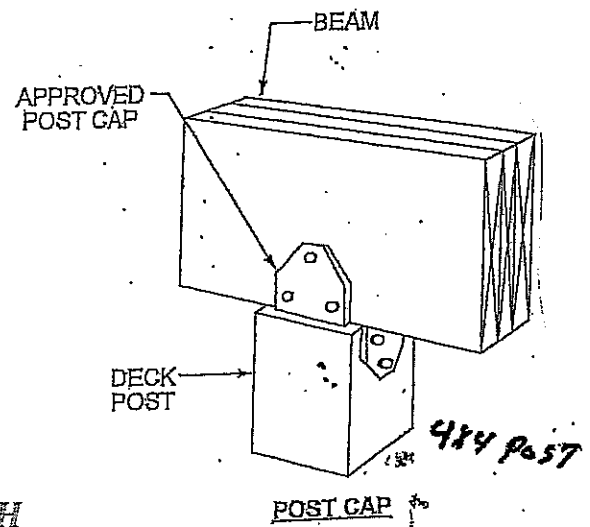


## DECK REQUIREMENTS

- DRAWING SHOWING SIZE OF DECK (2 SETS OF DRAWINGS)
  - SHOWING STEPS WITH 9" RUN, 8 ¼ " MAX RISE AND HANDRAIL
  - SHOWING GUARDRAIL BALUSTERS; OPENING NOT WIDER THAN 4"
  - POSTS SIZE, DEPTH AND DISTANCE BETWEEN
  - JOIST - SIZE AND SPACING
  - DECK BOARDS - SIZE
  - SIZE OF CARRIER IF USING ONE
  
- DRAWING MUST ALSO SHOW LOCATION OF HOUSE ON LOT AND THE DECK LOCATION IN RELATION TO ALL LOT LINES (DISTANCE FROM)
  
- DECKS BEING BUILT IN MOBILE HOME PARKS MUST HAVE APPROVAL LETTER FROM MANAGEMENT

### **NOTE:**

- ALL BEAMS MUST BE NOTCHED INTO POST
- IF USING A 4X4 POST THEN A POST CAP IS REQUIRED FOR THE POST TO BEAM CONNECTION
- WILL THE DECK BE CONNECTED TO A CANTILEVER OR THE HOUSE?



VILLAGE OF GOODRICH

7338 S STATE ROAD ~ PO BOX 276 ~ GOODRICH, MI 48438 ~ P 810.636.2570 ~ F 810.636.8886

# DECK/PORCH PERMIT APPLICATION

## HOMEOWNER INFORMATION

DATE OF APPLICATION \_\_\_\_\_

HOMEOWNER \_\_\_\_\_

ADDRESS OF PROJECT \_\_\_\_\_

PHONE # \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

ADDRESS OF HOMEOWNER IF OTHER THAN ABOVE \_\_\_\_\_

## CONTRACTOR INFORMATION

COMPANY NAME \_\_\_\_\_

CONTACT \_\_\_\_\_

ADDRESS \_\_\_\_\_

PHONE # \_\_\_\_\_

EMAIL ADDRESS \_\_\_\_\_

SIZE OF DECK \_\_\_\_\_

(ALL BEAMS MUST BE NOTCHED INTO POST IF USING A 4X4 POST THAN A  
POST CAP IS REQUIRED FOR THE POST TO BEAM CONNECTION)

WILL THE DECK BE CONNECTED TO A CANTILEVER OF THE HOUSE \_\_\_\_\_

COVERED \_\_\_\_\_ ENCLOSED \_\_\_\_\_ OPEN \_\_\_\_\_

IS THE DECK THE FRONT \_\_\_\_\_ BACK \_\_\_\_\_

SET BACK FROM LOT LINES: FRONT \_\_\_\_\_ SIDE \_\_\_\_\_ REAR \_\_\_\_\_

---

## BUILDING DEPARTMENT ONLY

INSPECTOR'S APPROVAL \_\_\_\_\_ DATE \_\_\_\_\_

CONFIRMATION OF SQUARE FOOTAGE \_\_\_\_\_

6" SPHERE  
UNABLE  
TO PASS  
THROUGH  
OPENING

34" MIN.

4" TYP.

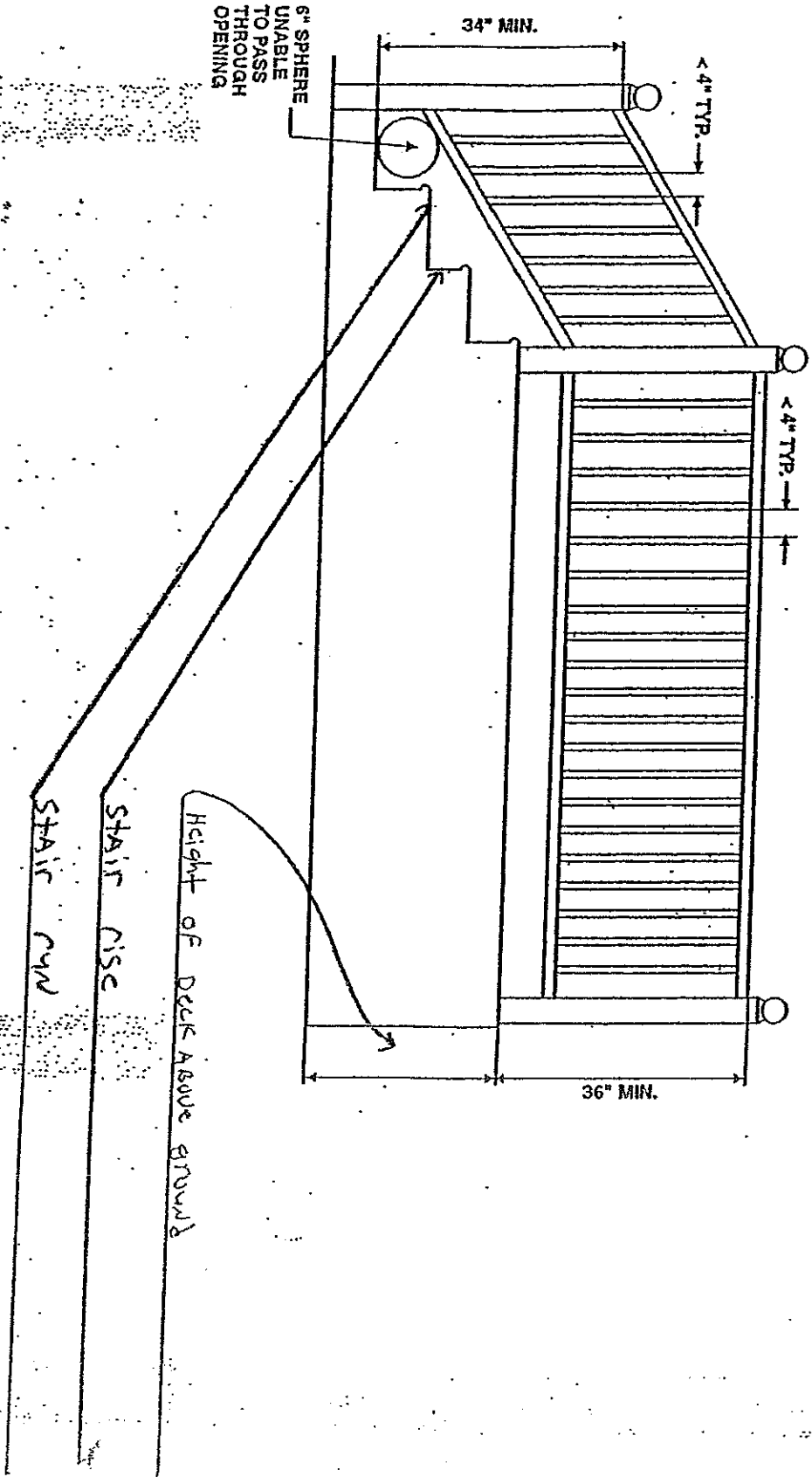
4" TYP.

