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

June 17, 2021

FIRST REVIEW
WC[3] Project #: *221-525-026*
Weber County

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

Attention: Stan Berniche Building Official

Subject: Crimson Ridge Well House – Plan Review Comments 1st Review

Mr. Berniche:

West Coast Code Consultants, Inc. (WC[3]) has completed the first review of the proposed Crimson Ridge Well House project located in Eden, UT. This review was based upon the following:

1. Architectural drawings
2. Civil drawings by Gardner Engineering, sealed and signed by Michael Duane Durtschi, Professional Engineer.
3. Structural drawings dated 11/23/2020 by Gardner Engineering, sealed and signed by David L. Pierson, Professional Structural Engineer.
4. Electrical drawings dated 4/8/2021 by Gardner Engineering, sealed and signed by Daniel Leon White, Professional Engineer.
5. Geotechnical investigation report (#1200541) dated 9/15/2020 by AGEC Applied GeoTech, sealed and signed by Christopher J. Beckman, Professional Engineer.

The 2018 International Codes and 2017 NEC, as adopted by the State of Utah, were used as the basis of our review. Specific comments regarding this project are enclosed with this cover letter. If you have any questions regarding this review, please contact me.

Sincerely,

Mike Molyneux , P.E.
Senior Plan Review Engineer

Attachment: Comments

Plan Review Comments

Project Name: Crimson Ridge Well House

Location(s): North of Lot #5 Valley View Drive, Eden, UT

Checked By:

Code Review by: George Williams

Structural by: Scott Porter

MEP by: George Williams

OCCUPANCY & BUILDING SUMMARY:

Type of Construction	Use Group*(s)*	Occupant Load	Risk Category	Square Footage	Building Height	Sprinklers
V-B	U	N/P	II	550 ft^2	1-story, 16-feet	No

N/P- Items noted with N/P were not provided by the design professional.

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. Please list on the plans the applicable codes that apply to this project, which would be the 2018 International Codes, 2017 NEC, and the ICC A117.1-09.

A2. Please provide a basic code analysis. An architect may not be required for this project, based on the size and scope; however, the design professional is responsible to demonstrate code compliance. Please list a construction type, use and occupancy (there may be multiple), occupant load, square footages, building heights, etc. as outlined in the table at the top of this review letter. *(Assumed values have been provided)*

A3. Provide Safety Data Sheets and list quantities and classes of all materials to be stored and used in the building per IBC 414.1.3. Indicate the location and quantities of materials being stored and used. This information is needed to determine whether compliance with Sections 414 and 415 of the IBC is required.

A4. Please add the following to a stamped plan sheet, as the engineer is assuming responsibility for the design of this building:

- A. IBC 1013.4 requires tactile exit signs be provided at the entrances to the stairways and at all exterior exit doors.
- B. Please indicate the size and location of portable fire extinguishers as required by IBC 906.3.
- C. As indicated in Section 1008.3.2 item 5 of the IBC, the lights above the exit discharge landings need to be provided with emergency power.

A5. Sheet C5/C8: Please address the following:

A. Please follow the geotechnical report recommendations requiring 6" of all within the first 10' of the exterior of the building.

MECHANICAL REVIEW COMMENTS:

M1. Per IMC 106.3.1 "Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code." General notes, plans sheets, details and equipment schedules must be included and provide sufficient information. Please provide stamped mechanical plans or otherwise indicate that no mechanical scope of work will be associated with this permit application. Please provide the following:

A. Specify the make, model and fuel type for each of the proposed unit heaters. A "gas" heater in the chlorinator room does not seem to be plausible as shown.

I. Provide a proposed mounting detail and show required venting/combustion air.

II. If electric heaters are proposed, please provide product information, and account for loads in the electrical plan sheets. See E3/E6 suggesting electric unit heaters.

B. Provide equipment schedules for all proposed exhaust fans.

PLUMBING REVIEW COMMENTS:

P1. Per IPC 106.3.1 "Construction documents shall be drawn to scale and shall be of sufficient clarity to indicate the location, nature and extent of the work proposed and show in detail that the work conforms to the provisions of this code." General notes, plans sheets, and equipment schedules must show sufficient information.

