

**CITY OF GREENFIELD  
INSPECTION SERVICES DIVISION  
DECK PERMITS**

**APPLICATION REQUIREMENTS:**

1. Draw to scale, on a copy of your existing survey, the location of the proposed deck. The office staff may be able to provide you with a copy of a survey of your property if one is available. There is a charge for the copy. If a survey is not available, a hand drawn sketch/drawing will be acceptable, provided the drawing shows the location of the deck in relation to property lines, known easements, and other structures including your dwelling.
2. The construction plan shall follow the specifications detailed in the attached outline of requirements. It shall show how the deck will be constructed with details on joist/beam/support post spacing and the size and type of materials. Proper dimensions must also be noted on the construction detail. A general picture of what the deck will look like is **not** a sufficient construction plan. The size and spacing of the deck joists is determined by the spacing of the support posts and the size of the beams. A chart and typical deck framing plan is provided within these guidelines.
3. Submit two (2) copies of survey/sketch together with a building permit application for review and setting of fee.

**ZONING ISSUES:**

1. Decks are not permitted in the front yard or corner side yards on a corner lot.
2. Decks are permitted on the rear yard or side yard not less than ten (10) feet from any property line.
3. If you have any questions regarding the setback/zoning issues please contact Inspection Services at 414-329-5331.

**CODE REQUIREMENTS:**

**CHAPTERS SPS 320 TO 325 APPENDIX B**

**1. DEFINITIONS:**

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

**2. SOIL & 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 materials must be removed from the cavity area prior to pouring concrete.

### **3. DECK 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. Concrete must be used and must have a minimum compressive strength of 3,000 pounds per square inch.
- c. Type and size of concrete pads, piers or foundations shall be installed in accordance with Table 1.
- d. If the edge of a deck footing is closer than 5 feet to an existing house wall, the footing must bear at the same elevation as the existing footing for that wall.

#### **Free Standing Decks:**

1. Detached decks which serve an exit must have frost footings (same as attached decks).
2. 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.
3. If the edge of a deck footing is closer than 5 feet to an existing exterior house wall, the footing must bear at the same elevation as the existing wall footing as shown in Figure 17.

### **4. FRAMING:**

#### **a. General Requirements:**

1. Materials – All wood framing used in deck construction shall be pressure treated against decay or shall be protected from the weather.
2. Design Loading – Decks shall be designed for a minimum of 40 pounds per square foot loading.

#### **b. Posts:**

1. Post height, measured from the top of the footing to the underside of the beam must be in accordance with Table 2.
2. Any post supporting a beam splice must be a minimum of 6"X6".
3. Lateral Support – Posts must be attached by the appropriate methods shown in Figure 2. Toe-nailing of beams to posts is prohibited.

#### **c. Beams:**

1. Beam Size – All beams shall be sized per Tables 3A or 3B.
2. The depth of flush beams must be greater than or equal to the joist depth.
3. Beams may overhang past the center of the post up to one-fourth of the actual beam span.
4. Bearing – Beams bearing directly on the posts shall be attached by means of approved metal anchors or other approved methods.
5. Ledger Boards – Ledger board(s) 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 in accordance with one of the conditions shown in

Figures 11 through 13 – except if metal plate connected wood floor trusses are used in the house.

6. Continuous flashing with a drip edge is required at a ledger board that is attached to wood framed construction. Caulking is needed with the flashing at a threshold to prevent water intrusion due to splash from the deck or due to melting snow and ice.

**d. Joists:**

1. Joist Size – The joist span length is measured between the centerline of bearing at each joist span end and does not include overhang. Use Table 4 to determine the joist size based on span length and joist spacing.
2. Bearing – Deck joists shall bear a minimum of at least three inches onto beams, unless joist hangers are used in accordance with section 7.
3. Bridging – Bridging shall be provided at intervals not exceeding eight (8) feet.
4. Overhanging of Joists – Joists that are at right angles to the supporting beam may overhang past the center of the beam up to one-fourth the actual joist span.
5. Attach a continuous rim joist unless blocking or bridging is provided for each joist at the beam where a joist overhang begins.
6. Joist must be attached to beams in accordance with Figure 8.

**e. Decking:**

1. Wood decking must be 2x4s, 2x6s, or five quarter span rated decking boards.
2. Decking must be attached in accordance with Figure 22, and may be placed at an angle of 45 to 90 degrees to the joist.
3. The center to center joist spacing may be up to 24 inches for wood decking, but may not exceed 16 inches for wood plastic composite decking unless specified by the manufacturer.
4. Each wood decking member must bear on a minimum of 4 joists or intermediate blocking between joists.

**f. Guardrails and Handrails:**

1. Guardrails – All decks that 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. Guardrail and Handrail Details:

Height – Handrails shall be located at least thirty (30) inches, but not more than thirty-four (34) inches, above the nosing of the treads. Guardrails shall be located at least thirty-six (36) inches above the surface of the deck.

Open Railing – 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 4 inches.

Railing Loads – Handrails and guardrails shall be designed and constructed to withstand a 200 pound load applied in any direction.

