



FARMINGTON CITY RESIDENTIAL PLAN CHECK

PLEASE RETURN THIS ORIGINAL CHECKLIST WITH EACH RE-CHECK

PROJECT ADDRESS:		ZONE:	
SUBDIVISION:		LOT:	
BUILDER'S NAME:			

- 1.1 CHECKLIST.** This checklist is compiled for plan checking purposes for **1 AND 2 FAMILY DWELLINGS, THEIR ACCESSORY BUILDINGS (Garage/ Carport) AND SWIMMING POOLS**. The information contained herein is from the **INTERNATIONAL RESIDENTIAL CODE, 2012** edition and **INTERNATIONAL ENERGY CODE, 2006** edition. This checklist is not intended to indicate any change in any code or ordinance by inference or omission.
- 1.2 ITEMS CIRCLED ON THE CHECKLIST SHALL BE CORRECTED ON THE PLANS BEFORE A PERMIT SHALL BE ISSUED.** This checklist shall be attached to and become a part of the approved plans. Next to the item circled put the page number of the plans where the corrections were made.
- 1.3 ITEMS CHECKED ON THE CHECKLIST SHALL BE CORRECTED DURING CONSTRUCTION.**
- 1.4 ALTERNATE MATERIALS AND METHODS OF CONSTRUCTION.** Provisions of the codes are not intended to prevent the use of any material or method of construction not specifically prescribed by the codes, provided that any such alternate has been approved by the Building Official in advance.
- 1.5 TESTS.** Whenever there is insufficient evidence of compliance with the provisions of the codes or evidence that any material or any construction does not conform to the requirements of the codes, or in order to substantiate claims for alternate materials or methods of construction, the Building Official may require tests as proof of compliance be made at the expense of the owner, by an approved testing agency.

FOR RE-CHECK, PLEASE RETURN THIS ORIGINAL CHECKLIST AND ALL INFORMATION ATTACHED. An additional plan check fee will be charged if this list is lost. Thank you.

SECTION 2. SITE PLAN / DRAINAGE PLAN

2.1 SITE PLAN shall contain the following information:

2.1.1 Shall be **drawn to a scale of at least 1" = 20'** and the scale shall be shown on the plan.

2.1.2 North arrow.

2.1.3 Address and lot number.

2.1.4 Subdivision title or owner's tax ID number.

2.1.5 Lot dimensions (all sides).

2.1.6 Size and location of **all easements**. (Include drainage, utility, trail, faults, conservation easements, etc.)

2.1.7 Name or number of all frontage streets.

2.1.8 Location of the building on the lot and location of existing buildings.

- a. Front setback dimension.
- b. Both side setback dimensions.
- c. Rear setback dimension.

NOTE: All setback dimensions shall be taken perpendicular to the property lines. **In most cases the property line is 10' behind the back of curb.**

2.1.9 Outside dimensions of the building.

2.1.10 Location and width of driveway and off-street parking.

2.1.11 Location of flood hazard zone _____.

2.1.12 Existing and proposed grades, in contour intervals of **two feet or less**. Show at least top back of curb (TBC), lot corner elevations, and finished grade elevations at corners of house.

2.1.13 Elevation of all floors, including basement.

2.1.14 Location of all retaining walls. Engineering and a separate permit are required for all retaining walls over 4 feet tall.

2.1.15 Show how prevention of off-site storm water runoff and erosion shall be accomplished **during and after** construction. **PUT THIS NOTE ON PLANS:** "All storm water and dirt will be kept on site during construction until final landscaping is done." General contractor will be held responsible for keeping dirt/mud on site during bad weather and for cleaning up after subcontractors.

2.1.16 Drainage. Lots shall be graded so as to drain surface water away from foundation walls. **PUT THIS NOTE ON PLANS:** “The grade adjacent to all foundation walls shall fall a minimum of **6 inches within the first 10 feet (5%)**.” R401.3 Landings, ramps, patios, porches or decks, which are required to be level or can have a MAXIMUM slope of ¼” per foot. All other impervious surfaces within 10 feet of the foundation walls must slope a MINIMUM of ¼” per foot away from walls.

2.1.17 PUT THIS NOTE ON PLANS: “Street, curb and gutter will be inspected and cleaned of all mud and dirt at the end of EVERY day.”

2.1.18 PUT THIS NOTE ON PLANS: “Gravel bags to be placed and maintained around any storm drain inlet adjacent to or immediately downstream from site during construction.”

2.1.19 Surface drainage shall be diverted to a storm sewer conveyance or other approved point of collection so as to not create a hazard. **Use arrows on site plan to show direction of storm water drainage from front, sides, and rear of lot.**

2.2 SITE PLAN outside recorded subdivision (in addition to Section 2.1 and 2.2):

2.2.1 Tax ID parcel number and legal description along with proof that the parcel to be developed is in compliance with Farmington City’s subdivision ordinance and state law as not being the second lot created through a lot or parcel split.

2.2.2 Location and size of existing culinary water, secondary water, and sanitary sewer mains.

2.2.3 Location and size of existing storm drainage facilities.

2.2.4 Location and type of electrical power facilities (underground or overhead).

2.2.5 Location of nearest fire hydrant. (Max. 250 ft.)

2.2.6 Location and size of other existing public utilities such as natural gas, telephone, and cable TV.

2.2.7 Location of any ditches, pipes, culverts, land drains, etc. and written approval by affected entities where alterations are required.

2.2.8 Location of proposed curb, gutter and sidewalk. Detailed plan and profile information is required. If a state highway is involved, evidence of approval of access, curbs, gutters, and sidewalks by UDOT is required.

2.2.9 Location and edge of existing street surfacing.

2.2.10 Must get architectural approval and provide letter from appropriate individual.

2.3 **EXCAVATION AND FILLS shall meet the following requirements:**

- 2.3.1 Footings on or adjacent to slopes.** The placement of buildings and structures on or adjacent to slopes steeper than 1 unit vertical in 3 units horizontal (33.3-percent slope) shall conform to Sections R403.1.7.1 through R403.1.7.4 (R403.1.7).

- 2.3.2 Building clearances from ascending slopes.** In general, buildings below slopes shall be set a sufficient distance from the slope to provide protection from slope drainage, erosion and shallow failures. Except as provided in Sections R403.1.7.4 and Figure R403.1.7.1, the following criteria will be assumed to provide this protection. Where the existing slope is steeper than one unit vertical in one unit horizontal (100-percent slope), the toe of the slope shall be assumed to be at the intersection of a horizontal plane drawn from the top of the foundation and a plane drawn tangent to the slope at an angle of 45 degrees (0.79 rad) to the horizontal. Where a retaining wall is constructed at the toe of the slope, the height of the slope shall be measured from the top of the wall to the top of the slope. (R403.1.7.1)

- 2.3.3 Footing setback from descending slope surface.** Footings on or adjacent to slope surfaces shall be founded in material with an embedment and setback from the slope surface sufficient to provide vertical and lateral support for the footing without detrimental settlement. Except as provided for in Section R403.1.7.4 and Figure R403.1.7.1, the following setback is deemed adequate to meet the criteria. Where the slope is steeper than one unit vertical in one unit horizontal (100-percent slope), the required setback shall be measured from an imaginary plane 45 degree (0.79 rad) to the horizontal, projected upward from the toe of the slope. (R403.1.7.2.)

