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Memorandum

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

Date: March 29, 2018

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 2nd 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	March 5, 2018
Minor Development Plat	March 5, 2018
Construction Documents	March 22, 2018

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. Please note that the site plans for Lots 10 and 11 were not reviewed by the Engineering Department this submittal as the site plans have not been finalized.
2. Per discussion with the applicant, a public improvements cost estimate will be submitted with the next referral.
3. Per previous discussions with the applicant, the proposed offsite detention pond will require private agreements regarding maintenance and overall responsibility for the pond. The applicant will need to coordinate these items with the property owner, Douglas County, and the Town to ensure the arrangement is acceptable to all parties.
4. A copy of the executed access easement agreement will be required to be submitted to the Town prior to any approvals.

Plat

5. Show sight triangle at the access on South Parker Road.
6. Ensure sight triangles are clearly called out on the plat.
7. The 50' drainage easement being shown on the plat needs to be replaced with a 50' multi-use easement. This easement will be dedicated by the plat but PWSD will also require a 50' multi-use easement be dedicated via separate document over the same area.

Traffic Study

8. Please upload the traffic study with the next submittal and ensure the comments from the previous review are addressed.

Construction Plans

9. Provide a signing and striping plan for Stroh Road. Include redirect and taper transition ratios. The design of Stroh Road will need to be further coordinated with Town staff.
10. Please show any necessary modifications to the crosswalk and traffic signal to formalize the pedestrian crossing along the south and east legs of the Parker RD Stroh RD intersection.

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11. Confirm western boundary of the proposed island and ensure it's coordinated with the northern island and the adjacent thru lane.
12. Please revise the dedicated right turn through the island to be 14 feet, edge of pavement to edge of pavement.
13. Revise the site's northeast access to align with the existing Stroh Crossing access. The Town would prefer that this access have NB thru, dedicated left, and SB thru movements.
14. Label lane widths on signing and striping plans.
15. Add the Town's Engineering signature block to the Overall Utility Plan.
16. Some sheets still have the Town's outdated Engineering signature block.
17. There was a typo on the previous review memo. The Engineering Department contact number should be 303 840 9546.
18. Provide cross sections for the work on Parker Road.
19. Please provide more detail on the inlet proposed at the southeast corner of Stroh and Parker. Include the existing storm sewer as well as necessary modified details on the plans.
20. Please revisit the sight triangles. The distance from the curbline should be 15 feet and the corner intersection sight distance should span 555 feet along the centerline of the road for Parker RD and Stroh RD. Ensure the sight triangles are also updated on the plat.
21. Provide an island detail with spot elevations.
22. CDOT approval will need to be granted on the proposed curb and gutter as well as the inlets shown on Parker Road.
23. Provide a storm sewer profile for the stub west of MH-6.
24. Note that any wall over 4 feet will require a building permit.
25. Show utility crossings on storm sewer profiles. Ensure a minimum of 18 inches of vertical separation is provided.
26. Show ramps leading into and out of the forebay per Figure 7.1 in the SDECM.

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27. Show slopes and horizontal curves of the pond access road. Ensure they comply with the geometric criteria outlined in Section 7.3.15 of the SDECM.
28. Please see the attached redlines regarding the alignment of the pond maintenance access.
29. Access to the top of the outlet structure must be provided.
30. There shouldn't be any standing water in the secondary chamber of the outlet structure. Please either lower the outlet pipe or provide concrete up to the invert of the outlet pipe.
31. Please provide more detailed grading information for the Parker Road curb and gutter drainage. It is unclear how the road drains between Stroh Road and the site access road. Please provide spot elevations and flow arrows/slope callouts.
32. Water Quality treatment is required for the storm outfall adjacent to Parker Road. Please provide treatment calculations in the drainage report and coordinate with the design drawings.
33. Please modify the storm pipe alignment north of the pond forebay. Change the manhole (MH – 8) to a Type C/D area inlet to drain the swale conveying flows from the north.

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

34. Include basin descriptions for all drainage basins.
35. Delineate drainage basins for all areas on the site. Ensure compensatory storage is provided for basins that convey runoff off site.
36. The height of the curb and allowable depth at gutter flowline in the minor event should be 6" for streets with vertical curb and gutter and 4" for streets with mountable curb. Please modify the inlet calculations accordingly.

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37. Please upsize inlet SR2 and clarify the drainage patterns of any bypass flows.
38. Ensure any bypass flows are accounted for in the next downstream inlet. Note that the Town only requires half of the bypass flow be included in the downstream inlet's capacity calculations.
39. Please state in the drainage report that a floodplain development permit will be required for all of the proposed work in the Kinney Creek floodplain. Please provide a no-rise analysis for all of the disturbance in the floodplain including the proposed portion of the floodplain that will be filled. The hydraulic model can be obtained from the Urban Drainage and Flood Control District. The analysis will need to show the pre-project condition and the post project condition 100-year water surface elevations. The analysis needs to show no rise in the water surface elevation as proposed.
40. Please provide treatment calculations for water quality for all of the work on Parker Road. The Parker Road inlets adjacent to the site drain to a swale that may be able to be modified into a small water quality pond. The double turn lane on Southbound Parker Road will need to be addressed as well. As a suggestion, please look at the water quality volume required and determine if it will not go beyond the grassy area on the west side of the road.

Sediment and Erosion Control

41. Add a note on all land adjacent to the project stating that no work shall occur in these areas.
42. Add J-hooks to the silt fence along the north and west boundaries to limit the concentrated flows.
43. Show TSBs and diversion ditches on the initial CBMP plan.
44. Show silt fence or sediment control log behind back of curb down- gradient of disturbed areas.
45. Please include the acreage draining to the TSBs and the depth of the TSBs. TSB storage volume should be at least 3,600 cubic feet per acre of drainage area.

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

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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.

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

