

September 7, 2021

Bradley Schurman, P.E.
Balzer & Associates, Inc.
15871 City View Dr., Suite 200
Midlothian, VA23113

**RE: Landmark Section 1
 310 Clayman Road
 File No. 5427 POD2021-00333**

Dear Mr. Schurman:

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 August 6, 2021 and received by DPU on August 16, 2021.

DPU recommends approval of these plans by the Planning Commission.

Please address the attached 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 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 is complete when submitted, an Agreement will be forwarded to the Owner for signature within 21 days.
2. The Overall Water and Sewer Utility Plan shall be approved prior to the approval of the first section of the Landmark Development. In addition, **DPU will require that the Overall Utility plan be submitted prior to any further review of sections to this development** to be able to adequately review plans for coordination and adequacy of facilities. Please note that we have not received a resubmittal in response to our first review comments on June 2, 2021.
3. A certificate to construct (CTC) from DEQ will be required for the sanitary sewer in this project if average design flows exceed 40,000 gpd.
4. Include public water and sewer material quantities.
5. A sewer shed map and sewer pipe analysis is required to be submitted as part of the Overall Utility Plan for determining sewer design and alignment
6. Revise the Project Summary Report (Form F-10) per the following and resubmit:
 - Show the correct ISO calculated fire flow and include the maximum day demand instead of the peak hour demand for the maximum day + fire flow.
 - Revise the number of fire hydrants to match the utility plan and in accordance with the utility comments.
 - Revise pipe quantities to match the plans and utility plan comments.
7. Revise the Engineering Report form as follows:
 - Correctly label project title on sheet 1.
 - Include offsite sewer flow within the sanitary sewer design calculations.
 - Revise the design fire flow, GPM based on the ISO fire flow calculations.

- Revise the total design peak flow, GPM for the water system design to use the maximum day demand instead of the peak hour flow.
- Revise lowest residual pressure in system based on revised hydraulic model. This value must reflect the modeled portion of system installed to just serve section 1.

Sheet 3 (Overall Plan):

8. Show water and sewer utilities on this sheet or provide a separate overall master utility sheet. Update proposed section numbers for this development to reflect necessary order of development and match the overall water and sewer plan.

Sheets 4, 4.1, and 5 (Layout & Utility Plan):

9. Waterline within Dry Bridge Road and Turtle Parkway shall be 12" given the long dead-end run required to serve the next sections along this road and the need for service reliability and adequate pressure within the overall development should there be a break within Dry Bridge Road or Old Memorial Drive water mains.
10. Show and label where the waterline and sewer pipe will be terminated within section 1.
11. Sewer main size must be 16" for DIP from manholes E13 up to 4. Other sewer line sizes shall be confirmed in accordance with the overall sewer utility plan requirements and calculations.
12. Relocate sanitary laterals for blocks D, E and F to the 8" main within Orange Blossom Run instead of the deeper more critical 16" trunk sewer main.
13. Provide an adequate number of fire hydrants to meet DPU Standards in regard to location and to provide 350 feet maximum hose lay to all buildable areas and meet ISO required fire flow hydrant requirements. Consequently, locate hydrants as follows:
 - Dry Bridge Road entrances to Turtle Parkway and Orange Blossom Lane at the point of tangent in curb returns.
 - Southern side of Alley #1 entrance to Fiddle Leaf Drive.
 - Western side of Orange Blossom Run entrance to Turtle Parkway.
 - Adjust hydrant location near unit 81 to be at the curb point at intersection of Orange Blossom Run and Orange Blossom Lane.
14. Provide 5' of separation between water services.
15. Will there be irrigation meter services required for landscaping? Show in accordance with DPU Standard details.
16. Provide water service for lot 97.
17. Provide 5' of separation between the water service for lot 98 and the adjacent storm inlet.
18. To improve clarity, provide the following:
 - Darken and the text for the utility callouts. Provide 0.1" text size.
 - Darken the line for the proposed sewer mains.
 - Resolve overlapping notes in several locations.
19. Provide 5' x 16' of utility easement for all proposed fire hydrants outside of right of ways.
20. Provide a tee instead of the 90-degree bend for the waterline at the intersection of Orange Blossom Lane and Dry Bridge Road. Include a valve on south side of tee and extend 12" waterline past the entrance.
21. Remove misplaced callout note for sewer lateral located over lots 72 and 73. Provide a callout note for dual sewer laterals per DPU D-190 at several locations on the plan sheets.
22. Locate the proposed cleanouts outside of the sidewalk for block C.
23. Resolve the conflict between the cleanouts for block B and the storm pipe crossing.

