

*City of Moscow, Idaho
Community Development*

Residential Construction Guide

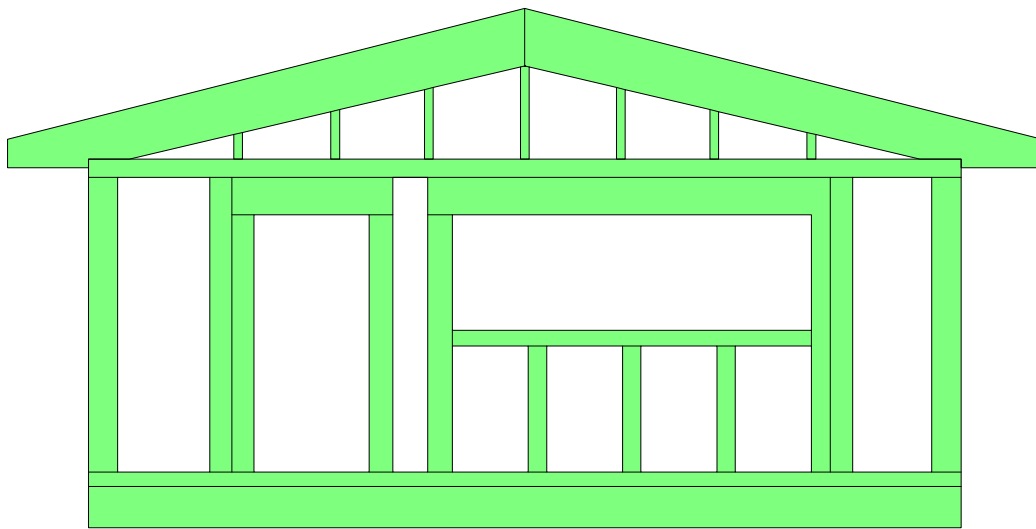
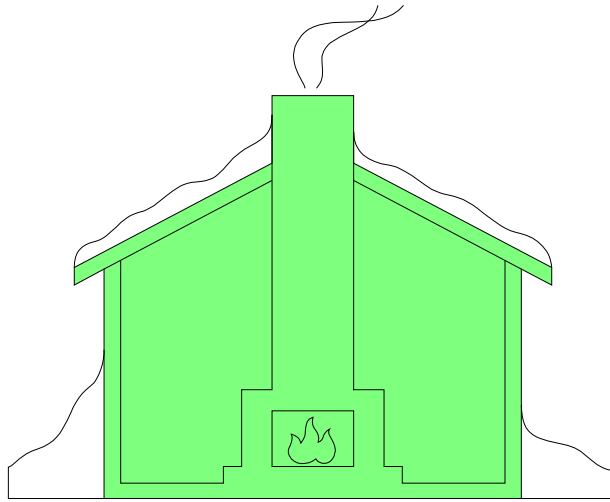


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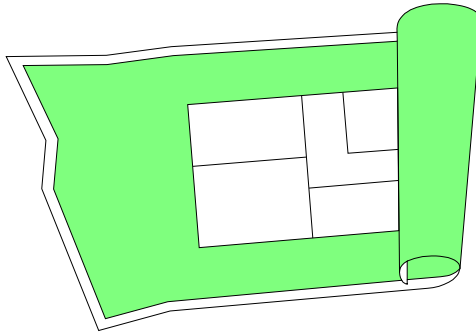


For Your Information Only

The information presented in this guide, both graphical and text, is based on general construction techniques and may be considered **ADVISORY ONLY**. If you need information about specific codes, or have questions about specific projects, *please call our office and talk to one of our staff*. The information provided in this guide is based on the 2006 International Building Code, the 2006 International Residential Code, the 2006 Uniform Plumbing Code, 2006 International Mechanical Code, 2006 International Fuel Gas code, the 2006 International Energy Conservation Code and the 2005 National Electric Code.

Community Development Staff

<i>Community Development Director</i>	Bill Belknap
<i>Assistant Community Development Director</i>	Anne Clapperton
<i>Planner</i>	Vacant
<i>Building Official</i>	Carol Alexander
<i>Building Inspector</i>	Adam Kampenhout
<i>Electrical Inspector</i>	Gordon Hoobler
<i>Plumbing/Mechanical Inspector</i>	Justin Goodwin
<i>Permits Coordinator</i>	Leora Frei



Frequently Asked Questions

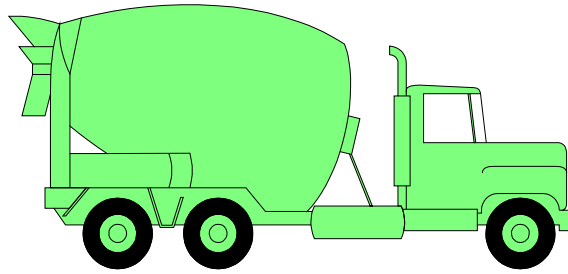
1. **Do I need a building permit?**

Yes, in most cases. The City of Moscow requires building permits for all new construction. This includes, but is not limited to, repair, remodel, new construction, decks, storage sheds over 120 square feet, demolition, retaining walls, re-roofing, and re-siding. The 2006 International Building Code does not require building permits for some types of construction, like concrete driveways and sidewalks; however, it is best to call the Building Department to inquire about your specific project. Storage Sheds under 120 square feet still need to have zoning approval.

2. **How do I get a building permit?**

Building permits can be acquired from the Building Department located at the Paul Mann Building, 221 East Second. Leora Frei, the permits coordinator, will have you fill out a building permit application on which you describe the construction you propose. Some building permits, for example re-roofing permits and re-siding permits, are a flat fee of \$43.00. More involved projects require you to provide drawings that detail what the project is, how it will be situated on the property, and how it will be constructed. See our [Plan Review Checklist](#). These drawings then go through a plan review process where they are approved or you are asked to supply more information. Once the drawings are approved and all the information is added to the building permit application and/or plans, the permit is issued. The approval process usually takes a few days, but can take up to two weeks or more during our heavy construction season. The approval process will take less time if you submit complete plans. Please call and ask for the [Plan Review Check](#) list to see the requirements for drawings.

Building permit fees are based on the estimated cost of construction, including labor, or by a per square foot average cost as established by the Building Safety Magazine as published by the International Code Council.



3. What work is covered by a building permit?

The building permit will cover all work except plumbing, electrical, gas/mechanical, and water/sewer hook-ups. These are separate permits and need to be obtained separately. If any changes occur during construction, that alter the value of the project, they must also be added to the permit valuation and will usually involve an increase in the permit fee.

