



COUNTY OF NEVADA COMMUNITY DEVELOPMENT AGENCY

Building Department

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RESIDENTIAL PLAN REVIEW CHECKLIST

(Based on the 2019 California Building Standards Codes)

The design documents submitted for this project will be reviewed for compliance with the State of California Building Standards as modified and adopted by the County of Nevada. Plan reviews are active for 180 days from the application date. Applications may be extended for an additional 90 days upon written request if shown that the delay is due to circumstances beyond the control of the applicant.

NOTE: Numbers in parenthesis () refer to Code sections of the 2019 California Building Code, California Residential Code (CRC), California Plumbing Code (CPC), California Mechanical Code (CMC), California Electrical Code (CEC), California Energy Code, California Fire Code (CFC), California Green Building Standards Code (CGBSC), and Asterisk (*) refers to local ordinance.

Please keep in mind that this checklist does not list all requirements in the 2019 California Building Standards Codes. The checklist is intended to show the most common code items that are reviewed during construction project plan review. Additional comments may be required upon completion of project reviews.

GENERAL

1. Please download the Residential General Notes Sheet located at <https://www.mynevadacounty.com/DocumentCenter/Home/View/19430>. Fill out the fields in the notes sheet and make it part of the plans including the construction waste diversion plan that you choose. All notes in the plans shall match the notes sheet or be removed.
2. If the proposed project is over 50% reconstruction the structure must meet the 2019 Title 24 code requirements, with the exception of residential fire sprinklers and the wildland urban interface requirements. Please see the following policy for details:

<https://www.mynevadacounty.com/DocumentCenter/View/15087/Percentage-of-Structure-Removed-Altered-or-Damaged-Policy-BD-CSC-08-02-PDF>

Submit structural engineering, energy calculations and complete construction plans (Including complete foundation, floor, lateral and roof framing plan) showing compliance with the 2019 Title 24 code editions. Or provide an analysis of the building clarifying why the project does not exceed the 50% reconstruction limit. Additional corrections may be required subsequent to your submittal.

3. Indicate the address of the building, assessor's parcel number (APN), zoning, the name, address and phone number of the owner(s) and person(s) preparing the plans on the first sheet (cover sheet) of the plans. (R106.1.1) **Ensure the plans show the location of the required site address per CRC R319. Approved site address shall be placed in a position that is plainly legible and visible from the street or road fronting the property. These numbers shall contrast with their background. Address numbers shall be minimum of 4 inches high with a minimum width of ½ inch.**

4. Indicate the occupancy type, type of construction, square footage and current Code Editions (2019 CRC, CBC, CEC, CMC, CPC, CGBSC and the 2019 California Energy Code).
5. Multiple sheets have not been signed. Please provide a signature on each sheet of the individual responsible for the preparation of the sheet. Please see reference from the 2019 California Residential Code section 106 and the Business and Professions Code, Sec. 5536.1
6. Please number all sheets and provide a sheet index on the cover page.
7. Draft the plans to scale and indicate the scale for all sheets and details.
8. Separate building permits are required for grading, as-built structures, retaining walls, swimming pools, demolition, detached accessory structures, outdoor cooking facilities, etc. Clearly note this on the site plan. Also clearly indicate which improvements are “proposed” or “existing” on the site plan.
9. Provide a legend on appropriate sheets for any symbols, abbreviations, notations, etc used on the plans.
10. Void or delete all items, details, and notes that do not pertain to this project.
11. **PLOT PLAN:** Provide fully dimensioned plot plan to scale. Provide North arrow. Show property lines, easements and new and existing building locations. Dimension front, side and rear distances to property lines and between buildings. Indicate finish and existing ground slope grades. Provide drainage information. Show the propane tank size, location, grade level/underground and minimum setback based on size. Show other information such as driveways, well, septic system, leach field, street centerline and alley. Clearly show the locations, sizes and material of the water lines, gas lines, sewer lines and electrical service and/or feeders. Indicate the location of the water and electrical meters. Specify if the electrical service/feeder is underground or overhead. **All structures and improvements on the parcel shall be shown with their uses accurately noted on the site plan; an accurate and complete review cannot be conducted without this being shown.**
12. Provide an erosion control plan indicating locations of erosion control measures, coverage of soil, etc.
13. Clarify where drainage will terminate to an approved drainage way and not on adjacent properties or how the drainage will be retained onsite. (Nevada County Land-Use Ordinance L-V 13.14)
14. Two (2) sets of fire sprinkler plans and hydraulic calculations must be submitted if required for new construction and/or substantial improvements.
15. Submit a “will-serve” letter from the water service provider or a well test report indicating the available water pressure at the water meter. If storage tanks and/or pressure tanks are utilized, complete calculations shall be provided for the proposed assembly. Clearly show the locations, types and sizes of any storage and pressure tanks on the site plan and/or floor plan.
16. Submit two sets of wet or digitally stamped truss calculations for review including a wet or digitally stamped/signed review and approval letter from the projects design professional (architect and/or engineer) stating that they have reviewed the truss calculations and they are in conformance with their structural design.
17. The Deferred Submittal Application shall be completed/submitted for any items requesting to be deferred such as fire sprinklers, truss calculations, etc. Clearly note on the cover sheet of the plans all deferred items and what construction phase they shall be submitted, reviewed and issued by.
18. Alternate materials/methods form shall be filled out in the County of Nevada Building Department office.
19. **FLOOR PLAN:** Show all dimensions and label use of each room as well as location, size, and type of windows and doors, electrical fixtures and appliances, plumbing and heating fixtures. Show the location and type of all braced and shear walls. List floor area (itemize garage and porch areas). Show North arrow and drawing scale on plan.

20. **FOUNDATION PLAN:** Submit a dimensioned plan including exterior and interior footing. Label and locate porches, patios, decks, garage, etc. Locate and note size of anchor bolts, rebar, straps, and hold-downs on plans. Note size, number, and position of crawl space vents.
21. **EXTERIOR ELEVATIONS:** Draw minimum of four (4) elevation views showing all openings, wall, and roof finish materials, original and finish grade, building height, stepped footing outline, crawl vents, attic vents and roof pitch.
22. **FRAMING PLANS:** Note framing members and sheathing for floor and roof plans, framing for ceiling plans. Show size and spacing of joists, rafters, and beams with grade of lumber to be used. Carry all vertical and lateral loads to footings.
23. **CROSS SECTION:** Provide true section through building showing structural elements, earth to wood clearances, floor to ceiling heights, roof slopes, etc. Note typical finishes and value/location of thermal insulation.
24. **DETAILS:** Submit foundation, floor, roof, beam connection, special framing and flashing details as necessary for construction.

LIGHT, VENTILATION AND MINIMUM ROOM DIMENSIONS

25. Required window area for natural light shall be not less than eight (8) percent of floor area of a room used for human habitation, *or* artificial light that is adequate to provide an average illumination of 6 foot candles over the area of the room at a height of 30 inches above the floor level. Four (4) percent of the floor area in occupied spaces shall be able to open for ventilation, provide mechanical ventilation capable of producing .35 air changes per hour, or provide a whole-house mechanical ventilation system capable of supplying air of 15 cubic feet per minute per occupant. (CRC R303.1)
26. Provide each bedroom, basement, and habitable attics with a minimum of one exterior window with a 44" maximum clear opening height, 5.7 sq. ft. minimum clear openable area (minimum 5.0 sq. ft. at grade floor openings), 24" minimum clear openable height and 20" minimum clear width, or an openable exterior exit door. (CRC R310.2.1 and CRC R310.2.2) Window wells, ladders, and steps shall comply with CRC R310.2.3. Bars, grilles, covers, and screens shall be releasable or removable from the inside without the use of a key, tool, special knowledge, or force greater than 15lbs to operate the emergency escape and rescue openings. (CRC R310.4) **Photovoltaic panels & modules shall not be below an emergency escape and rescue opening within 36". (R324.6.2.2)**
27. Bathrooms, water closet compartments, and other similar rooms shall be provided with an aggregate glazing area of not less than 3sq.ft; one half which must be openable OR provide artificial light and a mechanical ventilation system is provide capable of supplying a minimum ventilation rate of 50 cubic feet per minute for intermittent ventilation or 25 cubic feet per minute for continuous ventilation; exhaust air shall be exhausted directly to the outside. (CRC R303.3) Each bathroom containing a bathtub, shower or tub/shower combination shall be mechanically ventilated with Energy Star approved equipment (minimum 50cfm) with an integral humidistat installed. (CRC R303.3.1)
28. Provide attic cross ventilation: 1/150 of attic area or 1/300 with at least 40% but not more than 50% of vents are a maximum 3 ft. below the ridge or highest space in the attic and the balance is provided **in the lower third of the attic space (not limited to eaves or cornice vents)**. As an alternative in Climate Zone 16 (Truckee region), the net area may be reduced to 1/300 when a Class I or II vapor barrier is installed on the warm-in-winter side of the ceiling. Baffles are required at vents for insulation. Provide minimum of 1" inch of air space between insulation and roof sheathing. (CRC R806)
29. Enclosed rafter spaces shall have a 1-inch clear cross ventilation. (Properly sized rafters for insulation) (CRC R806.3)
30. Under floor cross ventilation: minimum 1.0 sq. ft. for each 150 sq. ft. of under floor area. When a class 1 vapor retarder is installed on the ground surface the minimum area of ventilation may be limited to 1sq.ft for each 1,500

square feet of under-floor space. One ventilation opening shall be within three (3) feet of each corner of the building (CRC R408.1). Unvented crawl spaces shall comply with CRC R408.3. **Unvented crawl space added option for dehumidification of 70 pints moisture per day per 1,000 sf to requirement for exemption. (R408.3)**

