Mason County Building Department
Residential Deck, Stair, Landing and Guard Detail

Guard installed on all decks over 30" above grade.

Spaced so a 4" sphere cannot pass through.

The greatest riser and the greatest stair tread shall not exceed the smallest by more than 3/8."

Minimum Guard Height 36"  
Ledger at wall: Decks shall be positively anchored for lateral & vertical loads. See Mason County deck ledger attachment detail. Decks shall be self supporting if connections cannot be verified during inspection. R502.2

Handrail ends shall be returned or shall terminate in newell posts or safety terminals.

Stair nosing not less than 3/4" but not more than 1-1/4" on all solid risers unless tread depth is at least 11."

Provide 4" wood/earth clearance here, 6" all other areas.

Concrete footing 12" below grade when deck is greater than 30" above grade. See foundation info on reverse side.

Typical Door with 3 Risers

Landings are required on each side of each exterior door. Exception: A landing is not required with two or fewer risers.

Landings shall not be more than 1-1/2" lower than the top of the threshold. Exception: The landing shall not be more than 7-3/4" lower than the threshold provided the door does not swing over the landing.

CONSTRUCTION MATERIALS
Decay resistant woods heartwood of redwood, cedar, black locust and pressure preservatively treated wood are all acceptable material for use in deck construction. Field applied treatment is not an acceptable method. Fasteners for pressure preservative treated woods shall be of hot-dipped galvanized steel, stainless steel, silicon bronze or copper. Field cut ends, notches and drilled holes of pressure preservatively treated wood shall be retreated in the field in accordance with AWPA M4.
IRC R319 & R320.

Illuminate stairs with controls located at top and bottom of stairs.

Graspable Rail 34" min 38" max

36" min landing

6'8" Min

36' Min landing

Max. 7 3/4" rise

Indicate loist size/spacing. Provide positive connection post

Indicate post size, spacing and base connector.

Indicate beam size/spacing. Provide positive connection post

Indicate stringer size. Space per decking material

4"x4"x16" masonry block with asphalt shim.

7 3/4" max. 10" min.

Miraculous opening formed by riser/tread/guard are permitted to be open so that a 6" sphere cannot pass through.

Indicate fasteners

Vertical Pickets at handrail

Graspable handrail on all stairways with 4 or more risers. Not less than 34" and not more than 38" vertically from nose of tread or walking surface. 

Handrail ends shall be returned or shall terminate in newell posts or safety terminals.

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Provide 4" wood/earth clearance here, 6" all other areas.

Concrete footing 12" below grade when deck is greater than 30" above grade. See foundation info on reverse side.

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Provide 4" wood/earth clearance here, 6" all other areas.

Concrete footing 12" below grade when deck is greater than 30" above grade. See foundation info on reverse side.
Handrail Details

All stairways with 4 or more risers shall have at least one handrail. Such handrails shall be placed not less than 34" nor more than 38" above the nose of the treads and shall be continuous for the full length of the flight. Handrail ends shall be returned or terminate in the newel post or safety terminals. Handrails adjacent to the wall shall have a space not less than 1 1/2" between the wall and the handrail. Circular handrails shall have an outside diameter of at least 1 1/4" and not more than 2". Handrails with a perimeter greater than 6 1/4" shall provide a graspable finger recess on both sides. Handrails shall not project more than 4 1/2" on either side of the stairway.

FOUNDATION SUPPORT SYSTEMS

- Decks 30" or less above grade: Minimum 12"x12" manufactured pier.
- Deck 30" to 5'0" above grade: Minimum 14"x14" manufactured pier set 12" below grade.
- Decks greater than 5'0" above grade: Minimum 18"x18"x18" poured in place footing set 12" below grade.

All deck posts shall have a positive post to footing and positive post to beam connection. Deck height is measured at the lowest point within 5'0" beyond the walking surface of the deck.

DECK PLAN

EXAMPLE ONLY
Deck Ledger Attachment Details & Specifications

Please see Mason County Checklist item #56 and #69 for additional wood and fastener requirements

Fastener spacing for solid sawn deck ledger to an existing band (rim) joist. (Deck Live Load = 40 psf & Dead Load = 10 psf)

