City of Lee's Summit

PUBLIC WORKS DEPARTMENT/ENGINEERING DIVISION
220 SE Green Street
Lee's Summit, Missouri 64063
(816) 969-1800 FAX (816) 969-1810

Friday, January 13, 2012

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Applicant: Engineering Surveys & Services
1113 Fay Street
Columbia, MO 65201

Re: Engineering Plan Review
Wilshire Hills Street and Storm Sewer Improvements
PL2011067

Dear: Engineering Surveys & Services

The Public Works Department received drawings for this site dated 02 Jun 2011. These plans were received by our department on Thursday, June 02, 2011 Wednesday, December 07, 2011 Wednesday, December 28, 2011. We have completed our review and offer the following comments.

Engineering Review

1. After reading the U.S. Army Corps of Engineers Permit for this project, it does not appear that the proposed plans will comply with the terms of the permit. For instance, the typical section view for the reconstructed Maybrook Creek show a 12' +/- channel with a floodplain shelf. We are measuring the channel width and showing a width of 20 to 25 feet for the bottom of the channel. To reiterate our concern, the City is of the opinion that the proposed wide channel will never overtop as intended and the floodplain shelf will not serve its intended use. Finally, there would be a conflict with the U.S. Army Corps of Engineers permit.

2. Sheet 25 of 31 shows the Grade Control Detail (i.e., Rock Cross Vane) keyed into the bank a minimum of 4 feet at the top of bank. It is our experience that this needs to be a minimum of one half the stream width or 10 feet, whichever is greater.

3. The various plan views of the Grade Control Detail (i.e., Rock Cross Vane) do not reflect the detail. The plan view merely shows their location without the keyed-in location. The City is concerned that a contractor will neglect to install these critical elements.

4. There are four instances where the proposed storm sewer is shown discharging (i.e., daylighting) onto rip rap. The first instance is located at the end of the 116 feet of 24" HDPE. Is there a swale planned for the remainder of this discharge channel? The other instances are the discharge locations for the HDPE along the east side of the project and near the stream bank. Are swales proposed for these discharges? Finally, it appears that the northernmost discharge location for the 36" HDPE will be discharging at a ninety degree angle to the creek and with no rip rap or erosion control along the bank. What will be done in that location to limit bank erosion?

5. Sheet 9 of 31 shows a Typical Permanent Stream Channel Section which appears to contradict the U.S. Army Corps of Engineers Permit because it is considerably wider than shown on the U.S. Army Corps permit. The permit shows a 12' bottom width on the channel.

6. The revised stormwater report dated August 30, 2011 still does not clearly summarize what is being proposed at the site. The pre-developed (i.e., existing) peak flow rates for the 2, 10, and 100 year events versus the proposed peak flow rates from the site are not presented in an easy-to-read fashion. The narrative portion of the report again directs the reader to Appendix B, but it would be difficult for a person without knowledge of this particular software to evaluate the data. The City is asking for a narrative description of the existing peak flow rates for the 2, 10, and 100 year events versus the proposed peak flow rates for the 2, 10, and 100 year events. We are also asking for the Engineer's opinion on the effect to downstream properties (i.e., water quality, peak flow rates, flooding potential less than or greater than existing, etc.). Again, there are significant downstream issues concerning flooding potential and water quality which need to be discussed in a "summary report". We would be receptive to an addendum to the report.

7. As indicated in our previous comment letter, there are sections of the sanitary sewer which are greater than 15 feet in depth as measured from the ground surface to the top of pipe. The areas where the sanitary sewer exceeds the 15 foot depth rule are in the vicinity of the Wilshire Drive/Meadowview Drive intersection and extend well beyond these limits. If there are future utility problems with the sewer in these locations, the entire street would need to be reconstructed due to the 22 foot depth at the City's expense. At this time, the City cannot support a waiver to this requirement since it appears that adequate sewer service can be provided without the excessive depth.

8. The water line profile requested by the City in our last comment letter was not submitted. This will be required.

9. The City is highly recommending a separate water line plan view since it is not clear what is existing versus what is proposed. If this is not possible, then clearly show what is being proposed using appropriate shading, notes, or other means as deemed appropriate.

10. Sheet 13 of 31 shows a stub-off of Wilshire Drive to the south. The City is requesting that the stub-off be eliminated by extending a line to the west centered on the curb line of Meadowview Drive. This is being requested since the City is unsure how the future connection will be made, and it is possible that it will be removed and replaced with a different width and/or geometry.

11. Appropriate MUTCD end of roadway markers should be called out on the plans on the west end of Meadowview Drive.

12. A sidewalk will be required along the south side of Meadowview Drive and will need to be shown on the plans.

13. Signs (R1-1 and street names) should be called out at the northeast corner of Meadowview Drive and Manhatten Drive.

14. Sign R1-1 should be called out at the northwest corner of Meadowview Drive and Manhatten Drive.

15. Sheet 15 of 31: The font size is too small to read.

16. Will the proposed triple box culvert include handrails? Is guardrail being proposed along Meadowview Drive?

Engineering Review

1. Sheet 12 of 31 still shows the manhole rim approximately 9 inches above finish grade. Please revise the drawing to show the rim to be flush with the finish grade.

