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**DEVELOPMENT SERVICES**

**Date:** Friday, December 16, 2022

**To:** SCHLAGEL & ASSOCIATES - Mark Breuer, P.E.  
14920 W 107TH ST  
LENEXA, KS 66215

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

**Application Number:** PL2022414

**Application Type:** Engineering Plan Review

**Application Name:** Residences at Blackwell - Street and Stormwater

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The Development Services Department has completed its review of the above-referenced plans dated Nov. 30, 2022 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 - Corrections**

1. Plans include a Master Drainage Plan which is not required for this project. Although an overall mass grading and drainage plan is required, the Master Drainage Plan is defined in a different context. Suggest changing the title of the sheet and index on the cover sheet to "overall drainage plan" or equivalent language.
2. A SWPPP is required due to the size being larger than 1 acre.
3. ADA-accessible ramp details: Please include slope callouts for 1) running slope at ramps, 2) cross-slope of sidewalk and ramps, and 3) cross-slope, and diagonal slope at all turning spaces within ADA-accessible ramps. The latter includes all turning spaces at the Type B curb ramps, where the area between the ramps must be flat (i.e., no more than 1.50% design slope in any direction, including the diagonal direction). Please revise.
4. Sheet 12 and 13: A total of 4 of the curb ramps show truncated domes that are greater than 5 feet to the back of curb. A maximum of 5.0 feet to the back of curb is required, so the truncated domes will either need to be skewed, or a different design shown. Please evaluate and revise as appropriate.
5. Riley St., Wildflower Ln., Wildflower Ct., and Riley Ln. enter Heritage St. in a stop-controlled situation.

ADA-accessible routes with a minimum of 5.0 feet across the entire route shall be established at these stop-controlled intersections with a design cross-slope no greater than 1.50%. Please show this on the ADA-accessible ramp design sheets.

6. The hydraulic grade line shall be shown on the profile view for all storm lines greater than 6 inches diameter. The design storm shall also be included on the hydraulic grade line callout. If the 100 year event cannot be contained within the pipe without surcharging as defined in the Design and Construction Manual, a suitable overflow route shall be established. Please evaluate and revise as appropriate.
7. In regard to above comment, if the 10 year event can be contained at or below the crown of the pipe, it is typical the 100 year event will still be within the pipe without surcharging. Recommend evaluating this approach to eliminate flooding concerns.
8. All cross-pipes beneath Collector roads (i.e., Heritage St.) shall either be RCP or CPP as specified in the Design and Construction Manual. Please revise as appropriate, since HDPE is not allowed beneath Collector streets.
9. A trenching and backfill detail for the storm lines appeared to be missing. Please provide a trenching and backfill detail with the updated 12 inch aggregate over the top of pipe which was adopted in July 2020. Please update.
10. Please see Traffic comments related to the temporary turnaround on Heritage St. If you desire to end the street at Riley St. rather than completing Heritage St. to the east of Riley Place, recommend a meeting be set up with Development Services concerning the effects to the platting process, and other effects to storm design, etc. It is recommended a temporary cul-de-sac be constructed at the end of Heritage St. east of Riley Place which may take the form of a bulb extended to the north rather than a symmetrical cul-de-sac.

#### **Traffic Review - Corrections**

1. Sheet 3: Heritage St. - Minimum horizontal curve for a Residential Collector is 335'.
2. Sheet 22: Street name signs need to be a mix of upper- and lower-case letters (first letter capitalized) with directional suffix.
3. Sheet 21: Stop signs and street name signs on the side streets along Heritage do not have to be installed with this phase. If installed this phase, they should be covered.
4. Sheet 21: Add additional "No Parking" signs, one at each end of the stretch being designated. Add additional if needed around curve with double arrow.
5. Sheet 21/22: The end of road object markers should be the solid red diamond (no reflective buttons -

OM4-3), spaced 6' OC, and 4' from the ground to the bottom of the diamond.

6. General: Constructing Heritage St. in its entirety with this phase creates a long deadend street. Without any side streets, this street will need a temporary turn around at the end. Alternatively, the street could be constructed to the northmost entrance/Riley St. with this phase and be extended with future phases.

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 Dec. 16, 2022

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

cc: Development Engineering Project File