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Memorandum

To: Stacey Nerger, Senior Planner

Date: October 18, 2021

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

Cc: Alex Mestdagh, P.E. Engineering Services Manager
Dave Aden, P.E. Traffic Engineer
Michael Grabczyk, P.E. Stormwater Project Manager

Subject: Lincoln Profession Parker MDP and Preliminary Site Plan – Engineering 1st Review

The Engineering Department has reviewed the documents submitted for the Lincoln Professional Park MDP and Preliminary Site Plan. The submittal consisted of the following documents:

<u>Document</u>	<u>Date Received</u>
Drainage Report	August 16, 2021
Construction Plans	August 16, 2021
Site Plan	September 2, 2021
Plat	August 16, 2021

The site is located at the southeast corner of Lincoln Avenue and Dransfeldt 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, May 2018. 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 secured via a Subdivision Improvement Agreement. On future submittals, provide a public improvements cost estimate. This should only include work proposed in public right-of-way or any storm sewer that collects public flows.
2. Provide a cost estimate for the restriping work associated with converting the existing westbound left at Lincoln and Dransfeldt to a double left. This will be a cash-in-lieu payment condition in the SIA.
3. On future submittals, upload the Traffic Study.

Construction Plans

4. Remove the proposed turning arrow striping shown in the northbound left at Dransfeldt and Road A. The striped out median will need to remain a “chicken lane” in this area.
5. In order to provide adequate transition distance and advanced warning per MUTCD, the proposed southbound through lane on Dransfeldt and Road A will need to carry through the Lowe’s driveway and connect to the existing southbound left at Dransfeldt and Parkglenn (Lincoln Meadows Parkway). Please note that advanced warning signage will not be accepted north of the intersection of Dransfeldt and Road A.
6. The Town will not permit east-west pedestrian crossings of Dransfeldt and Road A. Please revise the curb ramps to be directional and only facing north-south and provide 2’x’10’ crosswalk.
7. Provide a 2’x10’ crosswalk at the site’s Lincoln Access.
8. Add the following note to the Overall Utility Plan in the PWSD set:

"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."

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9. Add a note to the signing and striping plan noting that public striping is to be done with epoxy paint and specialty striping (crosswalks, arrows, etc.) will be thermoplastic.

Plat

10. Add the following notes to the plat: These notes have been added.

A blanket drainage easement is hereby dedicated to the Town of Parker over and across Tract A for the purpose of accessing, maintaining, and repairing stormwater management improvements including, but not limited to, inlets, pipes, culverts, channels, ditches, hydraulic structures, riprap, detention basins, forebays, micropools, and water quality facilities in the event that the property owner fails to satisfactorily maintain or repair said facilities.

“ACCESS EASEMENT ARE HEREBY GRANTED OVER ALL PRIVATE ENTRANCES AND INTERNAL ROADWAYS WITHIN THE DEVELOPMENT 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 IMPROVEMENTS 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 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 COMMERCIALY REASONABLE CONDITION AND STATE OF REPAIR.”

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11. Show sight triangles at public access points (even those that do not require an easement) 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."

12. Provide 25-foot drainage easements over all storm sewer not within the pond tract.

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 Plans

13. 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 outlined within Section 6.3.3 of the Town's SDECM, including the use of RCP and dedication of drainage easements. Landscape drains, roof drains, and leaders for these systems are considered private and may be constructed with plastic pipe and catch basins. These private systems must connect to the public storm sewer system at an inlet or manhole structure.
14. Provide and identify major and minor storm hydraulic grade lines on all storm sewer profiles.
15. Please verify all proposed crossing utilities are provided on profiles with depth labels to show clearance between utilities where appropriate (ie if the clearance between utilities is 2-feet or less).
16. Provide a minimum of 0.2-feet of drop between any pipe in and the pipe out of a structure.

