

October 29, 2021

Mark E. Williams, P.E.
Koontz Bryant Johnson Williams, PC
1703 North Parham Road, Suite 202
Henrico, Virginia 23229

**RE: Virginia Center Commons Apartments
10101 Brook Road
File No. 5541 POD2021-00414**

Dear Mr. Williams:

The Department of Public Utilities has completed a review of the water and sewer plans that are part of the plan of development submitted to the Planning Department on October 1, 2021, and received by DPU on October 11, 2021.

□ DPU recommends approval of these plans by the Planning Commission.

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

General:

1. 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 or prior to subdivision plat approval. 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.
2. The redevelopment of Virginia Center (not just this apartment site) requires an overall utility plan. This plan must include water and sewer design calculations for the site and others. This plan will be required in order to address any potential capacity issues that may arise during the development of the site.
3. Ensure that design calculations for this project have been incorporated into the calculations for the overall project. It is imperative that downstream sewer impacts are reviewed/determined based on the demands for this project.
4. Engineer to provide hydraulic calculations demonstrating adequate residual pressure throughout the distribution system assuming fire flow at worst case fire hydrants.
5. Revise the water and sewer design calculations form as follows:
 - Revise the design basis to be 300 GPD/ unit.
 - Revise the source to be Henrico Public Utilities.
 - Revise the total design peak flow, GPM to use the maximum day demand and not the peak hour flow.
6. Revise the Project Summary Report (Form F-10) per the following and resubmit:
 - Revise the number of connections to 2 and specify apartments buildings under other. Use 300 gal per apartment for average flow.
 - Use a peak factor of 1.75 for maximum day demand and 2.7 for peak hour demand in all locations.
 - Leave the signature block blank.

- Leave “design fire flow acceptable to fire official” blank.

C 0.0 (Cover Sheet):

7. Original signature is required on the P.E. Seal on the Cover Sheet. A facsimile of seal, signature and date is acceptable on all other sheets.
8. Coordinate building construction type, under site data, with that shown in the ISO fire flow estimate form.
9. List in Site Data how many apartment units are proposed.

C1.6 & C1.7 (Demolition Plan):

10. If a building demolition permit is desired prior to construction plan approval, then a separate disconnection or abandonment plan must be prepared and approved in advance of the demolition permit showing either disconnection locations for the water and sewer services or complete abandonment of both services at the water and sewer mains. Disconnection or abandonment of the services would be required prior to approval of the demolition permit. For the disconnection plan, the following would need to be shown on the disconnection plan:
 - Sewer laterals are to be disconnected at the property line or edge of utility easement and water services are to be disconnected on the customer side of the domestic meter.
 - Add a note on the plan stating whether services will be reused or capped for later abandonment.
 - Meter will stay within the box/vault. Provide the meter number and meter size on the plans.
 - Contractor shall notify DPU of disconnection schedule so that DPU metering staff can read the meter and turn off the service prior to disconnection, and DPU inspector can verify the work.
 - Account shall be transferred to Developer and will continue to be billed for service.
 - Connections shall be plugged prior to approval of site demolition permit.
11. If a building demolition permit is not desired prior to construction plan approval, then the following would need to be shown on the demolition sheet in addition to the previously listed items for the disconnection plan:
 - If services are to be capped for reuse, show disconnection locations in accordance with what was previously stated.
12. Remove dark shading background and heavy cross hatching as these obscure the existing water and sewer utilities. Another option is to provide a separate utility abandonment sheet that clearly shows all water and sewer abandonments and removals.
13. Label the size and meter number for the existing domestic meters and existing irrigation meter.
14. Clearly show and label the existing meters (domestic, irrigation, etc.) that serve the existing building. This applies to both external and internal meters.
15. Provide GIS manhole ID number for the existing manholes shown on the plan. Revise the utility sheet as well.
16. Clearly show and label on the demolition plans the extent (pipe length) of all water line and sewer line to be either abandoned or removed.
17. Add the following note: “relocation of existing hydrants is not permitted. Where existing hydrants are disturbed, new hydrant materials are required, and old hydrants are to be returned to DPU Operations Division.”
18. Provide the following for sanitary sewer relocation:

- Provide sequence of construction for sanitary sewer relocation.
 - Submit sanitary sewer bypass plan. The contractor shall prepare a specified detailed description of the proposed pumping system.
 - 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.
19. Provide the following information for sequence of construction regarding service outage while the water main is being relocated.
- Provide addresses of all affected existing water customers.
 - Provide a sequence of construction outlining how existing waterline will be relocated. Include the following within this sequence in addition to construction steps.
 - Disruption to domestic water service and fire protection shall be minimized to the fullest extent possible.
 - 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 water customers is to be maintained within the sequence of construction.
 - Waterline valves will only be operated by DPU personnel or under DPU supervision.
 - Existing water mains are to be left in service until the new main is placed in service.
 - Fire Division is to be notified prior to any disruption of fire protection.
20. Show and label the valves that will be used to isolate the waterline.

