

DEVELOPMENT SERVICES

Date: Friday, July 12, 2024

To: OLSSON ASSOCIATES - Terry Parsons, P.E.
1301 BURLINGTON, SUITE 100
NORTH KANSAS CITY, MO 64116

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

Application Number: PL2021226

Application Type: Engineering Plan Review

Application Name: East Trails Middle School - Cape Drive Extension

The Development Services Department has completed its review of the above-referenced plans and cost estimate dated Jun. 27, 2024 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 - Pending

1. Proposed water main is shown beneath the future double box culvert, and is too deep. Maximum depth of cover is 7 feet. Please evaluate and revise as appropriate. Water Utilities does not want the water main placed beneath a box culvert. It would appear the road grade can be revised to allow for the placement of the water main on top of the box while maintaining vertical clearance from the box, and still maintaining 3.5 feet of cover over the top of the pipe. Please evaluate and revise as appropriate. Please be aware this will require revision to the grading plan.
2. Utility easement shown on the plat does not appear to be sufficient to fully-contain the box and its rip rap on the north side of future Cape Dr., nor the increase in the 100 year calculated water surface elevation upstream of the box. Please evaluate, and revise the plat as appropriate.
3. Has the placement of rip rap over Tri County water district line been discussed with Tri County? If not, we need to see confirmation this will be acceptable to Tri County water district.
4. The north side of the box culvert appears to be placed in a skewed configuration in relation to the actual stream bed. The question is whether this is a logical placement of the culvert. Would it be better to place the entrance to the box culvert further to the east? If so, please show on the plan.

5. Please be aware that any changes to the grading plan which raise the road bed of Cape Dr. will require a reanalysis of the culvert hydraulics to account for the increased roadway height in relation to the stream. This may also increase the area subject to change in the 100 year water surface elevation, and may increase the area needed for a drainage easement upstream of the box culvert.
6. Cost estimate did not appear to include engineering for the future work. Please include engineering cost within the estimate.
7. Cost estimate shall be revised to include any changes discussed within this applicant letter.
8. Cost estimate shall include a 10 percent overage factor to account for possible overages in the estimate.
9. You are showing a 2:1 slope for the grading around the box culvert. Maximum slope is 3:1. Please evaluate and revise as appropriate.
10. You are showing 2.5 to 1 slope along portions of the roadway embankment. Maximum slope is 3:1. Please evaluate and revise as appropriate.
11. Since we have been going back and forth on this application, I would recommend a Zoom meeting to discuss.

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 Jul. 12, 2024

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

cc: Development Engineering Project File