

**City of Greenwood, Indiana**

**2020 Indiana Residential Code-Based  
Prescriptive Shed/Accessory Structure  
Construction Guide**



A reference guide from the City of Greenwood, Indiana's  
Community Development Services Building Department

Created: February 2024



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

## **General Information Notes**

1. This guide is using the 2020 Indiana Residential Code (2018 International Residential Code with Indiana Amendments), this is referenced in the rest of this guide as “Residential Building Code”.
2. This guide also references the City of Greenwood Unified Development Ordinance, this is referenced in the rest of the guide as “City Ordinance”.
3. In this guide we tried to cover all the basic construction/design code & City Ordinance information, but this is not meant to be exhaustive list of the all the Shed/Accessory Structure code requirements.
4. The City Ordinance limits each property to one of each type of structure located on a property, i.e. Shed, Detached Garage, Detached Accessory Dwelling Unit, etc. Properties under two acres are limited to maximum of two different types of Accessory Structures. Properties over two acres can have one additional accessory structure per acre with a maximum of five accessory structures.
5. Sheds/Accessory Structures cannot be placed on a property without a Primary/Main Structure on the property.
6. You have the option to apply for a Variance from the City Ordinance requirements, by submitting a Variance Application with the Planning Department to go to the Board of Zoning & Appeals meeting where Board Members vote whether to grant or reject the Variance request.
7. If you want your structure placed within a Recorded/Platted Easement, you can submit an Encroachment Request Application with the City Engineering Department to go to the Board of Public Works meeting where Board Members vote whether to grant or reject the Encroachment request.
8. All lumber shall be No. 2 grade or better, preservative-treated or approved naturally durable lumber required if exposed to weather or in contact with the ground, Preservative-treated wood products in contact with the ground shall be labeled for that use, have identifying grade marks of an approved lumber grading or inspection bureau agency.
9. If you are using Lumber Composite Materials, you need to not only to follow the Residential Building Code, but also follow the Manufacturer’s recommendations and specifications for installation of these products.
10. Sheds shall not be occupied until the shed Passes the Final Inspection by the City of Greenwood Building Department.
11. Sheds of 200 sq.ft. or less cannot contain Water Supply/Sanitation Services, Permanent Heat and is limited to one 20-Amp Electrical Circuit and cannot be greater than 1-story in height per 2020 Indiana Residential Code.

## **Site/Plot Plan Information:**

Sheds/Accessory Structures must not be placed in any recorded/platted easements without Permission from the City Board of Public Works to encroach into the easement (Drainage, Utility, Landscape or Building Setback Easements), see General Note #7 above for more info on this process. The placement of the structure cannot create or add to Stormwater Drainage issues on the property or affect adjacent



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

properties. You cannot cover greater than certain percentage of your property square feet with impervious surfaces [i.e., Residence, Driveway(s), Patio(s), Accessory Structures with roofs], see by Zoning Lot Coverage list below. For a Permit submittal a Site/Plot Plan must be provided showing Property Structures and proposed shed/Accessory Structure with dimensions from shed to Property Lines, to Main Residence & other Adjacent Structures on the property. Shed/Accessory Structure cannot be located in a Front Yard (Corner Lots have min. two Front Yards when facing a street) or in a Side Yard that is located less than 15'-0" from the Front Building Line of the Main Residence.

### **Property Zoning Max. Coverage:**

RL (Residential Large): 40%

RM (Residential Medium): 50%

RA (Residential Attached Single-Family): 60%

RMH (Residential Mobile Home): N/A

OTR (Old Town Residential): 70%

### **Property Line Setback Per Property Zoning:**

RL (Residential Large): Rear & Side Min. 10'-0"

RM (Residential Medium): Rear & Side Min. 8'-0"

RA (Residential Attached Single-Family): Rear & Side Min. 8'-0"

RMH (Residential Mobile Home): Rear & Side Min. 5'-0"

OTR (Old Town Residential): Rear & Side Min. 5'-0"

### **Shed Construction Information:**

If this Shed/Accessory Structure is a Kit or Pre-Built off site then we just need Structure Brochure/Specifications paperwork for the Permit submittal. If the shed is greater than 200 square feet and less than 722 square feet in size you will need either a footing at grade or to Frost Depth per Residential Building Code Table R309, see "Footing Information" section in this guide for more information on Footing Requirements. Sheds 200 square feet or less can be placed on concrete block/pads, gravel or preservative-treated 4x4 Runners. If you are custom-building this structure then we need complete construction plans. We suggest you start by creating a Floor Plan for your Shed/Accessory Structure project which shows the walls, door(s), window(s), Loft(s), etc.

