DECK PERMIT HANDOUT

This handout is intended only as a guide and is based in part on the [illegible] Minnesota State Building Code, Albertville City ordinances and good building practices. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the applicable codes or contact your local Building Department.

The following are examples of information that should be included on plans submitted for building permits for residential decks. They are **examples only** and should not be construed as being code complete for every application. It is the responsibility of the homeowner or person preparing the plans to show in detail how they will build their deck. Some designs may require more detail than others.

Your deck plans should reflect exactly how you will build your deck. We will review your plans before we issue the building permit to identify code violations before you start work. The more detailed your plans, the more likely you avoid corrections in the field.

When you receive your permit, you will also be given one set of plans stamped "Approved". Once your plans are approved, you should not change your design without approval by the Albertville Building Department. **You should read through the approved plans to determine if the plan reviewer noted any corrections to your plan.** If you have any questions regarding any of the corrections, you should contact us before proceeding.

Plans created at home centers are not acceptable for plan review. These computer designs do not allow homeowners to duplicate conditions at their home. Applications submitted with these types of plans will be returned to the applicant.

REQUIRED INFORMATION WHEN APPLYING FOR A PERMIT: We will not accept computer generated plans from retail home centers as they are materials lists for estimating purposes only. Deck plans shall be site specific to your property.

A. Submit 2 copies of a Certificate of Survey or 2 Copies of a plot plan drawn to scale indicating the lot dimensions, the location and ground coverage area of existing structure(s), and the location and area of the proposed structure. Indicate the setbacks from property lines.
B. Submit 2 copies of drawings showing proposed designs and materials. Drawings shall be drawn to scale and shall include the following information.
C. Floor Plans shall include the following:
   - Indicate proposed deck size.
   - Indicate size and spacing of floor joists.
   - Indicate size, location, and spacing of posts.
   - Indicate size of headers/beams.
D. Cross Section of either a rear of side view shall include the following:
   - Diameter and depth of footings.
   - Size of posts.
   - Header size supporting floor joists.
   - Floor joists size and spacing.
   - Flooring material.
   - Guardrail height (if any).
   - Type of lumber to be used.
   - Provide detail of beam to post connection, deck ledger connection, and stairway rise and run (see attached samples 1, 2, and 3).

CHECKLIST TO SUBMIT WITH DECK PERMIT APPLICATION

Please fill in each question and return with deck application.

1. Proposed size of deck _____
2. Height of deck from grade _____
3. Size and spacing of floor joists _____
4. Size of beam(s) _____
5. Type of decking material _____
6. Size of posts _____
7. Spacing between posts _____
8. Type of lumber using _____
9. Diameter of footings _____
10. Size of bell at bottom of footings _____
11. Height of guardrail _____
12. Copy of lot survey with proposed deck drawn to scale indicating location. ☐

RESIDENTIAL DECKS
Information Sheet

Building Permits — Permits are required for any deck attached to your home. Check with the building and zoning department for any detached decks.

Setbacks — Building code and zoning requirements apply. Contact the zoning department for setback requirements for your property.

Frost Footings — Required for any deck attached to an existing dwelling, porch or garage that has frost footings. The minimum depth to the base of the footing is 42". See frost depth rules in the Minnesota State Building Code.

Live Load — All decks shall be designed to support a live load of 40 pounds per square foot.

Guards — Required on all decks more than 30 inches above grade or a lower deck. Rail shall be 36 inches minimum in height. Guardrails must have intermediate rails or an ornamental pattern that a 4" sphere cannot pass through, stair railings must have 4 3/8" spacing. The triangular openings formed by the riser, tread and bottom element of a guard may be sized so that a 6 inch sphere cannot pass through.

Cantilevers "Overhanging Joists and Beams" — Joists shall not overhang beams by more than two feet, nor shall beams overhang posts by more than one foot unless a special design is approved.

Flashing — All connections between deck and dwelling shall be weatherproof. Any cuts in exterior finish shall be flashed.

Framing Details — Header beams and joists that frame into ledgers or beams shall be supported by approved framing anchors such as joist hangers.

Nails and Screws — Use only stainless steel, high strength aluminum or hot-dipped galvanized.

Wood Required — All exposed wood used in the construction of decks is required to be of approved wood of natural resistance to decay (redwood, cedar, etc.) or approved treated wood. This includes posts, beams, joists, decking and railings.

Stairs — Minimum width is 36 inches. Maximum rise is 7 3/4 inches, minimum rise is 4 inches. Minimum run is 10 inches. Largest tread width or riser height shall not exceed the smallest by more than 3/8 inch within any flight of stairs.

All interior and exterior stairways shall be provided with a means to illuminate the stairs, including the landings and treads. Interior stairways shall be provided with an artificial light source located in the immediate vicinity of each landing of the stairway. Exterior stairways shall be provided with an artificial light source located in the immediate vicinity of the top landing of the stairway. Exterior stairways providing access to a basement from the outside grade level shall be provided with an artificial light source located in the immediate vicinity of the bottom landing of the stairway. The illumination of exterior stairs shall be controlled from inside the dwelling unit.

Handrails — The top shall be placed not less than 34 inches or more than 38 inches above the nosing of the treads. Stairways having four or more risers shall have at least one handrail. Handrail ends shall be returned or terminated in posts. The hand grips shall not be less than 1 ¼ inches or more than 2 inches in cross-sectional dimension or the shape shall provide an equivalent gripping surface. The handgrip shall have a smooth surface with no sharp corners.

Special — Some deck designs **may not** be appropriate should the placement of a screen porch or 3-season porch on the deck platform be a future consideration.

Beam and Footing Sizes

Based on No. 2 or better Ponderosa Pine and Southern Pine
(treated for weather and/or ground exposure)

