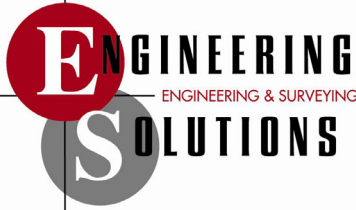




Project: Woodland Oaks 1st Plat – Sanitary (On-Site)
Application Number: PL2021074
Application Type: Engineering Plan Review
Comments Dated: March 26, 2021

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. **Report Enclosed.**
2. HDPE line must be used for the force main. **Revised.**
3. Force main is shown entering the manhole too high. **Invert Elev. Revised**
4. Please label the existing manhole with the City manhole number #26-274. **Labeled.**
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. **Performed.**
6. The first two manholes receiving waste from a force main must be epoxy lined. **Epoxy lining note Added.**
7. Sheet C.403: Provide end flushing assembly. **Note Added.**
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. **Acknowledged, Shown on connection detail with Public/Private callout.**
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%. **Slope has been revised to 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. **We have revised crossings to ensure the required minimum separations including water have been met. In addition we have provided a mild continuous slope through this section to enhance operation.**
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. **Public/Private notes are shown on detail as typical for all services.**
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. **There are both waterline and storm sewer crossings in the area. The public water prefers being placed above the sanitary and we did not see the value in varying the vertical location in this section. The continuously welded small diameter HDPE sanitary main typically requires the least maintenance of all utilities. For operational purposes in the sanitary main it is most important to minimize excessive vertical swings.**
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. **A terminal flushing assembly has been called out for the end of the line and detail added.**



Woodland Oaks
April 12, 2021
Woodland Oaks - Sanitary
Lee's Summit, MO

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. **See response to item 12 above. The much smaller continuously welded HDPE main can dip with sweeping bends making it a natural fit to dive beneath both water mains and long gravity operated systems without compromising neither operation nor maintenance.**
15. Sheet C.403: Plan and profile view appear incomplete concerning the end of the line near Lot 20. Shouldn't the line extend beyond Lot 20, just beyond the private stub? **A terminal flushing assembly has been called out for the end of the line and detail added.**
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. **Detail Added.**

Please forward all comments or concerns to Matthew Schlicht.