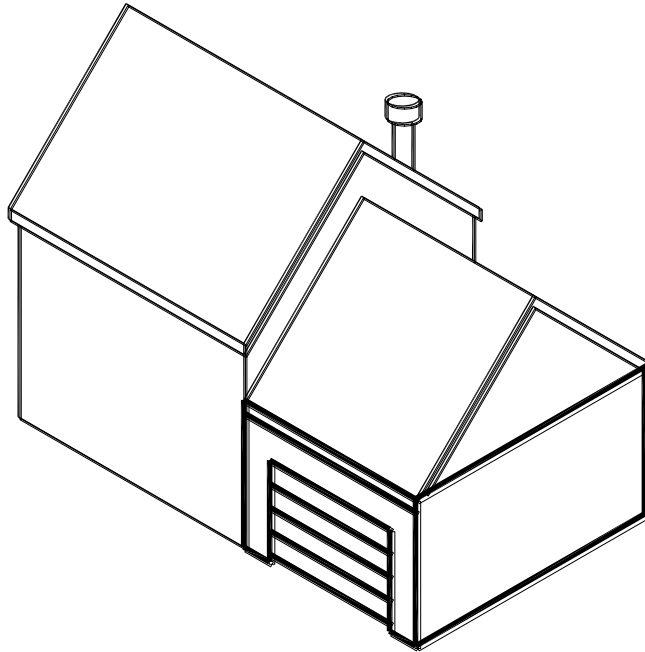


Fairfax County, Virginia

Typical Carport Enclosure Details

Based on the 2009 International Residential Code



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Enclosed carports must be constructed in conformance with these details. For requirements, details and information not contained herein, you must consult the Virginia Residential Code. Code books may be viewed [online](http://iccsafe.org) or purchased from the International Code Council at iccsafe.org. A copy of these details is required to be available on the job site and available to the inspector during each required inspection.

GENERAL REQUIREMENTS

1. Habitable rooms (excluding closets, hallways, laundry rooms, storage spaces and bathrooms) shall have an area of not less than 70 square feet and shall not be less than 7 feet in any direction.
2. Hallways shall not be less than 36 inches in width.
3. Ceiling heights shall not be less than 7 feet above the finished floor. Structural members may project a maximum of 6 inches below the required ceiling height provided they are spaced at 4 feet or more.
4. Bathrooms shall be equipped with a fan vented directly to the outside. A fan is not required if the bathroom is equipped with a window with an opening of 1.5 square feet or more.
5. Enclosed accessible space under stairs shall have walls and ceilings protected with $\frac{1}{2}$ -inch drywall on the enclosed side.
6. A smoke alarm shall be installed in the basement and in each basement bedroom. New smoke alarms shall be interconnected so that when one is activated all will sound. Smoke alarms must be hardwired with a battery backup.
7. A carbon monoxide alarm shall be installed if a bedroom is being constructed and the house is equipped with gas appliances. The carbon monoxide alarm must be hardwire, plug-in or battery type.
8. Garages must be separated from living areas with a minimum of $\frac{1}{2}$ -inch drywall applied to the garage side. Garages beneath living areas must have $\frac{5}{8}$ -inch, type-X drywall applied to the garage ceiling.
9. Doors between an attached garage and adjacent living areas must be a $1\frac{3}{8}$ -inch solid wood core door, a $1\frac{3}{8}$ -inch honeycomb core steel door or a 20-minute fire-rated door.

EMERGENCY ESCAPE AND RESCUE

Where Required

An emergency escape and rescue opening in the form of a window or door to the outside is required for all new bedrooms.

Requirements

- All doors and windows utilized for emergency escape and rescue must be operable from the inside without the need of a key or tool.
- The opening must be a minimum of 5.0 square feet.
- Windows must have a sill 44 inches or less above the finished floor.
- See FIGURE 1 for more opening requirements.