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17. When changing pipe sizes across a structure match the soffit of the smaller pipe into the structure to the soffit of the larger pipe out of the structure where feasible.
18. Based on measurements taken from the plans Storm Line B does not appear to have the minimum 12-inch of cover required by SDECM section 6.3.3.1. Please note that the 12-inches of cover is measured from the bottom rather than the top of the proposed pavement section.
19. A Type D inlet appears to be proposed in the roadway at the corner of Lincoln and Dransfeldt. Please note per the CDOT standard detail "Inlet Type D is not HS-20 rated and shall not be placed in paved roadways." Please revise to a Type R or equivalent.
20. What appears to be a proposed Type R inlet is shown in plan view on the corner of Dransfeldt and Lincoln just south of the proposed Type D, but no labeling or profile is provided. Please either remove the block if it is an artifact or provide corresponding labeling and profile.
21. Please verify that the proposed Flared End Section E3 appropriately daylights. Per the profile provided the FES appears to be approximately 5-feet below grade.
22. Several structures appear to be grabbing the existing rather than proposed surface. Please verify Rim elevations for these structures and revise the blocks to grab the proposed grade where appropriate.
23. Provide a detail for the pond forebay which complies with Figures 7.1 or 7.2 of the Town's SDECM. The detail should provide at a minimum all dimensions, elevations, material, reinforcement, and any other information necessary to construct the forebay in compliance with the drainage report. Specifically noted section view and all relevant details as missing along with the forebay wall dimensions.
24. Provide a detail for the forebay notch.
25. Provide a detail for the pond trickle channel which complies with Figure 7.3 of the Town's SDECM. Specifically noted overbank slope and extents do not meet criteria.
26. Provide and identify the emergency overflow spillway extents and protection in plan view on the EDB plan sheet.

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27. Provide a detail for the pond emergency overflow spillway which complies with Figure 7.6 of the Town's SDECM. The detail should provide a minimum of all dimensions, elevations, material, reinforcement, and any other information necessary to construct the emergency overflow spillway in compliance with the drainage report.
28. Provide a detail for the pond outlet control structure which complies with Figures 7.5 or 7.9 of the Town's SDECM. Specifically noted missing close mesh grates above micropool, 4-inch drop for initial surcharge volume, manhole steps, rebar layout, and bedding material.
29. Provide the Town's maintenance road detail, Figure 7.4 of the Town's SDECM. Identify in plan view the extents of each cross section to be used.
30. Provide CDOT standard details for all proposed storm sewer infrastructure.
31. Provide Town of Parker standard detail for Manhole Covers. Please reference RDCCM Appendix A for the most current version of the detail.

Drainage Report

32. Provide information regarding the major basin as defined by MHFD for the area in the Major Basin Description section of the narrative (ie Cherry Creek 4600).
33. Move the proposed basin descriptions to the Sub-basin Description section of the narrative.
34. Provide additional details for the means of sizing the receiving 24-inch flared end section on the north east corner of the site. Also, provide information about the tributary area to the proposed flared end in the Sub-basin description section of the narrative.
35. Provide basin delineations for the areas anticipated to freely discharge offsite per the Development Criteria References and Constraints section of the narrative. Compensatory storage will need to be provided for any flows bypassing the proposed EDB in accordance with SDECM Section 7.2.4.
36. Please note the 5-year storm is considered the minor storm for commercial per SDECM Table 2.3.

