Renaissance Infrastructure Consulting

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July 3, 2018

Mr. Mike Weisenborn
Project Manager
City of Lee's Summit
220 SE Green St.
Lee's Summit, MO 64063

Re: **Summit Square Phase II**

Mr. Weisenborn,

Please see the following responses to the City of Lee's Summit's Applicant Letter dated Thursday,May 24th, 2018.

Planning Review:

1. Comment: There are still discrepancies between the data represented on Sheets C02 and SP1.00. Specifically, the building information table on Sheet C02 does not match the dwelling units on Sheet SP1.00. Please reconcile these and any other differences on these sheets and throughout the plans.

   Engineer Response: Differences have been reconciled.

2. Comment: It does not appear that the total linear feet along NW Tudor Road was adjusted to removed the drive entry in the street frontage landscape calculations. By adjusting this calculation and counting the trees along NW Ward Road from the angle down to right before the corner, then counting those for NW Donovan Road from corner to corner the trees provided meet the requirement.

   Engineer Response: The landscape calculations have been revised. See revised landscape plan.

3. Comment: It appears there may still be some drives that does not meet the minimum (24' exclusive of the curb and gutter, 28' if you include the curb and gutter). The drive onto NW Ward Road on Sheet C05 and the drive onto NW Tudor Road on Sheet C06 are a couple examples.

   Engineer Response: Drive Aisles have bee revised to meet the minimum requirements.

Fire Review:

1. Comment: All issues pertaining to life safety and property protection from the hazards of fire, explosion or dangerous conditions in new and existing buildings, structures and premises and to the safety to fire fighters and emergency responders during emergency operations, shall be in accordance with the 2012 International Fire Code.

   Engineer Response: Acknowledged.

2. Comment :IFC 507.5.1- Where a portion of the facility or building hereafter constructed or moved into or

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within the jurisdiction is more than 300 feet from a hydrant on a fire apparatus access road, as measured by an approved route, on-site fire hydrants and mains shall be provided where required by the fire code official.

Action Required: Provide a hydrant plan that meets this requirement for all buildings and provides fire flow and distribution of hydrants in accordance with IFC App. B-105 and App. C-103. All hydrants shall be readily accessible on a fire apparatus access road, as measured by an approved route around the exterior of the facility or building, on-site fire hydrants and mains shall be provided where required by the fire code official.

5/22/2018 Hydrant distances are measured AROUND the buildings and shall be accessible from the fire lane, not obstructed by buildings, parked cars and canopies. Provide accessible hydrant coverage for Building 5. Move the hydrant to the fire lane between Building 3 and 4.

Engineer Response: Dimensions have been revised to measure around buildings and located to be accessible.

3. Comment: IFC 903.3.7- Fire department connections. The location of fire department connections shall be approved by the fire code official. Connections shall be a 4 inch Storz type fitting and located within 100 feet of a fire hydrant, or as approved by the code official.

   Engineer Response: Note added to specify this requirement.

4. Comment: IFC 503.2.1- Fire apparatus access roads shall have an unobstructed width of not less than 20 feet (6096 mm), exclusive of shoulders, except for approved security gates in accordance with Section 503.6, and an unobstructed vertical clearance of not less than 13 feet 6 inches (4115 mm)..

   Action required: Calculate turning movements for a 47' aerial with a 22' foot wheelbase.

   Engineer Response: Turning movements revised to match the described vehicle.

5. Comment: IFC 503.3- Where required by the fire code official, approved signs or other approved notices or markings that include the words NO PARKING — FIRE LANE shall be provided for fire apparatus access roads to identify such roads or prohibit the obstruction thereof. The means by which fire lanes are designated shall be maintained in a clean and legible condition at all times and be replaced or repaired when necessary to provide adequate visibility.

   5/22/18 Action required: All fire lanes shall be marked. Mark the fire lanes, including the in front of the buildings, using either signage or painted curbs. Painted curbs shall be red with white stencil.

