



PUBLIC WORKS ENGINEERING DIVISION

Date: Friday, October 06, 2017

To:

PHOENIX ENGINEERING & SURVEYING LLC

Brian Glenn, P.E.

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Fax #: (660) 429-1801

From: Gene Williams, P.E.

Senior Staff Engineer

Application Number: PL2017195

Application Type: Engineering Plan Review

Application Name: Whispering Woods 1st Plat - Streets, Stormwater, Master Drainage Plan, and ESC

The Development Services Department received plans for this project on September 14, 2017. We have completed our review and offer the following comments:

Engineering Review

1. General Comment: The plans are incomplete in regard to several significant items, including the box culvert, the Master Drainage Plan, 40 hour extended detention basin details, erosion and sediment control, temporary cul-de-sac details, and ADA-accessible ramp details. It is for this reason that additional comments beyond the scope of this comment letter are likely, following resubmittal.
2. The project should include "Master Drainage Plan" somewhere in the title. Perhaps "Street, Stormwater, Master Drainage Plan, and Erosion and Sediment Control"?
3. Sheet 3 of 22: MoDOT Type 5 base standards have changed. A minimum of 10" MoDOT Type 5 base is required on residential local streets, when using geogrid. A minimum of 12" MoDOT Type 5 base is required for residential collector streets when using geogrid. The 6" MoDOT Type 5 base is allowed if subgrade stabilization is used in lieu of geogrid.
4. Sheet 3 of 22: Sidewalk cross-slope does not meet Section 5300 of the Design and Construction Manual. The design standard is 1.5% in the City of Lee's Summit. Please change the typical sections as appropriate.
5. Where is the design of the temporary cul-de-sac? A plan view is shown, with no details concerning the construction.

6. Sheet 4 of 22: Please clean-up the strikeover error in the title block.
7. Sheet 5 of 22: The Master Drainage Plan is missing most of the required items contained in Section 5600 of the Design and Construction Manual. Missing items include: 1) existing and finish elevations of all lot corners, 2) swale call-outs, 3) cross-section call-outs for swales, 4) basement type (i.e., standard, daylight, or walkout), 5) MBOE set a minimum of 2.0 feet above the 100 year water surface elevation, 6) contours labeled with elevations, 7) locations of all swales and channels, either natural or improved, along with design flows, typical sections, details, upstream and downstream elevations, and slope.
8. Erosion and Sediment Control Plan: Where are the sediment traps located, and where are the details concerning their construction?
9. A copy of the SWPPP should be provided.
10. Sheet 9 of 22: Silt fence is called-out in the legend with a symbol that is not shown on the plans. In addition, it does not appear there is sufficient silt fencing provided for this project.
11. Sheet 9 of 22: Rock check dams are called-out in the legend, but no such features are shown on the plans.
12. It was our understanding that a CLOMR-F would be sought for all lots affected by the 1% floodplain. Several lots are shown within the 1% floodplain, and the grading plan does not reflect these lots being taken out of the floodplain. This places a burden on individual homeowners to provide evidence that their individual structure is not within the floodplain, and if any portion of the lot is contained within the floodplain, the lowest finish floor elevation must be elevated a minimum of 2.00 feet higher than the 1% base flood elevation in order to comply with the City Floodplain Ordinance. What is the status of the CLOMR-F, and what do you propose in terms of timing?
13. No details were provided for the box culvert on SW River Run Dr., therefore, no comments are provided as part of this review. Design calculations must be submitted for this culvert, and the culvert must be designed to HL93 standards.
14. No details were provided for the detention basin (i.e., the 40 hour extended detention basin). As such, no comments are provided for the design.
15. No details were provided for the temporary sediment trap/temporary sediment basin. As such, no comments are provided for the design.
16. A City-issued floodplain development permit is required for all work within the floodplain. A standard

form is available on the City website, and should be accompanied by plans and calculations.

