

January 6, 2023

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 December 8, 2022 and received by DPU on December 15, 2022.

□ 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)

**Cover Sheet**

3. Revise the sheet title within the sheet index for C2.4 to match the sheet title block by including demolition.

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

4. 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. Please advise DPU of which path is desired and we will offer further guidance on what information a disconnection or abandonment plan would require. As communicated in the staff developer meeting, a one-page disconnection plan would be the easiest to prepare and require the least amount of work to perform prior to approval of the demolition permit. Abandonment of the utilities could occur later with the POD construction plan.

5. Provide a separate utility demolition sheet to clearly show abandonment and removal of the utilities. On that sheet, please show the following:
  - Clearly show and label all existing water and sewer utilities.
  - Locate and show sanitary laterals and existing water meters and services with a callout that the water and sewer connections will be abandoned at the main in accordance with DPU standards 1.4.01C and 10.3.10.
  - Label the existing meter number and size and add a note that meters smaller than 3" will be removed by DPU Operations Staff when existing accounts are closed.
  - Show removal of water mains where in close proximity to or in conflict with other utilities and services. Add a note that these are to be removed only after the new water mains have been installed, tested, and accepted by DPU.
  - Add a note: Contractor shall notify DPU Inspector of abandonment schedule so that the work can be verified.
  - (If separate disconnection plan option is not followed for the demo permit, add this note) Service connections shall be properly abandoned prior to demolition permit approval.
  - Add a note: Accounts will be transferred to the Developer and will continue to be billed for service prior to abandonment. Account will be finalized, and billing will stop only after proper abandonment of the services has been verified.
  - Add a note: Waterline valves will only be operated by DPU personnel or under DPU supervision.
  - Add a note: The Division of Fire will need to be notified prior to any disruption of fire protection.

### **C3.2 (Site Utility Plan)**

6. The proposed sewer depths are not acceptable, especially for sewer from manholes 4 to 7. In accordance with DPU comments for the rezoning case REZ2021-00057, either relay existing sewer on East Beal Street west of the site starting from the 18" trunk sewer, across S. Kalmia Avenue, and into the site to serve the entire project or extend sewer from the intersection of East Beal Street and South Oak Avenue. Sewer depth is to be at least 5.5 feet with laterals at 5 feet depth and shall also be designed to serve the entire sewer shed.
7. 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.
8. Include a sewer shed map within the plans and show where sewer will need to serve offsite property to the north owned by Bellsun Apartments LLC (GPIN 822-722-7143) Provide a sewer utility easement to the property as all of this property (multiple parcels) drains towards storm structure 14 area and sanitary sewer would likely extend in same direction. In this case, the proposed sanitary sewer for this project would need to be public up to this location. Also, revise sanitary sewer calculations to include possible future flows from this area at a multifamily zoning density.
9. Label GIS ID for each existing manhole shown.
10. Provide benchmarks consistent with DPU Spec. 5.5L for the sanitary sewer extensions.
11. Reference appropriate CWB/CSB sheets within the lower right corner of utility plan sheet.
12. Include DPU detail number in specific callouts where they apply (water and sewer services, backflow preventers, SIPs, water meters, fire hydrants, etc.).
13. Revise water and sewer material quantities in accordance with all comments.
14. Clarify where the driveways will be for each townhouse. Either label typical features or provide an enlarged view as a typical example of the townhouse layout.

