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Memorandum

To: BrieAnna Simon, Associate Planner

Date: March 30, 2020

From: Alex Mestdagh, P.E. Engineering Services Manager
Dave Aden, P.E. Traffic Engineer
Tyler Sandt, Development Review Engineer
Michael Grabczyk, P.E. Project Engineer

Subject: Douglas 234 Filing 5 Minor Development Plat – Engineering 1st Review

The Engineering Department has reviewed the documents submitted for the Douglas 234 Filing 5 Minor Development Plat. The submittal consisted of the following documents:

<u>Document</u>	<u>Date Received</u>
Plan and CD Doc.	February 6, 2020
Drainage Report	February 6, 2020
Traffic Study	February 6, 2020

The site is located at the northeast corner of Chambers Road and Hess 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. On future submittals, please separate the Civil CD's, Utility CD's, Plat, and Site plan into separate documents.
2. Please note that the public improvements associated with this project will be secured via a Subdivision Improvement Agreement. On future submittals, provide a public improvements cost estimate per the template in Appendix B of the RDCCM.
3. Note that no certificates of occupancy, temporary or otherwise, will be granted until Filing 5 has received probationary acceptance and all necessary onsite improvements have been constructed and accepted by the Town.

Minor Development Plat

4. Add the following notes to the plat:

“ACCESS EASMENT ARE HEREBY GRANTED OVER ALL PRIVATE ENTRANCES AND INTERNAL ROADWAYS WITHIN THE DEVLOPMENT FOR THE BENEFIT OF ALL CURRENT AND FUTURE OWNERS OF THESE PROPERTIES FOR INGRESS, EGRESS AND TRAFFIC CIRCULATION. SHOULD PROPERTIES BE FURTHER SUBDIVIDED INTO ADDITIONAL LOTS, ALL SUCH LOTS SHALL HAVE THE RIGHT TO USE ALL SUCH ENTRANCES AND ROADWAYS FOR PUBLIC ACCESS PURPOSES.”

“NO CERTIFICATES OF OCCUPANCY, TEMPORARY OR OTHERWISE WILL BE ISSUED UNTIL ALL PUBLIC IMPROVEMENTS AND NECESSARY ONSITE IMPROVEMETS ARE COMPLETED AND ACCEPTED IN WRITING BY THE TOWN.”

“NO CERTIFICATES OF OCCUPANCY, TEMPORARY OR OTHERWISE SHALL BE ISSUED UNTIL THE LANDSCAPING IS INSTALLED AND APPROVED BY THE TOWN OR AS OTHERWISE ALLOWED IN THE LAND DEVELOPMENT CODE.”

“PRIVATE ACCESS DRIVES/ROADWAYS MUST BE CONSTRUCTED PRIOR TO THE ISSUANCE OF TEMPORARY CERTIFICATE OF OCCUPANCY AND/OR CERTIFICATE OF OCCUPANCY FOR ANY DEVELOPMENT OCCURRING ON PROPERTY SHOWN HEREIN.”

“PROPERTIES IN THIS PLAT ARE SUBJECT TO A PERPTUAL, NON-EXCLUSIVE CROSS PARKING EASEMENT FOR THE SHARED USE OF ALL PARKING SPACES

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SITUATED WITH THE PROPERTIES SHOWN HEREIN. THE OWNER OF EACH LOT SHALL KEEP AND MAINTAIN THE PARKING SPACES CONTAINED WITHIN THERE RESPECTIVE LOT IN A COMMERCIALLY REASONABLE CONDITION AND STATE OF REPAIR.”

5. Show the full sight triangles at the private drive intersections with Hess and Red Sky and add the following note to the plat:

"Within the sight triangles, as shown, limited landscaping shall be allowed but no solid structures or trees will be permitted. Solid structures shall include, but not be limited to, fences, mailboxes, and utility boxes. Landscaping within the sight triangles will be limited to shrubs and plantings that at maturity will be no taller than two feet. Landscaping within the sight triangle shall be maintained by the property owner or appropriate association."

