

March 20, 2019

Zackary A. Wilkins, P.E.  
Townes Site Engineering  
9850 Lori Road, Suite 201  
Chesterfield, VA 23832

RE: Projects Isaac  
5900 Elko Road  
File No. 5067 POD2019-00105

Dear Mr. Wilkins:

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 March 7, 2019.

DPU recommends approval of these plans by the Planning Commission.

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 complete when submitted, an Agreement will be forwarded to the Owner for signature within 21 days.
2. Provide the utility material quantities on the construction plans.
3. The DPU Monitoring and Compliance Division is currently reviewing the NOI form information. Any comments requiring further action will be forwarded to you upon receipt by our office.
4. Will any waste from cooling system be discharge to sanitary sewer? Will any drain from cooling be discharge to sanitary sewer? Please explain how cooling systems will be operating.
5. Provide an Overall Utility Plan to show the full extent of the proposed project.

**Sheet C-01 (Cover Sheet):**

6. Add "Utility" to sheets title on C-16 to C-19 on the Sheet Index. Also, update the Sheet Index accordance with sheet titles.

**Sheet C-16 (Portugee Road Improvement):**

7. 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."
8. Do not install the proposed curb and gutter at the entrances to the site on top of the existing 30" sanitary sewer force main.
9. Clearly show the location of the 30" sanitary sewer force main in Portugee Rd. Be sure to label the typical distance from the force main to the edge of the pavement.
10. Label existing air release valve on the 30" force main.
11. Label the size and material of the proposed sanitary sewer main.
12. Label sanitary sewer as "Private" for the run of sewer between MH-B3 to MH-5.
13. Show the existing water valves and fire hydrants on Portugee Road.
14. If an encasement pipe will be installed on Portugee Road, use an 18" pipe versus a 12" casing pipe in accordance with DPU Standards.
15. Remove the limits of disturbance around the sanitary sewer main along Portugee Road.
16. Revise the width of utility easement around proposed sanitary sewer to a 30' wide utility easement between MH-B3 to MH-5.
17. The existing sanitary sewer crossing Portugee Road is not in the center of the easement. Review and coordinate the location of the utilities and easements with the approved White Oak Tech Park Sewer Relocation plan.
18. Provide the top and invert information for the existing manholes on the White Oak Tech Park Sewer Relocation plan.
19. Will a 30"x8" tee be used to make the water main connections? DPU suggests using a 30" x 8" tapping sleeve & valve to avoid a water main shut down.
20. Provide sanitary sewer internal angles at each manhole. See all utility plan sheets.

**Sheet C-17 (Site and Utility Layout):**

21. Provide a minimum 10' separation between the water main and storm pipes. If 10' cannot be obtained, change the water pipe material to ductile iron. See all utility plan sheets.
22. Show the proposed sanitary sewer lateral to the buildings. Be sure to reference the size, material, and slope of the laterals. See all utility plan sheets.
23. Show the location of the waterline adjustments by providing a bubble around the adjustment area on the utility plan.
24. A monitoring manhole is required for each building.
25. Change the 8" tee callouts on the utility plan sheets to "8"x8" tee".
26. Label the material type of the proposed 8" water main. See all utility plan sheets.
27. Remove the word "Public" from the water main callouts. See all utility plan sheets.