- 2.3.4 Foundation elevation.** On graded sites, the top of any exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved drainage device a minimum of 12 inches (305 mm) plus 2 percent. Alternate elevations are permitted subject to the approval of the building official, provided it can be demonstrated that required drainage to the point of discharge and away from the structure is provided at all locations on the site. (R403.1.7.3)

- 2.3.5 Alternate setback and clearances.** Alternate setbacks and clearances are permitted, subject to the approval of the building official. The building official is permitted to require an investigation and recommendation of a qualified engineer to demonstrate that the intent of this section has been satisfied. Such an investigation shall include consideration of material, height of slope, slope gradient, load intensity and erosion characteristics of slope material. (R403.1.7.4)

- 2.3.6 Geo-tech Engineer** must inspect excavation prior to any fill or concrete being placed. Geo-tech shall provide a letter to contractor prior to footing inspection.

2.4 **Additional comments on excavation:**

SECTION 3. FOOTING AND FOUNDATION

3.1 GENERAL PLAN REQUIREMENTS

- 3.1.1 **Dimensions** and locations of **ALL** footing and foundation walls.
- 3.1.2 Indicate the width or size and thickness of **ALL** footings.
- 3.1.3 Indicate the thickness of **ALL** foundation walls.
- 3.1.4 Indicate the location, size and spacing of **ALL** footing reinforcing steel.
- 3.1.5 Show size spacing and location of all anchor bolts.

3.2 FOOTINGS

- 3.2.1 **ALL** exterior footings shall be continuous and poured monolithic.
- 3.2.2 **ALL** changes in vertical footing elevation shall be stepped. The minimum thickness of the vertical step shall be 6".
- 3.2.3 **Minimum footing thickness** shall be not less than **10"**, except for fireplace footings, which shall be **12"**.
- 3.2.4 **Minimum depth.** All exterior footings shall be placed at least 12 inches (305 mm) below the undisturbed ground surface. Where applicable, the depth of footings shall also conform to Section R403.1.4.1 through R403.1.4.2. (R403.1.4)
- 3.2.5 **Minimum depth of footings.** Bottom of **ALL** footings shall be not less than **30"** below the finished grade.
- 3.2.6 **Minimum footing reinforcing shall be:**
 - a. Two #4 continuous bars.
 - b. Vertical dowels spaced to match vertical wall steel.

3.3 FOUNDATIONS

- 3.3.1 Indicate the location, size and spacing of **ALL** foundation reinforcing steel.

3.4 CRAWL SPACES

- 3.4.1 **Access.** An access opening 18 inches x 24 inches shall be provided to the under-floor space. I.R.C. R408.4
- 3.4.2 If a furnace or appliances are located in the crawl space, the minimum access opening shall be not less than 30" x 22" and large enough to be able to remove the appliance. I.R.C. R1305.1.4

- 3.4.3 Ventilation.** The under-floor space between the bottom of the floor joists and the earth under any building (except space occupied by a basement) shall be provided with ventilation openings through foundation walls or exterior walls. The minimum net area of ventilation openings shall not be less than 1 square foot for each 150 square feet of under-floor space area, **unless the ground surface is covered with a Class 1 vapor retarder material.** When a Class 1 vapor retarder material is used, the minimum net area of ventilation openings shall not be less than 1 sq. ft. for each 1500 sq. ft. of under-floor space area. One such opening shall be within 3 feet of each corner of the building. I.R.C. R408.1
- 3.4.4 Unvented crawl space.** Ventilation openings in underfloor spaces as required in section 3.4.3 of this plan check are not required if the exposed earth of the crawl space is covered with a continuous Class 1 vapor retarder with all joints overlapped a min. of 6" and extended up the foundation wall or footings at least 6" and have all joints and edges sealed. In addition to the vapor retarder, mechanical ventilation must be provided at a rate of at least 1 cubic foot of air per minute for each 50 sq. ft. of crawlspace area and be provided with a return air pathway for circulation. IRC R408.3
- 3.4.5 Finished grade.** The finished grade of under-floor surface may be located at the bottom of the footings; however, where there is evidence that the groundwater table can rise to within 6 inches of the finished floor at the building perimeter or where there is evidence that the surface water does not readily drain from the building site, the grade in the underfloor space shall be as high as the outside finished grade, unless an approved drainage system is provided. I.R.C. R408.6
- 3.4.6 Protection of wood against decay.** Any wood joists closer than 18 inches or any wood girders or beams closer than 12 inches to the exposed ground shall be either naturally durable wood (redwood) or preservative-treated lumber (R317.1). Any wood columns where the bottom of the column is within 8 inches of exposed earth shall be naturally durable or preservative-treated lumber (R317.1.4.).
- 3.5 Land Drain.** If a land drain has been installed to the lot in which you are building, it shall be extended to the building and connected to a footing drain, R405.1. If a land drain is provided to the home, all window well drains must connect to the footing/foundation drainage system, R310.2.2.
- 3.6 Concrete floors on ground.** A 4 inch thick base course consisting of gravel or crushed stone passing a 2 inch sieve shall be placed under all concrete slabs when slab is below grade unless concrete slab is installed on well-drained soil approved by the building official. R506.2.2
- 3.7 R405.1 Concrete or masonry foundations.** Drains shall be provided around all concrete or masonry foundations that retain earth and enclose habitable or usable spaces located below grade. Drainage tiles, gravel or crushed stone drains, perforated pipe or other approved systems or materials shall be installed at or below the area to be protected and shall discharge by gravity or mechanical means into an approved drainage system.

3.8 R405.2.3 Drainage system. In other than Group I soils, a sump shall be provided to drain the porous layer and footings. The sump shall be at least 24 inches (610 mm) in diameter or 20 inches square (0.0129 m²), extend at least 24 inches (610 mm) below the bottom of the basement floor and shall be capable of positive gravity or mechanical drainage to remove any accumulated water. The drainage system shall discharge into an approved sewer systems or to daylight.

3.9 Additional requirements on the footing and foundation plan are:

SECTION 4. FLOOR AND BASEMENT PLANS

4.1 GENERAL PLAN REQUIREMENTS

- 4.1.1 Outside building dimensions shall be shown and shall include the overall length and width.
- 4.1.2 Dimensions all decks, patios & porches and include locations of columns.
- 4.1.3 All rooms and areas shall be dimensioned.
- 4.1.4 Show size and designate type (i.e. horizontal slide, single hung, casement etc.) of all windows.
- 4.1.5 Show size and designate type (i.e. solid core, hollow core, steel, etc.) of all doors.
- 4.1.6 Designate the use of all rooms and spaces.
- 4.1.7 Show the location and BTU input of furnace and water heater.
- 4.1.8 Show the location of clothes washer and dryer.