17. Sheet 7 of 24: Please correct the overstrike error in the title block.
18. Sheet 7 of 24: The Pryor Rd. improvement plans are insufficient in terms of detail. A plan view is provided with no typical pavement sections, dimensions, stationing that is missing, an elevation which has been crossed-out, etc.
19. Sheet 14 of 22: Ensure the intersection details reflect PROWAG in terms of providing ADA accessibility.
20. Sheet 7 of 22: There is another Sheet 7, but it is labeled Sheet 7 of 24. Please re-number this sheet, and correct the strikeover error in the title block.
21. Sheet 8 of 22: Please correct the strikeover error in the title block.
22. Sheet 11 of 22; No details or notes were provided for the temporary cul-de-sac.
23. Sheet 11 of 22: Please correct the strikeover errors in the title block.
24. Sheet 13 of 22: This sheet is entitled "Intersection Details", but ADA-accessible ramps are shown. Please rename this sheet to include the ADA-accessible ramp details.
25. Sheet 13 of 22: The details contained on this sheet do not comply with the minimum requirements contained in Section 5304.8 of the Design and Construction Manual. Please refer to this section, and provide information shown in the bullet points. Simply calling-out the elevations of sidewalk corners is not sufficient for the design of these features.
26. The above comment also pertains to Sheets 14 of 22, and 15 of 22.
27. Sheet 16 of 22: What are the plans for the ends of the flared end sections near Pryor Rd.? Is energy dissipation required? If so, please provide design calculations for the energy dissipation measures.
28. Sheet 16 of 22: The hydraulic grade line for the design storm must be provided on the profile view of all storm lines and structures.
29. Sheet 16 of 22: Storm Line B is shown "cut-off" in the plan view. No stationing or coordinates are provided, and no other details concerning Storm Line B (i.e., the box culvert) are provided.

30. All Drainage Sheets Related to Collector Streets: HDPE pipe is not allowed beneath collector streets (i.e., at cross-pipe locations).
31. All Drainage Plan and Profile Sheets: The hydraulic grade line of the design storm should be provided for each pipe and structure.
32. What is the 100 year water surface elevation within the 40 hour extended detention basin? Please call-out on the plans. Ensure this has been accounted in the hydraulic grade line calculations for the incoming storm lines.
33. It would appear an additional field inlet is warranted at the northeast corner of Lot 28.
34. All Plan and Profile Sheets for Street Construction: Stationing is called-out in the profile view, but no stationing is shown on the plan view.
35. Underdrains are required at all sag locations on the roadway. Please show the locations of these underdrains, and provide the City standard detail for underdrain construction. These underdrains are generally installed between curb inlets at the sag location.
36. General Comment Related to ADA-accessible Routes: Please ensure that intersections with or without stop control are constructed with an ADA-accessible route across the intersection, including turning space requirements, cross-slope requirements, width requirements, etc.
37. General Comment Related to Master Drainage Plan: MBOEs should be specified for any lot adjacent to swales, natural drainage ways, or other features as deemed necessary by the engineer. The lots shown on the table should be expanded to reflect this requirement. In addition, the MBOE must be set a minimum of 2.00 feet above the 100 year water surface elevation.
38. General Comment: It appears these plans are not complete, and it is likely that additional comments will be forthcoming based on this cursory review.

Traffic Review

1. Design plans for Pryor Road improvements lack detail, notes, dimensions, etc. The lane transition taper that is shown to begin near Station 16+00, ending near Station 20+00, should be moved to begin near Station 17+15 (south of the intersection) so that southbound traffic is not transitioning through the intersection.
2. Pavement markings along Pryor Road, including symbol type, arrow locations, termination of diagonals, etc., should be revised to match the City's standard details.
3. A separate signing plan is recommended for the subdivision. Stop signs with street name signs are shown

in some locations, some locations only show stop signs. The end of road Object Marker installation should reflect the City standard and are not necessary on temp. cul-de-sacs.

4. Include the City's standard details for signing and marking.
5. Multiple vertical sag curves do not meet the minimum design criteria along River Run Drive.
6. Plan detail, including alignment stationing, is missing for the proposed subdivision streets.
7. Verify the intersection sight distance is adequate for streets, and especially the School Driveway, at each location along River Run Drive. It appears the vertical crest near Sta. 4+50 is limiting ISD.
8. Sidewalk should be shown on the roadway plans.

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

Beginning Monday, May 23, 2016, 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 will not be required for initial application submittals at this time as the plans are subject to change.

Electronic copies shall be provided on CD in the following formats

- Plats – All plats shall be provided in Tagged Image Format File (TIFF) Group 4 compression.

- Engineered Civil Plans – All engineered civil plans shall be provided in Tagged Image Format File (TIFF) Group 4 compression. All sheets shall be individually saved and titled with the sheet title.
- Architectural and other plan drawings – Architectural and other plan drawings, such as site electrical and landscaping, shall be provided in Portable Document Format (PDF).
- Studies – Studies, such as stormwater and traffic, shall be provided in Portable Document Format (PDF).
- It is requested that each plan sheet be a maximum of 2MB.

Please contact Staff with any questions or concerns you may have.

If you have any questions or comments, please contact me, either at or e-mail to .

Sincerely,

Original Signed

Gene Williams, P.E.
Senior Staff Engineer

cc: Development Engineering Project File