



# **INSPECTION GUIDELINES**

## **FOR SINGLE FAMILY RESIDENTIAL CONSTRUCTION**

## Inspection Requests



To assist you in requesting your inspections, we have created a list of inspection types and their corresponding numeric codes. This list is provided with new permits and is available upon request. When you call the Inspection Request Line all you will need to submit, in the following order, is the: (1). **Inspection Type(s)** by number from the list and (2). **Permit Number**. Please check that the correct permit number has been provided. **If the wrong permit number is given or incorrect type of inspection is requested, the computer will print the wrong address and/or inspection type and we will be unable to conduct your inspection on the requested day.**

Inspection requests should only be made when the job is ready for inspection. Inspections are accepted each business day before 3:00 p.m. as long as space is available. The inspectors cannot take inspection requests in the field. Under normal conditions, requested inspections will be conducted the next business day. ***Please remember*** inspection requests cannot be conducted on weekends or holidays. Inspections are to be requested at least one business day in advance.

All inspections must be scheduled the business day preceding the scheduled inspection request. We cannot accept specific times for inspections. However, we will try to accommodate concrete placement and electrical service upgrades. Inspectors begin conducting inspections as soon as the inspections are posted. All scheduled inspections must be ready for inspection at that time.

<b>Inspection Phone Numbers:</b>	<b>Riverside Office:</b>	<b>951-955-1800</b>
	<b>Murrieta Office:</b>	<b>951-600-6100</b>
	<b>Indio Office:</b>	<b>760-863-8271</b>

**Remember: No building or structure shall be used, occupied or furnished until a Certificate of Occupancy or Finaled Job Card has been issued by the Building Department.**

### GENERAL

The following will apply at each inspection. If you are unsure of any of these requirements, please give us a call.

1. If the job has not progressed to a point where it can be properly inspected, a reinspection fee may be assessed on non-deposit based permits. The fee must be paid prior to requesting another inspection. If the job will not be ready, please cancel the inspection prior to the inspector's arrival. If the inspector observes an abnormal amount of code violations upon commencing the inspection, he or she can declare the job as not being ready and may charge a reinspection fee.
2. Provide access to all inspection sites. Be sure the inspector can gain access to the lot, any excavations and all floor levels. This may necessitate that an OSHA-approved (not carpenter-built) ladder be available at the inspection site.

3. Post the lot number and the address in a conspicuous location so that it is readily visible from the street. Individual tenant spaces must also be posted.
4. Maintain all roads so that emergency vehicles can gain access to the site. Do not block fire hydrants (or mailboxes), sidewalks or public right-of-ways with construction vehicles or construction materials.
5. Provide suitable toilet facilities for all workers on the project and maintain them in a sanitary condition during construction.
6. Construction sites (interior and exterior) must remain clean to minimize the chance of injury. County safety requirements will not allow an inspector to perform an inspection if there is too much debris around the inspection site.
7. All property pins/stakes must be clearly visible. Setbacks – check with approved plans.
8. Provide the site plan, permit, and the County of Riverside reviewed set of building or construction plans. The plans will be stamped with the permit number and will have attachments including the white inspection card. These items are to be available for the inspector at each individual lot. Additionally, letters and/or documentation from special inspectors, truss specifications, etc. must be available as well.
9. Any deviations from the APPROVED set of plans must be submitted for review and approval by the Building Department prior to work being performed. Very minor deviations may not require re-submittal and can be addressed with the inspection staff in the field. If you believe this to be the case, you must contact the building inspector or plan reviewer for a determination.
10. Check information on permit for any incorrect information (address, permit number, etc.).
11. Are any special inspections required? If so, for what?
12. Are there any unusual topographic features that differ from approved plan? [CBC 3304, CBC 3306, CBC 1803 -1805]
13. Are there any protected areas onsite, which need to be maintained and/or protected? [Per approved plans.]

## **FOOTINGS AND FOUNDATIONS**

1. Post the lot number and/or the address in a conspicuous location so that it is readily visible from the street. Individual tenant spaces must also be posted.
2. Property pins/stakes must be visible and the lot lines strung with durable string.
3. Verify the building setbacks, orientation, and layout, plan (model) number, and address in accordance with the “APPROVED” site or plot plan.
4. Verify for all TRACT inspections that deepened footing requirements from the grading plan are met.
5. Verify the installation and location of the grounding electrode (Ufer). [NEC 250.52 (A) (3)].

6. Verify that any fill is properly compacted and that no foreign matter is present in the excavation. Verify all footing excavations are clean and conform to the “APPROVED” plan layout(s). [CBC 1803, CBC 3304]
7. Verify the location and depth of footings in accordance with the “APPROVED” plans and plan details. [ CBC Appendix Chapter 1, Section 109.3.1]
8. Verify proper placement of reinforcing steel for size, spacing, hooked bars, horizontal ties, vertical bars, and alignment, and minimum 1” clearance from forms boards. [ CBC 1906 -1907].
9. Verify reinforcing steel is free from mud, oil, or other nonmetallic/vinyl coatings. [CBC 1907.4.1, ACI 318 Section 7.4.1]
10. Verify reinforcing steel is isolated from the earth a minimum of 3” with wrapped pins, concrete blocks, or plastic/rebar chairs. [CBC 1907.4, ACI 318 Section 7.7.1]
11. Verify “turn down” requirements for rebar on the “APPROVED” plans.
12. When a foundation (stem) wall method is used, it is **HIGHLY** recommended that the interior footings not be poured at the same time as the exterior footings. This will help facilitate the underground plumbing installations and avoid problems with cold joint pours.
13. All special anchor bolts, hardware (straps), and HD bolts must be secured in place. [CBC Appendix Chapter 1, Section 109]
14. Finished floor shall be a minimum of 6 inches above adjacent grade.

### **FOUNDATION (STEM) WALLS**

1. Verify that property stakes are visible and the lot lines strung with durable string.
2. Verify for all TRACTS inspections deepened footing requirements from the grading plan are met.
3. Verify the building setbacks, orientation, and layout, plan (model) number, and address in accordance with the “APPROVED” site or plot plan. [CBC Appendix Chapter 1, Section 109]
4. Verify the location of the grounding electrode (Ufer). [NEC 250.52 (A) (3)].
5. Verify that any fill is properly compacted and that no foreign matter is present in the excavation. Verify all footing excavations are clean and conform to the “APPROVED” plan layout(s). [CBC 1803, CBC 3304]
6. Verify that all roots/stumps are removed 12" below surface of ground within footprint of the structure. [CBC 3304.1]
7. Verify that all loose soils, mud and/or water are removed from bottom of footing to provide bearing capacity. [CBC 1905.7, ACI 318 Section 5.7]

8. Verify foundation (stem) walls for proper placement of reinforcing steel as to size, spacing, hooked bars, horizontal ties, alignment, and clearances from forms boards. [CBC 1907, ACI 318 Section 7.1]
9. All reinforcing steel must be isolated from the earth a minimum of 3” with wrapped pins, blocks, or plastic/rebar chairs. [CBC 1907.7, ACI 318 Section 7.7.1- 7.7.3]
10. Footings shall be level or stepped if ground slopes more than 1 ft. in 10 ft. [CBC 1805.1]
11. Verify that thickness of concrete is sufficient to allow proper 7" embedment of anchor bolts. Bolts shall be embedded at least 7 inches into the concrete or masonry. [CBC 2308.6]
12. Verify that anchor bolts installed are not spaced more than 6 feet apart. There shall be a minimum of two bolts per sill plate with one bolt located not more than 12 inches or less than 4 inches from each end of the sill plate. [CBC 2308.6]
13. Verify that plate washers installed on each bolt are a minimum of 3 inch by 3 inch by ¼ inch thick. [CBC 2305.3.11, CBC 2308.12.8]
14. Verify that all special hardware is installed with proper hangers prior to foundation inspection. [CBC Appendix Chapter 1, Section 109.3.1]
15. Verify the placement of embedded hold downs as per the approved plans. All hold downs must be installed with appropriate templates prior to inspection. [CBC Appendix Chapter 1, Section 109.3.1]