4. What kind of plans and other information do I need to submit?

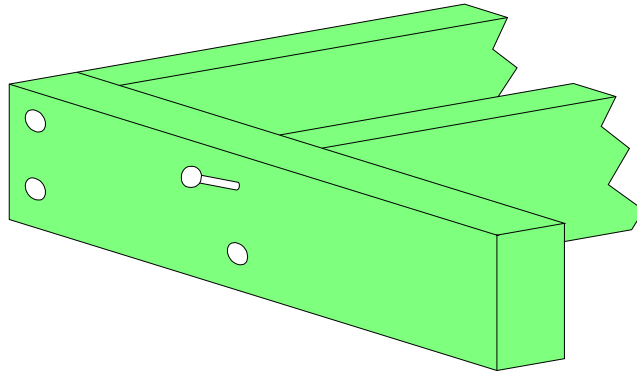
You will need to include two copies of:

- a. Site plan
- b. Foundation Plan
- c. Floor Plan
- d. Structural Cross Section
- e. Elevation Views and
- f. Energy Conservation Program Sheet (available at the Building Department).

You need to show connections between the foundation and exterior walls, the exterior walls and the roof, masonry fireplaces, stairs and any post-to-beam connections. Please discuss this with a building official before submitting any drawings. Please see the plan review check sheet

5. Can I draw the plans myself?

Yes. Residential plans may be drawn by the homeowner, or any person the homeowner chooses. Drawings should be legible and drawn to scale. Apartments containing more than three dwelling units, or commercial drawings, must be drafted by a registered design professional, licensed by the State of Idaho.



6. **Can I do all the work myself?**

A homeowner may do most of the work in a home. The only work that cannot be done by a homeowner are gas/mechanical installations. Gas piping and appliance installations must be done by a qualified and licensed gas installer. Work that is done on rental property or property that is not the primary residence, may be done by the property owner as long as the property owner does, in fact, do the work.

7. **How long is a permit valid?**

A building permit is valid as long as work continues; however, if no construction takes place for six months, the building permit becomes invalid. If construction begins at any time within six months, the permit does not run out until the project has been inactive for a six month period. In other words the permit is valid as long as the project is ongoing, with lapses in construction of less than six months.

8. **What inspections do I need and how do I get an inspection?**

The Building Department requires the following inspections, which should be called in when completely ready and requested 24 hours before the inspection. **The address must be posted on site and visible from the road so the inspector knows which address is to be inspected.**

Footing and Foundation: These inspections should be done after the forms are braced, the reinforcing steel is tied and installed, and before the concrete is placed. Please note that an inspection is required for both the footings *and* the foundation walls. We will also look for proper drain tile installation. **We like to look at the soil conditions before placement of the footings and all erosion control devices must be in place at the time of the footing inspection.**

Basement Slab Insulation: This inspection is done prior to placing concrete for any slab in conditioned space.

Framing and Roughed-in Plumbing and Electrical: This inspection is called for when the roof, framing, fire blocking, and bracing are all complete, but before the insulation has been installed. Also, the roughed-in plumbing and electrical services, gas piping, mechanical and fire barrier requirements must be inspected and approved for cover.

Insulation Inspection: This inspection is done when all exterior wall cavities, floor joists, basement walls, windows, doors, exposed hot water pipes in unheated areas, ducts and headers have been insulated, caulked, and sealed. All plate penetrations in exterior walls must also be sealed. Attic insulation is inspected during the final inspection.

Sheetrock Nailing Inspection: This inspection is done before mudding and taping. Screws should be spaced 8" at the bottom, top and corners of walls and 12" in the field.

Final Inspection: A final inspection is done after all work is completed, including site grading, driveways, electrical, plumbing, and mechanical, life safety and before occupancy.

When an inspection is required, please notify the Building Department as far in advance as possible, 24 hours minimum is preferred. This will allow your inspection to be scheduled at a mutually convenient time. **A rule of thumb is that an inspection is required before placing any concrete and before covering anything with sheetrock**

It is important that you or your contractor be present during the inspection. If you wish, we will be happy to do a progress inspection prior to a full inspection if you have questions. No inspection will be done in a private residence unless an adult is present.

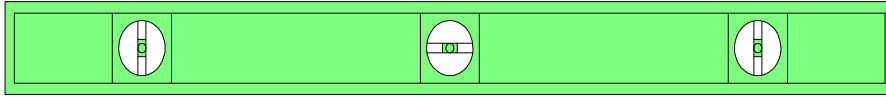
9. What if the inspector finds something wrong?

Any deficiencies found during an inspection will be listed on an "Inspection Report" and will be posted on the job site, or given directly to the construction foreman. Further work may be done, though all deficiencies must be corrected and re-inspected. Once all code requirements are completed for a particular inspection, the inspector will sign the yellow inspection card. This will provide you and the contractor with an up to date list of approved inspection. If a gross violation is found, a "Stop Work Order" may be issued, which means that no work may continue until the "gross violation" is remedied. It is the inspector's job to see that work is done in accordance

to codes and building requirements as adopted by the City Council, and as shown on the "Approved Plans."

10. What if I disagree with the inspector or the building official on a code interpretation, or if I choose to use materials or construction methods not addressed in the building codes? Misunderstanding code requirements is usually the root cause of disagreements between builders and building inspectors. If you are not sure what a code requirement is, or don't understand why the inspector wants a certain construction feature, ask the inspector to explain the requirement. If you still disagree you may want to talk to the building official. If for some reason you are still not satisfied with the response, or believe the code is being interpreted incorrectly, you may submit your opinion to the Board of Appeals. The Board of Appeals reviews challenges to interpretations of the Building Official and the Fire Chief. The staff of the Community Development Department will assist you through the appeals process.

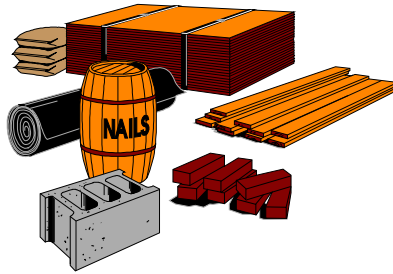
We hope these questions and answers have proven beneficial, and would encourage any further questions to be directed to the Building Department. It is our goal to provide quality service and to help facilitate education with regards to safe building construction procedures.



Residential Construction General Information

1. ***Curbs, Gutters, and Sidewalks are Required*** on all new construction. If your building site does not have these, please call our office. An application can be obtained from the director of the Community Development Department to postpone improvements. The application must be filed and approved by the City Council, at which time a bond must be secured in the amount of the cost of improvements and assigned to the City as part of an agreement.
2. ***Minimum Frost Depth*** is 30" below finished grade. Footings on the daylight side of basements shall be 30" below finished grade of yard.
3. ***Footings*** for houses carrying one floor or two floors shall be a minimum of 8" x 16". Footings carrying three floors shall be a minimum of 10" x 20".
4. ***Foundation Walls*** may be 6" wide when carrying one floor and roof and the foundation wall is 48" in height or less. Foundation walls must be 8" wide when supporting two floors and a roof or the foundation wall height is over 48". Foundation walls must be 10" wide when carrying three floors and a roof.
Reinforcing steel in residential foundation walls 48" or less shall be: #4 (1/2") rebar @ 48" on center (o.c.) for vertical bars and 24" o.c. for horizontal bars. Foundation walls above four feet and up to eight feet: #4 (1/2") rebar shall be spaced @ 18" o.c. each way. Taller walls, most retaining walls, or specialty walls will require engineering design and specific approval.
5. ***Emergency Egress/Rescue Windows.*** All bedrooms or sleeping rooms must have emergency egress windows. The net openable area for egress shall be at least 5.7 square feet (820 square inches). The minimum width allowable for the egress portion of a window shall be 20", while the minimum height shall be 24". The finished sill height shall be 44" maximum above the finished floor. The egress window requirements will also be enforced when windows in bedrooms are being replaced in existing structures.