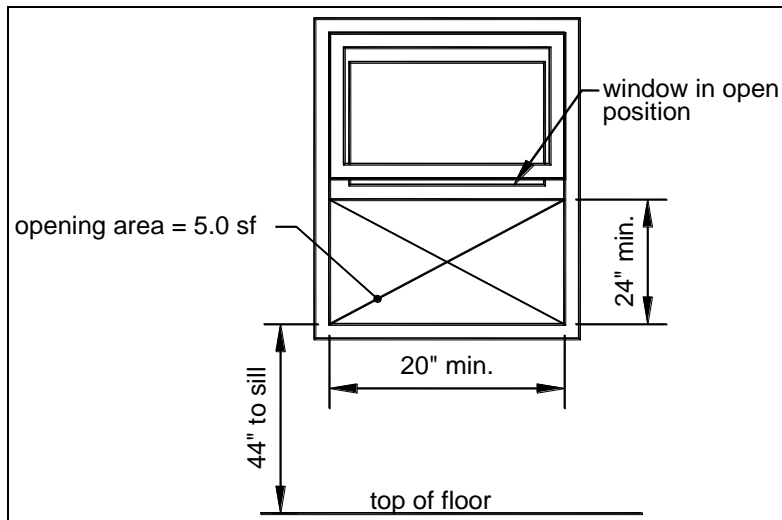


FIGURE 1: EMERGENCY ESCAPE AND RESCUE REQUIREMENTS

FOUNDATION AND FLOOR

Foundation Requirements

All exterior walls enclosing a carport must be supported on continuous concrete footings 24 inches deep. See FIGURE 2 - FIGURE 4. See Page 6 for slab insulation requirements when enclosing a carport into a living space.

