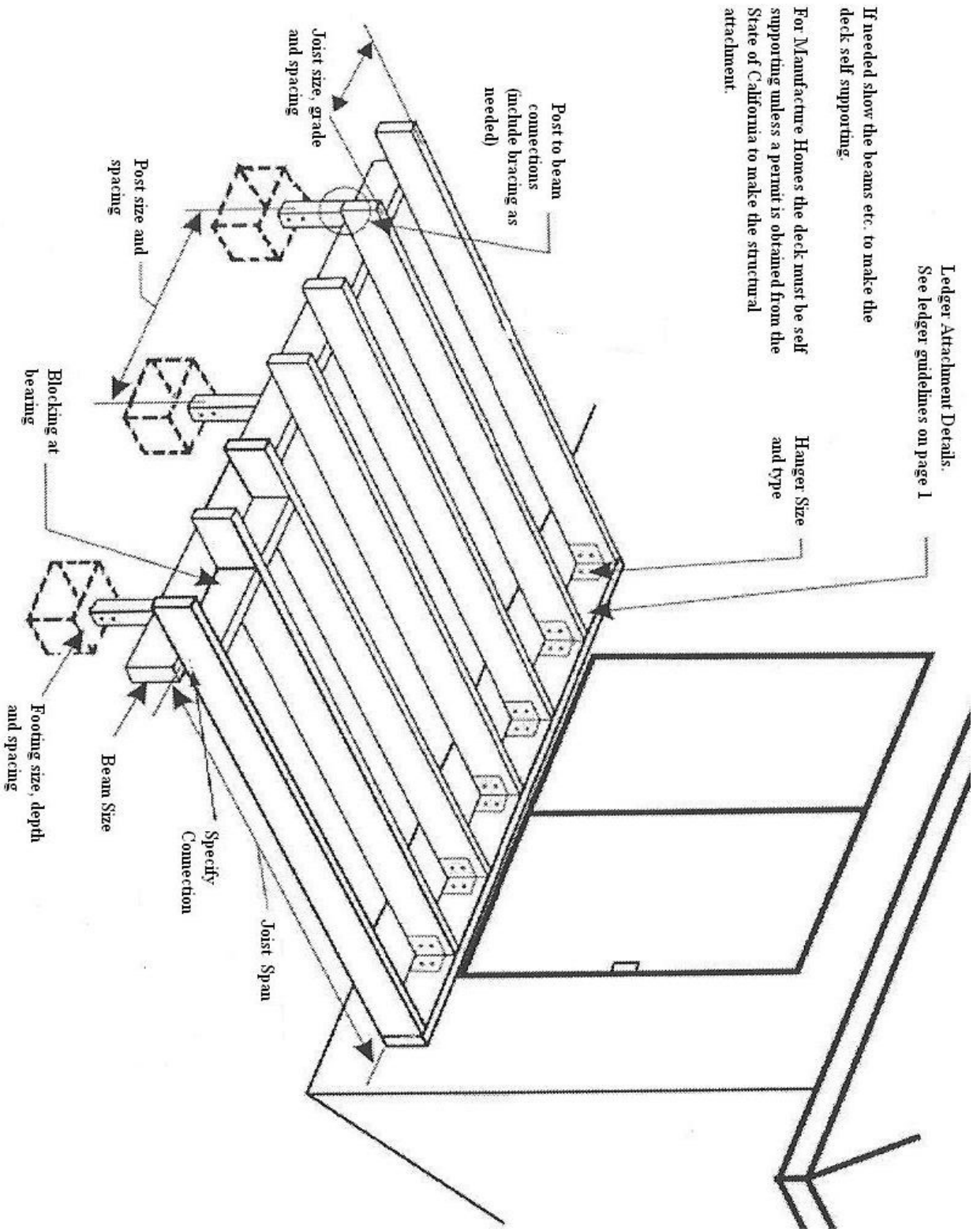
1. This handout is intended to cover simple owner builder decks. Decks: over 8' in height, with spans over 10', supporting roofs, incorporating special designs or with certain ledgers attachments will require design by a California Licensed Professional. Snow loads over 40 psf may also require professional design.

