

March 2, 2021

David Ellington, PE
Kimley-Horn
1700 Willow Lawn Drive, Suite 200
Richmond, VA, 23223

**RE: Laurel Park
 2314 Hungary Road
 File No. 5501; POD2021-00049**

Dear Mr. Ellington:

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 February 9, 2021.

DPU recommends approval of these plans by the Planning Commission.

Please address the following comments before submitting the construction plans for signature.

Cover Sheet:

1. The Owner's information provided under the Site Data does not match with what is shown on our records. Revise accordingly.
2. Original signature is required on the P.E. Seal on the Cover Sheet. A facsimile of seal, signature and date is acceptable on all other sheets.

Sheet CV-101, CV-102, CV-103 & CV-104 (Existing Conditions):

3. Revise the Owner's information for the following Parcel ID: 773-759-3106, 773-759-5623 & 773-759-3087. Update where necessary.
4. Show all the existing utilities such as sanitary sewer pipe, pump station, manhole, SIP, clean-out, water line, tee, valve, fire hydrant, fire hydrant lead, meter, sanitary and water service connections.
5. Existing water valve should be shown correctly on the tee.
6. Provide size and materials for all existing utilities.
7. Include the size and meter identification numbers for all existing meters.
8. Include CSB or GIS information for all tie-in existing manholes by including MH ID or Station Numbers, top elevations, inverts, and provide directional flow arrows on the sanitary sewer main. Update where necessary.
9. Label Shecardee Lane. Update where necessary.
10. Revise the sheet number in the match line.
11. Show all the existing storm pipe, electric line, light pole, gas line and its appurtenances.

Sheet CD-100, CD-101, CD-102 & CD-103 (Demolition Plan):

12. Show all the existing utilities.

13. Cut and cap the two existing water line going on site from Hungary Road and the one from Shecardee Lane at the property line.
14. Label to cut and cap the existing water line instead of cap and cut the existing 8" water line at the most eastern entrance from Hungary Road.
15. Relocate the label to cut and cap the existing water line slightly so it will not cover up the existing valve and water line in Hungary Road.
16. Recommend plugging the existing sewer at manhole 331NW061 to separate the onsite sewer from the offsite sewer.
17. Add the following notes to the demolition plans:
 - a. Contractor shall notify DPU of the demolition schedule so that DPU metering staff can read the meter and turn off the service prior to disconnection, and DPU inspector can verify the work.
 - b. Meter will be removed with the present of the DPU staff and return to DPU Operations Division.
 - c. Account will be finalized, and billing will stop only after proper abandonment of the services has been verified by DPU.

Sheet CU-100, CU-101, CU-102, CU-103 (Utility):

18. Revise the water and sewer quantities list to match with the utility plan and in accordance with all the comments.
19. Revise the size of the proposed water line. Henrico County DPU can only accept 8" or 12" water line not 10".
20. Show the existing gas main along Woodman Road that crossing the proposed water main.
21. Revise the proposed corporation stop and copper water service pipe to be one size bigger than the water meter.
22. Label the pipe material of the fire line.
23. Recommend labeling all the fixtures such as tee, and bend on the fire line.
24. Delete the label of the 10" valve at the fire hydrant near Building 07.
25. Label all clean-out in the paved roadway or parking area to be traffic rated clean-out. Provide a detail in the detail sheet.
26. Relocate the proposed fire hydrant to be within 7 feet from the curb.
27. Provide backflow preventer on the fire line for the apartments and retail building. Reference the detail drawing.
28. Provide the distances from proposed water main to either the proposed face of curb or back of curb.
29. Show the location of waterline adjustments in the water main by providing a bubble or circle around the adjustment area on the utility plan. Be sure to reference the sheet location of the waterline adjustment detail in the waterline adjustment callouts.
30. Fire hydrants must be a minimum of 50' from structures per DPU Standards. If the minimum cannot be obtained, request an exception to allow hydrants to be closer than 50'.
31. The waterline between the two apartments can be eliminated.
32. Relocate the valve for the flushing hydrant to be in the paved area.
33. Provide approximately 5 feet separation between the water service and the fire line.
34. Eliminate one of the two 10" valve near the dedicated fire hydrant to the big apartment building.
35. Provide additional easement in the back of the proposed fire hydrant near manhole 4.
36. Show more existing water line in Hungary Road at the site entrance. Delete the old fire hydrant lead and valve shown at the entrance. That was shown to be removed in your demolition plan.

