SECTION 6.5.1 - FIELD INSPECTION GUIDE
NEW SINGLE FAMILY DWELLINGS

INSPECTIONS

1. Rough plumb, sewer and water, point of connections……. (ROP)
2. Foundation……. (FO)
3. Raised Floor……. (RFL)
4. Floor Nailing…….(FLN)
5. Roof/Shear…… (RF/SH)
6. Felt & Bat…….(F&B)
7. Frame…….. (FR)
8. Insulation……. (INSUL)
9. Sheet-rock…….. (SR)
10. Gas Test……(GAS)
11. Shower pan & lath……(SHOW)
12. Final…… (FA)

1. Rough Plumb, sewer & water, Point of Connection (ROP)

- 1.1 Site Address shall be posted
- 1.2 Sewer Connection
  - 1.2.1 Piping is run straight and true with proper slope, ¼" per foot
  - 1.2.2 Proper fittings used for all connections
  - 1.2.3 Piping installed so inside of pipe does not provide obstructions to stop/obstruct flow
- 1.3 Water Connection
  - 1.3.1 Copper supply at house to have a minimum of 18" horizontal copper pipe before connecting to plastic
  - 1.3.2 Copper/plastic connection to be done with female copper/male plastic
  - 1.3.3 Piping to be run straight and true
  - 1.3.4 Min. burial depth of 12"
- 1.4 Underslab/Underfloor waste
  - 1.4.1 Proper slope - minimum 1/4" per foot
  - 1.4.2 Check size of pipe
  - 1.4.3 Check for leaks - system filled with water to 10'-0" water column
  - 1.4.4 Check clean out locations
  - 1.4.5 Check for main cleanout - outside of house, where line goes to main city sewer. Cleanout shall come to grade
  - 1.4.6 All piping wrapped where in contact with concrete
  - 1.4.7 Check for clean out at foot vent for island sinks
- 1.5 Underslab/Underfloor water
  - 1.5.1 Check piping for nicks, kinks, etc.
  - 1.5.2 All piping to be separated from each other
  - 1.5.3 All piping wrapped where in contact with concrete
  - 1.5.4 All piping under water pressure or 60 psi air pressure
  - 1.5.5 Anchored/strapped as required
  - 1.5.6 Type "L" copper under slab or other approved pipe
  - 1.5.7 No joints in copper piping under slab unless silver soldered

2. Foundation (FO)

- 2.1 Setbacks (front, rear, sides) String lines shall be pulled on property lines
- 2.2 Footings
  - 2.2.1 Check size
  - 2.2.2 Clean of dirt and debris
  - 2.2.3 Plastic vapor barrier down sides of footings, but not on bottom
  - 2.2.4 Proper sand base
  - 2.2.5 Correct location-verify with drawings
- 2.3 Holdowns/Rebar
  - 2.3.1 Holdowns in place, required size, proper location
  - 2.3.2 Rebar in place
    - 2.3.2.1 1 - #4 bar top and bottom all around or 1-#5 bar centered all around in footings
    - 2.3.2.2 Minimum 3" clear from earth
    - 2.3.2.3 Proper lap at splices - 40 times bar diameter

2.3.2.4 Wire mesh in place (if required)
2.3.2.5 Rebar in place as per design drawings if drawings are Engineered
2.3.2.6 Use of approved methods to support rebar.

2.4 Uffer Ground in place
2.5 All plumbing in contact with concrete to be wrapped.
2.6 Check for slab thickness. String lines to be pulled

3. Raised Floor Framing (RFL)

3.1 Min. 12" clear under beams
3.2 Min. 18" clear under floor joists
3.3 Mud sill to be pressure treated
3.4 Proper joist size & spacing & blocking
3.5 Proper spacing of interior supports
3.6 Provide min 1/2" clear around wood, at concrete beam pockets
3.7 All underfloor ductwork hung clear of earth
3.8 Location for underfloor access
3.9 Check for special nailing or strapping
3.10 Provide required ventilation on opposite walls (1:150)
3.11 Check for pier sizes and embedment into earth.

