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Memorandum

To: Stacey Nerger, Associate Planner

Date: November 20, 2019

From: Tyler Sandt, Development Review Engineer
Michael Grabczyk, P.E. Project Engineer

Cc: Alex Mestdagh, P.E. Engineering Services Manager
Jacob James, P.E. Stormwater Manager

Subject: Jackalope F1 AMD1 L1 Site Plan and Replat – Engineering 2nd Review

The Engineering Department has reviewed the documents submitted for the Jackalope Filing 1 Amendment 1 Lot 1 Site Plan and Replat. The submittal consisted of the following documents:

<u>Document</u>	<u>Date Received</u>
Site Plan Set	October 25, 2019
Drainage Report	October 25, 2019
Construction Plans	October 25, 2019
Replat	October 25, 2019
Cost Estimate	October 25, 2019
PWSD Plans	October 25, 2019

The site is located at the southeast corner of Parker Road and Cockriel Drive. 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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Road and Storm Plans

1. Please remove the fire life safety signature block from the cover sheet of the civil set.
2. Please correctly show the easements on the plans and ensure the storm sewer is appropriately covered by the drainage easements.
3. Add the following note to the overall utility plan in the PWSD set:

"The proposed utility connection will require a Town right-of-way permit prior to commencing work. The Town prefers connections to be bored to the extent possible, and any street cut allowed by the Town will be required to be patched according to the Town's construction standards and details. The limits of patching will be determined by the Town at the time of construction. The Town of Parker does not allow roadway closures for utility work."

Public Improvements Cost Estimate

4. Per previous review, please add the soft costs outlined in Appendix B of the RDCCM.

Replat

5. Revise Note 13 to be Tract A.

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.

Road and Storm Construction Plans

6. Only a single HGL was provided in the storm plan and profiles. Please provide and identify the HGLs for *BOTH* minor and major storm events on the storm profiles.
7. Reconfigure the lateral for Inlet 3 (CDOT Type C) so that the RCP does not connect through the corner of the structure. Provide an additional manhole if necessary.

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8. Specify on the storm plan sheet that close mesh grates and not standard inlet grates are to be utilized on the Type C catch basins. (reference CDOT detail)
9. It appears that by reducing the 24" RCP slope down to 0.50%, it will be feasible to match soffit elevations.
10. It appears the Town's Figures 7.3 and 8.7 were utilized as the details for the perimeter trickle channel. Specify which section is to be utilized and remove reference to all other swale/trickle channel sections which are not to be used. Please note that it is not required that a Town detail be used for the perimeter trickle channel design, only for the pond trickle channel design.
11. All Town details appear blurred in the plans and will not be readable when plotted at half-size. Please revise to a readable quality.
12. Identify the maintenance access path with a hatch. The Trail may not exceed a 10% running slope. Also identify the transition from the 8" access section to the 12" section at the EURV water surface level.
13. Label the overflow spillway and show the extents with a hatch. Provide dimensioning, elevations, and rip-rap sizing based on the pond design. Also provide a detail for the cut-off wall.
14. Provide a detail for the forebay specific to this pond which includes dimensioning, elevation callouts, notch size, grout slab reinforcement.
15. The outlet structure detail still does not meet the requirements set forth in the SDECM and shown in Figure 7.5 as copied into the plan set. Provide a micropool with standard and coarse bar grating and a concrete ramp. Identify the design area for the Initial Surcharge Volume (ISV) on the plan set and within the outlet structure detail. Provide reinforcement details for the pond structures.
16. Revise the outlet structure design to utilize a 3-hole orifice plate for water quality as recommended by MHFD for maintenance.
17. Remove Figure 7.7 from the plan set as this is a layout example for engineers/designers.

Drainage Report

18. Reprint the proposed SF-2 form to not clip the sheet.

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19. The watershed area of 7.92-acres originally entered into the MHFD pond worksheet was correct.
20. To account for the undetained flows, the pond discharge must be lowered so that the sum of the peak 100-year pond discharge and the undetained flows is equal to or less than 90% of the pre-developed peak flows.
21. The developed to undeveloped peak flow ratio for the 5-year storm event was reduced from 3.4 to 3.0. This should be reduced further to the range of 1.0-1.5. Utilizing a 3-hole orifice plate may help with the minor storm flows.

Grading and Erosion Control Plans

22. Show only the initial CBMPs and existing improvements on the initial CBMP plan sheet.
23. Remove reference to the proposed storm sewer and inlet protections which should be shown on the interim/final CBMP plan sheet.
24. Show the proposed grading contours on the interim/final CBMP plan sheet.
25. Add a callout identifying the rock hatch as rock mulch.
26. Silt fence (SF) is labeled adjacent to Cockriel Drive east of the main entrance, but no linework is shown (as shown on the west side). Please show line work for SF or SCL along the back of sidewalk along the entire length of Cockriel Drive.
27. Show the ratio of all slopes that are 4:1 or greater.
28. Provide SCL along the perimeter of all proposed landscape islands, unless the island landscaping includes a sump with a drain.
29. Turn the proposed construction fence along the sides of the VTC to force access over the entire length of VTC.
30. Provide Masonry Work Protection (MWP) if the new building will utilize a masonry exterior.

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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.

Link to Engineering Standards and Criteria:

<http://www.parkeronline.org/210/Standards-and-Criteria>

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.