

September 18, 2023

David Barlow, PE
CHA, Inc.
9020 Stony Point Parkway, Suite 160
Richmond, VA 23235

**RE: Glover Park Phase II
11217 Greenwood Dr.
POD NO: 2023-00239**

Dear Mr. Barlow:

We have reviewed the construction plans submitted to the Department of Public Utilities on August 22, 2023. The following items must be corrected and six (6) sets of the revised plans transmitted to this for further review.

General:

1. Remove all dark backgrounds on the pages on the plans so that way the plans can be seen when scanned for DPU files.

Cover Sheet:

2. Add Greenwood Rd to the vicinity map. Lighten up or remove the gray background in the vicinity map.

Adjacent Property Map (C-002):

3. As previously commented, review and update the property owner name and address.

Existing Conditions (C-001):

4. Show all the existing utilities.

Overall Utility Plan (C-400):

5. Show all existing and proposed utilities on the Overall Utility Plan Sheet. Use light dash line to show the existing utilities and heavy dark line to show the proposed utilities. Distinguish private from public utilities. Remove the dark gray shading.
6. Update the quantities list.
7. Provide 4 Northing/Easting points on the utility plans. Recommend using the 4 property corners.
8. Update the overall plan per comments on the utility plan.
9. What is the low flow during off-season for this pump station? What is the average flow and peak flow for the pump station?
10. Is the flow of 200 gpm the flow for just the proposed bathroom? Is there going to be additional flow from the park discharging into the existing sanitary sewer system? Is there going to be another pump station for the future bathroom?
11. DPU is concern with the generation of sulfides and potential for odors. Provide the pump station operating parameters and information on the potential H2S generation during low flows.

Utility Plan (C-401-C-405):

12. Not all waterlines have to be DI.

13. 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 adjust the water line per detail D-485.
14. Label all the water appurtenances such as the bends, valve, and tee.
15. Proposed water main must be 10 feet from the storm sewer. It should cross the storm sewer close to 90 degrees instead of parallel or in the same trench with the storm sewer. See sheet (C-402&C-404).
16. Label the pipe material of the of the proposed and existing waterlines and sanitary sewer lines on all utility sheets.
17. Show the 8" valves at the tee. DPU normally required 2 valves at the tee.
18. Reference the distance from the water main to the curb or edge of pavement.
19. Provide station and some kind of reference for the proposed water line shown in the utility plan so it can quickly be identified and match with the waterline profile.
20. Darken the road name, edge of pavement, the limit of the 2 acres reserve area, and the sanitary sewer corridor.

Utility Plan (C-401):

21. Provide a corridor for future sanitary sewer from the 2 acres reserve area to the corridor already shown north of it.
22. Label the water fountain.

Utility Plan (C-402):

23. Provide the water meter for the water fountains near the dog park.
24. Eliminate the two reducers. Use corporation stop and copper pipe to the meter. Run the 1.5" service line from the meter to the water fountains.
25. A fire hydrant or a flushing hydrant is required at the end of the water main to flush out the water main.
26. Remove the gray background.
27. Show the existing utilities and their appurtenances clearly. The existing force main and gravity sewer are not visible. Many of the sewer labeling is pointing to nothing. Use a different symbol for meter so it does not look like the fire hydrant.

Utility Plan (C-403):

28. Provide minimum finish floor elevation for the bathroom.
29. Proposed sanitary sewer come out from the bathroom should be 6" @ 2.08% instead of 4" @ 1%.
30. Proposed gravity sewer from the manhole is too close to the storm sewer manhole and the force main. Relocate the pump station to an area south of the bathroom so that the gravity sewer will come into the pump station from the north side of the pump station and out to the force main on the south side.
31. Provide an additional benchmark near the proposed bathroom.
32. Recommend relocating the water line to come into the bathroom on the west side instead of east side of the bathroom to avoid being so close to the storm sewer.
33. Provide the meter for the bathroom.
34. Eliminate the two reducers. Use corporation stop and copper pipe to the meter. Run the service line from the meter to the bathroom.
35. Relocate the fire hydrant to be north of the meter.

