

CULTURAL RESOURCE RECONNAISSANCE  
New York Harbor  
Collection and Removal of Drift  
area of Elizabeth, Union Co., N.J.  
and  
Channel Dredging, Elizabethport and  
North and South of Shooters Island Reaches

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HISTORIC SITES RESEARCH

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## I. INTRODUCTION

This report presents a preliminary assessment (reconnaissance level) of the cultural resources of two projects: (1) the New York Harbor - Collection and Removal of Drift in the area of Elizabeth, N.J. and; (2) the N.Y. District's feasibility report on deepening and straightening the New York and New Jersey Channels from deep water in Upper New York Harbor westward to the Howland Hook Marine Terminal, Howland Hook, Staten Island, New York and creating a turning basin to serve that facility (Revised Scope of Work dated 80 Jan 23, amending solicitation No. NANSU-P-10). The work has been performed under Purchase Order No. DACW51-80-M-0474, dated 80 Feb 06.

The areas to be surveyed were marked on a navigation map (Map 1), which indicated the area of the Drift Removal Project, and of the Channel Deepening and Straightening Project. As of the time of writing, no mapping of location has been provided for the turning basin, so this report specifically cannot address impacts on the turning basin.

Basic elements of this project are:

- (1) Removal and/or repair of piers and other shoreline structures and the removal of derelict hulls.
- (2) Removal and/or repair may be accomplished by either land or sea-based operations. Removal may involve dredging access channels and/or dredging associated with the removal of piles. Thus the impact of these associated activities should also be assessed.
- (3) Deepening of the New York and New Jersey Channels from the Staten Island Railroad Bridge eastward to the most easterly point of Shooters Island. See attached project map. In addition the construction of a turning basin near Howland Hook.
- (4) Sites or objects in the project area which might be potentially eligible for nomination to the National Register of Historic Places, and which would be affected by the proposed operations should be noted.

(Revised Scope of Work, II.b.)

The objective of this study is to identify any prehistoric and historic cultural resources which might be eligible for nomination to the National Register of Historic Places, under the provisions of the National Historic Preservation Act of 1966, Executive Order 11593, and the Archaeological and Historical Preservation Act of 1974. The detailed definition of services included the following:

d. Evaluation. The cultural resources to be located and evaluated include both historic and prehistoric properties. All sites, buildings, structures, vessels and objects which are significant in terms of national, state or local history or pre history, and for which there is either subsurface evidence, above ground, or underwater level components will be considered. Besides evaluating individual resources in terms of National Register criteria, each resource will be analyzed with respect to the impact the project will have upon it. For instance, it should be clear if the construction project will ultimately destroy the resource, have only a partial effect on the resource, or have minimal or no effect. Any other pertinent information having to do with this subject should be included in the evaluation.

e. The evaluation of cultural resources to be performed by the contractor should be considered as a Recon level investigation. The reconnaissance should focus on the potential existence of resources and their eligibility for nomination to the National Register of Historic Places. Criteria for significance/eligibility and mitigation possibilities as described in Appendix A and in 36 CFR 60 (National Register of Historic Places) should be used as guidelines where possible and relevant.

(Revised Scope of Work, III. d. & e.)

The report includes a summary of the recorded history and development of the area, based upon primary and secondary written, photographic, cartographic and topographic records, and a description of the present condition of the study area. It refers to and summarizes the findings of other cultural resource studies which impinge upon sections of the study area, notably:

Kardas, Susan and Edward Larrabee

1976 A Preliminary Archaeological Reconnaissance for Cultural Resources, Kill Van Kull and Newark Bay Channel Dredging Project. U.S. Army Corps of Engineers, New York Office.

1977 Cultural Resource Reconnaissance, East River Reach, New York Harbor Collection and Removal of Drift Project. U.S. Army Corps of Engineers, New York District.

Kraft, Herbert C.

1977 Archaeological and Historical Survey of the Proposed Elizabeth Flood Control Project, Elizabeth, New Jersey. Submitted to the Department of the Army, New York District, Corps of Engineers.

Rockman, Diana diZerega and Nan A. Rothchild

1979 A Preliminary Assessment of Cultural Resources on Shooters Island, Richmond County, New York, and Hudson and Union Counties, New Jersey. In Shooters Island, New York and New Jersey Report to Congress. Department of the Army, Corps of Engineers, New York, New York.

This report also includes recommendations for future work to be implemented in evaluating these resources.

**WARNING**  
 The prudent mariner will not rely solely on any single aid to navigation, particularly on floating aids. See U.S. Coast Guard Light List and U.S. Coast Pilot for details.

**MAP 1 PROJECT AREAS**  
 as marked by New York District  
 Corps of Engineers

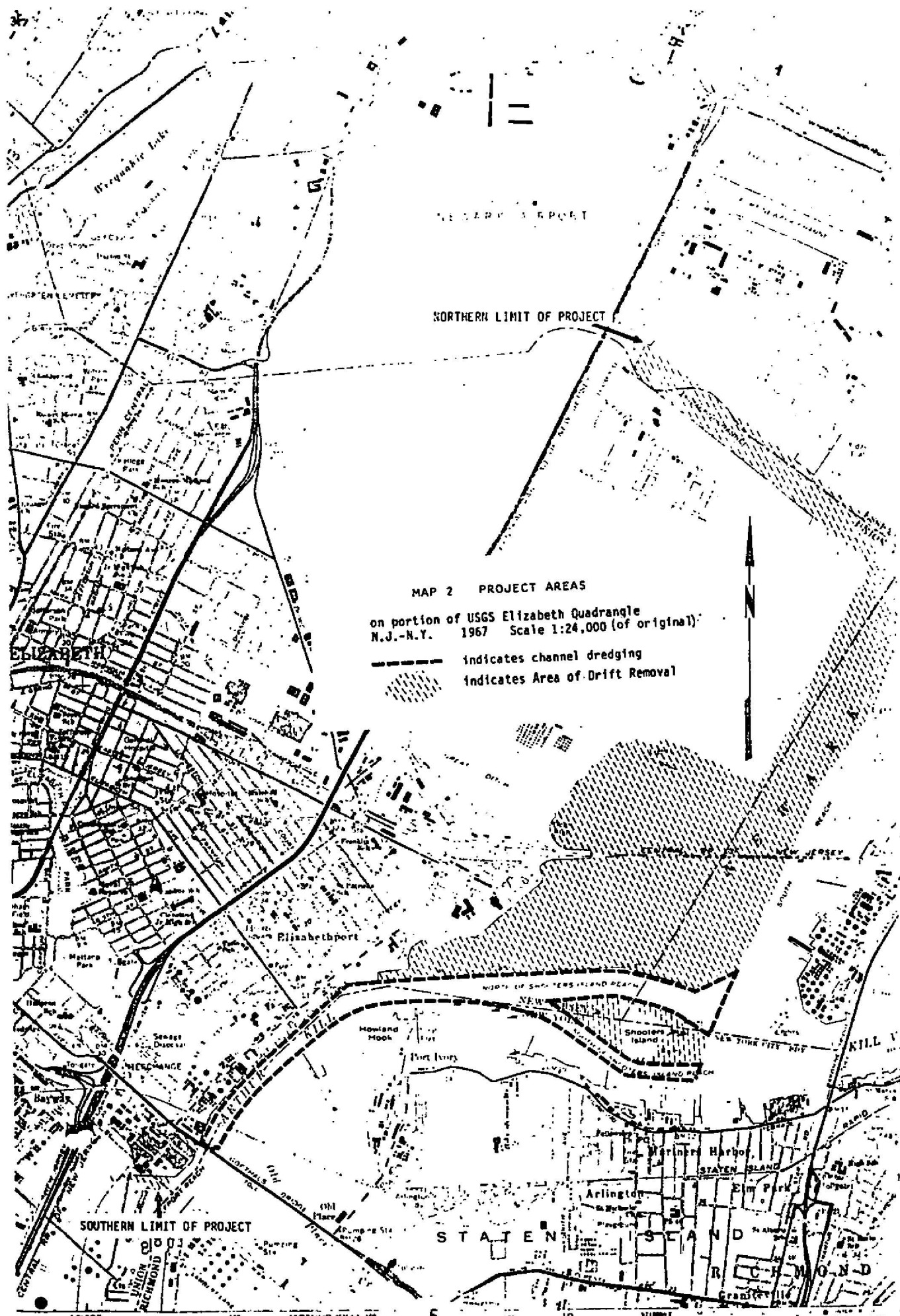
Portion of Chart NOAA 12172 (C&GS 369)  
 scale 1:40,000

VHF WEATHER BROADCASTS FOR MARINERS  
 FM Station with frequency of 162.55 megahertz and range approximately 40 miles is in continuous operation 24 hours daily broadcasting weather warnings forecasts and reports from the NATIONAL WEATHER SERVICE Office as follows  
 KWO-35 New York, New York



This chart is based on the latest available information and is subject to change without notice. It is not to be used for navigation unless it is accompanied by the latest edition of the New York District Corps of Engineers Reports to the U.S. Coast Guard.			
Controlling depths from soundings in feet or mean low water unless noted.			
NAME OF CHANNEL	DEPTH	DEPTH	DATE OF SURVEY

Nautical Miles







## II. METHOD

Description of Research Methods: This reconnaissance included the following steps:

1. A complete visual survey of the piers and waterfront of Elizabethport to be affected by a) boat survey provided by the Corps of Engineers on 1 April 1980, and b) pedestrian reconnaissance, including close inspection of wharfs and piers, evaluation of eroded surfaces and standing structures.
2. Preparation of a base map showing development and approximate age of present shoreline; and location of original shoreline, aboriginal Indian and Colonial settlements, and Revolutionary War events.
3. Study of present wharves and structures to show their relationship to similar structures known from 19th and 20th century maps, insurance records, and industrial histories.
4. Examination of maritime historic and aerial photographic records to determine if ship wrecks or Register quality boats and/or maritime structures are known to have been present in the Elizabethport Reach. A brief examination of derelict vessels at Shooters Island was made by Norman Brouwer, Ship Historian at the South Street Seaport, in December 1978, and is reprinted as an Appendix to this report.
5. Examination of current National Register of Historic Places, State Historic Preservation Office files, and previous Cultural Resource reports prepared for the New York Office of the Corps of Engineers (Kardas & Larrabee 1976, Kraft 1977, Rockman & Rothschild 1979).

6. Examination of previous records of dredging for the channels involved in this project.

In performing these steps, the following large aerial photomaps, provided by the New York Office, were used:

"Corps of Engineers New York District Elizabeth Drift Removal Project." (by) Dravō - Van Houten, December 1979, General Plan Sheets 1-8, & "Dredging Plan and Real Estate Requirement, Sheets 1-8." (Drawings No. 56901-1 through 17).\*  
Scale: 1 inch = 100 feet.

and

"Survey of Arthur Kill."  
(Drawings No. 2659-00, Sheets 2, 2a, 3, 4, 5, 6 & 7).  
Scale: 1 inch = 100 feet.

\* Drawings 18 & 19, "Sections", were not provided.



### III. DEVELOPMENT OF THE STUDY AREA

#### A. Topographic Description of the Study Area

The study area for this reconnaissance falls entirely within the Elizabeth, N.J. - N.Y. Quadrangle (U.S.G.S. 1967). It extends north to south, from the mouth of Morses Creek and the Goethals Bridge linking Linden, New Jersey, to Staten Island, New York, northeast up the Arthur Kill, along the New Jersey side of Newark Bay in Union County, as far as the northern edge of the Elizabeth Channel just across the Essex County line, and extends to the east including the Arthur Kill Channel and part of Newark Bay as far as the eastern shallows of Shooters Island.

This channel is divided into the "Elizabethport Reach", the "North of Shooters Island Reach", and the "South of Shooters Island Reach". These three reaches form the portion of the survey in which a channel dredging project is proposed. The other portion of the survey is concerned with the removal of drift. Included are the entire Union County shoreline, from Morses Creek north to Elizabeth Channel, and an extensive shallow area east of Elizabethport, west of the dredged channel of Newark Bay - South Reach, and north of a dike which retains the "North of Shooters Island Reach". Also included is an area at the northwest corner of Shooters Island, where more than sixty derelict vessels or hulks are marked for removal.

## B. Prehistoric Cultural Development

### 1. New Jersey Shoreline

Much of the project area along the New Jersey shore of the Arthur Kill was originally salt marsh, which is not favorable to occupation, or is man-made land, having been filled in the last hundred years. However, the central portion of the project, particularly the area around Elizabeth Avenue (near the Elizabeth River) is higher than the surrounding area and would have been favorable for prehistoric occupation. This is particularly true because of its proximity to Staten Island, which was densely populated prehistorically and had a rich environment along the river with plentiful food resources (fish, shellfish, birds and plants). This area was also the locus of earliest Euro-American population along this section of shoreline, and has since been subject to construction, demolition and industrial use, which may have destroyed any prehistoric resources.

Documentary references to prehistoric cultural resources in this area are sketchy. Skinner and Schrabisch state that "In grading streets in Elizabethport, near the shore, relics are said to have been found" (1913: 42). Later publications such as Cross (1941) and Skinner (1932) make no reference to any sites in the area. Kraft conducted a survey along the Elizabeth River in 1977, and discovered "no prehistoric cultural materials of any kind" (Kraft 1977: 8). Thus, it is likely that if any prehistoric settlement did exist along the New Jersey side of the Arthur Kill, it has been destroyed by three hundred years of historic occupation and industrial use.

## 2. Synopsis of Prehistoric Cultural Development of Shooters Island and Staten Island (North Shore)

Archaeological sites dating from the Paleo-Indian through the contact periods have been found on Staten Island. Along the north shore (facing Bayonne, Shooters Island and Elizabethport) are several sites dating from the Archaic to the contact periods. In the vicinity of Mariners Harbor these include (as referred to in Rockman & Rothschild 1979):

Bowmans Brook (large 5 component site)(Smith 1950; Ritchie 1969)

Goodrich Site (Ottesen & Williams 1969; Anderson 1970)

Old Place Site (Jacobson n.d.; Anderson 1964, 1967)

Arlington Place (Skinner 1909: 5-9)

Arlington Station (Skinner 1909: 5-9)

Gerties Knoll (Skinner 1909: 5-9)

Shooters Island is situated directly between the western portion of this large multi-component site area on Staten Island, and Bergen Point in Bayonne. The latter location was reported as having both prehistoric and contact period archaeological sites (Skinner & Schrabisch 1913: 42).

A preliminary assessment of the cultural resources of Shooters Island was prepared for the Corps of Engineers New York District by Diana diZerega Rockman and Nan A. Rothschild (January 1979). This study established that the original ground surface of the island is under up to 13 feet of fill. No archaeological tests were performed to that depth and further study (Stage I Cultural Resource Survey) was called for at that time.

It is postulated on sea level reconstruction that around 3000 B.C. sea levels were about 25 to 30 feet lower than they are now. This is discussed at length in a previous report on Newark Bay (Kardas & Larabee 1976: 8-20). Under such conditions, Shooters Island was a knoll

projecting above the valley floor adjacent to an earlier Passaic - Hackensack river bed. Both the east and west sides of the island may have submerged and undisturbed Archaic or earlier prehistoric deposits. Rockman and Rothschild conclude:

...The possibility that prehistoric archaeological deposits lie undisturbed on Shooters Island under the protective covering of fill or under water must be investigated further as they might constitute the only remaining relatively undisturbed archaeological deposits in the important coastal area.

These prehistoric archaeological deposits would constitute an important cultural resource, potentially eligible for nomination to the National Register of Historic Places. We therefore recommend that, as a next step, a determination be made of whether or not the original land surface of the Island has been disturbed or simply covered up by the fill which has been deposited there in the last century, whether any prehistoric deposits are present, and to what degree they are disturbed. It is extremely important that this question be settled before any further action is taken which would affect the Island's future (1979: 7-8).

The same assessment is true for the large area of extremely shallow water north of the dike on the "North of Shooters Island Reach," west of the Newark Bay Channel, and south of the Central RR of New Jersey bridge across Newark Bay. A recent assessment of submerged cultural resources was made for the Bureau of Land Management by the Institute for Conservation Archaeology at the Harvard University Peabody Museum. This concluded that the area in question falls within Zone A-49, where a medium to high frequency of sites is predicted for the period from 6,000 years ago to the present (Roberts et al. 1979: II-356, 367). Particularly good preservation conditions can be expected in this very shallow area which has never been dredged, and has always been protected from surf and storm action.

## C. Historic Cultural Development of the New Jersey Side of the Arthur Kill

### 1. 17th and 18th Century

The earliest Euro-American use of the area centered around the high shoreline along the bluff between the mouth of the Elizabeth River and DeHarts Point (near the Singer Manufacturing Company Plant). Early maps show a ferry to Staten Island and New York established before 1679, a Revolutionary War period tavern, three redoubts, and several battle positions occupied during the Revolutionary War, all near the north side of the Elizabeth River.

Action during the American Revolution came to the vicinity of the project at the beginning of July 1776, in attempts to cross the Kill (Munn 1976: 30, 36). In December British troops occupied the Elizabethtown area, while pursuing Washington's army across New Jersey, after the defeat of the Americans in the New York City Area. Following Washington's victories at Trenton and Princeton at the end of December and beginning of January, the British evacuated most of New Jersey, concentrating their forces at New Brunswick and Perth Amboy. Several skirmishes were fought in January and February 1777, including a raid from Staten Island to Elizabeth (Clayton 1883: 74-78). In July 1777 the British evacuated New Jersey, but remained in force on Staten Island until the end of the war, so that the Elizabethport shoreline became a military frontier with numerous crossings of the Arthur Kill. For example, on 21 August 1777, one detachment of Americans crossed to Staten Island from a point near the mouth of Morses Creek, and another crossed "at the Old Blazing Star" or Elizabethport ferry, for a night raid. The British under Clinton invaded New Jersey at Elizabethtown Point on 12 September 1777, and the Americans retaliated by making raids from Elizabeth onto Staten Island in November (*ibid.*: 79-80). Elizabethtown became a major seat for the exchange of prisoners after Elias Boudinot, a resident, was made Commissary General of Prisoners. Many prisoners passed through the area after the Battle of Monmouth.

Desultory raids were made in 1778 and 1779. In January 1780 there was exceptionally cold weather, freezing the Arthur Kill solid. Taking advantage of this the Americans made a major invasion of Staten Island on 15 January 1780, which was unsuccessful, and followed by a rapid retreat. This was followed by an equally unsuccessful British incursion on 25 January 1780 (ibid.: 81-87).

The most important campaign of the war at Elizabethport was the British invasion of 6 June 1780, under Baron von Knyphausen. About 6,000 troops crossed and marched to Connecticut Farms, where they were repulsed. The same day they retreated, and the majority re-crossed to Staten Island. However, about 500 men remained "to intrench themselves at the Point. The encamped between Old Point and DeHart's House." In the 1880's it was reported that "the ground occupied by the contending forces on this occasion is now covered by the factories, warehouses, and residences of Elizabethport." For two weeks the British remained here, "behind the fortifications thrown up by the Americans more than four years before" (Clayton 1882: 90). After one more invasion in strength to attack Washington's encampment in the Watchungs on 23 June 1780, the British retreated to Staten Island, abandoning their defensive works, and removing their bridge of boats. The following day the American militia marched into Elizabethtown Point and demolished the British defences (ibid.: 91). Throughout the remainder of 1780, and 1781 and 1782, small raids were made across the Arthur Kill here by both sides, but there were no more major fights.

In all, between July 1776, and February 1782 there were nearly fifty incidents, from foraging expeditions to serious fire fights, reported in connection with Elizabethtown, Elizabethtown Point, and this crossing of the Arthur Kill (Munn 1976: 30-37). The major event was during the period from 6 June to 24 June 1780, when the British fortified the shoreline here. These defences are clearly shown on a 1780 map by British Lieutenant John Hills, and again on an 1879 map by E. Meyer which is based on the earlier map, but shows Elizabethport streets

of a century later. The defences were all behind the existing shoreline, on the first solid ground (See page 16 for map of area during this period).



SECTION OF E.L. MEYER MAP OF 1879

showing Jersey side of Arthur Kill and Newark Bay at the time of the Revolutionary War. Cultural Resources: K, l, m, w & z described in Table 2 are indicated.

Scale: 1"=937.5'  
 (Original Scale 1"=600')





## 2. Post Revolutionary War Developments

None of these cultural features except for the ferry house are in the direct impact area of the proposed project. This "tavern or ferry house" was visited by Dankers and Sluyter in 1697. It was reputed to have been kept by a French papist, one of the men from the Isle of Jersey brought over by Carteret (Clayton 1882 : 181).

