



Detached Garage Construction Guidelines

Community Development Department - Construction Permits and Inspection Services
215 Sycamore St Muscatine, IA 52761 - PH 563.262.4141 - FAX 563.262.4142
www.muscatineiowa.gov/26/Community-Development

2015 International Residential Code

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Detached Garage Construction Permits Submittal Checklist

- Building Permit Application
- Site Plan
- Construction Plans
- Electrical, Plumbing and Mechanical Permit Applications (when applicable)

BUILDING PERMIT APPLICATION

Submit completed Building Permit Application

SITE PLAN

Submit an accurate site plan for review and approval, which includes:

Location of the proposed garage, the house and any other building or structures on the property.

Distances between buildings and structures and to property lines.

Easements, drainage and City Right-of-Way (when applicable)

CONSTRUCTION PLANS

Submit complete set of construction plans drawn to scale no smaller than $\frac{1}{4}$ inch to 1 foot - electronic plans are also required for plans larger than 11x17.

OR fill out the following Construction Details, Floor Plan and Cross Section pages of this handout

ADDITIONAL PLANS AND INFORMATION REQUIRED FOR:

Gambrel roof or unconventional roof framing.

Attic storage area and/or stairs to storage area, basement or second floor.

Any use other than a building accessory to one and two family dwellings.

ELECTRICAL, PLUMBING AND MECHANICAL PERMIT APPLICATIONS:

When applicable, separate permit applications must be submitted for each of the following respective trades Electrical, Plumbing and Mechanical Permits as separate permits are required.

Contractors licensed in accordance with State of Iowa Licensing Laws for the respective trade must obtain these permits and perform the work.

Per State of Iowa Code, homeowners may obtain these permits and perform the work, provided the homeowner has lived there for at least six months.

OTHER INFORMATION:

After application, the building inspector does a thorough plan review and notes any code deficiencies or missing information on the plans.

When the plans are approved and permit fees are paid, the building permit is issued and construction is authorized to begin.



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Construction Details

Construction Details for detached garages to one and two family dwellings.
 Please provide the following information:

Size of New Garage _____ X _____ **Wall Height** _____ **Enlarging an existing garage?** Yes No
 Length _____ Width _____

Wall Sheathing

- Plywood (approved structural wood panel)
- OSB (approved structural wood panel)
- Other sheathing _____

Roof Framing

- Manufactured wood trusses (truss design required)
- Rafters (ask for rafter information sheet and rafter tables)

Roof Sheathing

- Plywood (approved structural wood panel)
- OSB (approved structural wood panel)

Roof Sheathing Size

- 7/16"
- 1/2"
- 5/8"

Roofing Underlayment

Minimum #15 asphalt felt underlayment

Separation from house

- Solid wood door
- Metal door (no windows)
- On garage side of common wall up to roof sheathing
- On garage side of common wall up to ceiling height and on entire garage ceiling
- On all garage walls and on entire garage ceiling if living area above

Wall Corner Bracing

- 4' at each corner
- Other bracing method _____

Eave Ice Protection

(required to a point 24" inside exterior wall if garage will be heated)

- Self-adhering bitumen
- 2 layers mop on (cemented) #15 felt underlayment

Roofing

- Asphalt/fiberglass shingles (approved)
- Other roofing _____

Wall Weather Barrier

- Approved house wrap
- #15 asphalt felt
- Other barrier _____

Siding

- Vinyl
- Other siding _____

OVERHEAD DOORS

Quantity	Width	X	Height	Quantity	Width	X	Height
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Overhead doors: _____ X _____

In gable end? Yes No

Quantity	Width	X	Height	Quantity	Width	X	Height
----------	-------	---	--------	----------	-------	---	--------

Overhead doors **Headers LVL:** _____ 1 3/4" X _____ 1 3/4" X

2X: _____ 2" X _____ 2" X

DOORS AND WINDOWS

Quantity	Width	X	Height	Quantity	Width	X	Height
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Doors: swing out swing in sliding _____ X _____ 6' 8" _____ 3' or 2' 8" X _____ 6' 8"