JOIST LENGTH			Post Spacing										
			4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
	6'	Southern Pine Ponderosa Pine	1-2x6 1-2x6	1-2x6 1-2x6	1-2x6 1-2x8	2-2x6 2-2x8	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x12	2-2x10 2-2x12	2-2x10 3-2x10
		Corner Footing Intermediate Footing	6 5 4 9 8 7	7 6 5 10 8 7	7 6 5 10 9 7	8 7 5 11 9 8	9 7 6 12 10 9	9 7 6 13 10 9	10 8 7 14 11 10	10 8 7 14 12 10	10 9 7 15 12 10	11 9 8 15 13 11	11 9 8 16 13 11
	7'	Southern Pine Ponderosa Pine	1-2x6 1-2x6	1-2x6 1-2x6	1-2x6 1-2x8	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x10	2-2x10 2-2x12	2-2x10 3-2x10	2-2x12 3-2x10
		Corner Footing Intermediate Footing	7 5 5 9 8 7	7 6 5 10 8 7	8 7 6 11 9 8	9 7 6 12 10 9	9 8 7 13 11 9	10 8 7 14 11 10	10 8 7 15 12 10	11 9 8 15 13 11	11 9 8 16 13 11	12 10 9 17 14 12	12 10 9 17 14 12
	8'	Southern Pine Ponderosa Pine	1-2x6 1-2x6	1-2x6 2-2x6	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x10	2-2x10 3-2x10	2-2x12 3-2x10	2-2x12 3-2x12
		Corner Footing Intermediate Footing	7 6 5 10 8 7	8 6 6 11 9 8	9 7 6 12 10 9	9 8 7 13 11 9	10 8 7 14 11 10	10 8 7 15 12 10	11 9 8 16 13 11	11 9 8 16 13 12	12 10 9 17 14 12	13 10 9 18 15 13	13 11 9 18 15 13
	9'	Southern Pine Ponderosa Pine	1-2x6 1-2x6	1-2x6 2-2x6	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x10	2-2x10 3-2x10	2-2x12 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12
		Corner Footing Intermediate Footing	7 6 5 10 9 7	8 7 6 12 10 8	9 7 6 13 10 9	10 8 7 14 11 10	10 9 7 15 12 10	11 9 8 16 13 11	12 10 8 17 14 12	12 10 9 17 14 12	13 10 9 18 15 13	13 11 9 19 15 13	14 11 10 20 16 14
	10'	Southern Pine Ponderosa Pine	1-2x6 1-2x6	1-2x6 1-2x6	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x12	2-2x12 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12	3-2x10 Eng Bm
		Corner Footing Intermediate Footing	8 6 6 11 9 8	9 7 6 12 10 9	10 8 7 14 11 10	10 8 7 15 12 10	11 9 8 16 13 11	12 10 8 17 14 12	12 10 9 17 14 12	13 11 9 18 15 13	14 11 10 19 16 14	14 12 10 20 16 14	15 12 10 21 17 15
	11'	Southern Pine Ponderosa Pine	1-2x6 2-2x6	2-2x6 2-2x6	2-2x6 2-2x8	2-2x8 2-2x8	2-2x8 2-2x10	2-2x10 2-2x12	2-2x10 2-2x12	2-2x12 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12	3-2x12 Eng Bm
		Corner Footing Intermediate Footing	8 7 6 12 9 8	9 7 6 13 11 9	10 8 7 14 12 10	11 9 8 15 12 10	12 9 8 16 13 11	12 10 9 17 14 12	13 11 9 17 14 12	14 11 10 18 15 13	14 12 10 19 16 14	15 12 10 20 16 14	15 13 11 21 17 15
	12'	Southern Pine Ponderosa Pine	1-2x6 2-2x6	2-2x6 2-2x6	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 2-2x12	2-2x10 2-2x12	2-2x12 3-2x12	3-2x10 3-2x12	3-2x10 Eng Bm	3-2x12 Eng Bm
		Corner Footing Intermediate Footing	9 7 6 12 10 9	10 8 7 14 11 10	10 9 7 15 12 10	11 9 8 16 13 11	12 10 9 17 14 12	13 10 9 18 15 13	14 11 10 19 16 14	14 12 10 20 16 14	15 12 10 21 17 15	15 13 11 22 18 15	16 13 11 23 18 16
	13'	Southern Pine Ponderosa Pine	1-2x6 2-2x6	2-2x6 2-2x6	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x12	2-2x10 2-2x12	2-2x10 3-2x12	2-2x12 3-2x12	3-2x10 3-2x12	3-2x12 Eng Bm	3-2x12 Eng Bm
		Corner Footing Intermediate Footing	9 7 6 13 10 9	10 8 7 14 12 10	11 9 3 15 13 11	12 10 8 17 14 12	13 10 9 18 15 13	13 11 9 19 15 13	14 12 10 20 16 14	15 12 10 21 17 15	15 13 11 22 18 15	16 13 11 23 19 16	17 14 12 24 19 17
	14'	Southern Pine Ponderosa Pine	1-2x6 2-2x6	2-2x6 2-2x8	2-2x6 2-2x8	2-2x8 2-2x10	2-2x10 2-2x12	2-2x10 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12	3-2x12 Eng Bm	3-2x12 Eng Bm	3-2x12 Eng Bm
		Corner Footing Intermediate Footing	9 8 7 13 11 9	10 8 7 15 12 10	11 9 8 16 13 11	12 10 9 17 14 12	13 11 9 18 15 13	14 11 10 20 16 14	15 12 10 21 17 15	15 13 11 22 18 15	16 13 11 23 18 16	17 14 12 24 19 17	17 14 12 24 20 17
	15'	Southern Pine Ponderosa Pine	2-2x6 2-2x6	2-2x6 2-2x8	2-2x8 2-2x8	2-2x8 2-2x10	2-2x10 3-2x10	2-2x12 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12	3-2x12 Eng Bm	3-2x12 Eng Bm	Eng Bm Eng Bm
		Corner Footing Intermediate Footing	10 8 7 14 11 10	11 9 8 15 12 11	12 10 8 17 14 12	13 10 9 18 15 13	14 11 10 19 16 14	14 12 10 20 17 14	15 12 11 21 17 15	16 13 11 22 18 16	17 14 12 23 19 17	17 14 12 24 20 17	18 15 13 25 21 18
	16'	Southern Pine Ponderosa Pine	2-2x6 2-2x6	2-2x6 2-2x8	2-2x8 2-2x10	2-2x8 2-2x10	2-2x10 3-2x10	2-2x12 3-2x10	2-2x12 3-2x12	3-2x10 3-2x12	3-2x12 Eng Bm	3-2x12 Eng Bm	Eng Bm Eng Bm
		Corner Footing Intermediate Footing	10 8 7 14 11 10	11 9 8 15 13 11	12 10 9 17 14 12	13 11 9 18 15 13	14 11 10 20 16 14	15 12 10 21 17 15	15 13 11 22 18 16	16 13 12 23 19 16	17 14 12 24 20 17	18 15 13 25 21 18	18 15 13 25 21 18

Notes:

1. Joist length is total length of joist, including any cantilevers.
2. When joist extends (cantilevers) beyond support beam by 18" or more, add 1" to footing dimensions shown.
3. Requirements for future 3-season porches or screen porches:
   a. Increase corner footing size shown by 90%.
   b. Increase center footing size shown by 55%.
   c. Locate all footings at extremities of deck (no cantilevers).
   d. Beam sizes indicated need not be altered.
4. All footing sizes above are base diameters (in inches) and are listed for THREE SOIL TYPES (see right)

Clay
Sand
Gravel

Corner Footing	10 8 7
Intermediate Footing	14 11 10

REVISION DATE 05/20/2019

JOIST SPAN TABLE

Joist Sizes									
	Ponderosa Pine			Southern Pine			Western Cedar		
Joist Size	**12" oc**	**16" oc**	**24" oc**	**12" oc**	**16" oc**	**24" oc**	**12" oc**	**16" oc**	**24" oc**
2x6	9-2	8-4	7-0	10-9	9-9	8-6	9-2	8-4	7-3
2x8	12-1	10-10	8-10	14-2	12-10	11-0	12-1	11-0	9-2
2x10	15-4	13-3	10-10	18-0	16-1	13-5	15-5	13-9	11-3
2x12	17-9	15-5	12-7	21-9	19-0	15-4	18-5	16-0	13-0

BEAM SPAN TABLE

Joist Length		Post Spacing										
		4'	**5'**	**6'**	**7'**	**8'**	**9'**	**10'**	**11'**	**12'**	**13'**	**14'**
6'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2X10**
	Ponderosa Pine Beam	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**2-2x12**	**3-2X10**
7'	Southern Pine Beam	2-2x6	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2X12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2X10
8'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**2-2X12**
	Ponderosa Pine Beam	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x10**	**3-2x10**	**3-2x10**	**3-2X12**
9'	Southern Pine Beam	2-2x6	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2X10
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2X12
10'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**3-2x10**	**3-2X10**
	Ponderosa Pine Beam	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**3-2x10**	**3-2x12**	**3-2x12**	**ENG BM**
11'	Southern Pine Beam	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2X12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	3-2x12	ENG BM
12'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**3-2x10**	**3-2x10**	**3-2X12**
	Ponderosa Pine Beam	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**2-2x12**	**3-2x12**	**3-2x12**	**ENG BM**	**ENG BM**
13'	Southern Pine Beam	2-2x6	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2X12	3-2X12
	Ponderosa Pine Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	ENG BM	ENG BM
14'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x10**	**2-2x10**	**2-2x12**	**2-2x12**	**3-2x12**	**3-2X12**	**3-2X12**
	Ponderosa Pine Beam	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x10**	**2-2x12**	**3-2x10**	**3-2x12**	**3-2x12**	**ENG BM**	**ENG BM**	**ENG BM**
15'	Southern Pine Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2X12	ENG BM
	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	ENG BM	ENG BM	ENG BM
16'	**Southern Pine Beam**	**2-2x6**	**2-2x6**	**2-2x8**	**2-2x8**	**2-2x10**	**2-2x12**	**2-2x12**	**3-2x10**	**3-2x12**	**3-2X12**	**ENG BM**
	Ponderosa Pine Beam	**2-2x6**	**2-2x8**	**2-2x10**	**2-2x10**	**3-2x10**	**3-2x10**	**3-2x12**	**3-2x12**	**ENG BM**	**ENG BM**	**ENG BM**

