SCHLAGEL
ENGINEERS PLANNERS SURVEYORS LANDSCAPE ARCHITECTS

April 22, 2022

Gene Williams, PE
City of Lee's Summit, Missouri
220 SE Green Street
Lee's Summit, MO 64063

RE: PL2021434 - MANOR AT BAILEY FARM 1ST PLAT
RESPONSE TO COMMENTS DATED FEBRUARY 14, 2022
STREETS, STORMWATER, AND MASTER DRAINAGE PLAN

This letter is regarding the above-referenced comments to which we have the following responses:

Engineering Review

1. The "Final Stormwater Management Plan for the Manor at Bailey Farms 1st Plat" dated Jan. 31, 2022 (hereinafter referred to as "stormwater report") was written for the entire build-out of the project. There was no discussion within the text of the report concerning the phasing of the project, and the fact that only one (1) detention basin is being constructed during this phase.
   Response: Study has been revised. Note that the content of the studies for both Manor and Cornerstone are identical. Items pertaining directly to Cornerstone have been flagged accordingly and text has been crossed through.

2. Since the stormwater report includes the entire site, the title of the stormwater report should be revised to reflect the entire site, not just Bailey Farms 1st Plat.
   Response: See response above

3. No review of the northern detention basin was conducted in reference to the actual design of the northern detention basin versus the pond setup sheets contained within the stormwater report. This review shall be performed separately from this review, and comments on the stormwater report may be forthcoming for the northern detention basin.
   Response: Noted

4. A waiver to the 2-year allowable release rate for RP-2 was requested within the body of the stormwater report. A waiver request on a form provided by the City shall be submitted, along with all necessary Design and Construction manual

citations, a signed and sealed summary of the waiver request attached to the form explaining the waiver request and a rationale behind the request, along with an exhibit.
Response: The waiver has been included with this submittal.

5. The stormwater report discussed stream buffer waivers for "transition grading". This discussion is contained within the cover letter of the stormwater report, but no subsequent discussion is included within the body of the report. A review of the plans does not appear to show any grading within the buffer which would be considered an encroachment, since the City does not consider the grading for a detention basin side slope within the buffer as an encroachment. Was this what was being described as "transition grading"? If so, this does not require a waiver to the Design and Construction manual. If this is the case, the cover letter should be revised.
Response: Yes, this is what we considered "Transition Grading." The cover letter has been revised.

6. The stormwater report describes the southern detention basin as EDDB#2, but the plans do not reflect this nomenclature. Please label the southern basin to match what is shown in the stormwater report.
Response: Plans updated with "EDDB #2"

7. The stormwater report shows a 15-inch BMP for the incoming pipe. CMP is not allowed unless aluminized. Recommend RCP due to longevity issues.
Response: HDPE used in this instance. Note the discharge structure has been revised.

8. The stormwater report shows a 24-inch RCP, but the plans show HDPE. Recommend RCP for this area.
Response: 30" HDPE is being proposed for the outlet pipe of the detention basin.

9. Recommend "x-ing-out" the portions of the stormwater report within the appendix that refer to the northern detention basin EDDB#1, along with notation they will be reviewed during the phase of the project related to construction of EDDB#1, since they are not included in this review. Other alternatives would include notation on the affected sheets within the appendix. If preferred, this may be done on the pond setup sheets for EDDB#1, but shall clearly state this will be re-reviewed at the time this basin is being evaluated.
Response: X-ing out of Cornerstone analysis is used and provided a note stating that the info for Cornerstone is provided for informational purposes only and to refer to the Cornerstone Study for its analysis.

10. Stream buffer is shown for a portion of the project as requested in previous applicant letter, but is missing callouts and dimensions near EDDB#2. Please

show the limits of the stream buffer in this area, and show the transition between the 60 foot buffer and the 100 foot buffer on the general layout of the plans.
Response: Callouts added to plan sheets.

11. Easements are shown for storm pipes entering and exiting the private detention basin. These easements imply public storm lines, which these are not. Please eliminate the easements on all sheets, and ensure this is carried-through to the plat. Please label these lines as "PRIVATE" to ensure our GIS technicians are able to accurately show these lines on our GIS system.
Response: Private easements removed.