## **RESIDENTIAL UNDER-FLOOR INSPECTION CHECKLIST**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time. [CBC Appendix Chapter 1, Section 109.6]
2. If foundation was required to have special inspections, are all the reports with permit? [CBC 1704.1.2]
3. Verify that the grade under all girders and beams is 12” minimum. [CBC 2304.11.2.1]
4. Verify that the grade under joisting is 18” minimum. [CBC 2304.11.2.1]
5. Verify that all anchor bolting is installed per shear wall schedule. [CBC 2305.3.11]
6. Verify anchor bolts installed in Seismic Design Category E are 5/8 inch nominal diameter. [CBC 2308.12.9 ]
7. Verify that anchor bolts installed are not spaced more than 6 feet apart. There shall be a minimum of two bolts per sill plate with one bolt located not more than 12 inches or less than 4 inches from each end of the sill plate. Properly sized nut and washer tightened on each bolt. [CBC 2308.6]

8. Verify that all square washers (minimum 3"x3"x1/4") are installed on sill plate. If a slotted washer is used, a standard cut washer must be installed between the plate washer and the nut. [CBC 2305.3.11, 2308.12.8]
9. Check for missing or damaged hold downs and anchor bolts within sill plate.
10. Check for any strapping at drag struts, etc., which may occur at tops of joisting that will be covered by subfloor.
11. Check for any strapping, hold downs, specified hardware, etc., which occur at under-floor crawl space.
12. Verify that all hangers are installed at head-outs, cantilevers, etc. [ CBC 2308.10.4.]
13. Verify that all nailing of joisting, doublers, rims, etc. are per plan and code. [CBC Table 2304.9.1]
14. If wood I-joists for floors are being used, verify layout and installation guides are on site, detailing blocking, bearing requirements, etc.
15. Verify that all load bearing cripple wall studs, which are greater than 14" in height, are fully blocked or sheeted with plywood on both sides and nailed per shear schedule. [CBC 2308.9.4]
16. Verify that cripple wall studs that exceed 48" in height, are the size required for an additional story. [CBC 2308.9.4]
17. Verify that under-floor crawl space access opening is 18" x 24", with an unobstructed opening (no beams, posts, plumbing, duct work, etc.). [CBC 2304.11.2, CBC 1209.1]
18. Verify positive mechanical connections at all post to pads, post to beams, etc. [CBC 2314]
19. Verify attachment where shear wall/floor diaphragm nailing and/or blocking may occur, typically blocking perpendicular to joisting, or specified hardware connections.
20. Verify under-floor crawl space venting requirements are installed. [CBC 1203.3.1]
21. Verify stud partitions containing plumbing, heating or other pipes are framed and the joists underneath so spaced as to give proper clearance for the piping. Where a partition containing such piping runs parallel to the floor joists, the joists underneath such partitions shall be doubled and spaced to permit the passage of such pipes and shall be bridged. [CBC 2308.9.8]
22. Where plumbing, heating or other pipes are placed in or partly in a partition, necessitating the cutting of the soles or plates, a metal tie not less than 0.058 inch (16 galvanized gage) and 11/2 inches wide shall be fastened to each plate across and to each side of the opening with not less than six 16d nails. [CBC 2308.9.8]
23. Verify that all individual concrete or masonry piers project at least 8" above exposed ground unless the columns or posts that they support are of approved wood of natural resistance to decay or treated wood. [CBC 2304.11.2.7 Exception 1& 2]
24. Verify that all girders entering masonry or concrete walls have 1/2" air space. [CBC 2304.11.2.5]

25. Verify that all foundation plates, sills, and sleepers on concrete, which is in direct contact with the earth, are treated wood or wood of natural resistance to decay. [CBC 2304.11.2.4]
26. Verify that columns and posts located on concrete or masonry floors or decks exposed to weather, if not treated wood, are supported by concrete piers or metal pedestals projecting minimum 6” above exposed earth and minimum 1” above such floors. The distance increases to 8 inches in crawl spaces above exposed earth. [CBC 2304.11.2.7 Exception 1 & 2]
27. Verify where concrete is being poured over framed floor, approved protective moisture barrier must be installed or joisting and plywood sheeting is pressure treated. [CBC 2306.9]

## **UNDERGROUND PLUMBING**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify the type of material used for appropriate systems, ABS, CPVC, PEX or copper.  
[CPC 701.1-701.1.5]
3. Verify that if either ABS or PVC waste piping is being used in residential constructions, it is limited for use in two-story building. [CPC 701.1.2.2]
4. Verify the installation of an approved backwater prevention device when drainage piping serving fixtures are below the elevation of the upstream manhole cover of the public or private sewer system. [CPC 710.1]
5. Verify that a split system has been installed for all two-story houses so the discharge of the fixtures above the elevation of the upstream manhole cover does not discharge through the backwater valve.  
[CPC 710.1]
6. Verify that where rocks or large “dirt clods” which are larger than 3/16” are present, clean backfill material (sand, screened earth) must be on site and used as bedding. Piping in the ground shall be laid on a firm bed for its entire length. [CPC 314.3]
7. Verify the location of required cleanouts. [CPC 707-719]
8. Verify that each cleanout in piping, two (2) inches or less in size, are installed with clearance of not less than twelve (12) inches in front of the cleanout. [CPC 707.10]
9. Verify that all cleanouts in piping larger than two (2) inches have a clearance not less than eighteen (18) inches in front the cleanout. [CPC 707.10]
10. Verify that all cleanouts in under-floor piping extend to or above the finished floor or extend outside the building when there is less than eighteen (18) inches vertical overall and thirty (30) inches horizontal clearance from the means of access to such cleanout. [CPC 707.10]
11. Verify that no under-floor cleanout is located more than twenty (20) feet from an access door, trap door or crawl hole. [CPC 707.10]

12. Verify that all sewer lines (building drain) are tested with water and have a test tee provided at the first connection upstream of the sewer tap. [CPC 723.0]
13. Verify a minimum 10' head of water for testing the drain, waste, and venting systems. [CPC 712.2.]
14. Verify the proper size of sewer, soil, and water piping.
15. Verify island vents and waste lines are properly installed. [CPC 910]
16. Verify the water service and underground waterlines are under pressure with the available water pressure or by a minimum 50 psi air test. [CPC 609.4].
17. Verify water service and underground water lines are free from dents, dings, and bends which deform or create a loss in the cross sectional area of the tubing. [CPC 609.1]
18. Verify anti-siphon devices (vacuum breakers) are placed on all hose bibs as soon as they are installed. No hoses are to be connected until the vacuum breakers are in place. [CPC 602 and 603]
19. Verify the minimum water line size from the meter to the first manifold in the building served. [CPC 610.1]
20. Verify that all closet bends are extended to a minimum height above the finished floor level prior to underground inspection.
21. Verify that all horizontal drainage piping is run in practical alignment and a uniform slope of not less than one-fourth (1/4) of an inch per foot or two (2) percent toward the point of disposal provided. [CPC 708.0]
22. Verify that a water test is applied to the drainage and vent systems either in its entirety or in sections. The water shall be kept in the system or in the portion under test, for at least fifteen (15) minutes before inspection starts. The system shall then be tight at all points. [CPC 712.2]
23. Verify that if gas piping is to be run under a slab in any building or structure, it is installed in a gastight conduit as per Riverside County requirements. [CPC 1211.1.6]

### **INTERIOR FOOTINGS / SLAB GRADE**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify for all TRACT inspections, deepened footing requirements from the precise grading plan are met.
3. Verify that any fill is properly compacted and that no foreign matter is present in the excavation. Verify all footing excavations are clean and conform to the "APPROVED" plan layout(s). [CBC 1803, CBC 3304]
4. Verify that at the time concrete is placed, reinforcement shall be free from mud, oil or other nonmetallic coatings that decrease bond. [CBC 1907.4, ACI 318 Section 7.4.1]