4.2 OCCUPANCY SEPARATION

- 4.2.1 **Opening protection.** Openings from a private garage directly into a room used for sleeping purposes shall not be permitted. Other openings between the garage and residence shall be equipped with solid wood doors not less than 1-3/8 inch in thickness, solid or honeycomb core steel doors not less than 1-3/8 inches thick, or 20-minute fire-rated doors, doors shall be self closing I.R.C. R302.5.1
- 4.2.2 **Duct penetrations.** Ducts in the garage and ducts penetrating the walls or ceilings separating the dwelling from the garage shall be constructed of a minimum No. 26 gage (0.48 mm) sheet steel or other approved material and **shall have no openings into the garage.** I.R.C. R302.5.2
- 4.2.3 **Separation required.** The garage shall be separated from the residence and its attic area by not less than 1/2 inch (12.7 mm) gypsum board applied to the garage side. Garages beneath habitable rooms shall be separated from all habitable rooms above by not less than 5/8 – inch (15.9 mm) Type X gypsum board or equivalent. Where the separation is a floor-ceiling assembly, the structure supporting the separation shall also be protected by not less than 1/2 - inch (12.7 mm) gypsum board or equivalent. I.R.C. R302.6

4.3 EXIT FACILITIES

- 4.3.1 **Exit door required.** Not less than one exit door conforming to this chapter shall be provided from each dwelling unit. The required exit door shall provide for direct access from the habitable portions of the dwelling to the exterior without requiring travel through a garage. I.R.C. R311.1

- 4.3.2 Type of lock or latch.** All egress doors shall be readily openable from the side from which egress is to be made without the use of a key or special knowledge or effort. I.R.C. R311.2
- 4.3.3 Type and size.** The egress door shall be side-hinged, and shall provide a minimum clear width of 32 inches (813 mm) when measured between the face of the door and the stop, with the door open 90 degrees (1.57 rad) R311.2
- 4.3.4 Hallways.** The minimum width of a hallway shall be not less than 3 feet. I.R.C. R311.6
- 4.3.5 Exit facilities.** Exterior exit balconies, stairs and similar exit facilities shall be positively anchored to the primary structure to resist both vertical and lateral forces, or shall be designed to be self-supporting. Such attachment shall not be accomplished by use of toenails or nails subject to withdrawal. I.R.C. R311.5.1
- 4.3.6 Landings at doors.** There shall be a floor or landing on each side of each exterior door. The floor or landing at a door shall not be more than 1.5 inches lower than the top of the threshold. **Exception:** 1. The landing at an exterior doorway shall not be more than 8 inches below the top of the threshold, provided that the door, other than an exterior storm or screen door, does not swing over the landing. The landing shall be permitted to have a slope not to exceed ¼ inch per foot. **Exception:** 2. Where a stairway of two or fewer risers is located on the exterior side of a door, other than the required exit door, a landing is not required for the exterior side of the door provided the door, other than an exterior storm or screen door does not swing over the stairway. I.R.C. R311.3 (and State Amendments)
- 4.3.7 Size.** The width of each landing shall not be less than the stairway or door served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel. I.R.C. R311.3
- 4.3.8 Emergency escape and rescue required.** Basements, habitable attics, and every sleeping room shall have at least one open-able emergency escape and rescue window or exterior door opening for emergency escape and rescue. Where openings are provided as a means of escape and rescue the bottom of the clear opening shall not be over 44 inches above the finished floor in the room. Where a door opening having a threshold below the adjacent ground elevation serves as an emergency escape and rescue opening and is provided with a bulkhead enclosure, the bulkhead enclosure shall comply with Section R310.3. The net clear opening dimensions required by this section shall be obtained by the normal operation of the window or door opening from the inside. Escape and rescue window openings with a finished sill height below the adjacent ground elevation shall be provided with a window well in accordance with Section R310.2. I.R.C. R310.1
- 4.3.9.1 Minimum opening area.** All emergency escape and rescue openings shall have a minimum net clear opening of 5.7 square feet.
- 4.3.9.2 Minimum opening height.** The minimum net clear opening height shall be 24 inches.
- 4.3.9.3 Minimum opening width.** The minimum net clear opening width shall be 20 inches.

4.3.9.4 Operational constraints. Emergency escape and rescue openings shall be operational from the inside of the room without the use of keys, tools, or special knowledge (R310.1.4).

4.3.10 Window wells. Window wells required for emergency escape and rescue shall have horizontal dimensions that allow the door or window of the emergency escape and rescue opening to be fully opened. The horizontal dimensions of the window well shall provide a minimum net clear area of 9 square feet with a minimum horizontal projection and width of 36 inches. **Exception:** The ladder or steps required by Section R310.2.1 shall be permitted to encroach a maximum of 6 inches into the required dimensions of the window well. I.R.C. R310.2

4.4 **STAIRWAYS, LANDINGS AND RAMPS**

4.4.1 The **minimum width** of a stairway is 36 inches. Stairways shall have a **8" maximum** riser height and a **9" minimum** tread depth. The greatest riser height within any flight of stairs shall not exceed the smallest by more than 3/8 – inch, the greatest tread depth within any flight of stairs shall not exceed the smallest by more than 3/8 – inch. I.R.C. R311.7

4.4.2 Winders in winding stairways **shall have the required width of run (10")** at a point **12"** from the side of the stairway where the treads are the narrower, but in no case shall any width be less than **6" at any point.** I.R.C. R311.7.4 and I.R.C. R311.7.5.2

4.4.3 There shall be a floor or landing at the top and bottom of each stairway. The width of each landing shall not be less than the width of the stairway served. Every landing shall have a minimum dimension of 36 inches measured in the direction of travel. Landings of shapes other than square or rectangle shall be permitted provided the depth at the walk line and the total area is not less than that of a quarter circle with a radius equal to the required landing width. A floor or landing is not required at the top of an interior flight of stairs, including stairs in an enclosed garage, provided a door does not swing over the stairs. R311.7.6

4.4.4 Stairways with **4 or more risers** shall have at least one handrail. I.R.C. R311.7.8

4.4.5 Handrails shall be placed not less than **34"** nor more than **38"** above the **nosing** of the **treads** and shall be continuous the full length of the stairs. I.R.C. R311.7.8.1

4.4.6 Guards shall be located along open-sided walking surfaces, including stairs, ramps and landings, that are located more than 30 inches measured vertically to the floor or grade below at any point within 36" horizontally to the edge of the open side. Open guards shall have intermediate rails such that a 4" sphere cannot pass through. Guards shall be not less than 36" in height. I.R.C. R312

4.4.7 Every stairway shall have a headroom clearance of **not less than 6'8"**. Such clearance shall be measured in a vertical plane parallel and tangent to the stairway tread nosing to the soffit above at all points. I.R.C. R311.7.2

4.4.8 Enclosed usable space under stairways shall have the walls and soffits protected on the enclosed side with 1/2" gypsum wall board. I.R.C. R302.7

