

Date: Tuesday, May 25, 2021

To: ENGINEERING SOLUTIONS
Matt Schlicht, P.E.
50 SE 30TH ST
LEES SUMMIT, MO 64082

From: Gene Williams, P.E.
Senior Staff Engineer

Application Number: PL2021073

Application Type: Engineering Plan Review

Application Name: Woodland Oaks 1st - Street, Stormwater, Master Drainage Plan, and Erosion and Sediment Control

The Development Services Department received plans for this project on May 11, 2021. We have completed our review and offer the following comments listed below.

- See comments below to determine the required revisions and resubmit to the Development Services Department public portal located at devservices.cityofls.net. Digital documents shall follow the electronic plan submittal guides as stated below.
- Revised plans will be reviewed within ten (10) business days of the date received.

Engineering Review - Corrections

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.
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.
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.

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?
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.
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.
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.
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.

Traffic Review

1. Horizontal curve data missing.

In order to calculate the Engineering Plan Review and Inspection Fee, a sealed Engineer's Opinion of Probable Construction Costs shall accompany your final submittal copies. The itemized estimate (material and installation) shall be sufficiently broken down and shall include the following items, as applicable.

- Public infrastructure, both onsite and offsite.
- Private street construction, including parking lots and driveways.
- Sidewalks located within the right-of-way.
- ADA accessible ramps.
- Sanitary sewer manholes and piping between manholes, including private mains.
- Connection of the building sanitary sewer stub to the public main.
- Waterlines larger than 2 inches in diameter, valves, hydrants, and backflow preventer with vault, if outside the building.
- Stormwater piping greater than 6 inches in diameter, structures, and detention / retention facilities - public or private.
- Water quality features installed to meet the 40-hour extended duration detention requirements.
- Grading for detention / retention ponds.
- Grading to establish proper site drainage.
- Utility infrastructure adjustments to finished grade (i.e. manhole lids, water valves, etc.).
- Erosion and sediment control devices required for construction.
- Re-vegetation and other post-construction erosion and sediment control activities.

Electronic Plans for Resubmittal

All Planning application and development engineering plan resubmittals shall include an electronic copy of the documents as well as the required number of paper copies.

Electronic copies shall be provided in the following formats

- Plats – All plats shall be provided in multi-page Portable Document Format (PDF).
- Engineered Civil Plans – All engineered civil plans shall be provided in multi-page Portable Document Format (PDF).
- Studies – Studies, such as stormwater and traffic, shall be provided in Portable Document Format (PDF).

Please contact me if you have any questions or comments.

Sincerely,

/s/ Gene Williams electronically signed May 25, 2021

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cc: Development Engineering Project File