

Deck Permit Guide:

This guide was developed to help direct you through the permit application process. Following the steps below will help to expedite the issuance of your building permit.

1. Completely fill out the Attached Building/Zoning Permit Applications

Provide a detailed description of all proposed work. Owners may obtain permits for construction projects if the house is owner occupied. All contractors shall include their Dwelling Contractor Certification and Dwelling Contractor Qualifier Certification numbers from the State of Wisconsin Safety and Buildings Division. Our office is required by the State of Wisconsin to verify these certifications prior to issuing permits to contractors performing work on one and two family dwellings.

2. Provide 1 Site Plans.

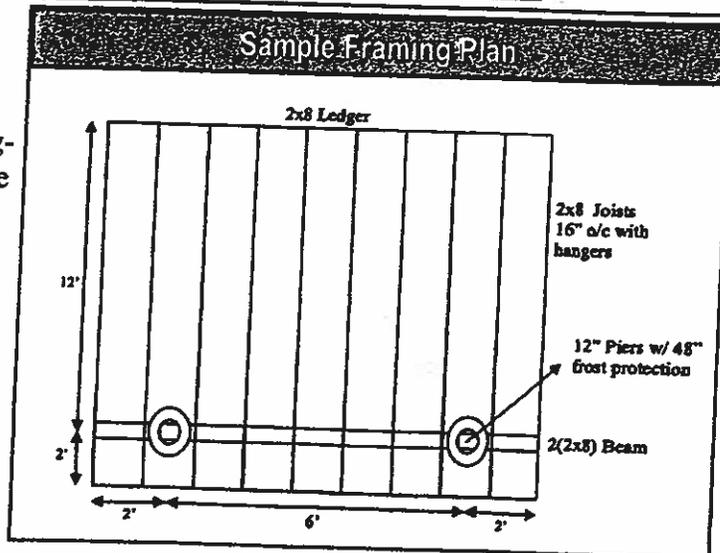
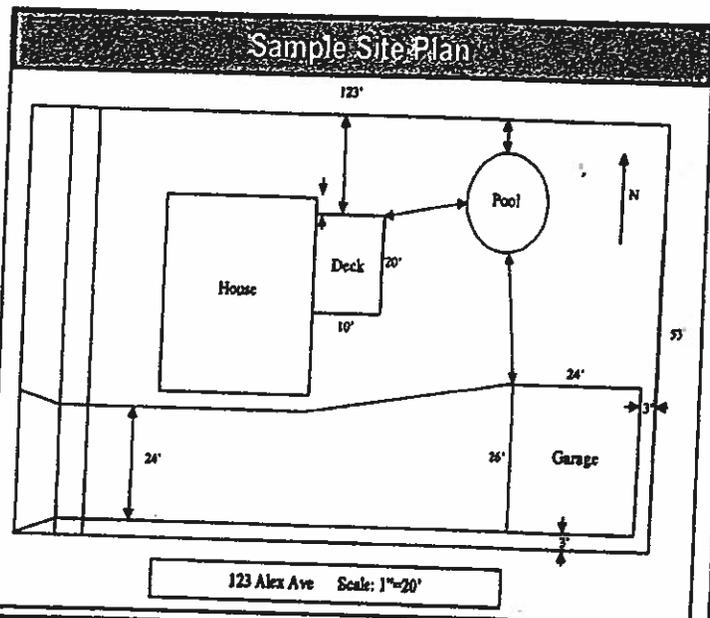
The plans shall be drawn at 1 inch = 20 ft. or larger scale and shall include the following (see the sample site plan):

- All streets, North arrow and graphic scale.
- Exterior boundaries of the property including dimensions of property lines.
- Location of existing and proposed structures.
- Dimensions of setbacks from property lines and between structures.
- Location, dimension and purpose (i.e. water, sewer, etc.) of all easements.

3. Provide 1 sets of Framing Plans

The plans shall be drawn at 1/8 inch = 1 ft. or larger and shall include the following information (see page 13 for minimum requirements):

- Footing size, thickness and locations.
- Floor joist size, span, spacing.
- Beam sizes and locations.
- Height of the deck above grade.
- Guardrail heights and intermediate rail spacing.
- Ledger size, connection and flashing details.
- Post sizes and decking material.
- Ledger size, connection and flashing details.
- Lateral support information.





8348 County Road T
Larsen, WI 54947

Building Code Requirements

Effective January 1, 2016 The WI Department of Safety and Professional Services adopted Appendix B and C in the Uniform Dwelling Code . Please note that the following building code requirements are not all inclusive. To view Appendix B and C please follow this link: <http://dsps.wi.gov/Programs/Industry-Services/Industry-Services-Programs/One-and-Two-Family-UDC/UDC-Admin-Code/>

All decks will need to comply with these requirements or be designed by a structural engineer.

General Deck Requirements:

- All lumber must be pressure preservative treated unless it's a naturally durable species such as cedar. The lumber must also be graded and stamped.
- Nails must be threaded, which includes ring-shanked and spiral-grooved.
- All fasteners must be galvanized steel, stainless steel, or approved for use with treated wood.
- All hardware, hangers and anchors must be galvanized steel with 1.85 ounces of zinc per square foot or stainless steel.
- A deck that has concentrated loads that exceed 40 pounds per square foot (planters, hot tubs, multi level decks, etc) will require engineering analysis.

Footings:

- Minimum compressive strength of 3,000 pounds per square inch.
- Footing size and thickness must be in accordance with the below chart.
- Each post must bear directly over the middle one-third of a footing.
- Footings must bear on solid ground at least 48 inches below finished grade. Bearing onto unprepared fill material, organic soil, alluvial soil, or mud is prohibited.
- If the edge of a deck footing is closer than 5 feet to an existing house wall, the footing must bear at the same elevation as the existing footing for that wall.