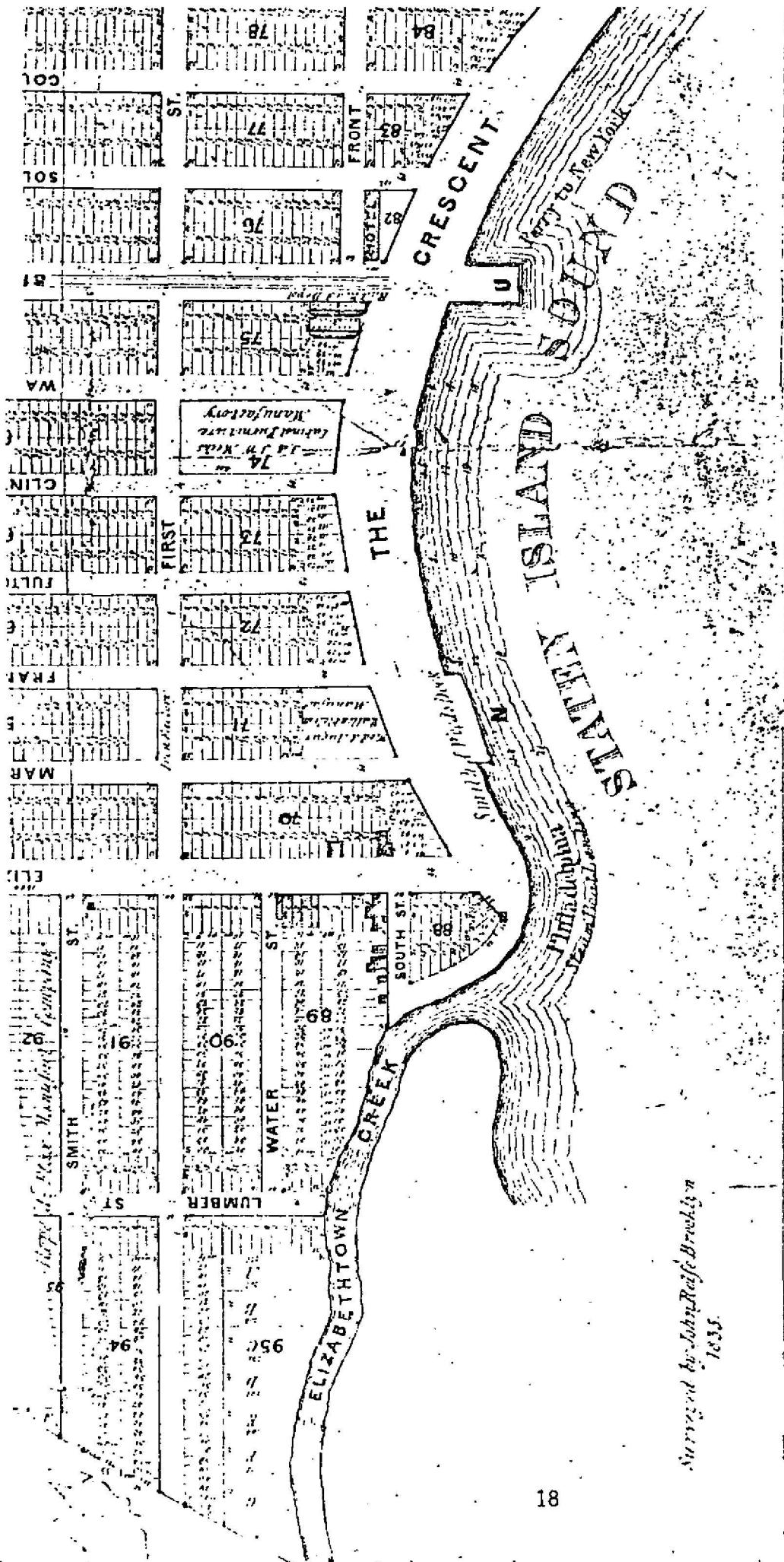
This location continued to be utilized as a ferry crossing after the Revolution. Now called "Old Point", or "Elizabeth Point", it became the docking port of the steamer *Raritan* built by John R. and Robert J. Livingston. The *Raritan* became the first boat that connected Elizabethtown with New York by steam (*ibid.*). Other notable vessels associated with Elizabethtown Point were the *Sea-Horse* built by Daniel Dod circa 1811 (12 hp.). Aaron Ogden owned this profitable ferry.

Nearly at the mouth of the creek Thomas Gibbons fitted up another ferry dock called the "Rising Sun Landing", and established a rival ferry with the steamers *Stouddinger* and *Bellona*. Cornelius Vanderbilt was the captain of the latter boat (Clayton 1882: 182).

This rivalry and ensuing legislative acts ultimately resulted in the case of *Gibbons v. Ogden*, argued before the Supreme Court of the United States in 1824 (6 Wheaton, 449; Lane 1938: 185-194). The impact of this decision, which declared that monopoly of steam navigation in the waters of New York State was unconstitutional and hence null and void, opened steam navigation to the competition of the world, an event of untold and incalculable importance to the commerce and prosperity of the United States (Clayton 1882: 182).

This is frequently considered one of Chief Justice John Marshall's most important decisions, and is a landmark in the constitutional law of the United States. The case was concerned with the navigation of New York State waters, and, for practical purposes, with access to New York City, but the departure points of the competing ferry lines which were the subject of this epochal decision were two docks on the Elizabeth waterfront, only a few yards from each other.

The section of waterfront now known as Elizabethport has industrial antecedents as far back as the 1830's. This includes the post-Revolutionary War docks and related industries of Smith & Woods (1835); Elizabethport Manufacturing Co. (1836); and the Broad Street Ferry to New York (1835).



SECTION OF JOHN ROLFE, BROOKLYN MAP OF 1835

showing waterfront of Arthur Kill (then called Staten Island Sound) between Elizabethtown Creek and Wall Street. Resources k, l, m, w, & z no longer are shown. Post Revolutionary War resources n & u described in Table 2 are indicated.

No Stated Scale

Surveyed by John Rolfe Brooklyn 1835.

During the mid to late 19th Century several different types of industries became established along the shoreline of the Arthur Kill. These included:

Foundries & Factories (Cultural Resources \* a,b,i,n,p,x,y)

Oil Refining (Cultural Resources c,d,e,f,g,h)

Shipbuilding and Shipping Law (Cultural Resources j, o)

Railroad Related Industries (Cultural Resources t, v)

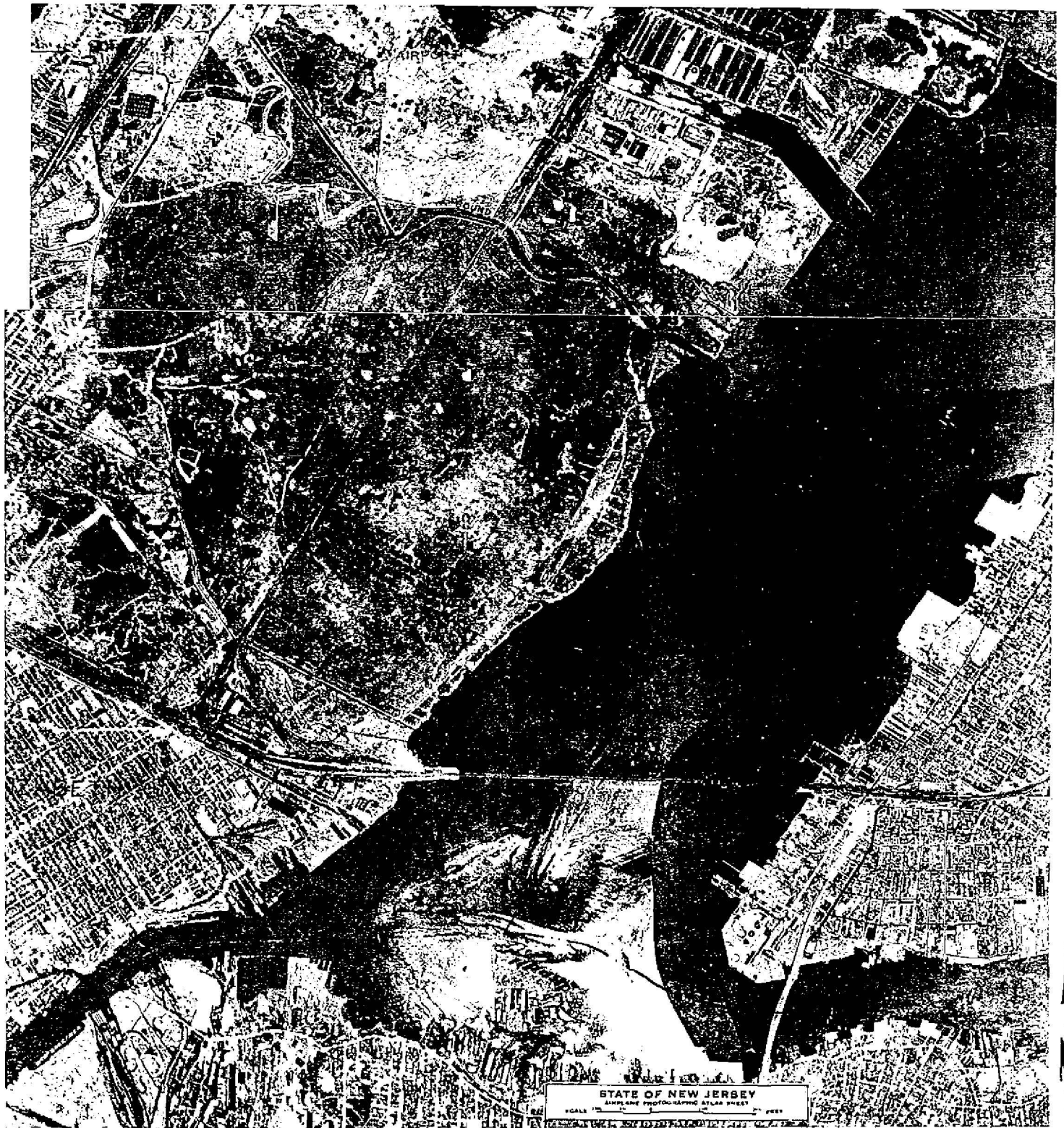
These industrial complexes are summarized in the following table. This tabulation (Table 1) lists all the manufacturies and structures near the Arthur Kill and includes a brief description of the earliest known structures adjacent to the Sound as they appear on Sanborn Insurance maps of 1899, 1903, and 1922. Each of the entries in Column 2 (Company) are discussed with regard to project impact and National Register Eligibility in Table 2 which also cross-references them to the photo-plates. The letter preceding company name indicates its referent in Table 2. The location of each of these is indicated on one of two Cultural Resource Base Maps on pages 27 and 29.

Many of these industries are located some distance back from the present waterfront and therefore are not in the project area, nor will they be affected by it. Many of them have been removed and replaced with new structures during the 20th Century, as is indicated in Table 2 and illustrated in the photoplates.

\* See Table 2

TABLE 1  
LIST OF LATE 19TH CENTURY INDUSTRIES AND COMMERCIAL ESTABLISHMENTS ON THE ELIZABETHPORT  
WATERFRONT

Location	Company	Buildings by sound	1889	1903	1922
S of Bayway	a. H.A. Clark Wire Co. (1903) American Copper Products (1922)	large building ending in dock	brickyard	present	present
N of Bayway	b. Bowker Fertilizer Co.	storage & mixing sheds	present	present	expanded
	c. Borne-Scrymser Co. Mfrs. of Lubricating oils	shipping shed	open meadow	-----	present
	d. Cook Bros. (1903) Cook & Swan (1922) Fish Refinery		" "	present	present
	e. New York Oil Storage & Transfer Co. (1922)		" "	Buildings part of Scrymser Oil Works	present
	f. Scrymser & Co. Oil Works (1903) Galena-Signal Oil (1922)	filling & storage shed	" "	present	expanded old bldgs. gone; new built
	g. Pennsylvania & Delaware Oil Co.	shipping building & dock	" "	present	expanded
	h. Bayway Refining Co. (1903) New York Lubricating Co. (1922)	long building with dock	" "	present	expanded-old bldgs. gone; new built
	i. Connelly Iron Sponge & Governor Co. Oxydizing works	storage buildings & shed	" "	-----	present
Immediately S of Eliz. R.	j. New Jersey Dry Dock & Transportation Co.	drydock in sound & at point	" "	present	present
between Eliz- abeth & Mar- shall Sts.	m. H.A. Ellis & Co. (1903) Standard Oil Co. (1922)		-----	present	present
between Marshall & Franklin	n. Crescent Iron Works Dock (1889)		present	replaced by shipbuilder	replaced
foot of Fulton St.	Carpenter shop (1889)	boat dock (1889)	present	" "	"
between Marshall & Fulton	o. U.S. Shipbuilding Co. (1903); Bethlehem Shipbuilding Co. (1922)	paint shop at NE corner (1922)	-----	present	probably new buildings; N end filled for drydocks.
between Fulton & E. Jersey	q. Gibbs & Price Coal & Meal, Flour & Feed (1903) Abrow & Cooper Inc. Mason's Materials (1922)	old vacant bldg. on pier (1889) coal shed on pier (1903 & 1922)	structures present	new struc- tures pre- sent	present
foot of E. Jersey	r. Staten Island Ferry Landing	Ferry house	-----	present	present
between E. Jersey & Livingston	s. Recreation Pier (1922)	2 boathouses (1889) 1 boathouse (1903) recreation pier (1922)	present	present	new structures present
foot of Livingston	unnamed	2 oyster sheds & wharf (1889); dwelling, boat house (1903)	present	present boathouse is 1 of oyster sheds; some land fill	present
between Living- ston & Broad	t. RR paint sheds (1889) N.J. Concentrating Co. (Chemicals) (1922)		present	gone	N.J. Concentrating Co. new building 1922
between Broad & S. Park	v. Central RR of N.J.	Freight Depot	present	present	part of N.J. Concentrating Co.
between S. Park & Bond	Central RR of N.J. car works		present	present	present
between Wall & Trumbell	Central RR of New Jersey	coal wharves	present	present	present
	x. H.R. Worthington Foundry	foundry		present	present
between Trumbell & CRR of N.J. bridge	z. Singer Mfg.	boathouse	present	present	present



1930 Aerial Photo-mosaic

Note that no development has occurred in the Port Elizabeth area, which is all meadowland at this time. A ferry can be seen crossing the Arthur Kill from the dock at the foot of East Jersey St. (Resource r).

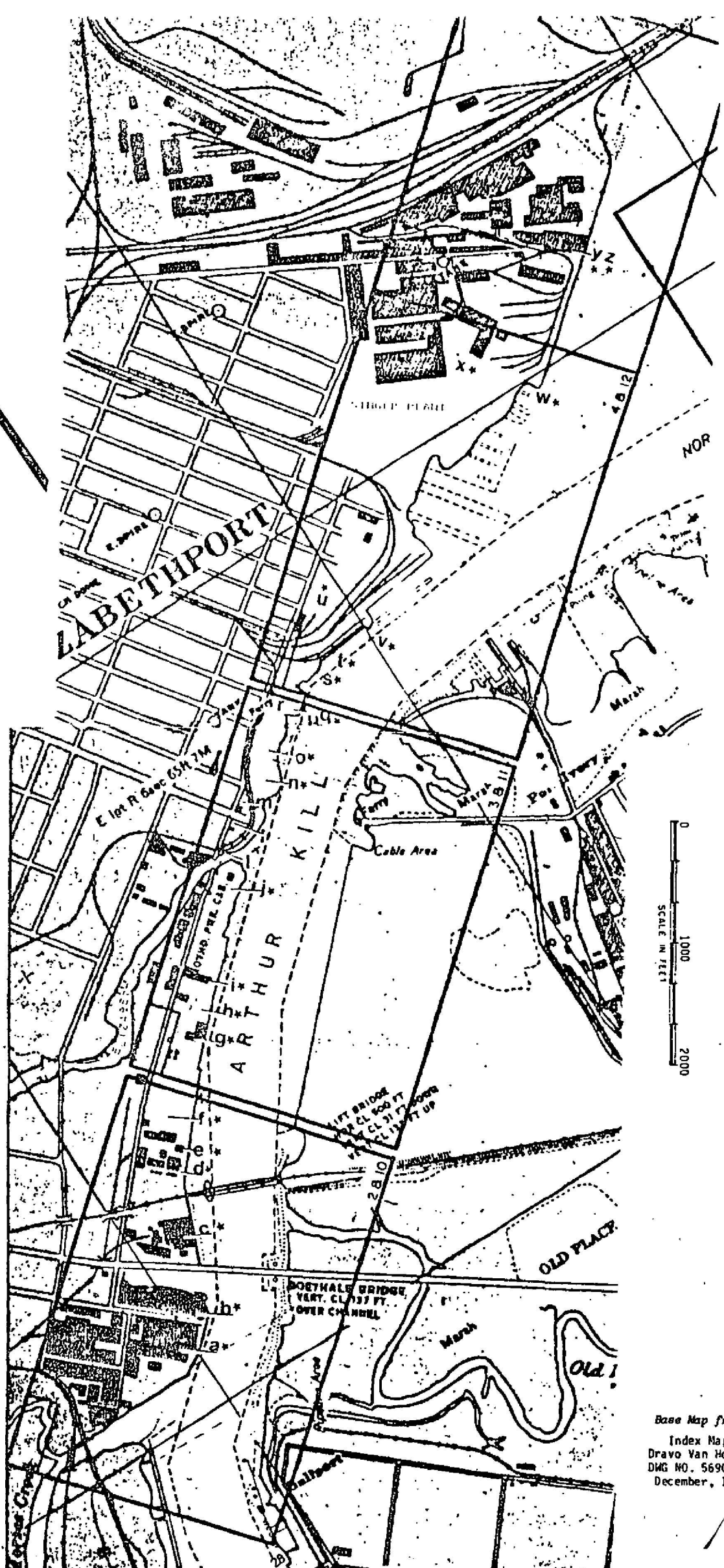




1940 Aerial Photograph,  
Taken 28 March 1940, showing Shooters Island and the north end of the Arthur Kill.  
At the time no hulks had accumulated by the island.