4.4.9 Ramps shall have a maximum slope of 1 unit vertical in 12 units horizontal (8.3 percent slope). Exception: Where it is technically infeasible to comply because of site constraints, ramps may have a maximum slope of one unit vertical in eight horizontal (12.5 percent slope). IRC R311.8

4.5 LIGHT AND VENTILATION

4.5.1 All habitable rooms shall be provided with natural light by means of exterior glazed openings with an area of not less than 8% of the floor area of such rooms. I.R.C. R303.1

4.5.2 All habitable rooms shall be provided with natural ventilation by means of operable exterior openings with an area of not less than 4% of the floor area of such rooms. I.R.C. R303.1

4.5.2.1 Exceptions: The glazed areas need not be openable where the opening is not required by Sections R310 and an approved mechanical ventilation system capable of production 0.35 air change per hour in the room is installed or a whole-house mechanical ventilation system is installed capable of supplying outdoor ventilation air of 15 cubic feet per minute (cfm) (78L/s) per occupant computed on the basis of two occupants for the first bedroom and one occupant for each additional bedroom.

4.5.3 Mechanical ventilation. Where the air infiltration rate of a dwelling unit is less than 3 air changes per hour when tested with a blower door at a pressure of 0.2 in. w.c. in accordance with section N1102.4.1.2, the home shall be provided with whole-house mechanical ventilation in accordance with M1507.3. See R303.4 and State Amendments.

4.5.4 Bathrooms: water closet compartments and other similar rooms shall be provided with aggregate glazing area in windows of not less than 3 square feet, one-half of which must be openable. **Exception:** The glazed areas shall not be required where artificial light and a mechanical ventilation system are provided. The minimum ventilation rates shall be 50 cfm for intermittent ventilation or 20 cfm for continuous ventilation. Ventilation air from the space shall be exhausted directly to the outside. I.R.C. R303.3

4.5.5 Enclosed attics and enclosed rafter spaces shall have cross ventilation for each space by ventilating openings protected against the entrance of rain or snow. The **net free ventilating** area shall not be less than **1/150th** of the area of the space ventilated, except that the area may be **1/300th** provided that at least **50%** of the required ventilating area is located in the upper space portion of the space to be ventilated and the remainder is provided by eave or cornice vents. I.R.C. R806

4.6 MINIMUM ROOM AREAS

4.6.1 Minimum area. Every dwelling unit shall have at least one habitable room that shall have not less than 120 square feet. I.R.C. R304.1

4.6.2 Other rooms. Other habitable rooms shall have a floor area of not less than 70 square feet. **Exception:** Kitchens. I.R.C. R304.2

4.6.3 Minimum dimensions. Habitable rooms shall not be less than 7 feet in any horizontal dimension. I.R.C. R304.3

4.6.4 Height effect on room area. Portions of a room with a sloping ceiling measuring less than 5 feet or a furred ceiling measuring less than 7 feet from the finished floor to the finished ceiling shall not be considered as contributing to the minimum required habitable area for that room. I.R.C. R304.4

4.7 CEILINGS

4.7.1 Minimum height. Habitable rooms, hallways, corridors, bathrooms, toilet rooms, laundry rooms and basements shall have a ceiling height of not less than 7 feet. The required height shall be measured from the finished floor to the lowest projection from the ceiling. I.R.C. R305.1

Exceptions:

- a. Beams, girders, ducts or other obstructions may project to within 6 feet 4 inches of the finished floor at basements.
- b. Basement hallways, bathrooms, toilet rooms, laundry rooms, or any non-habitable areas at basements shall have a ceiling height of not less than 6 feet 8 inches.
- c. Not more than 50 percent of the required floor area of a room or space is permitted to have a sloped ceiling less than 7 feet in height with no portion of the required floor area less than 5 feet in height.

4.7.2 Attic Access. Need to provide a minimum of a 22" x 30" attic access. Access must be in a readily accessible location and must also be large enough to remove any appliances located in the attic. R807.1 and M1305.1.3

4.8 FIREBLOCKING

4.8.1 Fireblocking required. Fireblocking shall be provided to cut off all concealed draft openings (both vertical and horizontal) and to form an effective fire barrier between stories, and between a top story and the roof space. Fireblocking shall be provided in wood-frame construction in the following locations. I.R.C. R302.11

- a. In concealed spaces of stud walls and partitions, including furred spaces, at the ceiling and floor level and at 10 foot (3048mm) intervals both vertical and horizontal. Batts or blankets of mineral or glass fiber or other approved non-rigid materials shall be allowed as fireblocking in walls constructed using parallel rows of studs or staggered studs.
- b. At all interconnections between concealed vertical and horizontal spaces such as occur at soffits, drop ceilings and cove ceilings.
- c. In concealed spaces between stair stringers at the top and bottom of the run. Enclosed spaces under stairs shall comply with Section R302.7
- d. At openings around vents, pipes, and ducts at ceiling and floor level, with an approved material to resist the free passage of flame and products of combustion.

- e. For the fireblocking of chimneys and fireplaces, see Section R1003.19
- f. Fireblocking of cornices of a two-family dwelling is required at the line of dwelling unit separation.
Note: Examples of approved fireblocking material include: 3/4" plywood, 2x nominal lumber, 1/2" sheetrock or 1/4" cement board, and in some circumstances cellulose insulation (if approved for fireblocking).

4.9 ENGINEERING

4.9.1 Buildings of unusual shape shall be designed by a registered professional engineer and all pages of drawings and calculations shall be clearly stamped and signed. All detail indicated must be **clearly shown on plans**, such as sheer walls, hold downs, etc. I.R.C. R301.1.3

4.9.2 Plans shall include a lateral and gravity analysis.

4.10 FLOOR AND BASEMENT

4.10.1 Framed walls in the basement that are non bearing shall be a minimum of 2 x 4's at 24" on center with a treated or redwood bottom plate.

