Summary: Erickson Consulting Engineers, Inc. (ECE) was responsible for managing all design, permitting, engineering and construction for a 500-ft vertical oceanfront steel sheetpile wall to protect storm-threatened upland properties.

Construction Cost: $1.2M

Key Project Elements:
- Seawall Design
- Frangibility Analysis
- Analysis of Adjacent Coastal Structures
- Storm Erosion Computer Modeling
- Linear Regression Analysis
- Geotechnical and Structural Analysis
- Topographic and Bathymetric Surveys
- Acquire all County, State and Federal Permits
- Re-vegetation Plans and Design Using Native Plants
- Environmental Resource Mapping
- Sea Turtle Monitoring Plan
- Development of Lateral Access and Conservation Easements
- Assessment of Existing Utilities and Relocation
- Drainage System Analysis and Re-Design
- Construction Plans and Specifications
- Bidding Assistance
- Construction Monitoring Services

Shoreline data was obtained and storm erosion model simulations were performed to assess a 15 and 25-year return period storm event beach/dune erosion. A 500-ft cantilevered steel sheet pile wall was designed based on storm erosion data, geotechnical investigation of upland soils and scour analysis. Environmental studies and comprehensive planning included assessment and design of a dune re-vegetation plan to comply with state regulatory permit requirements.

Challenges: Due to very limited site access and the close proximity of residential structures to the seawall, a hydraulic press-in system was used to install the 40 ft steel sheet piles. The system “walks” on top of the sheet pile wall with a minimal required 7 ft wide work area and with minimal vibration. In addition, the project required that an existing utility watermain be passed-through a section of the seawall.