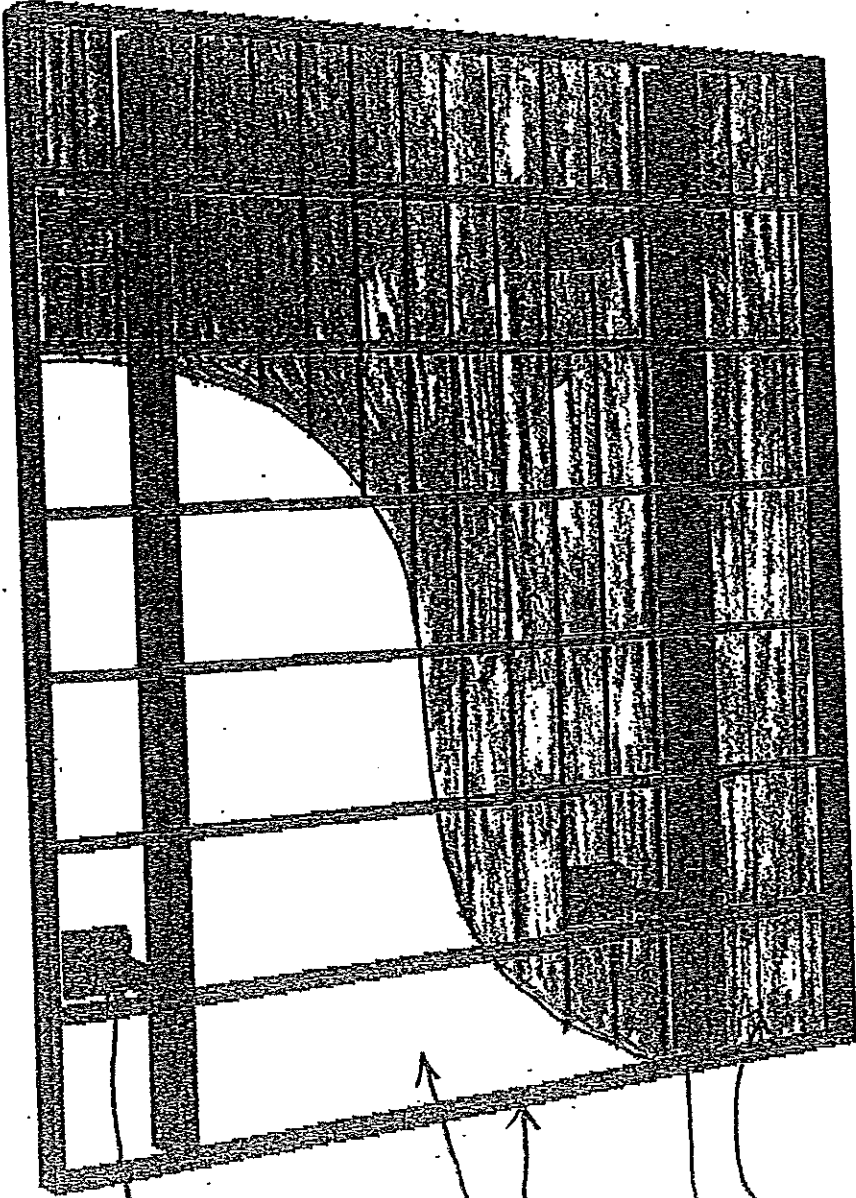
36" MIN.

STAIR RISE

STAIR RISE

Height of Deck Above Ground





Footings

Posts

Joist Spacing

Joist

Beam

Decking

addendum

**ADDENDUM  
CONTRACTOR'S INFORMATION**

This information is strictly for the contractor, please do not include any homeowner information.

**Business Name:** \_\_\_\_\_

**Owners  
Name:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**City:** \_\_\_\_\_ **State:** \_\_\_\_\_ **Zip:** \_\_\_\_\_

**Contracting Companies Business Telephone  
( )** \_\_\_\_\_

**Mobile ( )** \_\_\_\_\_ **Fax ( )** \_\_\_\_\_

**After Hours Contact Person and Telephone Number  
( )** \_\_\_\_\_

**Superintendent Name:** \_\_\_\_\_

**Telephone Number** \_\_\_\_\_

**Builders License No:** \_\_\_\_\_

**Federal Employer ID Number or  
Reason for Exemption:** \_\_\_\_\_

**Workers Comp Insurance Carrier or  
Reason for Exemption:** \_\_\_\_\_

**MESC Employer Number or  
Reason for Exemption:** \_\_\_\_\_

**Also, we need a copy of your Builders License.**

## SECTION R506 CONCRETE FLOORS (ON GROUND)

**R506.1 General.** Concrete slab-on-ground floors shall be designed and constructed in accordance with the provisions of this section or ACI 332. Floors shall be a minimum 3½ inches (89 mm) thick (for expansive soils, see Section R403.1.8). The specified compressive strength of concrete shall be as set forth in Section R402.2.

**R506.2 Site preparation.** The area within the foundation walls shall have all vegetation, top soil and foreign material removed.

**R506.2.1 Fill.** Fill material shall be free of vegetation and foreign material. The fill shall be compacted to ensure uniform support of the slab, and except where *approved*, the fill depths shall not exceed 24 inches (610 mm) for clean sand or gravel and 8 inches (203 mm) for earth.

**R506.2.2 Base.** A 4-inch-thick (102 mm) base course consisting of clean graded sand, gravel, crushed stone, crushed concrete or crushed blast-furnace slag passing a 2-inch (51 mm) sieve shall be placed on the prepared subgrade where the slab is below *grade*.

