July 19, 2019

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City of Lee's Summit
Development Services
220 SE Green Street
Lee's Summit, Missouri 64063

Subject: The Princeton Senior Living – 1701 SE Oldham Pkwy
PL2019218

The following comments for the Lee's Summit Senior Community facility were received from the City of Lee's Summit on July 10, 2019. Each comment is followed by a response shown in ***bold italics***. Please feel free to contact me should you have any question.

Comment/***Response***

Fire Review

1. 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 2018 International Fire Code.

    - ***Understood***

2. D105.1 Where required. Where the vertical distance between the grade plane and the highest roof surface exceeds 30 feet (9144 mm), approved aerial fire apparatus access roads shall be provided. For purposes of this section, the highest roof surface shall be determined by measurement to the eave of a pitched roof, the intersection of the roof to the exterior wall, or the top of parapet walls, whichever is greater.

    - ***Aerial access drive has been provided and noted.***

3. The fire lane along the west side of independent living shall be 26 feet (C200). Make adjustments to meet this requirement.

    - ***Width has been increased to 26 feet.***

4. 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.

- ***Understood. Refer to Sheet C800.***

5. 501.4 Timing of installation. Where fire apparatus access roads or a water supply for fire protection are required to be installed, such protection shall be installed and made serviceable prior to and during the time of construction except where approved alternative methods of protection are provided. Temporary street signs shall be installed at each street intersection where construction of new roadways allows passage by vehicles in accordance with Section 505.2. IFC 507.1 - An approved water supply capable of supplying the required fire flow for fire protection shall be provided to premises upon which facilities, buildings or portions of buildings are hereafter constructed or moved into or within the jurisdiction.

   - ***This note has been added to sheet C101 and C800.***

6. Upgrades to the water supply, hydrants on site, and the asphalt base of the fire lanes shall be installed prior to construction.

   - ***Understood.***

7. 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.

   - ***Refer to sheet C800 for locations of hydrants and FDCs.***

Planning Review

1. Please refer to Engineering comment regarding pavement thicknesses. Reference the UDO, Article 8.

   - ***This has been updated.***

2. Revise Sheet C200 to note the Side yard setback is 20 feet for Lot 1. The Special Use Permit for this use required the side yard setbacks to be doubled within the zoning district, thus requiring 20 feet. The Build Lines indicate this on the plan and plat.

   - ***This has been addressed.***

3. Reference the R78 accessible sign within the detail on sheet C702. This sign has a white background and a green border.

   - ***This has been referenced.***

Engineering Review

1. A cursory review of the stormwater report showed that the wrong methodology was utilized. The City of Lee's Summit uses the "Comprehensive Control Strategy", which requires the calculation of an allowable release rate at different points of interest, along with 40 hour extended detention or volumetric reduction in lieu of 40 hour extended

detention. In addition, the report states this area is located in the 0.2% chance flood zone. Are you sure this is the case? FEMA has two (2) different designations for zone x...one relates to being "minimal flood hazard", and the other zone x designates it is within the 0.2% chance flood zone. Please reconcile this discrepancy.

- ***Calculations following the "Comprehensive Control Strategy have been included in the drainage report. The project has two identified points of interest. POI #1 is west of the project site near the existing 5'x5' box culvert that crosses beneath Oldham Parkway and US Route 50. POI #2 is the existing 30-inch RCP culvert located north of the site that crosses beneath Oldham Parkway. The drainage report has also been revised to indicate that no portion of the project site is located in the 1% or 0.2% chance flood zones. See revised drainage report. Allowable flow rate calculations are provided in Table 4A. Pre and Post development point of interest comparisons are located in Tables 6A and 6B. 40-hour extended detention drainage time calculation is provided in Appendix C.***

2. MoDOT approval shall be required for the new entrance to Oldham Pkwy. This may be in the form of an email from MoDOT.

    - ***We are coordinating this with MoDOT.***

3. Sheet C500: Please reference the water line plans contained elsewhere in the plan set (i.e., Sheet C509).

    - ***Refer to sheet C503.***

4. C500: The method used to drain the sump of the backflow vault should be shown either on the plan view, or a modified standard detail. The sump may be drained in three ways: 1) daylight, 2) connection to a storm structure, or 3) construction of an infiltration trench.

