Town of Sullivan
Building Department/Zoning Department

7507 Lakeport Road
Chittenango, New York 13037
(315) 687-5251

To All Homeowners

Exterior Deck Construction

Dear Residents:

This office's main objective and concern is for your safety. The proper construction of a deck is essential. Some decks are small, others are large or multi-level or incorporate storage areas or entertainment areas below the deck.

In fairness to all, this office has made the decision that all decks being constructed above walk-out basements or reaching over high banks would require a stamped Architectural design. In certain instances this requirement has not been taken favorably by the owner wishing to construct a deck onto their home. In reality a deck not properly designed or constructed can become a very dangerous structure. In designing a proposed deck, certain factors must be considered such a Ground Snow-load, wind speed, lateral reinforcement, proper attachment to the structure, post size and spacing, proper attachment to ground or pier, support beam sizing and proper attachment, a stable and properly installed and spaced railing system, etc. These are all considerations that must be considered when designing a deck. The higher a deck is above the ground, the need for proper design and construction becomes critical.

This office takes no joy in spending your hard-earned dollars when asking that an Architectural design be required for proposed construction. We do take comfort in knowing that your deck has been properly designed and constructed and will be a place for family gatherings and your enjoyment for many years to come.

Going forward, this office will review each proposed deck on its own merits. If this office does not believe that proper design practices have been considered or there are special considerations that need to be addressed (multi-level, hot tubes on the deck, entertainment areas below the deck, storage buildings below the deck, etc.) the requirement of an Architectural design may be required.

Commitment to your safety is our top priority.

Sincerely,

Larry Ball, Code Enforcement Officer
www.townofsullivanny.gov

TOWN OF SULLIVAN **DEPARTMENT OF BUILDING and ZONING** **7507 LAKEPORT RD, CHITTENANGO, NY 13037**
(315) 687-5251 **FAX (315) 510-2101**

APPLICATION FOR PERMIT

FOR TOWN USE ONLY **Permit No.**_____

Date Submitted_____ Tax Map No. _____ Permit Fee $_____

Approved _____ Zoning District _____ Sewer Connection Fee $_____

Denied _____ Septic Approval?. Y / N Planning Board? Y / N Zoning Board? Y / N

_____ _____

Approved By ***Conditions of Approval*

Print or Type clearly and fill in all spaces that apply!

Application is hereby made for the issuance of a Building Permit pursuant to all applicable codes, ordinances and laws regulating and governing the erection, construction, enlargement, addition, alteration, repair, replacement, improvement, removal, demolition, conversion of any building or premises or part thereof in the Town of Sullivan.

Address of Property:	Zip Code:
Lot Number:	
PROPERTY OWNER	
Name:	Phone #:
Address (City/State/Zip):	E-mail:
Applicant Name:	Phone #:
Address:	E-mail:
Architect/Engineer/Other Name:	Phone #:
Address:	E-mail:
Name of Contractor:	Phone #:
Address (City/State/Zip):	E-mail:
Contractor to attach a copy of Certificate of Insurance including liability and workers compensation or NYS exemption certificate.)	

Nature of Work (check all applicable – work not identified will require separate application form.)

☐ New building	☐ Generator	☐ Addition	☐ Alteration/Repair	☐ Fire Repair	☐ Fireplace/stove
☐ Deck	☐ Demolition/Removal	☐ Roofing	☐ Swimming Pool/Spa	☐ Foundation	☐ Mechanical (MPE) work
☐ Shed	☐ Fire Protection System	☐ Fence	☐ Occupancy Change	☐ Electrical	☐ Grading/Sitework
☐ Garage	☐ Polebarn	☐ All Others (Describe)			

Describe proposed work, including use and size of all items checked above:

The application must contain all information found on the handout sheet to be considered complete and to be processed.

Parcel type: ☐ Residential ☐ Commercial ☐ Industrial ☐ Office ☐ Other Square Feet:

****Site Plan/Survey Required showing Distances to ALL decks, sheds, other structures and Property Lines**

Electrical Application #: Third Party Agency:

Plumber: Mechanical Contractor:

Estimated ***VALUE*** of all **work, materials and labor** for the work under this application: $

Property Located in **Flood Zone**: ☐ Yes ☐ No	Property Located in **Wet Lands**: ☐ Yes ☐ No	**Easements**: ☐ Yes ☐ No

The below signed applicant has read the instructions for Application for Building Permit. The below signed applicant hereby affirms under the penalty of perjury that to the best of his/her knowledge and belief the information given and accompanying this Application for Building Permit is accurate and true. The applicant agrees to comply with all applicable laws, ordinances and regulations; that all statements contained in this application are true to the best of his/her knowledge and belief and that all work will be performed in the manner set forth in the application and in the plans and specifications filed therewith.

Owner Signature _____ Signature of Applicant: _____

TOWN OF SULLIVAN
CODES ENFORCEMENT
7507 Lakeport Road
Chittenango, NY 13037
(315) 687-5251
www.townofsullivanny.gov

