

PREDESIGNED DECK GUIDE RESIDENTIAL

Revised: 11.2025

City of Tukwila - Permit Center
6300 Southcenter Blvd, Suite 100,
Tukwila, WA 98188
www.tukwilawa.gov/departments/permit-center/



When is a permit required?

A building permit is required for any residential deck more than 30 inches tall, measured vertically from the walking surface to the grade below and within 36 inches of any edge of the deck. This is a guide created by City of Tukwila to allow Construction without structural engineering. Your project must fall within the parameters described within this document to use this guide for permitting.

Resources:

- [City Maps](#)
- [Permit Center](#)
- [Site Plan](#)
- [Certificate of Fire Flow form](#)
- [Online permits website](#)
- [Tukwila iMap](#)

Do I qualify to use this guide?

- Attached to a legally established, stick built, residential structure.
- Total area of 500 square feet maximum
- Walking surface shall be located lower than 14 feet from adjacent grade.
- Posts do not bear on existing deck or patio. Footings are constructed per plan.
- Design Criteria: Wind 110mph Ultimate, Seismic Zone D, Ground Snow load of 30 lbs per square foot, 18 inches frost depth.
- Structures closer than 5 feet to the property line do not qualify to use this guide.

Construction beyond these limitations will require calculations from a WA State registered engineer.

How do I apply?

Complete and submit the following:

1. Complete all sections of this document, which will act as your plans.

ADDITIONAL DOCUMENTS REQUIRED WITH PACKET

2. Upload a [Site Plan](#) with property lines, all existing structures, proposed structures and setbacks.
3. Upload Completed [Certificate of Fire Flow form](#).

Construction shall be in accordance with the current Washington State Adopted IRC section 507; Decks

If your property has the following you will need additional review to complete your project:

- Unknown septic drain field location
- Steep slopes, flood hazards, small lots
- Setback or property line encroachment concerns
- Wetlands or shoreline properties
- You can investigate whether your property has environmental issues at the [Tukwila iMap](#) site.

What comes next?

Approval: Once your application has been approved, you will be notified of the approval and get access to the permit and approved plans. Please print these and have on site for your inspector.

Inspections: You will have 1–3 inspections, depending on your scope:

- Setback/Footing (Prior to pouring concrete)
- Final (When work is complete)

Inspections can be scheduled using our [online permits website](#).

