



Your kind of place.

Memorandum

To: Julia Duncan, Associate Planner – Development Review

Date: January 9, 2025

From: Charles Kudlauskas, P.E., Senior Development Review Engineer
Robert Seacat, Stormwater Permit Coordinator

Cc: Alex Mestdagh, P.E., Engineering Services Manager
Tom Williams, P.E., Director of Engineering/Public Works

Subject: SP24-124 Salisbury North MDP F1 AMD2 L1 - Park Expansion Phase 1–
Engineering 1st Review

The Engineering Department has reviewed the documents submitted with this application. The submittal consisted of the following documents:

<u>Document</u>	<u>Dated</u>
Construction Plan	May 2024
Site Plan	May 2024
Drainage Report	May 2024
Traffic Impact Study	February 2024

Thank you for the opportunity to review this application. 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, November 2020. Additional regulatory and planning documents may have been utilized in the review and are referenced in the comments where appropriate.

CONSTRUCTION PLANS – CIVIL

1. Please include contact information on the cover sheet. Developer (Company, Address, Phone & Contact); Engineer/Surveyor (Company, Address, Phone & Contact); Town of Parker Contacts (Company, Address, Phone & Contact); Public Utilities (Company, Address, Phone & Contact).

January 9, 2025

2. The Vicinity Map shall be at a scale of 1"=2,000' and include location and names of all aerial roadways within one mile of proposed construction. Include any major drainageways in this area.
3. Please provide all sheets of the Civil Construction Documents formatted to the Town's standards as required per the Town's Roadway Design and Construction Criteria Manual (RDCCM). Please reference section 2.3 of the RDCCM for the required construction plan submittal requirements.
4. Please include the sight distance certification on the cover sheet from section 3.1.8 of the RDCCM.
5. Please provide the Town of Parker signature review block on the cover sheet and ensure it matches the latest shown in the Parker Roadway Design and Construction Criteria Manual (RDCCM).
6. Please Include Project Datum/Basis of Bearings.
7. Please include all proposed and existing easements in the Overall Utility Plan and provide reference reception no. or book and page for existing easements. Please remove unnecessary linework for clarity and include all proposed drainage easements.
8. Provide the following note on the Overall Utility Plan: "ANY PROPOSED UTILITY CONNECTION WITHIN AN EXISTING ROADWAY WITHIN PUBLIC RIGHT OF WAY WILL REQUIRE A TOWN RIGHT-OF-WAY PERMIT PRIOR TO COMMENCING WORK. THE TOWN REQUIRES 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."
9. Please reference Reception No. or Book and Page for all Right-of-Way.
10. Sheet CD-303 is redundant with the same details shown on CD-302. Please revise or remove CD-303.
11. Please adjust overlapping labels and ensure labels are readable/visible throughout the plans.
12. Roadway Sections have travel lanes that include the gutter which is not typical on roadways/town facilities. Please confirm with Parks Staff that travel lane widths are sufficient.
13. On the Grading Sheets, label critical grading point (spot) elevations including High/Low points and points to match to existing grade throughout. Designate points as FL, TBC, PC, PCR, POC, FG, ME, etc.
14. Please provide names of any major drainage ways/channels and include a flow direction arrow. (See uploaded redline comments)
15. Please label all private driveway/roadway as "Private" throughout the plans.

January 9, 2025

16. Please include a legend for line types in the grading and drainage plans.
17. Per Section 3.7 of the RDCCM: Spot elevations for top and bottom (at grade) of all retaining walls shall be shown on the grading plans. Retaining walls four feet high, from the bottom of the foundation to the top of the wall, or greater require a building permit. Plans shall be submitted to and approved by the Building Department prior to construction.
18. Include any necessary removals of any median/stripping for intersection alignment for inbound and outbound lanes and traffic movement.
19. Per the submitted Traffic Impact Study at the North Access, a Southbound Left-Turn Lane is recommended with a 120ft taper length and 100ft storage length and a Northbound Right-Turn Lane is recommended with a 120ft taper length and 100ft storage length. Please ensure the signing and striping plans correlate to recommendations of the TIS and provide these lanes in the Construction Plans. (Note that the Pavement width will be there from the Town's CIP project but striping will need to be placed with this project.)
20. Per the submitted Traffic Impact Study at the South Access, a Southbound Left-Turn Lane is recommended with a 120ft taper length and 100ft storage length and a Northbound Right-Turn Lane is recommended with a 120ft taper length and 100ft storage length. Please ensure the signing and striping plans correlate to recommendations of the TIS and provide these lanes in the Construction Plans. (Note that the Pavement width will be there from the Town's CIP project but striping will need to be placed with this project.)

SITE PLAN – CIVIL

1. Provide and identify sight lines in accordance with Town Standard Detail 24 from the RDCCM on the landscaping plans and show that there are no obstructions proposed within sight triangles.
2. Please note, the minimum offset distance of any trees to edge of storm pipe/inlet is 7 feet per SDECM Section 6.3.3.2. Please adjust plans to accommodate the minimum 7 foot separation accordingly.

