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Raleigh, NC 27601

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MEMORANDUM

Date: May 30th, 2025
To: Michael Elabarger
From: Jacqueline Thompson, PE
Subject: Merritt Reserve
CID-25-02, 1st Submittal
Town of Rolesville, NC

This memo summarizes the review of Construction Infrastructure Drawings submitted by American Engineering, dated May 1, 2025 (received 5/06/2025).

Based on the number of comments from this first review, it is anticipated that changes to these plans will drastically change the plan set and bring to light new information. It is anticipated that additional comments may follow in subsequent submittals.

A number of comments apply to multiple sheets, as indicated on this memo. There are markups on sheets not specifically listed on the memo due to the duplicate comment. Please reference the markups for additional details and each sheet's markup.

Cover:

1. Update the project number to "CID-25-02".
2. All comments provided as part of the 3rd PSP submittal still apply and should be completed in the next CID submittal. Comments can be addressed in writing in the PSP re-submittal.
3. A signing and striping plan is required in CID submittals. Please provide this plan as part of the next submittal.

Sheet G-002:

4. Update the title block so that the Project Number is CID-25-02 on all sheets.

Sheet G-004:

5. Please confirm the construction sequence for Phase 1 - Stage 1.
 - a. Does the construction of the SCMs include only the pond grading?
 - b. Will storm sewer pipes and structures be installed and connected later?
6. The construction sequence for Phase 2 and 3 - Stage 1 appears to be truly focused on Phase 2 & 3, but the EC plans show additional grading and work in Phase 1. Please review the construction sequence and the plans to ensure phasing is clear for what is being constructed and when; there currently appears to be an overlap with Phase 1 into Phase 2 & 3.
7. Please remove any Standard Utility Notes that are not applicable to the project.
8. For Phase 1 - Stage 2 construction sequence Step 10, please confirm if sewer is included as a utility that will be installed during this phase. If yes, please add to that step of the construction sequence.



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9. There is duplicated information within General Notes A and B. Please revise accordingly.

Sheet G-005:

10. Please review all sheet titles to ensure the titles are clearly describing what the sheet is, that they are consistent across sheets, and fit within the space provided.
- For example, this sheet may be better named CALCULATIONS or SWALE SCHEDULE and the next sheet named SANITARY SCHEDULE and the following named STORM SCHEDULE. Clear naming will make navigating a plan set this size much easier.
 - Another example is on Sheet CE-102 where the title overlaps with the title block. There is another set of sheets that says, "SITE PLAN" on some and "SITE PLAN (50 SCALE)" on others. Please be consistent.

Sheet CV-100:

11. Correct the sheet title and page number within the title block of the sheet.

Sheet CX-100:

12. Indicate if the 5.6'x9.5' grave site will also be protected throughout construction. If so, please add a label to indicate that.

Sheet CE-100:

13. Add the gray hatching to the Erosion Control Legend.
14. Add and label contours (existing and proposed) to help understand flow patterns.
- This comment is applicable for all relevant sheets.
15. Please confirm if there is any grading for roadways being completed in Phase 1 Stage 1.

Sheet CE-101:

16. In the Erosion Control Legend, the "Slope Drain / Drainage Pipe" symbol does not match the pipe symbology on the plan view. Please revise accordingly.
17. Please include the missing symbology for "Phaseline". If it is not relevant to the plans, please remove it from the legend.
- This comment applies to all erosion control sheets.

Sheet CE-103:

18. Confirm the limits of disturbance in the area of the stream crossing. The bridge mat is shown and labeled; however, it is also grayed out making it seem like it is not part of this phase/stage of erosion control. If it is to be installed in a future erosion control phase/stage, remove from Phase 1 - Stage 1 plan.
19. The vicinity map is missing; please include it like the other sheets.



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Sheet CE-110:

20. It is our assumption that the gray hatching is undeveloped area (future phases). If that is the case, linework should not be reviewed to clarify what is to be completed during Phase 1 - Stage 2 erosion control.
21. Please confirm if the curb and gutter and/or utilities will be installed during Phase 1 - Stage 2 erosion control. If infrastructure is to be installed, confirm if a staging area is needed and will be provided.