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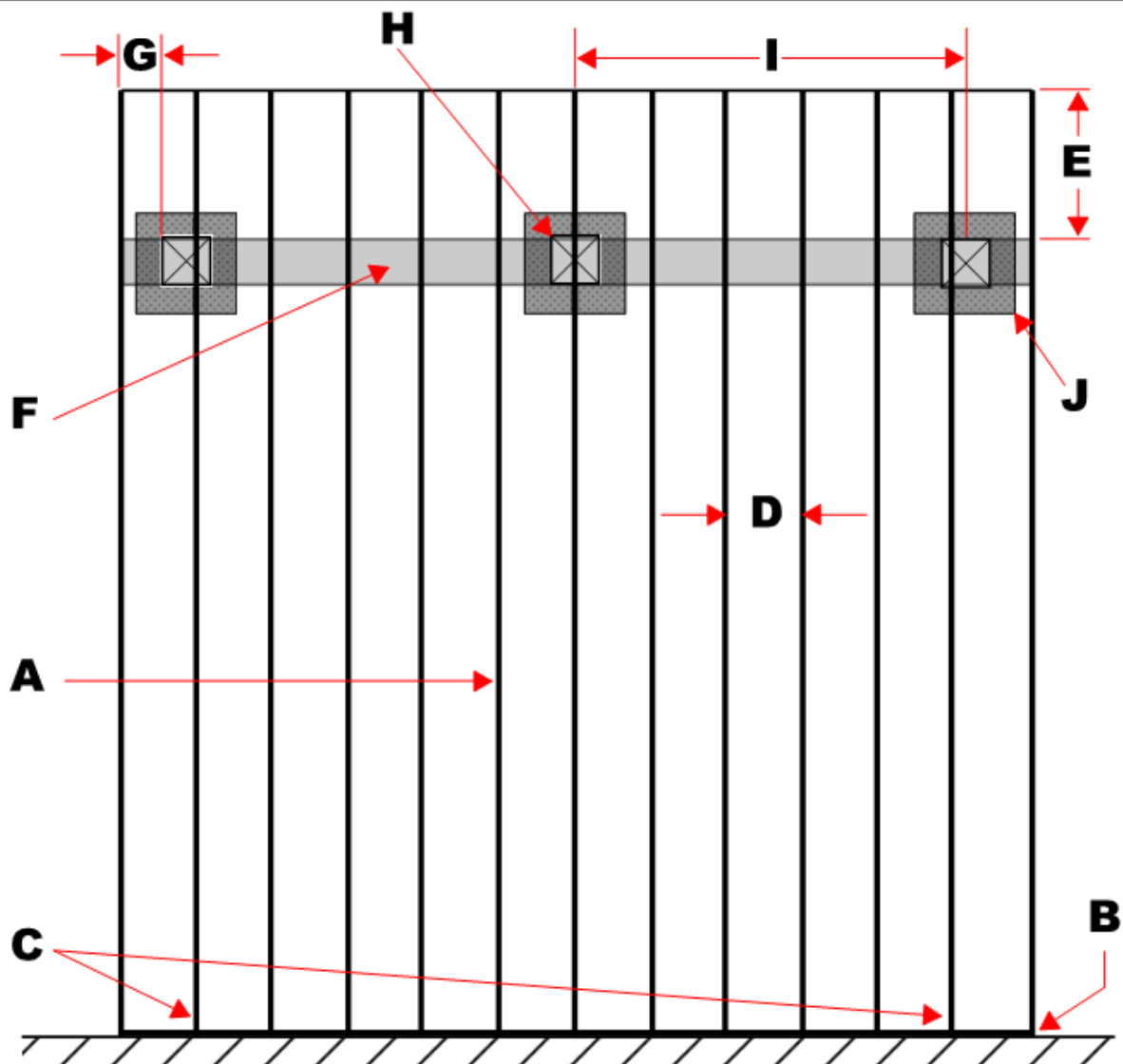
Additional Criteria

- Lumber used for construction, including ledgers, shall be of naturally durable or preservative treated wood.
- Hardware and fasteners must be hot-dipped galvanized or stainless steel.
- The design criteria included will not support a hot tub, jacuzzi or pool.
- Decks using this design will be limited to a **single joist span and a single beam span** per the included tables.
- The deck cannot be supported by a mobile or manufactured home.

Note: All proposals are subject to additional requests for information and plan review at the discretion of your assigned Plans Examiner.

Please use the following details on pages 3–7 to complete A–J on this deck table

Description	Example	
1. Overall Deck Size	10' wide x 12' long	1.
2. Decking Surface	Cedar or Trex	2.
3. Decking Material	2"x6", 5/4" x 4", 2"x 4"	3.
4. Height Above Grade	48" at highest point	4.
A. Joist Length and Size	12' and 2"x10"	A.
B. Ledger Size	2"x10"	B.
C. Lateral Tension Device	Detail 2	C.
D. Spacing of Joists	16" O.C. or 24" O.C.	D.
E. Joist Overhang/ Cantilever (Max allowed 25% of Joist Span TABLE 2)		E.
F. Beam Size	6"x10"	F.
G. Beam Overhang (Max allowed 25% of beam Span TABLE 3)		G.
H. Post Size	6"x 6" - 10' tall	H.
I. Post Spacing	48" Center - Center	I.
J. Footing Size	Square 18"x 18" - 12" thick	J.