Door Headers: _____ 2" X _____ 2" X

Windows: _____ X _____ X

Window headers: _____ 2" X _____ 2" X



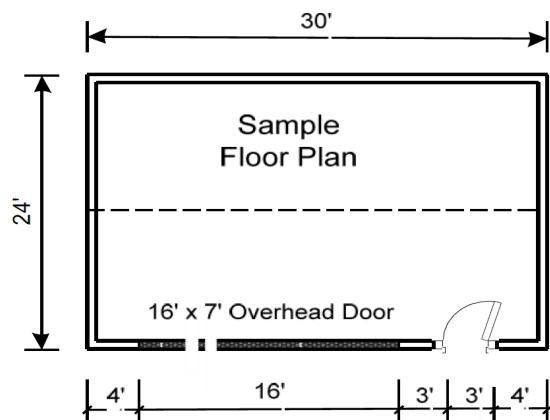
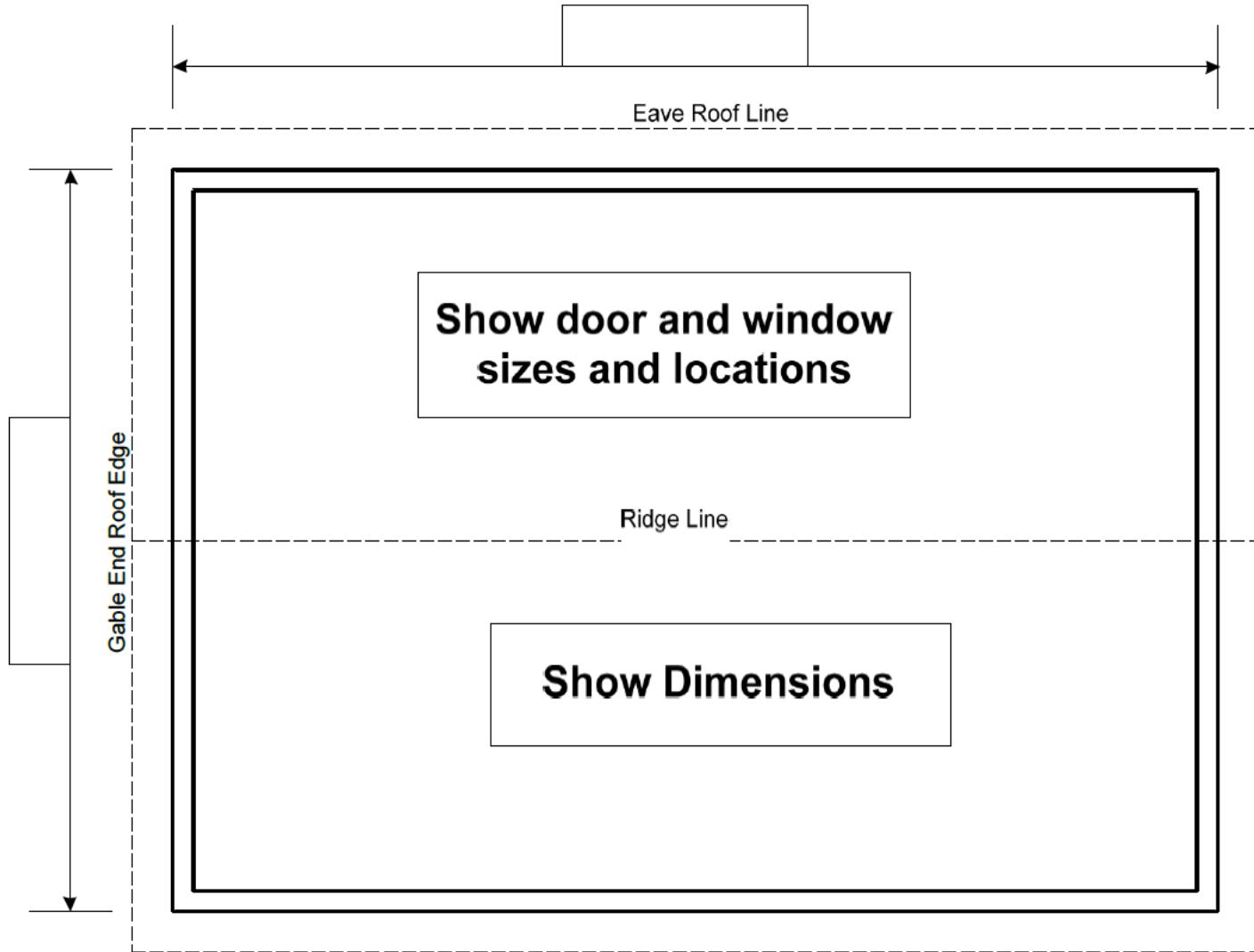
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Floor Plan





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Cross Section

Check, circle, or fill in each detail to create your building design.