4. Floor Nailing

4.1 Min. nailing 6" o.c. edges and 12" o.c. field or as per design
4.2 Material & thickness as per design

5. Roof/Shear

5.1 Roof Nailing/Sheathing
5.1.1 Minimum nailing 6" o.c. edges/joints, 12" o.c. field or as required by design
5.1.2 Required nails or staples
5.1.3 Required sheathing. Check span index on sheathing or per design
5.1.4 All sheathing must span minimum of 3 supports
5.1.5 Check for required straps, drag truss nailing, special nailing requirements.
5.1.6 Space sheathing as per mfgs. recommendations

5.2 Shear –Note: On structures over 1 story in height the shear, straps, and bracing, required for the lower story, shall be in place prior to framing the next story.
5.2.1 Proper shear locations (exterior & interior walls)
5.2.2 Proper material used for shear panel
5.2.3 Proper nailing of shear panel
5.2.3.1 All edges nailed and blocked or as required by design
5.2.4 Verify proper type of holdown and anchor bolts as specified
5.2.5 All holdowns fastened in place & properly nailed, screwed, and/or bolted

5.3 Other Items
5.3.1 Check all anchor bolt spacing, sizes, nuts tightened
5.3.1.1 Minimum 1/2" diameter x 10" long with minimum 7" embedment w/ 3"x3"x0.229" washers.
5.3.1.2 Minimum 6'-0" o.c. & 1'-0" from corners, openings, and plate splices
5.3.2 Check for required strapping

5.3.3 Trusses clipped to top plate at exterior walls or as required by design
5.3.3.1 H2.5 (or equal) or as required by design
5.3.4 Check truss calculations for special requirements and lateral bracing and spacing. Check design drawings for special conditions. All lateral bracing must be braced down to upper or lower cord of truss.
5.3.5 Gable end truss bracing required if high point of truss is over 6'-0". Install lateral supports @ 4'-0" o.c. to strong back
5.3.6 Freeze blocking and vent blocking in place
5.3.7 Min. of 2 studs or 4x4 at all beam and girder truss bearing points or as per design. Double 2x4 shall be nailed a 12" o.c. staggered
5.3.8 All hangers and metal connectors of proper size and nailing/bolting

6. Felt & Bat

6.1 Proper lap on all roofing felts with min. 4" lap on vertical and 2" lap on horizontal joints, for roofs 4:12 or more pitch. See CBC Chapter 15 for more information.
6.2 All flashings in place, as required, and fastened properly
6.3 All valleys flashed properly
6.4 Bats installed, if required, and terminated properly at flashings
6.5 Roofing felts free of tears, rips and holes
6.6 Anti-ponding foam in place, if required
6.7 Proper overlap of felts on fascia boards
6.8 All primary flashings in place for roof penetrations

7. Framing

7.1 Roof Covering
7.1.1 Tile, asphalt shingles, etc. must be laid, or at a minimum, the roof must be loaded, prior to frame inspection being conducted
7.1.2 Install "Cool Roof" materials or use one of the approved alternates per the California Energy Code
7.2 Carpentry
7.2.1 All headers have full bearing
7.2.2 General framing and nailing. As required by CBC Chapter 23, "Fastening Schedule"
7.2.3 Proper nailing of trimmers
7.2.4 At 45° walls, both top plates should have full lap or have metal straps
7.2.5 Attic access - minimum 22" x 30" with min. 30" headroom
7.2.6 Roof covering to be installed (option - roof must be at least loaded with roofing materials)
7.2.7 STC clips @ interior walls to trusses @ 48" o.c. Trusses shall not bear on non-loadbearing walls
7.2.8 Trusses true and plumb
7.2.9 Check framing at all holes, penetrations, etc. to assure proper strength of member
7.2.10 Required backing at corners, top of wall, tub/showers, shower etc.
7.2.11 Check window sill height in bedrooms - maximum 44" for egress purposes
7.2.12 Verify bedroom window size to meet egress requirements

7.2.13 Areas behind tubs and showers are insulated
7.2.14 Exterior lath complete
7.2.14.1 Fasten @ 6" o.c.
7.2.14.2 Check for proper lap of paper and metal lath
7.2.14.3 Applied in shingle fashion on the wall to shed moisture
7.2.14.4 Two layers of grade ”D” paper over solid sheathing
7.2.15 Exterior rigid insulation is installed properly with all joints greater than 1/16" to be caulked and all penetrations caulked
7.2.16 All firestops in place
7.2.17 Soffit vents in place
7.2.18 Insulation attic baffles in place
7.2.19 Garage overhead door header to run wall to wall or be blocked and strapped
7.2.20 Tempered glass in windows if located less than 24" from door openings, or form part of tub/shower enclosure
7.2.21 Bottom plate to be pressure treated if in contact with concrete
7.2.22 Where top or bottom plates are notched for piping, etc. they shall by tied with a minimum 16 GA x 1½” strap with 6-10d x 1½” nails at each side of the notch. No nails shall be closer than 3” to the notch.
7.2.23 All mud sills shall be solid and securely anchored. Not split or broken
7.2.24 All exterior wall wood framing members resting on the foundation, shall have a minimum of 8” clearance to earth or be treated or decay resistant materials