24. Provide a typical note for the distance from the water line to the face of the standard curb or back of rolled face curb. This distance is to be at least 4 feet for standard curb.
25. Provide 5' of separation between the fire hydrant tee across from block B and adjacent water service for lot 6 of block B.
26. Show existing manhole 13 and upstream sewer main to manhole 1 on utility plan sheet 4.1. Clearly show manhole labels for both manholes.
27. Clearly show and label the easement boundary for the proposed sewer main between manhole 2 and manhole 4.
28. Relocate water main per attached conceptual sketch within the intersection of Fiddle Leaf Drive and Turtle Parkway to prevent closure of traffic Circle area.
29. Provide a note on plans stating, "HOA will own and maintain all sanitary sewer laterals from the main to the building". Engineer shall make sure that the same statement is made on the approved plat and in the HOA covenants.
30. Provide 5-6 feet O.D. to O.D. horizontally between water main and storm piping structures.
31. Add the following note, "Where possible in unpaved areas, manhole castings shall be approximately 12 inches above final grade using appropriate covers (i.e. – vandal proof, watertight)."
32. Reference county monumentation used for site survey.
33. Provide exception request for fire hydrant less than 50' from proposed building. Exception request is to be addressed to the DPU Director and must provide justification for the request.
34. 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."
35. Provide 3 minimum Northing/ Easting points for GIS on utility plan view sheet.
36. Provide benchmarks consistent with DPU Spec. 5.5 L. (Add note for contractor reestablishing benchmarks if temporary and can be disturbed).
37. Cluster the 8" northern valve with the 8"x8" tee at the intersection of Orange Blossom Run and Orange Blossom Lane and locate the water service connection for lot 87 above this valve.
38. Show north arrow on all utility plan sheets.
39. Provide match lines between all utility sheets.
40. Label Dry Bridge Road on all sheets and adjust label for Orange Blossom Lane to be within the right of way.
41. Relocate floodplain note near Orange Blossom Lane entrance to Dry Bridge Road.
42. Water service line length from main to meter box must not exceed 60 feet since continuous coil length limit is typically 60 feet and DPU doesn't accept couplings on service lines. Therefore, relocate waterline within Orange Blossom Lane to the north side of the road to shorten service line length. Consequently, adjust location of storm sewer to maintain adequate separation between storm sewer and water main of 5-6 feet minimum.
43. For blocks A, B, I, and J, provide an offset between sewer lateral connections of at least 3 feet between tees.
44. Remove large X's from drawing if these are spurious. Otherwise, label as to significance.
45. Coordinate utility easement and meter box locations so that these are within the easement.
46. Adjust utility easement width to provide 5 feet to the north for water service to lot 71.
47. Where water main within Dry Bridge Road is outside of the road, locate it 2 feet off of the pavement edge and outside of roadside ditches.
48. Provide bearings for all sewer mains.
49. Provide at least 90 degrees internal angle for sewer main adjacent to manhole 8.

50. Detail what will be constructed or placed within traffic circle area. Manhole 5 must not be covered up by landscaping or impacted by structures.
51. Sheet 5 is very vague in that nothing is really labeled. Provide the following information and changes:
 - Provide road stationing for entire length that corresponds with what appears to be the utility profile for the waterline within Dry Bridge Road.
 - Eliminate tree drip line for clarity.
 - Label edge of pavement and right of way boundaries.
 - Show ditch boundary and ditch centerline.
 - Label distance from water main to edge of curb face per previous comment.
 - Locate waterline outside of ditch and 2 feet off of edge of pavement where curb and gutter is not in place.
52. Provide hydrants every 500 feet along Dry Bridge Road as well as at the road entrances and high points that need air relief.
53. The following concern the waterline crossing area of Old Williamsburg Road:
 - Water main must cross all the way without a bend in the middle of the road.
 - Will DPW/VDOT allow open cut of this road? If not, provide casing pipe for crossing as well as the standard VDOT detail.
 - Label the symbols and features that are nearby in this intersection. See power pole and square symbol near water main bend.
 - Show valve and hydrant that are near the tie-in point.