TABLE 2  
Inventory of Cultural Resources  
Along the New Jersey Side of the Elizabeth Reach  
(The Arthur Kill from Morses Creek north to the Singer Plant)\*

Description of Resource	Plate No.	Eligible for Nomination to the National Register of Historic Places	Effect of Drift Removal on Resource
(No prehistoric resources are known to be near the present shore)			
a. W.A. Clark Wire Co. (1903), American Copper Products (1922) now Phelps-Dodge Copper S of Bayway	I	yes	none
b. Bowker Fertilizer Co. pre 1882? now replaced by Goethals Bridge Complex N side of Bayway	II	(no longer intact)	none
c. Borne-Scrymser, Inc., Mfrs. of Lubricating Oils (1922) N of Goethals Bridge	III	(no longer intact)	none
d. Cook Bros. Animal Oils (1903) Cook & Swan Fish Oil Refinery (1922) Part of modern Industrial Tank Yard N of Clifton	See Aerial Photomap	(no longer intact)	none
e. Scrymser Oil Works (1903) N.Y. Oil Storage & Transfer Co. (1922) Some buildings replaced by two large tanks now - Chevron Oil in 1970 N of Clifton	See Aerial Photomap	(no longer intact)	none
f. Scrymser & Co. Oil Works (1903) Galena Signal Oil (1922) Replaced by large tanks N of Clifton	See Aerial Photomap	(no longer intact)	none
g. Pennsylvania & Delaware Oil Co. (1903, 1922) Replaced by modern structures N of Clifton	See Aerial Photomap	(no longer intact)	none
h. Bayway Refining Co. (1903) N.Y. Lubricating Co. (1922) Replaced by modern structures N of Clifton	See Aerial Photomap	(no longer intact)	none
i. Connelly Iron Sponge & Governor Co. Oxydizing Works (1922) Replaced by modern structures? N of Clifton	IV & V	(no longer intact)	none
j. N.J. Drydock & Transportation Co. (1903, 1922) Buildings now gone, except one structure - 2 ship ways filled in, dry dock gone & marine- way at tip of S side of Elizabeth River is partially gone & partially filled S of Elizabeth River	V	(no longer intact)	none
k. Ferry to Staten Island & New York established before 1679 Also vicinity of ferries associated with Gibbons v. Ogden case. No structure standing. S. Front St. at N bank of Elizabeth River	V, VI, VIII & IX	yes	<u>ADVERSE</u> requires mitigation, by monitoring during Drift removal
l. Revolutionary War tavern Replaced by modern structure SE corner of Front & Elizabeth Sts.	VI	(no longer intact)	none
m. British Redoubt ca. 1780 (1 of a series of 3 extending to Broad St.) Replaced by C. Meyers Coal & Wood (1889) W.A. Ellis & Co. (1903) Standard Oil Co. (1922) Not on present waterfront Starting at NE corner of Front & Elizabeth, extending to Broad St.	VI	obscured, probably integrity modified or destroyed	none
n. Smith & Woods Dock (1835) Elizabethport Mfring Co. Dock (1836) Crescent Iron Works Dock (1889) Site of Holland Submarine launching (1899) Now filled, and behind present shoreline, between Marshall & Franklin	See Aerial Photomap	yes	none
o. U.S. Shipbuilding Co. (1903) Bethlehem Shipbuilding Co. (1922) Structures now gone, behind present shoreline Between Marshall & Fulton	See Aerial Photomap	yes	none
p. Worrall & Co. (established 1843) Part of U.S. Shipbuilding Co. Structures now gone, behind present shoreline Between Franklin & Fulton, W of Front St.	See Aerial Photomap	yes	none
q. Old vacant building on pier (1889) Replaced by Gibbs & Price Coal & Wood, Flour & Feed (1903) Abrew & Cooper Masons Materials (1922) Replaced by modern structures & tanks Between Fulton & E. Jersey	See Aerial Photomap	(no longer intact)	none
r. Staten Island Ferry Landing (1903 & 1922) Foot of E. Jersey Foot of E. Jersey	See Aerial Photomap	(no longer intact)	none
s. Recreation pier (1922) Between E. Jersey & Livingston	X	(no longer intact)	none
t. RR Paint Sheds (1889) Replaced by N.J. Concentrating & Chemicals Co. (1922) Structures now gone Between Livingston & Broad Sts.	X & XI	(no longer intact)	none
u. Ferry to New York (1835) extended into sound - area filled by CRR N.J. before 1889, probably by mid-19th century. Behind present shoreline		site may be buried under fill	none



Base Map from  
 Index Map  
 Dravo Van Houten  
 DWG NO. 56901-1  
 December, 1979

Resources are designated by letters  
 as described in Table 3.

CULTURAL RESOURCE RECONNAISSANCE SURVEY  
 showing location of historic resources  
 (as far as Central Railroad of New Jersey Bridge.  
 Tip of project into South Elizabeth Channel is  
 in post 1975 land fill and has no resources.)





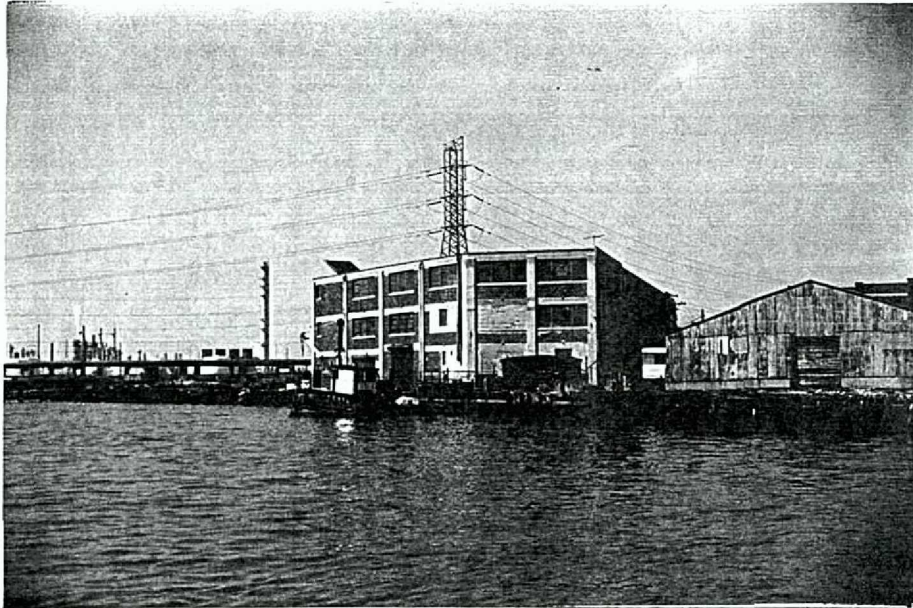


Plate I

View of Morses Creek mouth and the Phelps Dodge Copper Company building, previously American Copper Products (1922); and W.A. Clark Wire Company (1903, Resource a). Closest structural feature to shoreline in 1922 was a plank on pile dock. In 1889 this was the location of a Brickyard (Sanborn 1889, Sheet 54). (Resource a, looking west)

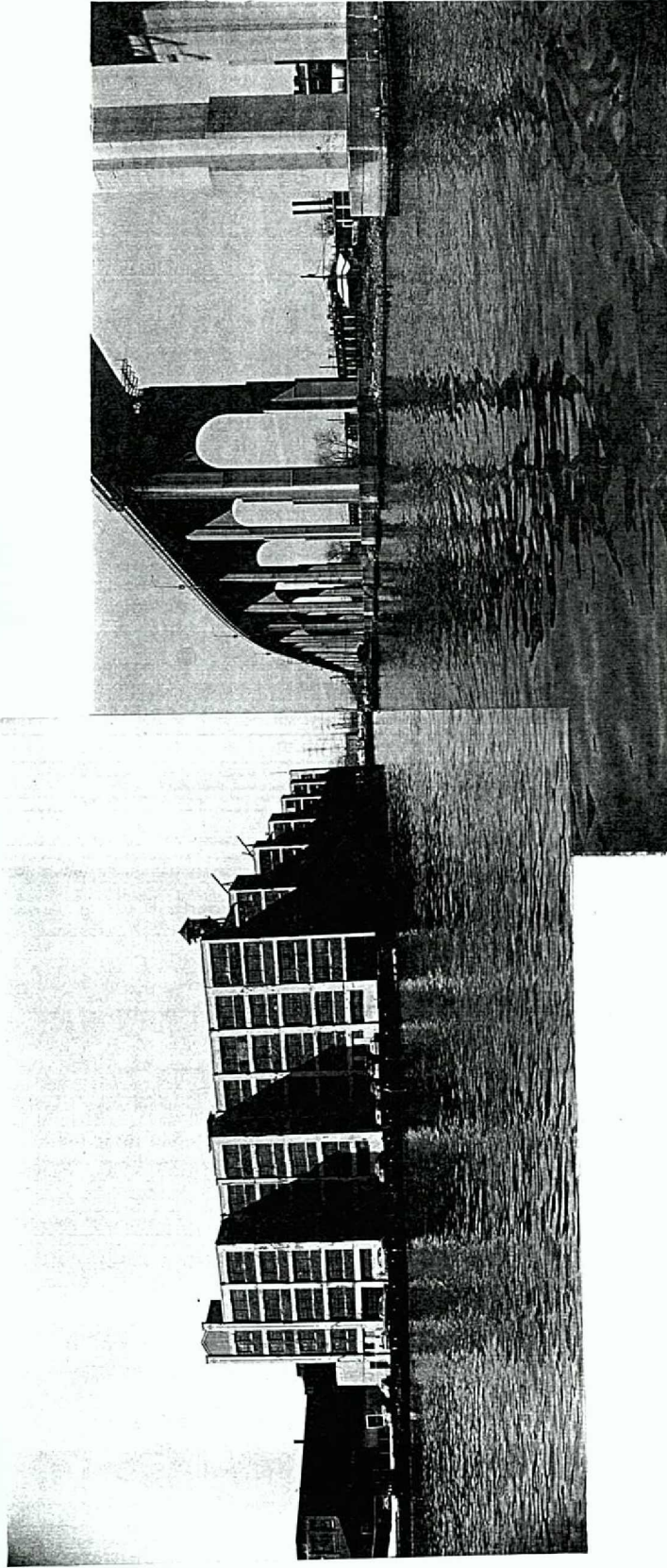


Plate II  
Composite view of the former site of Bowker Fertilizer Company, built prior to 1882.  
It is now replaced by a modern warehouse and the Goethals Bridge Complex. Bayway  
Avenue is to the right of the warehouse.  
(Resource b., looking west to northwest)



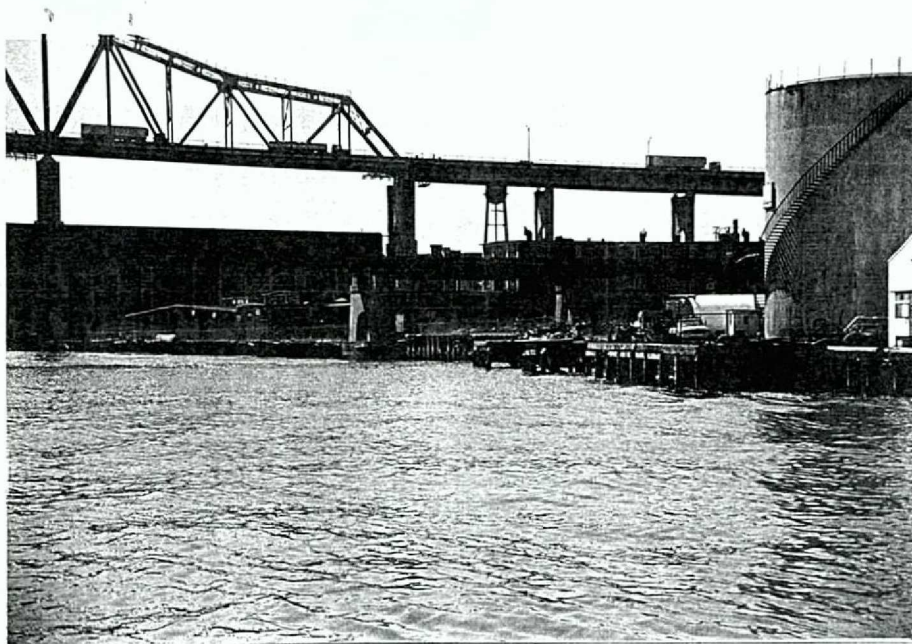


Plate III

Former site of Borne - Scrymser Lubricating Oil Works (by 1922, Resource c.). In center ground is a railroad bridge and behind that the Goethals Bridge. Borne - Scrymser was one of the numerous 20th century oil companies which were located in Elizabethport, in an area which is still devoted to petroleum processing and shipping. (View looks southwest)

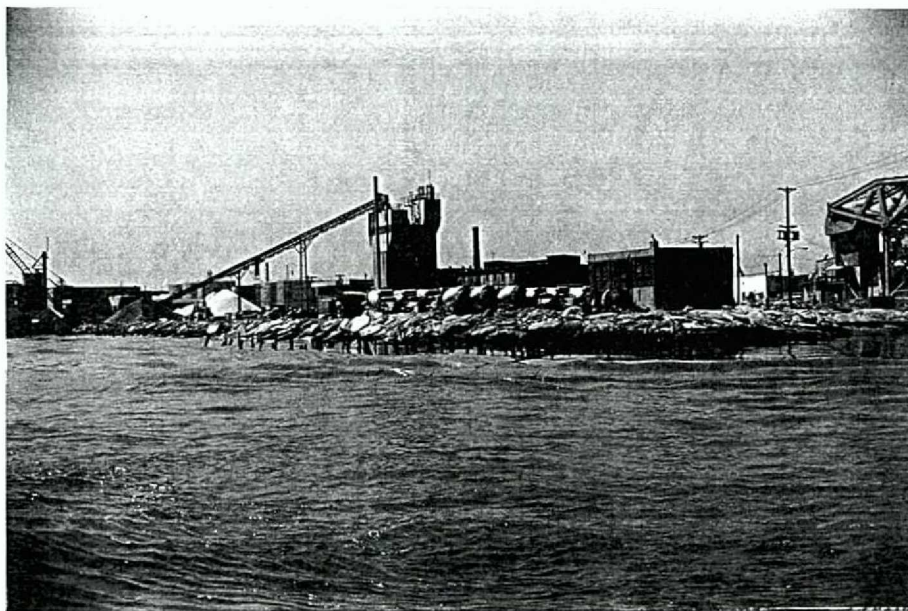
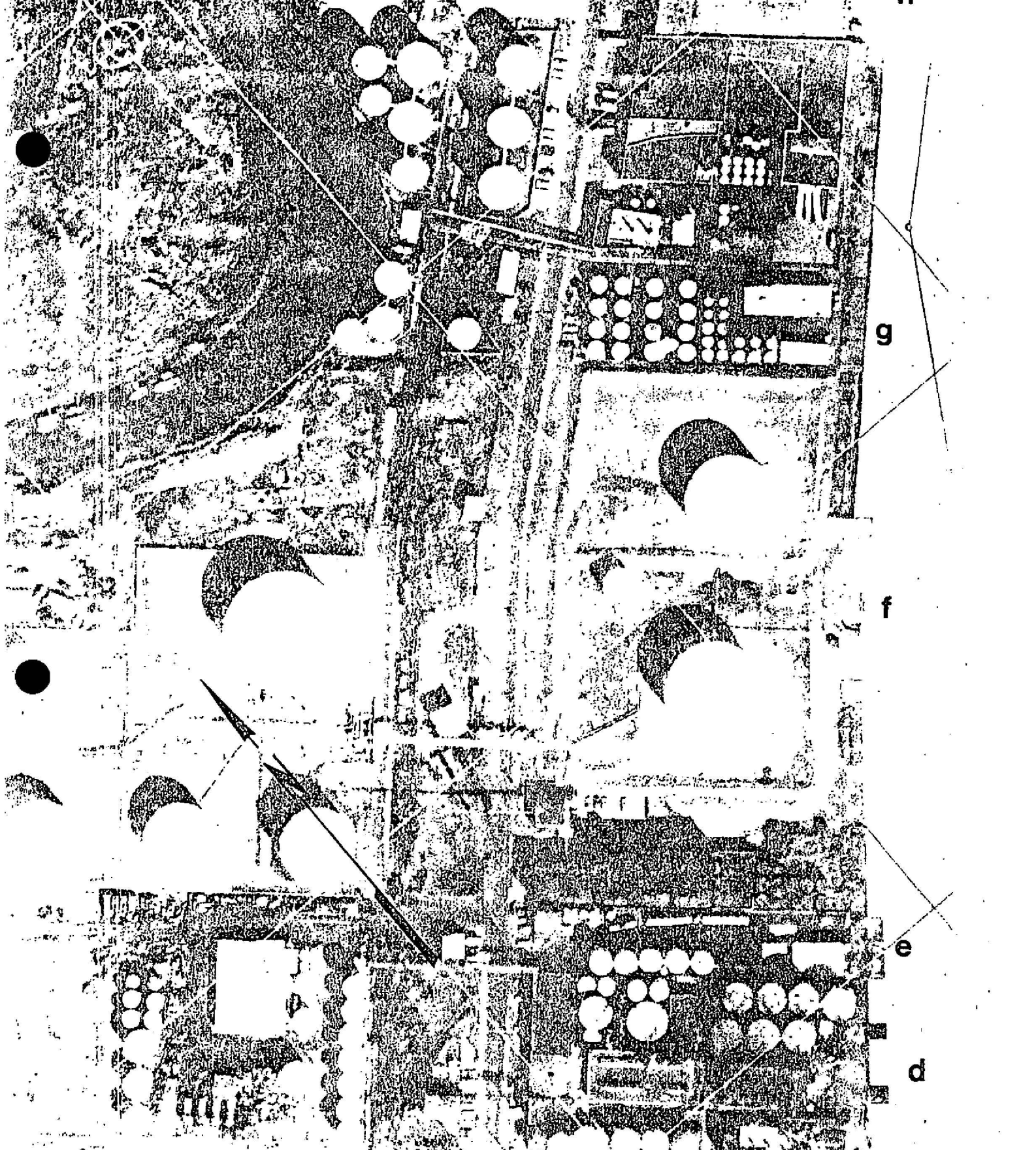


Plate IV

This view looks across the mouth of the Elizabeth River toward the railroad and Goethals bridges in the distance. The area on the bank of the river was the site of the early 20th century N.J. Drydock & Transportation Co. and the Connelly Iron Sponge & Governor Co. (Resources i. and j., view looks southwest)



AERIAL PHOTOMAP  
Portion of Elizabethport Waterfront  
between RR Bridge and Elizabeth River  
showing Cultural Resources d-g

(portion of Drawing 2659-00 sheet 6 scale 1" = 150')



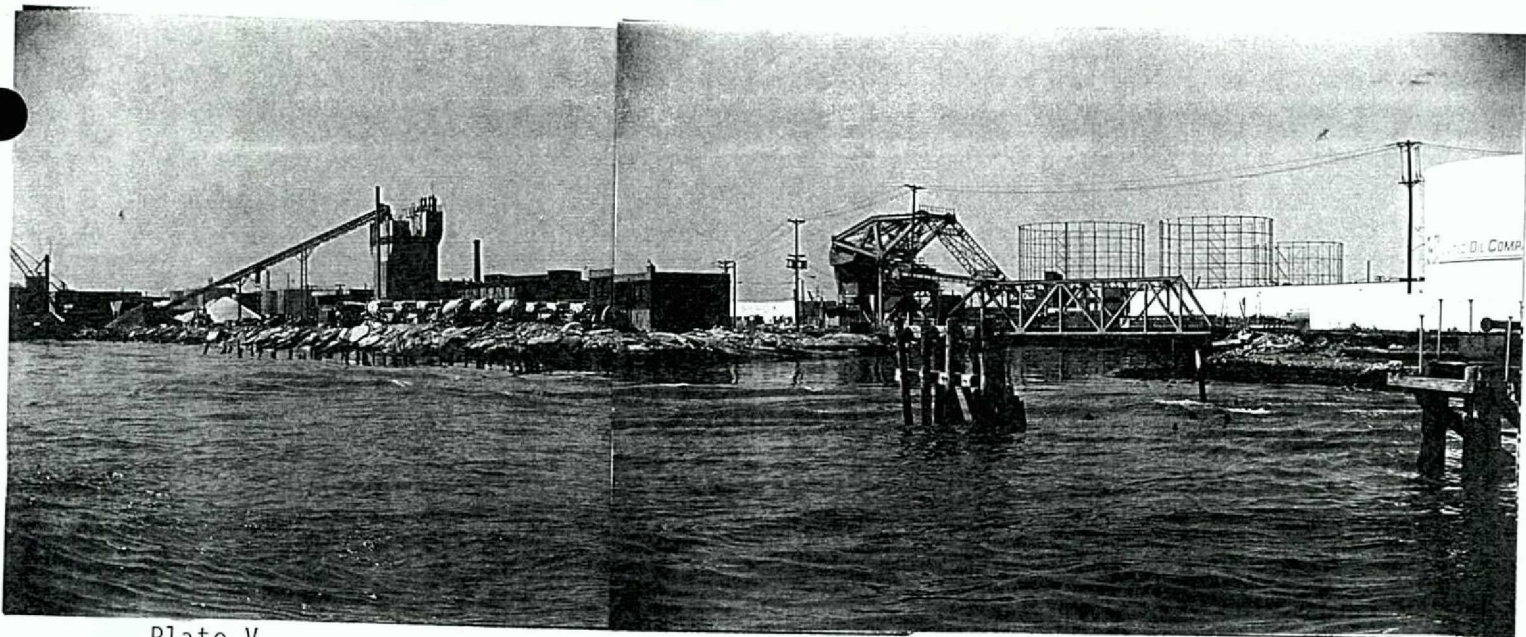


Plate V

Composite view of the mouth of the Elizabeth River (center right). The N.J. Drydock & Transportation Company (Resource j.) was on the area of filled land at left. An earlier resource, a 17th and 18th century ferry was located on this shoreline near the United Oil Co. tank at right. (Resource k., view looks west to northwest)

