

Date: Thursday, October 08, 2020

To: Snyder & Associates
802 Francis St
St. Joseph, MO 64501

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

Application Number: PL2020228

Application Type: Engineering Plan Review

Application Name: Whispering Woods 2nd Plat - Streets, Storm and Grading

The Development Services Department has completed its review and offer the following comments listed below.

- Resubmit three (3) full size sets of plans (no larger than 24"x36") folded to 8-½"x11", one (1) comment response letter, and one (1) digital copy following 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. Sidewalks that are adjacent to unplatted property (i.e., the northeast corner of the intersection and the short section just east of Lot 50) must be clearly shown to be constructed with the improvements. All other sidewalks (i.e., adjacent to platted property) may be deferred until building permits are issued. It is recommended that a separate hatch pattern be designated for the sidewalk to be constructed with these improvements, versus those to be constructed in the future by others.
2. ADA-accessible ramps must be clear shown to be constructed with the improvements. A note is provided concerning this requirement, but is not clear and should be emphasized to ensure it is not missed.
3. Why are wings shown on the ADA-accessible ramps? Standard procedure for the City is to eliminate the wings, and grade to the new ramp. As long as the slope is within tolerance, there is no need to provide these wings. They only serve to increase maintenance costs for the City.
4. Sheet 5 shows a stilling basin at the end of the road. How will this basin drain? It would appear to not drain if installed, and will lead to mosquito issues.
5. The Master Drainage Plan is titled as "Grading Plan". This should be titled as "Master Drainage Plan" since this is an Ordinance requirement.

6. The rear yard swales shown on the Master Drainage Plan are not sufficiently detailed. They are only shown in plan view, and the City requires profile views for the beginning, the end, and along selected key points, including lot corners and locations of field inlets. Sufficient labeling must be provided for the swale. Hydraulic grade line calculations must be provided for the swale for the 100 year event, along with flow information for each section.
7. MBOEs that are shown on Sheet 5 do not meet the requirements of the Design and Construction Manual. For instance, Lot 46 is shown with an MBOE of 993.0. The proposed grade within the rear yard swale is shown as 995.84. Assuming a 0.5 foot delta for the hydraulic grade line at this point, the MBOE is more than 3 feet lower than the 100 year water surface elevation. The City requires a minimum of 2.0 feet between the calculated 100 year water surface elevation, and the MBOE, and therefore does not comply.
8. In regard to the above comment, the following may be used if deemed appropriate by the engineer. The City will consider the placement of a "diversion berm" along the rear of these lots, which serves to provide a swale and a diversion from upstream drainage. For purposes of design, this "diversion berm" should be designed to have a minimum of 2.0 feet freeboard between the calculated 100 year water surface elevation, and the top of the berm. With those design considerations in mind, the proposed MBOEs might be acceptable, but without the specific swale/diversion berm design details, the City cannot provide comment at this time.
9. If diversion berms are being proposed in accordance with the above comment, please ensure there are sufficient details in terms of plan view, profile view, and notes.
10. At a minimum, the City recommends at least two (2) MBOEs per lot: one (1) for the rear, and one (1) for the front. If deemed necessary by the engineer, side lot MBOEs may also be utilized, with interpolation allowed between these MBOEs. If this is desired, then sufficient notes must be provided on the Master Drainage Plan which specify interpolation be allowed for these multiple MBOEs.
11. The reason for these strict requirements concerning the Master Drainage Plan, is that the City's permit technicians will be reviewing the as-graded Master Drainage Plan during the plot plan review process. They will be verifying the information shown on the as-graded Master Drainage Plan, and ensuring that all proposed grades, swales, and diversion berms shown on the as-graded Master Drainage Plan match what is proposed on the plot plan, in addition to the "good lot grading practices" required by the individual plot plans.

Traffic Review - Corrections

1. End of Road Signing shall be OM4-3 (18") and requires four signs for each installation (spacing not to exceed 6'); evenly spaced signs.

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/ Gene Williams electronically signed Oct. 8, 2020

Gene Williams, P.E.
Senior Staff Engineer
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cc: Development Engineering Project File

