

January 28, 2022

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

**RE: PL2021432 – ENGINEERING PLAN REVIEW  
MANOR AT BAILEY FARM 1<sup>ST</sup> PLAT – PUBLIC WATER MAIN  
RESPONSE TO COMMENTS DATED NOVEMBER 19, 2021**

Dear Gene:

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

Engineering Review

1. Tri county Water Authority (TCWA) may have issues with the expanded right of way along Ranson d., and may require additional easement for their line and/or relocation of their line. Please coordinate with TCWA (John Overstreet) on this issue, as it may affect lot placement, right of way, off-site traffic improvements on Ranson Rd. or other effects.

*Response: We are working with Tri-County now.*

2. Fire hydrant is too close to the PC at Ranchland St. and Cape Dr. The minimum distance is 20 feet as measured from the PC of the curb return.

*Response: The hydrant has been moved.*

3. A fire hydrant is required on Sweet Root Dr. distance requirements cannot include adjacent streets, hence the requirement for a fire hydrant along Sweet Root Dr.

*Response: Added a hydrant at about the middle of Sweet Root Drive.*

4. Sheet 5: It appears the new 8 inch water line beneath Bailey Rd. is being bored. No notes or details are provided, however. Please provide sufficient notes clarifying this issue. Please be aware the city will not allow open-cut installation of the water line, and please be aware casing carrier pipe is not required for water mains.

*Response: Added notes. Sorry for the omission.*

5. Please review the profile view for all segments of water line. Where fill is being provided, provide sufficient notation on the profile view, along with sufficient notes which specify that the fill be brought in and compacted to a plain 18 inches minimum over the top of pipe prior to trenching and installation of pipe.

*Response: Hatch and notation has been added to all areas where this is needed on all profiles.*

6. Sheet 5: Stub streets serving future phases are shown with fire hydrants within the curb return which is normally not allowed. In this instance, however, it make sense given the future construction will require these to be relocated. Inline placement of the fire hydrants in these instances to facilitate an easier relocation in the future is required.

*Response: Added a detail to the detail sheet for an end of assembly and placed these at all occurrences where the water line will be continued.*

7. Fire hydrants appear to be missing along Bailey Farms Pkwy. Maximum distance between fire hydrants is 500 feet. Fire hydrants on adjacent cross streets cannot be used to satisfy this requirement.

*Response: Added several hydrants along Bailey Farms Parkway.*

8. Sheet 6: Two (2) of the storm line crossings are too deep. The City allows up to 7 feet maximum depth of cover over a water main.

*Response: We moved the water main to the west side of Bailey Farms Parkway to help minimize the number of crossings with the storm sewer. The storm sewer (48" RCP) at 13+80 cannot be lowered as we are at very low slopes for this line which originates at Ranson Road.*

*The storm sewer (30" HDPE) at 16+38 also cannot be lowered. Similar to the 48" pipe above, it is designed at low slopes to allow it to adequately drain to the detention basin. This entire run, approximately 850 feet with 13 storm inlets would all need to be lowered to allow this water line to pass over the storm. Also, we can't raise the street due to depth limits on the sanitary sewer manhole located in the intersection nearby.*

9. Sheet 6: Fire hydrants appear to be missing along Bailey Farms Pkwy. Please see previous comment related to this requirement.

*Response: Several hydrants have been added along Bailey Farms Parkway.*

10. Sheet 7: Fire hydrant is shown within the curb return on Richland St. The fire hydrant shall be no closer than 20 feet from the PC of the curb return.

*Response: Fire hydrants have been moved where needed to meet this requirement.*

11. Sheet 7: The water main should be extended a short distance to the west along Cape Dr., and a temporary inline fire hydrant installed.

*Response: This has been revised.*

12. Sheet 7: Storm line crossing near sta 400 is too deep. Maximum depth of cover is 7 feet as measured from top of pipe.

*Response: The depth of the storm sewer does not allow us any flexibility in lowering it to allow the water to go over. Therefore, the pipe crossing under the storm sewer was checked for minimal clearance and the amount of main over 7 feet deep was minimized.*

13. Sheet 7: Where are the gate valves at the tees? The City requires two (2) valves for each tree, including the new tee to be installed for the short western extension along Cape Dr. described in the above comment.

*Response: Gate valves have been added throughout the system.*

14. Sheet 8: Fire hydrants are missing along Ranchland St. Maximum distance between fire hydrants is 500 feet. Fire hydrants on adjacent cross-streets cannot be used to satisfy this requirement.

*Response: Fire hydrants have been added along Ranchland Street.*

15. Sheet 8: Fire hydrants are shown within the curb return which is not allowed. Please see previous comments related to placement of fire hydrants behind the PC of the curb return.

*Response: Fire hydrants have been moved where needed to meet this requirement.*

16. Sheet 8: Gate valves appear to be missing at tees. Please see previous comments related to this requirement.

*Response: Gate valves have been added throughout the system*

17. Sheet 9: Valves appear to be missing on this sheet. Please see previous comment related to the placement of two (2) valves in relation to tees. Also, three (3) valves are required at a cross, so please ensure this is considered.