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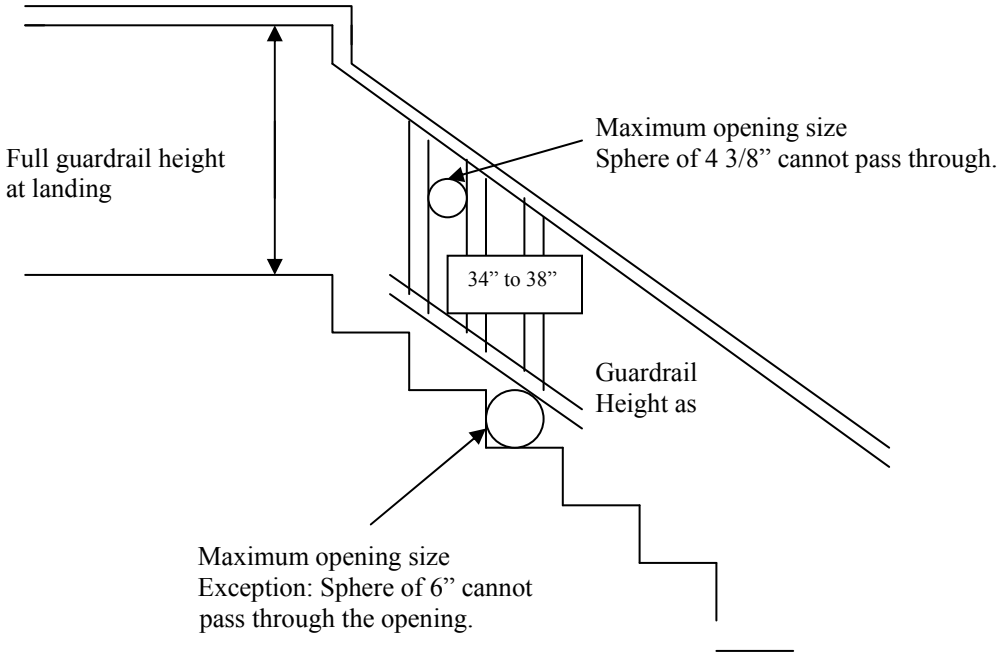
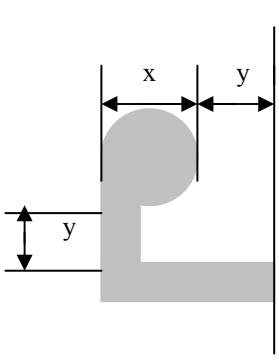
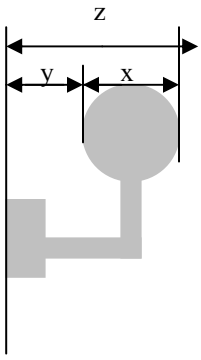
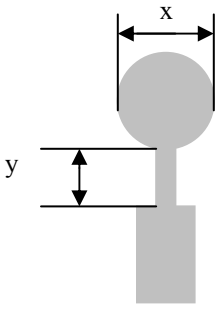
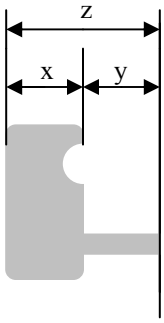


x = 1 ¼” min, 2” max. y = 1 ½” min z = 3 ½” max.









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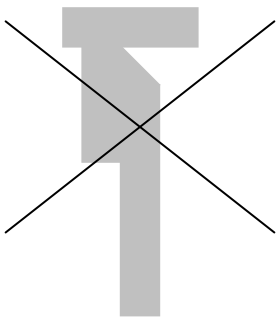

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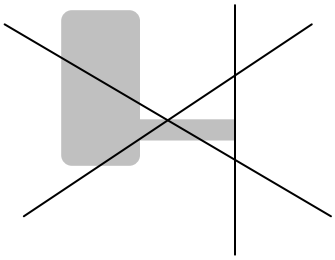
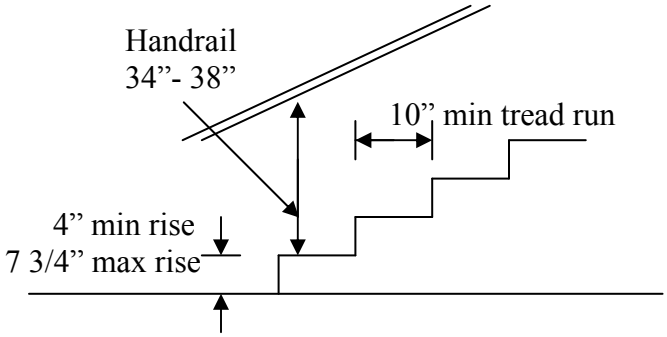
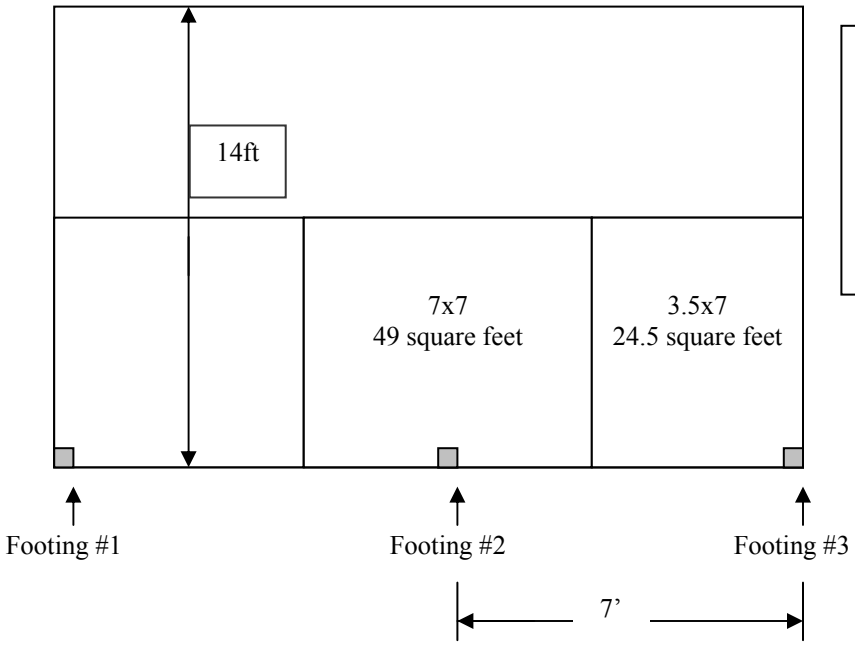


Measured from stairway
front edge of nosing

Handrail shall be made continuous.
(See information sheet)



Open risers are permitted, provided that the opening between treads does not permit the passage of a 4-inch diameter sphere.



Assumed Allowable Foundation Pressure = 2000 lbs/ sq. ft.

Floor Load = 40 lbs/ sq. ft.

