

COMPACT DECK



**SOUTHERN
PINE
COUNCIL**

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Compact Deck

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This plan contains an attractive deck design that two handy persons with intermediate building skills can construct in a weekend. Build it with versatile pressure-treated Southern Pine lumber and your new deck will provide many years of outdoor living enjoyment. Designed for a level site, this deck includes comfortable seating. When built with pressure-treated Southern Pine lumber, the deck frame is suitable for “ground contact” applications. All decking, seating, and rail materials can be quality marked for “above ground” use.

Also, local soil conditions may warrant the installation of 4x4 corner posts, set in concrete beneath the deck frame, to minimize the effects of ground subsidence over time. An easier alternative is to place concrete block footers at the deck frame’s four corners. Ask a local builder if either support device is necessary.

MATERIALS LIST

To build this deck, you will need the following quantities of pressure-treated Southern Pine lumber:

NUMBER OF PIECES	MATERIAL	LENGTH	TO MAKE
4	2x12	12'	Deck Framing (F1-F4)
5	2x12	10'	Deck Framing (J1-J5)
3	2x10	8'	12 Seat Supports (R)
6	2x6	12'	Deck Framing (F4,F5); Blocking
12	2x4	10'	Seat Frames, Rail Supports, Ledgers
22	2x2	17"	Railing Spindles
372 lin.ft.	5/4x6 R.E.D.	D1 16 pcs. 8'	D2 20 pcs. 10' (Deck, Seats & Back Rail) D3 4 pcs. 11' (Steps)

OTHER MATERIALS NEEDED

- Hot-dip galvanized or stainless steel fasteners (See Fastener Advisory)
 - 8d (approx. 8 lbs.) to fasten decking, steps, seat, and rail
 - 12d (approx. 10 lbs.) to assemble deck framing
 - 11 hot-dip galvanized bolts, 5"x $\frac{3}{8}$ " dia., with 22 washers
- Construction adhesive for treated wood
- Water-repellent sealer

TOOLS REQUIRED

- Hammer
- Crosscut or circular saw
- Carpenter’s level and square
- Miter saw
- Drill with 3/16" bit
- Small hand saw or sabre saw

ADVISORY:

Fastener & Connector Performance for Treated Wood

Metal products in contact with pressure-treated wood must be corrosion resistant. Examples include flashing, termite shields, fasteners (e.g. nails, screws, and bolts), and all connecting hardware (e.g. joist hangers, straps, hinges, post anchors, and truss plates).

The International Residential Code, Section R319.3 states, “Fasteners for pressure-preservative treated wood shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper. **Exception:** One-half inch (12.7mm) diameter or greater steel bolts.”

Traditionally, the treated wood industry has recommended hot-dip galvanized or stainless steel fasteners and connectors for wood products treated with Chromated Copper Arsenate (CCA). Hot-dip galvanized or stainless steel fasteners and connectors continue to be recommended for use with alternative wood preservatives (e.g. Alkaline Copper Quat – ACQ – and Copper Azole), but additional clarification is needed to ensure adequate corrosion protection.

Type 304 or 316 stainless steel is recommended for maximum corrosion resistance in more severe exterior applications, such as swimming pools and salt-water exposure. Furthermore, stainless steel fasteners are generally required below grade for permanent wood foundations.

Hot-dip galvanized fasteners and connectors are generally acceptable for above grade applications. Hot-dip galvanized *fasteners* should meet ASTM A153 (with 2 ounces of zinc coating per square foot minimum for marine use) and hot-dip galvanized *connectors* should meet ASTM A653, Class G185 sheet with 1.85 ounces of zinc coating per square foot minimum. Fasteners and connectors used together should be of the same type (e.g. hot-dip nails with hot-dip joist hangers).

Do not use standard carbon-steel or aluminum products in direct contact with pressure-treated wood. Spacer materials or other physical barriers are recommended to prevent direct contact. In addition, electroplated galvanized metal products generally have a thinner layer of protection compared to hot-dip galvanized and are typically not accepted by the building codes for use in exterior applications.

Fasteners and connectors coated with proprietary anti-corrosion technologies (other than stainless steel or hot-dip galvanized) are also available for use with treated wood. Consult individual hardware manufacturers for specifics regarding the performance of their products with treated wood.

