
DEVELOPMENT SERVICES

Date: Monday, July 17, 2023

To: Matt Kriete, P.E.
Engineering Surveys and Services
COLUMBIA, MO 65205

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

Application Number: PL2023171

Application Type: Engineering Plan Review

Application Name: Wilshire Hills 4th Plat - Streets and Storm

The Development Services Department has completed its review of the above-referenced plans dated Jun. 27, 2023 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

1. Please review Section 5600 of the Design and Construction Manual related to detention basin design. A minimum freeboard of 1.0 feet is required from the 100 year clogged condition/zero available storage and the top of dam. It appears this criteria is not met.
2. Detention pond setup table was not included within the appendix of the stormwater report. Please include within the appendix of the stormwater study.
3. Please review Section 5600 of the Design and Construction Manual related to emergency spillway freeboard and the 100 year nominal (i.e., the design) water surface elevation. A minimum of 0.5 feet from the nominal (i.e., the design) 100 year water surface elevation and the emergency spillway is required. It does not appear this condition was met. Please revise as appropriate.
4. Title of the plans is Phase III, but this appears to be the 4th Plat of Wilshire Hills. To avoid confusion, please rename the plans as "Street and Stormwater for Wilshire Hills 4th Plat" or equivalent language.
5. Why are there two (2) cover sheets for this project?

6. Asphaltic concrete section shown in the plans is incorrect and does not follow the Design and Construction Manual. Please review the Design and Construction Manual, and ensure the subgrade either includes geogrid, or chemically-stabilized subgrade. In addition, ensure the pavement thickness meets the requirements for commercial streets. Please review and revise as appropriate.
7. A separate sheet should be developed for the detention basin/retention basin showing the following information:
 1. Top of dam elevation.
 2. Emergency spillway elevation.
 3. All weir and orifice elevations that are part of the outlet structure.
 4. 100 year nominal (i.e., design) storage volume.
 5. Bottom of basin elevation.
 6. 100 year nominal (i.e., design) water surface elevation (WSE).
 8. 100 year clogged/zero available storage WSE.
 9. Graphical limits of the 100 year clogged/zero available storage WSE (i.e., shown on the plan view with callouts), along with dimensional callouts from property lines and buildings to ensure a minimum 20 foot setback.
 10. Typical section view of the outlet works and dam, along with elevation callouts for the 100 year nominal and 100 year clogged/zero available storage to ensure there is a minimum 0.5 feet freeboard between the nominal condition and the crest of the emergency spillway, and a minimum 1.0 feet from the clogged condition/zero available storage and the top of dam.
 11. Location and callouts showing the emergency spillway, and a clear path that is not directed towards buildings or other other vulnerable features.
8. The reason for the above is an as-built Record Drawing of the detention basin and outlet works shall be required prior to occupancy. The single sheet shall make the process of review easier when occupancy permits are being sought.
9. Sidewalk was missing from the plans. In addition, site-specific ADA-accessible ramps and ADA-accessible routes across intersections were also missing. No further review can be conducted until these are shown on the plans.
10. The pavement width as measured from back of curb to back of curb does not appear correct. Commercial roads shall be 36 feet back of curb to back of curb. Residential local, which does not appear relevant to this development, shall be 28 feet as measured from back of curb to back of curb. Please revise as appropriate.
11. Type M curb inlets are called-out, but the City of Lee's Summit does not have any such detail. Please clarify that the City of Lee's Summit standard curb inlet shall be used by referencing the appropriate standard drawing.
12. Hydraulic grade line for the design storm shall be shown on all storm line profiles. Typical practice in City of Lee's Summit is to show the 10 year at or below the crown of pipe, with the 100 year contained within

the pipe and no less than 6 inches from any throat opening. Please update on the profile view.

13. Pipe calculations should be shown within the plans in the form of a table(s) for each storm event. The stormwater report presents these, but in addition, the City of Lee's Summit requires these to be placed in the plans. Please update as appropriate.
14. The 60 inch pipe exiting the detention basin shall be designated private. As shown, it is public. Please revise.
15. The 60 inch pipe exiting the detention basin is shown with an excessive slope which will lead to supercritical flow conditions and excess erosive ability. Recommend lessening the slope. Please evaluate and revise as appropriate.
16. The outfall structure of the detention basin is shown as public. This shall be private. The City of Lee's Summit does not maintain public stormwater detention basins, outlet works, or discharge pipes. Please revise as appropriate.
17. Sheet C2.12 shows an "existing detention basin". Where is this existing detention basin?
18. Rip rap calculations were not provided, nor were there any dimensions, thickness, geofabric, rip rap sizing, etc. shown for the rip rap. Please show this information on all sheets related to rip rap.
19. A trenching and backfill detail was missing from the plans. Please ensure the most up-to-date detail is provided with 12 inches aggregate over the top of pipe which was adopted in Jul. 2020. The City does not have a standard detail for trenching and backfill, so it will need to be a customized detail.
20. Plans reference "The City of Locust Grove" throughout the plan set. Please revise. Many of the references relate to concrete, and the City of Lee's Summit requires KCMMB mix for all stormwater structures, pavement, curb and gutter, etc. Please review and revise as appropriate.
21. TMIs are called-out, but the City does not recognize a "TMI". What is a TMI? Is this a curb inlet?
22. Has the plat been reviewed in terms of right of way width for street classification? A minimum 60 feet right of way is required for commercial streets with a 36 foot back of curb to back of curb street width. Please review and revise the plat and the plans as appropriate.
23. Informational Comment: It is probable that additional comments shall be forthcoming on future submittals due to the incomplete nature of the plans.

Traffic Review - Corrections

1. Sidewalk will be required with these improvements. Sidewalk will need to extend past this plat and connect to the existing sidewalk on Wilshire Drive.

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 development 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 multi-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 Jul. 17, 2023

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cc: Development Engineering Project File