6. 25-foot drainage easements will be required to be dedicated over all proposed storm sewer. In areas with multiple utilities, the Town will also accept a 50-foot multi-use easement accompanied by the following note:

“A Multi-Use Utility Easement is hereby dedicated as shown for the use of all utilities. The Town of Parker is granted access over and across the easement for the purpose of accessing, maintaining, and repairing stormwater management improvements in the event that the property owner fails to satisfactorily maintain or repair said facilities.”

7. Please coordinate with the Town regarding the dedication of access easements between the commercial lots. Shared accesses are the preferred configuration as they minimize the number of access points while increasing the effective area of each lot. However, this is not a requirement.
8. Dedicate an access easement over Rosebud Drive.

Road and Storm Construction Plans

9. Remove the “Approved One Year From Date” signature block from the cover sheet.
10. Provide existing and proposed cross slopes on the intersection detail sheets at 25-foot intervals.
11. Add Private Road No Town Maintenance signs to each end of the private drive.

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12. Please separate the Rosebud Drive plan and profile and storm sewer plan and profile into their own sheets and ensure the private drive ties into the cross slopes of Hess Road and Red Sky Drive properly.

Utility Plans

13. Add the following note to the Overall Utility Plan:

"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."

Site Plan

14. Show storm sewer on the landscape plan and ensure there are no trees proposed within 7-feet of the storm sewer.
15. Show the sight triangle at the Chambers Road – Red Sky Drive intersection and ensure no landscape or solid structures are proposed within.

Traffic Study

16. Trip Generation: Project Description, Table 3. Further discussion with Town Staff is needed regarding the quantity of development proposed. While a conservative approach to the Traffic Study is appreciated, a Floor Area Ratio of 0.5 is unlikely to be achievable on this site or supported by the market study associated with the Chambers Subarea plan.
17. Trip Distribution: Exhibit 5:
 - a. The overall map shows trip distribution for short term, but no long term distribution exhibit was found in the study. Chambers Road south of Hess will carry significant traffic in the future. Please review short and long term distribution with Engineering.
 - b. Map callout has 30% of site traffic from the east bypassing the first entry from Hess into the site and going around to the Chambers/Red Sky entry. Please revisit this assumption and discuss with Town Staff.
 - c. 10% of the site traffic is assumed to come to/from the neighborhoods. Not sure there is critical mass of residences to support 1200 trips a day. If this 10%

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assumes cut thru traffic to site from outside areas, may need to review assumed paths and mitigation.

18. Project Volumes: Exhibit 8. While percentages were shown in Exhibit 5 entering/exiting the neighborhood, no project volumes are shown on Swift Fox or Firefly in Exhibit 8. Please update and provide calculation of added traffic.
19. Please review volumes from intersection to intersection to ensure the analysis matches up. For example, Exhibit 12 seems to add eastbound trips to the analysis between Chambers and the roundabout and lose westbound trips based on the movements shown at each intersection.
20. Driveway analysis – Hess Rd RIRO to/from project site. It appears that the driveway analysis assumed converting the continuous acceleration/deceleration lane to a mandatory right (drop) condition. This will need to be reviewed. Prior assumption was this outside lane would be a shared/thru+right condition to meet accel/decel lengths for adjacent established intersections.
21. AM peak analysis: the AM Peak has two different high traffic periods. From 24-Hr count, 8-9 AM is highest raw volume on Red Sky. This corresponds to adjacent elementary school site traffic. From TMC at Chambers/Red Sky, it appears Chambers is highest hourly volume at 7-8 PM. Both periods should be analyzed to ensure all impacts are accounted for.
22. PM peak analysis: the PM Peak also has two different high traffic periods. From 24-Hr count, 3-4 PM is highest raw volume on Red Sky. This corresponds to adjacent elementary school site traffic. From TMC at Chambers/Red Sky, it appears Chambers is highest hourly volume at 5-6 PM. Both periods should be analyzed to ensure all impacts are accounted for.
23. Queue analysis/geometrics: Table 8. Table 8 shows 266' storage recommendation for WB approach to Chambers on Red Sky. It appears only 180' of left turn storage is available before access to right turn is choked off. Please review operation. Microsimulation may be necessary to verify traffic does not back up into the traffic circle.
24. The traffic study is not in standard Town format including signed checklist. Please see Roadway Design and Construction Criteria for details.

