Deck Construction Requirements

Requirements to receive a building permit for construction of a deck or terrace

1. Plat of survey showing location of proposed deck
2. 2 sets of detailed construction drawings.
3. Completed application.
4. Call J.U.L.I.E. before you dig at 811
5. Permit fee is 2.2% of construction cost with a minimum fee is $55.00 and a plan review fee $85.00.

If contractor is doing work they must be registered.
Homeowner doing their own work must provide a copy of your homeowners general liability; min. $300,000.

General Requirements

1. Prepare site and remove all biodegradables, sod, etc.
2. All lumber must be treated or rot resistant species
3. Decks shall be designed to a minimum live load of 40 lbs. per sq. foot
4. Balconies shall be designed to a minimum live load of 60 lbs. per sq. foot
5. If attached to house, install ledger, bolted (see chart) to solid dimension lumber and can't be attached directly to plywood, nondimensional bands, truss joists, or cantilevered framing.
6. Ledger requires water tight flashing.
7. All fasteners must be hot-dipped galvanized or stainless
8. Hot dipped galvanized or stainless connectors required when framing into headers, ledgers, beams, and post base with anchor bolts on concrete piers
9. Hurricane ties shall be used for joist to beam attachment
10. Bridging required on joist spans greater than 10 ft. between support beams or ledger.
11. Headers and adjacent framing shall be doubled up and properly nailed
12. Guardrails are required on all surfaces 16" above the Floor or grade below & shall be not less than 36" in height
13. Handrails required for all stairs with 2 or more risers of not less than 34" in height and maximum of 38" in height
14. Stair treads shall be min. 10" and risers max. of 7 ¾"

Joist Spacing*

Size in.	Spacing on Center	Grade No. 1	Grade No. 2
2X 6	12	10' 7"	10' 4"
	16	9' 7"	9' 5"
	24	8' 5"	7' 10"
2 X 8	12	13' 11"	13' 8"
	16	12' 8"	12' 5"
	24	11' 1"	10' 2"
2 X 10	12	17' 9"	17' 5"
	16	16' 2'	15' 10"
	24	13' 6"	13' 1"
2 X 12	12	21' 7"	21' 12"
	16	19' 8"	18' 10"
	24	16' 1"	15' 5"

Beam Spacing*

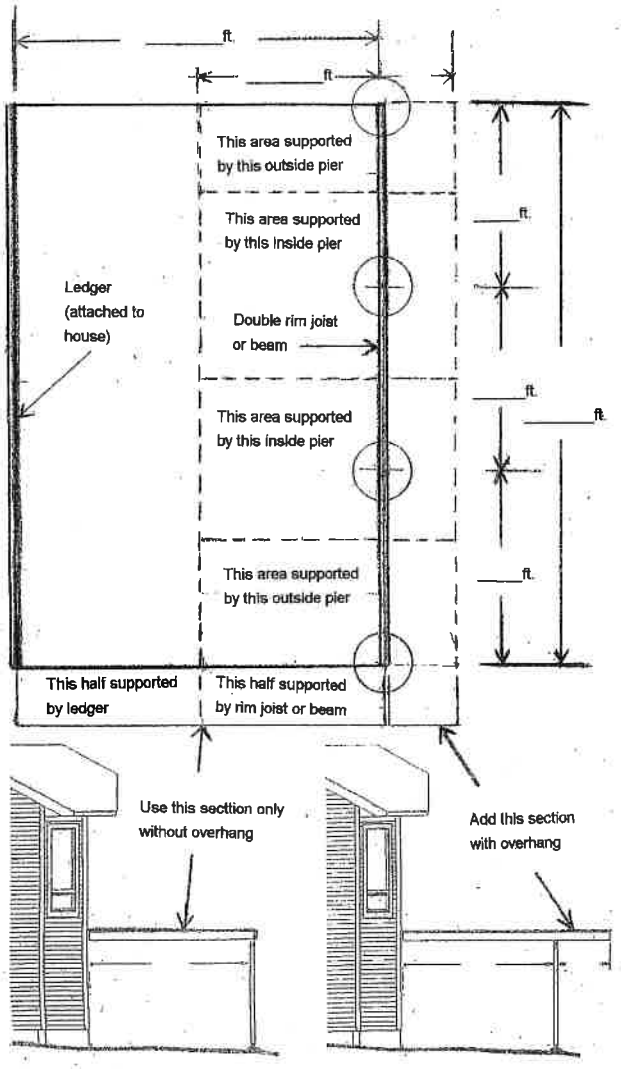
Beam size	Tributary Load Width (Beam Spacing in ft)												
	4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'	15'	16'
(2)2X 6	7'	6'											
(2)2X8	9'	8'	7'	7'	6'	6'							
(2)2X10	11'	10'	9'	8'	8'	7'	7'	6'	6'	6'	6'		
(3)2X8	12'	11'	10'	9'	8'	8'	7'	7'	7'	6'	6'	6'	
(2)2 X12	13'	12'	10'	10'	9'	8'	8'	7'	7'	7'	6'	6'	6'
(3)2X10	15'	13'	12'	11'	10'	10'	9'	9'	8'	8'	8'	7'	7'
(3)2X12	16'	15'	14'	13'	12'	11'	11'	10'	10'	9'	9'	8'	8'

