

## 2006 INTERNATIONAL RESIDENTIAL CODE Building Code Plan Review Checklist

### CONSTRUCTION DOCUMENTS MINIMUM DESIGN GUIDELINES

TABLE R301.2 (1) amended

#### CLIMATIC AND GEOGRAPHIC DESIGN CRITERIA

ROOF SNOW LOAD	WIND	SEISMIC DESIGN CATEGORY <sup>f,g</sup>	SUBJECT TO DAMAGE FROM				WINTER DESIGN TEMP <sup>i</sup>	FLOOD HAZARDS <sup>h</sup>
			Weathering <sup>a</sup>	Frost line depth <sup>b</sup>	Termite <sup>c</sup>	Decay <sup>d</sup>		
0	90 Exposure C	C	Negligible	Final Grade	Moderate to heavy	None to slight	34 degrees	

#### BUILDING CODE DESIGN DATA

All construction within Scottsdale shall comply with the following codes and amendments per their adopting ordinances:

- 2006 International Building Code (ord. # 3735 )
- 2006 International Residential Code (ord. # 3744 )

#### **APPLICANT: Correct plans where the following items have been checked.**

- Provide Civil Site plan.
- Refer to plan set for red lines. Correct plans as marked or submit equivalent alternate corrections.
- IRC sections indicated are for your convenience in detailing code requirements.
- Do not quote code IRC Sections in lieu of providing plan set notes and revised details.
- IMPORTANT:** Please return all documents indicated on the Resubmittal Checklist.
- Plan set is incomplete. Next submittal may require additional review(s).
- Plans must be readable and to "scale".
- Specification books on Single Family Plan checks are not acceptable.
- Place all required notes on the drawings.
- Provide a True North Arrow and an Orientation North Arrow on site plans and floor plans.



## 2006 INTERNATIONAL RESIDENTIAL CODE

### Building Code Plan Review Checklist

#### A. Standard Plans

1. Provide a soils report and a compaction tests for the subdivision.
2. Per the soils report provide over-excavation and / or re-compaction for foundations and slabs on grade.
3. Place the following notes in **bold type** on the foundation plan and floor plan sheets:
  - a. This standard plan is not approved for locations within 5 feet of an adjacent property line. (NOTE: Zoning setbacks or Design Review Board stipulations may be more restrictive.) (R302.1)
  - b. Projections shall not extend more than 12" into the areas where openings are prohibited.
  - c. Overhangs and projections within 3' of the property line shall be of one-hour fire resistive construction.
  - d. Eaves over required bedroom egress windows shall not be within 30" of the side and rear property lines.
4. Provide a continuous 3' wide path of travel from all bedroom egress windows to a public way.
5. Show minimum allowable dimensions from stem wall to property lines on foundation plan.
6. Remove all parcel/lot specific information from plan set. (i.e. site plan).
7. The cover sheet must have key plans drawn to scale indicating each possible combination of footprint options with corresponding building ridge lines to ensure conformance with varying lot configurations.

#### B. Additions/ Alterations/ Remodels

1. Provide scope of work.
2. Provide separate existing and demolition plans.
3. Clearly identify throughout, existing vs. new vs. remodeled area.
4. Complete and return fire sprinkler worksheet. [Link](#).
5. Address smoke detectors throughout house with additions/alterations/remodels.(R313.2.1).

#### C. Site Plan

1. Provide a complete civil grading and drainage site plan. (R302.1).
2. Provide a complete project address
3. Show location of structure(s) with set back dimensions on civil site plan. (R302.1).
4. Provide lineal footage of fences and retaining walls.
5. Show location of all fences and retaining walls on site plan.

6. Reference on site plan, structural details for each retaining wall and fence.
7. Provide structural calculations for retaining walls. City of Scottsdale, Administrative Policy 96-6.
8. Show sewer tap location at street.
9. Show and identify next upstream manhole rim location and elevation, address backwater valve. (IRC P3008.1).
10. If septic system, provide copy of septic system permit application from Maricopa County.
11. Provide minimum 3-foot wide, minimum 60-inch high, out-swinging, self-closing gate. (AG103.1).
12. Provide 36" guardrails at change in elevations that are greater than 30" (R312).

