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THE NEW YORK CITY
LONG RANGE SLUDGE MANAGEMENT PLAN
GENERIC
ENVIRONMENTAL IMPACT STATEMENT III

RECEIVED
ENVIRONMENTAL REVIEW
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LANDMARKS PRESERVATION
COMMISSION

NORTH BROTHER ISLAND
PHASE 1A
ARCHAEOLOGICAL ASSESSMENT

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1991
**HISTORICAL
PERSPECTIVES INC.**



P.O. Box 331 Riverside, Connecticut 06878

THE NEW YORK CITY LONG RANGE SLUDGE MANAGEMENT PLAN

GENERIC ENVIRONMENTAL IMPACT STATEMENT III

NORTH BROTHER ISLAND

PHASE IA ARCHAEOLOGICAL ASSESSMENT

Prepared by:

Historical Perspectives, Inc.
P.O. Box 331
Riverside, CT 06876

Authors:

Betsy Kearns
Cece Kirkorian

Prepared for:

Allee King Rosen & Fleming, Inc.
117 East 29th Street
New York, NY 10016

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PROPOSED NORTH BROTHER ISLAND SLUDGE MANAGEMENT FACILITY

NEW YORK CITY LONG RANGE SLUDGE MANAGEMENT PLAN (GEIS III)

INTRODUCTION: New York City has entered into a Consent Decree and Enforcement Agreement with the U.S Environmental Protection Agency (EPA) and the New York State Department of Environmental Conservation (DEC) to end ocean disposal of its sewage sludge. A Long Range Sludge Management Plan is being developed by the City as part of the agreement. The Plan calls for the development of multiple City sites where dewatered sludge can be processed into sludge product with beneficial reuse technologies.

This archaeological assessment is part of a Generic Environmental Impact Statement (GEIS III) for the Long Range Plan. Its purpose is to assess the archaeological potential of the site and to determine if the proposed building's footprint will encroach on those areas of the site that might contain archaeological resources.

Research has included study of both old and current maps, historical accounts, records in various New York City departments, archaeological reports, guides to New York, a New York State site file search, and a field inspection.

LOCATION: The North Brother Island site is located in the Upper East River, bounded by the Rikers Island Channel to the south and Brother Island Channel to the east. The island consists of two parcels; Lot 10 is a federally owned United States Reservation and Lot 20 is owned by the City of New York. The project area occupies Block 2605, Lot 20 and is approximately 20 acres large (see Figures 1 and 2).

CURRENT CONDITION: A field visit was made on June 21, 1991. There are 28 buildings on the site, in conditions that range from deteriorating to ruined. They include a former hospital building, boiler, transformer and coal storage houses, a chapel, administration and service buildings, and houses once used by hospital staff. (See Photographs 1 and 2 for general views.) A nineteenth century lighthouse and ruined outbuilding are adjacent to the site on the federally owned portion of the island.

The island is covered with dense vegetation that is typical of many overgrown urban areas; the remnants of old plantings and

landscaping are evident as well as naturally occurring flora (Photo 3). In some places the walkway and street layout can be discerned, but it is difficult to follow. Several species of birds were seen, especially sea gulls whose nests and newly-hatched chicks are all over the island, even inside buildings. Other than the large number of birds, rats were the only fauna observed.

CONSTRUCTION PLANS: As proposed, a sludge treatment facility would have spread-footing foundations to a depth of 5-6 feet below grade and would cover the majority of the island area. (D. Lang, Allee King Rosen & Fleming Inc., personal communication 5/22/91, see Figure 3).

PREHISTORIC ERA ARCHAEOLOGICAL POTENTIAL

A site file search at the New York State Museum and the New York State Historic Preservation Office was undertaken in order to ascertain if there have been any sites reported on North Brother Island. While there are 8 recorded prehistoric sites in the surrounding area (see Figure 4: # A005-01-0027,28,30,31; 4574 and 4575;4539;2831) [Sites A005-01-0074-79 are historic underwater sites discussed in the Historic Era section of this report], there are no recorded sites on the island. Indeed, from what we know about settlement pattern preferences, several factors argue against major use of North Brother Island by prehistoric peoples. There is no fresh water source on the island. The ground water is tidally influenced and may be saline since "pockets of Phragmites and field-like conditions on the southern and eastern banks of the island suggest occasional incursion by salt water" (Winthrop and Williams 1978:69).