Example Calculation

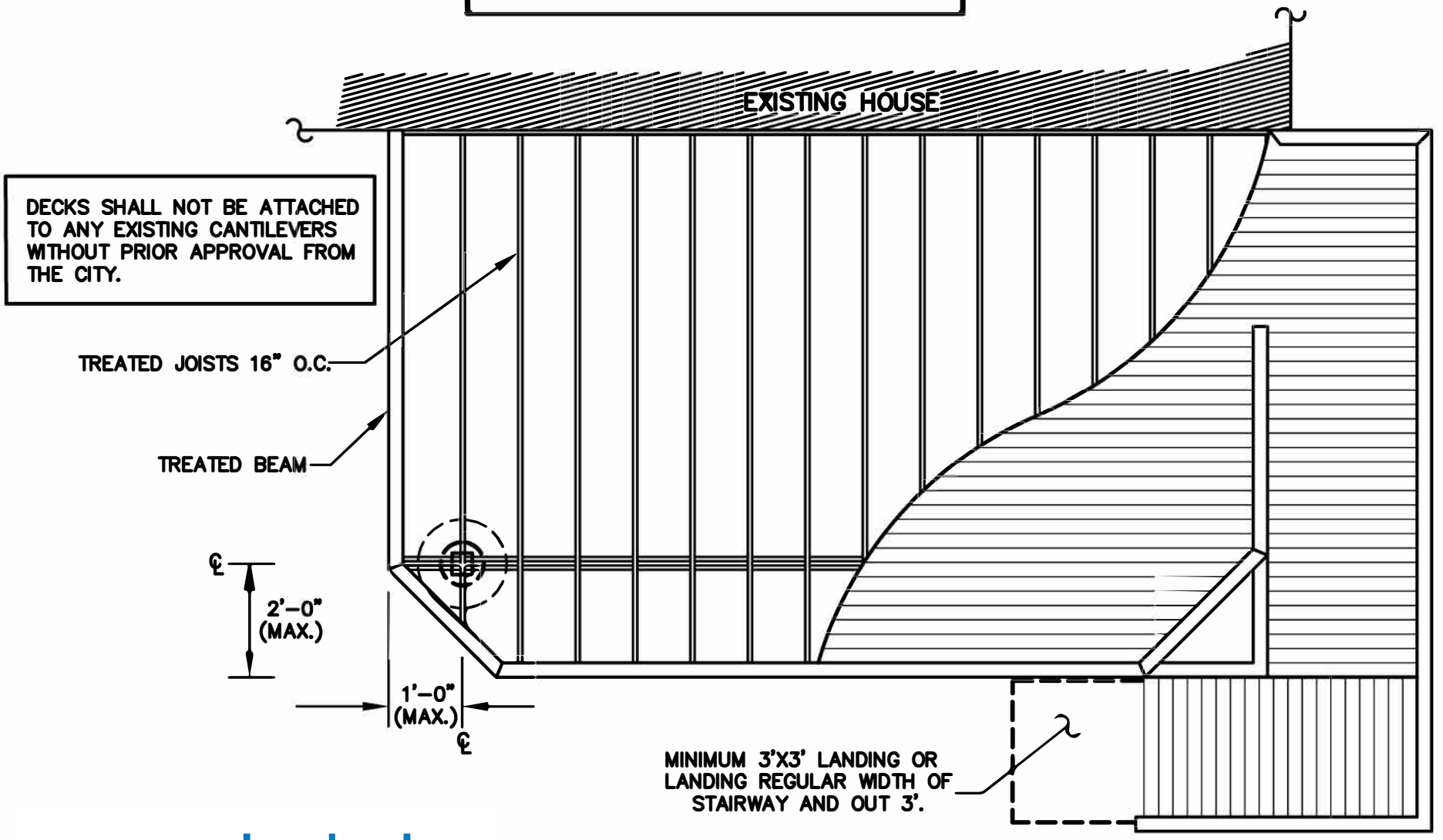
Footing 1 and 3

Circle
24.5 sq. ft x 40 = 980 lbs
980 ÷ 2000 lbs = .49 sq ft area
.49 ÷ 3.14 = .156
√ .156 = .395
.395 ÷ .083 = 4.758 x 2 = 9.5”
= 10” diameter

Footing 2

Circle
49 sq ft x 40 = 1960 lbs
1960 ÷ 2000 lbs = .98 sq ft area
.98 ÷ 3.14 = .313
√ .312 = .56
.56 ÷ 0.083 = 6.75 x 2 = 13.49”
=13” diameter

CITY EXAMPLE PLAN

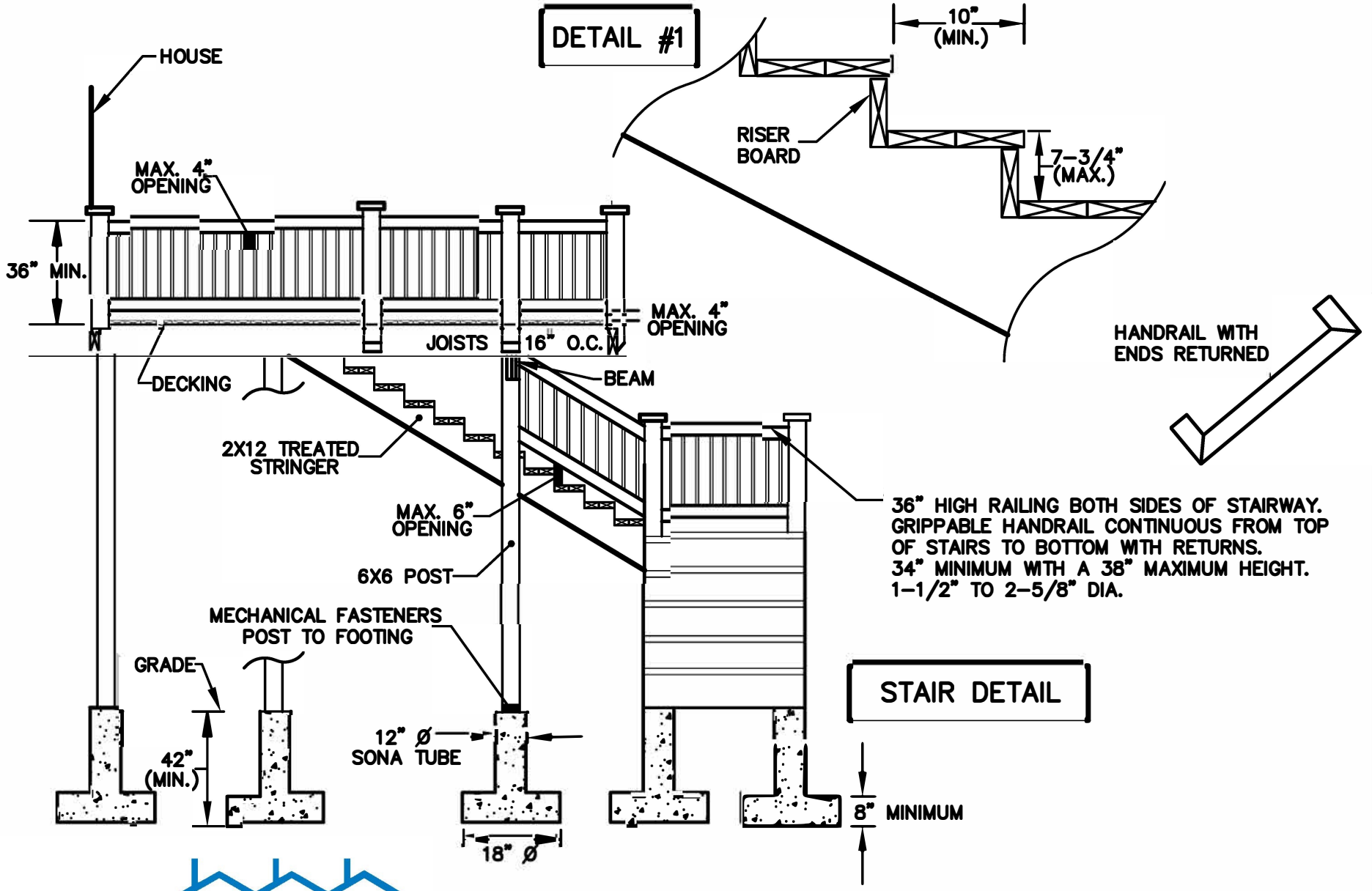


Albertville

STAIRWAY ILLUMINATION SHALL BE REQUIRED.

ALL DRAWINGS MUST BE TO SCALE.