### **Shed Floor Framing Information (Not Applicable if using a poured concrete slab):**

Use the Table R507.6 of the Residential Building Code for the Joist Species, Size and Spacing and their associated maximum spans & cantilevers. We use this table due to this being a Floor System exposed to the exterior weather/elements as shed floors are typically not protected from this exposure in their installation. You will need to base your Floor design on what species is available and you will be using for your Floor Framing. Now in Indiana the predominant wood species readily available at local



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

lumberyards is “Spruce-Pine Fir”, usually you will have to special order “Southern Yellow Pine”. This Lumber must be preservative-treated or approved naturally durable lumber, Preservative-treated wood products in contact with the ground shall be labeled for that use, have identifying grade marks of an approved lumber grading or inspection bureau agency per Residential Building Code Section R317.1.2.

**Table R507.6 Deck Joist Spans For Common Lumber Species:**

SPECIES <sup>a</sup>	SIZE	ALLOWABLE JOIST SPAN <sup>b</sup>			MAXIMUM CANTILEVER <sup>c,1</sup>		
		SPACING OF DECK JOISTS (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	1-3	1-4	1-6
	2 x 8	13-1	11-10	9-8	2-1	2-3	2-5
	2 x 10	16-2	14-0	11-5	3-4	3-6	2-10
	2 x 12	18-0	16-6	13-6	4-6	4-2	3-4
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	1-2	1-3	1-5
	2 x 8	12-6	11-1	9-1	1-11	2-1	2-3
	2 x 10	15-8	13-7	11-1	3-1	3-5	2-9
	2 x 12	18-0	15-9	12-10	4-6	3-11	3-3
Redwood, western cedars, ponderosa pine <sup>e</sup> , red pine <sup>e</sup>	2 x 6	8-10	8-0	7-0	1-0	1-1	1-2
	2 x 8	11-8	10-7	8-8	1-8	1-10	2-0
	2 x 10	14-11	13-0	10-7	2-8	2-10	2-8
	2 x 12	17-5	15-1	12-4	3-10	3-9	3-1

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.

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.

**Shed Concrete Footing Information (Applicable if over 200 sq.ft. ):**

**Table 309 Detached Garages, Detached Carports, And Accessory Structures**

TABLE R309 DETACHED GARAGES, CARPORTS, AND ACCESSORY STRUCTURES			
CONSTRUCTION REQUIREMENTS	Portable 200 Square Feet Maximum	Monolithic <sup>1</sup> Footings 721 Square Feet Maximum	Structures with Conventional Foundation
Footings and Foundations	No Requirements	8" W x 18" D <sup>2</sup> or 12" W x 12" D <sup>2</sup>	

**NOTES:**

<sup>1</sup>In structures utilizing monolithic floor systems, the water and sanitation systems and permanent heating facilities may be installed when approved flexible connections are provided.

<sup>2</sup>6 x 6 - W2.9 x W2.9 welded wire fabric or equivalent is required when monolithic slab footing system is used.

<sup>3</sup>One story unless otherwise approved by the building official.

Per the Code Chart above, up to 721 sq.ft. can have monolithic slab/footing or poured at-grade pier pads 8"W x 18"D or 12"w x 12"D. Sheds over 721 sq.ft. must have a Conventional Foundation per the 2020 Indiana Residential Code requirements. Sheds required by the City Ordinance to have a 36" Mortared Masonry Wainscot must provide a means of support which may require either a Conventional Foundation or a Properly - Sized Steel Angle to support Mortared Masonry Veneer. For Conventional Foundation



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

Footing Info see Applicable Code Tables below, assumed bearing capacity is 1500 unless you have a soils test that indicates differently:

