**DECK LAYOUT**

**MATERIAL FOR STRUCTURAL ELEMENTS (EX. PRESSURE TREATED WOOD):**

**MATERIAL FOR DECK BOARDS (EX. TREX LUMBER):**

Note: All wood decking is to be 5/4" x 6" (minimum) or approved equal.

### Maximum 2-Ply Beam Length

<table>
<thead>
<tr>
<th>Supported Joist Length</th>
<th>2-2x8</th>
<th>2-2x10</th>
<th>2-2x12</th>
</tr>
</thead>
<tbody>
<tr>
<td>4'-0&quot;</td>
<td>11'-7&quot;</td>
<td>14'-10&quot;</td>
<td>17'-4&quot;</td>
</tr>
<tr>
<td>6'-0&quot;</td>
<td>9'-10&quot;</td>
<td>12'-1&quot;</td>
<td>14'-0&quot;</td>
</tr>
<tr>
<td>8'-0&quot;</td>
<td>8'-7&quot;</td>
<td>10'-6&quot;</td>
<td>12'-3&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>7'-8&quot;</td>
<td>9'-4&quot;</td>
<td>10'-8&quot;</td>
</tr>
</tbody>
</table>

### Maximum 3-Ply Beam Length

<table>
<thead>
<tr>
<th>Supported Joist Length</th>
<th>3-2x8</th>
<th>3-2x10</th>
<th>3-2x12</th>
</tr>
</thead>
<tbody>
<tr>
<td>8'-0&quot;</td>
<td>10'-8&quot;</td>
<td>13'-0&quot;</td>
<td>15'-1&quot;</td>
</tr>
<tr>
<td>10'-0&quot;</td>
<td>9'-6&quot;</td>
<td>11'-8&quot;</td>
<td>13'-6&quot;</td>
</tr>
</tbody>
</table>

### Maximum Floor Joist Length

<table>
<thead>
<tr>
<th>Joist Size</th>
<th>Max. Joist Span</th>
<th>Max. Cantilever</th>
</tr>
</thead>
<tbody>
<tr>
<td>2x8 @ 12&quot; O.C.</td>
<td>12'-6&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>2x8 @ 16&quot; O.C.</td>
<td>11'-9&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>2x8 @ 24&quot; O.C.</td>
<td>11'-0&quot;</td>
<td>16&quot;</td>
</tr>
<tr>
<td>2x10 @ 12&quot; O.C.</td>
<td>14'-6&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2x10 @ 16&quot; O.C.</td>
<td>13'-8&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2x10 @ 24&quot; O.C.</td>
<td>12'-10&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2x12 @ 12&quot; O.C.</td>
<td>16'-5&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2x12 @ 16&quot; O.C.</td>
<td>15'-6&quot;</td>
<td>24&quot;</td>
</tr>
<tr>
<td>2x12 @ 24&quot; O.C.</td>
<td>14'-6&quot;</td>
<td>24&quot;</td>
</tr>
</tbody>
</table>
**MIN. GUARD HEIGHT:**

- 35" FOR DECKS 5'-11" OR LESS ABOVE GRADE
- 42" FOR DECKS GREATER THAN 5'-11" ABOVE GRADE
- OTHER GUARD TYPE (SEE ATTACHED)

**OPTION A**

- 3" SCREWS @ 12" O.C.
- 2x4 MIN. 2x6 RECOMMENDED
- 2x4
- 1 - 2 1/2" SCREW
- MIN. 2x2 PICKETS (2x2 TURNED PICKETS NOT PERMITTED)
- 2 - 3" SCREWS
- RIM JOIST

**OPTION B**

- RIM JOIST

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**WOOD GUARD DETAILS - CIRCLE ONE**

- 2 x ____ BEAM
- 2 3/8" (MIN.)

- 2 - 1/2" Ø ANCHOR BOLTS THROUGH THE
- ____ 2 x ____ BEAM

- 3 - 1/2" Ø ANCHOR BOLTS THROUGH THE
- ____ 2 x ____ BEAM

- 6 x 6 POST FOR DECKS GREATER THAN 4'-0" ABOVE GRADE.

**GUARD POST DETAIL**

- SADDLE BRACKET OR MIN. 4" DEEP EMBEDMENT OF POST INTO CONCRETE PIERS
- Ø PIER
- PIER BELLED
- Ø IF PROPOSED

**LEDGER BOARD DETAIL**

- MIN. 1/2" Ø LAG BOLTS SPACED AT MAX. 32" O.C. LAG BOLTS MUST BE INTO WOOD FRAMING OR FOUNDATION WALL

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**Fill-In Guard Details**

- Post Details
- Ledger Board Details

**DRAWING NO.: 2**

**REVISED: 2014**

**THE CITY OF Waterloo**

**Building Standards**

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Waterloo, Ontario
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**NOTE: ANYTHING OTHER THAN A WOOD GUARD/RAILING, PLEASE SUBMIT A COPY OF THE PRE-ENGINEERED GUARD/RAILING DETAILS WITH YOUR BUILDING PERMIT APPLICATION.**
**Deck Elevation**

- **Existing House**
- **Ledger Board**
- **4" Ø Pier**
- **Piers Belled To**
- **4'-0" x Beam**

**Pier Size**

<table>
<thead>
<tr>
<th>Joist Span</th>
<th>Pier Spacing</th>
</tr>
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<tbody>
<tr>
<td>4'</td>
<td>8&quot;Ø</td>
</tr>
<tr>
<td>6'</td>
<td>8&quot;Ø</td>
</tr>
<tr>
<td>8'</td>
<td>8&quot;Ø</td>
</tr>
<tr>
<td>10'</td>
<td>10&quot;Ø</td>
</tr>
</tbody>
</table>

**Stair Detail**

- **4x4 Guard Post Flush To Bottom Of Floor Joist**
- **Min. 2x10 Stair Stringer**
- **3 - 2" Screws Countersunk**
- **Minimum 3-1/2" Effective And 9-1/4" Overall Depth**

**Stair Dimensions**

- **Type**
  - Max.
  - Min.
- **Rise**
  - 7-7/8" 4-7/8"
- **Run**
  - 14" 8-1/4"
- **Tread**
  - 14" 9-1/4"
- **Max 1" Nosing**
- **Risers Shall Have A Uniform Height In Any One Flight Of Stairs.**
- **Treads Shall Have A Uniform Run And Tread Depth In Any One Flight Of Stairs.**

**Notes:**

-  35" For Decks 5'-11" Or Less Above Grade
-  42" For Decks Greater Than 5'-11" Above Grade
- Piers Within 4'-0" Of House Must Be As Deep As Existing House Footings To Rest On Undisturbed Soil.