



City of Duluth
Construction Services & Inspections Division

411 West First Street • Room 210 • Duluth, Minnesota • 55802-1194
218-730-5300 • Fax: 218-730-5901 • www.duluthmn.gov/onestop/

An Equal Opportunity Employer

Residential Decks

One and Two Family Dwellings Including Townhouses

Building Permits: A permit is required if the deck is attached to the dwelling or is 30 inches (or more) above grade. A building permit application must be completed and submitted to Construction Services. Allow a minimum of 3 business days for review of the plans. You will be contacted when the building permit is ready to be issued. Cost of the permit is based upon the size of the deck. With your permit you will receive a copy of your approved plan. Please be aware that if you later decide to make changes to your plan, these changes must also be approved.

A Permit Application Checklist outlining all application requirements is provided within this handout (2nd page from back) and must be completed and submitted with your application. See pages within for sample Site Plans, Ledger Connection, Lateral Load Connection, Framing / Foundation Plan and Standard Details.

Setbacks: Always site specific. Check with Construction Services (730-5240) for your project.

Loads: All decks shall be designed to support a live load (people, furniture, grills, etc.) of 40 lbs per square foot, and a dead load (wood, decking, etc.) of 10 lbs per square foot (R301.4, R301.5).

Joists and Beams: See *JOIST SPAN* table for minimum joist size and spacing requirements. See *BEAM AND FOOTING SIZES* table for beam size and footing requirements. Ask your lumber supplier about species and grade.

Cantilevers: Joists shall not overhang beams by more than 2 feet, and beams must not overhang posts by more than 1 foot unless a special design is approved.

Cantilever Attachment: Decks shall not be supported by cantilevers extending from the primary structure or from another deck.

Ledger Attachment: Different loads require different attachment. Please refer to the *LEDGER ATTACHMENT REQUIREMENTS* provided in this hand-out.

Deck Lateral Load Connection: A minimum of two lateral load connections are required per deck. The intention of the lateral load connection is to tie the deck and ledger into the residence's floor system. Please refer to the *DECK LATERAL LOAD CONNECTION* requirements provided in this handout.

Flashing: All connections between deck and dwelling shall be weatherproof. Any cuts in the exterior finish shall be flashed. Flashing of the ledger at the point of connection to the house is especially critical (R703.8).

Frost Footings: Footings are required for any deck attached to a dwelling or to any other structure that has frost footings. The minimum depth to the bottom of the footings is 60 inches. The footing bottom diameter shall be based upon the attached table. If the materials used for posts are not rated for ground contact, the concrete piers must protrude above grade a minimum of 6 inches. See attached *BEAM AND FOOTING SIZE* table for footing size and spacing requirements. Minimum thickness of footing pad is 8 inches but a thicker pad is required for larger footings (see chart). Reinforce concrete piers with a minimum of (1) - #4 vertical.

Post and Beams: Posts must be centered on the concrete piers and attached with a mechanical fastener (post base) and anchor bolt (or approved equal). Beams must be positively connected to the top of the posts. Options include a mechanical fastener (post cap) or notch the top of the post 3 inches (two 2x beam only) from one side and thru-bolt the beam with a minimum of (2) – ½ inch diameter bolts (two 2x8) or (3) – ½ inch diameter bolts (two 2x10 or greater). Splices in beams must be centered over a post. Each joist must be connected to the beam with the proper fastening method using nails, joist hangers or hurricane clips. Beam members shall be nailed or screwed together. Attach with a minimum of (2) – rows 10d common nails or (2) – rows #10 screws at 16 inches on center from each side, stagger. Split beam attachment to posts is not allowed.

Stairs: Minimum width is 36 inches. Maximum riser height is 7¾ inches. Minimum tread depth is 10 inches. Treads with a depth less than 11 inches must have compliant nosing. Largest tread depth or riser height shall not exceed the smallest by more than ¾ inch across the run of the stairs. Treads shall be level with a slope no greater than 2%. Lighting capable of illuminating the treads and landings is required, shall be located in the immediate vicinity of the top landing and may be activated from inside the dwelling (R303.7). There shall be a landing at the top and bottom of stairs. Landings must be as wide as the stairs they serve, have a minimum length of 36 inches in direction of travel and have a slope no steeper than one unit vertical in 48 inches horizontal (2% slope). R311.7.7

Handrails: Stairways having 4 or more risers shall have at least 1 handrail. The top of the handrail shall not be less than 34 inches or more than 38 inches above the nosing of the treads (to the top of the gripping surface). Handrails shall be continuous for the full length of the stairs and shall protrude from the adjoining surface by at least 1½ inches, but no more than 4½ inches, and the ends shall be returned or terminated into posts. Handrails with a circular cross section shall have an outside diameter of not less than 1¼ inches or more than 2 inches. Other handrails may be acceptable. See the specific code language to be sure your handrail does comply (R311.7.8.3).

Guardrails: A guardrail is required on all decks or any portion of a deck more than 30 inches above grade or above a lower deck. Deck guardrails must be a minimum of 36 inches high. Open guardrails on decks must have intermediate rails (balusters) or an ornamental pattern that a 4 inch sphere cannot pass through. Guardrails on stairs cannot have an opening between balusters that a 4¾ inch sphere can pass through (R312.1).

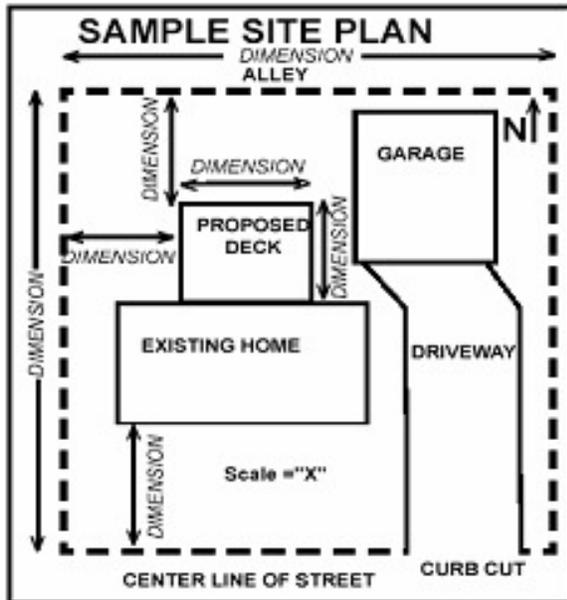
Structural Details: Header beams and joists that frame into beams shall be supported by approved framing anchors such as joist hangers. Beams supporting deck joists shall not be supported on deck ledgers or band joists. Posts shall be attached to concrete piers with a post base and anchor bolt (or approved equal). Installation of these framing anchors shall be in accordance with the manufacturer's installation instructions; typically special nails are required. **Note:** Decks must be positively anchored to the primary structure or be self-supporting (R507.1). Please see drawings provided.