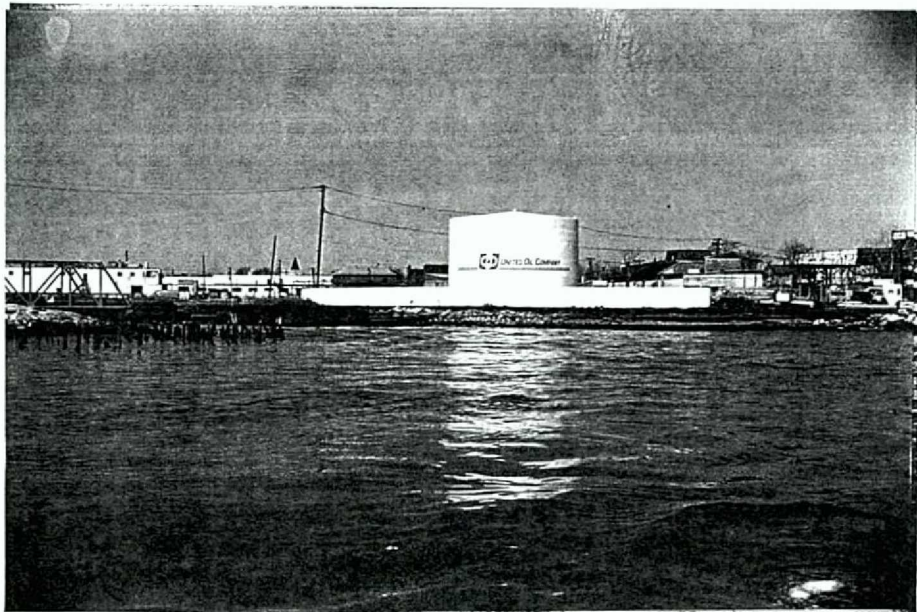


Plate VI

This shows the present shoreline near South Front St. It was near here that from about 1679 a ferry ran to Staten Island (Resource k.). Near this ferry there was a tavern at the intersection of South Front St. and Elizabeth Ave. at the time of the American Revolution, (Resource l.) Immediately beyond this was a redoubt erected by General von Knyphausen's troops during the British incursion of 1780 (Resource m.). The latter two resources are back of the shoreline, but the site of the 17th-18th century ferry may be close to the modern shore by the bridge. (View looks north)



Plate VII

Typical shoreline at the mouth of the Elizabeth River (on right), as it enters the Arthur Kill, consists of eroding land fill and rotted pilings. Water-rounded cement covers parts of the beach. (looking east)



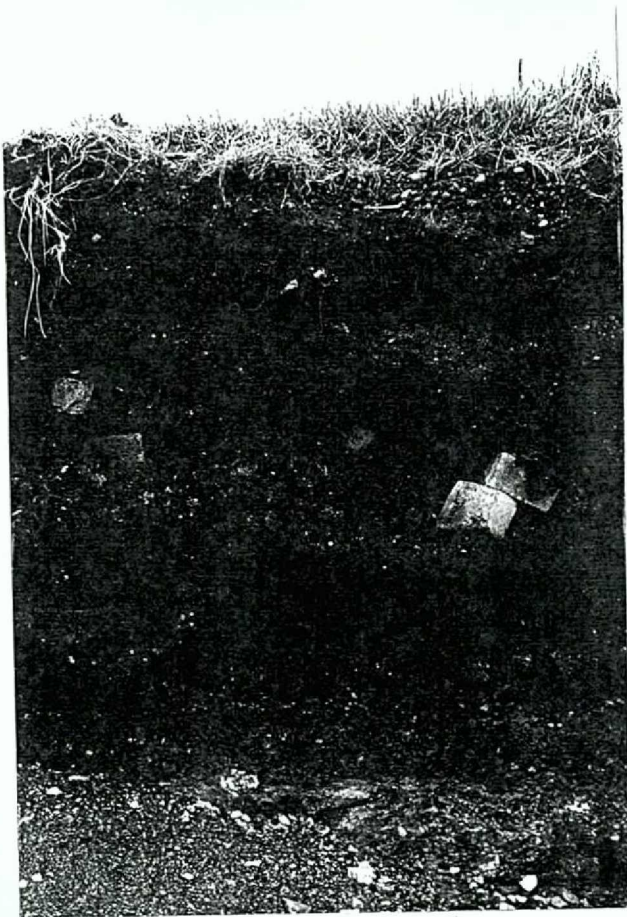


Plate VIII

Stratified landfill on the shore at the mouth of the Elizabeth River. This shows about 2½ ft. (or about 70 or 80 cm.) of fill, with brick bats and cinders in the matrix. This is typical industrial landfill of the very late 19th and first half of the 20th century.

(looking north-northwest)

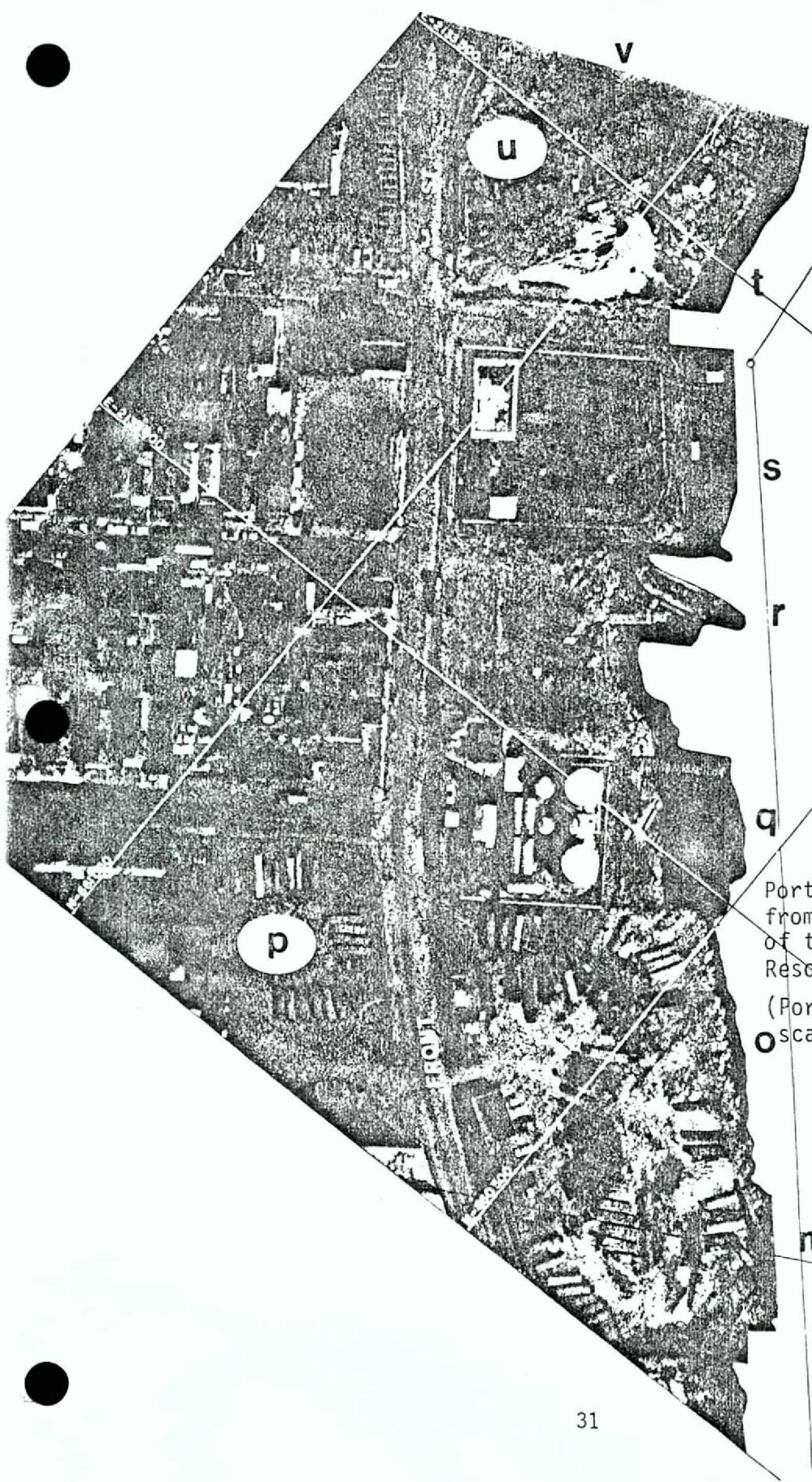


Plate IX

Slotted planks extending from below the levels of fill shown in Plate VIII. This landfill beach with buried wooden members is near the area of the 17th-18th century ferry (Resource k.). Monitoring during removal of drift is recommended as a means of observing possible resources buried under massive landfill.

(looking north)





Aerial Photomap  
Portion of Elizabethport Waterfront  
from Marshall to Livingston St. north  
of the Elizabeth River showing Cultural  
Resources n-v.  
(Portion of Drawing 2659-00 sheet 4,  
scale 1"=150')



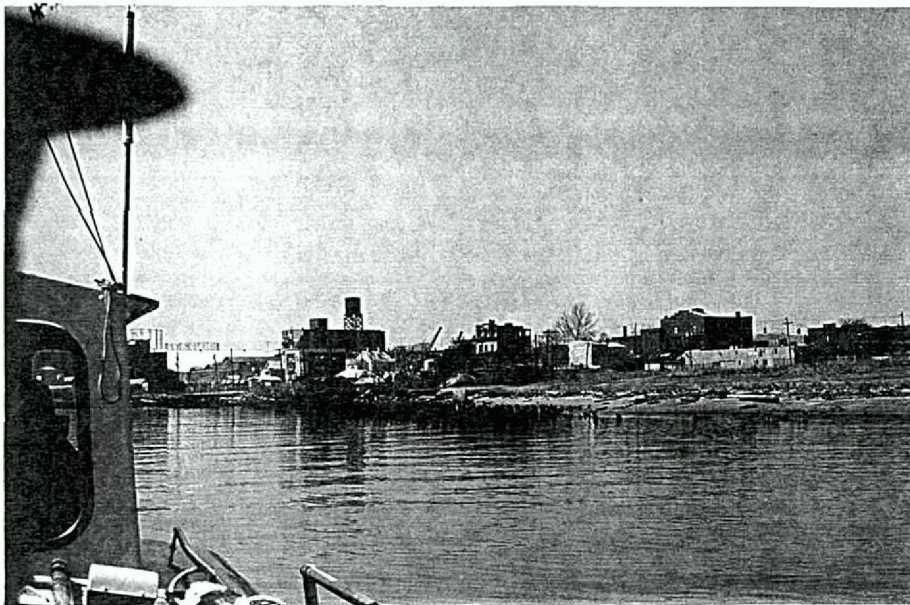


Plate X

View of the area of the Recreation Pier (Resource s, partly hidden by cabin of boat) and railyards on landfill. These yards were once covered by paint sheds of the Central Railroad of N.J. (Resource t.), as well as a Roundhouse and numerous car shops (Resource v.), all removed by 1922. (looking west)



Plate XI

Closer view of the old R.R. Paint Shed area. These were removed by 1903, and by 1922 were replaced by the N.J. Concentrating & Chemical Co. The ruined buildings, empty tanks, and pile of light-colored material are probably left from chemical processing. (looking northwest)

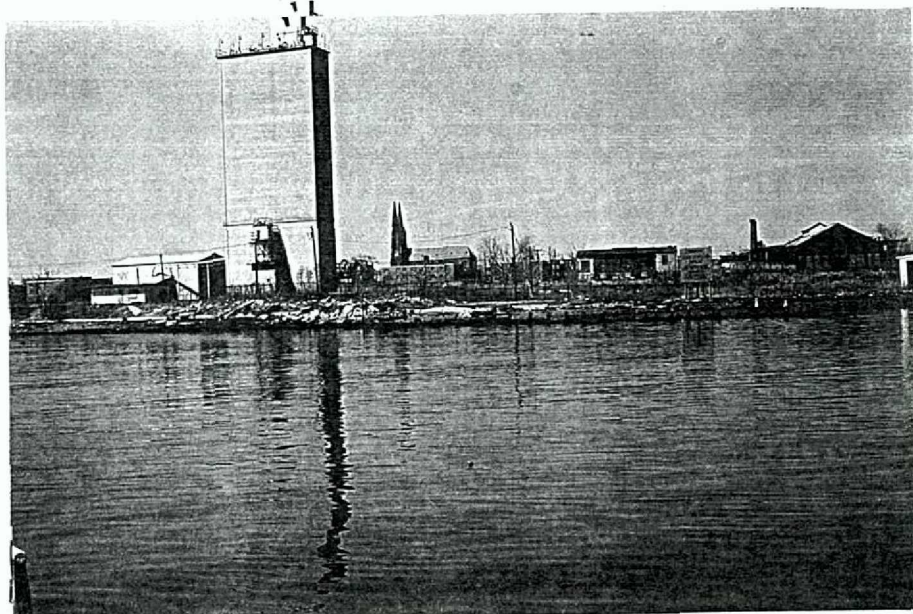


Plate XII

View of the north end of the area once occupied by the Central RR of N.J. yards and shops (Resource v.). All this area is man-made land, and the railroad buildings have been gone for over fifty years. A tall new structure shows here. (looking northwest)



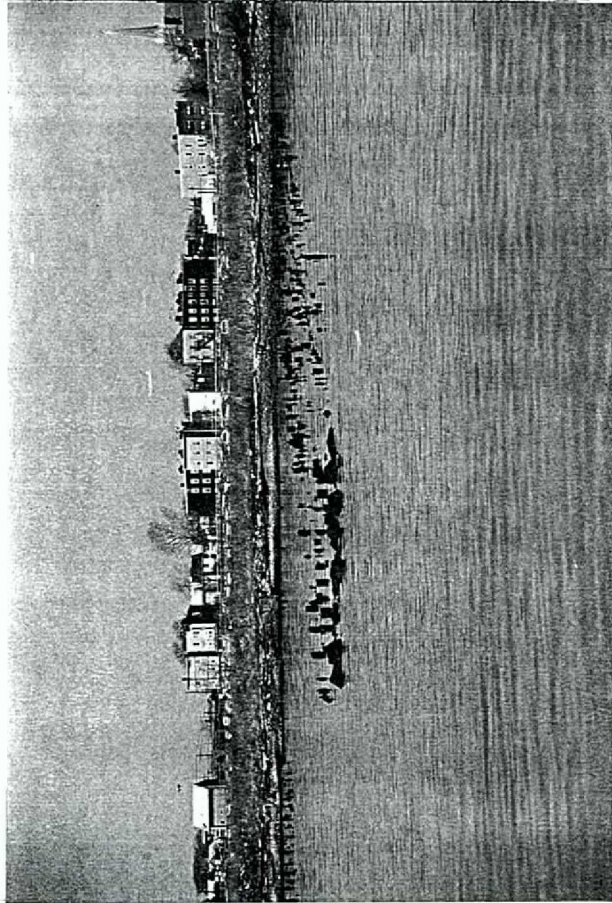
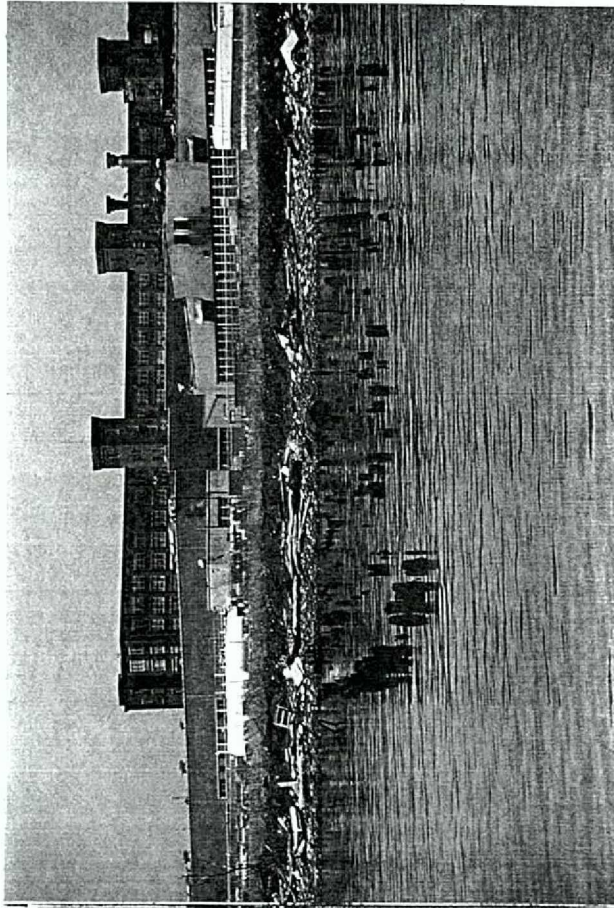


Plate XIII

Composite view of the rotted pilings of old railroad coal wharves, and of the site of the Worthington Foundry (Resource x.), now part of the Singer Plant. The pilings of the wharves are not an eligible resource. (looking west to northwest)



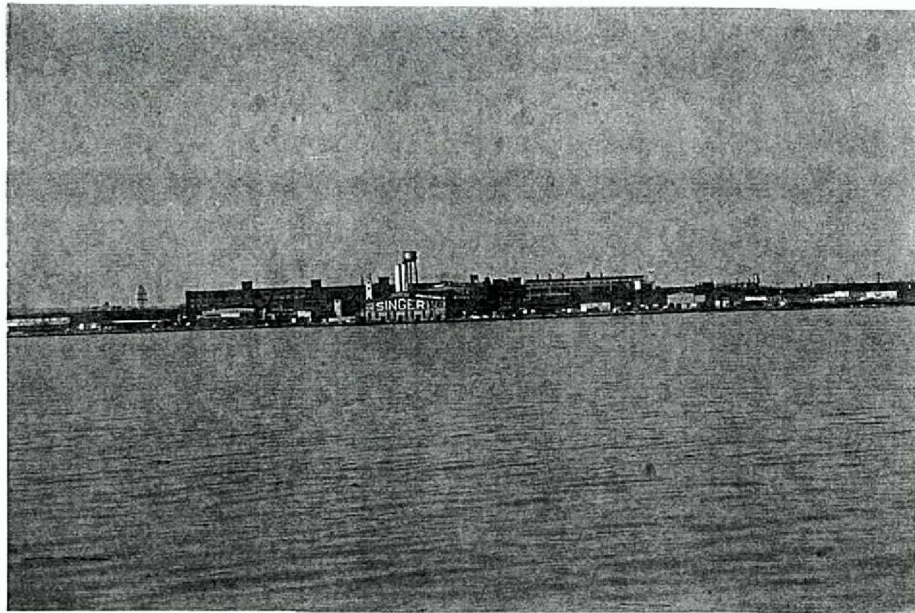


Plate XIV

General view of Singer Plant (Resource y.) which moved to the location in 1873. The plant complex represents one of the first "modern" industrial campuses and has been deemed eligible for nomination to the State and National Registers of Historic Places. The northern (right) half of the plant, which contained the oldest buildings, has recently been sold as a multi-use industrial park. (looking west)

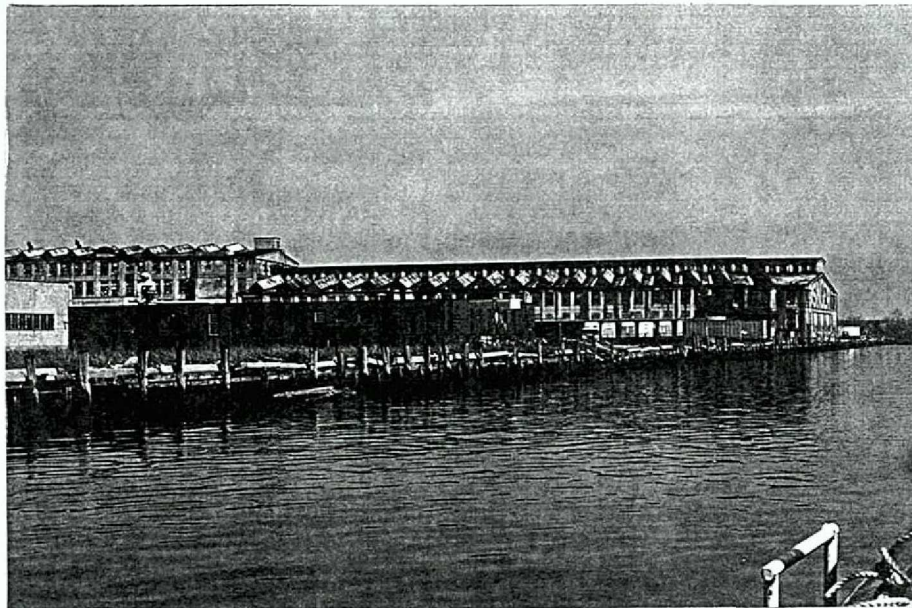


Plate XV

General view of the waterfront at the Singer Plant (Resource y.). The long building extending to the waterfront was present by 1889 as a 450 ft. long "Packing Ho." In 1909 (date on end of the building) it was extended approximately 120 ft. to the present waterfront, where the name "SINGER" was painted. (looking north)