5. Verify the location and depth of footings in accordance with the “APPROVED” plans and plan details. [CBC Appendix Chapter 1, Section 109.3.1]
6. Verify proper placement of reinforcing steel for size, spacing, hooked bars, horizontal ties, vertical bars, and alignment, and minimum 1” clearance from forms boards. [CBC 1906-1907]
7. Verify reinforcing steel is isolated from the earth a minimum of 3” with wrapped pins, concrete blocks, or plastic/rebar chairs. [CBC 1907.7.1, ACI 318 Section 7.7.1]
8. Verify that all under-slab conduits are of an approved material and alignment. [CEC 300.5].
9. Verify that all plumbing, electrical, mechanical, or other piping is not installed parallel with the footings when installed within the footings, unless approved by the Building Official. [CBC 1906.3, ACI 318, Section 6.3, CPC 313.1].
10. Verify plumbing, electrical, mechanical, or other piping is properly protected when installed within the footings. [CBC 1906.3, ACI 318, Section 6.3, CPC 313.1].
11. Verify that the under-slab gas lines, such as to kitchen islands are installed as per required special installation procedures and must be approved by the Building Official before installation. [CPC 1211.3.1, NFPA 54: 7.3.2]
12. Verify the minimum thickness of concrete floor slabs supported directly on the ground shall not be less than 3 1/2" thick. [CBC 1910.1]
13. Verify special reinforcements for post tension foundation system. Obtain all special inspection reports prior to slab inspections.
14. Verify special methane mitigation measures have complied with special soil conditions.

### **SHEAR NAILING AND ROOF DECK INSPECTION**

The **Shear and Roof Nail** inspection is to verify installations that will be covered and not visible at the **Rough Framing** inspection. This does not negate any further requirements as a result of deficiencies found during the **Rough Framing Inspection**.

### **WALL BRACING AND SHEAR WALLS**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify sill (sole, foundation) plate anchor bolt size(s) and spacing at braced wall lines, exterior walls and shear walls are per the approved plans. Verify 5/8 inch anchor bolts are installed in seismic design category E. [CBC 2308.3.3, 2308.6, 2308.12.9]
3. Verify that wood framing members, including wood sheathing, that rest on exterior foundations walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood. [CBC 2304.11]

4. Verify the installation of all hold downs, straps and rafter and truss ties to the wall below. [Review plan details and CBC 1604.8, CBC 2308.10, CBC 2305.7]
5. Verify the location, panel size, and nailing pattern of shear walls. [Review Plan details, CBC 1604.4, CBC 1604.8, CBC 2305.3.3, CBC 2305.1.4 ]
6. Verify sizes of all nails and fasteners. [CBC 2305.3.3, Table 2304.9.1]
7. Verify the size of all structural members that will be covered or hidden when the weather resistive barrier, lath, and/or roofing paper is installed; i.e. beams, posts, girder trusses, etc with the approved plans and details.
8. Verify the bearing load paths to insure all loads are properly supported from roof to the foundation. Review plans and details. [CBC 1604.4, CBC 2304.9.6]
9. Verify that cutting, notching, and boring of wood members is not in excess of that permitted. [CBC 2308.8.2, CBC 2308.9.10, CBC 2308.9.11, CBC 2308.10.4.2 ]
10. Verify post and beam connections. Review plans, and details. [CBC 2304.9.7, CBC 2304.10]
11. Verify top plate joints, ends, and splices are properly supported, lapped, and/or strapped. [CBC 2308.9]
12. Verify approved structural materials have been used, including grade stamps on lumber, sheathing, and engineered trusses. [CBC 2303]

### **ROOF DECK**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify approved structural materials, including grade stamps on lumber, sheathing, and engineered trusses. [CBC 2303]
3. Verify the size and span of all roof sheathing installed. Review plans and details. [CBC 2304.7, CBC 2308.10.8]
4. Verify that all roof sheathing is run perpendicular to the framing members and it must span a minimum of two truss spaces. [CBC 2304.7.2, Table 2304.7(1), Table 2304.7(2), Table 2304.7(3), Table 2304.7(5)]
5. Verify truss and roof sheathing blocking and edge supports as required:
  - Wood diaphragms shall be constructed of wood structural panels manufactured with exterior glue and not less than 4 feet by 8 feet, except at boundaries and changes in framing where minimum sheet dimensions shall be 24 inches. [CBC 2305.2.4]
  - Panel less than 24 inches located at boundaries and changes in framing shall have all edges of the undersized sheets supported and fastened to framing members or blocking. [CBC 2305.2.4]

- Roof sheathing panel span rating for roof's thickness and edge support shall comply with [CBC Table 2304.7(3)]
6. Verify the roof sheathing nailing pattern. In general, adjoining panel edges shall bear and be attached to the framing members and butt along their centerlines. Nails shall be placed not less than 3/8 inch from the panel edge, not more than 12 inches apart along intermediate supports, and 6 inches along panel edge bearings, and shall be firmly driven into the framing members. [CBC Table 2304.9.1, CBC 2305.1.2, CBC Table 2306.3.1]
  7. Verify a gap (1/8" to 1/4") is provided between roof sheathing panels to allow for expansion and contraction. Refer to the manufacturer's recommendations or ESR report (installation requirements).
  8. Verify the slope of the roof for proper drainage. Follow the approved plans (which may include engineered recommendations) where greater slopes are shown. [CBC 1503.4]
  9. Verify that all ceiling joists or rafter ties are installed parallel to ceiling joist or roof rafters. [CBC 2308.10.4]

### **ROOF TRUSSES**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Provide the truss placement diagram, each individual truss design drawing, the truss member permanent bracing specification, the cover sheet/truss index sheet, and calculations from the manufacturing company. Truss calculation sheets and drawings shall be stamped and signed by a registered design professional of the State of California. [CBC 2303.4]
3. Verify the required truss member lateral (web) bracing is installed in accordance with the manufacturer's design shown on the truss calculations. [CBC 2303.4]
4. Verify any special truss blocks (bearing blocks, wedges, etc.) are installed in accordance with the manufacturer's design shown on the truss calculations.
5. Verify the required truss hangers are installed in accordance with the manufacturer's design shown on the truss calculations and/or the reviewed plans and details.
6. Provide an engineered repair detail for any truss modified or repaired. Verify modifications or repairs are installed exactly as required in accordance with the engineering. [CBC 2303.4.7.1]
7. Verify the roof is uniformly loaded to allow trusses to properly deflect.
8. Verify proper clearance (min. 1/2 inch) between top of nonbearing walls and bottom chords of trusses.

9. Verify all truss bearing points are blocked and fully supported with the minimum bearing required by the truss calculations. [CBC 2303.4.1.6, Wood Truss Council Of America and the Truss Plate Institute]

## 10. **ROUGH INSPECTION**

The Rough Inspection usually consists of the rough wood framing, rough plumbing, rough mechanical and rough electrical. When these items are complete, they should be called in all at one time rather than individually. It is important to note that the location and installation of “rough-in” items will affect the finished product at the FINAL stage. Many items inspected at the rough stage will also be verified at the final inspections. Therefore, carefully consider the location of the installations and how they will affect the final inspection.

