

Date: Sunday, May 08, 2022

To: POWELL CWM INC
3200 S STATE ROUTE 291 BLDG 1
INDEPENDENCE, MO 64057

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

Application Number: PL2022164

Application Type: Engineering Plan Review

Application Name: Lakewood Business Center on I-470 Plat S - Public Street, Storm Water and Mass Grading

The Development Services Department has completed its review of the above-referenced plans dated Mar. 31, 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. 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. An additional ADA-accessible ramp appears warranted at Maguire and Cargo. This ramp would cross Maguire, but since it is not in a stop-controlled situation, is not subject to the 1.5% cross-slope across the ramp, but rather, 5% max. Please add details showing the additional ramp, and please show the general location on the "overall site plan" sheet.
2. iSheet C-130: Portions of the ADA-accessible ramps are shown with a designation of "L" for a landing. These are not landings, but rather, turning spaces. In one instance at north side of Maguire and Hagan, this turning space (incorrectly designated as a landing) is called out with 1.5% in all directions, which mathematically equates to a slope greater than 2.0% in the diagonal direction. All turning spaces must be flat, as defined as being no greater than 1.5% in any direction including the diagonal. Please review and revise as appropriate.
3. Sheet C-130: Wings are shown on the ramps, and not desired by the City. Please remove the wings, and substitute grading at no greater than 3 to 1 slope to the ADA-accessible ramp.
4. Sheet C-130: ADA-accessible route across the stop controlled intersections were missing from this sheet. The route shall be clearly shown on the plans, with 5 foot minimum callouts for width, and maximum 1.5% cross-slope across the entire route.

5. Sheet C-130: The diagonal slope across the turning space (incorrectly labeled as a landing) on the east side of Cargo and Maguire is greater than 1.5%. I am showing approximately 2.1% slope across the diagonal based on elevation callouts on the diagonal. Please review and revise as appropriate.
6. Sheet C-130: The turning space (incorrectly labeled as a landing) shows a slope of greater than 1.5% on the diagonal on the south side of the intersection of Maguire and Hagan. I am showing a slope of 2.1% at this location. Please review and revise as appropriate.
7. Profile views of streets should be updated to reflect the ADA-accessible route across the intersection at stop controlled intersections. As shown, it appears a 2% callout is provided on the profile views, which may present an issue when compared to Sheet C-130 which shall be revised to show no more than 1.5% cross slope across the stop controlled intersections. Please review and revise as appropriate.
8. Sheet C-211: Future sanitary sewer extension in phase 2 is being proposed within easements on adjacent property to the west of Lot 1. An exclusive easement should be dedicated for this future sanitary sewer on Lot 1 rather than utilizing the adjacent property easement to the west. Please review and revise as appropriate, noting that distance requirements are met between the sanitary sewer and the storm line, as well as depth of sewer versus width of easement for the exclusive sanitary sewer easement. This shall also be reflected on the final plat. Please contact this office for language for the exclusive sanitary sewer easement.
9. Sheet C-211: The same issue with the sanitary sewer exists to the west of Lot 3. An exclusive easement for sanitary sewer is required rather than a general utility easement since this line is being constructed behind lots and out of the right of way. Please review and revise as appropriate, and ensure proper clearances and sufficient easement width of twice the depth is provided for the sanitary sewer easement, assuming the line is centered within the easement. Ensure this comment is carried forward to the final plat.
10. An additional curb inlet appears warranted on Maguire, to the north of the westernmost proposed curb inlet on Maguire. The maximum distance between curb inlets is 400 feet, and as proposed, it appears the curb inlet at the sump location may overload without an additional at-grade curb inlet to the north of the proposed curb inlet. Please revise as appropriate.
11. Normal procedure within the City of Lee's Summit is to show the HGL below the crown of the pipe, and the 100 year HGL at least 6 inches below the throat of any opening. As proposed, the 10 year event is above the crown of the pipe in many instances, and it would appear the 100 year event will surcharge out of the inlet. If this design is sought, emergency overflow swales for the 100 year event shall be required. Recommend sizing the pipe as described above (i.e., with the 100 year event no less than 6 inches from any throat opening). Please review and revise as appropriate.
12. Storm lines that cross Maguire shall be either RCP or CPP. HDPE is not allowed in this instance due to the

street classification. Please revise as appropriate.

13. The last section of pipe entering the detention basin is shown as HDPE with a diameter of 60 inches. This will tend to float if constructed as shown without anchors. Recommend RCP from the last structure to the detention basin. If not, other designs are required to address the issue of floating.
14. Underdrain was missing at the sump location of the two curb inlets along Maguire. These shall be called out on the plan view, and sufficient notes directing the reader to a standard detail to be provided elsewhere within the plan set. Please show which KCAPWA detail is being used (i.e., the cross-pipe detail should be shown, you can cross-out the other details if that is easier). Please revise as appropriate. In general, you will be connecting the two curb inlets with a perforated pipe to facilitate groundwater drainage at the sump location.
15. It was our understanding the ditch to the west of Lot 1 would be filled-in after installation of the storm line entering the detention basin. This will also be required after re-routing the sanitary sewer line to the east onto Lot 1 (see previous comments related to this issue). As shown, the ditch will remain, and erosion issues will continue to affect the integrity of the detention basin at its inlet. Please review and revise as appropriate.
16. In regard to the above comment, it is acceptable to provide a gentle swale rather than completely filling the ditch to the west of Lot 1. However, some method of addressing the ongoing issues at the discharge point into the detention basin shall be considered. There is excessive erosion occurring at this location, and it is recommended the swale be directed to a small private underground drainage system which then conveys the stormwater to the detention basin bottom, rather than allowing it to create rills along the basin side. Please review and revise as appropriate.
17. A SWPPP is required prior to formal approval of the plans.
18. Are there any wetlands on the site?

Traffic Review - Corrections

1. Sheet C-120: Street name signs shall be a mix of upper and lower-case letters. Re. City Sign detail.
2. The existing temporary cul-de-sac at the end of Maguire shall be completely removed with the road extension. Plans shall show clearly shown the removal and restoration of these areas.

In order to calculate the Engineering Plan Review and Inspection Fee, a revised (i.e., based on these comments) 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 May 8, 2022

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cc: Development Engineering Project File