FOOTING SIZE (In Inches)^{1,2,3}

Joist Length		Post Spacing (Measured Center to Center)										
		4'	5'	6'	7'	8'	9'	10'	11'	12'	13'	14'
6'	Corner Footing	8	9	10	11	11	12	12	13	14	14	15
	Intermediate Footing	10	11	12	13	14	15	15	16	17	17	18
	Footing Thickness	6	6	6	6	6	6	6	6	6	6	8
7'	Corner Footing	9	10	11	11	12	13	13	14	15	15	16
	Intermediate Footing	11	12	13	14	15	16	17	17	18	19	19
	Footing Thickness	6	6	6	6	6	6	6	6	8	8	8
8'	Corner Footing	10	10	11	12	13	14	14	15	15	16	17
	Intermediate Footing	12	13	14	15	16	17	18	19	19	20	21
	Footing Thickness	6	6	6	6	6	6	8	8	8	8	8
9'	Corner Footing	10	11	12	13	14	14	15	16	16	17	18
	Intermediate Footing	12	14	15	16	17	18	19	20	20	21	22
	Footing Thickness	6	6	6	6	6	8	8	8	8	8	8
10'	Corner Footing	10	12	12	13	14	15	16	16	17	18	18
	Intermediate Footing	13	14	15	17	18	19	20	21	21	22	23
	Footing Thickness	6	6	6	6	8	8	8	8	8	8	10
11'	Corner Footing	11	12	13	14	15	16	16	17	18	19	19
	Intermediate Footing	13	15	16	17	19	20	21	22	22	23	24
	Footing Thickness	6	6	6	6	8	8	8	8	8	10	10
12'	Corner Footing	11	12	14	15	15	16	17	18	19	19	20
	Intermediate Footing	14	15	17	18	19	20	21	22	23	24	25
	Footing Thickness	6	6	6	8	8	8	8	8	10	10	10
13'	Corner Footing	12	13	14	15	16	17	18	19	19	20	21
	Intermediate Footing	14	16	17	19	20	21	22	23	24	25	26
	Footing Thickness	6	6	6	8	8	8	8	10	10	10	10
14'	Corner Footing	12	13	15	16	17	18	18	19	20	21	22
	Intermediate Footing	15	17	18	19	21	22	23	24	25	26	27
	Footing Thickness	6	6	8	8	8	8	10	10	10	10	10
15'	Corner Footing	12	14	15	16	17	18	19	20	21	22	22
	Intermediate Footing	15	17	19	20	21	23	24	25	26	27	28
	Footing Thickness	6	6	8	8	8	10	10	10	10	10	12
16'	Corner Footing	13	14	15	17	18	19	20	20	21	22	23
	Intermediate Footing	16	18	19	21	22	23	25	26	27	28	29
	Footing Thickness	6	8	8	8	8	10	10	10	10	12	12

¹All footing sizes are base diameters².

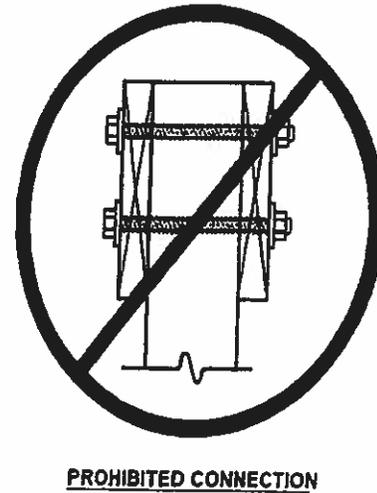
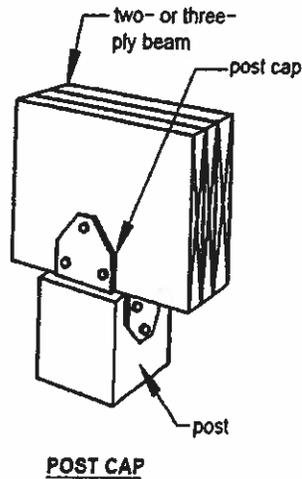
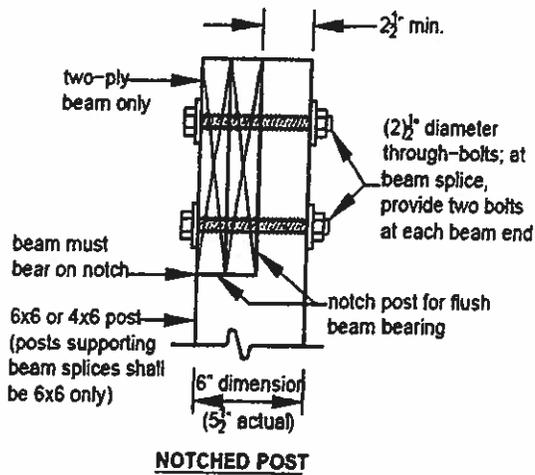
²For square footings, insert the diameter (d) into the following formula: $\sqrt{((d/2)^2 \times \pi)}$. This number will give you the square dimension and must be rounded up to the nearest inch.

³Joist length is the joist span plus any overhang beyond a beam. See section 5.4.

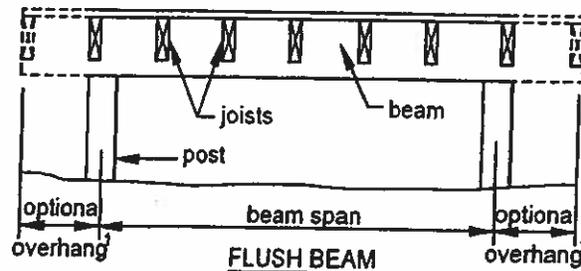
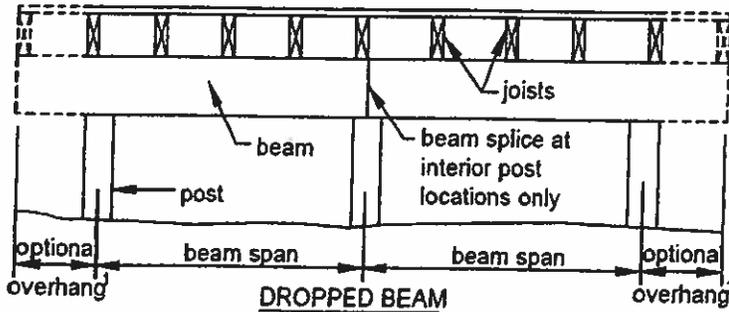
Posts & Beams:

- Maximum post height for a 4"x4" post is 6' (measured from the top of the footing to the underside of the beam).
- Any post supporting a beam splice must be a 6"x6".
- Posts must be properly attached to the beams per the below diagrams.

POST-TO-BEAM CONNECTIONS



BEAM TYPES



¹The maximum length of the overhang is equal to one-fourth of the actual beam span length ($0.25 \times \text{beam span}$).

