LEE'S SUMMIT
MISSOURI

PUBLIC WORKS ENGINEERING DIVISION

Date: Thursday, August 11, 2016

To:
OLSSON ASSOCIATES
Brett Lauritsen, P.E.
Email: BLauritsen@OLSSONASSOCAITES.COM
Fax #: (913) 381-1174

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

Application Number:	PL2016143
Application Type:	Engineering Plan Review
Application Name:	Summit Place Sanitary Sewer

The Public Works Department received plans for this project on July 22, 2016. We have completed our review and offer the following comments:

Engineering Review

1. Please show the location of proposed lot lines on the plans, and label them.

2. This review is based on the preliminary lot line layout entitled "Parking and Property Exhibit" (undated) provided by the applicant. This exhibit includes 9 lots. If lot lines change, then these comments may change.

3. Sanitary sewer Line F appears to run parallel to an existing sanitary sewer line which is already installed along NW Ward Rd. It would appear that than an extension of the sanitary sewer from City manhole #22-098 towards the east would be more appropriate. It would appear there is sufficient depth at City manhole #22-098 to serve the lot to the east.

4. Sanitary sewer Line E appears to be a parallel line which is redundant. What is the reasoning behind the installation of this parallel line? The City does not want to maintain sanitary sewer lines which are redundant and unnecessary.

5. What is the linear feature (i.e., shown in a darkened-gray lineweight) between sanitary sewer Line E and Line C?

6. Sheet 3 of 11: A note is provided concerning the Aquila sanitary service. Will details be provided on the connection to Aquila? It does not appear this was provided. Please be aware that any connecton

between Aquila and the public system should be made via a wye connection rather than a direct-connect to a manhole.

7. It would appear the northwest to southeast leg of Line C is unnecessary. It would appear that Line F can be extended to serve this sole lot along NW Ward Rd. If Line F cannot be extended in this fashion, then a private easment and private sanitary service may be appropriate to serve this sole lot along NW Ward Rd.

8. Sheet 3 of 11: Line B should be designed as a private sanitary sewer. The on-site portion of Line A may be considered public contingent upon the two lots that are served by Line A are platted in accordance with the exhibit provided by the applicant.

9. Sheet 3 of 11: Is there another existing City manhole northeast of City manhole #22-027? It would appear City manhole #22-026 is located immediately to the northeast of City manhole #22-027.

10. Sheet 4 of 11: It would appear that insufficient depth is shown near station 11+25. This would appear to be located in a drainage area. What measures are proposed to provide for sufficient protection of the sanitary sewer pipe, such as ductile iron, concrete encasement, etc.?

11. Sheet 4 of 11: Please show the outgoing pipe at existing City manhole #23-002, along with outgoing flowline elevations. Please be aware of the requirement pertaining to the smaller sewer joining a larger sewer (i.e., when a smaller sewer joins a large one, the invert of the smaller sewer should be raised sufficiently to maintain the same energy gradient. An approximate method for accomplishing this is to place the 0.8 depth point of both sewers at the same elevation).

12. Sheet 4 of 11: Manhole A3 should be designed with a minimum of 0.5 foot drop due to the high deflection angle.

13. Sheet 4 of 11: Manhole A4 should be designed with a minimum drop of 0.4 feet due to the high deflection angle. An allowance was made to the normal 0.5 foot requirement.

14. Sheet 5 of 11: Substandard pipe slope is shown between manhole A7 and A6. A minimum of 0.60%, with a higher value preferred, is required.

15. Sheet 5 of 11: Manhole A5 should be designed with a minimum drop of 0.5 feet due to the high deflection angle.

16. Sheet 6 of 11: The profile view does not appear to show any manholes. Please see previous comment, however, concerning the private versus public line.

17. Sheet 6 of 11: Manholes A5 and B1 should be designed with a minimum 0.5 foot drop due to the high deflection angle. Please see the previous comment, however, concerning the private versus public line.

18. Sheet 7 of 11: Substandard pipe slope is shown at two (2) locations. The minimum pipe slope for a public line is 0.60%, with a larger slope preferred. Please see previous comment, however, concerning public versus private sewer line.

19. Sheet 7 of 11: Please label the existing City manhole number on Line C.

20. Sheet 7 of 11: Manhole C6 should be designed with a minimum drop of 0.4 feet due to the high deflection angle.

21. Sheet 10 of 11: Please see previous comment concerning the need for this line, and the extension of the existing sanitary sewer near the intersection of NW Blue Pkwy., and Ward Rd.

22. Sheet 10 of 11: Manhole F2 appears to be too shallow. The minimum depth of cover is 3.5 feet. Only 2.5 feet is provided. Please see previous comment concerning the need for this new sanitary sewer line.

23. General Comment: Where concrete encasement is specified, it should be clearly specified and defined (i.e., if "RCE" is shown, then define it and reference the City standard detail SAN-7).

24. Sheet 10 of 11: A DIP crossing is labeled, but the actual location of the pipe is not shown.

25. Are any private laterals proposed as part of this project? If so, please show their location.

In order to calculate the Public Works' 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 Re-submittal

Begining Monday, May 23, 2016, all Planning application and development engineering plan re-submittals shall include an electronic copy of the documents as well as the required number of paper copies. Electronic copies will not be required for initial application submittals at this time as the plans are subject to change.

Electronic copies shall be provided on CD in the following formats

- Plats – All plats shall be provided in Tagged Image Format File (TIFF) group 4 compression.
- Engineered Civil Plans – All engineered civil plans shall be provided in Tagged Image Format File (TIFF) group 4 compression. All sheets shall be individually saved and titled with the sheet title.
- Architectural and other plan drawings – Architectural and other plan drawings, such as site electrical and landscaping, shall be provided in Portable Document Format (PDF).
- Studies – Studies, such as storm and traffic, shall be provided in Portable Document Format (PDF).
- It is requested that each plan sheet be a maximum of 2MB.

Please contact Staff with any questions or concerns you may have.

If you have any questions or comments, please contact me, Gene Williams either at (816) 969-1812 or e-mail to Gene.Williams@cityofls.net.

Sincerely,

Original Signed

Gene Williams, P.E.
Senior Staff Engineer

cc: Development Engineering Project File