# Township of Derry

Dauphin County, Pennsylvania

## Residential Deck Addition
## Submittal Guide and Construction Fact Sheet


The text and illustrations included in this guide represent tables and illustrations from the 2009 International Residential Code and the opinions of the Township of Derry Community Development Department. This guide is for information purposes and should not be misconstrued as a full and complete interpretation of the Building Code.

# Residential Deck Permit Submission List

- Zoning permits are required for all decks/patios, regardless of size/material
- Building permits required if decking is 30" above grade. Uncovered decks that are less then 30" above grade do not require building permits. Uniform Construction Code (UCC) 403.62(8)
- Complete building permit application Sections I thru IV, sign and date application.
- Provide two copies of plans.
- Provide two copies of the plot plan with dimensions to property lines/easements, show all impervious coverage. (See sample plot plan attached)
- Provide one of the following relating to workers compensation:

    1. Proof of Worker's Compensation coverage from the general contractor, containing an original signature from an authorized representative of the insurance company, and listing the Township of Derry, 600 Clearwater Road, Hershey, PA 17033, as the certificate holder.
    2. If the contractor has no employees or meets the exception from worker's compensation, a signed and notarized exemption form is required. Forms are available at Community Development Office.
    3. No worker's compensation coverage or exemption form is required if the homeowner is doing their own work or acting as their own general contractor.

## Code Requirements

- Provide height above grade, measured from decking to average grade
- Footing depth below grade and footing size
- Post size, post spacing, attachment to footings. See figure 1.

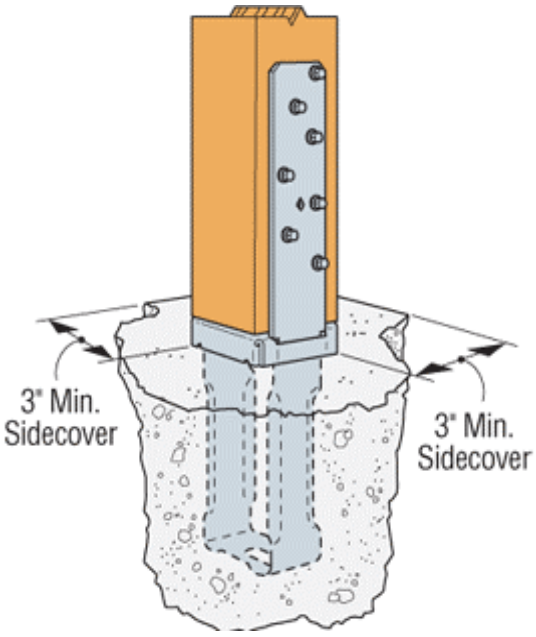


**Figure 1: Post to footing connection**

O Beam size, method of attachment to post. See Figure 2a and 2b.

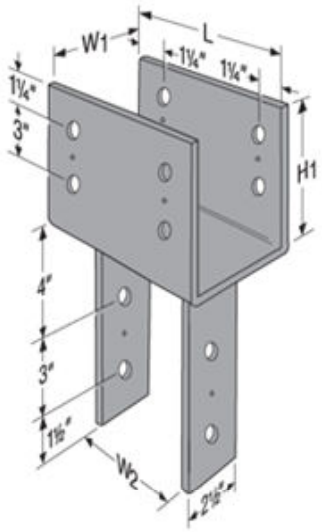


**Figure 2a: Post to beam connection**

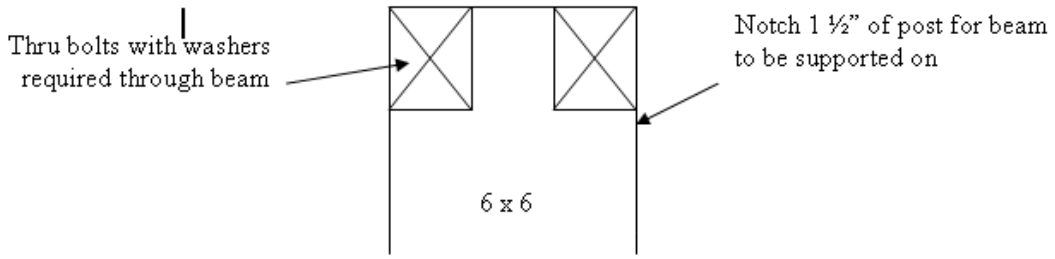


**Figure 2b: Post to beam connection**

- Joist size, spacing, spans, cantilever, and attachment to ledger, attachment to beam. See Figure 3.