**Exception:** A base course is not required where the concrete slab is installed on well-drained or sand-gravel mixture soils classified as Group I according to the United Soil Classification System in accordance with Table R405.1.

**R506.2.3 Vapor retarder.** A 6-mil (0.006 inch; 152 µm) polyethylene or *approved* vapor retarder with joints lapped not less than 6 inches (152 mm) shall be placed between the concrete floor slab and the base course or the prepared subgrade where no base course exists.

**Exception:** The vapor retarder is not required for the following:

1. Garages, utility buildings and other unheated *accessory structures*.
2. For unheated storage rooms having an area of less than 70 square feet (6.5 m<sup>2</sup>) and carports.
3. Driveways, walks, patios and other flatwork not likely to be enclosed and heated at a later date.
4. Where *approved* by the *building official*, based on local site conditions.

**R506.2.4 Reinforcement support.** Where provided in slabs-on-ground, reinforcement shall be supported to remain in place from the center to upper one-third of the slab for the duration of the concrete placement.

## SECTION R507 EXTERIOR DECKS

**R507.1 Decks.** Wood-framed decks shall be in accordance with this section or Section R301 for materials and conditions not prescribed herein. 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 Deck ledger connection to band joist.** Deck ledger connections to band joists shall be in accordance with this section, Tables R507.2 and R507.2.1, and Figures R507.2.1(1) and R507.2.1(2). For other grades, species, connection details and loading conditions, deck ledger connections shall be designed in accordance with Section R301.

**R507.2.1 Ledger details.** Deck ledgers installed in accordance with Section R507.2 shall be a minimum 2-inch by 8-inch (51 mm by 203 mm) nominal, pressure-preservative-treated southern pine, incised pressure-preservative-treated Hem-fir, or approved, naturally durable, No. 2 grade or better lumber. Deck ledgers installed in accordance with Section R507.2 shall not support concentrated loads from beams or girders. Deck ledgers shall not be supported on stone or masonry veneer.

**R507.2.2 Band joist details.** Band joists attached by a ledger in accordance with Section R507.2 shall be a minimum 2-inch-nominal (51 mm), solid-sawn, spruce-pine-fir lumber or a minimum 1-inch by 9½-inch (25 mm × 241 mm) dimensional, Douglas fir, laminated veneer lumber. Band joists attached by a ledger in accordance with Section R507.2 shall be fully supported by a wall or sill plate below.

**R507.2.3 Ledger to band joist fastener details.** Fasteners used in deck ledger connections in accordance with Table R507.2 shall be hot-dipped galvanized or stainless steel and shall be installed in accordance with Table R507.2.1 and Figures R507.2.1(1) and R507.2.1(2).

**R507.2.4 Flashing.** An approved corrosion-resistant flashing as required by Section R703.8 shall be installed above the attached ledger as shown in Figure R507.2.1(2) or as approved.

R408.30523a

**R507.3 Plastic composite deck boards, stair treads, guards, or handrails.** Plastic composite exterior deck boards, stair treads, guards and handrails shall comply with the requirements of ASTM D7032 and the requirements of Section 507.3.

**R507.3.1 Labeling.** Plastic composite deck boards and stair treads, or their packaging, shall bear a label that indicates compliance to ASTM D7032 and includes the allowable load and maximum allowable span determined in accordance with ASTM D7032. Plastic or composite handrails and guards, or their packaging, shall bear a label that indicates compliance to ASTM D7032 and includes the maximum allowable span determined in accordance with ASTM D7032.

**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 accor-

dance with ASTM E84 or UL 723 with the test specimen remaining in place during the test.

**Exception:** Plastic composites determined to be non-combustible.

**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 D7032.

**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 D7032.

**R507.3.5 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.

**R507.4 Decking.** Maximum allowable spacing for joists supporting decking shall be in accordance with Table R507.4. Wood decking shall be attached to each supporting member with not less than (2) 8d threaded nails or (2) No. 8 wood screws.

**R507.5 Deck joists.** Maximum allowable spans for wood deck joists, as shown in Figure R507.5, shall be in accordance with Table R507.5. Deck joists shall be permitted to cantilever not greater than one-fourth of the actual, adjacent joist span.

**R507.5.1 Lateral restraint at supports.** Joist ends and bearing locations shall be provided with lateral restraint to prevent rotation. Where lateral restraint is provided by joist hangers or blocking between joists, their depth shall be equal not less than 60 percent of the joist depth. Where lateral restraint is provided by rim joists, they shall be secured to the end of each joist with not less than (3) 10d (3-inch × 0.128-inch) nails or (3) No. 10 × 3-inch (76 mm) long wood screws.

**R507.6 Deck Beams.** Maximum allowable spans for wood deck beams, as shown in Figure R507.6, shall be in accordance with Table R507.6. Beam plies shall be fastened with two rows of 10d (3-inch × 0.128-inch) nails minimum at 16 inches (406 mm) on center along each edge. Beams shall be permitted to cantilever at each end up to one-fourth of the actual beam span. Splices of multispan beams shall be located at interior post locations.

**TABLE R507.2  
DECK LEDGER CONNECTION TO BAND JOIST<sup>a,b</sup>**  
(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 <sup>c,d</sup>	30	23	18	15	13	11	10
1/2-inch diameter bolt with 1/2-inch maximum sheathing <sup>d</sup>	36	36	34	29	24	21	19
1/2-inch diameter bolt with 1-inch maximum sheathing <sup>e</sup>	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.

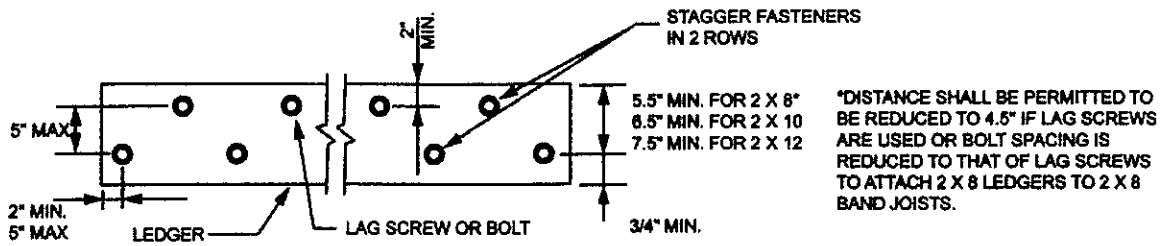
- a. Ledgers shall be flashed in accordance with Section R703.8 to prevent water from contacting the house band joist.
- b. Snow load shall not be assumed to act concurrently with live load.
- c. The tip of the lag screw shall fully extend beyond the inside face of the band joist.
- d. Sheathing shall 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 <sup>a</sup>	2 inches <sup>d</sup>	3/4 inch	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>
Band Joist <sup>c</sup>	3/4 inch	2 inches	2 inches <sup>b</sup>	1 5/8 inches <sup>b</sup>

For SI: 1 inch = 25.4 mm.

