

## CHAPTER IV. -- DECKS

### SECTION 30.30 GENERAL REQUIREMENTS

#### (1.) DEFINITIONS

- (a.) Deck: Any structure which serves as a raised horizontal platform on floor constructed of wood or other materials, without enclosing walls or roof.
- (b.) Attached Deck: Any deck which is physically connected to the principal building or accessory structure.
- (c.) Detached Deck: Any deck which is not physically attached to the principal building or accessory structure.

#### (2.) SOIL AND EXCAVATION REQUIREMENTS FOR DECK PIERS OR FOUNDATIONS

- (a.) No pier shall be placed on soil with a bearing capacity of less than 2,000 lbs. per square foot unless the pad support is designed through structural analysis.
- (b.) All organic material (roots, etc.) shall be cut off at the sidewalls of the borings or trench. All organic and loose material must be removed from the cavity area prior to pouring concrete.

#### (3.) DECKS PIERS, PADS AND FOUNDATIONS

- (a.) General footings, pads or piers shall be of adequate bearing area to safely distribute all live and dead loads to the supporting soil without exceeding the bearing capacity of the soil.
- (b.) Type and size of concrete pads, piers or foundations.
  - 1. Decks attached to principal buildings.
    - a. Concrete Pads - The minimum depth of a pad shall be 48" below grade. The minimum dimensions of this pad shall be 4" in depth and 8" in diameter.
    - b. Piers - The minimum depth of concrete piers shall be 48" below grade. The minimum dimension of this pier shall be 8" in diameter. (The concrete pier(s) shall extend a minimum of 6" above grade unless an approved mounting bracket is secured at the top surface of the pier(s)).
    - c. Direct burial wood posts shall be placed on a minimum 2" nominal thickness treated plat or other approved materials at a uniform depth below grade. Posts shall be treated to the requirements of the American Wood Preserver's Association (AWPA) standards C2 and

C15. for direct soil contact 4" below grade. Post shall be a minimum of 4' below established grade.

(4.) FRAMING

(a.) General Requirements.

1. Materials. All wood framing used in deck construction shall be pressure treated against decay or shall be a species of wood that is naturally decay resistant or shall be protected from weather.
2. Design loading. Decks shall be designed for a minimum of a 40 pound per square foot loading.
3. See fastener schedule for nailing requirements.

(b.) Column Posts.

1. Column spacing. Column posts shall be spaced per "Table No. 2".
2. Column size.
  - a. All column posts not exceeding six feet (6 feet) in height shall be a minimum of four inches by four inches (4 X 4) nominal thickness.
  - b. All column posts exceeding six (6) feet in height shall be a minimum of six inches by six inches (6 X 6) nominal thickness.
3. Lateral support. Column posts shall be constructed in such a manner or mechanically attached to the deck foundation to resist lateral movement.

(c.) BEAMS

1. Beam Size – All beams shall be sized per "Table No. 2".
  - a. Beams, except as otherwise noted in "Table No.2", SHALL BE A MINIMUM OF TWO (2), TWO (2) INCH THICK MEMBER OF ONE (1), FOUR (4) INCH THICK MEMBER. (I.E., 2 - 2X8 OR 1 - 4X8).
  - b. Beams may be spaced on each side of the post provided that blocking is installed a minimum of twenty four (24) inches.
2. Bearing. Beams bearing directly on the posts shall be attached by means of approved metal anchors or other approved methods.
3. Ledger boards. Ledger boards attached directly to the house or other structure may be used to replace a beam or beams. A single member of equal depth to the required size beam shall be used. The ledger board shall be attached with bolts, lag bolts or nails, spaced no less than 16 inches on

center, secured directly into the building structure. Flashing shall be installed between the ledger and building structure.

4. Beams shall not be cantilevered more than twelve (12) inches past the column post.

(d.) JOISTS

1. Joist size. All deck joists shall be sized and spaced per "Table 2".
2. Bearing. Deck joists shall bear a minimum of one and one half (1-1/2) inches on the beam or ledger board. Joists fastened to the face of the beam or ledger shall be attached with approved metal hangers.
3. Bridging. Bridging shall be provided at intervals not exceeding eight (8) feet.
4. Overhanging of joists. Joists which are at right angles to the supporting beam shall not be cantilevered more than two (2) feet past the supporting beam, unless designed by structural analysis.

(e.) DECKING

1. Material. All decking material shall be a minimum of one and one quarter (1-1/4) inches thick, nominal thickness. One inch decking may be used provided that the joists are spaced no more than 16" o.c.
2. Decking Orientation.
  - a. Decking shall be installed diagonally or at right angles to the joists.
  - b. Decking shall be centered over joists with cuts made Parallel to joists. Not more than two adjacent boards may break joints on the same joist except at ends and at openings.

