

Date: Tuesday, May 17, 2022

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

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

Application Number: PL2021074

Application Type: Engineering Plan Review

Application Name: WOODLAND OAKS 1ST PLAT - PUBLIC LOW PRESSURE SANITARY SEWER
SYSTEM

The Development Services Department has completed its review of the above-referenced plans dated Apr. 27, 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. Additional information is required on the odor control system to be included in the report. Information such as sizing, application/dosing details, onsite storage, electrical/controls. Other than making a mention that it will be included, there was no additional detail.
2. Tracer wire should be provided on the forcemain and on the sewer stubs. Please show by sufficient notation or other means on the plans.
3. A high point appears to exist on Line 3 near station 14+00. An air release valve appears warranted.
4. Construction and Design Notes, Notes 1 and 2 under Sanitary Sewers reference PVC, SDR-26. This should be updated to be SDR 11 HDPE.
5. Note 2 seems to be for gravity mains/laterals, not LPS. All notes should probably be checked for conflicts.
6. Sheet C.401 and Sheet C.405: Odor control is only mentioned, but no specific information is presented. On-site storage requirements are required, electrical and control systems are required, as well as any

other information required to build the odor control system.

7. Sheet C.406: Please submit calculations supporting the valve sizing. These calculations can be either from the manufacturer, or your firm.
8. Sheet C.406: Flomatic is not on the approved products list. Please provide justification for inclusion of this non-approved part, or specify what is already shown on the approved products list.
9. Sheet C.406: Provide a 5 feet diameter manhole detail for use with the air release valve assembly.
10. Sheet C.406: Provide a tee instead of the tapping saddle for the air release valve assembly.
11. Sheet C.406: Provide an isolation valve in the yard upstream of the ARV. This way if there's a break, we can isolate the system to fix it.
12. Sheet C.406: There is concern about the location for the ARV near the entrance to Woodland Shores subdivision. This is right inside the main entrance and close to property owners. What is the proposal to manage potential odor issues? Carbon cannister appears warranted.
13. Sheet C.406: Provide additional detail on the valves proposed for the ARV assembly They are shown in the detail but not called out.
14. Updated "Low Pressure Sanitary Sewer System for Woodland Oaks Subdivision" installation manual was not included in the resubmittal. This manual is required, as it will be consulted when homeowners, homebuilders, and plumbers are installing pumps and performing maintenance. It shall also be consulted by Development Services staff. An updated manual shall be required prior to formal approval of the plans.
15. Forcemain is located at the foot of three (3) retaining walls. Two (2) are located along Blackwell, and one (1) is located along Woodland Shores Dr. near the entrance. The Design and Construction Manual requires a minimum of 15 feet of distance between any structures and the outside of the pipe, and this has not been achieved.
16. Forcemain is located at the foot of three (3) floodlights. See above comment concerning this issue.
17. The 90 degree bend at the south corner of Woodland Oak Dr. and Blackwell is not desired. Please eliminate the 90 degree bend and replace with two (2) 45 degree bends at a minimum.
18. The 90 degree bend at the south corner of Woodland Shores Dr. and Blackwell is not desired by the City.

Please use two (2) 45 degree bends at a minimum.

19. Will the forcemain be bored? At a minimum, it shall be bored at all street crossings. Please add sufficient notation showing where the forcemain will be bored. Steel casing shall not be required.
21. Epoxy coating of three (3) manholes is shown on Sheet C.404 with no corresponding information, details, or specifications on what is required to epoxy-coat these three (3) manholes. Please provide all necessary information on what is required to epoxy-coat these manholes.
22. Profile view along line 3 appears to be missing the location of the three (3) water lines. This would include near station 12+00, and station 12+50.

Traffic Review - Not Required

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 May 17, 2022

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cc: Development Engineering Project File