Permit requirements:

- A building permit is required when a deck or platform exceeds 200 square feet and/or is more than 30 inches above adjacent grade.
- A building permit is required regardless of height from grade when the deck includes a roof or trellis. (Suggestion: if you ever anticipate enclosing the deck as a screened-in porch or a 4 season porch, we suggest you design the deck and footings for the increased loads and purchase a permit for your deck and ask for the required inspections.)
- All decks are to be located per the zoning guidelines listed below.

Zoning guidelines: Planning & Zoning Dept.

- A zoning permit is required.
- Decks cannot be constructed in the required front yard, side yard or rear yard setback.

Site Plan requirements:

- Draw in North arrow
- Show actual dimensions of the lot or tract to be built upon
- Show location of the proposed house & any other proposed/existing structures on property
- Show size of any proposed buildings
- Show distance from the buildings to the property lines
- Label well & septic locations
- Show driveway location
- Identify easements or flood plain on the property
- Include owner's name and address on site plan

Applying for a permit: (Submit 2 sets of building plans for review and approval)

- Submit a site plan showing all required information (see above).
- Fill out the applicable information on the “Open Deck Construction” form and submit detailed, scaled plans that reflect the actual shape of the deck. (see sample below)
- Applications and submittals for permits can be made in our office located at 935 2nd St SW, Cedar Rapids, IA or online at
- After receiving zoning approval and the approval of the submitted plans (typically 5-10 business days), the permit will be issued. Please review all information provided in the reviewed plans.

REQUIRED PLANS
Design consideration:

- All wooden members of decks shall be pressure treated ACQ (approved pressure treated to .40 retention) or rot resistant wood (redwood or cedar).
- Decks shall be designed and constructed for a load of 50# per square foot. If there will be additional loads (large planters, hot tub, etc.), additional design issues must be addressed.
- Metal flashing (stainless steel, copper, or vinyl) is required behind the ledger board where it attaches to the house. Galvanized metal or aluminum is not to be used.
- Look for hardware with “zamx” or “triple zinc”.
- Joist hangers with proper nails are required whenever joists do not have at least 1 ½ “bearing. (Hangers must be rated for the ACQ treated lumber.
- Footings are to be a minimum of 42” deep below grade. Footing diameters will vary with the size of the deck and number of posts. Footing holes shall not contain loose soil and be flared at the bottom. (If you are considering a future 3-seasons porch or enclosed deck, footings should be located at the outer extremities of the deck and adjusted in size for the increased loads.)
- Posts to be anchored to prevent movement.
- Maximum cantilever (joist overhang past the beam) is one quarter of the actual span, without special design. Also beams should not overhang posts by more than 1’ without special design.
- Guardrails at least 36” high are required on decks over 30” above the adjacent grade.
- Decks can be constructed over escape windows with certain conditions.
- Handrails are required for 4 or more stair risers. The height shall be 34 – 38” above the tread nosing.

Inspections required:

- Footing – call for a footing inspection after footing holes are dug and before pouring concrete. Footing holes shall not contain loose soil and should be flared at the bottom of the holes.
- Framing inspection is required prior to deck board installation for decks 48” or less above the ground.
- Final inspection – after all work is completed and prior to use.
Simple Deck Plan View

Please include the actual deck shape, dimensions, footing locations, and beam locations with your building permit application.

All lumber shall be approved pressure treated to .40 retention or naturally resistant to decay (cedar/redwood)

Fill in boxes with dimensions and sizes

Size of desired deck:
A. Deck width ___ ft. ___ in.
B. Joist length ___ ft. ___ in.

Ledger board: (Flashing required)
Size: ___ x ___
Lag or bolt size: ______

Flashing material: __________

Joists:
Size:____ x ____
Spacing: ____ on center

Beams: (Any splices to be over a post.)
Beam size:____ x ____
Length of beam:____
Number of beams needed:____

Posts:
Height of deck off ground:______
Posts spacing:________
Number of posts needed:______

Decking:
Material:_____________________
Size desired:____ x ____

Footings: (42” min. depth)
Diameter of footing:______
Deck Section Drawings – Footing, Post, and Beam Details:

- Check beam construction for this deck.
- Check footing design for this deck.

All lumber shall be approved pressure treated to .40 retention or naturally resistant to decay (cedar/redwood)
Stairs, Guardrails, and Handrails

Determine total rise at point where steps will start, not at the deck. In this example, 5 steps would get a total rise of 38 ⅞" (7 ⅞" is the max riser, so 5 x 7 ⅞" = 38 ⅞" total rise). Commercial steps cannot exceed 7" in rise; therefore, a 38 ⅞" total rise would require 6 risers (38 ⅞" / 6 = 6.45 or approximately 6-7/16" per rise). See table to convert decimals to fractions.

