

# TOWN OF CAREFREE PLAN REVIEW COMMENT LETTER

2003 International Residential Code  
1994 UPC w/State amendments

DATE:	SUBMITTAL:	LOG #:	PLANS EXAMINER
BUILDER:		STANDARD PLAN #:	
ELEVATIONS:		MAXIMUM SQUARE FOOTAGE TOTAL:	

GROUND SNOW LOAD	WIND Speed (mph)	SEISMIC DESIGN CATEGORY	SUBJECT TO DAMAGE FROM			WINTER DESIGN TEMP.	FLOOD HAZARDS	AIR FREEZING INDEX	MEAN ANNUAL TEMP.	
			Weathering	Frost line depth	Termites					Debris
-0-	90	B	Negligible	12"	Moderate to Heavy	None to Slight	32° F	Jurisdiction specific	-0-	71.2

Plan review for code compliance for the above referenced project has been completed. The following comments are standard items required by adopted codes by the jurisdiction and must be resolved before a building permit can be issued to commence construction. The items listed shall not be construed as being all-inclusive. Please contact the Plans Examiner if you have any questions regarding the following comments or need clarification on the plan submittal process. In order to expedite your plan approval, please submit the following after all comments have been addressed:

- TWO new sets of corrected plans and TWO new sets of applicable calculations and the previously reviewed plans and calculations.
- Provide either a detailed response to the plan reviewer's comments or **indicate the corrected sheet number in the area provided at the end of every plan review comment.**

## GENERAL

- |                      |   |                          |                               |
|----------------------|---|--------------------------|-------------------------------|
| [ ] Sheet #<br>_____ | 1. Provide one set of complete plans, a minimum plan size of 24" x 36" and a maximum plan size of 30" x 42". No loose sheets shall be attached, but structural calculations, energy calculations and manufacturer's cut sheets may accompany plans. The plans should be drawn to a preferred scale of 1/4" = 1'0". However, an alternate scale of 3/16" = 1'0" may be accepted. Indicate the drawing scale. | IRC Section:<br>R106     | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 2. Provide a square footage summary for each of the following: livable, garage, covered patios and porches, accessory buildings, decks, bay windows, media center (minus fireplace). All options must be clearly identified.  | IRC Section:<br>R108.3   | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 3. All options shall be clearly referenced and detailed. Complex options may require a separate plan sheet for clarity.   | IRC Section:<br>R106.1.1 | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 4. Provide a legible 8 1/2" x 11" floor plan of the house. Clearly identify all options. All major dimensions shall be provided and legible.  | IRC Section:<br>R108     | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 5. Provide truss calculations for review, or request a truss design waiver complete the waiver and return to the building department for review and approval. The truss design waiver is only a option if the construction documents are design by a registered professional licensed in the State of Arizona.  |                          | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 6. PROVIDE NOTE: A 125-volt, 15-ampere receptacle shall be installed in an accessible location under each bathroom lavatory and kitchen sink to allow for the operation of a point-of-service hot water recirculating pump. All hot water lines shall be completely insulated with a minimum of R-4 insulation.   | IRC R306.4               | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 7. PROVIDE NOTE: A residential fire sprinkler system is required on all new single family residents, and when additions, alterations or repairs within a twelve month period exceed fifty (50) percent of the value of an existing building or structure, such building or structure shall be made to conform to the requirements for new buildings or structure.   |                          | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 8. PROVIDE NOTE: Builders providing landscaping to residences shall install an approved vacuum breaker and if the sprinkler system has an automatic timer, an additional approved circuit breaker shall be installed by time of final inspection.   |                          | Corrected Sheet<br>#<br>_____ |