#### D. GREEN BUILDING

1. Provide a separate plan sheet listing the minimum 28 "green" building requirements and the options selected from the 300 available. Include the points permitted for each selection and a total summary (minimum 50 points for entry level and 100 points for advanced level)
2. Include the "green" building requirements in the plan design, notes and details, (i.e. carbon monoxide detectors locations and 1.3 or less gal/flush or dual-flush toilets, etc).
3. Provide the most current Testing or Evaluation Report for the Building Product(s), i.e. Rastra, Eco-block, Tech-Block, Etc.
4. Incorporate Designs, Details, Instructions and Requirements from the Evaluation Report(s) onto the plans and reference where applicable.
5. Complete REScheck for each house.
6. Place the following note in large text on the Plan Sheets (Floor, Foundation, Roof Framing):

NOTE: To maintain "Green Building" status, separate "Green Building" inspections are required prior to covering work.



## E. Floor plans

### a) Doors and Windows

1. Provide a solid...self-closing, self-latching door between residence and garage. (R309.1 *amend.*).
2. Provide landing on outside of exterior doors. (R311.4.3 *amended.*)
3. Doors shall not open directly between a sleeping room and a garage. (R309.1).
4. Shower doors shall have safety glazing and shall swing out. (R308.4).
5. Provide and identify all required safety glazing. (R308).
6. Indicate emergency escape and rescue openings in basements and bedrooms. (R310.1).
7. Show direction of door swing. (R311.4.3 *amended.*)
8. Show size of each window and type of operation. (R303.1, 310.2).
9. Show type of structural silicone for butt-glazed windows. (Interpretation 98-11).
10. 15% glazing or less provide U-factor 0.60 and Solar Heat Gain Coefficient (SHGC) 0.40
11. 25% glazing or less provide U-factor 0.45 and SHGC 0.40
12. Opaque doors separating conditioned and unconditioned space shall a maximum U-factor 0.35

### b) Light and Ventilation

1. Provide required natural light and ventilation for habitable rooms (R303.1).
2. Provide mechanical exhaust ventilation for bathrooms, water closet rooms, laundry room, and kitchen, ducted direct to outside. (R303.2 *amended*, M1506, Table 1506.3).
3. Provide attic ventilation per (R806.1) unless insulation is applied on the under-side of roof sheathing. (R806.4).

### c) Stairways, handrails, guardrails

1. Show handrail, notes and dimensions where required (R311.5.6-311.5.6.3).
2. Show guardrails where required. (R312.1, .2).
3. Provide a floor or landing at the top and bottom of each stairway. (R311.5.4).
4. Provide code complying stairways; address tread and riser dimensions per type of stairway. (R311.5).
5. Provide stairway illumination per (R303.6)

### d) Fire Places/Gas Appliances

1. Provide manufacture, model number and ICC report or equal for each fireplace. (R1002, 1004, 1005).
2. Provide a permanently installed approved gas log set. (R1004.4).

3. Decorative shrouds shall not be installed at the termination of chimneys of factory-built fireplaces except where listed and labeled for such use. (R1004.3)
4. Provide outside combustion air for fireplaces located in bedrooms. (R1005.1.1).

### e) Mechanical Equipment

1. Show mechanical equipment and water heaters on 18-inch platform if placed in garage or room with direct access to garage. (M1307.3).
2. Provide combustion air and show hi and low vent sizes for gas fuel appliances located in *confined* spaces. (M1702.2, M1703.2 *amnd.*)
3. Provide and reference approved detail for gas piping to gas island cooktop.
4. Provide kitchen exhaust fan vented direct to outside. (M1505.1, Table 1507.3)
5. Provide minimum 78% AFUE (Annual Fuel Utilization Efficiency) for gas heating equipment.
6. Provide minimum 13 SEER (Seasonal Energy Efficiency Ratio) for air conditioning equipment.
7. Supply and return ducts shall be insulated to a minimum **R-8**. Ducts in floor trusses shall be insulated to minimum R-6. (N1103.2.1).