2. Sheet 14 of 31 shows fire hydrants too far behind the back of curb. Please revise the plan sheet to show the locations of these fire hydrants to within 2 feet behind the back of curb.

3. It does not appear that the sanitary sewer stub locations are shown on the plans. Please revise accordingly.

Traffic Review

1. Remove the proposed Stop Sign shown at the NE corner of Wilshire Drive and Meadowview Drive. Add Street Name signs on a standard sign post on this corner.

2. Remove the proposed Stop Sign and post from the NW corner of Wilshire Drive and Meadowview Drive.

3. Prove the guard rail along Meadowview Drive is necessary. Unnecessary guard rail is less safe, being an obstruction within the clear zone, and maintenance expense. It does not appear to be required based on the 25 mph speed limit and curb and gutter road section, since the unrecoverable slope and open box is so far from the travel lane (at least 10-12 feet including C&G). The pedestrian protection fence is needed.

Engineering Review

1. Final approval of the plans shall be contingent upon a modification to the United States Army Corps of Engineers permit.

2. Sheet 12 of 31 (Sanitary Sewer Profiles) shows a manhole at station 1+80. The rim elevation appears to be nearly a foot above finish grade. Please revise the drawing to show the manhole flush with the finish grade.

3. Due to the depth, please specify SDR 21 sanitary sewer pipe for the run between manhole A and manhole B, and manhole B and manhole D.

4. Supplemental Sheet 1: Please add a fire hydrant to the end of the line where the "cap" is shown (southwest corner of the intersection of Meadowview Drive and Wilshire Drive).

5. Supplemental Sheet S1: The water line is shown reversed (i.e., flip-flopped) from what is needed. Please show the water lines within utility easements fronting the road, with fire hydrants shown in the green space between the sidewalk and the street.

6. Supplemental Sheet S1: It may be necessary to move the sanitary sewer manhole slightly to accomodate the water line at station 9+58.

7. Supplemental Sheet S1: The water line is proposed to be laid on top of the triple box culvert. There is not sufficient cover below the proposed water line to make this practical. Please re-route the water line around the triple box culvert to the north with no more than 45 degree bends (i.e., if a 90 degree bend is needed, please show two 45 degree bends). Please show the water line no more than 15 feet from the toe wall of the triple box culvert or wing wall of the triple box culvert.

8. Supplemental Sheet S1: Please show appropriate drainage easements for the triple box cuvert to facilitate future maintenance. In general, we will require a 12 foot easement on each side of the box (both sides of the roadway) and extending 10 feet beyond the toe wall.

9. Supplemental Sheet S1: Please label all general utility easements.

10. Supplemental Sheet S1: Please specifiy ductile iron pipe for the stream crossing extending a minimum of ten feet beyond the low flow stream bank. The ductile iron pipe must be installed

a minimum of 42" below the flowline of the stream.

11. Supplemental Sheet S1: Please specify a water valve with straddle blocks on each side of the stream bank for the stream crossing.

12. Supplemental Sheet S1: Please specify an additional fire hydrant along Meadowview Drive roughly in the vicinity of station 2+50.

13. Sheet 13 and 14: Sidewalk ramps shown at Meadowview and Wilshire are shown as Type B ramps. These should be Type A since there is no sidewalk on the west side of Wilshire Drive to receive them.

14. An ADA-accessible sidewalk ramp is shown on the north side of Meadowview Drive at the intersection of Manhattan Drive. Since there is no receiving ramp on the east side of Manhattan Drive, this ramp needs to be changed to a Type A ramp directed toward the south side of Meadowview Drive.

15. Sanitary sewer stub-offs (i.e., private laterals) need to be shown on the plans.

Traffic Review

A sealed Engineer's Opinion of Probable Construction Costs should accompany your final submittal copies. Public Works' review and inspection fee is based on that cost. The following items, both materials and installation, should be included in the itemized estimate.

- Any water line larger than 2" in diameter, valves, hydrants, and backflow preventer with vault, if outside the building
- All storm water piping, structures, and detention/retention facilities
- All sanitary sewer manholes and piping between manholes, including private mains
- All public infrastructure, both onsite and offsite
- All grading for detention/retention ponds
- All erosion control devices
- The connection of the building sewer stub to the public main
- All private street construction, excluding parking lots, drive approaches and sidewalks

Feel free to contact Gene Williams at (816) 969-1812 or e-mail to Gene.Williams@cityofls.net should you have any questions or comments.

Sincerely,

Gene Williams, Senior Staff Engineer

C: Bill Lyon, Public Works Inspections
cc: