November 2, 2022

Derek Lounsbury, PE
Timmons Group
1001 Boulders Parkway, Suite 300
Richmond, VA 23225

**RE: Virginia Randolph Campus Renovations**
**2204 Mountain Road**
**POD NO. 2022-00516**

Dear Mr. Lounsbury:

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 October 17, 2022.

DPU recommends approval of these plans by the Planning Commission.

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

**General:**

1. Provide Water Local review Program Form F-10.
2. Use 16gpd/ student as the design basis for both the water and sewer design calculations.
3. Provide the lowest pressure at the design peak flow.

**Cover Sheet:**

4. Add "utility plan" to the title.
5. Update the material notes and utility quantities list.
6. Remove the gray background in the vicinity map. Increase the font size and darken the road name. Add Mountain Road, Woodman Road, and Jessie Chavis Drive to the vicinity map.

**Existing Conditions C2.00-C2.06:**

7. Show the existing water service and sanitary sewer lateral to each building. It is unclear how each building is getting water and sanitary sewer.
8. Label the size of the existing water meter.
9. Show all the water valves including fire hydrant valve. Valve should be on one of the three size of the tee instead of in the middle of the tee.
10. What is the purpose of the oil tank in the rear? An oil and water separator, grease trap, and monitoring manhole might be required. Fill out the NOI form.
11. Review the water line alignment at the left site's entrance.
12. Label to abandon existing well per VDH standards.
13. Show the missing existing hydrant at the end of the water line in the parking lot at the middle of the site. Verify the location of the valve. Our record does not show the valve at the tee near Mountain Road but show one near the fire hydrant.
14. Verify the size and material of the existing sanitary sewer lateral at the bottom right of sheet C2.06. Sanitary sewer lateral is normally 6" not 10"TC.

**Utility Demo Plan C3.10-C3.16:**

15. Show all the water services and water meters. Which building are these meters and water service connections serving? Are you planning to keep these water service and meters to serve the existing buildings? Provide the Domestic Meter Sizing Form showing the number of fixtures in each existing building as well as the proposed building.
16. Is it possible to reuse the existing sewer service? Why are you abandon the existing sanitary sewer service and replace it with the new sewer service in the same location? Is the existing sanitary sewer in bad condition?
17. Label to abandon existing well per VDH standards.
18. Clearly identify the limit of removing /abandon existing water and sanitary sewer pipe.
19. Existing water line should be removed all the way back to the tee in Mountain Road. DPU is not going to allow leaving the existing water line in the dirt area. The water line must be in the paved area.
20. Identify where you are going to cut and plug the pipe to abandon or remove the existing sanitary sewer.
21. Clarify note #9 in the demolition notes. How are you going to keep the utilities active and abandon/removing it at the same time?

**Utility Plan C6.0-C6.06:**

22. Label the buildings on the plan like A, B, C or 1, 2, 3 to match the paperwork.
23. Many of the FDC and fire hydrants appear to be in an undesired location. Contact Fire Department for recommendation of the location for the FDC and fire hydrants.
24. Dedicated fire hydrant should be within 50 feet from the FDC.
25. Show existing utility easement for the existing water line. Provide the DB&PG for the easement.
26. Show proposed utility easement for the proposed waterline leading to the proposed fire hydrant and water meter.
27. Clarify the need for a 6" meter. A triple 2" meter is not the same as the 6" meter. For example: The maximum capacity for a 6" meter is 1000 gpm while the maximum capacity for a triple 2" meter is only 480 gpm.
28. Provide a monitoring manhole in accordance with DPU detail D-125 and include this detail on the plans. The manhole shall be located so as to receive a mixed combined flow from both domestic and non-domestic loads.
29. Provide an estimated nondomestic discharge value to determine if the grease traps are of adequate size.
30. Provide bearings, deflection angles, size, and material of the proposed sanitary sewer in plan view.
31. Distinguish private sanitary sewer from public sanitary sewer.
32. Provide 20' utility easement for the proposed sanitary sewer from manhole 3 to manhole 7.
33. Provide and extend the 20' utility easement northward from manhole 3 to the northeast corner of the property for future sewer.
34. Realign the proposed sanitary sewer at the southeast corner of sheet C6.06 to avoid crossing into the neighbor property which would require an off-site easement.
35. Show the location of waterline adjustments in the water main by providing a bubble or circle around the adjustment area on the utility plan. Label to do the waterline adjustment per detail D-485.
36. The sanitary station appears to be backward. Provide 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 sewer line runs in the same stationing sequence.
37. Relocate the proposed water line out of the parking area on sheet C6.05. Keep the proposed water line in the paved road and tie to the existing water line on the western side of the site.

38. Use dash line to show the portion of the existing sanitary sewer service connection to the existing building on sheet C 6.05 and C6.06
39. Revise the waterline 2 alignment to keep it in the paved area and tie to the existing water line on the eastern side of the site.
40. DPU prefer you tie to the bottom of the manhole versus using the drop connection.
41. Waterlines shall be 10 feet from any structure, building or its foundation. Waterline 1 appear to be too close to the proposed building.
42. Revise the scale on sheet C6.04.
43. All sprinkler lines need to be provided with a Siamese connection and a dedicated fire hydrant, as well as a boundary valve and reduced pressure detector.
44. Show the size and location of the backflow preventer.
45. Show the degree of the bends in the proposed water.
46. Provide 4 Northing/Easting Points.
47. Reference the CSB and CWB 494SW.
48. 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."
49. Provide a table to address the raising and lowering of existing manholes to finished grade. This table should include:
    a. Existing top elevation.
    b. Proposed top elevation.
    c. Amount of modification required, i.e. vertical feet of raising or lowering.
    d. Proposed method of adjusting each manhole.
50. Provide benchmarks consistent with DPU Spec. 5.5 L. Provide a benchmark every 500 feet.
51. 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."
52. Label the traffic rated cleanout where the cleanout is in the parking.
53. Label to install the fire hydrant per detail D-495.
54. Identify the approximate location of the backflow preventer for the domestic service line and the reduced pressure detector assembly for the fire line.
55. Provide minimum finish floor elevation for each building. Be sure that each building can be served by gravity with sewer service connections installed at a minimum slope of 2.08%.

**Utility Profiles C6.10-C6.11:**

56. Provide the type of frame and cover on the profile.
57. Provide both upper and lower invert elevations for the drop stack.

**Utility Notes and Details C6.20-C6.22:**

58. Redo the Domestic Meter sizing for each building including the existing building using the AWWA Manual M22. Separate the existing fixtures from the proposed fixtures in the case of the existing building with addition.
59. Provide a Fire Flow Estimate Form for each building. Clarify how you calculate the ground floor area. Does it include the area of the existing building? Label the type of firewall, fire door within the building. Calculate any exposure and communication factor if applicable.
60. The number of required fire hydrants for a required fire flow of 1500 gpm should be 2 instead of 1.

61. Provide a detail of the grease trap.
62. Add details D-125, D-740 and D-750.

**Landscape Plan L1.00-L1.06:**

63. Remove the bushes from the top of the sanitary sewer.
64. Tree plantings need to be located 10 feet from all utilities.
65. Update landscaping list.

**Lighting E1S.1.1-E1S.1.4:**

66. Show all existing and proposed utilities on the lighting plan for us to review it.

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4601 or Nolan Ekers at 501-4992.

Sincerely,

Bob Dao
Utilities Engineer

cc: Adam Belfield, Henrico County, Capital Project Manager

bc: Ralph Claytor
Marchelle Sossong
Rick Schwartz, DPW
Daniel Ivy
Christiania Goggin Planning

BQD/vr