6. ***Below Grade Windows.*** Windows that extend below the finish grade must have approved area wells (window wells) installed. The vertical surface area of the well must be at least the same area as the window it serves. When the window is used as an egress window the outer edge of the well must be at least 36" from the home and at least 36" wide and provide at least 9 sq. feet of clear area. If the window well is deeper than 44" measured from the adjacent ground a permanent ladder or steps must be installed. The top of the window well must extend above ground grade at least 6" while the bottom of the well must extend 6" minimum below the window sill. **It is important that construction details of window wells be review by the Building Department, as this brief description cannot cover every situation.**
7. ***Window Area in All Habitable Rooms*** will be 8 percent of the floor area; 4 percent of the floor area must be exterior openings openable for ventilation.
8. ***Floor Joists*** will be in accordance to Table R502.3.1(1)(2) of the 2003 International Residential Code and will have solid blocking over bearing walls. Engineered floor joists ie. TJI's shall be installed according to the manufactures installation guide.
9. ***Hallways and Stairways*** serving an occupant load of 49 or less may be no less than 36" wide.
10. ***Private Residential Stairways*** may have a rise of no more than 7 3/4" and a tread depth of at least 10". The rise may differ between treads up to 3/8". **Handrails** are required on all stairways and must be mounted between 34" and 38" as measured from the nose of the tread. **Guardrails** are required on the open side of stairways and must be at least 34" high. Stairs that are 30" or less in height need no guardrails, and if the stairs have less than four risers, no handrail is required.
11. ***Stairway Headroom*** must be 6'8" minimum as measured from the nose of the tread. **Doorway height** is 6'8" minimum. **Required exit doors** shall be 3'0" in width.
12. ***Ceiling Height*** in all habitable rooms will be 7'0" minimum.
13. ***Safety Glass*** is required whenever glass is within 18" of finished floor, in doors, within 24" of doors, within 60" of stairs or landings and in other areas prescribed in the IBC and IRC. Safety glass shall be tempered, laminated, or wire glass. Shower doors may be plastic.



14. **Exterior Walls** shall have double top plates that shall be overlapped at corners. **Interior walls** shall have the top plate overlap onto exterior walls.

15. **Stud Spacing** is a maximum of 24"; 16" where supporting a floor above, or other wise approved by the Building Official.

16. **Stud Height** up to 10' may be spaced

Table R602.3(5)

Stud Size (inches)	Supporting One Roof and Ceiling (inches)	Supporting One Floor Roof and Ceiling (inches)	Supporting Two Floors Roof and Ceiling (inches)	Supporting One Floor Only (inches)
2 x 4	24 (a)	16	-	24 (a)
3 x 4	24 (a)	24	16	16
2 x 5	24	24	-	24
2 x 6	24	24	16	24

(a) Shall be reduced to 16 inches if utility grade studs are used

For wall heights exceeding 10 feet see table R602.3.1 and the building inspector

17. **Headers** in bearing walls are required for openings. The size must be indicated on the plans.

18. **Crawl Spaces** shall be vented with evenly spaced screened openings, at a ratio of one square foot of opening for every 150 square feet of crawl space area. An 18" x 24" crawlspace access opening is required and must not be obstructed by piping, ducting, or debris. Unvented crawl spaces may be allowed if the design drawings meet standatds outlines in the Energy Star Residetial Field Guide or an equal standard.

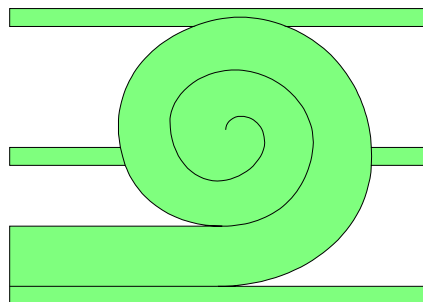
19. **Attic Spaces** shall be vented. Venting shall be equally distributed between the upper third and the lower third of the roof. When a vapor barrier is used on the warm side of attic insulation, a ratio of one square foot of venting to 300 square feet (1:300) of attic space shall be required. Other attic construction, or existing older attic spaces must be ventilated at a ratio of 1:150.

20. *Attic Access* is required, with a 22" x 30" minimum opening. Openings should be placed such that 36" of headroom is available. Attic access is not required when there is less than 30" of attic space measured from the bottom chord to the peak of the roof. Access must be large enough to accomodate equipment and may need to be larger than 22" x 30".
21. *Minimum Siding Thickness* is 3/8". Building paper, Tyvek, or other approved weather resistant material shall be used under all siding.
22. *Wall-sheathing* must be of an approved type, and must connect the top and bottom plates of the wall. If wall sheathing is to be used to fulfill the diagonal bracing requirement, it shall be nailed at 4" spacing at the edges and 6" spacing in the field at 25 foot centers. Se the inspector for braced wall panel requirements.
23. *Smoke Detectors* are required in all new residences, and when remodeling is done to an existing residence. In new residences, detectors shall be powered by 110 volt house wiring with battery backup, while in residential remodels battery powered detectors may be used when hard wiring is not possible.
24. *A 200 amp Electrical Service is Required on All New Residences* and remodels when the service is altered or extended.
25. *ALL GAS INSTALLATIONS must be completed by a licensed gas fitter who works for a licensed gas installer.*
26. *Trusses* may be used when supplied by an approved manufacturer and a set of truss drawings are provided which include an Idaho licensed engineers stamp. Trusses must be designed for a 40 pound live load per square foot.

Site Grading, Excavation, and Drainage

All foundations and basement walls on lots with characteristics listed below will require geotechnical engineering. *Grading excavation and drainage are required to meet the Erosion Control Ordinance and the Stormwater Ordinance. Please see one of our inspectors to find out particular requirements.*

1. Any lot with a fill greater than four feet.
2. Any lot with a total slope of greater than one to five (1:5) or twenty percent over the lot.
3. Any slope above a building site with a slope greater than ten (10) feet, or with a slope greater than three to one (3:1).
4. Any site with apparent fill that has been determined to be non engineered fill, must be inspected by a soils engineer. A written report may be required.
5. In cases involving residences or apartments with daylight basements, soil-bearing walls greater than 20 feet long by 8 feet high or 12 feet long by 10 feet high must be installed pursuant to plans submitted by a licensed engineer and approved by the Building Official, unless shear walls or other bracing material is provided consistent with the International Building Code.
6. Roof drains shall terminate on the same property as the building being drained, with pipe being tight jointed and draining into an approved storm sewer or other approved structure. Roof drains shall not be connected to footing drains, but may be connected to the same pipe outside of the building envelope and at a lower elevation. All erosion or stormwater shall be retained on site and/or have no impact on surrounding properties or a public right of way.