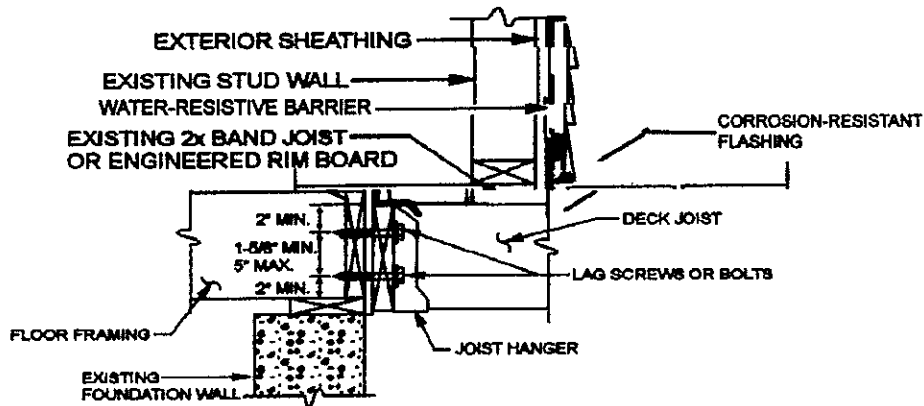
- a. Lag screws or bolts shall be staggered from the top to the bottom along the horizontal run of the deck ledger in accordance with Figure R507.2.1(1).
- b. Maximum 5 inches.
- c. For engineered rim joists, the manufacturer's recommendations shall govern.
- d. The minimum distance from bottom row of 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

R 408.30523



For SI: 1 inch = 25.4 mm.

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

408.30523a

\*

**R507.7 Deck joist and deck beam bearing.** The ends of each joist and beam shall have not less than 1½ inches (38 mm) of bearing on wood or metal and not less than 3 inches (76 mm) on concrete or masonry for the entire width of the span. Joist framing into the side of a ledger board or beam shall be supported by approved joist hangers. Joists bearing on a beam shall be connected to the beam to resist lateral displacement.

**R507.7.1 Deck post to deck beam.** Deck beams shall be attached to deck posts in accordance with Figure R507.7.1 or by other equivalent means capable to resist lateral displacement. Manufactured post-to-beam connectors shall be sized for the post and beam sizes. All bolts shall have washers under the head and nut.

**Exception:** Where deck beams bear directly on footings in accordance with Section R507.8.1.

**R507.8 Deck posts.** For single-level wood-framed decks with beams sized in accordance with Table R507.6, deck post size shall be in accordance with Table R507.8.

TABLE R507.8  
DECK POST HEIGHT\*

DECK POST SIZE	MAXIMUM HEIGHT*
4 × 4	8'
4 × 6	8'
6 × 6	14'

For SI: 1 foot = 304.8 mm.

a. Measured to the underside of the beam.

**R507.8.1 Deck post to deck footing.** Posts shall bear on footings in accordance with Section R403 and Figure R507.8.1. Posts shall be restrained to prevent lateral displacement at the bottom support. Such lateral restraint



FLOORS

shall be provided by manufactured connectors installed in accordance with Section R507 and the manufacturers' instructions or a minimum post embedment of 12 inches (305 mm) in surrounding soils or concrete piers.

**TABLE R507.4  
MAXIMUM JOIST SPACING**

MATERIAL TYPE AND NOMINAL SIZE	MAXIMUM ON-CENTER JOIST SPACING	
	Perpendicular to joist	Diagonal to joist <sup>a</sup>
1 1/4-inch-thick wood	16 inches	12 inches
2-inch-thick wood	24 inches	16 inches
Plastic composite	In accordance with Section R507.3	In accordance with Section R507.3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 degree = 0.01745 rad.

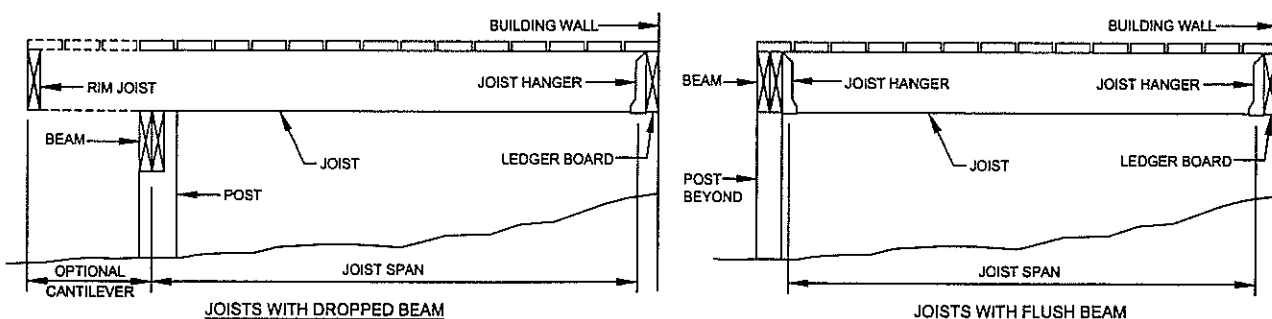
a. Maximum angle of 45 degrees from perpendicular for wood deck boards

**TABLE R507.5  
DECK JOIST SPANS FOR COMMON LUMBER SPECIES<sup>f</sup> (ft. - in.)**

SPECIES <sup>a</sup>	SIZE	SPACING OF DECK JOISTS WITH NO CANTILEVER <sup>b</sup> (Inches)			SPACING OF DECK JOISTS WITH CANTILEVERS <sup>c</sup> (Inches)		
		12	16	24	12	16	24
Southern pine	2 x 6	9-11	9-0	7-7	6-8	6-8	6-8
	2 x 8	13-1	11-10	9-8	10-1	10-1	9-8
	2 x 10	16-2	14-0	11-5	14-6	14-0	11-5
	2 x 12	18-0	16-6	13-6	18-0	16-6	13-6
Douglas fir-larch <sup>d</sup> , hem-fir <sup>d</sup> spruce-pine-fir <sup>d</sup>	2 x 6	9-6	8-8	7-2	6-3	6-3	6-3
	2 x 8	12-6	11-1	9-1	9-5	9-5	9-1
	2 x 10	15-8	13-7	11-1	13-7	13-7	11-1
	2 x 12	18-0	15-9	12-10	18-0	15-9	12-10
Redwood, western cedars, ponderosa pine <sup>e</sup> , red pine <sup>e</sup>	2 x 6	8-10	8-0	7-0	5-7	5-7	5-7
	2 x 8	11-8	10-7	8-8	8-6	8-6	8-6
	2 x 10	14-11	13-0	10-7	12-3	12-3	10-7
	2 x 12	17-5	15-1	12-4	16-5	15-1	12-4

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

- a. No. 2 grade with wet service factor.
- b. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360.
- c. Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied to end.
- d. Includes incising factor.
- e. Northern species with no incising factor
- f. Cantilevered spans not exceeding the nominal depth of the joist are permitted.