28. The manholes symbols are shown to be 10' wide. Modify the manhole symbols to match the existing manholes.
29. Why are four (4) sprinkler systems proposed for each building?
30. Provide a separate connection to the water main to install the proposed dedicated fire hydrants. See all utility plan sheets.
31. Install the dedicated fire hydrant within 50' of the siamese connection. See all utility plan sheets.
32. Provide isolation valves prior to the system boundary valves on the fire service lines near the tees.
33. Label the size of the boundary valves. See all utility plan sheets.
34. Label the size and material of the proposed fire service lines. See all utility plan sheets.
35. Provide an additional 5' of utility easement for the back area of the fire hydrants.
36. Reference the sheet location of the backflow preventer details in the backflow preventer callouts. See all utility plan sheets.
37. Fire hydrants should be at least 50' from the building or structure. If 50' cannot be obtained, provide an exception request letter to DPU Standards.
38. Provide the material and size of the proposed domestic service lines.
39. Provide a minimum of 10' separation between the water main and buildings/structures.
40. What are the structures attached to both side of buildings? Label on the plan accordingly.
41. Provide a minimum of 5' separation between the water meter and backflow preventer.
42. Install the water valves on the fire hydrant leads near the proposed tees.
43. Provide valves every 1,000 feet of the water main in accordance with DPU Standards.
44. Since the security fence will be located over top of the water main, ensure fence posts are located outside of the utility easement.
45. Several symbols overlap stations and callouts. Review and revise as necessary.
46. DPU recommend relocating sanitary sewer main at least 10' away from any structures.
47. Darken the match line callouts on the utility plan sheet so information can be seen when the plan is scanned for archive.
48. Water main stations are removed in certain areas on the utility plan. Review and revise as necessary.
49. Callout all bends shown on the water main.
50. Relocate the dumpster pad area from over the water main and utility easement.
51. There is a callout that reference the water line to be installed 3' and 4' from the face of curb near STA 11+75. Review and revise as necessary.

**Sheet C-18 (Site and Utility Layout):**

52. Relocate the storm sewer crossing from over top of the water main to behind the curb by adding a manhole. This will eliminate any crossing conflicts with the storm and water main pipe.
53. Provide information and/or a detail of the proposed controlled access gate.

**Sheet C-29 to C-33 (Profiles):**

54. Label the vertical clearances between the sanitary sewer and storm pipes.
55. Show and label all water and sanitary sewer pipe crossings on the storm profiles.
56. Provide a profile for the run of sewer between MH-2 and MH-9.

57. Casing pipes are shown on the utility plan at the 30" water main connections but not shown on water main profiles.

**Sheet C-29 (Profiles):**

58. The minimum slope for the 12" pipe is 0.24%. Review and revise.  
59. The sanitary sewer stationing should begin at the most downstream manhole and increase upstream with equalities at each junction manhole. Minimize stationing changes by using the longest chain of sanitary sewer line run in the same stationing sequence.  
60. Show the drop connection to the bench of MH-2 per the drop connection detail.  
61. Is there a reason why the sewer cannot be raised to eliminate the drop connection at MH-2?  
62. Be sure to match crown at MH 2.  
63. There are three (3) connections at MH-2 but only two (2) are labeled. Provide all three inverts.  
64. Provide invert in and out information for MH-010618.

**Sheet C-30 (Profiles):**

65. A back tap is shown on the profile but not reference or shown on the utility plan sheet.  
66. Ductile iron pipe is called out between STA 9+00 and 9+80 but the pipe is not shown as ductile iron on the profile view.  
67. Why is the grading being cut so much on the waterline A profile?  
68. Provide the vertical separation between the 30" force main and 8" water main.

**Sheet C-31 (Profiles):**

69. Why is one joint of pipe called out as PVC between DI pipe on Water Line B profile between STA 47+50 and 47+75? Why not make the whole length as ductile iron?

**Sheet C-36 (Utility Details):**

70. Add necessary details per comments.

**Sheet C-37 (DPU Engineering Forms):**

71. Will a cooling tower be installed? If so, redo the NOI to inform DPU what will be discharging into the sanitary sewer.  
72. Provide hard copy of NOI and the Engineering Report.  
73. The Maximum Construction factor for a Class 3 type of Construction is 6,000 on the Fire Flow Estimate Form.  
74. What will be the use of the building? Why is the Type of Occupancy classified as a C-2?

If you have any questions concerning the above noted comments or the plans, please contact me at 501- 4508 or John Yi at 501- 4511.

Sincerely,

A handwritten signature in black ink, appearing to read 'AT' or 'AJT' in a stylized cursive script.

Alice Thompson  
Utility Engineer

cc: Anthony Romanello, Economic Development Authority of Henrico County Virginia  
Kevin Snead, SWO Logistics, LLC

bc: Ralph Claytor  
Carmel Duverne  
Tony Greulich, Planning

ANT/tt