   Engineer Response: The detail has been revised to indicate the required colors.

<u>Engineering Review</u>

1. Comment: Please refer to the applicant's letter dated Apr. 27, 2018 (hereinafter referred to the previous applicant's letter). Comment #2 requested the applicant check whether the connection across Ward Rd. at the intersection of Ward Rd. and Pryor Rd. existed. Our records indicated this connection is not present, and if not present, please remove this from the Utility Plan sheets.

   Engineer Response: Connection has been removed.

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2. Comment: Please refer to the previous applicant's letter. Comment #7 requested specific ADA- accessible ramp details for the two (2) commercial entrances, including the ADA- accessible route across the entrances. Sheet C13 shows the south entrance detail, but the following issues remain unresolved; 1) please label the street for a frame of reference, 2) the cross- slope across the 5 foot wide ADA- accessible route on the driveway was not labeled as 1.5% or less cross-slope,3) a section view across the driveway was not provided showing the 1.5% or less cross- slope, 4) Section CC appears to show 2.8% cross- slope across the ramp, which is not in compliance with City standards.

   Engineer Response: ADA Details have been revised to conform to city requirements.

3. Comment: Please refer to the previous applicant's letter. Comment #7 requested specific ADA- accessible ramp details for the two (2) commercial entrances, including the ADA- accessible route across the entrances. Sheet C14 shows the north entrance details, but the following issues remain unresolved: 1) street name was not provided for a frame of reference, 2) Section B-B appears to show a cross-slope that contradicts that which is shown on the plan view, 3) a section view across the driveway appeared to be missing which shows the maximum cross- slope is less than or equal to 1.5% across the 5 foot wide ADA-accessible route.

   Engineer Response: ADA Details have been revised to conform to city requirements.

4. Comment: Please refer to the previous applicant letter. Comment #9 requested the 100 year water surface elevation for the ponds. While the lower pond elevation was shown, the upper pond elevation was shown with a 100 year water surface elevation which did not differ from the normal pool elevation. This does appear valid. In addition, what is the 100% clogged outlet structure 100 year water surface elevation? Where is the emergency spillway? The grading plan appears to be missing elevations of proposed contours, and without this information, it is difficult to determine where the overflow route will be directed in the event of a clogging event.

   Engineer Response: See Sheet C29, Pond Plan, showing the pond hydraulics. Additional information has been added for the upper pond, 100% clogging 100-year WSE, emergency spillway and overflow path.

5. Comment: Sheet C08 and Sheet C09: Please add elevations to the contours, especially in the vicinity of any potential emergency overflow from the 2 ponds.

   Engineer Response: Additional contour labels have been added.

6. Comment: Sheet C04: What is the feature shown within the 100 year water surface elevation surrounding the lower pond? It appears to be flooded during the 100 year event?

   Engineer Response: The feature is proposed to be a yoga area. The grading has been revised to keep this area out of the 100-year flooding area.

7. Comment: C04 Please label the upper pond in the correct location. As shown, it appears to be south of the pond rater than on the pond.

   Engineer Response: The pond label has been relocated.

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8. Comment: Sheet C06: The sanitary sewer manhole shown on the north side of the project is a public manhole. Please label it as a public manhole (i.e., City manhole #23-163). Since this manhole is being relocated, please label it as being a public manhole to be relocated as a public manhole.

   Engineer Response: With the north driveway reconfiguration, the existing public sanitary manhole will remain in place. The manhole has been labeled as public and with the City's designation.

9. Comment: Sheet C15: Please specify cut-in tees at all public water main location. Provide sufficient notes that a maximum shut -down of the lines is limited to 8 hours, and night work must be performed to make these connections.

   Engineer Response: A note has been added to the plans.

10. Comment: Sheet C15: Please label the location and size of the water main along Ward Rd.

    Engineer Response: The existing water main on Ward has been labeled.

11. Comment: Sheet C15: A separate detail must be provided for the meter well. The City standard detail does not include meter wells for 3 inch water meters, so a special design is required.