- Show the location of the capped water line and tie the proposed water line to the existing water line at that location.
37. Tie the proposed water line to the existing water line in Hungary Road at both entrances.
 38. Label the corporation stop and cover pipe for the water service to the retail building.
 39. Add a fire hydrant on the opposite side of the dedicated fire hydrant to the retail building for fire protection.
 40. Show the existing manhole 09 on sheet CU-101. Provide both surveyed and GIS ID and elevations at this manhole.
 41. Provide bearing and internal angles for the proposed sanitary sewer.
 42. Provide utility easement for the meter to building 68.
 43. Compression saddle connection is not needed for the proposed sanitary sewer lateral tying into the proposed sewer. A tee can be used instead.
 44. Relocate the proposed clean-out to be at the easement line.
 45. Proposed storm sewer is in conflict with the fire line near building 63.
 46. Proposed storm sewer manhole UG7 CS appears to be in conflict with the existing water line. Cap the water line at the property in the demolition plan and off-set the water line to avoid conflict with the storm manhole.
 47. Proposed storm sewers are too close to the proposed water line and sanitary sewer main. Provide a minimum of 8 feet separation between the utilities if possible.
 48. Relocate the text that covering up the sewer lateral to buildings 63-67.
 49. Label the size and material of the sewer lateral and clean-out for building 53-72.
 50. Clarify how will the sanitary sewer be extended to each individual unit. Is it just one 6" sanitary sewer lateral for the building and all the sanitary sewer for the units in the building will be connected together through internal plumbing?
 51. Label the minimum slope for the sewer lateral.
 52. Proposed sewer lateral for building 45 and 50 should be connected to the manhole. The proposed sewer can be shortening by moving the manhole back to laterals location.
 53. Revise the size of the sewer lateral to building 9 to be 8". Update the profile.
 54. Include detail numbers D-125 within the callouts for the monitoring manholes.
 55. Show the limit of the utility easement in the area near building 28.
 56. Show the proposed sanitary sewer from manhole 01 to manhole 08 on Shecardee Lane on sheet CU-102.
 57. Relocate the grease trap out of the pavement.
 58. Grease interceptors are not designed to treat domestic waste. Therefore, a separate domestic, sanitary sewer lateral needs to be added well after the grease interceptor. Subsequently, the monitoring manhole should be moved downstream of where this lateral will tie in to observe total flow generated from the facility.
 59. Label the proposed sewer from manhole 7 to manhole 6 as private.
 60. Provide benchmarks consistent with DPU Standards 5.5L.
 61. Add the following note on the plan: "Electronic Markers (ball type) shall be installed on all water mains, sewer gravity mains in accordance with specifications 2.2.05N & 4.4.02E of the 2014 DPU Design and Construction Standards.
 62. Include station numbers on the plan view in accordance with the profile sheets.
 63. Provide road name if possible.
 64. Specify building name to distinguish the smaller townhomes from the bigger one.

Sheet CU-201-CU202 (Sanitary Profiles):