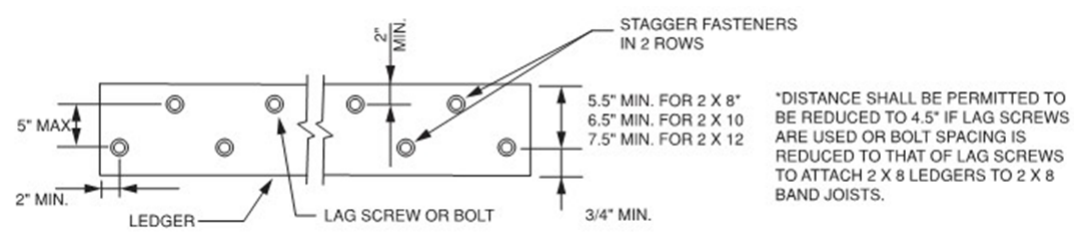
- A.** Joist Length and Size—Use [TABLE 2](#) to determine minimum size of pressure treated lumber.
- B.** Use [TABLE 2](#) for ledger size, please note ledger must be equal to or greater than joist size. Connection of Ledger (A) to existing home with ½" diameter lag screws per [TABLE 1](#), install ½" lag screws per [DETAIL 1](#).

Table 1

Deck Ledger Connection to Band Joist ^{a,b}							
(Deck live load = 60 psf, deck dead load = 10 psf, snow load ≤ 60 psf)							
Joist Span							
Connection Details	6' 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"
On-center Spacing of Fasteners							
1/2" diameter Lag Screws	22" o.c	16" o.c.	13" o.c.	11" o.c.	9" o.c.	8" o.c.	7" o.c.

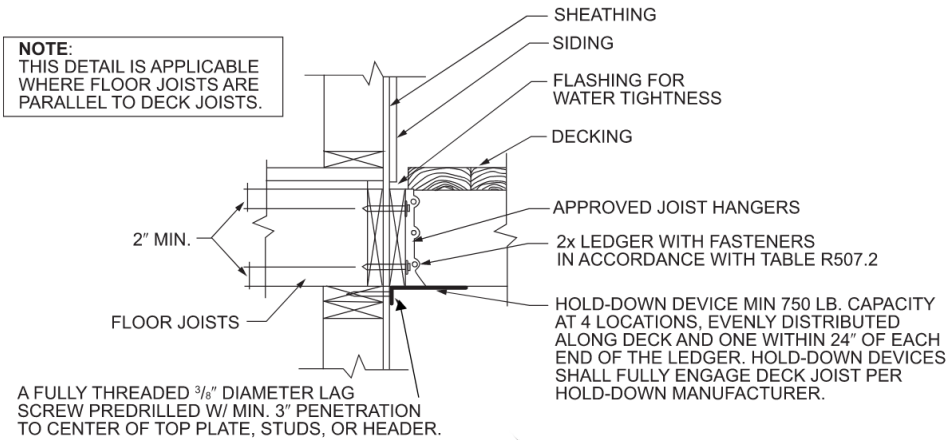
- a. Ledgers shall be flashed in accordance with Section R703.4 to prevent water from contacting the house band joist.
- b. Snow load shall not be assumed to act concurrently with live load.