### e) General Floor Plan

1. Show ceiling heights for all rooms, spaces and hallways. (R305).
2. Show minimum clearances from centerline of water closets to finished wall, cabinets, and other plumbing fixtures. (IRC R307.1)
3. Gypsum Board applied to a ceiling shall be 1/2" when framing members are 16" o.c. or **5/8"** when framing members are **24" o.c.** or use labeled **1/2" sag-resistant gypsum ceiling board**. Table R702.3.5 (d).

### f) Energy/Insulation Requirements

1. Complete and return REScheck or equal report. N1101.2. Compliance shall be demonstrated by a passing score at least 15% above the IECC.
2. **For additions and remodels only:**
  - a. Walls with 15% glazing or less require minimum R-30 ceilings, R-13 walls.
  - b. Walls with 16% to 25% glazing or less require minimum R-38 ceilings, R-19 walls.

### g) Manufacturers' Installation Instructions

1. Manufacturer's installation instructions, as required by this code, shall be available on the job site at the time of inspection (R106.1.2)
2. RANGES AND COOKTOPS: Show note on plans.  
-Provide a listed and approved range and/or cooktop unit installed in accordance with the listing and with the manufacturer's installation instructions. VERIFY AND MAINTAIN REQUIRED HORIZONTAL AND VERTICAL CLEARANCES ABOVE THE FINISHED COUNTERTOP SURFACE BEFORE ORDERING OR INSTALLING CABINETS-

### F. Braced/Shearwall Plan

1. Provide a complete braced/shear wall plan and reference a braced /shear wall schedule at each braced/shear wall location. (R602.10).
2. Braced/Shear wall schedule to include anchor bolts, holdowns, studs and spacing, sheathing and nailing. (Table 602.3(1)), (R403.1.6, 403.1.6.1).
3. Address 'alternate braced wall panels' per (R602.10.6).
4. Coordinate post locations with holdowns on foundation plan. (R602.11.1).
5. Show and identify each required holdown on foundation plan.
6. Provide Wood-Stud wall Engineering Analysis For Bearing Walls Over 10 Feet High Per IRC Table R602.3 (5).

### G. Elevation Plan

1. Provide minimum of four elevation drawings of building, typical front, back, left, right.
2. Show building heights and dimensions.
3. Show and label all exterior building materials. (R703).
4. Show manufacture, model number and ICBO/ICC/NER Report Number for stucco, roof materials, stone veneer. (R703.7).
5. Show weepscreed with notes or detail at typical exterior wall and at stone veneer locations. (R703.6.2.1).
6. Provide weather flashing/proofing and exterior wall penetrations/openings. (R703.1, 703.2, 703.8).
7. Label all safety/Temp glazing on each elevation. (R308).

### H. Sections

1. Provide minimum two building cross sections.
2. Cut cross-sections on foundation, floor and roof framing plans.
3. Foam plastics shall be separated from attics and crawl spaces per R314.2.3.
4. Show required fire blocking on each section. (R602.8).

5. Show height dimensions on each section.
6. Label all rooms, spaces, and hallways on each section.
7. Provide and reference/key structural details for critical connections for cross-sections.

### I. Wall Construction

1. Provide a cross section detail and wall legend for each type of wall.
2. Callout exterior materials, including, stucco system, lath, building paper, foam, and sheathing where required. (R703).
3. Specify on plans, interior wall materials. (R702).
4. Specify on plans, interior wall construction, coverings, and backings for tile and in wet locations. (R702.1).
5. Provide weepscreed and dimensions from soil and paved surfaces. (R703.6.2.1).
6. Provide nailing schedule. (R602.3 (1)).