*Treated Southern Pine No. 2 or better

Post Size*

Post Size	Tributary Load Area (40 psf live load)																			
	36	48	60	72	84	96	108	120	132	144	150	168	180	192	204	216	228	240	256	256
4X4	10	10	10	9	9	8	8	7	7	6	6	6	6	5	5	5	4	4	4	4
4X6	14	14	13	12	11	10	10	9	9	8	8	8	7	7	7	7	6	6	6	6
6X6 (No.1)	17	17	17	17	17	17	17	17	17	17	17	17	16	16	15	15	14	14	13	13
6X6 (No.2)	17	17	17	17	17	17	17	17	16	16	15	14	13	13	12	11	10	8		

Joist Spacing 40 psf	Ledger Bolt/Lag Size and Spacing On Center		
	0-6 ft Joist Span	6-12 ft Joist Span	12-16 ft Joist Span
12 in. oc	(2)-3/8in @24in oc	(2)-1/2in @24in oc	(2)-1/2in @24in oc
16 in. oc	(2)-3/8in @24in oc	(2)-1/2in @24in oc	(2)-1/2in @24in oc
24 in. oc	(2)-3/8in @24in oc	(2)-1/2in @24in oc	(2)-1/2in @24in oc



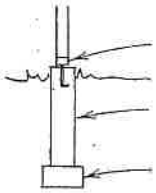
Calculate Footings/Piers

Step 1	Measurment from Ledger to Rim Joist or Beam	_____Ft
Step 2	Enter Measurment from End to End	_____Ft
Step 3	Multiply Step 1 X Step 2	_____SF
Step 4	Divide answer from Step 3 by 2	_____SF
Step 5	Add overhang Square Footage if your deck has an overhang, if not enter amount from Step 4 in Total Total	_____SF _____SF
Step 6	Divide Total from Step 5 by number of Support Posts _____less 1=_____	_____SF
Step 7	Multiply amount from Step 6_____SF X 50 PSF = Footing Load	_____PSF

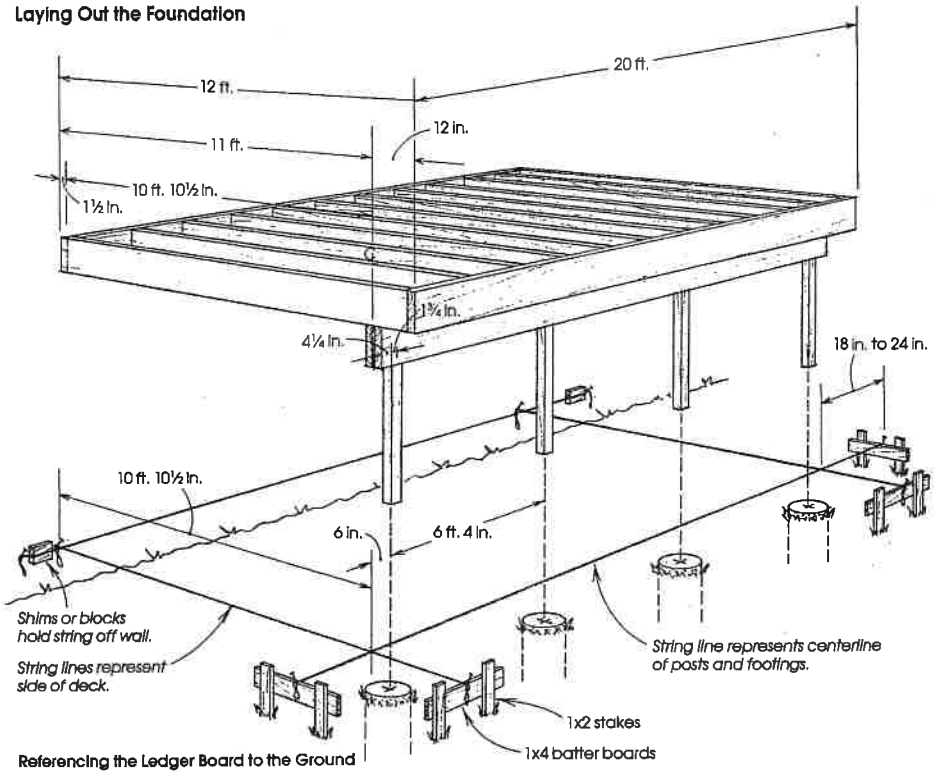
Step 8 **Select Footing Load Capacity higher than Footing Load from Step 7 to obtain minimum required Footing Diameter from chart below.**