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25. Analysis detail volumes should match detail sheets. For example, it appears at Chambers/Red Sky NB in the long term + project they used the wrong volume for right turn (looks like analysis used AM right for PM).
26. With a traffic signal warranted long-term at the intersection of Chambers Road and Red Sky, this development will be required to pay its share of the cost to design and construct the signal.
27. Final study will need PE stamp and signature.

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

28. Storm Drainage Infrastructure Notes on sheet 5 appear to be out of date. Include current notes provided in the SDECM on the Town's website (<http://parkeronline.org/577/Storm-Drainage-and-Environmental-Criteri>)
29. Provide profiles for each of the lot and area inlet laterals.
30. Provide minor and major 7HGLs for the entire length of proposed RCP and not just the structures.
31. Provide the type and size of all drainage structures in both plan and profile. EX: 5' Type R or 6' MH.
32. Provide a key map for the storm laterals on Sheet 19.

Drainage Report

33. Reference within the report and include in the appendix the relevant Pond A contributing/assumed sub-basin characteristics, pond calculations, and drainage maps from the Parker234 report.

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Grading and Erosion Control Plans

GENERAL COMMENTS

34. Rename the Phase A and Phase B CBMP plan sheets to be initial CBMP plan and interim/final CBMP plan.
35. Provide a legend of symbols to correspond to the Town's 31 CBMP Notes & Details.
36. Revise note 4 to read as follows:

“LOT PROTECTION (LP) IS REQUIRED ON COMMERCIAL LOTS WHEN LANDSCAPING IS NOT POSSIBLE.”

INITIAL CBMP PLANS

37. Remove reference to any non-initial phase CBMPs such as rough cut street control (RCSC) and inlet protection for future/proposed inlets.
38. Provide and identify the vehicle tracking control (VTC), stabilized staging area (SSA), and portable toilet protection (PTP). The contractor may adjust and/or relocate these controls as coordinated with the environmental inspector prior to construction. Revise note 7 to have any CBMP changes coordinated through the Town's environmental inspector.
39. Revise the IPAN for the existing area inlet adjacent to the single-family lots to graphically show on top of the existing inlet.
40. Provide a callout at the two driveway cuts that states the following:
“ALL WORK WITHIN PUBLIC RIGHT-OF-WAY (ROW) WILL REQUIRE A TOWN ROW PERMIT. INITIAL AND INTERIM CBMPS FOR WORK WITHIN THE TOWN'S ROW SHALL BE COORDINATED WITH THE TOWN'S ENVIRONMENTAL INSPECTOR PRIOR TO THE BEGINNING OF ANY ROW WORK.”

INTERIM/FINAL CBMP PLANS

41. In addition to the identified back of walk protection, provide sediment control log (SCL) in the tree lawn along the back of curb. Erosion control blanket (ECB) may be utilized over the entire tree lawn in-lieu of the additional SCL.

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42. Show the swales identified on the grading plan as diversion ditches (DD) on the interim/final CBMP plan.
43. Provide and identify debris and trash control (DTC) along Hess Road, Chambers Road, and Red Sky Drive.
44. Provide sidewalk transition protection (STP) for the proposed curb ramps on Hess Road.
45. Revise the curb inlet protection along Hess Road and the private drive from IPCOS to IPCOG. The IPCOG CBMP includes both the protection at the inlet lip as well as the upstream rock socks.
46. Identify the RCSC on the interim/final CBMP plan.
47. Include surface roughening (SR) over the lots in addition to the provided seeding, mulching, and crimping (SMC)

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.