

August 8, 2023

Stig Owens, PE
Sekiv Solutions
14207 Pond Chase Place
Midlothian, VA 23113

RE: Meadow Springs Run Subdivision
LOCATION: Chartwood Drive and Meadow Rd
POD NO. 2023-00259

Dear Mr. Owens:

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 July 19, 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. 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 or prior to subdivision plat approval. An Information Sheet for the Preparation of Utility Agreements has been submitted and is being reviewed. If the Information Sheet is incomplete, we will send you comments for correction and resubmittal. If the Information Sheet is complete, an Agreement will be forwarded to the Owner for signature within 21 days.
2. Provide a topographic sewer shed map that shows the entire drainage area involved, locations of existing and proposed sewer lines, points of entry of flows, including flows received from other areas. Drainage area map shall be keyed to a computation sheet (form F-4) that summarizes the acreage and flows served by this proposed sewer. Parcel owner and address information and necessary easement corridors shall be included on the sewer-shed map too.
3. If average sewer flows exceed 40,000 gpd when offsite acreage is factored into the total design flow, utility plans shall be submitted to DEQ for acceptance and a certificate to construct (CTC) obtained from DEQ prior to DPU approval.
4. Revise Project Summary Report in accordance with all subsequent plan review comments and per the following:
 - Provide minimum pressures within hydraulic evaluation table.
 - Revise peak hour demand to be 2.7 times the average demand and the maximum day demand to be 1.75 times the average demand.
5. Revise Engineering Report in accordance with all subsequent plan review comments and per the following:
 - Revise average sewer flow to match the design basis and number of lots.
 - Include offsite sewer flow from adjacent parcels within the sewer shed based on latest land use projections.
 - Provide peak flow and peak factor based on chart relationship shown on form F-2.
 - Provide downstream manhole number (GIS ID).
 - Revise average and peak hour demands for water to match what is proposed.
 - Update fire flow and resultant lowest pressure per model.

C-109 thru C-111(Utility Plan)

6. Show location of 20" DIP force main that runs parallel to the east side of the 18" trunk sewer. Show crossing of this force main within proposed sanitary sewer profile and provide field verified depth information on what available separation there is. **Actual depth of 20" force main shall be field determined during design stage to confirm available clearance and to evaluate options if there is a conflict. Please provide a report from a utility location firm on this assessment.**
7. Provide benchmarks consistent with DPU Spec. 5.5 L.
8. 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."
9. Provide water and sewer material quantities.
10. Add the following 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 13.3.7D."
11. Add the following note, "Where possible in unpaved areas, manhole castings shall be approximately 12 inches above final grade using appropriate covers (i.e. - vandalproof, watertight)."
12. Specify zinc coated DIP for all water main where DIP is called for in order to address any potential for corrosive soil conditions.
13. Reference county water and sewer book sheets in lower right corner for all utility plan sheets.
14. Provide county monumentation used for site survey and specify on the plan.
15. Provide a minimum of 3 GIS northing/easting reference points on each utility plan sheet.
16. Install 16" DI water main within Meadow Road in accordance with DPU water master plan. Available oversize credits toward connection fees will be determined in accordance with County Code.
17. Show existing recorded utility easement for 18" trunk sewer that this project is connecting to.
18. Provide utility easements (20 feet minimum) for future sanitary sewer extension to adjacent properties per the sewer shed map study.
19. Provide a GIS ID for the sewer manhole where connection is being made.
20. Provide bearings and deflection angles (or internal angles) for all sanitary sewer.
21. Add a note that the existing 12" abandoned storm pipe is to be removed where within the proposed 20-foot utility easement near manhole 1.
22. Show abandoned 12" CI sewer pipe in this area and clarify whether this is the actual storm pipe that you are referencing above. The same requirement for pipe removal within the utility easement would apply.
23. Coordinate between plan and profile on all lengths of sewer main as there were many discrepancies.
24. On sheet C-110, review matchline sheet designation on the left as this doesn't appear to coincide with sheet C-109.
25. On sheet C-111, review and revise the matchline sheet designation at the top of the sheet which should be C-110.
26. Clarify drafting legibility on existing valves and hydrant within Chartwood Drive.
27. Label within plan view all locations where vertical waterline adjustments are proposed.
28. Adjust underground cable TV lines to be at least 5 feet from proposed waterline within Meadow Road. Are there any fiber optic lines nearby?