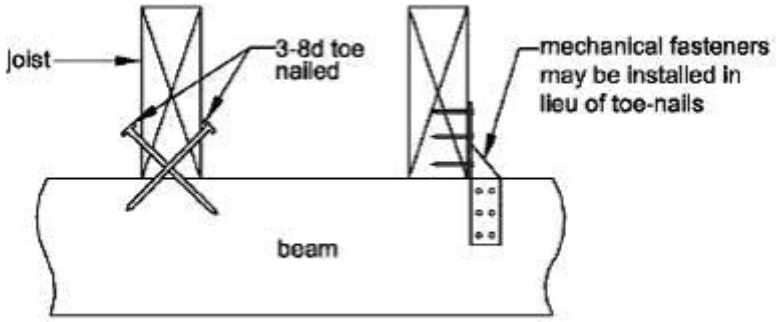


**Figure 3: Joist to beam connection**

- Ledger board size, method of attachment to house, size and spacing of anchors, location of hold down devices, flashing detail. See Figures 4, 5, 6 and Table 502.2.2.1

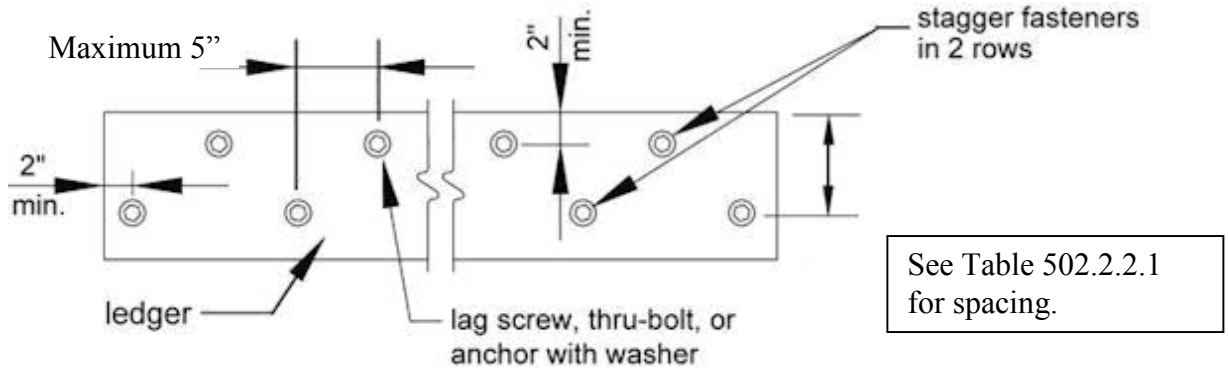


**Figure 4: Placement of lag screws or bolts in deck ledger**

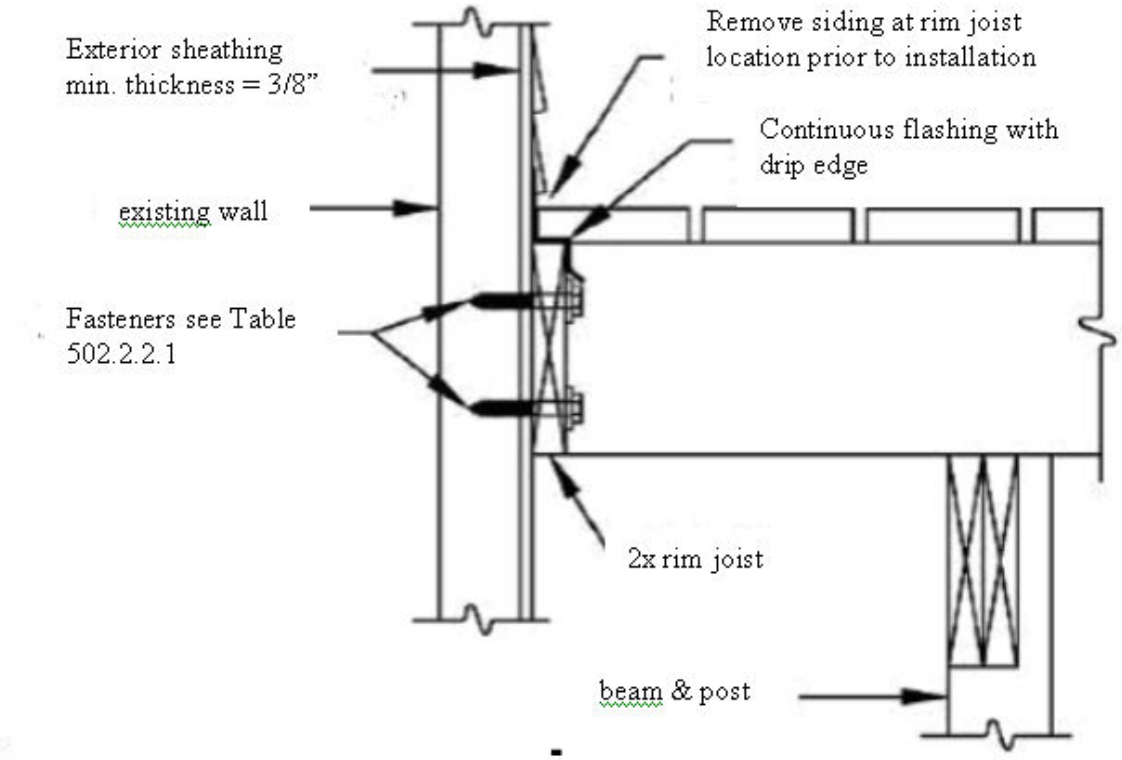


**Figure 5: Attachment to house lateral support**

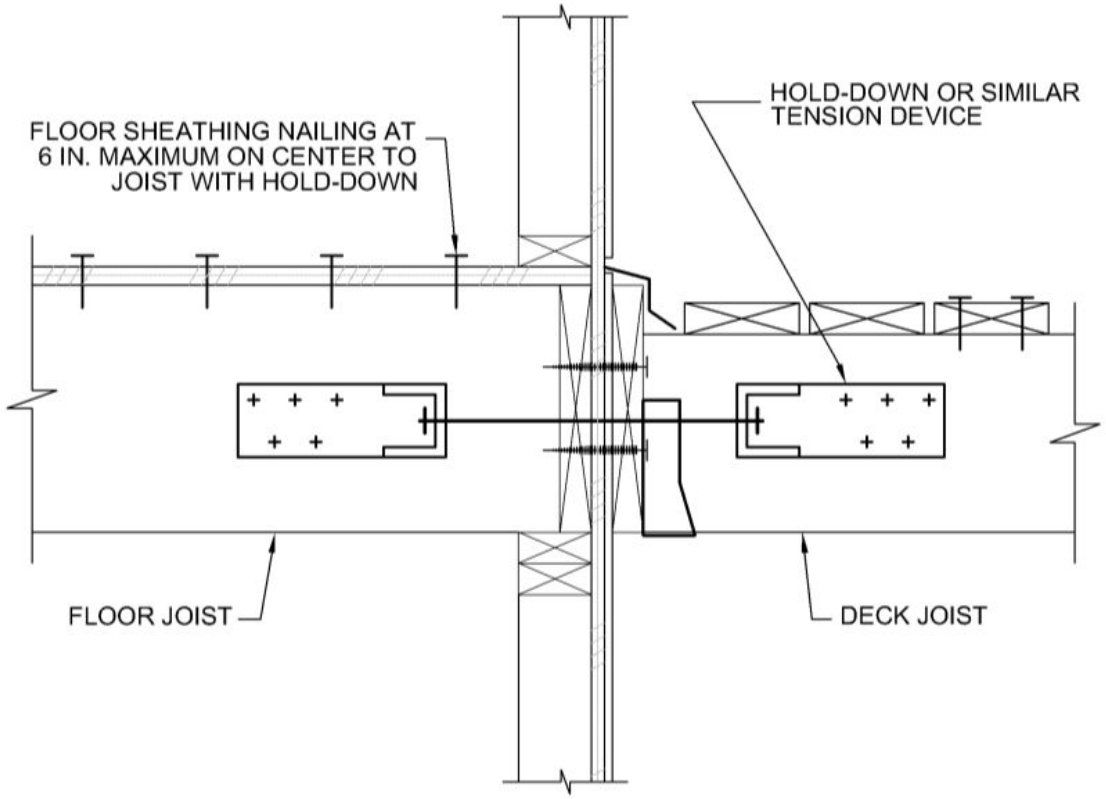


**Figure 6: Deck attachment for lateral loads**

**TABLE R502.2.2.1**
**FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOISTc, f, g**
(Deck live load = 40 psf, deck dead load = 10 psf)

| JOIST SPAN | 6'-0" and Less | 6'-1" to 8'-0" | 8'-1" to 10'-0" | 10'-1" to 12'-0" | 12'-1" to 14'-0" | 14'-1" to 16'-0" | 16'-1" to 18'-0" |
|---|---|---|---|---|---|---|---|
| Connection Details | On-Center Spacing of Fasteners[d, E] | | | | | | |
| 1/2" diameter lag screw with 15/32" maximum sheathing[a] | 30 | 23 | 18 | 15 | 13 | 11 | 10 |
| 1/ 2" diameter bolt with 15/32" maximum sheathing | 36 | 36 | 34 | 29 | 24 | 21 | 19 |
| 1/ 2" diameter bolt with 15/32" maximum sheathing and 1/2" stacked washers[b, h] | 36 | 36 | 29 | 24 | 21 | 18 | 16 |

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm. 1 pound per square foot = 0.0479kPa.

