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LAYTON, UT 84041
(801) 547-8133

June 16, 2022

FIRST REVIEW
WC[3] Project #: *222-525-043*
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: Sundown Condominiums – Plan Review Comments 1st Review

Mr. Berniche:

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

1. Architectural drawings dated 4/5/2022 by Iridium AE, sealed and signed by Kimly C. Mangum, Licensed Architect.
2. Civil drawings dated 3/29/2022 by Fawkes Consultants, sealed and signed by Jordan J. Williams, Professional Engineer.
3. Structural drawings dated 4/5/2022 by Iridium AE, sealed and signed by Garrett Jenkins, Licensed Professional Engineer.
4. Electrical drawings dated 4/5/2022 by Iridium AE, sealed and signed by John Allen Kingston, Professional Engineer.
5. Geotechnical investigation report (#17355) dated 12/9/2021 by CMT Engineering Laboratories, sealed and signed by Bryan N. Roberts, Licensed Professional Engineer.

The 2018 International Codes and 2020 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: Sundown Condominiums

Location(s): 6550 North Powder Mountain Road, Eden, UT

Checked By: Alexa Nielsen

Code Review by: Layne Western

Structural by: Chris Kimball

MEP by: George Williams

OCCUPANCY & BUILDING SUMMARY:

Type of Construction	Use Group*(s)*	Occupant Load	Risk Category	Square Footage	Building Height	Sprinklers
VB	R-2, U	40	II	7,992 ft²	3-story, 50-feet	Yes 13R

***** - Items noted with an asterisk may change as a result of the plan review comments.

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-002: Please address the following:

A. The coded analysis shows 2015 IRC, this is an R-2 and needs to be designed to the 2018 IBC. Also, Remove the reference to the Utah Conservation Code and add the 2018 IPC, IMC, IECC, 2020 NEC.

I. Please update the analysis and verify compliance with the listed codes.

B. The maximum number of stories is 3 as noted in your code analysis and IBC Table 504.4. Per the 2018 IBC "Story above grade plane" definition, the garage level is a story because you are more than 12' above the finished ground level at any point.

I. Your elevations show that you are 14' above grade at the garage opening grade level.

II. You will need to design this building as Type VA construction to have 4 stories.

C. Interior exit stairways shall terminate at an exit discharge per IBC 1023.3.

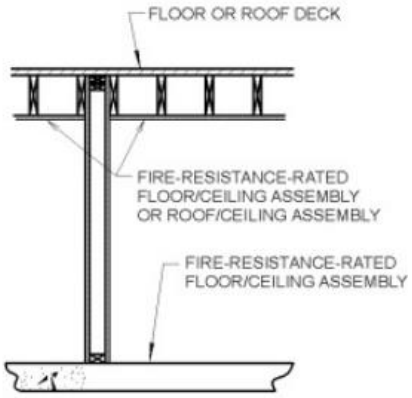
I. The rated stair enclosures cannot include the garage access corridors.

II. Interior exit stairways cannot be used for any purpose other than as a means of egress.

III. You cannot access a storage closet from within an enclosure.

IV. Openings into the enclosure from spaces that are not normally occupied (Garages) are prohibited per IBC 1023.4.

V. The Fire Barriers around the Interior stair enclosure would also need to go from the slab to the underside of the floor above (not the ceiling) see diagram below from commentary. I don't know how you would do this with your floor framing design.



VI. Due to the many design issues, we might need to set up a meeting with the Weber County Building Official to discuss the design moving forward.

A2. Sheet A-100: Please address the following:

A. Update all rated walls to current 2018 IBC terminology.

I. Walls around the interior stair enclosures need to be built as Fire Barriers IBC 707.

II. Walls separating dwelling units are fire partitions per IBC 420 and 708.

III. Floor separations are horizontal assemblies per 711.

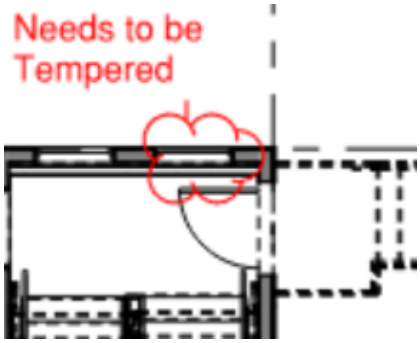
B. The stairs going from the main stair landing down to garage units 203 and 204 need to be shifted to allow for the handrails on both sides of the stairs to project 12" at the top.