Detail 1

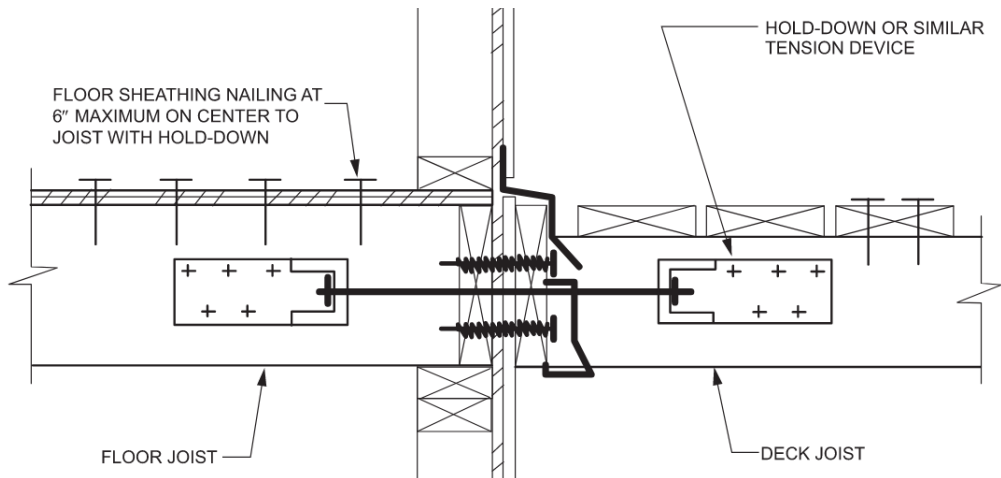


- C.** Lateral Tension Device attachment—Choose [DETAIL 2](#) or [DETAIL 3](#)

Detail 2



Detail 3



- D. Spacing of Joists**—Use [TABLE 2](#) to determine layout of 12" O.C. / 16" O.C. / 24" O.C.
- E. Joist Overhang**—Max distance of overhang allowed is ¼ (25%) of Joist span from [TABLE 2](#)

Table 2: Deck Joist Span Lengths

Species	Size	Spacing of Deck Joists with No Cantilever ^b (inches)			Spacing of Deck Joists with Cantilevers ^c (inches)		
		12" O.C.	16" O.C.	24" O.C.	12" O.C.	16" O.C.	24" O.C.
Pressure-Treated Lumber ^a Doug-fir ^d / Hem-fir ^d	2 x 6	8'-1"	7'-0"	5'-9"	7'-5"	6'-9"	5'-9"
	2 x 8	10'-10"	9'-5"	7'-8"	9'-7"	8'-8"	7'-7"
	2 x 10	13'-3"	11'-6"	9'-4"	13'-3"	11'-6"	9'-5"
	2 x 12	15'-4"	13'-4"	10'-10"	15'-5"	13'-4"	10'-11"

- a. No. 2 grade with wet service factor.
- b. Ground snow load, live load = 60 psf, dead load = 10 psf, L/Δ = 360.
- c. Ground snow load, live load = 60 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied to end.
- d. Includes incising factor.

- F. Beam Size**—Use [TABLE 3](#) to determine minimum pressure treated beam sized
- G. Beam Overhang**—Max distance of overhang allowed is ¼ (25%) of Beam Span from [TABLE 3](#)

Table 3: Deck Beam Span Lengths ^{a,b} (ft. - in.)

Species ^c	Beam Size ^d	Deck joist span less than or equal to (feet):					
		6' Joist Span	8' Joist Span	10' Joist Span	12' Joist Span	14' Joist Span	16' Joist Span
Pressure-Treated Lumber ^a Doug-fir ^d / Hem-fir ^d	2-2x6	5'-5"	4'-5"	N/A	N/A	N/A	N/A
	2-2x8	7'-3"	5'-9"	4'-8"	N/	N/A	N/A
	2-2x10	8'-11"	7'-5"	5'-11"	4'-11"	4'-3"	N/A
	2-2x12	10'-4"	8'-11"	7'-2"	6'-0"	5'-2"	4'-6"
	4x6	6'-3"	5'-11"	4'-11"	4'-1"	N/A	N/A
	4x8	8'-9"	7'-9"	6'-6"	5'-5"	4'-8"	4'-1"
	4x10	11'-0"	9'-6"	8'-3"	6'-11"	5'-11"	5'-2"
	4x12	12'-10"	11'-1"	10'-0"	8'-5"	7'-2"	6'-3"
	3-2x6	6'-11"	6'-6"	6'-1"	5'-3"	4'-6"	N/A
	3-2x8	9'-8"	8'-6"	7'-8"	6'-11"	5'-11"	5'-3"
	3-2x10	11'-11"	10'-4"	9'-4"	8'-6"	7'-7"	6'-8"
	3-2x12	13'-10"	12'-0"	10'-10"	9'-10"	9'-1"	8'-1"