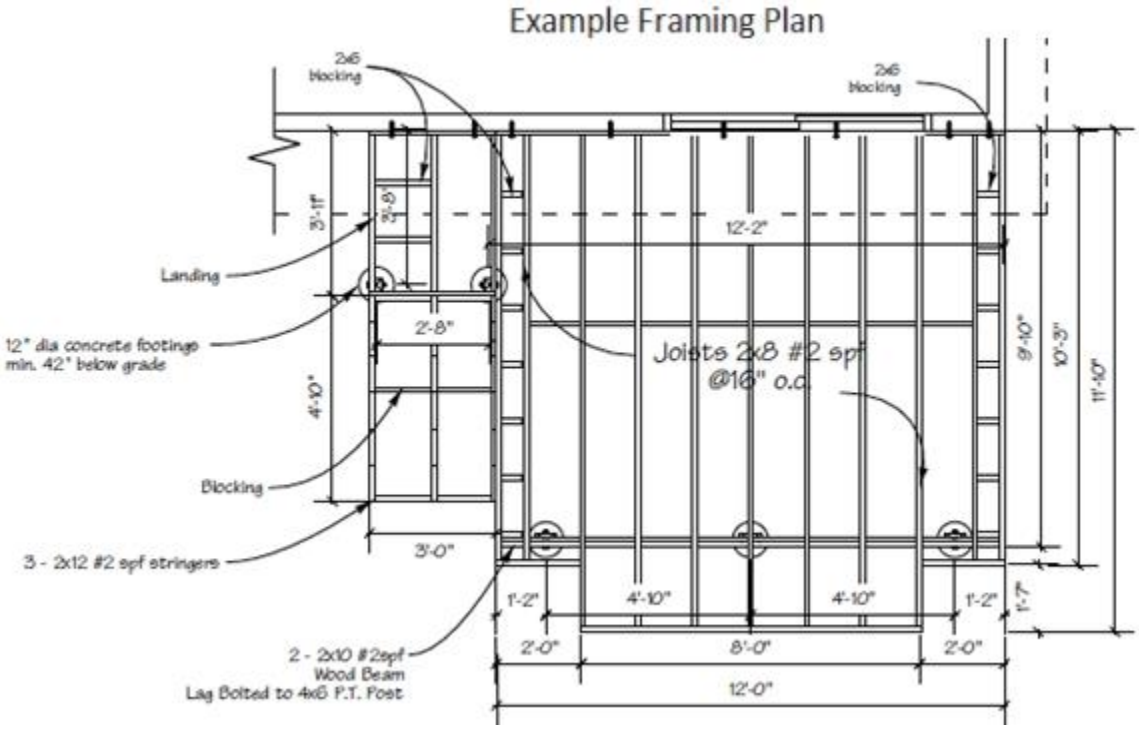
2020 Deck Construction Guide

To apply for a building permit, complete all applicable sections of the building permit application and include the following:

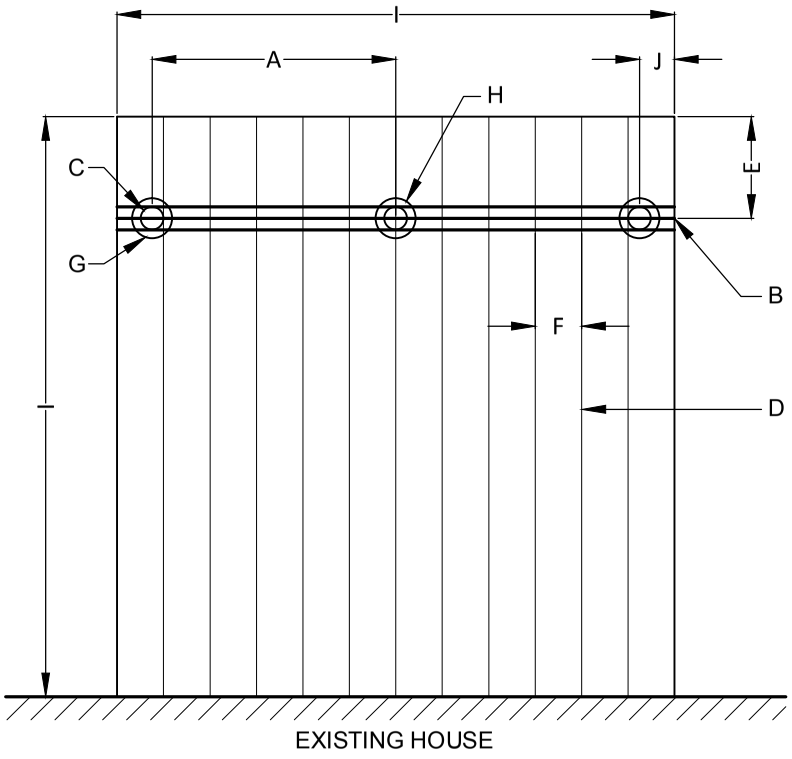
1) Contractor information including liability and workman's compensation insurance certificates
2) A copy of the property survey indicating the project location with dimensions and setbacks from lot lines
3) Detailed construction drawings (see pages 2-4) including:
    a. The type of all materials to be used including framing lumber, decking, railings, flashing, all fasteners and hardware
    b. A framing plan indicating the location, spacing and dimensions of footings, posts, beams and joists
    c. Stair and railing details including riser height, tread depth, railing height, spindle spacing, railing post fastening and handrail details

Note:

- Decks must have concrete footings that are at least 48 inches in depth, 12" round or square and 6" thick
- All fasteners and connectors used with pressure treated lumber must be designed for that purpose in order to prevent corrosion. Acceptable Simpson connector materials include ZMAX, HDG (hot-dip galvanized) and 316 stainless steel.
- The only screws allowed on metal connectors is Simpson Strong-Drive® SD CONNECTOR Screws. Deck screws may not be used on any metal connectors. The packaging for Strong-Drive® SD Connector Screws must be on site for inspection.
- The placement of lag screws and bolts in ledgers shall comply with R507.9.1.3(1) (see page 6)
- Decks attached to a dwelling must have lateral load connections (see page 7)
- Beams must rest on top of the posts (see pages 2 & 9)
- Stairs with four or more 4 risers must have frost footings and proper, graspable handrails (see page 4)



SIMPLE DECK PLAN



FILL IN THE BLANKS

A. SPACING IN BETWEEN POSTS: _____

B. BEAM SIZE (2 - 2x10, ETC.): _____

C. POST SIZE (6x6, ETC.): _____

D. JOIST LENGTH AND SIZE: _____

E. JOIST OVERHANG (2' MAX): _____

F. SPACING BETWEEN JOISTS (16", 24" O.C.): G. _____

CORNER FOOTING SIZE: _____

H. INTERMEDIATE FOOTING SIZE: _____

I. OVERALL DECK SIZE: _____

J. BEAM OVERHANG: _____

TYPE OF RAILING OR GUARD

MATERIAL (CEDAR, TREATED, ETC.): _____

HEIGHT ABOVE GROUND: _____

TYPE OF DECKING: 5/4", 2x6, ETC _____

SPECIAL NOTE:
A COMPLETE AND DETAILED DECK PLAN WILL RESULT IN A COMPLETE AN DETAILED PLAN REVIEW.

NOT TO SCALE

Town of Sullivan
Building and Zoning Office
7507 Lakeport Road
Chittenango, New York 13037
PH: 315-687-5251 Fax: 510-2101

This information only outlines general code requirements related to building a residential deck. For specific code requirements, please contact a design professional or the Town of Sullivan Building Department at 315-687-5251.