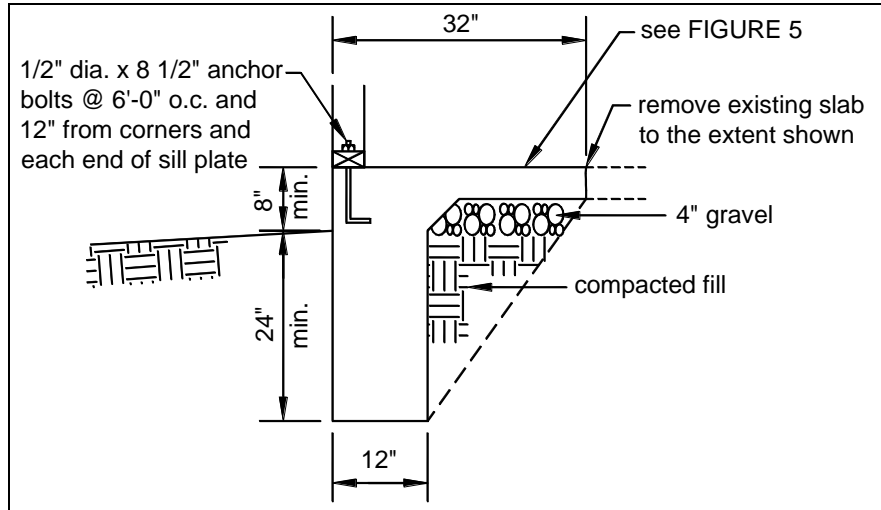


FIGURE 2: TYPICAL FOOTING/SLAB DETAIL

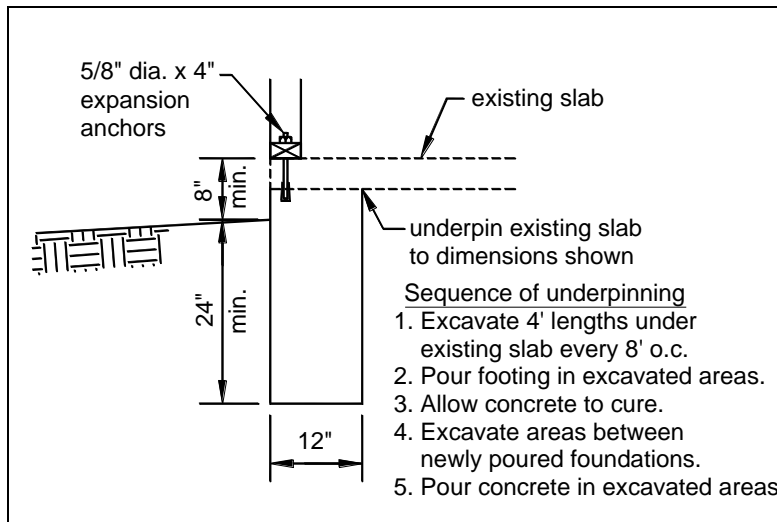


FIGURE 3: TYPICAL UNDERPINNING DETAIL

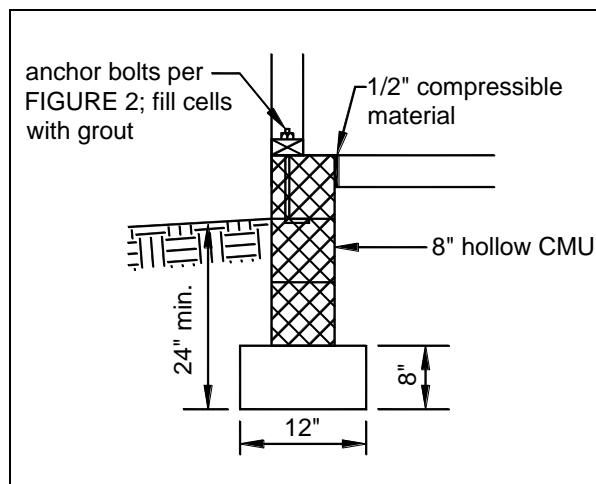


FIGURE 4: CMU FOUNDATION OPTION

Floors

When converting a carport to a garage, the garage floor must slope towards the garage door. All new slabs associated with a carport enclosure must have a concrete compressive strength of 3,500 pounds per square inch. See FIGURE 5 for more information. Built up floors must meet the requirements shown in FIGURE 6. Apply a waterproofing sealant to the top surface of all slabs in carports converted to living spaces.

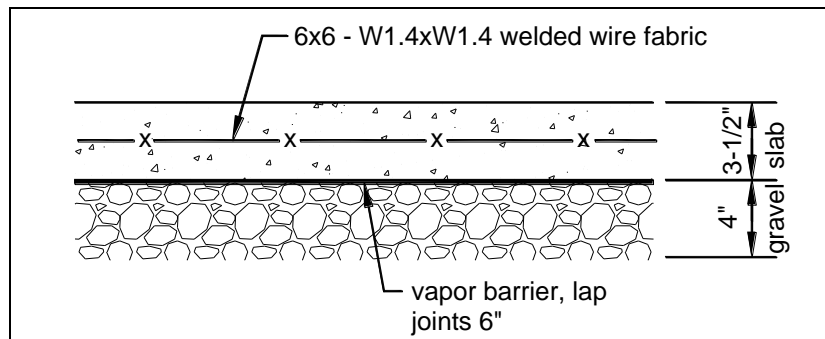


FIGURE 5: TYPICAL SLAB-ON-GRADE

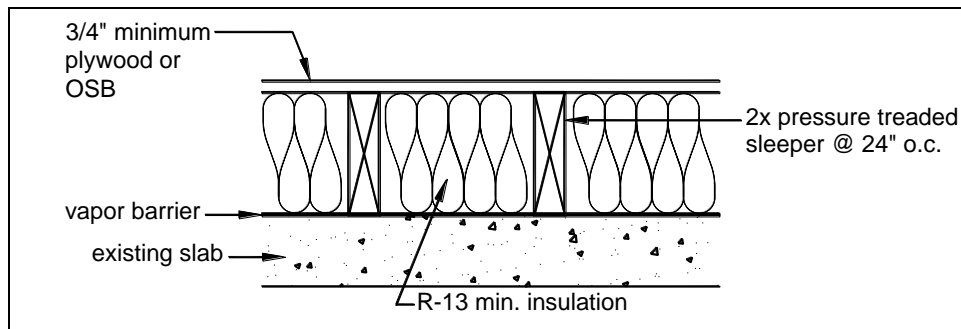


FIGURE 6: TYPICAL BUILT-UP FLOOR

WALL CONSTRUCTION

Studs

Studs may be utility grade or better. Stud shall be spaced per TABLE 1. Walls shall have a single pressure treated bottom plate and can have a single or double top plate.

