LEE'S SUMMIT
MISSOURI

DEVELOPMENT SERVICES

Date: Monday, February 11, 2019

To:
WEST PRYOR VILLAGE LLC
Email:
Fax #: <NO FAX NUMBER>

KAW VALLEY ENGINEERING
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From: Sue Pyles, P.E.
Senior Staff Engineer

Application Number:	PL2019009
Application Type:	Engineering Plan Review
Application Name:	STREETS OF WEST PRYOR - STREET, STORM, & ESC

The Development Services Department received plans for this project on January 14, 2019. We have completed our 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 five (5) business days of the date received.

Engineering Review

3. Submit:
   - Traffic Signal plans.
   - Engineer's Estimate of Construction Costs.

4. Include specific ADA-accessible sidewalk ramp design at ramp locations. Meet the design requirements shown in LS Section 5300 of the Design and Construction Manual. Detectable warnings are only required when crossing a public street.

5. Sheet C-2:
   - Include a Table of Quantities, as indicated in the title block for this sheet.
   - Revise Construction Note 20 to only refer to Lee's Summit specifications. Any applicable APWA specifications are incorporated by reference in the Lee's Summit specifications.

6. Sheet C-3:

- Please label the vertical line dimensioned as 99.67 feet east of Black Twig centerline Sta. 50+00.
- There is some concrete hatching shown at the southwest corner of the Tract D detention basin. Please clarify or remove.

7. Sheet C-4: Several of the Typical Sections show “Future” sidewalk. All sidewalk within the public right-of-way must be constructed with the public infrastructure. Revise this sheet and all other applicable sheets throughout the plan set.

8. Sheet C-5:
   - Include existing street grade at the west end of the Lowenstein Drive construction.
   - Include ADA sidewalk ramps at the intersection.
   - Include the water line crossing at Sta. 32+19 in the Profile view.

9. Sheet C-6:
   - The curb inlet at Sta. 27+77.51 does not meet the City’s minimum size requirements. Please revise.
   - Sheet C-7: Include ADA sidewalk ramps at the intersection with the commercial entrances.

10. Sheet C-8: Add underdrain at the low point on Lowenstein Drive as required by th Design and Construction Manual Section 5203.19.

11. Sheet C-9: Include an End Street Construction label similar to the Begin Street Construction label.

12. Sheet C-12: The curb inlet at Sta. 59+13.79 does not meet the City’s minimum size requirements. Please revise.

13. Sheet C-13:
   - Include elevations at the north end of Proposed Retaining Wall A.
   - Relocate overlapping text at the southwest corner of the intersection.
   - Include the water line crossing at Sta. 64+76 in the Profile view.

14. Sheet C-14:
   - Indicate the design storm.
   - It is difficult to see the drainage areas for Lines T & H.
   - Is there a reason Structure T-3 can’t connect to Structure H-5? It would eliminate a street crossing.

15. Sheet C-15:
   - include station equations where multiple lines join together on this and all applicable sheets.

• Include the following note on any profile sheet applicable: “Compacted Fill shall be placed to a minimum 18” above the top of the pipe prior to installation.”
• Show and label the limits of the compacted fill placement in the Profile view. Use hatching for clarity.
• Will any additional energy dissipation be required at the Structure D-1 discharge?
• Include the water line crossing upstream of Structure D-5 in the Profile view.

16. Sheet C-16: The curb inlet at Sta. 252+93.66 does not meet the City’s minimum size requirements. Please revise. Verify that the structure size matches that shown on Sheet C-12.

17. Sheet C-19: Include the water line crossings upstream of Structures H-4 & T-1 in the Profile view.

18. Sheet C-21:
    • Include the water line crossing upstream of Structure G-2 in the Profile view.
    • The curb inlet at Sta. 365+51.23 does not meet the City’s minimum size requirements. Please revise.

19. Sheet C-22: Revise the detail number for the temporary construction entrance to the APWA detail number for that item and add the detail to the plan set.

20. Sheets C-23 – C-24:
    • Include singing as indicated in the title blocks.
    • Revise the pavement Marking note on each sheet to refer to City specifications, not MoDOT.

21. Sheet C-30:
    • The Lee’s Summit Junction Box standard detail, STM-3, is included in the plan set. Remove Detail 403. Base a grate inlet or double grate inlet standard detail on the City’s standard details.
    • Remove Detail 047 and add the APWA detail for that item to the plan set.

22. Sheet C-35: The details on this sheet are already included in the plan set on Sheet C-27.

23. Include a sheet showing all design details for the parking lot on park property. Include slopes, elevations, ADA requirements, etc.

Traffic Review

1. Review comments regarding the traffic signal and interconnect plans are pending submittals. These plans may result in additional comments on the roadway plans.

2. Title Sheet - Lowenstien Road should be Lowenstien Drive. The posted speed limit of Lowenstein Drive is

25 mph. Verify and update the posted speed and design speed information. Some portions of the vertical alignments do not meet the noted 35 mph design speed criteria, but all meets a 25-30 mph design criteria.

3. Concrete jointing plans should be included in the drawings for review and approval.

4. General layout sheet should include project control points, benchmarks, etc. Roadway centerline information is missing.