*Response: Gate valves have been added throughout the system*

18. Sheet 10: Storm crossing shown on the profile view is too deep. Maximum depth of cover is 7 feet.

*Response: The depth of the water main, as shown in the profile, is 7.6' to the top of pipe. To meet the 7' requirement the 30" storm sewer would need to be lowered 2' placing it 8' feet in the ground. Several storm runs would also need to be lowered. Therefore, we minimized the amount of water main that is at this depth through the use of vertical bends.*

19. Sheet 10: Please see previous comments related to placement of valves in relation to tees and crosses. No valves were shown.

*Response: Gate valves have been added throughout the system*

20. Sheet 11: Storm line crossings (both) shown in the profile view are too deep. Maximum depth of cover is 7 feet.

*Response: Crossing at Sta. 0+70: I tried regrading over the pipe to get enough room to place the water over the pipe but could not make it work. Lowering the storm sewer*

*would not work due to a lack of fall between this point and the discharge point. Cannot reduce the storm pipe slope because the 10 yr. capacity would necessitate a 36" pipe, therefore, losing the clearance we are trying to get. I looked at moving the water to the other side of the street and would not help. Ultimately, I raised the water main under the storm sewer to minimum clearance of 18", therefore, reducing the depth as much as possible.*

*Crossing at Sta. 5+15: This scenario is similar to the crossing on Sheet 10. The depth of the main is also, 7.6'.*

21. Sheet 11: A fire hydrant is warranted on Sweet Root Dr. fire hydrants located on adjacent cross streets cannot be used to satisfy the 500 foot maximum distance requirement between fire hydrants.

*Response: Fire hydrant has been added*

22. Sheet 11: Please refer to previous comments related to the installation of valves in relation to tees and crosses. No such valves were shown on the plans.

*Response: Gate valves have been added throughout the system*

23. Sheet 12: Both storm line crossings shown on the profile view are too deep. Maximum depth of over is 7 feet as measured to the top of pipe.

*Response: Crossing at Sta. 0+67: Unable to lower storm to get the water over the pipe. Therefore, raised the water line to the minimum clearance under the storm to limit the depth of the water main.*

*Crossing at Sta. 3+55: Lowered the storm sewer to allow adequate clearances for the water main to go over the storm sewer.*

24. General Comment Related to All future Stubs: The City does not allow a plug to be installed at the end of the line as shown in numerous locations. A temporary inline fire hydrant is required. Please go through all sheets related to this requirement and revise.

*Response: End of line hydrant assembly has been added to the detail and used throughout the system where the mains will be extended in the future.*

25. Please refer to Sheet 12. As an example of the above comment, please see the notes at the south end of Line 5. The City does not allow a simple cap in this instance, but rather, a temporary inline fire hydrant. Since these are stub streets and the hydrants will be moved in the future, it will be acceptable to place the temporary fire hydrant within the curb return limits rather than 20 feet beyond the PC of the curb return.

*Response: End of line hydrant assembly will be installed in place of the plug.*

26. Sheet 12: Please refer to previous comments related to the placement of valves in relation to crosses and tees. No such valves were shown.

*Response: Gate valves have been added throughout the system*

27. Sheet 13: a blow-off assembly is shown. The City does not allow blow-off assemblies. Please remove and use a temporary fire hydrant.  
*Response: End of line hydrant assemblies will be used throughout the system where the main will be extended in the future.*
28. Sheet 13: Regarding the temporary fire hydrants along Bailey Pkwy., these fire hydrants shall not count towards the required number of fire hydrants along Bailey Farm Pkwy. The reason is that these are temporary fire hydrants to be relocated along their respective streets in the future, and cannot be used to satisfy the 500 foot rule for maximum distance between fire hydrants along Bailey Farm Pkwy.  
*Response: Hydrants have been added along Bailey Farms Parkway.*
29. Sheet 14: Profile view for Line 9 and 10 appears incomplete. Please revise.  
*Response: Because Line 1 has been moved to the west side of Bailey Farms Parkway The profiles for Lines 9, 10 and 11 have been replaced with profile 8 and new profiles for 10 and 11.*
30. Sheet 14: Blow-off assembly is called-out. These are not allowed in the City of Lee's Summit.  
*Response: These have been replaced with end of line assemblies.*
31. Sheet 14: Please see previous comments related to stub-off streets and temporary fire hydrants. Termination of all water mains shall be at a fire hydrant rather than a plug.  
*Response: These have been replaced with end of line assemblies.*
32. Sheet 15: Please see previous comments related to the placement of valves in relation to tees and crosses. It appears this was missing from the sheet.  
*Response: Gate valves have been added throughout the system*
33. A trenching and backfill detail was missing. Please ensure the new July 2020 standard of 12 inch aggregate over the top of pipe is shown, rather than the previous 6 inch requirement.  
*Response: Detail for trenching and back fill has been added to Sheet 15*

#### Traffic Review – Corrections

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: A cost estimate is included with the submittal.*

## 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

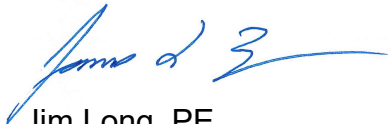
- Plats – all plats shall be provided in multi-page Portable Document Format (PDF).
- Engineered Civil Plans – All engineered civil plans shall be provide in multi-page Portable Document Format (PDF).
- Studies – Studies, such as stormwater and traffic, shall be provided in Portable Document Format (PDF).

*Response: Noted*

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

Sincerely,

SCHLAGEL & ASSOCIATES, PA



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Sr. Project Engineer

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Enclosures