

**Date:** Thursday, December 08, 2022

**To:** Doug Ubben  
Phelps Engineering, 1270 N. Winchester St., Suite #5878  
Olathe, KS 66061

**From:** Sue Pyles, P.E.  
Senior Staff Engineer

**Application Number:** PL2022325

**Application Type:** Engineering Plan Review

**Application Name:** Orchard Woods - Streets, Stormwater, and Master Drainage Plan

The Development Services Department received plans for this project on September 07, 2022. We have completed our review 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](https://devservices.cityofls.net). Digital documents shall follow the electronic plan submittal guides as stated below.
- Revised plans will be reviewed within five (5) business days of the date received.

#### Engineering Review - Corrections

3. General:

- Submit an Engineer's Estimate of Probable Construction Costs.
- These plan sheets are also included in the Mass Grading and ESC plan set. Please review those comments and make any necessary revisions to this plan set based on those comments as necessary.
- The storm sewer design was not reviewed at this time. Please submit a final stormwater study with the resubmittal.
- The second review for this plan set will require a 10 business day review period due to the plans lacking information.
- Include a sign plan.

4. Sheet 4:

- Show and label the 100-yr WSE on this sheet and throughout the plan set.
- Grading is shown extending onto the adjacent lot, Lot 6 Savannah Ridge 1st Plat. No information is shown regarding what will be done due to existing features. Please clarify.
- Please see Design and Construction Manual Lee's Summit Section 5601.8.A and incorporate all required information into a Master Drainage plan within this set of plans.
- The fringe drainage along the west edge of the property is being directed in a different direction than it is currently. Please provide additional information to ensure it will not cause any negative effects to the adjacent properties.

5. Sheets 5-7:
  - Provide underdrains at all low points.
  - Show information on connection to existing streets, such as a saw cut line and any required notes.
  - It is unclear how the entrance to the water tower will connect with the proposed street.
  - Include the Lakewood Way stationing at the Sta. 0.00.00 NE Orchard Drive label in Profile view.
  - Revise the street name title on Sheet 6.
  - Include ADA-accessible route details, using the City of Lee's Summit design standards, across intersections under stop control. In addition, the profile view of the roadway sections must be updated to clearly show the locations of these stop controlled intersections.
6. Sheets 8-10: No information is provided on these sheets.
7. Sheets 11-13: A complete review has not been done. However, some comments follow:
  - Include rip-rap dimensions for constructability.
  - Include rip-rap calculations to verify the design is adequate.
  - Include the following note on any profile sheet applicable: "Compacted Fill shall be placed to a minimum 18" above the top of the pipe prior to installation." Show and label the limits of the compacted fill placement in the Profile view. Use hatching for clarity.
  - Please show the hydraulic grade line for the design storm on the profile view of the storm system. If the pipe cannot manage the 100 year event without surcharging, then a suitable overflow route must be established for the excess. Finish floor elevations must be a minimum of 2 feet higher than the calculated 100 year water surface elevation.
  - Please relocate overlapping text for clarity on Line 2 Plan and Profile views.
  - Please clarify the Line 2 connection to the existing storm sewer. It is referred to as both proposed and existing in the labels.
8. Sheets 14-16:
  - Include a pavement design section.
  - The curb and gutter detail or pavement detail must show that the aggregate base and compaction of native subgrade extends a minimum of one (1) foot beyond the back of curb.
9. Sheet 17: No information is provided on this sheet.
10. Sheet 18: Please revise notes on this sheet to refer the correct city, process, and reference documents.
11. Sheet 19: Please look at ways to make this exhibit a bit larger and more clear. Perhaps rotate and scale back some line weights, for example. Locate drainage area information where it won't block drainage area boundaries.
12. Sheet 20: Storm Drainage Calculations are incomplete. Please include pipe and inlet calculations for all storm structures for both the 100-yr event and the design event, if different.

13. Sheets 21-24: These plan sheets are also included in the Mass Grading and ESC plan set. Please review those review comments and make any necessary revisions to this plan set based on those comments as are necessary.
14. Sheet 25: No information is provided on this sheet.

### **Traffic Review - Corrections**

1. Sheet 5-7 - Please provide horizontal curve data.
2. Sheet 5 - Minimum K value for sag curve on Residential Collector is 37 (Sta. 5+73.84).
3. Sheet 7 - Minimum K value for sag curve on a Local is 26 (Sta. 1+19.36).

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**

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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,

Sue Pyles, P.E.  
Senior Staff Engineer  
(816) 969-1245  
Sue.Pyles@cityofls.net

cc: Development Engineering Project File