TRAFFIC IMPACT STUDY – CIVIL

1. Please see uploaded redline comments.
2. The Traffic Impact Study will need to include the engineer's signature and seal prior to approval of the site plan application.

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*

January 9, 2025

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.

CONSTRUCTION PLANS – ENVIRONMENTAL GENERAL COMMENTS

Please submit phased CBMP (Erosion Control) Plans formatted per the RDCCM with initial and interim/final Plans.

Please note, CIVIL Drawings with Erosion Control Plans will be required and reviewed when the site plan gets close to final approval.

CONSTRUCTION PLANS – STORMWATER

1. Per State and Town regulations, any development within the Special Flood Hazard Area (SFHA), otherwise known as the 100-year regulatory floodplain, which increases the base flood elevations more than 0.50-feet shall require a CLOMR be submitted on the community's behalf. Any development which increases or decreases the base flood elevations more than 0.30-feet shall require a LOMR be submitted on the community's behalf.
2. Per State and Town regulations, any development within the FEMA Floodway which results in an increase or decrease in base flood elevations above 0.00-feet shall require a CLOMR and LOMR be submitted on the community's behalf.
3. Please reference appropriate details throughout the plans, Typical.
4. Please label Inlet IDs in the construction documents that clearly correlate to labels shown in the proposed basin maps and inlet calculations of the drainage report.
5. Please include a Key Map for maps that consist of plan views showing a portion of the overall site (see redline comments).
6. HGL's shown in the drainage profiles need to match and correlate to those calculated in the drainage report where the 10-year storm event is calculated for the minor storm in culvert sizing. (See Section 6.4.2 of the Parker SDECM for Culvert Sizing Criteria)
7. HGL's shown in the drainage profiles need to match and correlate to those calculated in the drainage report where the 5-year storm event calculations are provided.
8. Per the SDECM, Swale culverts for driveways, trails and sidewalks shall be minimum 18" diameter or equivalent for non-circular shapes. (See uploaded redline comments)
9. Please reference and provide cross sections for swales that match design calculations in the drainage report.
10. Riprap will also be required at the inlet and outfall due to the potential scouring velocities. Refer to Section 6.5.2 and 6.4 of the SDECM and the MANUAL, Volume 2, Culverts and Hydraulic Structures Chapters. Please show in profiles. (See uploaded redline comments)

11. Per the SDECM, In the initial storm event, the hydraulic grade line must be located below the crown of the pipe; In the major storm event, the hydraulic grade must be located 12-inches below finished grade as a maximum condition. (See uploaded redline comments.)
12. The minimum clearance between storm sewer and sanitary sewer, either above or below, shall also be 18 inches (per requirements of Parker Water & Sanitation District). In addition, when a sanitary sewer main lies above a storm sewer, or within 18 inches below, the sanitary sewer shall have an impervious encasement or be constructed of mortar lined ductile iron pipe for a minimum of ten feet on each side of where the storm sewer crosses. Clearances less than 18 inches shall require the approval of the applicable water & sanitation district and the Public Works Department. (See uploaded redline comments)
13. The proposed pipes for culvert and pipe outfalls in the drainage profiles appear to have the pipe extend beyond the proposed surface. The pipe lengths shown in the profiles should have the top of pipe end at the surface where the proposed surface at the bottom of pipe would be graded to the invert accordingly and not indicate exposed pipe.
14. Joint restraints and toe-walls, conforming to CDOT M&S Standard Plan No. M-601-11 shall be used on all RCP flared end section outfalls. Please include details for headwall/toe walls for FES and show and label these in the profiles with reference to the details.
15. Include Parker Standard Detail 33 from the RDCCM for Manhole Cover.
16. Provide a forebay and 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.
17. Provide a trickle channel and a detail for the pond trickle channel which complies with Figure 7.3 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 trickle channel in compliance with the drainage report.
18. 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.
19. Reference and provide a detail for the pond outlet control structure which complies with Figures 7.5 or 7.9 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 outlet control structure in compliance with the drainage report.
20. Please show maintenance accesses to infrastructure and 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.

21. Please include location and dimensions of the pond spillway and maintenance access.
22. On the pond area sheet, Label and identify the ratio of all slopes that are 4:1 or greater and please include critical grading point (spot) elevations including High/Low points and points to match to existing grade throughout.
23. Please clearly show the WSEL for 100YR, WQCV, and EURV on the pond area sheet.
24. Please show the maintenance access into the forebay and outlet structure. The working bench and access drive shall slope no more than 10-percent. The maintenance access drive shall be a minimum of 10-feet wide in straight segments, 12- feet wide for a centerline radius of 80-feet and greater and at least 14-feet wide for a centerline radius between 50- and 80-feet. The minimum centerline radius shall be 50-feet. See Section 7.3.15 of the SDECM for material requirements.
25. Please include a table of pond information including the WQCV elevation, EURV elevation, 100 year WSEL and all volumes and release rates for the minor and major storm.
26. Please include flow direction arrows and a legend in the drainage plans.
27. Existing drainage easements should include reference to reception number.
28. Please include existing and proposed grade contour labels and slopes.
29. Curb opening inlets are preferred by the town as combination/grate inlets are more practical if there is insufficient space behind the curb for a curb opening inlet. Curb inlets are also recommended as there does not appear to be room for the grate of the proposed inlet to set within the gutter pan.
30. Provide detailed grading/drainage plan sheets that encompass all proposed grading/earthwork areas of the project site. (See uploaded redline comments)

