How to Obtain a Building Permit For

CONVENTIONAL LIGHT FRAME BUILDINGS

DETACHED GARAGES, RESIDENTIAL ACCESSORY STRUCTURES AND AGRICULTURAL BUILDINGS

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Miami County's Mission is to provide the Community with professional services and effective use of resources through responsive, interactive and progressive government;
To safeguard community trust and funding; and
To promote and enhance the highest possible quality of life, while respecting individual rights and human dignity.

INTRODUCTION

Several types of structures are commonly utilized for detached residential accessory and agricultural buildings. The three most common types of structures are conventional light wood framing, post frame construction and rigid steel frame structures.

Each of these structures have unique construction features that need to be shown on the plans that are required to be submitted as a part of a building permit application. This document will outline the details and specifications that need to be shown on the plans for buildings utilizing the conventional light frame construction requirements of the International Residential Code.

HOW TO GET STARTED

The following preliminary issues may need to be addressed prior to an application for a building permit .

- **Zoning:**
  Is the property zoned for how I intend to use my building?
  If the intended use of a building is planned for anything other than normal residential accessory or agricultural use, you should contact the Miami County Planning Department at 913-294-9553 to discuss the proposed use. If the intended use is for any type of commercial or industrial activity including the storage of contractor's equipment, commercial trucks, or the repair or servicing of commercial equipment may require special zoning.

- **Wastewater Treatment:**
  If a bathroom or any plumbing fixtures, including floor drains, that will discharge any wastewater are planned to be installed, contact the Miami County Environmental Health Department at (913) 294-4117 to discuss what type of wastewater treatment system is best suited for your building and an explanation of design and permitting guidelines for the system.

- **Highway Entrance Permit:**
  The location and construction of a new or existing entrance to a property off of county roadways is required to be approved before the construction of a new entrance is started or before a building permit is issued.

  An application for a new driveway entrance or approval of an existing driveway entrance may be made either prior to or at the same time as applying for a building permit. A $50.00 processing fee is due at the time the application for the entrance permit is made. Application for a highway entrance permit can be made at the building inspection office in the Miami County Administration Building.

  After a site inspection of the proposed entrance location is made, the Road and Bridge Department will provide an estimated cost of construction. If an applicant chooses to have the Road and Bridge Department construct the new entrance, the construction costs shall be paid before installation will begin.

  If applicants wish to construct the entrance themselves or contract with a private entity, a cash bond with the amount to be determined by the Road and Bridge Department shall be made prior to the start of construction. The Road and Bridge Department will refund the bond upon final approval of the installation of the highway entrance.

AVOID THE MOST COMMON MISTAKES

You can avoid unnecessary delays in obtaining your building permit approval by avoiding the most common mistakes that are found during the review of plans and documents. Some of the most common mistakes are described.

1. Site Plan not prepared in accordance with required standards. The site plan standard available from the Planning and Zoning Department should be followed closely.

2. Truss design plans not provided. Truss plans that have been sealed by an engineer are required. However, for the permit application truss shop drawings that are not sealed will be accepted with the sealed drawings being submitted prior to the truss installation beginning.

3. Braced wall construction methods not shown on plans. The exterior braced wall construction method as required by Section R602.10 of the International Residential Code must be detailed on the plans. In addition to normal braced wall construction methods any special methods for bracing of wall segments that are less than 2 feet 8 inches in width such as occur in walls containing overhead garage doors must be detailed. Portions of Section R602.10 and the APA "Narrow Wall Bracing Method" have been included later in this guideline to assist in the development of your plans.

4. Foundation details and specifications are not provided on plans. Any building that exceeds 400 square feet in area is required to be placed on a permanent foundation. The foundation design shall be included on the building plans and should include all information requested by this guideline.

5. Licensed contractors. Miami County requires that any general, electrical, plumbing, mechanical, foundation, roofing or site utility contractor hold a valid contractor license. A letter from the licensed contractors that are used on a project verifying that they have agreed to work on the project must accompany each permit application.

6. Work performed exceeds the scope of work covered by permit. All work that is planned to be performed, including any interior partitions or any electrical, plumbing or heating and cooling systems, should be detailed on the permit application and the plans in accordance with the requirements of this guideline. Any work that is observed during inspections that is not included in the scope of work covered by the permit will result in a Stop Work Order being issued until the proper permits have been secured.

WHAT IS THE MINIMUM INFORMATION NEEDED TO APPLY FOR A BUILDING PERMIT?

In order for a permit application to be considered acceptable for review the following information shall be provided:

1. A completed building permit application form with all requested information provided.
2. A copy of the deed to the property with a full legal description included.
3. A completed highway entrance permit application.
4. Signed letters, copies of contracts or affidavits from each contractor that is listed on the permit application questionnaire. If the property owner intends to perform any work for which a licenses is required, an affidavit on a form provided by our office shall be completed and submitted with the permit application.
5. An affidavit for use of accessory building on a form provided by our office shall be completed and be submitted with the permit application.
6. Two (2) site plans prepared in accordance with Planning and Zoning standards.
7. Two (2) full sets of building plans prepared in accordance with the enclosed standards.

