

February 6, 2024

Claire Shirley, PE
Gradient
1406 Laburnum Park Blvd
Richmond, VA 23227

**RE: Highland Woods Apartments Expansion
Site, Utility, Landscape, and Lighting Plans
Location: S Kalmia Ave and E Beal Street
POD2022-00633**

Dear Ms. Shirley:

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 January 12, 2024 and received by DPU on January 17, 2024.

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. 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.
2. Provide the following additional information with the next plan submittal:
 - Engineering Report (F-1)
 - Project Summary Report (F-10)
 - Hydraulic model for water system improvements based on correct ISO fire flow required.

C2.4 (Demolition & Phase I Erosion Control Plan)

3. Show the remainder of the waterline in the road south of buildings 2 and 4 and the gate valve that is in the middle of this stretch of waterline which is to be used to isolate the existing water system from the portion to be replaced.

C3.2a and C3.2b (Site Utility Plan)

4. The proposed sewer depths as shown on the profiles are not acceptable. In addition, the use of 10" sewer at minimum slope to conserve depth of cover is not acceptable since flows will not produce adequate flow velocity with the pipe also being severely under capacity. Based on what is shown on sheet C3.2b, sewer can be extended from South Oak Avenue thru future Highland Woods Phase 2 to serve this project and achieve improved pipe depth for the sewer. Therefore, design the sewer to go this route.
5. Provide an overall/master utility plan within this plan set that incorporates the future Highland Woods Phase 2 development.

6. Where a terminal portion of onsite sewer is not within a public right of way, and will serve one property owner, that portion can be private, but must still meet DPU design standards. Where other offsite customers are served or offsite property is crossed, that portion of sewer will be public.
7. Revise water and sewer material quantities in accordance with all comments.
8. Label all apartments with unit numbers within each building in order to set up billing accounts.
9. Utilities shall be acceptably abandoned prior to any vacation of utility easements.
10. Provide 5 feet of separation between the following:
 - Waterline at western end of Beale Street and the first sanitary lateral to building A.
 - The first water meter service to building D and the second sanitary lateral to building A. One option could be to relocate the water meter and service line further to the west and on the other side of the driveway to the first unit.
 - The eastern two water services to building C. One option could be to relocate one water meter to the eastern peninsula next to building C.
11. Add a north arrow to C3.2a.
12. Specify size of RPZ backflow preventer for the irrigation meter.
13. A response to the exception request letter, for fire hydrants located closer than 50 feet from proposed buildings, will be forthcoming. Exception is to be noted on the cover sheet when granted.
14. Provide a 20-foot-wide utility easement for the waterline coming off of East Beale Street and pointing north towards Phase 2 of Highland Woods.
15. Provide utility easements for water services up to and including meter boxes.
16. As previously commented, be advised that where right of way will be vacated, existing and proposed utilities will need to have a standard 20-foot easement provided. Easements for existing utilities shall be recorded for field verified locations and shall be recorded prior to C.O.
17. As previously commented, reference county monumentation was used for the survey of this project. There are existing monuments close by on East Nine Mile Road.
18. The laterals at the end of the sewer main should be tying directly into the sewer main with as few bends as possible. In this case, sewer with manholes 4 and 5 should be extended so that this can occur. Also, cleanouts are typically required at each bend and would need to be traffic rated, but this can be avoided with a more appropriate sewer design.
19. Add a note that the existing water service for building #1 shall be continuous copper from the new main to the meter box where it is being reconnected. No couplings will be allowed on the service line.

C3.3 (Water System Analysis & Layout) (not included in this plan set submittal)

20. Revise the layout on this sheet to match what will be changed on the utility plans. In addition, revise the model to reflect the ISO fire flow calculations for fire demand and the hydrant locations.

C3.4 (Waterline Profile)

21. The vertical waterline adjustment at station 12+85, in the profile titled "S. Kalmia to West Side of Beal Street", does not appear to be needed as waterline can cross over the sewer. Provide DIP for sewers where 1.5 feet separation is not available.
22. Adjust the extent of all vertical waterline adjustments as shown in the profiles to be more inline with D-485 and so that waterline fittings do not fall within the sloped portion of the adjustment.

C3.5 (Utility Calculations)

23. Adjust ISO Fire flow calculations for the following:

- Occupancy type is C2 for residential with a value of 0.85.
 - Only one exposure is needed for this calculation. The worst-case scenario is between buildings E and F with the latter as the exposure. The value should be 0.126 based on the latest ISO Guide for Determination of Needed Fire Flow.
24. Revise sanitary sewer computations to reflect redesign as required by above previous comments.

C3.7 (Sanitary Sewer Details & Profiles)

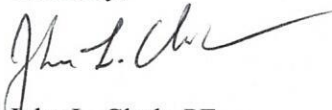
25. Any sewer profile comments will be deferred to the revised sewer design.

Landscape, Hardscape & Lighting (volume 2)

26. Correctly show all utility easements on the landscape and lighting plans.
27. 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. There were several conflicts observed with water meters and landscaping as well.
28. Light poles shall be located outside of all utility easements and at least 10 feet from all utilities.
29. On sheet L101 at the first western unit of Building D, adjust the following:
- Omit the front two bushes next to or on top of the water meter box and SIP.
 - Omit the Crape Myrtle tree directly between the water meter box and SIP.
30. On sheet L102 at Building C, adjust the following:
- Omit the Crape Myrtle tree between the private water service lines for the eastern most two units as it will create issues as it grows.
 - Omit the three bushes surrounding the irrigation meter as this will encumber access to the meter vault and would need to be removed.
31. On sheet L103 at building F, adjust the following:
- Remove bushes to provide at least 3' of distance from the water meter boxes.
 - Adjust flowering shrubs and ornamental flowers to be at least 2 feet away from perimeter of meter boxes so that these are not covered up or heavily encumbered for accessibility.

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: Justin Oliver, Oliver Properties

bc: Ralph Claytor
Marchelle Sossong
Daniel Ivy, Kenisha Williams
Otis Mitchell
Spencer Norman, Planning

JLC/vr