- a. Ground snow load, live load = 60 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.
- b. Beams supporting deck joists from one side only.
- c. No. 2 grade, wet service factor.
- d. Beam depth shall be greater than or equal to depth of joists with a flush beam condition.
- e. Includes incising factor

H. Post Height—Use [TABLE 4](#) to determine minimum post height and size. [DETAIL 4](#) required for knee bracing on posts over 4' in height

Table 4

Deck Post Size	Max Height
4 x 4	8 feet
4 x 6	8 feet
6 x 6	14 feet

- I. Post Spacing—The post spacing is less than or equal to the beam span selected from [TABLE 3](#)
- J. Footing Size—Use your Joist Span from [TABLE 2](#) and beam span from [TABLE 3](#) to determine footing size based on [TABLE 5](#). Please select round or square footing. A positive attachment from post to footing is required, see post to footing [DETAIL 5](#).
** Please note minimum frost depth must be met for your specific construction site—consult with building department to confirm.

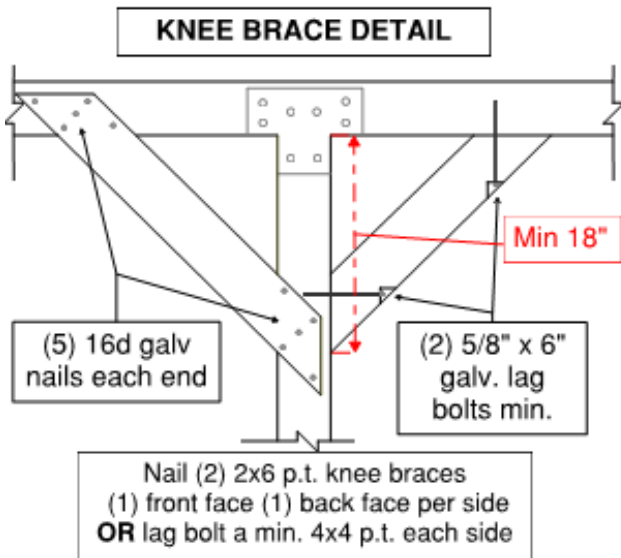
Table 5

- a. Assumes 1,500 PSF soil bearing capacity
- b. Assumes 2,500 PSI compressive strength of concrete

Beam Span	Joist Span	Round Footing Diameter	Square Footing Dimensions	Footing Thickness
6' or less	8' or less	14"	12" x 12"	12"
	8'-11'	18"	16" x 16"	12"
	11'-16'	20"	18" x 18"	12"
6'-10'	8' or less	20"	18" x 18"	12"
	8'-11'	24"	20" x 20"	12"
	11'-16'	28"	24" x 24"	12"
10'-14'	8' or less	24"	20" x 20"	12"
	8'-11'	28"	24" x 24"	12"
	11'-16'	32"	30" x 30"	18"

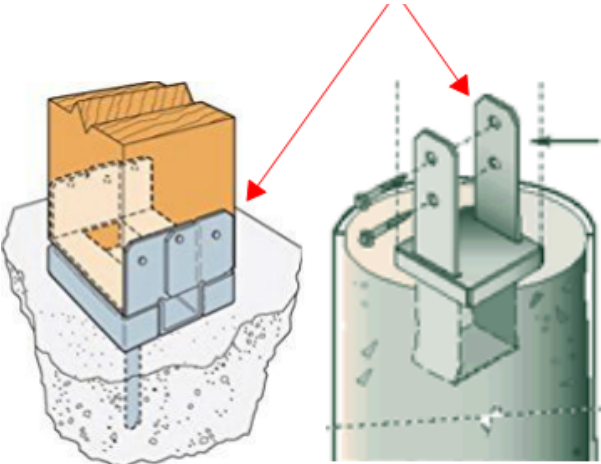
Detail 4

Knee Braces required on all posts exceeding 4' in height. **Please note all post to beam connections require a positive connection through mechanical means—"Post Cap Hardware"