PREPARATION OF PLANS

Plans are required to accurately represent the proposed construction. Plans will be reviewed for compliance with the codes and regulations of Miami County before the permit is issued. The more complete the plans the faster the plan review can be performed and the quicker a permit can be issued.

Plans that are incomplete or that require more than one-hour of review time will have plan review fees charged at the rate of $50.00 per hour with a minimum one-half hour charge. Plan review fees will be added to the permit fee and collected at the time that the permit is issued.

Upon approval of the submitted plans, the plans will be stamped “APPROVED” and the permit will be authorized for issuance. One set of stamped “APPROVED” plans will be returned to the applicant with the permit. The permit applicant is responsible to have approved plans on the job site for all inspections and all site construction is required to be performed in accordance with the approved plans. Revisions to the approved plans must be reviewed and be approved by the building inspection department prior to the revised work being performed.

A brief outline of the details and specifications that the plan reviewer will be checking follows this introduction and an applicant may utilize this outline as a checklist to ensure that they have complied with all the necessary information for submittal with the permit application. If this information is not provided the permit application will be deemed to be incomplete and the plans will be returned to the permit applicant for correction. Upon re-submittal, the plans will be re-reviewed for compliance with the codes and regulations of Miami County.

SITE PLAN REQUIREMENTS

Please refer to the Site Plan Standards handout available from the Planning and Zoning Department.

Site plans that do not show the information that is requested will be rejected during plan review and the site plan will be required to be prepared to acceptable standards, either by an individual or by a registered surveyor.

BUILDING DESIGN LOADS

The following design loads shall be used in the preparation of the building plans:

- Ground Snow Load: 20 psf
- Roof Snow Load: 20 psf
- Wind Load: 90 mph, exposure “C” for a 3-second gust
- Seismic Design Category: “A”

PREPARATION OF BUILDING PLANS

Building plans shall provide details and specifications on all of the following that apply:

Floor Plan:

- The use of each separate area of the building shall be shown.
- The overall building dimensions and all separated interior area dimensions shall be shown.
- Ceiling heights shall be shown.

- Location of Exterior Doorways and Windows with Opening Dimensions.
  - Show the location of exterior doors and windows showing the finished opening dimensions
- Location of Plumbing Fixtures shall be shown (if applicable).
- Location of any heating or cooling equipment shall be shown (if applicable).
- Location of electrical service shall be shown with the following information provided (if applicable):
  - Show the location of the electrical service
  - Specify amperage rating of service

- **Foundation Plans**
  - **Footings —** the following information for footings is required to be shown on the plans**:**
    - Width and thickness of footings shall be shown
    - Reinforcing specifications for footings shall be shown
    - Footings with minimum 36-inch depth below finished grade shown
    - Pier pad location and dimensions shall be shown

  - **Foundation Walls —** the following information is required for foundation walls**:**
    - Specify the maximum height of unbalanced fill
    - Specify the height of foundation walls
    - Specify the thickness of foundation walls
    - Specify the reinforcing for walls in accordance with Chapter 4 of the IRC
    - Specify anchor bolt size and spacing
    - Specify use of Pressure Preservatively Treated Sill Plates when in contact with concrete

- **Concrete Floors:**
  - Detail or note specifying minimum 4 inches gravel under floor slab
  - Specify reinforcing schedule of minimum #4 reinforcing bar at 24 inches on center each way
  - Specification of Pressure Preservatively Treated lumber when in contact with slabs
  - Specify any slabs that will be placed on more than 2 feet of fill and specify fill material and reinforcing schedule

- **Wall Framing:**
  - Dimension and spacing of studs
  - Show header dimensions

- **Braced Wall Panels:**
  - Show the location of braced wall panels as required by IRC Section R602.10
  - Braced wall panel construction methods as required by IRC Section R602.10.3 shall be shown by specification or detail on plans
  - Show special braced wall panel methods proposed for garage door walls where panel widths are less than 32 inches wide

Roof Ceiling Construction:
The two most common methods of constructing the roof ceiling portion of detached accessory structures, conventional framing where all components are site built utilizing the framing specifications contained in the code or engineered truss systems where the components are preassembled. The specifications that are required to be shown on the plans for each method are described below.