ROOF DESIGN

Ice and Water Barrier (to 24" inside wall line)
+ Felt

Roof Sheathing (Circle): 7/16" or 1/2"
OSB or Plywood

2 X _____ Rafters _____ on center
2 X _____ Ceiling Joists _____ on center

Hip/Valley Rafters _____
– or –

Manufactured Trusses (Provide Mfgr. Specs.
at or before Rough Frame Inspection)

Roof Ventilation: Total Vent Area in Sq. Inches: _____

ROOF SLOPE
_____ Inches 12 inches

Attic Insulation: Minimum R49

WALL DESIGN

Double Top Plate (Circle): 2X4 or 2X6
(Consult Building Department Staff for Single Top Plate Option)

Window Header: 2 X _____ – or – LVL 1 3/4" X _____

Door Header: 2 X _____ – or – LVL 1 3/4" X _____

Studs (Circle): 2X4 or 2X6 at _____ on center

Bottom Plate (Single) – Same as Top Plates

Wall Sheathing: _____

Weather Barrier (Circle): House Wrap or Felt

Siding: _____

Sill Plate (Circle): 2X6 or 2X8

(Must be Treated or Naturally Decay Resistant)

FOUNDATION DESIGN

1/2" X 10" Anchor Bolt, Washer and Nut (or other approved anchors), 6' on center and 12" max. from plate splices.

Anchor Bolt MUST have 7" embedment in concrete.

Foundation Rebar (size, grade, location): _____

UFER Ground (1/2" X 20' Rebar Typical) for connection to new electrical panel

Foundation Depth – 42" minimum below finished grade

Footing Size: 8"X16" minimum or _____

Foundation Wall Width: _____ Height: _____

Drainage Tile Required for Basement Foundations

Slope Finished Grade Away from Building–min. 6" in 10'

Maintain 6" Clearance from Exterior Siding to Grade

INTERIOR FINISH

Ceiling – 5/8" Drywall, Typical; Other _____

Wall Insulation (Minimum R20):
6" Fiberglass or better in 2X6 Wall

– or –

2X4 Wall with Alternate Insulation (Circle):
Foam or Cellulose or Rigid Foam
Sheathing Plus Fiberglass (+ Wind Bracing)

Vapor Barrier: _____

Wall Finish – 1/2" Drywall; Other _____

Wall Height (from Finished Floor): _____ ft. _____ in.

FLOOR DESIGN

Subfloor: _____

2 X _____ Floor Joists _____ on center
 Engineered Floor System _____ Center Beam Size
 2 X _____ or _____ 1 3/4" X _____ LVL
or Steel: _____

Center Beam Post Spacing: _____ on center

CRAWL SPACE

Pressure Treated Beams
within 12" and Joists within 18" of Earth

Clear Height Provided: _____

Vapor Barrier Over Earth (Circle): Yes or No
Ventilation: _____ square inches

Insulation (Circle):
R10 Foundation Walls or R30 Floors

Insulate Mechanical Ducts: R6 Minimum



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Cross Section Example

LIMITATIONS

A floating slab foundation as illustrated is limited to 1,000 sq. ft. for one story, with a height not to exceed 16' and side walls not exceeding 12'.