Sheet CE-111:

22. The construction entrance and concrete washout will need to move to stay on the pavement versus where the island is located. Consider shifting it north to align with the future roadway and future erosion control plans for less re-work.
 - a. This comment applies to multiple sheets.

Sheet CE-114:

23. The grading does not match the roadways/curb in some areas for Phase 1 - Stage 2 erosion control (in various locations). If roadways are not installed during this phase, it would be clearer to remove the edge of pavement and curb linework. The infrastructure shown should align with the proposed work within this phase.
 - a. This comment applies to multiple sheets.
24. Street linework should align with the work being proposed. It appears curb and gutter is shown (in the grey area) but the grading cuts through the street linework shown. It is unclear where the pavement ends for Phase 1; please clarify the intent of the grading within this stage and what will be installed (curb and gutter, pavement, utilities, etc).
 - a. This comment applies to multiple sheets.
25. If the offsite roadway that Lineage Place ties to already exists, silt fence and an outlet won't be able to be installed. Please adjust accordingly.

Sheet CE-115:

26. Trim the proposed contours to tie into existing contours.
 - a. This applies to all applicable sheets.

Sheet CE-116:

27. Slopes at 2:1 or steeper should have an erosion control blanket specified and shown on the plan. Please ensure all notes clarify this intent.
28. Confirm the intent of the grading along Fowler Road. This does not appear to be the final roadway grade.



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Sheet CE-120:

29. Please review the whole plan set for legibility of labels.
 - a. Consider wipeouts/backgrounds for text in areas where legibility is an issue.
 - b. There are areas where text is very small and hard to read. Consider revising to make it more legible.
 - c. Review text to ensure no overlapping and everything is legible.
 - d. Ensure leaders are aligning to the correct objects.
 - e. Try to eliminate text/labels being cut off across sheets.
30. There is a phase line shown on the plan that truncates. Please revise accordingly.

Sheet CE-130:

31. The white color in the NPDES Stabilization Legend is everything not in Area 1 and 2, but this also indicates area outside of the project area and/or areas not disturbed. Please consider this and confirm if this was the intent.
 - a. This applies to all NPDES Plan Sheets.

Sheet CE-140:

32. Please clarify the intent of the plan and profile sheets for erosion control. If it is to show grading, then profiles are not needed for temporary conditions and the temporary grading should be shown on the plan views in the CE-100 series (per Town requirements), which currently doesn't show any proposed grading. If plan/profile sheets are required by Wake County or a different agency, please clarify as we have not come across this before. Additional notes requiring confirmation/explanation of intent are as follows:
 - a. The profiles do not show much information for grading since grades and PVI are not shown. What is the purpose of the profiles?
 - b. If these are to show temporary sewer/storm, please clarify the pipe is temporary.
 - c. If these are for the sanitary/storm pipe, please adjust the sheet labels.

Until we understand the intent of these profiles, we have not reviewed them in detail. In all proposed profiles, whether in temporary or permanent conditions, please ensure all pipe is to be installed with the minimum cover.

Sheet CE-200:

33. Check the plot style to eliminate the color; the Town's preference is black.
 - a. This applies to all applicable sheets.
34. If Phase 1 is to be completed before Phase 2 and 3, the Phase 2 & 3 erosion control plans should show Phase 1 streets, sidewalks, etc. (not just rough grading). Please confirm the intent.



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Sheet CE-210:

35. Phase 1 - Stage 2 plans show an area for Phase 1 with Phase 2 & 3 grayed out, and erosion control is specified for only Phase 1. Please confirm if the intention is that Phase 1 will be completed at the start of Phase 2 & 3, or if it will still be under construction. If Phase 1 is completed, then consider graying out the Phase 1 area, like was done for Phase 2 & 3 for the Phase 1 plans. There appears to be an overlap between the Phase 1 sheets and the Phase 2&3 sheets making it difficult to navigate what is to be constructed/completed in Phase 1 versus Phase 2&3.

a. This comment applies to multiple sheets.

Sheet CE-211:

36. It appears the roadway, curb and gutter, utilities, etc. will be installed with Phase 1, please clarify either on the plans or in notes how equipment will access the greenspace to grade and navigate the site without damaging the site.