### **STRUCTURAL: WOOD FRAME ROUGH**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify sill (sole, foundation) plate anchor bolt size(s) and spacing at braced wall lines, exterior walls and shear walls as per the approved plans. Verify 5/8 inch anchor bolts are installed in seismic design category E. [CBC 2308.3.3, 2308.6, 2308.12.9]
3. Verify that wood framing members, including wood sheathing, that rest on exterior foundation walls and are less than 8 inches from exposed earth shall be of naturally durable or preservative-treated wood. [CBC 2304.11]
4. Verify the installation of all hold downs, straps and rafter and truss ties to the wall below. [Review plan details and CBC 1604.8, CBC 2308.10, CBC 2305.7]
5. Verify the location, panel size, and nailing pattern of shear walls. [Review Plan details, CBC 1604.4, CBC 1604.8, CBC 2305.3.3, CBC 2305.1.4]
6. Verify the location of required blocking for drywall (gypsum board) shear walls with the approved plan shear panel schedule.
7. Verify all perimeter edges are blocked using a wood member not less than 2-inch by 6-inch nominal dimension for horizontal board diaphragm ceilings. Blocking material shall be installed flat over the top plate of the wall to provide a nailing surface not less than 2 inches in width for the attachment of the gypsum board. [CBC 2508.5]
8. Edges and ends of gypsum board shall occur on the framing members, except those edges and ends that are perpendicular to the framing members. [CBC 2508.3]
9. Verify the size of all structural members, i.e. beams, posts, girder trusses, rafters, joists, etc with the approved plans and details.

10. Verify post and beam connections. Review plans, and details. [CBC 2304.9.7, CBC 2304.10]
11. Verify the bearing load paths to ensure all loads are properly supported from roof to the foundation. Review plans and details. [CBC 1604.4, CBC 2304.9.6]
12. Verify that cutting, notching, and boring of wood members is not in excess of that permitted. [CBC 2308.8.2, CBC 2308.9.10, CBC 2308.9.11, CBC 2308.10.4.2]
13. Verify top plate joints, ends, and splices are properly supported, lapped, and/or strapped. [CBC 2308.9]
14. Verify approved structural materials have been used, including grade stamps on lumber, sheathing, and engineered trusses. [CBC 2303]
15. Verify that where rafters are installed, they are framed directly opposite each other at the hip & ridge; the ridge board is not less in depth than the cut end of the rafter. Hip and valley rafters shall be minimum 2 inches nominal in thickness and not less in depth than the cut end of the rafter. [CBC 2308.10.4]
16. Verify that all ceiling joists or rafter ties are installed parallel to ceiling joist or roof rafters. [CBC 2308.10.4]
17. Verify floor joists rafters and ceiling joists are blocked (bridged) or supported laterally to prevent rotation and lateral displacement. Two by ten members shall have one edge held in line for the entire length. Two by twelve members shall have bridging for each eight feet of span unless both edges of the member are held in line. [CBC 2308.8.5, CBC 2308.10.6]
18. Verify attic spaces are provided with a minimum of one access opening not less than 20 inches by 30 inches in attic area having a clear height of over 30 inches. An attic in which an appliance is installed shall have an opening not less than twenty-two inches by 30 inches. [CBC 1209.2, CMC 904.11]
19. Verify the required amount of attic and under-floor ventilation is installed. All vents must be installed at time of rough inspections. [CBC 1203.2, CBC 1203.3]
20. Verify a free flow of air will be maintained when eave or cornice vents are installed. [CBC 1203.2]
21. Verify that all insulations baffles have been installed and 1" air has been maintained. California Energy Standards
22. Verify a minimum 1-inch air space will be maintained between insulation and the roof sheathing. [CBC 1203.2]
23. Verify fire blocking in the following locations, [CBC 717..2]:
  - In combustible construction in concealed spaces between floors, between a top story and a roof or attic space

- At all interconnections between concealed vertically stud wall or partitions spaces and concealed horizontal spaces created by an assembly of floor joist or trusses, and concealed vertical and horizontal spaces such as occurs at soffits, drop ceilings, cove ceilings and similar locations.
  - In concealed spaces of stud walls and partitions, including furred spaces, and parallel rows of stud or staggered studs, as follows :
    - Vertically at the ceilings and floor levels.
    - Horizontally at intervals not exceeding 10 feet.
  - Double stud wall spaces
  - In concealed spaces between stair stringers at the top and bottom of the run.
  - At openings around vents, pipes, ducts, chimneys, and fireplaces at ceilings and floor levels.
  - At openings between attic spaces and chases for factory built chimneys. [UL 103 and UL 127]
23. Verify fire blocking material and construction, [CBC 717.2.1]
- Nominal two inch lumber or two thickness of 1-inch nominal lumber.
  - Gypsum board or cement fiber board.
  - Batts or blankets of mineral wool, glass fiber.
  - Other materials approved by the Building Official.
24. Verify gable end bracing in accordance with the approved plans.
25. Verify occupied spaces, habitable spaces and corridors have a finished ceiling height of not less than 7 feet 6 inches. [CBC 1208.2]
26. Verify bathrooms, toilet rooms, kitchens, storage rooms and laundry rooms have a finished ceiling height of not less than 7 feet. [CBC 1208.2]
27. Verify foam plastic insulation is not exposed to the interior of the building. Foam plastics that are used as interior finish on the basis of special tests shall also conform to the flame spread requirements of Chapter 8. [CBC 2603.9]
28. Verify that fenestrations products for proper U-Factor and SHGC as per energy packages.

### **ROUGH PLUMBING: DRAIN, WASTE, AND VENT (DWV)**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify a minimum 10' head of water for testing the drain, waste, and venting systems. [CPC 712.2-712.3].

3. Verify proper support for building drain piping. [CPC 314.0 and Tables 3-1 &3-2].
4. Verify the proper size of drain/waste piping. [CPC 703.0]
5. Verify the location of required cleanouts. If cleanouts were not installed until the rough plumbing (top out) stage, the cleanout locations should have been painted at the underground stage. [CPC 707]
6. Verify waste vent termination location for required distances:
  - Vertically minimum 6 inches termination above roof, and not less than 12 inches above any vertical surface. [CPC 906.1].
  - Either 10 feet from or 3 feet above any open able window, door, opening, air intake. [CPC 906.2]
  - 3 feet from property lines. [CPC 906.2].
7. Verify shower, tub, and lines in exterior walls are grouted (rat proofed). [CPC 313.12]

### **WATER PIPING ROUGH**

1. Verify the waterlines are under normal supplied pressure and no leaks are present. [CPC 609.4]
2. Verify water heaters located in a garage shall be guarded by either an adequate barrier, by being elevated, or located out of the normal path of the vehicle. [CPC Section 508.14]
3. Verify anti-siphon devices (vacuum breakers) are placed on all hose bibs as soon as they are installed. No hoses are to be connected until the vacuum breakers are in place. [CPC 602.0 -603.0]
4. Verify proper support for building water piping. [CPC 314.0]
5. Verify the proper size of water piping. [CPC 610.0]
6. Verify the brine line is terminated to an approved receptor when a loop is plumbed for a water softener or conditioner.

### **GAS PIPING ROUGH**

1. Verify if the gas type to be utilized is natural gas or LPG (Propane).
2. Verify use of proper materials. [CPC 1209.0]
3. Verify proper size of gas piping. [CPC 1211.17, CPC 1217.0]
4. Verify proper gas line support. [CPC 1211.2.6, and CPC Table 12-3]
5. Verify shutoff valves are installed within the same room, outside the hearth, and maximum 6 feet from a barbecue or fireplace. [CPC 1211.10-1211.10.3, CPC 1212.4]
6. Verify shutoff valves are installed within 6 feet of the intended appliance. [CPC 1214.4],
7. Under-slab gas lines, such as to kitchen islands, require special installation procedures and must be approved by the Building Official before installation. [CPC 1211.1.6]
8. Although not required until the final inspection, it is **HIGHLY** recommended to test all gas lines at the rough stage. The test pressure to be used shall be no less than 1-1/2 times the proposed

maximum working pressure, but not less than 3 psi, irrespective of design pressure. The test duration shall be a minimum of 10 minutes. [CPC 1214.3.2, CPC 319]

