Johnson Engineering offers hydrographic surveying, which provides maps showing 3-D modeling or contours required for project approval. The results of the survey can also show marine geological features that pose a hazard to navigation such as rocks, shoals, reefs. The data produced may be required prior to any engineering design and to obtain the necessary permits. Hydrographic surveying is performed by using GPS, survey grade depth recorders and Hypack Max software to produce accurate maps of underwater topography.

Johnson Engineering’s hydrographic team utilizes the following equipment:
- Odom Single and Dual Frequency Hydrographic Echo Sounders
- Trimble R5800 GPS Receiver, Stand-Alone and RTK Capabilities, Hypack Max Software on Toughbook Laptops
- 20’ Kencraft Bay Rider with 115 HP Yamaha Outboard
- 14’ Jon Boats with 15 HP Yamaha Outboard
- 10’ Jon Boats with 9.9 HP Yamaha Outboard
Peppertree Point Marina
Our surveyors conducted a hydrographic survey of the basin and channel from the basin to the main channel in the Caloosahatchee River (+/- 1,800 feet). The survey was overlaid onto a scaled aerial photograph in color which showed one foot contours and channel markers. It was used to determine the extent and volume of maintenance dredging necessary and create cross-sections for permitting purposes.

Harborview Road Surveys
Our surveyors completed upland boundary and topographic surveys on a 402-acre parcel adjacent to the Peace River. A hydrographic survey was also conducted in 113 acres of canals within the upland parcel and on portions of the Peace River adjacent to the shoreline. A one foot contour interval was required for the Peace River portion of the survey and a half foot contour interval was required for the canals. The mean high water line was also located. The upland topography and the hydrographic data were combined to provide a boundary and topographic survey for future site development and to assess dredging needs in the canal and Peace River.

Fishermen’s Village Yacht Basin Dredging
Our team obtained the ERP, federal dredge and fill permits, as well as subsequent permit modifications for this project. Our surveyors performed hydrographic and bathymetric surveys, and prepared cross-sectional drawings of the marina basin, which were used to determine the volume of material to be dredged. Hydrographic and bathymetric surveys were also performed post-dredging to reconcile differences in the estimated amount to remove versus the actual amount removed, since fees were based on the volume of actual material removed. The work also involved setting up benchmarks, establishing horizontal and vertical control, locating existing pertinent site features, and locating the mean high water line. The project ecologist conducted biological surveys of submerged lands to identify any potential areas of sea grasses or other marine resources. Our water resources team conducted water quality and sediment sampling and analyses as required by FDEP and we prepared the construction plans for the project. A revised sovereign, submerged lands lease was also completed for the project.

U.S. Navy Turning Basin
Our team conducted a hydrographic and bathymetric survey of 15 acres at the eastern end of Key West Bight Marina, in Key West, FL. We were a subcontractor to Appledore Marine, who was contracted by the U.S. Navy. This project included establishing horizontal (NAD 83/99) and vertical (NGVD 29) control on the site and the location of piers and seawalls adjacent to the bight. A hydrographic survey was produced with one foot contour intervals of the bottom in hardcopy and digital (AutoCAD) format. The final deliverables included the hydrographic contour map overlaid onto scaled aerial photograph in color. The survey was used for preparing a scope of services to dredge the bight, repair piers and seawalls.

Magnolia Landing Lakes Bathymetric Surveys
Our surveyors obtained ground elevations for over 17 areas where lakes were to be dug for a golf course community for Taylor Woodrow at Magnolia Landing. Once the lakes were excavated, hydrographic surveys were prepared for each of the 17 lakes and the volume of material removed was also calculated for each lake. Side slopes of the lake were calculated to ensure they met design standards.