Energy Conservation

The following items have been adopted through the 2003 International Energy Conservation Code (IECC) or are specifically required by the City of Moscow. They are required on all new residential construction and remodels. The IECC allows different insulation values depending on wall area, window area, and floor and ceiling areas. The values listed below are for a standard home with less than 15% glazing.

1. Exterior walls shall have an R-value of not less than R-19 or as prescribed in the IECC.
2. Attic insulation shall be R-38 or as prescribed in the IECC.
3. Crawl space insulation shall be R-21 or as prescribed in the IECC.
4. Heated garages are considered part of the "conditioned space" in a home and must meet IECC requirements; unheated garages do not.
5. Below grade walls used for living space shall be insulated to not less than R-11. Any wall 50% or more above grade must be completely insulated as if it was an above grade wall.
6. Sill seal will be installed under sill plate. Caulking will be installed under the bottom plate when walls are erected.
7. All penetrations (including wiring penetrations at top and bottom plates; and exterior joints at floors, exterior walls, roof, or ceiling wall) will be sealed, caulked, gasketed, or weather stripped to limit air leakage. Penetrations in fire separation assemblies shall be sealed with an approved caulking or fire rated product for their specific fire rated assembly.
8. Fresh air must be supplied to all habitable rooms in residences. Ask the building department for specific requirements.
9. A vapor barrier rated at one (1) perm, dry cup, is required on the heated side of the insulation.
10. A black ground cover of at least six mils will be installed in all crawl spaces. The ground cover shall be installed so it is anchored at the edges and along joints to reduce movement.
11. Gas, oil, or solid burning fuel appliances must be supplied with adequate combustion air as laid forth in Table 7-A of the 1997 Uniform Mechanical Code.

12. All windows must be low-E type, and must have a U-value of .35 or as prescribed in the IECC
13. All windows must be rated by the National Fenestration Rating Service and must have its approval sticker on the window or readily available for the inspector to review.
14. Two inches of rigid insulation must be placed either horizontally under any concrete floor or vertically, against any foundation wall or a combination of both, for a distance of 48". The point where the foundation wall contacts the concrete floor must be separated by thermal break. A building inspector can refer you to the options available for a thermal break.

Zoning and Building Go Together

Zoning is a matter of creating standards for the use and development of land within different sections of the city. The purpose of zoning is to allow the city to grow and function in ways that benefit the community as a whole. All standards of a zone are applied in the same way to all properties in that zone. Sometimes exceptions to zoning standards can be made depending on the circumstances. This is done with zoning permits such as Variances, Conditional Use Permits, Special Use Permits, or Planned Unit Development Permits that involve special review and opportunity for public input. All zoning standards are established by public hearing before the City Council and are compiled in a document known as the Zoning Ordinance.

Most building permit applications must have zoning approval to be issued. This means that the building plans, especially the site plan, must clearly and accurately show the nature of proposed project in detail. Zoning standards are requirements that apply to all land and buildings within city limits, and outside city limits but within the Area of City Impact. Structures that are exempt from building permits are *not* exempt from zoning standards.

The plans will be checked for many zoning requirements, some of which are:

1. Use of the building(s) and/or property.
 - ◆ Is the use allowed in the zone?
2. Legal lot status.
 - ◆ Is the development to take place on a legally created lot?
3. Minimum lot size and density.
 - ◆ Is the lot large enough for the development?
4. Setbacks.
 - ◆ Will the building be too close to the street or property lines?
5. Parking and access.
 - ◆ Will there be legal access to the parking lot, and are there enough parking spaces?
6. Building height.
 - ◆ Will the building be so tall that it is out of character with the neighborhood?
7. Flood impact.
 - ◆ Will the building be in a flood zone, and if so, how can flood damage be prevented?

8. Landscaping.

- ◆ Will the development require landscaping as a visual buffer from adjacent uses?
- ◆ Will the development involve the removal or planting of any trees in rights-of-way?

9. Fencing.

- ◆ Will the fence location, height, and/or material create any traffic hazard?
- ◆ Is fencing required for the use?

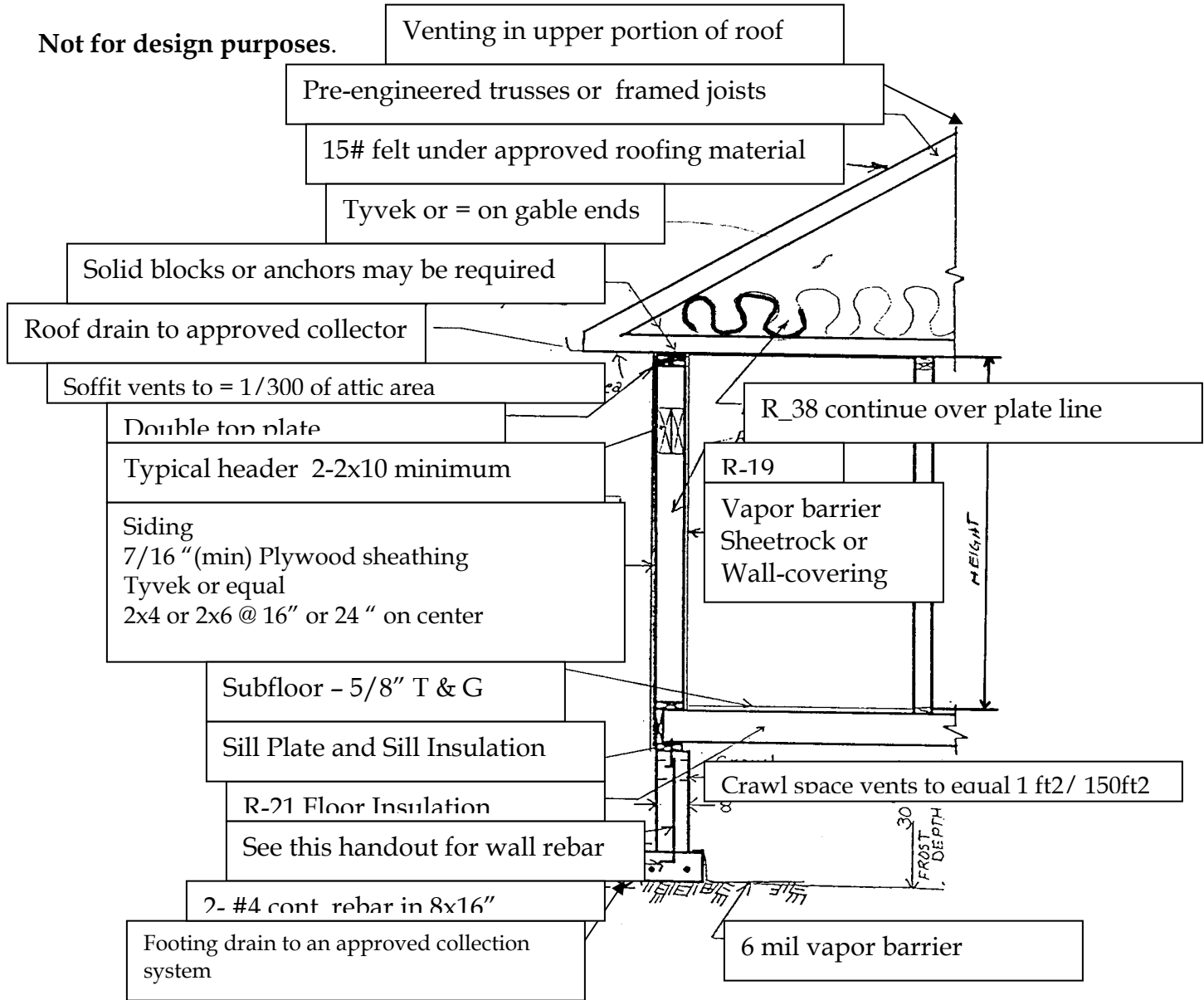
10. Signs.