### **ROUGH MECHANICAL & H.V.A.C.**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Equipment installed in a garage which has a flame, generates a spark or uses a glowing ignition source open to the space in which it is installed shall be elevated such that the source of ignition is at least 18 inches above the floor unless listed as flammable vapor ignition resistant. [CPC 508.14, CMC 308.1]
3. Equipment burning liquefied petroleum gas (LPG) or liquid fuel shall not be located in a pit, an under-floor space, below grade or similar location where vapors or fuel might unsafely collect. [CMC 304.7]
4. Warm-air furnaces within compartments or alcoves shall have a minimum working space clearance. [CMC 304, CMC Table 3-2, CMC 904 and CMC Table 5-3]
5. Equipment installed at grade level shall be supported on a level concrete slab or other approved material extending a minimum of 3 inches above adjoining grade. [CMC 1106.2 exception #2]
6. Provide proper protection of equipment installed where subject to damage. Equipment shall not be installed in a location where it is subject to mechanical damage unless protected by approved, substantial barriers. [CMC 308.1]
7. Verify that an approved fuel shutoff valve will be installed in the fuel supply piping serving each piece of fuel-burning equipment at an accessible location ahead of the union or appliance connector. [CMC 513.4]
8. Verify that a 120-volt service receptacle is located within 25 feet of, and on the same level as, the equipment for maintenance. [CMC 309.0]
9. Provide a switch-controlled light & outlet for maintenance of equipment. A permanent switch-controlled lighting outlet shall be installed for maintenance of equipment. [CMC 904.11.5]
10. Provide ventilation air supply systems with screen, grills or louvers that shall not pass an object larger than a 1/4-inch-diameter sphere. [CMC 701.9 (A) (B)]

### **APPLIANCE VENTS**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify vent clearances from combustibles. [CMC 802-802.10 and CMC Table 8-2]
3. Verify vent termination. [CMC 802.5.2]



4. Type B Vents. [CMC 802.4 and CMC Table 8.1]
5. Verify joints are tightly fitted and properly supported. Manufacturer installation instructions
6. Verify sizing and type meets the manufacturers listing or appropriate tables.

### **COMBUSTION AIR**

1. Verify the need for required combustion air. [CMC 701]
2. Verify combustion air source(s):
  - Directly to the outside:
    - From the attic provided:
      - Attic ventilation is sufficient to provide the required combustion air.
      - Attic is not less than 30 inches high at its maximum point.
      - An air opening is provided with a minimum 26 gage galvanized sleeve or a material having equivalent corrosion resistance, strength, and rigidity.
  - Interior Spaces:
    - Adequate volume.
    - Spaces with inadequate volume shall be provided with other combustion air.
3. Verify combustion air locations. One opening shall be located within the upper 12 inches of the enclosure and one opening shall be located within the lower 12 inches of the enclosure. [CMC 701.4]
4. Verify that all openings will be covered with 1/4-inch corrosion-resistant screen mesh. Exception: vents that terminate in an attic shall not be screened. [CMC 701.9, CMC 701.10]

### **ENVIRONMENTAL AIR DUCTS**

1. Verify flexible ducts are not kinked or smashed. [CMC STANDARD NO. 6-3.]
2. Provide solid backing/support for air vents utilizing directional registers, normally only the short sides of rectangular vents and all four sides of square vents.
3. Verify proper support. [CMC 604.5, Table 6-10]

### **EXHAUST DUCTS**

1. Dryer vents. [CMC 504.3].
2. Verify that the domestic clothes dryer moisture exhaust ducts shall be of metal and shall have smooth interior surfaces. Verify duct is minimum 4 inches in diameter or as per mechanical engineering provided.

3. Verify that the domestic dryer moisture-exhaust ducts shall not exceed a total combined horizontal and vertical length of 14 feet, including two 90-degree elbows. Two feet shall be deducted for each 90-degree elbow in excess of two. [CMC 504.3.2.2]
4. Verify that screens shall not be installed at the duct termination. Ducts for exhausting clothes dryers shall not be connected or installed with sheet metal screws or other fasteners, which will obstruct the flow. [CMC 504.3.1]
5. Verify that the moisture-exhaust ducts for domestic clothes dryers shall terminate on the outside of the building and shall be equipped with a backdraft damper. [CMC 504.3.1]
6. Verify that the ducts used for domestic kitchen range ventilation shall be of metal and shall have smooth interior surfaces. Kitchen exhaust (not required, but must conform to CMC 504.3.2, CMC 504.3.2.1 when installed).
7. Bathrooms without open able windows. [CBC 1203.4.2.1]

### **AIR UNITS INSTALLED IN ATTICS**

1. Heating or cooling equipment located in attic spaces shall comply with [CMC 904.11-904.11.5] and be provided with:
  - An access opening minimum 22" x 30" (but not less than the largest piece of equipment).
  - A continuous 24" wide passageway maximum of 20 feet from the access.
  - A level working platform not less than 30" deep in front of the equipment,
  - Electrical receptacles located near the equipment.
  - A light fixture located above the unit and controlled by a switch at the access opening.
  - A cooling coil or cooling units located in an attic where damage may result from condensate overflow shall have an additional watertight pan of corrosion-resistant metal and it shall be installed beneath the cooling coil or unit top to catch the overflow condensate due to a clogged primary condensate drain, or one pan with a standing overflow and a separate secondary drain may be provided in lieu of the secondary drain pan. Condensate waste pipes from air-cooling coils shall be as required in CMC 310.3. Condensate drains shall not drain over a public way. [CMC Section 309.3].

### **METAL CHIMNEYS**

1. Metal chimneys shall be installed in accordance with their listings and the manufacturer's installation instructions. Maintain required clearances from combustibles for connectors. [CMC 802.5, CMC Table 8-2]

### **MISCELLANEOUS**

1. Verify the pilots, burners, or heating elements of appliances, water heater, FAU, washer, dryer, etc. which generate a spark, glow, or flame (gas or electric) to be installed in the garage, will be a minimum of 18 inches above the finished floor level. [CMC Section 308.1]

### **GAS ROUGH PIPING**

Refer to the gas piping installation requirements in the **ROUGH PLUMBING** section.

### **GROUNDING AND BONDING**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify the UFER grounding electrode conductor is installed. [NEC 250.52 (A), 250.64(C)]
3. Verify the metal interior water-bonding conductor is installed. The connection must be accessible and located within 5 feet of where the water line enters the building. [NEC 250.104 (A), 250.68 (B), 250.52 (A)(1) and 250.64]
4. Verify the metal interior gas-bonding conductor is installed. The connection must be accessible. [NEC 250.104 (B)].
5. Verify metallic junction boxes are bonded. [NEC 250.148 (C)]
6. All equipment grounding conductors entering a box must be spliced or joined together within the box. [NEC 250.148].

### **NONMETALLIC –SHEATHED CABLE (NEC ARTICLE 334)**

1. Verify NM wiring is supported horizontally at maximum 4 1/2 feet on center. [NEC 334.30]
2. Verify NM wiring is secured by connectors at junction boxes and supported within 12 inches of boxes. [NEC 334.30]
3. Verify NM wiring is not bundled or secured for lengths greater than 24 inches. [NEC 334.80]

### **JUNCTION BOXES**

1. Verify boxes are properly supported. [NEC 314.23]
2. Verify boxes to be used for ceiling fans are listed for the use and installed in accordance with the manufacturer's installation instructions. [NEC 314.27 (D)].

3. Locate junction boxes Such that the front edge of the box will be flush with the finished walls of combustible construction. [NEC 314.20].
4. Verify boxes have the minimum required volume for the conductors and devices. [NEC Table 314.16 (A)].
5. Verify in wet locations, cabinets and cutout boxes of the surface type shall be mounted so there is at least 1/4-inch air space between the enclosure and the wall or other supporting surface. (This will include disconnects to HVAC units located outside. [NEC 300.6 (D)].