MAXIMUM BEAM-SPAN LENGTH FOR SOUTHERN PINE¹

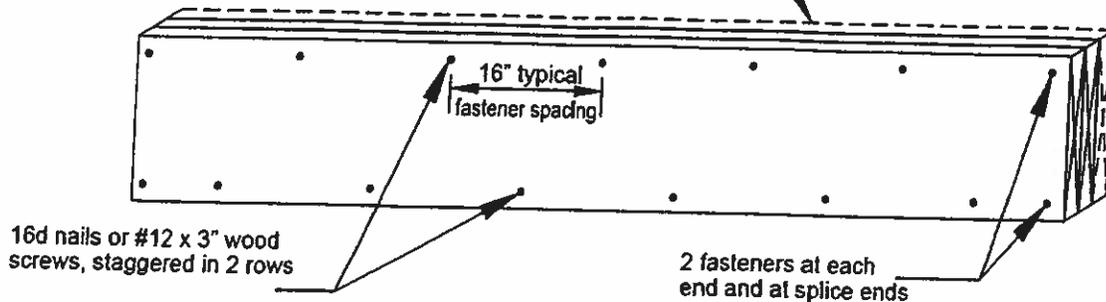
Joist Span	(Number of Plies) Beam Size ² - Inches							
	(2) 2x6	(2) 2x8	(2) 2x10	(2) 2x12	(3) 2x6	(3) 2x8	(3) 2x10	(3) 2x12
≤ 6'	6'-11"	8'-9"	10'-4"	12'-2"	8'-2"	10'-10"	13'-0"	15'-3"
≤ 8'	5'-11"	7'-7"	9'-0"	10'-7"	7'-5"	9'-6"	11'-3"	13'-3"
≤ 10'	5'-4"	6'-9"	8'-0"	9'-5"	6'-8"	8'-6"	10'-0"	11'-10"
≤ 12'	4'-10"	6'-2"	7'-4"	8'-7"	6'-1"	7'-9"	9'-2"	10'-9"
≤ 14'	4'-6"	5'-9"	6'-9"	8'-0"	5'-8"	7'-2"	8'-6"	10'-0"
≤ 16'	4'-3"	5'-4"	6'-4"	7'-6"	5'-3"	6'-8"	7'-11"	9'-4"
≤ 18'	4'-0"	5'-0"	6'-0"	7'-0"	5'-0"	6'-4"	7'-6"	8'-10"

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.

²Beam depth must be equal to or greater than joist depth if joist hangers are used (see Figure 8, Option 3).

BEAM ASSEMBLY

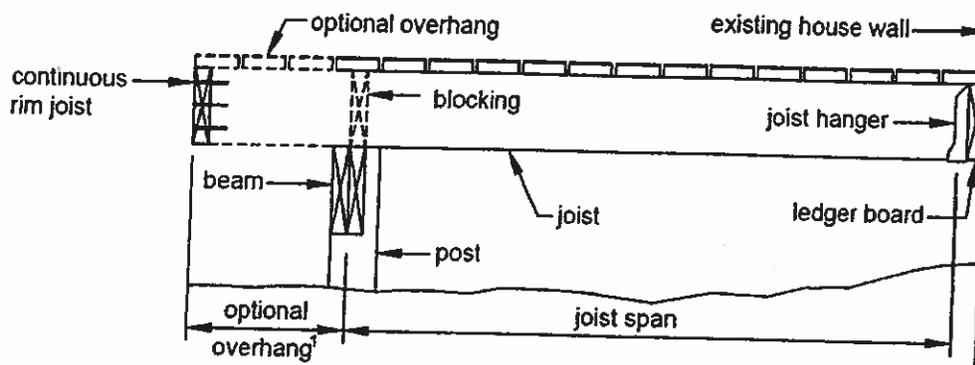
If a beam is constructed with three-ply, attach each outside member to the inside as shown herein



Joists:

- Joists must bear at least 3" onto beams unless joist hangers are used.
- Joists may overhang past the center of the beam up to one-fourth of the joist span.
- Full depth blocking or bridging is required for 2"x10" or deeper joists at intervals not exceeding 8' with (3) 10 d toe-nails at each end.

JOISTS WITH DROPPED BEAM - DECK ATTACHED AT HOUSE



¹The maximum length of the overhang is equal to one-fourth of the actual joist span length (0.25 x joist span).

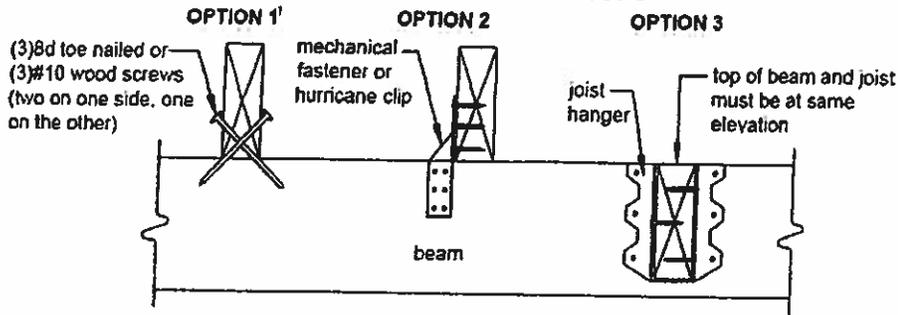
MAXIMUM JOIST-SPAN LENGTH¹

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"
16"	2"x12"	18'-0"	18'-0"	18'-0"	18'-0"
	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"
24"	2"x12"	15'-9"	15'-9"	16'-6"	16'-6"
	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.

JOIST-TO-BEAM CONNECTIONS



¹Option 1 is not allowed on free standing decks

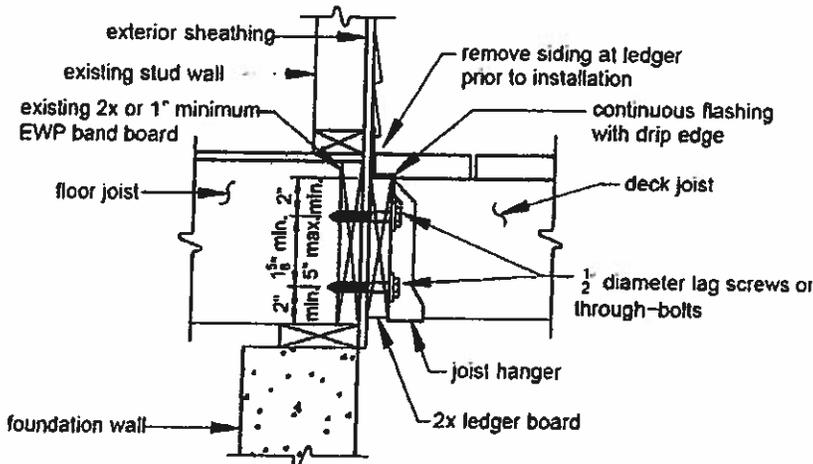
Joist Hangers:

- The joist hanger depth must be at least 60 percent of the joist depth.
- The joist hanger must accommodate the number of plies being carried.
- Do not bend hanger flanges to accommodate field conditions.
- Screws are not allowed unless recommended by the manufacturer of the hanger.

