

October 26, 2023

Bradley P. Schurman, PE
Balzer & Associates
15871 City View Drive, Suite 200
Midlothian, VA 23113

RE: The Crossings at Mulberry Section 1
LOCATION: 5251 Chamberlayne Road
POD NO. 2023-00352

Dear Mr. Schurman:

The Department of Public Utilities has completed a review of the water and sewer plans that are part of the plan of development resubmitted to the Planning Department on October 5, 2023.

DPU recommends approval of these plans by the **Director of Planning**.

Please address the following comments before submitting the construction plans for signature.

General

1. Response to most of the comments from the previous letter of September 6, 2023, were deferred to the next submittal and are repeated in this letter. The following previous numbered comments from that letter were evaluated for responsiveness: 8, 9, 10, 13, 15, 16, 18, 20, 22, 24, 31, 42, 43, 46, 54, and 55.
2. Agreements have not been executed at this time. Agreements must be executed prior to the authorization to begin utility construction or approval of building permits. An Information Sheet for the Preparation of Utility Agreements has not been submitted for review. If the Information Sheet is incomplete when submitted, we will send you comments for correction and resubmittal. If the required Information Sheet is complete when submitted, an Agreement will be forwarded to the Owner for signature within 21 days.
3. Utility plans shall be submitted to DEQ for acceptance and a certificate to construct (CTC) obtained from DEQ prior to DPU approval.
4. Update and resubmit the engineering report to include the following.
 - Include total sewer flow from both sections 1 and 2 and existing offsite flow for the portions of sewer that are being replaced.
 - Revise downstream manhole number based on subsequent comment.
 - Include total units for sections 1 and 2 since water main is shown being installed for both sections. Section 2 units can be labeled as future.
 - Revise fire flow based on subsequent comment.
 - Show lowest residual pressure in system based on water model calculations.
5. Update and resubmit the Project Summary Report to reflect any revised pipe quantities and water model calculations. In addition, incorporate section 2 connections within this form and label as future.
6. All utilities outside of Section 1 shall have a recorded easement where located outside of right of way prior to recordation of the Section 1 subdivision plat.
7. The rezoning comments regarding waterline connection were not exactly meet. DPU will further assess when the water model is corrected and resubmitted.

C01(Cover)

8. Revise water and sewer material quantities in accordance with all comments.

C01.3(Overall and Master Utility Plan)

9. Show and label on the master utility plan all connection points to existing water and sewer mains and the proposed pipe sizes. Resolve any drafting conflicts to clearly show this information.
10. The following issues were observed in looking at the lot layout:
 - Relocate waterline to minimize crossing of lot 102. A 10-foot separation between water and sewer main is allowed.
 - A minimum distance of 10 feet separation must be provided from the sewer main near lot 91 to the building foundation, any extensions from the building face, and any HVAC equipment.

C02-C02.1(Existing Conditions)

11. Label existing manholes and fire hydrants with GIS ID on these sheets.
12. Label existing water and sewer main with pipe size and material where known.

C04-C04.1(Utility Plan)

13. For the replacement of sewer from manholes 151SW016-151SW017 within Brook Hill Road, label the run of sewer and manhole to be replaced.
14. Provide the following for sanitary sewer relocation or replacement:
 - Provide sequence of construction for sanitary sewer relocation or replacement.
 - Submit temporary sanitary sewer bypass plan for each location. The contractor shall prepare a specified detailed description of each proposed pumping system.
 - Dimension the distance from the nearest upstream manhole to the new manhole, where relocation will start, on the plans. The same would apply for replacement of a line with distances and stationing shown on the plan.
 - Show existing sewer line that flows into this development, as well as other nearby sewer line that might be considered for the pump around of existing flows. Label remaining existing sewer line size and material.
 - Specify approximate calculated existing sewer flow that needs to be pumped around at each location.
 - Provide addresses of all affected existing sewer customers whose sewer connections will be relocated or adjusted.
 - Propose a method for notifying customers of service disruptions. All affected customers are to be notified well in advance of any service disruption for this work. The DPU Construction Engineer must approve all disruptions. Explain how service to existing sewer customers is to be maintained within the sequence of construction.
15. Extend sewer main another 25 feet west consistent with what was shown on the previous submittal set manhole 21 where the first cleanout is located so it can be eliminated. This will allow the existing sewer lateral to remain in service and minimize cleanouts in the road.
16. Label cleanouts as traffic rated and include a detail in the plans.
17. Provide an exception request to the Director of Public Utilities for where hydrants are less than 50 feet from buildings and include the justification for the exception.
18. Label all existing sewer manholes and fire hydrants with GIS ID.
19. Provide benchmarks every 500 feet for the sanitary sewer.
20. The following are for the waterline crossing of Chamberlayne Avenue:
 - Include a VDOT detail for the casing pipe without the leak detector. The casing pipe shall
 - be 18" diameter per DPU Standards for this 8" waterline.

