

III. SURVEY DATA COLLECTION

As previously stated, beach profile surveys were conducted along the Town's shoreline by CPE in September 2013, May 2015, December 2017, May 2019, and June 2020. Each of these surveys include the 34 profile transects shown in Figure 2. The profile transects are spaced 1,000 feet along the Town's oceanfront beach. CPE also conducted an additional survey in December 2019 following Hurricane Dorian. The December 2019 survey included only the profiles within the project area (D-10 to D-19). Beach profile data was collected along transects listed in Table 1. Coordinates shown in Table 1 are referenced to the North Carolina State Plane coordinate system in feet NAD83 and the profile azimuth refers to degrees referenced to true north. Transects listed in Table 1 are shown graphically in Appendix A – 2020 Town of Duck Topographic and Hydrographic Survey Report. Appendix A also includes detailed survey methodology, monument information, profile plots, profile digital photography, and field book notes.

Beach profile surveys extended landward until a structure was encountered or to a range 50 feet beyond the landward toe of dune, whichever was more seaward. Elevation measurements were also taken seaward along the profile to at least the -30-foot NAVD88 contour. Upland data collection included all grade breaks and changes in topography to provide a representative description of the conditions at the time of the work. The maximum spacing between data records along individual profiles was 25 feet. The upland survey extended into wading depths sufficiently to allow the offshore portion to overlap the upland portion by a minimum of 50 feet. More detailed information on survey data acquisition is available in Appendix A.

Data along profiles D-19, D-20, D-21, D-22, and D-23 were only be collected by CPE for the upland portion of the profiles due the United States Army Corps of Engineers (USACE) Field Research Facility's (FRF) request not to approach the shoreline with survey vessels. Offshore data was obtained from the USACE FRF who regularly surveys the offshore portions of those profiles. The USACE FRF data was collected on June 23, 2020.