REVISION DATE 05/20/2019



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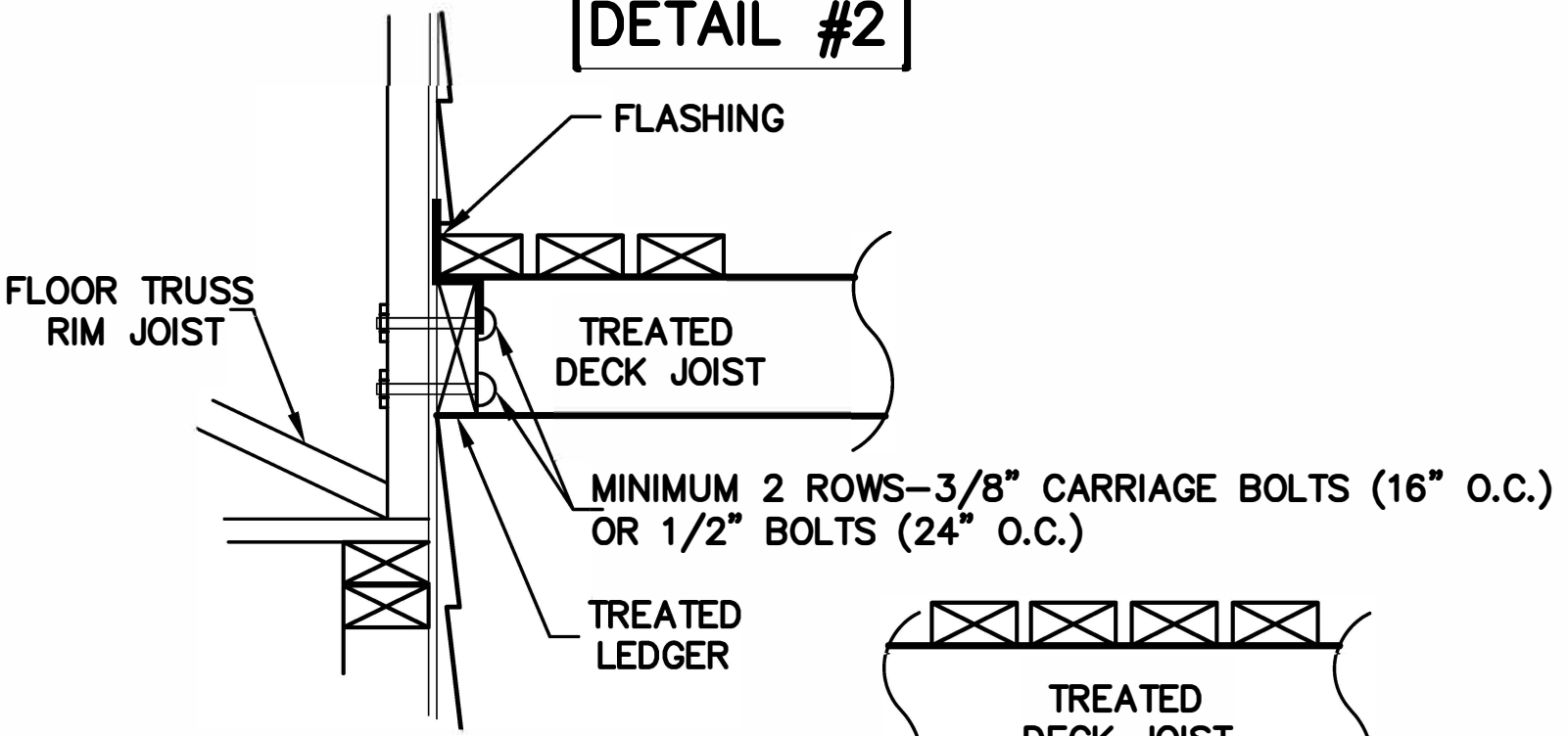
DETAIL #2



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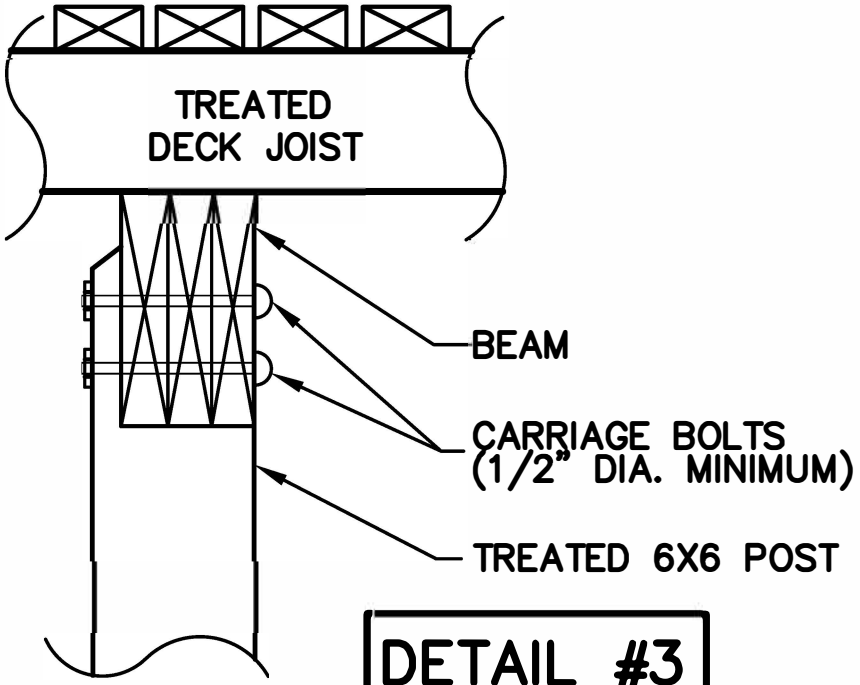


DETAIL #3

REVISION DATE 05/20/2019

in accordance with ASTM D 7032. Plastic or composite handrails and guards, or their packaging, shall bear a label that indicates compliance to ASTM D 7032 and includes the maximum allowable span determined in accordance with ASTM D 7032.

R507.3.2 Flame spread index. Plastic composite deck boards, stair treads, guards, and handrails shall exhibit a flame spread index not exceeding 200 when tested in accordance with ASTM E 84 or UL 723 with the test specimen remaining in place during the test.

Exception: Plastic composites determined to be noncombustible.

R507.3.3 Decay resistance. Plastic composite deck boards, stair treads, guards and handrails containing wood, cellulosic or other biodegradable materials shall be decay resistant in accordance with ASTM D 7032.

R507.3.4 Termite resistance. Where required by Section 318, plastic composite deck boards, stair treads, guards and handrails containing wood, cellulosic or other biodegradable materials shall be termite resistant in accordance with ASTM D 7032.

507.3.5 Installation of plastic composites. Plastic composite deck boards, stair treads, guards and handrails shall be installed in accordance with this code and the manufacturer's instructions.

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)

CONNECTION DETAILS	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′
	On-center spacing of fasteners						
1/2-inch diameter lag screw with 1/2-inch maximum sheathing[c, d]	30	23	18	15	13	11	10
1/2-inch diameter bolt with 1/2-inch maximum sheathing[d]	36	36	34	29	24	21	19
1/2-inch diameter bolt with 1-inch maximum sheathing[e]	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. Ledgers shall be flashed in accordance with Section R703.8 to prevent water from contacting the house band joist.

b. Snow load shall not be assumed to act concurrently with live load.

c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.

d. Sheathing shall be wood structural panel or solid sawn lumber.

e. Sheathing shall be permitted to be wood structural panel, gypsum board, fiberboard, lumber or foam sheathing. Up to 1/2-inch thickness of stacked washers shall be permitted to substitute for up to 1/2 inch of allowable sheathing thickness where combined with wood structural panel or lumber sheathing.

