LEE'S SUMMIT
MISSOURI

DEVELOPMENT SERVICES

Date: Friday, March 31, 2023

To: ENGINEERING SOLUTIONS
50 SE 30TH ST
LEES SUMMIT, MO 64082

From: Gene Williams, P.E.
Senior Staff Engineer

Application Number:	PL2022248
Application Type:	Engineering Plan Review
Application Name:	THE VILLAS OF CHAPEL RIDGE 2ND PLAT, LOTS 43-74 AND TRACTS C-1 AND D-1 - Street, Stormwater and Master Drainage Plan

The Development Services Department has completed its review of the above-referenced plans dated Oct. 3, 2022 and offer the following comments listed below.

- See comments below to determine the required revisions and resubmit to the Development Services Department public portal located at **devservices.cityofls.net**. Digital documents shall follow the electronic plan submittal guides as stated below.
- Revised plans will be reviewed within ten (10) business days of the date received.

Engineering Review - Corrections

1. Sheet C.201: This sheet has changed since the last submittal, and no longer includes the required lot corner existing and finish elevations. Please review and revise as appropriate. The lot corner elevations are required for the Master Drainage Plan.

2. Overall Comment: The plans have changed considerably from the previous submittal in August 2022. These changes were not discussed in the response to comments letter. For instance, stop-controlled intersections are now non-compliant with ADA-accessibility across the street in terms of cross-slope, and stationing is missing on the plan view. Please evaluate and revise as appropriate.

3. Were other revisions made to the plans not specifically dicussed in the response to comments letter?

4. Sheet C.206: This sheet (i.e., the ADA-accessible ramp details) does not match the profile view of the street construction plans. Please review and revise as appropriate, and ensure the ADA-accessible ramp details reconcile with the profile view of the streets.

5. Please refer to comment #3 in the previous applicant letter. Sidewalk installation notation was missing near Dick Howser Dr. In addtion, a shaded pattern was used for all sidewalk in the subdivision, with the

exception of the portion near Dick Howser Dr., with notation along common area tracts. Recommend the following: 1) provide a separate symbology for sidewalk to be constructed with these improvements, including common area tracts and unplatted areas, and 2) provide a separate symbology for sidewalk to be installed by the homebuilders. As shown, there is no consistency and questions shall be fielded on what is to be constructed with these improvements.

6. Please refer to comment #4 in the previous applicant letter. The response to comments states the storm system has been re-designed, and proposed velocities are within allowable range per APWA 5600. I am not seeing any re-design of the pipe slope on the discharge end of storm line 1. It was unchanged in terms of slope (but changed in terms of pipe size), and shown discharging into a trapezoidal channel with a 16.67% slope. Finally, the response to comments on comment #4 states that the velocity is within accepted range specified in APWA 5600. I do not agree with the velociity calculation, as this appears to be steady uniform subcritical flow. It would appear this is supercritical flow, and the velocity will be substantially higher. This will lead to backcutting over time, property damage, and a re-design appears warranted.

7. Please refer to comment #5 in the previous applicant letter. The response to comments states the normal pool elevation of the receiving water body was shown on the plans, but I cannot find where this is specified. The bigger question is why you are proposing to discharge the flow from storm line 1 into a trapezoidal channel with an excessivley high slope of 16.67% with high energy and future damage to property by backcutting. Has there been any discussion with the Lakewood Property Owner's Association on the discharge of storm line 1? It would appear this is necessary, since you are propsing to grade on their property.

8. It would appear storm line 1 should be designed to convey the stormwater underground rather than installing an excessively-steep trapezoidal channel with excessive slope. This will require a re-design of the system, and likely extension of storm line 1 onto the adjacent property and extension to the normal pool elevation of the receiving pond. Please review and revise as appropriate.

9. Off-site easements shall be required for the stormwater improvements shown on the plans. This would include storm line 1 and storm line 6.

10. Storm line 6 is shown discharging from a pipe slope of 6.5% to a v-bottom swale. The velociity calculations for this swale appear to be based on steady uniform subcritical flow rather than supercritical flow. The velocity calculation appears in error, and should be higher than shown. It would appear the storm line should be extended closer to the permanent pool to minimize erosion issues. Please review and evaluate, and revise as appropriate.

11. Please refer to comment #6 in the previous applicant letter. Although there was a slight change in cover, please see previous comments related to the discharge of storm line 1 and a re-design. These comments will have a bearing on this comment. Please revise as appropriate.

12. Please refer to comment #8 in the previous applicant letter. Although the response to comments states

that sideyard swales were called-out on the Master Drainage Plan, there is an indistinct note in the bottom left hand corner with this notation. Recommend a bold note in a prominent location so this is not missed during the plot plan review process. Please revise as appropriate.

13. Sheet C.301: This sheet has changed in terms of pipe size for the discharge end of storm line 1. The previous submittal showed a 36 inch HDPE pipe. The latest submittal shows a 30 inch HDPE pipe with no explanation for the change in pipe size. Finally, the pipe immediately upstream of the discharge end of storm line 1 was shown as a 24 inch HDPE, but is now shown as an 18 inch HDPE. Please explain the discrepancy in the plans, and please describe any other changes that were made since the August 2022 submittal.

Traffic Review - No Comments

In order to calculate the Engineering Plan Review and Inspection Fee, a sealed Engineer's Opinion of Probable Construction Costs shall accompany your final submittal copies. The itemized estimate (material and installation) shall be sufficiently broken down and shall include the following items, as applicable.

- Public infrastructure, both onsite and offsite.
- Private street construction, including parking lots and driveways.
- Sidewalks located within the right-of-way.
- ADA accessible ramps.
- Sanitary sewer manholes and piping between manholes, including private mains.
- Connection of the building sanitary sewer stub to the public main.
- Waterlines larger than 2 inches in diameter, valves, hydrants, and backflow preventer with vault, if outside the building.
- Stormwater piping greater than 6 inches in diameter, structures, and detention / retention facilities - public or private.
- Water quality features installed to meet the 40-hour extended duration detention requirements.
- Grading for detention / retention ponds.
- Grading to establish proper site drainage.
- Utility infrastructure adjustments to finished grade (i.e. manhole lids, water valves, etc.).
- Erosion and sediment control devices required for construction.
- Re-vegetation and other post-construction erosion and sediment control activities.

Electronic Plans for Resubmittal

All Planning application and developmrnt engineering plan resubmittals shall include an electronic copy of the documents as well as the required number of paper copies.

Electronic copies shall be provided in the following formats

- Plats – All plats shall be provided in multi-page Portable Document Format (PDF).
- Engineered Civil Plans – All engineered civil plans shall be provided in mulit-page Portable Document Format (PDF).
- Studies – Studies, such as stormwater and traffic, shall be provided in Portable Document Format (PDF).

Please contact me if you have any questions or comments.

Sincerely,

/s/ electronically signed Mar. 31, 2023

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cc: Development Engineering Project File