



City of Tukwila
Building Division/Permit Center
6300 Southcenter Blvd. #100
Tukwila, WA 98188
(206) 431-3670

SAMPLE OF DECK CONSTRUCTION

2015 WASHINGTON STATE BUILDING CODES

REQUIREMENTS FOR TYPICAL DECK CONSTRUCTION WITH PLAN DETAILS

Q. When is a permit required for a residential deck?

A. Decks exceeding 200 square feet in area, that are more than 30 inches above grade at any point, are attached to a dwelling serves the exit door required by Section R311.4.

Q. What information is required to apply for a permit?

A. Your proposed project must have reviewable deck plans. These plans must contain the following information checked below to be reviewable by the Building Department.

Plans must be fully dimensioned or to scale

Provide a site plan showing deck(s) in relation to property and setbacks

Provide elevation drawing showing final grade of surrounding ground

Show height of deck above finished grade

Show deck-flooring type (wood, vinyl, etc)

Show direction, size and spacing of all floor joists, posts and beams

Show connections: post to beam, post to pad or foundation, identify fasteners and hardware as galvanized, identify hardware connections with specific type or manufactures hardware identification.

Provide footing details including reinforcing bars size and footing dimensions

Indicate method of attachment to house

Show roof framing detail, roof covering (if applicable)

Provide stair detail (rise, run, width, handrails) and guardrail details

Show all wood as being treated or of natural resistance to decay

PLEASE NOTE:

Deck handouts are provide as a helpful reference only and are not to be used for permit plans. Deck plans shall be drawn specific to each site location and characteristics.



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DECK HARDWARE TABLES

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TABLE R507.2
DECK LEDGER CONNECTION TO BAND JOIST^{a, b}
 (Deck live load = 40 psf, deck dead load = 10 psf, snow load £ 40 psf)

JOIST SPAN	6' and less	6'1" to 8'	8'1" to 10'	10'1" to 12'	12'1" to 14'	14'1" to 16'	16'1" to 18'
Connection Details	Connection Details ^{d, e}						
1/2 inch diameter lag screw with 15/32 inch maximum sheathing ^a	30	23	18	15	13	11	10
1/2 inch diameter bolt with 15/32 inch maximum sheathing	36	36	34	29	24	21	19
1/2 inch diameter bolt with 15/32 inch maximum sheathing and 1/2 inch 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 = 0.0479 kPa.

- 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 x 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, laminated veneer lumber or wood structural panel band joist), the ledger attachment shall be designed in accordance with accepted engineering practice.
- g. A minimum 1 x 9 1/2 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.

R507.2.1 Ledger details.

Deck ledgers installed in accordance with Section R507.2 shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, pressure-preservative-treated southern pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers installed in accordance with Section R507.2 shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.

TABLE 507.2.1
PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger ^a	2 inches ^d	3/4 inch	2 inches ^b	15/8 inches ^b
Band Joist ^c	3/4 inch	2 inches ^e	2 inches ^b	15/8 inches ^b

For SI: 1 inch = 25.4 mm.

- a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).
- b. Maximum 5 inches.
- c. For engineered rim joists, the manufacturer's recommendations shall govern.
- d. The minimum distance from bottom row of lag screws or bolts to the top edge of the ledger shall be in accordance with Figure R507.2.1(1).
- e. The 2 inches may be reduced to 3/4 inch when the band joist is directly supported by a mudsill, a header or by double top wall plates