- ◆ Will the sign be too large or too tall and will its location, size, and/or height be a traffic distraction or pedestrian hazard?

The zoning standards for the above listed categories are very specific. A person preparing a building permit application and plans should always contact the Community Development Department to verify zoning standards before paying the application fee and submitting the plans. After verifying the zoning standards, as much detail as practical should be included in the building plans. Following these suggestions will lessen the applicant's plan review time and decrease the chance of improper permit issuance due to misunderstanding of the project.

Typical Section Drawing

Not for design purposes.



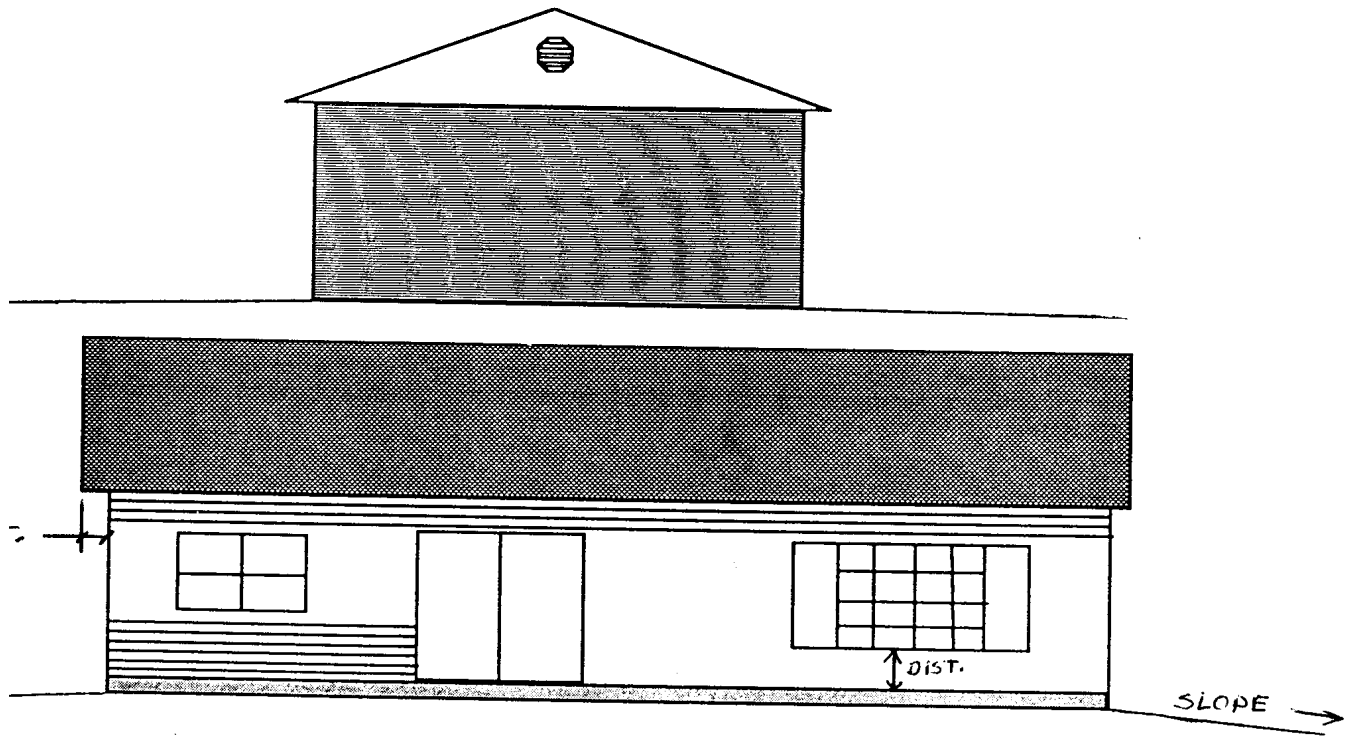
Section Drawings

Drawings are not required to be drawn by an architect or engineer (unless specifically asked for, or for commercial projects) and do not need to be complex. The drawings should include the following:

- a. Wall framing, including connections to the roof, ceiling, drainage and foundation.
- b. Roof slope and roofing materials.
- c. Size of studs, beams rafters and all framing members, including spacing and span dimensions.
- d. Type of siding, insulation, and vapor barriers.
- e. Heights, widths and location if reinforcing bar in concrete footings and foundation walls. Include frost depth.