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]	1 5/8 inches[b]
Band Joist[c]	3/4 inch	2 inches	2 inches[b]	1 5/8 inches[b]

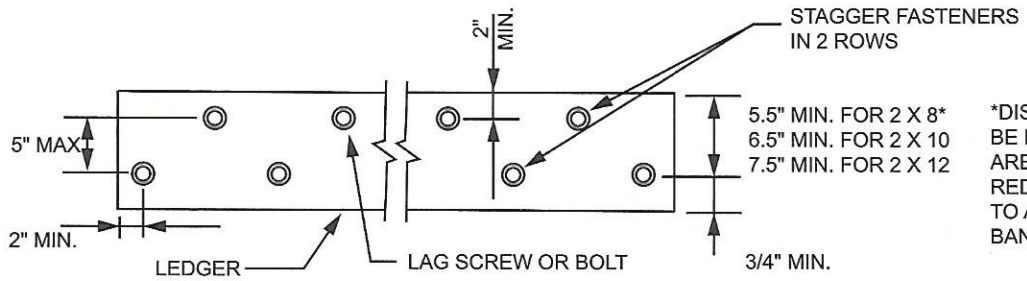
For SI: 1 inch = 25.4 mm.

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.

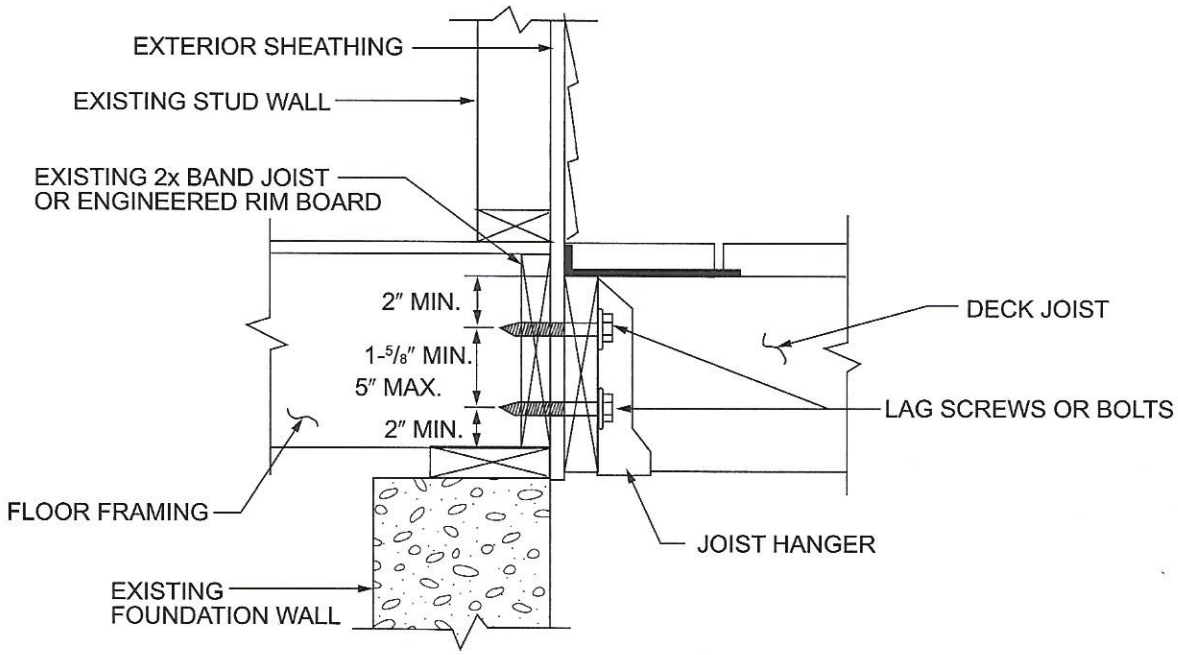
c. For engineered rim joists, the manufacturer's recommendations shall govern.

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).



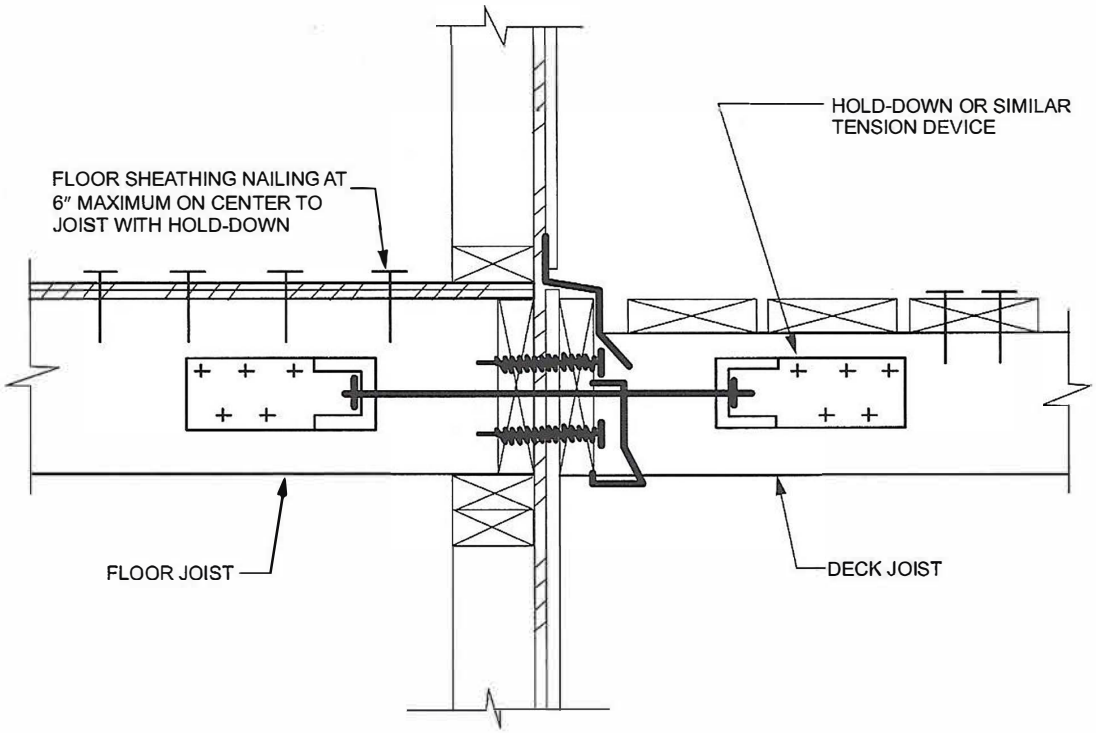
For SI: 1 inch = 25.4 mm.

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



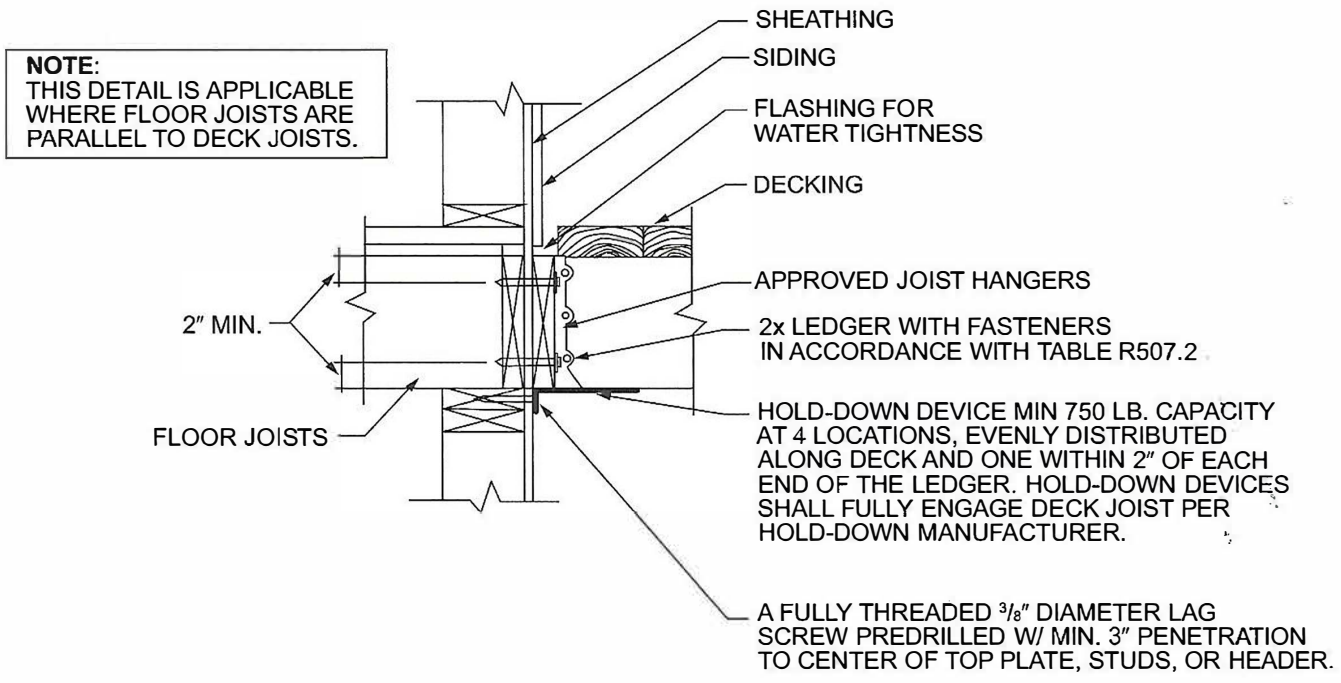
For SI: 1 inch = 25.4 mm.