Utility Plan (C-404):

36. Extend the proposed water line to Bent Pine Road.

37. The force main is too close to the storm sewer. It should not be running under the 36" storm sewer in the same trench.

Utility Plan (C-405):

38. Reroute the force main toward the existing manhole on site at the entrance to the parking south of the existing soccer field instead of going toward the manhole at the intersection of Greenwood Road and Forest Trace Way. The existing 8-inch sanitary sewer in Forest Trace Way and along I-295 would have to be upsized if you decided to connect to the current location as shown on the plan. All the existing sanitary sewer manholes in Forest Trace Way between Greenwood and I-295 would need to be lined with acid resistant material to protect against sulfide attack.
39. DPU will provide the letter accepting the flow from the park for the CTC required by DEQ once we receive a utility plan showing the routing of the force main connecting to the existing sewer with adequate capacity.
40. Proposed force main can not be connect directly to the manhole. It should be gravity into the manhole. The force main must have a trap before increase and connect to the clean-out and gravity into the manhole. See force main termination detail.
41. Revise the 6" lateral slope to the manhole to be 2.08% instead of 1%.
42. Show the surveyed elevations as well as the GIS elevations of the existing manhole.

Landscaping Plan (C500- C506):

43. Trees are not allowed on top of water or sewer. Remove the trees from the proposed utilities. Tree plantings must be 10' from all utilities.

Storm Profile (C-700):

44. Update the water and sewer crossings on the storm profile per the comments made. Resolve any conflict between the utilities.

Water Line Profiles (C-707):

45. Change the vertical scale to engineering scale like the horizontal scale.
46. Label the tee as 8"x8" tee or 8"x6" tee instead of 90° tee.
47. Label the degree of the bend instead calling everything as elbow.
48. Label the amount of clearance between the pipes if less than 18".
49. Revise the pipe run-46 between 4+00 and 4+50 to fill in the gap between the 2 elbows.
50. Clarify what are these pipe runs represented?
51. Maintain 3.5' of cover over the water line. Clarify why some of them are 6 feet deep.
52. Show the proposed grade in the fire hydrant connection profiles.
53. Review the location of the 3 elbows from station 13+00 to 15+50 shown in pipe run 46 profile. There is no elbows shown at these locations in the utility plan.
54. Label to use plug instead cap at the end of the water line to match with the utility plan.
55. Label to remove existing plug and connect the proposed water main to the existing water main at station 0+00 of pipe run (18)-47 profile.
56. Update the water main profile per comments made on the utility plan.

Sanitary Sewer Profiles (C-708):

57. Label the amount of clearance between the pipes if less than 18".
58. Update the sanitary sewer profile per comments made on the utility plan.
59. Change the vertical scale to engineering scale like the horizontal scale.
60. Review the invert in and invert out shown in the profile. Invert in must be higher than the invert out.

Storm & Utility & Details (C-801-C-803)

61. Delete D-125, D-145, D-170, and D-100 since it does not apply to this project.

Pumpstation Details (C-804):

62. Delete the inside force main connection detail.
63. Add the force main termination detail.
64. Provide elevations in the pump station and valve pits details.

DPU Standard Forms & Notes (C-805 – C-806):

65. Add the title of the plans to the first page of the Engineering Report. Check “no” for the sewer design form since they are not required for this project. Remove the 2nd page of the Engineering Report from the plans and provide a hard copy.
66. Provide a hard copy of the NOI from.
67. Update the project summary report. Provide the minimum pressure at maximum day plus fire flow.
68. Fill out the top part of the Domestic Meter Sizing Form.
69. Update the Fire Flow Estimate Form. The Construction Class 2 (Joisted Masonry) would have a coefficient of 1.0 instead of 0.8. Clarify how did you calculated the total floor area. Why is it different from the ground floor area if it's a one story? It's also did not match with item 12a in the site data.

If you have any further 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: Steve Hart, County of Henrico

bc: Ralph Claytor
Marchelle Sossong
Daniel Ivy