37. Please confirm if the staging and laydown area shown on this sheet be needed for Phase 1.

a. Is there a reason this grading can't be completed with Phase 1?

38. Label all easements on all sheets.

39. The Site Legend is missing. Please add it to all erosion control sheets.

Sheet CE-213:

40. Label the dashed line shown on the erosion control plans.

a. This comment applies to multiple sheets.

Sheet CE-215:

41. Label or remove the line indicated on the markup.

Sheet CE-220:

42. Fix the Site Legend where it is cut off so that the entirety of the legend can be seen on the plan sheet.

Sheet CE-221:

43. Add all hatching types shown in the plan to the legend.

44. Please indicate what the "50"s are meant to signify on the lower part of the sheet.

a. This applies to multiple sheets.

Sheet CS-101:

45. Please confirm if a construction and/or maintenance easement is needed since the sidepath is outside of the right-of-way.

a. This comment applies to all portions of the sidepath outside of the right-of-way.

46. Please show site triangles at both entrances of the subdivision; it appears they are provided on the intersections internal to the site.



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47. Label the length of the taper as Fowler Road approaches the entrance of the subdivision.

48. Label the width of the median at the Fowler Road entrance.

Sheet CS-102:

49. There is a callout for an easement, but the easement is not shown. Show the easement or delete the callout.

a. This comment applies to multiple sheets.

Sheet CS-200:

50. Only the stationing (and not the alignment) is shown; adjust accordingly.

a. This applies to all alignments on all sheets.

51. Confirm if a storm drainage easement will be needed where the storm pipe comes close to the right-of-way / property line.

52. Please provide more information on the water line connection at the Fowler Road entrance, as to how the connection will occur/fittings/etc., through descriptive labeling and/or reference to appropriate details.

53. Label the existing water line size and material. Consider revising the line type so it is clear that it is a water line.

54. Is Fowler Road being constructed to the centerline of the existing roadway? Please end the profile where actual construction will start/stop.

55. Ensure all crossings have adequate separation; label minimum separation required between pipe crossings.

a. This comment applies to all profile sheets.

56. Label all pipes on all profile sheets (sewer, water, storm) and label all pipe crossings.

a. This comment applies to all profile sheets.

Sheet CS-203:

57. All dead-end roads will need barricades for future roadway connections.

a. This comment applies to multiple sheets.

58. Confirm that from approximately Station 51+25 to the end of the alignment is the future proposed roadway profile. If so, depict it through line type or note as future and show how the roadway will tie into existing grade per the plan.

Sheet CS-210:

59. Please provide more information on the water line connection at the Merritt Reserve Drive entrance, as to how the connection will occur/fittings/etc., through descriptive labeling and/or reference to appropriate details.

60. Label the existing water line size and material. Consider revising the line type so it is clear that it is a water line.



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61. It appears the storm crossing near Station 20+75 may be in conflict with sewer. Please confirm and adjust accordingly.
62. Please confirm if the profile reflects the actual grading intention of the roundabout. Usually, the roundabouts have a crown/high point in the center for drainage.
 - a. There does not appear to be any roundabout design information provided in the plan set. Please provide either plan/profile or spot grading detailed information.
63. Is Merritt Reserve Drive being constructed to the centerline of the existing roadway? Please end the profile where actual construction will start/stop.

Sheet CS-211:

64. Update stationing for all sewer and storm structures on all sheets.
65. Review and adjust the waterline offsets along Merritt Reserve Drive at approximate Stations 31+75 and 33+75.
66. Adjust labels for legibility for all grades.
 - a. This comment applies to multiple profiles.
67. On all profiles, stop the alignment/profile at the center/center and show proposed grades. The proposed grades don't seem to be the correct grades. If they are, 5% is too steep for the sidewalk.
 - a. This comment applies to multiple profiles, specific to cul-de-sacs, dead-ends, tie-ins to existing.

Sheet CS-212:

68. It would be helpful, specifically when the plan view has multiple roads shown, to add a label for which roadway the profile is for. Some profiles already have this; for consistency, add to all profiles.
69. Review labels and ensure everything is labeled correctly. On multiple profiles there seem to be labels that don't align with the design and other corresponding labels.
70. Confirm that Station 16+63.95 is the end of the alignment where it ties into Merritt Reserve Drive.