"According to published reports, the rock line determined in borings drilled for the Tuberculosis Building on the northern side of the site is from 6 to 12 feet below the existing grade. Furthermore, these reports also indicate that the soils consist of an upper layer of clay and a lower level of wet sand of equal thickness" (Stone and Webster, BX28 -2-p.1) Therefore, the island would be poorly drained, and well-drained sites were preferred habitation sites.

Another factor is the strong water current in the surrounding East River. Currents average 1.5 knots east from two hours past low water to one hour past high water, and average 1.0 knots west from two hours past high water to one hour past low water, according to a report prepared in 1978. An interesting anecdotal corroboration of that fact was reported in a clipping (on file at the Bronx County Historical Society) from the NEWS of 4/15/84 that

quoted a New York City policeman as saying that escapees from Rikers Island may get as far as Brother Island, but can't go any further because of the strong East River tides.

Of course, Native Americans may have visited the island by the same route from Rikers Island, but probably only for fishing or shellfish gathering. That kind of procurement usage ordinarily entailed transient visits rather than long-term habitation. Robert Grumet reported that the name "Wikisan," possibly referring to reeds, had been applied to one or both of the Brothers Islands by Robert Bolton (Figure 5). "This term has not as yet been located in the colonial record, and may have been introduced by R. Bolton" (Grumet 1981:63).

If there were any prehistoric resources left on the island by native Americans, there is a strong possibility that these shallow deposits would have been severely impacted by nineteenth and twentieth century building episodes and landscaping over the entire island. In southern New York, prehistoric deposits are usually located within the top 3 feet below the original grade.

Another factor affecting prehistoric potential would be the erection of the seawall that rings the island and the fill placed behind the wall. The 1890 Board of Health Annual Report referenced expenditures for 400 feet of sea wall and 4058 square feet of "dirt filling behind the new sea wall" (Board of Health 1990:30). Historian I.N.P. Stokes noted that as of 1909 "At North Brother Island about 1,900 feet of concrete retaining wall has been built, in the rear of which it is intended to deposit filling in a manner similar to that at Rikers Island (city refuse). These four acres of made land are designed for the use of the Department of Health" (Stokes 1926:Vol. V, 2074).

A recent examination of the site reported that "In the vicinity of the reinforced concrete sea wall, which surrounds the entire island, the land appears to be fill comprised of cinders, slag and miscellaneous debris which was probably placed when the island was enlarged between 1902 and 1907" (Stone and Webster, 1991, BX28-2-p.1). (Observations made during the recent field inspection concur with that, except that some material that would be from a later date than 1907 was also noted, especially in places where erosion had taken place underneath the seawall. It is not possible to know if the small material remains such as pottery sherds have been washed ashore, or were deposited as landfill or discarded as trash from within the island.) Thus testing would be hampered because there has been so much land manipulation, including compaction, that finding the original landform would be quite difficult. The overall acreage of the site has increased from approximately 16 acres to approximately 20 acres.

HISTORIC ERA

"Adrian Block noted this island on his charts in 1614, along with a surrounding cluster of islets which he called "de Gesellen," a term meaning Brethren. This was not in the family sense, but meant the commercial brothers (associates) of the Dutch West Indies Company. It was Anglicized to "The Brothers" when the English occupied New York, and designated "North" due to its geographical location" (McNamara 1984:187). According to Stokes, North Brother Island was granted to James Graham in 1695 (Stokes 1926:Vol.V). "In 1708, the English governor patented to William Bond the islands known as 'The Brothers.' Daniel Ludlow was owned [sic] in the later 1700's, Edward Acheson in 1802, and Jacob Eaton in 1805" (McNamara 1984:232). The island had been offered for sale by one Eleanor Braster in 1791 (Stokes 1926, Vol.V). On April 14, 1871 "all of North Brother Island, except part ceded to United States Government" was sold to the Board of Trustees of the Town of Morrisania by "Martha Ackerson (single woman) and Annie J. Ackerson (widow)" for \$40,000.00 (Bureau of Municipal Investigation and Statistics 1908: 14).