4.10.2 Additional comments on floors and basements:

SECTION 5. ELEVATIONS

- 5.1** The finished grade line shall be shown on ALL elevations.
- 5.2** **Height above finished grade.** Concrete and masonry foundation walls shall extend above the finished grade adjacent to the foundation at all points a minimum of 4 inches (102 mm) where masonry veneer is used and a minimum of 6 inches (152 mm) elsewhere. I.R.C. R404.1.6
- 5.3** All exterior footings and foundation systems shall extend 30” below grade for frost protection. **Exception.** Frost-protected footings constructed in accordance with Section R403.3 and footings and foundations erected on solid rock shall not be required to extend below the frost line. In Seismic Design Categories D1 and D2, interior footings supporting bearing or bracing walls and cast monolithically with a slab on grade shall extend to a depth of not less than 12 inches below the top of slab. I.R.C. R403.1.4 through R403.1.4.2
- 5.4** Denote the type of roof covering.
- 5.5** Show the pitch of all roofs.
- 5.6** **Ice barrier.** In areas where there has been a history of ice forming along the eaves causing a backup of water as designated in Table R301.2(1), an ice barrier that consists of a least two layers of underlayment cemented together or of a self-adhering polymer modified bitumen sheet, shall be used in lieu of normal underlayment and extend from the lowest edges of all roof surfaces to a point at least 24 inches (610mm) inside the exterior wall line of the building, **or ice and water shield.** I.R.C. R905.2.7.1
- 5.7** Denote the type of exterior wall finish materials. **NOTE:** Exterior wall finishes must be listed, labeled, and installed as per manufacturer’s installation instruction guide. **All installers must be approved** by the manufacturer.
- 5.8** Denote the size, type (i.e. steel, wood, aluminum, etc.) and location of roof and/ or gable vents.
- 5.9** Denote the size, type and location of foundation vents.
- 5.10** Dimension the width of all roof and floor overhangs.
- 5.11** All open sides or stairs, landings, ramps, balconies, and porches which are **more than 30"** above grade or floor below and roofs used for other than service of the building shall be protected with a guardrail. Guardrail **shall be not less than 36"** high and shall have intermediate rails such that a **sphere 4" in diameter** cannot pass through. I.R.C. R312.1 through R312.3
- 5.12** All exterior stairs and steps with **4 or more risers** shall have a handrail placed **not less than 34" or more than 38" above the nosing of the treads.** I.R.C. R311.7.8
- 5.13** Ramps having a slope steeper than **1 unit vertical to 12 units horizontal** shall have handrails as required for stairways, except that intermediate rails are not required. I.R.C. R311.8.3

5.14 Fireplace chimneys shall extend at least **2 feet above** the roof or any part of the building **within 10 feet**. I.R.C. R1003.9

5.15 Flashing shall be installed in such a manner so as to prevent moisture from entering a wall, roof or floor and redirect it to the exterior. Flashing shall be installed at the perimeters of exterior door and window assemblies, penetrations and terminations of exterior wall assemblies, exterior wall intersections with roofs, chimneys, porches, decks, balconies and similar projections and at built-in gutters and similar locations where moisture could enter the wall. Flashing with projected flanges shall be installed on both sides and the ends of copings, under sills and continuously above projected trim. A flashing shall be installed at the intersection of the foundation to stucco, masonry, siding or brick veneer. The flashing shall be an approved corrosion-resistant flashing with a half inch drip leg. R703.7.5, R703.8, R903.2, R905

5.16 Additional elevations requirements are as follows:

SECTION 6. MASONRY

6.1 Size and spacing. Veneer ties, if strand wire, shall not be less in thickness than No. 9 U.S. gage wire and shall have a hook embedded in the mortar joint, or if sheet metal, shall be not less than No. 22 U.S. gage by 7/ 8 inch corrugated. Each tie shall be spaced not more than 24 inches on center horizontally and vertically and shall support not more than 2.67 square feet of wall area. **Exception:** In Seismic Design Category D1 or D2 and in wind areas of more than 30 pounds per square foot pressure, each tie shall support not more than 2 square feet. R703.7.4.1

6.2 Additional masonry requirements are as follows:

SECTION 7. GLASS AND GLAZING

7.1 HAZARDOUS LOCATIONS. The following shall be considered specific hazardous locations for the purposes of glazing: I.R.C. 308.4

1. Glazing in side-hinged doors except jalousies.
 2. Glazing in fixed and sliding panels of sliding door assemblies and panels in sliding and bifold closet door assemblies.
 3. Glazing in storm doors.
 4. Glazing in doors, walls, fences and/or enclosures for hot tubs, whirlpools, saunas, steam rooms, bathtubs and showers. Glazing in any part of a building wall enclosing these compartments where the bottom exposed edge of the glazing is less than 60 inches measured vertically above any standing or walking surface. Glazing that is more than 60” horizontally from the waters edge of a hot tub, whirlpool tub, or bath tub need not comply with this section.
 5. Glazing in an individual fixed or operable panel adjacent to a door where the nearest vertical edge is within a 24-inch arc of the door in a closed position and whose bottom edge is less than 60 inches above the floor or walking surface.
 6. Glazing in an individual fixed or operable panel, other than those locations described in Items 4 and 5 above, that meets all of the following conditions:
 - (a) Exposed area of an individual pane greater than 9 square feet.
 - (b) Bottom edge less than 18 inches above the floor.
 - (c) Top edge greater than 36 inches above the floor.
 - (d) One or more walking surfaces within 36 inches horizontally of the glazing.
- 7.1.1** All glazing in railings regardless of an area or height above a walking surface. Included are structural baluster panels and nonstructural in-fill panels.
- 7.1.2** Glazing in walls and fences enclosing indoor and outdoor swimming pools, hot tubs and spas where the bottom edge of the pool or spa side is less than 60 inches above a walking surface and within 60 inches horizontally of the water’s edge. This shall apply to single glazing and all panes in multiple glazing.
- 7.1.3** Glazing in walls adjacent to stairways or landings between flights of stairs when the window is less than 36” above the plane of the stairs or less than 36” above the landing. Windows located within 60” of the bottom tread of the stairs and the bottom of the window is less than 36” off of the floor, shall also be considered as a hazardous location.

7.2 Additional glass and glazing requirements are as follows:

SECTION 8. ELECTRICAL PLAN

8.1 FIRE WARNING SYSTEM. In new construction, required smoke detectors shall receive their primary power from the building wiring and shall be equipped with a **battery backup**. All detectors shall be wired in series so the alarm is audible in all sleeping areas. **Smoke alarms in existing construction may be battery operated only**, I.R.C. R314.4. All smoke detectors must be listed as per UL 217, R314.1.

Smoke detectors shall be located as follows:

8.1.1 Installed in each sleeping room.

8.1.2 Mounted at a point centrally located in the corridor or area giving access to each separate sleeping room.

8.1.3 When the dwelling has more than one story and in dwellings with basements, a detector shall be installed on **EACH STORY** and in the **BASEMENT**. I.R.C. R314.3

8.2 CARBON MONOXIDE ALARMS

8.2.1 Carbon monoxide alarms shall be installed on each habitable level of a dwelling unit equipped with fuel burning appliances. Carbon monoxide detectors shall also be located in the immediate vicinity outside of all bedrooms. All carbon monoxide detectors shall be listed and comply with U.L. 2075 and shall be installed in accordance with provisions of this code and NFPA 720. IRC R315

8.3 INTERCONNECTION OF ALARMS. Interconnection of alarms. When multiple alarms are required to be installed within an individual dwelling unit, the alarm devices shall be interconnected in such a manner that the activation of one alarm will activate all of the alarms in the individual unit. The alarm shall be clearly audible in all bedrooms over background noise levels with all intervening doors closed. **Approved combination smoke and carbon monoxide detectors shall be permitted.** R314.5

8.4 Outlet boxes in fire rated walls shall be listed and tested for use in fire rated walls and be installed per their listing. Such boxes on opposite sides of the wall shall be separated by one of the following:

1. by the horizontal distance of 24". R302.4.2
2. by solid fireblocking per Section R302.11.
3. by protecting both boxes with listed putty pads. OR
4. by other listed materials and methods. R302.4.2 item #2.