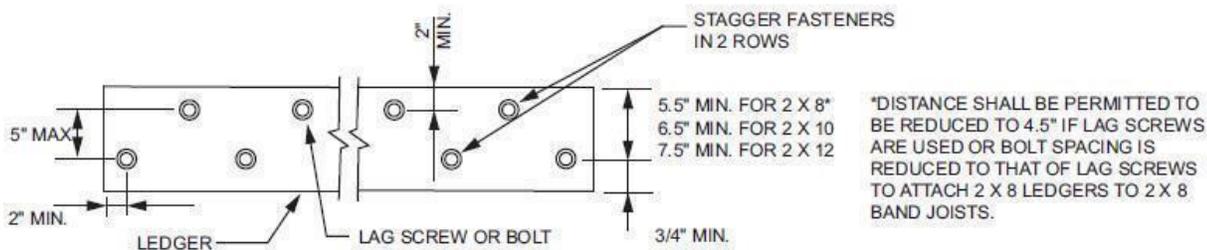


FIGURE R507.2.1(1)
PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS



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DECK LEDGER CONNECTIONS

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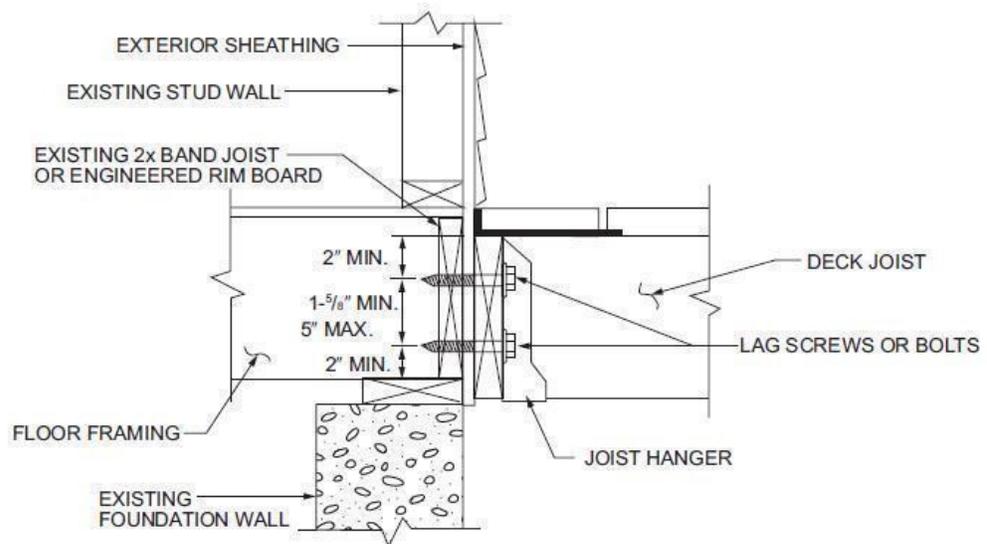


FIGURE R507.2.1(2)
PLACEMENT OF LAG SCREWS AND BOLTS IN BAND JOISTS

R507.2.2 Band joist details.

Band joists attached by a ledger in accordance with Section R507.2 shall be a minimum 2-inch-nominal (51 mm), solid-sawn, spruce-pine-fir lumber or a minimum 1-inch by 91/2-inch (25 mm x 241 mm) dimensional, Douglas fir, laminated veneer lumber. Band joists attached by a ledger in accordance with Section R507.2 shall be fully supported by a wall or sill plate below.

R507.2.3 Ledger to band joist fastener details.

Fasteners used in deck ledger connections in accordance with Table R507.2 shall be hot-dipped galvanized or stainless steel and shall be installed in accordance with Table R507.2.1 and Figures R507.2.1(1) and R507.2.1(2). inches may be reduced to 3/4 inch when the band joist is directly supported by a mudsill, a header or by double top wall plates