C3.1 (Utility Plan):

21. Provide a master utility sheet within the plan set to show how utility changes fit in with current overall system.
22. Provide the direction of flow arrows on the existing and proposed sewer main.
23. Relocate the proposed cleanouts outside the sidewalk to minimize tripping hazard.
24. Provide 10' of separation between the storm pipe and the proposed sanitary sewer pipe between manholes 8 and 9. Please also note that sewer must be at least 10' from building foundation based on sewer depth of 10' maximum and at least 15' if greater than 10' depth.
25. Combine proposed water and sewer easements and label as a utility easement.
26. Use a tee instead of tapping sleeve and valve when connecting to proposed waterline. Revise the waterline profiles as well.
27. Provide the peak irrigation demand.
28. Specify a reduced pressure detector assembly for the fire lines in lieu of an RPZ.
29. Relocate sewer lateral connection to be at 90° with respect to the sewer main for building 2 and provide a manhole at the point of tie-in.
30. Reference DPU detail D-476 for the boundary valve.
31. Label vertical waterline adjustment in the areas where waterline has to be vertically adjusted. Also, add DPU detail reference D-485.
32. Use tees instead of crosses for the domestic and fire line connections to the main. Provide 5' spacing at a minimum.

33. Provide at least 5' of separation between the FDC and boundary valve for each building.
34. Reroute the existing sewer downstream of existing manhole E 29 to connect to manhole 7 to resolve the core hole separation issue at manhole 6. Another option is to eliminate this run of existing sewer if it will not be used to serve any building.
35. Provide vandal proof/ watertight frame and cover for manhole 9.
36. Provide a table to address the raising and lowering of existing manholes to finished grade. This table should include:
 - Existing top elevation.
 - Proposed top elevation.
 - Amount of modification required, i.e., vertical feet of raising or lowering.
 - Proposed method of adjusting each manhole.
 - Phase of construction each manhole modification is to be done.
37. Add the following note, "A maximum of 12" adjustment may be done utilizing pre-cast riser rings to raise frame and cover. For additional height adjustment, pre-cast manhole sections must be installed. Decreasing manhole depth must be done by removal/replacement of pre-cast manhole sections."
38. Show existing manholes E9 and E7 on the utility plan.
39. Provide a standard 20' utility easement for the proposed waterline south of the 12"x12" tee near manhole 2.
40. Show the utility easement for the existing waterline west of the proposed 90-degree bend near STA 11+00 and southwest of building 1.
41. Add the following note: "Electronic markers (ball type) shall be installed on all water mains and sewer gravity mains in accordance with specification 2.2.05N and 4.2.02E of the 2014 DPU Design and Construction Standards."
42. The following comments pertain to the proposed pool at building 2:
 - How is it filled?
 - Where does it discharge?
 - Label pool on utility plan and show piping to and from the pool.
 - Provide air gap for fill line.
 - Provide an RPZ backflow preventer on fill line to any chemical treatment system.
43. Relocate fire hydrants as follows to provide 50' setback as much as possible, to be outside of building collapse zone, and to meet fire hydrant spacing requirements:
 - Relocate the proposed fire hydrant at the northwest of building 1 to the northwest corner of building 1 at the island next to the dumpster and expand the island to provide 10' separation from the dumpster.
 - Relocate the fire hydrant at the end of the 8" waterline between the buildings 1&2 to the other side of the road at the northeast corner of building 1.
 - Relocate the fire hydrant at northeast corner of building 2 to the other side of the road.
 - Eliminate the fire hydrant at southeast side of building 2.
 - Relocate the fire hydrant in front of building 1 to the second middle island to the east.
 - Where a minimum of 50' from the fire hydrant to the building cannot be obtained, request an exception to DPU Standards.

C5.1 (E & S Phase 1 A):

44. The proposed silt trap 1 will expose existing gravity sewer. Either relocate sewer or relocate silt trap.

C6.4 (Profiles-Sanitary Sewer)

45. Show all proposed manhole structures using dark lines similar to proposed sewer main.
46. Revise the sanitary sewer stationing at manhole 2 to reflect the correct pipe length between manholes 1 and 2 within MH-1 to MH-9 profile. Revise all upstream stationing numbers that are impacted.
47. Label manholes 10 thru 13 as cleanouts.

C6.5 (Profiles-Waterline)

48. Provide at least 18" of vertical separation between the existing sewer and proposed waterline within Waterline B profile near STA 10+50. This issue can be resolved by rerouting sewer to manhole 7 so that waterline crossing is eliminated or replacing sewer with DIP.

C9.4 (Details-Utilities):

49. Revise water and sewer material quantities in accordance with all comments.
50. A single 1 1/2" meter will be adequate for each building since no flush valve fixtures are proposed and fixture count is within 5500 limits.

L2.1 & L2.2 (Landscape Plan):

51. Tree plantings must be located outside of all utility easements or at least 10 feet away from utilities within 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."

If you have any questions concerning the above noted comments or the plans, please contact me at 501- 4501 or Ireini Botros at 501- 4512.

Sincerely,

John L. Clark

John L. Clark, P.E.
Utility Engineer

cc: Brian McNeal, REBKEE

bc: R. Claytor
M. Sossong
I. Botros
D. Ivy
M. Gallagher
Aimee Crady, Planner

INB/vr