



908 WEST GORDON AVE. SUITE #3
LAYTON, UT 84041
(801) 547-8133

October 26, 2017

FIRST REVIEW
WC³ Project #: 217-525-188

Weber County
Building Inspection Department
2380 Washington Boulevard, Suite 240
Ogden, Utah 84401
Phone: (801) 399-8374

Attention: Craig Browne, Building Official

Subject: Plunkett Kuhr SFD – Plan Review Comments

Mr. Browne:

West Coast Code Consultants, Inc. (WC³) has completed the first review of the proposed Plunkett Kuhr SFD project located in Eden, UT. This review was based upon the following:

1. Architectural drawings dated 10/5/2017 by Elliot Workgroup, sealed and signed by Craig Elliot, Licensed Architect.
2. Structural drawings and calculations dated 9/15/2017 by Canyons Structural Consulting, sealed and signed by Dany JP Tremblay, Professional Structural Engineer.
3. Mechanical and plumbing drawings dated 10/5/2017 by Elliot Workgroup, sealed and signed by Craig Elliot, Licensed Architect.
4. Electrical drawings dated 10/5/2017 by Elliot Workgroup, sealed and signed by Craig Elliot, Licensed Architect.
5. Geotechnical investigation report (#01496-004) dated 9/13/2017 by IGES, sealed and signed by David A Glass, Professional Engineer.

The 2015 IRC, as adopted by the State of Utah, were used as the basis of our review. Specific comments in regards to this project are enclosed with this cover letter. If you have any questions in regards to this review please do not hesitate to contact me.

Sincerely,

Mike Molyneux, P.E.

Attachment: Comments



Plan Review Comments

Project Name: Plunkett Kuhr SFD

Code Review by: Josh Goodman

Location(s): 7977 Heartwood Drive, Eden, UT

Structural by: Joe Bingham

Checked By: DeAnn Wilde

SQUARE FOOTAGE SUMMARY:

Main Level	Upper Level	Finished Basement	Unfinished Basement	Covered Porch	Uncovered Patio(s)	Garage	Carport
1,129 ft ²	375 ft ²	1,667 ft ²	-	208 ft ²	581 ft ²	367 ft ²	-

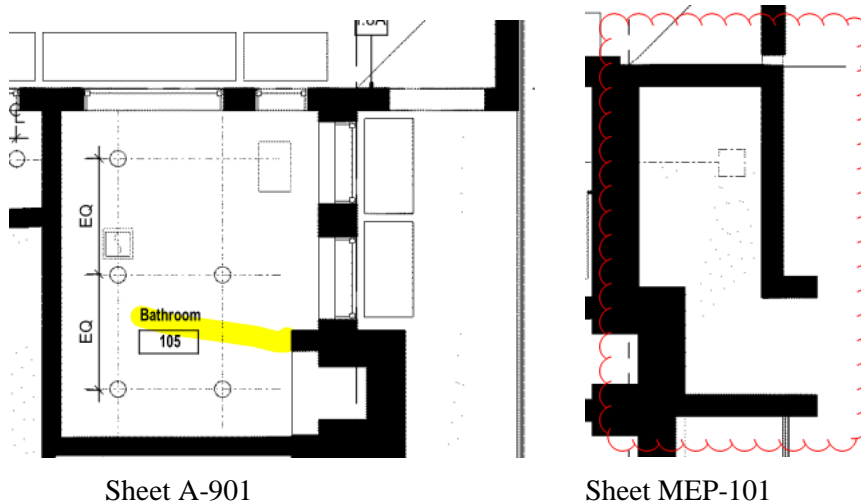
GENERAL INFORMATION:

The submitted documents for the above-mentioned project, as outlined in the cover letter, have been reviewed. The following comments address areas of concern, non-compliance with the governing code, potential errors, or omissions in the proposed design. The appropriate design professional must address each comment below and submit a written response in addition to revised plans and calculations if necessary. **Please cloud any revisions made to the construction drawings and provide the date of the latest revision on each revised sheet.**

CODE REVIEW COMMENTS:

- A1. Sheet G-5: Please address the following:
 - A. The IRC code summary references several I-codes besides the IRC. Other than the IECC, please clarify why the list of codes has been provided. Detail in writing that the plans were designed based upon and meet the requirements of the 2015 IRC.
- A2. Sheet A-101: Please address the following:
 - A. A crawl space access door is identified on the Level 1 floor plans. The south elevation drawing provided on Sheet A-201 shows the access door to be approximately 6-feet above grade. Please clarify what is occurring at these locations.
 - B. Detail the size of the crawl space access door, per R408.4.
- A3. Sheet A-102: Please address the following:
 - A. Door 205c is identified as an interior fire rated glass door. Door 205d is identified as an interior single flush door. Door 205d is required to be fire rated in the same manner as the other door since it is separating habitable space from the garage. Please detail on the plans how all openings between the garage and the residence will meet the requirements of IRC R302.5.1.
- A4. Sheet A103: Please address the following:
 - A. A firebox is identified in the study, and yet no other information is provided. Please provide the listing information for the firebox, the cut sheet, and the manufacturer's installation information.
- A5. Sheet A-201: Please address the following:

- A. Guards are shown at various locations throughout the elevations drawings. Per R312.1, the minimum height of guards located more than 30 inches above the floor shall be not less than 36 inches, except at the sides of stairs where the minimum height is 34 inches. Openings in guards shall have intermediate rails or ornamental closures that do not allow passage of a 4-inch sphere. Please detail the required guard on the plans.



- A6. Sheet A-301: Please address the following:

A. General Notes 5 and 6 reference IRC 703 for exterior walls. The statement is insufficient for construction. Detail on the plans how the exterior wall coverings will meet the requirements of IRC 703. Sheet G-1 identifies siding details and weather-resistive barrier as deferred submittals. This information may not be deferred.

- A7. Sheet A-606: Please address the following:

A. Sheet G-1 identifies the unvented roof system as a deferred submittal. This information may not be deferred. Sheet A-301 references details on this sheet. Provide complete details on the plans identifying how the requirements of R806.5 for unvented attic and unvented enclosed rafter assemblies will be met.

- A8. Sheet A-901: Please address the following:

A. This sheet is identified as Level 1 reflected ceiling plan. Sheet MEP-101 is also identified as Level 1 reflected ceiling plan. Provide only one complete and accurate reflected ceiling plan for each level of the structure. ***This comment also applies to Sheets A-902 and MEP-102.***

- A9. Per R302.11, please detail on the plans the required fireblocking materials to be provided in concealed spaces of stud walls and partitions, at interconnections between concealed vertical and horizontal spaces, and in concealed spaces between stair stringers.

- A10. Per 302.12, please detail on the plans the required draftstopping material to be provided to breakup concealed spaces into areas not to exceed 1,000 square feet at suspended ceilings or open-web floor framing.

MECHANICAL REVIEW COMMENTS:

- M1. Sheets MEP-101 and MEP-102 do not provide information regarding the mechanical aspects of the project. Provide complete general mechanical sheet notes. Per IRC R106.1.1, construction documents shall be of



sufficient clarity to indicate the location, nature and extend of the work proposed and show in detail that it will conform to the provisions of code.

- A. It is acknowledged that the HVAC system and radiant heat system are identified as deferred submittals. That does not eliminate the requirement to address the general requirements of code for mechanical systems.
- M2. Per R303.3, toilet rooms without windows are required to have vent fans in accordance with M1507. Please identify the required vent fan on the plans.

PLUMBING REVIEW COMMENTS:

- P1. Sheets MEP-101 and MEP-102 do not provide information regarding the plumbing aspects of the project. Provide complete general plumbing sheet notes. Per IRC R106.1.1, construction documents shall be of sufficient clarity to indicate the location, nature and extend of the work proposed and show in detail that it will conform to the provisions of code.
- P2. The gas piping schematic is identified as a deferred submittal. This information cannot be deferred and must be defined prior to the placement of footings.

