
PUBLIC WORKS ENGINEERING DIVISION

Date: Tuesday, February 11, 2014

To:

ENGINEERING SOLUTIONS

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From: Gene Williams, P.E.

Senior Staff Engineer

Application Number: PL2014007

Application Type: Engineering Plan Review

Application Name: Abundant Life Baptist Church Public Street Improvements

The Public Works Department received plans for this project on January 17, 2014. These plans are dated and were sealed on **January 15, 2014**. We have completed our review and offer the following comments:

Engineering Review

1. Please add a note stating that "...all construction shall follow the City of Lee's Summit Design and Construction Manual as adopted by Ordinance 5813."
2. Due to questions concerning the drainage between the landscape berm and road, cross-sections will be required from station 78+26 to station 81+36 at 25 foot intervals. The cross-sections should, at a minimum, extend from the edge of existing pavement to 5 feet beyond the sidewalk or right of way.
3. The proposed storm inlet at station 79+25 (+/-) appears to be impossible to build without a significant drop-off along several tens of feet along the sidewalk. The Final Development Plan shows a 2 foot drop from the top of the sidewalk to the throat of the east-facing inlet, and this presents not only a maintenance concern, but a safety concern. Please be aware that all earthen grades are limited to 3:1 slope, and this constraint will likely require a significantly different design than shown.
4. A grading plan was not shown in the area between the proposed landscape berm and the street. The drainage plan should be of sufficient size to clearly show existing and proposed contours, including any localized sump(s) around proposed inlet(s), and should clearly show the existing and proposed elevations and contour interval. Public Works recommends a separate sheet due to the critical nature of this area.
5. An erosion and sediment control plan was absent.
6. A traffic control plan was absent.
7. A street repair plan for utility work (i.e., domestic water, sanitary sewer, and fire line) was absent from the plans.

8. Please label the ADA-accessible ramp with a note stating that truncated domes will not be allowed on the commercial entrance.
9. A plan and profile of the new private culvert beneath the driveway will be required.
10. The plans call for an extension to the existing 18" CMP pipe with a like material, but it is unclear what the finish slope of the ground surface from the roadway will be. In addition, CMP pipe must be aluminized as per City specifications. Please provide a plan and profile of the extension unless a different design is presented to manage stormwater in the area between the sidewalk and the road.
11. The 18" CMP extension proposed on the plans should be re-evaluated since there are questions concerning the ability to achieve proper grading and drainage in this area. It may be necessary to install a field inlet between the sidewalk and the roadway, and providing a junction at the 18" CMP rather than an extension of the CMP.
12. The existing slope of the 18" CMP was not called-out. If the plan can accommodate the 18" CMP extension without a change in grade (i.e., the pipe should be extended with a slope equal to the prevailing pipe slope), it would only be allowed if the end of pipe section is in good condition. It will be necessary to evaluate the condition of the end of pipe section to determine whether corrosion has rendered the section unsuitable for the extension. Coupling bands must meet the City specifications.
13. Where stormwater structures such as junction boxes, field inlets, curb inlets or the like are shown on the plans, the specific City detail for the structure should be called-out (e.g., FI-1, GI-1, etc.).
14. The typical cross-section for the road widening should be changed to reflect the City standards for aggregate base (6" MoDOT Type 5) and subgrade stabilization or geogrid installation.
15. The Engineer's Estimate of Probable Construction Costs will need to be adjusted based on the final design. Traffic control, geogrid (if used), stabilized subgrade (if used), MoDOT type 5 aggregate base, street repair for City utilities, flared end sections, sidewalk, grading within the area bounded by the landscape berm and the street, sodding, seeding, fertilizer, turf reinforcement mat, and all other items not included should be added to the estimate.
16. General comment: The proposed storm drainage system does not appear able to function as intended. Public Works recommends a re-design of the system to manage the stormwater within the area bounded by the landscape berm and the street.
17. Comment concerning inlet structures within sidewalk: Structures within sidewalk such as inlets and manholes are not allowed when suitable alternatives exist; however, if they are allowed, castings such as frames and lids must be ADA-compliant, and the two (2) sidewalk panels adjacent to the structure must be constructed with a 6" thickened slab over compacted subgrade or aggregate base. If this design is used, please provide appropriate labeling on the plans.
18. Please provide a typical section for the sidewalk construction. Please note that welded wire fabric within City sidewalk is not allowed in the City of Lee's Summit.
19. Provide a note on the commercial entrance specifying that the ADA-accessible ramp shall extend across the entrance with a width of five (5) feet. This five (5) foot lane should line up with the sidewalk and have a transverse slope of 1.5%.

20. The backflow vault shown on the plans does not agree with that shown on the Final Development Plan. It is shown directly adjacent to the sidewalk with no provision for a gate valve to be installed prior to the backflow prevention assembly. Please revise as appropriate.
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If you have any questions or comments, please contact me, Gene Williams either at (816) 969-1800 or e-mail to gene.williams@cityofls.net.

Sincerely,

Original Signed

Gene Williams, P.E.
Senior Staff Engineer

cc: Development Engineering Project File