2. Deck repairs: Those items repaired are required to comply with current Code.

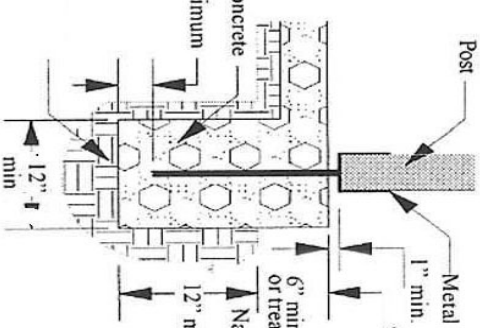
3. Stairs and Guardrails. Guardrails are required if the deck is more than 30" above grade (height is measured within 5' of the edge of deck). Guardrails are required to be 42" high. See handout Residential Stairways and Landings 2013 CRC for detailed requirements of Guardrails and Stairs.

4. Provide details and scaled plans for:
    a. Foundations (minimum 12" square and 12" into undisturbed earth), posts, joist and girders. Include type, size, grade and spacing.
    b. Detail connections for: footings to posts, posts to girders, minimum of two deck lateral load attachment (CRC R507.2 and page 5 of this handout) joists and guardrails.
    c. Decks shall be designed to 40 psf (or P_f snow load if greater. Cantilever decks shall be designed in accordance with CRC or CBC.
    d. For posts over 30" in height provide mechanical connection at post base.
    e. Decks greater than 30" shall be cross braced in all directions at all posts for lateral stability.
    f. Ledger (if used) must include positive attachment to structural framing of the main building (not through foam or into "I" joist type framing). If the ledger attachment to the structural frame cannot be verified the deck must be self supporting. Nails are not permitted for ledger attachments. For areas not exceeding 40 psf provide a minimum ledger attachment of 3/8" x 5" lags 16" o.c. through *structural panels* for joists spanning up to 12'.
    g. Hardware and fasteners to be hot-dipped galvanized, stainless steel, silicon bronze or copper (CBC 2304.9.5). Check the manufacture due to failure of metals in contact with modern pressure treating chemicals.
    h. Decks, unless covered, require framing and support posts to be of preservative-treated or naturally durable lumber. 2304.11.5

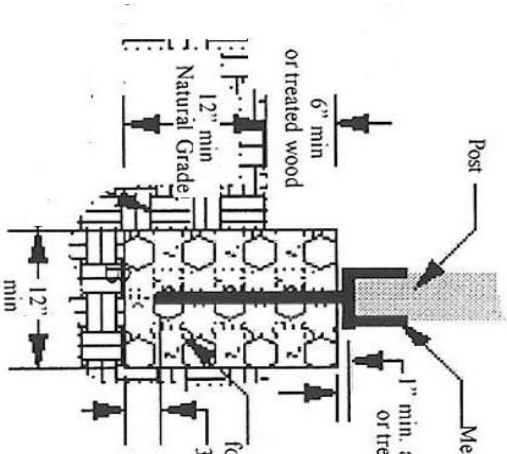
5. Wildland Fire Requirements for Decks: Any structure built to Wildland Fire Standards (conventional structures with a 2008 or newer permit) and all decks with 10' of a manufactured/mobile home must comply have approved decking material. A current list of approved decking materials is located in the "New Products Handbook located at http://www.fire.ca.gov/fire_prevention/fire_prevention_wildland.php When required the components that must comply are deck surfaces, stair treads/risers and the detailed on the plan. Wildland requirements do not apply to the underlying deck support material.


Ledger Attachment Details.
See ledger guidelines on page 1
If needed show the beams etc. to make the deck self supporting.
For Manufacture Homes the deck must be self supporting unless a permit is obtained from the State of California to make the structural attachment.
Hanger Size and type
Post to beam connections (include bracing as needed)
Joist size, grade and spacing
Post size and spacing
Blocking at bearing
Footing size, depth and spacing
Beam Size
Specify Connection
Joist Span

Anchor and footing detail, integrated slab

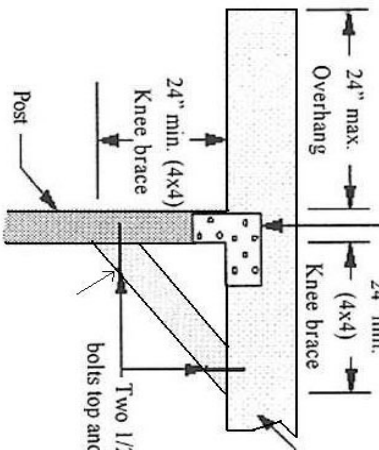


Anchor and footing detail



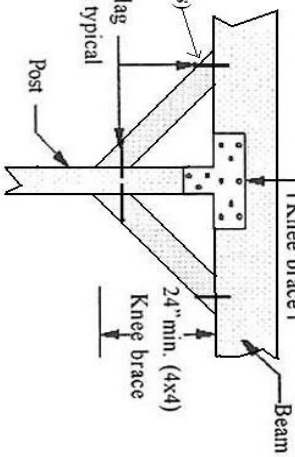
Post & Beam Connection detail (end condition)