31. **Exterior balconies and elevated walking surfaces exposed to water, where structural framing is protected by an impervious moisture barrier require construction documents with manufacturer's installation instructions. (R106.1.5) Must be inspected and approved before concealing barrier. (R109.1.5.3)**
32. **Enclosed framing in exterior balconies and elevated walking surfaces exposed to rain, snow or drainage from irrigation shall be provided with cross-ventilation area of at least 1/150. (R317.1.6)**
33. Label the following windows fully tempered: (CRC R308.4)
 - a. Sliding/swinging glass doors
 - b. Glazing in walls and enclosures facing hot tubs, spas, whirlpools, saunas, steam rooms, bathtubs, showers and swimming pools where the glazing is less than 60 inches above the standing surface within the compartment and within 60 inches horizontally of the water's edge (CRC R308.4.5)
 - c. Glazing within a 24" arc of a door that is less than 60 inches above the floor. Safety glazing required on a wall **less than 180 degrees from the plane of the door** in a closed position and within 24" of hinge side of an in-swing door. (R308.4.2)
 - d. Glazing where the exposed area is greater than 9sq.ft, bottom is less than 18 in. and at least 36 in. above the floor, and adjacent to a walking surface
 - e. Within 60in. of the bottom tread of a stairway and less than 36in. above the landing
 - f. Glazing in guards and railings
 - g. Glazing adjacent to stairways, landings, and ramps within 36in. horizontally of the walking surface less than 36in. above the walking surface
34. Provide landings and a porch light at all exterior doors. Landings are to be minimum 3 ft deep x width of door. Landings at required egress doors may step down a maximum of 7.75 inches when the door does not swing over the landing and 1.5 inches when door swings onto the landing. Other than required exterior exit doors may have a threshold of 7.75 inches maximum; a landing is not required if a stair with two or fewer risers is located on the exterior side and the door does not swing over the stairway. (CRC R311.3-R311.3.2)
35. Minimum room dimensions (CRC R304):
 - a. Habitable rooms shall be minimum 70sq.ft. (One 120sq.ft room requirement removed).
 - b. Habitable rooms, hallways and portions of basements containing these spaces shall have a ceiling height of 7ft. Bathrooms, toilet rooms, laundry and basements without habitable spaces shall have a ceiling height of not less than 6'8". (CRC R305.1 and R305.1.1)
 - c. Habitable spaces in basements shall have a minimum 6'4" under obstructions. (CRC R305.1)
 - d. Kitchen shall be provided with a clear passageway at least 3' in width between counters/appliances.
 - e. Shall not be less than 7 ft. in any dimension except kitchens
 - f. See sections CRC R304.3 and R305 Exception 1 for sloped ceiling requirements.
 - g. Private garages and carports shall have a minimum 7-foot ceiling height. (CBC 406.3.2)
 - h. Hallways shall have a minimum width of 36 inches. (CRC R311.6)
36. At least one egress door shall be provided for each dwelling unit, the egress door shall be side hinged with a minimum openable width of 32 inches; the minimum clear openable height shall be 78 inches minimum (other doors shall not be required to comply with these dimensions). Egress doors shall be readily openable from the inside without the use of a key, special knowledge, or effort. (CRC R311.2)
37. Habitable levels or basements located more than one-story above or below grade shall have a maximum travel distance from any point within the room to the stairway or ramp of not more than 50ft. (CRC R311.4)
38. Operable windows more than 72" above finish grade with a sill height less than 24" shall have openings not more than 4" apart or needs a compliant guard. (CRC R312.2)

39. Mezzanines shall not be greater than 1/3 of the story unless fire sprinklers are installed then the area can be 1/2 of the story. (R325.3)

STRUCTURAL

40. PROVIDE ENGINEER'S DESIGN CALCULATIONS.

***Specific County of Nevada Design Criteria:**

- Wind: Most residential structures west of Kingvale have a minimum basic wind speed of 95mph. Areas above 4,000ft elevation and east of Kingvale are in a special wind region. Use exposure C for design factors, unless verified otherwise by design Engineer per CBC Chapter 16.
- Seismic: Design based on engineered calculations for specific building location, soil analysis and/or USGS information; if unknown, seismic design category D0 shall be used as a minimum.
- Allowable soil bearing is 1500 pounds per square foot (CRC Table R401.4.1) for stable soils. Provide soils report for unstable soils or if higher bearing values are to be used.
- Snow Loading: Minimum snow loads are based on the specific location of structures with a minimum design snow load of 20psf* (Nevada County Land-Use Ordinance L-V 3.10). See <http://gis.nevcounty.net/MyNeighborhood/> for minimum ground snow load values.
- Include all structural criteria on the cover sheet of the plans as well as in the structural calculations.
- Based Structural Referenced Standards:
 - ASCE 7-16 – Design Loads for Buildings/Structures
 - ACI 318-14 – Structural Concrete
 - TMS 402/602-16 – Structural Masonry

41. Submit 2 sets of wet stamped and signed structural calculations from a licensed California design professional for all construction not conforming to conventional light-frame construction as listed in the 2019 California Residential Code.

42. Clearly show compliance on the plans for applicable live load values used throughout per CRC Table 301.5 and actual dead loads of material used per CRC R301.4.

43. All buildings in Nevada County shall be designed to resist snow loads as indicated in Tables 16-C-1 and 16-C-2 of Nevada County Land-Use Ordinance L-V 3.10.

44. Maximum story heights for wood, steel, masonry, etc construction shall be in compliance per CRC R301.3.

FOUNDATIONS & CONCRETE SLABS

45. Concrete: Footings and slabs – 2500psi minimum (CRC T-R402.2). Concrete foundation walls, retaining walls, basement walls, etc for seismic design category D0, D1, and D2 shall have a compressive strength of 3,000psi minimum and rebar grade shall be 60 minimum. (CRC R404.1.3.3.1)

46. Show the size, type, location and grade of reinforcement; also the location/length of lap splices on the foundation plan/details. Show the type/location of hold-downs, straps, and anchors. Details/location of contraction or isolation joints specified for plain concrete. (ACI-318-14)

47. Show location and dimensions of all pier locations.

48. Basement, foundation, and retaining walls shall be designed for soil lateral loads per ASCE-7-16.

49. Masonry foundation walls shall be constructed per CRC R404.1.2. Clearly show compliance on the plans for maximum wall heights, maximum unbalanced backfill, masonry units used, reinforcement, lap splices, etc.

50. Concrete foundation walls shall be constructed per CRC R404.1.3. Clearly show compliance on the plans for maximum wall heights, maximum unbalanced backfill, masonry units used, reinforcement, lap splices, etc.

51. Pier and Curtain foundation walls shall be constructed per CRC R404.1.5.3. Clearly show compliance on the plans for maximum wall height, maximum unbalanced backfill height, anchorage, reinforcement, etc.
52. Geotechnical report for expansive soils, per the design of the engineer, or determined necessary by the Building Official. (2 wet stamped and signed sets) (CRC R401.4) Submit 2 wet stamped and signed letters from geotechnical report author certifying that the construction plans have been reviewed and are in compliance with the report recommendations.
53. Slope drainage 6" within the first 10ft. from the foundation wall. If physical obstructions or lot lines prohibit the 10ft distance, a 2-5 percent slope shall be provided to an approved alternative method of diverting the water away from the foundation. Impervious surfaces shall also be sloped a minimum of 2 percent for 10ft away from structures to an approved drainage way. (CRC R401.3)
54. Compaction report specified on the foundation plan per the soils report, design professional or the Building Official. This is required when structural fill is part of the improvements or any fill >12" deep.
55. Update the foundation plan to provide the minimum footing width and thickness based on snow load, number of stories and the load bearing capacity of soil. (CRC Table R403.1)
56. Footings shall extend at least 12 inches into the undisturbed ground surface. (CRC R403.1.4) Unless erected on solid rock, to protect against frost and freezing, the minimum foundation depth is 18 inches below grade if between 4,000-7,000 foot elevation and 24 inches below grade for 7,000 foot elevation and above. Exception: Interior footings shall be a minimum of 12 inches below grade. (L-V 3.14)
57. Stepped footings shall be used when slope of footing bottom is greater than 1 in 10 (V: H). Step footing detail shall be shown on building elevations and foundation plan. (CRC R403.1.5)
58. Walls or portions thereof that retain earth and enclose interior spaces and floors below grade shall be waterproofed and/or damp- proofed. (CRC R406)
59. The top of the exterior foundation shall extend above the elevation of the street gutter at point of discharge or the inlet of an approved drainage device a minimum of 12 inches plus 2 percent. (CRC R403.1.7.3)
60. All exterior braced wall panels shall be supported by continuous foundations. All interior braced wall panels in buildings with a plan dimension greater than 50ft shall be supported by continuous foundations. (CRC R403.1.2)
61. Where a construction joint is created between a concrete footing and a stem wall, a minimum of one #4 bar shall be installed at not more than 4ft on center vertically with a standard hook and extend a minimum of 14 inches into the stem wall. (SDC D0 and above) (CRC R403.1.3.1)
62. Where a grouted masonry stem wall is supported on a concrete footing and stem wall, a minimum of one #4 bar shall be installed at not more than 4ft o.c vertically with a standard hook. (SDC D0 and above) (CRC R403.1.3.2)
63. Foundations with stem walls shall have a minimum of one #4 bar within 12 inches of the top of the wall and one #4 bar located 3-4 inches from the bottom of the footing. (CRC R403.1.3.1)
64. Slabs on grade cast monolithically with turned down footings shall have a minimum of one #4 bar at the top and bottom of the footing or one #5 bar or two #4 bars in the middle third of the footing depth. Where the slab is not cast monolithically with the footing, #3 or larger vertical dowels with standard hooks on each end shall be provided at 48 inches o.c. (SDC D0 and above) (CRC R403.1.3.3)
65. Retaining walls over 4' in height from bottom of footing to top of wall, or supporting a surcharge, shall be designed by a California licensed Architect or Engineer.
66. Concrete slabs: 3 ½" minimum (CRC R506.1). Slabs under living areas and garages shall be reinforced with wire 6" x 6", 10 gauge x 10 gauge welded mesh or equivalent steel reinforcement and 4" thickness of 3/8 minimum

gravel under the concrete slab. Separate from soil with a 6 mil polyethylene vapor retarder with joints lapped not less than 6 inches in living areas. A capillary break shall be installed when a vapor retarder is required.

67. Site excavation and grading shall comply with Chapter V, Article 13 of the Nevada County Land-Use Code.
68. Please revise the plans to show the location and dimensions of the underfloor access for all underfloor areas. A minimum 18" x 24" under-floor access, unobstructed by pipes or ducts and within 5' of each under-floor plumbing cleanout and not located under a door to the residence, is required. Provide a solid cover or screen. (CRC 408.4 & CPC 707.9)
69. Minimum sill bolting: ½" anchor bolts or approved anchors at 6 ft. o.c. maximum for one-story. (CRC R403.1.6) Use anchor bolts at 4 ft. o.c. maximum for three story construction. Embed bolts 7" minimum. The anchor bolts shall be placed in the middle third of the width of the plate. Locate end bolts not less than 7 bolt diameters, nor more than 12" from ends of sill members. In SDC D0 and above: Provide 3"X3"X0.229 plate washers on each bolt at braced or shear wall locations, standard cut washers shall be permitted for anchor bolts not located in braced/shear wall lines. The hole in the plate washer is permitted to be diagonally slotted with a width of up to 3/16" larger than the bolt diameter; the slot length shall not exceed 1 ¾", provided a standard cut washer is placed between the plate washer and the nut. (CRC R403.1.6.1 & R602.11.1)
70. Foundation cripple walls shall be framed of studs not smaller than the studding above. When exceeding 4ft in height, such walls shall be framed of studs having the size required for an additional story. Cripple walls less than 14" in height shall be sheathed on at least one side with wood structural panel sheathing fastened to both top and bottom plates or shall be constructed with solid blocking. (CRC R602.9) In seismic design categories D0, D1, and D2 cripple walls shall be braced in accordance to CRC R602.10.10.