- Label the nearby existing fire hydrant with its GIS ID.
 - A test pit shall be done to find the location and elevation of this main where the 8" line will cross. This will impact whether the proposed line can cross under or over the transmission main and will impact the bore depth if a bore is required.
 - The receiving pit is to be near the entrance of the casing pipe.
21. The previous comment regarding a shutdown of water main that serves the adjacent area west of Chamberlayne Road is no longer applicable since a tapping sleeve and valve connection is being used on the 6" existing waterline.
 22. Provide two 45 ° bends instead of two 90 ° bends where transitioning across the road on Encore Autumn Lane.
 23. The hydrant at the end of Dayspring Lane is not in an acceptable location for firefighting and could get damaged. Also, will this be a through road connection to Wilmer Avenue?
 24. Locate water meter boxes outside of driveways where possible. Otherwise, meter boxes shall be placed outside of the wheel path and approximately 4 feet from the edge of the driveway using traffic rated meter boxes.
 25. Where the proposed water main is installed outside of paved roads, provide a gravel access drive along the easement for DPU access until roads within section 2 are constructed.
 26. The portion of water main crossing from the northeast corner of Fashion Loop to the southern end of Dayspring Lane shall be zinc coated DIP from fitting to fitting.
 27. Label typical distance from waterline to the curbface for each street.
 28. Provide county monumentation used for site survey.
 29. Provide at least 3 minimum GIS northing/easting reference points on each utility plan sheet.
 30. As previously commented, label manhole 22 on the plan view.
 31. Add a prominent reference note on sheet C04 that sanitary sewer design data are located on sheet C04.1.
 32. Show storm pipe on the utility plan sheets using a darker font and label structure numbers. This will help with coordination of locations.
 33. Specify distance from existing upstream manhole to manhole 3.
 34. Label size and material of existing sewer and water main where connections and replacements will occur.
 35. Provide a matchline between both utility plan sheets.

C06-C06.1(ESC plans ph1&2)

36. Verify whether a conflict exists between the temporary stockpile and proposed water and sewer utilities.

C07-C07.5(Profiles)

37. Add the following note, "Where possible in unpaved areas, manhole castings shall be approximately 12 inches above final grade using appropriate covers (i.e. - vandalproof, watertight)."
38. Specify the method of waterline and sewerline installation within _____. If jack and bore, provide the stationed amount of casing pipe on the plan and profile, show the bore and receiving pits, and include the standard VDOT encasement pipe detail without the leak detector. If open cut, show the extent of pavement disturbance on the plan view and include the DPW pavement restoration detail.
39. For all sanitary sewer profiles, provide separate sewer stationing starting at the most downstream connection and proceeding upgradient with equalities at each junction manhole. Minimize stationing changes by using the longest chain of sewerline runs in the same stationing sequence. Locate sewer stationing away from road stationing to provide clarity.

40. Sewer profile is missing for short run of sewer from manholes 14 to 19.
41. Provide lower dropstack invert elevations where dropstacks are being proposed.
42. Label all manholes outside of pavement as having a combined vandal proof/watertight frame and cover per DPU standards.
43. Where possible, locate sanitary laterals outside of driveways. Otherwise, locate within driveway using DIP and traffic rated cleanouts so that these are outside of the wheelpath. Provide details in the plans for this cleanout type.
44. Specify sanitary lateral type where DI.
45. Provide profiles of sanitary laterals for block A where crossing storm sewer.
46. Label on profile all sanitary laterals that are deeper than 12 feet and identify with lot and block numbers.
47. The separate profiles for sanitary 5-12 and sanitary 6-16 can be combined with Encore Autumn Lane and Formosa Way profiles respectively to simplify the presentation and eliminate duplication of the profiles.
48. On Dayspring Lane profile, locate manhole 5 labeling on top consistent with the other sewer manholes since there is room.
49. Add labeled matchlines between profiles to help with understanding how the waterline profiles on sheet C07.5 coordinate with the other profiles and with each other.
50. For the Chamberlayne Rd waterline profile on C07.3, provide the following:
 - 18" steel pipe casing.
 - VDOT casing pipe detail
 - Depth of 30" transmission main based on field test pit elevations.
 - Locate 45 ° vertical bends at least 5 feet from end of casing pipe.
51. Provide specifications for the run of sewer from E2 to E1 within Brook Hill Road and label the replacement of manhole E2.
52. Provide matchlines on the waterline A, B, and C profiles referencing where these profiles connect to other profiles.

C12.1(Details)

53. For the ISO fire flow calculations, adjust the total floor area to include just 50% of the floors above the ground floor. This should lower both of the fire flow calculations to 1250 gpm.
54. Include water and sewer construction notes and standard material notes on the plans.
55. Include detail D-410 for backflow preventer on an irrigation meter. D-415 can be omitted since there is not an exclusion meter proposed.
56. Include the standard detail for thrust blocking.

C14(Water Model Calculations)

57. Use a C value of 120 for the model.
58. Adjust fire flow for corrected ISO values.

L01(Lighting Plan)

59. Locate all light poles at least 10 feet from utility mains and so that services can extend to the individual lots without direct conflict on the private side. There should be at least 3-5 feet of spacing provided where services go by these light poles depending on depth.

L03-L04(Landscaping)

60. Tree plantings must be located outside of all utility easements or at least 10 feet away from utilities within the right of ways. All other proposed landscaping must not obscure visibility or hinder maintenance of above grade or at grade utilities. Any non-tree landscaping within utility easements requires the following statement on the landscaping plan: "The owner is responsible

for replacement of any planting (i.e., shrubs, etc.) damaged or removed by DPU, or it's agent, as required for maintenance of county owned water and/or sewer facilities."

61. Locate trees so that services can extend to individual lots without direct conflict on the private side and with at least 5 feet of spacing.

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4501.

Sincerely,



John L. Clark PE

Utilities Engineer

cc: Darin Smouse, RDK Land Holdings, LLC

bc: Marchelle Sossong
Daniel Ivy
Christina Goggin, Planning

JLC/vr