A3. Sheet A-100: Please address the following:

A. Based on the below comments, this structure is required to be provided with Type B Units, per IBC 1107. As such, IBC 1106.2 Item 1 requires that accessible parking stalls be provided. Please specify each type of parking stall to be provided to this structure (standard, garage, etc.) and verify a minimum of 2% but not less than one (1) of each type of stall is accessible.

I. Please provide complete information showing how these accessible parking stalls comply with the provisions of ICC A117.1-09 Section 502 for dimensions, access aisles, signage, etc.

A4. Sheet A-101: 3'0 x 4'0 window within a 24" arc of all 3 main stair entry doors needs to be tempered.

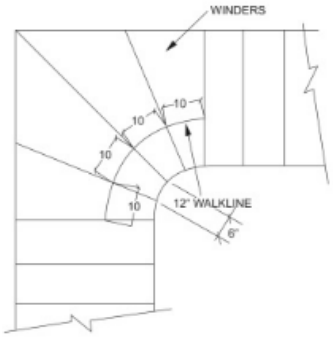


A5. Sheet A-102: Provide 21" minimum in front of the water closet to the sink in all ½ baths.

A6. Sheet A-320: All stairs except for the stairs within the individual living units/garages, need to comply with the IBC.

A. Maximum 7" rise, minimum 11" run.

B. Winder stairs need to comply with IBC 1011.5.3. Show all dimensions on detail UB and E.



A7. Provide framing and shaft details for mechanical room venting and combustion air. Provide listed assemblies and penetration details.

A8. Per IBC 1107.7.1 and 1107.4 at least one (1) story containing dwelling units intended to be occupied as a residence must be provided an accessible entrance from the exterior of the structure and all units on this story must be Type B. Please provide an accessible route to at least one level of this structure.

A. Once this accessible route has been provided, these dwelling units must be designed as Type B in accordance with IBC 1107.2.2.2 and ICC A117.1-09 Section 1004. Provide complete plans and details demonstrating how compliance with these provisions shall be achieved.

B. Based on the information provided, additional comments may be generated.

MECHANICAL REVIEW COMMENTS:

M1. Sheet A-001 & G002 references the IRC code for mechanical notes. Please note that this building is classified as R-2 and falls under the 2018 IMC. Please change all reference notes accordingly. Plans must be designed to commercial industry standard.

M2. Since the mechanical work associated with this project does not qualify as incidental to the practice of architecture, as defined by R156-22-102 of Utah Administrative Code a professional engineer, licensed by the State of Utah must stamp all mechanical sheets.

M3. 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." Additional comments are likely for the next review. Please provide the following

A. General notes

B. Mechanical layout sheets for all ductwork

C. Schedule sheets for diffusers, appliances, etc.

D. Mechanical installation details

M4. Provide heating and cooling load calculations in accordance with ASHRAE/ACCA Standard 183. This is required per Section 312 of the IMC, as well as IECC C403.2.1. Please provide short load forms, including applicable R-values and U-factors used in the calculations. Ensure all values match the proposed envelope on the building plans and energy compliance documents.

A. If the software allows, please provide the general project data input sheets, and the building envelope report.

M5. Per IFGC 402 plans must provide the following information for gas piping:

A. Plan sheet with general layout of all gas pipe, identifying materials, sizes, appliances, btu's served & meter pressure. Include total load for meter and length to most distant appliance.

M6. Per IFGC 410 a line pressure regulator shall be installed where the appliance is designed to operate at a lower pressure than the supply pressure. Indicate if vented or ventless. Please provide.

M7. The maximum equivalent dryer length is limited to 35 feet, per IMC 504.8.4.1. If exceeded, the dryer manufacturer's installation instruction specific to the make and model of the proposed dryer(s) must be provided.

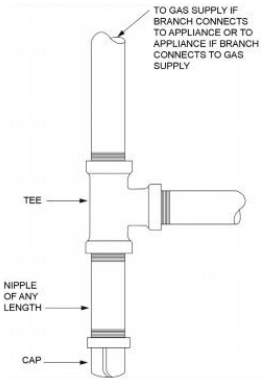
A. Per IMC 504.8.5, a label must be located within 6 feet of the dryer box, and must include the equivalent length, not the actual length. Please provide an estimated length on the plans for each unit. Ensure the length account for the anticipated elbows per Table 504.8.4.1.

B. Add a note and show on the plans makeup air for the clothes dryer will be accomplished by providing a minimum of 100 square inches of makeup air, per IMC 504.6.

C. Show the proposed dryer vent size, material and proposed routing. Dryer vents must be a minimum of 4" in diameter and constructed of metal as per IMC 504.8.

