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May 13, 2021

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

Attn: Shannon McGuire, Planner

Re:
Application Number: PL20211059
Application Type: Residential Preliminary Development Planning
Application Name: Summit Point 2nd Plat (Phase II)
Location: 510 NE Chipman road, Lee's Summit, MO 64063
Response to April 27, 2021 Comments

Shannon,

Below are responses to your comments dated April 27, 2021. We are resubmitting revised plans and Storm Study and HEC RAS study with this response letter.



Engineering Review Gene Williams, P.E. Senior Staff Engineering
(816) 969-1223 Gene.Williams@cityofls.net

2. Please refer to comment #6 in the applicant letter dated Mar. 29, 2021. The "Preliminary Stormwater Drainage Study" dated Apr. 5, 2021 (hereinafter referred to as the preliminary stormwater study) still contains the statement "The City requires that no construction be allowed within the stream setback, with the exception of stormwater detention basins" on page 2. While this may be partially correct, the City will consider grading within the stream buffer for detention basins on a case-by-case basis. Please correct the report as appropriate. *The statement, "A portion of the proposed stormwater detention basin would be located within the stream buffer area, which is allowable with the City on a case-by-case review basis," has been removed from the revised drainage study.*



3. The figure on page 3 of the preliminary stormwater study is illegible due to pixelation of the diagram. No review was performed. *The illustration was a blow-up from the full Grading Plan sheet which was included in the appendix, the blow up has been deleted from the study.*

4. Page 4 of the preliminary report states that City personnel participated in the determination of the OHWM. The City only observed the delineation of the OHWM by Frank Norman, so this statement is not accurate. Please revise. *The revised drainage study has been re-written to exclude mentioning the City in the determination of the ordinary high water elevation.*

5. Page 8 of the preliminary stormwater study included a diagram which is illegible due to pixelation. No further review was performed. *The illustration was a blow-up from the pre-development conditions Drainage Area Map sheet which was included in the appendix, the blow up has been deleted from the study.*

6. Page 10 of the preliminary stormwater study included a diagram which is illegible due to pixelation. No further review was provided. *The illustration was a blow-up from the post-development conditions Drainage Area Map sheet which was included in the appendix, the blow up has been deleted from the study.*

7. Page 11 of the preliminary stormwater study included a diagram which is illegible due to pixelation. No further review was performed. *The illustration was a blow-up of the Outlet Structure detail from the Details sheet which was included in the appendix, the blow up has been deleted from the study.*

8. Page 14 of the preliminary stormwater study included a diagram which is illegible due to pixelation. No further review was performed. *The illustration was a blow-up of the HEC-RAS channel cross-sections along the north side of the site, which was included in the appendix, the blow up has been deleted from the study.*

9. Page 14 of the preliminary stormwater study states in the second paragraph "...results of the HEC-RAS model showed the 100 year flood elevations...ranging from 994.3 to 1005.1." The report goes on to state that buildings were set above this level. This does not reconcile with the finish floor elevations shown for A2-2 and C1-2, which show the finish floor elevations at 1005.00, which is below the calculated base flood elevation. The City requires 2.00 feet of freeboard (preferably higher) between the calculated 100 year water surface elevation and the lowest floor elevation. *Based on the revised more conservative HEC RAS model, the highest flood plain elevation on the site is 998.81. The previous elevations called out in the report are not on the site.*

10. HEC-RAS study has not been formally reviewed as of this date. Final results of an accepted study will affect the lowest floor elevations of the buildings, the bottom of the detention basin, and the location of the detention basin. *Noted. We have received comments back and are responding to those comment under a separate letter.*

11. Energy dissipation at the end of the discharge point does not appear sufficient for this project, and will likely have a negative impact on the adjacent property owner to the north. Rip rap appears to be shown, but extends approximately one pipe diameter into the floodplain. Preliminary calculations shall be provided for the dimensions of the energy dissipation measure. Other alternatives for energy dissipation should be considered, such as field-tested designs by the Federal Highway Administration to induce a hydraulic jump within the energy dissipation device over a wide range of flow regimes. *A 15 ft long riprap blanket was designed for the end of the 36" HDPE outlet pipe from the stormwater detention basin. Calculation is included in the study.*