5. Plan and Profile Sheets:

   a.) Generally, all horizontal alignments lack sufficient detail to establish (e.g. N/E, bearing, PI, CP's, etc.)

   b.) All ROW's and Easements should be shown and labeled.

   c.) Some notes and details/call-outs are overlapping and should be separated for clarity.

   d.) The plans do not include all necessary dimensions or notes pertaining to radii, PC's/PI's/PT's, etc. for the location of proposed improvements. The typical sections do not include sufficient information for all improvements proposed on the plans. For example, the medians and curb curves along Lowenstien are missing detailed information.

6. Plan Sheet Station 21+00 to 22+50, Lowenstien Drive, should be revised to provide a matching three-lane wide section at the PC west of Black Twig centerline that has adequate transition tapers over approximately 65 feet (both sides) to the existing conditions at Station 21+00 (where improvements were shown to begin).

7. Fence relocation should be shown and detailed on the plans at the SW corner of Black Twig and Lowenstien. The intersection sight distance should be measured at this intersection by the engineer (not in the field or City) to ensure the relocation is not in conflict.

8. The plans did not include a southbound right-turn lane along Pryor Road at the proposed right-in/right-out driveway.

9. The right-turn lane along Pryor Road at Lowenstien Drive was drawn with 250 feet of storage and 100 feet of taper. The condition of approval was a 200-foot storage and 150-foot taper in accordance with the AMC (a 12.5:1 Taper Ratio is stated in the AMC). Either revise accordingly or discuss why the recommended alternative is shown/proposed.

10. The westbound right-turn lane along Lowenstien Drive at the commercial entrance was drawn with approximately 180 feet of storage and 100 feet of taper. The condition of approval was a 150-foot storage and 150-foot taper in accordance with the AMC (a 12.5:1 Taper Ratio is stated in the AMC). Either

revise accordingly or discuss why the recommended alternative is shown/proposed.

11. The eastbound left-turn lane along Lowenstien Drive at the proposed commercial entrance (near Sta. 36+00) was drawn with 75 feet of storage and a 40-foot, reverse curved taper. Can additional storage and longer taper be considered within the proposed median? The standard minimum storage for this condition is 150 feet with 150-foot reverse curve. However, shorter distances for this unique condition may be reasonably supported given the traffic volume, and vertical and horizontal alignments. Either revise the plan to reasonably/practically increase the storage and taper within the shown median towards the minimum standards or discuss why the recommended alternative is shown/proposed and cannot be revised.

12. Pavement Marking and Signing Sheets:

    a.) Remove references to MoDOT. City of Lee's Summit standards and specifications for pavement marking and signing shall be used.

    b.) Note that all longitudinal lines shall be high-build paint and all symbols, crosswalk lines, stop lines, diagonals, etc. shall be preformed thermoplastic per City specifications.

    c.) Revise the markings per plan geometric changes (e.g. widening of Lowenstien Drive west of Black Twig, turn lane revisions, etc.).

    d.) Revise the markings to match City standards. Remove the TWLT arrows on Lowenstien at Sta. 23+12, 31+05 and 32+62. Move TWLT arrows from Sta. 29+66 to Sta. 30+50 and Sta. 26+09 to Sta. 25+50. Add LT arrows for a westbound left-turn lane along Lowenstien at Black Twig (a turn lane that ends at Sta. 24+25 and transitions to TWLT lane per City details with 75' gap and 18' overlap). Add LT arrow for a westbound left within the introduction of TWLT lane along Lowenstien Drive at Sta. 32+65. The painted lines and diagonals for the median extension near Sta. 33+00 are not shown or labeled properly. Change the marking types as necessary for these turn lane revisions.

    e.) Remove the crosswalks across Lowenstien Drive at Black Twig and along Lowenstien Drive across the south commercial entrance near Sta. 36+50. The crosswalks at the signal shall all be Type I, per City standard (parallel lines).

    f.) Add dashed lines within the signal intersection for dual left turn movements along the left-turn path. Verify the left-turn movements do not conflict with the approach stop position or other concurrent traffic movements.

    g.) Turn arrow spacing for all dedicated left and right-turn lanes should be adjusted to match City standards.

    h.) Remove all thru arrow or any thru/right arrows.

    i.) Verify the stop lines are 4 feet separated from the crosswalk. The stop line on Lowenstien at Pryor appears too close to the crosswalk.

j.) Label/dimension all markings, including longitudinal lines and all symbols.

k.) Add crosswalk signs, crosswalk ahead warning signs for the mid-block crossing on Lowenstien at the proposed commercial driveway.

l.) Add speed limit (25) sign near Sta. 35+00. Remove existing and add new stop signs with street name signs at the intersection of Black Twig and Lowenstien for north and south approaches. Add end of road treatment signing (evenly spaced Object Markers) on the north approach to the intersection of Black Twig and Lowenstien. Add TWLT sign near Sta. 25+00 for eastbound traffic, a TWLT sign near Sta. 31+00 for westbound traffic, a Lane Use sign near Sta. 38+00 for eastbound traffic and near Sta. 38+50 for westbound traffic. Add Keep Right (Symbolic) sign near Sta. 38+15 for westbound traffic in the median and Sta. 32+35 for eastbound traffic in the median.

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 developmrnt 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 mulit-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,

Sue Pyles, P.E.
Senior Staff Engineer
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cc: Development Engineering Project File