    Engineer Response: As of now, all proposed meters will be 2" therefore the City's standard detail shall be used.

12. Comment: Sheet C15: The domestic water line should be connected on the same side of the street as the backflow vault. The location of the connection should be just prior to the gate valve to be installed prior to the backflow vault. In other words, only one street crossing is required since the water main is located on the opposite side of the street.

    Engineer Response: All domestic water connections will be to the main on Ward. There will be no street crossings for water service.

13. Comment: Sheet C15: Show the location of a gate valve just prior to the backflow vaults. Ensure the gate valve is located within an easement, and ensure the backflow vault is located outside the easement, on the private side.

    Engineer Response: Gate valves and easements have been shown on all fire lines prior to the backflow vaults.

14. Comment: Sheet C15: Ensure all domestic water meters are located within an easement or right of way.

    Engineer Response: All water meters have been shown in an easement.

15. Comment: Sheet C15: A valve is required on the public water main if a valve is located greater than 500 feet on either side of the new cut-in tee. According to our records, it appears that a new gate valve shall be required at each new connection point, unless it can be demonstrated that a valve(s) exists within 500 feet of the new connections.

    Engineer Response: Valves have been added to the public main on Ward near the cut-in tees for the fire

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services.

16. Comment: Sheet C15: Please add a label which specifies that the street crossings for the water lines shall be bored. Casing is not required.

    Engineer Response: All water connections will be to the main on Ward. There will be no street crossings for water service.

17. Comment: Sheet C15: At all street crossings for the water lines, an additional valve is required near the connection point. In other words, there will be 2 valves total on each private leg; 1 on the connection side of the street, and another just prior to the backflow vault.

    Engineer Response: All water connections will be to the main on Ward. There will be no street crossings for water service.

18. Comment: Sheet C15: Ensure that the water meter is connected to the private leg just prior to the gate valve feeding the backflow vault.

    Engineer Response: All water connections will be to the main on Ward. There will be no street crossings for water service therefore no shared fire/domestic services are required.

19. Comment: Sheet C16: All comments above related to Sheet C15 also apply to Sheet C16. Please revise as appropriate.

    Engineer Response: Acknowledged. All sheets will be revised.

20. Comment: Sheet C16: Please specify the sanitary sewer on the northeast corner of the project is private, up to the public sanitary sewer manhole (relocated) near the commercial entrance.

    Engineer Response: Acknowledged. The sanitary sewer has been labeled.

21. Comment: Sheet C19: Manhole 2A is a public manhole, and should be labeled as such. The notes showing removal of the private manhole should be revised to read" … public manhole to be removed".

    Engineer Response: With the north driveway reconfiguration, the existing public sanitary manhole will remain in place. The manhole has been labeled as public and with the City's designation.

22. Comment: Sheet C19: There is a question of constructability of the sanitary sewer from private manhole 2B to the new public sanitary sewer manhole. As shown, there is a significant drop, and it is unclear whether the invert can be poured. Was there any consideration to deepening the connection point at that location? Please be aware that the standard drawing for an invert at the bottom of a manhole show a 3:1 slope from incoming pipe, to the middle of the manhole.

    Engineer Response: The drop through the manhole has been revised to 1.33 feet therefore reducing the slope to 3:1.

23. Comment: Sheet C29: The pond plan is inadequate from a review standpoint, and a construction and inspection standpoint, it is unclear what is being proposed , and it is unclear what will occur in the event of a

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100% clogging event at the outlet structure. A 6" by 6 foot "orifice" is called out, but this would appear to be a weir rather than an "orifice". It is unclear what measures are being taken to prevent clogging. The storage curve and weir report are hard to read, and there is reference to an emergency spillway, but no details are provided for said emergency spillway. In other words, additional design details must provided. These design details must be clear in terms of what is being proposed, where it is being built, how it is being built, and locations of any emergency spillway, crest elevation of emergency spillway, etc.