    - ***A sump pump has been added to each, and pipe that extends and daylights into to the bioretention.***

5. C500: A gate valve is required immediately prior to the backflow vault.

    - ***Refer to sheet C503.***

6. The location of the water meter and sizing must be shown on the plans. Pipe type must be shown, and must conform to the soft copper requirements shown on the standard detail for the minimum distances shown on the standard detail.

    - ***Refer to sheet C503.***

7. C503: A scale was not shown. It appears there may be instances where the slope is not 2.0% in the bottom of the detention basin. A minimum of 2.0% slope is required in the bottom of the basin as measured in any location within the bottom of the basin.

    - ***This information is now located on sheet C901. Detention Basin is designed to maintain 2% minimum slope to the outlet.***

8. C503: The 1% chance storm event water surface elevation must be shown graphically, and the elevation called-out. The minimum distance between any property line or building is 20 feet from this surface.

    - ***This information in now shown on sheet C901.***

9. General Comment: A profile view of all storm lines is required for any private or public storm line greater than 6 inches in diameter.

    - ***Profile views of the storm sewer have been added to the plan set and are located on sheets C905 to C915.***

10. C200: It would appear there is another bioretention area along the east side of the project? Please label.

    - ***Eastern bioretention has been labeled***

11. No review is being provided for the ADA-accessible ramps within right of way. Comments on these features shall be performed with the public street plan review.

    - ***Refer to Public Roadway set.***

12. It appears there are two (2) bioretention basins to be constructed with this project. Please identify these (e.g.,bioretention basin #1, bioretention basin #2) on the general layout, grading plan, and other appropriate sheets.

    - ***Correct, the two bioretention areas have been identified in the appropriate sheets. Information for bioretention basins is located on sheet C901 and C902.***

13. Please add a note stating that the detention basins and bioretention basins shall be constructed prior to any other activity on the site.

    - ***Note has been added to sheet C101***

14. General Comment Concerning Emergency Spillway: It appears the detention basin is being cut into the existing grade. Emergency spillway requirements may change due to the fact that a "dam" is not really being constructed, but rather, the basin is being cut-into the existing grade. You may wish to revisit this requirement, discuss in the report why or why it may not be required based on your assessment.

    - ***Basins are cut into the site. Emergency spillways have been removed as suggested.***

15. C503: Concrete low flow channels are not allowed in the City of Lee's Summit.

    - ***Concrete low flow channels have been removed. See sheet C901.***

16. The hydraulic grade line for the design storm must be shown on the profile view of all storm lines greater than 6 inches in diameter.

- ***Storm sewer profiles with the 10-year hydraulic grade line have been provided on sheets C905 to C915.***

17. Sheet C503: It is unclear what the outlet structure is referring to. Is this the control structure for bioretention basin #1? Shouldn't the bioretention basin be labeled?

    - ***Structures are now referred to as Bioretention Overflow Outlet on sheet C901 and C902.***

18. Sheet C503: Please see comments concerning emergency spillways in cut areas. This may not be required based on these comments. The purpose of the emergency spillway is to ensure the integrity of a dam is not jeopardized during periods of clogged flow conditions, or higher-than-design storm events. If this features are installed in cut areas, then the consequences of overtopping would not appear to jeopardize the "dam", because in these cases, a "dam" doesn't exist. Please review, and discuss within the report.

    - ***Basins are cut into the site. Emergency spillways have been removed as suggested***

19. Sheet C504: Please provide additional context for this drawing. Perhaps street or highway labeling would show where this is located?

    - ***Additional context has been provided. This information is now provided on sheet C902.***

20. Sheet C504: Please see previous comments about the emergency spillway, and whether or not this pertains to the situation shown on the plans.

    - ***Basins are cut into the site. Emergency spillways have been removed as suggested***

21. Sheet C504: Please be specific as to the location of the outlet structure in relation to this drawing. It does not appear clear from the notes or table. In the table, it appears this is called-out as an Area Inlet? Invert elevations, however, do not appear to match the "Outlet Structure Detail".