12. Off-site easements or off-site acquisition of property is required for the energy dissipation device shown on the preliminary development plan. This shall be required prior to approval of the Final Development Plan. *A head wall is being designed to allow 15' of rip rap for energy dissipation and not grade off site.*

13. Geometry shown for outlet structure in the text of the report and within contradictory diagrams within the preliminary stormwater study appendix will bypass the water quality aspects of the basin. Short-circuiting effect of outlet structures constructed in this fashion negate the residence time in the basin. Traditional design should be shown rather than the off-line structure. *The outlet structure would be a traditional in and out design. No off-line configuration.*

14. The 100 year water surface elevation was shown graphically for the detention basin, but the incorrect condition was shown. The 100% clogged/zero available storage elevation shall be shown, and shall be a minimum of 20 feet from any building and any property line. This is a requirement of Section 5600 of the KCAPWA stormwater requirements, which have been adopted by reference by the City of Lee's Summit. Rough calculations by City show this will not be met for the northeast basin if showing the above condition. It will be too close to Building C1-2 and the east property line. *Per our discussion at the comment resolution meeting, Section 5608.2 references design storage pool, so the location shown is correct:*

*Section 5608.2, Access and Easements, Sub-section A, discusses how permanent access and buffers must be provided for maintenance of a detention facility with the following requirements: "The water surface of the design storage pool shall be a minimum of 20 feet from property lines and building structures. A greater distance may be necessary when the detention facility might compromise foundations or slope stability is a consideration." The term "design storage pool" does not appear to be specifically defined in Section 5600. The detention basin was designed to store and detain a 100-year storm, and the 100-year design storage elevation was calculated to be 1000.48'. There is no mention of increasing the elevation to include the depth for an additional 100-year storm to flow through the emergency overflow spillway.*

15. A concrete "trickle channel" is shown in the bottom of the detention basin. Construction of these low flow channels tend to negate the water quality aspects of detention basins. Recommend soliciting input from a design professional at the final plan phase for appropriate plantings, soil amendments, or other measures to help drain the area of low slope. *Per our discussion at the comment resolution meeting, we are leaving the trickle channel shown as is and we will have further discussion with City Staff prior to FDP.*

16. There appear to be areas behind building A2-2 with slopes in excess of 3:1. These areas will either need a geotechnical report to assess the global stability of the slope, or retaining walls installed. *The grading plan was designed with maximum 3:1 slopes.*

17. Commentary within the preliminary stormwater study appears to discuss an off-line outlet structure, as well as the illegible diagram contained below the commentary. Appendix within the report contradicts this discussion and the illegible diagram. Grading plan and utility plan in the appendix of the study show a more traditional outlet structure location. Please see previous comment concerning the off-line outlet structure. *The outlet structure details and descriptions were revised to reflect the in-line outlet structure.*

18. DAM-2 shown within the appendix of the preliminary stormwater report appears to show the off-line outlet structure, contradicting the previous grading plan and utility plan. *The Drainage Area Map 2 for the Post-Development conditions was revised to show the reconfigured in-line outlet structure.*

19. Sheet C3 Site Plan and C4 Grading Plan: A sidewalk is shown along building A2-2 and C1-2. These are shown in areas where grading is shown, some over the 3:1 max slope discussed in previous comments. Sidewalks cannot be installed over 3:1 slope without grading to max. 2.0% slope for the sidewalk cross-slope, and it is unclear how this will work without grading within the floodplain or stream buffer. *The grading plan was designed with maximum 3:1 slopes and proposed sidewalk/trail designed with max 2% cross slope. A note was added to the drawing for clarity.*

Respectfully,

**Cook Flatt & Strobel Engineers, P.A.**

Lance W. Scott, P.E.
Vice President