12. The storm line exiting the detention basin appears to be in conflict with the preliminary design of the box culvert on Cape Dr. Please review the preliminary design, and ensure this private storm line does not conflict with the box culvert.
Response: Design was reviewed and modified to avoid conflict.

13. Sheet 6 and 7 of Master Drainage Plan: MBOEs are called-out without any specific elevations. Please review and revise.
Response: MBOEs with specific elevations are shown in a table on sheets 6 and 7.

14. Sheet 6 and 7 Master Drainage Plan: No basement callouts were provided on the Master Drainage Plan (i.e. standard, daylight, or walkout). Please show this for every lot within this plat.
Response: MBOEs with specific elevations are shown in a table on sheets 6 and 7 and also include basement type.

15. Sheet 6 and 7 Master Drainage Plan: No call-outs were provided on these sheets whether an as-graded plot plan is required. Notation shall be provided for each lot whether or not an as-graded plot plan required prior to occupancy.
Response: MBOEs with specific elevations are shown in a table on sheets 6 and 7.

16. Sheet 9 and 10 Master Drainage Plan: These two sheets appear to conflict with the previous Master Drainage Plans in that tables are provided and swale details are provided. Please eliminate the previous east and west Master Drainage Plan sheets, and use these sheets. Clean up the MBOE references on the lots with no corresponding elevation call-out. Consider reviewing my comments from previous applicant letter which stated that MBOEs are not necessarily required for each lot.
Response: Previous Drainage Plans eliminated. Swale Grading Plan sheets added.

17. Ensure the comment concerning the requirement that an as-graded plot plan is noted on the Master Drainage Plan. This is usually shown in table format, with another column after the MBOE for the lots. Please be aware the City does not

necessarily require an MBOE or an as-graded plot plan for each lot. The MBOE requirement should follow guidance previously-provided to you in the last applicant letter and the necessity of an as-graded plot plan shall be at the discretion of the design engineer.
Response: MBOEs with specific elevations are shown in a table on sheets 6 and 7.

18. Sheet 9 Master Drainage Plan East: Call-outs are provided for overflow swales running east/west, but no specific swale cross-sections are provided. Cross-sections at key intervals shall be provided for these overflow swales, suggest at the beginning, the end, and perhaps every 25 feet along the swale. Generic details as shown on the bottom of this sheet are not sufficient, as a site-specific design is required for these particular swales.
Response: Swale Grading Plan sheets added with cross sections on sheets 8 and 9.

19. Sheet 10 Master Drainage Plan West: A generic swale section at the tope of this sheet is provided, but does not match what is shown on the grading plan view. You are showing a V-bottom swale for most cases, and unknown on C-C. In this instance, the beginning and end of the swale should be noted on the plan view, along with notation along key intervals (i.e. 25 feet?). Section views should be provided for each location, which will likely require a separate sheet.
Response: Swale Grading Plan sheets added with cross sections on sheets 8 and 9.

20. Sheet 15 Cape Dr. Plan and Profile: What is the purpose of the cross-hatching on this street? There is no definition of what this means. Please reconcile.
Response: The purpose of the cross-hatching was to reflect the street type (Residential Collector) as shown on the General Layout sheets. The cross-hatching has been removed from plan-profile sheets 14 and 15.

21. Underdrains appeared to be missing at sump locations on streets. Please show on plan view the location of these underdrains, and reference and insert the KCAPWA standard detail to show how curb inlets will be tied together with underdrains in these instances. Please “x-out” the irrelevant KCAPWA standard details since the City only uses the cross-pipe style in sump conditions.
Response: Underdrains have been added at sump locations (Line 2900 and Line 100). The underdrain lines (4000 and 4100) are shown in plan view on sheet 29. Profiles for the underdrains are on sheet 35. Details for the underdrains are shown on sheet 41.

22. Please see previous applicant letter about the missing notation on the plans concerning who builds which sidewalk. The response to comments stated this was provided on the general layout sheets. I am not seeing any indication of this on the general layout sheets, the specific plan views, or the intersection details. All sidewalk along unplatted property (i.e. along Bailey Farm Pkwy), detention

tracts, common area tracts, and all ADA-accessible ramps shall be shown to be installed by the contractor. Notation or symbology shall be clear in this regard to avoid any confusion in the field.
Response: Sidewalk construction (shaded portions) are called out on the plan-profile sheets 10 through 17. Sidewalk ramp construction details are called out on the Intersection Detail sheets 18 through 25. Labels indicating "Limits of Construction" for the ramps have been added along with "Turning Space is Part of Ramp Construction" for mid-block ramps.

