

September 13, 2022

Joshua Krolewski, PE
The Bay Companies
8500 Bell Creek Road
Mechanicsville, VA 23116

RE: Gateway at Landmark Section 1
LOCATION: 501 Old Memorial Drive
POD NO. 2022-00438

Dear Mr. Krolewski:

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 August 12, 2022 and received by DPU on August 18, 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 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. A separate overall water and sewer utility plan shall be approved by DPU for this development prior to approval of Section 1 or any section of this development.
3. Utility plans shall be submitted to DEQ for acceptance and a certificate to construct (CTC) obtained from DEQ prior to DPU approval since sewer is being designed to convey average flows exceeding 40,000gpd.
4. Add the following note: "The sewer system for this project will not be accepted, nor will a connection be allowed to the County sewer system until the downstream sanitary sewer as proposed by Landmark Section 2 utility plans is accepted by the County for operation."
5. Revise the water model for any changes to the required ISO fire flow. Also, include waterline between junctions J2 and J6 which should help the pressure.
6. Revise Engineering Report and Project Summary Report in accordance with all plan comments and resubmit.

Cover Sheet

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

Existing Conditions and Demolition Plan(C2)

8. Correctly show the Sandston Woods Sewer pump station facility and associated piping near the entrance road.
9. Add a note stating that, "All water and sanitary sewer is to be abandoned consistent with DPU Spec. 1.4.01C. and 10.3.10."

Overall(C3)

10. The Sandston Woods sewer pump station, force main and a portion of gravity sewer will have to be abandoned by the developer for this project instead of by others. In addition, a sequence of construction for this project will have to be developed that coordinates conveyance of existing sewer flows with the necessary sewer main installation to handle these flows. Sewer main will need to be installed first and accepted by DPU construction division on a partial tentative basis prior to taking the Sandston Woods facilities offline for abandonment/removal.
11. A sewer utility easement shall be provided to extend sewer to serve the remainder of the Sandston Woods property from a location near the low grade of this property. See near back of lot 11.
12. Coordinate Overall utility layout with the utility plan view sheets regarding sewer design as there are several inconsistencies.
13. Waterline serving this development will exceed 600 feet of dead-end minimum sized fire line(8"). DPU will temporarily allow this with the understanding that waterline thru Turtle Parkway will be installed to complete a looped system.
14. Provide a topographic sewer shed map that shows the entire drainage area involved, locations of existing and proposed sewer lines, points of entry of flows, including flows received from other areas. Drainage area map shall be keyed to a computation sheet(form F-4) that summarizes the acreage and flows served by this proposed sewer. Parcel owner and address information and necessary easement corridors shall be included on the sewer-shed map too.

Erosion Control(C4-C7)

15. There are complications and conflicts between the existing Sandston Woods pump station and force main and portion of upstream gravity sewer and installing proposed storm sewer that is part of the Erosion Control Phase 1 and Phase 2 plans which need to be thought through and resolved regarding the narrative and sequence of construction.

Layout and Utility plans(C12-C15)

16. Correctly show the Sandston Woods Sewer pump station facility and associated piping near the entrance road as well as what parts are being removed or abandoned in place. DPU can forward as-built drawings to you to help in this endeavor. The following will need to be shown and performed to properly abandon this facility:
 - Installation and DPU acceptance of proposed sewer necessary to receive existing flows from Sandston Woods.
 - Cutting and capping of sanitary sewer and abandonment of manholes in accordance with DPU D-170 from just downstream of proposed manhole 111 to just outside of the pump station.

- Complete draining of existing force main and capping force main at the point of discharge at existing manhole 284NE001 near intersection of Whiteside Road and East Williamsburg Road.
17. There are complications and conflicts between the existing pump station and force main and the proposed sewer main that is needed to serve the existing flows which need to be thought through and resolved regarding construction sequence. Provide a construction sequence that details the proposed work and the abandonment of the existing facilities.
 18. Provide match lines between the several utility plan sheets.
 19. Remove spurious sanitary lateral shown near manhole 110 that is unconnected to sewer.
 20. Provide replacement current standard water services and meters connected to the new 8" water main for lots at #300, #302, #304, and #480 Old Memorial Drive, and abandon the 2" water main by cutting and capping the line at the valve as well as abandoning the old services and meter boxes. Add a note that the existing meters are to remain in the meter box so that DPU Operations will pick them up after interconnections are made. Interconnection on the private side of each water service will have to occur in coordination with property owners and County plumbing inspections. In addition, add the following meter numbers and meter sizes for the existing meters on the plan view:
 - #300-5/8" meter, no. 46200938, 3/4" service line
 - #302-5/8" meter, no. 46200934, 3/4" service line
 - #304-5/8" meter, no. 08017393, 3/4" service line
 - #480-3/4" meter, no. 09019159, 3/4" service line
 21. Show and label existing flushing hydrant at the end of the 2" waterline at #480 Old Memorial Drive.
 22. Relocate existing hydrant outside of proposed sidewalk at Betner Road and Old Memorial Drive. Add a note stating, "Where existing hydrants are disturbed, new hydrant materials are required, and the old hydrants are to be returned to DPU Operations Division".
 23. Label proposed manhole 111 as a doghouse type manhole. Dimension distance from existing manhole 355NW001 to the proposed manhole 111 and provide inverts at this existing manhole and the next downstream existing manhole 355NW005 on which to base inverts at manhole 111.
 24. Provide benchmarks consistent with DPU Spec. 5.5 L. (Add note for contractor reestablishing benchmarks if temporary and can be disturbed).
 25. Show the extent of open cut pavement disturbance on the plan view using light stippling and include the DPW pavement restoration detail.
 26. Add a lead line for removal of 8" waterline plug within Betner Road and Old Memorial Drive.
 27. Coordinate barricade posts with waterline location across from main entrance so that the waterline is not in conflict with the post but centered equidistant from adjacent posts and separated by at least 3 feet of distance.
 28. Correctly label 6" PVC force main from Sandston Woods pump station on the utility plan sheets and on the overall plan sheet.
 29. Reference county water and sewer book sheets in lower right corner for each utility sheet.
 30. Remove gray shading from roads to help improve legibility of scanned information.
 31. Add valves at the tee for the fire sprinkler line with one on the branch side and one on the north line side that will be extended for the future section 2.
 32. The fire sprinkler line has several issues with its current setup and location:

- Add a boundary valve (per D-476) on the fire sprinkler line at the easement boundary. This is in addition to the valve at the branch of the tee. Include D-476 in the utility detail page.
 - The FDC location is not accessible for the Fire Division in that it is located behind parking spaces.
 - Provide a dedicated hydrant on the same side as the FDC and within 50 feet.
33. Include the following additional hydrants for now to meet hose lay and logistical needs. ISO calculations still need to be finalized and may impact this layout.
- Add a hydrant on the right side of the southern entrance off Old Memorial Drive.
 - Add a hydrant on the southeast corner of the island across from building 1.
 - Add a hydrant at the corner between buildings 3 and 7.
34. Valving is recommended at each tee and junction for the private fire lines that are serving each building.
35. Label vertical waterline adjustments within the plan view sheets.
36. Coordinate between plan and profile views and the overall plan on the proposed sanitary sewer alignment and size.
37. Label all manholes outside of the pavement has having vandal proof frame and covers.
38. Extend paved road to cover the waterline south of building 4. Otherwise, relocate the water meter and service for this building and terminate the main with a plug at the edge of pavement currently shown.
39. Terminate the waterline within Old Memorial Drive at the edge of the widened pavement.
40. Revise alignment of sewer around manholes 116 to 117 so that it is closer to a 90-degree angle and setup for future extension to the south within Old Memorial Drive.
41. Show lateral for building 3 connected to the sanitary sewer.
42. Sanitary laterals can be PVC where connected to sewer main of the same material unless there are other conditions that dictate DIP.
43. Move lot 1 sanitary lateral 20 feet towards the road so that it is further away from the buildable area and allows room for the private cleanout on the lateral not owned by DPU.
44. Perform a corrosive soil study by taking soil samples along the proposed waterline alignment area in accordance with Henrico DPU Standard 4.2.02G. Provide protection of water main and appurtenances against aggressive soils in accordance with DIPRA recommendations and the ductile iron pipe manufacturer recommendations.
45. The following pertain to the condominium building sanitary laterals:
- Provide a note on plans stating, "HOA will own and maintain all sanitary sewer laterals from the main to the building".
 - Engineer shall make sure that the same statement is made on the approved plat and in the HOA covenants.
46. Label any laterals on the sanitary sewer profiles that are deeper than 12 feet.
47. Are there any irrigation meters proposed for this development? Provide appropriate information and DPU details.

Offsite Grading and Drainage and Utility Plan(C20)

48. Label private 6" PVC force main on sheet C20.
49. Revise sewer distance for existing sewer in Landmark Section 2 as shown on sheet C20.

Profiles(C21-C26)

50. 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.
51. Show location of private 6" PVC force main in all profiles and resolve any conflicts.
52. The sewer profiles need to be coordinated with the plan view representation regarding sewer alignment, manhole location and pipe sizes. Additional review of the corrected profiles may produce other comments at that time.
53. Show crossing of building 4 sanitary lateral versus storm sewer from structures 66-67. The sewer main from manholes 104 to 103 can be lowered to provide additional separation of at least 1 foot at the crossing.
54. On sheet C26, address the following:
 - Coordinate manhole numbering and starting sewer inverts at manhole EX200 with Landmark Section 2.
 - Provide additional cover for the runs of sewer from EX200 to 123 so there is at least 3.5 feet of cover.
 - Show 6" force main crossings.
 - Provide casing pipe for sewer main where crossing under two 48" storm sewers.
 - Coordinate pipe lengths for runs of sewer from manholes 124 to 122 with that in the plan view.

SWM#3 details(C45)

55. Extend rip rap from structure 381 over the sanitary sewer main.

Utility Details(C48)

56. Include DPU details for the water meters and service lines.
57. Include detail for boundary valve (D-476).

Site Details(C49)

58. Revise fixture total for 10 unit building to be 227.
59. Revise the following for the ISO fire flow form:
 - The site data indicates that these are frame structures whereas the form indicates limited combustible. Please coordinate on the correct construction type and factor and revise remainder of calculations accordingly.

Landscape Plan(L01)

60. 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."

Lighting Plan(L02)

61. Light poles shall be located outside of all utility easements or at least 10 feet away from utilities within right of ways.

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

Sincerely,

John L. Clark

John Clark, PE
Utilities Engineer

cc: Philip Parker, Henrico CO VO/Tech Ed Foundation Inc.
Dennis Harlow, G & G Ltd

bc: Ralph Claytor
Marchelle Sossong
Daniel Ivy
Christina Goggin, Planning

JLC/tt