Nails, Screws and All Connection Hardware: Fasteners for pressure-preservative wood shall be hot dipped zinc coated galvanized steel (HDG), stainless steel, silicon bronze or copper. Ask your materials supplier for an approved fastener (R317.3.1). Screws cannot be used to attach joist hangers unless specifically approved for such application.

Inspections: You must call for a scheduled appointment time (please try to schedule inspections a minimum of 24 hours in advance). The approved plan must be on site for all inspections. Typically 3 inspections are required:

1. Footings – These will be checked for proper diameter, depth, belled bottom, a flat surface at the base, and no water in the holes. The form (sonotube) and reinforcement must be in place. The post bases and anchor bolts (or approved equal) must be on-site.
2. Framing – If your deck surface is 4 feet or closer to the ground, you must pass a framing inspection before the decking material may be applied to the deck surface. Structural integrity and proper attachment of all connectors will be inspected.
3. Final – For decks that are 4 feet or greater off the ground, framing and final inspections may be completed together. A final inspection must be completed to be sure that the deck complies with the current *Minnesota State Building Code*.

Sample Site Plan, Elevation and Framing Plan

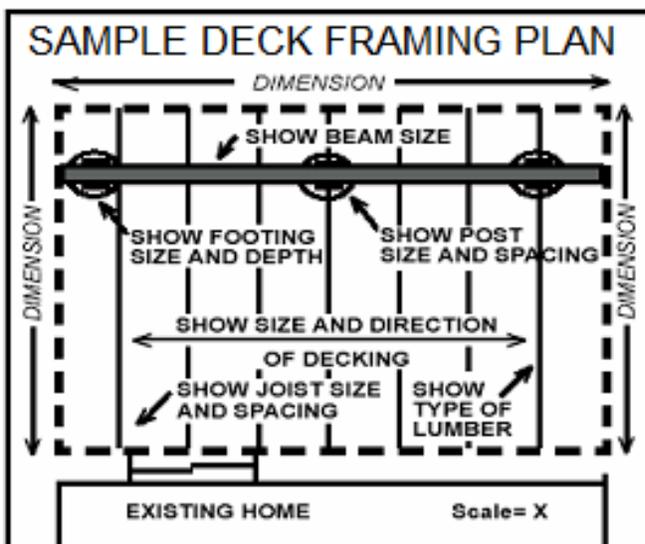
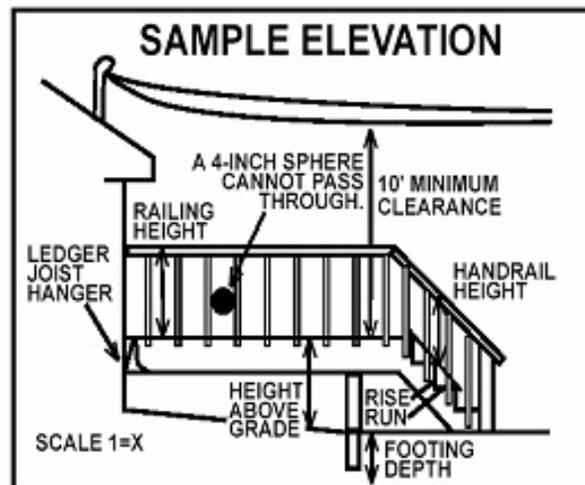


PLANS: SITE, DECK FRAMING, and ELEVATION

The following text and sample drawings show the minimum detail expected so the permit process can proceed smoothly. **TWO sets of each plan are required.** Plans do not need to be professionally drawn. However, plans should include all of the information requested. The application for permit can be filled out at the time you drop off your plans. **Certificate of Survey or Site Plan** drawn to scale indicating the lot dimensions, the location and size of the existing structure(s), and the location and size of the proposed structure. Indicate the setbacks from property lines of the existing and proposed structure(s), including septic system area and wells if applicable.

ELEVATION

1. Height of structure surface from grade.
2. Size and depth of footings.
3. Guard height and spacing (if any).
4. Stairway rise/run and handrail height (if any).
5. Clearance of over-head wires (if applicable).
6. Gas meters cannot be located above or below a new deck. Contact Duluth City Engineering at 730-5200 for gas meter relocations.



DECK FRAMING PLAN

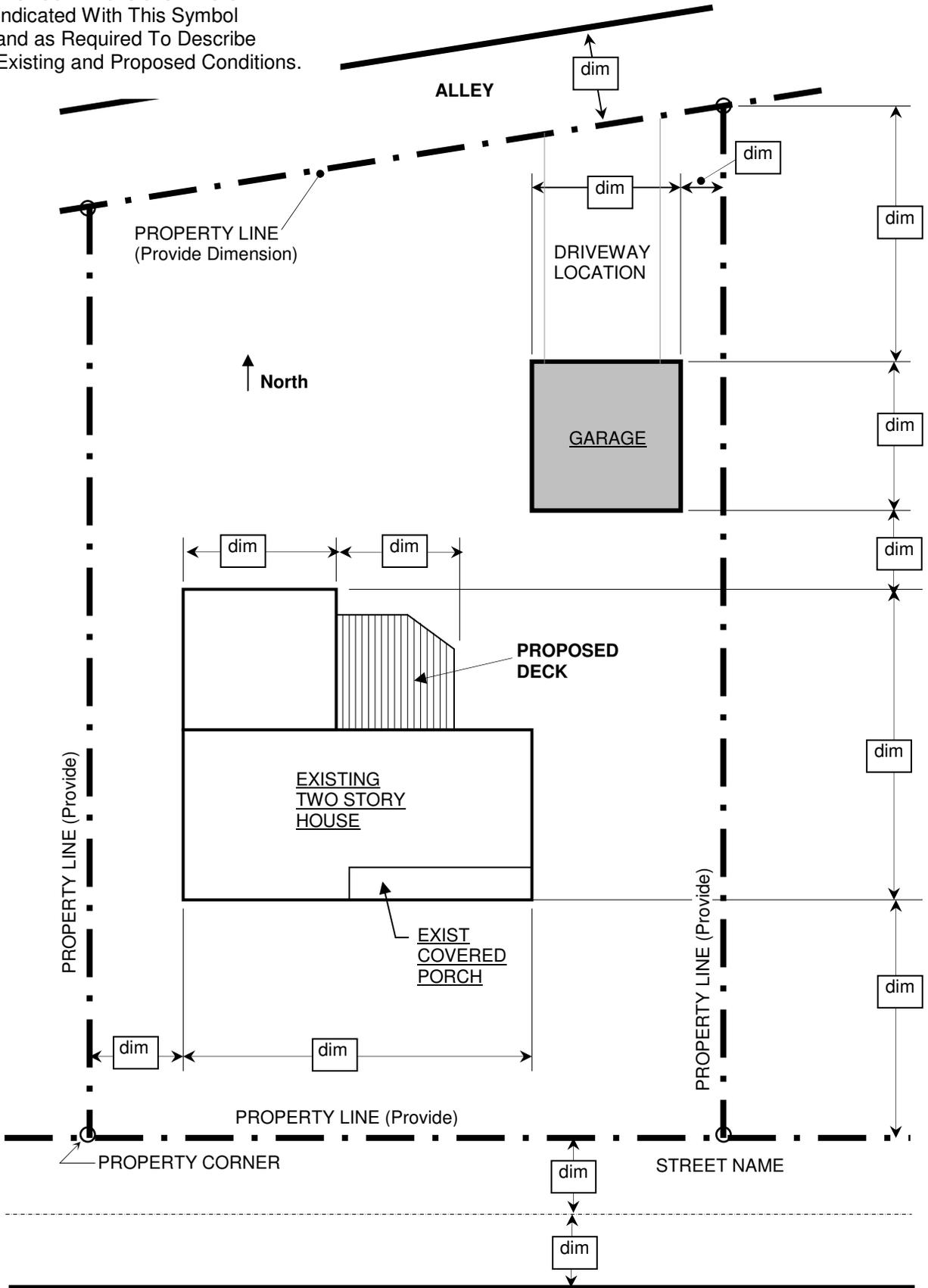
1. Proposed deck size.
2. Size and spacing of deck joists.
3. Size and type of decking material.
4. Size, type, location, and spacing of posts.
5. Size and type of beams.
6. Size of pier bottom diameter.
7. Ledger connection.