23. Intersection Detail Sheets General Comment: All ADA-ramp construction shall show in explicit terms the limits of construction. This shall include any required turning spaces. Please review and reconcile.
Response: Explicit labels showing the sidewalk ramp construction limits have been added to the Intersection Detail sheets.

24. Sheet 19: The ADA-accessible ramp at Ranchland and Cape Dr. on west side is missing the detailing on the turning space. The turning space in this instance shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall be design slope be greater than 1.5% in any direction (i.e. flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space has been revised.

25. Sheet 19: Longitudinal slope call-outs were missing on the ramps at Ranchland and Cape Dr. Slope call-outs are required for all ADA-accessible ramps in addition to elevation corner call-outs.
Response: Slope labels have been added on sheet 18.

26. Sheet 19: The ADA-accessible ramp at Sweet Root Dr. and Cape Dr. on east side is missing the detailing on the turning space. The turning space in this instance shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e., flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the Ada-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramp have been modified to meet requirements.

27. General Comment on All Intersection Details: Wings are not allowed on ADA-accessible ramps. Please show grading up to the ramp no greater than 3 to 1.
Response: Wings have been removed on all ramps.

28. General Comment on All ADA-Accessible Ramps: The five (5) foot wide ADA-accessible route across all stop-controlled intersections shall be shown, along with cross-slope call-outs of no greater than 1.5%.
Response: 5-foot accessible routes have been added with slope labels at stop-controlled intersections.

29. Sheet 20: ADA-accessible ramps at Rising Sun and Cape Dr. on northeast side and the southeast side are missing the detailing on the turning spaces. The turning space in these instances shall include the entire "baseball diamond" shaped turning spaces as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e. flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramp have been modified to meet requirements.

30. Sheet 20: The longitudinal slope call-out on the ADA-accessible ramp at Rising Sun Dr. on the northeast corner is higher than the maximum allowed by the City of Lee's Summit. The City has adopted a more stringent requirement than PROWAG (i.e., 7.5% versus 8.33%) to allow for some construction tolerance. In no case shall be finished product be allowed greater than 8.33%. Design slope, however, shall be 7.5%.
Response: Design slopes limited to 7.5% on all ramps.

31. Sheet 20: The ADA-accessible ramps at Bailey Farm Pkwy. And Cape Dr. on east side are missing the detailing on the turning spaces. The turning spaces in these instances shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e., flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramp have been modified to meet requirements.

32. Sheet 20: The longitude slope call-out is too high for the ramp shown at the northeast corner of Bailey Farm Pkwy. And Cap Dr. Please reconcile, and ensure the elevation call-outs and the slope call-outs show a design slope less than 7.5% (see previous comment related to City's more stringent design slope requirements).
Response: Longitudinal slope has been decreased to 7.5% or less.

33. Sheet 20: The ADA-accessible route across Cape Dr. is skewed due to the ramps not lining up at Rising Sun Dr. and Cape Dr. Please correct to eliminate the skew in the ADA-accessible route.
Response: All ramps have been realigned to match the opposing ramp.

34. Sheet 20: The ADA Accessible route across Cape Dr. at Bailey Farm Pkwy is skewed due to the ramps not lining up. Please revise as appropriate to eliminate the skew.
Response: All ramps have been realigned to match the opposing ramp.

35. Sheet 21: The ADA-accessible route across Cape Dr. at Falling Star Dr. is skewed due to misalignment of the ramps on either side. Please revise as appropriate to eliminate the skew.
Response: All ramps have been realigned to match the opposing ramp.

36. Sheet 21: The ADA-accessible route across Ranchland at Sweet Root Dr. is skewed due to misalignment with the ADA-accessible ramps. Please revise to eliminate the skew.
Response: All ramps have been realigned to match the opposing ramp.