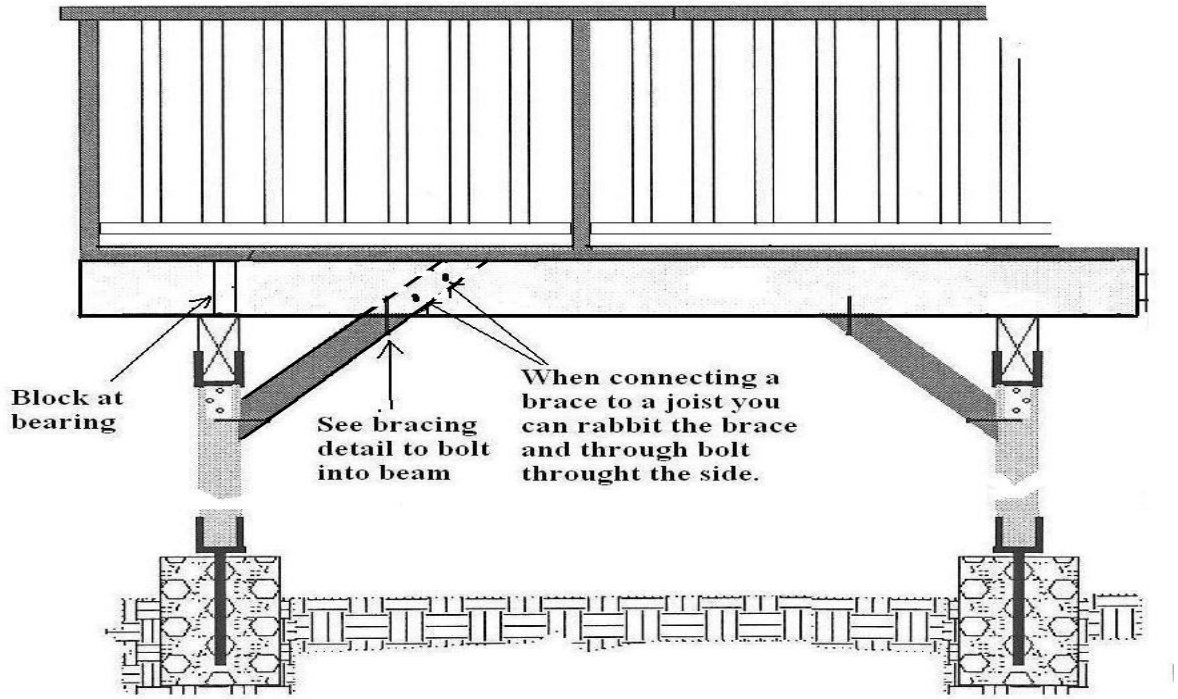
Post cap installed per manufacturer's instruction



Post & Beam Connection detail (interior condition)

Post Cap installed per manufacturer's instruction




Block at bearing
See bracing detail to bolt into beam
When connecting a brace to a joist you can rabbit the brace and through bolt throught the side.