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



For SI: 1 inch = 25.4 mm.

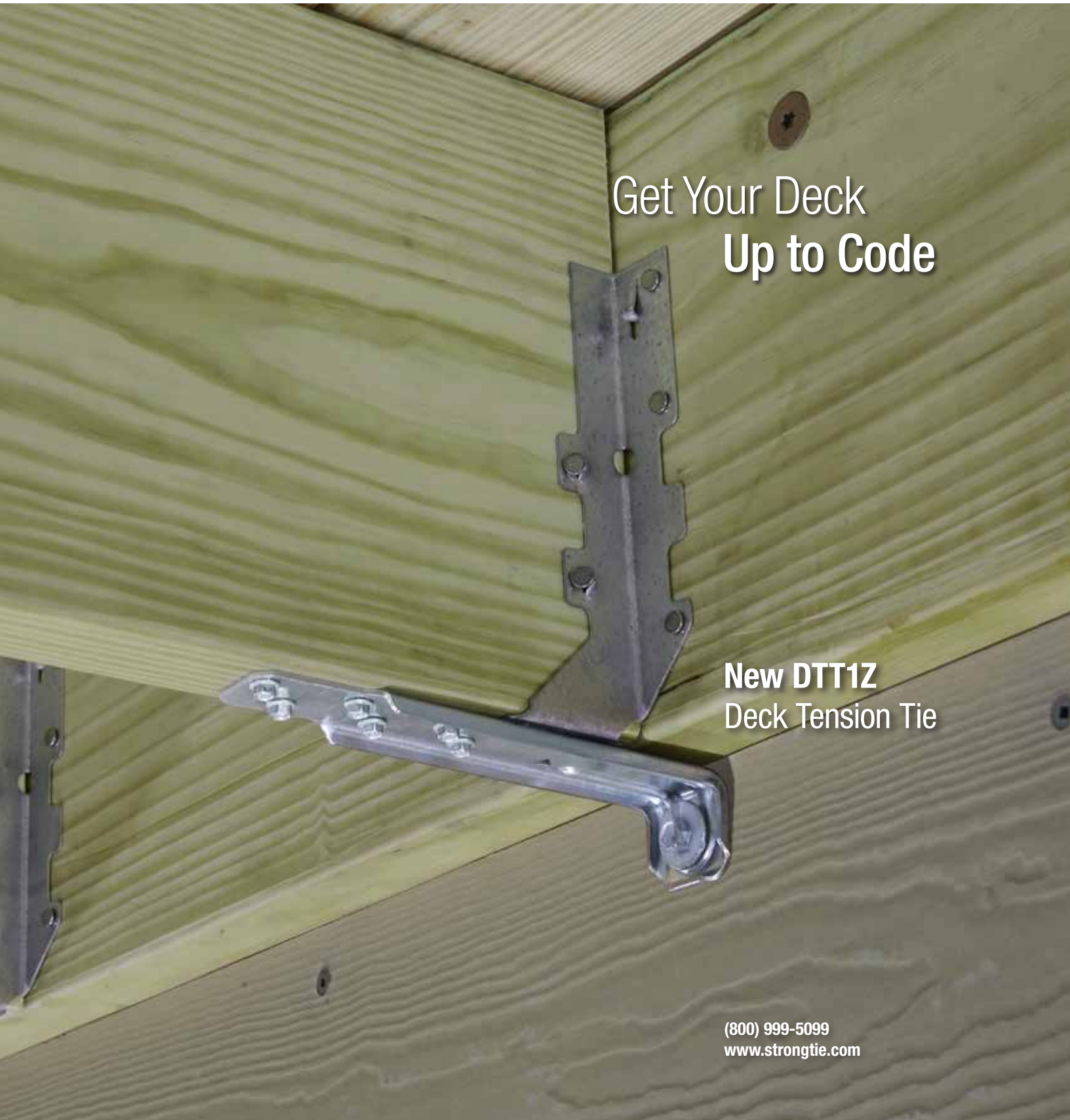
FIGURE 507.2.3(1)
DECK ATTACHMENT FOR LATERAL LOADS



For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm.

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

®



Get Your Deck **Up to Code**

New DTT1Z
Deck Tension Tie

(800) 999-5099
www.strongtie.com

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:

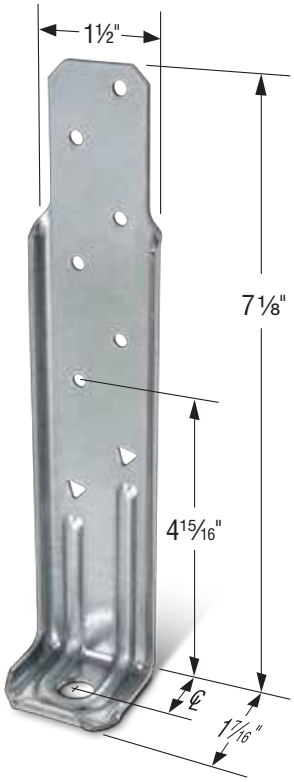
- #9x1½" Strong-Drive® SD Connector Screw
- 10dx1½" HDG nail

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

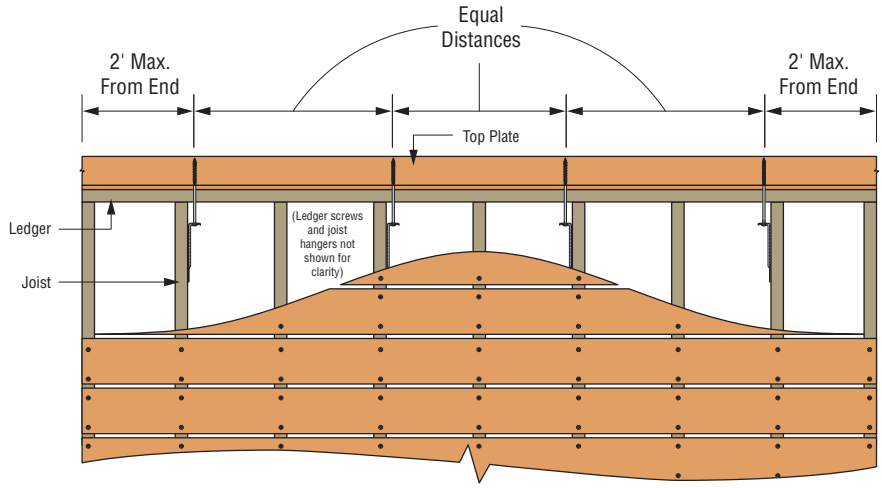
1. Allowable loads have been increased 60% for wind or earthquake loading with no further increase allowed.
2. Dry values are applicable to installations into wood with a moisture content that does not exceed 19%.
3. Wet values are applicable to installations into wood with a moisture content greater 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

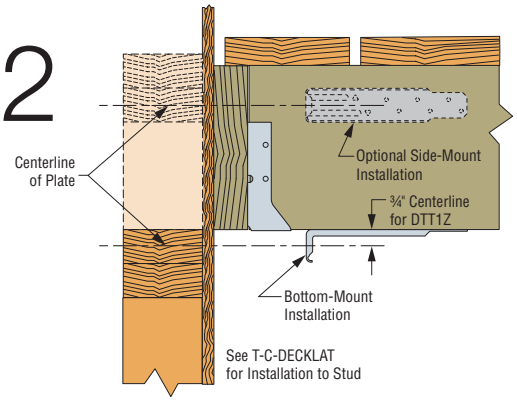
1



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.