From conveyance records, some early owners of North Brother are known (see above), but no data concerning actual land usage could be located other than that the southernmost 2.53 acres were ceded to the federal government for a lighthouse in 1867 (Winthrop and Williams 1978:25), and a report that the Sisters of Charity established a small hospital for communicable disease in the 1850s. No further information verifying or describing the early hospital usage could be found. Possibly the paucity of documentary sources is due to the fact that the island was politically part of Queens until 1881 when "an act of the New York City Council officially transferred North Brother from the jurisdiction of Queens to that of the Bronx" (Ibid.:25).

The City of New York had purchased the island the year before, in 1880, in order to establish a hospital for tuberculosis and contagious diseases. Riverside Hospital was moved from Blackwell's (now Welfare or Roosevelt) Island to North Brother Island and the first pavilion (the male dormitory) was opened in 1885. After that time, many buildings were erected, bringing the total to 32 when the facility closed in 1944 (Ibid.:26 and see Figure 6). Certainly the most infamous of its patients was "Typhoid Mary" Mallon, a typhoid carrier who unwittingly had started epidemics while employed as a cook.

From 1946 to 1951 the island was used by the State to house veterans and their families, and from 1951 to 1963 by the City as a teenage drug rehabilitation center (NEW YORK TIMES: 8/15/82).

The island was declared surplus property and offered for sale in 1970. Since that time, a number of plans have been suggested for its usage, but to date none have been implemented.

Historic Era Archaeological Potential

Aside from the purported use of part of the island as a hospital in the 1850s, about which no data whatsoever could be found, the documented historic era on the island began in 1880 with its purchase by the City of New York for the new location of the Riverside Hospital for communicable diseases which was transferred from Blackwell's Island. The first building phase was in c.1885 when the male dormitory was opened. During the 1885 building era five pavilions and support buildings consisting of an ice house, a boiler room, and a store house were also constructed. Five structures from that building era still exist, although the ice house is in ruins and inaccessible because of a large concrete wall and a more recent building wall abutting it. (Photograph 3 shows the male dormitory, Photographs 4 and 5 show the kitchen building/staff house, and Photograph 5 shows all that could be seen of the ice house.)

There is a problem for the researcher in documenting this building era because important archival material either does not exist or cannot be located. The New York City Board of Health, under whose aegis the hospital complex was built and administered, did not print an annual report for the years 1881 through 1888, crucial years for the purposes of this research. The annual reports for 1879 and 1880 consist solely of vital statistics and do not mention buildings. The 1889 annual report does not describe the physical plant of the hospital complex. The only pertinent information contained in the 1890 annual report was a statement that besides the male dormitory, there were five other heated pavilions that were about 50 feet apart. No building plans could be found. The Bronx Buildings Department does not even have a block folder for North Brother Island, and the Department of Health has no construction records in its library. Librarians at the Department of Health library and the Municipal Reference Library knew of no place where such plans might be found. The 1978 report prepared by Winthrop and Williams gave a general description of the c.1885 building phase, but it is unclear where the information was obtained. It is possible that the writers at that time had access to documents that by now have been destroyed or dispersed to unknown repositories. A librarian at the Municipal Reference Library commented that she thought that the Department of Health document collection had been divided during a department re-organization (Personal communication from Derryl Lang, 6/91). Therefore, the early building history has been reconstructed from a variety of sources, including the visual evidence obtained during the field inspection.