Footing Load Capacity	Footing Diameter
700 PSF	8 In
1100 PSF	10 In
1580 PSF	12 In
2200 PSF	14 In
3540 PSF	16 In

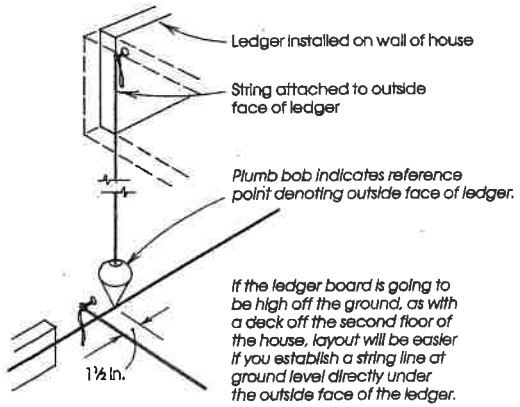
Footing Diamater Required _____in.



Laying Out the Foundation

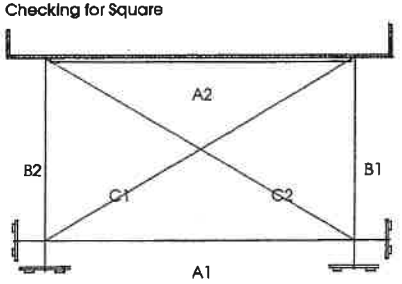


Referencing the Ledger Board to the Ground



If the ledger board is going to be high off the ground, as with a deck off the second floor of the house, layout will be easier if you establish a string line at ground level directly under the outside face of the ledger.

Checking for Square



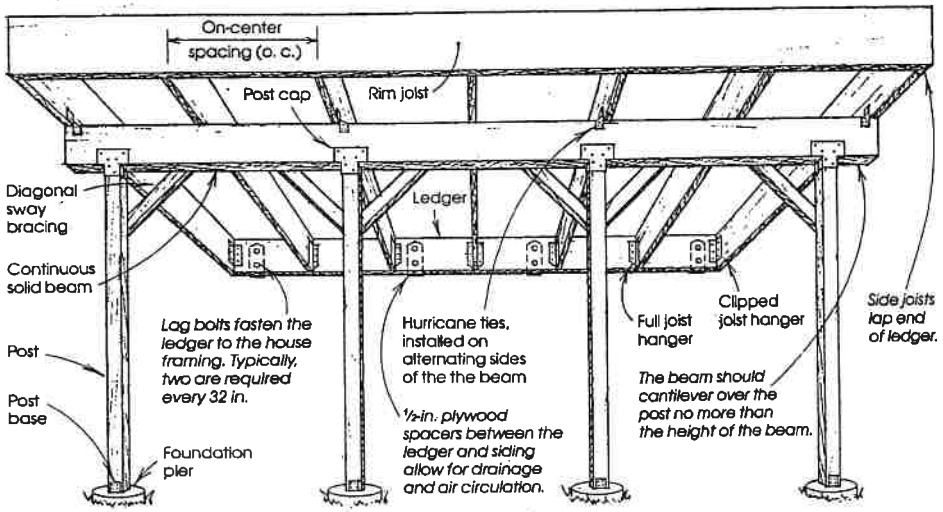
After the layout strings are attached to batter boards, check for square. If A1 equals A2, B1 equals B2 and C1 equals C2, the layout is square.

Two Ways to Frame a Deck

Beam-Over-Post Framing

The cantilever should not exceed one-fifth of the maximum rated span of the joists. It should never exceed one-half the length of the joist that is supported between the ledger and the beam.

Joists spaced 16 in. or 24 in. on center, typ.