ELECTRICAL REVIEW COMMENTS:

- E1. Sheets MEP-101 and MEP-102 do not provide sufficient information regarding the electrical aspects of the project. Provide complete general electrical sheet notes. Per IRC R106.1.1, construction documents shall be of sufficient clarity to indicate the location, nature and extend of the work proposed and show in detail that it will conform to the provisions of code.
- E2. Per E3901, receptacle outlets are required at the following locations:
 - A. No point measured horizontally along “wall space” is more than 6 feet from receptacle. “Wall space” includes any space 2 feet or more in width.
 - B. At each wall counter space 12” or wider so that no point along the wall is more than 24” from a receptacle outlet.
 - C. At least one receptacle outlet at each island or peninsular counter space with a long dimension of 24” or greater and a short dimension of 12”.
 - D. Within 6 feet of intended appliance locations (i.e. oven, laundry, etc.). No less than one receptacle is required in laundry areas.
 - E. At least one receptacle outlet on the wall within 36” of the outside edge of each lavatory basin in bathrooms.
 - F. Outdoor outlets at the front and back of each dwelling unit within 6.5 feet from grade.
 - G. Basements, garages, and accessory buildings shall have at least one receptacle outlet, in addition to any provided for specific equipment.
 - H. Provide a receptacle outlet in hallways 10 feet or more in length. Foyers > 65 ft² shall have receptacles on all wall spaces > 3 feet.
 - I. Provide a convenience receptacle for the servicing of appliances (HVAC) within 25 feet of the appliance.



- E3. Per E3902, the following receptacles shall have GFCI protection:
- A. Bathrooms receptacles
 - B. Garage receptacles and grade-level receptacles in unfinished accessory buildings used for storage or work areas
 - C. Outdoor receptacles (These are also required to be weatherproof.)
 - D. Crawl space receptacles
 - E. Unfinished basement receptacles
 - F. Kitchen receptacles
 - G. All receptacles located within 6 feet of sinks, bath tubs or showers
 - H. Laundry areas
 - I. Dishwasher receptacles
- E4. Per E4002.14, please provide a note on the plans indicating that all outlets will be tamper resistant.
- E5. Per E3902.10, please specify on the plans that electric radiant heating system for the bathroom(s) must have ground-fault circuit protection.
- E6. Per E4203.4, please specify on the plans the types of lighting to be installed over or within 5' horizontally of the hot tub.
- E7. Per E4002.9, please specify that all receptacles located outside must be the weather resistant type.
- E8. Per E4003.9, please specify that all lighting over tubs or showers must be suitable for wet or damp locations.
- E9. Per E3703.3, please note that a dedicated 20-amp branch circuit for the laundry receptacle outlets.
- E10. Per E3703.4, please note that a dedicated 20-amp branch circuit for the bathroom receptacle outlets is required. This circuit cannot supply any other receptacles, lights, fans, etc.
- E11. A smoke detector is required outside of bedrooms 104 and 106.

ENERGY REVIEW COMMENTS:

- N1. Sheet A-301: Please address the following:
- A. The general notes reference the 2009 IECC. The currently adopted code for the State of Utah is the 2015 IECC and the Utah State Amendments. Make all necessary corrections throughout the plans to ensure the energy code requirements meet the requirements of current code.
 - B. General Note 2 states “roof/ceiling assembly does not allow sufficient space for required insulation, minimum required insulation may be reduced to R-30 at ceiling”. The REScheck identifies R-49 insulation at the cathedral ceiling. Make necessary corrections throughout to accurately identify the R-value of the insulation to be installed at the unvented attic assembly.
 - C. General Note 2 states “floors R-30 of insulation sufficient to fill cavity R-19 minimum”. The REScheck identifies 49 SF of floor area with R-49 insulation. Make necessary corrections throughout to accurately identify the R-value of the insulation to be installed in the floor(s).
 - D. General Note 2 states “...R-15 for heated slabs”. The REScheck identifies the hated slab-on-grade with R-10 continuous insulation.