**Table R403.1(1) Minimum Width And Thickness For Concrete Footings For Light-Frame Construction:**

SNOW LOAD OR ROOF LIVE LOAD	STORY AND TYPE OF STRUCTURE WITH LIGHT FRAME	LOAD-BEARING VALUE OF SOIL (psf)					
		1500	2000	2500	3000	3500	4000
	1 story—slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story—with crawl space	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6

**Table R403.1(2) Minimum Width And Thickness For Concrete Footings For Light-Frame Construction With Brick Veneer:**

SNOW LOAD OR ROOF LIVE LOAD	STORY AND TYPE OF STRUCTURE WITH BRICK VENEER	LOAD-BEARING VALUE OF SOIL (psf)					
		1500	2000	2500	3000	3500	4000
	1 story—slab-on-grade	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6
	1 story—with crawl space	15 × 6	12 × 6	12 × 6	12 × 6	12 × 6	12 × 6

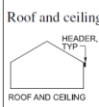
**Shed Wall Construction Information (Applicable if over 200 sq.ft. in size):**

Exterior walls shall be framed with #2 Grade or greater 2x4's/2x6's studs at 16" O.C. Exterior Wall Finishes per the City Ordinance is based on Shed sq.ft.:

- Up to 300 sq.ft. can be Wood, Fiber Cement, Masonry or the same materials as the Primary Structure on the property. In no instances shall Steel be utilized.
- Over 300 sq.ft. must contain a 36" tall Mortared Masonry Veneer and the remaining siding material can be Wood, Fiber Cement, Masonry, Steel or the same materials as the Primary Structure on the property.

Appropriately sized Headers & Framing around door or window openings, see Code Table below for further information:

**Table R602.7(1) Girder Spans And Header Spans For Exterior Bearing Walls:**

GIRDERS AND HEADERS SUPPORTING	SIZE	GROUND SNOW LOAD (psf)*											
		30						50					
		Building width* (feet)											
		12		24		36		12		24		36	
Span <sup>1</sup>	NJ <sup>2</sup>	Span <sup>1</sup>	NJ <sup>2</sup>	Span <sup>1</sup>	NJ <sup>2</sup>	Span <sup>1</sup>	NJ <sup>2</sup>	Span <sup>1</sup>	NJ <sup>2</sup>	Span <sup>1</sup>	NJ <sup>2</sup>		
Roof and ceiling 	1-2 × 6	4-0	1	3-1	2	2-7	2	3-5	1	2-8	2	2-3	2
	1-2 × 8	5-1	2	3-11	2	3-3	2	4-4	2	3-4	2	2-10	2
	1-2 × 10	6-0	2	4-8	2	3-11	2	5-2	2	4-0	2	3-4	3
	1-2 × 12	7-1	2	5-5	2	4-7	3	6-1	2	4-8	3	3-11	3
	2-2 × 4	4-0	1	3-1	1	2-7	1	3-5	1	2-7	1	2-2	1
	2-2 × 6	6-0	1	4-7	1	3-10	1	5-1	1	3-11	1	3-3	2
	2-2 × 8	7-7	1	5-9	1	4-10	2	6-5	1	5-0	2	4-2	2
	2-2 × 10	9-0	1	6-10	2	5-9	2	7-8	2	5-11	2	4-11	2
	2-2 × 12	10-7	2	8-1	2	6-10	2	9-0	2	6-11	2	5-10	2
	3-2 × 8	9-5	1	7-3	1	6-1	1	8-1	1	6-3	1	5-3	2
	3-2 × 10	11-3	1	8-7	1	7-3	2	9-7	1	7-4	2	6-2	2
	3-2 × 12	13-2	1	10-1	2	8-6	2	11-3	2	8-8	2	7-4	2
	4-2 × 8	10-11	1	8-4	1	7-0	1	9-4	1	7-2	1	6-0	1
	4-2 × 10	12-11	1	9-11	1	8-4	1	11-1	1	8-6	1	7-2	2
	4-2 × 12	15-3	1	11-8	1	9-10	2	13-0	1	10-0	2	8-5	2



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

## Shed Roof Construction Information (Applicable if over 200 sq.ft. in size):

The Roof can be framed by either Field-Framed Rafters or Pre-Engineered Trusses. If using Pre-Engineered Trusses you will need to provide Engineer Signed and Sealed Truss Specs & Layout prior to Rough-In/Final Inspection. If using Field-Framed Rafters see Code Table below for further sizing information, common species locally is usually “Spruce-Pine-Fir”:

**Table R802.4.1(5) Rafter Spans For Common Lumber Species:**

RAFTER SPACING (Inches)	SPECIES AND GRADE	DEAD LOAD - 10 psf					
		2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4
		Maximum rafter spans*					
		(feet - Inches)	(feet - Inches)	(feet - Inches)	(feet - Inches)	(feet - Inches)	(feet - Inches)
12	Douglas fir-larch SS	8-5	13-3	17-6	22-4	26-0	8-5
	Douglas fir-larch #1	8-2	12-0	15-3	18-7	21-7	7-7
	Douglas fir-larch #2	7-10	11-5	14-5	17-8	20-5	7-3
	Douglas fir-larch #3	6-0	8-9	11-0	13-6	15-7	5-6
	Hem-fir SS	8-0	12-6	16-6	21-1	25-6	8-0
	Hem-fir #1	7-10	11-10	15-0	18-4	21-3	7-6
	Hem-fir #2	7-5	11-1	14-0	17-2	19-11	7-0
	Hem-fir #3	5-10	8-6	10-9	13-2	15-3	5-5
	Southern pine SS	8-4	13-1	17-2	21-11	Note b	8-4
	Southern pine #1	8-0	12-3	15-6	18-2	21-7	7-7
	Southern pine #2	7-0	10-6	13-4	15-10	18-8	6-6
	Southern pine #3	5-5	8-0	10-1	12-3	14-6	5-0
	Spruce-pine-fir SS	7-10	12-3	16-2	20-8	24-1	7-10
	Spruce-pine-fir #1	7-8	11-3	14-3	17-5	20-2	7-1
	Spruce-pine-fir #2	7-8	11-3	14-3	17-5	20-2	7-1
Spruce-pine-fir #3	5-10	8-6	10-9	13-2	15-3	5-5	
16	Douglas fir-larch SS	7-8	12-1	15-11	19-9	22-10	7-8
	Douglas fir-larch #1	7-1	10-5	13-2	16-1	18-8	6-7
	Douglas fir-larch #2	6-9	9-10	12-6	15-3	17-9	6-3
	Douglas fir-larch #3	5-2	7-7	9-7	11-18	13-6	4-9
	Hem-fir SS	7-3	11-5	15-0	19-1	22-1	7-3
	Hem-fir #1	7-0	10-3	13-0	15-11	18-5	6-6
	Hem-fir #2	6-7	9-7	12-2	14-10	17-3	6-1
	Hem-fir #3	5-0	7-4	9-4	11-5	13-2	4-8
	Southern pine SS	7-6	11-10	15-7	19-11	23-7	7-6
	Southern pine #1	7-1	10-7	13-5	15-9	18-8	6-7
	Southern pine #2	6-1	9-2	11-7	13-9	16-2	5-8
	Southern pine #3	4-8	6-11	8-9	10-7	12-6	4-4
	Spruce-pine-fir SS	7-1	11-2	14-8	18-0	20-11	7-1
	Spruce-pine-fir #1	6-8	9-9	12-4	15-1	17-6	6-2
	Spruce-pine-fir #2	6-8	9-9	12-4	15-1	17-6	6-2
Spruce-pine-fir #3	5-0	7-4	9-4	11-5	13-2	4-8	
19.2	Douglas fir-larch SS	7-3	11-4	14-9	18-0	20-11	7-3
	Douglas fir-larch #1	6-6	9-6	12-0	14-8	17-1	6-0
	Douglas fir-larch #2	6-2	9-0	11-5	13-11	16-2	5-8
	Douglas fir-larch #3	4-8	6-11	8-9	10-8	12-4	4-4
	Hem-fir SS	6-10	10-9	14-2	17-5	20-2	6-10
	Hem-fir #1	6-5	9-5	11-11	14-6	16-10	8-11
	Hem-fir #2	6-0	8-9	11-1	13-7	15-9	5-7
	Hem-fir #3	4-7	6-9	8-6	10-5	12-1	4-3

(continued)