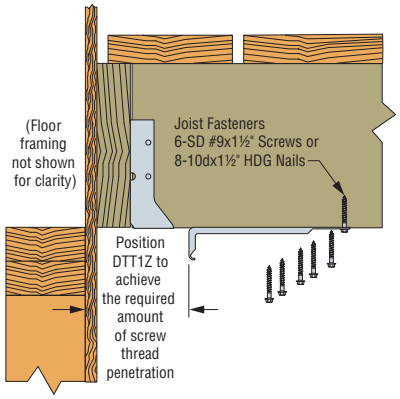
2



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.

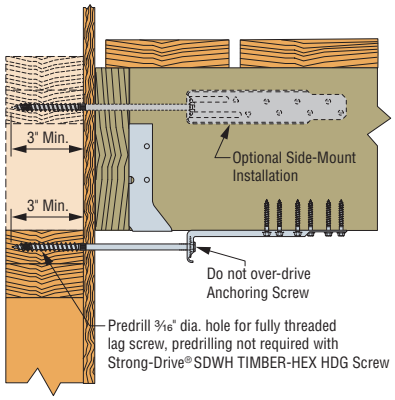
3



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.

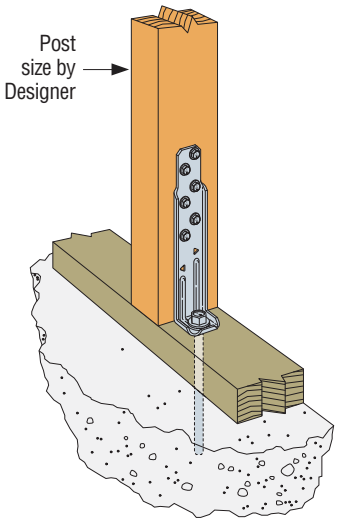
Note: The details above are applicable where floor joists are parallel to deck joists per IRC figure R507.2.3 (2).

Wall Bracing and Shearwalls

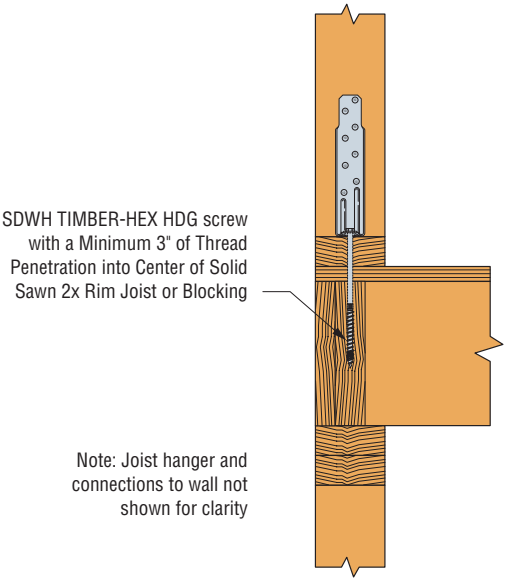
DTT1Z as a Holdown

The 14-gauge DTT1Z has the versatility to be installed and load-rated as a holdown for light-duty shearwalls and may satisfiy the 800 lbs. holdown requirement for some braced wall-panel applications.

For additional information about the DTT1Z in a wall-bracing application, refer to the technical bulletin T-WALLBRACE at www.strongtie.com.



DTT1Z installed with a Titen HD® screw anchor through a sill plate. (6) Strong-Drive® SD Connector screws are attached to the stud.



DTT1Z shown with a Strong-Drive® SDWH Timber-Hex HDG screw to floor framing below (wall bracing application only).

Know What You Need for Decks

Our Deck Connection and Fastening Guide

When building or remodeling your deck, make sure it's done right. You'll need special hardware (connectors, nails and screws) that meets your local building code and is rated for outdoor use. Look to Simpson Strong-Tie for all your deck and outdoor hardware solutions. Take the time to learn how to make your deck safe and strong. To download our free *Deck Connection and Fastening Guide*, visit www.strongtie.com/deckcenter, or use our free Literature Library mobile app at the Apple App Store or Google Play!

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BUILDING PERMIT APPLICATION

5959 Main Avenue NE
Albertville, MN 55301
Phone: 763.497.3384 Fax 763.497.3210

Date Received _____
Date Notified _____
Date Paid _____
Ck, Cash, CC _____
Permit # _____

Site Address: _____
Business Name: _____
The Applicant is: _____ Owner _____ Contractor _____ Tenant

Legal Description: PID #_____
Addition _____ Lot _____ Block _____

Owner:
Name _____ Address _____

City _____ State_____ Zip_____

Email_____

Phone (H) _____(W)_____(C) _____

Contractor:
Company Name _____License # _____

Address _____City _____ St_____ Zip_____

Contact Person _____ Email_____

Phone: (W) _____(C) _____(Fax) _____

Architect:
Name _____Address _____

City _____State_____ Zip_____

E-Mail_____

Phone (W) _____(C) _____(Fax) _____

Type of Work:

☐ New Construction Residential	☐ Addition	☐ Alteration	☐ Finish Bsmt
☐ New Construction Commercial	☐ Garage/Shed	☐ Reside/Reroof	☐ Fireplace
☐ Tenant Finish	☐ Plbg	☐ Htg	☐ Deck

Description of Work: _____
_____

Size of Structure:
Length _____
Width _____
Height _____

Total Square Footage:
First Floor _____
Second Floor _____
Basement _____
Garage _____

Estimated Valuation of Work: $_____

Separate permits are required for electrical, plumbing, heating or fireplace. I hereby apply for the above consideration and declare that the information and materials submitted with this application are in compliance with City Ordinance and Policy Requirements and are complete and accurate to the best of my knowledge. It is applicants responsibility to locate and establish the elevations, if needed, of all site improvements. Required adjustments at owners expense. I understand that all City incurred professional fees and expenses associated with the processing of this request are the responsibility of the property owner and/or applicant and will be promptly paid. If payment is not received from the applicant, the property owner acknowledges and agrees to be responsible.

_____ _____ _____
Applicants Signature | Applicants Printed Name | Date

_____ _____ _____
Approved by Building Official | Value Approved | Date

Special Conditions or Comments: _____

BUILDING PERMIT FEES

Permit	_____
Surcharge	_____
Plan Check	_____
Engineering (site)	_____
Mechanical	_____
Fireplace (s)	_____
Plumbing	_____
Sewer	_____
Water	_____
Water Meter	_____
City WAC	_____
JP WAC	_____
SAC	_____
Storm Water	_____
License Check	_____
Other	_____
TOTAL	_____

Type of Const.	_____
Use of Bldg	_____
Occupancy Group	_____
Occupancy Load	_____
Zoning	_____
Code Used	_____

Are Fire Sprinklers Required?
☐ Yes ☐ No

	Date	Approved
Fire Dept.	_____	_____
City Engineer	_____	_____
Notify of Assoc & Covenant	_____	_____
Public Works	_____	_____
City Planner	_____	_____