## CONVENTIONAL FOUNDATION

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|----------------------|--|--------------------------|-------------------------------|
| [ ] Sheet #<br>_____ | 9. Footing details (interior and exterior) shall be located on the foundation sheet or the detail sheet and shall be cross-referenced to the foundation plans. Specify depth and size of all footings and pads. Specify dimensions to locations of pads. | IRC Section:<br>R403     | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 10. PROVIDE NOTE: All plates (interior and exterior, load bearing and non-load bearing) shall be pressure treated or foundation grade redwood.   | IRC Section:<br>R403.1.6 | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 11. Wood columns shall be approved wood of natural decay resistance or approved pressure preservative treated wood or be supported by piers or metal pedestals projecting 1 inch above the floor and separated by an impervious moisture barrier.        | IRC Section:<br>R319.1.4 | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 12. PROVIDE NOTE: Footings shall be supported on undisturbed natural soils or engineered approved fill.  | IRC Section:<br>R403.1   | Corrected Sheet<br>#<br>_____ |
| [ ] Sheet #<br>_____ | 13. Required holddowns, as specified on lateral design or as required for all alternate braced wall panels, shall be shown on the foundation plan OR provide a separate shear wall plan.   | IRC Section:<br>R403.1.6 | Corrected Sheet<br>#<br>_____ |

[ ] Sheet # _____	14. Provide note to address alternatives approved for field use when holddowns shown on plans are missed or erroneous placement. Add note: "Special Inspection will be required for the epoxy used for these alternatives."	IRC Section: R301	Corrected Sheet # _____
[ ] Sheet # _____	15. Appliances located in a garage or carport shall be protected from impact by automobiles. Protection shall be provided by one of the following: a) Located out of the normal path of vehicular travel b) A minimum 3-1/2" high x 3' deep curb or raised floor measured from the face of the appliance; c) A minimum 3" steel pipe bollard installed 18" below and 44" above the finished floor in front of the appliance d) Alcove; e) A minimum 2"x4" full height framed wall with 16" o.c. stud spacing, sheathed with 1/2" gypsum board each side, located to protect the appliance.	IRC Section: M1307.3.1 M.A.G.	Corrected Sheet # _____
[ ] Sheet # _____	16. There shall be a floor or landing on each side of each exterior door. The width of the landing shall not be less than the door served with a minimum dimension of 36" measured in the direction of travel.	IRC Section: R311.4.3	Corrected Sheet # _____
[ ] Sheet # _____	17. Garage floor surface used for parking of vehicles shall be sloped to facilitate the movement of liquids to a drain or toward the main vehicle entry doorway.	IRC Section: R309.3	Corrected Sheet # _____

**POST-TENSION FOUNDATION**

[ ] Sheet # _____	18. Identify each tendon by number, with length and elongation range listed. All intersections of slab tendons shall be secured with tie wire or other means (such as snap chairs) to prevent displacement during placement of concrete. Reinforcement for plumbing boxes shall be clearly defined. Reinforcement for penetrations in the anchor zone shall be clearly defined.	Post-Tension Round Table Committee Recommend	Corrected Sheet # _____
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**FLOOR PLAN**

[ ] Sheet # _____	19. Label and dimension all rooms and spaces. Include ceiling height.	IRC Sections: R304 R305	Corrected Sheet # _____
[ ] Sheet # _____	20. The minimum width of a hallway shall not be less than 3'.	IRC Section: R311.3	Corrected Sheet # _____
[ ] Sheet # _____	21. An attic access opening shall be provided to attic areas that exceed 30 square feet and have a vertical height of 30" or greater. The rough-framed opening shall not be less than 22" by 30" and shall be located in a hallway or other readily accessible location. 30" minimum unobstructed headroom in the attic space shall be provided at some point above the access opening.	IRC Section: R807.1	Corrected Sheet # _____
[ ] Sheet # _____	22. Openings between the garage and residence shall be equipped with solid wood doors not less than 1 3/8" thick, or shall be 20-minute fire-rated doors and shall be maintained self-closing and self-latching.	AZBO amend IRCSection R309.1	Corrected Sheet # _____
[ ] Sheet # _____	23. The garage shall be separated from the residence and its attic area by not less than 5/8" type X gypsum board applied to the garage side.	Amendment To IRC Section R309.2 and Table R702.3.5	Corrected Sheet # _____