### J. Foundation Plan

1. For single-family custom submittal, provide a soils report or a soils waiver signed by owner.
2. Provide a complete fully dimensioned and detailed foundation plan.
3. Address foundation drainage per (R405.1).
4. Address foundation damp proofing (R406.1)
5. Show isolated footing dimensions, and reinforcing. (Table R403.1 amended).
6. Show note: Exterior and interior footings shall bear minimum 18 inches below undisturbed soil or engineers certified compacted fill. (Table R 403.1).
7. Show required reinforcing steel for all footings and stem. (R 403.1.3.1).
8. Reference a complete set of structural details, footing, stem, turndown, pad footing, post at stem...
9. Clearly show, dimension and detail interior bearing footings and shearwall footings.
10. Clearly show each required post location on foundation plan, coordinate with shearwall and roof framing plans.
11. Clearly show and label each required holdown on foundation plan. (R403.1.6).
12. Show and detail building retaining walls and basement and foundation walls, including drainage. (R 405.1)
13. Provide any/all slab elevations.

### K. Floor and Roof Framing Plans

1. Provide a complete fully detailed floor and/or roof-framing plan. (R106 amended).
2. Clearly identify all framing members, including posts/columns, headers, beams, joists, and trusses. (R106 amended).
3. Clearly show each required post and size, coordinate with foundation plan.
4. Show and identify posts from above framing.
5. Show floor-to-floor tie, mechanical connectors.
6. Clearly show and identify all truss/joist hangers.
7. Clearly show and identify beam to post mechanical connectors.
8. Clearly show and key detail reference(s) for each beam to post, beam-to-beam, and girder to beam connections.
9. Detail typical truss/joist to wall, beam, and girder connections.
10. Locate and **key each truss** on roof/floor framing plan per truss manufacturer layout sheet.
11. If pre-qualifying conditions are met, **deferred submittals** for truss design drawing may be allowed per (R802.10.1.1 amended).
12. Show lateral full height blocking at braced/shear wall line for joists, rafters and trusses.
13. Framing details shall reflect types of framing members, trusses flat and sloped, I-joists, dimension lumber rafters...
14. Show stair mechanical attachment at top and bottom.
15. Framing members to accommodate masonry fireplace clearances to combustibles. (Table R1001.1).
16. Provide seismic strap per (R1003.4.1).
17. Framing members to accommodate mechanical equipment requirements if installed in attic.

### L. Structural Calculations

1. Provide the following structural engineering calculations:
  - a. Gravity loads analysis.
  - b. Lateral loads analysis.
  - c. Retaining wall calculations per policy #96-6.
  - d. Provide special inspections per (IBC Ch. 17).

### M. Masonry Construction

1. General Masonry Construction (R606)
2. Glass Block Masonry (R610)
3. Insulating Concrete Form (R611)
4. Adobe Block Construction.

### N. Electrical Plan

1. Provide a complete Electrical Plan. (R106 amended).
2. Provide fully noted plan showing, all required receptacles, light fixtures, switches, exhaust fans, smoke detectors, service panels and sub-panels. (E3603, E3603.2 amended, E3801.1, E3802).
3. Provide notes and symbols legend.
4. Show and label all required **GFCI** and **WP/GFCI** receptacles. (E3802.8, .9).
5. Show and label all required **AFCI** outlets in bedrooms. (E3802.12).
6. Show and label all **WP/DP** lighting fixtures as SUITABLE FOR WET OR DAMP LOCATIONS accordingly. (E3903.8).
7. Show and label all smoke alarms. (R313.1 *amended*).
8. Provide **IC** rated recessed light fixtures installed in insulated ceilings. (N1102.4.3)
9. Provide a UFER ground encased in concrete footing. (E3508.1.2).
10. For Electrical Services greater than 400 amps, PROVIDE ELECTRICAL LOAD CALCULATIONS.
11. Provide electrical load calculations for the service and each sub-service panel for service over 400 amp.
12. Provide an ELECTRICAL SINGLE LINE DIAGRAM for Services 200 amps and larger.