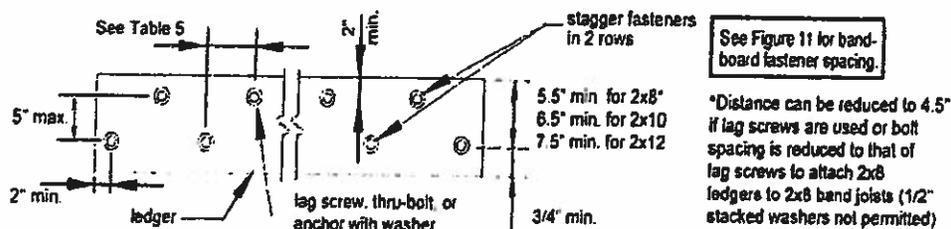
Ledger Attachments:

- Ledgers must be greater than the depth of the joist but never less than a 2"x8".
- Ledgers can not be attached to the house when I joists or floor trusses are installed unless manufacturer approval is granted. A free standing deck would be required.
- The top of the ledger board and the top of the deck joists must be at the same elevation.
- Siding must be removed in the area of the ledger and flashing must be installed.
- Ledgers can not be attached through an exterior veneer such as brick, stone or to a house overhang.

ATTACHMENT OF LEDGER BOARD TO BAND BOARD OR BAND JOIST



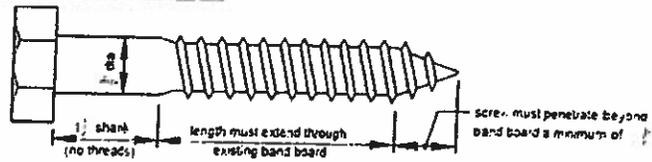
LEDGER BOARD FASTENER SPACING AND CLEARANCES



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" FWP	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"

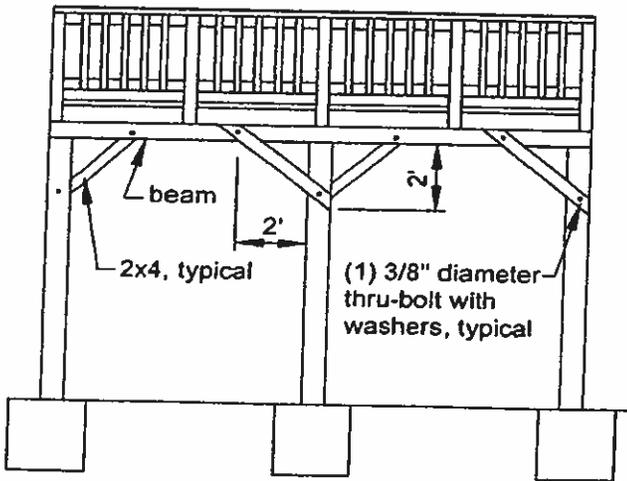
LAG SCREW



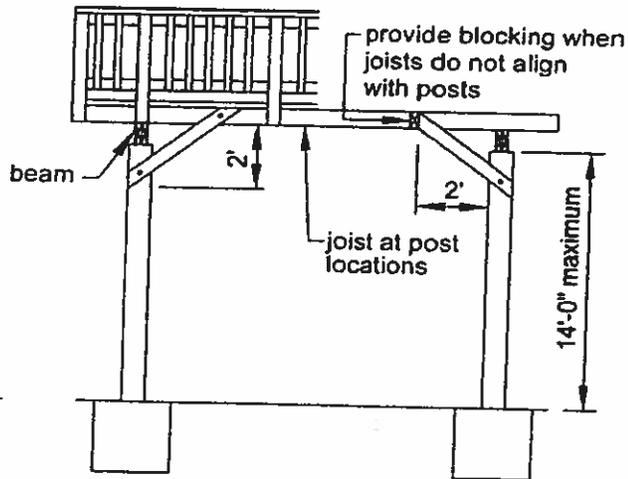
Lateral Support:

- Diagonal bracing shall be provided both parallel and perpendicular to the beam at each post. Where parallel to the beam, the bracing must be bolted to the post at one end and to the beam at the other. Where perpendicular to the beam, the bracing must be bolted to the post at one end and to a joist or blocking between the joists at the other. Where a joist does not align with the bracing location, provide blocking between the adjacent joists.
- Bracing is not required perpendicular to the house for a deck that is attached to the house with both a ledger and a tension tie or hold down tension device.
- All bracing may be omitted for a deck which is attached to the house and which has all of its decking installed at a 45 degree angle to the deck joists.