WOOD FRAMING

71. Wood framing shall comply with CRC R602 and R802.
72. Fire retardant treated lumber and wood structural panels shall be labeled. The label shall contain the following items: identification mark of an approved agency in accordance with CBC 1703.5, identification of the treating manufacturer, the name of the fire-retardant treatment, the species of wood treated, flame spread and smoke developed index, method of drying after treatment, conformance with appropriate standards in accordance with CBC 2303.2 through 2303.2.5.
73. Labeling for fire-treated wood exposed to weather, damp or wet locations, must include the words "no increase in the listed classification when subjected to the Standard Rain Test." (ASTM D 2898)
74. Columns shall be restrained to prevent lateral displacement at the bottom end. Wood columns shall be 4x material minimum and steel columns shall be schedule 40, 3" in diameter minimum. (CRC R407.3) Exception: In seismic design categories A, B and C column not more than 4' in height are exempt from the bottom end lateral displacement requirement.

CLEARANCES AND TREATMENT FOR WOOD FRAMING

75. Wood of natural resistance to decay or pressure treated wood shall be used for (CRC R317.1):
 - a. Wood embedded in concrete exposed to weather or in contact with soil
 - b. Sills and sleepers on a concrete or masonry slab that is in direct contact with the ground unless separated from such slab by an impervious moisture barrier.
 - c. Wood sub floor and framing with clearances less than 18" under joist or 12" under girder.
 - d. Wood with less than ½" airspace on top, sides & end of members entering concrete or masonry.
 - e. Wood framing members that rest on concrete or masonry exterior foundation walls and are less than 8 inches from the exposed ground.
 - f. Wood siding, sheathing and wall framing on the exterior of a building having a clearance of less than 6 inches from the ground or less than 2 inches from concrete steps, patio, etc that is exposed to the weather.
 - g. Wood furring strips attached directly to the interior of exterior masonry or concrete walls below grade unless separated by an impervious moisture barrier.

76. Weather exposed glu-lam, beams and posts shall be pressure treated or shall be wood of natural resistance to decay. (CRC R317.1.3 & 5)
77. Columns exposed to the weather or in basements when supported on concrete pier or metal pedestals shall be pressure treated or natural resistance to decay unless the pier/pedestals project 1” above concrete or 6” above earth and the earth is covered by an approved impervious moisture barrier. (CRC R317.1.4 exc. 1)
78. Columns in enclosed crawl spaces or unexcavated areas located within the periphery of the building shall be pressure treated or natural resistance to decay unless the column is supported by a concrete pier or metal pedestal of a height 8” or more and the earth is covered by an impervious moisture barrier. (CRC R317.1.4 exc. 2)
79. Deck posts supported by concrete piers or metal pedestals projecting not less than 1” above a concrete floor or 6” above exposed earth. (CRC R317.1.4 exc. 3)

FLOORS

80. Wood floor joist size, spacing, and grades for conventional construction must conform to CRC Tables R502.3(1)-(2). Cantilevered joists shall conform to CRC Tables R502.3.3(1)-(2). Others shall be designed by structural calculations completed by a registered California Design Professional.
81. Wood floor girder size, spacing, and grades for conventional construction must conform to CRC Tables R602.7(1), R602.7(2) and R602.7(3). Others shall be designed by structural calculations completed by a registered California Design Professional.
82. Under-floor areas with storage, fuel-fired equipment or **electric-powered** equipment with less than 2x10 solid joists shall be protected on the underside by half-inch sheetrock or a sprinkler system. (R302.13)
83. Steel floor joists size, spacing, and gauge for conventional construction must conform to CRC Tables R505.3.2. Others shall be designed by structural calculations completed by a registered California Design Professional.
84. Provide a steel floor fastening schedule including but not limited to attachment to blocking, bearing walls, rim joists, etc. Provide applicable details on the plans for steel floor construction such as blocking details, web stiffener installation, web patching, etc. (CRC R505)
85. Joists under and parallel to bearing partitions shall be doubled; if joists are separated due to location of vents, piping, etc 2x ladder blocking shall be installed at 48”o.c. Doubled joists may not be adequate to support the load – provide structural design calculations. (CRC R502.4)
86. Bearing partitions perpendicular to joists shall not be offset from supporting girders, walls or partitions more than the joist depth or provide calculations for joist size. (CRC R502.4)
87. Specify type, thickness, and attachment of floor sheathing per table R503.2.1.1(1). Nail spacing for floor plywood sheathing: 6” o.c on the edges and 12” o.c in the field (unless closer nailing is specified). (CRC T-R602.3(1))
88. Provide detail of connection of floor girder at foundation wall. Specify an applicable hanger on the plans if the girder is cantilevered and bearing.
89. At floor openings, show double trimmer joist if over 4 ft. span. Structurally designed header if over 6 ft. span and approved hangers shall be provided from joists to headers. (CRC R502.10)
90. Solid block all joist at ends and supports (SDC D0 and above) or use other approved connections. (CRC R502.7)
91. Provide specification/calculations for the use of engineered wood products. (CRC R502.1.2-7)
92. Balconies must be designed for a minimum live load of 60lbs per square foot. (CRC T-R301.5)

93. Draft-stopping shall be installed per R302.12 in combustibile concealed floor/ceiling assemblies that exceed 1,000sq. ft.

WALLS

94. Show stud size, height, grade and spacing (CRC Table R602.3(5) & R602.3.1). Exterior and interior studs shall be continuous floor to roof unless braced at ceiling. (R602.3) Cripple walls between ceiling and roof require standard stud framing.

95. Studs supporting two floors, ceiling, and roof must be at 3x4 or 2x6 at 16" o.c. (CRC T-R602.3(5))

96. Clearly show a nailing schedule on the plans. (CRC T-R602.3(1))

97. Show location, length and type of shear/ braced walls. Show shear schedule on plans showing wall type, fastener type/spacing, floor/roof transfer connections, etc. Specify the size and use of common nails for any shear or braced walls.

98. The length of bracing along each braced wall line shall not be less than required for wind speed in Table R602.10.3(1) and per the seismic design category in CRC Table R602.10.3(3). See Tables R602.10.3(2) and R602.10.3(4) for adjustment factors based on story height, wall dead loads, exposure types, roof eave-to-ridge heights, bracing methods, etc.

99. The braced wall panel uplift value exceeds 100plf per CRC Table R802.11. Provide an approved listed connector. (CRC R602.3.5)

100. Braced wall lines shall not angle out of plane more than 45 degrees for a maximum diagonal length of 8ft. (CRC R602.10.1.4)

101. Braced wall panels shall be spaced at not more than 25ft o.c. for SDC D0, D1 & D2 and 35ft o.c in SDC C (CRC Table R602.10.1.3). Braced wall lines at exterior walls in seismic design categories D0, D1, and D2 shall have a braced wall panel located at each end of the braced wall line. (see exceptions below)

102. If structural wood sheathing is used for the braced wall it shall be permitted to begin no more than 10ft from each end of the braced wall line provided one of the following is satisfied in accordance with figure R602.10.7:

- A minimum 24" wide panel is applied to each side of the building corner and the braced wall line shall be continuously sheathed per R602.10.4.2.
- End of braced wall panel closet to the corner shall have a hold-down device installed with a minimum uplift value of 1,800lbs and the braced wall line is continuously sheathed or WSP sheathing.

103. Braced wall panels in one-and-two story buildings may be spaced at 35' o.c in order to accommodate one single room not exceeding 900sf. (CRC Table R602.10.1.3)

104. Alternate braced wall panels shall comply with CRC R602.10.6.1. Clearly provide an alternate braced wall detail on the plans showing minimum lengths, hold-down device used, fastener spacing, headers, etc.

105. Continuous braced wall sheathing shall comply with CRC R602.10.4.2 and R602.10.7. Clearly provide details on the plans showing minimum wall lengths, hold-down devices, wall corner fastening, etc.

106. Provide full depth blocking directly above and below braced wall lines when joists are parallel to the wall and not provide directly above or below the wall per CRC Figure R602.10.8(2).

107. Clearly show a detail on the plans for braced wall panel connections to roof framing in accordance to CRC R602.10.8.2.

108. Horizontal and vertical joints in braced wall panels shall occur over 2x blocking minimum. (CRC R602.10.4.4)

109. In seismic design categories D0, D1, and D2 where stone or masonry veneer exceeds the first story the braced wall framing shall comply with CRC R602.10.6.5.
110. Where shear design values exceed 490lbs per foot, all framing member receiving edge nailing from abutting panels shall not be less than a single 3-inch nominal or two 2-inch members stitch nailed together per the design professional. Panel joints and sill plate nailing shall be staggered. 3x sill plate required or 2x sill with double the amount of anchors required for the 3x sill. (CBC T-2306.2(1) and sections 4.3.6.1 and 4.3.6.4.3 of AF&PA-SDPWS)
111. Specify proper size framing members at hold-down locations. If double 2x posts are used, specify the stitch nailing requirements on the plans.
112. Clearly show the type, size, gage, etc of steel wall framing to be used. Provide details on the plans for steel wall fastening, straps, web stiffeners, hole patching, foundation/ floor connections, header construction, uplift connections, braced wall construction, etc. (CRC R603)
113. Clearly show the size, type, and construction of masonry walls per R606. Provide details on the plans for masonry unit type, general construction, reinforcement, anchorage, connections to wood/steel framing, etc. (CRC R606.3)
114. Clearly show the size, type, and construction of Structural Insulated Panels (SIP) per R610. Provide details on the plans for the panel type, construction, fasteners used, lumber types, top/bottom plate connections, corner framing, maximum spans, etc. Conventional framing for Structural Insulated Panels (SIP) is limited to two-stories. (CRC R301.2.2.3.1)
115. Specify post to beam connections. Positive connection shall be provided to ensure against uplift and lateral displacement. (CRC R502.9 & CBC 2304.10.7)
116. Show minimum header sizes and number/size of supports for standard light frame. (CRC R502.5 and Tables 602.7(1), (2) and (3).
117. Specify double top plate with minimum 24" lap splice length each side of end joint. Nail with 12 16d each side of lap joint). (CRC T-R602.3(1)) Lap plates at intersecting walls. (CRC R602.3.2)
118. Minimum wood structural panel sheathing nailing: 6" o.c. edge including nailing into mudsill and top plate. 12" o.c. nailing in field of sheathing. (CRC T-R602.3(1))
119. Indicate minimum 2x6 wall stud framing members in plumbing walls to accommodate drilling and notching of studs. (CRC R602.6)
120. All fasteners used for attachment of siding & into pressure treated lumber shall be of a corrosion resistant type. (CRC R317.3)
121. Fire-block in concealed spaces of stud walls/partitions, vertically at ceiling/floor levels, & horizontally at 10ft. intervals. Fire-block at soffits, drop ceilings/similar locations & in concealed spaces at the top/bottom of stair stringers. (CRC R302.11)
122. Provide approved building paper under the building siding and approved flashing at exterior openings. (CRC R703.2) Specify a minimum of 2 layers of Grade D paper under stucco and 2 layers of 15lb felt (or equivalent) under stone veneer.
123. Stucco shall have a minimum clearance to earth of 4 inches and 2 inches to paved surfaces with an approved weep screed. (CRC R703.7.2.1) Masonry stone veneer shall be flashed beneath the first course of masonry and provided with weep holes immediately above the flashing. (CRC R703.8.5 and R703.8.6)

