



VILLAGE OF JACKSON

"Small Town Living / World Class Technology"

Deck Permit

The following information is necessary to obtain a building permit for a deck. **A building permit application must be complete with all the applicable required information.** Failure to provide all information, 2 plans and 2 surveys, will delay the permit issuance process. The Building Inspector may request additional information as required.

Processing of permits is usually five (5) working days, but at peak construction times processing may take longer.

1.) Two detailed drawings on an 8 ½" x 11" sheet of paper showing cross section of deck, footprint of deck, exterior dimensions, elevations and footing details. The scale used shall be shown on plan. If the plans are not drawn to scale, exact dimensions shall be given and plan marked "not to scale." All deck information shall also be included on the Typical Deck Framing Plan. (Figure 35)

2.) Stair and handrail/guardrail details. All decks more than 24" above grade shall be provided with a guardrail on all open sides of the deck. Rail heights shall be a minimum of 36" above finished deck floor. Intermediate rails shall be spaced no more than 4 3/8". Stairs with more than three (3) risers shall provide handrails and a guardrail on open sides of stairs. Baluster spacing shall not allow a 4 3/8" sphere to pass through any railing. Open stair riser openings shall not exceed a height of 4".

3.) Survey/Plot Plan. 2 surveys or plot plans showing the location on the site of the proposed project as well as all existing structures, easements and lot dimensions. Surveys or plot plans shall be drawn on a minimum of an 8 ½" x 11" sheet of paper and be drawn to scale or have exact dimensions given for distances. The scale used shall be shown on plan.

4.) Decks must meet setback requirements. Decks located 5' or closer to the principal structure are considered an attached deck by local zoning code. Decks located 5' or more from the principal structure would be considered a detached accessory structure and must meet setback requirements for detached accessory structures.

5.) The application shall state the cost of the deck.

Note: Plats of survey are recorded at the County Register of Deeds. To acquire a plat of survey for your lot, the County will require your tax key number and address of your property. (Tax key numbers can be obtained from your property tax bill or at the Village Hall.)

If you have any questions, please call the Building Inspection Office at 677-9696.



VILLAGE OF JACKSON

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BUILDING PERMIT APPLICATION FOR VILLAGE OF JACKSON

Please Print:

Date _____ Permit # _____

Owner _____ Phone _____

Street Address _____

City _____ State _____ Zip _____

Project Address _____

City _____ State _____ Zip _____

Contractor _____

Contractor Address _____

City _____ State _____ Zip _____

Contractor License No. _____ Qualifier License No. _____ Phone No. _____

Year Built _____ **(NOTE: If house is older than 1978, a DHS License is required.)**

Wisconsin Lead Safe Company No. _____ Wisconsin Lead Safe Renovator No. _____

****2 sets of plans for residential and 3 sets of plans for commercial****

Type of Project _____

Size of Building (or remodeled area) _____

Cost of Project _____

Building Plat of Survey or Certified Survey Map (C.S.M.)

Air Conditioner – Tons _____ # of Units _____

Furnace – BTU's _____ # of Units _____

DECKS

GENERAL REQUIREMENTS

(1.) DEFINITIONS

- (a.) Deck: Any structure which serves as a raised horizontal platform or floor constructed of wood or other materials, without enclosing walls or roof.
- (b.) Attached Deck: Any deck which is physically connected to the principal building or accessory structure.
- (c.) Detached Deck: Any deck which is **not** physically attached to the principal building or accessory structure and is **not** used for exiting the principal building.

(2.) SOIL AND EXCAVATION REQUIREMENTS FOR DECK PIERS OR FOUNDATIONS

- (a.) No pier shall be placed on soil with a bearing capacity of less than 2,000 lbs. per square foot unless the pad support is designed through structural analysis.
- (b.) All organic material (roots, etc.) shall be cut off at the sidewalls of the borings or trench. All organic and loose material must be removed from the cavity area prior to pouring concrete.