TABLE 1: STUD SPACING

Wall Finish Material	Stud spacing, inches on center
Drywall	16 or 24
Wood veneer, hardwood paneling	16

Attachment Requirements

Wall construction shall be fastened in accordance with TABLE 2.

TABLE 2: FASTENING SCHEDULE

Connection	Nailing method
Top plate to stud	end nail, 2-16d @ 24"o.c.
Stud to bottom plate	toe nail, 2-16d
Bottom plate to floor	face nail, 6d (concrete nail) @ 16"o.c.

Drilling And Notching Studs

Studs in non-load bearing walls may be notched or drilled in accordance with FIGURE 7.

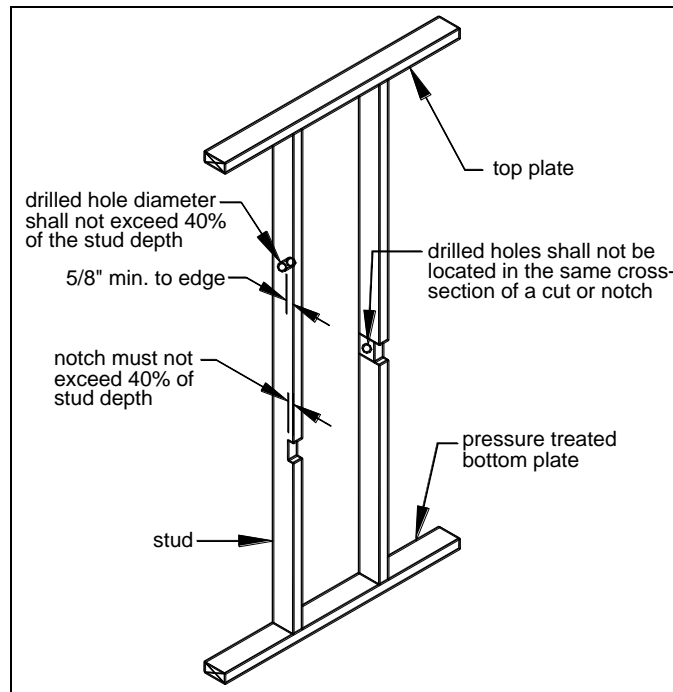


FIGURE 7: DRILLING & NOTCHING STUDS

Headers

A single flat 2x4 member may be used as a header in interior nonbearing walls for openings up to 8 feet in width if the portion of the wall above the opening is not more than 24 inches in height. If the opening does not meet these conditions, the header size shall be per TABLE 3.

TABLE 3: HEADER SIZE

Header Size	Span length, feet
(2)2x4	4
(2)2x6	6
(2)2x8	10
(2)2x10	12
(2)2x12	16

Interior Covering

Wall and ceiling material must meet the requirements below.

- Materials must have a flame spread classification no greater than 200 and a smoke density classification no greater than 450. This does not apply to trim, molding, handrails and doors.
- Cement or fiber-cement board (e.g., Durock) must be installed on walls of bathtub and shower spaces and finished with a non-absorbent surface.
- Wood veneer or hardboard paneling less than 1/4-inch shall not be permitted.
- Gypsum board must be 1/2-inch minimum.

Exterior Sheathing

Exterior walls must be sheathed with 1/2-inch plywood or OSD. Each corner must have 4 feet of solid sheathed panels with no openings for windows or doors. This panel may be offset from the corner a maximum of 10 feet if a door or window is desired near the corners. If enclosing a carport into a garage, each side of a garage door must have a minimum 2-foot solid sheathed panel. The sill plate to all solid sheathed panels must have a minimum of two anchor bolts or expansion anchors at least 12 inches from each panel end.

ENERGY COMPLIANCE

Carports converted to living spaces must have the insulation R-values and window/door and skylight U-factors shown in TABLE 4.