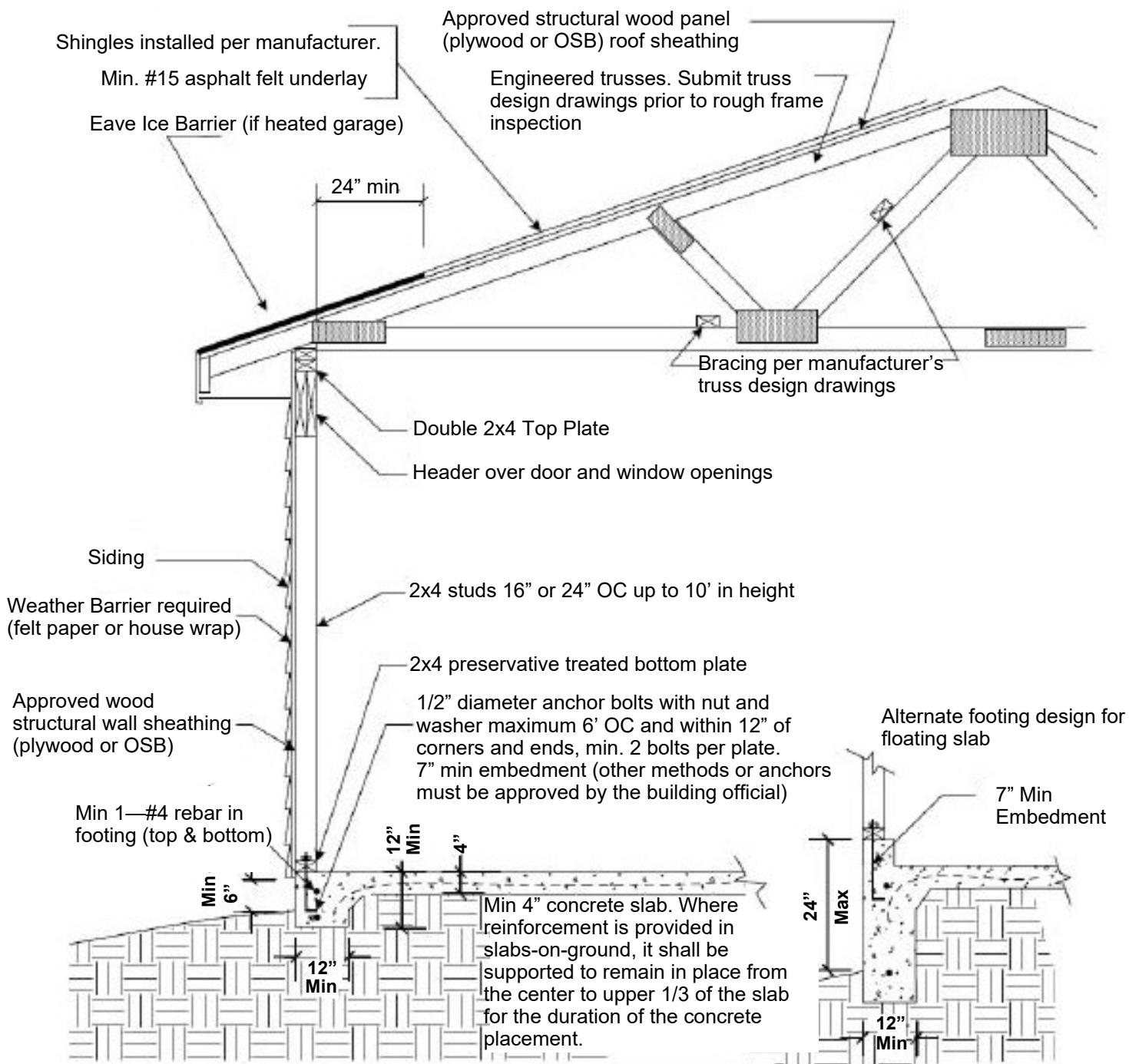
Continuous frost footings 42" below finished grade are required for any of the following conditions:

Detached garages exceeding 1,000 sq. ft. and/or exceeding one story.

Masonry veneer, concrete block walls and concrete walls.

Garages constructed or converted for other uses (such as business or office use).

The area within the foundation walls shall have all vegetation, top soil, and foreign material removed.





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Inspections Required

The inspection card must be kept at the jobsite to be available to the building inspector at all times. The permit card must be displayed and visible from the street. If this is impossible, post on an exterior to be visible to the building inspector on site.

Each phase of construction listed below shall comply with City of Muscatine Codes and shall pass inspection before work proceeds. It is the responsibility of the permit holder or their agent to call for inspections and to provide access for inspection. At least **24 Hours Notice** is required prior to inspection. Based on the scope of work, all inspections listed below may not be required for every project.

Concrete Foundation	Excavation complete, forms, before concrete is poured. Includes floating slab (thickened edge) when permitted, post, pier, trench, spread, pad and other footings.
Pole Foundation	For pole buildings, after postholes are drilled or excavated and before placing concrete in the hole.
Utilities	Temporary and permanent electrical services.
Gas Piping Rough-In	Gas piping before covering or concealment. Coordinate air test on gas piping with Alliant Energy.
Plumbing Rough-In	Before insulation, gypsum board, or any covering has been installed.
Mechanical Rough-In	Before insulation, gypsum board, or any covering has been installed.
Electrical Rough-In	Before insulation, gypsum board, or any covering has been installed.
Framing Rough-In	All framing complete, after the above applicable rough-ins have been approved, before insulation, gypsum board, or any covering has been installed. If possible, coordinate rough-in inspections for one trip.
Final Inspection	After all phases of construction are complete and building is ready for occupancy. Framing Rough-In and Final Inspection can occur on the same trip provided the framing can be inspected from the inside of the building (there are no finish materials installed on the inside).

The portion or addition of the building affected by the work must not be occupied until Final Inspection has been completed, approved and a **Certificate of Occupancy** has been issued by Community Development.