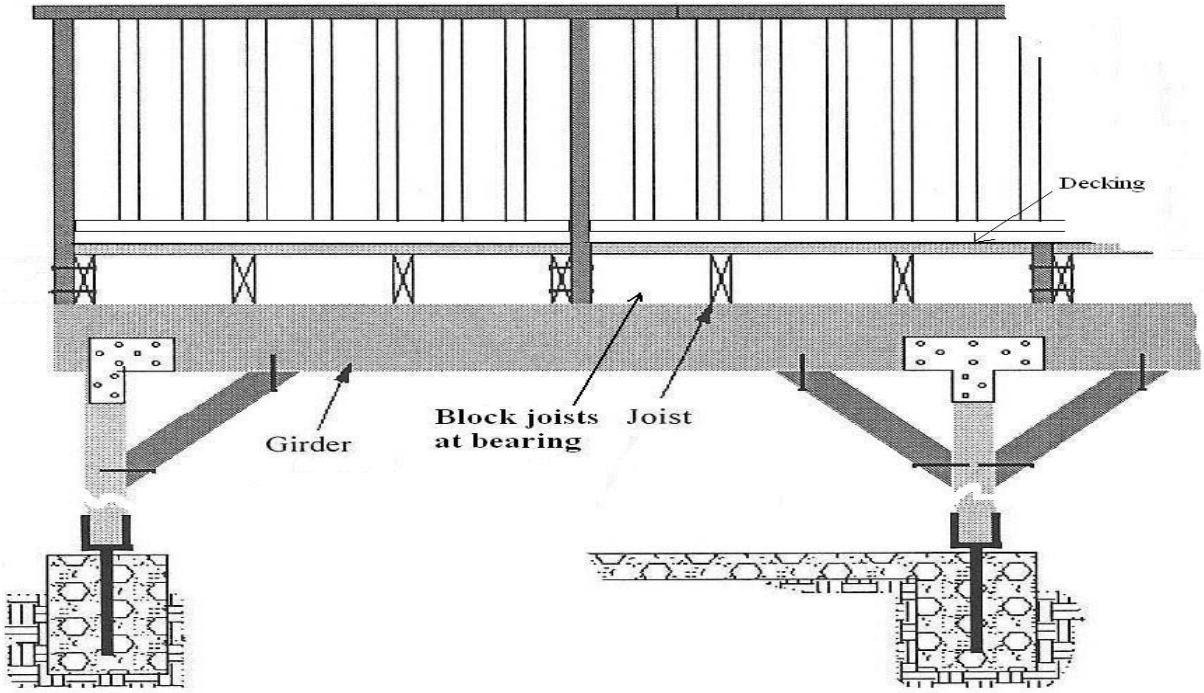

Decking
Girder
Block joists at bearing
Joist

TABLE R507.2
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST[c, f, g]
(Deck live load = 40 psf, deck dead load = 10 psf)

JOIST SPAN	6′ and less	6′1″ to 8′	8′1″ to 10′	10′1″ to 12′	12′1″ to 14′	14′1″ to 16′	16′1″ to 18′
Connection details	On-center spacing of fasteners[d, e]						
$^1/_2$ inch diameter lag screw with $^{15}/_{32}$ inch maximum sheathing[a]	30	23	18	15	13	11	10
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing	36	36	34	29	24	21	19
$^1/_2$ inch diameter bolt with $^{15}/_{32}$ inch maximum sheathing and $^1/_2$ inch stacked washers[b, h]	36	36	29	24	21	18	16

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479 kPa.

a. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

b. The maximum gap between the face of the ledger board and face of the wall sheathing shall be $^1/_2$ inch.

c. Ledgers shall be flashed to prevent water from contacting the house band joist.

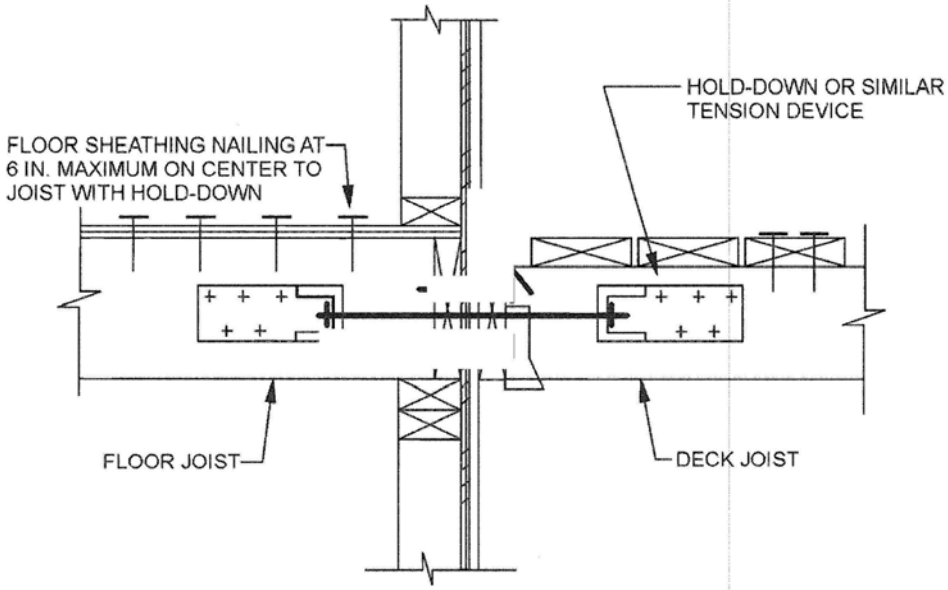
d. Lag screws and bolts shall be staggered in accordance with Section R507.2.1.

e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials as established by standard engineering practice.

f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1-inch-thick engineered wood product (structural composite lumber, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.

g. A minimum 1 × $9^1/_2$ Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.

h. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.



For SI: 1 inch = 25.4 mm.

FIGURE 507.2.3
DECK ATTACHMENT FOR LATERAL LOADS