TABLE 4: INSULATION AND U-FACTOR REQUIREMENTS

Location	R-value	U-factor
Window/door U-factor	-	0.35
Skylight	-	0.60
Ceiling R-value	38	-
Wall R-value	13	-
Built-up floor	11	-
Slab-on-grade	10 ¹	-

¹ Insulation must be provided to protect the slab-on-grade from heat loss; see FIGURE 8.

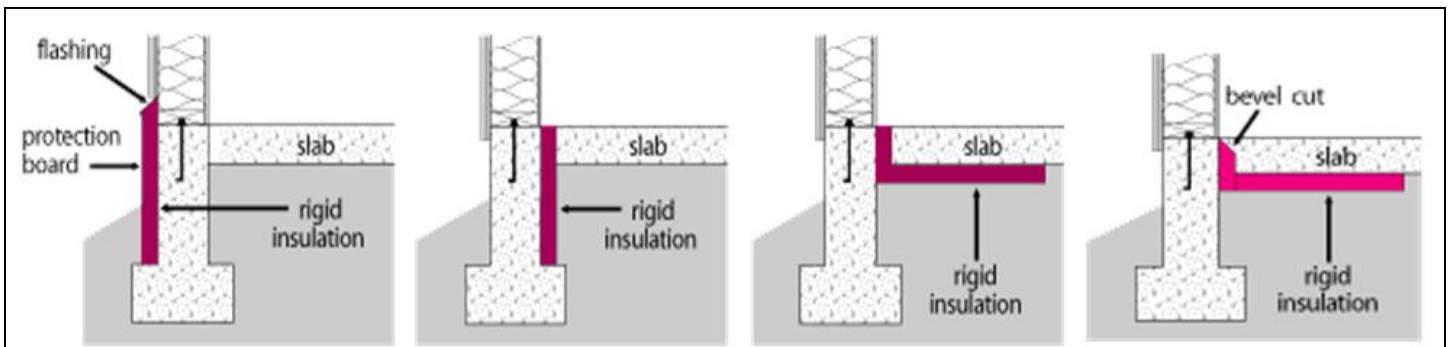


FIGURE 8: SLAB-ON-GRADE INSULATION REQUIREMENTS

(Insulation must extend from the slab edge to a total length of 24 inches vertically and/or horizontally.)

PLUMBING

Showers

Showers and shower compartments must meet the following requirements.

- Shower compartments must have a minimum total area of 900 square inches and a minimum dimension of 30 inches in any direction.
- Shower compartments may have a minimum dimension of 25 inches provided it maintains a cross section area of 1,300 square inches.
- Hinged shower doors must open outward.
- All glass which encloses a shower must be safety glazed.
- Shower control valves must be scald resistant (in accordance with ASSE/ANSI 1016) with a hot water limit of 120 degree F.

Fixture Clearances

Toilets, sinks and showers shall have the minimum clearances listed below.

- 21 inches in front of sinks and toilets.
- 24 inches in front of shower stall opening.
- 4 inches between two adjacent sinks.
- 4 inches between a sink and a toilet.
- 4 inches between a sink and a wall.
- 2 inches between a sink and a bathtub.
- 15 inches clearance from a toilet's centerline to an adjacent fixture or wall on each side.

Drain Size

Fixture drain size must meet the dimensions below and must be equipped with a strainer and stopper.

TABLE 5: MINIMUM DRAIN SIZE

Fixture	Diameter, inches
Bathroom sink	1 ¹ / ₄
Bathtubs	1 ¹ / ₂
Sinks (other than bathroom)	1 ¹ / ₂
Laundry tubs	1 ¹ / ₂
Shower	1 ¹ / ₂

ELECTRICAL

Branch Circuits

Branch circuits must meet the requirements listed below. See TABLE 6 for more information.

- Use a 15- to 20-ampere rated branch circuit for general use purposes such as lighting and outlets.
- One "plugged-in" electrical device shall not exceed 80 percent of the circuit rating.
- Hardwired appliances or equipment may be included in a general use circuit provided its rating does not exceed 50 percent of the circuit rating.
- A dedicated 20-ampere minimum branch circuit must be provided to serve laundry room outlets only.
- A dedicated 20-ampere branch circuit must be provided to serve the bathroom receptacles.
- Branch circuits which serve bedroom outlets must have circuit breakers equipped as combination arc-fault/over current circuit interrupters.

