Form No. 10-300 (Rev. 10-74)

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UNITED STATES DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

NATIONAL REGISTER OF HISTORIC PLACES INVENTORY -- NOMINATION FORM

FOR NPS USE ONLY **DATA SHEET**
RECEIVED APR 1 1976
DATE ENTERED DEC 12 1976

SEE INSTRUCTIONS IN *HOW TO COMPLETE NATIONAL REGISTER FORMS*
TYPE ALL ENTRIES -- COMPLETE APPLICABLE SECTIONS

1 NAME

HISTORIC
** Delaware Breakwater and Harbor of Refuge, National Harbor of Refuge

AND/OR COMMON
nhr Delaware Breakwaters and Lewes Harbor (Preferred Name)

2 LOCATION

STREET & NUMBER
Cape Henlopen — NOT FOR PUBLICATION

CITY, TOWN
Lewes — X VICINITY OF

CONGRESSIONAL DISTRICT
One

STATE
Delaware

CODE
10

COUNTY
Sussex

CODE
002

3 CLASSIFICATION

CATEGORY	OWNERSHIP	STATUS	PRESENT USE	
__DISTRICT	X PUBLIC	X OCCUPIED	__AGRICULTURE	__MUSEUM
__BUILDING(S)	__PRIVATE	__UNOCCUPIED	__COMMERCIAL	__PARK
X STRUCTURE	__BOTH	__WORK IN PROGRESS	__EDUCATIONAL	__PRIVATE RESIDENCE
__SITE	**PUBLIC ACQUISITION**	**ACCESSIBLE**	__ENTERTAINMENT	__RELIGIOUS
__OBJECT	__IN PROCESS	__YES: RESTRICTED	__GOVERNMENT	__SCIENTIFIC
	__BEING CONSIDERED	X YES: UNRESTRICTED	__INDUSTRIAL	X TRANSPORTATION
		__NO	__MILITARY	__OTHER:

4 OWNER OF PROPERTY

NAME
Corps of Engineers, U. S. Army

STREET & NUMBER
Customs House, Second & Chestnut Streets

CITY, TOWN
Philadelphia — __ VICINITY OF

STATE
Pennsylvania

5 LOCATION OF LEGAL DESCRIPTION

COURTHOUSE, REGISTRY OF DEEDS, ETC.
Sussex County Court House

STREET & NUMBER
The Circle

CITY, TOWN
Georgetown

STATE
Delaware

6 REPRESENTATION IN EXISTING SURVEYS

TITLE
Historic American Engineering Record

DATE
1974 — X FEDERAL __STATE __COUNTY __LOCAL

DEPOSITORY FOR SURVEY RECORDS
Library of Congress

CITY, TOWN
Washington

STATE
D.C.

7 DESCRIPTION

CONDITION		CHECK ONE	CHECK ONE
X EXCELLENT	DETERIORATED	X UNALTERED	X ORIGINAL SITE
GOOD	RUINS	ALTERED	MOVED DATE
FAIR	UNEXPOSED		

DESCRIBE THE PRESENT AND ORIGINAL (IF KNOWN) PHYSICAL APPEARANCE

The breakwaters at Lewes reflect three stages of construction: the two-part original breakwater, the connection between these two parts, and the outer breakwater. All three breakwaters stand within the protective arm of Cape Henlopen, a long sandspit that forms the entrance to Delaware Bay. Protected by land on the west, the Cape on the south, and the two breakwaters on the east, the two harbors provide protection for ships of all sizes.

The first portion of the breakwater, begun in 1828, consisted of a rubble-stone icebreaker 1,700 feet long and a main breakwater 2,800 feet long. The fill is 160 feet wide at the base. The material is Brandywine granite, quarried along the Delaware River in New Castle County. The first lighthouse, completed in 1848, stood at the northeast end of the original main breakwater.

A federal signal station and a private telegraph station once occupied sites on the original breakwater.

The gap between the two original structures is filled by a similar stone structure that was begun in 1883 and finished in 1897. The connection across the gap differs from the original rubble breakwater in its squared-stone superstructure and the wooden mat on which it rests.

A newer breakwater, called the "National Harbor of Refuge," is also built of rubble stone, but the fill is more precisely arranged, permitting a steeper slope to seaward.

The new structure stands 6,500 feet farther north, on a shoal known as the Shears. Since it was built with steam derricks, its construction was more precise than the first, which was constructed by rolling rocks off the sides of barges. Dressed stones, some weighing 13 tons, were set in place on the superstructure. The breakwater is 8,040 feet long at the low water line and 7,950 feet long at the top.

8 SIGNIFICANCE

PERIOD	AREAS OF SIGNIFICANCE -- CHECK AND JUSTIFY BELOW				
__PREHISTORIC	__ARCHEOLOGY-PREHISTORIC	__COMMUNITY PLANNING	__LANDSCAPE ARCHITECTURE	__RELIGION	
__1400-1499	__ARCHEOLOGY-HISTORIC	__CONSERVATION	__LAW	__SCIENCE	
__1500-1599	__AGRICULTURE	__ECONOMICS	__LITERATURE	__SCULPTURE	
__1600-1699	__ARCHITECTURE	__EDUCATION	__MILITARY	__SOCIAL/HUMANITARIAN	
__1700-1799	__ART	X ENGINEERING	__MUSIC	__THEATER	
X 1800-1899	X COMMERCE	__EXPLORATION/SETTLEMENT	__PHILOSOPHY	X TRANSPORTATION	
__1900-	__COMMUNICATIONS	__INDUSTRY	__POLITICS/GOVERNMENT	__OTHER (SPECIFY)	
		__INVENTION			

SPECIFIC DATES 1828, 1883, 1896 BUILDER/ARCHITECT William Strickland, Simon Bernard and others

STATEMENT OF SIGNIFICANCE

Superlative adjectives have been used to describe the engineering feat represented by the breakwaters at Lewes. The recent Delaware HAER catalogue says that the inner breakwater was "the first structure of its kind in the Western Hemisphere."