    - ***Clarification has been added to table and detail on sheet C902. The bioretention outlet is now referred to as the "Bioretention Overflow Outlet" on the table and detail.***

22. The private sanitary sewer is shown with an 8 inch line connecting to the existing manhole. If using 8 inch private sanitary sewer line with a direct-connection to the manhole, then manholes should also be shown for the private sanitary sewer. Cleanouts are not allowed. If using private sanitary sewer line less than 8 inches, a cut-in wye must be installed along the existing public sanitary sewer line, a minimum of 4 feet from the outside of the manhole to the outside of the wye. In this case, no direct connection to the existing sanitary sewer manhole is allowed.

    - ***The clean-out has been deleted and the private line has an updated alignment on Sheet C501.***

23. Sheet C509: Please show the vaults and meters in bold, to denote these are proposed improvements. As shown, they appear to be existing improvements because they are greyed-out.

    - ***Refer to sheet C503.***

24. General Note about Utility Plan on Sheet C500: Please add a prominent note which references the "Water System Plan" on Sheet C509.

    - ***This has been added to the bottom right portion of the sheet.***

25. The pavement detail does not meet the Unified Development Ordinance (UDO) in terms of pavement thickness or subgrade design. In general, the following requirements apply: 1) drive aisles and parking stalls require a minimum of 1.5 inch surface course, with a minimum 4 inch base course, on top of 6 inches of aggregate base, and over 6 inch minimum thickness of chemically-stabilized native subgrade, or in lieu of chemically-stablized subgrade, geogrid that meets the specifications of the City of Lee's Summit. Heavy truck traffic lanes where fire department, trash delivery, or other truck traffic has the same requirement, except the base must be a minimum of 5 inches thick rather than 4 inches thick.

    - ***This has been revised.***

26. Curb and gutter detail must be provided, which clearly shows that the subgrade design discussed in the above comment is extended a minimum of 1 foot beyond the back of curb.

    - ***This has been added to sheet C701.***

27. It appears that the backflow vault is shown within a public easement, which is not allowed.

    - ***This has been addressed.***

28. A profile view of the fire line is required. Other utilities should be shown on this profile view to eliminate utility conflicts. Depth of cover should be specified (i.e., minimum of 42 inches).

    - ***This is now included on sheets C504 thru C507.***

29. The domestic water meter vault should be shown within a public easement. As shown, it appears to be outside the limits of the easement?

    - ***This has been addressed. Refer to sheet C503. Easement extends around vault and is included on the Final Plat.***

30. KCMMB concrete of 8 inch thickness must be used for all new commercial entrances from non-MoDOT roads.

    - ***Refer to the Public Roadway plan set for this.***

31. An itemized and sealed Engineer's Estimate of Probable Construction Costs should accompany your final submittal drawings. The Engineering Plan Review and Inspection Fee is based on this estimate. Items to include in the estimate are: 1) storm lines greater than 6 inches, 2) storm structures, 3) sanitary sewer lines and structures, 4) sanitary manholes, 5) wye connections, 6) water lines and connections, 7) special water meter vaults for 3 inch meters, 8) fire hydrants, 9) valves, 10) tees, bends, and other items, 11) thrust blocks and straddle blocks, 12) grading to establish proper drainage, 13) grading for detention basins and bioretention basins, 14) detention basin outlet structures, 15) paving, 16) subgrade, including aggregate base and chemically-stabilized subgrade/geogrid extending a minimum of one (1) foot beyond the back of curb, 17) commercial entrances, 18) curb and gutter, 19) rip rap, 20) turf reinforcement mat, 21) erosion and sediment control devices and measures, and 22) final restoration, including sodding, seeding, fertilizer, mulch, and topsoil.

    - ***This has been prepared, EXCEPT the commercial entrance is included within the OPC for the Public Roadway plan set.***

Building Codes Review

1. Depth of secondary electrical wiring is noted as 18” deep. Any wiring under parking or driveways must be minimum 24” deep. To be field verified.

    - ***This has been edited on sheet C500.***

We feel these revisions should sufficiently satisfy your comments. However, if you should have any questions regarding our revisions, please feel free to contact me at 417-890-8802 or by email at rjeppson@olsson.com.

Sincerely,

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