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

RAFTER SPACING (inches)	SPECIES AND GRADE	DEAD LOAD = 10 psf					
		2 x 4	2 x 6	2 x 8	2 x 10	2 x 12	2 x 4
		Maximum rafter spans <sup>a</sup>					
		(feet - inches)	(feet - inches)	(feet - inches)	(feet - inches)	(feet - inches)	(feet - inches)
19.2	Southern pine SS	7-1	11-2	14-8	18-3	21-7	7-1
	Southern pine #1	6-6	9-8	12-3	14-4	17-1	6-0
	Southern pine #2	5-7	8-4	10-7	12-6	14-9	5-2
	Southern pine #3	4-3	6-4	8-0	9-8	11-5	4-0
	Spruce-pine-fir SS	6-8	10-6	13-5	16-5	19-1	6-8
	Spruce-pine-fir #1	6-1	8-11	11-3	13-9	15-11	5-7
	Spruce-pine-fir #2	6-1	8-11	11-3	13-9	15-11	5-7
	Spruce-pine-fir #3	4-7	6-9	8-6	10-5	12-1	4-3
24	Douglas fir-larch SS	6-8	10-5	13-2	16-1	18-8	6-7
	Douglas fir-larch #1	5-10	8-6	10-9	13-2	15-3	5-5
	Douglas fir-larch #2	5-6	8-1	10-3	12-6	14-6	5-1
	Douglas fir-larch #3	4-3	6-2	7-10	9-6	11-1	3-11
	Hem-fir SS	6-4	9-11	12-9	15-7	18-0	6-4
	Hem-fir #1	5-9	8-5	10-8	13-0	15-1	8-4
	Hem-fir #2	5-4	7-10	9-11	12-1	14-1	4-11
	Hem-fir #3	4-1	6-0	7-7	9-4	10-9	3-10
	Southern pine SS	6-7	10-4	13-8	16-4	19-3	6-7
	Southern pine #1	5-10	8-8	11-0	12-10	15-3	5-5
	Southern pine #2	5-0	7-5	9-5	11-3	13-2	4-7
	Southern pine #3	3-10	5-8	7-1	8-8	10-3	3-6
	Spruce-pine-fir SS	6-2	9-6	12-0	14-8	17-1	6-0
	Spruce-pine-fir #1	5-5	7-11	10-1	12-4	14-3	5-0
	Spruce-pine-fir #2	5-5	7-11	10-1	12-4	14-3	5-0
	Spruce-pine-fir #3	4-1	6-0	7-7	9-4	10-9	3-10

### Shed Utilities Information:

1. Sheds of 200 sq.ft. or less cannot contain Water Supply/Sanitation Services, Permanent Heat and is limited to one 20-Amp Electrical Circuit. This Electrical Circuit must be installed per code and rated for outdoor use. Interior Receptacle(s) shall be GFCI-Protected, Exterior Receptacle(s) shall be GFCI-Protected, "WR"-Rated Receptacle Fixture and be in a "In-Use" Electrical Box. A Circuit Power Disconnect shall be supplied at the Shed in order to shut power off at the Shed.
2. If Shed is over 200 sq.ft., if Electrical Circuit(s) provided, Interior Receptacle(s) shall be GFCI-Protected, Exterior Receptacle(s) shall be GFCI-Protected, "WR"-Rated Receptacle Fixture and be in a "In-Use" Electrical Box. A Circuit/Circuit Panel Power Disconnect shall be supplied at the Shed in order to shut power off Circuit(s) at the Shed.
3. If Shed is over 200 sq.ft. in size and Water/Sanitary Service is provided in the shed, then the Shed is required to have a Foundation to Frost Depth (min. 30" below surrounding grades). Installation must meet Plumbing Code Requirements, if no permanent heat is provided in the Shed then you must protect Water/Sanitary Systems from Freezing, install Weatherization Devices. If Shed is Permanent Heated, see Heating Requirements below in note #4.



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698

4. If Shed is over 200 sq.ft. in size and Permanent Heat is provided, the Heating System shall be installed per 2020 Indiana Residential Code which requires min. Insulation installed to meet the Energy Code requirements below:
  - Wall Insulation R-13 min., Ceiling Insulation R-24 min., Window/Door Fenestration U-Factor of U-0.45, Skylight Fenestration U-Factor of U-0.70.



**BUILDING COMMISSIONER**

300 South Madison Avenue | Greenwood, IN 46142 | 317.881.8698