Sample Site Plan

Don't use this sheet-create your own drawing.

SCALE: 1" = _____ FEET

dim Provide Dimensions Where Indicated With This Symbol and as Required To Describe Existing and Proposed Conditions.



Approved Decking Materials

Wood Decking Materials allowed by the 2015 *Minnesota State Building Code (MSBC)*

Naturally decay and termite resistant wood species such as:

Redwood and Cedar
Preservative Treated Wood

Naturally Decay Resistant Woods allowed as Alternate Materials by the Building Official:

Douglas Fir heartwood

Lodgepole Pine heartwood

Redwood heartwood and sapwood

Western Red Cedar heartwood

White Oak sapwood and heartwood

Western White Pine heartwood

Red Oak sapwood and heartwood

Eucalyptus heartwood

Ponderosa Pine heartwood

Ipe (Brazilian Walnut)

Approved Composite Decking Materials

Composite decking material is not addressed in the Building Code. It is allowed as an alternative material only when the building official finds that the material is, for the purpose intended, at least the equivalent of that (material) prescribed (by the code). (MSBC 1300.0110 Subp. 13) The building official evaluates composite decking products on a product by product basis to determine their equivalence with prescribed materials and other code requirements applicable to decking. ICC Evaluation Services provides reports about products that have been tested and evaluated specifically for compliance with the building code.

The following composite decking products have been approved for use in Duluth:

Azek Decking System, ESR-1667

Correctdeck, NER-688

CertainTeed Kingston Railing Systems, ESR-1555 and NER 605

CertainTeed PVC Deck Planks, NER-605

Endura Board, ESR-1890

eON Decking, ESR-1300

Fiberon Decking, ICC-ES 22-41

Geodeck Decking and Guardrail Systems, ESR-1369

Life Long Composite, ICC-ES 1278 and 1279

Rhino Deck, ICC-ER-6134

Tamko Evergrain Decking, ESR-1625

Timber Tech Decking, ICC-ES-2325, ESR-1400

Trex Composite Lumber, ESR-3168 and VAR-1011

Ultradeck (Manufactured by MME in Eau Claire WI, *NOT* Ultra-Dek), ESR-1674

VEKAdeck, CCRR-0137

Veranda Deck Board, ESR-1573

Weatherbest Decking and Railing, ESR-1088

Xtendex Decking, NER-695

Genova Deck Board and Guardrail Systems, ESR-1904

The product supplier or manufacturer can tell you whether an ICC Evaluation Report is available for other products. Approval of alternate materials must be by the Building Official.

Table 1

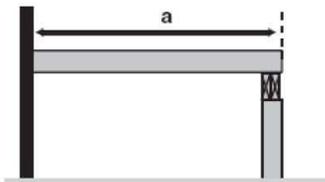
Joist span

(Design Load = 40#LL + 10#DL, Deflection= L/360)

	Ponderosa Pine or Red Pine #2			Southern Yellow Pine #2			Western Cedar #2		
	12" o.c.	16" o.c.	24" o.c.	12" o.c.	16" o.c.	24" o.c.	12" o.c.	16" o.c.	24" o.c.
2x6	8' - 9"	8' - 0"	7' - 0"	10' - 4"	9' - 4"	7' - 9"	8' - 9"	8' - 0"	7' - 0"
2x8	11' - 6"	10' - 6"	8' - 9"	13' - 6"	12' - 4"	10' - 0"	11' - 5"	10' - 6"	9' - 2"
2x10	14' - 9"	13' - 3"	10' - 10"	17' - 4"	15' - 9"	13' - 0"	14' - 9"	13' - 5"	11' - 3"
2x12	17' - 9"	15' - 4"	12' - 6"	21' - 0"	18' - 8"	15' - 3"	18' - 0"	16' - 0"	13' - 0"

Sample calculations for using joist span, beam size and footing size tables

Case I solution:

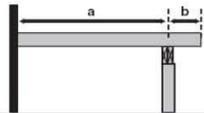


Refer to tables for joist, beam and footing size requirements.

Example: a = 12 feet; Post spacing = 8 feet

Use the **joist span** table to find the acceptable joist sizes for a 12 foot span, 2x8s at 12 inches O.C., 2x10s at 16 inches O.C. or 2x12s at 24 inches O.C. Use the **Beam and footing sizes** table and find the 8 foot post spacing column. With a 12 foot deck span, the beam may be either two 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 12 inches, 10 inches or 9 inches for the corner post and 17 inches, 14 inches or 12 inches for all intermediate posts.

Case II solution:

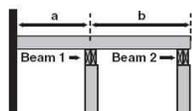


Use "a" to determine joist size and "a" + "2b" to determine beam and footing sizes. The length of "b" is restricted by both the length of "a" and the size of the joists.

Example: a = 8 feet, b = 2 feet, Post spacing = 10 feet

Refer to the **joist span** table. For an 8 foot joist span, either 2x8s at 24 inches O.C. or 2x6s at 16 inches O.C are acceptable. For sizing the beam, use a joist length of 12 feet (8 feet + 4 feet) and a post spacing of 10 feet. The **beam and footing sizes** table indicates that the beam may be either two 2x10s or two 2x12s, depending on wood used. Depending on the type of soil, the footing diameter at the base must be a minimum of 15 inches, 12 inches or 11 inches for the corner post and 20 inches, 17 inches or 15 inches for all intermediate posts. Note that because of the 2 foot cantilever all footing sizes were increased by 1 inches as required by footnote 2 at the end of the table.