CONSTRUCTION STEPS

1. Build the deck frame. From the 12' 2x12 lumber, cut members F1, F2, F3, and F4 according to the Deck Framing Plan. Assemble with 12d nails and construction adhesive.
2. Complete step frame, cutting F5 (10'-10") and F6 (10'-7½") from 2x6 lumber. Attach to protruding ends of F1 and F2. Check for square. Overall dimensions of deck frame should be 10'-11½" by 10'-10½".
3. Carefully measure the inside distance between F1 and F3; it should be 9'-10". Cut five 2x12 joists, J1 through J5 to fit between F1 and F3. Refer to section A-A for joist location. Attach to deck frame with 12d nails and construction adhesive. As each joist is installed, recheck for square.
4. From the remaining 2x6 lumber, cut blocking to attach at midpoints of all joists and between J1 and F2 and J5 and F4. Align top edge of blocking with top of 2x12 joist. Attach blocking adjacent to seat frame locations between F2 and J1. Attach blocking at steps, between F4 and F5, and between F3 and F6. Add diagonal blocking at four deck corners and at the intersection of the steps. Refer to Deck Framing Plan for all blocking locations.
5. Cut all 2x10 lumber into two-foot lengths, making a total of 12 vertical seat supports (R). From two 10' 2x4s, cut 15" ledger pieces (S), making a total of 12. From four more 2x4s, cut a total of 20 seat frame members (W), each 21" long. From the remaining six 2x4s, cut 12 rail supports (T) 3'-8¼" long, plus four 21" seat frame members (W). Refer to Section A-A for end-cutting details of parts T (both ends cut at 45°) and W (one end at 60°); use miter box to make uniform cuts.
6. Construct seat framing as shown in Sections A-A and C-C. Using 12d nails and adhesive, attach 2x4 rail supports (T) to F1 and F2 at locations shown in Deck Framing Plan. Attach 2x10 vertical (R) to 2x12 joists and frame and 2x6 blocking with 12d nails and adhesive. Bottom of 2x10 should be 3" above ground level; vertically, the 2x10 is positioned 5½" in from the outer edge of the deck frame. NOTE: Use a single piece of decking (5½" wide) to aid positioning of 2x10 (R). Next, attach pairs of 2x4 seat supports (W) flush with top edge of 2x10 vertical (R).
7. Where the 2x4 seat supports (W) and rail support (T) intersect, drill a centered hole to receive 5"x¾" bolt with washers. NOTE: For optimum appearance, a 4½"x3/16" bolt can be used if countersunk ⅜" on both sides.
8. Pre-cut and pre-position all Radius Edge Decking (R.E.D.) before nailing in place. For the deck platform's four sides, three pieces of decking (D2) form a "picture frame" around 16 pieces of decking (D1) cut to a length of approximately 7'-2"; take actual measurement before cutting the 8' lengths of decking.

At seat frame locations, some notching of D2 decking will be required. Use a small hand (keyhole) or sabre saw for notching. Use miter box saw to cut 45° decking and step joints at corners.
9. Once all R.E.D. pieces are in position, attach to deck frame with 8d nails and construction adhesive. The R.E.D. steps (D3) are completed in similar fashion. Decking on steps should overhang ½" beyond 2x6 framing (F5 and F6).
10. Attach R.E.D. seating to 2x4 frames (W) using 8d nails and adhesive. Use miter saw to cut ends where the two benches intersect. Attach R.E.D. rail to the top of 2x4 support (T) in similar fashion.