(f.) GUARDRAILS AND HANDRAILS

1. Guardrails. All decks which are more than twenty four (24) inches above grade shall be protected with guardrails.
2. Handrails. Every stairway of more than three (3) risers shall be provided with at least one handrail. Handrails shall be provided on the open sides of stairways.
3. Guardrails and handrail detail.
  - a. Height. Handrails shall be located at least thirty (30) inches, but not more than thirty-eight (38) inches, above the nosing of the treads. Guardrails shall be located at least thirty-six (36) inches above the surface of the deck.

- b. Open railings. Open guardrails or handrails shall be provided with intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter greater than ~~5~~<sup>4</sup>(6) inches.
- c. Railing loads. Handrails and guardrails shall be designed and constructed to withstand a 200 pound load applied in any direction.

(g.) STAIRWAY, TREADS AND RISERS

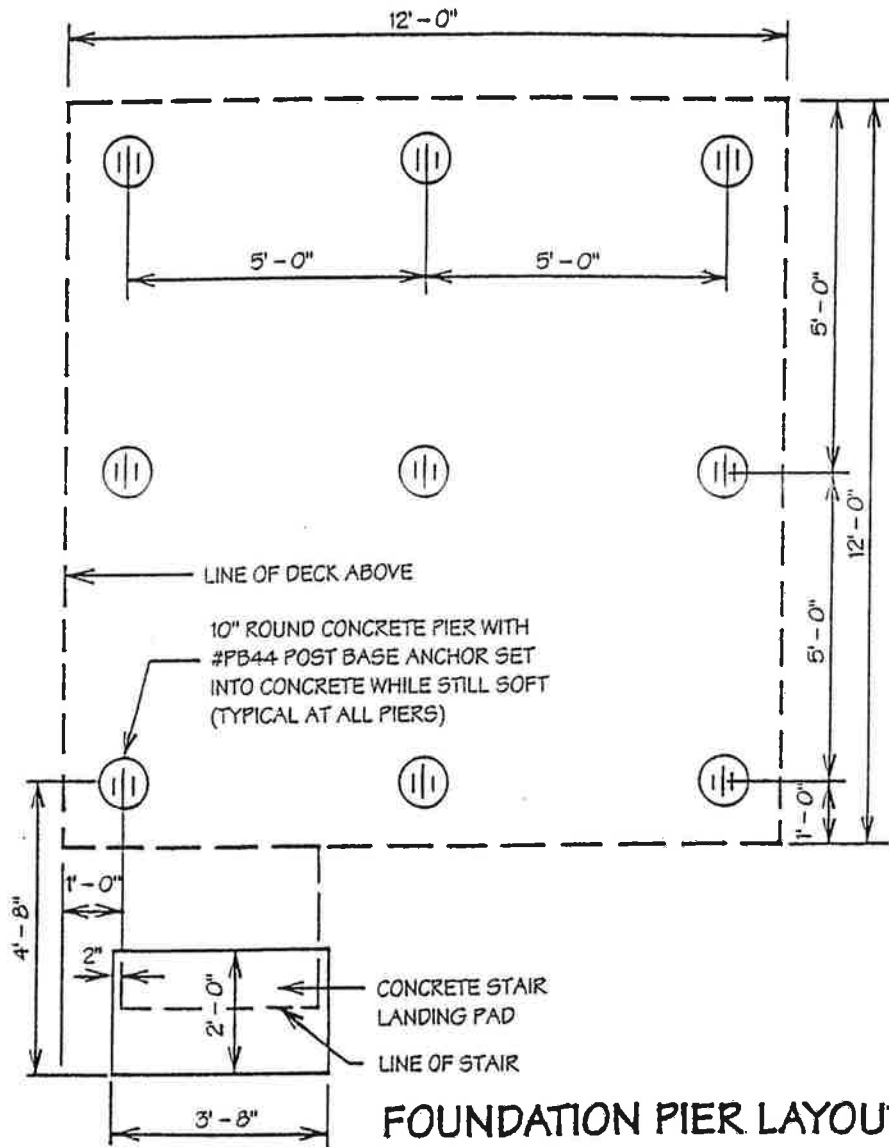
- 1. Risers. Risers shall not exceed eight (8) inches in height measured from tread to tread.
- 2. Treads. Treads shall be at least nine (9) inches wide, measured horizontally from nose to nose.
- 3. Variation. There shall be no variation in uniformity exceeding 3/16 inch in the width of a tread or in the height of risers.
- 4. Stair stringers shall be supported in accordance to the same manor as used for the deck.