ROOF

124. Show wood roof rafters and ceiling joist. Spans per CRC Table R802.4(1-2) and R802.5.1 (1-8). List the size, spacing and grade.
125. Rafters shall be framed to a minimum 1x ridge board or tied to each other with an approved gusset plate. Valleys and hip rafters shall be 2x material minimum. All ridge, valley, and hip boards shall not be less in depth than the cut end of the rafter. (CRC R802.3)
126. Truss layout does not correspond with bearing wall layout shown on the plans. All transfer of loads & anchorage of each truss to the supporting structure is the responsibility of the design professional. Posts are required underneath all girder truss bearing points. (CRC R802.10)
127. Trusses shall be connected to wall plates by approved connectors having a resistance to uplift as designed per the truss manufacturer; clearly indicate the types and locations of connectors on the plans.
128. Provide a gable end bracing detail.
129. Provide a truss cap attachment detail.
130. Roof assemblies shall be attached to the supporting walls capable of resisting the uplift values per CRC Table R802.11. A continuous load path shall be designed to transmit the uplift forces from the rafter or truss ties to the foundation. (CRC R802.11)
- 131. Roof sheathing can only cantilever 9 inches beyond a gable end wall unless supported by overhang framing (R802.5.2.1)**
132. Nail rafters to adjacent parallel ceiling joists. Where not parallel, use rafter 2”X4” minimum cross ties spaced evenly with rafters. Where ceiling joists or rafter ties are not provided, design by a California licensed design professional is required. (CRC R802.5.2)
133. Solid block all rafters for shear at exterior walls. Solid block at bearing points of roof framing members that have a depth-to-thickness ratio exceeding 5 to 1. (CRC R802.8) Rafters and ceiling joists with a depth-to-thickness ratio exceeding 6 to 1 shall have bridging installed per CRC R802.8.1. Nail blocking to top plate with 3 each 8d toe nails per block (T-R602.3(1)).
134. Roof purlins shall not be smaller than the rafter they support. For purlin supports, provide struts not smaller than 2x4 at 4ft o.c. inch with an unbraced length not over 8ft., and not flatter than 45 degrees from the horizontal, to bearing walls or partitions. (CRC R802.4.5)
135. Open beam ceilings: Provide galvanized steel strap (minimum size 1.25” x 24” x 18 gage) with 18-10d nails, 3” o.c., equally spaced over ridge at each beam to tie beams together. Provide hanger or seat for beams.
136. For less than 3:12 roof pitch: ridge, hips and valleys require design as beams (CRC R802.4.4)
137. Show minimum 22” x 30” access opening to attic (CRC R807); may be required to be 30”x30” to remove the largest piece of mechanical equipment per the California Mechanical Code.
138. Plywood or structural panels exposed to the weather shall be exterior glue grade. Protected roof panels shall have exterior glue. Minimum nailing per CRC T-R602.3(1), 6” edge, 12” field **with 8d common nails**. Edge-nail panels to blocking between rafters at exterior walls and at shear walls.
139. Provide adequate roof slope (minimum ¼ inch per 12 inches) for roof drainage. Roof drains/gutters required to be installed per the California Plumbing Code with leaf/debris protection also installed.
140. Provide special rafter or truss design for tile roofs. Provide underlayment to comply with ASTM D 226, type II; ASTM D 2626 or ASTM D 6380, class M mineral surfaced roll roofing on solid sheathed roofs for all tiles; 2.5/12 to <4/12 sloped roofs require double underlayment. (CRC R905.3) Specify weight of tile in pounds per square foot.

141. Roof construction and coverings shall comply with CRC Chapters 8, 9 and local ordinance. All roofing shall be tested/listed Class A minimum.
142. Specify a metal roofing product. Provide an ESR report for the proposed metal roofing product which includes the requirements for a Class A roof assembly or select a product from one of the following ESR reports:

Metal Sales ESR Report 2385

<https://icc-es.org/wp-content/uploads/report-directory/ESR-2385.pdf>

VersaShield ESR Report 2053

https://www.gaf.com/en-us/document-library/documents/productdocuments/residentialroofingdocuments/roofdeckprotectiondocuments/versashieldfireresistantroofdeckprotectiondocuments/VersaShield_FireResistant_Roof_Deck_Protection_ICC_ESR2053.pdf

143. Asphalt shingles with sloped roofs 2/12 to <4/12 shall have two layers of underlayment applied per CRC R905.2.2.
144. Wood shingles shall be installed on slopes of 3/12 or greater and installed per CRC R905.7.2
145. On flat roof assemblies provide a detail on the plans showing the construction and location of overflow drains and scuppers in compliance with CRC R903.4 and the California Plumbing Code.
146. Clearly note on the plans to provide the manufactures specifications, installation instructions, and applicable ES report or equivalent to be on site at time of inspection of the roofing material.
147. Specify that skylights shall comply with CRC R308.6.9 for approved types. Show skylights to be mounted on minimum 4 inch curbs where roof slope is less than 3:12 unless otherwise specified by the manufacturer.

GARAGE AND CARPORT

148. Garage shall be separated from the dwelling unit & attic area by ½ inch gypsum board applied to the garage side. Garage beneath habitable rooms shall be separated by not less than 5/8” type X gypsum board. Structure supporting floor/ceiling assemblies used for required separations shall have ½” gypsum board installed minimum. Door openings from the garage to the dwelling shall be solid wood/steel doors or honeycomb steel doors not less than 1 3/8” thick or a 20-minute rated fire door. Doors shall be self-closing & self-latching. No openings directly into a sleeping room from the garage. When the dwelling and garage have fire sprinklers installed per R309.6 and R313, doors into the dwelling unit from the garage only need to be self-closing and self-latching. (CRC R302.5.1 & T-R302.6)
149. Ducts penetrating the garage to dwelling separation shall be a minimum of 26 gauge with no openings into the garage. (CRC R302.5.2)
150. Penetrations through the garage to dwelling separation wall (other than ducts as listed above) shall be fire-blocked per CRC section R302.11, item #4.
151. Garage and carport floor surfaces shall be non-combustible material and slope to drain towards the garage door opening. (CRC R309.1)
152. Appliances and receptacles installed in garage generating a glow, spark or flame shall be located 18” above floor unless it is listed as flammable vapor ignition resistant. (CMC 305.1) Provide protective post or other impact barrier from vehicles. (CMC 305.1.1)
153. **Appliances in private garages and carports shall be installed with a minimum clearance of 6ft above the floor unless they are protected from vehicular impact. (CBC 406.2.9.3)**

STAIRWAYS & RAMPS

154. Stair landings required every 12'7" of vertical rise. (CRC R311.7.3)

155. The minimum dimension of the spiral stairway walk-line is 24.5" (measured on the radius, not perpendicular to the stair tread) with a minimum depth of 6.75" at this location. (CRC R311.7.10.1)
156. Ship ladder and alternating tread are allowed as an extra to the means of egress component. (CRC R311.7.11-12)
Alternating tread devices and ships ladders are allowed as a means of egress for lofts, mezzanines and similar areas of 200 gross sf or less that do not provide exclusive access to a kitchen or bathroom (R311.7.11 & R311.7.12)
157. Exterior stair stringers must be naturally resistant to decay or pressure treated. (CRC R317.1)
158. Rise shall be maximum 7.75"; Run shall be 10" minimum; headroom 6'-8" minimum; width 36" minimum, 31.5" between a handrail on one side and 27" with handrails on two sides. Variation between riser heights 3/8" maximum. A nosing not less than .75 inches but not more than 1.25 inches shall be provided on stairways with solid risers where the tread depth is less than 11 inches. The leading edge of treads shall project not more than 1.25 inches beyond the tread below. Open risers are permitted, provided the opening between the treads does not permit the passage of a 4" sphere. (Openings are not limited when the stair has a rise of 30" or less). (CRC R311.7)
159. Stairways with 4 or more risers shall have a handrail on one side 34" to 38" above the tread nosing. Circular handrails shall have an outside diameter of 1.25"-2"; if not circular, it shall have a perimeter dimension of 4"-6.25" with a maximum cross-sectional dimension of 2.25". See R311.7.8.3 item# 2 for type II handrails with a parameter over 6.25". A minimum clearance of 1.5" shall be maintained from the wall or other surface. Handrails shall be returned, terminate in newel posts, or safety terminals. (CRC R311.7.8.2)
160. Guards shall be 42" minimum height (unless acting as a handrail/guard for a stairway; the guard height may be 34"-38" in height), with openings less than 4" inches clear (guards on the open sides of stairs may have 4 3/8" openings). (CRC R312)
161. Provide landings at the top/bottom of the stairway the width of the stairway. The depth of the landing shall be 36" minimum. (see CRC R311.7.6 for exceptions).
162. Usable spaces underneath enclosed/unenclosed stairways shall be protected by a minimum of 1/2" gypsum board. (CRC R302.7)
163. Exterior stairs, balconies, decks, etc shall be attached to the primary structure with lag screws or equivalent attachment that will resist against withdrawal and vertical/lateral forces or shall be designed to be self-supporting. (CRC R311.5.1)
164. Ramps serving the egress door shall have a slope of not more than 1 unit vertical in 12 units horizontal (8.3-percent slope). All other ramps shall have a maximum slope of 1 unit vertical in 8 units horizontal (12.5-percent slope). Exception: Where it is technically infeasible to comply because of site constraints, ramps shall have a slope of not more than 1 unit vertical in 8 units horizontal (12.5-percent slope) (CRC R311.8.1). Provide 3' X 3' landings at the top and bottom of ramps, where doors open onto ramps, and where ramps change directions. (CRC R311.8.2)

DECKS

165. Guards are required if deck or floor is over 30" above grade, minimum 42" high, with openings less than 4". (CRC R312) Guardrails shall be designed and detailed for lateral forces according to CRC Table 301.5.
166. Provide detail at junction of exterior decking, wall and interior floor framing. Show elevations, flashing and anchorage. Cantilever decks shall be designed for any notches and for the maximum spans per CRC Table 502.3.3(1).

