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## Memorandum

**To:** Carolyn Parkinson, Planner I  
**Date:** December 8, 2022  
**From:** Michael Walton, P.E., Senior Development Review Engineer  
**Cc:** Alex Mestdagh, P.E., Engineering Services Manager  
Tom Williams, P.E., Director of Engineering/Public Works

**Subject:** SP22-099 Ray J. Harvie L1 Open Space – Stormwater 2<sup>nd</sup> Review

The Engineering Department has reviewed the documents submitted with this application. The submittal consisted of the following documents:

<u>Document</u>	<u>Dated</u>
Construction Plan	November 2022
Drainage Report	November 2022

Thank you for the opportunity to review this application. Based on our review we have the following comments:

### 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.

### CONSTRUCTION PLANS – ENVIRONMENTAL

#### GENERAL COMMENTS

1. Please relocate the Sediment Control Log (SCL) provided as perimeter control around the parking lot area to fall at the interface between the parking lot and landscaped area. This will help mitigate against sediment discharging into the gravel lot. **SCL Relocated as requested.**
2. Provide and identify one instance of Culvert Protection (CP) on the upstream side of every culvert proposed. **CP added to every culvert crossing.**

December 8, 2022

3. Please remove the Town's approval block from all standard detail sheets. Approval block removed.

### **CONSTRUCTION PLANS – STORMWATER**

1. Please upsize the proposed inlet to accommodate a free release of the proposed flows without surcharging the structure as currently shown.  
1. Coordinated with Town, Inlet is a Type D and has more than enough capacity for this area. Inlet must have some hydraulic head to function. Trail grading revised to capture 100yr event.
2. Please note that maintenance equipment will be required to access the site along this trail system as well and any culvert crossings of the trail should be adequately protected to accommodate the loading of said equipment. Please verify that adequate cover and appropriate material type are used to provide protection above the pipe for these loads. Response below.
3. Use of HDPE was noted for the proposed culvert crossings of the trail. Please note that this material has a tendency to “float” through soft surface trail material over time and could cause significant maintenance issues for the trail and culvert. It appears the designer may have provided the larger rock above the pipe to help accommodate for this, but please note there are concerns that the larger rock will localize the load of necessary maintenance vehicles on the pipe and cause a structural failure of the culvert. If possible, the Town's preference would be to utilize 18-inch or the elliptical equivalent RCP for this application. It is noted that there is not significant vertical clearance in these areas though and it may not be feasible to accommodate this size of pipe through the section. If this is the case, please propose potential options to help restrain the HDPE pipe to avoid floating as smaller RCP will be more prone to failure due to clogging. Response below.
4. Provide CDOT's standard detail for RCP. Please remove whichever inlet detail is no longer proposed for the project. Detail added. Type C Detail remains on the pipe since there is a detail of how to connect to a Type C needed.

### **DRAINAGE REPORT**

1. Please update the drainage letter as needed to accommodate all other comments provided. Drainage letter updated to include latest map and calcs.
2. Please ensure the most current version of the drainage plan is provided with future submittals. Drainage letter updated to include latest map and calcs.

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.

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.

2. Detail revised to give 1' of cover. PVC meeting ASTM D 3034 and AWWA C900 have a 1' minimum burial depth in loose soils down to E' =1,000psi. We anticipate infrequent lighter weight maintenance vehicles on trails.
3. Coordinated with Town, nuisance flow allowed to be kept in smaller PVC. 18" RCP would extend much further and create more grading and new swales. There will likely be clogging, but maintenance would be able to clear these instances as stated in coordination.