TABLE 6: BRANCH CIRCUIT REQUIREMENTS

Circuit Rating→	15 amp	20 amp	30 amp
Circuit Element↓			
Minimum conductor size	14	12	10
Maximum breaker size	15	20	30
Outlets rating	15	15 or 20	30
Maximum load	15	20	30

Lighting Requirements

Lights must meet the requirements listed below.

- At least one switched light shall be provided in each room and hallway. A switched outlet may be substituted in all rooms except bathrooms and hallways. A switched outlet cannot count as a required outlet.
- At least one switched or pull chain light must be provided in each storage area and at or near heating and air conditioning appliances and equipment.
- Lighting fixtures must not be installed within 3 feet horizontally and 8 feet vertically of a bathtub rim or shower stall threshold. A light fixture may be installed above a shower area if it is constructed so that water cannot enter or accumulate in wiring areas and the lighting fixture is marked "suitable for wet locations."

Outlets

Outlets must meet the requirements listed below.

- Outlets shall be placed in accordance with FIGURE 9.
- The minimum wall length which requires an outlet is 2 feet.

- Kneewalls, built-in bars and other fixed room dividers must be included for outlet spacing.
- Hallways more than 10 feet long must have a minimum of one outlet.
- Outlets installed for specific appliances must be within 6 feet of the appliance location.
- Bathrooms must have at least one outlet located on a wall adjacent to each basin and within 36 inches of the bathroom sink. All bathroom outlets must have ground fault circuit interrupter (GFCI) protection.
- At least one outlet must be provided to serve laundry appliances and sinks.
- Each unfinished portion of the basement is required to have at least one outlet that is GFCI protected.
- An outlet must be provided within 25 feet of heating and air conditioning appliances and equipment.

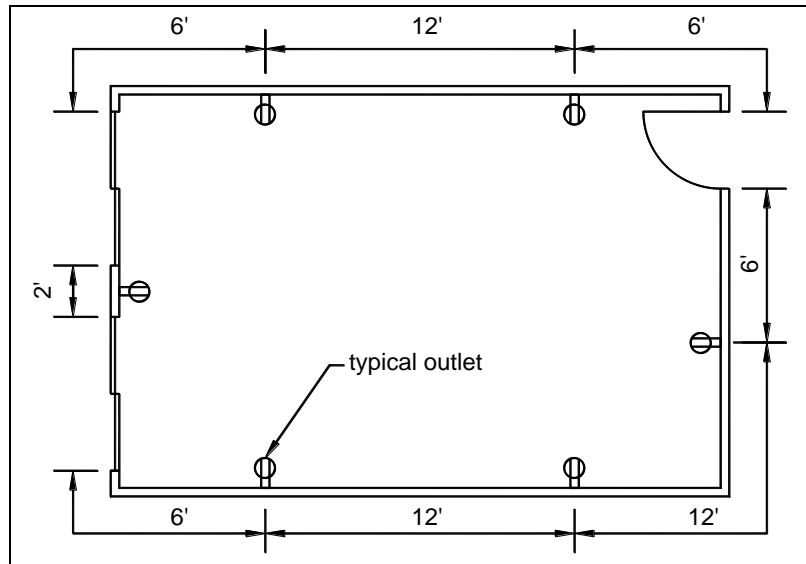


FIGURE 9: TYPICAL OUTLET DISTRIBUTION

Light Fixtures In Closets

Fixtures installed in clothes closets shall be limited to surface mounted or recessed incandescent fixtures with completely enclosed lamps and surface mounted or recessed fluorescent fixtures. See TABLE 7 for clearance requirements.

TABLE 7: CLOSET LIGHT FIXTURE CLEARANCES¹

Fixture Type	Fluorescent Bulb ²	LED Bulb ²
Surface mounted	6"	12"
Recessed	6"	6"

¹ Incandescent bulbs are prohibited.

² Fluorescent and LED bulbs are permitted in storage areas when identified for this use.

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