DIAGONAL BRACING REQUIREMENTS

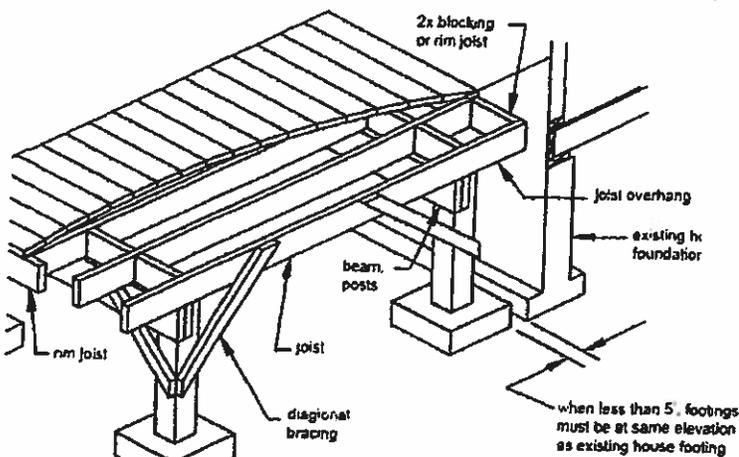


BRACING PARALLEL TO BEAM

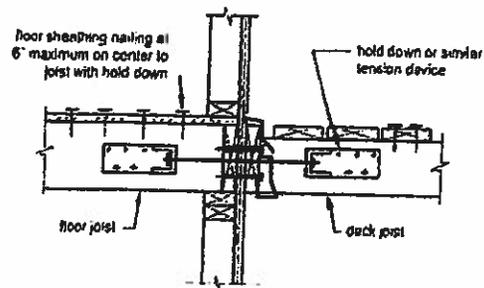


BRACING PERPENDICULAR TO BEAM

FREE-STANDING DECK

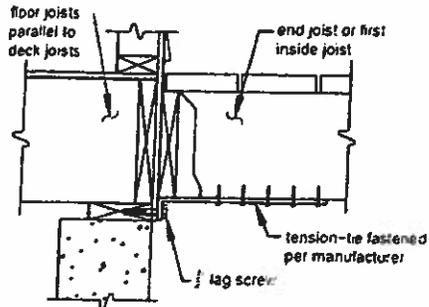


HOLD-DOWN TENSION DEVICE, WITH LEDGER BOARD

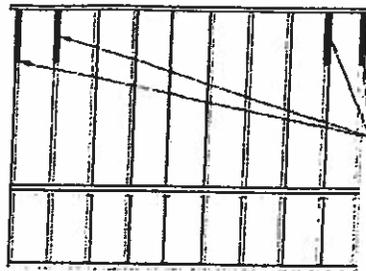


If hold-down tension devices are used they must be provided in at least 2 locations per deck.

TENSION-TIE CONNECTION, WITH LEDGER BOARD

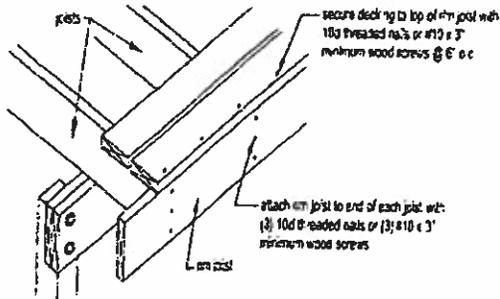
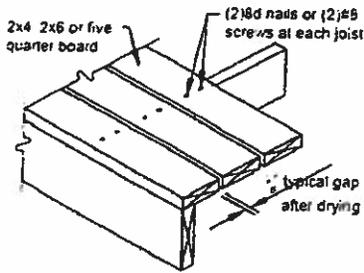


TYPICAL DECKING



install tension-tie to underside of outside and first inside joists on each side of deck

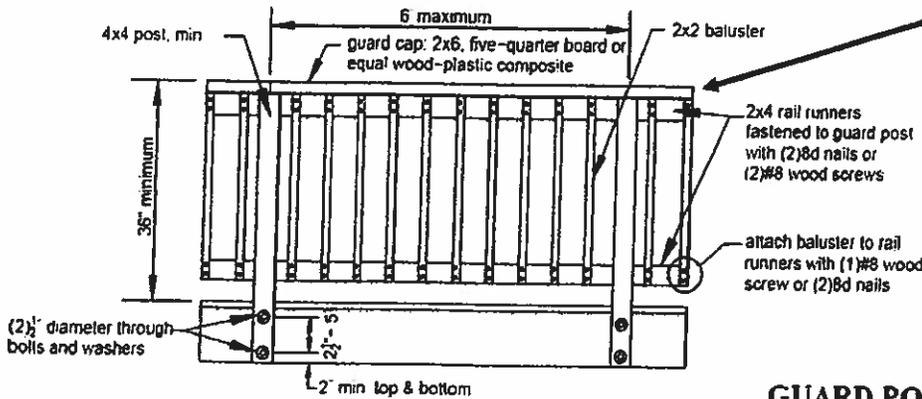
RIM JOIST CONNECTION



Guards:

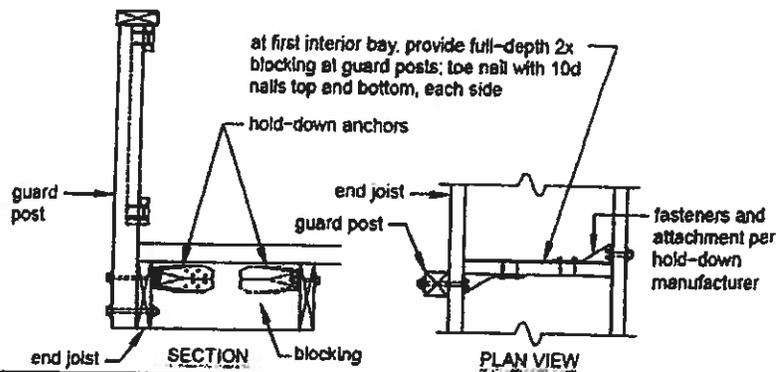
- Guards are required on all open sides of decks that are more than 24 inches above grade.
- Openings in guards can not allow passage of a sphere 4 3/8 inches in diameter.
- The triangular opening formed at steps can not allow passage of a sphere 6 inches in diameter.
- Rope, cables, etc can be used if it's strung with a maximum opening of 3 1/2 inches and vertical supports no more than 4 feet apart.
- Guard posts can not be notched.
- Hold-down anchors must be used to attach the guard post to the end joist and rim joist.

GUARDS



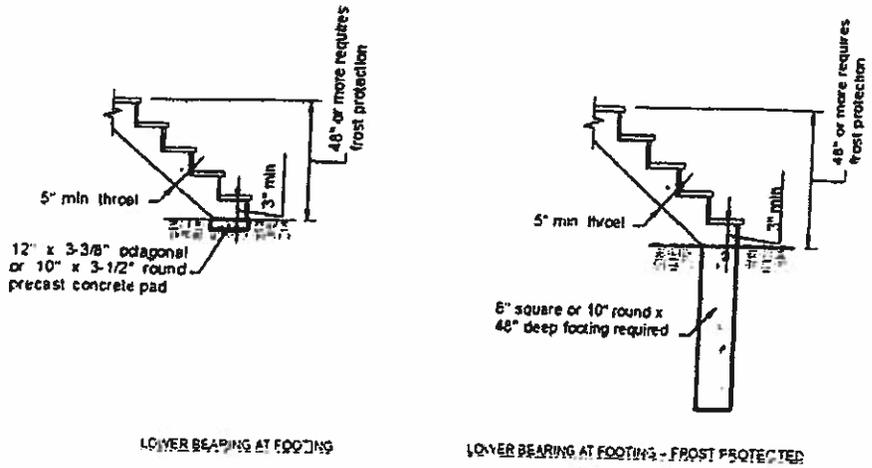
The City of Oshkosh has adopted design standards for single and two family homes. Decks/Porches visible from the street must include posts, rails and balusters with non-visible fasteners. Contact the City of Oshkosh Planning Department with any questions regarding design standards at (920) 236-5059.