(3.) DECKS, PIERS, PADS AND FOUNDATIONS

- (a.) General footings, pads or piers shall be of adequate bearing area to safely distribute all live and dead loads to the supporting soil without exceeding the bearing capacity of the soil.
- (b.) Type and size of concrete pads, piers or foundations.
 - 1. Decks attached to principal buildings.
 - a. Concrete Pads – The minimum depth of a pad shall be 48” minimum below grade. The minimum dimensions of this pad shall comply with both footing size & thickness per **Appendix C-Beam & Footing Sizes with Overhangs**.
 - b. Piers – The minimum depth of concrete piers shall be 48” minimum below grade. The minimum diameter shall comply with **Appendix C-Beam & Footing Sizes with Overhangs**. (The concrete pier(s) shall extend above grade with an approved mounting bracket secured at the top surface of the pier(s)).
 - c. Direct burial wood posts may be placed on a concrete pad per **Appendix C-Beam & Footing Sizes with Overhangs**. Treated posts shall be identified by the grade mark of, or certificate of inspection issued by, a professional lumber – grading or inspection bureau or agency (www.alsc.org) & shall be rated as “ground-contact”. Note: Not all treated lumber is rated for ground contact.

Appendix C

Beam & Footing Sizes with Overhangs

Beam and Footing Sizes with Overhangs																																																																										
Based on No. 2 or better Southern Pine, Douglas Fir-Larch2, and Ponderosa Pine																																																																										
		Post Spacing (Measured Center to Center)																																																																								
Joist Length (JL) ¹		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'																																																														
6'	Southern Pine Beam	1-2x6	1-2x6	1-2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12																																																														
	Douglas Fir-Larch Beam	1-2x6	1-2x8	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12																																																														
	Ponderosa Pine Beam	1-2x6	1-2x8	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12																																																														
	Corner Footing	8	7	6	9	8	7	10	8	7	11	9	8	11	9	8	12	10	9	12	10	9	13	11	9	14	11	9	15	12	10	16	12	10	17	13	11	18	13	11	19	14	12	20	15	12	21	16	13	22	17	14	23	18	15	24	19	16	25	20	17	26	21	18	27	22	19	28	23	20	29	24	21	30
	Intermediate Footing	10	8	7	11	9	8	12	10	9	13	11	9	14	12	10	15	12	11	16	13	11	17	14	12	18	13	12	19	14	13	20	15	13	21	15	14	22	16	14	23	17	15	24	18	16	25	19	17	26	20	18	27	21	19	28	22	20	29	23	21	30	24	22										
	Footing Thickness	6	6	6	6	6	6	6	6	6	6	6	8																																																													
7'	Southern Pine Beam	1-2x6	1-2x8	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12																																																														
	Douglas Fir-Larch Beam	1-2x6	1-2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12																																																														
	Ponderosa Pine Beam	1-2x6	1-2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	Eng Bm																																																														
	Corner Footing	9	7	7	10	8	7	11	9	8	11	9	8	12	10	9	13	11	9	13	11	10	14	12	10	15	12	10	16	13	11	17	14	12	18	13	11	19	14	12	20	15	13	21	15	13	22	16	14	23	17	15	24	18	16	25	19	17	26	20	18	27	21	19	28	22	20	29	23	21	30	24	22	
	Intermediate Footing	11	9	8	12	10	9	13	11	9	14	12	10	15	12	11	16	13	11	17	14	12	18	14	12	19	15	13	20	15	13	21	16	14	22	16	14	23	17	15	24	17	15	25	18	16	26	19	17	27	20	18	28	21	19	29	22	20	30	23	21													
	Footing Thickness	6	6	6	6	6	6	6	6	6	6	8	8	8																																																												
8'	Southern Pine Beam	1-2x6	1-2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm																																																														
	Douglas Fir-Larch Beam	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm																																																														
	Ponderosa Pine Beam	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm																																																														
	Corner Footing	10	8	7	10	9	8	11	9	8	12	10	9	13	11	9	14	11	10	14	12	10	15	12	11	16	13	11	17	14	12	18	14	12	19	15	13	20	15	13	21	16	14	22	16	14	23	17	15	24	18	16	25	19	17	26	20	18	27	21	19	28	22	20	29	23	21	30	24	22				
	Intermediate Footing	12	10	8	13	11	9	14	12	10	15	12	11	16	13	11	17	14	12	18	14	12	19	15	13	20	15	13	21	16	14	22	16	14	23	17	15	24	17	15	25	18	16	26	19	17	27	20	18	28	21	19	29	22	20	30	23	21																
	Footing Thickness	6	6	6	6	6	6	6	6	8	8	8	8	8																																																												
9'	Southern Pine Beam	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x10	3-2x12	Eng Bm	Eng Bm																																																														
	Douglas Fir-Larch Beam	1-2x8	1-2x8	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm																																																														
	Ponderosa Pine Beam	1-2x8	2-2x6	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm																																																														
	Corner Footing	10	8	7	11	9	8	12	10	9	13	11	9	14	11	9	14	12	10	15	12	11	16	13	11	17	14	12	18	14	12	19	15	13	20	15	13	21	16	14	22	16	14	23	17	15	24	17	15	25	18	16	26	19	17	27	20	18	28	21	19	29	22	20	30	23	21							
	Intermediate Footing	12	10	9	14	11	10	15	12	11	16	13	11	17	14	12	18	14	12	19	15	13	20	15	13	21	16	14	22	16	14	23	17	15	24	17	15	25	18	16	26	19	17	27	20	18	28	21	19	29	22	20	30	23	21																			
	Footing Thickness	6	6	6	6	6	6	6	8	8	8	8	8																																																													
10'	Southern Pine Beam	1-2x6	1-2x8	2-2x8	2-2x8	2-2x10	2-2x12	2-2x12	3-2x12	3-2x12	Eng Bm	Eng Bm																																																														
	Douglas Fir-Larch Beam	1-2x8	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	3-2x12	Eng Bm	Eng Bm																																																														
	Ponderosa Pine Beam	1-2x8	2-2x6	2-2x8	2-2x10	2-2x10	2-2x12	3-2x10	3-2x12	Eng Bm	Eng Bm	Eng Bm																																																														