7.3 Electrical
7.3.1 Bond metallic water and gas piping
7.3.2 Uffer ground connected to ground wire with approved clamp
7.3.3 Check wire sizes
7.3.3.1 Service entrance
7.3.3.2 Ground
7.3.4 Check wire clearances where wood is drilled. Nail plates installed if there is less than 1¼" from nearest edge of wood member to wire.
7.3.5 All ground wires are twisted and have crimp furrel or wire nut
7.3.6 Spacing and location of receptacles
7.3.7 Receptacle, light and switch in attic, if FAU located in attic, switch located adjacent to access
7.3.8 Minimum one exterior waterproof GFCI protected recepticle at front and back of house
7.3.9 Lighted house address at wall closest to street
7.3.10 Fasten wires
7.3.10.1 Maximum 8" from box - if wire not anchored at box. 12" from box if anchored at box
7.3.10.2 Every 4½' o.c. otherwise
7.3.11 Firewall penetrations
7.3.11.1 Wiring in a chase, min. 26 GA. G.I., by min. 30" long each side of firewall and fire caulked with approved materials.
7.3.11.2 High voltage and low voltage wiring in separate chase. Low voltage chase can be inside of high voltage chase.
7.3.12 Smoke alarm locations
7.3.13 Temporary power
7.3.13.1 Ground wire attached to uffer or ground rod

7.3.13.2 GFCI recpticle in place
7.3.13.3 20 amp breaker at panel

7.3.14 Exterior outlet for light fixture at all exterior doors

7.3.15 PVC conduit - Sch. 40, min. 18" cover
- Sch. 80, less than 18" cover and above grade

7.3.16 Separate 20 Amp. circuit for all bathroom receptacles. No other outlets on this circuit. Provide one GFCI protected receptacle adjacent to each sink

7.3.17 Min. of 2-20 Amp small appliance branch circuits serving kitchen, pantry, breakfast room and dining room. All kitchen receptacles which serve the countertop to be GFCI protected.

7.3.18 Provide a min. of one 20 Amp. circuit to the laundry. No other outlets shall be on this circuit

7.3.19 Provide AFCI circuits for all bedroom electrical outlets. Rule of thumb, maximum of 10 outlets on 15 amp circuit with #14 wire or 15 outlets on a 20 amp circuit with #12 wire

7.4 Mechanical

7.4.1 All HVAC boots blocked

7.4.2 All attic ducting hung to allow min. 10" clear to ceiling for insulation

7.4.3 All ducting routed without kinks

7.4.4 Thermostat wire run in separate holes from 110V

7.4.5 Condensate drains to exterior, tail piece of lavatory sink or bathtub or approved location with proper trap and vent

7.4.6 Condensate overflow to exterior at conspicuous location

7.4.7 If HVAC unit in attic, install the unit in a pan with drain to conspicuous location

7.4.8 Exhaust fans ducted properly and to exterior with approved termination

7.4.9 Dryer vent ducting to exterior as per code and city standard with proper termination. Do not connect sections with screws. Insulate if in non-conditioned space. Use proper transition fittings.

7.4.10 All ducting in unconditioned space to be insulated with min. R=4.2

7.4.11 Min. 2" clearance around HWH and/or FAU vent pipe to combustible materials

7.4.12 Provide 100 sq. in. make-up air for clothes dryer if installed in compartment or closet

7.4.13 Provide ventilation in laundry room, natural or mechanical

7.4.14 Provide a “Whole Building Ventilation” system per California Energy Code

7.4.15 Provide a minimum of 50 CFM bathroom exhaust and 100 CFM kitchen exhaust for local ventilation, per the California Energy Code