Typical Elevation Drawing

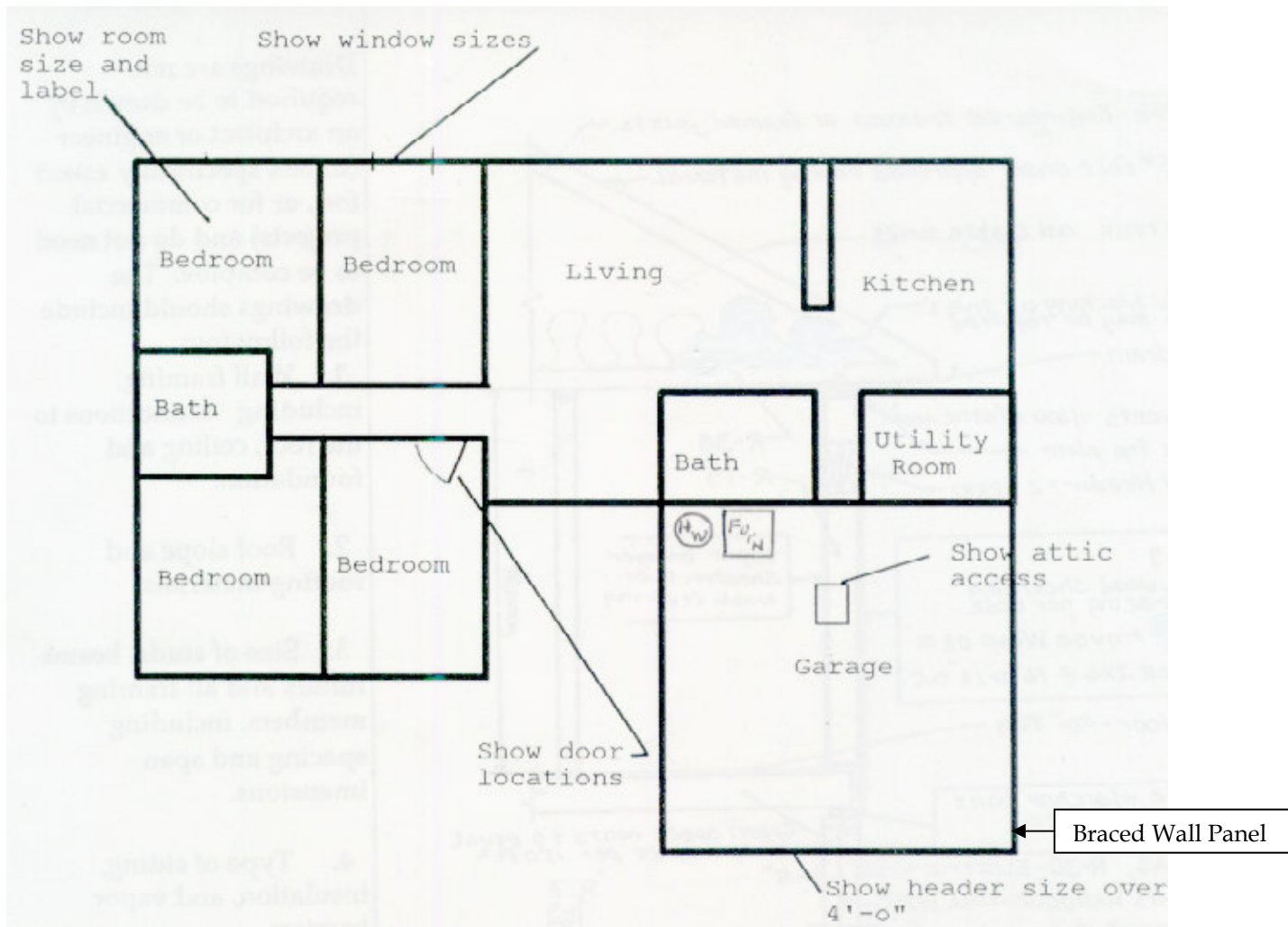
EXAMPLE ONLY



Exterior elevations are drawn to show what a particular side of a building looks like. Simple sketches will suffice as long as windows, doors, porches, guardrails, and finished grade are shown. Other details that are important are height of chimneys above the roof, location of skylights, eaves overhang, and location of any retaining walls that abut the structure. The building inspector who reviews your plans may also ask for specific details.

Typical Floor Plan

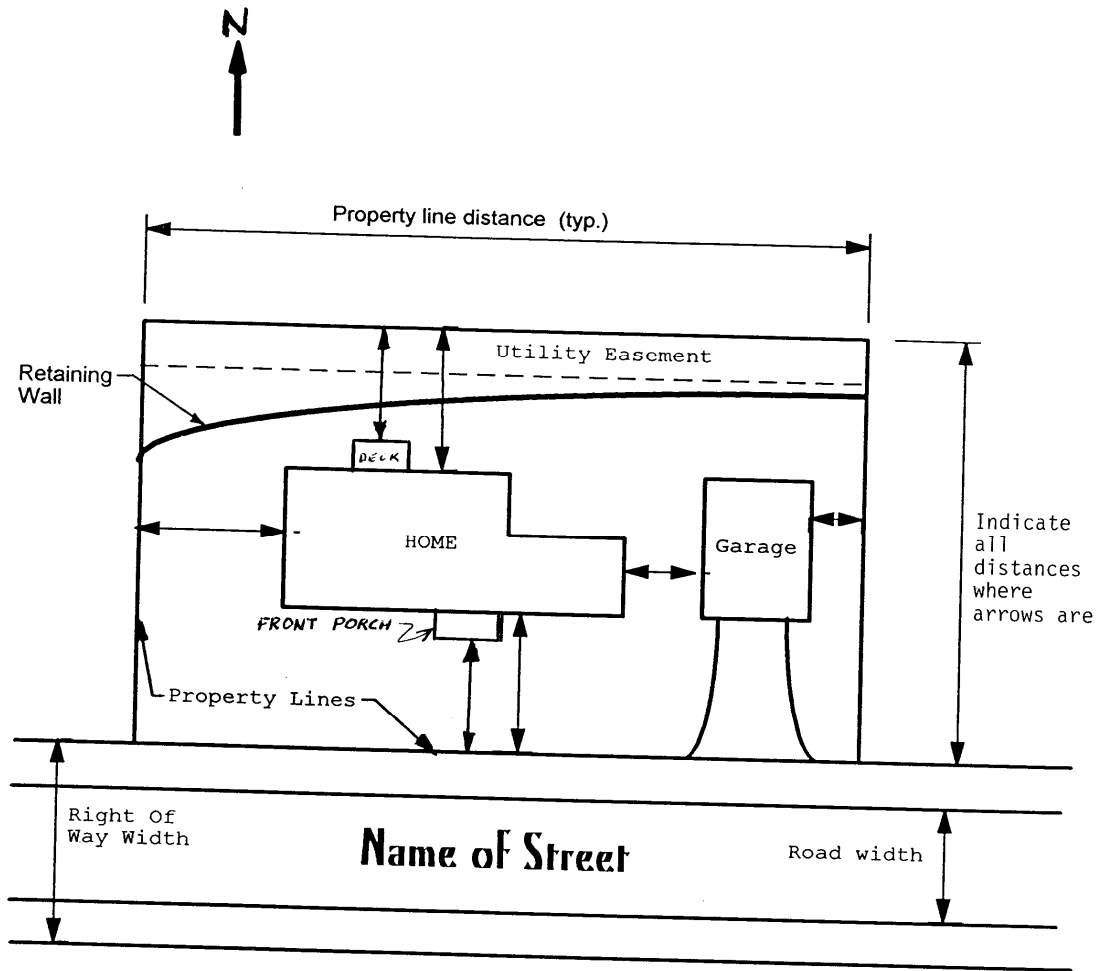
EXAMPLE ONLY



Floor plans should show rooms and their usage, location of smoke detectors and electrical features, window and door sizes, and location of fireplaces, stairs and permanent architectural features. Dimensions and type of headers over doors windows and other long spans should be shown as well as attic access and crawl space access locations. The placement of the furnace, hot water tank and any other major heating or cooling appliances should be shown. Show decks porches and stair location and size. Additionally braced wall panels should be shown within 12' of a corner and 25' on center elsewhere.