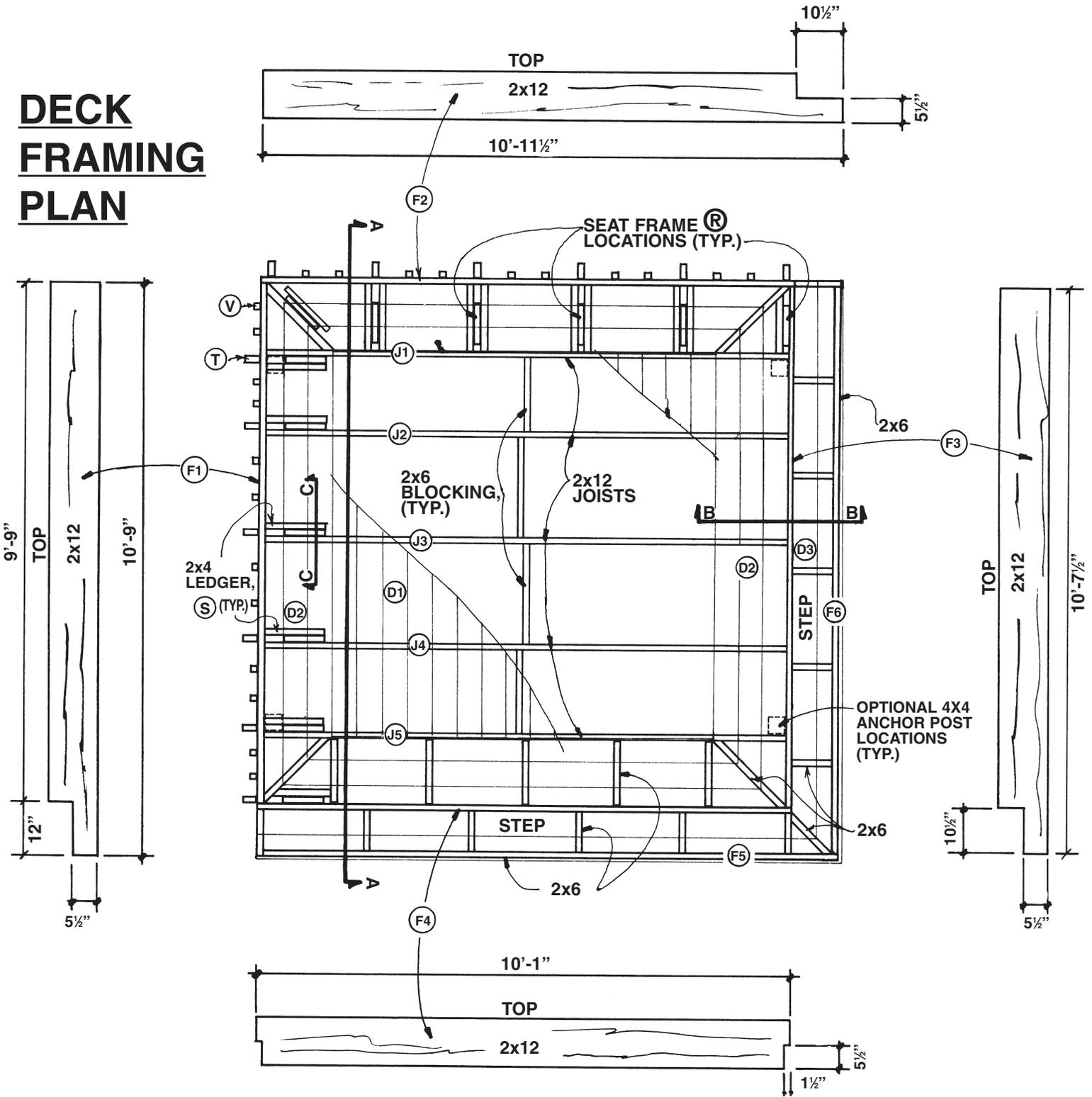
NOTE: Do not nail R.E.D. seating into end of 2x10 (R).
11. From 2x2 material, cut 22 railing spindles (V) 17" in overall length. The top should be cut to 45°; the bottom cut straight. Equally space two spindles between each 2x4 support (T). Use 8d nails and construction adhesive to attach each spindle to the back of R.E.D. rail and seating. Predrill all holes in spindles.
12. Apply a water-repellent sealer to all exposed wood surfaces now that construction is complete. Properly dispose of treated lumber scraps.