A building permit is REQUIRED to construct a deck if attached to or detached from a structure or more than 12" above grade. To obtain a permit, the following items must be submitted:

REQUIREMENTS

- A signed, completed building permit application form.
- A copy of the Certificate of Survey or site plan drawn to scale, showing property lines, existing buildings and the proposed structure location with distances to property lines.
- Two copies of building plans. All structural members must be sized and properly spaced to support all loads. The following pages may be used in designing your deck. If there is any overhead wires in the vicinity of your proposed deck, contact the state electrical inspector for required clearances. The following items must be included with the deck plans:
  - All dimensions drawn to scale
  - Size and depth of footings
  - Size and spacing of posts
  - Size of beams and headers
  - Stair location (if applicable)
  - Size, direction and spacing of joists
  - One elevation showing deck height and guard design
  - Size, direction and type of decking
  - Type and size of all materials used

Call Before you Dig at 811 to locate utilities 48 hours in advance

PERMIT PROCESS

Your application will be reviewed for code compliance and setback requirements. Permit fees will be calculated and you will be notified when the permit is ready to be picked up.

Before digging or excavating , call "Before You Dig" at 811 or request stakeout at 1-800-962-7962

REQUIRED INSPECTIONS

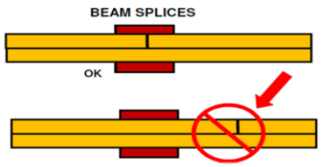
Please call 315-687-5251 a minimum of 24 hours in advance to schedule inspections. Inspections are scheduled Monday thru Friday, 8:30 am until 4:00 pm.

- **FOOTING**
  After holes are dug, loose dirt and water removed and **prior** to pouring concrete
- **FRAMING**
  Only if the deck joists are lower than 36" above grade
- **FINAL**
  Final building inspection after work is complete

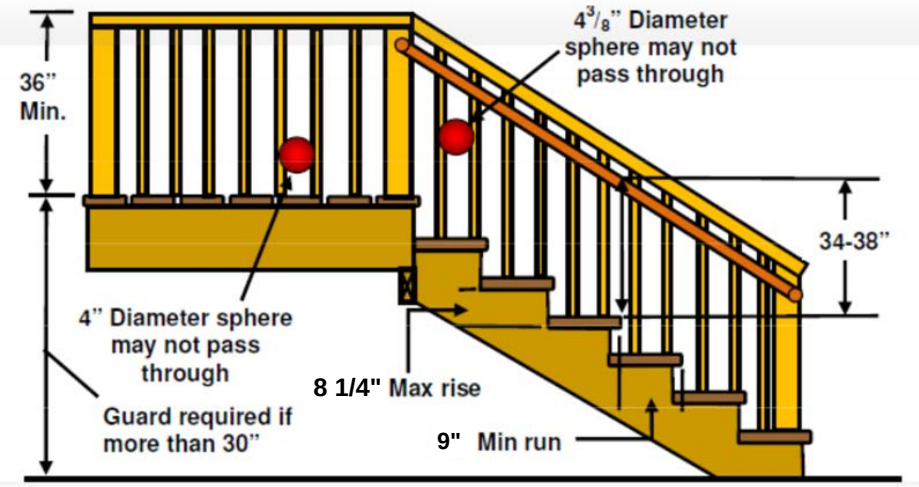
HIGHLIGHTS OF BUILDING REQUIREMENTS 2020 NYS RESIDENTIAL CODE-EXTERIOR DECKS R507

- The bottom of the footing must be 48" minimum below undisturbed soil, measured either vertically or horizontally. Augured footings shall have smooth forms installed prior to the footing inspection.

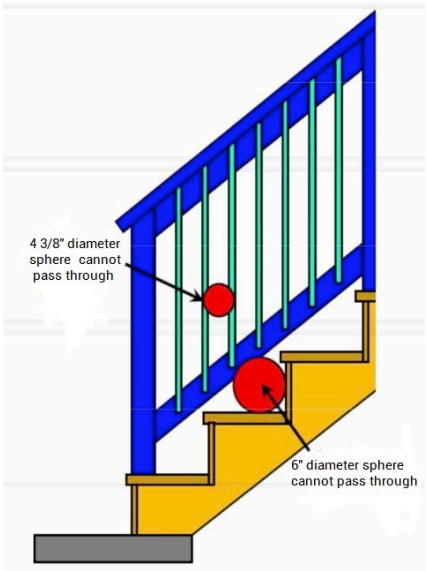
- Beam splices must be directly over posts, minimum of 1½” bearing.



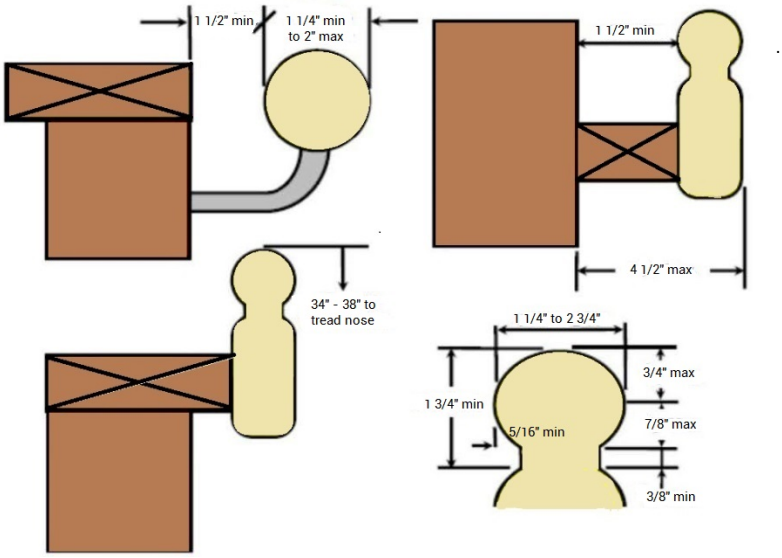
- Deck ledger boards must be secured and attached to the structure per table R507.9.1.3(1) and R507.9.1.3(2) within this handout.
- Joist hangers are required wherever joists do not have at least 1½” of bearing. (Exceptions: cantilevered ends.)
- Galvanized connectors are required for footing to post, post to beam, and beam to joist connections.
- Guards are required on all decks more than 30” above grade. Guards must be 36” minimum in height. Open guards must have intermediate rails or an ornamental pattern that a 4” sphere cannot pass through. Guards must be able to withstand 200 lbs. of applied pressure.
- Stairways must be 36” between guards for the full length of the stairway.

