



BUILDING PLANS
City of Grand Rapids
Building Safety Division
218-326-7601

www.cityofgrandrapidsmn.com



This handout is intended only as a guide to the subject matter covered herein and is based in part on the 2015 Minnesota State Building Code. While every attempt has been made to insure the correctness of this handout, no guarantees are made to its accuracy or completeness. Responsibility for compliance with applicable codes and ordinances falls on the owner or contractor. For specific questions regarding code requirements, refer to the Minnesota Building Code or contact your local Building Safety Division.

The most important step in the permit process is the submittal and review of building plans. The purpose of the plans is to provide a detailed written document of the scope of your project. If you are having a number of contractors bid on your project, it is in your best interest to provide plans independent of a contractor. This ensures contractors that bid on your project will be bidding on the same plans. This will also make it easier to compare bids.

When the City receives your plans, a staff member will review your plans to determine in advance that the proposed work complies with the various building rules. The goal is to uncover potential problem areas while the project is still on paper and save you costly corrections later. Applicants are asked to provide two sets of plans. The City retains one set, the other set will be returned to the permit applicant with any corrections noted.

Plans must be detailed. They must also be neatly drawn and drawn to a useable scale. One-quarter inch to one foot is a common scale for floor plans and building plans. Typical residential plans would include a site plan, foundation plans, floor plans, cross sections, elevations, details of various structural components, and a window schedule. Plans should include dimensions and information on use of rooms, wall and ceiling finishes, and lumber sizes and spacing. It is helpful if each page identifies the address of the project as well as the owner's name.

Plans can be prepared by a property owner, contractor, or drafting service. 8 ½ X 11 sheets can be used for projects that aren't too large.

If your project is very complex, you may find it advantageous to hire a professional designer to assist you. Also, if your design involves complicated framing techniques or the use of steel I-beams, for example, you may be required to verify that the designs meet code as a part of the plan review process. The Building Safety Division may require that a licensed engineer provide this verification.

Once your plans are reviewed and approved, it is very important that you do not change the plans without prior approval of the Building Safety Division. If you change the plans,

you run the risk of code violations and negate the purpose of having the plans reviewed in the first place.

The following is a description of what should be included on various portions of the plans:

Site Plan

The site plan is a scale drawing of the lot showing the location of each building on the lot. The site plan should indicate the address of the property, the scale to which the drawing was prepared, and indicate the orientation of the drawing with a north arrow. The size of each building must be shown as well as the distance from each building to the property lines and to other buildings. The new construction should be clearly identified on the site plan. Any water features, retaining walls, or other physical features should be shown. Distances from buildings must be shown to property lines and not streets, sidewalks or alleys.

Foundation Plans

Foundation plans indicate the path and location of the footings, footing dimensions, and general notes on the foundation design.

Elevations

An elevation plan is a view of the building, as one would see it from each side of the building. Elevations help to show the scale of the project, the building height, and exterior finishes. They also help to determine the number of stories of a building, which can effect certain building code requirements.

Floor Plans

Floor plans should be submitted for each floor affected by a building project. The floor plan should show the location and identity of each room, room dimensions, locations of windows and doors, fixture locations, and items such as smoke detectors. A window schedule should be provided with the floor plans. The schedule should indicate the location of the window, the manufacturer, the window size (manufacturer's model number), and if the window is safety glazed.

Cross Sections

Cross sections show a view through the building's framework from foundation to the peak of the roof. Multiple cross sections may be necessary to portray the various work proposed.

