LEE'S SUMMIT
MISSOURI

DEVELOPMENT SERVICES

Date: Friday, March 26, 2021

To: Matt Schlicht, P.E. Engineering Solutions

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

Application Number: PL2021074

Application Type: Engineering Plan Review

Application Name: WOODLAND OAKS 1ST PLAT - SANITARY (On-Site)

The Development Services Department has completed its review of the above-referenced plans. The following comments are offered:

- Revised plans will be reviewed within ten (10) business days of the date received.

Engineering Review

1. A sanitary sewer report is required for the low pressure sanitary sewer. The report should analyze and discuss the low pressure sanitary sewer system in terms of total users connected to the lines, residence time within the forcemain, required individual pump systems, and how it relates to sizing of the line. The intent is to minimize residence time within the line to minimize odor issues, and to ensure sewage does not become septic.

2. HDPE line must be used for the force main.

3. Force main is shown entering the manhole too high.

4. Please label the existing manhole with the City manhole number #26-274.

5. We continue to see errors in the flowline directions at inverts. Please perform a thorough QA/QC review of flowline in and out elevations in relation to directions shown.

6. The first two manholes receiving waste from a force main must be epoxy lined.

7. Sheet C.403: Provide end flushing assembly.

8. A ball/check valve with valve box and cover shall be installed on the stub line just upstream of the connection to the low pressure sewer main connection point. This denotes the end of the public system. The private system includes everything from the ball valve to points upstream, including the pumps and the ball/check valve.

9. Please see new requirements concerning minimum slope for an 8 inch line. It is now based on upstream lots. It would appear the minimum slope for these lines would be 1.00%.

10. Storm sewer crossings at Sta. 1+73.79 and 0+24.03 seems to be less than 18" from top of forcemain and bottom of storm pipe.

11. Provide notes stating the end of the public low-pressure sanitary sewer system, versus the private low-pressure sanitary sewer system. The private portion includes the ball/check valve.

12. Sheet C.404: Why is the force main being placed beneath the storm line? Please re-design the storm system, or perhaps adjust the grading in that area so the force main can be placed above the storm line. The proposed location will be a high-maintenance issue.

13. Sheet C.404: It would appear the plans are incomplete at the end of the line (i.e., Lot 40). It would appear this line needs to be extended further beyond the Lot 40 connection stub.

14. Sheet C.403: Why was the force main shown beneath the storm line? The storm line should be revised, and/or grading should be adjusted.

15. Sheet C.403: Plan and profile view appear incomplete concerning the end of the line near Lot 20. Shouldnt the line extend beyond Lot 20, just beyond the private stub?

16. Private sanitary sewer stub typical detail was missing for the low-pressure sewer. Since the City does not have such a detail, this will need to be supplied by the engineer.

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/ Gene Williams electronically signed Mar. 26, 2021

Gene Williams, P.E.
Senior Staff Engineer
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cc: Development Engineering Project File