37. Sheet 21: Both ADA-accessible ramps at Ranchland and Sweet Root Dr. are too high of a slope. The maximum design slope is 7.5%. Please see previous comments related to the City's more stringent design standards. Please revise as appropriate.
Response: Ramps revised to include a maximum 7.5% slope.

38. Sheet 21: The ADA-accessible ramps at Falling Star Dr. and Cape Dr. on northeast side and southeast side are missing the detailing on the turning spaces. The turning space in these instances shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e., flat as defined by PROWAG and city of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramps have been modified to meet requirements.

39. Sheet 21: The longitudinal slope on the ADA-accessible ramps on the northeast corner and the southeast corner of Falling Star Dr. and Cape Dr. are too high. The maximum design slope is 7.5%. Please see previous comments related to the City's more stringent slope requirements. Please revise as appropriate.
    Response: Ramps revised to include a maximum 7.5% slope.

40. Sheet 21: The ADA-accessible route across Cape Dr. at Falling Star Dr. is skewed due to misalignment of the ADA-accessible ramps on either side. Please revise as appropriate to eliminate the skew.
    Response: All ramps have been realigned to match the opposing ramp.

41. Sheet 22: The ADA-accessible route across Rising Sun Dr. at Ranchland Dr. is skewed, and the ramp on the east side of Rising Sun Dr. is no mono-directional. Please revise as appropriate to eliminate the skew and to eliminate the multi-directional ADA-accessible ramp.
    Response: All ramps have been realigned to match the opposing ramp.

42. Sheet 22: The ADA-accessible ramp at Ranch land and Cape Dr. on northeast side is missing the detailing on the turning space. The turning space in this instance shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e., flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
    Response: Turning space and ramps have been modified to meet requirements.

43. Sheet 22: the longitudinal slope is too high for the ADA-accessible ramp at the northeast corner of Ranchland and Bailey Farm Pkwy. Please revise as appropriate, and ensure it is no greater than 7.5% design slope. Please see previous comments related to the City's more stringent requirements for slope on ADA-accessible ramps.
    Response: Ramps revised to include a maximum 7.5% slope.

44. Sheet 22: Turning space is shown on the west side of the intersection of Ranchland and Rising Sun Dr. This turning space is not flat as defined by PROWAG and the City of Lee's Summit. A turning space is required for any turns greater than 45 degrees, and this is approximately 90 degrees. It shall be detailed with corner elevations and slope call-outs. In no case shall the slope be greater than 1.5% in any direction, including the diagonal.
    Response: Turning space and ramps have been modified to meet requirements.

45. Sheet 23: Longitudinal slope call-out for the ADA-accessible ramp at Falling Star Dr. and Ranchland is too high. The maximum design slope is 7.5%. Please see previous comments related to the City's more stringent requirements for slope. Please revise as appropriate.
Response: Ramps revised to include a maximum 7.5% slope.

46. Sheet 23: The termination of the sidewalk shown within the cul-de-sac does not meet City requirements. This sidewalk shall end with an ADA-accessible ramp, without a receiver. Please see examples provide din an earlier email, or let me know and I can re-send. There are essentially two (2) choices: 1) enter straight into the cul-de-sac, or 2) enter using a parallel ramp geometry. Either is acceptable, but termination of sidewalk as shown in the cul-de-sac is not acceptable. Please revise as appropriate.
Response: Terminating ramp design at cul-de-sacs have been revised.

47. Sheet 24: The ADA-accessible route across Bailey Farm Pkwy is skewed due to misaligned ADA-accessible ramps. Please revise as appropriate by eliminating the skew and aligning the ADA-accessible ramps.
Response: All ramps have been realigned to match the opposing ramp.

48. Sheet 25: The ADA-accessible ramp at Arboretum Dr. and Bailey Farm Pkwy on northeast corner is missing the detailing on the turning space. The turning space in this instance shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e., flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramps have been modified to meet requirements.

49. Sheet 25: The ADA-accessible route across Windbreak Drive at Bailey Farm Pkwy is skewed due to misalignment of the ADA-accessible ramps on either side of Windbreak Dr. Please eliminate the skew by aligning the ramps as appropriate.
Response: All ramps have been realigned to match the opposing ramp.