D. Indicate the likely equivalent length of the dryer duct from each unit on the unit plans. Account for both vertical and horizontal vent length, as well as all bends and elbows. Complete detail 4/A-501 for each unit.

M8. Please revise the sediment trap to comply with the requirements of IFGC figure 408.4. The sediment trap must be at the bottom of a vertical section of pipe, not horizontal as shown.



PLUMBING REVIEW COMMENTS:

P1. Sheet A-001 & G-002 references the IRC code for mechanical notes. Please note that this building is classified as R-2 and falls under the 2018 IPC. Please change all reference notes accordingly. Plans must be designed to commercial industry standard.

P2. Since the plumbing related work associated with this project does not qualify as incidental to the practice of architecture, as defined by R156-22-102 of Utah Administrative Code a professional engineer, licensed by the State of Utah must stamp all plumbing sheets.

P3. 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." Additional comments are likely for the next review. Please provide the following.

A. Plumbing layout for DWV, supply piping, etc…

B. Plumbing general notes sheet

C. Materials schedules

D. Fixture schedules

E. Plumbing installation details

P4. Please provide notes or a table indicating the proposed plumbing materials for all drain, waste, and vent piping, as well as water distribution piping. IPC 303

P5. Please provide listed details for an approved manner of penetration fire rated assemblies. Include required caulking material, sealant, or gasketing system for penetrations through fire rated assemblies per IPC 315.1 & IBC 714. All pipe sizes, wall materials and conditions must be specific to the project.

P6. Include specifically shower/tub P-trap conditions, and water closet flange conditions. See Hilti FC-2203 and 2204 as examples.

P7. Please provide a basic water heater detail showing the proposed installation. Include expansion tanks, recirculation pumps, drain pans, T&P discharge, and other relevant information. IPC Chapter 5.

P8. Please specify seismic restraints for the water heater, in accordance with IPC 502.4 and IBC 1613.1. Include size, type, and material of straps, as well as required anchors into the structural framing or wall.

P9. Please add a note indicating that after construction, the individual water supply system shall be purged of deleterious matter and disinfected as per IPC 602.3.4 and IPC 610.

P10. Please provide a water service pipe detail showing shut off valve, pressure reducing valve, & backflow preventor. Per IPC 604, 605, & 606

ELECTRICAL REVIEW COMMENTS:

E1. Provide emergency lighting for the following locations per IBC 1008.3

A. Sheet E700 & E701 exterior landings that are part of the egress path.

B. Sheet E700 & E701 Stairway lighting part of the egress path.

E1. Sheet E100, E101: Please address the following:

A. Please note for laundry branch, that if a receptacle is to be used for GFCI protection than that outlet is required to be readily accessible. IRC E3902.7

B. Please note that the branch circuit for garbage disposal is required to have GFCI protection as it falls within 6 feet of the sink. IRC E3902.7

C. Please provide location of service equipment and provide a service receptacle outlet within 25ft of service equipment NEC 210.64

D. Please provide electrical panel location for each unit.

E2. Sheet E600: Please address the following:

A. Please clarify how the electrical service will be run to the units (Conductor, conduit, etc.)

E3. Sheet E700, E701: Please address the following:

A. Please provide approved electrical fan boxes for ceiling mounted fans. IRC E3905.9

C. Please address emergency lighting at exterior landings that are part of the egress path. IBC 1008.3

D. Please address stairway lighting as part of the egress path. IBC 1008.3

E2. All 15/20A branch circuits to be AFCI protected per NEC 210.12.

ENERGY REVIEW COMMENTS:

N1. Since no mechanical plans showing heating and cooling areas were given, it is impossible to determine the nature of where the thermal envelope is required. It may be possible that there are common areas in the garage section that have heating and cooling, if so, the COMcheck and plan sheets of the thermal envelope will need to be updated. This project exceeds 3 stories and must comply with the commercial provisions of the IECC.

N2. Sheets A300-A320 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.

A. Include all proposed wall insulation types, thickness and R-values in details, sections and/or wall types. These values must match those provided in an Envelope Compliance Certificate specific to this project.

B. Please indicate the maximum U-factor and SHGC for all windows and glazed openings in accordance with IECC C402.4.3.

I. The U-factor specified for the windows is less than the default value listed in Table C303.1.3(1) of the IECC. IECC C303.1.3 requires the U-factors for the windows be certified by an independent laboratory per NFRC 100 and labeled as such by the manufacturer. Please note this requirement on the plans.