GUARD POST TO END JOIST



Stairs:

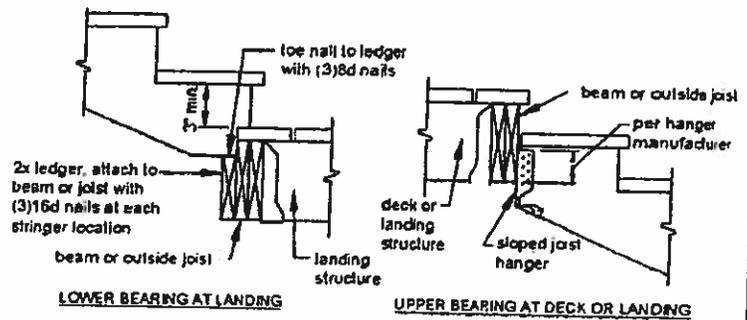
- Minimum width of a stairway is 36 inches. A level landing 3'x3' is required at the top and base of stair flights.
- Treads minimum 9 inches; Risers maximum 8 inches.
- Treads and risers can not vary within a stair flight by more than 3/8 inches.
- Level landings must equal the width of the stairway.
- Stringers must be solid 2"x12"s and can not be spaced more than 18 inches on center.
- Stringers must bear on a solid surface and may require frost protection (see diagram).
- The span length of a cut stringer can not exceed 6 feet and the throat must not be less



LOWER BEARING AT FOOTING

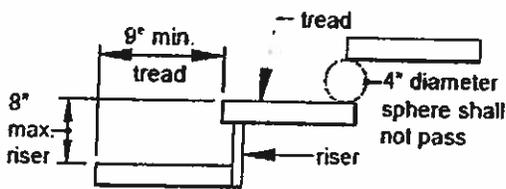
LOWER BEARING AT FOOTING - FROST PROTECTED

STRINGER BEARING



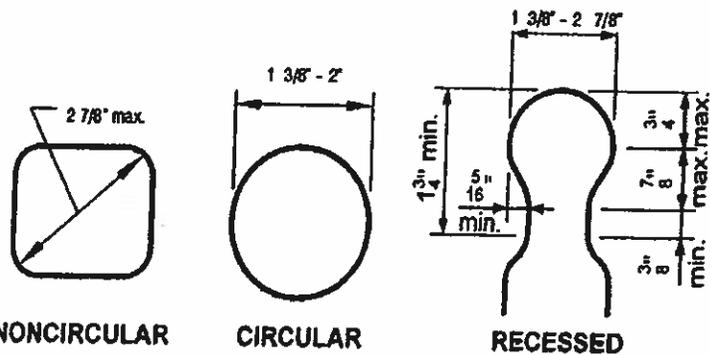
LOWER BEARING AT LANDING

UPPER BEARING AT DECK OR LANDING



than 5 inches.

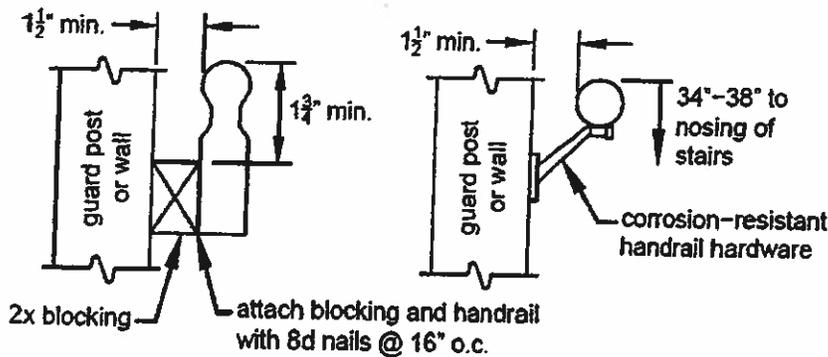
HANDRAIL GRASPABILITY



Perimeter: 4" - 6 1/4"

Handrails:

- A flight of stairs with more than 3 risers must be provide with at least one handrail.
- The handrail must be located at least 30 inches

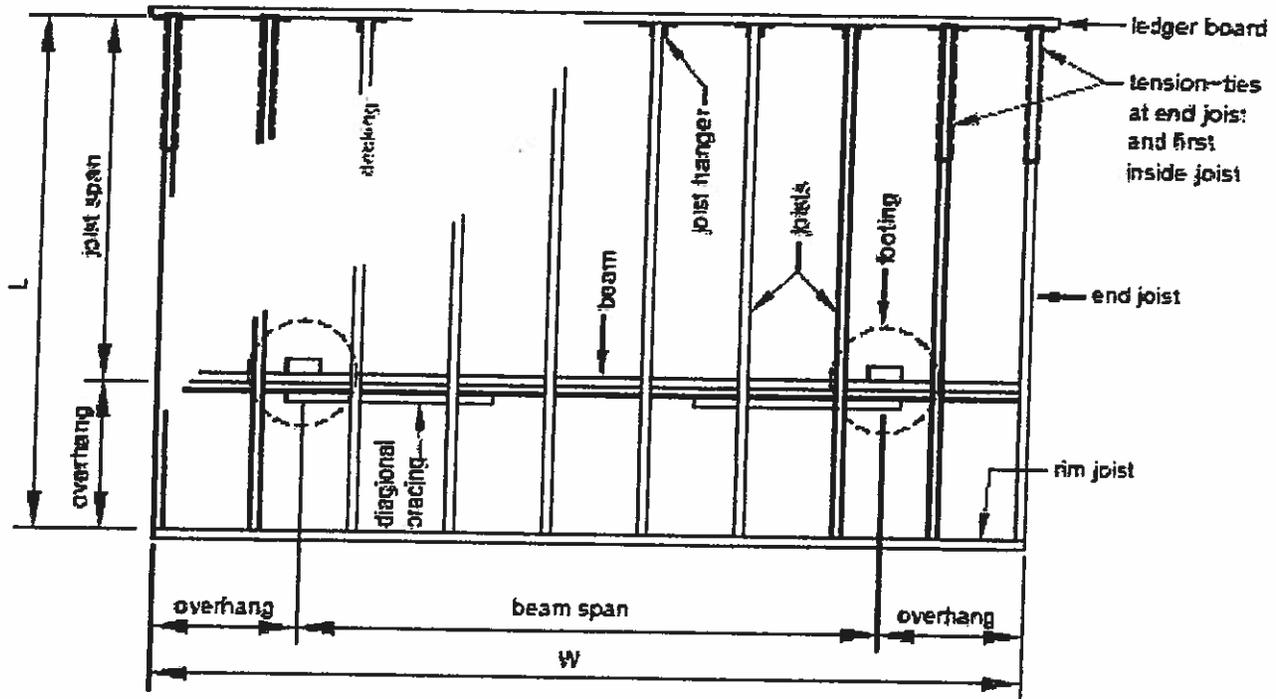


but no more than 38 inches above the nosing of the tread.

