November 22, 2023

Anne W. Tignor, PE
Youngblood Tyler & Associates
P.O. Box 517
Mechanicsville, VA 23111

RE: The Flats at Mayland
LOCATION: 3441 Pemberton Rd
POD NO. 2023-00491

Dear Ms. Tignor:

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 November 7, 2023.

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. Per DPU rezoning comment for case REZ2023-00013, the proposed use will produce flows that will exceed the projected flows based on the 2026 Land Use Plan. Therefore, an analysis of the downstream sewer system will be required to determine if upgrades to the existing sewer are needed. The developer will be required to make any needed improvements. This analysis shall extend down to the tie in with the 15" trunk sewer at manhole 327SW008.
3. Revise water distribution system calculations to incorporate the correct ISO fire flow and to use a C value of 120.

Cover

4. Provide a signature and date on the PE seal on all subsequent plan sheets.
5. Revise water and sewer material quantities in accordance with all comments and per the following:
   - There are 9 hydrants, 8"x6" tees, and 6" valves.
   - Amend listing for 5/8" irrigation meter to indicate these are repurposed existing residential water meter services.
   - Revise number of 8" gate valves and boxes to match plans.
   - Some of the 8" fire line will be public, that is within the utility easement and up to the boundary valve location.
   - Boundary valves and the 8"x8" tees for the fire lines are public.
   - Include the number of sanitary laterals and pipe material.

Overall Plan (sheet 2)

6. Revise the overall plan to match any utility changes.
7. Label the size and material of existing water main where connections will occur.
8. Label the manhole with GIS ID where tie in will occur and label the pipe size of downstream existing sewer.
9. The water main shown to the east of building 3 and north of the hydrant does not appear to be needed and can be omitted.

Existing Conditions/Demolition Plan (sheet 3)

10. Label the size and water meter number (register, not GIS ID) for each domestic meter that will be reused for irrigation.
11. For the existing 3 houses served by county water, 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 services or complete abandonment of services at the water mains. Disconnection of water services would be shown on the private side just after the meter box. Disconnection or abandonment of the services would be required prior to approval of the demolition permit.

Layout and Utility Plan (sheets 6 & 7)

12. Reference county water and sewer book sheets on each utility plan sheet.
13. Show existing offsite utility easement within Bartley Pond Place and include recordation information.
14. Water services cannot be extended with couplings/unions for existing houses and must be replaced with continuous copper service line from the main (corporation stop) to the meter box.
15. Specify the method of waterline and sewerline installation within both Mayland Drive and Pemberton Road. If jack and bore, provide the stationed amount of casing pipe on the plan and profile, show the bore and receiving pits, and include the standard VDOT encasement pipe detail without the leak detector. If open cut, show the extent of pavement disturbance on the plan view and include the DPW pavement restoration detail.
16. Specify zinc coated DIP for any water main that is DIP.
17. There are several hydrants that are closer than 50 feet to the buildings. Where this cannot be remedied, please provide an exception request letter to the DPU Director for consideration and include a justification.
18. Locate FDC connections within 50 feet of a dedicated hydrant and on the same side of the road as the dedicated hydrant or in a location that is acceptable to the Fire Division.
19. Omit valves on the branch side of each of the 8 x 8 tees that are for water mains and not fire lines and relocate one valve to be on the line side of the tee instead of branch side.
20. Provide an 8"x4" tee and 4" gate valve with 4" DIP per D-535 for each water meter that has the water service exceeding 25 feet maximum in length.
21. Provide 5 feet minimum spacing between the fire line tee and water service connection to the main for each building.
22. An RPZ backflow preventer will be required on each domestic water meter since the buildings are 4 stories in height. Specify and include the appropriate details in the plans.
23. Show a boundary valve at the easement boundary for each fire line per D-476. This is in addition to the valve already shown at the cross or tee. This portion of the fire line will be owned by DPU.
24. Show approximate location and include specifications (size and DPU detail) for the Reduced Pressure Detector Assembly for each building's fire line.
25. Specify peak irrigation demand for each 5/8" meter of 16gpm and include existing water meter numbers.

26. Modify the following numbered notes:
    - Amend note 7 to state: "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."
    - For note 11 clarify that it is private beyond the boundary valve.
    - For note 14, review applicability of this note since sewer mains are private.
    - For note 21, amend to reference approximate locations of BFP are shown on utility plan sheets.
27. Add to callouts for irrigation meters along Pemberton Road that water service lines are to be replaced from the main to the meter and no couplings or unions allowed.
28. Provide an 8' wide utility easement for each irrigation meter.
29. Provide private road names on each of the utility plan sheets.
30. Adjust waterline alignment within entrance so that guard house is outside of the utility easement.
31. Provide a straight hydrant lead connection to the main for the hydrant off the northwest corner of building 10.
32. Specify slope (must be at least 2.08% minimum) of each of the building sewer laterals and provide matching crowns with sewer main where connection is made to a manhole.
33. Provide county monumentation used for site survey. The nearest monuments are near the intersection of Pemberton Road and West Broad Street.
34. Include an additional GIS reference point for a total of 3 on sheet 7.

Profiles (sheets 11-14)

35. For all sanitary sewer profiles, provide separate sewer stationing numbers at each manhole starting at the most downstream connection and proceeding upgradient with equalities at each junction manhole.
36. Specify DIP for sewer from existing manhole to manhole 1 since separation from bottom of storm sewer is less than 1 foot. Confirm storm field inverts and review design with DPW for any possibility of increasing the separation distance. Support piers for the storm pipe on either side of the sewer main crossing will be required if separation distance ends up being less than 6 inches.
37. Show lateral connections with inverts at manholes matching crowns with the sewer main.
38. Revise slope of sewer from manholes 5 to 4 to be no more than 1.50% to mitigate a hydraulic jump condition with supercritical flow.
39. Show all crossings for sanitary laterals within waterline profiles and storm sewer profiles.
40. Show all crossings for 8" fire line and 4" domestic water service line within storm sewer profiles.
41. It appears that the profiles for downstream storm sewers where tie-in is occurring are missing. Please provide and include the previously mentioned crossings where occurring.

Notes and Details (sheets 24-27)

42. Include the following details and reference within callouts on the plan view:
    - Details for backflow preventers for the irrigation meters and domestic water meters serving each condo building.
    - Appropriate detail for the reduced pressure detector assembly that will be on each building fire line.
    - Details for D-525, D-534 and D-535 for the water meter boxes/vaults and service lines.
    - D-500 for the flushing hydrants.
43. Revise ISO fire flow calculations per the following:
    - Coordinate the construction type with that shown on the cover sheet site data and use the correct factor.

- The ground floor area is not consistent with the building dimensions shown. In addition, 50% of each floor area above the ground floor is to be included in the total floor area.
- ISO methodology now only requires that 1 worst case exposure be included for each subject building.

Lighting (sheet 36)

44. Light poles shall be located at least 10 feet away from the fire hydrants positioned on either side of building 6.
45. Relocation of light poles to provide at least 10 feet separation in the following locations is strongly recommended to avoid issues with the following private lines:
    - Building 2 private water and fire lines.
    - Building 3 sanitary lateral.
    - Building 5 private water service.
    - Building 6 sanitary lateral.
    - Building 10 FDC line.

Landscaping (sheet LS)

46. Relocate shrub to be at least 5 feet edge to edge from the hydrant at intersection of Urbanshire Road and Bradyminster Place.

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: Cindy Weinstock, Legacy-Mayland Investments, LLC

bc: Marchelle Sossong
Daniel Ivy
Spencer Norman, Planning

JLC/vr