Conventional Framing Details:

- **Ceiling Framing Details:**
  - Dimension, grade, species and spacing of ceiling framing if conventional framing methods will be employed
  - Direction of ceiling joists
  - Show location and specifications for any beams required for ceiling or roof support

(See IRC Span Tables for Common Types of Lumber)

- **Roof Framing Details:**

— Dimension, grade, species and spacing of roof framing members framing if conventional framing methods will be employed

— Specify direction of rafters
(See IRC Span Tables for Common Types of Lumber)

♦ **Truss Design Requirements**

Truss construction documents shall be prepared by a design professional registered in the state of Kansas, and shall be submitted to the codes department for review and approval prior to installation. Submitted truss shop drawings shall indicate, at a minimum, the information specified below:

1. Slope or depth, span and spacing.
2. Location of joints.
3. Required bearing widths.
4. Design loads as applicable.
5. Top chord live load (including 20 lb psf snow load).
6. Top chord dead load.
7. Bottom chord live load.
8. Bottom chord dead load.
9. Concentrated loads and their points of application.
10. Controlling wind loads (minimum 90 mph, exposure C, unless terrain or physical structure is present on property to reduce to exposure B).
11. Adjustments to lumber and metal connector plate design values for conditions of use.
12. Each reaction force and direction.
13. Metal connector plate type, size, thickness or gage, and the dimensioned location of each metal connector plate except where symmetrically located relative to the joint interface.
14. Lumber size, species, and grade for each member.
15. Connection requirements for:
    15.1. Truss to girder
    15.2. Truss ply to ply
    15.3 Field Splices
16. Calculated deflection ratio and/or maximum deflection for live and total load.
17. Maximum axial compression forces in the truss members to enable the building designer to design the size, connections and anchorage of the permanent continuous lateral bracing. Forces shall be shown on the truss construction documents or on supplemental documents.
18. Required permanent truss member bracing location.

IRC TABLE R802.4(1)
CEILING JOIST SPANS FOR COMMON LUMBER SPECIES
(Uninhabitable attics without storage, live load = 10 psf, L/Δ = 240)

CEILING JOIST SPACING (inches)	SPECIE AND GRADE	DEAD LOAD = 10 psf			
		2x4	2x6	2x8	2x10
		Maximum ceiling joist spans			
		(feet - inches)	(feet - inches)	(feet - inches)	(feet - inches)
12	Douglas fir-larch SS	10-5	16-4	21-7	Note a
	Douglas fir-larch #1	10-0	15-9	20-1	24-6
	Douglas fir-larch #2	9-10	14-10	18-9	22-11
	Douglas fir-larch #3	7-8	11-2	14-2	17-4
	Hem-fir SS	9-10	15-6	20-5	Note a
	Hem-fir #1	9-8	15-2	19-7	23-11
	Hem-fir #2	9-2	14-5	18-6	22-7
	Hem-fir #3	7-8	11-2	14-2	17-4
	Southern pine SS	10-3	16-1	21-2	Note a
	Southern pine #1	10-0	15-9	20-10	Note a
	Southern pine #2	9-10	15-6	20-1	23-11
	Southern pine #3	8-2	12-0	15-4	18-1
	Spruce-pine-fir SS	9-8	15-2	19-11	25-5
	Spruce-pine-fir #1	9-5	14-9	18-9	22-11
	Spruce-pine-fir #2	9-5	14-9	18-9	22-11
	Spruce-pine-fir #3	7-8	11-2	14-2	17-4
16	Douglas fir-larch SS	9-6	14-11	19-7	25-0
	Douglas fir-larch #1	9-1	13-9	17-5	21-3
	Douglas fir-larch #2	8-9	12-10	16-3	19-10
	Douglas fir-larch #3	6-8	9-8	12-4	15-0
	Hem-fir SS	8-11	14-1	18-6	23-8
	Hem-fir #1	8-9	13-5	16-10	20-8
	Hem-fir #2	8-4	12-8	16-0	19-7
	Hem-fir #3	6-8	9-8	12-4	15-0
	Southern pine SS	9-4	14-7	19-3	24-7
	Southern pine #1	9-1	14-4	18-11	23-1
	Southern pine #2	8-11	13-6	17-5	20-9
	Southern pine #3	7-1	10-5	13-3	15-8
	Spruce-pine-fir SS	8-9	13-9	18-1	23-1
	Spruce-pine-fir #1	8-7	12-10	16-3	19-10
	Spruce-pine-fir #2	8-7	12-10	16-3	19-10
	Spruce-pine-fir #3	6-8	9-8	12-4	15-0
19.2	Douglas fir-larch SS	8-11	14-0	18-5	23-4
	Douglas fir-larch #1	8-7	12-6	15-10	19-5
	Douglas fir-larch #2	8-0	11-9	14-10	18-2
	Douglas fir-larch #3	6-1	8-10	11-3	13-8
	Hem-fir SS	8-5	13-3	17-5	22-3
	Hem-fir #1	8-3	12-3	15-6	18-11
	Hem-fir #2	7-10	11-7	14-8	17-10
	Hem-fir #3	6-1	8-10	11-3	13-8
	Southern -pine SS	8-9	13-9	18-1	23-1
	Southern pine #1	8-7	13-6	17-9	21-1
	Southern pine #2	8-5	12-3	15-10	18-11
	Southern pine #3	6-5	9-6	12-1	14-4
	Spruce-pine-fir SS	8-3	12-11	17-1	21-8
	Spruce-pine-fir #1	8-0	11-9	14-10	18-2
	Spruce-pine-fir #2	8-0	11-9	14-10	18-2
	Spruce-pine-fir #3	6-1	8-10	11-3	13-8
24	Douglas fir-larch SS	8-3	13-0	17-1	20-11
	Douglas fir-larch #1	7-8	11-2	14-2	17-4
	Douglas fir-larch #2	7-2	10-6	13-3	16-3
	Douglas fir-larch #3	5-5	7-11	10-0	12-3
	Hem-fir SS	7-10	12-3	16-2	20-6
	Hem-fir #1	7-6	10-11	13-10	16-11
	Hem-fir #2	7-1	10-4	13-1	16-0
	Hem-fir #3	5-5	7-11	10-0	12-3
	Southern pine SS	8-1	12-9	16-10	21-6
	Southern pine #1	8-0	12-6	15-10	18-10
	Southern pine #2	7-8	11-0	14-2	16-11
	Southern pine #3	5-9	8-6	10-10	12-10
	Spruce-pine-fir SS	7-8	12-0	15-10	19-5
	Spruce-pine-fir #1	7-2	10-6	13-3	16-3
	Spruce-pine-fir #2	7-2	10-6	13-3	16-3
	Spruce-pine-fir #3	5-5	7-11	10-0	12-3