8.5 A permanent 120V receptacle **and** a lighting fixture, controlled by a switch located at the required passageway opening, shall be provided at or near appliances located in attics and crawl spaces. I.R.C. M1305.1.3.1 and M1305.1.4.3

8.6 Arc fault circuit interrupters. ALL branch circuits that supply 125-volt, single-phase, 15- and 20-ampere receptacle outlets installed in dwelling unit **bedrooms** shall be protected by an arc-fault circuit interrupter(s). I.R.C. E3902.12 (and State Amendments)

8.7 GROUND-FAULT CIRCUIT INTERRUPTER PROTECTION FOR PERSONNEL (GFCI)

All 125V, single phase, 15 or 20A receptacles and circuits listed below shall be protected by a ground fault circuit interrupter. I.R.C. E3902

8.7.1 ALL receptacles installed in bathrooms.

8.7.2 ALL receptacles in garages

8.7.3 ALL receptacles installed outdoors.

8.7.4 ALL receptacles installed in **crawl spaces** and in **unfinished basements**

8.7.5 ALL receptacles installed within a kitchen to serve counter top surfaces.

8.7.6 Laundry, utility, and bar sink receptacles. All 125-volt, single phase, 15- and 20- ampere receptacles that are located within 6 foot (1829 mm) of the outside edge of a laundry, utility or wet bar sink shall have ground-fault circuit-interrupter protection for personnel. Receptacle outlets shall not be installed in a face-up position in the work surfaces or countertops. I.R.C E3902.7

8.7.7 The circuit supplying hydro-massage bathtubs and their associated components. The circuit shall only supply the bath tub and associated components and nothing else. The GFCI outlet protecting the tub and components must be readily accessible. E4209.1

8.7.8 All GFCI receptacles must be located in a readily accessible location, R3902.11.

8.8 The following rooms shall have receptacle outlets, installed so **no point, along the floorline in any space, is more than 6'**, measured horizontally, from an outlet in that space. The wall space afforded by free-standing bar-type counters shall be included in the **6'** measurement. A receptacle outlet shall be installed in any wall space **2'** or more in width. I.R.C. E3901.2

- a. Living Room
- b. Family Room
- c. Dining Room
- d. Master Bedroom
- e. Bedroom #2
- f. Bedroom #3
- g. Bedroom #4

- h. Recreation Room
- i. Den
- j. Sun Room
- k. _____
- l. _____
- m. _____
- n. _____

- 8.9** Kitchen and dining area counters shall have receptacle outlets at each counter space wider than **12"**. I.R.C. E3901.4.1
- 8.10** Kitchen and dining area counters shall have receptacle outlet located so that no point, along the wall line, is more than **24"** measured horizontally from a receptacle outlet in that space. I.R.C. E3901.4.1
- 8.11** Island and peninsula counter tops **12"** or wider shall have at least one receptacle. I.R.C. E3901.4.2 and E3901.4.3. Countertop spaces separated by ranges, cooktops, fridges or sinks shall be considered separate spaces. E3901.4.4
- 8.12** At least one wall receptacle outlet shall be installed in the bathroom within 3 feet of each basin. I.R.C. E3901.6
- 8.13** At least one receptacle outlet, accessible at grade level, both front and back, shall be installed outdoors. Balconies, decks, and porches that are 20 square feet or more in size shall have a receptacle installed within its perimeter. All exterior receptacles shall be listed as weather resistant. R4002.8 and R4002.9
- 8.14** There shall be at least one receptacle outlet installed for the laundry. I.R.C. E3901.8
- 8.15** At least one receptacle outlet, in addition to any provided for specific equipment, shall be installed in the basement. I.R.C. E3901.9
- 8.16** At least one receptacle outlet, in addition to any provided for specific equipment, shall be installed in the garage. I.R.C. E3901.9
- 8.17** At least one receptacle outlet shall be installed in each hallway of 10' or greater in length. I.R.C. E3901.10
- 8.18** At least one receptacle outlet shall be provided within 25' of all HVAC equipment, other than evaporative coolers, R3901.12.
- 8.19** At least one lighting outlet, with a switch located at point of entry, shall be installed in each attic, crawl space, utility room and basement used for storage or containing equipment requiring service. I.R.C. E3903.4
- 8.20** **Tamper-resistant receptacles:** All 125-volt, 15 and 20 amp receptacles installed inside or outside of a dwelling shall be listed tamper-resistant receptacles unless located more than 5'6" above the floor, R4002.14.
- 8.21** The following rooms or areas shall have at least one wall switch-controlled lighting outlet. I.R.C. E3903.2 and E3903.3
- | | | | |
|----|-----------------|----|-------------------------------|
| a. | Habitable Rooms | d. | Stairways top & bottom of run |
| b. | Bathrooms | e. | Outdoor Entrances or Exits |
| c. | Hallways | f. | Attached Garages |

8.22 Lighting fixtures may be installed in clothes closets only if the following clearances are maintained. I.R.C. E4003.12

8.22.1 Surface-mounted incandescent or LED fixtures installed on the wall above the door or on the ceiling, provided there is a minimum clearance of 12" between the fixture and the nearest point of a storage area.

8.22.2 Surface-mounted or recessed fluorescent fixtures installed on the wall above the door or on the ceiling provided there is a minimum clearance of 6" between the fixture and the nearest point of the storage area.

8.22.3 Recessed incandescent or LED fixtures, with a completely enclosed lamp, installed in the wall or ceiling provided there is a minimum clearance of 6" between the fixture and the nearest point of the storage area.

NOTE: Incandescent fixtures with open or partially enclosed lamps and pendant fixtures or lamp holders shall not be permitted.

8.23 All light switches must have neutral wires ran to them for potential future use of occupancy sensors and other devices that require a neutral wire. IRC E4001.15

8.24 Main electrical panel cannot be located facing the garage side of firewall.

8.25 Electrical panels must be in an area that is 30" in width with 36" clear in depth and a minimum of 6'6" high. I.R.C. E3405.2