Plate XVI

View of landfill against the Singer Plant sea wall. Decay of the retaining wall and storm erosion has created wash out, which has been followed by later maintenance filling. None of this fill is more than 70 years old, and it is all typical 20th century industrial landfill. (looking northeast)

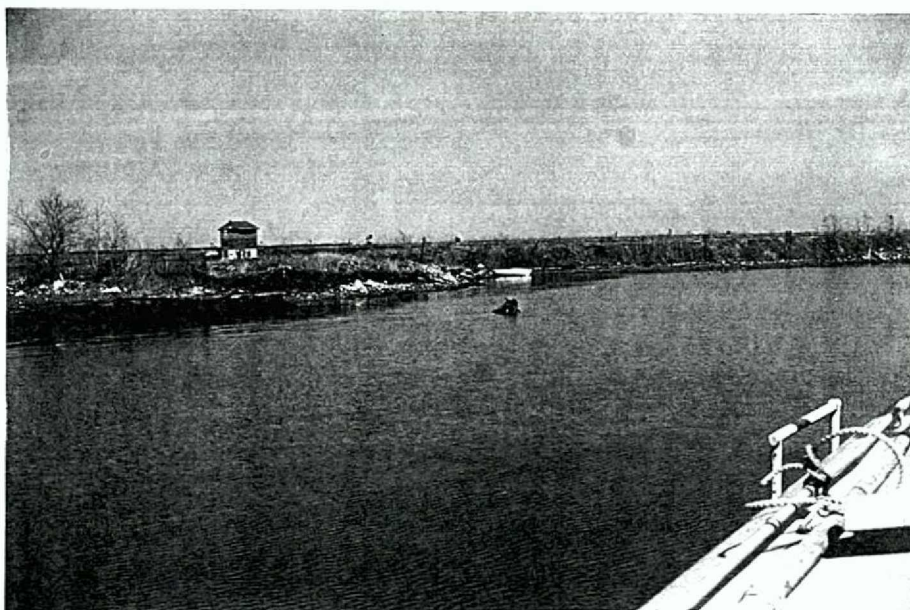


Plate XVII

View of the north end of the Singer Plant landfill, with marsh land beyond, and the horizon formed by the causeway for the Central RR of N.J. bridge across Newark Bay. An area of pilings here will be removed. (looking north)



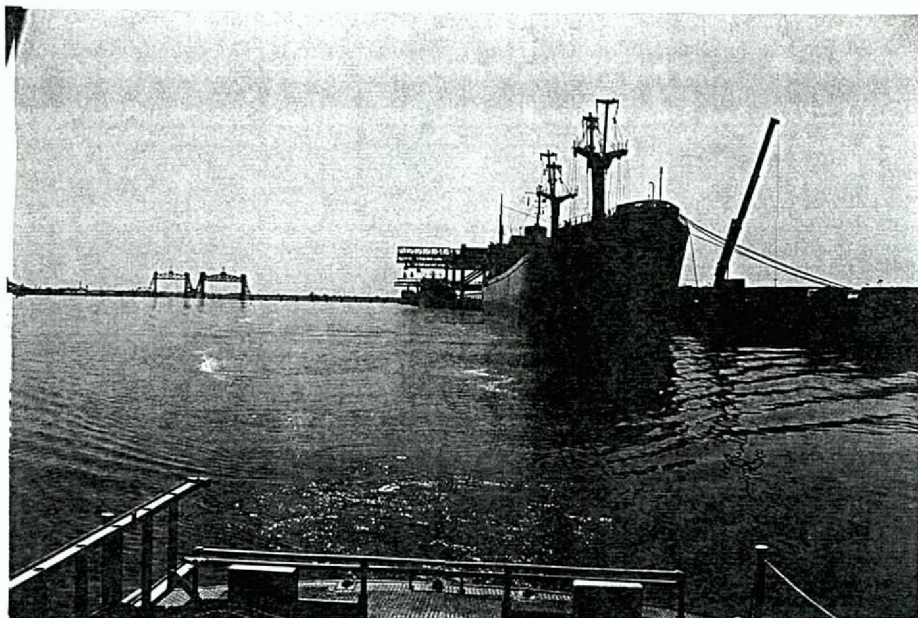


Plate XVIII

Containerships moored for loading along the Newark Bay wharf of the Port Elizabeth terminal. The area has been dredged, and the wharf is built on recent landfill. (looking southwest)

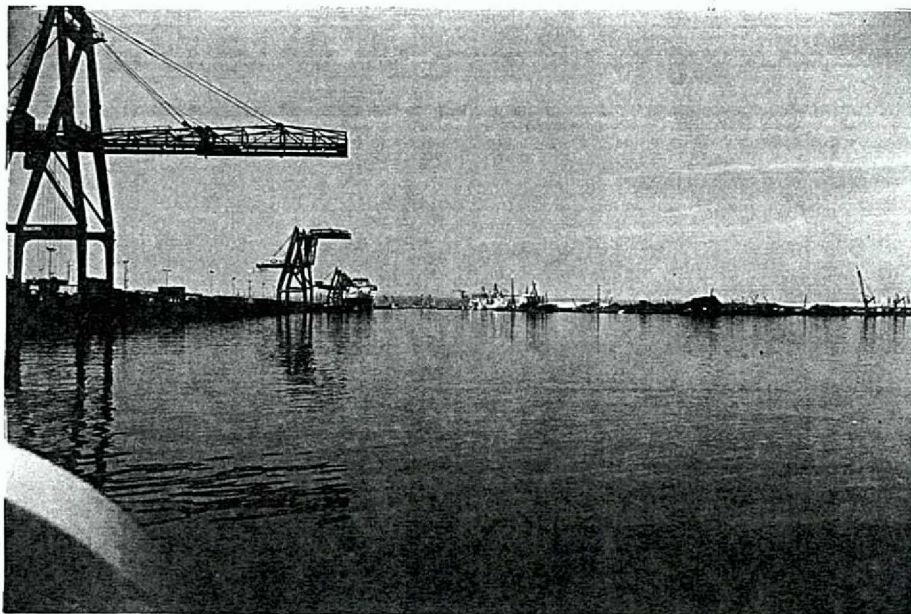


Plate XIX

View looking into the Elizabeth Channel, which will be re-dredged. Large Gantry cranes stand along the wharf for loading container ships. There are no historic resources at this modern facility on made land. (looking northwest)



### 3. Shooters Island

Little is known of the early history of Shooters Island. It is supposed to have been named Shooters Island because the Dutch went there to shoot wild geese (Leng & Davis 1930: 120, in Rockman and Rothschild 1979: 8). The island was granted to James Graham, a Scotsman who came to New York soon after the British took control, in 1680 (ibid.).

More detailed information about the island's history begins in the mid-19th century, when it was owned and occupied by David Decker. In addition to his house, the island at this time had a dry dock, an accommodation dock, and a joiners shop (Rockman & Rothschild 1979: 9). The shipbuilding activity on the island continued from the 1860's to the 1920's under Townsend and Downey, and Standard Shipbuilding companies. During this period, Shooters Island Petroleum Refining and Storage Company also occupied the island.

Since the closing of the shipbuilding company at the end of World War I, there has been no industrial activity on Shooters Island. It has been subjected to casual use since that time. The area around the island has been used as a dumping area for abandoned vessels since the close of the shipyard in the 1920's. Aerial photos indicate this started after 1940.

The entire island is covered with 8 to 13 feet of fill, which has been deposited from the mid-19th century to the present. This fill has been shown to contain recent cultural material, but earlier material may be deeply buried (Rockman & Rothschild 1979: 18).

Potential historic resources on the island include:

- Archaeological deposits associated with the domestic and shipbuilding aspects of the mid-19th century. (Resources associated with David Decker's property.)
- Resources associated with the island's use as a shipyard (circa 1860-1920).
- Resources associated with the island's use as a dumping place for abandoned vessels.
- Resources associated with the fill (circa 1850-1920).

#### 4. Previous Channel Dredging

The first recorded channel dredging in the vicinity of the project resulted from an appropriation of \$2,000 voted by Congress on 30 August 1852 for a survey of Newark Bay and \$10,000 for "improvement" of it (Chief of Engineers 1926: 265). A chart of soundings resulting from this work was produced by Lieutenant R. Wainwright in 1855-56. Subsequent work was authorized in Newark Bay in 1926, 1929, 1938 and 1954. Analysis of the data presented in the Annual Reports of the Chief of Engineers, U.S. Army, suggests that no substantial dredging occurred in Newark Bay prior to 1926 (Kardas & Larrabee 1976: 33-35).

Aerial photographs available in the Riparian Section, N.J. Department of Environmental Protection show that the dike north of Shooters Island existed and was aligned as it is now in 1930 and 1940, which means the channel "North of Shooters Island" must have already existed. A dredging permit granted in 1920 to the "Standard Shipbuilding Corp., Shooters Island", allowed for dredging to depths of from 12 feet to 22 feet at Mean Low Water at the eastern end of Shooters Island Basin, which further confirms dredging by that date near the portion of the present project area east of Shooters Island.

In Staten Island Sound (now generally referred to as the Arthur Kill), work was first authorized in 1874, and again in 1875, 1880, 1888, 1889, 1890, 1896, 1902, 1912 and 1913. The initiation of this work coincides with such industrial developments as the creation of the Singer Industrial Complex in 1873. By the mid-20th century these various authorizations had created a channel with a depth of 37 feet in rock or 35 feet in soft material. In the present project area this was to be from 500 feet to 600 feet wide from a point 1,000 feet south of Piles Creek to the confluence of the Newark Bay and Kill van Kull channels. The main channel was described as "passing north of Shooters Island and protected by a Dike on its northern side," and a secondary channel 30 feet deep and 400 feet wide passed south of Shooters Island (Chief of

Engineers 1963: 184-185). This was redredged in 1963 and in following years, and the dike was to undergo "construction," although, as noted, it must have already existed since at least 1930, and probably earlier. The same channel and dike authorizations were made in 1973 (Chief of Engineers 1973: 2-13 and 14, Item 17).

Several dredging permits for small areas along the Arthur Kill shoreline near the project have been issued in recent years. In 1974, Permit No. 8940 was issued to Public Service Electric & Gas Co. for its Arthur Kill waterfront near Piles Creek, south of the present project. In 1970 approximately one thousand feet of shoreline immediately south of Morses Creek was dredged (Permit No. 8298). Three years later the Exxon Corporation was allowed to dredge this area again ((Permit No. 8822). The Gulf Oil Corporation was given Permit No. 8350 in 1971 for dredging at Gulfport on the Staten Island Shore opposite Morses Creek. Slightly less than a thousand feet of waterfront between the Goethals Bridge and the mouth of the Elizabeth River, in the project area, was dredged in 1970 by the Chevron Oil Company (Permit No. 8234). At about the same time an extensive dredging project was undertaken along the east and south sides of the Elizabeth - Port Authority Marine Terminal Wharf. Most of the area between the Newark Bay Channel and the Wharf was dredged to a depth of 42 feet below Mean Low Water (Permit No. 8240, 1970 - revised 1971). Dredging was also done in the Elizabeth Channel in 1970 (Permit No. 8136).

A summary of this information indicates that the channel to be dredged has already been dredged numerous times, starting at least as early as the 1920's, and possibly as early as the 1870's. In addition, private dredging has been permitted at the locations indicated adjacent to this channel. However, there are other areas, notably in the shallow water north of the dike on the north side of the "North of Shooters Island Reach," which have never been dredged or disturbed.

## VI. FINDINGS AND RECOMMENDATIONS

### A. Channel Dredging

Analysis of historic records of Channel Dredging (Section III.C.4) has shown that the entire channel to be dredged for this project has previously been dredged. Therefore, no undisturbed areas will be affected, and no adverse impacts will occur on any cultural resources.

Recommendation: No action needed.

### B. Removal of Drift

#### 1. Along the Elizabethport Reach New Jersey Shoreline

Examination of historic information indicated that the Elizabethport shoreline had no known prehistoric resources (Section II.B.), but had been the site of historic ferry crossings since the latter part of the 17th century, and that military activity occurred here during the American Revolution (Section II.C.1). In the early 19th century rivalry between owners of steam ferries and ferry docks at Elizabethtown Point culminated in the constitutional decision of *Gibbons v. Ogden*.

After the development of the Central Railroad of New Jersey in the 1840's, this shoreline became the scene of significant maritime and industrial developments, lasting into the 20th century (Section II.C.2). At the north end of the Elizabethport shoreline is the Singer Plant, which has already been considered a resource eligible for the National Register. This report concludes that many structures, plants, or sites along the shoreline between Morses Creek and the Central Railroad of New Jersey bridge are eligible, and constitute an industrial historic district, eligible under categories of transportation, industry, military, and legal. Only resource "k" (the 17th to early 18th century ferry to Staten Island) and possibly evidence of the Revolutionary War Pontoon Bridge are potentially affected by the removal of drift at the mouth of the Elizabeth River.

The precise location and condition of these resources cannot be determined without subsurface excavation, as they are now buried by landfill or under water. These resources do not have any remaining above-ground features, so examination must involve excavation. Therefore, further research at the Archaeological Survey Level is required to locate the resources and determine condition and eligibility. Such subsurface testing can only be performed by mechanical equipment making large open cuts (backhoe trenching) because of the tidal conditions and the probable large size of the resources (boulders, pilings) to be examined. Until the method for removing pilings here has been specified, it is not possible to recommend the most appropriate means of obtaining this information. If the removal operation will involve trenching, then it may be appropriate to monitor the removal operation, but if some other technique is used, it may be necessary to perform the Archaeological Survey first. Archaeological planning, monitoring, recording of any features exposed, and data retrieval should be written into the removal contract; otherwise Archaeological Survey must be done prior to the granting of any construction contract.

Recommendations: Consultation with the State Historic Preservation Officer and knowledgeable archaeologists is recommended. On the basis of this consultation, either (A) include Archaeological Planning, monitoring, recording of features and data retrieval in the Drift Removal Contract; or, (B) perform Archaeological Survey with mechanical testing prior to Drift Removal.

## 2. Derelict Vessels and Hulks

### a. Scattered Locations

Table 3, following, summarizes the location and descriptive information concerning six "items" designated for removal, as well as for two locations where no work is indicated in this project, but where recent Navigation Charts have shown "wrecks". They are assigned "Hulk Designation A" through "H" in this report. On the basis of information available at the Reconnaissance Level, it is not possible to determine eligibility of any of these. Only one of these ("Hulk F") was visible at the time of the survey. It appears to be the hull and decking of a tug about 80 ft. long and 20 ft. wide. It is recommended that this be included in the detailed inspection of hulks which should be performed by a knowledgeable maritime historian (see following section, IV.B.2.b.). No information is available concerning the other items, except for "Hulk A", which is shown as "boat shaped" (ie. with prow and stern) on drawings made by Dravō - Van Houten, apparently based on Side-Scan-Sonar readings (General Plan, Sheet 7, Drawing No. 56901-8, reproduced following "Hulk Inventory Sheet" in Appendix). At the time of that study, detailed information generated from the Side-Scan-Sonar used in preparation of the General Plan Sheets should be made available to the maritime historian, for "Hulk A, B, E, G," and "H".

Recommendation: "Hulk F" be included with Hulks at Shooters Island for detailed inspection by Maritime Historian, and also Side-Scan-Sonar information on the Hulks be provided.



Table 3

## Hulks or Derelict Vessels (not at Shooters Island)

Assigned Designation Hulk(s)	Sheet No.	Drawing No.	Item No. (on that Sheet and Drawing)	Plate No.	Description
A	7	56901-8	1	XXI	Vessel, on north side of dike, west of Navigation Light. Not visible on aerials, or on surface on 1 April 1980.
B	7	56901-8	2	XXI	? (3 arrows) This is area in which at least 2 derelicts are shown on Navigation Chart, so this may refer to one or more besides Item No. 1.
C	7	56901-8	-		Not indicated as work area or item, but Navigation Chart shows entire area as "Wrecks" - This is circa 1,000 ft. W of Item No. 1. Dravo-Van Houten Side-Scan-Sonar survey did not indicate objects for removal here.
D	7	56901-8	-		Not indicated as work area or item, but shows as at least 2 derelicts, at E edge of Dwg. B, and at E end of dike on Navigation Charts. This is circa 1,000 ft. E of Item No. 1. Side-Scan-Sonar did not indicate objects for removal here.
E	4	56901-5	1	XIV, XV	1 or 2 vessels (now gone?) along Singer waterfront, at end of long building. Not visible from surface 1 April 1980.
F	4	56901-5	2	XXII, XXIII, XXIV	Vessel along Singer waterfront, still present.
G	4	56901-5	3	XVII	? (area of pilings, or derelicts?)
H	3	56901-4	3	XIII	Barge? Shown as rectangular outline between piers, Items No. 18 & 19. Not visible from surface on 1 April 1980.

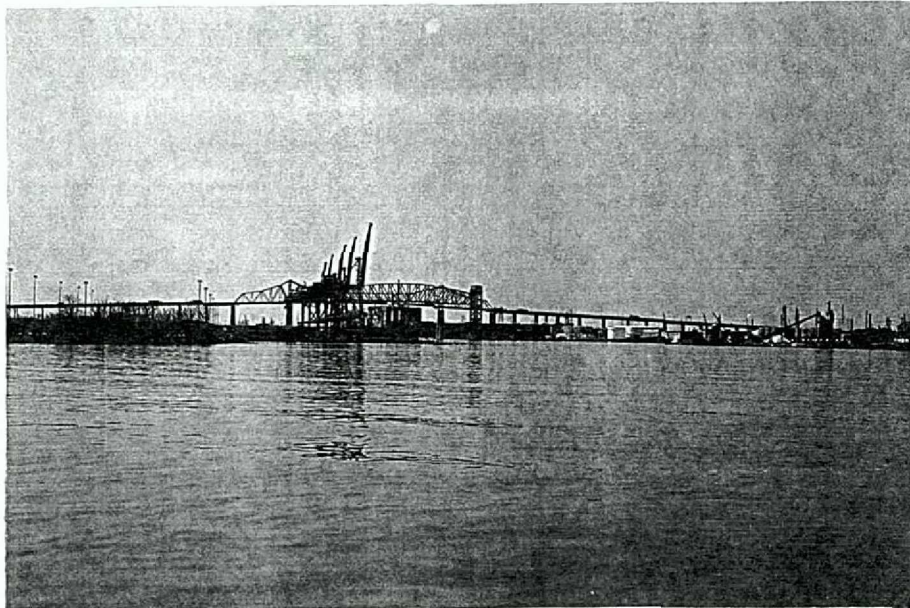


Plate XX

General view into Arthur Kill, at its northern end. This shows the Howland Hook Marine Terminal on Staten Island at the left, with the railroad and Goethals Bridges behind that. The Elizabethport shoreline extends south from the Elizabeth River (at right edge of picture) to the bridges in an area of petroleum industries. This view is typical of much of the Project Area. (looking west)

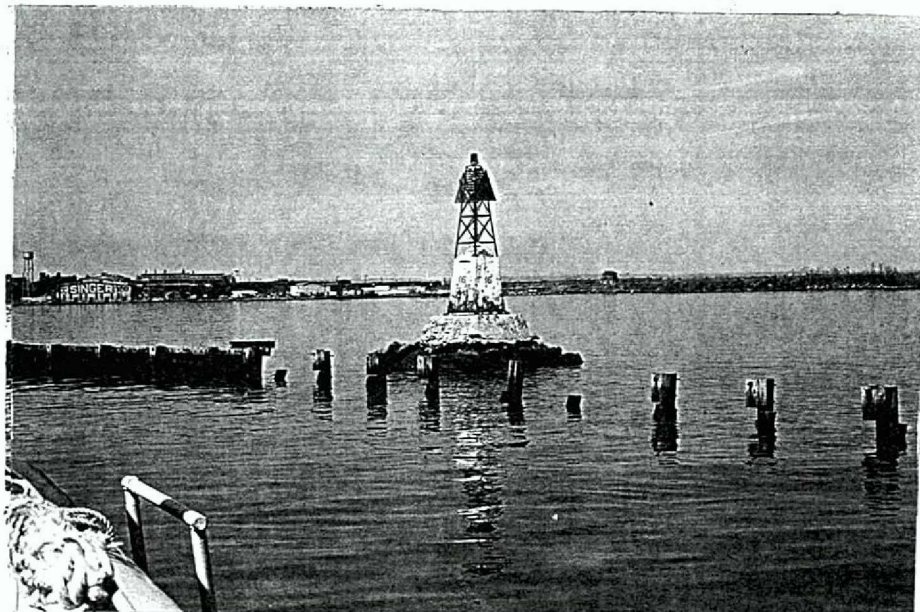


Plate XXI

View of dike and navigation light on the north side of the "North of Shooters Island" Channel. Hulk "A" (Item 1 on Sheet 7), designated for removal, is indicated as sunk on the north side of the dike, in shallow water near the light. No surface evidence was visible on 1 April 1980, but the drawing indicates outline of a vessel such as a tug boat. (looking northwest)