Case III solution:



Example: a = 6 feet, b = 7 feet, Post spacing = 9 feet

Joist size is determined by using the longest span joist (7 feet). The **joist span** table indicates that 2x6s at 24" O.C. would be adequate for this span. For Beam 1 and footings, use a joist length of 13 feet (6 feet + 7 feet) and a post spacing of 9 feet. The **beam and footing sizes** table indicates that the beam may be two 2x10s or two 2x12s, depending on the wood used. Depending on the type of soil, the footing diameters for Beam 1 posts shall be 13 inches, 11 inches or 9 inches for the corner (outside) post and 19 inches, 15 inches or 13 inches for all intermediate posts. For Beam 2 and footings use a joist length of 7 feet and post spacing of 9 feet. The beam may be two 2x8s or two 2x10s, depending on wood used. Depending on the type of soil, the footing diameters for Beam 2 shall be 10 inches, 8 inches or 7 inches for the corner posts, and 14 inches, 11 inches or 10 inches for all intermediate posts.

Beam and Footing Size Table 2

Treated Ponderosa Pine No. 2 or Better

Note: Prior to using this table, determine joist span from Table 1 on Joist Span sheet.

Circle joist span and post spacing of proposed deck, then find beam size and concrete pier footing (bottom diameter) requirements at their intersection (see notes below).

Post Spacing (ft.)

	4	5	6	7	8	9	10	11	12	13	14	
Size Requirements												
Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	2-2x12	2-2x12
Corner Footing	6	8	8	8	9	9	10	10	10	11	11	6
Intermediate Footing	9	10	10	11	12	13	14	14	15	15	16	
Beam	1-2x6	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	2-2x12	3-2x10	3-2x10	3-2x10
Corner Footing	7	8	8	9	9	10	10	11	11	12	12	7
Intermediate Footing	9	10	11	12	13	14	15	15	16	16	17	
Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12
Corner Footing	8	8	9	9	10	10	11	11	12	12	13	8
Intermediate Footing	10	11	12	13	14	15	16	16	17	17	18	
Beam	1-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	3-2x12
Corner Footing	10	8	9	10	10	11	12	12	13	14	14	10
Intermediate Footing	11	12	14	15	16	17	17	18	19	20	20	
Beam	2-2x6	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	11	8	10	11	12	12	13	14	14	15	15	11
Intermediate Footing	12	13	14	15	16	17	17	18	19	20	20	
Beam	1-2x6	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	12	9	10	11	12	13	14	14	15	15	15	12
Intermediate Footing	12	14	15	16	17	18	19	20	21	21	21	
Beam	2-2x6	2-2x6	2-2x8	2-2x10	2-2x12	2-2x12	2-2x12	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	13	9	11	12	13	13	14	15	15	15	15	13
Intermediate Footing	13	14	15	17	18	19	20	21	22	22	22	
Beam	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	14	9	10	12	13	14	15	15	15	N.A.	N.A.	14
Intermediate Footing	13	15	16	17	18	20	21	22	22	N.A.	N.A.	
Beam	2-2x6	2-2x8	2-2x8	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	15	10	11	13	14	14	15	16	16	N.A.	N.A.	15
Intermediate Footing	14	15	17	18	19	20	21	22	22	N.A.	N.A.	
Beam	2-2x6	2-2x8	2-2x10	2-2x10	3-2x10	3-2x10	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12	3-2x12
Corner Footing	16	10	11	13	14	15	16	16	16	N.A.	N.A.	16
Intermediate Footing	14	16	17	18	20	21	22	23	23	N.A.	N.A.	
	4	5	6	7	8	9	10	11	12	13	14	

Joist Span (ft.)

Notes:

1. An 8-inch minimum concrete pier is required with a 6 x 6 post centered and securely attached.
2. When joist extends (cantilevers) beyond support beam by 18 inches or more, add 1 inch to footing dimensions.
3. All footing sizes are base (bottom) diameters (inch).
4. Maximum beam cantilever is 1-foot.

TABLE R507.2

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'
Connection details	Two Rows On-Center Spacing of Fasteners^{d, e}					
¹ / ₂ inch diameter lag screw with ¹⁵ / ₃₂ inch maximum sheathing ^a	30	23	18	15	13	11
¹ / ₂ inch diameter bolt with ¹⁵ / ₃₂ inch maximum sheathing	36	36	34	29	24	21
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

- 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 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 2x8 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 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.

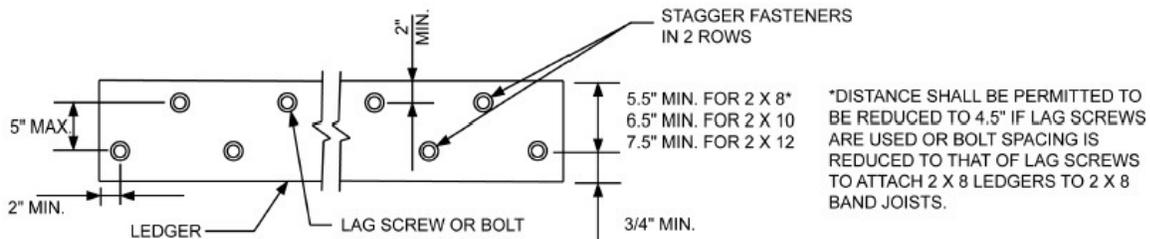


Figure R507.2.1(1)

1. Lag screws must have a minimum diameter of ¹/₂ inch. Lag screws can only be used when conditions allow. Verify the condition of existing rimboards. Do not attach lag screws to 2x wall studs. Lag screws require washers. Pilot holes must be used with lag screws; see below for requirements.
2. Thru-bolts must have a minimum diameter of ¹/₂ inch. Pilot holes for thru-bolts shall be ¹⁷/₃₂ inch to ⁹/₁₆ inch in diameter. Thru-bolts require washers at the bolt head and nut.