**FIGURE R507.5  
TYPICAL DECK JOIST SPANS**

**TABLE R507.6**  
**DECK BEAM SPAN LENGTHS<sup>a, b</sup> (ft. - in.)**

SPECIES <sup>c</sup>	SIZE <sup>d</sup>	DECK JOIST SPAN LESS THAN OR EQUAL TO: (feet)						
		6	8	10	12	14	16	18
Southern pine	2-2 x 6	6-11	5-11	5-4	4-10	4-6	4-3	4-0
	2-2 x 8	8-9	7-7	6-9	6-2	5-9	5-4	5-0
	2-2 x 10	10-4	9-0	8-0	7-4	6-9	6-4	6-0
	2-2 x 12	12-2	10-7	9-5	8-7	8-0	7-6	7-0
	3-2 x 6	8-2	7-5	6-8	6-1	5-8	5-3	5-0
	3-2 x 8	10-10	9-6	8-6	7-9	7-2	6-8	6-4
	3-2 x 10	13-0	11-3	10-0	9-2	8-6	7-11	7-6
	3-2 x 12	15-3	13-3	11-10	10-9	10-0	9-4	8-10
Douglas fir-larch <sup>e</sup> , hem-fir <sup>e</sup> , spruce-pine-fir <sup>e</sup> , redwood, western cedars, ponderosa pine <sup>f</sup> , red pine <sup>f</sup>	3 x 6 or 2-2 x 6	5-5	4-8	4-2	3-10	3-6	3-1	2-9
	3 x 8 or 2-2 x 8	6-10	5-11	5-4	4-10	4-6	4-1	3-8
	3 x 10 or 2-2 x 10	8-4	7-3	6-6	5-11	5-6	5-1	4-8
	3 x 12 or 2-2 x 12	9-8	8-5	7-6	6-10	6-4	5-11	5-7
	4 x 6	6-5	5-6	4-11	4-6	4-2	3-11	3-8
	4 x 8	8-5	7-3	6-6	5-11	5-6	5-2	4-10
	4 x 10	9-11	8-7	7-8	7-0	6-6	6-1	5-8
	4 x 12	11-5	9-11	8-10	8-1	7-6	7-0	6-7
	3-2 x 6	7-4	6-8	6-0	5-6	5-1	4-9	4-6
	3-2 x 8	9-8	8-6	7-7	6-11	6-5	6-0	5-8
	3-2 x 10	12-0	10-5	9-4	8-6	7-10	7-4	6-11
	3-2 x 12	13-11	12-1	10-9	9-10	9-1	8-6	8-1

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

<sup>a</sup> Ground snow load, live load = 40 psf, dead load = 10 psf, L/Δ = 360 at main span, L/Δ = 180 at cantilever with a 220-pound point load applied at the end.

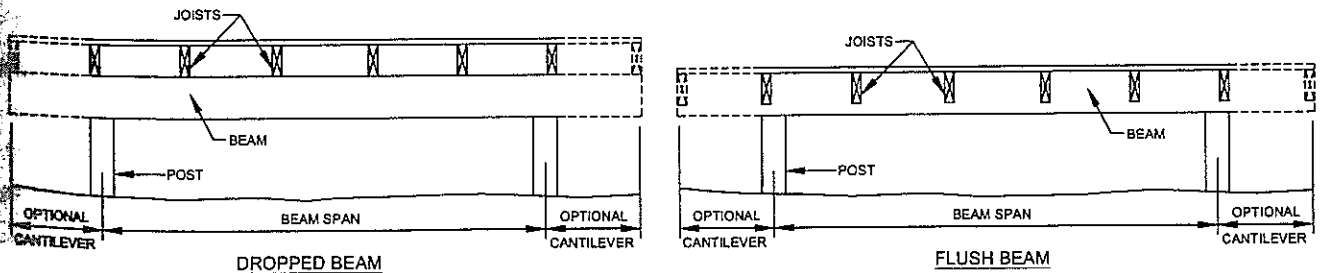
<sup>b</sup> Beams supporting deck joists from one side only.

<sup>c</sup> No. 2 grade, wet service factor.

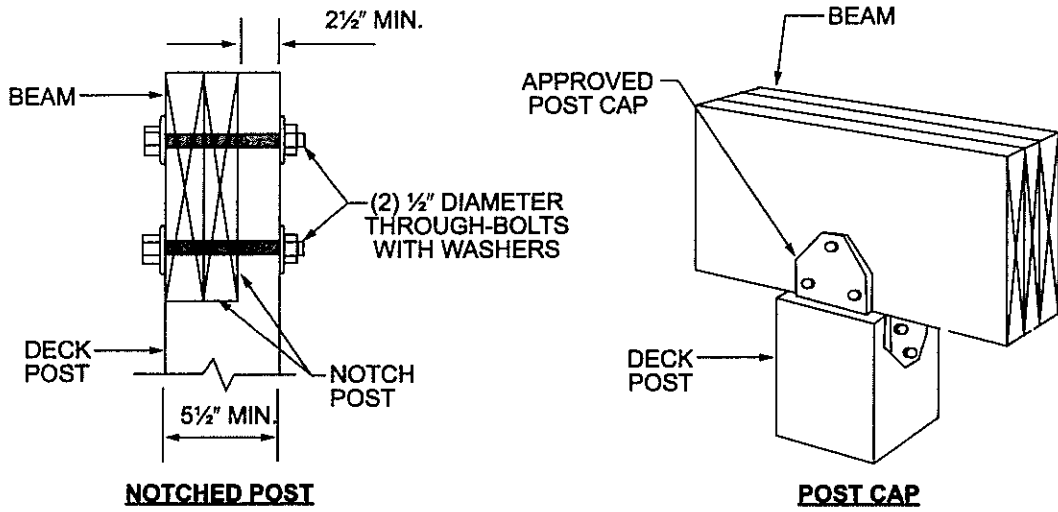
<sup>d</sup> Beam depth shall be greater than or equal to depth of joists with a flush beam condition.

<sup>e</sup> Includes incising factor.

<sup>f</sup> Northern species. Incising factor not included.