65. Proposed sanitary sewer with less than 2 feet of cover is not acceptable. Consider rerouting all the proposed sanitary sewer toward Paragon Drive. Provide a sewer analysis back to the existing sanitary sewer near Parham Road with adequate cover and capacity if you still insist on keeping the current alignment going toward Hungary Road.
66. Relocate the proposed sanitary sewer profile from manhole 1 to manhole 8 to be part of Paragon sanitary sewer profile to separate the offsite sewer from the onsite sewer.
67. Label the water line crossing at station 12+98 as 6" water line instead of fire hydrant lateral.
68. Label the length, pipe size, material, and slope for the sewer from manhole 5 to manhole 4.
69. Show the water line crossing between manhole 20 and manhole 3.
70. Show the fire line crossing between manhole 9 and manhole 8.
71. Revise the pipe diameter of the water line crossing at station 10+14 in sanitary sewer profile 6. Show the approximate location of the water line crossing in the profile.
72. Revise the rim elevation of manhole 13. It should not be buried in the ground.
73. Use dash line to distinguish existing manhole from proposed manhole. Show the other invert in and invert out at the existing manhole. Be sure to match crown.
74. Show GIS manhole ID and elevations along with surveyed elevations at the existing manhole.
75. Provide manhole station and the type of manhole cover at each manhole.
76. All proposed sanitary must have a minimum of 5.5 feet of cover on the pipe.

Sheet CU-301-CU302 (Paragon Sanitary Profiles):

77. Show all the existing sanitary sewer lateral to the existing homes. Those laterals must be tie back into the proposed sanitary sewer. Clarify how you are going to remove the existing 8" sanitary sewer and replace it with the 10" sewer and transfer the existing sewer over to the new sewer. Provide a sequence of construction on how you are planning to do that.
78. It is confusing to see all the manhole labeled as existing, but they are actually being remove and replace. Add a note in the profile in bold to clarify this issue.
79. Verify the existing sanitary sewer elevations at existing manhole 1. There is a big different between the surveyed elevations and the CSB elevations.
80. Provide both the existing elevations as well as the proposed elevation at each manhole.
81. Show all the existing water line, water service, fire hydrant in the plan view.
82. Provide Geotech information on Paragon Drive. Have you done any soil boring to determine the condition of the ground?
83. Provide pavement restoration plan and detail on Paragon Drive. Is the entire road going to be repaved?
84. Recommend separating the offsite sewer plan from the onsite sewer plan to bid the offsite plan publicly for credit.
85. See comments 73, 74, 75, and 76.

Sheet CU-503 (Utility Details):

86. Signatures are required on Fire Flow Estimate Forms and Domestic Meter Sizing Forms included on this sheet.
87. Revise calculations for the number of shower head shown on the Domestic Meter Form for the "Apartment Building – 178 units". Update the combined fixture value total accordingly.
88. Provide the maximum demand on the Meter Sizing Forms. Review the meter size accordingly.
89. Revise the number of fire hydrants required to 3 for Building with ground floor area of 83,450.
90. Provide the exposure factor for the townhomes along Woodman Road.
91. Specify the building name on the F-9 Forms.
92. Add material notes (Form F-6) and water and sewer notes (Form F-11).
93. Add detail D-180, D-185, and D-500 to the plan.

Sheet CL101 (Lighting):

94. Clearly show all utilities and easements on the lighting plan to ensure that there are no conflicts.

Sheet L5-101 – L5-104 (Landscape):

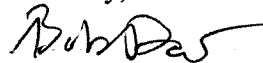
95. There are multiple places where plantings are proposed inside utility easements. Remove all the trees that are located inside the utility easement regardless of there are any conflicts with utilities not.

General:

96. 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 complete when submitted, an Agreement will be forwarded to the Owner for signature within 21 days.
97. VDH/DEQ permit will be required for this project.
98. Revise the fire flow, peak flow, and pressure at peak flow in the engineering report.
99. Revise the project summary report entirely. There should be 350 residential unit instead of 250. Include all the water line pipe size in the report. Revise the answer to "Yes" on the question about fire hydrants located on pipe equal or greater than 6" diameter. Update the flow and pressure in the hydraulic calculation.
100. Revise the water model using the correct water line size.
101. Revise the sewer analysis to include all the existing homes where the existing sewers are being replaced.
102. Review the capacity, velocity, and pipe size for the proposed sewer in the sewer analysis. It appears that some of the proposed sewer can be 8".
103. Provide a profile of the proposed water mains and resolve any conflict.

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4601 or Carmel Duvern .

Sincerely,



Bob Dao
Utilities Engineer

cc: Aurelie Capital

bc: Ralph Claytor
Megan Gallagher
Spencer Norman, Planning

BQD/tt