<table>
<thead>
<tr>
<th>Joist Span</th>
<th>6'-0&quot; and Less</th>
<th>6'-1&quot; to 8'-0&quot;</th>
<th>8'-1&quot; to 10'-0&quot;</th>
<th>10'-1&quot; to 12'-0&quot;</th>
<th>12'-1&quot; to 14'-0&quot;</th>
<th>14'-1&quot; to 16'-0&quot;</th>
<th>16'-1&quot; to 18'-0&quot;</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Connection Details</strong></td>
<td><strong>On-Center Spacing of Fasteners</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1/2&quot; diameter lag screw with 15/32&quot; maximum sheathing</td>
<td>30</td>
<td>23</td>
<td>18</td>
<td>15</td>
<td>13</td>
<td>11</td>
<td>10</td>
</tr>
<tr>
<td>1/2&quot; diameter bolt with 15/32&quot; maximum sheathing</td>
<td>36</td>
<td>36</td>
<td>34</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>19</td>
</tr>
<tr>
<td>1/2&quot; diameter bolt with 15/32&quot; maximum sheathing and 1/2&quot; stacked washers</td>
<td>36</td>
<td>36</td>
<td>29</td>
<td>24</td>
<td>21</td>
<td>18</td>
<td>16</td>
</tr>
</tbody>
</table>

- Lag screw tips shall extend beyond the inside face of the band/rim joist
- Maximum gap between band/rim joist and ledger shall be 1/2" with spacer(s)
- Flashing shall be installed to prevent water intrusion at structural attachment
- Deck Ledger shall be minimum 2x8 pressure preservative treated No. 2 grade lumber
- Lag screws and bolts shall be staggered per diagram below

Please see typical diagrams on reverse for construction details.
**Typical Construction Details**

Deck Ledger shall be 2x pressure preservative treated No. 2 grade lumber (2 x 8 minimum)

Ledger shall be equal to (or greater than) joist sizes larger than 2 x 8 nominal
DECK TO HOUSE LATERAL LOAD CONNECTION
International Residential Code/WAC R507.2.3

R507.1 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. Such attachment shall not be accomplished by the use of toenails or nails subject to withdrawal. Where positive connections to the structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to the exterior walls or other framing members, shall be designed and constructed to resist uplift in accordance with Table R301.5.

LATERAL ATTACHMENT:
Decks more than 30-inches above grade, measured 36-inches beyond the deck, Lateral load connections shall be permitted to be in accordance with Figure R507.2.3. Hold down tension devices shall be installed in not less than 2-locations per deck, with an allowable stress design capacity of not less than 1500 pounds.

OPTION: Lateral load connections may be installed in accordance with Figure R507.2.3(2), using holdown devices min. 750-pound capacity, evenly distributed and within 2-ft of each end of the ledger and attachments as shown.

Note: This detail is applicable where floor joists are parallel to deck joists.

Figure R507.2.3(2)
Permit/Policy Requirements for Construction/Repair of Decks

Purpose:
This policy is to assist in determining building permit requirements for decks. It applies to the construction, repair or alteration of deck structures and their associated components (guards, stairs, handrails) only. This policy does not apply to Piers, Docks or Balconies.

Authority:
Mason County Code 14.04.010 Uniform codes adopted (MCC)
2006 International Residential Code (IRC)/2006 International Building Code (IBC)

Definitions: (as interpreted by Mason County for this purpose)

- **Deck**: An exterior floor system supported on at least two opposing sides by an adjoining structure and/or posts, piers, or other independent supports.
- **Pier or Dock**: A structure built over or floating upon the water that is used as a landing place for marine transportation or for commercial or recreational purposes.
- **Adjacent Grade**: The lowest point of elevation of the surface of the ground, floor or beach (measured from the walking surface) between the perimeter of the structure and a line 3 feet out from, and parallel to, the perimeter of the structure.
- **Exterior Balcony**: An exterior floor projecting from, and supported by, a structure without additional independent supports.
- **Deck Repairs**: Limited to the refinishing of existing components or the replacement of not more than 50% of the decking surface or 50% of the guard/railing components.
- **Alteration**: Change in size (footprint), replacement of any structural components (including but not limited to piers, footings, posts, beams or joists) or replacement of greater than 50% of the deck surface or guard/railing components.

Procedure:
A Building Permit is Required for construction/alteration of any deck greater than 30” above grade.

**EXCEPTIONS:**

- When the walking surface of a deck is below 30” above adjacent grade (as defined above) it is considered exempt from a building permit.*
- Landings associated with a residential manufactured home permit that are 24 square feet or less will be considered exempt from a building permit.*

*The structure must meet all construction standards and applicable egress requirements as set forth in the adopted building codes at the time of construction. The owner/applicant/contractor shall verify compliance with all setbacks prior to construction and verify compliance with all other regulations or permit requirements adopted by Mason County.

ANY deck cover/roof requires a building permit

Additional information:
Mason County Building Department staff can assist with identifying code issues for deck construction, alteration/repair and replacement. Explanations and code references for many of the items listed in this policy can be found in the Mason County Residential Plan Review Checklist.

**Signature:** Mark Core  
**Date:** January 20, 2009