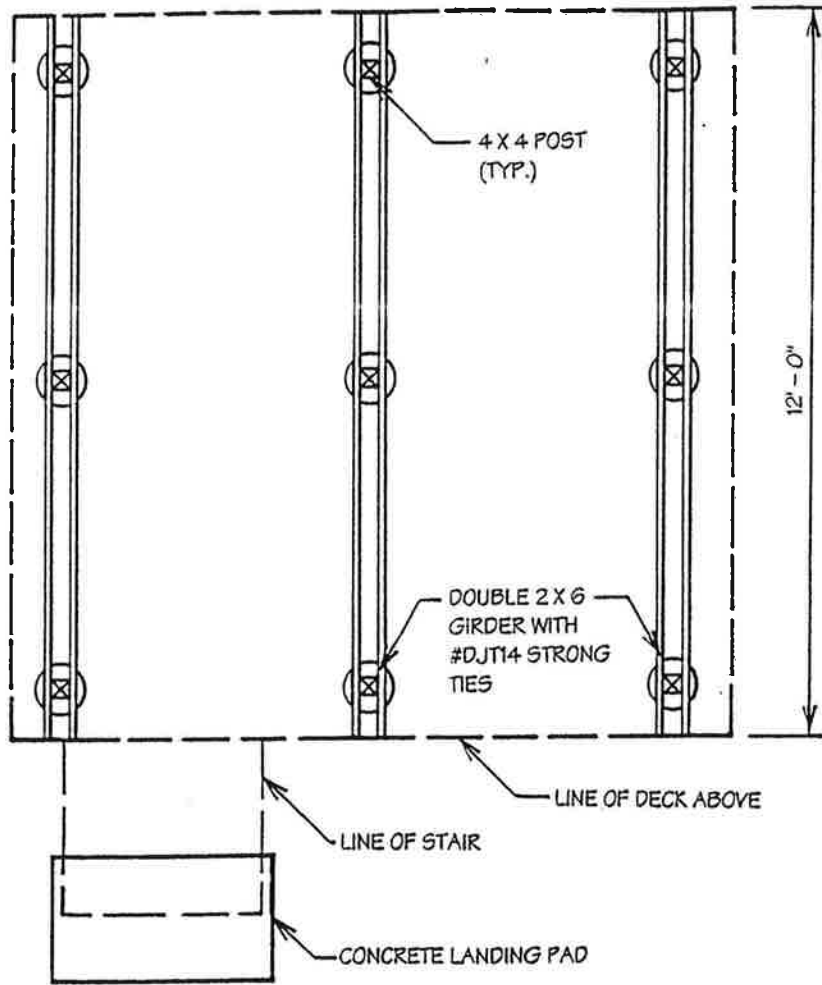
(h.) ALTERNATIVE PROVISIONS AND METHODS.

- 1. Wood Decks. Wood decks attached to the dwelling may be constructed to the Uniform Dwelling Code standards listed below.
  - a. Excavation requirements of s. COMM 21.14
  - b. Footing requirements of s. COMM 21.15
  - c. Frost penetration requirements of s. COMM 21.16
  - d. Load requirements of s. COMM 21.02
  - e. Stair, handrail and guardrail requirements of s. COMM 21.04
  - f. Decay protection requirements of s. COMM 21.10
- 2. New materials and methods shall comply with the provisions of Section 30.60.
- 3. Detached decks must:
  - a. Concrete pads shall be provided at a uniform depth below grade with all loose or organic material moved from the pad area prior to placement of concrete. The pad shall have a minimum depth of 4" thick and 8" in diameter.
  - b. Piers -- The minimum of 8" diameter concrete piers shall be at a uniform depth below grade.
  - c. Direct burial wood posts shall be placed on a minimum 2" nominal pressure treated plate or other approved materials at a uniform depth

