



## **GUIDE FOR BUILDING A DECK**

### **Application and Required Approvals**

Bring copies of the following documents to our office and apply for approval.

1. Two (2) complete sets of construction documents and site plans.
2. Application completed and signed by applicant. To complete the application, you will need all project information including Street No., name and parcel ID (contact the Auditor's office, 732-7150).
3. Applicable fees paid.
4. Flood plain determination and/or Flood Plain Development Application, if required.
5. Provide a Zoning permit or Letter of Approval from your local township or village.
6. Private/On-Site System - If property has septic or cistern, obtain approval from the Public Health District.

We will review your plans by 11:00 a.m. the first business day after your submittal. Call the office after 11:00 am to verify plans were approved. If there are corrections to be made you will need to return to our office and pick up your drawings along with the correction list. Drawings will need to be corrected and returned to our office for review.

Construction Plans should be drawn to scale, dimensioned and showing all post and pad sizes and locations; size and type of beams spanning between posts; deck ledger size and anchoring method; method of attachment of LATERAL LOADS; and size, type and spacing of floor joists. (See RCO Section 502 Attachment.) Plans from a lumber supplier, or computer generated plans are acceptable if you have added or included all dimensions, spacing, lumber species, sizes and spans, and any other needed information on the line drawings.

### **Plans Required (2 complete sets)**

Site Plan: Draw deck on your site plan. Show distances to other structures and from property lines. A site plan prepared by a licensed engineer or surveyor is NOT required in most cases.

Elevations	Stair Section/Details (8-1/4" risers X 9" treads)
Footer/Foundation Plan	Guardrail/Handrail Details (4" max opening sphere)
Structural section/framing details	Lateral Bracing and Anchor Bolt Spacing

### **Design Requirements**

Frost depth for footings is 30" w 8" concrete pad

Illuminate stairs (more than four risers) for means of egress.

Trusses must be purchased from a certified truss manufacturer, and installed per the engineered drawing.

See the Residential Plan Review Checklist for an example of the design elements we will review. The items on this list will be examined and any other issues that may pertain to your project.

### **Required Inspections**

Footing Inspection: Inspection will be made after excavation, but before concrete.

Rough Inspection: After all connections but before any structural elements are concealed.

Final Inspection: When the project is complete.

**502.2.2 Decks.** Where supported by attachment to an exterior wall, **decks shall be positively anchored to the primary structure and designed for both vertical and lateral loads** as applicable. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connection to the primary building structure cannot be **verified during inspection**, decks shall be self-supporting.

**502.2.2.1 Deck ledger connection to band joist.** For decks... the connection between a deck ledger... and a 2-inch nominal lumber band joist bearing on a sill plate or wall plate **shall be constructed with 1/2-inch lag... bolts with washers in accordance with Table 502.2.2.1.**

**502.2.2.1.1 Placement of lag screws or bolts in deck ledgers.** The lag screws or bolts shall be placed 2 inches in from the bottom or top of the deck ledgers and between 2 and 5 inches in from the ends. The lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger.

**502.2.2.2 Alternate deck ledger connections.** Deck ledger connections not conforming to Table 502.2.2.1 shall be **designed in accordance with accepted engineering practice.**

**502.2.2.3 Deck lateral load connection.** The lateral load connection required by Section 502.2.2 shall be permitted to be in accordance with **Figure 502.2.2.3 (See Below).** Hold-down tension devices shall be installed in not less than two locations per deck, and each device shall have an allowable stress design capacity of not less than 1500 pounds.

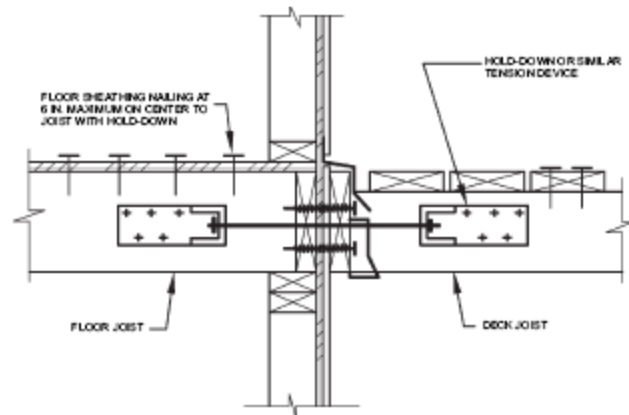
**TABLE 502.2.2.1  
FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER  
AND A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST<sup>c, f, g</sup>  
(Deck live load = 40 psf, deck dead load = 10 psf)**

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'
<b>Connection details</b>	<b>On-center spacing of fasteners<sup>d, e</sup></b>						
1/2 inch diameter lag screw with 15/32 inch maximum sheathing <sup>a</sup>	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 <sup>b, h</sup>	36	36	29	24	21	18	16

- 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".
- 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 502.2.2.1.1.
- e. Deck ledger shall be minimum 2x8 pressure-preservative-treated No.2 grade lumber, or other approved material.
- f. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1 inch thick engineered wood product the ledger attachment shall be designed in accordance with accepted engineering practice.

**\*\* Alternate Deck Ledger Connections**

Using screws LISTED for the specific JOIST HANGER to attach the joist to the ledger board is an acceptable engineering practice.



**FIGURE 502.2.2.3  
DECK ATTACHMENT FOR LATERAL LOADS**