50. Sheet 25: The ADA-accessible ramp at Windbreak Dr. and Bailey Farm Pkwy northeast side is missing the detailing on the turning space. The turning space in this instance shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e. flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-

accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramps have been modified to meet requirements.

51. Sheet 26: The ADA-accessible ramp at Vantage Point Dr. and Bailey Farm Pkwy on northeast side is missing the detailing on the turning space. In addition, the geometry should follow what is shown previously for these situations (i.e., the "baseball diamond" shape to 1 foot of right of way). The turning space in this instances shall include the entire "baseball diamond" shaped turning space as shown on your proposed geometry. In no case shall the design slope be greater than 1.5% in any direction (i.e. flat as defined by PROWAG and City of Lee's Summit requirements). As previously discussed, all construction of ADA-accessible ramps shall be performed with the subdivision improvements, with the homeowner tying into the turning space, or if that is not practical at a later date due to grading concerns, the ADA-accessible ramp construction shall continue beyond the turning space if deemed appropriate by the design engineer.
Response: Turning space and ramps have been modified to meet requirements.

52. Sheet 32: Rap rap at the end of the 48-inch RCP is shown without a stilling basin. It would appear this is warranted, along with a suitable method to drain the stilling basin during low flow periods. Recommend a stilling basin utilizing one of the recognized design by USACE, and a method to drain the still basin using an underdrain. Please revise as appropriate.
Response: Per email conversation with Gene, the stilling basin was determined to be impractical. The rip-rap has been enhanced to provide enhanced coverage. Please see sheet 29 for detail.

53. Sheet 37: Geometry of the incoming and outgoing pipes do not match what is shown on the plan view. The plan view appears to show a "straight-through" geometry, while the detail shows a skewed angle. Finally, why is the detail view 180 degrees opposite that which is shown on the plan view? This is very confusing for field review.
Response: Structure view has been removed from sheet and replaced with a more comprehensive profile view.

54. Sheet 37: Profile view for line 3800 does not match what is shown in the stormwater report or the other section details and plan view on this sheet. Where is the 15-inch pipe that is to be connected to the outlet structure? It is completely missing from the profile view.
Response: Profile view revised and Water Quality Structure 3801 added.

55. Sheet 37: HDPE is called-out for the 15-inch pipe to be connected to the outlet structure, yet RCP is called-out in the stormwater report. Please revise to RCP, since a trash rack is to be installed and it would appear impossible to construct such a trash rack unless it is RCP.
Response: This pipe was replaced with an 8" PVC pipe.

56. Sheet 37: A trash rack is called out on the 15-inch flared end section that connects to the outlet structure. Where are the details for such construction of a trash rack? Is the rack intended to be hinged for easy maintenance? Please show all details necessary for construction so there is no confusion during construction.
Response: The flared end section has been replaced from the design with a perforated CMP riser pipe.

57. Sheet 37: The trash rack for the open top outlet structure was missing notes concerning welding of steel rods. Is this intended to be welded? If so, please be specific. If not, please show how these will be tied-together.
Response: Trash rack is intended to be welded. This has been called out on the trash rack detail (lower righthand corner of detail)

58. Sheet 37: Materials, thickness of walls, placement of steel, and all other details necessary to construct the outlet structure were missing. This is required. Please revise as appropriate.
Response: Information added to Detention Basin Design sheet 36.

59. Sheet 37: Detention basin was missing the graphic format of the 100-year WSE and clogged condition/zero available storage WSE on the plan view. It should also include dimensions from property lines to ensure a minimum 20 foot setback is maintained between the clogged/zero available storage WSE is maintained. Please update as appropriate.
Response: 100-year WSE and 100-year Clogged WSE added to Detention Basin Design sheet 36 plan view.

60. Sheet 37: Detention basin was missing the contour elevation callouts within the basin and the dam. Please update and revise as appropriate.
Response: Contour elevation labels have been added to sheet 36.

61. Sheet 37: Please eliminate all easements for incoming storm lines and outgoing storm lines. These lines shall be noted elsewhere as 'PRIVATE". Pleas ensure the plat is updated to remove these easements.
Response: Easements have been removed from plan.