Engineer Response: See Sheet C29, Pond Plan. Additional information has been added per the comment above.

24. Comment: Sheet C33: The pavement section details are still not in compliance with the Unified Development Ordinance (UDO) Article 12 " Parking". In particular, the City of Lee's Summit required either 6 inches of chemical-stabilized subgrade, or geogrid. In addition, it appears there is confusion concerning heavy duty pavement, and vehicle parking and drive aisle pavement thickness and base. The UDO make no distinction between drive aisle and parking stalls, but does differentiate between fire lanes and truck access lanes. It may be beneficial for the applicant to review these design standards, since it may be possible to eliminate some of the " heavy duty " pavement section.

    Engineer Response: See attached memo for the Geotechnical Engineer regarding how the proposed pavement section compares to the City's minimum pavement requirements.

25. Comment: Sheet C33 The upper pond spillway section is missing the elevation call-outs. In addition, what is the 100 year water surface elevation within this spillway? Please show this on the section view, along with a specific elevation call-out.

    Engineer Response: The 100-year WSE has been added to the spill way section.

26. Comment: Sheet C33: GEN-4 is shown, but we still require that a detail be shown with the 6 inch aggregate base, and the chemically-stabilized soil or geogrid be shown a minimum of 1 foot beyond the back of curb. GEN-4 does not show this required feature.

    Engineer Response: A detail showing the subgrade extending 1 foot beyond back of curb has been added.

27. Comment: Sheet C36: A trench check detail is shown, but there appear to be no notes concerning their location. They should be located on the sanitary sewer laterals. Sufficient notes must be placed on the plans specifying their use at these locations.

    Engineer Response: The detail has been removed.

28. Comment: Sheet C35: How will the sump within the backflow vault be drained? Shall it be daylighted? Shall a gravel sump be constructed? How will the gravel sump be constructed? Details must be provided showing how the backflow vault will be drained.

    Engineer Response: Piping has been added to the backflow vaults to drain the sumps.

29. Comment: Engineer's Estimate of Probable Construction Costs dated May 11, 2018 appeared to be missing the following items: 1) backflow vaults and backflow assembly, 2) valves, elbows, valve boxes, and valve covers, 3) commercial entrances, 4) sodding, 5) seeding, 6) fertilizer and other final restoration measures, 7)

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sanitary sewer manhole, 8) storm structures, 9) chemically-stabilized subgrade or geogrid, including the area 1 foot beyond the back of curb, 10) cut-in tees, 11) sanitary sewer relocation, 12) pond construction, 13) pond outlet construction, 14) emergency spillway construction, 15) thrust blocks, saddle block, 16) boring beneath street for water line.

Engineer Response: See the attached revised estimate.

Traffic Review:

1. Comment: The driveway along Donovan needs to be relocated. The PDP showed the driveway 265' from the edge of Ward Road. The proposed driveway is less than 150 feet from the edge of Ward Road. Queue conflicts and operational issues aside, this location will not work for development south of Donovan to align, being too close to Ward Road. It is inconsistent with the PDP approved and conceptual FDP we have seen for the development south of Donovan.

   Engineer Response: The driveway location has been revised per staff comments.

Building Codes Review:

1. Comment: Water meter sizes are not specified

Action required: Specify sizes of water meters based on calculated flow rates. 5/23/18- meters shown. Final approval pending justification of sizes

Engineer Response: As of now, all proposed meters will be 2" therefore the City's standard detail shall be used.

2. Comment: Sewer design incomplete.

Specify size of building sewer pipes (per 2012 IPC Section 10) as they exit structures and provide cleanouts as applicable (per 2012 IPC Section 708.3.2).

Engineer Response: Sanitary service line information to each building has been added.

2. Comment: Retaining walls are proposed to be built but we are unable to find the construction details.

Action required: Provide complete retaining wall designs.
5/23/18- deferred to construction and / or building permit.

Engineer Response: Acknowledged.

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Please feel free to contact me if you have any additional questions.

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