### O. Plumbing Plan

1. Provide a single line gas-piping diagram; include all gas burning appliances and BTUs of each appliance, show pipe *lengths* and sizes from gas meter to each branch line and to each appliance. (IRC G2413 (402).
2. Show type of gas piping. (IRC G2415.11).
3. Do not place gas piping under slab. (IRC G2415.11).
4. Provide approved detail for gas piping to kitchen island gas cook top. (IRC G2415.11)
5. Show all sewer piping materials. (IRC Table P3002.2)
6. Provide low flow plumbing fixtures. (IRC P3002.2).
7. Provide roof drains and over-flow/scuppers per R903.4, .1

### P. Fire Sprinklers

1. Provide fire sprinklers per (R325. *amended*).





## REQUIRED RESIDENTIAL NOTES

*The following notes shall be incorporated into the plans. If these notes are reproduced on the plans as a block, it will facilitate the review of the project. The notes are available and can be downloaded from <http://www.scottsdaleaz.gov/Assets/documents/bldgresources/2006+IRC+Plan+Review+Checklist.pdf>*

## PLACE THE FOLLOWING REQUIRED NOTES ON THE DRAWING

2006 International Residential Code	(Ordinance 3744)
2006 International Building Code	(Ordinance 3735)

1. All products listed by ICC/N.E.R. number(s) shall be installed per the report and manufacturer's written instructions. Product substitution(s) for product(s) listed shall also have an ICC approved evaluation report(s) or be approved.
2. Exterior wall, bottom sill plates, shall be pressure treated or equal, and shall bear/extend minimum 6 inches above finish grade. (R319.1).
3. Provide fire protection sprinkler system. (R903.2 as Amd.).
4. Miscellaneous site structures, pools, spas, fences, site walls, retaining walls, and gas storage tanks require separate permits.
5. All exits to be operable from the inside without the use of a key or special knowledge.
6. Doors leading into house from garage shall be self-closing, self-latching. (R309.1 *Amd.*).
7. Exterior wall penetrations by pipes, ducts or conduits shall be caulked. (R307.6)
8. Provide roof attic ventilation unless insulation is applied directly to underside of roof sheathing or the dimension is 24 inches or less between the ceiling and bottom of roof sheathing. (R806.1 *Amd.*)
9. Energy compliance shall be demonstrated by passing REScheck energy compliance software with a score at least 15% above the IECC (N1101.2 amended).
10. Lumber shall bear an approved grading stamp (R502.1).
11. Provide engineered truss designs for all prefabricated trusses for review and approval by the City of Scottsdale. (R802.10.1).
12. Fire blocking shall comply with (R602.8).
13. Windows located more than 72" above finished grade shall have the lowest part of clear opening of the window to be minimum 24 inches above the floor in which it serves. (R613.2).
14. Gypsum board applied to a ceiling shall be 1/2" when framing members are 16" o.c. or 5/8" when framing members are 24" o.c. or use labeled **1/2" sag-resistant gypsum ceiling board**. Table R702.3.5 (d).
15. Showers and tub-shower combinations shall be provided with individual control valves of the pressure balance or thermostatic mixing valve type. (P2708.3).
16. Shower area walls shall be finished with a smooth, hard non-absorbent surface, such as ceramic tile, to a height of not less than 72 inches above the drain inlet. **Water-resistant gypsum board** shall not be installed over a vapor retarder in a shower or tub compartment. Cement, fiber-cement or glass mat gypsum backers installed in accordance with mfgs' recommendations shall be used as backers for wall tile in tub and shower areas and wall panels in shower areas (R702.4.2).
17. Plumbing fixtures shall comply with the following conservation requirements: Table P2903.2. Water closets-Tank type 1.6 gal. /flush. Shower heads- 2.5 gal. /minute. Faucets- 2.2 gal. /minute, provide aerator.
18. Water treatment systems- shall be equipped with an automatic shutoff to prevent continuous flow when not in use.
19. Domestic dishwashing machines connected to a disposer shall have the discharge installed as high as possible. (P2717.3).
20. Hot water recirculation pumps. Provide a **hot water demand controlled recirculation pump** for water heaters located more than 20 feet from furthest fixture served. A manual control or occupant sensor switch shall operate the pump with an automatic temperature sensor shut-off (M2005.5 amended).