29. Provide DPU standard detail references within plan view callouts for water meter and service, sewer lateral house connection, flushing hydrants, and fire hydrants.
30. Place water meters within right of way between curb and sidewalk where possible. Where storm sewer is in conflict, show meter boxes at least 3 feet away and within a standard utility easement per D-510.
31. Provide 1" copper water service lines for all domestic meters per DPU standards.
32. Show driveway locations for all lots and coordinate with water meter boxes as well as tree and light pole locations. Water meter boxes shall be located outside of all driveways.
33. Locate sanitary lateral SIPs at the right of way line where possible. In addition, if SIPs fall within limits of a driveway, label that these SIPs are traffic rated and include a detail for installing a traffic rated SIP. DPU can provide an example if one is needed.
34. Fire hydrants shall be provided in accordance with DPU Standards for this subdivision as follows:
 - Given the multifamily zoning of R-5AC, hydrants shall be spaced to provide no more than 350 feet maximum hoselay around a buildable area. Therefore, 4 more hydrants will be required.
 - Provide a hydrant near the entrance just north of lot 46.
 - Provide a hydrant at the boundary between lots 38 and 39 with at least 5 feet separation from the adjacent water service to lot 38.
 - Provide a hydrant about 8 feet to the west of the drainage inlet at the property boundary between lots 36 and 35.
 - Provide a hydrant just prior to cul-de-sac at end of Meadow Rise Lane by locating it on west side of street and at least 5 feet north of water service to lot 27.
35. Provide 10 feet separation between water main and sewer main near manhole 21 by locating this manhole in center of travel lane on western side of the road.
36. Omit valve on north side of tee at the intersection of Hawk Ridge Road and Meadowrise Lane.
37. Revise drafting of water service for lot 4 to connect to the water main and not the storm sewer.
38. Label waterline bends in both plan and profile.
39. Provide profiles for any sanitary laterals where there is 1.5 feet or less of separation from storm sewers or water mains. Laterals should have at least 1 foot of separation where crossing under storm sewers and water main and at least 6" where crossing above the same.
40. Specify the sanitary lateral size, slope and pipe material that is typical per D-180. DIP laterals will be required where connected to DIP sewer mains or where location within a driveway that requires a traffic rated SIP. This also may be extended to laterals that have very minimal separation under storm sewers or less than 3.5 feet of cover within the road.
41. Provide 6" core hole separation for all laterals connecting to manholes, especially at terminal manholes within cul-de-sacs. If the laterals are all 4", then there needs to be at least 33.4 degrees centerline to centerline between the laterals. Also, maintain 10' distance from adjacent property boundary between lots on the frontage for laterals where these laterals are adjusted.
42. Provide 5 feet of separation between the flushing hydrant tee and water service connection for lot 34.

C-201(Road Profiles)

43. For all sanitary sewer profiles, provide separate sewer 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 sewerline runs in the same stationing sequence. Locate sewer stationing away from road stationing to provide clarity.

44. Provide 0.10-foot invert elevation drop across all manholes for sewer main. Sanitary laterals are to be shown matching crowns with outgoing sewer main pipe.
45. Provide 1.5-foot separation from the bottom of storm sewer to the top of water main at all locations. Show a vertical waterline adjustment for water main where a significant deflection would be otherwise required.
46. Label the title sheet as Road and Utility profiles.
47. Enlarge the hexagon symbols for each sanitary sewer manhole so that the manhole number is fully visible on every profile sheet.
48. Provide DIP for sewer main where there is less than 5.5 feet of cover over the main. This shall cover the entire run of pipe between manholes.
49. Information for labeling manhole 28 has been cut off.
50. Provide a stationing equality at manholes 15 and 23.
51. Lower slope on sewer from manhole 23 on upstream to the manhole where future sewer would tie into so that available sewer grade is maximized.
52. Lower sewer slope from manholes 28 to 29 so that there is at least 5.5 feet of cover over sewer main and laterals will have at least 1 foot of separation below water main where crossing.
53. Label all manholes outside of pavement as having vandalproof/watertight frame and cover per D-160.

C-202(Storm Sewer Profiles)

54. Show sanitary lateral and water main crossings in all profiles.

C-203 thru C-204(Utility Profiles)

55. Provide a profile of the waterline extension within Chartwood Drive. A vertical waterline adjustment may be needed for the existing storm sewer crossing.
56. Provide GIS ID for manhole EX2 where sewer main tie in will occur.
57. Show crossing of 20" force main and indicate what the available clearance will be.
58. Provide matching crowns between 8" and 18" sewer main at manhole EX2.
59. Provide 4 feet minimum cover over 12" and 16" water main to provide adequate depth for valves.

C-511(Water Model)

60. Revise water model calculations to show 1000 gpm for fire flow as required by ISO guidelines for buildings 11 to 20 feet apart. This is also the typical operational flow that the Fire Division will anticipate pulling from a hydrant at a minimum.

L-101 thru L-102(Landscape)

61. Tree plantings must be located outside of all utility easements or at least 10 feet away from utilities within right of ways. All other proposed landscaping must not obscure visibility or hinder maintenance of above grade or at grade utilities. Any non-tree landscaping within utility easements requires the following statement on the landscaping plan: "The owner is responsible for replacement of any planting (i.e., shrubs, etc.) damaged or removed by DPU, or it's agent, as required for maintenance of county owned water and/or sewer facilities."

LI-101(Lighting)

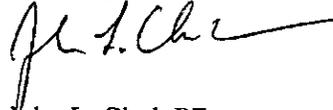
62. All light poles shall be located outside of all utility easements or at least 10 feet away from utilities within right of ways.

Stig Owens, PE
August 8, 2023
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Meadow Spring Run Subdivision

If you have any questions concerning the above noted comments or the plans, please contact me at 501-4501.

Sincerely,

A handwritten signature in black ink, appearing to read "John L. Clark". The signature is fluid and cursive, with a long horizontal stroke extending to the right.

John L. Clark PE
Utilities Engineer

cc: Kevin Jones, Meadow Developments LLC

bc: Marchelle Sossong
Daniel Ivy
Christina Goggin, Planning

JLC/djm