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**DEVELOPMENT SERVICES**

**Date:** Monday, January 10, 2022

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

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

**Application Number:** PL2021487

**Application Type:** Engineering Plan Review

**Application Name:** Cornerstone at Bailey Farms 1st Plat - Public Streets, Storm Water and Master Drainage Plan

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The Development Services Department has completed its review of the unsealed and undated plans received late last year, 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](https://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. Submittal is missing the required Final Stormwater Detention and Stormwater Management Report. Even though a preliminary report exists, a final report shall be required. No further review of the detention basin shall be provided as part of this comment letter in regard to volume, elevations of weirs, emergency spillways, etc.
2. Stream buffers were not shown anywhere within the plan set, except for Sheet 2 . This shall be required on additional sheets such as the detention basin.
3. Profile views of all storm lines are missing the design storm HGL. Recommend at a minimum to size the lines for 100 year event to a point no less than 6 inches below throat of any inlet, and 10 year event contained below pipe crown (i.e., gravity flow governed by mannings). If 100 year event cannot be contained within pipe under pressure flow, then overflow routes including swales for the incremental increase that the underground system is not able to manage, shall be required. In that case, MBOEs for all adjacent buildings shall be required to be at least 2.0 feet above the 100 year overflow HGL. In other words, appropriate MBOEs shall be required for adjacent lots if the underground system is unable to manage the 100 year event. Please analyze and revise as appropriate.
4. Typical pavement section view shows a generic residential street. Generic section views are not allowed.

The section view shall be revised to show which streets the section pertains so there is no confusion in the field by the contactor or inspector.

5. Master Drainage Plan is incomplete. Please contact this office for an example of an acceptable Master Drainage Plan showing the required elements. No further review performed at this time. Missing items included: 1) existing and finished lot corner elevations, 2) swale D-D does not appear to match what is shown on the table, versus what is shown on the grading contours, 3) swale 1-1 is shown on the plan view, but not defined anywhere on the table, 4) swale B-B is defined in the table but not shown on plan view, 5) MBOEs are called out, but not specified, 6) basement type for each lot was not shown (i.e., standard, daylight, or walkout), and 7) lack of the 100 year water surface elevation within the detention basin being shown in graphic format on the Master Drainage Plan, along with dimensions to property lines to ensure there is a minimum 20 foot setback.
6. Intersection Detail Sheet is incomplete. ADA-accessible ramps do not include the required detailing necessary to review, construct, and inspect. No further review was performed. In addition, the sidewalk shown extending around the entire cul-de-sac bulb is not desired by the City. The sidewalk should either enter the cul-de-sac in a straight fashion, or 90 degree parallel ramp fashion. No receiver ramp would be required. This particular ADA-accessible ramp shall be required to be shown and detailed. Please ask if examples are needed for this type of ramp (i.e., the end of cul-de-sac style ADA-accessible ramp).
7. Signage plan was missing. Therefore, I cannot comment on intersections with stop control and required ADA-accessible routes across the intersection. Ensure that a signage plan is provided, and all factors including stop control or no stop control are considered in the design of the cross slope in the pavement, as well as proper placement of stop signs in relation to a crosswalk, despite it not being a painted crosswalk.
8. Are ADA-accessible ramps and/or sidewalk included in the previously-submitted Manor at Bailey Farms 1st Plat along Bailey Farms Pkwy.? Otherwise, termination of the sidewalk along Bailey Farms Pkwy. will be an issue. This shall require revision to the Manor at Bailey Farms plans to rectify any deficiencies in these plans.
9. Emergency spillway design is shown on the Master Drainage Plan which is not appropriate placement for this feature. This shall be required on the detention basin design sheet(s).
10. Pavement typical section view missing the asphaltic concrete type for the base and surface course. Please see Design and Construction Manual for choices.
11. Why is the Master Drainage Plan shown in various "pieces" throughout the plan set? The most important piece is shown on Sheet 3, then later parts are presented later in the plan set on Sheet 8 and 9. Recommend placing all of these sheets together within the plan set.
12. General Comment Concerning the Incomplete ADA-Accessible Ramp Design: The concept design is

acceptable to the City, but wings shall be eliminated. Grading at a maximum of 3:1 shall be provided to the sidewalk edge rather than providing sloped wings. See also comments about the sidewalk extending around the cul-de-sac bulb. The City does not desire sidewalk extending around the cul-de-sac bulb. Straight entry or 90 degree parallel ramp is required, along with appropriate design and detailing.

13. A trenching and backfill detail for the storm lines was not provided and is required. Ensure new standards are used which require 12 inches of aggregate on top of pipe.
14. Detention storage and other statistics were shown on the Master Drainage Plan, which is not appropriate placement. This shall be shown on the detention basin design sheet(s).
15. Detention Basin Design Sheet: This shall show the proposed basin storage in cubic feet or other unit described in the final stormwater report, along with all other information provided on this sheet. Please see previous comment, however. The City did not receive a final stormwater report, so no further review shall be performed at this time.
16. Sheet 13: Please change title of this sheet to detention basin design or equivalent. It is more than a water quality structure detail sheet.
17. Sheet 13: Please specify the 100 year overflow with sufficient notes specifying what the 1010.13 elevation refers to. As it is shown in the section view detail, it is unclear and confusing.
18. Sheet 13: It is not clear how this basin shall provide 40 hour extended detention without a perforated riser, or other method to limit flows for the 90% mean annual event and hold it for 40 hours. We will wait to review with the final report which was not included in the submittal package.

### **Traffic Review - Corrections**

1. Sheet 5 - Silo St.: Sta. 10+69.75 and 14+25.00, sag k-value too low (min. 20)
2. Sheet 5 - Silo St.: Sta. 10+78.63 Horizontal curve radius too tight (min. 200').
3. Please provide a signing 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**

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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 Jan. 10,2022

Gene Williams, P.E.  
Senior Staff Engineer  
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Gene.Williams@cityofls.net

cc: Development Engineering Project File