March 7, 2022

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:

We have reviewed the construction plans submitted to the Planning Department on February 17, 2022.

Please address the following comments and **resubmit revised construction plans** for review. Water and Sewer Agreements that must be executed by the Owner and the County for water and sewer improvements **have not** been executed.

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 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.

C1.8 (Utilities Demolition Plan):

6. Correctly show the existing meters and fire line going to the JC Penney building. See attached drawing which shows a 2" domestic meter and a 1 ½" water only(irrigation?) meter and include meter size, type, meter ID and meter number on the plans.
7. There is a room 146 near the boundary between the JC Penney building and the main mall building which contains up to 18 meters. Please show on the plan the location of this room and the meters and verify that these will not be within the building to be demolished.

C3.1 (Utility Plan):

8. Proposed utilities shall be coordinated with an approved overall utility plan so that relocated utilities are efficiently installed with respect to proposed future development.
9. The following are regarding sanitary sewer:
    - Manhole 8 doesn't appear to be necessary based on same grade as adjacent sewer and short length. Also, it is in conflict with curb and gutter as currently shown.
    - Manhole 7 is too close to curb and gutter and in the wheel path. Revise sewer alignment.
    - Per Overall concept plan just received, the sewer downstream of manhole 1 will go thru future Apartment Building 3. Now would be an opportune time to reroute sewer to the north to follow ring road and tie into sewer near the Sports Complex so that sewer will not have to be relocated again via another sewer bypass and manhole 1 can be potentially eliminated.
    - Sewer from manholes 1 to 2 must be either in the center of the road or center of travel lane to avoid wheel impact on manholes.
10. The following are regarding water main location:
    - Waterline along the west side of building 1 is not in an acceptable location regarding being cross-country and parallel to the building face. Locate waterline in a paved area and consistent with the overall plan.
    - Waterline along east side of building 2 should be within the road and 4 feet off the curb face. This waterline would also appear to need to continue to the south within the access road between building 2 and future building 3 based on conceptual overall plan.
11. There does not appear to be adequate road width between building 2 and future building 3 for proper spacing of water main, 18" sanitary sewer main and 42" storm sewer. This needs to be evaluated and coordinated between this plan and the Overall.
12. Label within note 12 on sheet C3.2 that the peak irrigation demand is 40 gpm for a 1" meter.
13. Relocate E29 by 20 feet upstream so 8" sewer comes into manhole 7 at 90 degrees with respect to downstream sewer.
14. Provide a standard 20' utility easement for the proposed waterline south of the 12"x12" tee near manhole 2.
15. Add a note specifying that an air gap will be provided for pool fill line at building 2.
16. 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:
    - Extend water main within both roads on either side of building 2 so that hydrants are at P.T. of curb return near ring access road entrances and as far away as possible from building and collapse zone.

- Where a minimum of 50' from the fire hydrant to the building cannot be obtained, request an exception to DPU Standards.
- Provide a hydrant along the ring access road and just west of building 1 to allow for fire truck to extend hose heading east along north face of building 1.

17. Provide mechanical joint restraint for water main fittings above or near underground facilities such as sanitary sewer or storm sewer.
18. Provide two valves for the 12 x 12 tee southeast of manhole E29. These should be on the line sides of this tee.
19. Label location of room 146 containing the 16-18 meters.

C6.4 (Profiles-Sanitary Sewer)

20. Label manholes 10 as a cleanout.
21. Coordinate tops for manholes 1 and 2 to match proposed grade.

C9.4 (Details-Utilities):

22. Revise water and sewer material quantities in accordance with all comments and per the following:

    - Revise length of 8" sewer main to match plans.
    - Revise lengths of 4", 6" and 12" water main to match plans.
    - Replace 12 x 4 tees with 8 x 4 tees.
    - Revise meters entry.
    - Revise number of 6" RPDA.

23. Based on figure 4-3 of AWWA M-22, the maximum demand should be 87 gpm for building 1 and 83 gpm for building 2.

L1.1 & L1.2 (Lighting Plan):

24. Light poles shall be located outside of all utility easements and at least 10 feet from water and sewer utilities. The EA light pole northwest of building 1 is too close to existing 12" water main.

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

25. Tree plantings must be located outside of all utility easements or at least 10 feet away from utilities within right of ways. See tree within hydrant utility easement southeast of building 1. 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

Attachment
cc: Brian McNeal, REBKEE

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