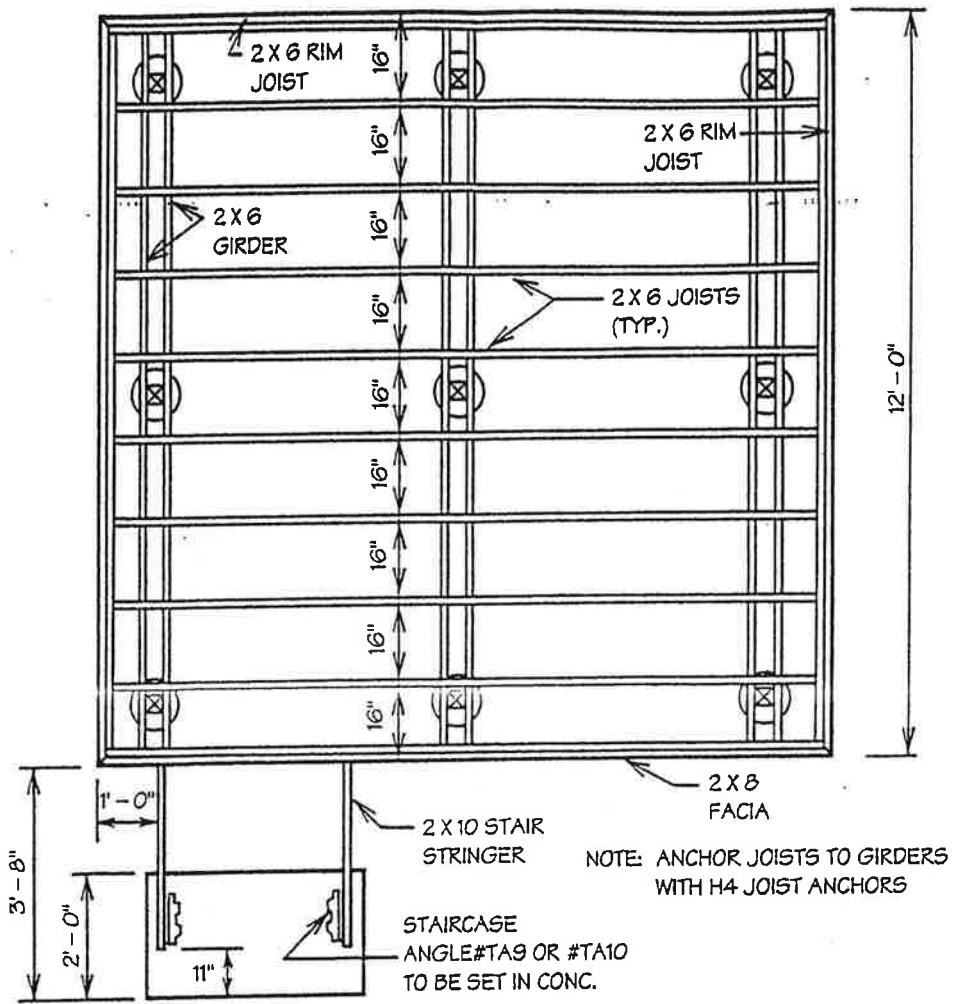
below grade. Posts shall be treated to at a uniform depth below grade. Posts shall be treated to CCA.40 for direct soil contact.

- d. Ground contact framing shall be allowed for decks which are less than 24" above grade. All materials in direct contact with the soil shall be treated to the requirements of the American Wood Preservers' Association (AWPA) Standards C2 and C15.

