

October 30, 2023

Sean Dougherty, PE
Kimley-Horn
2035 Maywill Street, Suite 200
Richmond, VA 23103

**RE: Arcadia Section 1
2031 Towhee
POD2023-00400**

Dear Mr. Dougherty:

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 10, 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. An Information Sheet for Preparation of Agreements for Water and/or Sewer Service is required but has not yet been submitted. The Information Sheet allows the Department of Public Utilities to prepare the Water and Sewer Agreements that must then be executed by the Owner and the County prior to approval of the utility plans or building permits. It is recommended that the Information Sheet be submitted as soon as possible to avoid delays to approval of plans. Preparation of the agreements may take up to 15 days after receipt of the Information sheet. Execution by the County after execution by the Owner may take up to 10 days. Conflicts between the completed Information Sheet and the plans may generate additional review comments.
2. Check "No" on the Engineering Report for the Information Sheet submitted and for NOI. The Information Sheet was not turned in with the plans and the NOI is not required for this project.
3. Update the Project Summary Report per comments made on the utility plans.
4. A separate Overall Water and Sewer Plan will be required before the approval of any of the Arcadia projects. The Overall Water and Sewer Plan needs to show the water and sewer system layout for the whole development. It needs to include the water hydraulic model and the sanitary sewer analysis.

Cover Sheet:

5. Add "Utility Plan" to the plan title.
6. Provide an original signature and date on the Engineer's Seal.
7. No Information has been provided under building information.

Existing Conditions & Demolition Plan CV-101:

8. Update the existing utilities on the plans per changes to the Arcadia Willson Rd. Improvements plan. Show location of all existing drain fields.
9. Show all existing drainfields and clear specify if the drainfields are to be abandoned per VDH requirements.
10. Provide a note to see plans titles, "Arcadia – Willson Rd. Improvements, DWG File No.: _____ - _____, by Kimley-Horn and New Markey Offsite Sanitary Sewer Extension, DWG File No." _____ - _____, by Kimley-Horn" for information pertaining to all existing utilities.

Road Profiles CS-201 – CS-209:

11. Sanitary sewer stationing should be provided on the profile. The 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. Road stationing is not adequate to provide stationing for sanitary sewer and should be located away from the sanitary sewer stationing to provide clarity. Additional comments may be generated on the next submittal.
12. Fix all horizontal and vertical crossing issues between the water lines, sewer lines, and storm sewers.
13. Add the type of manhole cover that will be used for each manhole. See all profiles as well.
14. Show the drop connections correctly as per detail D-130. Also, drop connections should have a minimum of 2.5' of drop.
15. Be sure to match crowns where the pipe diameter defers.
16. Water lines must maintain 3.5' of cover. Sanitary sewers must maintain 5.5' of cover in pavement and 3.5' of cover in easements.

Overall Utility Plan CU-100:

17. Clearly identify each section on the overall utility plan and include sheet numbers for the match-lines to coordinate with the utility sheets.
18. Add three (3) Northing/Easting points to the overall utility plan.
19. A CTC is required for this development. This is required for areas with more than 40,000 gpd average sewer flow.

Utility Plan CU-101:

20. Provide water line stationing on the utility plan.
21. Label which road are private and public on the utility sheets.
22. Show the location of all the driveways to ensure the driveway does not conflict with proposed utilities.
23. Callout bearings and angles on all sewer manholes.
24. Show the direction of flow arrows on the proposed and existing sanitary sewer.
25. Provide benchmarks within 500' of where sanitary sewer is installed.
26. Include the following gravity sewer service certification note, "*The Engineer shall certify that all proposed sites will be served by gravity with sewer service connections installed at a slope of 1/4 inch per 1 foot except where shown otherwise on the plans. The depth of service connections shall be in accordance with Paragraph 13.3.7 D.*"

27. Utility easements for the offsite sanitary sewer must be recorded before the utility plans are approved.
28. MH-20 needs to be relocated farther away (approximately 8') from the existing water line.
29. The sanitary sewer should be a minimum of 8' from the storm pipe.
30. The storm sewer drain (located east of MH-118) is too close to the sanitary sewer.
31. Label to remove the existing plug after the fire hydrant near station 29+60.
32. Water lines need to have a minimum of 4' from the face of curb.
33. Fire hydrants cannot be installed on top of storm sewers. Review the fire hydrant near station STA 25+25 and relocate the fire hydrant 8' from the storm sewer.
34. The water line is too close to the storm sewer. Provide an 8' horizontal separation from the edge of the water line pipe to the edge of storm sewer pipe.
35. No water meters and sewer service are referenced nor shown on the plan. Be advised this may generate additional comments in the next submittal.
36. Be advised, fire or flushing hydrants are required at the end of the water line for adequate flushing of the main.
37. The sizes of the existing waterline stubs do not coordinate with what is shown on the Willson Rd Improvement project. Review and coordinate the two projects with each other.
38. Remove the fire hydrant southwest of Lot 1. There is a fire hydrant near the entrance to be installed with the Willson Rd Improvement project.
39. Label the distance from the water line to either the face or back of curb.
40. Ductile iron pipe is required on waterlines 12" or larger.
41. Are there any water line adjustments in the water line? If so, show the location of the adjustments by providing a bubble or circle around the area of adjustment. See all utility sheets.
42. Relocate the sewer main in the center of the road, where possible. See all utility sheets.
43. Include the road names on all the utility plan sheets.