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kN/m^2.
a. Check sources for availability of lumber in lengths greater than 20 feet.

I RC TABLE R802.5.1(1)
RAFTER SPANS FOR COMMON LUMBER SPECIES
(Roof live load=20 psf, ceiling not attached to rafters, L/D =180)

RAFTER SPACING (inches)	SPECIE AND GRADE	DEAD LOAD = 10 psf					DEAD LOAD = 20 psf				
		2x4	2x6	2x8	2x10	2x12	2x4	2x6	2x8	2x10	2x12
		Maximum rafter spans [a]									
		feet - inches	feet - inches	feet - inches	feet - inches	feet - inches	feet - inches	feet - inches	feet - inches	feet - inches	feet - inches
12	Douglas fir-larch SS	11-6	18-0	23-9	Note [b]	Note [b]	11-6	18-0	23-5	Note [b]	Note [b]
	Douglas fir-larch #1	11-1	17-4	22-5	Note [b]	Note [b]	10-6	15-4	19-5	23-9	Note [b]
	Douglas fir-larch #2	10-10	16-7	21-0	25-8	Note [b]	9-10	14-4	18-2	22-3	25-9
	Douglas fir-larch #3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Hem-fir SS	10-10	17-0	22-5	Note [b]	Note [b]	10-10	17-0	22-5	Note [b]	Note [b]
	Hem-fir #1	10-7	16-8	21-10	Note [b]	Note [b]	10-3	14-11	18-11	23-2	Note [b]
	Hem-fir #2	10-1	15-11	20-8	25-3	Note [b]	9-8	14-2	17-11	21-11	25-5
	Hem-fir #3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
	Southern pine SS	11-3	17-8	23-4	Note [b]	Note [b]	11-3	17-8	23-4	Note [b]	Note [b]
	Southern pine #1	11-1	17-4	22-11	Note [b]	Note [b]	11-1	17-3	21-9	25-10	Note [b]
	Southern pine #2	10-10	17-0	22-5	Note [b]	Note [b]	10-6	15-1	19-5	23-2	Note [b]
	Southern pine #3	9-1	13-6	17-2	20-3	24-1	7-11	11-8	14-10	17-6	20-11
	Spruce-pine-fir SS	10-7	16-8	21-11	Note [b]	Note [b]	10-7	16-8	21-9	Note [b]	Note [b]
	Spruce-pine-fir #1	10-4	16-3	21-0	25-8	Note [b]	9-10	14-4	18-2	22-3	25-9
	Spruce-pine-fir #2	10-4	16-3	21-0	25-8	Note [b]	9-10	14-4	18-2	22-3	25-9
	Spruce-pine-fir #3	8-7	12-6	15-10	19-5	22-6	7-5	10-10	13-9	16-9	19-6
16	Douglas fir-larch SS	10-5	16-4	21-7	Note [b]	Note [b]	10-5	16-0	20-3	24-9	Note [b]
	Douglas fir-larch #1	10-0	15-4	19-5	23-9	Note [b]	9-1	13-3	16-10	20-7	23-10
	Douglas fir-larch #2	9-10	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Douglas fir-larch #3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Hem-fir SS	9-10	15-6	20-5	Note [b]	Note [b]	9-10	15-6	19-11	24-4	Note [b]
	Hem-fir #1	9-8	14-11	18-11	23-2	Note [b]	8-10	12-11	16-5	20-0	23-3
	Hem-fir #2	9-2	14-2	17-11	21-11	25-5	8-5	12-3	15-6	18-11	22-0
	Hem-fir #3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
	Southern pine SS	10-3	16-1	21-2	Note [b]	Note [b]	10-3	16-1	21-2	Note [b]	Note [b]
	Southern pine #1	10-0	15-9	20-10	25-10	Note [b]	10-0	15-0	18-10	22-4	Note [b]
	Southern pine #2	9-10	15-1	19-5	23-2	Note [b]	9-1	13-0	16-10	20-1	23-7