167. Deck supporting a live load of 50lbs per sq. ft. plus 10lb per sq. ft dead load shall have the ledger attached with ½” hot dipped or stainless steel lag screws/bolts per CRC Table 507.9.1.3(1). The lag screws/bolts shall be staggered and have an edge distance top and bottom of 2” and 2”-5” from the ends. See CRC section R301.5 for an alternate connection using hold-down devices. Deck ledgers shall not support concentrated loads from beams or girders and shall be 2x8 minimum in dimension (CRC 507.9.1.1).
168. Provide deck lateral load connections at each end of the deck and at deck intersections per CRC R507.9.2. Specify connectors with a minimum allowable stress design capacity of 1,500lbs and install with 24” of the end of the deck. 750lb rated devices are allowed (DTT1Z as example) if located at 4 points along the deck.
169. Posts/columns shall be restrained at the bottom end to prevent lateral displacement; clearly show approved post bases, straps, etc to achieve this per CRC R407.3
170. Exterior deck support posts shall be cross-braced in two directions for lateral stability if over 4ft in height above grade. Deck framing shall be anchored to the building with connectors not subject to withdrawal. (CRC R507)
171. Joists, girders, structural blocking and support posts shall be wood of natural resistance to decay or pressure-treated lumber when exposed to the weather. (CRC R317.1.3)
172. Hardware and fasteners to be hot-dipped galvanized, stainless steel, silicon bronzed or copper. (CRC R317.3)

ELECTRICAL

173. Never install electrical panels in closets of bathrooms. Maintain a clearance of 36” inches in front of panels, 30” wide or width of equipment and 6’-6” high for headroom. (CEC 110.26) Show the location and amperage size of all service/ sub-panels. A minimum 200amp service with room for a future double-pole circuit breaker for solar installations shall be installed for new construction per CA Energy Code 110.10(e).
- 174. Provide complete plans for house generator installations including manual and automatic transfer equipment. The plans shall include a one-line diagram, equipment specifications, etc in compliance with the Nevada County Residential Generator Submittal Checklist.**
- 175. Provide a minimum 3 lug intersystem bonding busbar at the main electrical service. (CEC 250.94)**
176. Provide electrical service load calculations for dwellings over 3,000 sq. ft, services 400 amperes or greater or as determined by the Plans Examiner.
177. For new, single-family, residential customers (including mobile homes and duplexes) that are supplied by an individual service drop or lateral and rated at 320 amperes or more, Fault Current Letter (AIC) is required from PG&E or the electrical utilities service provider. (CEC 110 & PG&E).
- 178. All automatic garage door openers that are installed in a residence shall have a battery backup function that is designed to operate when activated because of an electrical outage. (CBC 406.2.1)**
179. A concrete-encased electrode (ufer) consisting of 20’ of rebar or #4 copper wire placed in the bottom of a footing is required for all new construction. (CEC 250.52(A)(3)) Bond all metal gas and water pipes to ground. All ground clamps shall be accessible and of an approved type. (CEC 250.104)
180. All 15/20 ampere receptacles installed per CEC 210.52 shall be listed tamper-resistant receptacles. (CEC 406.12)
181. All branch circuits supplying 15/20 ampere outlets in family rooms, dining rooms, living rooms, parlors, libraries, dens, bedrooms, sunrooms, recreation rooms, closets, hallways, kitchens, laundry room or similar rooms/areas shall be protected by a listed combination type arc-fault circuit interrupter. (CEC 210.12)
182. Provide a minimum of one 20A circuit to be used for the laundry receptacle. (CEC 210.11(C)(2))
183. Provide a minimum of one 20A circuit for bathroom receptacle outlets. (CEC 210.11(C)(3))

184. Provide at least 1 outlet in basements, garages, laundry rooms, decks, balconies, porches and within 3' of the outside of each bathroom basin. (CEC 210.52 (D), (F) & (G))
185. Furnaces installed in attics and crawl spaces shall have an access platform (catwalk in attics), light switch and receptacle in the space. Provide a service receptacle for the furnace. (CEC 210.63)
186. All dwellings must have one exterior outlet at the front and the back of the dwelling. (CEC 210.52(E))
187. Provide a minimum of one 20A circuit for attached and detached garage outlets. The circuit shall supply no other receptacle outlet. **Exception: Garage circuit may serve readily accessible outdoor receptacle outlets.** ((CEC 210.11 (C)(4))
188. A minimum of 1 receptacle shall be provided for each car space. (210.52(G)(1))
189. At least one wall switched lighting outlet or fixture shall be installed in every habitable room, bathroom, hallways, stairways, attached garages and detached garages with electrical power, equipment spaces (attics, basements, etc). (CEC 210.70).
190. Kitchens, dining rooms, pantries, breakfast nooks, and similar areas must have a minimum of two 20A circuits. Kitchen, pantry, breakfast nooks, dining rooms, **work surfaces** and similar areas counter outlets must be installed in every counter space 12" inches or wider, not greater than 4' o.c., within 24" inches of the end of any counter space and not higher than 20" above counter. (CEC 210.52 (C)) Island counter spaces shall have at least 1 receptacle outlet unless a range top or sink is installed than 2 receptacles may be required. 1 receptacle is required for peninsular counter spaces. Receptacles shall be located behind kitchen sinks if the counter area depth behind the sink is more than 12" for straight counters and 18" for corner installations. (CEC Figure 210.52(C)(1))
191. Receptacles shall be installed at 12' o.c. maximum in walls starting at 6' maximum from the wall end. Walls longer than two feet shall have a receptacle. Hallway walls longer than 10 ft shall have a receptacle in hallways. (CEC 210.52(A))
192. Stairways with 6 or more risers shall have wall switch at each floor level at the stair landings. (CEC 210.70(A)(2))
193. Receptacles shall not be installed within or directly over a bathtub or shower stall. (CEC 406.9(C)) Light pendants, ceiling fans, lighting tracks, etc shall not be located within 3ft horizontally and 8ft vertically above a shower and/or bathtub threshold. (CEC 410.10(D))
194. All lighting/fan fixtures located in wet or damp locations shall be rated for the application. (CEC 410.10)
195. GFCI outlets are required: for all kitchen receptacles that are designed to serve countertop surfaces, dishwashers, bathrooms, in under-floor spaces or below grade level, in unfinished basements, crawl space lighting outlets, in exterior outlets, within 6' of a laundry/utility/wet bar sinks, laundry areas, and in all garage outlets including outlets dedicated to a single device or garage door opener. (CEC 210.8).
196. Carbon-monoxide alarms shall be installed in dwelling units with fuel-burning appliances or with attached garages (CRC R315):
 - a. Outside of each separate sleeping area in the immediate vicinity of bedrooms
 - b. On every level of a dwelling unit including basements
 - c. Alterations, repairs, or additions exceeding 1,000 dollars (May be battery operated)
197. Smoke alarms shall be installed (CRC (R314):
 - a. In each room used for sleeping purposes.
 - b. Outside of each separate sleeping area in the immediate vicinity of bedrooms.
 - c. In each story, including basements.
 - d. **At the top of stairways between habitable floors where an intervening door or obstruction prevents smoke from reaching the smoke detector.**

- e. Shall not be installed within 20ft horizontally of cooking appliances and no closer than 3ft to mechanical registers, ceiling fans and bathroom doors with a bathtub or shower unless this would prevent placement of a smoke detector (314.3(4)).
 - f. Alterations, repairs, or additions exceeding 1,000 dollars. (May be battery operated.)
198. All smoke and carbon-monoxide alarms shall be hardwired with a battery backup (smoke alarms shall have a 10-year sealed battery). (CRC R314.4 & R315.1.2)
- 199. Smoke detectors within 10 feet to 20 feet of the stove shall be ionization type with alarm silencing switch. (CRC R314.3.3)**
200. All 15/20 ampere receptacles in wet locations shall have in-use (bubble) covers installed. All receptacles in wet locations shall also be listed weather-resistant type. (CEC 406.9(B)(1))
201. Generator installations shall comply with CEC Article 445. Include complete generator details and installation instructions for the generator proposed.

PLUMBING

202. Underfloor cleanouts shall not be more than 5' from an underfloor access, access door or trap door. (CPC 707.9)
203. ABS piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paints. (CPC 312.13)
204. PVC piping shall not be exposed to direct sunlight unless protected by water based synthetic latex paint, .04" thick wrap or otherwise protected from UV degradation. (CPC 312.14)
205. Underground water supply lines shall have a **14 awg** blue tracer wire. (CPC 604.10.1)
206. The adjacent space next to showers without thresholds shall be considered a "wet location" when using the CRC, CBC, and the CEC. (CPC 408.5)
207. Shower compartments, regardless of shape, shall have a minimum finished interior of 1024 square inches (32" by 32") and shall also be capable of encompassing a 30" circle. The required area and dimensions shall be measured at a height equal to the top of the threshold and shall be maintained to a point of not less than 70" above the shower drain outlet. (CPC 408.6) Provide curtain rod or door a minimum of 22" in width (CPC 408.5). Showers and tubs with showers require a non-absorbent surface up to 6' above the floor. (CRC R307.2) **Minimum shower receptor slope is 1/8" per foot. (CPC 408.5)**
208. Show location and size of the water heater on plans. Provide pressure relief valve with drain to outside for water heater. (CPC 504.6) Provide seismic strapping in the upper & lower third of the water heater a minimum of 4" above controls. (CPC 507.2) The water heater shall be of an instantaneous type or the following shall be provided (new construction only) (CEC 150(n)):
- a. A 120V receptacles provided within 3ft
 - b. A category III or IV vent, or a straight (without bends) Type B vent
 - c. Condensate drain that is no more than 2 inches higher than the base of the water heater
 - d. Gas supply line with a minimum 200,000 Btu/hr dedicated capacity for the water heater
 - e. **A dedicated 120/240, 3 wire circuit with 10AWG wire to a receptacle outlet within 3' of the water heater. The unused conductor shall be electrically isolated and have a reserved circuit breaker space. Both ends of the conductor shall be labeled "spare" and be electrically isolated. A reserve single-pole circuit breaker space near this circuit labeled "Future 240V Use."** (CEC 150.0(n))
209. Provide complete gas line sizing calculations per the CA Plumbing Code for the gas line installation. (CPC 1215.0)
210. Domestic hot water lines shall be insulated. Insulation shall be the thickness of the pipe diameter up to 2" in size and minimum 2" thickness for pipes larger than 2" in diameter. (CPC 609.11)

211. A 3-inch gravity drain shall be provided at the low point of the space, installed which provides 1/4-inch per foot grade and terminate at an exterior point of the building protected from blockage. The opening shall be screened with a corrosion-resistant wire mesh with mesh openings of 1/4-inch in dimension. Lengths of the gravity drains over 10 feet in length shall be first approved by the Building Official. (L-V 8.8)
212. Water heaters located in attics, ceiling assemblies and raised floor assemblies shall show a water-tight corrosion resistant minimum 1 1/2" deep pan under the water heater with a minimum 3/4 inch drain to the exterior of the building. (CPC 507.5)
213. Indicate rain gutters and downspouts to be installed for projects below 4,000ft elevation. Clearly show/note that approved leaf/debris guards will be installed on all gutters.
214. Water closets shall be located in a space not less than 30" in width (15" on each side) and 24" minimum clearance in front. (CPC 402.5)
215. Indicate on the plans that the maximum hot water temperature discharging from a bathtub or whirlpool bathtub filler shall not exceed 120 degrees F. (CPC 408.3)
216. Provide anti-siphon valves on all hose bibs. (CPC 603.5.7)
217. Floor drains shall be provided with a trap primer. (CPC 1007)
218. The non-potable water reuse system shall comply with California Plumbing Code Chapter 16A and Nevada County Ordinance Chapter VI. Submit plans, details, notes, and specifications for the water reuse system including but not limited to type of fixtures utilizing the system, irrigation systems, verification of ground water depths, daily discharge, tank construction, disposal fields, indoor usage, plumbing material, etc. The non-potable reuse system shall be approved and permitted by the Environmental Health Department prior to permit issuance and issuance of the certificate of occupancy.
219. Fixtures on floor levels below the closest upstream manhole and/or septic system shall be provided with an approved backwater valve. Fixtures on floor levels above shall not discharge into the backwater valve. (CPC 710)
- 220. Provide complete plans, specifications, and notes on the plans for all hydronic systems per Chapter 12 of the California Plumbing Code. Be sure to include complete information about piping installations, tolerances, valve types/locations, water hammer resistance devices, boilers/water heaters, expansion tanks, manifolds, piping bend radiuses, concrete embedment, testing procedures, etc.**
221. Clearly label on the plans the maximum water flow rates per the (CGBSC 4.303.1):
 - a. Water Closets: 1.28gpf
 - b. Urinals: .125gpf
 - c. Kitchen Faucets: 1.8gpm @ 60psi
 - d. Lavatory Faucets: 1.2gpm @ 60psi
 - e. Showerheads: **1.8gpm**