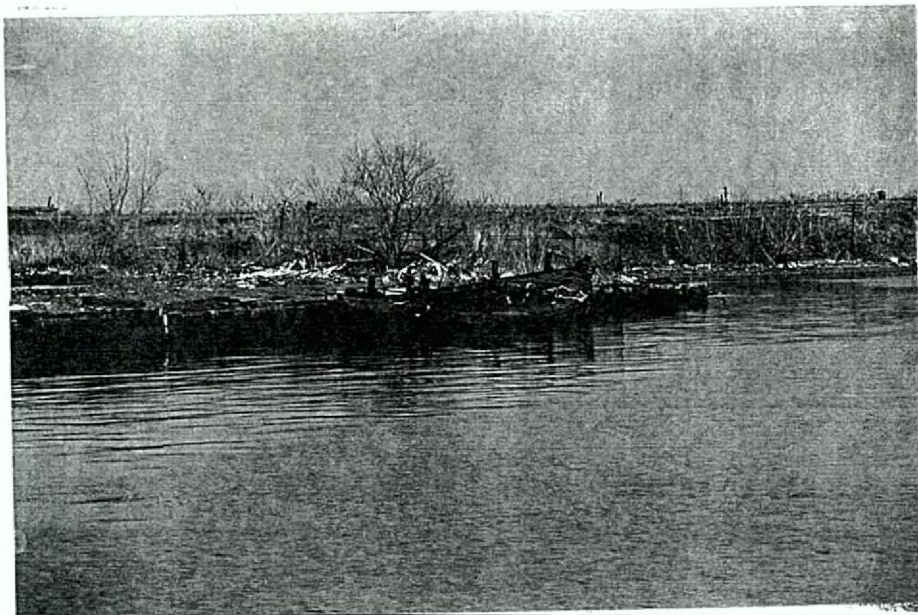


Plate XXII (looking north)

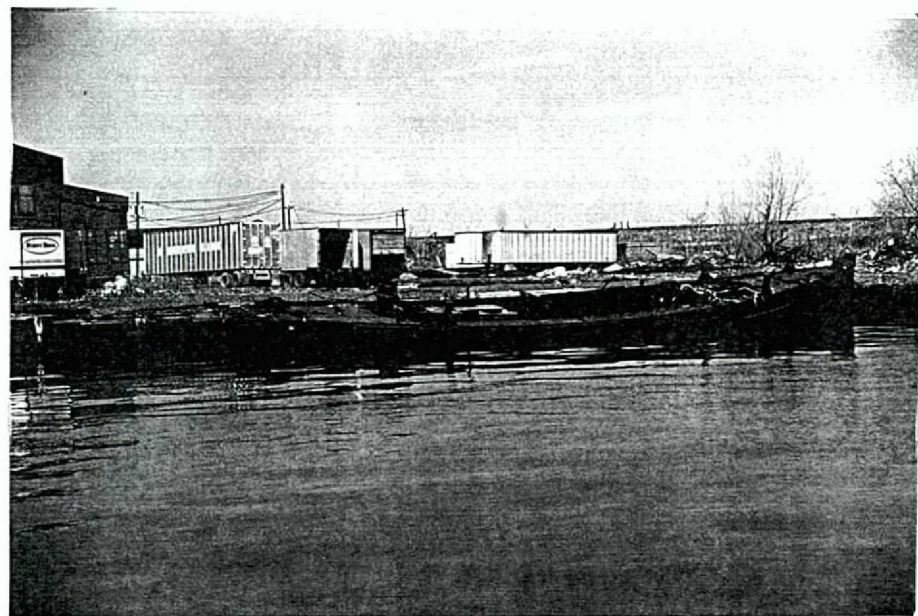


Plate XXIII (looking northwest)

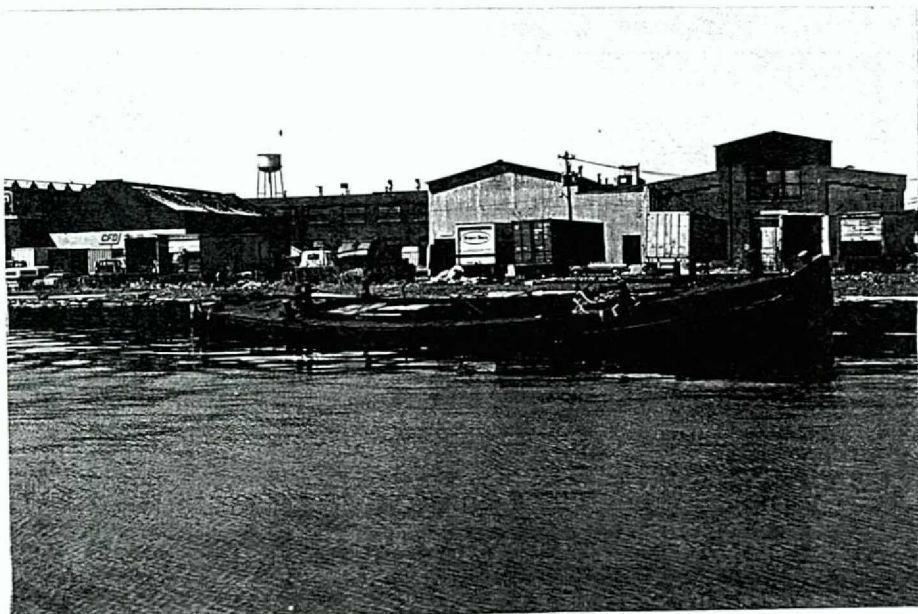


Plate XXIV (looking west)

Three views (3/4 stern, abeam, and 3/4 bow) of Hulk "F" (Item 2 on Sheet 4) near the north end of the Singer Plant waterfront. This vessel appears to be a tug, with hull and deck intact, but lacking superstructure.

b. at Shooters Island

The present project is confined to the boundaries of Union County. Consequently, only the northwest quadrant of the shallows at Shooters Island is included. This involves approximately one third to one half of the hulks or derelict vessels around Shooters Island. At the time of the Dravō - Van Houten survey 66 numbers were assigned to the hulks to be removed (General Plan Sheet 8, Items 5 through 70). It is not known when the aerial photograph was taken or the side scan-sonar survey made. Another aerial photograph (Drawing 2659-00 Sheets 2 and 2A) shows a different vessel count within the same area and different appearances of the hulk shapes. The date of the second set is also unknown; but is reputed to have been made earlier than the Dravō- Van Houten set (personal communication S. Hook Corps of Engineers, New York District).

The discrepancy makes it clear that some of the hulks have moved, and that it is not always possible to identify the same hulk on two photographs made at different times. It is certain that additional movement will have occurred by the time that removal is implemented, and that it will be difficult to follow an exact boundary or to make precise identification of some of the hulks to be removed. The hulk inventory sheets, in the appendix, reproduce parts of both aerial pictures, illustrating the discrepancy. It is estimated that at least 60, and possibly as many as 70 hulks are involved in this project.

Specific identification is not possible at the reconnaissance level, but a general statement can be made. The majority of the hulks are shaped like scows. Superstructures are deteriorated, and many of them are heaped with piles of drift wood so it is not easy to determine whether they were barges (covered) or lighters (open). Approximately six of the numbered items are pieces of drydock. The remaining hulks are various and unidentifiable vessels.

An inspection of the hulks at Shooters Island was made in December 1978, and was incorporated in a report on Shooters Island the following year (Brouwer in Rockman & Rothschild 1979). The 1978 inspection report is reproduced in its entirety as an appendix. It points out that significant data may be contained among these hulks, and that this is one of the two ships-graveyards left in the New York Harbor area, after the destruction of those at Edgewater and the Black Tom Channel. The authors of the report on the history and archaeology of Shooters Island agreed, stating "We consider that some of these abandoned vessels may constitute valuable cultural resources potentially eligible for the National Register of Historic Places" (Rockman & Rothschild 1979: 15). The present authors concur with these prior findings.

Recommendations: a qualified maritime historian should perform a detailed inspection using the latest aerial photographs available, and possibly making a survey and photographs from a helicopter at low tide, as well as in a small boat. This has been called for in two previous submissions to the Corps, and now that part of the graveyard is to be removed as a source of drift, it is time to implement those recommendations. The survey should be made with a liberal interpretation of the southern boundary because hulks now south of the line inadvertantly may be removed.



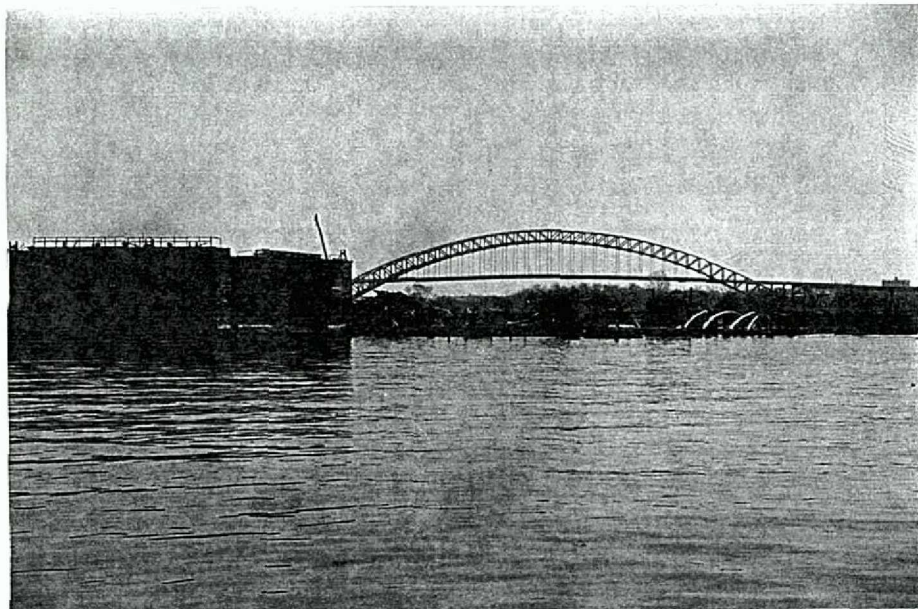


Plate XXV

View of part of "ships graveyard" at west end of Shooters Island. The drydock in the left foreground is probably Hulk 7 on Sheet 8 designated to be removed. Right of center, under one end of the Bayonne Bridge arch, is a vessel marked by two double arched frames on each side. This may be the double A frame for the walking-beam engine side-wheeler referred to by Brouwer. It is just south of the line for removal of drift for this project, and so might not be disturbed, but the ambiguity of the boundary suggests it should be studied or given special protection. (looking east)



Plate XXVI

This view is typical of the hulks at the west end of Shooters Island. The hull with decking of a tug is in the foreground, a drydock is behind that left of center, and right of center the smoke-stack and superstructure of another tug can be seen. (looking north)



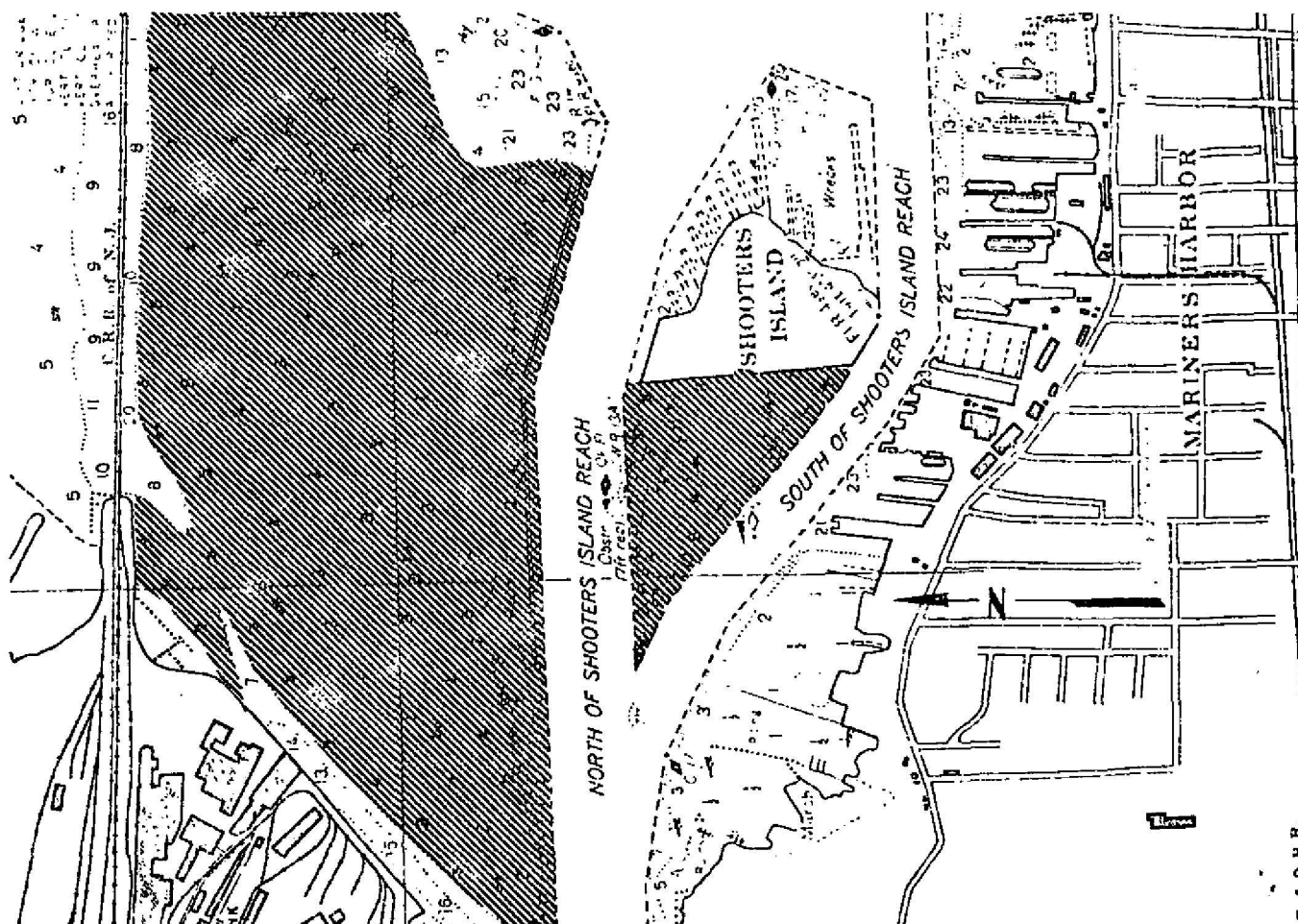


Plate XXVII

In this photograph, taken by Historic Sites Research in June 1976, it is possible to observe the paint pattern on the tug at left of center, and the sign "LACKAWANNA RAILROAD" at right of center, probably on a covered scow. Some deterioration has occurred in the four years since this was taken. Full identification of hulks may require use of recent photographs and aerial views, showing features now lost.  
(looking northeast)

c. Shallows west and north of Shooters Island

Two previous reports have called attention to the high probability that prehistoric resources from the Archaic and subsequent periods may be preserved in the shallow areas of Newark Bay which have never been dredged or disturbed (Kardas & Larrabee 1976; Rockman & Rothschild 1979). The two most likely places for this are (1) in the shallows west of Shooters Island, and (2) in the broad and very shallow area north of it (see Section III.B.2 of this report).



Map showing Archaeologically Sensitive Shallow Areas referred to above. (Portion of Chart 12333 (NOAA) Kill Van Kull and Northern Part of Arthur Kill. Scale 1: 15,000

The first sensitive area is wedged between the channels north and south of Shooters Island, and is now mostly occupied by the hulks referred to above. The second is a large area bounded by a wooden dike on the south, by the Newark Bay Channel on the east, and by the Union County New Jersey shoreline on the west. It extends to the channel dredged on the south side of the Elizabeth Port Authority Marine Terminal, and is roughly divided into a southern two thirds and northern one third by the 1864 Central RR of New Jersey bridge and causeway.

Drift removal is to cover this entire area, but the only items marked for action lie immediately on the north side of the dike for the "North of Shooters Island Channel". Method of access and of drift removal is to be left to the contractor, and is likely to involve shallow dredging to gain access to the hulks or objects to be removed. Similiar limited shallow dredging may occur near the Singer Plant waterfront, and almost certainly will occur in connection with removal of hulks at the northwest quadrant of Shooters Island, in the shallows there.

It is recommended that available sub-bottom data be compiled, and if necessary seismic or other geophysical survey be performed, to develop a geophysical map of the two areas of shallow water. The results of these studies should be used to predict locations of greatest probability for prehistoric site presence and preservation. Finally, a program of archaeological sampling should be undertaken. This would involve use of standard testing equipment, such as a truck mounted on a shallow draft scow to take piston-core samples into the sediments. Depth of testing would vary, but in most cases only shallow cores would be required, because it is only the upper 2 to 4 feet of once sub-aerially exposed soils which would contain archaeological resources.

The core samples should then be subjected to fine examination by qualified archaeologists (methods suggested in discussions with M. Roberts and S. Gagliano). This will determine if cultural resources are present or absent, and whether they are eligible for nomination to the National Register.

Recommendations: Perform a limited sub-surface coring program as described above, after compiling a geophysical survey of potentially affected areas.



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APPENDIX 1

Report of a Preliminary Reconnaissance  
of Cultural Resources on Shooters Island  
in New York Harbor

by Norman J. Brouwer, Historian  
South Street Seaport Museum

December 20, 1978



REPORT OF A PRELIMINARY RECONNAISSANCE OF CULTURAL RESOURCES

ON SHOOTERS ISLAND IN NEW YORK HARBOR

by Norman J. Brouwer, Historian, South Street Seaport Museum

December 20, 1978

On November 20, 1978 I had the opportunity to spend a day exploring Shooters Island, off Mariners Harbor, New York. This Island was a major shipbuilding center in the first three decades of this century, but is now overgrown and abandoned.

There are reports of a brick structure, and some type of drydock, on the Island as early as the 1860's. No remains dating from this period are evident. In 1902 the Townsend and Downey Shipyard was established on Shooters Island. They are best known as the builders of the three-masted schooner yacht ATLANTIC, which still holds the record for a transatlantic crossing under sail, and the Kaiser of Germany's schooner yacht METEOR, christened by Alice Longworth Roosevelt in 1902.

In 1916, the Standard Shipbuilding Corporation was established. Under their ownership, the size of the Island was almost doubled by landfill on the northern side, and a series of steel cargo ships was launched there for the World War I Emergency Fleet Corporation. During the late 1920's and the 1930's, use of facilities on the Island declined, and it had been completely abandoned prior to World War II. The Island was not revived as a shipbuilding center in the latter War.

There was probably little vegetation on Shooters Island while it was an active shipyard. Today, about 80% of the Island is covered by trees around 10-15 feet in height. The remaining area is covered by tall grass. This vegetation effectively hides the remains of the shipyards when viewed from any distance away. However, a person on foot can still make out the locations of virtually all the shipyard structures.

None of the buildings, which would have included general offices, heating plant, mold loft, fabricating shops, boiler shop, joiner shop, carpenter shop, pipe shop, machine shop, power house, riggers shop and paint shop, is still standing; nor even a portion of any wall. What remains are the outlines in the form of concrete platforms, steel and concrete supporting pillars, basements, and concrete-lined trenches used for access or ducts. Around the shoreline are the visible remains of building ways; both the 1902 slipways pointing southeast, and the 1916 slipways pointing northeast; as well as the ferry slips where workmen came over from the mainland (Staten Island) each day, fitting out piers, and a marine railway for hauling out ships to be repaired.