16'	Southern Pine Beam	1-2x8	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	Eng Bm																										
	Douglas Fir-Larch Beam	2-2x6	2-2x8	2-2x10	2-2x12	3-2x10	3-2x12	Eng Bm																										
16'	Ponderosa Pine Beam	2-2x6	2-2x8	2-2x10	2-2x12	3-2x12	3-2x12	Eng Bm																										
	Corner Footing	13	11	9	14	12	10	15	13	11	17	14	12	18	15	13	19	15	13	20	16	14	20	17	15	21	18	15	22	18	16	23	19	16
	Intermediate Footing	16	13	11	18	15	13	19	16	14	21	17	15	22	18	16	23	19	17	25	20	18	26	21	18	27	22	19	28	23	20	29	24	21
	Footing Thickness	6	8	8	8	8	8	10	10	10	10	12	12																					

Notes:

1. Joist Length (J_L) is Joist Span (L_J) plus any cantilever at the beam that is being sized.
2. Incising assumed for refractory species Douglas Fir-Larch.
3. All footing sizes above are base diameters (in inches) and are listed for THREE SOIL CAPACITIES. Soil capacity is based on the requirements of State of Wisconsin SPS 321.15 (3).⁴
4. For square footings, insert the diameter (d) into the following formula: $\sqrt{((d/2)^2 \times \pi)}$. This number will give you the square dimension and shall be rounded up to the nearest inch.

	⇓	⇐	⇐	⇐2000 psf Soil ³
	⇓	⇓	⇐	3000psf Soil ³
	⇓	⇓	⇓	4000psf Soil ³
	⇓	⇓	⇓	
Corner Footing	0	0	0	
Intermediate Footing	0	0	0	

(4.) FRAMING

(a.) General Requirements.

1. Materials. All wood framing used in deck construction shall be pressure treated against decay or shall be a species of wood that is naturally decay resistant or shall be protected from weather.
2. Design Loading. Decks shall be designed for a minimum of 40 pounds per square foot live load & 10 pounds per square foot dead load.
3. See fastener schedule for nailing requirements.

(b.) Column Posts.