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 R502.2.2.1.1.
E. Deck ledger shall be minimum 2 ´8 pressure-preservative-treated No.2 grade lumber, or other approved materials as established by standard engineering practice.
F. When solid-sawn pressure-preservative-treated deck ledgers are attached to a minimum 1 inch thick engineered wood product (structural composite lumber, lami¬nated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
G. A minimum 1 × 91/2 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominal band joist.
H. Wood structural panel sheathing, gypsum board sheathing or foam sheathing not exceeding 1 inch in thickness shall be permitted. The maximum distance between the face of the ledger board and the face of the band joist shall be 1 inch.

**Table 502.2.2.1**

- Guardrail height, spacing of balusters. See Figure 7.

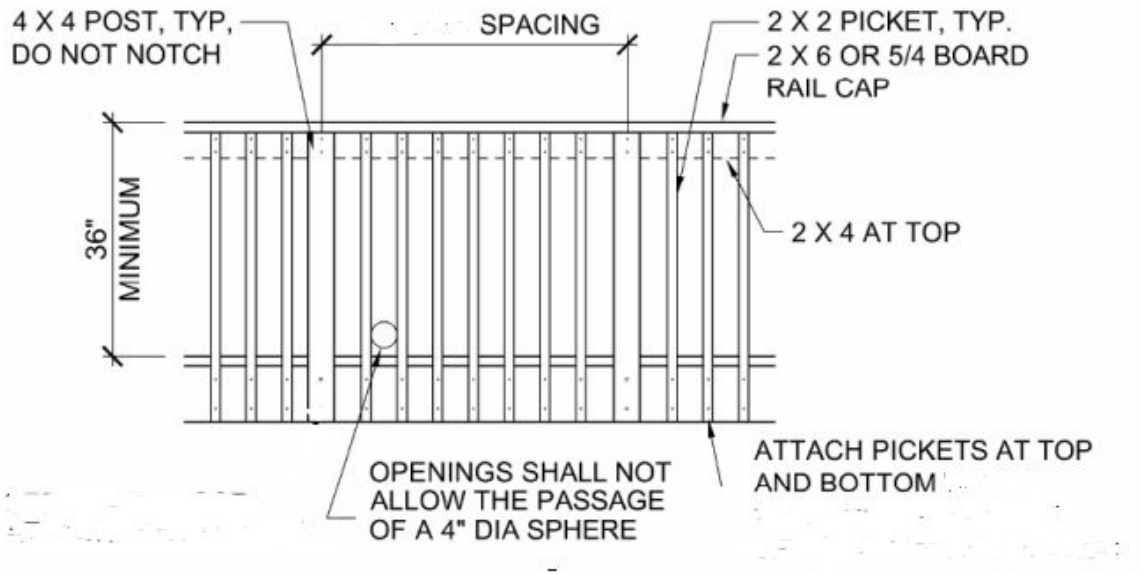


**Figure 7: Guardrail detail**

- If deck is at an above ground pool, the gate must meet the requirements of Appendix G of the International Residential Code (IRC).
- Stair width, rise/run, guardrail height, handrail size and height. See Figure 8 and attached handrail information.
- Maximum stair rise 8 ¼", minimum tread 9", per UCC Section 403.21.