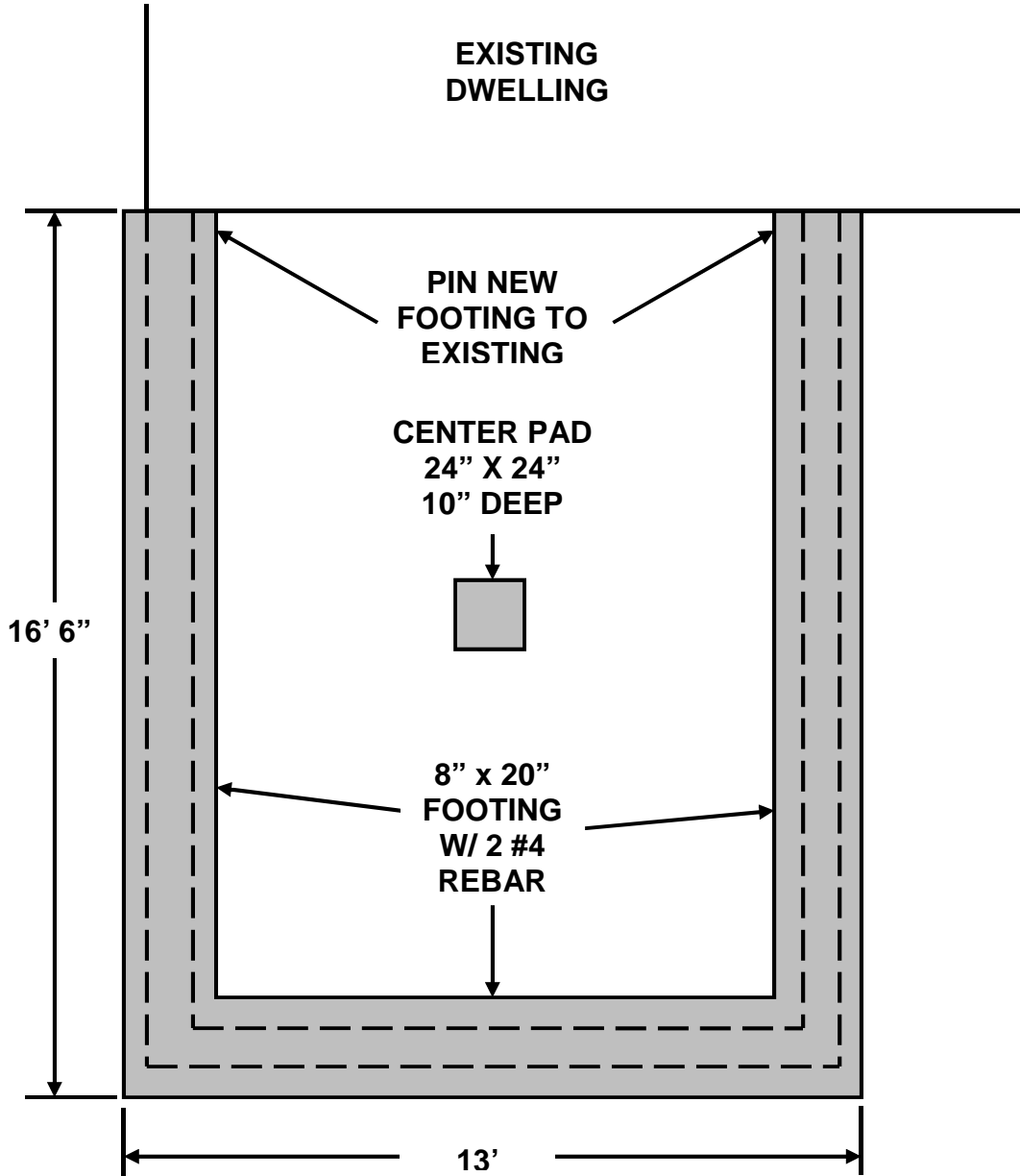
Cross sections should show the following:

- Footing width and depth including rebar placement
- Foundation type (masonry, concrete, or wood)
- Foundation height and thickness
- Rebar locations
- Framing details
- Anchor bolt locations
- Sill plates
- Floor joist size and spacing
- Stud size and spacing
- Exterior and interior sheathing
- Exterior wall coverings
- Insulation and vapor barriers

- Roof framing including truss drawings
- Joist and rafter size and spacing
- Roof pitch,
- Eave details
- Insulation and vapor barriers
- Roof sheathing
- Underlayment
- Ventilation methods
- Ice and water barrier installations
- Roofing type