	Southern pine #3	7-11	11-8	14-10	17-6	20-11	6-10	10-1	12-10	15-2	18-1
	Spruce-pine-fir SS	9-8	15-2	19-11	25-5	Note [b]	9-8	14-10	18-10	23-0	Note [b]
	Spruce-pine-fir #1	9-5	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-pine-fir #2	9-5	14-4	18-2	22-3	25-9	8-6	12-5	15-9	19-3	22-4
	Spruce-pine-fir #3	7-5	10-10	13-9	16-9	19-6	6-5	9-5	11-11	14-6	16-10
19.2	Douglas fir-larch SS	9-10	15-5	20-4	25-11	Note [b]	9-10	14-7	18-6	22-7	Note [b]
	Douglas fir-larch #1	9-5	14-0	17-9	21-8	25-2	8-4	12-2	15-4	18-9	21- 9
	Douglas fir-larch #2	8-11	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20- 4
	Douglas fir-larch #3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15- 5
	Hem-fir SS	9-3	14-7	19-2	24-6	Note [b]	9-3	14-4	18-2	22-3	25- 9
	Hem-fir #1	9-1	13-8	17-4	21-1	24-6	8-1	11-10	15-0	18-4	21- 3
	Hem-fir #2	8-8	12-11	16-4	20-0	23-2	7-8	11-2	14-2	17-4	20- 1
	Hem-fir #3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15- 5
	Southern pine SS	9-8	15-2	19-11	25-5	Note [b]	9-8	15-2	19-11	25-5	Note [b]
	Southern pine #1	9-5	14-10	19-7	23-7	Note [b]	9-3	13-8	17-2	20-5	24- 4
	Southern pine #2	9-3	13-9	17-9	21-2	24-10	8-4	11-11	15-4	18-4	21- 6
	Southern pine #3	7-3	10-8	13-7	16-0	19-1	6-3	9-3	11-9	13-10	16- 6
	Spruce-pine-fir SS	9-1	14-3	18-9	23-11	Note [b]	9-1	13-7	17-2	21-0	24- 4
	Spruce-pine-fir #1	8-10	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20- 4
	Spruce-pine-fir #2	8-10	13-1	16-7	20-3	23-6	7-9	11-4	14-4	17-7	20- 4
	Spruce-pine-fir #3	6-9	9-11	12-7	15-4	17-9	5-10	8-7	10-10	13-3	15- 5
24	Douglas fir-larch SS	9-1	14-4	18-10	23-4	23-4	8-11	13-1	16-7	20-3	23-5
	Douglas fir-larch #1	8-7	12-6	15-10	19-5	19-5	7-5	10-10	13-9	16-9	19-6
	Douglas fir-larch #2	8-0	11-9	14-10	18-2	18-2	6-11	10-2	12-10	15-8	18-3
	Douglas fir-larch #3	6-1	8-10	11-3	13-8	13-8	5-3	7-8	9-9	11-10	13-9
	Hem-fir SS	8-7	13-6	17-10	22-9	22-9	8-7	12-10	16-3	19-10	23-0
	Hem-fir #1	8-4	12-3	15-6	18-11	18-11	7-3	10-7	13-5	16-4	19-0
	Hem-fir #2	7-11	11-7	14-8	17-10	17-10	6-10	10-0	12-8	15-6	17-11
	Hem-fir #3	6-1	8-10	11-3	13-8	13-8	5-3	7-8	9-9	11-10	13-9
	Southern pine SS	8-11	14-1	18-6	23-8	23-8	8-11	14-1	18-6	22-11	Note [b]
	Southern pine #1	8-9	13-9	17-9	21-1	21-1	8-3	12-3	15-4	18-3	21-9
	Southern pine #2	8-7	12-3	15-10	18-11	18-11	7-5	10-8	13-9	16-5	19-3
	Southern pine #3	6-5	9-6	12-1	14-4	14-4	5-7	8-3	10-6	12-5	14-9
	Spruce-pine-fir SS	8-5	13-3	17-5	21-8	21-8	8-4	12-2	15-4	18-9	21-9
	Spruce-pine-fir #1	8-0	11-9	14-10	18-2	18-2	6-11	10-2	12-10	15-8	18-3
	Spruce-pine-fir #2	8-0	11-9	14-10	18-2	18-2	6-11	10-2	12-10	15-8	18-3
	Spruce-pine-fir #3	6-1	8-10	11-3	13-8	13-8	5-3	7-8	9-9	11-10	13-9