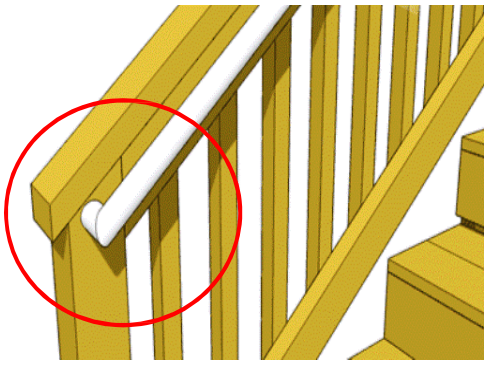


- The maximum rise is 8 1/4”, the minimum run is 9”. Treads, risers and nosing’s shall be consistent within 3/8”. Open risers on stairs with a total rise greater than 30” is not permitted to allow the passage of a 4” diameter sphere. A nosing not less than ¾ inch or greater than 1 ¼” shall be provided on stairways. Spiral stairs are to comply with Section R311.7.9.1.



- Stairways require a guard not less than 34” in height from the nose of the treads. Open guards shall have intermediate rails or an ornamental pattern such that a sphere 4 3/8” in diameter cannot pass through. The triangular openings formed by the riser, tread and bottom rail of guards shall be such that a sphere 6” in diameter cannot pass through.
- Handrails are required on stairs with four or more risers.



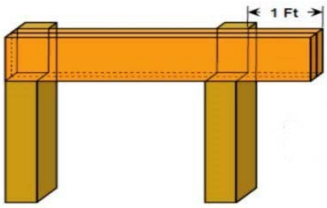


- Handrails must have a continuous graspable surface and be 34” to 38” above the tread nosing and run the full length of the stairs with ends returned. Handrails shall have a space of not less than 1½” between the handrail and the wall or guard. The handrails shall be not less than 1¼” or more than 2” in diameter.

- Structural members of exterior decks must be cedar, redwood, treated wood or an approved composite material.
- Hangers, connectors and fasteners used in conjuction with ACQ treated lumber are required to be ACQ compatable.
- Special designs or engineering may be required for a 3-season porch or if spas/whirlpool tubs will be placed/located on decks. Additionally, high decks or decks on slopes require stamped architectural design.
- Revised plan review fees shall be incurred in the event an additional plan review becomes necessary due to revised building plans.

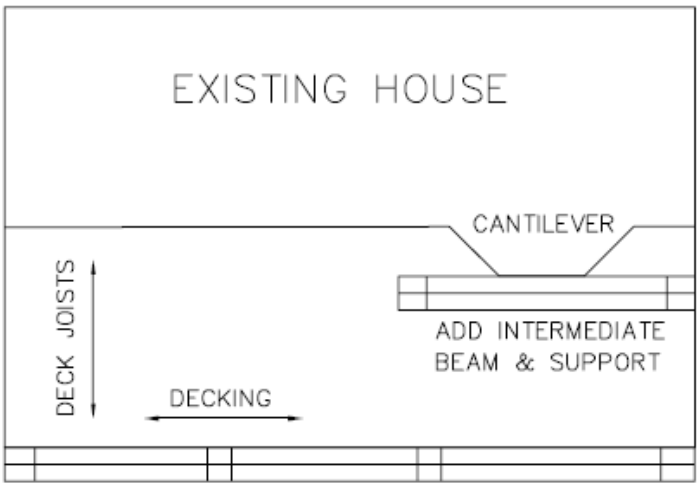
Single level deck support post sizes	4x4	6'9" feet (2020 Code Change)
(minimum sizes)	4x6	8 feet
	6x6	14 feet

- Joists may be cantilevered a maximum of one-fourth of the actual, adjacent joist. Beam spans may be cantilevered at each end no greater than one-fourth the actual beam span.
- Decks cannot bear on cantilevered floors. Additional framing will be required.

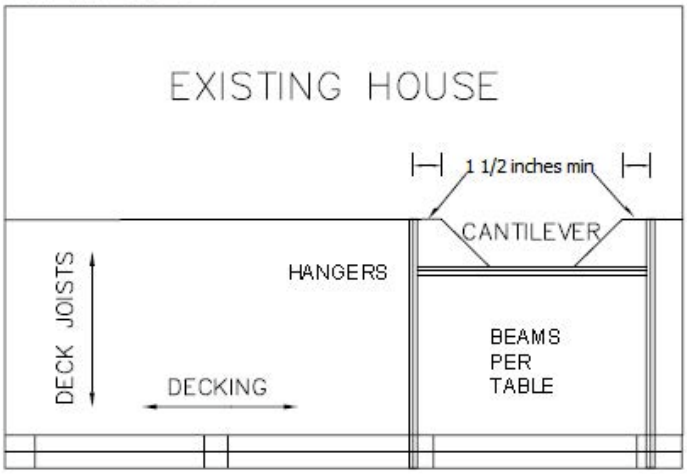


Many house designs have cantilevered (extensions) from the main structure and which typically contain patio doors for future deck additions. The reinforcement selected will be based on the type of floor framing member presently in the house. We have diagrammed two possible solutions for providing such reinforcement.

EXAMPLE 1



EXAMPLE 2



Example 1
Add an intermediate beam, supports and footings. Size beam and footings.

Example 2
Size beams per handout. Provide adequate hangers from all connections. Design center beam per chart. Also lag bolt to cantilever ledger board.

DECK LEDGER REQUIREMENTS

R507.1 Decks.

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 connection to the primary building structure cannot be verified during inspection, decks shall be self-supporting. For decks with cantilevered framing members, connections to exterior walls or other framing members, shall be designed and constructed to resist uplift resulting from the full live load specified in Table R301.5 acting on the cantilevered portion of the deck.

R507.9.1.3 DECK LEDGER TO BAND JOIST DETAILS

For decks supporting a total design load of 50 pounds per square foot [40 pounds per square foot live load plus 10 pounds per square foot dead load], the connection between a deck ledger of pressure-preservative-treated Southern Pine, incised pressure-preservative-treated Hem-Fir or approved decay-resistant species, and a 2-inch nominal lumber band joist bearing on a sill plate or wall plate shall be constructed with $^1/_2$-inch lag screws or bolts with washers in accordance with Table R507.9.1.3(1). Lag screws, bolts and washers shall be hot-dipped galvanized or stainless steel.

