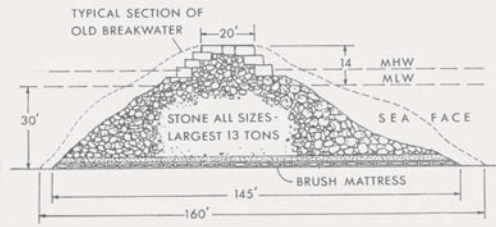


DELAWARE BREAKWATER AND ICE BREAKER



HARBOR OF REFUGE BREAKWATER



1879 Excavation of Schooner Ledge, a dangerous submerged reef extending from the Pennsylvania shoreline near Marcus Hook, becomes the costliest navigational improvement in the Delaware River to date. The project consists of the removal of rock to a mean low water depth of 24 feet.

1880 Timber crib jetties are employed in the first attempt to stabilize New Jersey's Manasquan Inlet.

1889 Army engineers respond to the JOHNSTOWN FLOOD as the South Fork Dam fails and "discharges its contents down little Conemaugh Valley, sweeping everything before a 40-foot wall of water."



JOHNSTOWN FLOOD



THE INTRACOASTAL WATERWAY AT STONE HARBOR, NJ

1896 The Rivers and Harbors Act of 1896 authorizes surveys to create a 30-foot-deep Delaware River Channel. The \$5.8 million cost estimate is based on the need to dredge 35 million cubic yards of sediment and to excavate 24,000 cubic yards of rock.

1897 The "gap" between the DELAWARE BREAKWATER AND ICE BREAKER is closed.

1899 Congress passes the Rivers and Harbors Act of 1899, which grants the Corps regulatory authority over construction, excavation, filling, or creation of any obstruction or alteration in navigable waters of the United States.

1900 Bulkheads are constructed around Baker and Stony Point Shoals to create Artificial Island which is then used as a dredged material disposal area for the 30-foot Delaware River Navigation Project.

1901 The HARBOR OF REFUGE BREAKWATER is completed offshore of Lewes, Del.

1906 Army engineers respond to the SAN FRANCISCO EARTHQUAKE.

Early Days

1877

1915

DISTRICT COMMANDERS



1877-1882
Col. J. N. Macomb



1882-1884
Lt. Col. G. Weitzell



1884-1885
Maj. W. H. Heuer



1885-1890
Lt. Col. H. M. Robert



1890-1901 & 1902-1903
Maj. C. W. Raymond



1901-1902
Col. J. A. Smith



1903-1908
Col. J. C. Sanford



1905-1907
Maj. C. A. F. Flagler



1908-1912
Maj. Herbert Deakne



1912-1913
Lt. Col. Joseph E. Kuhn



1913-1916
Col. George A. Zinn

1908 The Marine Design Division is established.

1909 Surveys are authorized for the construction of an INTRACOASTAL WATERWAY from Boston, Mass. to Beaufort Inlet, N.C.

1911 East and West Jetties are completed at Cold Spring Inlet.



SAN FRANCISCO EARTHQUAKE