7.5 Plumbing

7.5.1 All DWV piping filled with water to overflow at roof (Top out test)

7.5.2 Check piping size, slope, proper fittings, workmanship

7.5.3 Horizontal vent piping in attic which elbows up through roof to be supported at elbow

7.5.4 All piping to be separated from each other

7.5.5 For testing purposes all water piping shall be filled with water @ city pressure or 50 psi air pressure

7.5.6 Support piping:

7.5.6.1	Steel	≤ 3/4"	every 10'-0"
		≥ 1"	every 12'-0"
7.5.6.2	Copper	≤ 1 1/2"	every 6'-0"
		≥ 2"	every 10'-0"

7.5.6.3 Plastic PVC or ABS - every 4'-0"

7.5.6.4 Aquapex - every 32"

7.5.7 All exterior and interior cleanouts flush or beyond face of wall

7.5.8 Min 18 GA. nail plates installed where any piping has less than 1" wood protection

7.5.9 Framing complete for whirlpool/spa tub access panel

7.5.10 PEX tubing shall not be installed within the first 18" of the hot water heater.

7.6 Energy Efficiency (as applicable)

7.6.1 Windows

7.6.2 Caulking/Sealing of bottom plate to slab

7.6.3 Caulking/Sealing of all plate penetrations into unconditioned space

7.6.4 Radiant heat barriers

7.6.5 Any special duct requirements

7.6.6 Verify any special energy requirements

8. Insulation

8.1 Roof Covering must by laid (Tile, Asphalt Shingles, etc.)

8.2 Proper "R" value min. R-13 walls, R-30 ceiling or as per design

8.3 Rough opening space at doors and windows insulated

8.4 Bottom exterior wall plate caulked at floor line at interior

8.5 All penetrations at plates into unconditioned spaces sealed/caulked

8.6 Attic baffles, at attic vent locations, in place, min. 48" long

8.7 Areas below attic platforms for FAU's shall be insulated

8.8 Areas behind tubs & showers are insulated

8.9 Insulation installed in good workmanship like manner

8.10 Check for special HVAC duct insulation requirements

9. Sheetrock

9.1 Required thickness – $^{5}/_{8}$" fire-rated at all required firewalls or separations:

9.1.1 Garage firewall – locate on garage side

9.1.2 At chimney fire stop

9.1.3 Under stairs

9.1.4 Other areas as required by design

9.2 1/2" other areas - or as per design

9.3 Fastening

9.3.1 Nails at 7" o.c. edges and field for horizontal layout, and 8" o.c. for vertical layout

9.3.2 Screws at 12" o.c. for horizontal & vertical layout

9.4 Installed in good workmanship like manner

9.5 Check for required sheetrock shear and required fastening

9.6 Check for outlet & smoke alarm locations

10. Gas Test

10.1 Air pressure @ 15 psi for 10 min. for threaded pipe connections

10.2 Air pressure @ 60 psi for 30 min. for welded pipe connections

11. Shower Pan & Lath

11.1 Pan Liner

11.1.1 Lay flat with corners folded properly

11.1.2 Drain in place and plugged

11.1.3 Filled with water to curb height

11.1.4 Pan liner up walls min. of curb height

11.2 Lath

11.2.1 Nailed at 6" o.c. at studs and perimeter

11.2.2 Nail or staple @ 6" o.c. other areas

11.2.3 All lath lapped min. 6" on vertical seams, 2" on horizontal seams

12. Final

12.1 Obtain insulation certificate

12.2 Obtain CF-6R form(s), and/or other applicable energy forms

12.3 Obtain HERS rater forms, if required

12.4 Exterior

12.4.1 All wood painted

12.4.2 All bare metal painted

12.4.3 Roof platform and ladder to roof mount A/C units with roofs greater than 4:12 pitch. Anchored & painted

12.4.4 All PVC pipe painted

12.4.5 Waterproof GFCI receptacle at front and rear of house

12.4.6 Anti-siphon on all hose bibs

12.4.7 Window screens in place

12.4.8 All exterior light fixtures in place and operational

12.4.9 Lighted address at closest wall to street. Min. 2" high letters on contrasting background

12.4.10 Door bell operational

12.4.11 All roofing complete & debris removed from roof

12.4.12 Proper size electrical breaker for A/C unit

12.4.13 Electrical and mechanical supplies to A/C unit are sealed where they penetrate exterior wall

12.4.14 Exterior doors weather stripped with sweep

12.4.15 Grading complete, min. 2% slope for 5'-0" away from house. Site sloped with drainage to street or approved drainage facility.

