



*Your kind of place.*

## **Memorandum**

**To:** Krista Flynt, Planner 1

**Date:** December 9, 2020

**From:** Tyler Sandt, Development Review Engineer  
Michael Walton, Project Engineer

**Subject: Douglas 234 Filing 1 Lot 1 Daycare Site Plan – Engineering 1<sup>st</sup> Review**

The Engineering Department has reviewed the documents submitted for the Douglas 234 Filing 1 Lot 1 Daycare Site Plan. The submittal consisted of the following documents:

<b><u>Document</u></b>	<b><u>Date Received</u></b>
Road and Storm Plans	November, 2020
Drainage Report	November, 2020
Traffic Study	November, 2020
Utility Plans	November, 2020
Landscape Plan	November, 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.

December 9, 2020

### Landscape Plan

1. Show sight triangles at the site's access and ensure no trees or landscape above two feet are proposed within.
2. Show storm sewer on the landscape plan and ensure no trees are proposed within seven feet of the pipe.

### Site Plan

3. 25-foot drainage easements will be required to be dedicated over all proposed storm sewer prior to any approvals on this project. Once the storm sewer alignment is finalized, provide the legal descriptions and exhibits for all proposed storm sewer.
4. Please continue to coordinate with the Town as well as the other prospective property owners on access locations. Where possible, the Town would prefer that adjacent lots have shared accesses and access points across the private drive line up appropriately.

### Traffic Study

5. On future submittals, upload a brief traffic conformance letter demonstrating compliance with the master.

### **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. On Sheet C2.0 in the Swale Detail please revise filter material callout to CDOT Class C. Please revise "4" MIN. SANDY LOAM" callout to reference the area of sandy loam used for the bank material.
7. All storm sewer systems collecting drainage from the proposed drive aisles and parking areas shall be considered public and must adhere to the standards and specifications

December 9, 2020

outlined within Section 6.3.3 of the Town's SDECM, including dedication of drainage easements. Please provide an exhibit and legal descriptions with the next submittal defining these easements.

8. Either provide a reference to SDECM section 6.3.3.1 or provide the lateral extents of concrete encasement required for the sanitary sewer line which does not have the 18" of minimum clearance.
9. Revise profile labels for better readability.
10. Please provide reasoning for the change between Class IV and Class III RCP on site.
11. Include CDOT standard detail M-603-2 as part of the storm sewer detail sheets in the next submittal.
12. Please identify whether the Type-C inlet proposed by the master developer will be a precast structure. If so, please note the riser sections cannot be cut to accommodate new pipe penetrations. It is highly encouraged to coordinate with the master developer regarding these proposed additional penetrations.
13. Please provide the proposed invert of the underdrain where it connects to the Type C inlet.
14. On future submittals, include both 5 and 100-year HGL's on the storm sewer profiles.

#### Drainage Report

#### **Narrative**

15. Revise Engineer's Certification to match the certification provided in SDECM Section 4.5 for Final Drainage Reports.
16. Page 2 paragraph 3 describes the site as having 1.518 acres. The Drainage Plan and Rational calculations only account for 1.35 of these acres. Please provide descriptions and calculations of the anticipated plan for the runoff of the additional area.
17. Please revise Section 2.2 to reflect a Site specific Minor Drainage Basin description. Revise the description of the existing minor basins from the referenced preliminary report to match the Site specific summary provided for the post-development basin A12. Please

December 9, 2020

also provide project specific minor basin descriptions including basin area, ground cover, flow path, and routing for the sub basins defined in the Rational calculations and Drainage Plan.

18. Please update the *Urban Storm Drainage Criteria Manual* Reference to reflect the most current criteria manual Volume 1 revision of August 2018, and to reflect the change from Urban Drainage Flood Control District to Mile High Flood District.

### **Appendix A**

19. Please locate and label the site on the FIRM.
20. Please either provide background masking or relocate basin labels ST-1 and ST-3 for better readability.
21. Please provide additional flow arrows in the landscaped areas of Sub Basins ST-1 and ST-3.
22. It appears the additional area missing from the Rational calculations is the northeast portion of the site. Please evaluate whether it is feasible to route this area to the swale east of the site. If this preferred solution is not feasible, please detail the grading restraints and anticipated off site flows within the report. Please also provide evaluation of the existing roadway storm sewer system proving capacity is available to accept these flows. In this case please also grade this area more directly toward the sidewalk and away from the property to the east to all feasible extents.
23. Appendix A-5 – Site and Utility Plans were not provided. Please provide in future submittals.

### **Appendix B**

24. The 100-year StormCAD analysis shows contributions of additional flow not listed in the report or Rational calculations at the EX-1 Type C inlet structure node. If there are additional flows contributing to this inlet, please detail in report and revise inlet calculations.
25. Please consider utilizing 4:1 side slopes for the swale rather than 3:1 slopes. Utilizing 4:1 slopes will help to avoid revegetation issues and avoid potential grading permit closeout

December 9, 2020

issues. Using lower side slopes should also minimize the USDCM max allowable depth recommendation which is currently being exceeded within the design.

26. Please verify the swale has capacity for the 100-year storm event. The provided inlet calculations reference a flow depth of 1.63 feet during the 100-year storm event, but the Swale Detail provided in the plan set references a 6 inch typical depth for the swale.
27. The 5-year StormCAD analysis shows a flow input equivalent to Sub Basin ST-2 at structure node ST-2. This node is representative of the culmination of flows from Sub Basin's ST-1, ST-2, ST-3, and ST-3 roofs as provided in the rational calculations. Please revise to reflect the summation of these basins.
28. The 5-year StormCAD analysis shows a flow input equivalent to Sub Basin EX-1 at structure node EX-1. This node is representative of the culmination of flows from Sub Basin's ST-1, ST-2, ST-3, ST-3 roofs, and EX-1 as provided in the rational calculations. Please revise to reflect the summation of these basins.
29. The 100-year StormCAD analysis shows a flow input for structure node EX-1 which is not representative of any provided calculations or analysis in the report. Please either provide analysis and calculations describing the origin of these additional flows, or revise to reflect the flow values presented within the report and appendices.

#### Grading and Erosion Control Plans

#### **GENERAL COMMENTS**

30. Please note that the CBMP estimate will be reviewed with the Grading Permit after all CBMP comments have been addressed and the site plan is near approval.
31. Revise CBMP labels to center text. Size text to fit within CBMP label outline.
32. Label and identify the ratio of all slopes that are 4:1 or greater.
33. Include within the plan set all the Town's 31 CBMP Notes & Details.
34. Add the following note to the CBMP plan sheets:  
"LOT PROTECTION (LP) IS REQUIRED ON COMMERCIAL LOTS WHEN LANDSCAPING IS NOT POSSIBLE."

December 9, 2020

### **INITIAL CBMP PLANS**

- 35. Provide proposed grading contours on Initial CBMP Plan.
- 36. Show existing storm utilities on Initial CBMP Plan.

### **INTERIM/FINAL CBMP PLANS**

- 37. Show proposed and existing storm utilities on Interim/Final CBMP Plan.
- 38. Provide and identify sediment control logs (SCL) along all paved areas adjacent landscape/pervious areas. This includes landscape islands and all pedestrian walks.

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.