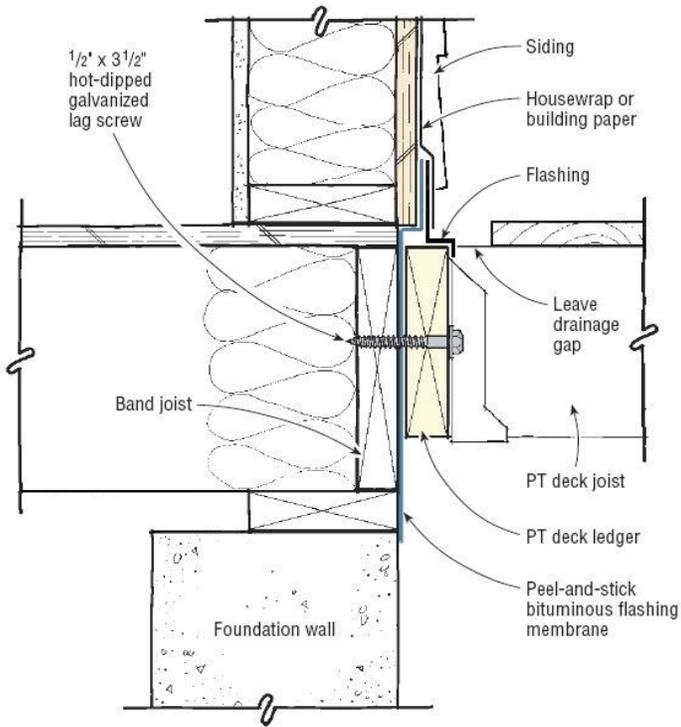
Lag Screw Pilot Hole Sizes				
Screw Size	Pilot Hole Size			
	Body	Threaded Section		
		Soft Wood Groups III & IV	Medium Wood Group II	Hard Wood Group I
¹ / ₂	¹ / ₂	¹⁵ / ₆₄	⁵ / ₁₆	¹¹ / ₃₂

Lag Screw Installation:

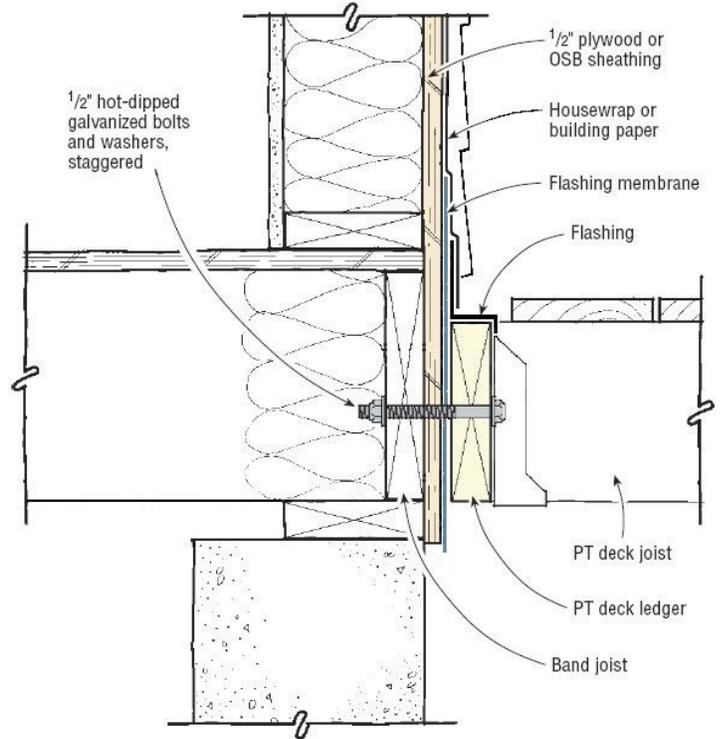
Use soap or beeswax to lubricate lag screws during installation. Install lag screws by turning with a wrench; do not use a hammer.

Ledger Attachment Requirements

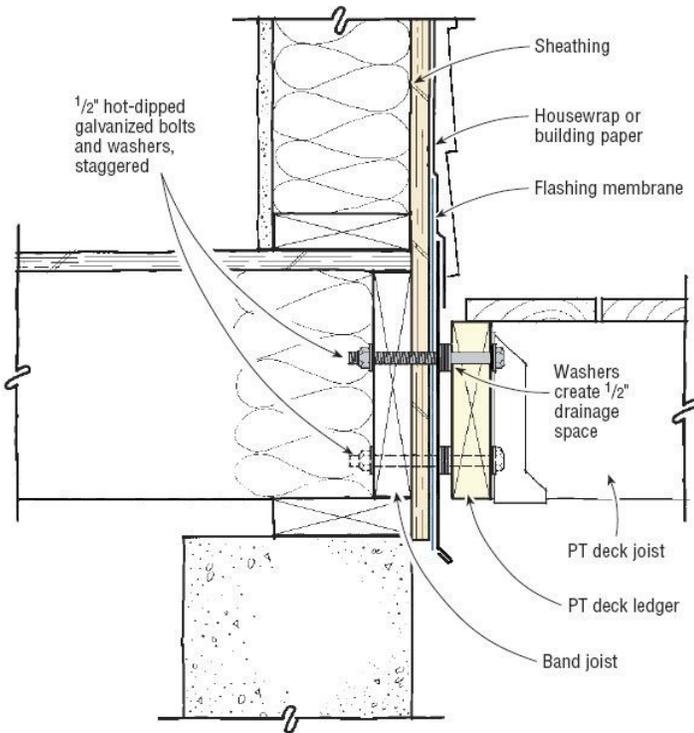
Detail 1: Attaching Ledger Directly to Band Joist



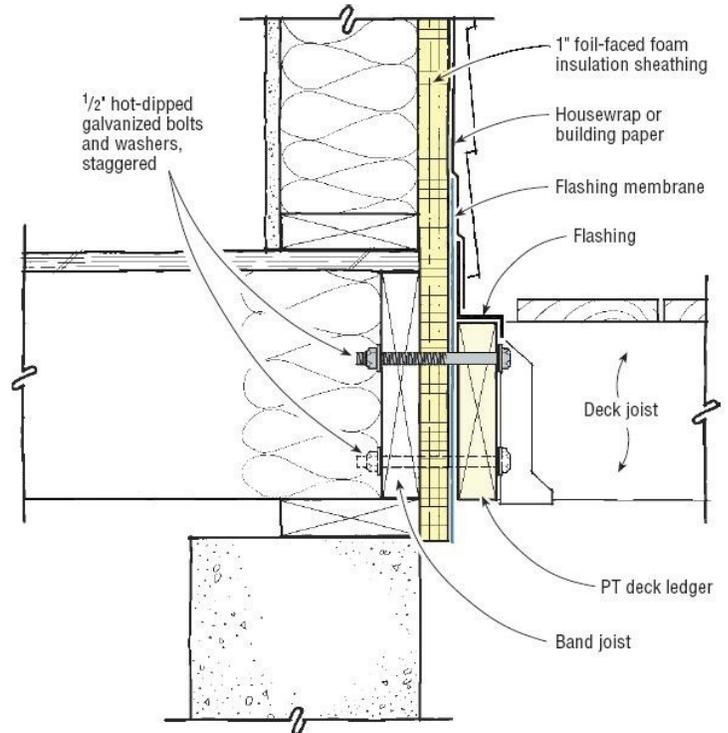
Detail 2: Attaching Ledger to Band Joist Over Structural Sheathing



Detail 3a: Attaching Ledger With Drainage Spacers



Detail 3b: Attaching Ledger Over Foam Sheathing



Deck Lateral Load Connection

The building code now requires that decks be designed for both vertical and lateral loads. A minimum of two lateral load connections are required for each deck. The intention of the lateral load connection is to tie the deck and ledger into the residence's floor system. The primary deck failure mode is the ledger pulling away from the residence. Figure 507.2.3 (below) is **ONE OPTION** for complying with the lateral load connection requirement. Coordinate the lateral load connection requirement with the Construction Inspector. Complying with the lateral load connection requirement will be on a case by case basis dependent on the type of and direction of floor framing to be attached to. Where a ledger is expansion anchored to a concrete wall, a deck lateral load connection is only required to connect to the ledger expansion anchors.