TABLE R507.9.1.3(1)

FASTENER SPACING FOR A SOUTHERN PINE OR HEM-FIR DECK LEDGER AND A 2-INCH-NOMINAL SOLID-SAWN SPRUCE-PINE-FIR BAND JOIST [c, f, g] (Deck live load = 40 psf, deck dead load = 10 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	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 = 0.0479 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 shallbe$^1/_2$ inch.

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 R507.2.1.

e. Deck ledger shall be minimum 2 × 8 pressure-preservative-treated No. 2 grade lumber, or other approved materials a 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 × 9-1/2 Douglas Fir laminated veneer lumber rimboard shall be permitted in lieu of the 2-inch nominalband 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.

R507.9.1.3 PLACEMENT OF LAG SCREWS AND BOLTS IN DECK LEDGERS AND BAND JOISTS

The lag screws or bolts in deck ledgers and band joists shall be placed in accordance with Table R507.9.1.3(1) and Figures R507.9.1.3(1) and R507.9.1.3.(2).

TABLE 507.9.1.3(2)

MINIMUM END AND EDGE DISTANCES AND SPACING BETWEEN ROWS				
	TOP EDGE	BOTTOM EDGE	ENDS	ROW SPACING
Ledger[a]	2 inches[d]	9" inch	2 inches[b]	1 5/8 inches [b]
Band Joist[c]	3/4 inch	2 inches	2 inches[b]	1 5/8 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).

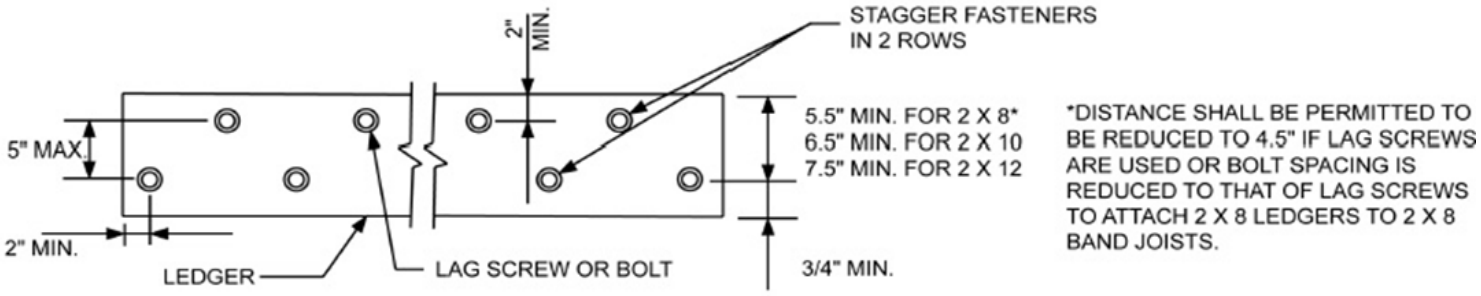


FIGURE R507.9.1.3(1) PLACEMENT OF LAG SCREWS AND BOLTS IN LEDGERS

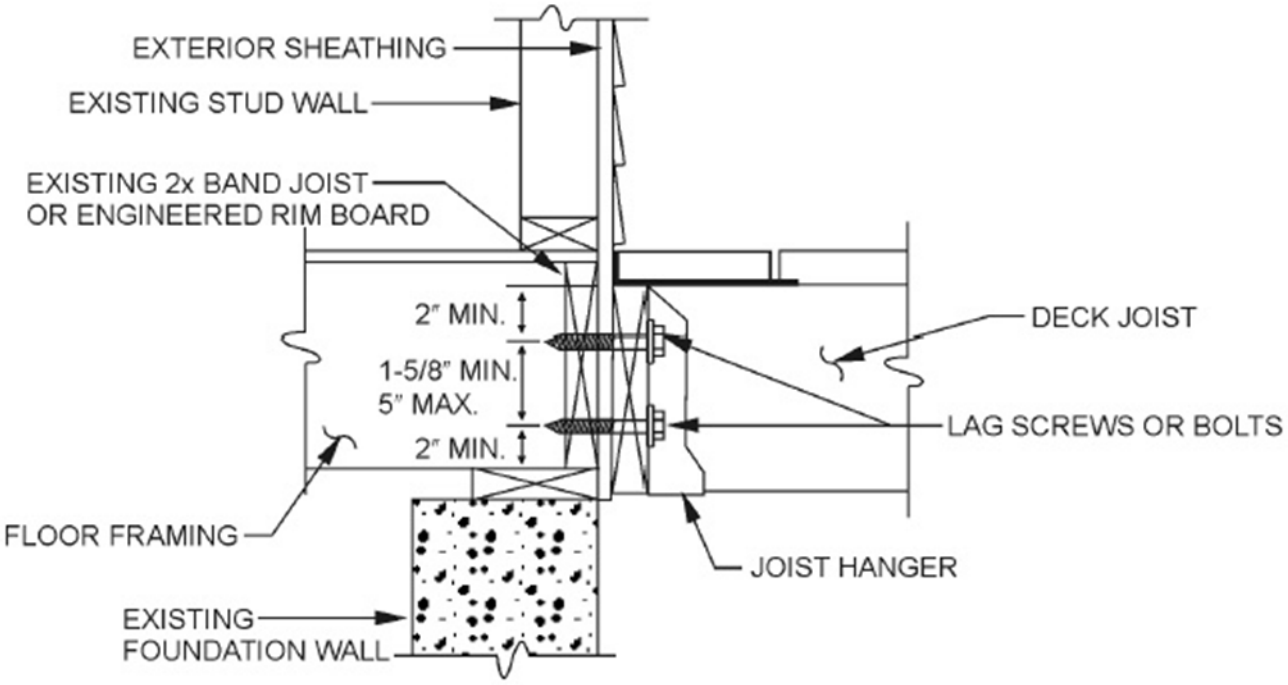


TABLE R507.5
DECK JOIST SPANS FOR COMMON LUMBER SPECIES[f] (ft. - in.)

