

Prepared for:

Town of Swansboro Public Works Department

*Civil Engineering Assessment
Swansgate Subdivision
Roads, Sidewalks and Drainage Areas
Swansboro, NC*

May 24, 2023

Submitted by: Larion PLLC, P-1146



LARION

ENGINEERING & CONSTRUCTION CONSULTANTS

PO Box 29, SWANSBORO, NC 28584
P: 910.376.5582 | F: 910.326.4382
WWW.LARION.NET



Introduction

Larion PLLC (Larion) conducted a visual assessment of the streets, curbs, sidewalks and drainage swales at the Swansgate Subdivision, Swansboro, North Carolina on 18 May 2023, at the request of Andrea Correll, Planner for the Town of Swansboro. A visual inspection was performed of the areas identified above by Bobby D. Canady, PE and Gerald “Tank” Bates, Public Works Director for Town of Swansboro.

Purpose

The purpose of this assessment was to evaluate the streets, curbs, sidewalks and drainage swales prior to the Town of Swansboro’s acceptance from A. Sides Construction Inc.

Scope of Assessment

The scope of this assessment included an on-site, visual inspection of the current conditions of the streets, curbs, sidewalks and drainage swales. Additionally, Larion reviewed the test and inspections reports submitted by Parker & Associates dated October 15, 2020.

Construction Information

The Swansgate Subdivision is located off Main Street Extension and Swansboro Loop Road in the Town of Swansboro. The subdivision consists of 37 new home sites. The roads are bituminous asphalt cement; curbs and sidewalks are cast in place concrete. The stormwater design does not include a stormwater basin/pond. New drainage swales were installed to carry the stormwater primarily toward the existing swale along Swansboro Loop Road.

Assessment Findings

Test Reports

The compaction test reports for the subgrade and ABC stone do not correctly correspond to the proctors provided.

The proctor for the ABC stone indicates a corrected maximum dry density of 132 pcf at 8.7% optimum moisture. The field test report indicates a 132.7 with 4.5% moisture and a 133.1 with 4.4% moisture. Based on the proctor curve, moisture in the 4% range would have been approximately 80% compaction.

The proctor for the subgrade indicates a corrected maximum dry density of 119 pcf at 13.3% optimum moisture. The field test report indicates in the low to mid 120 pcf with 4.8 to 6.0% moisture. Based on the proctor curve, moisture in the 5% range would have been less than 80% compaction.

Concrete Curbs

The concrete curb and gutters are low profile, drive over type separating the asphalt streets from the grassed areas.

There are multiple locations where the curb and gutter are cracked (photos 1 and 2).

- It is recommended that each crack be saw cut and filled with NP 1 polyurethane sealant.

There are areas where the curb and gutter were not installed to provide positive drainage and are ponding water during rain events (photos 3, 4 and 5).

- It is recommended that these areas of curb and gutter be removed and reinstalled to correct elevation for positive drainage.

Sidewalks

The sidewalks through the subdivision are cast in place concrete.

There is a section of sidewalk along Swansboro Loop Road that is damaged and cracked (photo 6).

- Recommend replacement of this section of sidewalk.

The sidewalk along Swansboro Loop Road has joints that are uneven/elevated with adjoining sidewalk sections at construction/control joints, multiple locations (photo 7).

- Recommend to grind sidewalks joints flush with adjoining section.

There are areas of spalling of the sidewalks surface (photos 8 and 9).

- Recommend that areas of spalling be repaired with an epoxy concrete product.

The sidewalks that are installed over the curb inlet areas do not have finished edges, honeycomb and form burrs were not corrected (photos 10 and 11).

- Recommend grinding the burrs and grouting the honeycomb to repair the sidewalks at these locations.

Drainage Swales

The drainage swales are installed between the homes to carry the stormwater from the streets and yards to the existing drainage swales along Swansboro Loop Road.

The drainage swales are not graded to provide positive drainage. The swales trap and pond water during and after rain events.

The drainage swales are not at the correct elevation at each of the curb inlets. There is no positive drainage from the roads/curbs through the curb inlets to the swales (photos 12 and 13).

- Recommend that all the swales be regraded to provide positive drainage and sodded after grading.

Additional Items Noted

There is concrete spillage and dropping on the finished surfaces of the curb/gutter and the sidewalks throughout the subdivision that should be removed (photo 14).

Remove the remaining riprap and stone that was used to form check dams during construction (photos 15 and 16).

Remove concrete debris along the sidewalk on Swansboro Loop Road (photo 17).

Grade and sod the culvert inlets that have eroded (photo 18).

Larion Photographs

The following photographs were taken during the assessment.

Photos 1 and 2



Photos 3, 4 and 5





Photo 6



Photo 7



Photo 8 and 9



Photo 10 and 11



Photos 12 and 13



Photo 14



Photo 15 and 16



Photo 17



Photo 18



Thank you for the opportunity to support your project team!

Any questions related to this report should be directed to Bobby Canady at bcanady@larion.net or Shannon D. Weaver at sweaver@larion.net and/or the contact information provided below.



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