- E. General Note 3 identifies the fenestration U-factor at 0.35. The REScheck identifies 0.32.
- F. Ensure the plans and the REScheck provide the same accurate and code compliant information.
- N2. Per IECC R402.4.5, please indicate that recessed luminaires (can lights) will be sealed to limit air leakage per ASTM E 283.
- N3. Per N1102.4.5, recessed lighting installed in the building thermal envelope shall be IC rated and sealed to the interior finish. Please note these requirements on the plans.
- N4. Per N1104.1, please indicate on the plans that no less than 75% of the lamps permanently installed in lighting fixtures shall be high efficacy lamps or not less than 75 percent of the permanently light fixtures shall contain only high efficacy lamps.

STRUCTURAL COMMENTS:

Structural Drawings:

- S1. Sheet S-000: Please include in the Design Criteria Notes the basic seismic force-resisting systems as required by IBC 1603.1.5.
- S2. Sheet S-101: Footings FC2.5 and FS6.0 do not meet the minimum reinforcement requirements of Section 24.4.3 of ACI 318-14.
- S3. Sheet S-300: The concrete pier size and reinforcing requirements have not been specified in Detail K. Please provide.
- S4. Sheet S-301: Please address the following:
 - A. Detail F references the plan and schedule for the concrete column reinforcing. The concrete column has not been indicated on the plan. Please clarify.
 - B. Detail G references B/S3.1 for wall reinforcing. This detail could not be found. Please clarify.
- S5. Sheet S-400: Details C and D both reference the shear wall schedule, but do not show the correct sheet number. Similar errors were noticed throughout the plans. Please verify that all references are correct.
- S6. The required thicknesses of concrete walls could not be found on the plans. Please clarify.

Structural Calculations:

- S7. The flat roof snow load is shown to be 192 psf. The exterior concrete deck snow load is shown to be 98 psf. Please explain how the deck snow load can be so much lower than the flat roof snow load.
- S8. Steel column SC1 is shown as HSS5x5x1/2 in the calculations while the plans show HSS4x4x1/2. Please verify.
- S9. The concrete lintel calculations show 16 inches deep by 10 inches wide. Detail S/S-300 shows 12 inches deep and the width could not be found. Please address.
- S10. The calculations show W2 Formlok Deck with 5-1/2 inches total slab depth. Detail E/S-301 shows 4 inches total slab depth. Please clarify.



- S11. Simpson anchorage calculations were done per ACI 318-11. Please verify that ACI 318-14 requirements have been met.
- S12. Snow drift calculations could not be found and drift loads do not appear to be indicated on the plans. Please address.
- S13. The proposed structure includes in-plane discontinuity in vertical lateral force-resisting element irregularities as defined by Table 12.3-2 of ASCE 7-10. Please confirm that the requisite forces were increased as required by Sections 12.3.3.3 and 12.3.3.4 of ASCE 7.
- S14. The proposed structure includes nonparallel system irregularities as defined by Table 12.3-1 of ASCE 7-10. Please confirm that the requisite forces were increased as required and that the requirements of Sections 12.5.3 and 12.7.3 of ASCE 7 have been met.
- S15. The lateral design was difficult to follow. Please provide a key plan indicating all lateral resisting elements (i.e. shear walls, moment frames, etc.) along with a horizontal distribution of lateral forces per Section 12.8.4 of ASCE 7-10 for the structure showing which walls/frames were considered in the design and the shear load to each wall/frame.
- S16. Please provide anchorage calculations for the moment frame per Chapter 17 of ACI 318-14.
- S17. The calculations appear to indicate that cantilever columns were used as lateral resisting elements, but detailing of these was not clear on the plans. Please clarify and verify that the correct R value was used for design.
- S18. It appears that combinations of framing systems are used in the same direction. Please verify that the requirements of Section 12.2.3 of ASCE 7-10 have been met and that the most stringent applicable structural system limitations contained in Table 12.2-1 have been applied.
- S19. Please provide calculations for the concrete columns and verify that ACI 318-14 detailing requirements have been met.

If you have any questions regarding the above comments, please contact Mike Molyneux at mikem@wc-3.com or by phone at (801) 547-8133.

[END]