8.26 Additional electrical items are as follows:

SECTION 9. SWIMMING POOLS

- 9.1** The installation of all swimming pools and the electrical wiring and equipment associated with the swimming pool shall conform to Chapter 42 of the 2012 I.R.C. or Article 680 of the 2011 N.E.C.
- 9.2** All overhead conductors shall meet the clearances as per Table E4203.5 and Sec. E4203.6.
- 9.3** Underground wiring shall not be installed under or within 5 feet of pool. E4203.7.
- 9.4** GFCI Requirements:
- 9.4.1** There shall be at least one 15 or 20 amp GFCI protected receptacle within 20 feet and not closer than 6 feet to waters edge of pool for the servicing of the pool. This outlet shall not be more than 6 feet 6 inches off the ground. R4203.1.2
- 9.4.2** All 15 and 20 amp receptacles located within 20 feet of waters edge of pool shall be GFCI protected. E4203.1.3
- 9.4.3** Outlets supplying pool pump motors from branch circuits rated 15 or 20 amps, 125 volt or 240 volt, single phase, whether by receptacle or direct connection, shall be provided with GFCI protection for personnel. E4203.1.3
- 9.5** Receptacles shall not be closer than 6 feet to waters edge and switches shall not be closer than 5 feet to edge of pool. E4203.1.1 and E4203.2
- 9.6** Bonding. I.R.C. E4204. The following items shall be bonded together using insulated, covered, or bare solid copper conductors not smaller than 8 AWG: conductive pool shells, pool structural steel, perimeter deck reinforcing steel or bond wire, underwater lighting with metal forming shells or brackets, all isolated metal fittings over 4" in any dimension, metal parts of electrical equipment associated with the pool water circulation or heating, pool covers and motors, and any metal wiring methods and equipment closer than 5 feet to the pool.
- 9.6.1** Perimeter surface bonding. The perimeter surface around the pool shall be bonded by means of structural reinforcing steel extending 3 feet from edge of pool, or by at least one bare solid 8 AWG copper conductor extending around and following the contours of the pool installed between 18 and 24 inches from the waters edge of the pool. The perimeter wire shall be bonded to the reinforcing steel of the pool at a minimum of four points uniformly spaced around the perimeter of the pool.
- 9.6.2** Pool water. The pool water shall be intentionally bonded by means of a conductive surface area not less than 9 square inches installed in contact with the pool water. This bond shall be permitted to consist of parts that are required to be bonded. E4204.3

9.6.3 Controlled access. The swimming pool shall be enclosed by a wall or fence that is at least 6 feet in height and constructed so a 4 inch sphere cannot pass through at any point. Access gates shall be self-closing, self-latching, and be equipped to accommodate a locking device.

SECTION 10. PLUMBING PLAN

- 10.1** Each water closet (toilet) shall be located in a clear space of not less than 30" in width (15" from center to any obstruction) and have a clear space, in front, of not less than 21". I.R.C. P2705
- 10.2** All shower compartments shall have a minimum finished interior of 900 sq. inches and shall also be capable of encompassing a 30" diameter circle. The access opening to a shower shall have a clear and unobstructed finished width of 22 inches (559 mm). If a door is installed it must have a 22" opening when open, it must swing out and must be tempered. I.R.C. P2708.1
- 10.3** All appliances (water heater, boiler, steam generator, etc.) which require pressure relief valves shall be provided with a full sized drain (not be smaller than the diameter of the outlet of the valve served) which shall extend to a floor drain and discharge through an air gap. I.R.C. P2803.6.1
- 10.4** All buildings are considered to be unusually tight construction and all combustion air to rooms or spaces containing fuel-burning appliances **shall be obtained from the outdoors** or from spaces freely communicating with the outdoors. I.R.C. M2407.1
- 10.4.1** If the one-permanent-opening method is used, a vertical or a horizontal duct shall extend to the outdoors and have a minimum area of 1 square inch per 3,000 BTU/h of total input rating of all appliances located in the enclosure and not less than the sum of the areas of all vent connectors in the space. G2407.6.2
- 10.4.2** Show the size and location (i.e. vertical in chase, horizontal ducts, horizontal panned space, wall louvers etc.) of all combustion air openings.
- 10.4.3** Must insulate floor joist panned for combustion air ducts.
- 10.5** No gas fired appliances shall be located in sleeping rooms, bathrooms, toilet rooms, closets or in a space that opens into such rooms or spaces. Exception: The appliance is a direct-vent appliance and is installed as per its listing and the manufacturer's instructions. G2406.2
- 10.6** Water heaters located in a garage and which generates a glow, spark or flame capable of igniting flammable vapors shall be installed with the pilots, burners or heating elements and switches **at least 18" above** the floor level, unless listed as flammable vapor ignition resistant. I.R.C. G2801.6
- 10.7** Water heaters installed in garages or other areas where they may be subject to damage shall be suitably guarded against such damage. I.R.C. G2408.3
- 10.8** The water heater space shall have an opening or door and a continuous passageway thereto not less than 2' in width and large enough to remove the largest water heater in the room. I.R.C. M1305
- 10.9** An unobstructed working area not less than **30"** in depth and **30"** in width shall be provided immediately in front of the control side to service the appliance. M1305.1

SECTION 11. MECHANICAL PLAN

- 11.1** Appliances installed in garages or other areas where they may be subject to damage shall be suitably guarded against such damage. I.R.C. M1307.3.1
- 11.2** Heating and cooling equipment located in a garage and which generates a glow, spark or flame capable or igniting flammable vapors shall be installed with pilots, burners, heating elements and switches at least **18"** above the floor level. I.R.C. M1307.3
- 11.3** All buildings are considered to be unusually tight construction and all combustion air to rooms or spaces containing fuel-burning appliances **shall be obtained from the outdoors** or from spaces freely communicating with the outdoors. I.R.C. M2407.1
- 11.3.1** Combustion air shall be supplied by one (1) vertical or horizontal opening, which has an area of **1 sq. inch per 3,000 BTU/H** of the total input rating of all appliances within the space. G2407.6.2
- 11.3.2** Show the size and location (i.e. vertical in chase, horizontal ducts, horizontal panned space, wall louvers etc.) of all combustion air openings.
- 11.4** The furnace room shall have an opening or door and passageway thereto not less than **2'** in width and large enough to permit removal of the largest furnace in such room. I.R.C. M1305.1.2
- 11.5** An unobstructed working space not less than **30"** in depth and the height of the furnace shall be provided along the front or service side of each furnace when the door of the enclosure is open. I.R.C. M1305.1.2
- 11.6** A warm air furnace or air handlers shall not be installed in a closet or alcove less than **12"** wider than the furnace or furnaces and with a minimum clear working space of **3"** along the sides, back and top of the furnace. Minimum clearances required by the manufacture must also be followed. I.R.C. M1305.1.1
- 11.7** **Prohibited locations.** Appliances shall not be located in sleeping rooms, bathrooms, toilet rooms, storage closets or surgical rooms, or in a space that opens directly into such rooms or spaces, except where the installation complies with one of the following: I.R.C. G2406.2
- 11.7.1** The appliance is a direct-vent appliance installed in accordance with the conditions of the listing and the manufactures' installation instructions.
- 11.7.2** Vented room heaters, wall furnaces, vented decorative appliances, vented gas fireplaces, vented gas fireplace heaters and decorative appliances for installation in vented solid fuel-burning fireplaces are installed in rooms that meet the required volume criteria of Sections G2407.5
- 11.7.3** A single wall-mounted unvented room heater is installed in a bathroom and such unvented room heater is equipped as specified in Sections G2445.6 and has an input rating not greater than 6,000 Btu/h (1.76 kW). The bathroom shall meet the required volume criteria of Section G2407.5.