### **REQUIRED CIRCUITS**

Verify the following required circuits are provided:

- General-purpose lighting. [NEC 210.11]
- Small appliance, minimum two 20 amps. [NEC 210.11 (C)(1), 210.52 (B)(1)]
- Refrigeration equipment (optional circuit). [NEC 210.52 (B)(1)]
- Laundry, minimum one 20 amp with no other outlets. [NEC 210.11 (C)(3), 210.52 (F)]
- Bathrooms, minimum one 20 amp with no other outlets. [NEC 210.11 (C )(3), 210.52 (D)]
- Air unit (appliances) [NEC 422.10]
- ARC- Fault circuits required in bedrooms. [NEC 210.12 (B)]

### **RECEPTACLE OUTLETS**

Verify receptacle outlet requirements and spacing. [NEC 210.52].

- General purpose lighting.
- Kitchen countertop.
- Kitchen island or peninsula.
- Bathrooms. Adjacent to each sink, basin, or lavatory.
- Outdoors
  - Front
  - Rear
  - Heating ventilating and air conditioning equipment within 25 feet of the unit.
- Laundry.
- Basements

- Garages.
- Hallways
- Bedrooms arc-fault circuit-interrupter protection. NEC 210.12

### **LIGHTING OUTLETS (NEC ARTICLE 210.70)**

1. Verify at least one grounded wall switch-controlled lighting outlet shall be installed in the following locations where applicable:
  - Every habitable room.
  - Bathrooms.
  - Hallways.
  - Stairways.
  - Attached garages.
  - Detached garages with electric power.
  - Exterior side of outdoor entrances or exits.
2. Verify light fixtures installed in clothes closets are installed in accordance with the following clearances from storage spaces and shelves, [NEC 410.8]:
  - 6 inches for recessed incandescent light fixtures.
  - 6 inches for recessed fluorescent light fixtures.
  - 6 inches for surface mounted fluorescent light fixtures.
  - 12 inches for surface mounted incandescent light fixtures.
3. Verify a minimum 1/2 inch clearance between recessed light (for non IC rated) fixtures and combustible framing or material. [NEC 410.66].

### **GFCI LOCATIONS (NEC ARTICLE 210.8 (A))**

1. Verify GFCI protected outlets shall be provided in the following locations where applicable:
  - Bathrooms.
  - Garages.
  - Grade level unfinished work or storage areas.
  - Outdoors.
  - Crawl spaces at or below grade.
  - Unfinished basements.
  - Kitchens, where serving the counter top.
  - Laundry, utility, and wet bar sink, within 6 feet.

## **SMOKE DETECTORS (CBC 907.2)**

1. Verify smoke detectors have a battery back up and receive their power from the building wiring. Wiring shall be permanent and without a disconnecting switch. Two or more alarms shall be interconnected. Alarms shall be provide in the following locations:
  - In each room used for sleeping purposes. A room not clearly identified as a kitchen, living room, family room, bathroom, or garage is considered a “bedroom” or sleeping room when it is enclosed by 4 walls or partitions and contains a clothes closet or area easily converted to a clothes closet.
  - On the ceiling or wall outside of each separate sleeping area in the immediate vicinity of bedrooms.
  - In split levels with an intervening door between adjacent levels.
  - On each story.
  - Basements
2. Verify that all smoke detectors shall be installed in accordance with the manufacturer’s installation instructions. [NEC 110.3 (B)]
3. Verify that all conductors are stapled within 12 inches of plastic or metal boxes. Clamps are required for conductors entering metal boxes and ground wires must also be bonded to metal boxes. [NEC 334.30, 314.17]
4. Verify that all ground wires in boxes are to be tied together by a wire nut or a crimp sleeve. If crimp sleeves are used, they are to be of the correct size and crimped with the proper crimping tool. [NEC 250.8, 250.148]
5. Verify that the clearance between edge of stud and conductors is to be at least 1-1/4”. If closer, nail plates are required. [NEC 300.4]

## **GENERAL**

1. Verify HVAC equipment disconnects are located within 50 feet of each unit, are within sight of each unit, and are permanently identified corresponding with the dead front identification. [NEC 100, 110.22, 440.11, 440.14]
2. Crawl spaces or attic areas containing mechanical or plumbing equipment shall be provided with a switched light fixture and a GFCI protected outlet. [NEC 210.63, 210.70 (C)]

3. Verify the required HVAC service receptacle is located on the same level and within 25 feet of the equipment. [CMC 309, NEC 210.63]

### **LIFE SAFETY AND CODE COMPLIANCE**

1. Verify safety glazing (tempered glass) is installed in the following locations as applicable: CBC 2406.3
- Swinging or sliding doors (except wardrobe doors).
  - Glass doors or enclosures for bathtubs, whirlpools, saunas, hot tubs, spas, steam rooms, etc.
  - Glazing less than 60 inches above a standing surface or drain inlet located in walls enclosing bathtubs, whirlpools, saunas, hot tubs, spas, steam rooms, etc.
  - Glazing less than 60 inches above the walking surface located adjacent and within a 24 inch arc of either vertical edge of a door in the closed position. The fixed portion of a sliding glass door is not used in measuring the 24 inch arc.
  - Glazing meeting **all** of the following conditions:
    - a. Exposed area of an individual pane is greater than 9 square feet;
    - b. Exposed bottom edge is less than 18 inches above the floor;
    - c. Exposed top edge is greater than 36 inches above the floor;
    - d. One or more walking surface within 36 inches horizontally of the plane of the glazing on a horizontal plane.
  - Glazing in guards and railings, including structural baluster panels and nonstructural in-fill panels, regardless of area or height above a walking surface.
  - Glazed in walls and fences enclosing indoor and outdoor swimming pools, hot tubs and spas where all of the following condition are present:
    - a. The bottom edge of the glazing on the pool or spa side is less than 60 inches above a walking surface on the pool or spa side of the glazing; and
    - b. The glazing is within 60 inches horizontally of the water's edge of a swimming pool or spa.
  - Glazing adjacent to stairways, landings and ramps within 36 inches horizontally of a walking surface; when the exposed surface of the glass is less than 60 inches above the plane of the adjacent walking surface.

- Glazing adjacent to stairways within 60 inches horizontally of the bottom tread of a stairway in any direction when the exposed surface of the glass is less than 60 inches above the nose of the tread.
2. Verify natural ventilation by means of operable exterior openings with areas of not less than four percent of the floor area being ventilated or verify mechanical ventilation in each habitable room. [CBC Section 1203.4, CMC Chapter 4]
  3. Verify the minimum net glazed area is not less than eight percent of the floor area of the room served in each habitable room. [CBC 1205.2]
  4. Verify the rough opening of the front door will compensate a minimum nominal 3 foot wide by nominal 6 foot 8 inch high door for exiting purposes. [CBC 1008.1]
  5. Verify corridors are minimum 36 inches wide. [CBC 1017.2]
  6. Verify that escape/rescue windows located in each “bedroom” (sleeping room) and/or basement meet the following requirements:
    - A minimum net clear opening area of 5.7 square feet or 5 square for grade level openings.
    - A minimum net clear opening height dimension of 24 inches.
    - A minimum net clear opening width of 20 inches.
    - Bottom of the clear opening not greater than 44, inches measured from the floor.
    - A room not clearly identified as a kitchen, living room, family room, bathroom, or garage is considered a “bedroom” or sleeping room when it is enclosed by 4 walls or partitions and contains a clothes closet or area easily converted to a clothes closet. [CBC 1026, CBC 302]
  7. Verify that escape/rescue windows openings with a finished sill height below the adjacent ground level are provided with a window well meeting the following requirements:
    - Window wells are provided which allow the window to be fully open-able and provide a minimum 9 square foot net clear opening with a minimum dimension of 36 inches.
    - Window wells deeper than 44 inches shall be provided with an approved permanently fixed ladder or steps accessible when the window is in the fully open position but do not encroach into the window well required dimension by more than 6 inches. [CBC 1026.5]