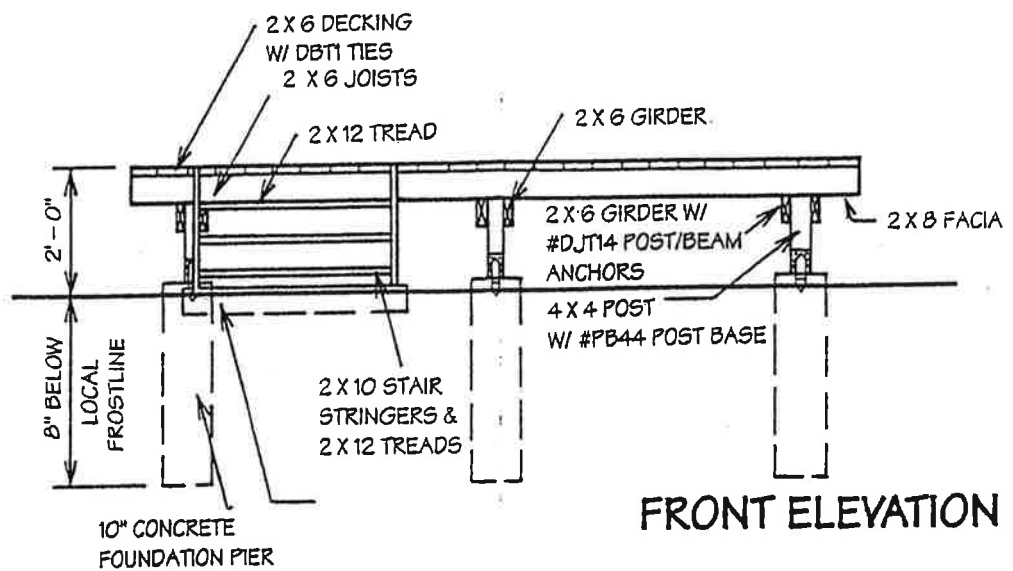




**GIRDER FRAMING PLAN**

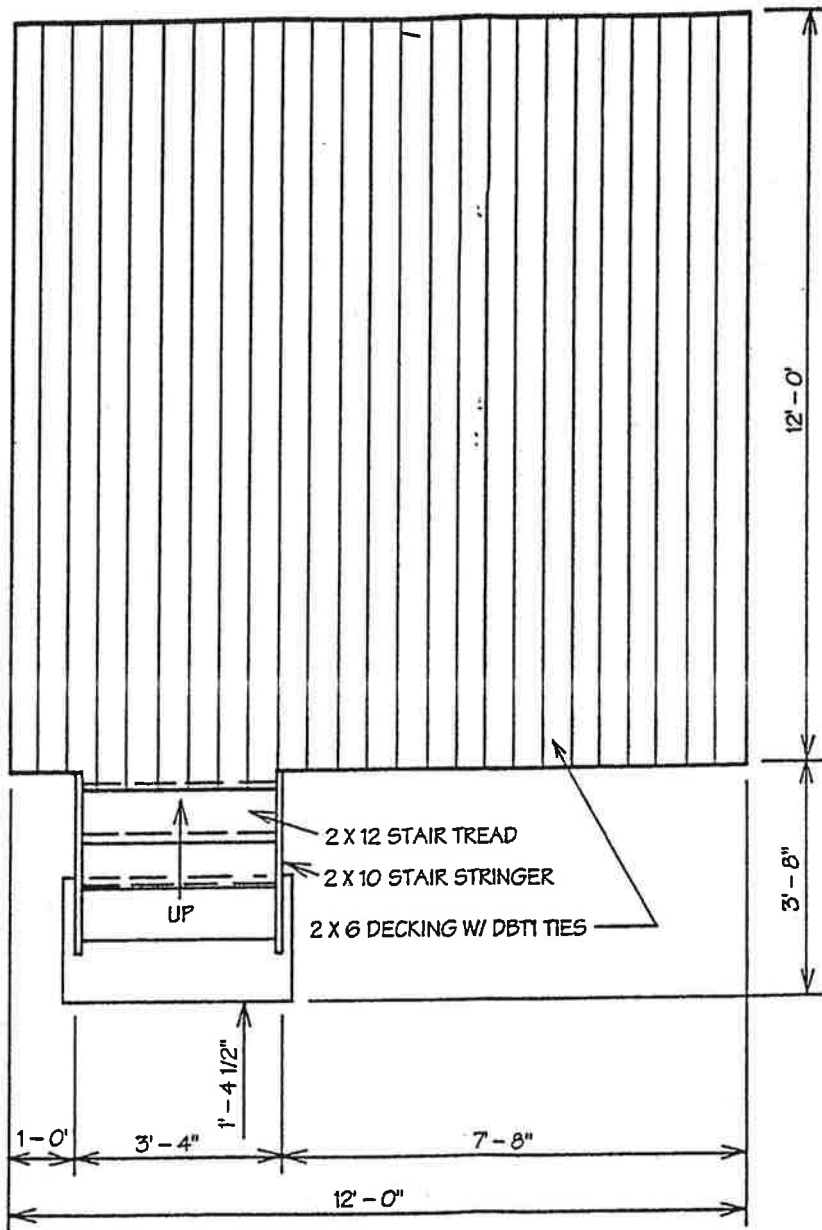


**DECK FRAMING PLAN**

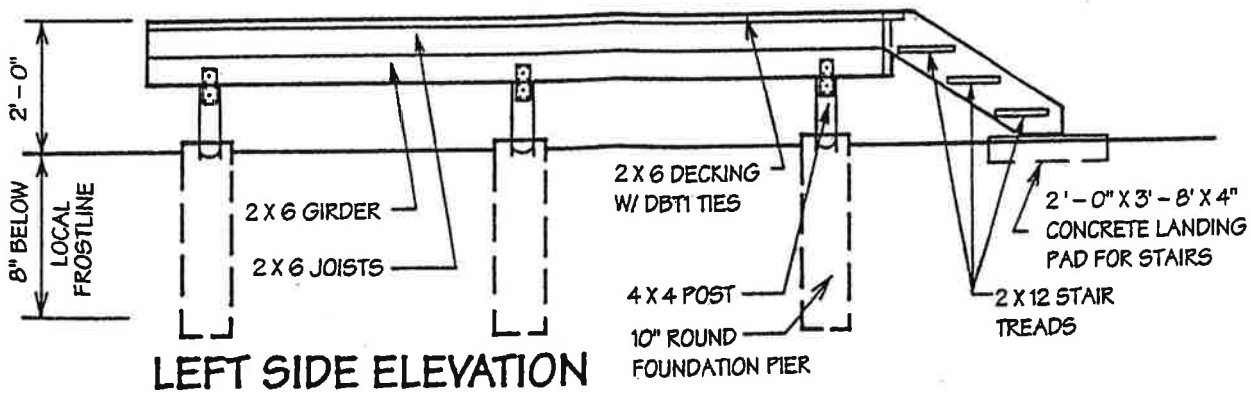


**FRONT ELEVATION**





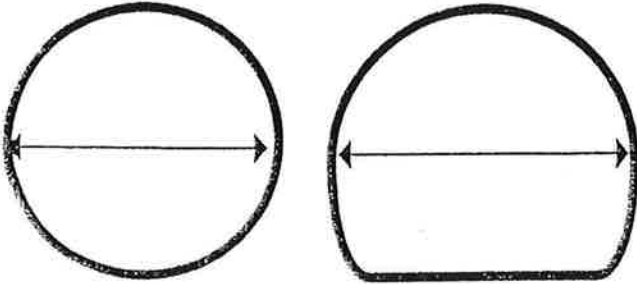
**DECK PLAN**



**LEFT SIDE ELEVATION**

# 21.04(2)(a)5. HANDRAIL SHAPES

## ROUND



MAXIMUM 2"  