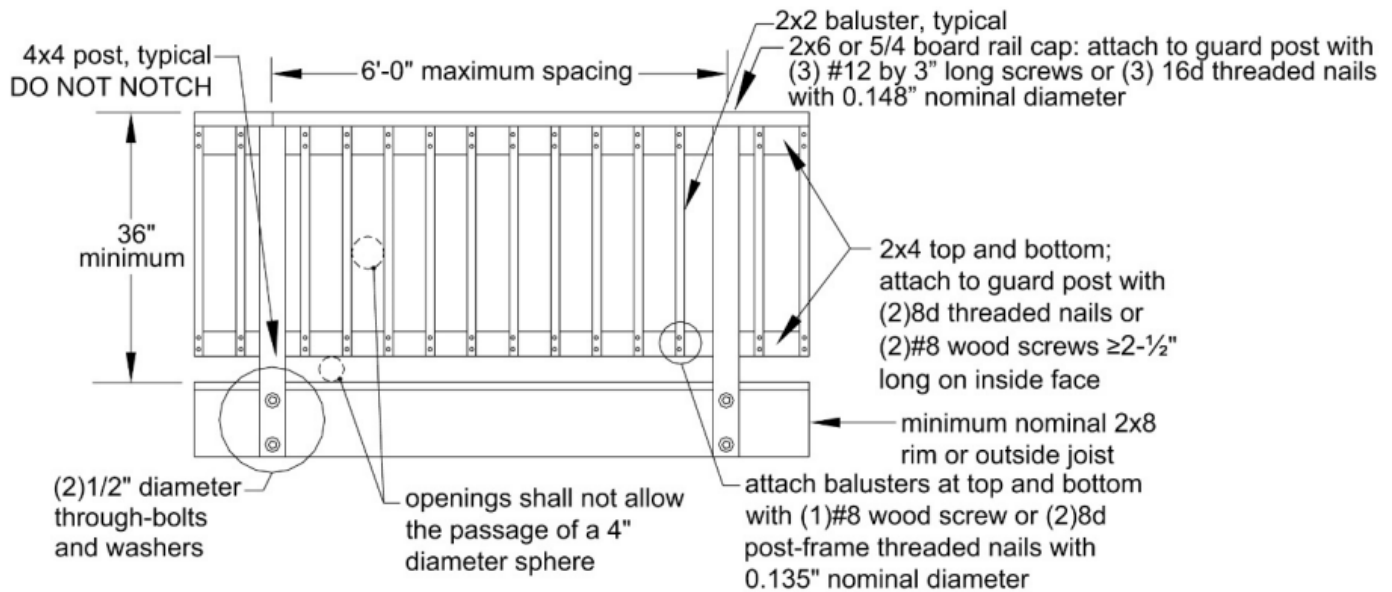
Detail 5

Post to footing connection required to be standard post base hardware at all locations



Typical Railing Attachments

(required to resist 200 lbs of lateral force)