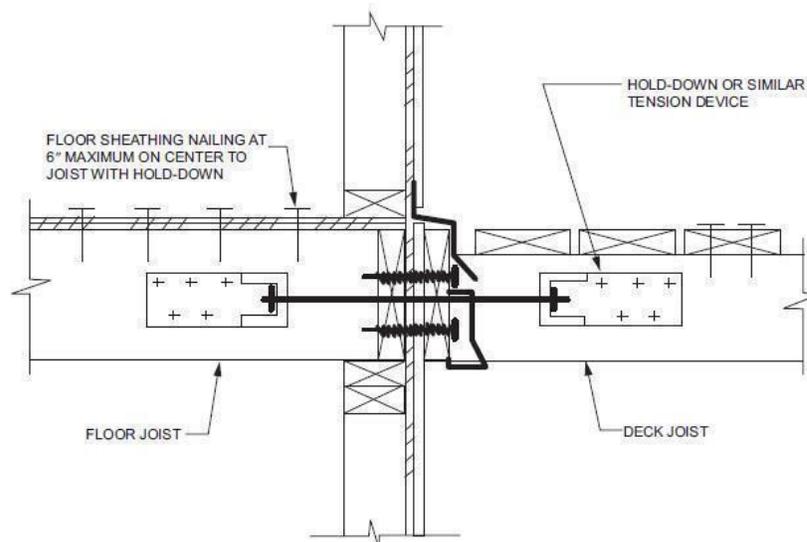


FIGURE 507.2.3(1)
DECK ATTACHMENT FOR LATERAL LOADS



DECK LEDGER ADDITIONAL INFO

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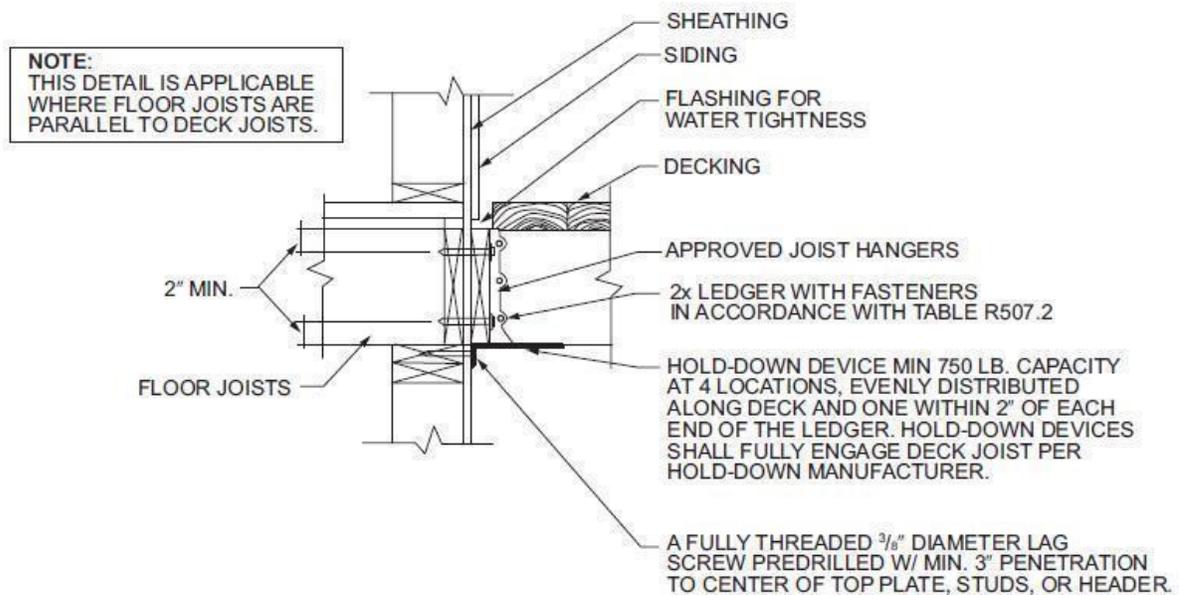


FIGURE R507.2.3(2)
DECK ATTACHMENT FOR LATERAL LOADS

R507.2.4 Deck lateral load connection.

The lateral load connection required by Section R507.1 shall be permitted to be in accordance with Figure R507.2.3(1) or R507.2.3(2). Where the lateral load connection is provided in accordance with Figure R507.2.3(1), hold-down tension devices shall be installed in not less than two locations per deck, within 24 inches of each end of the deck. Each device shall have an allowable stress design capacity of not less than 1,500 pounds. Where the lateral load connections are provided in accordance with Figure R507.2.3(2), the hold-down tension devices shall be installed in not less than four locations per deck, and each device shall have an allowable stress design capacity of not less than 750 pounds.