[ ] Sheet # _____	24. Ceiling gypsum board application: When applying a water-based texture material, the gypsum board thickness shall be a minimum 1/2" for 16" on center framing, and 5/8" gypsum board or 1/2" sag resistant gypsum ceiling board for 24" on center framing.	IRC Table R702.3.5	Corrected Sheet # _____
[ ] Sheet # _____	25. Appliances having an ignition source shall be elevated such that the source of ignition is not less than 18" above the floor in garages. Rooms or spaces that are not part of the living space of a dwelling unit and that communicate with a private garage through openings shall be considered to be part of the garage.	IRC Section: M1307.3	Corrected Sheet # _____
[ ] Sheet # _____	26. A gas or liquid fuel fireplace shall have dampers that remain permanently open. A fireplace or woodstove that directly burns wood or other solid fuel shall not be approved to be installed or constructed. The installation of a permanent gas or electric log insert will be required; a gas or electrical stub out for future installation of a log will not be acceptable. Exception: an EPA 40 approved solid fuel burning appliance will be acceptable.	Arizona Revised Statute 9-500.16 (1998)	Corrected Sheet # _____
[ ] Sheet # _____	27. All habitable rooms shall be provided with aggregate glazing area of not less than 8% of the floor area of such rooms. The minimum openable area to the outdoors shall be 4% of the floor area being ventilated.	IRC Section: R303.1	Corrected Sheet # _____
[ ] Sheet # _____	28. Every sleeping room and basement with habitable space shall have at least one window [min. net clear opening 5.7 sq. ft. (min. 5 sq. ft. net clear opening at grade floor),] Min. opening width of 20", and min. opening height of 24" The finished sill height shall not be more than 44" above the floor; or provide exterior door for emergency egress. Basements must have emergency egress openings for each sleeping room but shall not be required in adjoining areas of the basement.	IRC Section: R310.1	Corrected Sheet # _____
[ ] Sheet # _____	29. Window wells and required window well ladders shall comply with IRC Section R310.2.1. Provide details and dimensions to verify compliance.	IRC Section: R310.2.1	Corrected Sheet # _____
[ ] Sheet # _____	30. There shall be a floor or landing at the top and bottom of each stairway. The width of each landing shall not be less than the stairway served, and the length a minimum 36" in the direction of travel.	IRC Section: R311.5.4	Corrected Sheet # _____
[ ] Sheet # _____	31. The maximum riser height shall be 7 1/4" and minimum tread depth shall be 10".	IRC Section: R311.5.3	Corrected Sheet # _____
[ ] Sheet # _____	32. The minimum headroom in all parts of the stairway shall be not be less than 6'8" measured vertically from the slope plane adjoining the tread nosing or from the floor surface of the landing or platform.	IRC Section: R311.5.2	Corrected Sheet # _____
[ ] Sheet # _____	33. Four or more stair risers shall have at least one handrail. Handrails shall be continuous the full length of the stairs, and have minimum and maximum heights of 34" and 38", respectively, measured vertically from the nosing of the treads. The handgrip portion of handrails shall have a circular cross section of 1-1/4" minimum to 2-3/4" maximum; edges shall have a minimum radius of 1/8".	IRC Section: R311.5.6 R311.5.6.3	Corrected Sheet # _____
[ ] Sheet # _____	34. Guardrails shall be a minimum 36" tall. Openings in guards shall have intermediate rails or ornamental closures that do not allow passage of a sphere 4" in diameter	IRC Section: R312.1 R312.2	Corrected Sheet # _____
[ ] Sheet # _____	35. Glazing in hazardous locations shall comply with IRC R308.	IRC R308	Corrected Sheet # _____
[ ] Sheet # _____	36. All interior and exterior glazing in bathrooms must be safety glazing when the	ARS 36-1631	Corrected Sheet # _____

bottom edge is less than 56" above the floor level. (Bathrooms shall be defined as a room provided with a tub or shower.)