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37. Please note that a 40-hour release time is required for the WQCV in EDBs. Please revise the Hydrologic Criteria section of the narrative to reflect the appropriate release time.
38. Reference the means for calculating storm sewer capacity and hydraulic grade lines in the Hydraulic Criteria section of the narrative. Provide the calculations in the appendix.
39. Provide the required hydraulic grade line criteria in the Hydraulic Criteria section of the narrative. Reference SDECM section 6.3.3.4 for said criteria.
40. Provide discussion on how receiving capacity was verified for the existing storm sewer in Dransfeldt proposed to receive the site flows.
41. Please remove the inspection and maintenance information provided in the Outlet Works section of the narrative. Please consider relabeling this section as “Outlet Requirements” and moving the outlet design information from Specific Details down to this section.
42. Provide a brief discussion on how the storm sewer and inlets were sized in the Storm Sewer System section of the narrative.
43. Provide discussion on the EDB and why it is required based on the Cherry Creek tiered water quality requirements. Reference SDECM section 8.3 for the permanent BMP requirements.
44. Provide inlet capacity calculations.
45. Provide the means for calculating the Rational Method’s C coefficient in the appendix.
46. Replace the one-hour point rainfall values provided in the appendix with those provided in Table 5.1 of the SDECM.
47. Please note the basins provided on the drainage plan are not representative of tributary area flowing to a singular point based on the proposed grading and storm sewer layout. Please provide proposed contours on the drainage plan and revise basin delineations as needed. Please also consider whether delineation of EX-1 is needed since no proposed disturbance or receipt of the existing flows to the on-site storm sewer system are anticipated.

Sediment and Erosion Control

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GENERAL COMMENTS

48. Omit all existing and proposed utilities from the CBMP Drawings, except those relating to stormwater.
49. Provide arrows to indicate the direction of flow.
50. Label and identify the ratio of all slopes that are 4:1 or greater.
51. Provide and identify Erosion Control Blanket (ECB) on all slopes steeper than 4:1.
52. Provide and identify Debris and Trash Control (DTC) for all proposed paved driving surfaces on site and all existing paved driving surfaces adjacent to the site.
53. Provide and identify Portable Toilet Protection (PTP) for the site.
54. Please verify the Limits of Construction (LOC) encompasses the full extents of proposed work. Specifically, the proposed flared end on the north east corner and the additional improvements along Dransfeldt Road fall outside the LOC.
55. Utilize the four types of inlet protection provided in the Town's standard details. Provide unique labeling and blocks for each type of inlet protection utilized to avoid potential confusion in the field.
56. Include within the plan set all of the town's 31 CBMP Notes & Details.
57. Provide a legend of symbols to correspond to the Town's 31 CBMP Notes & Details.
58. Add a callout/label on all properties adjacent to the project stating that no work shall occur in these areas.
59. Add the following note to the initial and final CBMP plan sheets:
"LOT PROTECTION (LP) IS REQUIRED ON COMMERCIAL LOTS WHEN LANDSCAPING IS NOT POSSIBLE."
60. Add the following note to the initial and final CBMP plan sheets:
"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

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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."

61. Sheet title and number missing from CBMP Detail sheets.

INITIAL CBMP PLANS

62. Please note Construction Fence (CF) and Silt Fence (SF) are not both necessary for perimeter control. Please consider only providing one of the two control measures along any given extents of the site. Silt Fence (SF) should be used when downstream of proposed disturbance while Construction Fence (CF) should be used when upstream of proposed disturbance.

63. Provide a callout outside the perimeter controls along the public sidewalk(s) to be modified/replaced with the project 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 CBMP PLANS

64. Provide and identify sediment control logs (SCL) along all paved areas adjacent landscape/pervious areas. This includes landscape islands and all pedestrian walks.

65. Provide and identify Detention Pond Protection (DP) for the proposed pond.

66. Provide and identify the appropriate type of inlet protection from the Town's standard details for all proposed inlets.

67. Provide and identify Culvert Protection (CP) for the proposed flared end section receiving flow on the north east corner of the site.

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68. Provide and identify Surface Roughening (SR) in all proposed landscaped areas.

69. Provide and identify Sidewalk Transition Protection (STP) for all proposed pedestrian ramps adjacent to landscaped areas.

FINAL CBMP PLANS

70. Provide and identify Seeding Mulching and Crimping (SMC) in all proposed landscaped areas.

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.

Link to Town Engineering Standards and Criteria:

<http://www.parkeronline.org/210/Standards-and-Criteria>

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