1. Column Spacing. Column posts shall be spaced per **Appendix C-Beam & Footing Sizes with Overhangs.**
2. Column Size.
 - a. All column posts shall comply with **Table 2-Maximum Post Height.**

**Table 2
Maximum Post Height**

Post Size	Maximum Height
4"x4"	6'
4"x6"	8'
6"x6"	14'

3. Lateral Support. Column posts shall be constructed in such a manner or mechanically attached to the deck foundation to resist lateral movement.

(c.) Beams.

1. Beam Size – All beams shall be sized per **Appendix C-Beam & Footing Sizes with Overhangs**.
2. Bearing. Beams bearing directly on the posts shall be attached by means of approved metal anchors or other approved methods.
3. Ledger Boards. Ledger boards attached directly to the house or other structure may be used to replace a beam or beams. The ledger board must be greater than or equal to the depth of the deck joist, but not less than a 2x8. The ledger board shall be attached per **Table 6-Ledger Board Fastener Spacing, On Center**. Flashing shall be installed on the top edge of the ledger board & extend up behind the house siding.
4. Beams shall not be cantilevered past the center line of the column post(s) more than one-fourth of the actual beam span.

Table 6
LEDGER BOARD FASTENER SPACING, ON CENTER^{1,2,3}

Fastener	Band Board	Joist Span: less than or equal to						
		6'	8'	10'	12'	14'	16'	18'
Lag screws	1" EWP	24"	18"	14"	12"	10"	9"	8"
	1 1/8" EWP	28"	21"	16"	14"	12"	10"	9"
	2x Lumber	30"	23"	18"	15"	13"	11"	10"
Through-Bolts	1" EWP	24"	18"	14"	12"	10"	9"	8"
	1 1/8" EWP	28"	21"	16"	14"	12"	10"	9"
	2x Lumber	36"	36"	34"	29"	24"	21"	19"
Through-Bolts with 1/2" stacked washers 4,5	2x Lumber	36"	36"	29"	24"	21"	18"	16"
Adhesive anchors	_____	32"	32"	32"	24"	24"	16"	16"

¹These values are valid for deck ledgers consisting of Douglas fir/larch, hem/fir, or southern pine; and for band boards consisting of Douglas fir- larch, hem-fir, spruce-pine-fir, southern pine, or engineered wood product (EWP).

²Where solid-sawn pressure-preservative-treated deck ledgers are attached to engineered wood products (minimum 1" thick wood structural panel band joist or structural composite lumber including laminated veneer lumber), the ledger attachment must be designed in accordance with accepted engineering practice. These tabulated values are in accordance with that practice and are based on 300 lbs and 350 lbs for 1" and 1 1/8" EWP rim board, respectively.

1. The thickness of the sheathing over the band board must not exceed 15/32".
2. The maximum gap between the face of the ledger board and face of the wall sheathing is 1/2".
3. Wood structural panel sheathing, gypsum board sheathing, or foam sheathing is permitted between the ledger board and the band board. Stacked washers are permitted in combination with wood structural panel sheathing, but are not permitted in combination with gypsum board or foam sheathing. The maximum distance between the face of the ledger board and the face of the band board is 1".

(d.) Joists.

1. Joist Size. All joists shall be sized and spaced per **Table 4-Maximum Joist-Span Length**.
2. Bearing. Deck joists shall bear a minimum of one and one half (1½) inches on the beam or ledger board. Joists fastened to the face of the beam or ledger shall be attached with approved metal hangers (zinc coating/hot dip galvanized or stainless steel).

3. Bridging. Bridging shall be provided at intervals not exceeding eight (8) feet.
4. Overhanging of Joists. Joists may overhang past the center of the beam up to one-fourth of the actual joist span.