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## **ELEVATIONS**

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|-------------|--|----------------------|-------------------|
| [ ] Sheet # | 37. Provide height dimensions for roofline, headers, top plate and finished floor.   | IRC Section:<br>R106 | Corrected Sheet # |
| [ ] Sheet # | 38. Provide attic ventilation calculations for all concealed attic spaces; include required and provided net free ventilation area. Also, indicate the type and location of attic ventilation. PROVIDE NOTE, if applicable: "where eave or cornice vents are installed insulation shall not block the free flow of air. A minimum of 1" space shall be provided between the insulation and roof sheathing at the location of the vent. | IRC Section:<br>R806 | Corrected Sheet # |

## **STRUCTURAL**

- |             |  |   |                   |
|-------------|--|---|-------------------|
| [ ] Sheet # | 39. Specify type of design and construction of all walls and partitions. Wood stud walls shall comply with prescriptive requirements of IRC Section R602 or shall be designed by an Arizona Registrant. Masonry and concrete basement walls shall comply with prescriptive requirements of IRC Section R404 or shall be designed by an Arizona Registrant. | IRC Section:<br>R404<br>R601<br>R602      | Corrected Sheet # |
| [ ] Sheet # | 40. Indicate all braced wall panel locations. Specify the method of bracing to be used. A sealed lateral analysis, prepared by an Arizona Registrant, will be required if the bracing does not comply with the conventional provisions.  | IRC Section:<br>R602.10                   | Corrected Sheet # |
| [ ] Sheet # | 41. Specify lumber grade, species, and size of members.  | IRC Section:<br>R602<br>R602.10.3         | Corrected Sheet # |
| [ ] Sheet # | 42. Specify design criteria: floor and roof live and dead loads.   | IRC Section:<br>R301                      | Corrected Sheet # |
| [ ] Sheet # | 43. Provide complete floor (if applicable) and roof framing plans. Specify size and spacing of all framing members. Indicate all post sizes and locations.   | IRC Section:<br>R106                      | Corrected Sheet # |
| [ ] Sheet # | 44. Specify all hangers used to hang trusses from girders, walls, or other locations.  | IRC Section:<br>R 802<br>ANSI-TPI<br>2002 | Corrected Sheet # |
| [ ] Sheet # | 45. Indicate the size and span of headers and lintels in all bearing and non-bearing walls. Provide manufacturer's span charts for pre-manufactured steel lintels.   | IRC<br>Sections:<br>R602.7<br>R606.9      | Corrected Sheet # |

## **PLUMBING**

- |             |  |  |                   |
|-------------|--|--|-------------------|
| [ ] Sheet # | 46. Specify if appliances and equipment are gas, electric, or propane. Reference location of appliances and equipment. | AUPC<br>Section<br>1202.2              | Corrected Sheet # |
| [ ] Sheet # | 47. Specify materials for waste, water, and gas pipes.   | AUPC<br>Section<br>604, 701,<br>1210.0 | Corrected Sheet # |
| [ ] Sheet # | 48. If gas is indicated, provide a schematic indicating BTU or CFH rating for each                                     | AUPC                                   | Corrected         |

	appliance, size, and length of main and all branch lines. (worst case scenario)	Section 1216.0 1217.0	Sheet #
[ ] Sheet #	49. Buildings of new construction designed under the State Plumbing Code shall be provided with combustion air obtained from outside. A minimum of two openings shall be provided into the enclosure, minimum 50 square inches in each opening.	AUPC amendment to IRC Ch 17	Corrected Sheet #
[ ] Sheet #	50. Provide a detail for island sink venting.	AUPC Section 909.0	Corrected Sheet #
[ ] Sheet #	51. Reference locations and provide size of roof drains and scuppers.	AUPC Appendix D	Corrected Sheet #
[ ] Sheet #	52. Water heater relief valve shall extend outside of the building with the end of pipe not more than 2', nor less than 6" above the ground and pointing downward.	AUPC Section 608.5	Corrected Sheet #
[ ] Sheet #	53. Provide an expansion tank or other device designed for intermittent operation for thermal expansion control at the water heater if a backflow preventer is on or to be installed on the water line or at the meter.	UPC Section 608.3	Corrected Sheet #
[ ] Sheet #	54. Provide a water meter calculation. Specify number of plumbing fixtures, fixture unit values, longest length of water pipe measured from the meter to the furthest fixture. Specify minimum size water meter and building supply line.	UPC Tables 6-3 & 6-4	Corrected Sheet #