For SI: 1 inch = 25.4 mm, 1 foot = 304.8 mm, 1 pound per square foot = 0.0479 kN/m 2 .

a. The tabulated rafter spans assume that ceiling joists are located at the bottom of the attic space or that some other method of resisting the outward push of the rafters on the bearing walls, such as rafter ties, is provided at that location. When ceiling joists or rafter ties are located higher in the attic space, the rafter spans shall be multiplied by the factors given below:

TYPICAL WALL BRACING
IRC Section R602.10

This document has been produced to assist you in the preparation of your plans. Details and specifications showing the method of construction of the braced wall panels required by IRC Section 602.10 are required to be shown on your building plans with the location of the wall panels required to provide the braced wall lines required by IRC Section R602.10.2 and R602.10.3 also being specified. You may select one of the methods described below to provide the braced wall panel construction method and locations of the panels to provide the required braced wall lines on your building plans. You may use any of the methods specified by IRC Section R602.10 or provide sealed engineered plans with details, specifications and location of wall bracing shown on the plans.

General Bracing Requirements

1. Braced wall panels must be located within 12 feet of corners and at maximum 25 feet intervals.
2. Total bracing required for one-story or top of two-story shall equal 16% of braced wall lines.
3. Total bracing required for first story of two story building shall equal 25% of braced wall lines.
4. The amount of bracing required for Cripple Walls shall be increased by 15 % and the maximum spacing shall be reduced to 18 feet.
5. Framed foundation walls over 4 feet in height shall be braced as required for a story.

Method 1 (a) Let in 1 X 4 Diagonal Bracing

1X4 installed diagonally between 45° and 60° from horizontal continuous from top to bottom plate.
Fastener Requirements:

- Hand Nailed with minimum (2) 8d nails at each stud and plate
- Staple with minimum (2) 16 ga. 1 ¾ inches long
- Nail Gun 0.113 nail 1 7/8 inches long

Method 1 (b) Let in Metal Strap Bracing

Listed and Labeled preformed bracing installed diagonally between 45° and 60° continuously from top to bottom plates nailed according to material listing.

Method 3 Wood Structural Panels

Wood Structural Panel Sheathing 5/16 inch thick with stud spacing of 16 inches O.C. or 3/8 inch thick for stud spacing of 24 inches O.C. Wood structural panels shall be minimum 48 inches long.

Fastener Requirements:

- Hand Nailed with 6d nails 6 inches on center on perimeter and 12 inches on center in field
- Staple with 16 ga 1 ¾ inches long 6 inches on center on perimeter and 12 inches on center in field
- Nail Guns with 0.097 – 0.099 nail 1 ½ inches long 3 inches on center on perimeter and 6 inches on center in field