MECHANICAL

222. Wood burning appliances shall not be installed in a new or existing project that is not one of the following:
 - a. A pellet-fueled wood burning heater.
 - b. A U.S. EPA Phase II Certified wood burning heater.
 - c. An appliance or fireplace determined to meet the U.S. EPA particulate matter emission standard of less than 7.5 grams per hour for a non-catalytic wood fired appliance or 4.1 grams per hour for a catalytic wood fired appliance and is approved in writing by the APCO.
223. All newly installed gas fireplaces shall be direct vent and sealed-combustion type. (CMC 912.2)

224. Any installed wood stove or pellet stove shall meet the U.S. EPA New Source Performance Standard emission limits and shall have a permanent label certifying emission limits.
225. Pre-fab fireplaces require manufacturer specifications, model and UL Laboratories certification. Top chimney must extend a minimum of 2 ft. above any part of the building within 10 ft. (CMC 802.5.4)
226. Fireplaces shall have closable metal or glass doors, have combustion air intake drawn from the outside and have a readily accessible flue dampener control. Continuous burning pilot lights are prohibited. (CEC 150.0(e))
227. Provide combustion air for all gas fired appliances per CMC Chapter 7.
228. Masonry chimneys and fireplaces shall be constructed per CRC Chapter 10. Provide details and notes on the plans for the construction, foundation, seismic reinforcement, seismic anchorage, firebox dimensions, etc.
229. Gas vents passing through an insulated assembly shall have a metal insulation shield a minimum 2" above insulation. (CMC 509.6.2.7)
230. Gas water heater and furnace are not allowed in areas opening into bathrooms, closets or bedrooms unless installed in a closet equipped with a listed gasketed door assembly and a listed self-closing device with all combustion air obtained from the outdoors. (CPC 504)
231. Roof top equipment on roofs with over 4/12 slope shall have a level 30"x30" working platform. (CMC 304.2)
232. Exhaust openings terminating to the outdoors shall be covered with a corrosion resistant screen ¼"-1/2" in opening size (not required for clothes dryers). (CMC 502.1)
233. Vent dryer to outside of building (not to under-floor area). Vent length shall be 14 ft. maximum. Shall terminate a minimum of 3' from the property line and any opening into the building. (CMC 504.4.2)
234. Environmental Air Ducts shall not terminate less than 3' to a property line, 10' to a forced air inlet, 3' to openings into the building and shall not discharge on to a public way. (CMC 502.2.1)
235. Provide minimum 100 square inches make-up air for clothes dryers installed in closets. (CMC 504.4.1(1))
236. Heating system is required to maintain 68 degrees at 3 ft. above floor level and 2ft from exterior walls in all habitable rooms. (CRC R303.10)

GREEN BUILDING

237. The Residential Green Building Standards Mandatory Measures Application checklist shall be made part of the submitted plans. (Division A4.6) See the Guide to the 2019 California Green Building Standards Code Residential for more information. See <https://aiacalifornia.org/new-calgreen-checklists/> for a plan sheet summary.
238. Projects which disturb less than one acre of soil and are not part of a larger common plan of development which in total disturbs one acre or more, shall manage storm water drainage during construction, one or more of the following measures shall be implemented to prevent flooding of adjacent property, prevent erosion and retain soil runoff on the site (CGBSC 4.106.2):
 - a. Retention basins of sufficient size shall be utilized to retain storm water on site
 - b. Where storm water is conveyed to a public drainage system, collection point, gutter, or similar disposal method, water shall be filtered by use of a barrier system, wattle or other method approved by the enforcing agency.
239. All new residential construction with attached private garages shall have the following for electric vehicle (EV) charging stations (CGBSC 4.106.4):
 - a. Install a minimum 1-inch conduit capable of supplying a 208/240V branch circuit to a suitable box location for EV charging. The other end shall terminate to the main service and/or subpanel.

- b. The main panel and/or subpanel shall be of sufficient size to install a 40-ampere dedicated branch circuit. The dedicated overcurrent protection space shall be labeled “EV CAPABLE”.
240. Multiple shower heads serving a single shower shall have a combined flow rate of 1.8 gpm or the shower shall be designed to allow only one shower outlet to be in operation at a time. (CGBSC 4.303.1.3.2)
241. Residential projects with an aggregate landscape area equal to or greater than 500 square feet shall comply with either a local water efficient landscape ordinance or the current California Department of Water Resources’ Model Water Efficient Landscape Ordinance (MWEL0), whichever is more stringent. Automatic irrigation system controllers installed at time of final inspection shall have weather or soil based controllers and/or weather based controllers with rain sensors. Soil moisture based controllers are not required to have rain sensor input. (CGBSC 4.304)
242. Submit a construction waste management plan. Recycle and/or reuse a minimum of **65 percent** of nonhazardous construction and demolition waste. (CGBSC 4.408.2) The template is located at <https://www.mynevadacounty.com/DocumentCenter/View/15490/Construction-Waste-Management-Plan-PDF> or can also be completed as part of the included Residential General Notes Sheet as mentioned at the beginning of this checklist.
243. (Clearly note on the plans) At time of final inspection, a building operation and maintenance manual, compact disc, etc shall be provided containing the following: (CGBSC 4.410)
- a. Directions that manual shall remain onsite for the life of the building
 - b. Operation and maintenance instructions for equipment, appliances, roof/yard drainage, irrigation systems, etc
 - c. Information from local utility, water and waste recovery providers
 - d. Public transportation and carpool options
 - e. Material regarding importance of keeping humidity levels between 30-60 percent
 - f. Information regarding routine maintenance procedures
 - g. State solar energy incentive program information
 - h. A copy of any required special inspection verifications that were required (if any)
244. Clearly note on the plans how the project will meet minimum pollutant control requirements for adhesives, sealants, caulks, paints, carpet, resilient flooring systems, etc. (CGBSC 4.504)
245. Duct openings related to HVAC systems shall be covered with tape, plastic, sheet metal or other methods to reduce the amount of water, dust and debris which may enter the system. (CGBSC 4.504.1)

TITLE 24 ENERGY

246. Submit 2 signed AND registered sets of Title 24 Energy Compliance Calculations (per 2019 CA Energy Code) for review referencing the correct compliance year per the permit application submittal date. The energy calculations shall be made part of the plans.
- 247. Provide complete solar photovoltaic plans OR submit documentation, information and calculations how one of the exceptions has been met for all newly constructed dwellings (including changes of use). If a shading exception is used then the information shall be provided on the site plans and with calculations showing how the shading exception is being met based on the type of object, distance away, height, etc. (110.10(a)1)). The plans shall include one line diagrams, equipment specifications, etc in compliance with the Nevada County Residential Solar PV Submittal Checklist.**
- 248. Add note to coversheet: Contractor shall contact the HERS rater responsible for conducting the Quality Insulation Installation (QII) prior to beginning the rough framing when QII is required as part of the energy calculations.**
249. The conditioned floor area for all floors in the energy calculations shall match the floor areas shown on the cover sheet of the plans. The orientation on the energy calculations shall match the orientation shown on the site plan.

250. Clearly label on the plans what components require HERS testing per the projects energy calculations. Duct leakage requirement has been reduced to 5% maximum for single family homes.
251. All energy calculations shall be based on Climate Zone 11 except for the Eastern County Region which is Climate Zone 16.
252. Provide compliance documentation for mandatory measures to shown throughout the plans. All ducts in conditioned spaces must include R-4.2 insulation. (150.1(c)9) **Minimum heating and cooling filter ratings shall be MRV 13. (150.0(m)12)**
253. Clearly show compliance throughout the plans how the building will meet the minimum requirements shown in the energy calculations (radiant barrier on roof plan, insulation in cross sections, mechanical requirements on utility plans, minimum duct insulation, lighting and switching requirements on the electrical plan, etc).
254. Isolation water valves required for instantaneous water heaters 6.8kBTU/hr and above. Valves shall be installed on both cold and hot water lines. Each valve will need a hose bib or other fitting allowing for flushing the water heater when the valves are closed. (CEC 110.3(c)6)
255. In Climate Zone 16 (Truckee Region) a Class II vapor retarder shall be installed on the conditioned space side of all insulation in exterior walls, vented attics and unvented attics with air-permeable insulation. (California Energy Code 150.0(g))
256. ALL luminaires must be high efficacy. (150.0(k)1A)
257. Luminaires recessed in insulated ceilings must meet five requirements (150.0(k)1C):
- They must be rated for direct insulation contact (IC).
 - They must be certified as airtight (AT) construction.
 - They must have a sealed gasket or caulking between the housing and ceiling to prevent flow of heated or cooled air out of living areas and into the ceiling cavity.
 - They may not contain a screw base sockets
 - They shall contain a JA8 compliant light source
258. In bathrooms, garages, laundry rooms, and utility rooms, at least on luminaire in each of these spaces shall be controlled by a vacancy sensor **or occupant sensor provided the occupant sensor is initially programmed like a vacancy sensor (manual-on operation)**. (150.0(k)2I)
259. Joint Appendix A (JA8) certified lamps shall be considered high efficacy. JA8 compliant light sources shall be controlled by a vacancy sensor or dimmer. (Exception: <70sf closets and hallway) (150.0(k)2K)
260. Under-cabinet lighting shall be switched separately from other lighting systems. (150.0(k)2L)
261. All exterior lighting shall be high efficacy, be controlled by a manual on/off switch and have one of the following controls (the manual switch shall not override the automatic control device) (150.0(k)3A):
- Photo-control and motion sensor
 - Photo-control and automatic time switch control
 - Astronomical time clock control turning lights off during the day
262. All high efficacy light fixtures shall be certified as “high-efficacy” light fixtures by the California Energy Commission.
263. Contractor shall provide the homeowner with a luminaire schedule giving the lamps used in the luminaires installed. (10-103(b))
264. The number of blank electrical boxes more than 5 feet above the finished floor shall not be greater than the number of bedrooms. These electrical boxes must be served by a dimmer, vacancy sensor, or fan speed control. (150(k)1B)

265. Provide a gasket/ insulation on all interior attic/under-floor accesses. (110.7)
266. Provide a duct sizing plan, calculation and/or sizing chart showing compliance with minimum supply and return air duct requirements per California Green Building Standards Code 4.507.2 and California Energy Code 150.0(m).
267. Provide verification on the plans how the building will meet the minimum ventilation and acceptable indoor air quality requirements per ASHRAE Standard 62.2. Window operation is not a permissible method of providing the whole building ventilation airflow required. This is subject to HERS testing (clearly label this on the plans). The following label must be attached to the fan switch: "To maintain minimum levels of outside air ventilation required for good health, the fan control should be on at all times when the building is occupied, unless there is severe outdoor air contamination." (California Energy Code 150.0(o)) **A minimum 100 CFM indoor air quality fan is required in the kitchen and shall be HERS verified.**
268. Radiant barrier shall be installed, and it shall also be installed on all gable ends per the manufacture's specifications.