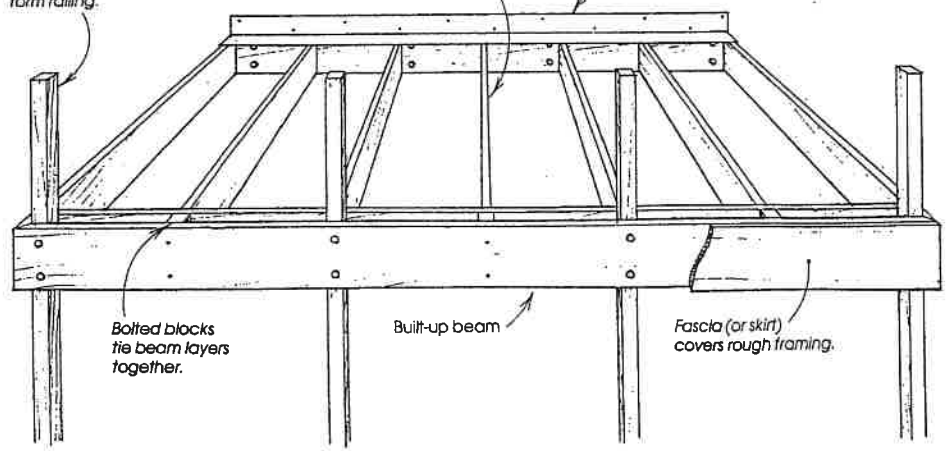


Continuous-Post Framing

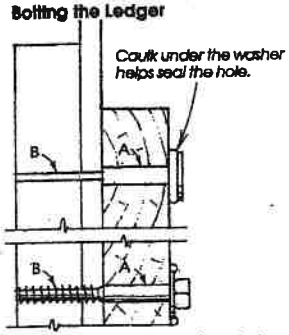
Continuous posts form railing.

Joist should slope ⅛ in. per foot away from the house.

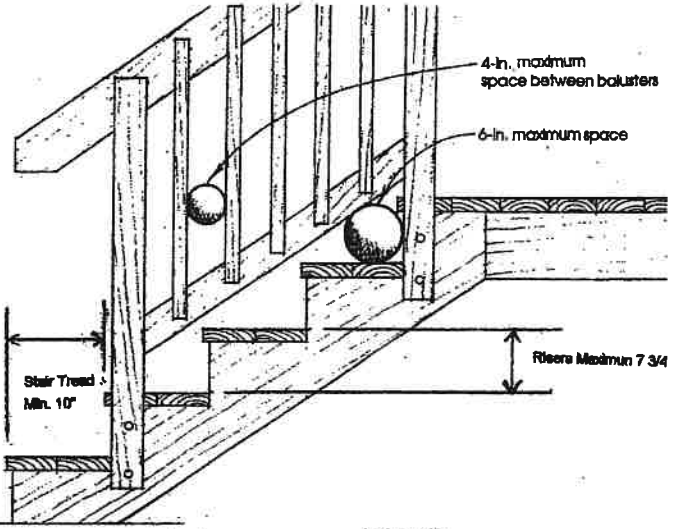
When the ledger can be firmly attached to the house only by cutting the siding, flashing must be added to keep out water.

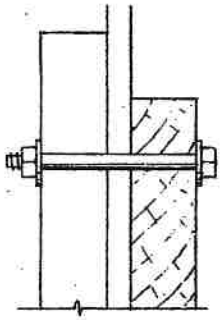


Bolting the Ledger

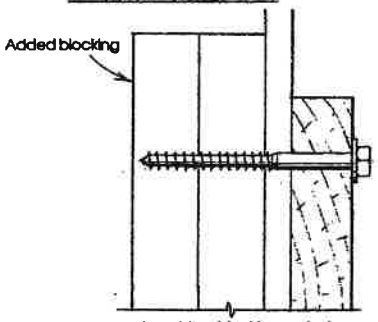


Drill a pilot hole for the unthreaded part of bolt (A), then drill a smaller pilot hole for the threaded part of bolt (B).



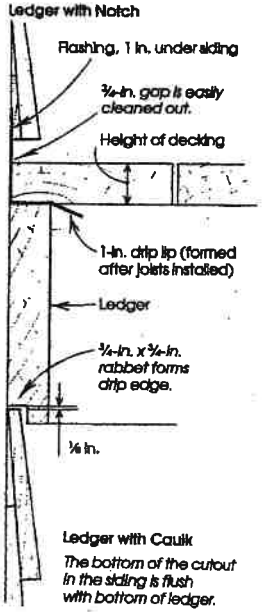


The ledger can be bolted more securely using a through bolt with a nut on the backside or...

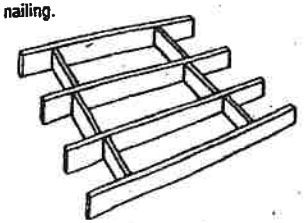


...by adding blocking and using a longer lag bolt. But reaching this part of the house framing is often difficult or impossible.