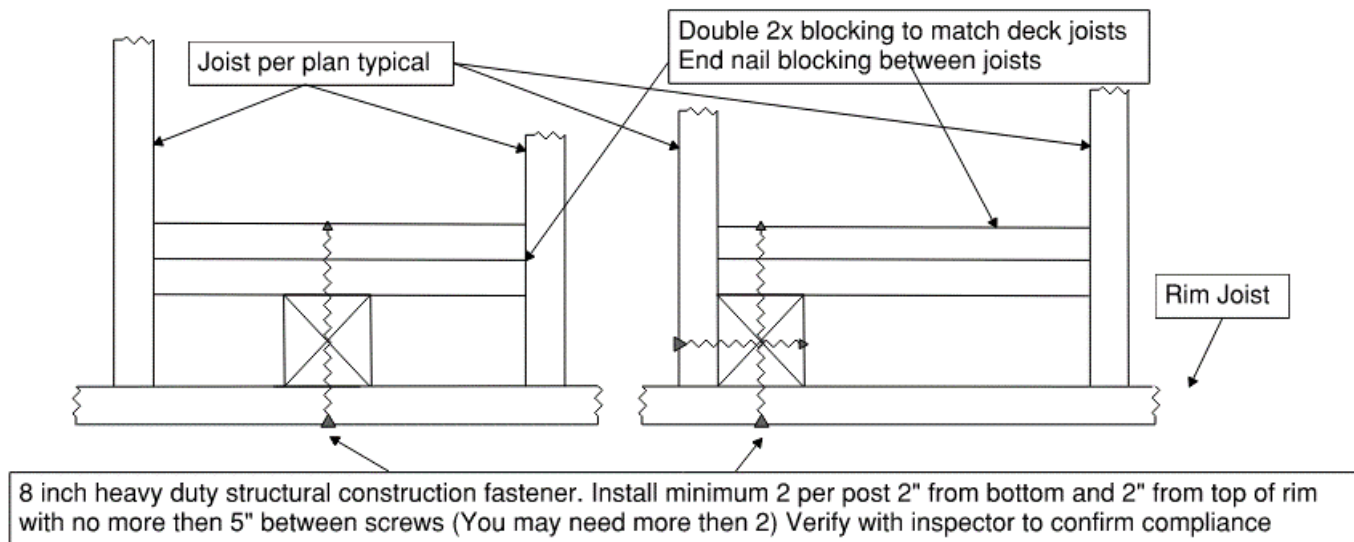


OVERHEAD VIEW

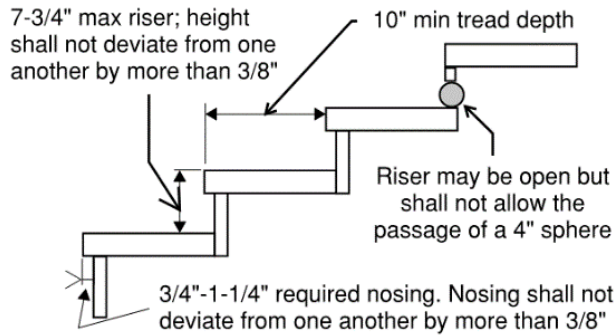
Typical Post Attachments

(required to resist 200 lbs of lateral force)

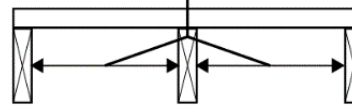
OVERHEAD VIEW



Typical Stair Stringer Construction



Tread Material
 2x4 or 2x6 - Wood 18" max
 5/4x4 or 5/4x6 - Wood 18" max
 Composite Decking 12" max