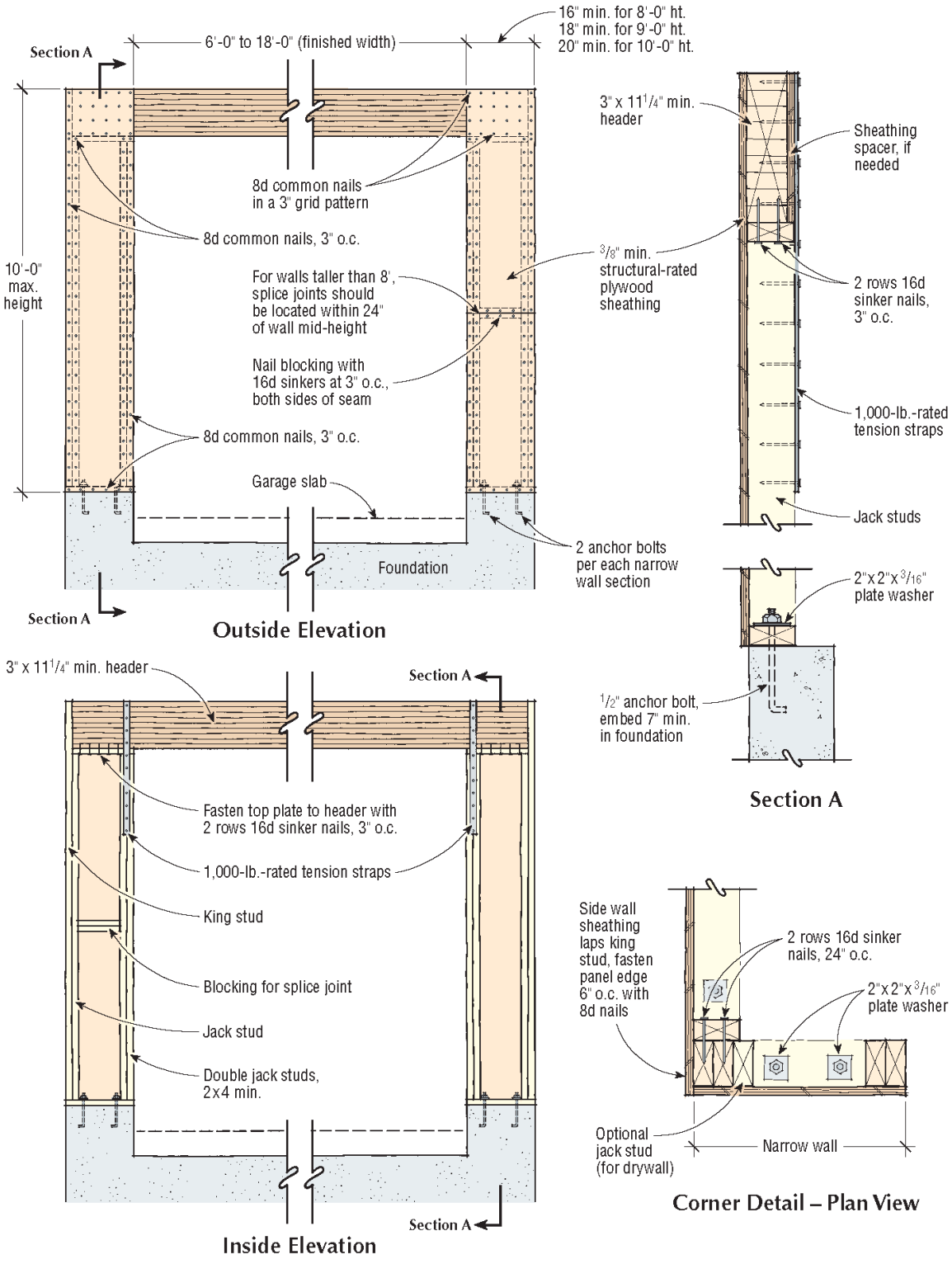
Method 5 Gypsum Wall Board

Minimum ½ inch thick Gypsum Wall Board placed on studs spaced a maximum of 24 inches on center and fastened at 7 inches on center with 6d nails, 1 ½ inch 16 ga. staples or 1 5/8 inch long Type W or S screws.

Walls with Garage Door Portals

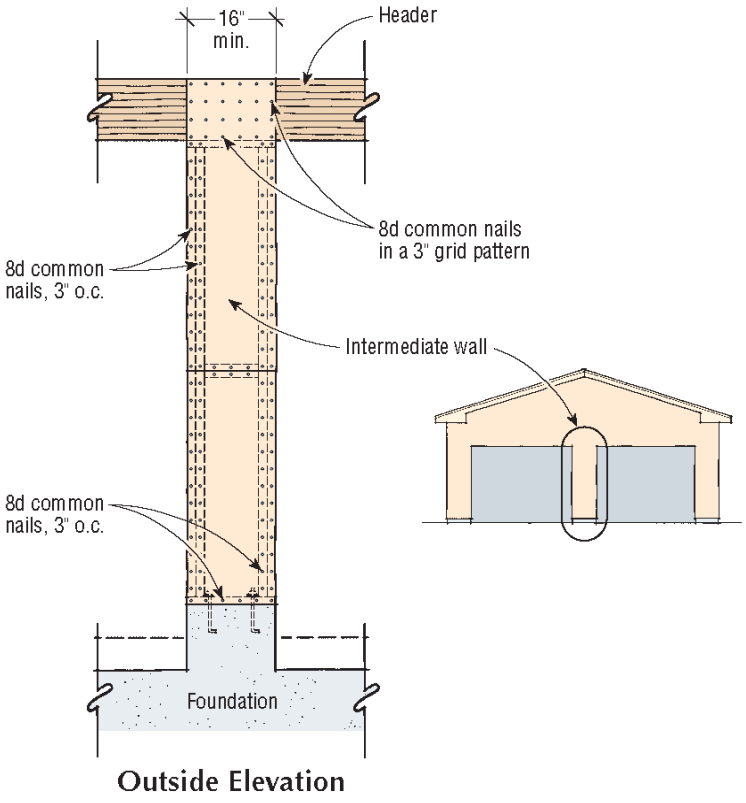
See attached designs for APA narrow wood portal segment design for requirements for braced wall panel construction in wall lines containing garage wall where it is not possible to construct a braced panel with a length of at least 2 feet 8 inches in accordance with IRC Section R602.10.6