Sheet CS-220:

71. Since the Fowler Road, as planned in this plan set, is a temporary condition (it will eventually be widened), show how tying into the existing grade will occur.
72. The profile ends here but picks up on Sheet CS-221 at station 17+25.89. Please fill in the missing profile for the stretch of alignment between Station 16+05.89 and Station 17+25.89 or provide a separate profile/design for the roundabout.

Sheet CS-221:

73. Label sanitary sewer pipe material. Sanitary sewer pipe greater than 12 feet should be SDR 26. Less than 12 feet should be PVC.
 - a. This comment applies to all profile sheets.



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Sheet CS-222:

74. If 10' minimum horizontal separation is not met, water and sewer lines must be installed in separate trenches. Please ensure minimum separation is met or construction notes are provided for this requirement.
 - a. This comment applies to multiple sheets.
75. The minimum K-value for vertical curves is 30 for "level" roadways; the minimum K-value for stopping conditions on a "level" roadway is 14. Please revise design accordingly to meet minimum design requirements.
 - a. This comment applies to multiple sheets.

Sheet CS-250:

76. Confirm sewer design and labels are correct. According to the MH 509 invert labels, there is only an invert out and therefore the sewer would have to flow uphill.
77. There appears to be two CS-250 sheets. They have the same plan/profiles but labels vary slightly and the title block has a revision listed in the second sheet.

Sheet CS-260:

78. Ensure the proposed grade is tying into the existing grade where Strips Drive connects to the offsite roadway.

Sheet CS-280:

79. Consider trying to get the K value to a minimum of 30 along Split Granite Court; due to the steep grades on the right, we understand if this can't occur, but please check.
80. Since the end of Strips Drive is a dead-end, please try to get a minimum K-value that would meet the stopping condition to provide a smoother condition for users. Due to the "rolling conditions" this would be a minimum K-value of 9.
 - a. This comment also applies to Toothed Chisel Way on Sheet CS-295 and Deep Canyon Court on Sheet CS-298. For "level conditions" the minimum K-value is 14.
81. Provide invert information for MH 120 in the profile view.
82. Show the grade to the edge of the pavement in the bubble profile.
 - a. This comment applies to multiple profiles.

Sheet CS-290:

83. Storm structures appear to be labeled in the profile but the structure/pipe is not shown. Please revise accordingly.
 - a. This comment applies to multiple sheets.

Sheet CS-291:

84. Dead-ending a roadway with an 11% grade could be potentially dangerous, especially in the winter. While barricades are normally required at a dead-end roadway, this specific condition may



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need something more (such as a guardrail) to prevent cars from going off the roadway. While the existing conditions are shown at or greater than the 11% grade, consider grading/usability of this roadway with the steep grades and the driveways off this roadway.

85. A retaining wall is referenced in the profile but not shown or labeled in the plan view. Please add to the plan view for clarification of location; this retaining wall should also be shown on the grading plan with top and bottom of wall elevations.
86. Add the station number to the Fetching Place "End of Roadway".
87. Confirm if the proposed grade shown is the future grade, and revise the callout accordingly. Show property line/limit in the profile.
88. Please show where the retaining wall is or add the station number to the label.
89. Since MH 107 is shown, please also show MH 170A.

Sheet CS-300:

90. The 8.30% grade on the greenway does not provide ADA compliance; reference the Town's Standards Manual for requirements of vertical design on greenways.
 - a. This applies for the entire greenway.
91. Label the greenway width and material and show and label the easement.
92. Boardwalks require a 10' concrete pad on each end that is less than 2% in any direction; based on the hatching and lack of labels, it is unclear if the path is concrete or asphalt.
93. Minimum longitudinal grade for the greenway is 0.50%. Please adjust accordingly.
 - a. This applies to the entire greenway.

Sheet CS-301:

94. Barricades will be required at the end of the greenway until the future connection is made.
95. Label the dark line (pipe?) shown in the profile.