After the Island was abandoned as a shipyard, it became a dumping place for obsolete or worn out wooden hulls. Today, over 100 abandoned wrecks lie in the surrounding shallows; clearly visible at low tide. Some of these wrecks are virtually complete. Most were craft employed in New York Harbor or on the Hudson River. They are tugs, floating drydocks, and barges of various types; including open barges, decked barges, covered barges, crane barges and railroad carfloats. There are some which may have been canal boats, and coastwise coal barges. One wreck is the former four-masted schooner MARGARET THROOP, later renamed the BESSIE M. DUSTIN, built at Thomaston, Maine in 1918. Another is a former sidewheel steamboat, as yet unidentified.

RECOMMENDATIONS:

1. The Shipyard remains should be examined by a qualified industrial archaeologist to determine whether any features merit recording for the Historic American Engineering Record.
2. A vessel by vessel inventory should be made of the wrecks surrounding Shooters Island to determine whether any have unique historic value, or National Register significance.

Though harbor and river barges had unromantic careers, they represent a technology, and a way of life for the people who operated them, which deserves to be recorded. Early in this century most were manned by families, and many people who grew up on such craft are still living. Before the last barges are demolished, or succumb to the elements or arson, representative examples should be studied, and measured drawings made of construction methods, fittings and living accommodations. Otherwise, these vessels will in a few years be unknown to us, aside from a very few plans and photographs. In this respect, Shooters Island represents an opportunity which should not be lost. There were until recently four major graveyards of wooden-hulled craft in New York Harbor. One at Edgewater, New Jersey has now been largely destroyed by fires and landfill, and a second at Black Tom, New Jersey was demolished in the development of Liberty State Park. This leaves only Shooters Island, and the Tottenville-Outerbridge area at the far southern end of Staten Island.

There is also the possibility that some hulls lying at Shooters Island, or portions of them, may be worthy of preservation as examples of past technology. At this point in our investigations, there is already one prime candidate for partial salvage. The large unidentified sidewheel steamer still has her massive timber double A frame for a walking beam engine, probably the best surviving example of one, and the remains of her paddlewheels. Both these items merit preservation in some type of museum display.

APPENDIX 2

Hulk Survey Forms  
for  
Scattered Locations (A,B,E,F,G, & H)  
and  
Northwest Quadrant, Shooters Island  
(Items "5" through "70")

note: For the Shooters Island Hulks,  
cut outs of two different aerial photo-  
maps are included. Those with Item Num-  
bers in triangles are from the Dravo -  
Van Houten Maps of 1979.  
(See p. 8 for full description of the  
aerial photomaps).  
The scale is 1 inch = 100 feet.

NO. A LOCATION N side of dike; W of Navigation Light DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 120 feet BREADTH 35 feet

HISTORY Vessel

Item No. 1 (submerged, see drawing following)

Sheet No. 7

Drawing No. 56901-8

TYPE OF VESSEL: ?	FERRY _____	LIGHTER _____
TUG _____	CANAL BOAT _____	CRANE BARGE _____
BARGE _____	CAR FLOAT _____	LAUNCH _____
HOPPER BARGE _____	PASS. EXCURSION _____	OTHER _____

CONSTRUCTION:	HOUSE: NO. DECKS _____	STATE OF HULL:
HULL: WOOD _____	WOOD _____	COMPLETE _____
IRON _____	STEEL _____	OVER 50% _____
STEEL _____	MASTS: NUMBER _____	LESS 50% _____
COMPOSITE _____	WOOD _____	REMAINS _____
WOOD KNEES _____	STEEL _____	
RIVETTED _____	LATTICE _____	
WELDED _____	A FRAME _____	

SURVIVING FITTINGS:	PHOTO:
MASTS _____	Plate XXI shows area (no Hulk visible)
HOUSE _____	
STACK _____	
VENTILATORS _____	
WINDLASS _____	
CARGO WINCH _____	
BOOMS _____	
STEERING GEAR _____	



NO. 8 LOCATION N of dike; W of Navigation Light DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY area in which at least 2 derelicts shown on Navigation Chart

Item No. 2

Sheet No. 7

Drawing No. 56901-8

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL: \_\_\_\_\_

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO: \_\_\_\_\_

MASTS \_\_\_\_\_

Plate XXI shows area  
(no hulks visible)

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

VENTILATORS \_\_\_\_\_

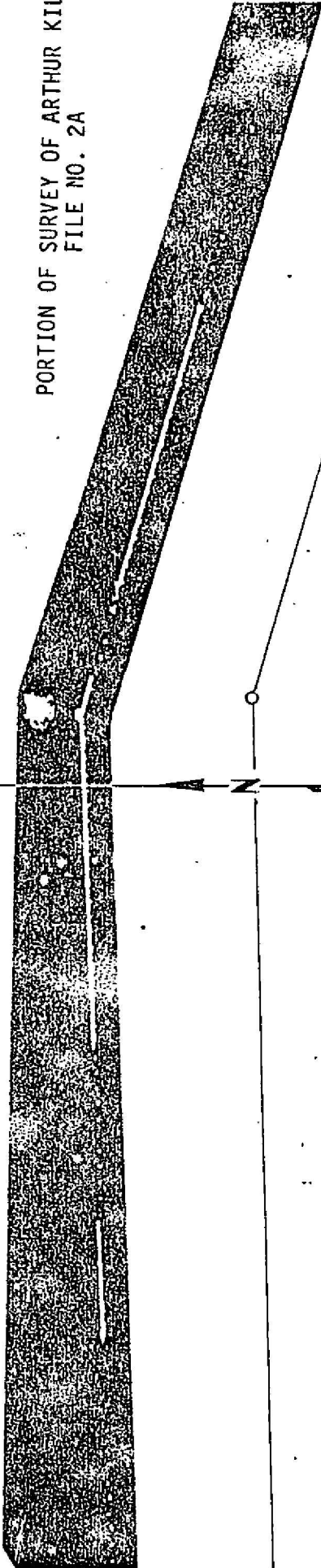
WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_

PORTION OF SURVEY OF ARTHUR KILL  
FILE NO. 2A



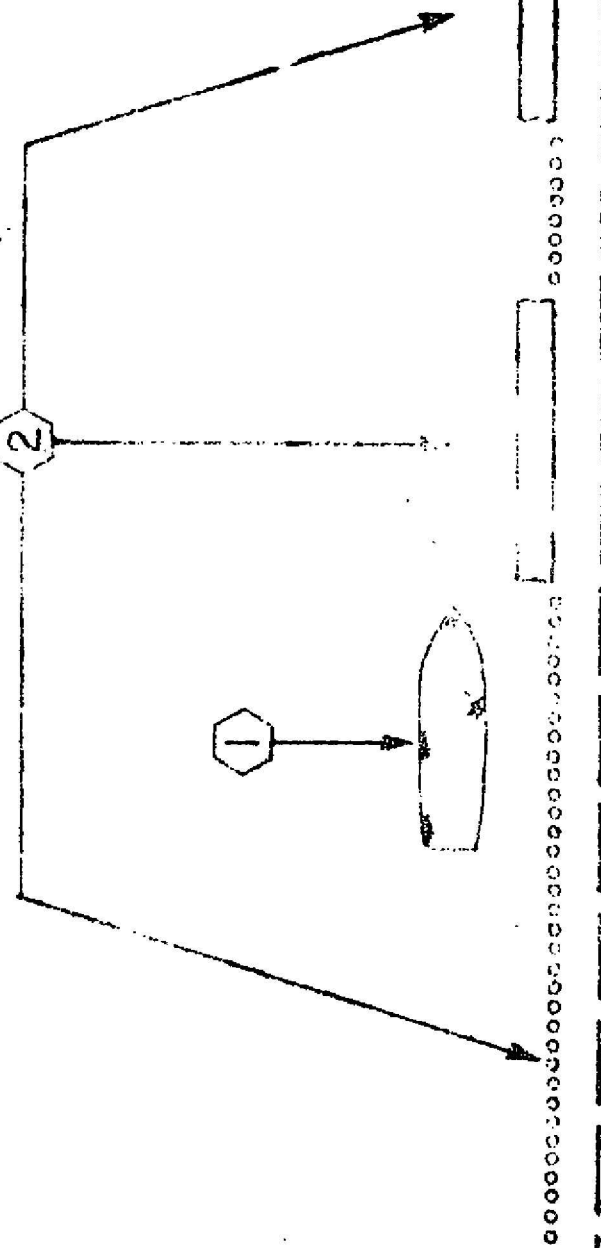
PORTION OF GENERAL PLAN - SHEET 7  
DRAWING NO. 56901-8

2

1

NAVIGATION  
LIGHT

SHOOTERS  
ISLAND REACH DIKE  
(NOT IN PROJECT)



1 INCH = 100 FEET

NO. E LOCATION along Singer waterfront @ end of DATE \_\_\_\_\_

NAME \_\_\_\_\_ long building OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY 1 or 2 vessels (now gone?) \_\_\_\_\_

Item No. 1

Sheet No. 4

Drawing No. 56901-5

TYPE OF VESSEL:	FERRY _____	LIGHTER _____
TUG _____	CANAL BOAT _____	CRANE BARGE _____
BARGE _____	CAR FLOAT _____	LAUNCH _____
HOPPER BARGE _____	PASS. EXCURSION _____	OTHER _____

CONSTRUCTION:	HOUSE: NO. DECKS _____	STATE OF HULL:
HULL: WOOD _____	WOOD _____	COMPLETE _____
IRON _____	STEEL _____	OVER 50% _____
STEEL _____	MASTS: NUMBER _____	LESS 50% _____
COMPOSITE _____	WOOD _____	REMAINS _____
WOOD KNEES _____	STEEL _____	
RIVETTED _____	LATTICE _____	
WELDED _____	A FRAME _____	

SURVIVING FITTINGS:	PHOTO:
MASTS _____	Plates XIV, XV
HOUSE _____	(no hulks showing)
STACK _____	
VENTILATORS _____	
WINDLASS _____	
CARGO WINCH _____	
BOOMS _____	
STEERING GEAR _____	

NO. F LOCATION along Singer waterfront DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH ca. 80 ft. BREADTH ca. 20 ft.

HISTORY Vessel, still present

Item No. 2

Sheet No. 4

Drawing No. 56901-5

TYPE OF VESSEL:	FERRY _____	LIGHTER _____
TUG <u>X</u>	CANAL BOAT _____	CRANE BARGE _____
BARGE _____	CAR FLOAT _____	LAUNCH _____
HOPPER BARGE _____	PASS. EXCURSION _____	OTHER _____

CONSTRUCTION:	HOUSE: NO. DECKS _____	STATE OF HULL:
HULL: WOOD _____	WOOD _____	COMPLETE <u>X</u>
IRON _____	STEEL _____	OVER 50% _____
STEEL _____	MASTS: NUMBER _____	LESS 50% _____
COMPOSITE _____	WOOD _____	REMAINS _____
WOOD KNEES _____	STEEL _____	
RIVETTED _____	LATTICE _____	
WELDED _____	A FRAME _____	

SURVIVING FITTINGS:

PHOTO:

MASTS \_\_\_\_\_

Plates XXII, XXIII, XXIV

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STZERING GEAR \_\_\_\_\_



NO. 6 LOCATION along Singer waterfront DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY area of pilings or derelicts?

Item No. 3

Sheet No. 4

Drawing No. 56901-5

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO:

MASTS \_\_\_\_\_ Plate XVII

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

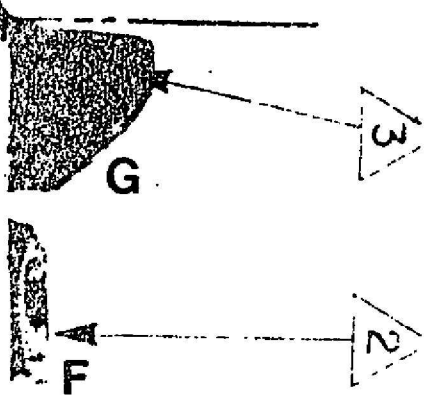
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

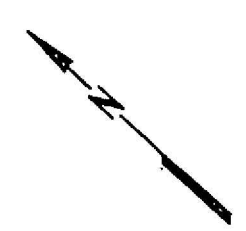
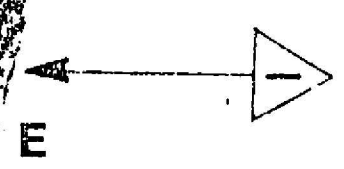
CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



AERIAL PHOTOMAP  
Portion of Singer Waterfront  
showing Hulk E, F, & G  
(portion of General Plan sheet 4  
scale 1"=100')



NO. H LOCATION RR pier S of Singer DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY between piers - Items No. 18 & 19

Item No. 3

Sheet No. 3

Drawing No. 56901-4

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

VENTILATORS \_\_\_\_\_

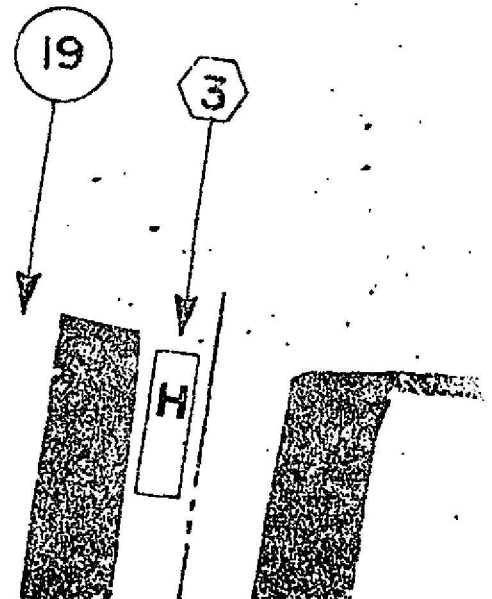
WINDLASS \_\_\_\_\_

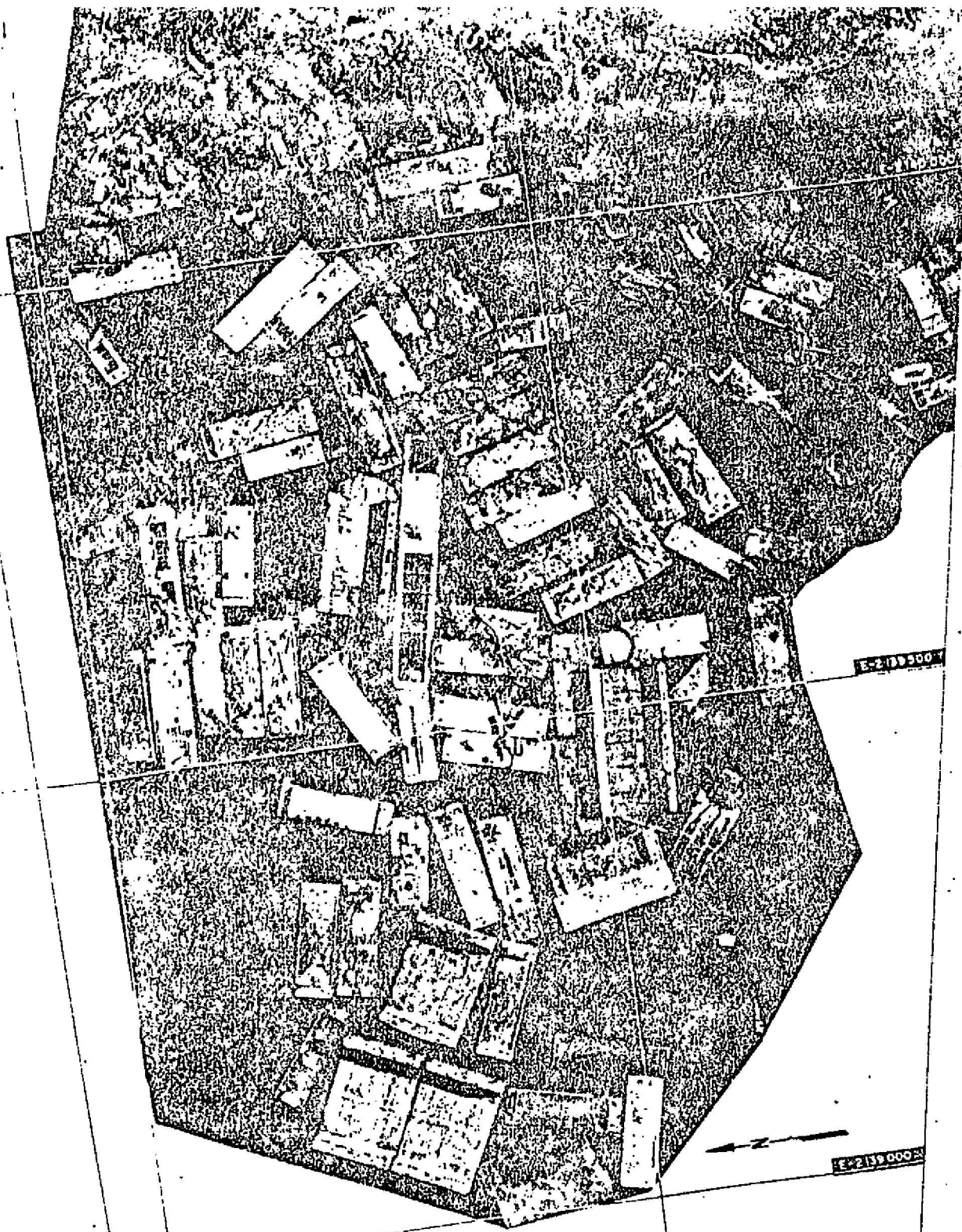
CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_

Plate XIII shows area  
(no hulk showing)





Part of Drawing No. 2659 Sheet 2A  
Aerial Photomap showing Hulks at  
Northwest Quadrant of Shooters Island.

Scale of Original 1 in. = 100 ft.  
For reduced version, see bar scale





NO. \_\_\_\_\_ LOCATION NW of Shooters Island

DATE 14 April 1980

NAME \_\_\_\_\_

OFFICIAL NO. \_\_\_\_\_

**B** BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 140 ft. & 170 ft. BREADTH 120 ft.

HISTORY E 2,139,000 - 500 / N 660-000-500

No. 6, 7, 8, 14 (Probably 2 drydocks, each broken)

Sheet No. 8

Drawing 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER DRY DOCKS

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

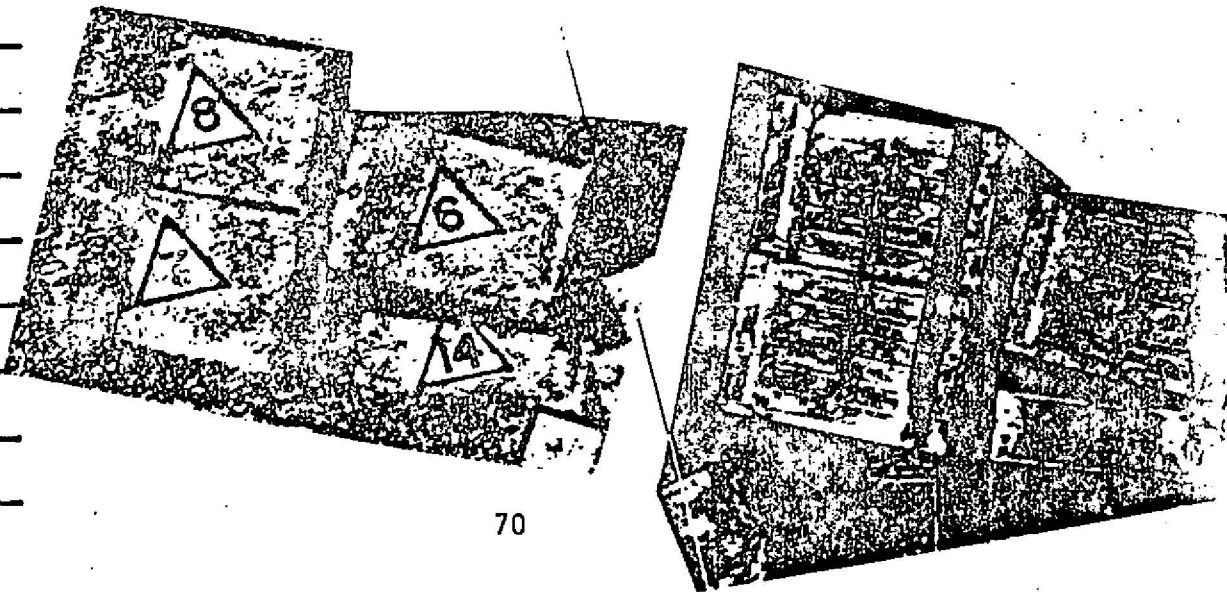
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Sooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 115 ft. BREADTH 40 ft.

