Florida Power & Light Manatee Expansion
Parrish, FL

Location: Parrish, FL

Owner: Florida Power and Light Company

Contractor: American Bridge

Engineer: Black and Veach

Lightweight Aggregate Supplier: Stalite Lightweight

The project entailed the installation of a 60 foot long, 40 foot wide, and 50 feet deep sheet pile cofferdam that was utilized to construct a cast-in-place concrete intake structure. Filter fabric, 3,400 tons of *STALITE* lightweight fill, and 900 tons of riprap was placed to provide for erosion protection. 9000 CY of material was dredged from the bottom of the reservoir, creating a deep channel to provide for an adequate volumetric flow rate for the pumps inside the intake structure. Additional work included the construction of an 18 foot x 25 foot x 12 foot tall cast-in-place box culvert, and installing 600 LF of 108-inch diameter subaqueous pipeline supported by (75) 24-inch steel pipe piling and pipe saddles. 1 (Information from American Bridge)

The lightweight fill used in the project was *STALITE* rotary kiln expanded slate produced in Gold Hill, NC. The material was sent by rail to Palmetto, FL and delivered to the project site by a contract hauler. Expanded slate lightweight aggregate is composed of non-connected cells that are separated by slate. Only a portion of these cells fills with water, which is characterized by the absorption percentage. *STALITE* has absorption under pressure of 10% and long-term absorption of 9%. The aggregate dry loose density was 48.6 lbs/ft3. The specific gravity of the lightweight aggregate was 1.55 which meant the material, despite its low unit weight, would not float in this marine application. The abrasion loss of the aggregate was 31% when tested in accordance with ASTM C131. The maximum compacted moist density when tested using ASTM D-698 was 63.8 lbs/ft3. The internal angle of friction when tested using a triaxial test was 42.3„a. The maximum submerged unit weight of the material was 89.5 pcf.

Built with

STALITE
STRUCTURAL
LIGHTWEIGHT AGGREGATE