- The handrail must be graspable.
- Handrails must be continuous from the lowest riser to the highest riser/landing.

Typical Deck Framing Plan

*All information is required to be filled out.
This plan can only be used for simple decks that are square/rectangle.*



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

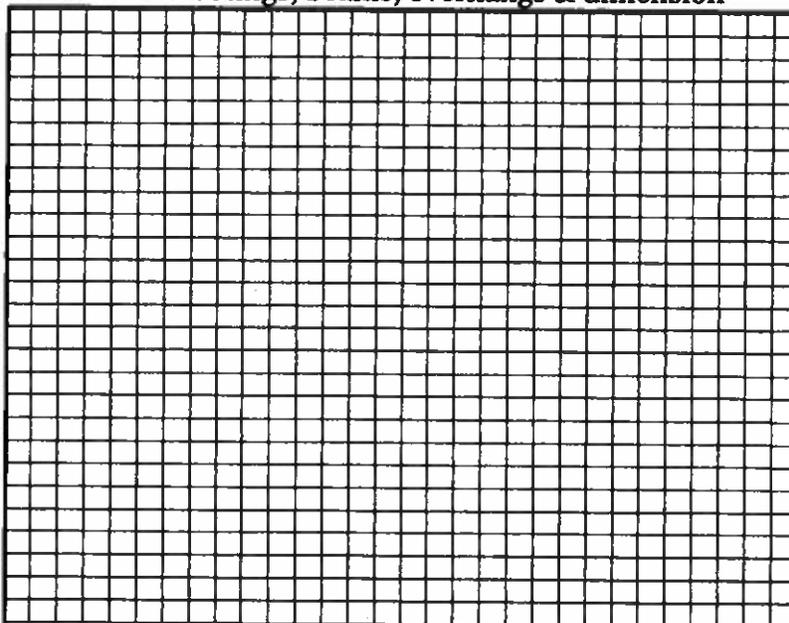
Lateral support: Tension-tie Diagonal bracing, size: 2x
(not permitted for free-standing deck)

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

Footing Size

Deck Layout

Locate footings, beams, overhangs & dimension



Loading

Live load = 40 PSF
 Dead load = 10 PSF
 Other = _____ PSF
 Total load = _____ PSF

Soil Bearing = _____ PSF*

*soils greater than 2,000 PSF must be verified

PSF=pounds per square foot

Tributary Area

(See Example on Right)

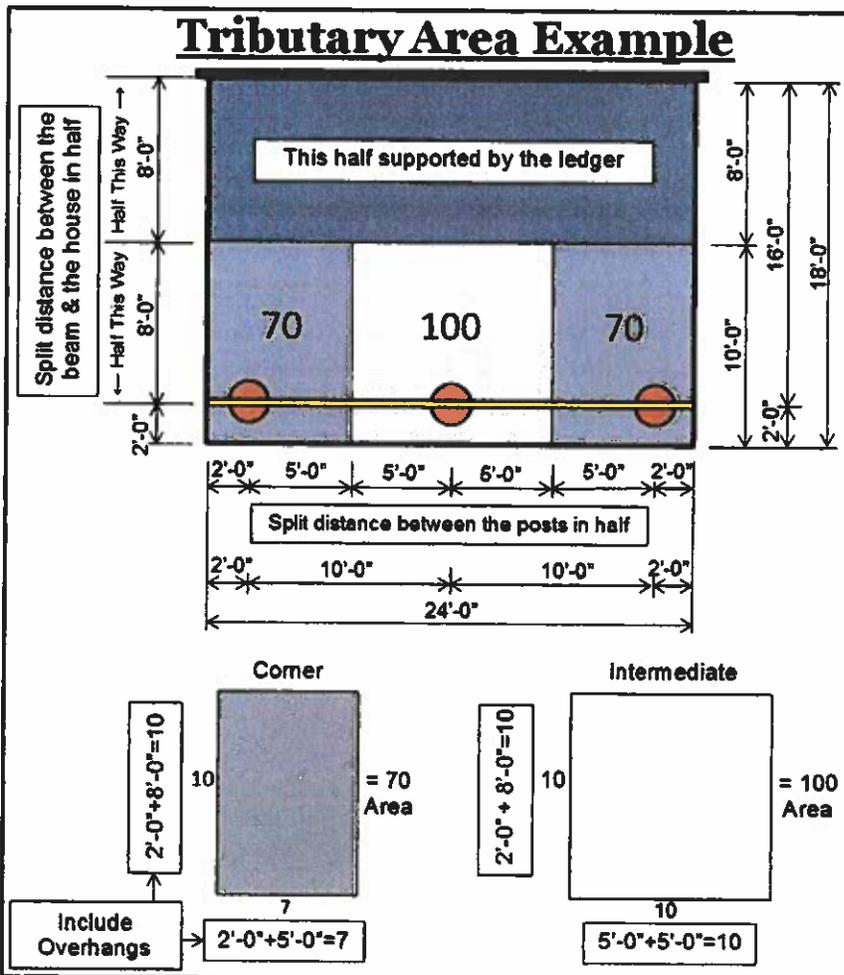
Corner Footing

_____ X _____ = _____

Intermediate Footing

_____ X _____ = _____

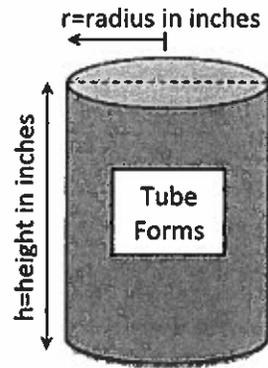
Tributary Area Example



Tributary load

Tributary area x total load= tributary load

Use this formula for tube forms, I.e. Sonotubes®
 Tributary area x total load + $(150 \left(\frac{\pi r^2 h}{1728} \right))$ = tributary load