## **MECHANICAL**

[ ] Sheet #	55. Provide a complete mechanical plan.	IRC Section: R106.1 M1301.1	Corrected Sheet #
[ ] Sheet #	56. Provide exhaust fans to the outside from bathrooms, water closet compartments, and similar rooms if not supplied with natural ventilation.	IRC Section: R303.3	Corrected Sheet #
[ ] Sheet #	57. Provide combustion air for all liquid and solid fuel-burning appliances including size, type, and location of openings.	IRC Section: Chapter 17	Corrected Sheet #
[ ] Sheet #	58. Attics containing appliances requiring access shall be provided with an opening and passageway large enough to remove the largest appliance, but not less than 30" high and 22" wide and not more than 20' in length. Passageway shall have continuous solid flooring not less than 24" wide. The clear access opening dimensions shall be a minimum of 20" by 30". A level service space at least 30" deep and 30" wide shall be present along all sides of the appliance where access is required.	IRC Section: M1305.1.3	Corrected Sheet #
[ ] Sheet #	59. The clothes dryer exhaust duct shall be at least the diameter of the appliance outlet as recommended by the manufacturer and shall terminate on the outside of the building. It shall not exceed 25' in length with reductions for bends. The duct shall terminate not less than 3' from a property line.	IRC Sections: M1501 R302.2	Corrected Sheet #

## **ELECTRICAL**

[ ] Sheet #	60. Provide a complete electrical plan to include electrical load calculations.	IRC Section: R106.1 E3604.3	Corrected Sheet #
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[ ] Sheet # _____	61. Indicate the size (rating) and location of the electric panel, including any sub panels. One line diagram will be required for services that exceed 200 amps and/or when a subpanel is provided. Also, services which are 400 amps or larger shall be sealed by a licensed engineer.	IRC Sections: E3301.3 E3305.2 E3606.1	Corrected Sheet # _____
[ ] Sheet # _____	62. Provide an approved grounding electrode system for main panel & sub panel (if located on detached building).	IRC Section: E3508	Corrected Sheet # _____
[ ] Sheet # _____	63. 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.	IRC Section: E3602.9 E3602.9.1	Corrected Sheet # _____
[ ] Sheet # _____	64. Provide bonding to the interior water piping and above ground portion of gas piping systems.	IRC Section: E3509	Corrected Sheet # _____
[ ] Sheet # _____	65. Provide a note indicating a minimum of two 20-ampere-rated branch circuits for receptacles located in the kitchen, pantry, breakfast, and dining areas, a separate 20-ampere-rated branch circuit to the laundry, and a separate 20-ampere-rated branch circuit for bathroom receptacle(s).	IRC Section: E3603.2	Corrected Sheet # _____
[ ] Sheet # _____	66. PROVIDE NOTE: All branch circuits that supply 125-volt, single-phase, 15- and 20-ampere outlets installed in dwelling unit bedrooms shall be protected by an arc-fault circuit interrupter(s) listed to provide protection of the entire branch circuit.	IRC Section: E3802.11	Corrected Sheet # _____
[ ] Sheet # _____	67. Receptacles shall be installed so that no point along the floor line in any wall space is more than 6', measured horizontally, from an outlet in that space, including any wall space 2' or more in width.	IRC Section: E3801.2.1	Corrected Sheet # _____
[ ] Sheet # _____	68. In kitchen and dining rooms, at least one receptacle outlet shall be installed at each island or peninsular counter space with a long dimension of 24" or greater and a short dimension of 12".	IRC Sections: E3801.4.2 E3801.4.3	Corrected Sheet # _____
[ ] Sheet # _____	69. In kitchen and dining rooms, a receptacle outlet shall be installed at each wall counter space 12" or wider so that no point along the wall is more than 24" from a receptacle outlet and shall be GFCI protected.	IRC Section: E3801.4.1 E3802.6	Corrected Sheet # _____
[ ] Sheet # _____	70. Receptacle outlets shall be permitted to be mounted not more than 12" below the countertop in construction designed for the physically impaired and for island and peninsular countertops where the countertop is flat across its entire surface and there are no means to mount a receptacle within 18" above the countertop, such as in an overhead cabinet. Receptacles mounted below the countertop in accordance with this exception shall not be located where the countertop extends more than 6" beyond its support base.	IRC Section E3801.4.5 Exception	Corrected Sheet # _____
[ ] Sheet # _____	71. Provide at least one weatherproof receptacle outlet, not more than 6'-6" above grade and GFCI protected, at the front and back of each dwelling. All receptacles installed outdoors must be GFCI protected.	IRC Sections: E3801.7 E3802.3 E3902.12	Corrected Sheet # _____
[ ] Sheet # _____	72. Provide at least one (1) receptacle outlet in hallways 10' or more in length.	IRC Section: E3801.10	Corrected Sheet # _____
[ ] Sheet # _____	73. All 125-volt, single-phase, 15-and 20-ampere receptacles in the following locations shall be GFCI protected: Garages, unfinished accessory buildings, crawl spaces, unfinished basements, bar sinks (within 6') and laundry sinks (within 6').	IRC Section: M.A.G. rev. & E3802	Corrected Sheet # _____
[ ] Sheet # _____	74. Provide at least one (1) wall switch-controlled lighting outlet in every habitable room and bathroom.	IRC Section: E3803.2	Corrected Sheet # _____