It appears that the next building phase took place in the early 1900s concurrent with the deposit of landfill and erection of the seawall ringing the island. A 1908 document on file at the Municipal Reference Library has undated photographs from that era that show structures from the earlier building phase as well as more recently constructed buildings (Bureau of Municipal Investigation and Statistics, Department of Finance 1908). These photographs were valuable during the field inspection in identifying the c.1885 structures that still stand. (For an example, see Figure 7.) There is extensive documentation through photographs and written descriptions of subsequent 20th century building episodes contained in the Art Commission files. There were a number of these episodes throughout the first half of the century; for example, several of the first wooden pavilions were replaced by masonry structures. It appears that often old buildings were demolished, the sites cleared, and new buildings erected on or near the earlier sites.

Locating the subsurface remains of razed structures from the first building phase would not make an important contribution to the archaeological record since there are extant examples (Photos 3, 4, and 5). The general building usage is known through documents and none of these indicate associated features - other than cisterns or privies - that might produce valuable archaeological resources. For example, there was a morgue building located adjacent to the ferry dock. This location is significant because bodies were transferred for private burial or to the potter's field. There was no burial ground on the island.

While the general building usage can be reconstructed, the hospital's earliest methods of obtaining water and disposing of waste cannot be determined. Privies and cisterns can provide archaeological data about past lifeways otherwise unobtainable for study, because when they are no longer in use they quickly fill with refuse, and they may remain undisturbed as "time capsules" with distinctly stratified layers. Waste material from the 19th century Riverside Hospital complex use might address research topics such as medical and dietary practices or institutional consumer patterns.

These shaft features - or the deeper portions of them - often survive development activity. There is the potential for this kind of cultural resource to be present on North Brother Island, although the existence of shaft features cannot be definitively proved because neither building blueprints/plans nor records about the initial installation of sewer and water lines can be found. The data that has been obtained is inconclusive and

sometime conflicting. The 1978 Winthrop and Williams report stated that "documents at the Bronx Building Department conflict as to the nature of sewage treatment. A 1902 application indicates a public sewer runs to North Brother from Davidson Avenue in the Bronx, whereas a 1905 document, and all subsequent material, state or imply that the sewage and drainage ran directly into the river...A six inch water main was constructed to North Brother from 140th Street in the Bronx. In 1902 the main froze solid and had to be taken up and relaid before the trouble was over" (Williams and Winthrop 1978: 26-27).

However, a recent visit to the Bronx water and sewer departments produced no records whatsoever about when North Brother Island was hooked into municipal utility lines despite a diligent search by staff personnel in each of the departments. One staff person suggested that early documents such as the ones in question may have been moved to some other repository - or even destroyed - because of limited storage space. They were able to locate some early maps of sewer and water lines in the Bronx near where the lines would have been extended to the island. The Sewer Department Section 2 Map shows an 1898 sewer along 138th Street leading to the East River and a Section 4 Map shows a 1907 line along Truxton Street also leading to the river. The pipelines terminate at the river's edge. A Water Department map shows a pipe along 140th Street, as mentioned above, but there is no installation date.

During the period in question, two pertinent items were found in the Board of Health Annual Reports for 1902 and 1903. "...With this appropriation Riverside and Kingston Avenue Hospitals were repaired and filled with proper sanitary accommodations" (Board of Health 1902: 16) and "Nearly all plumbing in the various buildings [on North Brother Island] has been replaced by new plumbing" (Board of Health 1903:15).

It should be remembered that the inspection of the state of the sanitary conditions of New York was the responsibility of the Board of Health which implies that their own facilities should be above reproach. Perhaps the conclusions of Joan Geismar's research on the same subject for Roosevelt Island are applicable to the case of North Brother Island. Dr. Geismar noted that "bucket brigades" that dumped waste material into the water surrounding the island were a means of disposal sometimes used even after the practice became a violation of health ordinances in 1881. It was suggested that the Department of Health or some other agency provided boats to remove such waste prior to the installation of sewer lines (Geismar 1985:28-45).

Like Roosevelt Island, there is no pictorial or cartographic evidence of privies or cisterns on the hospital grounds at North Brother Island. There is currently a large cistern located behind the boiler building that has pipe connections to the boiler room (Photograph 7). It is possible that there was a cistern of some size constructed during the 1885 building era although there is no mention of one in documents and no indication of one on a 1937 plan of the island. There also may well have been small cisterns associated with each 19th century building until or unless there was a central water supply system.

