LEE'S SUMMIT
MISSOURI

DEVELOPMENT SERVICES

Date: Wednesday, December 26, 2018

To:
OLSSON ASSOCIATES
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From: Gene Williams, P.E.
Senior Staff Engineer

Application Number:	PL2018216
Application Type:	Engineering Plan Review
Application Name:	WOODSIDE RIDGE 1ST PLAT - SANITARY SEWER

The Development Services Department received plans for this project on December 03, 2018. We have completed our review and offer the following comments listed below.

- Resubmit three (3) full size sets of plans (no larger than 24"x36") folded to 8-½"x11", one (1) comment response letter, and one (1) digital copy following the electronic plan submittal guides as stated below.
- Revised plans will be reviewed within five (5) business days of the date received.

Engineering Review

1. Sheet C201: Please change the Utility Service Numbers as follows: remove the Public Works contact, and insert in its place "Development Services 816-969-1200".

2. Sheet C202: Plumbing notes should eliminate the comment concerning tees. The City of Lee's Summit requires a wye. Tees are not acceptable.

3. General Layout Plan: Is it possible to provide a general layout sheet with the entire sanitary sewer line on one sheet, followed by subsequent general layout sheets? This will greatly enhance the plans.

4. Sheet C203: The sanitary sewer alignment from manhole 1-6 to manhole 1-2 does not follow what was shown in the Preliminary Development Plan. The issue is that the sanitary sewer is now located partially along rear yards, which is not allowed by the Design and Construction Manual.

5. Sheet C2303: We are assuming the future sanitary sewer line to serve lots 198 and 184 are to be installed along a separate route, and not connected to any of the sanitary sewer within the 1st Plat? If not, the extension will need to occur during the 1st phase.

6. Sheet C.203: It would appear a manhole could be eliminated between mh #8-3 and #8-5.

7. Sheet C.204: Laterals are shown connecting to the main in the middle of the cul-de-sac on Grady Ct. and Joshua Dr. Please move the location of these wyes so they are either at the back of curb, or completely outside the limits of the pavement. The issue is future maintenance. Homeowners would incur excessive costs for maintenance of these laterals, due to the pavement repair requirements.

8. Sheet C.206: The same comment above applies to the wye connections within Kaylea Ct.

9. Sheet C.206: Please show the horizontal limits of the permenant pool in the pond, as well as the 100 year water surface elevation within the pond in graphic form (i.e, horizontal extent) and an elevation call-out. This may have a bearing on the design of the manholes.

10. Sheet C.207: Stream crossings also require ductile iron pipe in addition to concrete encasement. The ductile iron pipe should extend from manhole to manhole. Concrete encasement should be shown bank to bank. Be aware of the comments related to the discharge point for the detention basin. The City feels this discharge point has not been adequately designed for energy dissipation, and any additional design in this area will impact the sanitary sewer in terms of depth. Sufficient depth of cover is required for any change to the energy dissipation measures instituted for the detention basin.

11. Sheet C207: Is there an additional stream crossing between mh #1-5 and 1-6? If so, ductile iron pipe and encasement is required.

12. Sheet C208: Please call-out the minimum 18 inch vertical spacing at station 28+50. Also, it appears the profile views are incomplete in terms of manhole call-outs for several segments. Please review the profile views, and update as appropriate.

13. Sheet C212: The sanitary sewer is too deep at station 12+25. The maximum depth of cover over the top of the pipe is 15 feet.

14. Sheet C213: No standard detail is referenced for the stainless steel casing. In addition, the standard detail contained in the Design and Construction Manual has specific requirements concerning material call-outs on the plans. Please include the standard detail for casing carrier pipe, and ensure that all information listed on the standard detail as to be placed on the plan view or profile view is included on the plan or profile view. Merely calling out "steel casing" is not sufficient.

15. Sheet C218: It appears the downstream pipe capacity has been exceeded for a few segments. This would appear to include the segments in the lower reaches of the project. What are the hydraulic grade lines associated with these exceedences? It is our assumption the hydraulic grade line will be above the crown of the pipe, but by how much?

16. Sheet C218: Please indicate the event on the sanitary sewer calculation table. We are assuming this is the

50 year event, in accordance with the Design and Construction Manual.

17. Are there any shallow manholes utilized on this project? If so, please provide a standard detail for the shallow manhole.

18. Please provide the standard detail for stainless steel casing carrier pipe.

19. Please provide the standard detail for concrete encasement.

20. Please show the 100 year water surface elevaton within all detention basin tracts. This may have a bearing on the design of the manholes. In general, manholes should include watertight, neoprene-gasketed lids with bolt-down assemblies if subject to the 100 year event.

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,

Original Signed

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cc: Development Engineering Project File