



Review Date: 3-31-23

Application No. PL2022248

Application Type: Engineering Plan Review

Application Name: THE VILLAS OF CHAPEL RIDGE 2ND PLAT, LOTS 43-74 AND TRACTS C-1 AND D-1 -
Street, Stormwater and Master Drainage Plan

Engineering Review

1. Sheet C.201: This sheet has changed since the last submittal, and no longer includes the required lot corner existing and finish elevations. Please review and revise as appropriate. The lot corner elevations are required for the Master Drainage Plan. **The lot corner elevations have been revised accordingly and shown on Sheet C.201.**

2. Overall Comment: The plans have changed considerably from the previous submittal in August 2022. These changes were not discussed in the response to comments letter. For instance, stop-controlled intersections are now non-compliant with ADA-accessibility across the street in terms of cross-slope, and stationing is missing on the plan view. Please evaluate and revise as appropriate. **Street stationing has been turned back on for both streets. ADA see response to Item 4.**

3. Were other revisions made to the plans not specifically discussed in the response to comments letter? **NE Independence Avenue was redesigned for better tie in to Dick Howser Drive which led to some design adjustments on NE Troon Drive. This redesign impacted the ADA ramps and the storm sewer system. A few inlets were lost and a few inlets were added to accommodate the changes.**

4. Sheet C.206: This sheet (i.e., the ADA-accessible ramp details) does not match the profile view of the street construction plans. Please review and revise as appropriate, and ensure the ADA-accessible ramp details reconcile with the profile view of the streets. **All proposed ADA ramps have been redesigned to accommodate the revised street designs.**

5. Please refer to comment #3 in the previous applicant letter. Sidewalk installation notation was missing near Dick Howser Dr. In addition, a shaded pattern was used for all sidewalk in the subdivision, with the exception of the portion near Dick Howser Dr., with notation along common area tracts. Recommend the following: 1) provide a separate symbology for sidewalk to be constructed with these improvements, including common area tracts and unplatted areas, and 2) provide a separate symbology for sidewalk to be installed by the homebuilders. As shown, there is no consistency and questions shall be fielded on what is to be constructed with these improvements. **Hatching with notation has been added to differentiate sidewalks to be built by the developer verse those to be built by home builders, see Sheet C.100.**

6. Please refer to comment #4 in the previous applicant letter. The response to comments states the storm system has been re-designed, and proposed velocities are within allowable range per APWA 5600. I am not seeing any re-design of the pipe slope on the discharge end of storm line 1. It was unchanged in terms of slope (but changed in terms of pipe size), and shown discharging into a trapezoidal channel with a 16.67% slope. Finally, the response to comments on comment #4 states that the velocity is within accepted range specified in APWA 5600. I do not agree with the velocity calculation, as this appears to be steady uniform subcritical flow. It would appear this is supercritical flow, and the velocity will be substantially higher. This will lead to backcutting over time, property damage, and a re-design appears warranted. **Per our conversation, storm line 1 has been extended to the retention basin edge to minimize any future potential erosion issues. The plans and calculations have been updated accordingly.**



7. Please refer to comment #5 in the previous applicant letter. The response to comments states the normal pool elevation of the receiving water body was shown on the plans, but I cannot find where this is specified. The bigger question is why you are proposing to discharge the flow from storm line 1 into a trapezoidal channel with an excessively high slope of 16.67% with high energy and future damage to property by backcutting. Has there been any discussion with the Lakewood Property Owner's Association on the discharge of storm line 1? It would appear this is necessary, since you are proposing to grade on their property. **We have been in discussion with LPOA and we are going to move forward with them once we have a City approved/acceptable solution.**

8. It would appear storm line 1 should be designed to convey the stormwater underground rather than installing an excessively-steep trapezoidal channel with excessive slope. This will require a re-design of the system, and likely extension of storm line 1 onto the adjacent property and extension to the normal pool elevation of the receiving pond. Please review and revise as appropriate. **See response to Item 6.**

9. Off-site easements shall be required for the stormwater improvements shown on the plans. This would include storm line 1 and storm line 6. **Offsite storm water easement exhibits and TCEs have been prepared and are attached.**

10. Storm line 6 is shown discharging from a pipe slope of 6.5% to a v-bottom swale. The velocity calculations for this swale appear to be based on steady uniform subcritical flow rather than supercritical flow. The velocity calculation appears in error, and should be higher than shown. It would appear the storm line should be extended closer to the permanent pool to minimize erosion issues. Please review and evaluate, and revise as appropriate. **Per our conversation, we understand the City's concerns, however we feel the solution proposed and the TRM specified will negate any potential issues. Per our discussion we would like to utilize a swale in this area for multiple reasons.**

11. Please refer to comment #6 in the previous applicant letter. Although there was a slight change in cover, please see previous comments related to the discharge of storm line 1 and a re-design. These comments will have a bearing on this comment. Please revise as appropriate. **The redesign provides for a minimum of two foot of cover over the proposed pipe which will eliminate any potential flotation issues.**

12. Please refer to comment #8 in the previous applicant letter. Although the response to comments states that sideyard swales were called-out on the Master Drainage Plan, there is an indistinct note in the bottom left hand corner with this notation. Recommend a bold note in a prominent location so this is not missed during the plot plan review process. Please revise as appropriate. **The subject note has been scaled up for prominence.**

13. Sheet C.301: This sheet has changed in terms of pipe size for the discharge end of storm line 1. The previous submittal showed a 36 inch HDPE pipe. The latest submittal shows a 30 inch HDPE pipe with no explanation for the change in pipe size. Finally, the pipe immediately upstream of the discharge end of storm line 1 was shown as a 24 inch HDPE, but is now shown as an 18 inch HOPE. Please explain the discrepancy in the plans, and please describe any other changes that were made since the August 2022 submittal. **See response to Item 3 above. The storm sewer was re-evaluated and sections redesigned based on the proposed layout.**

Feel free to contact me should you have any addition questions regarding this project.

Thank You,

Matt Schlicht