21. **Supply and return ducts** shall be insulated to a minimum **R-8**. Ducts in floor trusses shall be insulated to minimum R-6. (N1103.2.1).
22. Registers, diffusers and grilles shall be mechanically fastened to rigid supports or structural members on at least two opposite sides in addition to being connected to the ductwork they serve.
23. The clothes dryer shall be provided with a 4-inch diameter exhaust duct to the exterior and shall not exceed a total length of 25 feet, unless an engineered duct system is provided. (M1501.3) The duct shall terminate not less than 3 feet from a property line or from openings into a building.
24. Exhaust air from kitchens, bathrooms and toilet rooms shall not be re-circulated within a residence or to another dwelling unit and shall be exhausted directly to the outdoors. Exhaust air from kitchens, bathrooms and toilet rooms shall not discharge into an attic, crawl space or other areas inside the building. M1506.2.
25. Provide **IC**-rated recessed light fixtures installed in insulated ceilings. (N1102.4.3).
26. Fixtures located in damp or wet locations shall be "listed" to be suitable for such location. (E3903.8)
27. Provide **GFCI** protection for receptacles within 6' of all lavatories, sinks and basins. (E3802.7).
28. Provide **GFCI** protected receptacles at all exterior, bathroom and garage locations. (E3802.1, .2).
29. Provide a wall mounted **GFCI** protected receptacle outlet within 36" of a bathroom or powder room lavatory. (E3801.6).
30. All 125-volt branch circuits... in bedrooms shall be protected by a listed **AFCI** (E3802.12).
31. Provide a switch for the stairway when there are 6 or more risers. (R303.6.1).
32. Receptacle outlets shall be installed so that no point along the floor line in any wall space is more than 6 feet, measured horizontally, from an outlet in that space, including any wall space 2 feet or more in width. (E3502.2).
33. Provide a minimum of two 20-amp small appliance branch circuits for the kitchen/dining/breakfast.
34. The two or more 20-ampere small appliance branch circuits shall have no other outlets, except the receptacle installed solely for electric supply to an electrical clock in the kitchen/dining/breakfast areas or receptacles for supplemental equipment and lighting for gas-fired ranges, ovens, or counter-mounted units. (E3603.2).
35. Receptacle outlets for ranges and clothes dryers shall be a 3-pole with ground type. Four-wire, grounding-type flexible cords will be required for connection of ranges and clothes dryers. The bonding jumper shall not be connected between the neutral terminal and the frame of the appliance. Flexible cords shall be used only where the...flexible cord supplying an appliance shall terminate in a grounding-type attachment plug. (E4001.3.)
36. Provide a concrete encased grounding electrode of not less than 20 feet of #4 bare copper (200 ampere service). (E3508.1, .2).
37. Provide bonding to the water piping, gas and metal building systems. (Minimum #4 for 200-amp service). (E3503.1).
38. All metal piping systems, metal parts of electrical equipment, and pump motors associated with the hydro massage tub shall be bonded together using a copper bonding jumper, insulated, covered, or bare, not smaller than No. 8 solid. Metal parts of listed equipment incorporating an approved system of double insulation and providing a means for grounding internal non-accessible, non-current-carrying metal parts shall not be bonded. (E4104.2, .4).
39. R607.2.1 Masonry Bed and head joints...shall be 3/8 inch-thick, the thickness of the bed joint of the starting course placed over foundations shall not be less than 1/4 inch and not more than 3/4 inch. Mortar joint thickness shall be within the following tolerances from the specified dimensions: 1. Bed joint: + 1/8 inch. 2. Head joint: 1/4 inch + 3/8 inch. 3. Collar joints: 1/4 inch + 3/8 inch.
40. Provide combustion air to all fireplaces at all locations with air intake located at an elevation no higher than the firebox. (R1006.1)