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Memorandum

To: Carolyn Parkinson, Associate Planner

Date: March 31, 2020

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

Cc: Alex Mestdagh, P.E. Engineering Services Manager

Subject: Parker and Pine Subdivision Filing 1 – Engineering 4th Review

The Engineering Department has reviewed the documents submitted for Parker and Pine Subdivision Filing 1. The submittal consisted of the following documents:

<u>Document</u>	<u>Date Received</u>
Final Plat	March 11, 2020
Drainage Report	March 11, 2020
Road and Storm Plans	March 25, 2020
Utility Plans	March 11, 2020
Traffic Study	November 18, 2019

The site is located near the southwest corner of Parker Road and Pine Lane. 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 Construction Plans

1. Please add a porkchop the site's northern access to accommodate the three-quarter access restriction at this intersection.
2. The requested revisions to the northbound striping at the intersection of Parker and Pine will need to be completed with this project. This is part of the mitigation required for the long-term LOS deficiency.
3. Staff understands the more detailed intersection grading plans will be provided on future submittals for the site's accesses on the public roads.

Traffic Study

4. It does not appear that the traffic study was amended to reflect the northern access being converted to a three-quarter movement as NB left out trips are still being shown.
5. Trip Generation: Table 3, Appendix G (Site Plan). Need to review land uses against site plan. Appears there are two restaurants with drive thru (Lots 3, 5). Prefer to identify as two uses each with associated square footage rather than a single 6000 SF use.
6. Trip Generation: Table 3, related to Internal Capture:
 - a. Please discuss internal capture methodology with Town Staff. Appears reductions were taken for ineligible items. Example – ITE 820 Shopping Center already has internal capture accounted for in base rate. Not eligible for further reduction. (See Trip Generation Handbook, 3rd Ed, Ch. 6.)
 - b. Internal Capture methodology as implemented in ITE spreadsheet limited to AM/PM peak only. Unclear how daily extrapolation was calculated as this is not in ITE methodology.
7. Trip Generation: Table 3, related to pass by trips. Should Non-pass-By trips equal total trips after internal capture? Unclear for example how Multi family went from 952 trips to 576 trips to 288 non-pass by.
8. Trip Generation: ITE 948 use code (Automated Car Wash). Trip Generation Manual has no daily use data, and no AM Peak data. Unclear where the AM and Daily data points in the study originate.
9. Lane configuration, northern access point. Recommend analysis as separate left and right turns to minimize delay.

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10. Analysis general:

- c. no contemplation of opposing $\frac{3}{4}$ turn movement to north of site (Fig 13, et al).
- d. inconsistencies between short term and long term PHF used in analysis. Please contact Town.
- e. Study appears to underestimate traffic on 20-Mile at Pine, SB approach. Contact Town for current projections with current development.

11. Queue analysis/geometrics:

- f. Recommendations may need revision. Example – recommends extending EB to NB left turn to 250'. May not be possible and have any sort of entry Taper.
- g. Queue lengths may need verification of microsimulation model. Internal review suggests long term traffic for Parker at Pine EB to NB left turn may extend beyond requested Pine Lane access point.

12. Recommendations: Conversion of single to double lefts will require turning templates to verify what geometric changes may be required at each intersection in relation to stop bars, medians, and islands.

13. The traffic study checklist notes Town of Parker standard Pass-By and Internal Capture rates, however non-standard were used. Please update.

Replat

14. Per previous review, please clarify the ownership intention of the private access roads. Ideally these should be in their own tract that is then dedicated to the BOA. At the very least, an access easement will need to be shown.

15. It appears that the most logical path for the future multi-family lot is to show them as unbuildable tracts with this plat. If this is not acceptable, please coordinate with Town staff.

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.

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16. Identify the structure type and size within all storm labels in both plan and profile.
17. **Sheet C5.6:** The provided HGLs do not appear to be correct. Some HGLs are shown dipping below the pipe flowline.
18. **Sheet 6.4:** Provide and identify Type II bedding material underneath the forebays and trickle channel.
19. **Sheet 6.4:** Identify steel reinforcement sizing and spacing within the forebay details.
20. Provide details for all of the proposed pond structures, including but not limited to forebays, trickle channels, outlet structure, maintenance section, and emergency overflow spillway.

Drainage Report

21. Provide calculations/modeling for the pipe hydraulics.
22. Use the latest UDFCD Detention workbook v4.07. Also, utilize the Parker Town Hall rainfall depths and not the Pinery Country Club.
23. Correct the orifice plate design to drain the WQCV over 40-hours.

Grading and Erosion Control Plans

INITIAL CBMP PLANS

24. Close the gap between the SF and CF at the southeastern corner of the project.
25. Provide a callout at the driveway entrance off of S. Parker Road which states that no construction access shall take place at this location without a VTC.

INTERIM/FINAL CBMP PLANS

26. Shift/revise the DD for the street stub west of Lots 3 & 4 to capture the flows immediately after the Type R located outside the pavement.

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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.