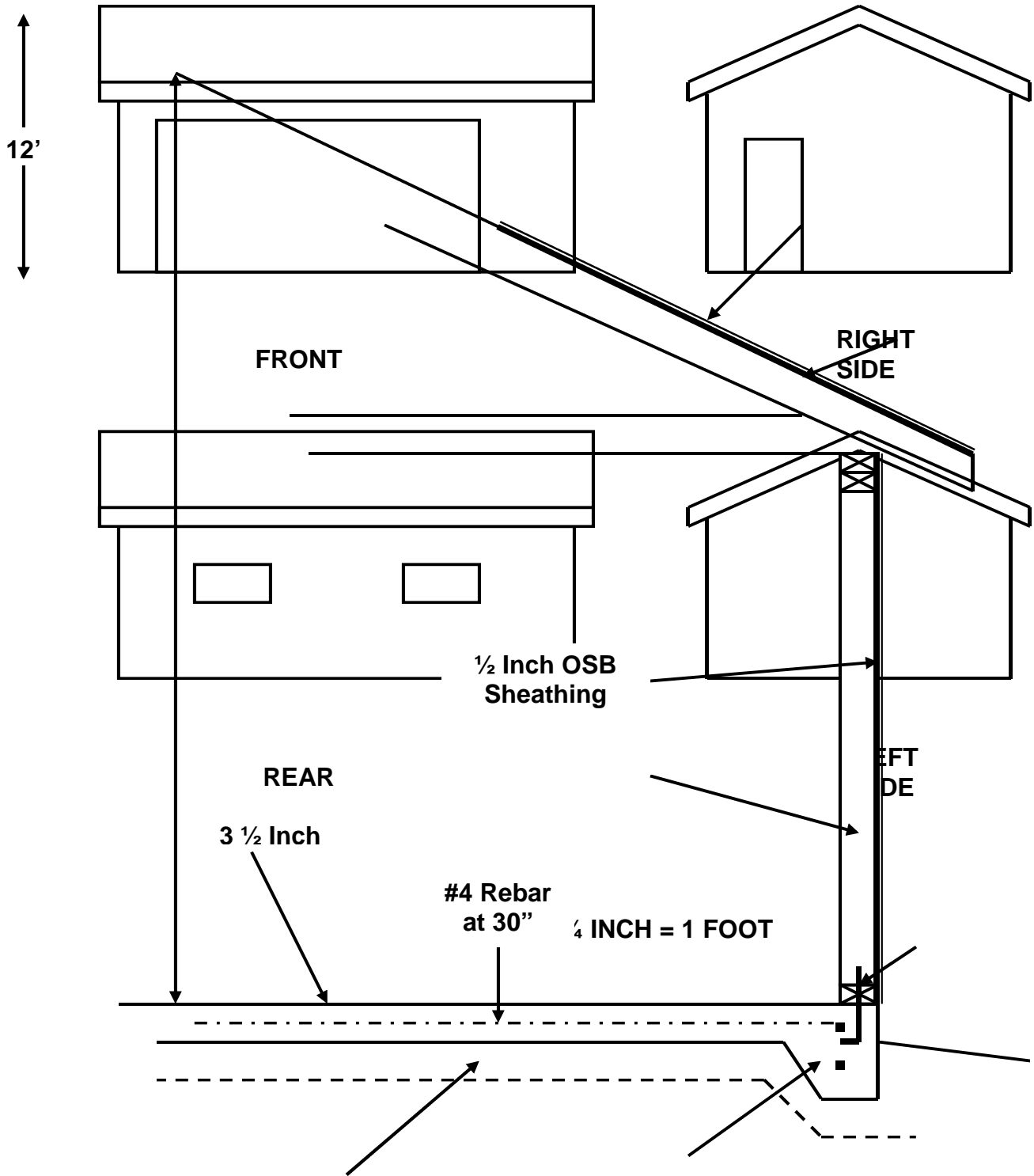
Descriptive notes may be included to address specific issues such as treated plates, header sizes, fastener schedules, etc.