SPECIES[a]	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER[b] (inches)			SPACING OF DECK JOISTS WITH CANTILEVERS[c] (inches)		
		12	16	24	12	16	24
Southern yellow pine (Typical Pressure Treated)	2 × 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 × 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 × 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 × 12	18-0	16-6	13-6	18-0	16-6	13-6
Douglas fir-larch[d], hem-fir[d] spruce-pine-fir[d]	2 × 6	9-6	8-8	7-2	6-3	6-3	6-3
	2 × 8	12-6	11-1	9-1	9-5	9-5	9-1
	2 × 10	15-8	13-7	11-1	13-7	13-7	11-1
	2 × 12	18-0	15-9	12-10	18-0	15-9	12-10
Redwood, western cedars, ponderosa pine[e], red pine[e]	2 × 6	8-10	8-0	7-0	5-7	5-7	5-7
	2 × 8	11-8	10-7	8-8	8-6	8-6	8-6
	2 × 10	14-11	13-0	10-7	12-3	12-3	10-7
	2 × 12	17-5	15-1	12-4	16-5	15-1	12-4

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. No. 2 grade with wet service factor.

b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360.

c. Ground snow load, live load = 40 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.

e. Northern species with no incising factor

f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.

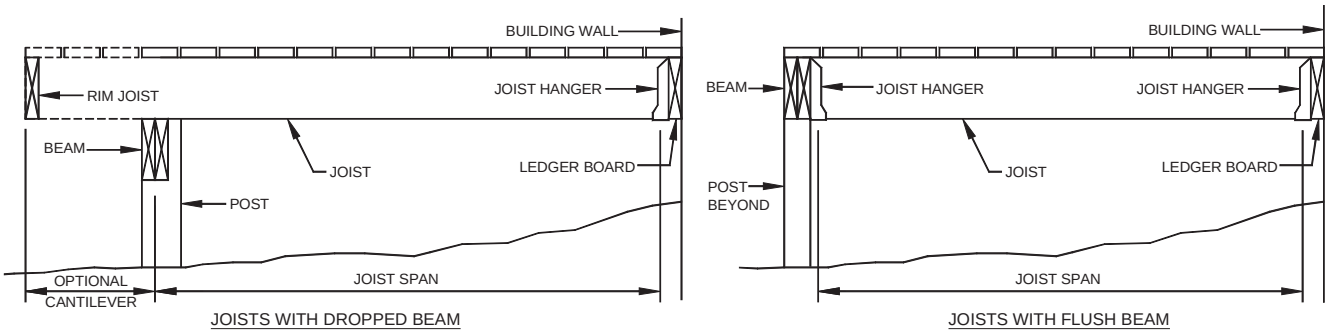


FIGURE R507.5
TYPICAL DECK JOIST SPANS

TABLE R507.8

DECK POST HEIGHTS

4 X 4	6'9" (2020 Code Change)
4 X 6	8'
6 X 6	14'

TABLE R507.6
DECK BEAM SPAN LENGTHS[a, b] (ft. - in.)

SPECIES[c]	SIZE[d]	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern yellow pine This information only outlines general code requirements related to building a residential deck. For specific code requirements, please contact a design professional or the Town of Sullivan Building Department at 315-687-5251.	2 – 2 × 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2 – 2 × 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2 – 2 × 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2 – 2 × 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3 – 2 × 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3 – 2 × 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3 – 2 × 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3 – 2 × 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10
Douglas fir-larch[e], hem-fir[e], spruce-pine-fir[e], redwood, western cedars, ponderosa pine[f], red pine[f]	3 × 6 or 2 – 2 x 6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3 × 8 or 2 – 2 × 8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3 × 10 or 2 – 2 × 10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3 × 12 or 2 – 2 × 12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4 × 6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4 × 8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4 × 10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4 × 12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3 – 2 × 6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3 – 2 × 8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3 – 2 × 10	12-0	10-5	9-4	8-6	7-10	7-4	6-11
	3 – 2 × 12	13-11	12-1	10-9	9-10	9-1	8-6	8-1

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kPa, 1 pound = 0.454 kg.

a. Ground snow load, live load = 40 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.

f. Northern species. Incising factor not included.

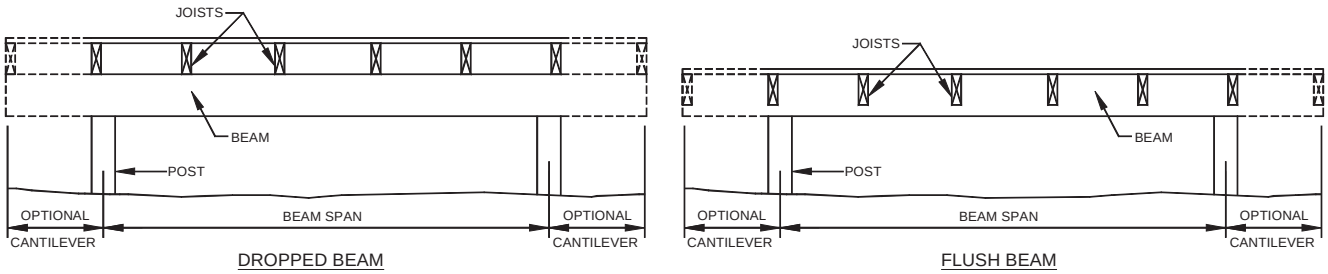


FIGURE R507.6
TYPICAL DECK BEAM SPANS

Call Before you Dig at 811 to locate utilities 48 hours in advance

BALUSTER

RAIL

36" Min.

Less than 4"

Electrical service lines over or within 3' horizontally of the deck or stairs *must* have a minimum 10' vertical clearance.

Flash any cuts in exterior finish

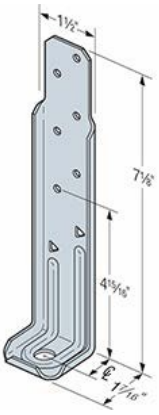
NOTE: SKIRTBOARD not required.

BEAM
See Beam and Footing Table

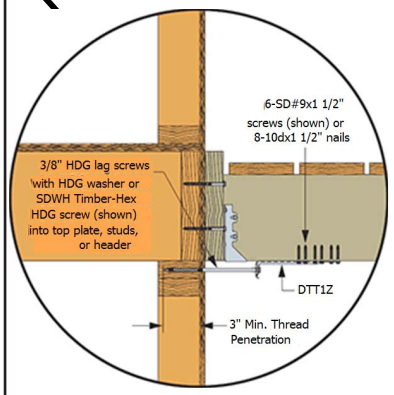
NOTES:
Any splices in beam must be over a support. All beams of 2 or more members shall be nailed together with 2 rows of 16d Nails at 16" O.C.

MANUFACTURED BEAM SUPPORT

JOIST
See Joist Span Table



Lateral load connectors per 507.2.3



Lateral load connections which are required in 507.2.3, can be achieved by using 4 connections similar to Simpsons DTT1Z. Alternate types of connectors can also be used but must be able to achieve stress design capacity of 1,500 lbs. with a minimum of 2 connections per deck.

