
DEVELOPMENT SERVICES

Date: Friday, November 19, 2021

To: SCHLAGEL & ASSOCIATES
14920 W 107TH ST
LENEXA, KS 66215

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

Application Number: PL2021434

Application Type: Engineering Plan Review

Application Name: Manor at Bailey Farm 1st Plat - Streets, Stormwater, and Master Drainage Plan

The Development Services Department received plans for this project on November 05, 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

1. Are additional phases to the east and west of Bailey Farm Pkwy. being planned in the near future? Plans show these improvements to be installed at a later date, and the concern is the sanitary sewer comments related to upstream connections and minimum slope. Water Utilities may require a strict interpretation of the slope requirements for upstream connections, which may have a bearing on your plans since it appears these improvements will be completed later rather than in the near-term.
2. Alley details were provided, but no alleys are being constructed on this project. Please remove all references to alleys within the details section of the plans.
3. Separate plans were provided for erosion and sediment control. Please eliminate the erosion and sediment control plans from this plan set since they were submitted separately and are being reviewed separately.
4. A signage plan was missing from the plan set. Please ensure all stop-controlled intersections include the minimum 5 foot wide ADA-accessible route across the intersection, and ensure the route is a maximum 1.5% cross-slope across the entire width of the route from the mouth of the ADA-accessible ramp to the opposite side.

5. ADA-accessible ramp details were missing from the plan set. Only the general geometry of the ramps were shown. If using the geometry shown, there are instances where the ramps may be difficult to design and still conform to City standards. In general, these would include turning spaces that transition into the actual ADA-accessible ramp, and as such, the turning space may need to be extended to include the transition to the actual ramp. The City has a different geometric concept that you may be interested in utilizing. If desired, please contact me and I will forward this geometric concept to you.
6. It would appear there are several instances where the street profile at stop-controlled intersections is greater than the City of Lee's Summit 1.5% maximum cross-slope across the ADA-accessible route. However, without a specific ADA-accessible ramp plan, there is no way to verify.
7. The Master Drainage Plan was incomplete. Only portions of the Master Drainage Plan were provided, but the portion related to existing lot corners, MBOEs, basement type was missing. If necessary, an example can be provided. It should be noted this sheet is important later in the building permit phase, when plot plans are being reviewed by permit technicians. A single sheet with this information has proven to be the best way to manage future reviews, with supporting sheets with calculations/tables/drainage areas on a separate sheet.
8. Hydraulic grade lines were not shown in the profile view of storm lines and structures. The hydraulic grade line for the design storm shall be shown on the profile view. In general, the 10 year event should be contained at or below the crown of the pipe, with the 100 year event at or below the 0.5 foot level below the throat of an inlet. Please see additional requirements for the east/west creek that will be diverted underground. This system should be designed to flow by gravity (i.e., at or below the crown of the pipe) for the 100 year event due to shallow depth of cover. An emergency overflow swale along this route would be another alternative, but it is unclear whether there is sufficient depth of cover.
9. A typical section view of a collector street is required. This should be in graphic format showing pavement and base thickness, subgrade design, etc. In addition, the typical section view shall also include the asphaltic concrete type as specified in Section 2205 of the Design and Construction Manual. This shall apply to all typical section views, whether collector or residential.
10. Sheet 47 is blank and thus not reviewed.
11. Sheet 45 title has strikeouts rendering the drawing illegible. Please revise.
12. Detention basin detail sheet was missing, along with the outlet structure detail. No review can be conducted until this has been submitted. We would suggest one (1) sheet devoted entirely to the construction of the detention basin, along with all necessary details for its construction.
13. Detention basin detail sheet(s) shall include the following items: 1) design storage volume, 2) top of dam elevation, 3) design elevations of all weirs and orifices, 4) design 100 year water surface elevation, 5) clogged condition/zero available storage 100 year water surface elevation, and 6) emergency spillway

elevation. This information will enable the as-built to be easily reviewed prior to issuance of a Certificate of Substantial Completion. This as-built of the detention basin is required prior to issuance of a Certificate of Substantial Completion, and hence is also needed prior to issuance of any building permits.

14. Asphaltic concrete type shall be specified in the typical section view. Please see the Design and Construction Manual Section 2205 for specific information related to pavement type.
15. HDPE pipe is not allowed beneath collector streets. Please see Design and Construction Manual for suitable alternatives beneath collector streets, and revise as appropriate. In general, either CPP or RCP shall be used in these instances. This shall apply to Cape Dr. and Bailey Farm Pkwy.
16. No clear indication of what sidewalks will be constructed with this project. ADA-accessible ramps shall be constructed with the project, along with all sidewalk adjacent to unplatted land or adjacent to common property. Please show what will be constructed by notes, labels, symbols/legend, or combination thereof.
17. Limits of the stream buffer should be shown on the plans.
18. Sheet 41 shows what appears to be proposed features for a future project. The lineweight is bold, which typically means the improvements are being constructed with this project. Please reconcile and revise as appropriate for the storm line not to be installed at this time.
19. For purposes of the east/west stream bisecting the property, the underground storm line shall be designed to manage the 100 year storm event without surcharging. In this instance, the hydraulic grade line for the 100 year event should be at or below the crown of the pipe. Grading should be provided along this alignment for an emergency overflow swale. It is recommended that MBOEs be established along the route of this underground system.
20. RCP should be specified for the east/west underground system described in the above comment.
21. Several area inlets are called-out without any corresponding opening information. In accordance with the standard detail, please provide callouts for the number of openings and the orientation as a cardinal direction. Please reconcile.
22. In all instances where fill is being brought in for storm line installation, please show in graphic format on the profile view the placement and compaction of fill, followed by the installation of the pipe. When pipe is to be installed in embankment or fill, the embankment shall be constructed in accordance with APWA section 2102.6 and shall be built up to a plane at least 18 inches above the top of the pipe prior to the excavation of the pipe trench. Please revise the plans as appropriate to show this on the profile view.
23. Street Legend: A legend is provided denoting collector and residential streets. However, there are no

such symbols used on the plans, and hence, no way to determine what street is a residential or collector. Please revise the plans as appropriate.

24. In general, MBOEs are not required on all lots. The City has adopted guidance for MBOEs that you may wish to consider. If the upstream drainage area is greater than 1 acre, and the underground system is not capable of managing the 100 year flows without surcharging above the 0.5 foot level beneath the throat of the inlet, an MBOE would be required. There would be other considerations, however, such as large upstream drainage areas, emergency overflow swales, or detention basin 100 year water surface elevations that should be considered when establishing an MBOE for a particular lot. In short, the City has adopted guidance which allows the engineer to provide their best judgment on the placement of MBOEs on the lot(s).
25. A note should be provided on the plans (preferably the detention basin plan sheet(s) discussed previously) stating the detention basin shall be constructed along with all other erosion and sediment control devices and prior to any infrastructure being constructed.
26. The Final Stormwater Management Plan dated Nov. 5, 2021 was not reviewed due to a lack of the detention basin plan and outlet structure plan. It is not possible to perform this review without both. Finally, the Final Stormwater Management Plan was not sealed.

Traffic Review - Corrections

1. Sheet 20 - K Value (sag) at sta. 13+20 and sta. 16+35 is too low (37 minimum - Residential Collector).
2. Sheet 22 - K Value (sag) at sta. 3+68.08 is too low (26 minimum - Residential Local).
3. Please include signing and temporary traffic control plan.

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/ electronically signed Nov. 19, 2021

Gene Williams, P.E.
Senior Staff Engineer
(816) 969-1223
Gene.Williams@cityofls.net

cc: Development Engineering Project File