DIAMETER

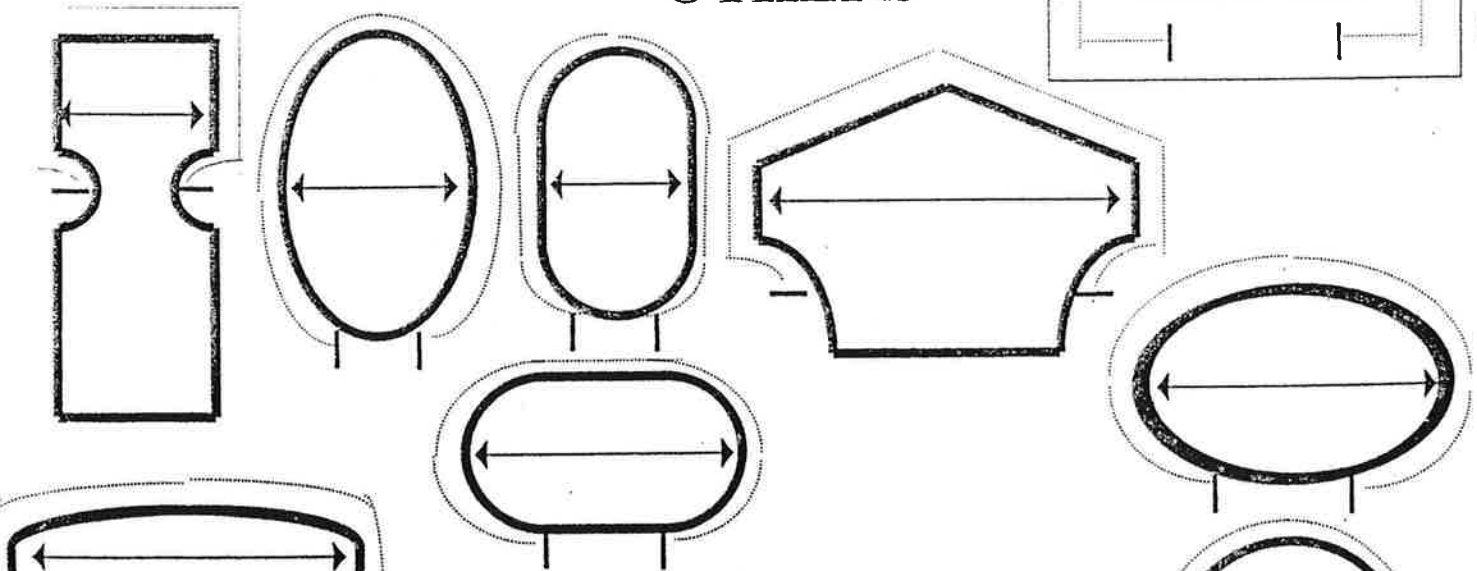
## RECTANGULAR

OK (w x ht):  
1/2" x 2-5/8"  
3/4" x 2-1/2"  
1" x 2-3/8"  
1-1/8" x 2-5/16"  
1-1/2" x 2-1/8"  
1-7/8" x 1-15/16"

OK (w x ht):  
2" x 1-7/8"  
2-1/2" x 1-5/8"  
2-3/4" x 1-1/2"  
2-7/8" x 1/2" TO 1-7/16"