<table>
<thead>
<tr>
<th>.06&quot;</th>
<th>.13&quot;</th>
<th>.19&quot;</th>
<th>.25&quot;</th>
<th>.31&quot;</th>
<th>.38&quot;</th>
<th>.44&quot;</th>
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<tr>
<td>1/16&quot;</td>
<td>1/8&quot;</td>
<td>3/16&quot;</td>
<td>1/4&quot;</td>
<td>5/16&quot;</td>
<td>3/8&quot;</td>
<td>7/16&quot;</td>
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<td>.81&quot;</td>
<td>.88&quot;</td>
<td>.94&quot;</td>
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</table>

Know what you want to use for tread material & determine your run. Remember that minimum residential run is 10"; minimum commercial run is 11".

Note:
* Risers will be equal in size to within ¾"
* There is always one less run total than required risers
Design consideration:

- All wooden members of decks shall be pressure treated ACQ (approved pressure treated to .40 retention) or rot resistant wood (redwood or cedar).
- Decks shall be designed and constructed for a load of 50# per square foot. If there will be additional loads (large planters, hot tub, etc.), additional design issues must be addressed.
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- Look for hardware with "zamx" or "triple zinc".
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- Posts to be anchored to prevent movement.
- Maximum cantilever (joist overhang past the beam) is one quarter of the actual span, without special design. Also beams should not overhang posts by more than 1’ without special design.
- Guardrails at least 36” high are required on decks over 30” above the adjacent grade.
- Decks can be constructed over escape windows with certain conditions.
- Handrails are required for 4 or more stair risers. The height shall be 34 – 38” above the tread nosing.

Inspections required:

- Footing – call for a footing inspection after footing holes are dug and before pouring concrete. Footing holes shall not contain loose soil and should be flared at the bottom of the holes.
- Framing inspection is required prior to deck board installation for decks 48” or less above the ground.
- Final inspection – after all work is completed and prior to use.

DECK LEDGER BOARD INSTALLATION
LEDGER

- Minimum of ½" lag screws or bolts are required and are to be staggered with spacing as shown in the table below.
- All screws or bolts are to be placed 2 inches in from the bottom and top edge of the ledger and between 2 and 5 inches in from the ends.
- Tips of the lag screws are to extend past the inside face of the band joist.
- Lag screws, bolts, and washers are to be hot-dipped galvanized or stainless steel when using.
- Ledger boards shall not be attached to open web trusses, brick veneers, or hollow concrete block.

<table>
<thead>
<tr>
<th>JOIST SPAN</th>
<th>6' OR LESS</th>
<th>6'1&quot; to 8'</th>
<th>8'1&quot; to 10'</th>
<th>10'1&quot; to 12'</th>
<th>12'1&quot; to 14'</th>
<th>14'1&quot; to 16'</th>
<th>16'1&quot; to 18'</th>
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</thead>
<tbody>
<tr>
<td>Connection details</td>
<td>Inches on center spacing of fasteners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>½&quot; diameter lag screw</td>
<td>30</td>
<td>23</td>
<td>18</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
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<tr>
<td>½&quot; diameter bolt</td>
<td>36</td>
<td>36</td>
<td>34</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>19</td>
</tr>
</tbody>
</table>

- When using engineered fastener screws (Ledgerlock®), follow manufacturer’s instructions for spacing and location.

Flashing

- House siding must be removed prior to the installation of the ledger board.
- Flashing is required where a ledger is fastened to wood construction.
- Flashing material shall be copper with copper nails, stainless steel, UV resistant plastic, or galvanized steel coated with G-185 coating.
Guardrails are required at unenclosed floor openings and open sides of stairways, landings, ramps, porches and decks which are more than 30 inches above grade or the floor below. Minimum guardrail height is 36". Intermediate rails shall be spaced so that a 4" sphere cannot pass through.

Stairs shall have a maximum rise of 7 ¾", minimum net tread of 10", minimum width of 36" and minimum headroom height of 6'8".

Handrails are required on one side of any stairway having four or more risers. Handrails shall be 34" – 38" above the nose of the tread, have a graspable shape with a cross section dimension of 1 ¼” minimum to 2 ⅝” maximum and be continuous throughout the flight. Continuous means the handrail is not interrupted by a newel post or other obstruction for the entire flight of stairs.
NOTE: Pre-manufactured stair stringers may not meet the rise requirements of the code.

Handrails & guardrails required but omitted for clarity
Residential stairs require a handrail on one side. The handrail must be an approved shape for grasping while walking up or down the stairs. Handrails must also be **continuous**. Continuous means the handrail is not interrupted by a newel post or other obstruction for the entire flight of stairs.

Handrail mounting height is 34" - 38" measured vertically from the nose of the tread to the top of the rail.

\[
A = 1 \frac{1}{4}'' \text{ to } 2 \frac{5}{8}'' \quad B = 1 \frac{1}{2}'' \text{ Minimum}
\]

Other shapes may be acceptable if they provide equivalent gripping surface.