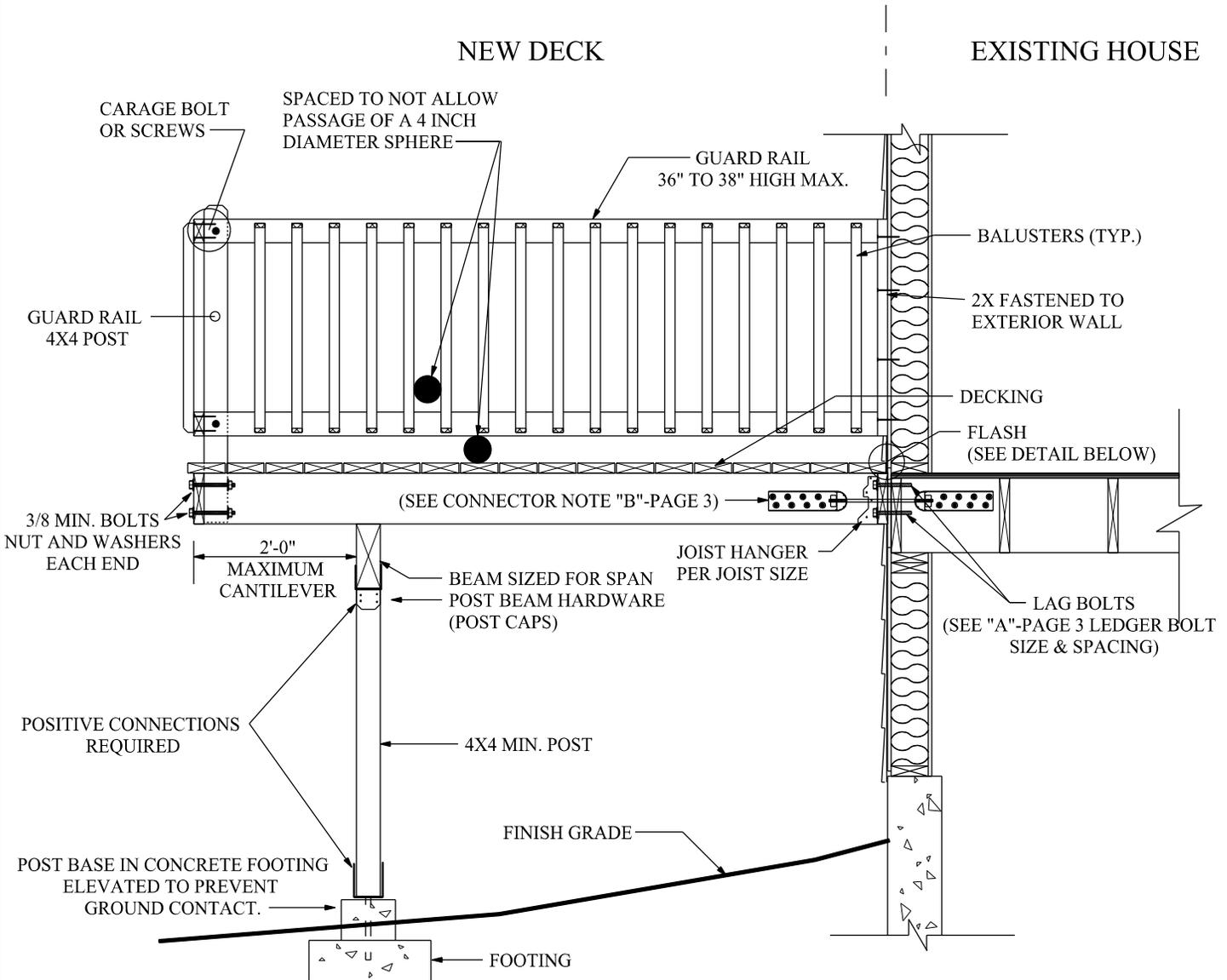
Exception: Decks not more than 30 inches above grade at any point may be unattached



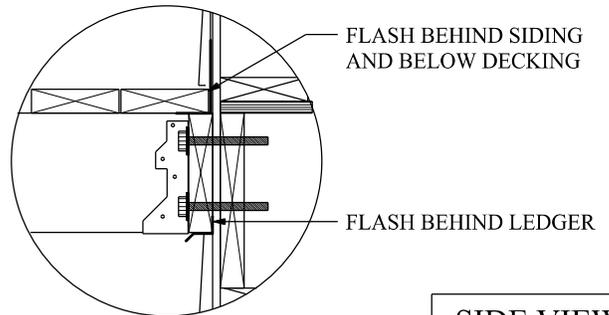
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DECKS SIDE ELEVATION FRAMING

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NOTE:
 *All support framing shall be pressure treated. (IRC R317.1 & SECTION R318)
 *Decking, railing balusters and hand rails shall be treated outdoor wood or similar.
 *Current chemical treatment for wood preservative will damage light galvanizing on bolts, nails and hangers. Use hot dipped galvanizing, stainless steel or better.