- **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.
- **R507.2.3 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. Where the lateral load connection is provided in accordance with Figure R507.2.3, 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 1,500 pounds.

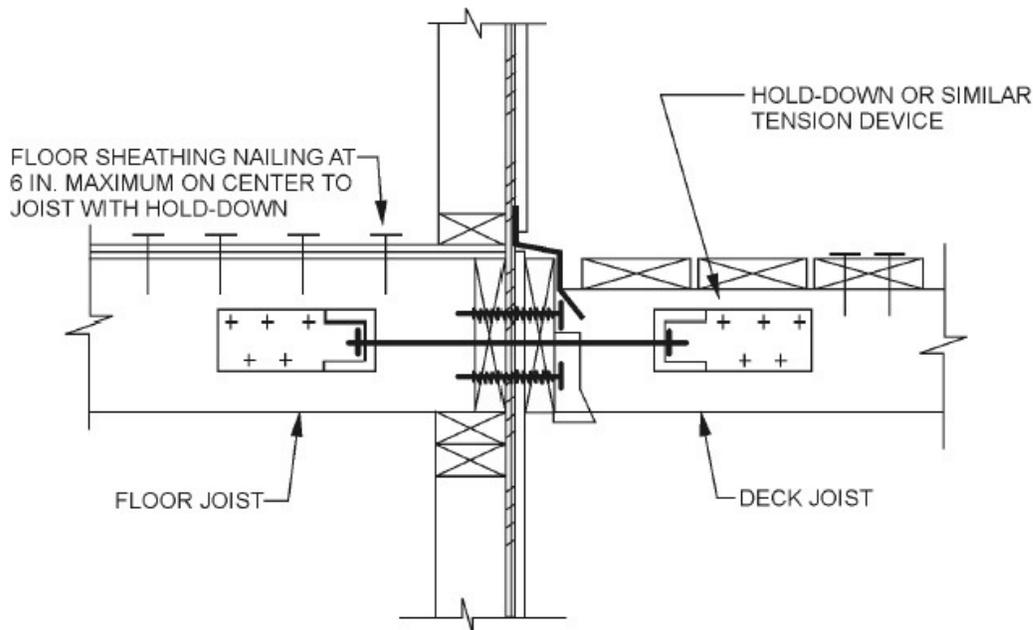
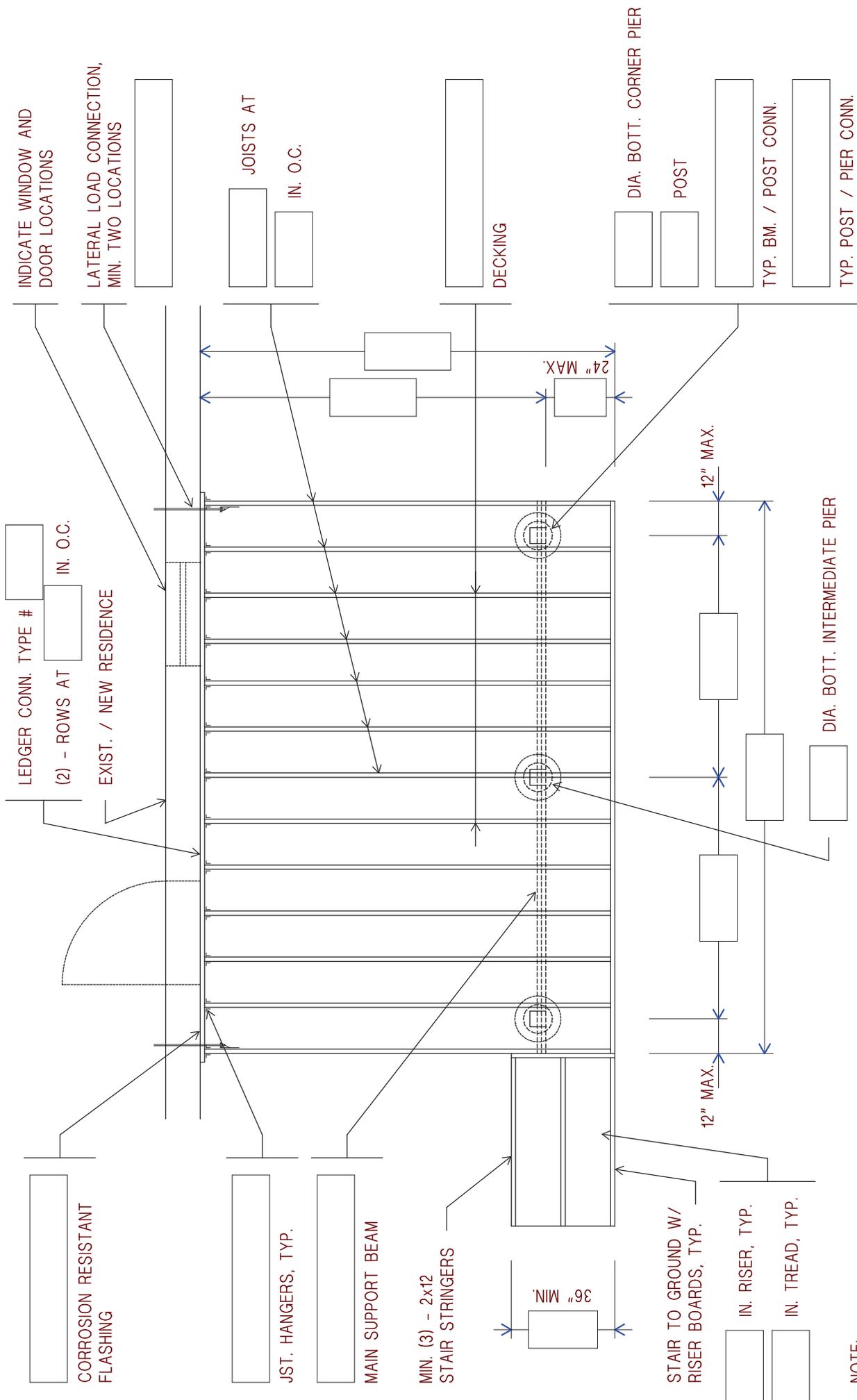