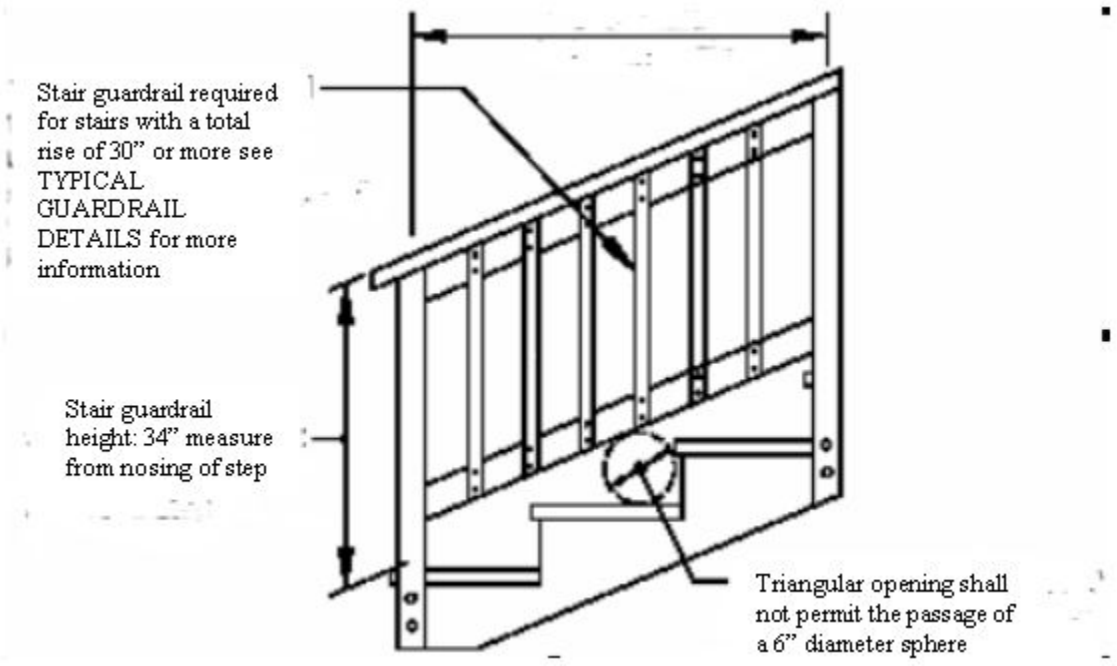


**Figure 8: Stair/Guardrail detail**

## General Code References

- Lumber to be preservative treated, Section 317.1-317.2 of the 2009 IRC.
- Fasteners for preservative treated wood shall be of hot dipped zinc coated galvanized steel, stainless steel, silicon bronze or copper, Section 317.3.1 of the 2009 IRC. Deck ledgers attachment by only lag screws, bolts and washers of hot dipped galvanized steel or stainless steel, see Table 502.2.2.1.
- Deck ledgers are required to be attached to band joist bearing on a sill plate or wall plate (no attachment to house overhangs or cantilevered bay windows), per Section 502.2.2.1 of the 2009 IRC. See Figure 9.
- Deck ledgers shall not be supported on stone or masonry veneer, Table 502.2.2.1 and Section 502.2.2.2 of the 2009 IRC. See Figure 9.

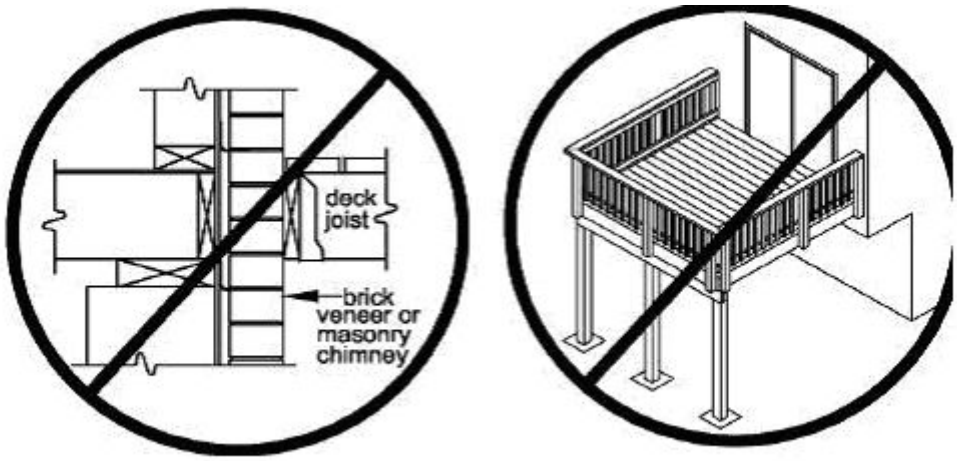


**Figure 9: Prohibited Ledger Attachments**

- Alternative deck ledger connections shall be done by a Pennsylvania design professional, Section 502.2.2.2 of the 2009 IRC.
- Girders supporting deck joists shall not be supported on deck ledgers or band joist, Section 502.2.2.2 of the 2009 IRC.
- Deck lateral load connection shall be permitted, see Figure 6, or by an approved equivalent method. 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, see Table 502.2.2.3. If hold down device is attached to an engineered floor joist, please provide engineered floor joist specs for hold down tension device attachment to joist. See Figure 6.
- Columns shall be restrained to prevent lateral displacement at the bottom end, Section 407.3 of the 2009 IRC. Mechanical anchor of post to concrete footing required. See Figure 1.
- Table 301.5 of the 2009 IRC, Guardrails and handrails shall be capable of supporting a concentrated load of 200 pounds per square foot, applied in any direction at any point along the top.