DRAINAGE REPORT

1. The Town has received the floodplain development permit application associated with the proposed project from ICON Engineering. Please Include a section in the report with discussion of the proposed development and impacts to the 100-year floodplain and description of who is providing the analysis. The report will need to reference and include the floodplain application and analysis in an appendix that includes a work map of the effective vs proposed floodplain with cross section analysis locations and floodway, calculations showing the impacts (delta of BFEs comparing proposed conditions model to corrected effective model) and the floodplain development permit application form.
2. Please be aware, per State and Town regulations, any development within the Special Flood Hazard Area (SFHA), otherwise known as the 100-year regulatory floodplain, which increases the base flood elevations more than 0.50-feet shall require a CLOMR be submitted on the community's behalf. Any development which increases or decreases the base flood elevations more than 0.30-feet shall require a LOMR be submitted on the community's behalf.

January 9, 2025

3. Please be aware, per State and Town regulations, any development within the FEMA Floodway which results in an increase or decrease in base flood elevations above 0.00-feet shall require a CLOMR and LOMR be submitted on the community's behalf.
4. Please use latest NOAA Atlas 14 point rainfall values for Town of Parker in Hydrology calculations and provide reference to the data used in this report. Parker is in the process of updating the SDECM to reflect this in requirement.
5. Please provide calculations for all 5 ponds. There are 4 ponds included in the calculations within drainage report.
6. Please discuss the proposed design considerations for swales and discuss any constraints that inhibit incorporating the recommendations from the USDCM_Volume_1 where it states: In general, the wider the bottom width of the swale, the more stable it will be, although concentrated flow paths may still form. It is generally recommended that swales be of a trapezoidal shape with a bottom width of 2 feet or more and with side slopes that are 5:1 or flatter. Provide typical cross sections in the construction plans for reference that match design calculations.
7. Per Section 6.5.4 of the SDECM, please provide riprap sizing calculations for all inlet/outlet protection in accordance with Chapter 9 of the USDCM-Volume-2.
8. See Section 6.4.2 of the Parker SDECM for Culvert Sizing Criteria based on the 10-year frequency storm and provide hydraulic calculations confirming these culvert sizing requirements are met.
9. Some profiles in the construction plan design show 2-year minor HGL's. Only 5-year calculations are provided in the report and the 5-year storm frequency should be used for this project as the minor design storm. Please discuss with staff any historic information that we can provide to assist.
10. The bypass culvert calculations do not match parameters shown in the construction documents that shows a 30-inch pipe with invert in of 5845.15. Please provide and ensure all culvert calculations correspond to the proposed construction set. Please provide profiles with the calculations that match the profiles in the construction set. (recommend utilizing HY-8 for culvert calcs)
11. Please match the Storm Line Profile Name and appropriate Pipe ID to those shown in the Construction Documents for clear comparison.
12. Please include clear labels for storm inlets and manholes (structures) on the basin map that correspond to labels shown in the construction plans.
13. Per the Town of Parker SDECM Section 6.3.1 for Street Drainage, use Mannings n for street=0.016 (See uploaded redline comments)
14. Per the SDECM, In the initial storm event, the hydraulic grade line must be located below the crown of the pipe; In the major storm event, the hydraulic grade must be located 12-inches below finished grade as a maximum condition.
15. Please help staff understand why proposed calculations are one-lined/crossed out for Pond D Phase 1.

January 9, 2025

16. The drainage plan indicates that there are proposed storm runoff flows that are routed offsite and undetained. Please see Section 7.2.3 of the SDECM and provide discussion of why these portions of the site are not able to be routed through the proposed detention facility. Compensatory storage will only be permitted in those cases where it is clearly impractical to route all runoff from the developed site through the detention facility.
17. The drainage plan indicates that there are proposed storm runoff flows that are routed offsite and undetained. The total release rates shown for the minor and major storm event need to be compared to the allowable release rate (historic/undeveloped) for the total tributary area (detained and undetained areas) and be shown to be equal to or less than the allowable release rate. Please provide calculations of the total allowable release rate and compare them to the total release rate showing compliance with Section 7.2.3 of the SDECM.
18. Please understand that variance requests from the Town of Parker criteria requires consideration and final approval from the Director of Engineering/Public Works. The following comments to the variance request for pond retaining walls within the preliminary site plan are intended to inform the applicant of staff's general opinion and includes requirements and/or recommendations for staff's support of the request.
19. Please clearly label the 100-Year Floodplain Limits on the Basin Maps.

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.

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) 805-3166 or Email: ckudlauskas@parkerco.gov.