

ATTACHMENT NO. 23c
CONSTRUCTION DETAILS

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The proposed Lido Key Hurricane and Storm Damage Reduction (HSDR) Project consists of the placement of approximately 950,000 cubic yards (cy) of sand along a 1.6 mile segment of the Lido Key coastline between FDEP monuments R-34.5 and R-44. The design beach is 80-ft wide (extension of the May 2000 MHW line according to the 2004 feasibility study) at +4-ft NAVD (+5-ft NGVD) with 5 years of advanced nourishment. The initial sand source for the project is Big Sarasota Pass, with New Pass being as a supplemental source upon availability. This project will also include the placement of two groin structures between R-42 and R-44.

A hydraulic cutterhead dredge will be used to excavate the proposed borrow areas. A floating pipeline from the dredge, connected to a submerged pipeline will transport sand to the beach. A water-sediment slurry will be pumped by the hydraulic dredge from the borrow area to the beach. Bulldozers will be used to construct a system of dikes to contain the water-sediment slurry on the beach to allow settlement of the sediment, and to shape the beach to the appropriate construction cross-section template. The dikes will be placed parallel to the coastline, and will be of sufficient length to allow settlement of the sediment on the beach. The contractor will utilize surveying techniques to ensure that the appropriate beach width, height, and beach slope are constructed. Seagrasses within the borrow areas will be buffered to avoid impact from the dredge activity.

The two groins will be constructed as rubble mound structures with 12 inch foundation mats on geotextile fabric. The groin crest width will be 9 feet at +4.0-ft NAVD. The structure side slopes will be 1V:1.5H. The design depth varies. The first groin will be located north of R-42.5 and 170 feet in crest length and constructed in three sections. The landward section will be 50 feet in length, the transition section will be 50 feet in length and the seaward section will be 70 feet. The second groin will be located near R-43.2 and 345 feet in crest length and will also be constructed in three sections landward (140 feet), transition (50 feet) and seaward (155 feet). Adding the front slopes and 5-foot scour aprons at the end of each structure yields total lengths along the foundations of 187 feet and 362 feet, respectively. If it is determined through analysis of the physical monitoring results that a third groin will be constructed, details of construction of the third groin will be provided at that time. Details of the groins are included in the U.S. Army Corps of Engineers report entitled Sarasota County, Florida HSDR Project, Engineering Analysis, Lido Key Groin Field provided in Attachment No. 38.

The potential staging area and construction access is located at the Lido Beach Public Pool, near R-38, which is the same area currently being utilized for 2015 beach nourishment project. The final staging and construction access will be shown on the construction plans, to be provided. Project permit sketches are included with this application as Attachment No. 24. Project area aerial photographs are provided in Attachment No. 25.