

Broward County Artificial Reefs, Florida



construction

Coastal Systems provided engineering services for the design/build construction of 10 acres of artificial reefs offshore of Dania and Hollywood beaches in Broward County. The mitigation was required for hard-bottom impacts from the planned Segment III (south of Port Everglades) beach restoration. The project consisted of placing 66,000 tons of limerock boulders utilizing a crane barge outfitted with precise positioning equipment. The boulders were transported using barges from quarries in Freeport on Grand Bahama Island. The crane barge was anchored in 15 - 20 feet of water approximately 500' off of the beach.



Anchored Project Assets

Coastal Systems provided an engineered approach to the construction with the following services:

- Coastal engineering wave statistical analysis to determine optimum construction schedule for favorable weather conditions
- Marine resource surveys to map hard-bottom limits utilizing towed underwater video
- Preparation of construction plans with reef mapping data and LADS data to modify environmental permits and use during construction operations.
- Mooring analysis design for temporary single-point mooring of supply barges
- Design/layout of pile anchor system for crane barge with supply barge in nearshore zone, adjacent to reefs
- Specification of high strength floating line for 4-point mooring of crane barge
- Design of barge loading ramps at quarry site
- Crane and barge marine positioning using DGPS
- Vessel tracking system
- Site engineering support
- Web-based project management
- As-built hydrographic surveys
- Construction management and automated quality control



Aspect of Reef Construction

Construction was completed between May and September of 2003, on schedule.

Client: Broward County
Department of Planning
and Environmental Protection

Location: Broward County, Florida

Date of Completion: 2003

Construction Cost: \$6,000,000

