



Project: Woodland Oaks 1<sup>st</sup> Plat – Street, Stormwater and Master Drainage Plan  
Application Number: PL2021073  
Application Type: Engineering Plan Review  
Comments Dated: May 25, 2021

### **Engineering Review**

1. Detail 1 and 2 of the ADA-accessible ramp details do not meet the standards discussed in the previous comment letter. We provided examples to utilize in the design, all of which remove the turning space from the gutter area. We are open to other designs as long as they remove the turning space from the gutter. The designs shown in the plans still incorporate a ramp down to a turning space, followed by an unnecessary and undesired climb out of the gutter area. **Revised Bi-directional Ramps for Details 1 and 2. Turning Space is now greater than 4'x4' square for each bi-directional ramp.**
2. Bypass channel shows what appears to be an existing stilling basin just prior to exiting the property (according to the profile view in this area). The proposed improvements appear to show the elimination of this stilling basin. This will lead to increased erosion at the property line. Construction of a stilling basin appears warranted, and it is recommended that a design mirroring the Federal Highway Administration using rip rap to create a depressed area be utilized in the design to provide a stilling basin. **The profile utilizing two foot contours and an exaggerated vertical scale based on the proposed channel centerline make it seem as an appreciable depression exists however no stilling basin exists this can be seen most clearly on the plan view. Velocities and shear stresses have been added to the Bypass Channel plan for each section. As stated on the Bypass Plan Class A vegetative lining is proposed in the channel outside of the rip rap section.**
3. Turf reinforcement mat appears warranted for the bypass swale, and it is called-out in an obscure note that will likely be missed. Recommend a label in the vicinity of the swale to ensure this is not missed during construction. **See response to item 2 above. Riprap revetment and aprons utilize a geotextile however no other blankets nor mats have been called for. Velocities and shear stress values have been added to the Bypass Plan for each cross section along with permissible shear stress for Class A Vegetation. The overall discharge and velocity obtained in the bypass channel have been reduced due to the addition of a detention basin and grading along the bypass channel.**
4. Final restoration including within the erosion and sediment control plan does not appear to show any final restoration. Please see above comment concerning turf reinforcement mat. In addition to the bypass swale, are there other areas where turf reinforcement mat is needed? **See response to item 2 above. Additionally on steeper slopes we have traditionally left the use of erosion control blankets and the like to the Owner/Contractor if required to establish vegetation.**
5. Sheet C.203: What is happening near Blackwell Rd.? The cross-slope is 8.5%, yet the callout shows 1.5% maximum cross-slope for the ADA-accessible route. **The street profile has been revised to accommodate ADA-accessible route.**
6. Detail 3 on Sheet C.205: Road is sloped at 8.5%, followed by an ADA-accessible route at 1.4%, followed by a 16% slope to Blackwell Rd. This is not going to work well, and a redesign is warranted. **ADA-accessible route re-designed.**
7. Sheet C.306: Spot check of several 100 year flow calculations revealed that the 1.25 factor was not applied. This will affect the 100 year HGL calculations within the pipe, and may have a bearing on whether MBOEs are necessary or not. **Calculations and HGLs Updated.**



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8. Underdrains are now labeled as requested in previous comment letter, but no specific detail is called-out other than "see detail". Please specify which detail is to be used. **Pipe Underdrains have been called out specifically on the plans. We have crossed out any details pertaining to edge underdrains or other non-applicable details on the detail sheet. The pipe underdrain configuration is shown in plan view.**

#### **Traffic Review**

1. Horizontal Curve Data missing. **Labeled.**

Please forward all comments or concerns to Matthew Schlicht.