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## **Memorandum**

**To:** Stacy Nerger, Associate Planner

**Date:** January 5, 2018

**From:** Alex Mestdagh, P.E. Engineering Services Manager  
David Aden, P.E. Traffic Engineer  
Jacob James, P.E. Stormwater Manager  
Kurt Patrick, P.E. Stormwater Engineer  
Tyler Sandt, Development Review Engineer

**Cc:** Tom Williams, P.E. Director of Public Works and Engineering

**Subject:** Trails at Crowfoot Filing 9 Final Plat – Engineering 2<sup>nd</sup> Review

The Engineering Department has reviewed the documents submitted for Trails at Crowfoot Filing 9. The submittal consisted of the following documents:

<b><u>Document</u></b>	<b><u>Date Received</u></b>
Final Drainage Report	December 12, 2017
Drainage Maps	December 12, 2017
Cost Estimate	December 12, 2017
Final Plat	December 12, 2017
Landscape Plans	December 12, 2017
Construction Documents	December 12, 2017
Traffic Study	December 12, 2017

The site is located east of Crowfoot Valley Road, directly south of the Richlawn Hills subdivision. This filing plats the major roads on the west side of Bayou Gulch Road. Based on our review we have the following comments:

### **Traffic and Roadway Review Comments**

The following comments concern traffic, access, roadway design, and construction standard issues for the subject property. They are based upon our review of the submittal documents in accordance with the criteria presented in the Town of Parker’s Roadway Design and Construction Criteria Manual (RDCCM), as revised, July 2015. Additional regulatory and planning documents may have been utilized in the review, and are referenced in the comments where appropriate.

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### General Comments

1. It will be the responsibility of the HOA to maintain the treelawn and median adjacent to the park that is being conveyed to the Town. Please coordinate with the Town regarding how this policy will be implemented.

### Final Plat

2. Per previous review, please dedicate sidewalk easements over any sidewalk not within the right-of-way.

### Public Improvements Cost Estimate

3. Update the cost estimate with any changes to the plans.
4. Please clarify what the “Special Sign” line item corresponds to.

### Landscape Plans

5. Remove the Town’s engineering signature block from the cover sheet.

### Traffic Study

See Traffic Study comments on eTrakit.

### Construction Plans

6. Add trench drains to the residential collector sections shown on the roadway plan and profiles.
7. Add crosswalks to the intersection of Sky Pilot Ave and Scarlet Sage Ave.
8. The redirect taper shown on westbound Scarlet Sage Ave needs to meet CDOT redirect taper criteria for a posted 30 MPH (165 feet for 11 foot lanes).
9. The easternmost portion of N Pinery Pkwy is being shown as existing, please revise.
10. The storm sewer being constructed with Filing 1 at the southwest corner of Bayou Gulch and N Pinery on sheet 21 is being shown as proposed, rather than existing. The storm sewer being shown on sheet 29 is also called out as existing. The same issue is on sheet 8.

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Please revisit the plans and confirm the storm sewer callouts are correct to avoid any confusion regarding phasing.

11. Show the limits of, and clarify the material being used in the initial surcharge areas. Only Pond A should have a hard bottom.
12. Please revise the forebays in Pond C so that the wingwalls tie directly into the forebay walls and there is no wall between the baffles and the rest of the forebay.
13. On the Outlet Structure and Initial Surcharge Plan, show the minimum 3.5" by 18" minimum opening in the standard bar grating as shown in Figure 7.5.
14. Label orifice hole elevations on X-Section B-B.
15. Show the pond slopes adjacent to the trickle channel as 4% minimum per Figure 7.3 in the SDECM.
16. Access needs to be provided to the outlet structure and both forebays in Pond C.
17. Micropool appears to extend beyond the outlet structure into the trickle channel, the micropool WSE should be kept completely within the outlet structure.
18. Please note that handrails are not required on outlet structures unless deemed necessary by the engineer. Are handrails needed on all the outlet structures?
19. If possible, lower the outlet pipe from the outlet structure to the bottom of the back chamber to avoid having to fill the chamber with concrete. Also, the extremely steep slope of the Type H riprap at the outfall creates constructability issues.
20. Dimensions on Section B-B are not the same as the plan view of the outlet structure.
21. Add details for all grating on the outlet structure. The close mesh grate doesn't appear to be the correct size for the structure. The close mesh grate also does not meet our coarse bar grate standards.
22. Ensure all grates are set into the walls flush with the top of the wall of the outlet structure instead of bolted to the top of the walls.
23. The emergency spillway protection needs to extend down to the bottom of the embankment, please show this on the plan view.

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24. Show the cutoff wall location on the plan view of the pond.
25. Maximum storm sewer distance between manholes is 400' for 18"-36" pipe. Beebalm Ave. shows a run of 500' of 24" RCP.

### **Stormwater Review Comments**

The following comments concern drainage, erosion and sediment control, and non-point source pollution control issues for the subject property. They are based upon our review of the submittal documents against the criteria presented in the Town of Parker's, *Storm Drainage and Environmental Criteria Manual (SDECM)*, as revised, February, 2014. Additional regulatory and planning documents were utilized in the review, and are referenced in the comments where appropriate.

### **Final Drainage Report**

See Filing 1 engineering memo for drainage report comments.

### **Sediment and Erosion Control**

26. Show silt fence or sediment control log down-gradient of all disturbance.
27. Show debris and trash control on all roadways, existing and proposed.
28. Add a note stating that sediment control BMPs may be necessary along lot lines during home construction.
29. Please show the TSBs on the initial plan, as we will require they be installed immediately after construction begins.
30. Final plan needs to show exactly which streets and sidewalks will be completely installed and which will be only rough graded.
31. Add a note stating that lot protection is required on all residential lots prior to issuing a certificate of occupancy.
32. Show erosion control blanket on both sides of the trickle channel in the detention ponds.
33. Show outlet structure protection in the detention ponds.
34. Show rough cut street control on all streets that will not be paved.

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35. Show erosion control blanket on all slopes steeper than 4:1.

The submittal is not in general conformance with the Town of Parker's *Roadway Design and Construction Criteria Manual* and *Storm Drainage and Environmental Criteria Manual*. The submittal must be revised and re-submitted for review. All submittals should be through the Town Community Development Department, accompanied by a letter that responds to each comment herein. Direct submittals to the Engineering Department will not be accepted.

An attempt has been made to identify all of the items that do not meet the Town of Parker's design criteria; however, it remains the developer's responsibility to ensure that all criteria are met.

If you have any questions regarding the comments please do not hesitate to contact the Engineering Department at (303) 840-9546.