11.7.4 A single wall-mounted unvented room heater is installed in a bedroom and such unvented room heater is equipped as specified in Section G2445.6 and has an input rating not greater than 10,000 BTU/H (2.93 kW). The bedroom shall meet the required volume criteria of Section G2407.5.

11.7.5 The appliance is installed in a room or space that opens only into a bedroom or bathroom, and such room or space is used for no other purpose and is provided with a solid weather-stripped door equipped with an approved self-closing device. All combustion air shall be taken directly from the outdoors in accordance with Section G2407.6.

11.8 A warm air furnace shall not be installed with a clearance of less than **6"** along the combustion chamber opening side. Minimum clearances as required by the manufacture must also be followed. I.R.C. M1305.1.1

11.9.1 Appliances in attics. Attics containing appliances requiring access shall have an opening and a clear and unobstructed passageway large enough to allow removal of the largest appliance, but not less than 30 inches (762 mm) high and 22 inches (559 mm) wide and not more than 20 feet (6096 mm) long when measured along the centerline of the passageway from the opening to the appliance. The passageway shall have continuous solid flooring in accordance with Chapter 5 not less than 24 inches (610 mm) wide. A level service space at least 30 inches (762 mm) deep and 30 inches (762 mm) wide shall be present along all sides of the appliance where access is required. The clear access opening dimensions shall be a minimum of 20 inches by 30 inches, where such dimensions are large enough to allow removal of the largest appliance. I.R.C. M1305.1.3

11.10 Clothes dryer duct shall terminate outdoors and shall not exceed a total combined horizontal and vertical length of **35'**. Maximum length of duct shall be reduced 2-1/2' for each 45° bend or 5' for each 90° bend. Duct shall be a min. nominal size of 4". I.R.C. M1502.4.4 (and State Amendment).

11.11 Required heating: When the winter design temperature in Table R301.2(1) is below 60°F (16°C), every dwelling unit shall be provided with heating facilities capable of maintaining a minimum room temperature of 68°F (20°C) at a point 3 feet (914 mm) above the floor and 2 feet (610mm) from exterior walls in all habitable rooms at the design temperature. I.R.C. R303.9

11.12 Condensate disposal: Condensate from all cooling coils or evaporators shall be conveyed from the drain pan outlet to an approved place of disposal. Condensate shall not discharge into a street, alley or other areas so as to cause a nuisance. I.R.C. M1411.3

11.12.1 Auxiliary and secondary drain systems: In addition to the requirements of Section 10.11, a secondary drain or auxiliary drain pan shall be required for each cooling or evaporator coil where damage to any building components will occur as a result of overflow from the equipment drain pan or stoppage in the condensate drain piping. Drain piping shall be a minimum of 3/ 4-inch (19.1 mm) nominal pipe size. I.R.C. M1411.3.1

11.13 Additional requirements on the mechanical plan are as follows:

SECTION 12. ENERGY EFFICIENCY- Out of the I.R.C. 2006

12.1 Scope. This chapter regulates the energy efficiency for the design and construction of buildings regulated by this code. I.R.C. N1101

12.1.1 Compliance. Compliance shall be demonstrated by either meeting the requirements of the *International Energy Conservation Code* or meeting the requirements of this chapter. Climate zones from Table N1101.2 shall be used in determining the applicable requirements from this chapter. Climate Zone 5

12.1.2 Building thermal envelope insulation. An R-value identification mark shall be applied by the manufacturer to each piece of building thermal envelope insulation 12 inches (305 mm) or more wide. Alternately, the insulation installers shall provide a certification listing the type, manufacturer and R-value of insulation installed in each element of the building thermal envelope.

12.1.3 Blown or sprayed roof/ceiling insulation. The thickness of blown in or sprayed roof/ceiling insulation (fiberglass or cellulose) shall be written in inches (mm) on markers that are installed at least one for every 300 ft² (28 m²) throughout the attic space. The markers shall be affixed to the trusses or joists and marked with the minimum initial installed thickness with numbers a minimum of 1 inch (25 mm) high. Each marker shall face the attic access opening.

12.1.4 Installation. All materials, systems and equipment shall be installed in accordance with the manufacturer's installation instructions and the provisions of this code.

12.1.5 Certificate. A permanent certificate shall be posted on or in the electrical distribution panel. The certificate shall be completed by the builder or registered design professional. The certificate shall list the predominant R-values of insulation installed in or on ceiling/roof, walls, foundation (slab, basement wall, crawlspace wall and /or floor) and ducts outside conditioned spaces. The certificate shall also list the type and efficiency of heating, cooling and service water heating equipment.

12.2 Show insulation R values and type clearly on plans for all areas.

12.3 All exterior walls of unfinished basements shall be insulated, or the floor above the unfinished basement with a separation of conditioned and unconditioned space.

12.4 Additional energy conservation items are as follows:

SECTION 14. STRUCTURAL DATA

14.1 DESIGN DATA

14.1.1 Seismic: Zone D-2, z 0.30, I 1.00

14.1.2 Wind: Basic wind speed - Occupancy Category II
150 mph (3 sec gust)
V-ult ASCE-7
Exposure is site-specific, but must of Farmington is Exposure B

14.1.3 Soil Bearing: 1,500 PSF (without a soils report)

14.1.4 Live Snow Load: 30 PSF Ground Snow Load: 43 PSF

14.1.5 Frost Depth: 30 inches

14.1.6 Floor Live Load: 40 PSF Bedrooms: 30PSF

14.1.7 Balcony/Deck Live Load: 40 PSF

14.2 Submit engineering diagrams for **all** floor, roof and girder trusses.

14.3 Spacing and direction of run for **all** trusses and girder trusses shall be shown on the plans.

14.4 Species, grade, size, spacing and direction of run for all joists and rafters shall be shown on plans.

14.5 Species, grade, size and location of all beams, girders and headers, over 4' long shall be shown on the plans.

14.6 Species, grade, size and location of all columns shall be shown on the plans.

14.7 Girders, beams and headers supporting roof and/ or floor loads are over spanned at:

14.8 Floor joists are over spanned at:

14.9 Ceiling joists are over spanned at:

14.10 Roof rafters are over spanned at:

14.11 Computations, stress diagrams or other data, showing the engineering design, shall be submitted on the following:

SECTION 15. NOTES

15.1 Validity of Permit. R105.4

15.1.1 The issuance or granting of a permit or approval of plans, specifications and computations shall not be construed to be a permit for, or an approval of, any violation of any of the provisions of this code or of any other ordinance of the jurisdiction. Permits presuming to give authority to violate or cancel the provisions of this code or other ordinances of the jurisdiction shall not be valid.

15.1.2 The issuance of a permit based upon plans, specifications and other data shall not prevent the building official from thereafter requiring the correction of errors in said plans, specifications and other data, or from preventing building operations being carried on thereunder when in violation of this code or of any other ordinances of this jurisdiction. The building official is also authorized to prevent occupancy or use of a structure where in violation of this code or any other ordinances of this jurisdiction.