TYPICAL FOUNDATION PLAN FOR DWELLING ADDITION

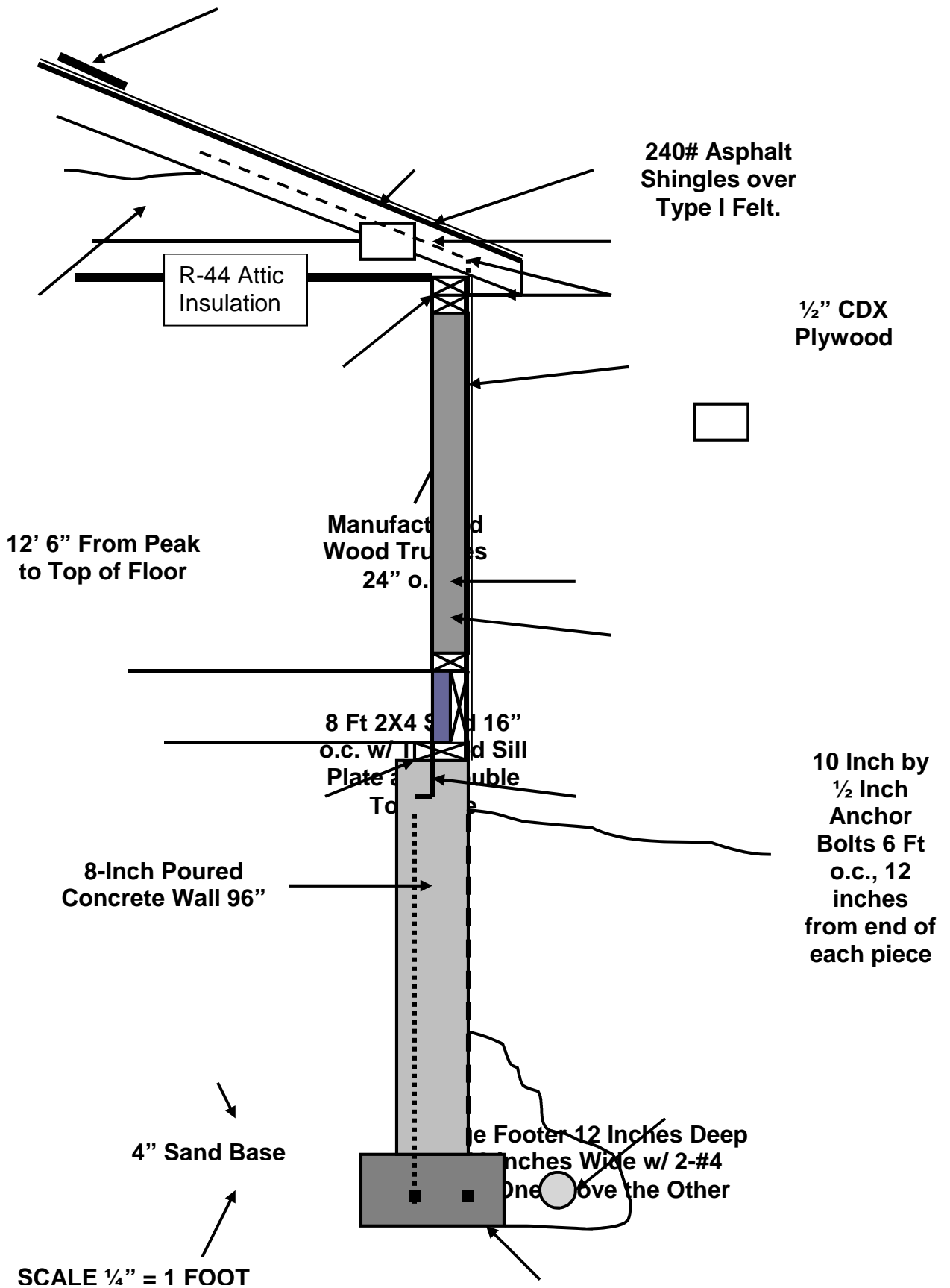


Scale 1/4 " = 1 Ft

TYPICAL BUILDING ELEVATIONS



TYPICAL GARAGE CROSS SECTION



SCALE 1/4 " = 1 FT

Roof Vents
w/Net Free
Area of 1 SF
per 150 SF of
Attic

TYPICAL DWELLING CROSS
SECTION

Factory Built
Trusses 24" O.C.

1/2 Inch CDX
Plywood

240# Asphalt Shingles over
Type I Felt. Ice and Water
Barrier extending 24 inches
Past Exterior Wall

Vent Chutes

Air Barrier and Soffit Vents

Vinyl Siding Installed
per Manufacturers

1/2 Inch CDX Plywood applied
vertically and Nailed with 6d Common
Nails 6" o.c. on the Perimeter and 12"
o.c. on Intermediate Supports

2X6 Studs, 16" o.c. SPF
Stud Grade
R-19 Fiberglass
Insulation

2X6 Bottom Plate

R-44 Attic
Insulation

5/8" Gypsum
Board
over 4 mil
vapor

2X6 Double
Top Plate

96"
1/2" Gypsum
Board
over 4 mil
Vapor
Retarder

3/4 Inch T&G Plywood
over 2X10 Floor Joists,
#2 Hem-Fir - 16" o.c.

R-10 Rigid Insulation

2X6 Treated Sill
Plate over Sill Sealer

1/2 Inch Anchor Bolts 6 Ft
o.c., 12" from ea end

Finished
Grade

Foundation damp proofing

R-10 Foundation
Insulation

3.5-Inch Concrete
Floor

4-Inch Drain Tile



Pea
Rock

4-Inch Sand
Base

6-mil
Polyethylene
Vapor Retarder

8" X 20"
Concrete Footing
w/ 2 #4 Rebar