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Memorandum

To: Paul Workman, Senior Planner
Carolyn Parkinson, Associate Planner

Date: December 29, 2017

From: Alex Mestdagh, P.E. Engineering Services Manager
David Aden, P.E. Traffic Engineer
Jacob James, P.E. Stormwater Manager
Kurt Patrick, P.E. Stormwater Engineer
Tyler Sandt, Development Review Engineer

Cc: Tom Williams, P.E. Director of Public Works and Engineering

Subject: **Parker Pointe Minor Development Plat – Engineering 1st Review**
Parker Pointe Lot 9 Multi-Tenant Retail Building – Engineering 1st Review
Parker Pointe Lot 10 Multi-Tenant Retail Building – Engineering 1st Review

The Engineering Department has reviewed the documents submitted for the Parker Pointe Minor Development Plat. The submittal consisted of the following documents:

<u>Document</u>	<u>Date Received</u>
Drainage Report	November 13, 2017
Minor Development Plat	November 13, 2017
Construction Documents	November 13, 2017
Traffic Study	November 13, 2017
Lot 9 Site Plan	November 13, 2017
Lot 10 Site Plan	November 13, 2017

The site is located at the southeast corner of the intersection of Parker Road and Stroh 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. The public improvements associated with this project will be required to be secured via a Subdivision Agreement. On future submittals, please include a cost estimate for all Public Improvements.
2. Prior to any approvals, the applicant will need to provide the executed access easement for the offsite access on Stroh Road. The applicant will also need to obtain a drainage easement dedicated to the Town for the pond if it is to remain in its proposed location.
3. On future submittals, the documents associated with the subdivision file (SUB17-058) should only include the site's major infrastructure; specifically work on Parker Road, Stroh Road, the private internal roads, the detention pond, and the site's major utility infrastructure. The documents associated with the site plans for Lots 7 and 8 (SP17-095 and SP17-096) should include CD's, a site plan, and a traffic conformance letter. Coordinate with Town staff prior to resubmittal.

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.

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.

5. Show sight triangles on the plat.
6. Dedicate 25' drainage easements over all storm sewer.

Traffic Study

Please see traffic study comments on eTrakit.

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Construction Plans

7. Add the Town's sight distance certification to the cover sheet. This can be found in Section 3 of the RDCCM.
8. Use the Town's updated signature block. This has been uploaded to eTrakit.
9. Update the Town of Parker contact phone number to (303) 841-9546.
10. Ensure that through lanes align with the existing subdivision entrance across Stroh Road at the eastern access.
11. Revise the curb return radii at the east access to be 30 feet.
12. Please revise the spacing between the west access on Stroh Road and intersection of the private drives. The east-west private access road should be shifted to straddle the Lot 1-Lot 2 property line to provide adequate intersection sight distance from vehicles entering from Stroh Road.
13. Remove all "future access" callouts on Lot 12. Access on that lot cannot be approved until the proposed use, and associated traffic implications, are evaluated. This will be completed with the site plan application for Lot 12.
14. In order to avoid access spacing issues along the private drive, it may be necessary to have shared accesses between Lots 9 and 8A and/or Lots 8 and 8A. Please make any necessary changes to the CD's and dedicate appropriate access easements.
15. Show slopes greater than 4:1 on the grading plan.
16. Add cross sections of the proposed roadway improvements for both the Parker and Stroh Road plans.
17. Show signal pole locations and callout any necessary modifications.
18. 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

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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.

19. Add the following note to the Parker Road plan and profile:

All work on Parker Road will require CDOT approval and a CDOT right-of-way permit.

20. Add the following note to the Stroh Road plan and profile:

All work on Stroh Road will require a Town right-of-way permit. Any work on Stroh Road that influences traffic on Parker Road will also require a CDOT right-of-way permit.

21. Please clarify with Town staff why the detention pond's outfall is routed back through the site and outlets to near the culvert under Parker Road. The Town would prefer that the pond outfall to the nearest feasible point in the channel.

22. Grade lots fronting Parker Road back into site or clearly show the intent for them to drain to pond. Also, in the interim, provide temporary sediment basins for the lots draining towards Parker Road.

23. On future submittals, provide a pond layout sheet.

24. The CD's and drainage report will need to address how flows from the Stroh Road widening will be routed to the storm sewer network.

25. The southern-most lane on Stroh Road should extend past the RIRO entrance to the development to provide adequate merging distance for vehicles continuing east.

26. Show the existing lane configuration of Stroh Road across the Parker Road intersection and ensure that thru lanes align across the intersection. Additional pavement may be necessary at the intersection to align the lanes.