Figure 507.2.3

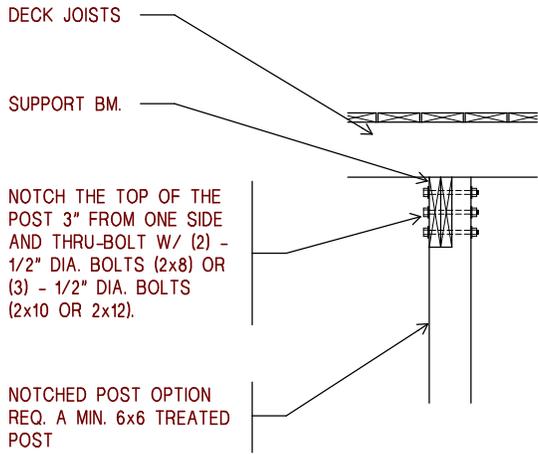


NOTE:
 IF YOUR DECK IS MORE COMPLEX, DRAW OUT A SIMILAR PLAN FOR YOUR SPECIFIC DECK

NOTE:
 FILL IN ALL BOXES

1 DECK PLAN
 NOT TO SCALE

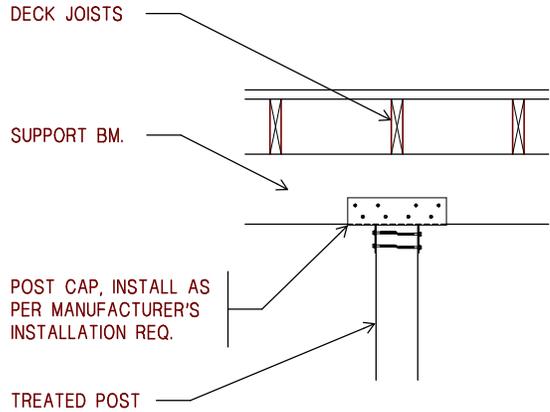
STANDARD DETAILS



NOTCH THE TOP OF THE POST 3" FROM ONE SIDE AND THRU-BOLT W/ (2) - 1/2" DIA. BOLTS (2x8) OR (3) - 1/2" DIA. BOLTS (2x10 OR 2x12).

NOTCHED POST OPTION REQ. A MIN. 6x6 TREATED POST

NOTCHED POST OPTION

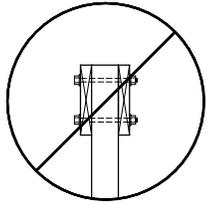


POST CAP, INSTALL AS PER MANUFACTURER'S INSTALLATION REQ.

TREATED POST

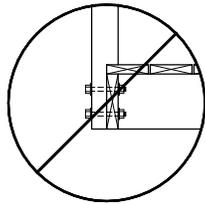
POST CAP OPTION

A BEAM / POST CONNECTION



SPLIT BEAM CONNECTION IS NOT ALLOWED

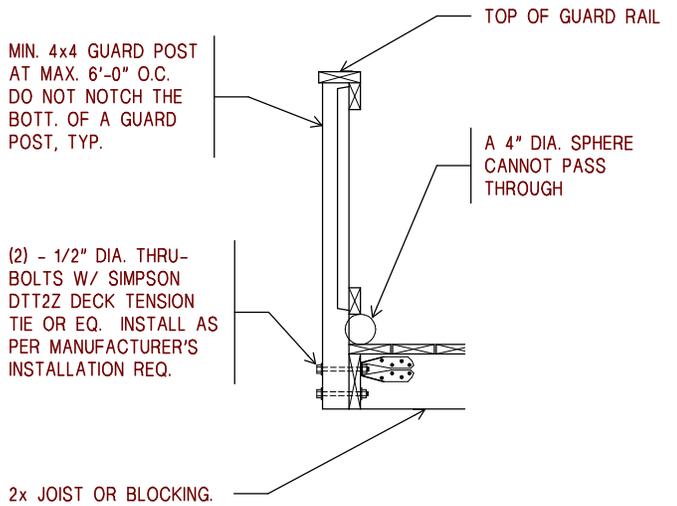
SEE STD. DETAILS 'A' AND 'B'.



DO NOT NOTCH THE BOTTM. OF A GUARD POST, TYP.

SEE STD. DETAIL 'E'.

B BEAM / POST CONNECTION



MIN. 4x4 GUARD POST AT MAX. 6'-0" O.C. DO NOT NOTCH THE BOTTM. OF A GUARD POST, TYP.

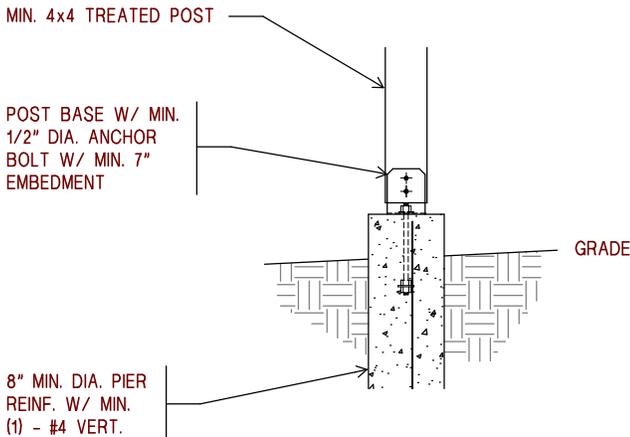
(2) - 1/2" DIA. THRU-BOLTS W/ SIMPSON DTT2Z DECK TENSION TIE OR EQ. INSTALL AS PER MANUFACTURER'S INSTALLATION REQ.

2x JOIST OR BLOCKING.

C BEAM CONN.

D GUARD CONN.

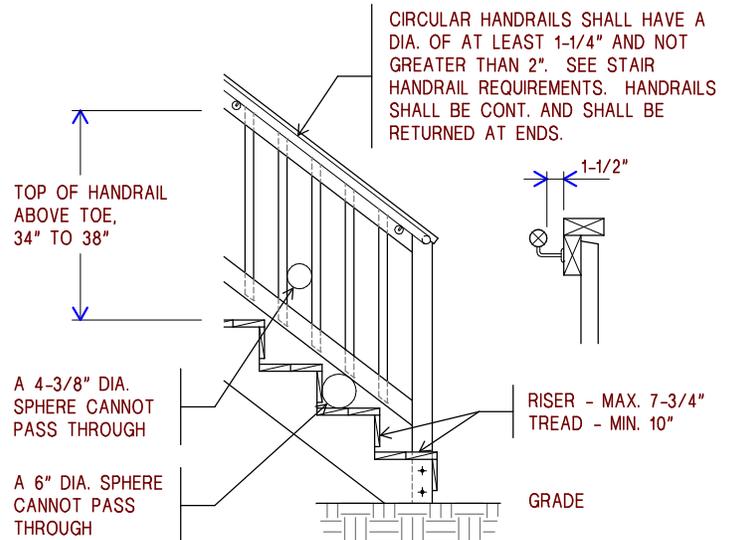
E GUARD POST CONNECTION



POST BASE W/ MIN. 1/2" DIA. ANCHOR BOLT W/ MIN. 7" EMBEDMENT

8" MIN. DIA. PIER REINF. W/ MIN. (1) - #4 VERT.