12.4.16 Concrete pad at all exterior doors, min. 36" x 36"

12.4.17 Dryer, range hood and bathroom exhaust fan terminations in place and unobstructed

12.4.18 All penetrations of exterior wall caulked

12.4.19 Stucco/siding completed

12.4.20 All plumbing cleanouts terminate at face of stucco/siding, etc. and caulked

12.4.21 All roof jacks painted
12.4.22 All exterior ceiling fans rated for exterior use
12.4.23 Entrance panel labeled, remove dead front and verify wire size to breaker rating. All clipped breakers to be done with approved clip.
12.4.24 Uffer ground accessible
12.4.25 A/C units are secured to concrete pad or roof frame
12.4.26 Electric garage door opener functions properly for automatic reverse
12.4.27 Clearance from grade to exterior wall covering:
12.4.27.1 From wood siding, min. 6"
12.4.27.2 From wood framing members, min. 8" (or treated or decay resistant)
12.4.27.3 From stucco min. 4"
12.4.28 Water meter installed and approved by Public Works. Obtain inspection tag.

12.5 Interior

12.5.1 Electrical
12.5.1.1 All recessed light fixtures to be IC rated
12.5.1.2 Lighting fixtures and switching shall comply with the current edition of the California Energy Code
12.5.1.3 GFCI protected circuits at exterior receptacles, bathrooms, kitchen counter, whirlpools, garages, (except dedicated circuits for freezers, refrigerators, landscape timer or FAU.)
12.5.1.4 Arc-Fault Circuit Interrupter shall be installed for all outlets located in bedrooms.
12.5.1.5 All smoke alarms in place, operational, interconnected and with battery back-up.
12.5.1.6 Kitchen, Pantry, Breakfast/Dining Room served by a min. of two 20 Amp appliance circuits
12.5.1.7 Receptacle spacing at kitchen countertops (max. 4'-0" o.c.)
12.5.1.8 Check for spacing for other receptacles
12.5.1.9 Closet lighting–12" clear to incandescent from shelf, 6" clear from recessed incandescent or fluorescent
12.5.1.10 Check all receptacles for proper wiring
12.5.1.11 Each room shall have a switch operated light or receptacle
12.5.1.12 Garbage disposal operational

12.5.2 Mechanical
12.5.2.1 Check range hood for back draft damper & ducting
12.5.2.2 Check bathrooms & laundry rooms for exhaust fans (if required)
12.5.2.3 HVAC units connected & operational
12.5.2.4 All register covers in place

12.5.3 Plumbing
12.5.3.1 HWH
12.5.3.1.1 T & P hard piped to exterior
12.5.3.1.2 Seismic strapped using min. ¾" wd. x 16 ga. strap with ¼" dia. X 2" long lag bolts with washers into stud
12.5.3.1.3 First 5'-0" of exposed piping from HWH insulated
12.5.3.1.4 If in garage, support on min. 18" high platform
12.5.3.1.5 If located in an area susceptible to damage provide protection

12.5.3.1.6 If in attic, install drip pan with drain to exterior at a conspicuous location
12.5.3.1.7 Single wall vent piping in exposed areas only with all joints screwed
12.5.3.1.8 Type "B" vent in concealed spaces and attic
12.5.3.1.9 If HWH is enclosed in a closet provide min. 100 sq. inches combustion air high and low

12.5.3.2 Whirlpool tub access panel provided
12.5.3.3 Gas piping in fireplace box to be sealed with fire caulk
12.5.3.4 Garbage disposal operational
12.5.3.5 Toilets flush properly. Max 1.6 gal. per flush
12.5.3.6 All cleanouts which penetrate walls are caulked
12.5.3.7 Check all "P" traps for leaks
12.5.3.8 Caulk all the following: shower goosenecks at wall line, tub/shower enclosures, tub to floor, toilet base to floor, vanity sinks

12.5.4 General

12.5.4.1 Firewall penetrations fire caulked, etc.
12.5.4.2 Fire door between garage/house to be min 1 3/8" solid core, tight fitting, or 20 min. U.L. rated, self closing with sweep
12.5.4.3 Fireplace to have tight fitting glass or metal doors
12.5.4.4 Stair rise/run
12.5.4.5 Bedroom egress windows max 44" sill height with proper window size. Min. 20" wide or 24" high with net clear area of 5.7 SF
12.5.4.6 Verify CF-1R and CF-6R forms

13. Misc.

13.1 Burial Depths

13.1.1 Gas piping, minimum 12" cover for steel, 18" cover for plastic
13.1.2 Electrical
13.1.2.1 Rigid non-metallic conduit, minimum 18" cover
13.1.2.2 Direct burial cables, minimum 24" cover
13.1.2.3 Other conditions, see California Electrical Code
13.1.3 Water supply, min. 12” cover
13.1.4 Sewer, min. 12” cover

14. REVISION DATE: July 1998
12-18-2002 (2001 codes)
04-12-2010

(END OF SECTION 6.5.1)