62. Sheet 37: the emergency spillway is referred to as an "auxiliary spillway" on this sheet. Please review and remove any reference to "auxiliary spillway", since this is an emergency spillway and not to be utilized in any event other than clogging

of the primary outlet works or exceedances in the design flow to the basin over and above the 100-year event.
Response: Auxiliary spillway changed to emergency spillway.

63. It is highly recommended that additional storage and freeboard be designed into the plans, as the as-built condition may deviate from the plan. The City may require modifications during the as-built review phase of the project if design storage and freeboard requirements are not met by the as-built condition.
Response: We have designed some additional storage into the basin. Detention storage table provided on sheet 36.

64. Sheet 37: It is recommended the outgoing pipe be lessened in terms of slope to eliminate the stormwater from entering the supercritical realm. Excessive erosion will occur at the daylight point near the stream bank, and will lead to degradation of the creek. Please revise to a lesser slope, and update the design calculations as appropriate.
Response: Outgoing pipe slopes have been reduced.

65. Sheet 37: Energy dissipation in the form of rip rap may not be sufficient for the daylight pint of the exiting 24-inch storm line 3800. Please provide calculations shown in the rip rap design is sufficient, and/or lessen the slope within the exiting 24-inch line to render the stormwater subcritical.
Response: Riprap sizing calculations have been added to the Storm Structure List sheet 30.

66. Sheet 37: Note under the trash rack for the outlet structure states" bar grating to be installed over V notch casting". What does this mean? It does not appear any V notch casting was included in the stormwater report, or shown on the plans. Please reconcile.
Response: Wording removed from plan sheet.

67. Sheet 37: A better section view is required for the outlet structure, which shows the height and grading of the dam in relation to this structure. As shown, it is more of a generic diagram rather than a site-specific section view. Although not necessarily required it be to scale, it should at a minimum show the riser structure, the grading in relation to the riser structure, the inlet and outgoing pipes, and the 8 inch orifice plate.
Response: Section view of water quality structure has been added to sheet 36.

68. Sheet 37: The 8-inch orifice plate does not include any details such as material, method of fastening, etc. Please show these details so there is no guesswork during construction. The City shall require a robust method of fastening to the pipe/outlet structure.
Response: Details have been added to sheet 36.

69. Sheet 36: Storm Line 3600 is shown entering the basin at an excessive slope which will lead to erosion in the basin. Please lessen the slope from the upstream inlet to the daylight point, so the flow is subcritical to the detention basin.
Response: Slope has been decreased.

70. Sheet 39: MODOT Type 5 aggregate thickness shown on the section view does not conform to the Design and Construction Manual. A minimum 12-inch thickness is required, unless chemically-stabilized subgrade is provided. Please review the table to the left of the typical section and revise as appropriate.
Response: Aggregate type has been updated.

71. Sheet 39: Please remove PCC pavement table. It is irrelevant to this project.
Response: Table removed.

72. Sheet 39: Please provide call-outs for the asphaltic concrete pavement type on the typical section. Please see the Design and Construction manual for specific choices for base and surface layers.
Response: Callouts revised.

Traffic Review – Corrections

1. Sheet 12 – K Value (sag) at sta. 16+35 is too low. (37 minimum – Residential Collector).
Response: K value has been increased to meet standards.

2. Sheet 14 – K Value (sag) at sta. 3+68.08 doesn't appear to have been modified and is too low (26 minimum – Residential Local).
Response: K value has been increased to meet standards.

Additional Comment

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, i9ncluding 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 mains.
- 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.

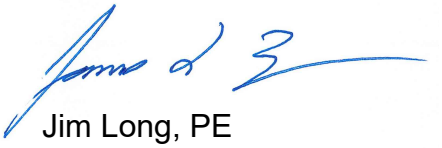
- Water quality features installed to meet the 40-hour extended duration detention requirements.
- Grading for detention / retention ponds.
- Grading to establish proper site drainage.
- Utility infrastructure adjustments to finished grade (i.e. manhole lids, water valves, etc.).
- Erosion and sediment control devices required for construction.
- Re-vegetation and other post-construction erosion and sediment control activities.

Response: EOPC is included with submittal.

Should you have additional comments/questions, please contact me. Thank you.

Sincerely,

SCHLAGEL & ASSOCIATES, P.A.



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Attachments