GRADE



CIRCULAR HANDRAILS SHALL HAVE A DIA. OF AT LEAST 1-1/4" AND NOT GREATER THAN 2". SEE STAIR HANDRAIL REQUIREMENTS. HANDRAILS SHALL BE CONT. AND SHALL BE RETURNED AT ENDS.

TOP OF HANDRAIL ABOVE TOE, 34" TO 38"

A 4-3/8" DIA. SPHERE CANNOT PASS THROUGH

A 6" DIA. SPHERE CANNOT PASS THROUGH

RISER - MAX. 7-3/4" TREAD - MIN. 10"

GRADE

F POST / PIER CONNECTION

G STAIR / HANDRAIL



**City of Duluth
Construction Services & Inspections Division**

411 West First Street • Room 210 • Duluth, Minnesota • 55802-1194
218-730-5300 • Fax: 218-730-5901 • www.duluthmn.gov/onestop/

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Deck Permit Application Checklist (2015)

Please complete this form and submit a copy with your permit application.

Check-off and fill in all items appropriate for your deck.

Project Address: _____

Applicant's Name: _____

Applicant's Address: _____

Applicant's Phone: _____

Applicant's E-Mail: _____

To obtain a permit, you need the following:

1. Permit Application Checklist * (this form)

2. Site Plan * (example enclosed)

3. Deck Plan * (form enclosed)

4. Deck Section * (form enclosed)

5. Standard Details * (form enclosed)

** Incomplete plans will not be reviewed.*

Your Deck Plan and Section must include all of the following:

Deck dimensions: Length: _____

Decking material: _____

Width: _____

Beam(s) size: _____

Post size: _____

Joist size, species and grade per Joist Span Table 1

Post spacing: _____

Corner footing bottom diameter: _____

Joist spacing: _____

Intermediate footing bottom diameter: _____

Joist cantilever: _____

(pier bottom dia. per Beam and Footing Table 2)

(see Beam and Footing Table 2, footnote 2)

Deck surface height above grade: _____

Ledger connection: _____

(see ledger connection requirements Table R507.2)

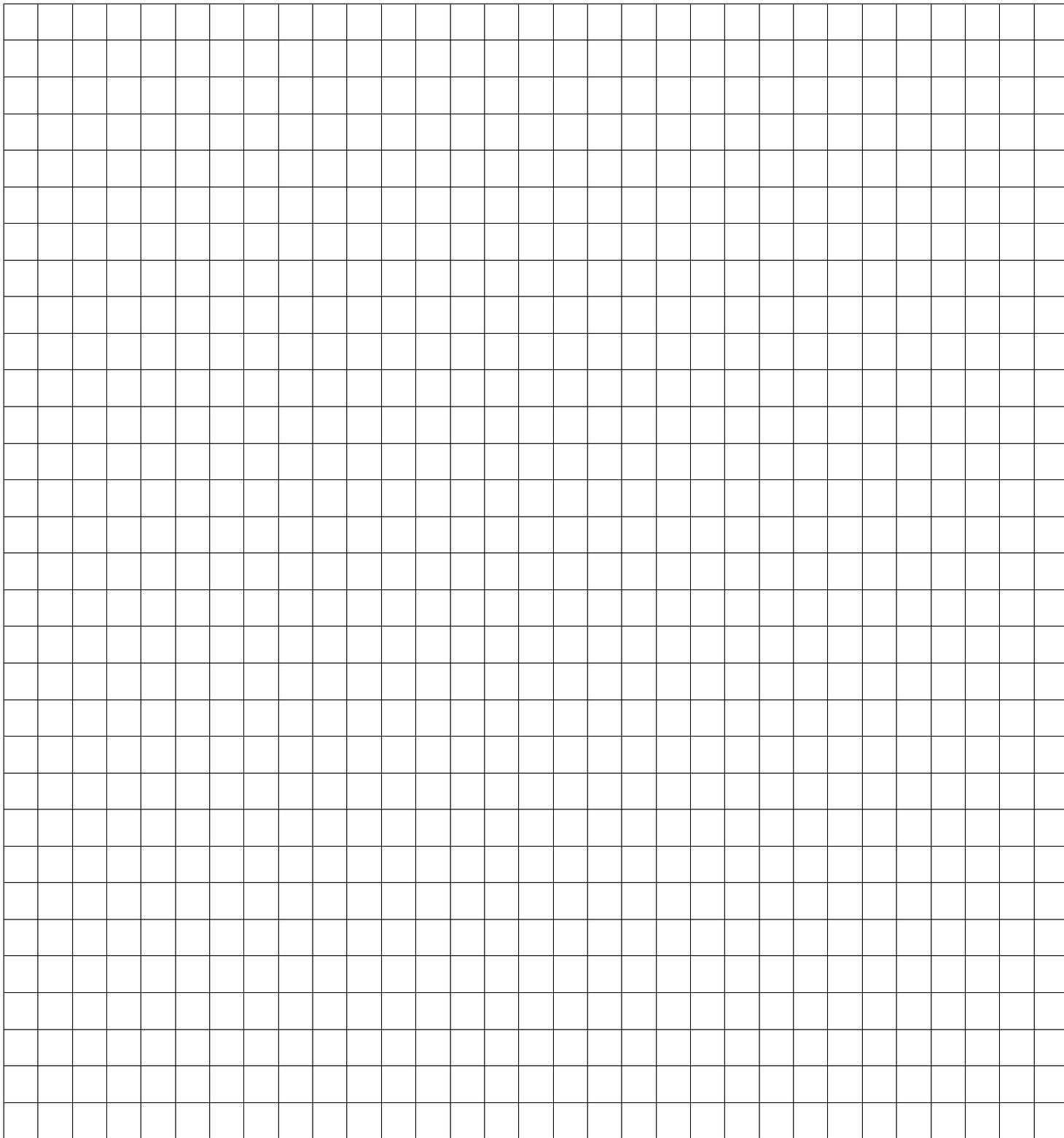
Diagonal bracing, Yes or No: _____

(Required for decks ≥ 6 feet above grade)

Lateral load connection, see requirements this handout

Indicate type of lateral load connection: _____

For Office use only
LUT: _____
App. Date: _____
Comments: _____



North Arrow Required

SITE PLAN

Do Not Use Pencil

Site Address: _____

Owner's Name: _____

This Site Plan is an accurate and complete representation of the footprint(s) of all existing and proposed structure(s) and their location(s) on the subject property.

Applicant's Signature: _____

Plat / Parcel No.

Grid is 4 squares per inch

Scale: 1" = _____ Feet

Date: _____