Ledger with Notch

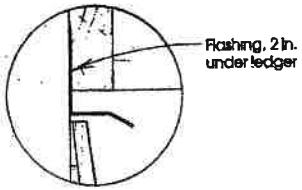


Bridging adds stability to the deck framework. Stagger the bridging on a line for ease in nailing.



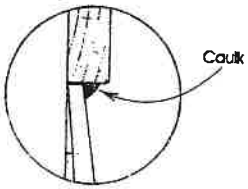
Ledger with Bottom Flashing

The bottom of the cutout in the siding is lower than the bottom of ledger.

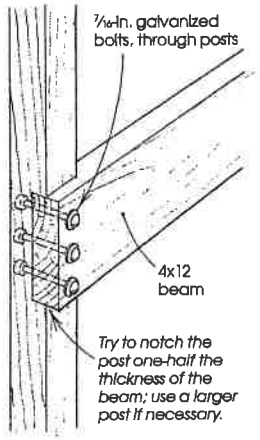


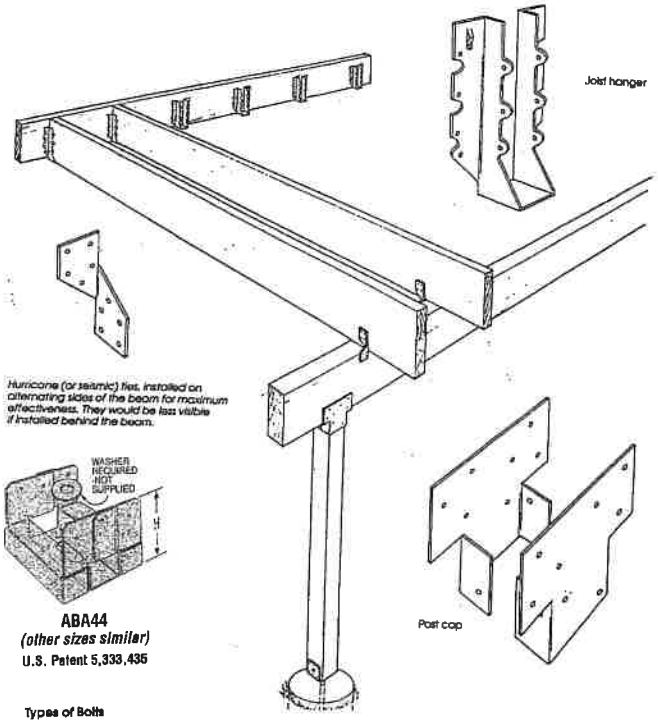
Ledger with Caulk

The bottom of the cutout in the siding is flush with bottom of ledger.



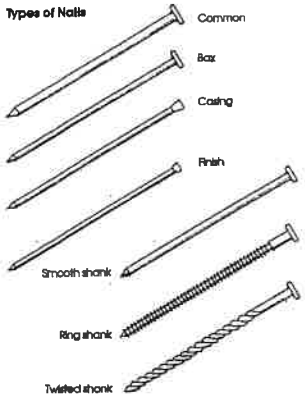
Notched Beams



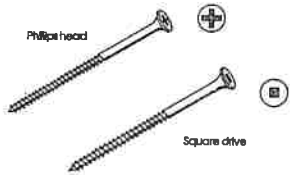


ABA44
(other sizes similar)
U.S. Patent 5,333,435

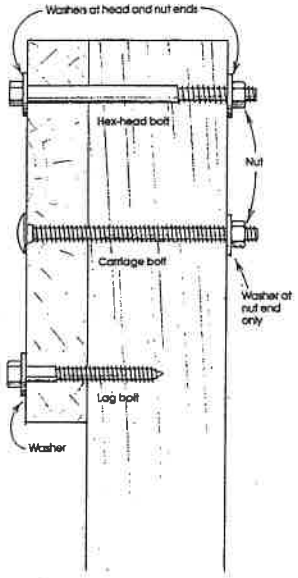
Types of Nails

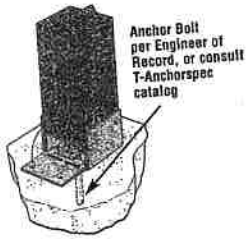


Types of Screws

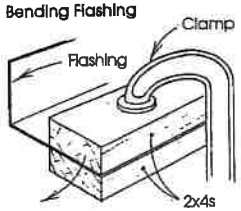


Types of Bolts





Bending Flashing



Flashing can be bent to form a drip lip by first clamping 2x4s along the bend line.