15. All water meters shall be located outside of paved areas and driveways. Sanitary laterals should be located in unpaved areas where possible with 5-foot separation from other laterals or water services. Where in driveways, laterals shall be DI including cleanout riser with traffic rated cleanouts.
16. Cleanouts are to be specified instead of SIPs per D-180 since these are multifamily laterals. SIPs are used for single family lots to delineate homeowner versus DPU responsibility for lateral maintenance and location of blockage.
17. Identify on plan view all locations where water line will be vertically adjusted and reference DPU detail D-485.
18. Provide bearings and either all deflection or internal angles for sewer mains between manholes.
19. Utilities shall be acceptably abandoned prior to any vacation of utility easements.
20. Specify size of proposed irrigation meter and provide an RPZ backflow preventer with size specified. Also, call out DPU D-410 and include this detail within the plans.
21. Fire hydrants are to be located at least 50 feet from proposed buildings wherever possible. In locations where this setback cannot be met, an exception request letter is to be addressed to the DPU Director that includes a justification for the request.
22. Additional fire hydrants are needed at the following locations for line maintenance, flushing and fire protection:
  - At the right side of the entrance off of S. Kalmia Avenue.
  - At the right side of the new drive aisle at the east end of the project off of East Beal Street.
  - Abandon reuse of existing hydrant location across from building E and install a new hydrant northeast of the underground detention BMP#1. This will provide better spacing of the hydrants and also help the existing apartments as well. The existing hydrant is to be returned to DPU Operations and not reused for this new location.
23. Show the following existing utilities on the plan:
  - 1" water meter and service near sewer manhole 163SW058.
  - 3" water line extending southeast off of end of East Beal Street 8" waterline prior to valve shown and dimensioned as 25 feet from the western edge of pavement per CWB information. This line supplies the two water meters that are shown with the "M" symbol with service lines that extend perpendicular from 3" main to each meter vault.
24. Provide a typical callout to identify the "W" symbol which appears to be a valve. Also, provide a similar callout to identify the "M" symbol which appears to be a meter vault.
25. To eliminate service disruption, provide a tapping sleeve and valve for the waterline connection to the 8" main on the east side of the project in East Beal Street. Locate this tap at least 5 feet away or more from the possible location of the tee serving the existing 3" line previously described.
26. DPU Standards require an 8" size water main at a minimum for fire protection for multifamily developments. Consequently, replace the 6" water main along buildings E and F with a new 8" main that is 4' off the curb face and remove the existing water main. Terminate the new line at the proposed hydrant location near BMP#1 and install a gate valve and reducer on south side of hydrant.
27. 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."
28. Provide standard width utility easements for all existing and proposed DPU owned water and sewer utilities. Where right of way will be vacated, utilities will need to have a standard easement provided. Easements for existing utilities shall be recorded for field verified locations and shall be recorded prior to C.O.

29. Add the following note, "Connections to existing manholes without stubs or bricked-up openings shall be the equal of either Kor-N-Seal w/stainless steel expander ring or Press-Seal w/nylon expander sleeve installed by core drilling manhole and in strict accordance with manufacturer's specifications."
30. 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)."
31. Reference county monumentation used for the survey of this project. There are existing monuments close by on East Nine Mile Road.

### **C3.3 (Water System Analysis & Layout)**

32. Revise the lay out 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)**

33. Correctly label the pipes crossing water main at stations 15+85 and 0+70 as storm sewer instead of sanitary sewer.
34. Label the tee as 8"x6" for the fire hydrant at station 12+30.
35. Show a vertical waterline adjustment per D-485 instead of waterline deflection for all crossings where waterline encounters a vertical conflict.
36. The vertical waterline adjustment at station 12+85 does not appear to be needed as waterline can cross over the sewer. Provide DIP for sewer where 1.5 feet separation is not available.
37. Any additional profile comments on specifics will be given after redesign per plan view comments.

### **C3.5 (Utility Calculations)**

38. Adjust ISO Fire flow calculations for the following:
  - Provide the worst-case scenario for required fire flow and identify location on the form.
  - Per staff developer meeting, show class 1(i.e., ICC type V-B for wood frame) for the construction type to match what is shown on the cover sheet site data.
  - The area shown appears to incorporate the entire block of townhouse apartments. The Virginia Residential Code requires fire divisional walls at a minimum. Show whether rated fire division walls or building separation walls are provided between each townhouse unit and adjust area calculation per ISO method. Rated division walls would require using the largest townhouse unit and 50% of the next largest unit within that block. A building separation wall would just require the area of the largest unit, but this wall must be certified to meet the criteria in chapter 5(Separate Classification of Buildings) of the ISO "Guide for Determination of Needed Fire Flow" June 2014 edition.
  - Exposure factors are required wherever there is an adjacent building within 40 feet of the subject building. See the previously mentioned ISO document for exposure factor tables.
  - Form shall be signed at the bottom by the P.E.
39. The domestic water meter sizing form can be omitted as a 5/8" meter is assumed for each residence.
40. Revise sanitary sewer computations as previously discussed to include offsite property and reflect redesign.

### **C3.6(Utility Notes & Details)**

41. Include the following additional details from the 2014 DPU Standards and details:

- i. Electronic marker placement details (D-740 and D-750).
- ii. Installation of reduced pressure backflow preventer for irrigation system with meter (D-410).
- iii. Thrust blocking details (D-700)

**C3.7 (Sanitary Sewer Details & Profiles)**

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

**Landscape and Lighting Plans**

- 43. Show all utilities and easements on the landscape and lighting plans.
- 44. 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.
- 45. Add the note: "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."
- 46. Light poles shall be located outside of all utility easements and at least 10 feet from all utilities.

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4501 or Kiara Korkuc at 501-4993.

Sincerely,

*John L. Clark*

John L. Clark, PE  
Utilities Engineer

cc: Justin Oliver, Oliver Properties

bc: Ralph Claytor  
Marchelle Sossong  
Daniel Ivy  
Kiara Korkuc  
Spencer Norman, Planning

JLC/vr