8. Verify the following for stairways having two or more risers:
- A minimum width of 36 inches. [CBC 1009.1]
  - Risers having a minimum 4 inch to maximum 7 3/4 inch height with no more than 3/8 inch differential between the greatest and smallest riser. Measurements are taken from the nose of the riser. [CBC 1009.3]
  - Treads having a minimum 10-inch tread depth with no more than 3/8 inch differential between the largest and smallest tread. Measurements are taken at right angles to the tread's leading edge. [CBC 1009.3]
  - A minimum head room clearance of 80 inches measured vertically from a line connecting the edge of the nosing's. [CBC 1009.2]
  - A landing is provided at the top and bottom of the stairway. An intermediate landing is required for each 12 feet of vertical stairway rise. Landings shall have a dimension measured in the direction of travel not less than the width of the stairway. [CBC 1009.4, CBC 1009.6]
  - At **FINAL INSPECTION**, at least one continuous handrail (4) four or more risers) with:
    - The top located a minimum 34 inches to maximum 38 inches above the stair tread. [CBC 1012.2]
    - A minimum 1-1/4 inch to maximum 2-inch cross-sectional area. The Building Official shall approve handrails with an "equivalent" gripping surface before installation. [CBC 1012.3]
    - A minimum 1-1/2 inch between the wall and handrail. [CBC 1012.6]
    - A maximum 4-1/2 inch encroachment into the required stairway width. [CBC 1012.7]
    - Extend only from the top riser to the bottom riser. [CBC 1012.5]
    - A guard when required. Refer to the next item. [CBC 1013.1]
9. Verify open-sided walking surfaces, stairways, landings, ramps, balconies, and porches which are more than 30 inches above grade, finished floor, or decks shall be protected by a guard in compliance with the following: [CBC 1013]
- The top of the guard is minimum 42 inches in height. [CBC 1013.2]
  - Openings in guard/handrails shall have intermediate rails such that a 4-3/8 inch sphere cannot pass through any opening. [CBC 1013.3]

## **INSULATION**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Job address posted in visible location with figures not less than 3 inches tall. [Riverside County Ordinance 463]
3. Permit and approved plans on the site and accessible to inspector. [CBC Appendix Chapter 1, Section 106]
4. Specifications have been stamped and signed by an engineer.
5. Check information on permit for any incorrect information (address, permit number, etc.).
6. Are any special inspections required? If so, for what?
7. Review any approved engineering documents attached to plans.
8. Framing, electrical, mechanical, and plumbing are signed off with no conditions. [CBC Appendix Chapter 1, Section 109]
9. Review plans for insulation requirements.
10. Verify that the house is dried in (roofing installed and exterior moisture barrier installed).
11. Verify and check for and have replaced any wet insulation.
12. Verify the correct thickness of insulation is installed at roof, walls and floors. See approved plan for requirements.
13. Verify that the R-value markers are installed, facing the attic access; every 300' in attics showing installed thickness and max. settling thickness.
14. Verify the insulation with facings, vapor barriers, breathable papers, installed within floor/ceiling assemblies, roof/ceiling assemblies, walls, crawl spaces, under stair voids, or attics have a flame spread rating of less than 25 and a smoke density not to exceed 450. (Exception: 2. Limits don't apply when facing is installed in substantial contact with the unexposed surface of ceiling, floor, or wall.) Un-faced insulation is okay when concealed in areas previously mentioned. [CBC 719.2]
15. Verify that the insulation at fireplace chases is secured to prevent insulation from falling into cavity.

### **EXTERIOR LATH INSPECTION**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Review plans for drywall requirements.
3. Verify that house is dried in (roofing installed and exterior moisture barrier installed).
4. Verify that all fasteners are corrosion resistant material other than aluminum.

5. Metal plaster bases shall be furred away from vertical supports or solid surfaces at least  $\frac{1}{4}$  inch. Self-furring lath meets furring requirements; except, furring of expanded metal lath is not required on supports having a bearing surface  $1\frac{5}{8}$  inch or less.
6. Verify the weather resistive barrier is installed with a minimum 2-inch overlap for horizontal seams and a minimum 6-inch overlap for vertical seams.
7. Corner beads shall be installed to protect all external corners and to establish grounds.
8. Diamond-mesh expanded metal lath, flat-rib expanded metal lath, and wire lath shall be attached to horizontal wood framing members with  $1\frac{1}{2}$ -inch roofing nails driven flush with the plaster base and attached to vertical wood framing members with 6d common nails, or 1-inch roofing nails driven to a penetration of not less than  $\frac{3}{4}$  inch, or 1-inch wire staples driven flush with the plaster base. Staples shall have crowns not less than  $\frac{3}{4}$  inch and shall engage not less than three strands of lath and penetrate the wood framing members not less than  $\frac{3}{4}$  inch. When metal lath is applied over sheathing, use fasteners that will penetrate the structural members not less than  $\frac{3}{4}$ -inch.
9. Expanded  $\frac{3}{8}$  inch rib lath shall be attached to horizontal and vertical wood framing members with nails or staples to provide not less than  $1\frac{3}{4}$ -inch penetration into horizontal wood framing members, and  $\frac{3}{4}$  inch penetration into vertical wood framing members. Staples shall have a minimum crown width of  $\frac{7}{16}$  inch. Verify No. 11 gage with 1- $\frac{1}{2}$  inch legs or No. 16 gauge with  $\frac{7}{8}$  inch legs.
10. Metal plaster bases shall be attached to framing members at not more than 7 inch along framing members except for  $\frac{3}{8}$  inch rib lath that shall be attached at each rib. Diamond mesh lath, flat rib lath shall have 16 inch on center stud spacing on unsheathed walls. Spacing can be increased to 24 inch on center spacing on sheathed walls with self-furring lath.
11. Verify that all penetrations (plumbing, electrical, etc.) are caulked and sealed.
12. When weather-resistive barriers are installed over wood-based sheathing in exterior plaster applications, the barriers must be applied in two layers over the sheathing. [CBC 2510.6]
13. Backing or a lath shall provide sufficient rigidity to permit plaster applications.
14. For one coat stucco systems, verify foam boards joints occur over solid backing as per the evaluation service report (ESR).
15. Verify all penetrations through foam board are sealed with caulking.
16. Verify a weep screed with a minimum vertical attached flange 3- $\frac{1}{2}$  inches shall be provided at or below the foundation plate line on exterior stud walls. The weep screed shall be placed a minimum of 4 inches above the earth or 2 inches above paved areas. [CBC 2512.1.2]
17. Verify all plumbing cleanouts are extended through foam board. [CPC 707.9]
18. Verify all metallic junction boxes are grounded and flush with the finished surface.
19. Verify location of boxes for front, rear, and HVAC receptacle outlets.

20. Verify box location for exterior lighting outlets.

### **DRYWALL / GYPSUM WALLBOARD / SHEETROCK INSPECTION**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify nailing on all required shear walls in accordance with the “APPROVED” plans.
3. Verify standard nailing pattern is 8 inches O.C. for walls and 7 inches O.C. for ceilings.
4. Verify nails are a minimum 1-3/8 inches long for 1/2 inch drywall and 1-1/2 inches long for 5/8 inch drywall. Verify screws are a minimum 1-1/8 long for 1/2 inch drywall and 1-1/4 inch for 5/8 inch drywall. [ASTM C840, Table 1].
5. Verify garage walls (adjacent to living areas and its attic) have 1/2” type “X” gypsum board or equal on the garage side. [CBC 406.1.4]
6. Cement, fiber-cement or glass mat gypsum backers shall be used as a base for wall tile in tub and shower areas and wall and ceiling panels in shower areas. Water-resistant gypsum backing board (green board) shall be used as a base for tile in water closet compartment walls. Green board shall not be used over a vapor retarder in shower or bathtub compartments, in areas of high humidity or on ceilings where the frame spacing exceeds 12 inches on center for 1/2 inch, or 16 inch on center for 5/8”. [CBC 2509.2].
7. Verify gypsum wallboard is not used in any exterior surface exposed directly to the weather, water or continuous high humidity condition. Gypsum sheathing board installed where exposed to the elements shall be covered by exterior cladding or other weather-resistive barrier within 30 days after installation. [CBC 2508, ASTM C 1280]
8. Verify all plumbing cleanouts are extended through the wallboard. [CPC 707. 9]
9. Verify safety-glazing locations as previously stated.
10. Verify rescue/escape window locations as previously stated.
11. Verify receptacle outlet locations as previously stated.
12. Verify lighting outlet locations as previously stated.
13. Verify smoke detector locations as previously stated.