Sheet 8 (Erosion and Sediment control):

54. Label this sheet as phase 2.
55. Locate sediment trap ST#A outside of utility easement for sanitary sewer unless the sewer is being installed after this trap is filled in.
56. Coordinate stockpile location and removal with installation sequence for water meter boxes and sewer laterals.

Sheets 11,12,13.1 (Utility Profiles):

57. Sewer main is too deep as shown on most of the profiles. Revise to more typical depths (6-10 feet) and so that deep laterals (>12') are minimized.
58. Show and label on profile any laterals that must be deeper than 12 feet.
59. 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 sewer line runs in the same stationing sequence. Locate sewer stationing away from road stationing to provide clarity.
60. Provide all missing information on sheet 13.1 that is typically required and shown for waterline profiles. Eliminate any spurious road stationing and elevation information.
61. On the waterline profiles, use an elliptical circle symbol for water main tee and a valve symbol (e.g., hourglass type) for 8" valve.
62. Use a standard vertical waterline adjustments per DPU detail D-485 for the waterline that conflicts with the storm pipe to provide 18" of vertical separation between the waterline and the storm pipe unless if it is possible for the waterline to cross over the storm pipe with at least 6" of vertical separation.
63. Show and label where the proposed waterline will be terminated within section 1 in all waterline profiles.
64. Show and label 8" valves near STA 13+00 within Fiddle Leaf Drive.
65. Clearly show the missing callout note near STA 15+00 within Fiddle Leaf Drive.
66. Show symbols of the tee and valve near STA 10+00 within Orange Blossom Lane profile.
67. Show and label the proposed fire hydrant within Orange Blossom Lane.

68. Profile the waterline within Orange Blossom Run profile.
69. Show manhole 11 within Orange Blossom Run profile. Also, show the top of manholes 12 and 14 at finished grade.
70. Clear up label for existing manhole E13 and provide invert information at this manhole within San EX 13-4 profile.
71. Clearly show finished grade for MH 2-MH 9 profile (should be MH11, not MH9).
72. Define the 3 different finished grade lines and identify which one relates to the sewer main.
73. Show manholes 1, 2 and 3 top elevation 1-foot minimum above grade. Reduce manhole 4 top elevation to 1-foot above grade.
74. Label dashed line at right side of upper profile on sheet 11. Is this a section 1 boundary line?
75. Provide missing top and invert elevations for manhole 6 on Fiddle Leaf Drive.
76. Show fire hydrant at station 13+00 on Orange Blossom Lane.
77. For Alley #1 profile, resolve drafting mess on all the road stationing and elevation points.
78. Provide 0.1" text size for all utility callouts on the profiles. Try to be consistent in text size as some text is super large and others are too small.
79. Show invert elevations to reflect matching crowns between dissimilar sized sewer mains entering manholes. Provide the same for laterals entering manholes so that crowns match with the sewer main.

Sheet 23 (Note & Details):

80. Revise ISO fire flow estimate form as follows:
 - Round Ci value up to 1000 gpm and revise NFF value.
 - Certify building separation walls between townhouses shall meet June 2014 Guide for Determination of Needed Fire Flow Chapter 5 Separate Classifications of Buildings.

Sheet 25 (Utility Details):

81. Include the following DPU details and notes on the plans:
 - Sewer connection detail (D-190) for dual laterals
 - Residential water meter detail (D-510)

If you have any questions concerning the above noted comments or the plans, please contact me at 501- 4501 or Ireini Botros at 501- 4512.

Sincerely,

John L. Clark

John L. Clark, P.E.
Utility Engineer

enclosure

cc: Doug Godsey, Godsey Properties

bc: M. Sossong
R. Claytor
I. Botros
Christina Goggin

JLC/vr