[ ] Sheet #	75. Provide a lighting outlet on the exterior side of all exits/entrances.	IRC Section E3803.3	Corrected Sheet #
[ ] Sheet #	76. Provide a lighting source in all stairways, switched at each floor level.	IRC Sections: E3803.3 R303.4	Corrected Sheet #
[ ] Sheet #	77. A receptacle shall not be installed within a bathtub or shower space.	IRC Section: E3902.10	Corrected Sheet #
[ ] Sheet #	78. Fixtures, fittings, boxes and receptacles located in damp or wet locations shall be "listed" to be suitable for such location.	IRC Sections: E3805.11 E3902.8 & 9 E3903.8	Corrected Sheet #
[ ] Sheet #	79. Provide interconnected smoke alarms in each sleeping room, immediately outside each sleeping room, on each additional story including basements. Smoke alarms shall be hard wired with battery backup.	IRC Section: R313.1 R313.2	Corrected Sheet #
[ ] Sheet #	80. At least one receptacle shall be located within 36" of each bathroom lavatory.	IRC Section: E3801.6	Corrected Sheet #

## **ENERGY EFFICIENCY**

[ ] Sheet #	81. Builder participation in a Nationally Recognized Third Party Energy Program will be accepted as compliance with the requirements for the Energy Efficiency in 2003 IRC/2003 IECC. Provide a note on the plans and documentation must be provided with the plans as verification of this participation which specifically states the model included in the program. Provide a note on the plans that a certificate or sticker must be provided at the SES panel and will be verified at the final inspection of the dwelling.	IRC Chapter 11	Corrected Sheet #
[ ] Sheet #	82. If percent of glazing DOES NOT exceed 15%, The builder may choose to design from IECC Chapters 4 or 5 OR Chapter 11 of the IRC and Chapter 6 of the IECC which includes the Basic Requirements of the 2003 IECC (Builder must provide a calculation to determine the percentage of glazing of the gross area of exterior walls that enclose conditioned space).	IRC Chapter 11	Corrected Sheet #
[ ] Sheet #	83. If percent of glazing DOES exceed 15%, must comply with one of the following: 1. Chapter 4 of the 2003 IECC (REM Design, HERS Best test design or National Recognized 3 <sup>rd</sup> Party Energy Program) 2. Chapter 5 of the 2003 IECC which includes Basic Requirements (MecCheck) IF USING REM DESIGN OR MECHECK, PROVIDE THE CALCULATIONS AND INCLUDE ENERGY NOTES ON THE PLANS FOR VERIFICATION BY THE PLAN REVIEWER AND INSPECTOR.	IRC Chapter 11	Corrected Sheet #
[ ] Sheet #	84. 2003 IECC Summary of Basic Requirements for designs from IRC Chapter 11 or Chapter 6 of IECC are as follows and are required to be clearly marked on the plans:	IRC Chapter 11	Corrected Sheet #
[ ] Sheet #	85. Air Leakage: 1. All openings in building envelope must be sealed.	IRC Chapter 11	Corrected Sheet #
[ ] Sheet #	86. Solar Heat Gain Coefficient: 1. SHGC cannot exceed 0.4	IRC Chapter 11	Corrected Sheet #