ALTERNATE BEAM

Joists rest on BOTH members of beam.

Two 1/2" carriage bolts with washers

LEDGER
Same size as joists. Install lag screws that penetrate 1 1/2" minimum into rim joist or wall studs per Table R507.2

POST
6" minimum
(6X6)

POST
6" minimum

NOTE: Joist hangers must be correct size for joist size used.

ALTERNATE BEAM

Joists rest on BOTH members of beam.

One 1/2" carriage bolt with washer if 2"X8" or larger beam.

Two 5/8" bolts with washers through manufactured beam support.

POST
6" minimum

BUILDING

Galvanized connectors

GRADE

48" minimum

ALTERNATE FOOTING

CONCRETE PIER FOOTING

12" minimum

BACKFILL MATERIAL

WOOD POST

8"

POURED CONCRETE FOOTING

DECK POST HEIGHTS

Revised February 2015

New DTT1Z Deck Tension Tie Provides Alternate Approach to Attaching Decks to Homes

The new DTT1Z deck tension tie provides a less invasive approach for attaching a new deck to a home or retrofitting an existing deck to current code standards. This tension tie addresses a 2015 International Residential Code provision (section R507.2.4) that now allows four 750 lb. lateral connectors to be fastened to framing in the house with a lag screw. This provision is an alternative to using two 1,500 lb. lateral connections from the deck to the floor joists within the house.

The DTT1Z is specifically designed to comply with this new code detail that permits the lateral connection from the deck joists to be made to top plates, studs, or headers within the supporting structure. This eliminates the need to access the floor joists inside the house.

The DTT1Z fastens to the narrow or wide face of a single 2x with Strong-Drive® SD Connector screws. The new Strong-Drive® SDWH Timber-Hex HDG screw with an integral washer attaches the tension tie to the supporting structure.

The DTT1Z deck tension tie with the Strong Drive® SDWH TIMBER-HEX HDG screw accommodates most installation conditions regardless of the siding type or ledger thickness.

Additional Features

- ZMAX® coating offers additional corrosion protection for exterior and preservative-treated wood applications
- DTT1Z offered as an individual part or as part of a retail pack with Strong-Drive® SD Connector Screws and SDWH Timber-Hex HDG Screws

Additional Fastening Options

To Joist:

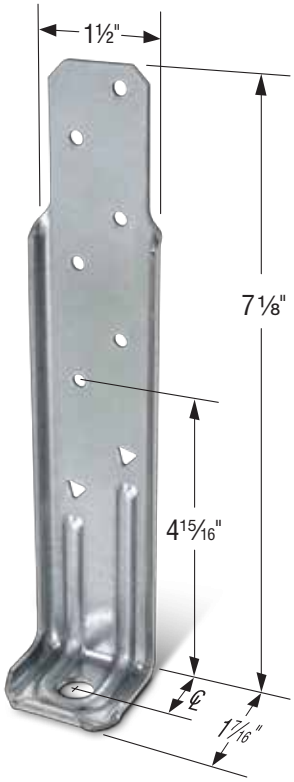
- #9x1½" Strong-Drive® SD Connector Screw
- 10dx1½" HDG nail

To Structure:

- Strong-Drive® SDWH Timber-Hex HDG Screw (available in 4"-12" lengths)
- ⅜" machine bolt, anchor bolt or lag screw (washer required)
- ⅜" Titen® HD Heavy Duty screw anchor (interior dry holdown applications only, see page 4)

Model No.	℄	Anchor Dia. or Type	Fasteners	Allowable Tension Loads (lbs.) (160)				Deflection at Allowable Load (in.)
				Dry		Wet		
				DF/SP	SPF/HF	DF/SP	SPF/HF	
DTT1Z	¾"	⅜"[5] or SDWHG[6]	6-SD #9x1½"	840	840	840	755	0.170
			6-10dx1½"	910	640[4]	795	640[4]	0.167
			8-10dx1½"	910	850	910	850	0.167

1. Allowable loads have been increased 60% for wind or earthquake loading with no further increase allowed.
2. Dry values are applicable to installations into wood with a moisture content that does not exceed 19%.
3. Wet values are applicable to installations into wood with a moisture content greater than 19% at time of installation or in service. Values include a NDS wet service factor for the fasteners.
4. DTT1Z installations with allowable loads of less than 750 lbs. do not satisfy the 2015 IRC requirements for deck-to-house lateral load connections.
5. A standard ⅜" cut washer is required when using a ⅜" machine bolt, anchor bolt or lag screw.
6. The Strong-Drive® SDWH Timber-Hex HDG screw with a min. of 3" of thread penetration into dry lumber has an allowable withdrawal load (160) of 1380 lbs. into SP, 1225 lbs. into DF and 1020 lbs. into SPF/HF.
7. Load values are valid if the product is flush with the end of the framing member or installed away from the end.
8. FASTENERS: SD #9x1½" (model SD9112) = 0.131" dia. x 1½" long, 10dx1½ = 0.148" dia. x 1½" long.