Corner footing
 _____ x _____ $(+150 \left(\frac{\pi \underline{\hspace{1cm}}^2}{1728} \right))$ = _____

Intermediate footing
 _____ x _____ $(+150 \left(\frac{\pi \underline{\hspace{1cm}}^2}{1728} \right))$ = _____

Footing Area In² =inches squared

Tributary load ÷ Soil bearing=Load PSF × 144(change to square inches) = Area in In²

Corner footing
 _____ ÷ _____ = _____ × 144 = _____ Area in In²

Intermediate footing
 _____ ÷ _____ = _____ × 144 = _____ Area in In²

Round footings π= 3.1416

$2 \times \sqrt{\text{area} \div \pi}$ = diameter of footing
 (round to nearest inch)

Corner
 $2 \times \sqrt{\underline{\hspace{1cm}} \div \pi}$ = _____ inches

Intermediate
 $2 \times \sqrt{\underline{\hspace{1cm}} \div \pi}$ = _____ inches

Square footings

$\sqrt{\text{area}}$ = length of each side
 (round to nearest inch)

Corner
 $\sqrt{\underline{\hspace{1cm}}}$ = _____ inches

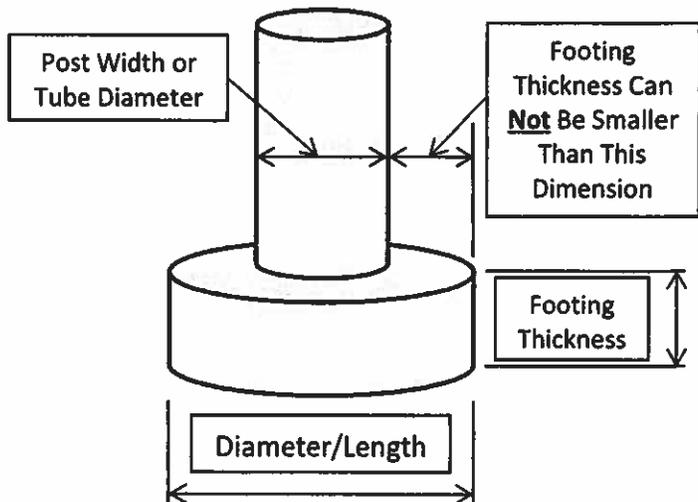
Intermediate
 $\sqrt{\underline{\hspace{1cm}}}$ = _____ inches

Footing thickness²

$(\text{Diameter or length} - \text{post width}) \div 2 = \text{thickness}$
 (in inches)

$(\underline{\hspace{1cm}} - \underline{\hspace{1cm}}) \div 2 = \underline{\hspace{1cm}}$ inches

Note: Footings may not be less than 8" thick



²Footing thickness formula from American Wood Council. Prescriptive Residential Wood Deck Construction Guide, 2015.

Parcel # _____

Permit # _____

Building Permit-Town of Clayton

Owners name _____ Phone _____

Project address _____

Contractors name _____ Phone _____

Contractors address _____ Fax #: _____

Type of occupancy _____ Square foot of Project _____

Project description _____ Job Costs \$ _____

Conditions of approval _____

- Possess and post required Zoning & Building Permits before starting any construction on additions, decks, etc.
- Property pins exposed on the first inspection for any additions or new construction.
- Road clean up is the responsibility of the owner/contractor on the same day.
- All work to meet the State Codes or re-inspection fees will be charged for improper installations.

The owner/contractor is responsible for making arrangements for the final inspection.

Required Inspections

Additional Permits

Additional Inspections

_____ Foundations (additions & decks)

_____ Framing

_____ Insulation

_____ Final

_____ Electrical _____

_____ HVAC _____

_____ Plumbing _____

Owner/Contractor _____ License # _____ Date _____

Inspector _____ Date _____

Available to: Town of Clayton

and To: 8348 Cty Rd T., Larsen, WI 54947 PH: 920-428-3361 or 920-836-2007

County Zoning Permit Required Yes No Total Fees _____

Town of Clayton Zoning Permit

Please complete this side of application
Review Fee is \$120

Review by Appointment Only - Please Call
Tom Spierowski (920) 428-3361

Tax Parcel No.: _____

Property Owner: _____ The property owner and applicant/builder are the same

Applicant or builder: _____

Mail Permit To: Property Owner Applicant/Builder

Mailing Address: _____

City: _____ **State:** _____ **Zip:** _____

Contact Name: _____ **Phone:** _____

Cell phone: _____ **Email:** _____

Construction Site Address: _____

City: _____ **Zip:** _____

Plat Name/CSM: _____ **Lot:** _____

Block: _____ **S:** _____ **T:** _____ **R:** _____ **Lot Size:** _____

Existing Use: Single Family Dwelling Vacant
 Other: _____

Existing Structures: None House Garage Attached Detached
 Other: _____

Proposed Start Date: _____

Construction: Principal Accessory

Type of Construction: New Addition Alteration
 Other: _____

Describe Proposed Construction: _____

1st Floor:	Wall Hgt	_____	Size	_____	Sq. Ft.	_____
2nd Floor:	Wall Hgt	_____	Size	_____	Sq. Ft.	_____
Other:	Wall Hgt	_____	Size	_____	Sq. Ft.	_____
Garage:	Wall Hgt	_____	Size	_____	Sq. Ft.	_____
Attached?	Y	N	Overall Structure Hgt:	_____	Mid-Peak Height:	_____
Estimated Cost:	\$	_____	Walk-out Basement:	<input type="checkbox"/> Yes	<input type="checkbox"/> No	

Fee Received: _____ **For office use**

Received by: _____

Receipt No.: _____

1. In accordance with Wisconsin State Statute 59.691, the information provided herein is to give you notice regarding potential wetlands. You are responsible for complying with state and federal laws concerning construction near or on wetlands, lakes, and streams. Wetlands that are not associated with open waters can be difficult to identify. Failure to comply may result in removal or modification of construction that violates the law or other penalties or costs.

For more information, visit the Department of Natural Resources Wetland Identification web page listed or contact your local DNR office.
[Http://dnr.wi.gov/topic/surfacewater/swdv](http://dnr.wi.gov/topic/surfacewater/swdv)

As the applicant, I hereby acknowledge notice of this wetland information.

2. Permission is hereby granted for Town Zoning Staff to enter the property for inspection purposes until a Certificate of Compliance is issued.

Signature: _____

Date: _____

**PERMIT IS NULL & VOID IF
ISSUED IN ERROR OR IF
APPLICANT MISREPRESENTS**