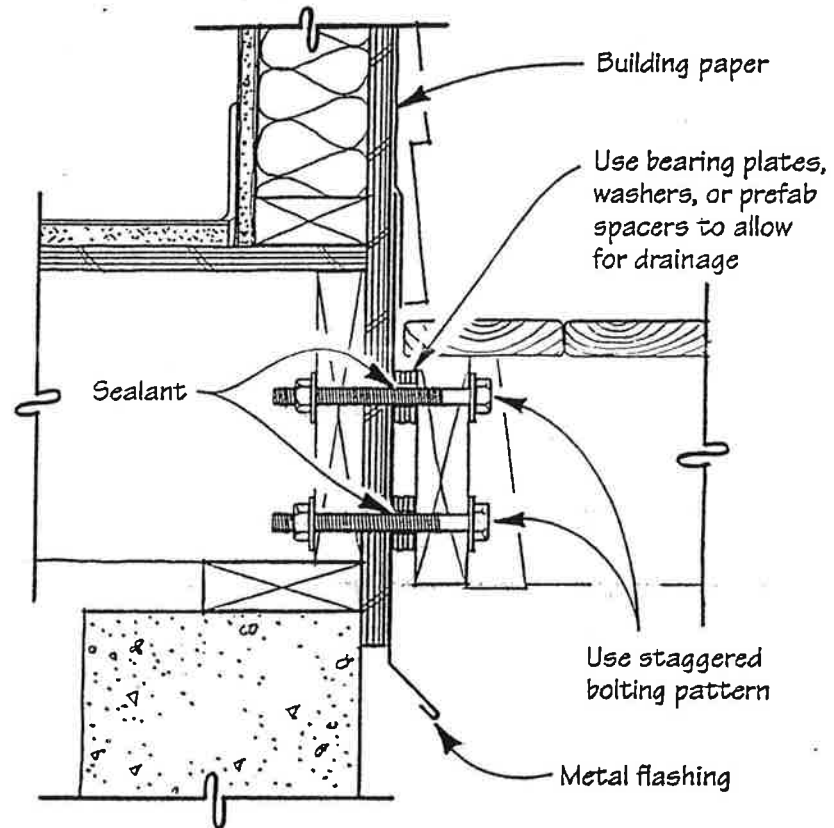
MAXIMUM 2-7/8"  
CROSS SECTION  
MAX. 6-1/4"  
GRIPPING  
SURFACE INCL.  
MIN. 1/4"  
RECESS ON  
EACH SIDE

## OTHERS



MAXIMUM 2-7/8"  
CROSS SECTION  
4" TO 6-1/4" GRIPPING  
SURFACE, INCLUDING A  
MIN. 1/4" RECESS ON  
EACH SIDE

## Flashing the Ledger



**Figure 3.** Properly flashing the ledger ensures that no water can get to the house framing and cause decay. The detail shown here allows water to drain behind the ledger.

MINIMUM FASTENER SCHEDULE TABLE

*Other interior and exterior panel products and finishes installed per manufacturer requirements.  
For engineered connectors, use manufacturer's specified fasteners.*

Description of Building Materials/Connection	Number and Type of Fastener <sup>1 2 3</sup>
<b>Floor Framing</b>	
Joist to joist, face nailed over support	2-12d
Joist to sill or girder, toe nail	2-16d, 3-8d
<i>Band or rim joist to joist, end nail</i>	3-16d
<i>Band or rim joist to sill or top plate</i>	2-16d at 16" o.c.
Bridging to joist, toe nail each end	2-8d
Built-up girder and beams, top loaded	10d at 32" o.c. at top and bottom and staggered and two at ends and at each splice
Built-up girder and beams, side-loaded	16d at 16" o.c. at top and bottom and staggered and two at ends and at each splice
Ledger strip to beam, face nail	3-16d each joist
Joist on ledger to beam, toe nail	3-8d
<b>Wall Framing</b>	
Sole plate to joist or blocking, face nail	16d at 16" o.c.
Top or sole plate to stud, end nail	2-16d
Stud to sole plate, toe nail	4-8d or 3-16d
Doubled studs, face nail	16d at 24" o.c.
Doubled top plates, face nail	16d at 16" o.c.
Top plates, laps and intersections, face nail	2-16d
Continuous header, two pieces	16d at 16" o.c. along each edge
Continuous header to stud, toe nail	4-8d
1" corner brace to each stud and plate, face nail	2-8d or 2 staples, 1 3/4"
Built-up corner studs	16d at 30" o.c., 16d at 24" o.c.
<b>Roof/Ceiling Framing</b>	
Ceiling joists to plate, toe nail	2-16d, 3-8d
Ceiling joist, laps over partitions, face nail	3-16d
Ceiling joist to parallel rafters, face nail	3-16d
Rafter to plate, toe nail (maximum 6' rafter span, engineered connector for longer)	2-16d, 3-8d
Roof rafters to ridge, valley or hip rafters, toe nail	4-16d
Roof rafters to ridge, valley or hip rafters, face nail	3-16d
Collar ties to rafters, face nail	3-8d
<b>Boards and planks</b>	
1" x 6" subfloor or less to each joist, face nail	2-8d or 2 staples, 1 3/4"
Wider than 1" x 6" subfloor toe to each joist, face nail	3-8d or 4 staples 1 3/4"
2" subfloor to joist or girder, blind and face nail	2-16d
1" x 6" roof sheathing to each bearing, face nail	2-8d or 2 staples, 1 3/4"
1" x 8" roof sheathing to each bearing, face nail	2-8d or 3 staples, 1 3/4"
Wider than 1" x 8" roof sheathing to each bearing, face nail	3-8d or 4 staples, 1 3/4"
2-inch planks	2-16d at each bearing