Typical Site Plan

EXAMPLE ONLY



The site plan should show the location of the building on the lot, with dimensions to all property lines. The building must be situated within the “setbacks” (which can be acquired from the Building Department) for the particular zone that the building is constructed in. Utility and other infrastructure easements should be shown as well as slopes and retaining walls. Other structures on the site should also be included on the site plan.

Common Plumbing & Electrical Questions

1. Can I install the plumbing and do the electrical work in my own home?

Yes. After completion and approval of the building permit application, plumbing and electrical permits can be issued to the owner of a property, providing the owner will do the work. (The property owner can do the plumbing work only in a single family or duplex dwelling.) If the owner wants to hire out the work, the plumber or electricians must be currently licensed with the State of Idaho. The City of Moscow does not license electricians or plumbers.

2. Can I do run my water and sewer pipe in the same ditch?

You can run both in the same ditch if both pipe materials are approved for that type of installation. If not, then you must excavate the ditch so a “shelf” is made and separate the pipes 12 inches vertically and 12 inches horizontally.

3. Are plumbing and electrical permits required?

Yes. It shall be unlawful for any person to install, remove, alter, repair or replace, or cause to be installed, removed, altered, repaired or replaced any plumbing, gas or drainage pipe or any fixture or water heating or treating equipment in a building or premises without first obtaining a permit from the City of Moscow Building Department. Changing light fixtures and outlets without adding any wiring is considered a repair and does not require a permit; however, adding or extending circuits does require a permit from the City of Moscow Building Department.

4. Do I need a plumbing or electrical license?

Yes. It shall be unlawful for any person to conduct, carry on or engage in the business of plumbing or electrician or act in the capacity of a plumbing contractor electrical contractor or labor in the trade of plumbing or electrician in the capacity of a journeyman or apprentice without first having been issued a certificate of qualification or registration by the State of Idaho. The City of Moscow does not license plumbers or electricians. The exception to licensing is if the property owner does the work in his or her own property (up to a duplex dwelling only and no commercial buildings for plumbing).

5. Who can I get to plumb or wire my house?

Any plumbing or electrical contractor, or journeyman working for a plumbing or electrical contractor, who possesses a certificate of qualification or registration from the State of Idaho.

6. What building code do I follow?

The City of Moscow has adopted the 2000 International Building Code, 2000 International Residential Code, 2000 Uniform Plumbing Code, and 2002 National Electric Code, as amended by the City of Moscow.

7. What type of material may I use to plumb my house?

Any material approved by the Uniform Plumbing Code. For waste vents, ABS, PVC or copper DWV may be used. For inside the building, copper pipe and type L, M and K may be used.

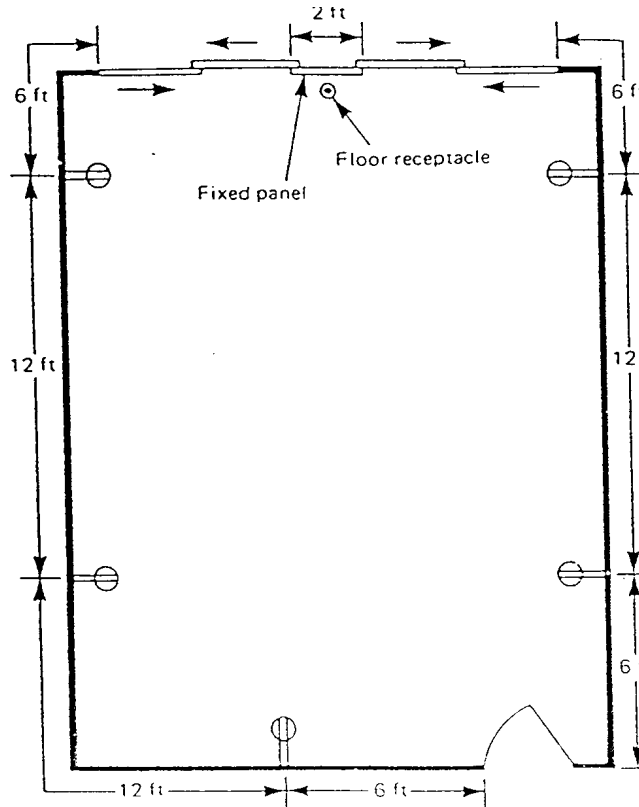
8. Requirements for electrical outlets in a dwelling, NEC Article 210-52.

A. General

In every kitchen, family room, dining room, living room, or similar room or area of dwelling units, receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet, measured horizontally, from an outlet in that space, including any wall space 2 feet or more in width and the wall space occupied by fixed panels in exterior walls, but excluding sliding panels in exterior walls. The wall space afforded by fixed room dividers, such as freestanding bar type counters or railings, shall be included in the 6 foot measurement. Receptacle outlets installed in the floor located within 18 inches of the wall shall be counted as part of the required number.

A multiwire branch circuit supplying more than one device or equipment on the same yoke shall be provided with a means to disconnect simultaneously all ungrounded conductors at the panelboard where the branch circuit originates.

(FPN): Listed baseboard heaters included instructions that may not permit their installation below receptacle outlets.

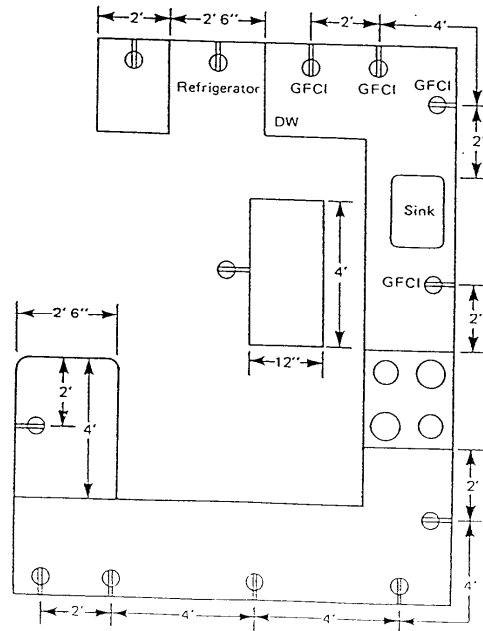
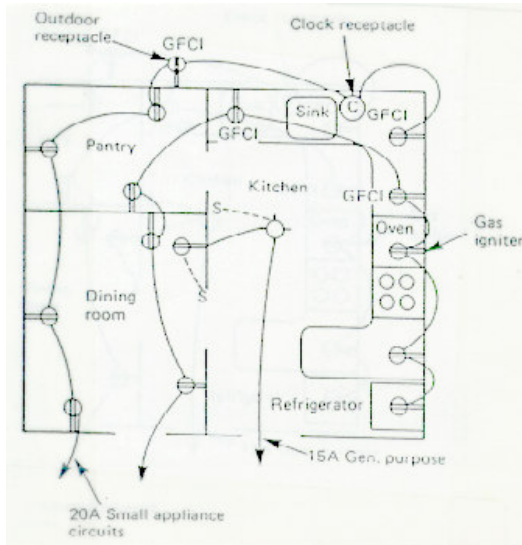


B. Small Appliances

1. Two or more 20 ampere small application branch circuits shall serve all receptacle outlets, including refrigeration equipment, in the kitchen, pantry, breakfast room, dining room or similar area of a dwelling unit. Such circuits, whether two or more are used, shall have no other outlets.
2. Counter top receptacle outlets in kitchens are required to be supplied by no fewer than two small appliance branch circuits. These circuits may also supply receptacle outlets in the pantry, dining room, and breakfast room, as well as electric clock receptacle, electric loads associated with gas fired appliances, or outdoor receptacles, but are to have no other outlets.