WILDLAND URBAN INTERFACE (WUI)

269. New construction shall comply with the Wildland Urban Interface requirements shown in the California Residential Code Section CRC R337. U occupancy structures located at least 50ft from structures required to comply with the WUI standards are not required to meet WUI construction requirements.
270. Show compliance with vegetation clearance requirements per CRC 337.1.5 on the site plan(s).
271. Clearly note on the cover sheet of the plans that all materials use shall comply with CRC Section R337 requirements for exposure to wildfire.
272. (Manufactured Housing Only) Submit written verification from the manufactured home company stating that the proposed structure has been constructed to meet minimum Wildland Urban Interface requirements. A permanent plaque/serial number shall be posted on the home that will be verified at time of inspection.
273. Exterior wall coverings shall be noncombustible, ignition resistant, heavy timber, log wall or fire resistive construction. (CRC R337.7)
274. Exterior wall coverings shall extend from the foundation to the roof and terminate at 2 inch nominal solid blocking between rafters and overhangs. (CRC R337.7.3.2)
275. Open/enclosed roof eaves and soffits, exterior porch ceilings, floor projections, under-floor areas and undersides of appendages to comply with ignition resistant construction requirements. (CRC R337.5-9)
276. Spaces created between roof coverings and roof decking shall be fire stopped by approved materials or have one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909. (CRC R337.5.2)
277. Indicate on the plans where valley flashing is installed, the flashing shall be not less than 26awg and installed over not less than one layer of minimum 72lb mineral surfaced non-perforated cap sheet complying with ASTM D 3909 and at least 36 inches wide running the full length. (CRC R337.5.3)
278. Attic gable and eaves above 12ft and under-floor ventilation shall be provided with fully covered metal wire mesh, vents, or other materials that have a minimum 1/16 inch and maximum 1/8 inch openings, non-combustible and corrosion resistant. All other eave vents shall be listed/approved to resist the intrusion of flame and burning embers. (CRC R337.6)
279. Indicate on plans exterior glazing shall have a minimum of one-tempered pane, glass block, have a fire resistive rating of 20 minutes or be tested to meet performance requirements of SFM Standard 12-7A-2. (CRC R337.8.2)

280. Operable skylights shall be protected by a noncombustible mesh screen 1/8" max openings (R337.8.2.2)

281. Exterior doors including garage doors shall be noncombustible, ignition resistant material, minimum 1 3/8 inch solid core, minimum 20 minute fire resistive rating or shall be tested to meet the performance requirements of SFM Standard 12-7A-1. (CRC R337.8.3)

282. Garage door perimeter gap maximum 1/8". Metal flashing, jamb and header overlap, and weather-stripping meeting section requirements are permitted. (R337.8.4)

283. The walking surface material of decks, porches, balconies and stairs within 10ft of grade level shall be ignition resistant material, exterior fire-retardant treated wood or noncombustible material. (CRC R337.9)

GRADING

284. Provide a complete scaled engineered grading plan showing property lines, easements, the amount of area to be disturbed, amount of cubic yards disturbed specifying cuts and fills, before and after grade elevations, driveway grades, drainage, slope percentages, swales, creeks, road and pad elevations, etc. The plans shall be wet stamped/signed by a licensed California Engineer.

285. See Green Building Standard items for requirements related to storm water pollution prevention measures.

286. Verify on the plans if any soil will be removed from the site providing information for what properties it will be delivered to. Also provide information if soil will be imported indicating where the soil is coming from and depicting the type of soil in the soils/geotechnical report.

287. Clearly label the following in **BOLD** on the plans: Approval shall be obtained from the Building Official prior to any grading activity occurring between October 15th – April 15th.

288. Cuts shall not be steeper than 1 unit vertical in 2 units horizontal (50% slope) unless verified through an approved soils engineering report. (Nevada County Land-Use Ordinance L-V 13.9)

289. Fill slopes shall not be constructed on natural slopes steeper than 1 unit vertical in 2 units horizontal (50% slope). Fill slopes shall be prepared to receive fill. (Nevada County Land-Use Ordinance L-V 13.10 (B))

290. Fill being constructed on slopes with steeper than 20% and over 5ft in height shall be appropriately benched per the soils engineer a minimum of 10ft in width. (Nevada County Land-Use Ordinance L-V 13.10 (B))

291. All fill material shall be clean and free of debris greater than 12 inches in diameter. (Nevada County Land-Use Ordinance L-V 13.10 (C)) All fill shall be compacted to a minimum of 90 percent of maximum density with a compaction report onsite at time of inspection. (Nevada County Land Use Ordinance L-V 13.10 (D))

292. Cut and fill slopes shall be set back from site boundaries per the below figure and section Nevada County Land-Use Ordinance L-V 13.11:

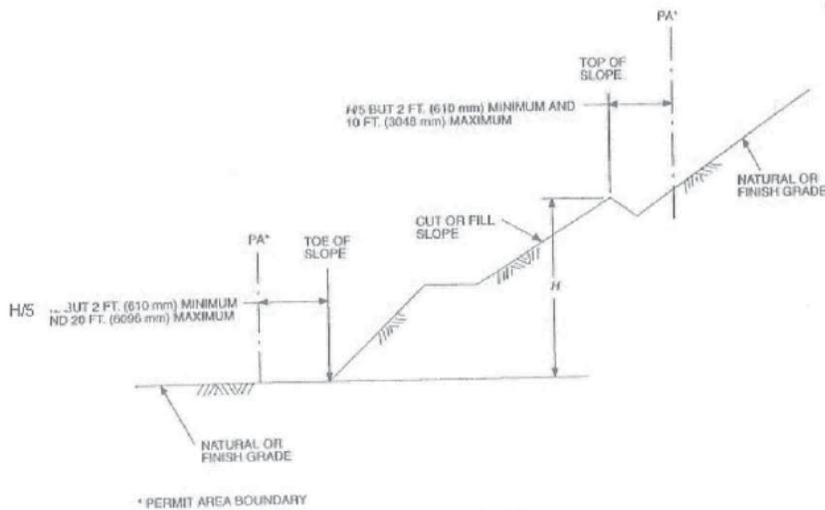


FIGURE A-33-1—SETBACK DIMENSIONS

293. The toe of fill slopes shall not be closer to a site boundary line than 2ft and a maximum of 20ft (see figure A-33-I).
294. The top of cut slopes shall not be closer to a site boundary line than 2ft and a maximum of 10ft (see figure A-33-I).
295. Terraces shall be provided and installed per Nevada County Land-Use Ordinance section L-V 13.12 when required for substantial cuts and fills.
296. Grading shall not be completed as to increase the amount of drainage/runoff onto neighboring properties. (Nevada County Land-Use Ordinance L-V 13.12) **Provide details or notes related to drainage. Important requirements are summarized below.**
 - a. **No concentrated flow across Right of Way.**
 - b. **No drainage onto neighboring property.**
 - c. **All drainage flows to landscaping.**
 - d. **Storm Water Protection Measures shall be implemented at the initial stage of construction activity. Projects shall prevent erosion and retain soil runoff on the site through the use of a barrier system, wattle or other approved method.**
 - e. **Site shall be graded to prevent surface water from entering buildings. Lots shall be graded to drain surface water away from foundation walls. The grade shall fall a minimum of 6 inches within the first 10 feet (5%).**
 - f. **Impervious surfaces within 10 feet of the building shall be sloped a minimum of ¼” per foot (2%) away from the foundation.**
297. Indicate and clearly note on the plans, “Prior to scheduling a foundation inspection. Preliminary grading and compaction reports shall be submitted to and approved by the Building Department. Any revisions from the soils report shall be incorporated into the plans and specifications.”
298. Driveways shall meet minimum ingress/egress, curve radius, running slope and cross slope requirements and fire safe standards per Chapter XVI of the Nevada County Land-Use Development Code.

AS-BUILT CONSTRUCTION

299. Verify that the foundation is constructed per minimum conventional construction code requirements and/or as designed by the project architect/engineer. Provide written verification from an approved testing agency qualified to perform such analysis that reinforcing steel has been installed according to the plans. Ground penetrating radar testing is typically used for this testing.
300. Provide written verification and inspection report by an engineer licensed by the State of California that the

building is structurally sound. This shall be a in depth and thorough inspection report stating observations in the field, site pictures, corrective measures taken and to be undertaken, and statement that the structure meets all minimum code requirements for that respective field.

301. Provide written verification by an electrical contractor licensed by the State of California that the electrical system meets the California Building Standard Codes. This shall be a in depth and thorough inspection report stating observations in the field, site pictures, corrective measures taken and to be undertaken, and statement that the structure meets all minimum code requirements for that respective field.
302. Provide written verification by a plumbing contractor licensed by the State of California that the plumbing system meets the California Building Standard Codes. This shall be a in depth and thorough inspection report stating observations in the field, site pictures, corrective measures taken and to be undertaken, and statement that the structure meets all minimum code requirements for that respective field.
303. Provide written verification by a mechanical contractor licensed by the State of California that the mechanical system meets the California Building Standards Codes. This shall be a in depth and thorough inspection report stating observations in the field, site pictures, corrective measures taken and to be undertaken, and statement that the structure meets all minimum code requirements for that respective field.
304. Clearly label the following in **BOLD** on the plans that the owner and/or contractor shall complete at time of inspection:
 - a. Make the means of attachment of the structure to the foundation accessible for inspection when the means of attachment are visible in a crawl space, an access opening must be within 20 feet of the means of attachment. In slab construction, the wall coverings must be removed to show the means of attachment.
 - b. Make the components of the electrical system visible by removing cover plates from Receptacles, fixtures, subpanels, and services and pulling receptacles and switches out of the boxes and as otherwise required by the Inspector.
 - c. Make the components of the plumbing system visible by removing cover plates, access panels and as otherwise required by the Inspector.
 - d. Make the components of the mechanical system visible by removing cover plates, access panels. Provide a gas pressure test on all new gas lines.