SIDE VIEW

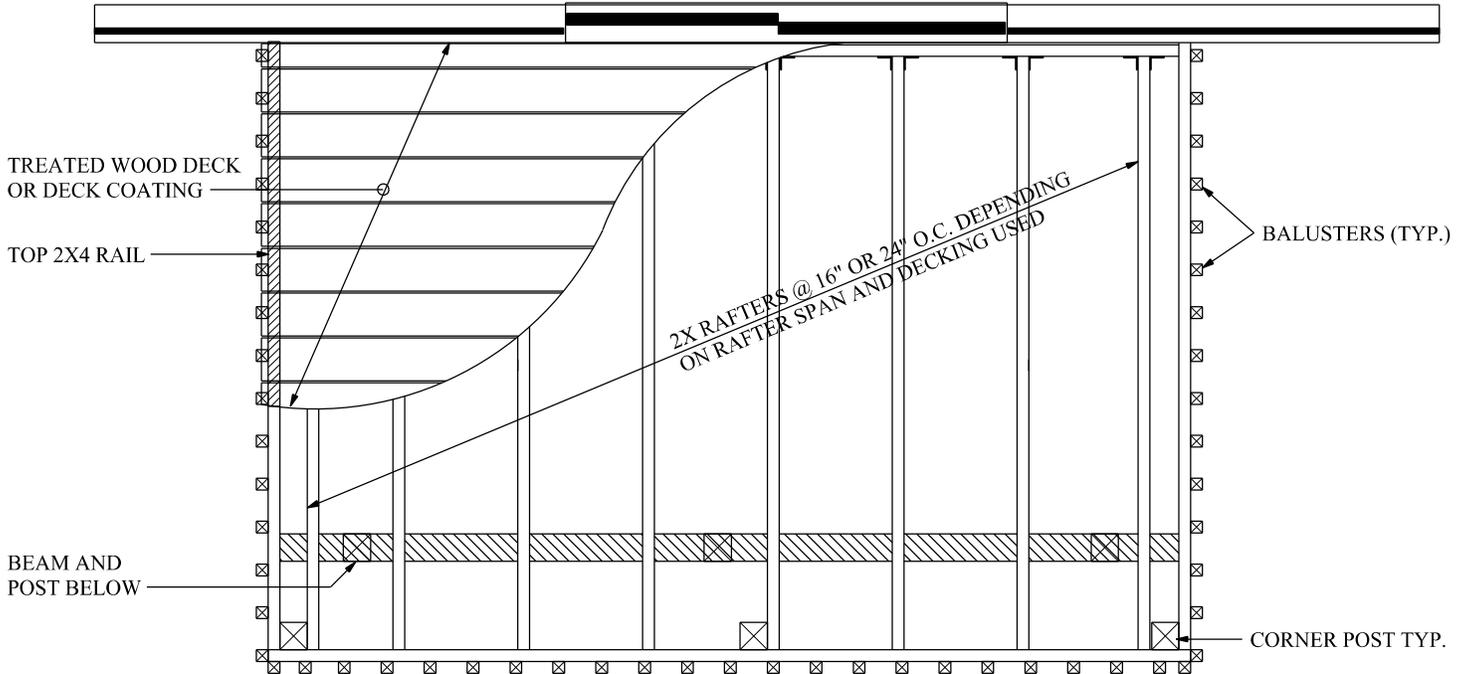


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DECKS PLAN & SIDE VIEWS

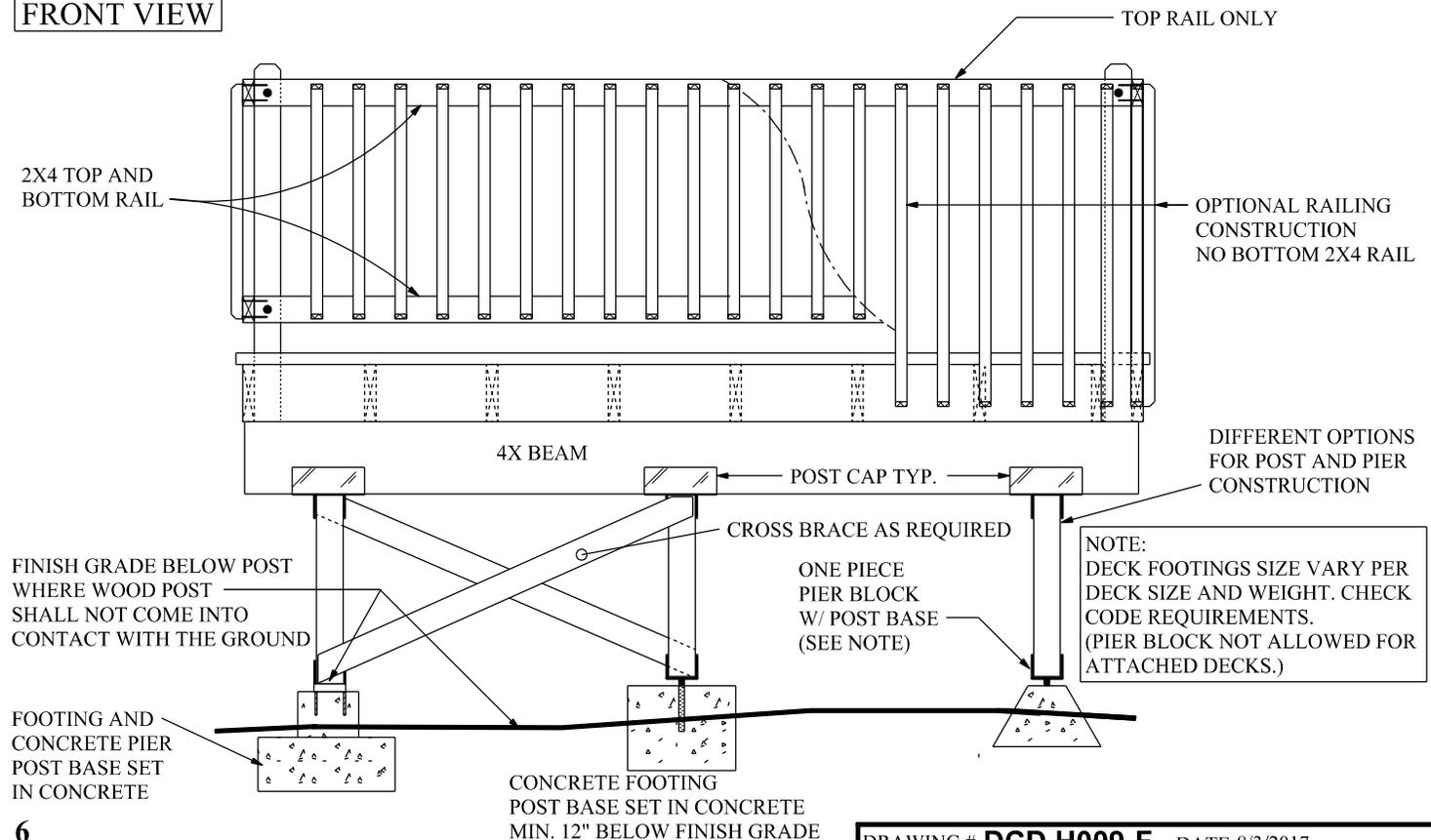
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HOUSE



TOP VIEW

FRONT VIEW



NOTE:
 DECK FOOTINGS SIZE VARY PER
 DECK SIZE AND WEIGHT. CHECK
 CODE REQUIREMENTS.
 (PIER BLOCK NOT ALLOWED FOR
 ATTACHED DECKS.)