[ ] Sheet # _____	87. Materials and Insulation Information: 1. Material and equipment must be installed per manufacturer's instructions 2. Material and equipment identified so compliance can be determined 3. Provide manufacturer manuals for HVAC & service water heating equipment 4. The following must be clearly marked on plans or specifications: a. Insulation R-values (R-19 ceiling/R-11 walls) b. Glazing U-factors (per NFRC 100 or Table 102.5.2(1)&(2) IECC c. Door U-factors (0.35 separating conditioned & unconditioned space) d. SHGC values (.40 maximum) e. Heating and cooling equipment efficiency 5. PROVIDE NOTE: A separate insulation inspection may be required prior to drywall OR an insulation certificate may be required at time of final.	IRC 11	Chapter	Corrected Sheet # _____
[ ] Sheet # _____	88. Duct Insulation: 1. The following must be clearly marked on plans or specifications for HVAC: a. Supply ducts – Insulation R-value b. Return-air ducts – Insulation R-value c. Plenums – Insulation R-value Exception: Factory-installed plenums, casings or ductwork furnished as part of HVAC equipment.	IRC 11	Chapter	Corrected Sheet # _____
[ ] Sheet # _____	89. Duct Construction: 1. All joints, seams, connections must be securely fastened with welds, gaskets, mastics, mastic-plus-embedded-fabric or tapes (Duct tape NOT permitted) 2. Ducts must be supported every 10' or per manufacturer 3. Cooling ducts with exterior insulation covered with vapor retarder 4. Air filters required in return-air 5. HVAC must provide means for balancing air and water systems	IRC 11	Chapter	Corrected Sheet # _____
[ ] Sheet # _____	90. Temperature Controls: 1. Thermostat required for each separate HVAC system as follows: a. Heating Only – 55 degrees F to 75 degrees F b. Cooling Only – 70 degrees F to 85 degrees F c. Heating & Cooling – 55 degrees F to 85 degrees F 2. Provide means to partially restrict or shut off HVAC input to each zone or floor 3. Heat pump thermostat must prevent back-up heat from turning on when heating requirements can be met by heat pump alone	IRC 11	Chapter	Corrected Sheet # _____
[ ] Sheet # _____	91. HVAC Piping Insulation: 1. Required in unconditioned spaces conveying fluids above 105 degrees F or chilled fluids at less than 55 degrees F must be insulated.	IRC 11	Chapter	Corrected Sheet # _____
[ ] Sheet # _____	92. Service Water Heating: 1. Water heaters with vertical pipe risers must have heat trap on both inlet and outlet unless water heater has integral heat trap or part of circulating system. 2. Circulating hot water systems must have automatic or manual controls and pipes must be insulated.	IRC 11	Chapter	Corrected Sheet # _____

**MISCELLANEOUS COMMENTS:**

[ ] Sheet # \_\_\_\_\_  
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Sheet #

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 Sheet #

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**RESPONSE TO ABOVE COMMENTS:** (May attach additional comment sheets)

      
 Sheet #

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 Sheet #

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