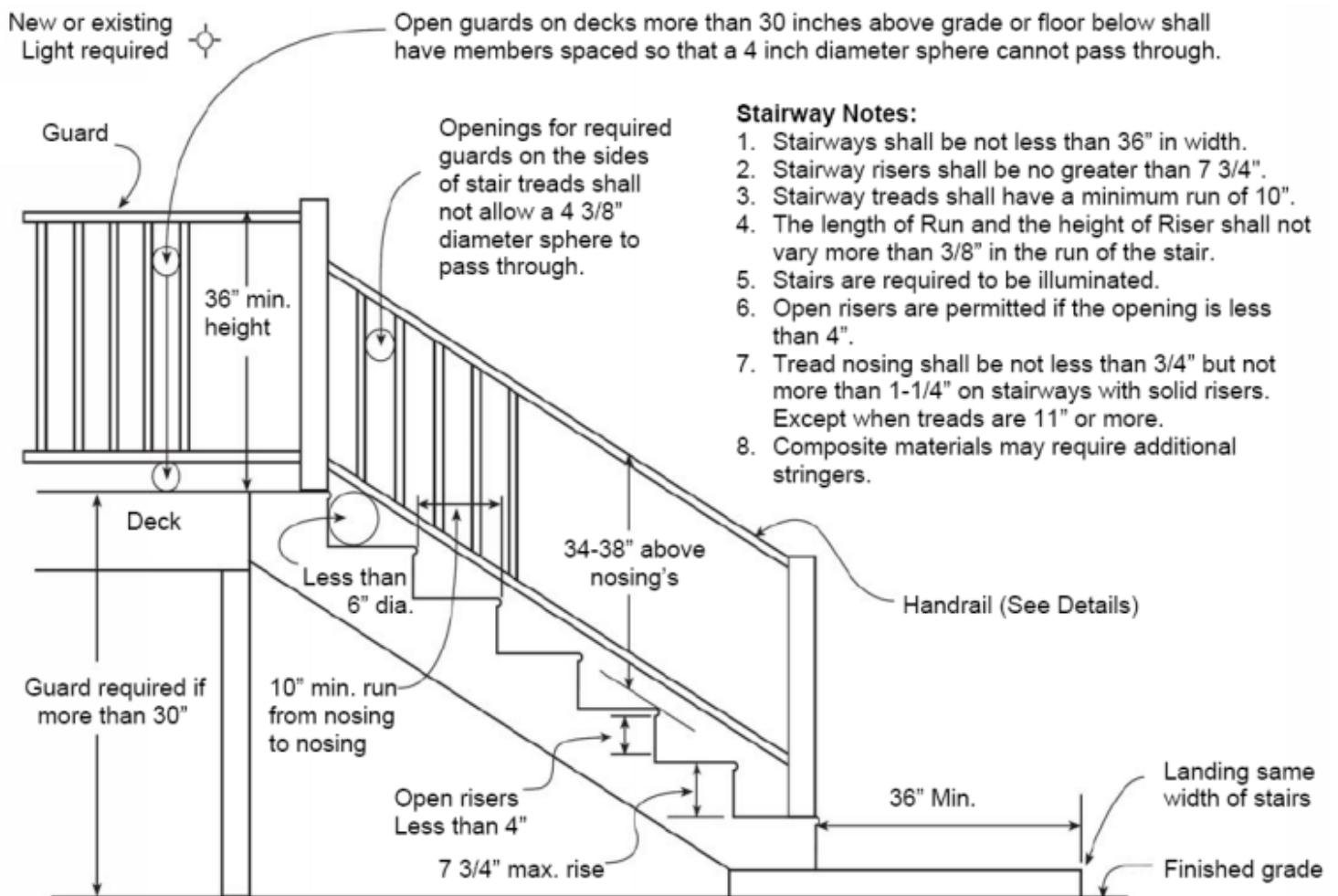


Cut Stringer
 Min. 2x12 full supported top and bottom

Tread Material
 2x12 or Greater - 36" max
 Composite Decking Not Allowed



Solid Stringer
 Min. 2x12 full supported top and bottom with min. 2x4 ledgers



Stairway Notes:

1. Stairways shall be not less than 36" in width.
2. Stairway risers shall be no greater than 7 3/4".
3. Stairway treads shall have a minimum run of 10".
4. The length of Run and the height of Riser shall not vary more than 3/8" in the run of the stair.
5. Stairs are required to be illuminated.
6. Open risers are permitted if the opening is less than 4".
7. Tread nosing shall be not less than 3/4" but not more than 1-1/4" on stairways with solid risers. Except when treads are 11" or more.
8. Composite materials may require additional stringers.