Table 4
Maximum Joist-Span Length

Joist Spacing (on center)	Joist Size	Douglas Fir/Larch, Hem/Fir, SPF ²		Southern Pine	
		Without Overhang	With Over- hangs	Without Overhang	With Over- hangs
12"	2"x6"	9'-1"	8'-1"	9'-6"	8'-7"
	2"x8"	12'-6"	9'-5"	13'-1"	10'-1"
	2"x10"	15'-8"	13'-7"	16'-2"	14'-6"
	2"x12"	18'-0"	18'-0"	18'-0"	18'-0"
16"	2"x6"	8'-3"	8'-0"	8'-7"	8'-7"
	2"x8"	11'-1"	9'-5"	11'-10"	10'-1"
	2"x10"	13'-7"	13'-7"	14'-0"	14'-0"
	2"x12"	15'-9"	15'-9"	16'-6"	16'-6"
24"	2"x6"	6'-9"	6'-9"	7'-6"	7'-6"
	2"x8"	9'-1"	9'-1"	9'-8"	9'-8"
	2"x10"	11'-1"	11'-1"	11'-5"	11'-5"
	2"x12"	12'-10"	12'-10"	13'-6"	13'-6"

¹Spans are based on 40 psf live load, 10 psf dead load, normal loading duration, wet service conditions, and deflections of $\Delta = L/360$ for main span and $L/180$ for overhang with a 220 lb. point load.

²Incising is assumed.

(e.) Decking

1. Material. All decking material shall be a minimum of one and one quarter (1¼) inches thick, nominal thickness. One inch decking may be used provided that the joists are spaced no more than 16" O.C.
2. Decking Orientation.
 - a. Decking shall be installed diagonally or at right angles to the joists.
 - b. Decking shall be centered over joists with cuts made parallel to joists. Not more than two adjacent boards may break joints on the same joist except at ends and at openings.

(f.) Guardrails and Handrails

1. Guardrails. All decks which are more than twenty four (24) inches above grade shall be protected with guardrails.
2. Handrails. Every stairway of more than three (3) risers shall be provided with at least one handrail. Handrails shall be provided on the open sides of stairways.
3. Guardrails and handrail detail.
 - a. Height. Handrails shall be located at least thirty (30) inches, but not more than thirty eight (38) inches, above the nosing of the treads. Guardrails shall be located at least thirty six (36) inches above the surface of the deck.

- b. Open Railings. Open guardrails or handrails shall be provided with intermediate rails or an ornamental pattern to prevent the passage of a sphere with a diameter greater than 4 3/8”.
- c. Railing Loads. Handrails and guard rails shall be designed and constructed to withstand a 200 pound load applied in any direction.

(g.) Stairway, Treads and Risers

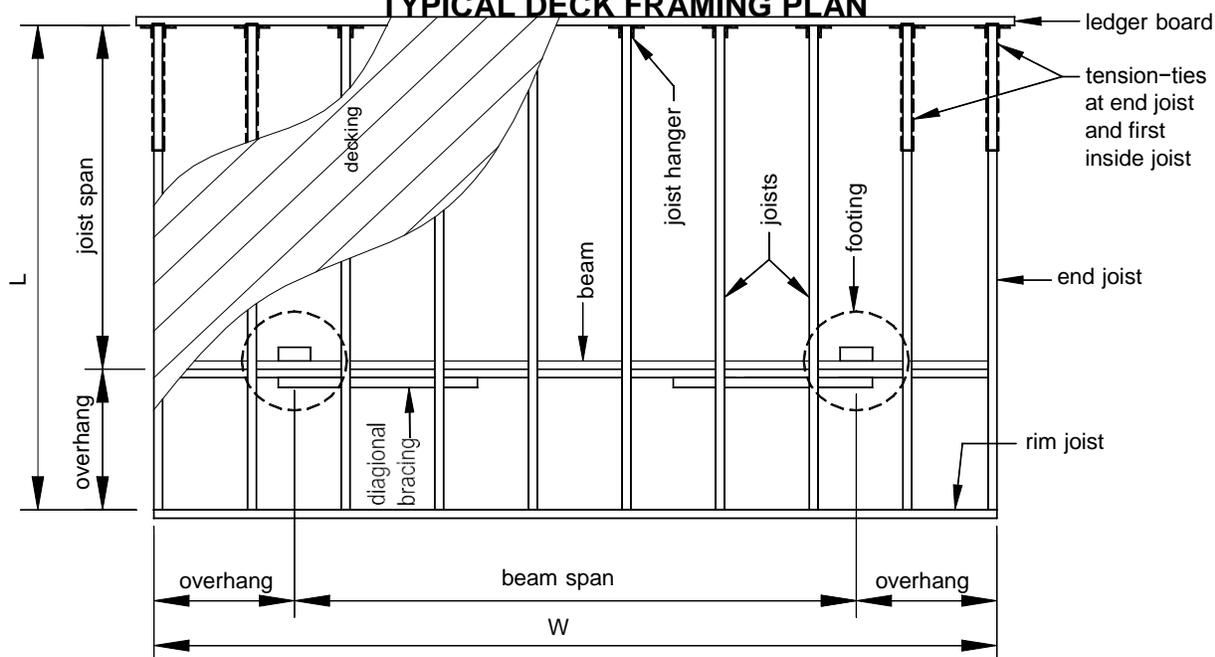
1. Risers. Risers shall not exceed eight (8) inches in height measured from tread to tread.
2. Treads. Treads shall be at least nine (9) inches wide, measured horizontally from nose to nose.
3. Variation. There shall be no variation in uniformity exceeding 3/8” in the width of a tread or in the height of risers.
4. Stair stringers shall be supported in accordance to the same manner as used for the deck. All stairs shall have a 36” minimum clear width & have a minimum of three stringers.