C. Counter Tops

In kitchens and dining areas of dwelling units, a receptacle outlet shall be installed on each wall counter space 12 inches or wider. Receptacle outlets shall be installed so that no point along the wall is more than 24 inches, measured horizontally, from an outlet in that space. Receptacles installed not more than 20 inches above the counter top. Outlets to serve island or peninsular counter tops shall be installed above, or within 12 inches below, the counter top.



D. Bathrooms

At least one wall receptacle outlet shall be installed within 3 ft. of each basin, and supplied by at least one 20 ampere branch circuit with no other outlets. However, this circuit is permitted to supply the required receptacles in more than bathroom. If the circuit supplies the required receptacle outlet in only one bathroom it is allowed to supply lighting and the exhaust fan within that bathroom.

E. Outdoor Outlets

For a one family dwelling, and for each unit of a two family dwelling that is at grade level, at least one receptacle outlet accessible to grade level shall be installed at the front and back of the dwelling. "Grade Level" is defined as being located not more than 6'-6" above grade. A receptacle shall be located on the same level and within 25 feet of the heating A/C and refrigeration equipment.

F. Laundry Facilities

At least one receptacle outlet shall be installed.

G. Basements and Garages

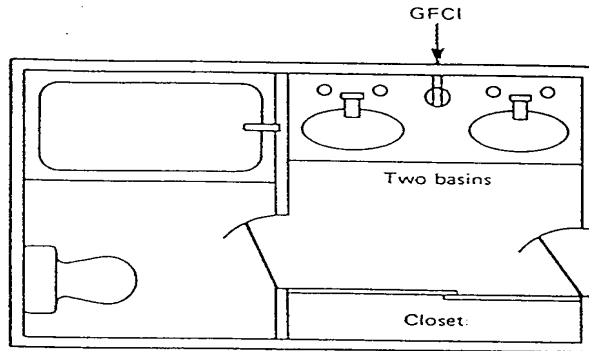
At least one receptacle outlet, in addition to any provided by laundry equipment, shall be installed in each basement and in each attached garage, and in each detached garage with electric power.

H. Hallways

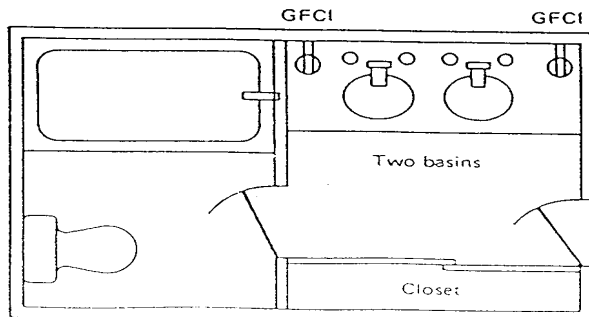
Hallways of 10 feet or more in length shall have at least one receptacle outlet. The length shall be determined by measuring along the centerline of the hall without passing through a doorway.

I. Bedrooms

All branch circuits that supply outlets and receptacles installed in bedrooms shall be protected by an acr-fault circuit interrupter listed to provide protection for the entire branch circuit.

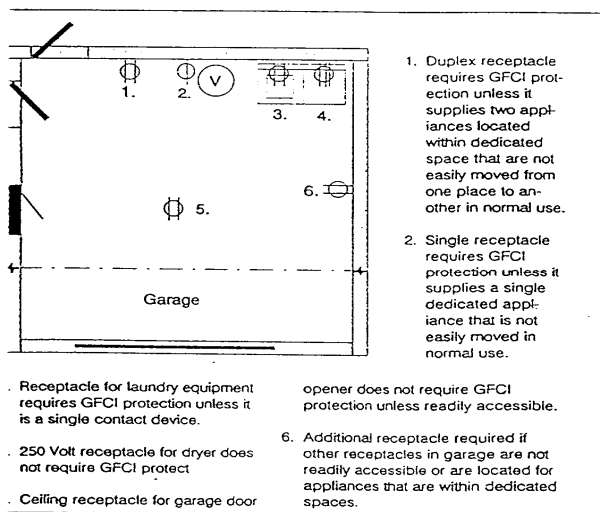
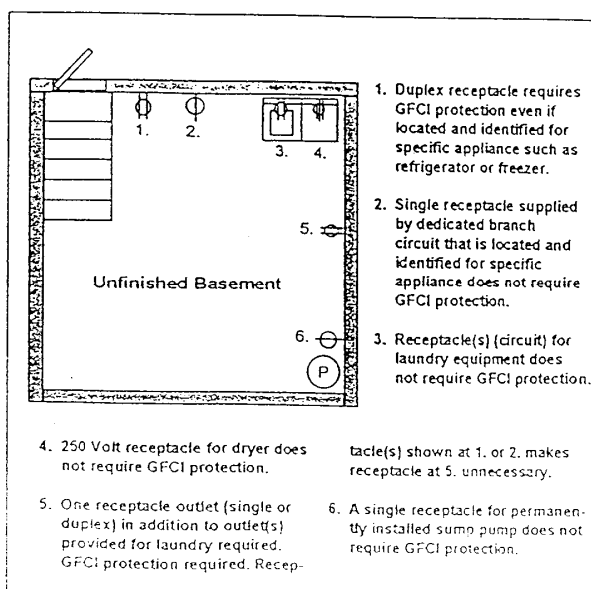


Or Two single or Two duplex receptacles



9. Requirement For Location Of Ground-Fault Circuit-Interrupter (GFCI) Protection, NEC Article 210-8.

- A. All receptacle outlets installed in bathrooms.
- B. All receptacle outlets installed in garages, except outlets that are not readily accessible and for appliances located within dedicated space.
- C. All receptacle outlets installed outdoors where there is direct grade level access.
- D. All receptacle outlets in crawl spaces and unfinished basements at or below grade.
- E. All receptacle outlets to serve counter top surfaces installed in a kitchen and within 6 feet of a wet bar.



10. Lighting Requirements, NEC Article 210.70.

At least one wall switch-controlled lighting outlet shall be installed in every habitable room, in bathrooms, hallways, stairways, attached garages, and detached garages with electric power, and at outdoor entrances and exits. At least one lighting outlet controlled by a light switch located at the point of entry to the attic, underfloor space, utility room, and basement shall be installed where these spaces are used for storage or contain equipment requiring service.