HISTORY E 2,139,000 - 500 / N 560,000 - 500

No. 68?, 69, 70 (Three Scows)

Sheet No. 8

Drawing 5601-9

TYPE OF VESSEL:	FERRY _____	LIGHTER <u>X ?</u>
TUG _____	CANAL BOAT _____	CRANE BARGE _____
BARGE <u>X ?</u>	CAR FLOAT _____	LAUNCH _____
HOPPER BARGE _____	PASS. EXCURSION _____	OTHER _____

CONSTRUCTION:	HOUSE: NO. DECKS _____	STATE OF HULL:
HULL: WOOD _____	WOOD _____	COMPLETE _____
IRON _____	STEEL _____	OVER 50% _____
STEEL _____	MASTS: NUMBER _____	LESS 50% _____
COMPOSITE _____	WOOD _____	REMAINS _____
WOOD KNEES _____	STEEL _____	
RIVETTED _____	LATTICE _____	
WELDED _____	A FRAME _____	

SURVIVING FITTINGS:

PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

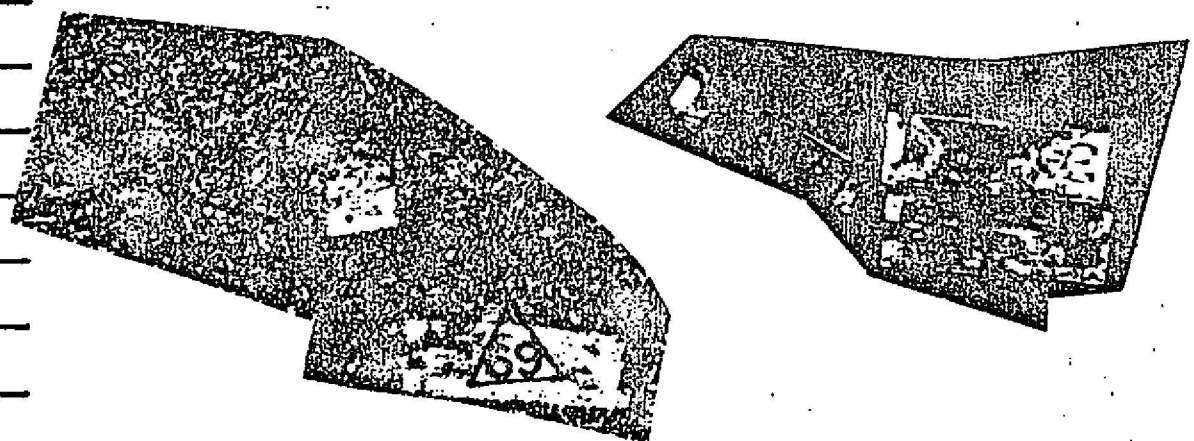
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 100 ft. to 130 ft. BREADTH 30 ft. & 40 ft.

HISTORY E 2,139,000 - 500 / N 660,000 - 500

No. 47?, 60, 61 (? not numbered) (Four Scows)

Sheet No. 8

Drawing No. 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER X ?

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE X ? CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS:

PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

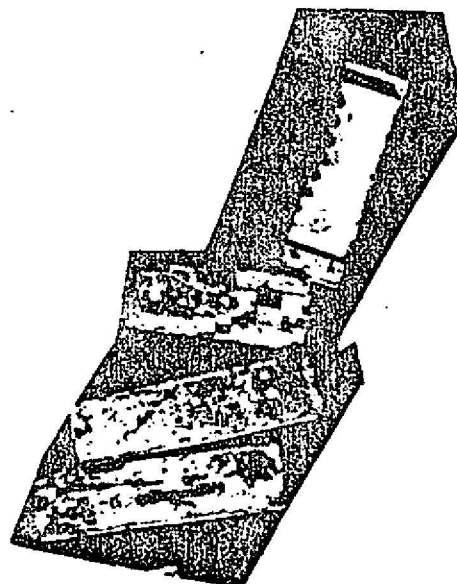
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 90 ft. to 115 ft. BREADTH 30 ft.

HISTORY E 2, 139,500 / N 660,000

No. 54, 55, 56, 57, 58, 59 (Four Scows, & two other smaller)

Sheet No. 8

Drawing No. 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER X ?

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE X ? CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER ?

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

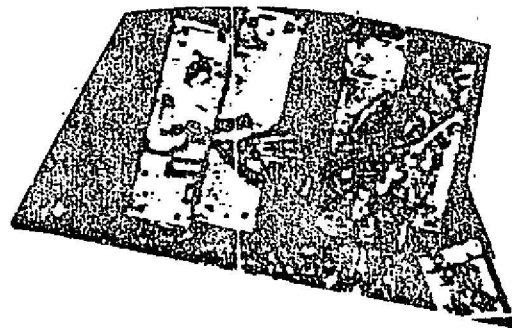
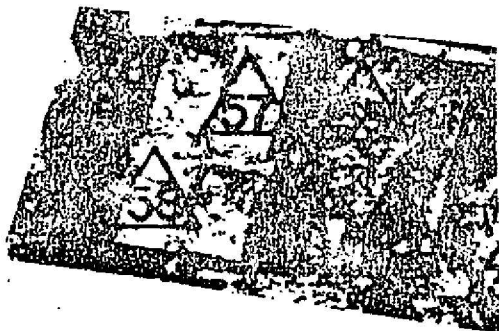
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_





NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 100 ft. to 220 ft. BREADTH 30 ft. to 40 ft.

HISTORY E 2, 139, 500 - 40,000 / N 660,000 - 500

No. 33, 34, 35, 36, 37, 38, 39, 40 - 26? (Eight or Nine Scows)

Sheet No. 8

Drawing No. 5601-9

TYPE OF VESSEL:	FERRY _____	LIGHTER <u>X ?</u>
TUG _____	CANAL BOAT _____	CRANE BARGE _____
BARGE <u>X ?</u>	CAR FLOAT _____	LAUNCH _____
HOPPER BARGE _____	PASS. EXCURSION _____	OTHER _____

CONSTRUCTION:	HOUSE: NO. DECKS _____	STATE OF HULL:
HULL: WOOD _____	WOOD _____	COMPLETE _____
IRON _____	STEEL _____	OVER 50% _____
STEEL _____	MASTS: NUMBER _____	LESS 50% _____
COMPOSITE _____	WOOD _____	REMAINS _____
WOOD KNEES _____	STEEL _____	
RIVETTED _____	LATTICE _____	
WELDED _____	A FRAME _____	

SURVIVING FITTINGS:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

PHOTO:

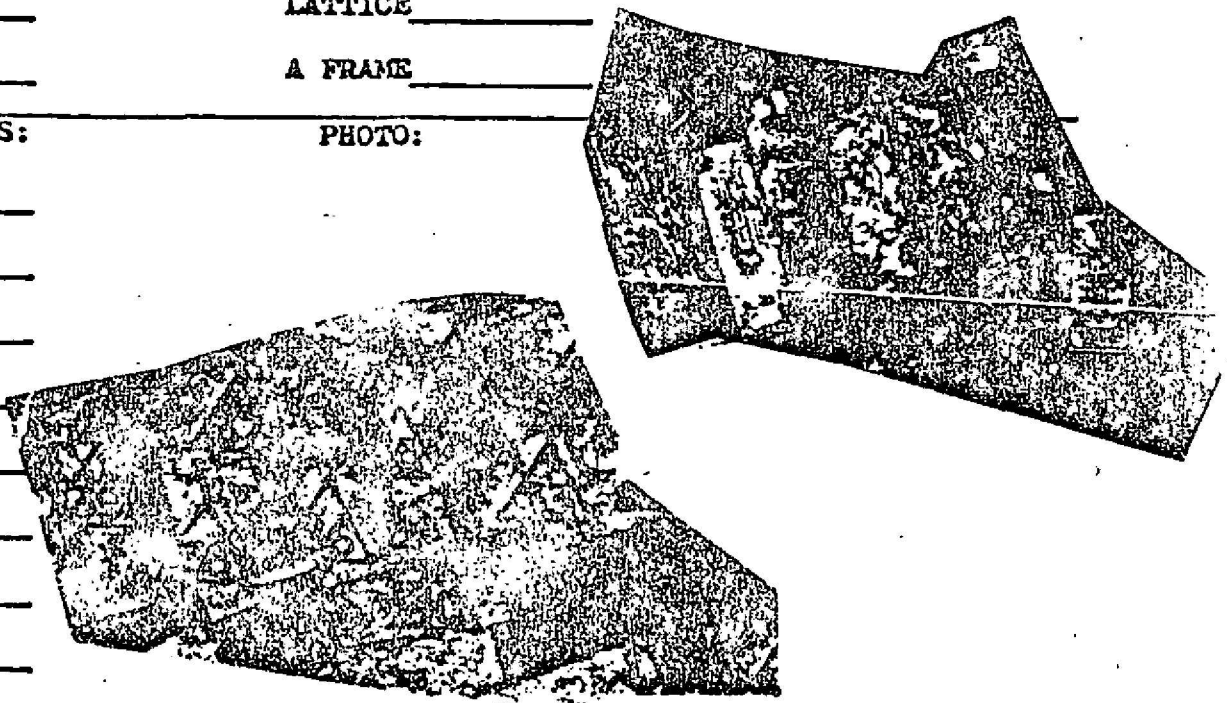
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 100 ft. to 260 ft. BREADTH 30 ft. to 70 ft.

HISTORY E 2,39, 500 - 40,000 / N 660,000 - 500

No. 5, 12, 52, 53 (Two Scows, One Dry Dock, & one possible hopper barge)

Sheet No. 8

Drawing 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER X ?

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE X ? CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE 1 ? PASS. EXCURSION \_\_\_\_\_ OTHER 1 Dry Dock

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO: 

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

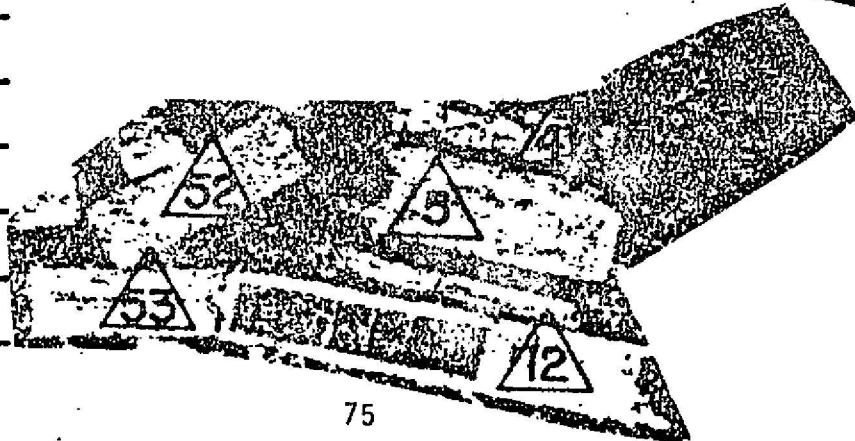
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

OR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 90 ft. to 135 ft. BREADTH 30 ft. to 40 ft.

HISTORY E 2, 139,500 - 40,000 / N 660,000 - 500

No. 27?, 28?, 29?, 30, 31, 32 (Five or six scows)

Sheet No. 8

Drawing 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER X ?

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE X ? CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS: PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

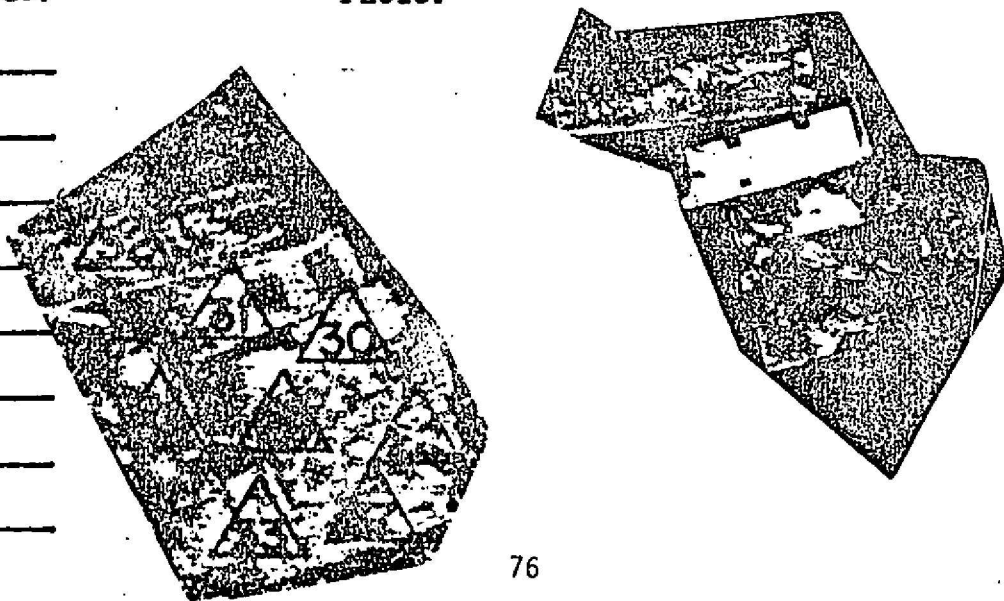
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW of Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

IR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH 95 ft. to 125 ft. BREADTH 30 ft. to 35 ft.

HISTORY E 2,140,000 / N 660,000 - 500

No. 9, 10, 17, 18, 19, 20, 21, 25 (Between eight and eleven scows, possibly

Sheet No. 8 including other vessels)

Drawing No. 5601-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER X ?

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE X ? CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_

WELDED \_\_\_\_\_

SURVIVING FITTINGS:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

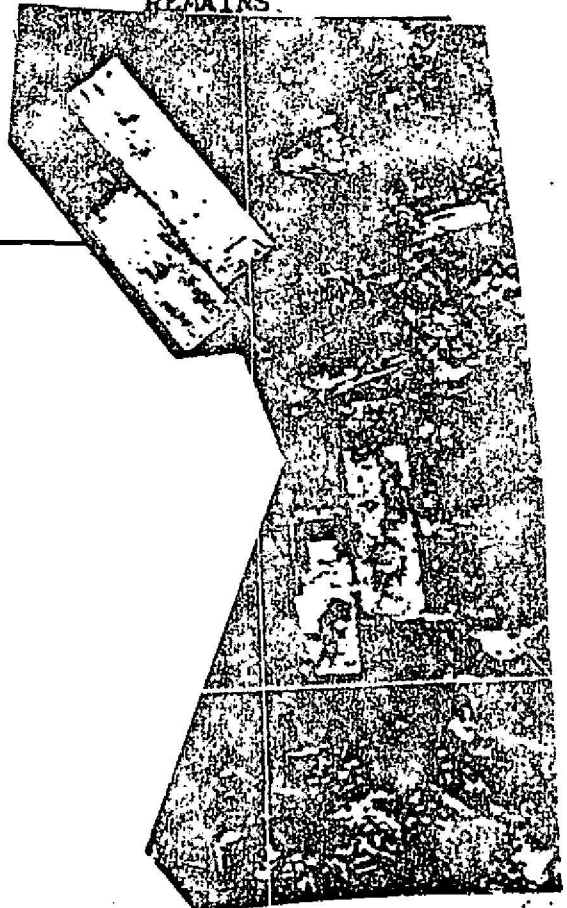
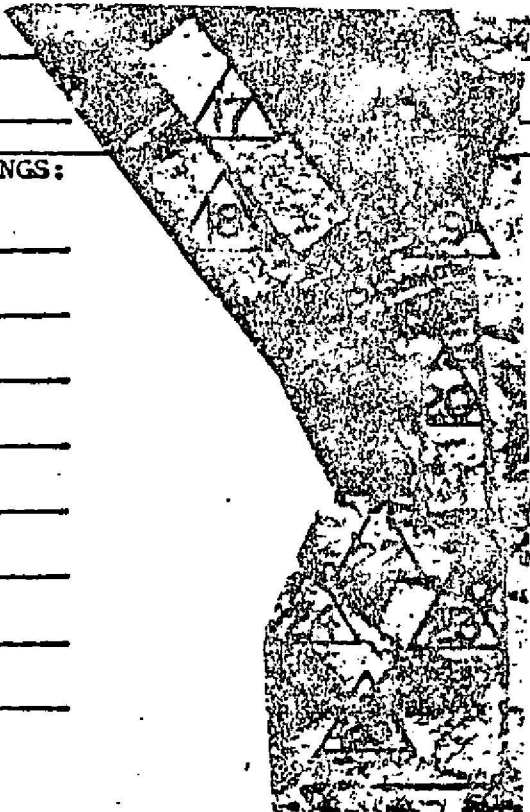
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_





NO. \_\_\_\_\_ LOCATION NW Shooters Island

DATE \_\_\_\_\_

NAME \_\_\_\_\_

OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY E-2,139,500 -40,000/ N 660,000 - 500

No. 14, 15, 16

Sheet # 8

Drawing # 56901-9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL:

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS:

PHOTO:

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

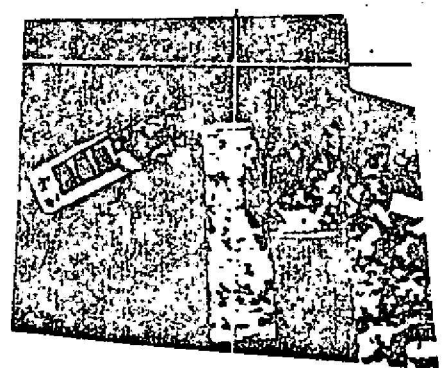
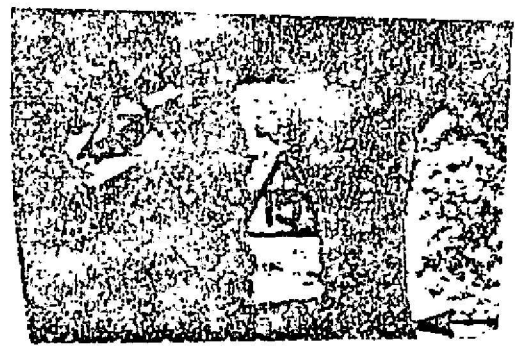
VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEAR \_\_\_\_\_



NO. \_\_\_\_\_ LOCATION NW Shooters Island DATE \_\_\_\_\_

NAME \_\_\_\_\_ OFFICIAL NO. \_\_\_\_\_

YEAR BUILT \_\_\_\_\_ WHERE BUILT \_\_\_\_\_

TONNAGE \_\_\_\_\_ LENGTH \_\_\_\_\_ BREADTH \_\_\_\_\_

HISTORY E-2,139,500 - 40,000 / N 660,000 -500

No. 47, 48, 49, 50, 51, 46, 45, 43

Sheet # 8

Drawing # 56901 - 9

TYPE OF VESSEL: FERRY \_\_\_\_\_ LIGHTER \_\_\_\_\_

TUG \_\_\_\_\_ CANAL BOAT \_\_\_\_\_ CRANE BARGE \_\_\_\_\_

BARGE \_\_\_\_\_ CAR FLOAT \_\_\_\_\_ LAUNCH \_\_\_\_\_

HOPPER BARGE \_\_\_\_\_ PASS. EXCURSION \_\_\_\_\_ OTHER \_\_\_\_\_

CONSTRUCTION: HOUSE: NO. DECKS \_\_\_\_\_ STATE OF HULL: \_\_\_\_\_

HULL: WOOD \_\_\_\_\_ WOOD \_\_\_\_\_ COMPLETE \_\_\_\_\_

IRON \_\_\_\_\_ STEEL \_\_\_\_\_ OVER 50% \_\_\_\_\_

STEEL \_\_\_\_\_ MASTS: NUMBER \_\_\_\_\_ LESS 50% \_\_\_\_\_

COMPOSITE \_\_\_\_\_ WOOD \_\_\_\_\_ REMAINS \_\_\_\_\_

WOOD KNEES \_\_\_\_\_ STEEL \_\_\_\_\_

RIVETTED \_\_\_\_\_ LATTICE \_\_\_\_\_

WELDED \_\_\_\_\_ A FRAME \_\_\_\_\_

SURVIVING FITTINGS:

PHOTO

MASTS \_\_\_\_\_

HOUSE \_\_\_\_\_

STACK \_\_\_\_\_

VENTILATORS \_\_\_\_\_

WINDLASS \_\_\_\_\_

CARGO WINCH \_\_\_\_\_

BOOMS \_\_\_\_\_

STEERING GEARS \_\_\_\_\_