### **OCCUPANCY SEPARATIONS (FIRE BARRIERS)**

Single-Ply gypsum board applied wood framing members on the garage side shall be attached with nails spaced a maximum of 7 inches on centers on ceilings, and a maximum of 8 inches on centers on walls. Screws shall be spaced not more than 12 inches on centers along framing members for ceilings and 16

inch on center for walls where the framing members are 16 inch on centers. Screws shall be spaced not more than 12 inches on center along framing members for ceilings and walls where the framing members are 24 inches on centers. [ASTM C 840]

1. Garages beneath habitable rooms shall be separated from all habitable rooms by not less than 5/8 inch Type X gypsum board or equivalent. Screws shall be spaced not more than 12 inches on centers along framing members for ceilings where the framing members are 16 inch on centers. Screws shall be spaced not more than 12 inches on center along framing members for ceilings where the framing members are 24 inches on centers. [CBC 406.1.4, ASTM C 840]
2. Verify the ducting penetrating the walls or ceilings separating the dwelling unit from the garage shall be constructed of a minimum 0.019-inch (26-gage) sheet steel and shall have no openings into the garage.

## **FINAL INSPECTION**

### **GENERAL**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify the building address is displayed and that the numbers correspond with the address on the permit. [Ordinance 463]
3. Verify the roof tile, shingles, or other approved roofing material is installed. [CBC Chapter 15].
4. Verify finished lot grade permits positive drainage away from the building.
5. Verify all exterior wood is protected from the weather.
6. Verify stucco crack or holes are repaired.
7. Verify doors openings between a private garage and the dwelling unit shall be equipped with either solid wood doors or solid or honeycomb core steel doors not less than 3/8 inches thick, or door assembly shall have a minimum fire protection rating of 20 minutes. Doors shall be self-closing and self-latching, with weather-stripping installed. [CBC 406.1.4]
8. Verify attic spaces are provided with a minimum of one access opening not less than 20 inches by 30 inches in attic area having a clear height of over 30 inches. An attic in which an appliance is installed shall have an opening not less than twenty-two inches by 30 inches. [CBC 1209.2, CMC 904.11]
9. A certificate of occupancy will be issued when the final inspection is approved by the Building Inspector. The final approval on the job card is the certificate of occupancy.

## **FINAL BUILDING / LIFE SAFETY / CODE COMPLIANCE**

Refer to and verify the items listed in the **LIFE SAFETY / CODE COMPLIANCE** heading under the **ROUGH INSPECTION** section.

### **FINAL ELECTRICAL**

1. Refer to and verify the items listed in the **ROUGH ELECTRICAL** heading under the **ROUGH INSPECTION** section.
2. Verify at the Electrical Service panel:
  - Verify the UFER grounding electrode conductor is terminated at the ground bus. [NEC 250.52(A)(3), 250.64(C)].
  - Verify the interior water-bonding conductor is terminated at the ground bus. [NEC 250.104(A), 250.52(A)(1)].
  - Verify the interior gas line-bonding conductor is terminated at the ground bus. [NEC 250.104(B)]
  - Verify breakers listed for the panel are installed and correspond the branch circuit requirements. [NEC 240].
  - The general location or use of each branch circuit is permanently identified. [NEC 110.22].
  - Verify a minimum 1/4-inch space between structure surface and the back of the service panel.
  - General-purpose lighting circuit. [NEC 210.11].
    - Small appliance circuits, minimum two 20 amp. [NEC 211 (C)(1), 210.52 (B)(1)]
    - Refrigeration equipment circuit (optional circuit). [NEC 210.52 (B)(1)].
    - Laundry circuit, minimum one 20 amp. [NEC 210.11 (C)(3), 210.52 (F)]
    - Bathroom circuit, minimum one 20 amp. [NEC 210.11 (C)(3), 210.52 (D)]
    - Air unit circuit. NEC 422-7. Appliances [NEC 422.10].
    - Verify receptacle outlet locations as previously stated.
3. Verify GFCI outlet locations. Refer to **ROUGH ELECTRICAL** above.
4. Verify lighting outlet and switch locations as previously stated.
5. Verify smoke detector locations. Refer to **ROUGH ELECTRICAL** above.
6. Verify switch plates, outlet plates, and box cover plates are installed. Conductors must be either terminated or ends properly capped.
7. Verify enclosure cover in wet locations will be weather proof when the attachment plug cap is installed or not. [NEC 406.8(B)].

8. Verify HVAC equipment disconnects are located within 50 feet of each unit, are within sight of each unit, and are permanently identified corresponding with the dead front identification. [NEC 100, 110.22, 440.11, 440.14].
9. Verify the required HVAC service receptacle located on the same level and within 25 feet of the equipment. [CMC 309 and NEC 210.63].
10. Verify the maximum HACR or fuse size on the A/C unit nameplate.
11. Verify the A/C branch circuit conductor size with the minimum circuit ampacity listed on the A/C unit nameplate.

### **GROUNDING AND BONDING**

1. Verify the UFER grounding electrode conductor is installed. [NEC 210.52(A)(3), 250.64(C)].
2. Verify the metal interior water-bonding conductor is installed. The connection must be accessible and located within 5 feet where the water line enters the building. [NEC 250.104 (A), 250.52(A)(1)]
3. Verify the metal interior gas-bonding conductor is installed. The connection must be accessible. [NEC 250.104(B)].

### **FINAL PLUMBING**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify the required gas line pressure tests. The test pressure to be used shall be no less than 1-1/2 times the proposed maximum working pressure, but not less than 3 psi, irrespective of design pressure. The test duration shall be a minimum of 10 minutes. [CPC 1214.3.2].
3. Verify the required combustion air vents are installed for gas fired water heaters installed in garages.
4. Verify the required platform is installed minimum 18 inches above the floor for appliances located in the garage.
5. Verify water service is provided and the water system under normal operating pressure. Water pressure in excess of 80 psi, requires the installation of an approved-type pressure-regulator preceded by an adequate strainer before entering the building. [CPC 608.2]
6. Verify all plumbing fixtures and faucets are installed and in normal working condition.
7. Verify shower enclosures are installed. Glass enclosures shall be safety glazing (tempered) and the shower door shall swing outward.
8. Verify curtain rods are provided for showers where enclosures are not installed.
9. Verify the sealing of all toilet bowl bases to floor surface.

## **FINAL MECHANICAL**

1. Verify that all previously required inspections are signed off. Inspector should verify if any corrections left from previous inspections need to be addressed at this time.
2. Verify gas appliance vent terminals are installed.
3. Verify gas appliance vents are connected. B vents are self-locking. Single wall vents require 3 metal screws at each connection.
4. Verify chimney and vent terminals are installed.
5. Verify the pilots, burners, or heating elements of appliances, water heater, FAU, washer, dryer, etc. which generate a spark, glow, or flame (gas or electric) to be installed in the garage provided will be a minimum of 18 inches above the finished floor level. [CMC Section 508.14]
6. Verify gas logs are permanently installed in fireplaces.
7. Verify fireplace dampers are permanently fixed in the open position per manufacturers specifications (gas appliances)