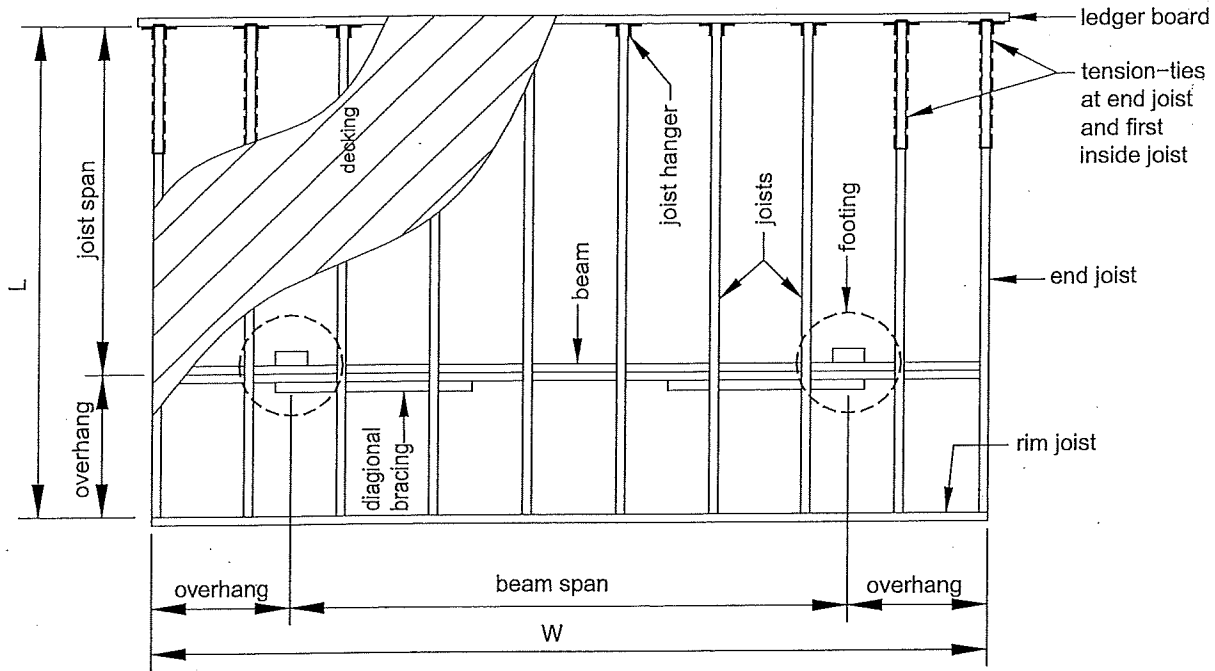
**g. Stairway – Treads and Risers:**

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 wide, measured horizontally from nose to nose.
3. Variation – There shall be no variation in uniformity exceeding 3/8 inch on the width of a tread or in the height of risers.
4. Stair Stringers - Shall be supported in accordance with the same manner as used for the deck.
5. Open Risers – Stairways with open risers shall be constructed to prevent the thru-passage of a sphere with a diameter four (4) inches or larger between any two adjacent treads.
6. The triangular area formed by the tread riser and bottom rail shall have an opening size that prevents the through-passage of a sphere with a diameter of six (6) inches or larger.

New Materials and Methods shall comply with the provisions of SPS 321.02.

**INSPECTION SERVICES DIVISION  
PHONE: 414-329-5331  
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**Figure 35  
TYPICAL DECK FRAMING PLAN**



**Decking:**     2x4     2x6     five-quarter board     wood-plastic composite (per ASTM D 7032)  
 Other decking, evaluation report number: \_\_\_\_\_

**Joists:**    size:     2x6     2x8     2x10     2x12    spacing:     12 in.     16 in.     24 in.  
joist span dimension:    \_\_\_\_\_ ft. - \_\_\_\_\_ in.  
overhang:     Yes     No    overhang dimension:    \_\_\_\_\_ ft. - \_\_\_\_\_ in.  
rim joist:     2x6     2x8     2x10     2x12

**Beam(s):**    number of plies:     2     3    size:     2x6     2x8     2x10     2x12  
overhang:     Yes     No    overhang dimension:    \_\_\_\_\_ ft. - \_\_\_\_\_ in.

**Posts:**    size:     4x4     4x6     6x6    height:    \_\_\_\_\_ ft. - \_\_\_\_\_ in.

**Footings:**    size: \_\_\_\_\_ in.     square     round    thickness: \_\_\_\_\_ in.

**Ledger:**    ledger board size:     2x8     2x10     2x12     Not applicable (free-standing deck)  
fastener:     Through bolt     Lag screw     Wood screw  
 Expansion anchor     Adhesive anchor

**Lateral support:**     Tension-tie     Diagonal bracing; size:     2x  
(not permitted for free-standing deck)

**Deck size:**    L= \_\_\_\_\_ ft. - \_\_\_\_\_ in.    W= \_\_\_\_\_ ft. - \_\_\_\_\_ in.