LEE'S SUMMIT
MISSOURI

DEVELOPMENT SERVICES

Date: Thursday, December 13, 2018

To:

HG CONSULT, INC
Kevin Sterrett, P.E.
Email: KSTERRETT@HGCONSULT.COM
Fax #: <NO FAX NUMBER>

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

Application Number: PL2018212

Application Type: Engineering Plan Review

Application Name: Cobey Creek 1st Plat - Off-site Sanitary Sewer

The Development Services Department received plans for this project on November 21, 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. Please change the title to "Off-Site Sanitary Sewer" or equivalent language, to differentiate between the on-site plans.

2. Sheet 2 of 7: The stream is not labeled. Please label all streams and stream crossings.

3. Sheet 2 of 7: Contours should be shown for context. There is no way to determine whether the proposed alignment will be acceptable to Water Utilities without the addition of finish/existing contours.

4. All Sheets: Where tree clearing or brush clearing is required, specify the width of the clearing to be maintained in perpetuity. Water Utilities requires that any off-site sanitary sewer be accessible, and suitable width within the forested or brushy area will need to be cleared a minimum of 20 feet, centered on the sanitary sewer line.

5. Sheet 2 of 7: Where is the golf green in relation to the project? Please show the location of the golf green for context.

6. Provide sufficient notes alerting a contractor to restoration requirements for the area within the golf course impacted by the installation of this sanitary sewer line.

7. It appears a stream crossing was omitted between manhole A4 and A5. Concrete encasement, restrained joint ductile iron pipe, and sufficient depth of cover is required at this stream crossing.

8. Sheet 3 of 7: Manhole A5 requires a minimum 0.50 foot drop. Only 0.20 is shown.

9. Sheet 3 of 7: The location of the manholes shown within the floodplain are not depicted correctly. Since these manhole tops will extend greater than 4 feet above the ground, it is only necessary to provide the following: 1) watertight ring with boltdown cover assembly, 2) neoprene gaskets, and 3) the top should be slightly above finish grade, perhaps 1 foot.

10. Sheet 3 of 7: The concrete encasement shown at station 1+00 should be extended further to the west to coincide with "bank to bank" encasement of the line. As shown, it is a little short on the west side.

11. Page 3 of 7: Please indicate where the base flood elevation was obtained.

12. Sheet 4 of 7: What is the flowline "in" elevation at manhole A8? Please show on the profile view, and ensure there is 0.50 feet minimum drop at this location.

13. Sheet 4 of 7: What is the calculated 100 year water surface elevation at the creek crossing? The manhole top elevations are likely too low based on the calculated 100 year water surface elevation. It may be better to extend the tops of these manholes above grade, but no greater than 4.0 feet above finish grade. This will enable Water Utilities personnel to quickly locate in the field, and will eliminate the possibility of flooding the manhole.

14. Sheet 4 of 7: Manhole A7 is shown barely "at grade". Provide perhaps 12 inches above grade to reduce the possibility of the manhole cover being buried.

15. Sheet 4 of 7: The proposed grade near manhole A7 is shown shaved-down a bit, and it is not clear why this is proposed. Is this proposed to meet the 15 foot depth of cover requirement? If so, then a grading plan will be required. As shown, it is impossible to review what impact this will have on the adjacent grading, stormwater, etc.

16. Sheet 5 of 7: Where are shallow manholes being proposed? If none, please remove this detail.

17. Sheet 6 of 7: Where are casing carrier pipes being installed? If none, please remove. If used, then show where they are used. It does not appear, however, any casing carrier pipes will be required or desired on this project.

18. The standard details for manhole frame and lids was missing, which also shows the lettering "SEWER".

19. A typical trenching and backfill detail is required. MDNR will reject the plans without it.

20. General Comment: Additional manholes are required. Although the Design and Construction Manual allows up to 500 feet between runs, Water Utilities has directed Development Services staff to require manholes every 400 feet unless there is compelling reasoning behind the additional length. Please be aware that even if Water Utilities allows this length, MDNR will reject the plans unless they receive a written response from Water Utilities stating the additional length can be maintained by the "continuing authority".

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

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