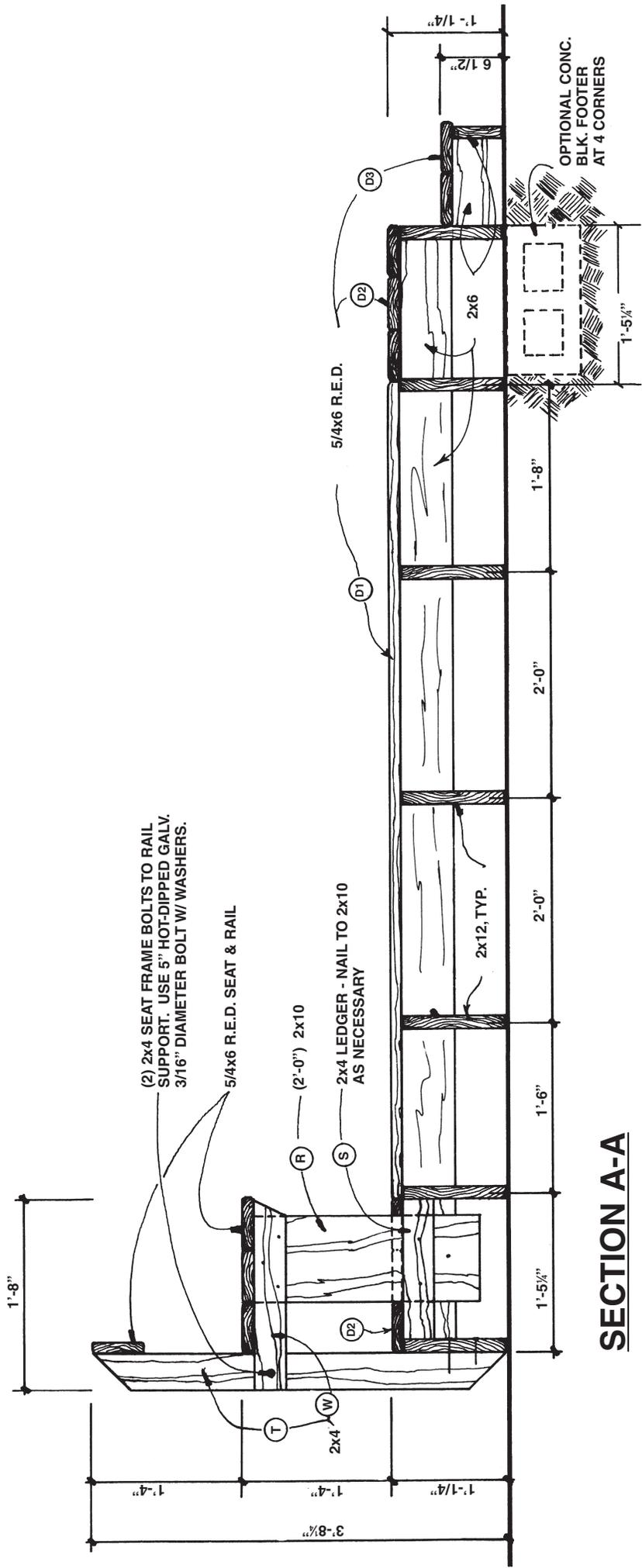


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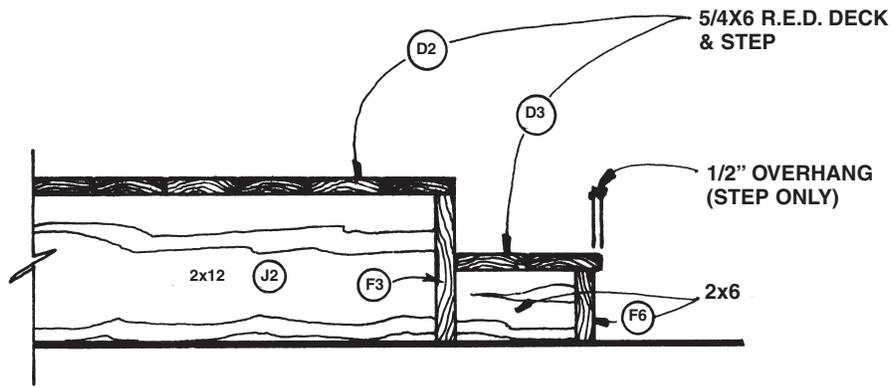
These plans and the information contained herein will help you achieve the best possible results in working with Southern Pine lumber products. The conditions under which lumber is used in construction vary widely, as does the quality of workmanship. Since neither the Southern Pine Council nor its members control the method of use or the quality of workmanship in structures built with lumber, they do not warrant lumber performance or design in completed structures.

DECK FRAMING PLAN

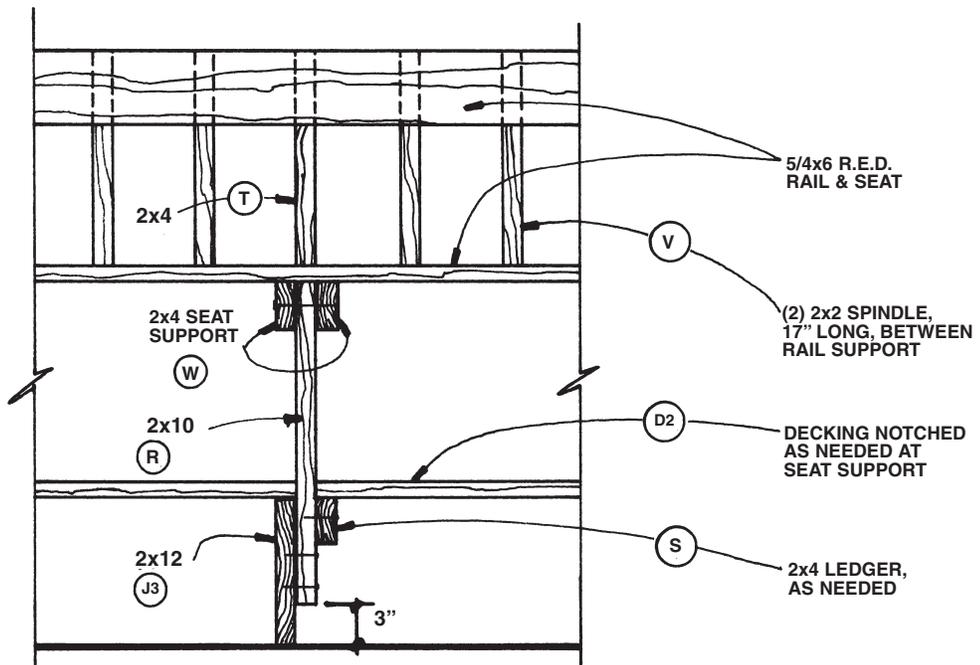




SECTION A-A



SECTION B-B



SECTION C-C