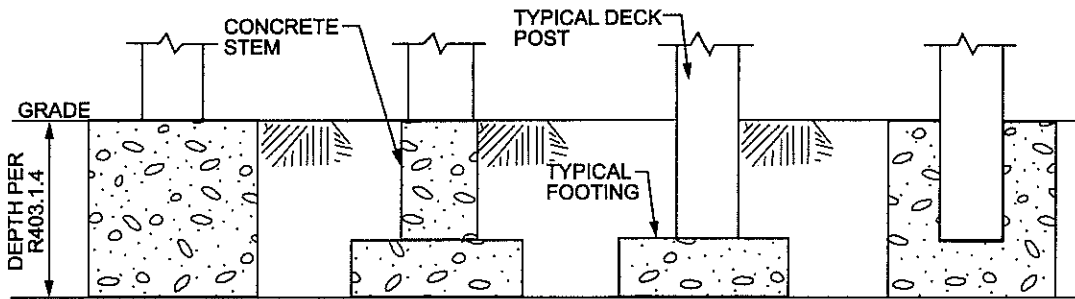


**FIGURE R507.6**  
**TYPICAL DECK BEAM SPANS**



For SI: 1 inch = 25.4 mm.

**FIGURE R507.7.1  
DECK BEAM TO DECK POST**



**FIGURE R507.8.1  
TYPICAL DECK POSTS TO DECK FOOTINGS**



# DTT

## Deck Tension Ties

DTT tension ties are safe, cost-effective connectors designed to meet or exceed code requirements for deck construction. These versatile DTT connectors are also load rated as a holddown for light-duty shearwalls and braced-wall panel applications.

For new construction or to make an existing current deck code-compliant, the DTT1Z can be used as a tension-tie to satisfy the 2015 IRC provision for a 750 lb. lateral load connection to the house at four locations per deck. This code detail permits the lateral connection from the deck joists to be made to top plates, studs, or headers within the supporting structure, which eliminates the need to access to the floor joists inside the home. The DTT1Z is available in a kit (DTT1Z-KT) that includes (4) DTT1Z connectors, (4) Strong-Drive® SDWH Timber-Hex HDG screws and (26) SD #9 x 1½" screws.

The DTT1Z fastens to the narrow or wide face of a single 2x with Simpson Strong-Tie® Strong-Drive® SD Connector screws or nails and accepts a ¾" machine bolt, anchor bolt, or lag screw (washer required) or can be installed with the Strong-Drive SDWH Timber-Hex HDG screw with an integral washer.

The DTT2 can be used to satisfy the IRC provision for a 1,500 lb. lateral load connection at two locations per deck. Additionally, the DTT2 has been tested and evaluated in deck guardrail post applications to resist the code-specified lateral forces at the top of railing assemblies. The DTT2 is also available with longer 2½" Strong-Drive SDS Heavy-Duty Connector screws (model DTT2Z-SDS2.5) to achieve higher loads when needed. The DTT2 fastens easily to the wide face of a single or double 2x using Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws (included) and accepts a ½"-diameter machine bolt or anchor bolt.

For guard post installations using Strong-Drive SDWS Timber screws, see T-F-SDWSGRD.

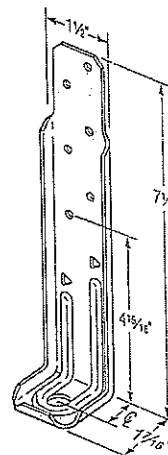
**Material:** 14 gauge

**Finish:** DTT1Z/DTT2Z — ZMAX® coating; DTT2SS — Stainless steel; see Corrosion Information, pp. 15–18

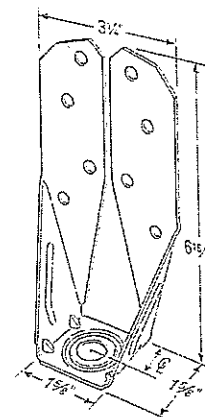
**Installation:**

- Use all specified fasteners; see General Notes
- A standard cut washer (included for DTT2) must be installed between the nut and the seat
- Simpson Strong-Tie Strong-Drive SDS Heavy-Duty Connector screws install best with a low-speed high-torque drill with a ¾" hex head driver (Model DB6H1.75)
- Strong-Drive SD Connector screws install with a ¼" hex head driver (Model DB6H1.75)
- Strong-Drive SDWH Timber-Hex HDG screws install with a ¾" hex head driver (Model DB6H1.75)

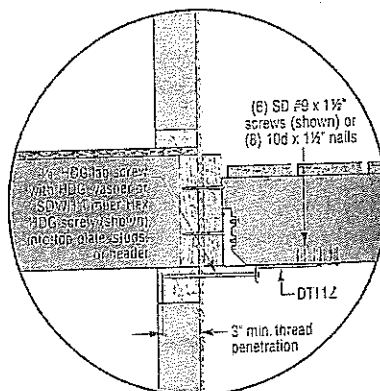
**Codes:** See p. 14 for Code Reference Key Chart



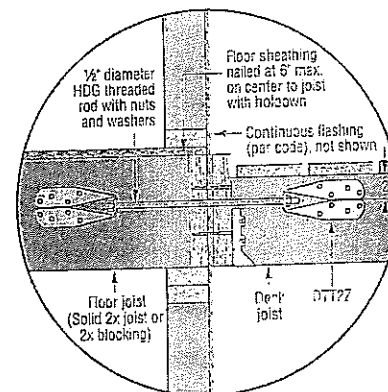
**DTT1Z**  
U.S. Patent Pending



**DTT2Z**  
U.S. Patent 8,555,580



**Typical DTT1Z Deck-to-House Lateral Load Connection**  
For more information on lateral load connections, see technical bulletin T-C-DECKLAT at strongtie.com



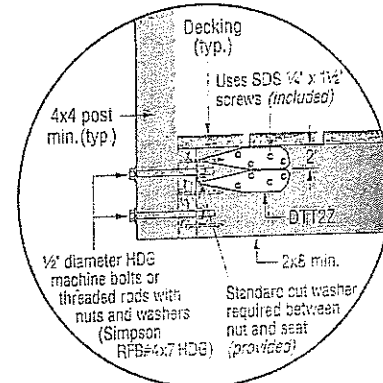
**Typical DTT2Z Deck-to-House Lateral Load Connection**  
For more information on lateral load connections, see technical bulletin T-C-DECKLAT at strongtie.com

These products are available with additional corrosion protection. For more information, see p. 16.

These products are approved for installation with the Strong-Drive® SD Connector screw. See pp. 39–40 for more information.