(h.) Alternative Provisions and Methods

1. Wood Decks. Wood decks attached to the dwelling & detached decks may be constructed to the Uniform Dwelling Code standards listed below.
 - a. Excavation requirements of SPS. 321.14
 - b. Footing requirements of SPS. 321.15(2)f
 - c. Frost penetration requirements of SPS. 321.16
 - d. Load requirements of SPS. 321.02
 - e. Stair, handrail and guardrail requirements of SPS. 321.04
 - f. Decay protection requirements of SPS. 321.10
2. Detached Decks
 - a. Concrete pads shall be provided at a uniform depth below grade with all loose or organic material moved from the pad area prior to placement of concrete. The pad shall have a minimum footing size & thickness per **Appendix C-Beam & Footing Sizes with Overhangs**.
 - b. Piers – The minimum thickness in diameter of concrete piers shall be sized per **Appendix C-Beam & Footing Sizes with Overhangs**.
 - c. Direct burial wood posts may be placed on a concrete pad per **Appendix C-Beam & Footing Sizes with Overhangs**. Treated posts shall be identified by the grade mark of, or certificate of inspection issued by, a professional lumber – grading or inspection bureau or agency (www.alsc.org) & shall be rated as “ground-contact”. Note: Not all treated lumber is rated for ground contact.
 - d. Ground contact framing shall be allowed for decks which are less than 24” above grade. All materials in direct contact with the soil shall be treated to the requirements of the American Wood Preservers’ Association (AWPA) Standards C2 and C15.

Figure 35

TYPICAL DECK FRAMING PLAN



Decking: 2x4 2x6 Five-quarter board Wood-plastic composite (per ASTM D 7032)

Other decking, evaluation report number: _____

Joists: Size: 2x6 2x8 2x10 2x12 Spacing: 12 in. 16 in. 24 in.

Joist Span Dimension: _____ ft. _____ in.

Overhang: Yes No Overhang Dimension: _____ ft. _____ in.

Rim Joist: 2x6 2x8 2x10 2x12

Beam(s): Number of plies: 2 3 Size: 2x6 2x8 2x10 2x12

Overhang: Yes No Overhang Dimension: _____ ft. _____ in.

Posts: Size: 4x4 4x6 6x6 Height: _____ ft. _____ in.

Footings: Size: _____ in. Square Round Thickness: _____ in.

Ledger: Ledger Board Size: 2x8 2x10 2x12 Not applicable (free-standing deck)

Fastener: Through Bolt Lag Screw Wood Screw Expansion Anchor

Adhesive Anchor

Lateral support: Tension-tie (not permitted for free-standing deck)

Diagonal Bracing, size: 2x _____

Deck size: L= _____ ft. _____ in. W= _____ ft. _____ in.