A. Please list proposed pipe materials, and proposed slopes.

B. Show code compliant venting of all proposed plumbing fixtures.

C. Please list proposed water lines supply, backflow prevention, material, size, locations, etc. Typically, a hose bib or water source would be provided for this type of building.

D. Provide a gas line schematic, showing proposed gas line routing, sizing, lengths and loads served.

I. Include sediment trap details, meter location, etc.

ELECTRICAL REVIEW COMMENTS:

E1. Sheet E1/E6: Please address the following:

A. Please show emergency lights at the exterior side of all required exits. IBC 1008.3.2 #5 requires where buildings are required to have two or more exits, emergency power for illumination shall be provided at all exit doors.

B. Provide a 110v exterior WP/GFCI at the service location. NEC 210.63

E2. Sheet E2/E6: Please address the following:

A. Per NEC 110.9 and 110.10, please provide complete and detailed available fault current calculations and show the following on the plans:

I. Based on the calculations, specify the amount of available fault current which could be provided to each panel and each piece of electrical equipment.

II. Specify on the plans the short circuit current ratings of all overcurrent protection devices or add a note on the plans indicating all overcurrent protection devices will have the same fault current rating as the rating of the panel or switchgear they are located within.

III. Please indicate on the plans the calculated available fault current which could be provided to the service equipment will be field marked, as required by NEC 110.24(A).

ENERGY REVIEW COMMENTS:

N1. Please provide complete information on the plans showing the extent of the thermal envelope and the corresponding R-values as required by IECC C402.1.3. This is generally accompanied by a COMcheck, Envelope Compliance Certificate. If not providing an ECC, please indicate prescriptive compliance per IECC C402.1.3 for walls (no insulation shown), attic (noted), slab edge condition (not details) and door U-factors.

A. For slab insulation to be counted in the design of the envelope, it must extend to the top of the slab-on-grade, as noted in IECC C402.2.5. Please address.

N2. Please provide a lighting power analysis for the interior lighting (i.e., COMcheck), in accordance with IECC C405.4.

GEOTECHNICAL COMMENTS:

G1. The geotechnical report indicated that risk of landslides and slope instability is high. Please explain how this has been addressed in design or submit a letter from the geotechnical engineer indicating that the proposed building is located appropriately to mitigate these risks.

STRUCTURAL COMMENTS:

Structural Drawings:

S1. Sheet S1: Please address the following:

A. Foundation note C.1b references a soils report by Christensen Geotechnical. The two soils reports provided were by AGEC and Western Geologic. Please provide the Christensen Geotechnical report for review or revise the notes to reference the correct soils report.

B. Foundation note C.1.d states that exterior foundations are to bear a minimum of "…" inches below grade. Please fill in the missing frost depth dimension.

S2. Sheet S3: Several details on S5 are referenced. Sheet S5 was not found in the submitted plans. Please provide sheet S5 or revise the detail references.

S3. Detail 7/S4 references 4/S5 for holdown information. Sheet S5 was not found in the submitted plans. Please provide sheet S5 or revise the detail reference.

Structural Calculations:

S4. Page 1 lists the seismic R value as 7. This is greater than the value of 6.5 listed in the structural notes and the value of 6.5 for wood shear walls in ASCE 7-16 Table 12.2-1 item A.15. Please address.

S5. Page 2 indicates that 0 psf seismic snow load was used in the design. Per ASCE 7-16 §12.7.2, when the roof snow load exceeds 30psf, as in this case where the roof snow load is 60psf, 20% of the roof snow load is required to be included in the effective seismic weight. Utah amendments to the IBC require additional seismic snow load at high altitude sites with the seismic snow $S=(0.2+0.025(A-5))P_f$. Please address.

S6. Page 50: The header calculation indicates that the (2) 2x12 header is fully braced against lateral torsional buckling. If the top of the header is not at the roof level, then it appears that the header would be unbraced laterally. Please address.

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]