C. The prescriptive insulation requirements include slab insulation, per Table C402.1.4 of the IECC. The plans do not appear to show slab insulation. IECC C402.2.5 requires slab insulation extend from the top of the slab. Please make necessary corrections.

N3. IECC C402.5.1 requires the air barrier be continuous for the entire building thermal envelope.

N4. Please provide heating and cooling load calculations for the sizing of the mechanical equipment in accordance with the requirements of IECC C403.2.1.

N5. Please provide a lighting power analysis for the interior lighting (i.e. COMcheck), in accordance with IECC C405.4.

N6. Please provide a lighting power analysis for the exterior lighting (i.e. COMcheck), in accordance with IECC C405.4.1.

N7. IECC C406.1 requires in addition to meeting the standard requirements of the IECC, an additional efficiency package option must be selected. One of the packages must be selected for the project.

STRUCTURAL COMMENTS:

General:

S1. The geotechnical report notes that, as this is a sloped site, CMT should review the final grading plans. Please provide confirmation that CMT has reviewed this and that the recommendations noted in the geotechnical report are still valid for the project.

Structural Drawings:

S2. Sheet G-001 provides notes that appear to refer that a geotechnical report is not available for this project. Please either remove this note or revise it to directly reference the requirements of the geotechnical report from CMT dated December 9, 2021.

S3. Sheet S-000: Please address the following…

A. The special inspection schedule notes that soils inspections during material placement and compaction are not required. From the geotechnical report, it appears that structural fill will likely be required at the site and this will require special inspections of the structural fill placement in accordance with IBC 1705.6.

B. A ground snow load of 69psf is listed. The Utah Ground Snow Load Map lists a ground snow load of 347psf at this site (https://www.usu.edu/utahsnowload/#). Please address this, the design roof snow load, and the seismic snow load accordingly.

C. A floor dead load of 12psf is listed. Per the architectural sheets the floors will have two layers of wood sheathing and two layers of 5/8-inch Type X gypsum board while the calculations appear to only consider one layer of sheathing and gypsum. Please address.

D. The "soils criteria" provided in the "Structural Design Information" needs to be updated to reference the CMT geotechnical report and the requirements noted therein.

E. Please revise the "Footing & Foundations" notes to refer to the geotechnical report requirements. It is not acceptable to have a note that states "geotechnical investigations take precedence over these notes".

F. The "Foundation Backfill" notes provided differ from what is provided in the geotechnical report which calls for a minim 90% compaction and detail foundation drain requirements. Please coordinate.

S4. Sheet S-100 & S-101: Please address the following…

A. The FS3.0 spot footings that are called out are not included in the footing schedule on Sheet S-100. Please address.

B. The footings called out at the corridor stairs near the landing are called out as FS-3.5 footings, yet it appears these are intended to be FC-3.5 footings. Please clarify.

C. The foundation walls at the FC-1.7 footings are not specified. Please clarify.

D. Foundation steps occur in numerous locations, yet a detail has not been provided noting the reinforcing details at these steps. Please clarify.

S5. Sheets S-102 & S-103: Please address the following…

A. When reviewing the calculations, it appears that the FB-34 and FB-35 beams are mixed up on the plans. Please review all floor beams on the plans and compare to the calculations.

B. Blocking is not called out where the floor framing runs parallel to the foundation walls. It appears that the design considers the foundation walls to be restrained. Blocking would be required in order to be considered a restrained foundation wall. Please address.

S6. Sheets S-104 & S-105: Please address the following…

A. The steel posts at the stairs are not specified. The notes appear to state that the steel stairs are to be prefabricated yet the size of the concrete piers cannot be verified without this information (see details 8 & 10 on sheet S-500). Please address.

S7. Sheet S-500: Please address the following…

A. No calculations have been provided for the foundation walls specified on this project. The plans call for 12-inch, 10-inch, and 8-inch-thick foundation walls. Detail 1 includes provisions for 8-inch and 10-inch walls, yet the height of these walls exceeds the limitations of the Utah Empirical Foundation Wall Table (Section 1807.1.6.4 of the Utah Amended Code). Please provide supporting calculations for these foundation walls or comply with the empirical limitations.

B. Similar to the comment above, Detail 6 provides requirements for the 12-inch-thick foundation walls. No supporting calculations were provided for these walls. The only concrete wall calculations provided are those for the exposed walls. Please provide supporting calculations and ensure that seismic earth pressure is also considered in the calculation per IBC 1803.5.12 (Item #1).

Structural Calculations:

S8. No calculations were provided for the interior spot footings. 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]