Model No.	Ø	Anchor Diameter	Fasteners	Min. Wood Member Thickness (in.)	Allowable Tension Loads		Code Ref.
					DF/SP (160)	SPF/HF (160)	
DTT1Z	¾"	¾" or SDWH <sup>1</sup>	(6) SD #9 x 1½"	1½"	840	840	E2 =1
			(6) 10d x 1½"		910	640 <sup>2</sup>	
			(8) 10d x 1½"		910	650	
DTT2Z/DTT2SS	1 3/16"	½"	(8) ¼" x 1½" SDS	1½"	1,825	1,600	I6, L8, FL
				3"	2,145	1,835	
DTT2Z-SDS2.5	1 3/16"	½"	(8) ¼" x 2½" SDS	3"	2,145	2,105	

1. Allowable loads have been increased for wind or earthquake loading with no further increase allowed.
2. DTT1Z installations with allowable loads below 750 lb. do not satisfy the 2015 IRC requirements for deck-to-house lateral load connections.
3. The Strong-Drive® SDWH Timber-Hex HDG screw with a minimum of 3" of thread penetration into dry lumber has an allowable withdrawal load (160) of 1,380 lb. into SP, 1,225 lb. into DF and 1,020 lb. into SPF/HF.
4. Load values are valid if the product is flush with the end of the framing member or installed away from the end.
5. The guardrail post illustration above addresses an outward force on the guardrail. An additional DTT2Z can be added at the lower bolt to address an inward force.
6. A ½" HDG round washer is required when using a lag screw.



**DTT2Z Installed as a Lateral Connector for a Deck Guardrail Post**  
For more information on guardrail post connections, see technical bulletin T-C-GRDRLPST at strongtie.com

C-C-2017 ©2017 SIMPSON STRONG-TIE COMPANY INC.

Decks and Fences

**IT IS THE RESPONSIBILITY OF THE  
APPLICANT TO RESEARCH  
WHETHER DEED RESTRICTIONS OR  
ASSOCIATION RULES APPLY.**

Resolution 2019-05

**VILLAGE OF GOODRICH BUILDING PERMIT FEES**

A. **DWELLING**

**House**

*First Floor* \$75 per square foot

*Second Floor* \$60 per square foot

**Garage** \$30 per square foot

**Porch** \$25 per square foot

Any said costs for construction over \$350,000 will be based on the permit fee plus \$3.00 per 1,000 square foot.

B. **ADDITIONS**

1. \$370.00 + \$.10 per square foot

Any residential addition to a dwelling (including: bedroom, bathroom, family room etc.)

2. \$190.00 + \$.10 per square foot

Any residential addition to a dwelling/parcel (including: detached/attached garages, porches, decks etc.)

C. **REMODELING** (minimum permit fee \$190.00)

Where building permits are required for construction that do not involve an addition to, or expansion, of outside walls of the structure, or an increase in the occupied space, or when the construction is less than \$10,000.00.

Any said costs for construction over \$10,000.01 will be based on the minimum permit fee plus \$3.00 per each additional \$1,000.

D. **SHEDS** No building permit is required for a shed under 200 square feet but requires authorization from the Village Administrator

E. **ACCESSARY BUILDINGS** \$215.00 + .10 per square foot

F. **SWIMMING POOLS**

Above Ground \$135.00 flat fee

In Ground \$215.00 flat fee

G. **FENCES**

No building permit required for fencing 6 feet and under but requires authorization from the Village Administrator.

H. **COMMERCIAL AND INDUSTRIAL BUILDING PERMIT FEES**

Commercial up to \$500,000.00 \$450.00 + .0050 x building cost \$500,000.01 and over

\$450.00 + .0035 x building cost

PLUS Plan review up to \$500,000.00 (min \$200.00) .0013 x building cost

PLUS Plan review over \$500,000.01 (min \$650.00) .0015 x building cost

I. **MOVING OF STRUCTURES**

Pre-moving application fee and site plan \$150.00  
(Building permit and bonds as required)

J. **DEMOLITION OF STRUCTURE**

Sheds, Garages & Accessory	\$60.00	
One & Two Family Homes	\$120.00 + \$5.00	per 1,000 square feet or part there of
Commercial	\$120.00 + \$5.00	per 1,000 square feet or part there of

K. **SIGN PERMITS**

MUST RECEIVE APPROVAL BY THE VILLAGE ADIMINISTRATOR  
PRIOR TO RECEIVING A BUILDING PERMIT

Permanent Sign \$70.00 PLUS \$45.00 staking inspection if needed

**\*\*PERMIT FEE SHALL BE DOUBLED IF SIGN IS ERECTED PRIOR TO ISSUANCEOF PERMIT\*\***

**ALLOWABLE TEMPORARY SIGN (SANDWICH BOARD) MUST RECEIVE  
APPROVAL FROM THE VILLAGE ADMINISTRATOR**

L. **RE-INSPECTIONS** \$55.00 PER INSPECTION

If a building inspection is requested and, in the opinion of the Building Inspector, the work is found to be either unacceptable or not ready for such inspection a re-inspection fee shall be paid to the Village of Goodrich before any such re-inspection is made.

M. **REMOVAL OF STOP WORK ORDER** \$120.00

N. **CULVERT INSPECTIONS** \$15.00  
(excluding M-15 and Green Road) ISSUED BY THE DEPARTMENT OF PUBLIC WORKS

O. **TEMPORARY LIVING QUARTERS** (One [1] year maximum)  
\$65.00 Permit Fee – Issued only under special circumstances.

P. **ROOF PERMIT** \$65.00 A ladder must be provided for inspector.  
If no ladder is present an additional \$55.00 inspection fee will be assessed.

*I, Sheri Wilkerson, the duly appointed Administrator and Clerk of the Village of Goodrich, do hereby CERTIFY that the foregoing is a true and accurate copy of Resolution 2019-05 that was adopted by the Village of Goodrich Council, Genesee County, Michigan at a regular meeting held April 8, 2019, the original of which is on file in my office and available to the public.*

*Village of Goodrich Council*

  
*Sheri Wilkerson, Administrator and Clerk*

*Resolution Number: 2019-05*

*Presented: April 8, 2019*

*Adopted: April 8, 2019*

Residential Building Permit Fees (Effective 7-1-19)

Village of Goodrich

Cost In (000)	Permit Cost
1	\$95
2	\$100
3	\$106
4	\$111
5	\$167
6	\$173
7	\$178
8	\$184
9	\$189
10	\$195
11	\$201
12	\$206
13	\$212
14	\$217
15	\$223
16	\$229
17	\$233
18	\$238
19	\$242
20	\$247
21	\$352
22	\$356
23	\$361
24	\$365
25	\$370
26	\$375
27	\$379
28	\$384
29	\$388
30	\$393
31	\$398
32	\$402
33	\$407
34	\$411
35	\$416
36	\$421
37	\$425
38	\$430
39	\$434
40	\$439
41	\$444
42	\$448
43	\$453
44	\$457
45	\$462
46	\$467
47	\$471
48	\$476
49	\$480
50	\$485
51	\$490
52	\$494
53	\$499
54	\$503
55	\$508
56	\$513
57	\$517
58	\$522
59	\$526
60	\$531
61	\$532
62	\$536
63	\$541
64	\$546
65	\$551
66	\$555
67	\$560
68	\$565
69	\$569
70	\$574