Sheet CU-101:

96. Review the plans to ensure there are no conflicts with sanitary sewer services and storm.
 - a. This comment applies to multiple sheets.
97. Review plans to ensure the minimum separation requirements between storm and water are being provided.
 - a. This comment applies to multiple sheets.

Sheet CU-105:

98. Check the utility plans for duplicate labels.

Sheet CU-200:

99. Correct the sheet number in the title block.
 - a. This comment applies to multiple sheets in the CU series.



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Sheet CU-201:

100. Confirm cover over sanitary sewer pipe is at least 36".
 - a. This comment applies to multiple sheets.

Sheet CU-300:

101. Label all pipes with size, length, slope, material, on all profiles.

Sheet CU-306:

102. The proposed grade does not cover the pipe between stations 4+50 and 8+00. Please revise accordingly. If an aerial sewer is intended, please add the appropriate labels, notes, details, etc.

Sheet CG-101:

103. General comments for all grading sheets:
 - a. Confirm that there is no proposed grading that is steeper than 3:1 slopes.
 - b. Provide and label (top of wall and bottom of wall) retaining walls as needed.
 - c. Label proposed and existing contours with frequency on all grading sheets.
 - d. Label stormwater pipe size, length, material and slope.
 - e. Show and label all drainage easements and access easements, including around the SCMs.

Sheet CT-300:

104. For the dedicated turn lanes, please confirm the taper lengths are correct. Generally, you see 100' tapers, or even footage requirements.
105. There appears to be 2 centerlines shown within Rolesville Road. If not relevant, clean up and remove unnecessary linework.
106. Remove any unnecessary labels throughout plans.
107. Dimension labels do not align with the sidewalk they seem to be dimensioning; review and adjust accordingly.
108. Review plans for any extra and/or extraneous lines; label any lines that are relevant and needed.
109. There is an existing driveway shown on the plan that encroaches into the expanded Rolesville Road. Label if it will remain and adjust linework to tie to the widened roadway.
110. Label all linework within the plan (underground utilities, edge of pavement, etc.; include widths and material).
 - a. This comment applies to multiple sheets.
111. There is a section cut "B-B" on the plan, but the view is not provided; please adjust accordingly.
112. Consider renaming this sheet to a more clarifying sheet title like "Rolesville Road Striping Plan".
 - a. Please clarify if there is a reason the striping plan is coming first / before the existing conditions and proposed improvements.



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Sheet CT-301:

- 113. Align labels and text to the sheet and make sure they are legible.
- 114. Please confirm if all labels currently shown are necessary. If not, remove them from the plan.
- 115. Label the existing watermain with size and material information.
- 116. Adjust the linework to show existing features. There is a dimension label that appears to be labeling an existing sidewalk, but that isn't clear.
- 117. Show the entire limits of the street improvements. Currently, the plan cuts off some of the proposed pavement.

Sheet CT-200:

- 118. The linework for the plan view hard to follow due to the multiple lines and hatches. Please try to clean up and add additional labels for clarity and legibility.
 - a. This comment applies to all sight line plan views.
- 119. Show proposed roadway location on profiles. Label heights on profiles.
 - a. This applies to all sight line profiles.
- 120. This sheet is out of order. Please make sure the sheets are in order as shown on the Cover Sheet.

Sheet LP-101:

- 121. Ensure street trees do not conflict with utilities and/or driveways.
 - a. This comment applies to all landscape plans.

Sheet LP-103:

- 122. Turn on utilities (half toned) to check for conflicts.

Drainage Report – Part 1:

Page 1:

- 123. Change the address from “Roseville” to “Rolesville”

Page 5:

- 124. Provide a drainage area map for the proposed storm drainage network.
- 125. Provide page numbers for each appendix to make it easier to find and jump to different sections.

Page 330:

- 126. Provide road names on gutter spread calculation sheets that match the site plan (versus Road A, B, C, etc.). Applies to all gutter spread sheets.



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Drainage Report – Part 2:

Page 45:

127. The HGL drops off at the start of this pipe run. Review and revise as necessary.

Page 120:

128. Confirm that the HGL remains in the pipe. This comment applies to all pipes in the network for the 10-yr storm condition.