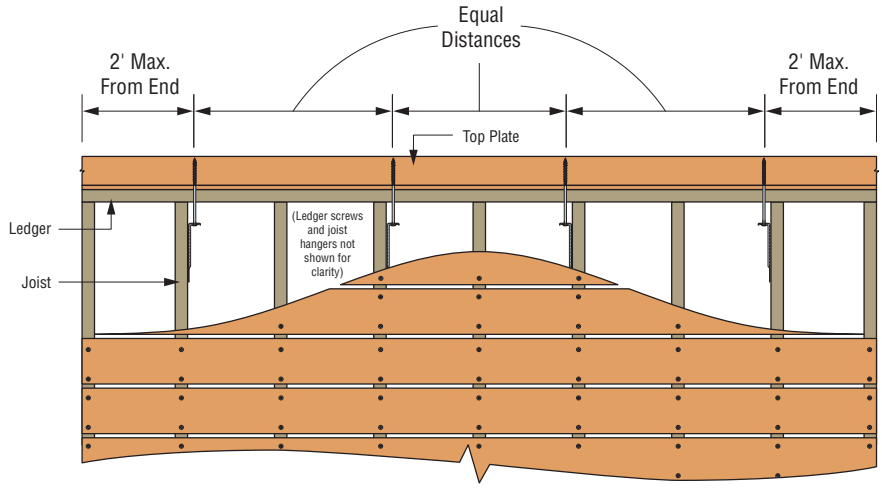


DTT1Z Deck Tension Tie
U.S. Patent Pending

DTT1Z Installation Instructions for Deck Applications

SIMPSON Strong-Tie®

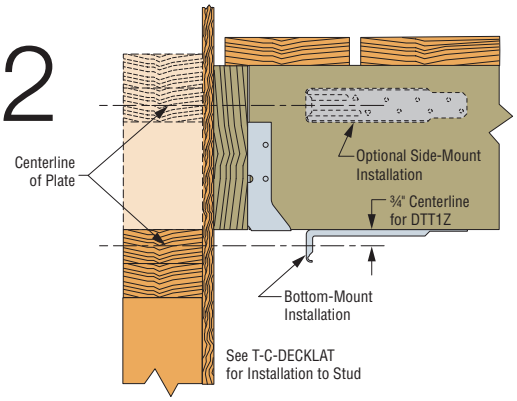
1



Layout:

Determine the horizontal locations of the installations. A minimum of four DTT1Z deck tension ties must be evenly distributed along the deck with one DTT1Z within two feet of each end of the ledger.

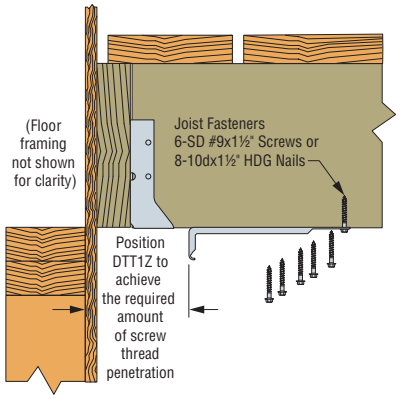
2



Location:

Determine the vertical locations of the installations. The DTT1Z tension tie must be fastened into the center of the top plate, studs or header (siding may need to be removed and exploratory holes may be needed). Ensure location is free of piping, wiring, ductwork, or other obstructions. In some cases, structural blocking fastened to the deck joists may be required to position the DTT1Z in the proper location. For additional information, refer to the technical bulletin T-C-DECKLAT at www.strongtie.com.

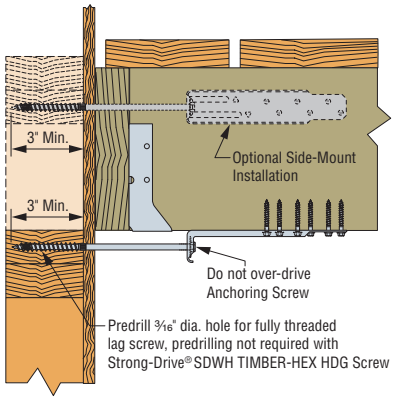
3



Joist Fasteners:

Position the DTT1Z on the deck joist in a location that provides a minimum of 3" of thread penetration of the anchoring screw into the top plate, studs or header. Using a low-torque wrench, fasten the DTT1Z to the deck joist with the required fasteners (6 - #9x1½" Strong-Drive® SD Connector screws or 8-10dx1½" HDG nails).

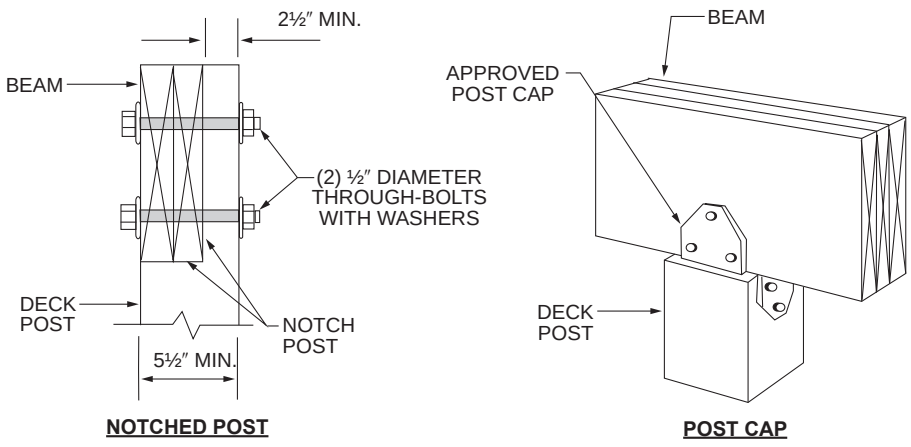
4



Anchoring Screw:

Install anchoring screw through the hole of the DTT1Z and into the center of the top plate, studs or header with a minimum of 3" of thread penetration and snug to the base of DTT1Z. Do not over-drive. Simpson Strong-Tie Strong-Drive® SDWH Timber-Hex HDG screws do not require predrilling or a washer. A ⅜" lag screw anchor can also be used but requires predrilled holes and a standard ⅜" washer.

Note: The details above are applicable where floor joists are parallel to deck joists per IRC figure R507.2.3 (2).



For SI: 1 inch = 25.4 mm.

FIGURE R507.7.1
DECK BEAM TO DECK POST

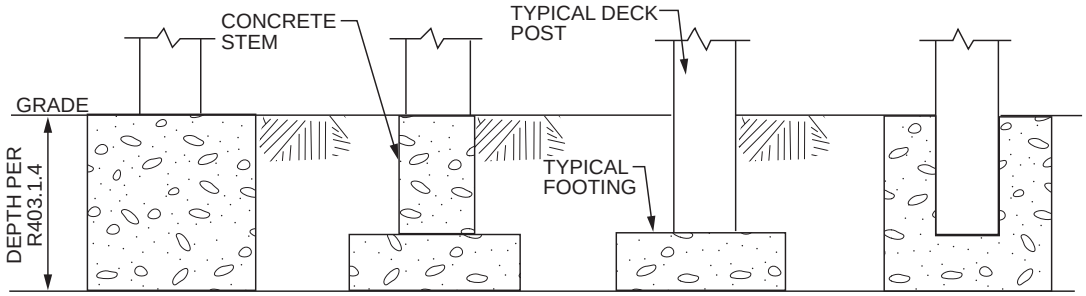


FIGURE R507.8.1
TYPICAL DECK POSTS TO DECK FOOTINGS

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The following resource materials were used in the preparation of the commentary for this chapter of the code:

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