While its priority may be argued, the breakwater was nonetheless a major contribution to the progress of American engineering, executed by a major figure in engineering history, and conceived on a scale seldom considered before in America.

Cape Henlopen was a dangerous anchorage for sailing ships from the time of earliest settlement. Henry Hudson, in his voyage of discovery, chose not to sail up Delaware Bay because of the shoals. Hens and Chickens Shoal, on the ocean side of the Cape, was one of the first American sites to be marked by a lighthouse. The harbor formed by Cape Henlopen was inadequate protection against storms. Ships that anchored in the lee of the Cape were often driven onto the beach or up the Bay to the shallow bars. The need for an artificial harbor became clear, as deeper-draft shipping increased early in the nineteenth century.

Congress appropriated funds for an initial study in 1822. To carry out the reconnaissance, a board of three officers was appointed, including the foremost engineers of the day. General Simon Bernard, lately a brigadier-general in the French army, had been employed at the recommendation of Lafayette to be chief engineer of the U.S. Army. Major J. G. Totten, his assistant, had been the first professor of mathematics at West Point. Commodore William Bainbridge, the naval member, was one of the senior commanders in the Navy, and an expert on coastal fortification. Their report, recommending a large and permanent harbor, resulted in a construction appropriation in 1828. To build the breakwater, another commission was formed, consisting of General Bernard; Commodore John Rodgers, the ranking captain in the Navy; and William Strickland, a Philadelphia architect who had recently resigned as chief engineer of the eastern division of the Pennsylvania mixed transportation system. Strickland would survive the other commissioners, finally completing the project in 1841.

Even before the breakwater was completed, it saved many ships from disaster. During the years that followed, more and larger ships crowded behind the breakwater, taxing its anchorage space to the limit. The 1877 storm, in which more than 200 vessels took shelter there, proved that the old breakwater was becoming obsolete. Several large craft, unable to get into the harbor, were lost in the storm. In 1883, Congress responded to the need by providing for a new structure to close the gap between Bernard and Strickland's two breakwaters. Work progressed slowly on the connection, which was not finished until 1897.

9 MAJOR BIBLIOGRAPHICAL REFERENCES

HAER Delaware Inventory, 1975.
Gilchrist, Agnes Addison. William Strickland, Architect and Engineer, 1788-1854. New York: Da Capo Press, 1969.
Scharf, J. Thomas. History of Delaware. Philadelphia: L. J. Richards & Co., 1888.
Strickland, William. Reports on Canals, Railways, Roads, and Other Subjects, Philadelphia 1826.

10 GEOGRAPHICAL DATA

ACREAGE OF NOMINATED PROPERTY 1,000

UTM REFERENCES

	ZONE	EASTING	NORTHING
A	18	492000	4298650
B	18	492000	4294000
C	18	489~~580~~ 520	4294000
D	18	489~~580~~ 550	4298650

VERBAL BOUNDARY DESCRIPTION

The nominated property consists of three parts: the inner breakwater, the Delaware Breakwater, and the row of icebreakers.

LIST ALL STATES AND COUNTIES FOR PROPERTIES OVERLAPPING STATE OR COUNTY BOUNDARIES

STATE	CODE	COUNTY	CODE
STATE	CODE	COUNTY	CODE

11 FORM PREPARED BY

NAME / TITLE
Edward F. Heite, Historic Registrar

ORGANIZATION
Div. of Historical & Cultural Affairs

DATE
January 1976

STREET & NUMBER
Hall of Records

TELEPHONE
302-678-4564

CITY OR TOWN
Dover

STATE
Delaware

12 STATE HISTORIC PRESERVATION OFFICER CERTIFICATION

THE EVALUATED SIGNIFICANCE OF THIS PROPERTY WITHIN THE STATE IS:

NATIONAL X STATE ____ LOCAL ____

As the designated State Historic Preservation Officer for the National Historic Preservation Act of 1966 (Public Law 89-665), I hereby nominate this property for inclusion in the National Register and certify that it has been evaluated according to the criteria and procedures set forth by the National Park Service.

STATE HISTORIC PRESERVATION OFFICER SIGNATURE Lawrence A. Sen

TITLE Director

DATE 3/22/76

FOR NPS USE ONLY

I HEREBY CERTIFY THAT THIS PROPERTY IS INCLUDED IN THE NATIONAL REGISTER

DATE 12/13/76

Acting DIRECTOR, OFFICE OF ARCHEOLOGY AND HISTORIC PRESERVATION

ATTEST:

DATE 12/6/76

KEEPER OF THE NATIONAL REGISTER

GPO 892-453

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Another disastrous storm in 1889 and increases in the drafts of oceangoing ships accented the need for a larger and deeper harbor. Finally in 1896, Congress authorized the new "National Harbor of Refuge" farther offshore.

Both breakwaters have served as models for similar structures elsewhere. The random stone breakwaters at San Pedro, California and Sandy Bay, Massachusetts are among the projects that followed the Delaware examples.

The last major structure to be built in the breakwater complex was the series of ten stone icebreakers to the north of the outer breakwater. They were added to the project in 1900, to protect ships in the harbor from floes coming down the bay. The United States Army Corps of Engineers administers the breakwater complex today.