Cost In (000)	Permit Cost
71	\$ 579
72	\$ 583
73	\$ 588
74	\$ 593
75	\$ 598
76	\$ 602
77	\$ 607
78	\$ 612
79	\$ 616
80	\$ 621
81	\$ 626
82	\$ 630
83	\$ 635
84	\$ 640
85	\$ 645
86	\$ 649
87	\$ 654
88	\$ 659
89	\$ 663
90	\$ 668
91	\$ 673
92	\$ 677
93	\$ 682
94	\$ 687
95	\$ 692
96	\$ 696
97	\$ 702
98	\$ 706
99	\$ 710
100	\$ 725
101	\$ 1,430
102	\$ 1,435
103	\$ 1,439
104	\$ 1,444
105	\$ 1,449
106	\$ 1,454
107	\$ 1,459
108	\$ 1,463
109	\$ 1,468
110	\$ 1,473
111	\$ 1,478
112	\$ 1,483
113	\$ 1,487
114	\$ 1,492
115	\$ 1,497
116	\$ 1,502
117	\$ 1,507
118	\$ 1,511
119	\$ 1,516
120	\$ 1,521
121	\$ 1,538
122	\$ 1,543
123	\$ 1,548
124	\$ 1,553
125	\$ 1,558
126	\$ 1,562
127	\$ 1,567
128	\$ 1,572
129	\$ 1,577
130	\$ 1,582
131	\$ 1,587
132	\$ 1,592
133	\$ 1,597
134	\$ 1,602
135	\$ 1,607
136	\$ 1,611
137	\$ 1,616
138	\$ 1,621
139	\$ 1,626
140	\$ 1,631

Cost In (000)	Permit Cost
141	\$1,636
142	\$1,641
143	\$1,646
144	\$1,651
145	\$1,656
146	\$1,660
147	\$1,665
148	\$1,670
149	\$1,675
150	\$1,680
151	\$1,685
152	\$1,690
153	\$1,695
154	\$1,700
155	\$1,705
156	\$1,709
157	\$1,714
158	\$1,719
159	\$1,724
160	\$1,729
161	\$1,734
162	\$1,739
163	\$1,744
164	\$1,749
165	\$1,754
166	\$1,758
167	\$1,763
168	\$1,768
169	\$1,773
170	\$1,778
171	\$1,783
172	\$1,788
173	\$1,793
174	\$1,798
175	\$1,803
176	\$1,807
177	\$1,812
178	\$1,817
179	\$1,822
180	\$1,827
181	\$1,832
182	\$1,837
183	\$1,842
184	\$1,847
185	\$1,852
186	\$1,856
187	\$1,861
188	\$1,866
189	\$1,871
190	\$1,876
191	\$1,881
192	\$1,886
193	\$1,891
194	\$1,896
195	\$1,901
196	\$1,905
197	\$1,910
198	\$1,915
199	\$1,920
200	\$1,925
201	\$1,930
202	\$1,935
203	\$1,940
204	\$1,945
205	\$1,950
206	\$1,954
207	\$1,959
208	\$1,964
209	\$1,969
210	\$1,974

Cost In (000)	Permit Cost
211	\$2,000
212	\$2,005
213	\$2,010
214	\$2,015
215	\$2,020
216	\$2,025
217	\$2,030
218	\$2,035
219	\$2,040
220	\$2,045
221	\$2,050
222	\$2,055
223	\$2,060
224	\$2,065
225	\$2,070
226	\$2,075
227	\$2,080
228	\$2,085
229	\$2,090
230	\$2,095
231	\$2,100
232	\$2,105
233	\$2,110
234	\$2,115
235	\$2,120
236	\$2,125
237	\$2,130
238	\$2,135
239	\$2,140
240	\$2,145
241	\$2,150
242	\$2,155
243	\$2,160
244	\$2,165
245	\$2,170
246	\$2,175
247	\$2,180
248	\$2,185
249	\$2,190
250	\$2,195
251	\$2,200
252	\$2,205
253	\$2,210
254	\$2,215
255	\$2,220
256	\$2,225
257	\$2,230
258	\$2,235
259	\$2,240
260	\$2,245
261	\$2,250
262	\$2,255
263	\$2,260
264	\$2,265
265	\$2,270
266	\$2,275
267	\$2,280
268	\$2,285
269	\$2,290
270	\$2,295
271	\$2,300
272	\$2,305
273	\$2,310
274	\$2,315
275	\$2,320
276	\$2,325
277	\$2,330
278	\$2,335
279	\$2,340
280	\$2,345

Cost In (000)	Permit Cost
281	\$ 2,350
282	\$ 2,355
283	\$ 2,360
284	\$ 2,365
285	\$ 2,370
286	\$ 2,375
287	\$ 2,380
288	\$ 2,385
289	\$ 2,390
290	\$ 2,395
291	\$ 2,400
292	\$ 2,405
293	\$ 2,410
294	\$ 2,415
295	\$ 2,420
296	\$ 2,425
297	\$ 2,430
298	\$ 2,435
299	\$ 2,440
300	\$ 2,445
301	\$ 2,450
302	\$ 2,455
303	\$ 2,460
304	\$ 2,465
305	\$ 2,470
306	\$ 2,475
307	\$ 2,480
308	\$ 2,485
309	\$ 2,490
310	\$ 2,495
311	\$ 2,500
312	\$ 2,505
313	\$ 2,510
314	\$ 2,515
315	\$ 2,520
316	\$ 2,525
317	\$ 2,530
318	\$ 2,535
319	\$ 2,540
320	\$ 2,545
321	\$ 2,550
322	\$ 2,555
323	\$ 2,560
324	\$ 2,565
325	\$ 2,570
326	\$ 2,575
327	\$ 2,580
328	\$ 2,585
329	\$ 2,590
330	\$ 2,595
331	\$ 2,600
332	\$ 2,605
333	\$ 2,610
334	\$ 2,615
335	\$ 2,620
336	\$ 2,625
337	\$ 2,630
338	\$ 2,635
339	\$ 2,640
340	\$ 2,645
341	\$ 2,650
342	\$ 2,655
343	\$ 2,660
344	\$ 2,665
345	\$ 2,670
346	\$ 2,675
347	\$ 2,680
348	\$ 2,685
349	\$ 2,690
350	\$ 2,695



**Example**

House 1st floor                      1200 sq ft x \$75 = 90,000

---

House 2nd floor                      500 sq ft x \$60 = 30,000

---

Garage                                      400 sq ft x \$30 = 12,000

---

Porch                                      60 sq ft x \$25 = 1,500

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Add totals 90,000 + 30,000 + 12,000 + 1,500

**Grand Total = 133,500**

Round up from 133,500 to 134,000

Find COST LINE 134 and the permit amount will be \$1,602