27. Please coordinate with Town and Douglas County staff regarding the location of the detention pond and the proposed offsite grading. There are several concerns regarding having the pond serving this property located outside of Town limits.

28. The triangular forebay shown in the pond does not comply with Town criteria. Please revise per Figure 7.1 in the *Storm Drainage and Environmental Criteria Manual*.

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29. The Town does not have criteria regarding baffle blocks or energy dissipation in the forebay. It is the responsibility of the design engineer to determine the need for baffles and provide a detail if they are deemed necessary.
30. Show 5 and 100 – year HGL’s on the storm sewer profiles.
31. Please show elevations on the storm profile grid on sheet C4.11.
32. Show all utility crossings on the storm sewer profiles.
33. Provide profiles for all storm sewer; including laterals.
34. Show pond details on a specific scale.
35. Revise the pond outlet structure detail per Figure 7.5 in the SDECM.
36. Provide an outlet structure plan view per Figure 7.5.
37. Add a note to Sheet C4.93 stating that fibermesh concrete is to be used in the trickle channel.
38. On future submittals, provide a forebay detail.
39. The 100-year restrictor plate should not have a circular hole. The plate should be positioned above the outlet pipe invert at the height specified in the UD Pond Calculation Sheet to maintain the 100-year flow. Please update the UD Pond calc sheet accordingly.
40. The manhole proposed at Design Point 23 should be replaced with an area inlet to collect the flows from the swale that runs along the east side of the property.

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.

Final Drainage Report

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41. Several of the storm pipes are shown with an extremely low slope. Please ensure that all storm sewer has a minimum velocity of 3 ft/s to ensure the pipes are self-scouring.
42. All flows generated from this development must comply with water quality and detention requirements. Please make necessary grading and storm sewer revisions to route all private drive runoff to the detention pond. Please also delineate any basins that release flows undetained from the site and adjust the pond calculations per the compensatory storage requirements outlined in 7.2.4 in the SDECM. Note that runoff associated with large sections of the private drives do not qualify for compensatory storage and need to be routed to the detention facility.
43. On future submittals, include swale calculations and ensure proper reinforcement is provided.
44. It appears Basin P, the land area of the detention pond, is not delineated on the drainage plan.
45. The table on page 6 in Section V has release times shown under the “release rate” column.
46. Basin SR1 currently drains to a roadside ditch. This ditch will be removed with the Stroh Road widening. Please provide discussion on how these flows will be accommodated. It may be necessary to revise the grading and have the swale north of the property collect these flows.
47. It appears the pond is extremely oversized; please clarify with Town staff why this is.
48. On future submittals, include UD inlet calculations.

Sediment and Erosion Control

49. Add the following note to each plan sheet:

To reduce the potential for clogging of debris grates, no straw mulch shall be used within the Excess Urban Runoff Volume of a detention basin. Instead, erosion control blanket shall be installed for a width of at least 6-feet on both sides of the concrete low flow channels or up to a depth of 1-foot in soil riprap or benched low flow channels. Additionally, hydraulically-applied wood fiber mulch, stabilized fiber matrix, bonded fiber matrix, or flexible growth medium shall be used in all other areas within the Excess Urban Runoff Volume of the detention basin. The blanket and hydraulically-applied mulch shall comply with the materials and installation requirements for erosion control blankets as required by the Town’s CBMP program, and where applicable, the product manufacturer.

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50. Add a note on all land adjacent to the project stating that no work shall occur in these areas.
51. Add J-hooks to the silt fence along the north and west boundaries to limit the concentrated flows.
52. Add a TSB to the southwest corner of the project to contain flows from the west side of the project.
53. Show all TSB sizing calculations and standpipe outfall locations.
54. Show the ratio of all slopes greater than 4:1.
55. Add a note stating that lot protection is required on all commercial lots when landscaping is not possible.
56. Show temporary irrigation in all areas of permanent native vegetation not already served by permanent irrigation. Ensure the temporary irrigation is shown on the landscaping plan.
57. Show erosion control blanket on both sides of the trickle channel in the detention pond.
58. Show silt fence all the way to the proposed sanitary sewer connection west of Parker Road.
59. Show the limits of the RCZ and the 100-yr floodplain on the west side of Parker Road adjacent to the SS tie-in.
60. Change DCT to DTC, and MMP to MWP.

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. All submittals should be through the Town Community Development Department, accompanied by a letter that responds to each comment herein. Direct submittals to the Engineering Department will not be accepted.

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.

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If you have any questions regarding the comments please do not hesitate to contact the Engineering Department at (303) 840-9546.