HIGH ELEVATION (ABOVE 4,000FT)

305. The propane gas (LPG) system site plan shall be stamped approved by the gas supplier and the fire marshal.
306. Indicate on the elevation plans that vent terminals of direct-vent appliances, exit terminals, gas vents, etc. shall terminate above the anticipated snow depth (anticipated snow depth is the ground snow load divided by 25). Vent terminations shall not be located under decks which could be sealed off around the perimeter with snow accumulation. (Nevada County Land-Use Ordinance L-V 8.9, L-V 8.10, L-V 8.11)
307. Above 4,000 feet elevation above sea level all direct vent appliances, exit terminals, gas vents, etc termination shall be protected from closure and sliding snow and ice by the use of formed metal crickets. The metal crickets shall have a minimum vertical height (at the apex) at least one-half of the required vertical height of the vent extension above the roof. In no case shall the cricket measure less than 8 inches at the apex. The cricket and flashing shall be secured to the roof framing and sheathing to withstand the shear loads anticipated. Combined flashing and cricket units may be used. Vent pipes shall extend through their flashings and be tightly sealed at the point of penetration so as to prevent the return of sewer gases into the structure. All appliance vents, flues and chimneys shall be strapped to the cricket near its apex with a galvanized steel strap with a minimum thickness of 16 gauge. (Nevada County Land-Use Ordinance L-V 7.13, L-V 8.9, L-V 8.10, L-V 8.11)

- EXCEPTION: Vent terminations which are made within 36 inches of the ridge or on roofs having a pitch of 2 in 12 or flatter shall not be required to have crickets.
308. An "ice dam" or "ice guard" is required on the roofs of heated buildings constructed at elevations above 4,000 feet above sea level. All roofs, regardless of covering, with a pitch of less than 8 in 12 shall be protected against leakage (caused by ice and snow) by either: (1) a base sheet of felt solid cemented to the roof sheathing with an approved cementing material, or (2) an approved manufactured membrane installed per the manufacturer's specifications. Application shall extend from the roof eave edge up the roof to a line five (5) feet horizontally inside the exterior wall line of the heated building and up 30 inches along each side of a valley. Where there exists both conditioned space and unconditioned space, the required covering shall also extend horizontally to a point at least five (5) feet onto the unconditioned space. This "ice dam"/"ice guard" shall be in addition to any underlayment otherwise required. (Nevada County Land-Use Ordinance L-V 3.7)
 309. Indicate on the plans and structural calculations for unbalanced snow load analysis for structures with ground snow loads over 100psf. Unbalanced snow loads shall be designed per Nevada County Ordinance L-V 3.13.
 310. Above 4,000 feet elevation above sea level, when structural conditions necessitate installation of water piping in exterior walls or above ceilings of buildings, the pipes shall be installed to the inside edge of the wall or ceiling framing and insulated, on the unheated side of the pipes, with at least R-19 insulation or equivalent. Above 4,000 feet elevation above sea level all cold water piping shall be graded back to the water service. Hot water lines shall be sloped to a bleeder valve or valves that are readily accessible. Gravity drains or other approved devices may be used to satisfy this requirement. No part of such water lines shall be trapped. (Nevada County Land-Use Ordinance L-V 7.8)
 311. Above 4,000 feet elevation above sea level the building water service line shall be equipped with a "stop and drain" valve located where the line daylights out of the ground within the building footprint. The drain port of the valve shall be protected from blockage by the use of a sleeve or box over the valve. The valve shall be protected from freezing with insulation material and fitted with a handle that is readily accessible. (Nevada County Land-Use Ordinance L-V 7.9)
 312. Above 4,000 feet elevation above sea level water supply yard piping shall be protected from freezing by a minimum of 36 inches of earth covering and shall be extended to within the building footprint before daylighting out of the ground. (Nevada County Land-Use Ordinance L-V 7.10)
 313. See section Nevada County Land-Use Ordinance L-V 7.13 for liquefied petroleum gas facilities and piping requirements above 4000 feet.

SPECIAL INSPECTION

314. Complete and submit a Special Inspection and Testing Agreement form to the Building Department for review for any required special inspections. The form is located at <https://www.mynevadacounty.com/DocumentCenter/View/15447>
315. Highlight in large font, a table or list of all the requested/required special inspections on the cover sheet & any other applicable sheets of the plans.
316. Inspection is required for high strength bolting. (CBC 1705.2)
317. Inspection is required for welding; groove welds, multi-pass fillet welds, single pass fillet welds more than 5/16", and welding of rebar. (CBC 1705.2)
318. Inspection is required for concrete designed with the f'c greater than 2,500 PSI. (CBC 1705.3)
319. Inspection is required for masonry construction not designed per conventional masonry construction per the California Building and Residential Codes. (CBC 1705.4)
320. Inspection is required for trusses 60" or greater in height. (1705.5.2)

321. Inspection is required for a soil fill, compaction and grading. (CBC 1705.6)
322. Inspection is required for the installation/testing of pile foundations. (CBC 1705.7)
323. Inspection is required the seismic-force-resisting system when the fastener spacing is 4 inches or closer. (CBC 1705.11.1)
324. Inspection is required for architectural components in seismic design categories D0-D2 on building more than 30' in height for exterior cladding, interior/exterior non-bearing walls, and interior/exterior veneer. (Exceptions: cladding/veneer 5psf or less and interior non-bearing walls weighing 15psf or less.) (CBC 1705.12.5)
325. Inspection is required for fire sprinklers in Seismic Design Categories (SDC) C-F for clearances to utilities. (1705.12.6)
326. Inspection is required for epoxy bolts & rebar. (per manufacturer)

TINY HOUSES (CRC Appendix Q)

327. **Maximum area of 400sqft excluding lofts (AQ102).**
328. **Ceiling heights meet the following and are shown on floor plans and cross sections (AQ103):**
 - **Habitable space and hallways: 6'8"**
 - **Bathrooms, kitchens and obstructions (beams, ducts, etc): 6'4"**
329. **Loft area and heights meet the following and are shown on the floor plans and cross sections (AQ104):**
 - **36sqft area minimum**
 - **5ft minimum length in any direction**
 - **Heights less than 3ft don't count toward minimum area (exception: 6/12 or greater sloped roof, only portion less than 16" doesn't count toward loft area)**
330. **Loft access stairways meet the following and are shown on the floor plan, cross sections and general notes (AQ104.2.1):**
 - **Width: 17" at or above handrail; 20" below handrail**
 - **Minimum 6'2" headroom from nosings**
 - **Risers: 7"-12"**
 - **Tread depth/riser height calculated by either of the following (provide calculation on floor plans and/or cross sections):**
 - **Depth: 20" minus 4/3 riser height**
 - **Height: 15" minus 3/4" tread depth**
 - **Stair landing platform if loft ceiling is less than 6'2" in height at the top by the width of the stairway shall have a top riser that is 18"-22" in depth and 16"-18" in height from loft floor.**
 - **Handrails shall be provided per R311.7.8.**
331. **Ladders may be used for loft access meeting the following and are shown on the floor plan and cross sections (AQ104.2.2):**
 - **Rung width: 12" minimum**
 - **Rung spacing: 10"-14"**
 - **Capable of supporting 200lbs**
 - **Rung max variation of 3/8"**
 - **Mounted 70-80 degrees from horizontal**
332. **Ship ladders and alternating tread devices may also be used for loft access. Show compliance on the plans per CRC R311.7 for these components (AQ104.2.3-4)**

333. Loft guards shall be a minimum of 36" in height or ½ the clear height to the ceiling, whichever is less (AQ104.2.5).
334. Emergency egress shall be provided from sleeping areas per R310. Roof access windows may be used if in compliance with R310. Show compliance on the plans (AQ105).
335. All other aspects in a tiny house shall be in compliance with the relevant adopted California Building Standards Codes such as light/ventilation requirements, utilities, structural compliance, etc.

FLOOD HAZARD

This Building is located within the Flood Hazard Specific Plan area and the following requirements must be met.

336. The building is within the FEMA Designated 100-year flood zone. Provide a Flood Elevation Certificate based on the construction drawings showing the **finish floor a minimum 1 ft. above the Base Flood Elevations (BFE)** completed by a licensed surveyor, or engineer which is required prior to plan check and approved by the Building Official and Flood Plain Administrator.
337. The building is within the FEMA Designated 100-year flood zone. It appears that the improvements may exceed 50% of the current market value of the existing structure. If the value of all work (including all improvements within the last three years) exceeds 50% of the current market value of the structure then the entire structure must be raised above the BFE.
338. Note on plans that an approved Flood Elevation Certificate based on the actual elevation of the building, by a licensed surveyor, or engineer is required prior to pouring the slab **or** prior to pouring a stem wall. In addition a final flood elevation certificate is required prior to final inspection that includes utilities and flow through vents.
339. Base Flood Elevation (BFE) must be shown on the site plan and building plans; on the elevation views include Base Flood Elevation and finish floor must be one foot above the Base Flood Elevation (BFE).
340. All materials within 1 foot above and below from the Base Flood Elevation (BFE) must be approved (FEMA Technical Bulletin # 3-93), specified and clearly shown on the plans, Garage/under-floor. Pressure treated solid wood, treated or marine grade plywood, concrete or steel etc.
341. All heating, ventilation, plumbing and air conditioning equipment must be designed and located so as to prevent water from entering or accumulating within the components during conditions of flooding, Without a special design authorized by the Building Department, mechanical equipment and plumbing fixtures shall be located **1 foot above the Base Flood Elevation (BFE)**
342. All electrical equipment must be located 1 foot above the Base Flood Elevation (BFE). "Electrical equipment" includes load centers, sub-panels, circuit breakers, and ground fault circuit interrupting devices, motors, etc. Electrical branch circuits may extend below the Base Flood Elevation (BFE) only if protected by a ground fault circuit interrupting device located above the BFE.
343. Venting requirements: all fully enclosed areas below the lowest floor that is subject to flooding shall be designed to automatically equalize hydrostatic flood forces on exterior walls by allowing for the entry and exit of flood water. Designs for meeting this requirement must either be certified by a registered professional engineer or architect or meet or exceed the following minimum criteria:
344. Have a minimum of two openings on opposite sides with a total net area not less than one square inch for every one square foot of enclosed area subject to flooding shall be provided. The bottom of all openings shall be no higher than one foot above grade. (Openings may be equipped with screens, louvers or other coverings or devices provided that they permit the automatic entry and exit of flood water).
345. Propane tank must be elevated or secured on a foundation designed to resist flotation and lateral movement.

346. Provide complete structural plans, details and calculations demonstrating that the proposed structure is adequate to withstand the flood depths, pressures, velocities, impact, uplift forces, and other factors associated with floods.
347. The property is located in a 100 year flood hazard area; a Conditional Letter of Map Revision for Fill (CLOMR-F) is optional and has to be completed and reviewed by FEMA. If the CLOMR-F is approved, this is the advantage of the homeowner due to the fact that the map would be revised and the building would be taken out of the flood hazard area.

DEFERRED SUBMITTALS

348. Submittal documents shall be submitted to the Architect or Engineer of record who shall review them and forward them to the Building Official with a notation indicating that the deferred submittal documents have been reviewed and that they have been found to be in general conformance with the design of the building. Any exceptions must be addressed before submitting to the Building Department.
349. Deferred submittal items shall be submitted to the Building Department for review and approval before installation. The applicant shall be responsible for coordination of the submittal items and allow adequate review time by the Building Department.

END OF COMMENTS

Additional review comments from Planning, Environmental Health, Public Works, Sanitation, Code Compliance, and/or Fire may be applicable to the proposed project. To check the review status of your permit go to the Accela Customer Portal located at:

<https://permits.mynevadacounty.com/CitizenAccess/Cap/CapHome.aspx?module=Building&TabName=Building>