<b>Panel Sheathing</b>		<b>Spacing of Fastener</b>	
<b>Material</b>	<b>Fastener</b>	<b>Edges</b>	<b>Intermediate Supports</b>
Engineered wood panel for subfloor and roof sheathing and wall corner wind bracing to framing			
5/16-inch to 1/2-inch	6d common or deformed nail or staple, 1 1/2"	6"	12" <sup>4</sup>
5/8-inch to 3/4-inch	8d smooth or common, 6d deformed nail, or staple, 14 ga. 1 3/4"	6"	12" <sup>4</sup>
7/8-inch to 1-inch	8d common or deformed nail	6"	12"
1 1/8-inch to 1 1/4-inch	10d smooth or common, or 8d deformed nail	6"	12"
Combination subfloor/underlayment to framing			
3/4-inch or less	6d deformed or 8d smooth or common nail	6"	12"
7/8-inch to 1-inch	8d smooth, common or deformed nail	6"	12"
1 1/8-inch to 1 1/4-inch	10d smooth or common or 8d deformed nail	6"	12"
Wood panel siding to framing			
1/2-inch or less	6d corrosion-resistant siding and casing nails	6"	12"
5/8-inch	8d corrosion-resistant siding and casing nails	6"	12"

<sup>1</sup>All nails are smooth-common, box or deformed shank except where otherwise stated

<sup>2</sup>Nail is a general description and may be T-head, modified round head or round head.

<sup>3</sup>Staples are 16-gauge wire, unless otherwise noted, and have a minimum 7/16-inch o.d. crown width.

<sup>4</sup>Staples shall be spaced at not more than 10 inches o.c. at intermediate supports for floors.

TABLE-2

	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
4'	Joint	2x6 16' OC	2x6 16' OC	2x8 16' OC	2x8 16' OC	2x8 16' OC	2x8 12' OC	2x10 16' OC	2x10 12' OC	2x10 12' OC	2x12 16' OC
	Beam	2x6 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
5'	Joint	1-2x6	1-2x8	1-2x8	1-2x10	1-2x10	1-2x8	1-2x10	1-2x10	1-2x10	1-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
6'	Joint	1-2x6	1-2x8	1-2x8	1-2x10	1-2x10	1-2x8	1-2x10	1-2x10	1-2x10	1-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
7'	Joint	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
8'	Joint	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
9'	Joint	3-2x6	3-2x8	3-2x8	3-2x10	3-2x10	3-2x8	3-2x10	3-2x10	3-2x10	3-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
10'	Joint	4-2x6	4-2x8	4-2x8	4-2x10	4-2x10	4-2x8	4-2x10	4-2x10	4-2x10	4-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
11'	Joint	3-2x8	3-2x8	3-2x8	3-2x10	3-2x10	3-2x10	3-2x10	3-2x10	3-2x10	3-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
12'	Joint	2-2x10	2-2x10	2-2x10	2-2x10	2-2x10	2-2x10	2-2x10	2-2x10	2-2x10	2-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
13'	Joint	3-2x8	3-2x8	3-2x8	3-2x10	3-2x10	3-2x10	3-2x10	3-2x10	3-2x10	3-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC
14'	Joint	4-2x8	4-2x8	4-2x8	4-2x10	4-2x10	4-2x10	4-2x10	4-2x10	4-2x10	4-2x12
	Beam	2x6 24' OC	2x8 24' OC	2x8 24' OC	2x10 24' OC	2x10 24' OC	2x10 16' OC	2x12 24' OC	2x10 16' OC	2x12 16' OC	2x12 16' OC