

January 28, 2022

Gene Williams, PE  
City of Lee's Summit  
220 SE Green Street  
Lee's Summit, MO 64063

**RE: PL2021433 – ENGINEERING PLAN REVIEW  
MANOR AT BAILEY FARM 1<sup>ST</sup> PLAT – PUBLIC SANITARY MAIN  
RESPONSE TO COMMENTS DATED NOVEMBER 18, 2021**

Dear Gene:

This letter is in regards to the above-referenced staff comments to which we have the following responses:

Engineering Review

1. Detail on Sheet 14 shows 6 inch aggregate over top of pipe. Standards changed in July 2020. New requirement is a minimum of 12 inch aggregate over top of pipe. Please revise.

*Response: Detail has been revised to show 12 inches of aggregate over top of pipe.*

2. Title may be incorrect. We are showing "Manor at Bailey Farm 1<sup>st</sup> Plat", not "The Manors at Bailey Farm 1<sup>st</sup> Plat". Please revise as appropriate.

*Response: Title has been revised.*

3. The City is requiring sanitary sewer manholes installed within the pavement to be placed in the middle of the driving lane rather than the centerline of the roadway. Previous methods of placing at the centerline of the street have proved difficult. Either drive lane is acceptable, but the frame and lid should be centered within the driving lane to avoid wheel / vehicular conflict.

*Response: Manhole locations have been revised to be in the middle of the drive lanes.*

4. The detail for the sanitary sewer manholes placed within pavement is acceptable, with one condition. A note should be placed on the detail which specifies the "square" be placed in such a way that the apex of opposing corners be aligned with the centerline of the roadway. This will create a "diamond" as viewing along the roadway rather than a square, and is purely for aesthetics.

*Response: A note has been added to the detail for manholes placed within pavement.*

5. Sanitary sewer manholes at the end of the line are shown with invert (in ) elevations to serve future phases. This is not allowed. Manholes must be core-drilled during subsequent phases. Stubbing of manholes for future phases is not allowed by the Design and Construction manual. Please review the plans for instances where this is shown, and ensure they are corrected.

*Response: A note has been provided at future inverts to not be poured and future connections are to be core drilled.*

6. Can a manhole be eliminated between A12 and G2? It would appear manhole G1 can be eliminated.

*Response: Manhole G1 has been removed.*

7. Slope between manhole K2 and K3 appears deficient. The slope requirement for sanitary sewer lines is dependent upon the number of upstream lots. In accordance with the Design and Construction Manual, the City requires 0.60% or greater if there are 31 or more upstream connections. For 15 to 30 upstream connections, the slope requirement is 0.80%. If 1 to 14 upstream connections, the slope requirement is 1.00%. It would appear 1.00% is required in this instance.

*Response: Please refer to sheet 2. Manhole K3 has 41 future lot services upstream. This includes all lots up to future Manhole K9 and also includes future Line M. We have also laid this line at 0.65% to allow for design flexibility.*

8. sheet 10: Can one of the manholes be eliminated along Sweet Root Dr.? It would appear A8 could be relocated further south to align with the extended centerline shown. Finally, manhole D2 appears to be placed too far to the south. The City only desires the minimum length necessary to serve the lots in question (i.e. lots 49 and 50). As shown, the sanitary sewer line is shown extending too far along these two lots.

*Response: Manhole D1 has been eliminated. Due to the high point being close to the lot line shared by lots 47 and 48. D1 has been placed so that the service line is located on the low side of the lot and to avoid manhole stubs.*

9. Sheet 9: A slope of 0.60% is called-out for line B. Please see previous comments concerning the upstream lot issue. The City requires a minimum slope that is dependent upon the number of upstream lots. It would appear a minimum 1.00% is required in this instance.

*Response: This sheet has been revised to show the correct profile for Line C.*

10. Manhole A10 appears to be 20.7 feet deep as measured from the rim to the flowline. Maximum depth of cover is 20.0 feet. Please revise.

*Response: Due to street grade revisions, Manhole A10 is now shown with the maximum cover of 20 feet.*

11. Sheet 6: The location of the Tri County water line does not appear to be shown in the profile view between manhole A1 and A1. Please show a best estimate of its location.

*Response: The existing 16" waterline has been added to the profile view.*

12. Wherever ductile iron pipe is specified, it shall be zinc-coated ductile iron pipe. Please revise notes.

*Response: Revised as requested.*

13. There are several instances where 0.60% slope is called-out. Recommend adding some leeway, since the City may reject anything less than 0.60% (e.g., if as-builts show 0.58%, it is possible the City will reject the installation)

*Response: Revised as requested.*

14. North arrow appears incorrect on Sheet 4. Please revise.

*Response: Revised as requested.*

15. North arrow appears incorrect on Sheet 3. Please revise.

*Response: Revised as requested.*

16. Sheet 8: Private lateral line beyond the normal length of construction is shown in bold serving the future clubhouse. Recommend removing the bold notation on the portion beyond the lateral to be constructed to avoid confusion.

*Response: The future connection to the clubhouse has been removed.*

17. Recommend adding an allowance for the standard drop in manholes (i.e. instead of 0.20 feet, perhaps 0.30 feet for normal situations, and 0.60 for higher angles rather than 0.50 feet). The City has experienced numerous situations in the past involving as-builts where the required drop was not provided. It is possible the city will not accept manholes that are less than specified in the Design and Construction Manual, and perhaps some leeway can be added to the plans to avoid this situation.

*Response: Revised as requested.*

#### 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 locate 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.

*Response: Cost estimate provided with resubmittal.*

## Electronic Plans for Resubmittal

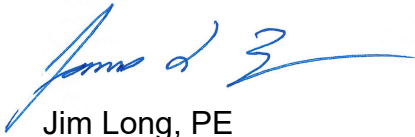
All Planning application and development engineering plan resubmittals shall include an electronic copy of the documents as well as the required number of paper copies. Electronic copies shall be provided in the following formats

- Plats – all plats shall be provided in multi-page Portable Document Format (PDF).
- Engineered Civil Plans – All engineered civil plans shall be provide din multi-page Portable Document Format (PDF).
- Studies – Studies, such as stormwater and traffic, shall be provided in Portable Document Format (PDF).
- *Response: Acknowledged.*

Should you have additional comments, please do not hesitate to contact me. Thank you.

Sincerely,

SCHLAGEL & ASSOCIATES, PA

A handwritten signature in blue ink, appearing to read "Jim Long", with a stylized flourish extending to the right.

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/mr  
Enclosures