Narrow Wall Bracing Method

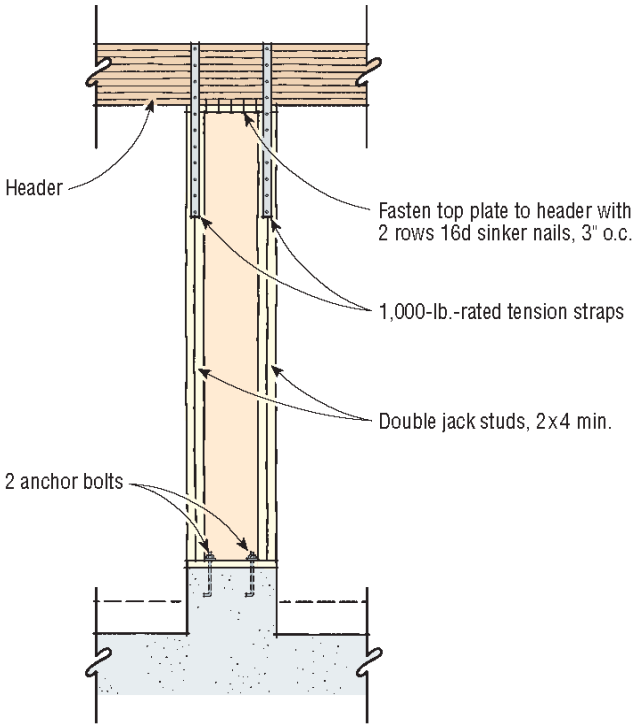


Narrow Wall Bracing Method (continued)

Intermediate Wall



Outside Elevation



Inside Elevation

FREQUENTLY ASKED QUESTIONS

Q. Are the plans required to be prepared or be sealed by an architect?

A. Generally, plans for construction work involving single family use buildings are not required to be prepared by an architect or engineer, however, some special design features or construction methods that are not covered by the prescriptive requirements of the applicable codes may require a design to be prepared by a Kansas Registered Design Professional. Some of the special features or construction methods that does require plans to be prepared by a design professional include truss system design, structural slabs and rigid steel frame building design including the supporting foundation systems.

Q. How long does it take to obtain a building permit?

A. A full review of the plans and specifications will be completed by the departments and agencies responsible for checking the project for compliance with applicable codes and regulations. Depending on the complexity of the project and completeness of plans and specifications an answer usually can be given within five working days. **During peak construction periods this time frame may be exceeded** so please allow ample time when making application for a building permit.
Please keep in mind that the more concise and complete your plans are, the faster it is to complete the review of your project and the easier it is for us for us to help you prevent costly errors and omissions once your project is underway.

Q. How close to a property line can I construct a building?

A. The minimum setbacks depend on the Zoning District in which the parcel of land is located. Contact the Planning and Development Department at (913) 294-9553 for details and have the legal description, including the Section, Township and Range of the property available when calling.

Q. How is my property zoned? What uses are allowed on the property?

A. Contact the Planning and Development Department at (913) 294-9553 for details and have the legal description, including the Section, Township and Range of the property available when calling.

Q. What work requires licensed contractors?

A. Generally property owners may perform any type of work on buildings that they own and will personally occupy. Individuals or companies that act as building contractors in Miami County are required to be licensed. Licensing is required for general contractors, electrical contractors, plumbing contractors, HVAC contractors, foundation contractors, roofing contractors and site utility installers.

Q. What codes have been adopted by Miami County?

A. Miami County currently enforces the provisions of the 2006 edition of the *International One and Two Family Dwelling Code*®, 2006 edition of the *International Building Code*®, the 2006 edition of the *International Plumbing Code*®, the 2006 edition of the *International Mechanical Code*®, the 2006 edition of the *International Fire Code*® and the 2005 edition of the *National Electrical Code*®.
Most code provisions that will apply to a swimming pool installed for a single family residence can be found in the 2006 edition of the International One and Two Family Dwelling Code®.

Q. Where can I obtain a copy of the Building Codes adopted by Miami County?

A. Copies of the International Codes may be obtained from the International Code Council by phone at 1-800-786-4452 or can be ordered online at www.iccsafe.org/store.

Q. What will my building permit cost?

A. Permit fees are based upon the valuation of construction. The valuation will be determined as part of the plan review process and there is no standard answer, the fee is based upon factors such as the square footage of the dwelling, basement, finished basement and garages along with other factors. A worksheet for an individual to estimate a permit fee is available from the building inspection department.

Q. What type of inspections are required?

A. A complete listing of required inspections will be included with the building permit. A related handout is available on request outlining required inspections and procedures for making inspection requests. A typical residential accessory building can have as few as two inspections, however, additional inspections may be required based upon the type of work that is being performed. Typical inspections include footings, foundation walls, underslab plumbing, rough in of building, electrical, plumbing and hvac systems, open trench inspections for electrical, water and gas laterals, interior gas piping installation and pressure testing, and a final inspection.

Q. When can a new building be used or occupied?

A. Generally anything that is considered to be a safety or sanitation requirement must be complete before occupancy of a new building will be granted. A Certificate of Occupancy is required to be issued by the Codes Official before a building may be legally occupied. A final inspection is required prior to gaining approval to use or occupy any building.

Q. Can a dwelling unit be constructed in an accessory building?

A. If the structure is designed for the loads and conditions for residential use the building may be allowed to have a dwelling unit finished inside of it. When the building is either of post frame or rigid steel frame construction, the structural plans will be required to be prepared and sealed by a design professional registered by the state of Kansas providing details and specifications showing the required compliance with the provisions of the International Building Code for use as a residential structure.