Utility Plan CU-102:

44. MH-131 invert-in has the incorrect size. It should read 10" PVC.
45. Label to remove the 8" plug at the connection to the existing 8" water line in Secondary Blvd.
46. Check the water line near station STA 11+50. Water lines need to be a minimum of 4' from the back of curb.
47. Relocate the fire hydrant located southwest of Lot 16 to the intersection of Road A and Secondary Blvd.
48. Relocate the fire hydrant located northeast of Lot 36 to the intersection of Secondary Blvd and Willson rd.

Utility Plan CU-103:

49. Reference the width of the utility easements around the sanitary sewer.
50. Manholes should be located 8' from storm sewer pipes. Review MH-126 and revise as necessary.

51. Relocate the fire hydrant near STA 29+75. It's too close to the storm sewer. Change the callout on the tee of this fire hydrant to be 8"x6".
52. Relocate the valve on the southern side of the 12" x 8" cross to the northern side in Primary Blvd.
53. A valve is not needed on the eastern side of the 8" x 6" tee at STA 29+76.
54. Change the size of the fire hydrant tee from 6" x 8" tee to 8" x 6" tee at STA 29+76.
55. Will a radius (R477.5) work for a DI pipe or will a bend be necessary to deflect the water line.
56. The water line is too close to the storm sewer in Primary Blvd. Provide 8' horizontal separation between the two utilities.

Utility Plan CU-104:

57. Be advised, main line valves are not required at each fire hydrant connection. The valves should be installed on the main line tees per D-480.
58. Relocate the hydrant at STA 26+68 to the intersection of Road C and Secondary Blvd.
59. Revise the scale bar to make it an even 30 (without the decimal points).
60. Relocate the hydrant at STA 29+ 76 to the intersection of primary Blvd and Road B.
61. Use a tee to connect the flushing/fire hydrant to the water line at the end of the 8" water line in the Road F. See D-495 and/or D-500.
62. The townhomes are using condominium style laterals; therefore, provide a note indicate HOA will be responsible for the sanitary sewer laterals from the main to building for the townhome units. Also, DPU will need to review the covenants before the subdivision plat approval.
63. A minimum of 90° angle is required at MH-110 between the up and downstream manhole.
64. All water line must terminate within the pavement. See all utility sheets as well.

Utility Plan CU-105:

65. Additional fire hydrants are required west of Primary Blvd to meet fire protection requirements.
66. Provide a utility easement around all public water and sewer mains/appurtenances.

Utility Plan CU-106:

67. Reference all valves on the water line.
68. The fire hydrant near station STA 12+60 needs to be located inside of the utility easement.
69. Relocate the fire hydrant in Road D on the opposite side of the road.
70. Install a fire hydrant at the end of the water mains for adequate flushing of the main.

Offsite Sanitary Sewer Plan and Profile CU-201:

71. Check the scale for the sanitary sewer. The measurements do not match the scale.
72. Manholes must be installed 12" above final grade when installed in grass areas.
73. Reference the Manhole GISID, station number, rim, and invert information for all existing manholes.

74. A 30" diameter encasement pipe is required for the proposed sanitary sewer bore. Also, provide a note indicate the ends of the pipes will be cement grouted.
75. Provide details for the encasement pipe in the utility details page.
76. Show all utility crossings on the profiles. See all profiles.
77. Label the length and thickness of the encasement pipe.
78. Label the size and material of the existing sanitary sewer on the plan and profile sheet.

Off-site Sanitary Sewer Plan and Profile CU-202:

79. The sanitary sewer profile does not have a vertical scale. Additional comments may be generated on the next submittal.

Offsite Sanitary Sewer Plan and Profile CU-203:

80. Relocate the manhole 10' away from the water line.

Utility Details CU-502:

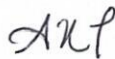
81. Remove the following details: D-180, D-190, D-476, D-510, D-520, and D-525. Remove all details that do not pertain to this project.
82. Add the VDOT encasement pipe detail. Be sure to remove the leak detector from the detail.

Landscape and Lighting Plan:

83. Show all the proposed utility easements on the landscape plan.
84. Trees and shrubs should not be located inside of the utility easements.
85. Show the proposed sanitary sewer all the way to New Market Rd.
86. Light poles should be 10' away from utilities when located in the right of way. They should not be inside of the utility easements.
87. Landscaping and lighting cannot be approved until final utility layout has been approved.

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4508 or Nolan Ekers 501-4992.

Sincerely,



Alice Thompson
Utilities Engineer

cc: Dean Vincent, East West Communities

bc: Ralph Claytor
Marchelle Sossong
Daniel Ivy
Christina Goggin, Planning

ANT/vr