If a portion of the shoreline of North Brother Island will be impacted by dock building or improvement (Photo 8), there is an additional archeological concern to be addressed which is the possible existence of sunken ships, or remains thereof. The British frigate HUSSAR sank in 1780 in the vicinity of North Brother Island. Its exact location has been the subject of numerous searches. A 1988 report by Maritime Explorations, Inc. exhaustively documented the history of the ship and previous attempts to find it as well as remote sensing and dive operations conducted between 1985 and 1988 (site numbers A0050074 through 79 as shown on Figure 4). The conclusion of the report stated that "there is no doubt that the remains of HMS HUSSAR lie on the bottom on the East River somewhere near the foot of 136th Street in the South Bronx" and thus outside the North Brother Island site area (Reedy 1988:14).

Another famous shipwreck occurred on June 15, 1904 when the excursion steamer GENERAL SLOCUM caught fire and beached off North Brother Island and 1051 persons perished. According to Irving Werstein's book about the incident, the boat ran aground about 20 yards off the south shore. The stern settled where the water was 30 feet deep and the bow on a sand bar only about 6 feet deep (Werstein 1965: 65-66). Coroner O'Gorman decided to send bodies to the Board of Health dockshed at the Manhattan morgue at the foot of East 26th Street. He also ordered the collection of personal belongings; there were many contemporary reports of looting of the debris and even of bodies (Ibid.:84). The Supervising Inspector, U.S. Steamboat Inspection Service, New York District, ordered the hulk towed to Hunters Point, Long Island, but on the way the ship foundered and went down in 60 feet of high tide water (Ibid.:93-94). The boat was shortly thereafter raised and towed to Robbins Dockyard at the Erie Basin in Brooklyn's Red Hook District (Ibid.: 127-128). It is possible that random artifacts related to the wreck might be recovered, but no significant deposits relating to the accident can be expected to be intact and no search for them is warranted.

CONCLUSIONS AND RECOMMENDATIONS

Because of minimum research potential and the known disturbance record as discussed on pages 2 and 3, no further archaeological consideration of the North Brother site for prehistoric resources is warranted. Documentary research and a field inspection on the island indicate that potential archaeological resources are limited to shaft features such as cisterns and privies from the historic era usage. It is likely, although not provable by documentary research, that sewer and water pipelines from the Bronx mainland were not in place until around the turn of the century, making it possible that privies received waste disposal and that cisterns stored rain water for approximately 15 years after the first buildings were constructed. When no longer needed, the shafts would have either been deliberately filled or used as trash receptacles. As discussed above, locating material culture remains from the early decades of operation of one of New York City's public hospitals could address a number of important archaeological research topics.

All or parts of these features - if they exist at all - may be intact or they may have been seriously disturbed by the underground water, sewer, and electrical system in use before the island was abandoned. Visual evidence obtained during the field inspection and a statement by a member of the Water Department staff as to the extensive network of utility lines on the island suggest substantial disturbance. Photograph 9 shows the above ground entrance to a utility vault, and Photograph 10 is a view into its interior space which is approximately 12 feet deep and whose horizontal extent is unknown, but probably hooks into a system of subsurface utility tunnels. Because of dense vegetation covering the site, if there are capped cisterns or privies they were not visible during the field inspection.

In the absence of conclusive evidence relating to the existence of shaft features, it is recommended that a systematic survey of the area in the vicinity of the extant 19th century buildings be conducted if North Brother Island is used as a sludge processing site. As proposed, a sludge facility would impact most of the island's area (Figure 3); the extant circa 1885 buildings are indicated by arrows on Figure 8. The survey should be conducted by archaeologists certified by the Society of Professional Archaeologists (SOPA) after the island has been cleared of vegetation prior to construction activity. If archaeological resources are encountered, a testing plan should be devised with the review and approval of the New York City Landmarks Preservation Commission.

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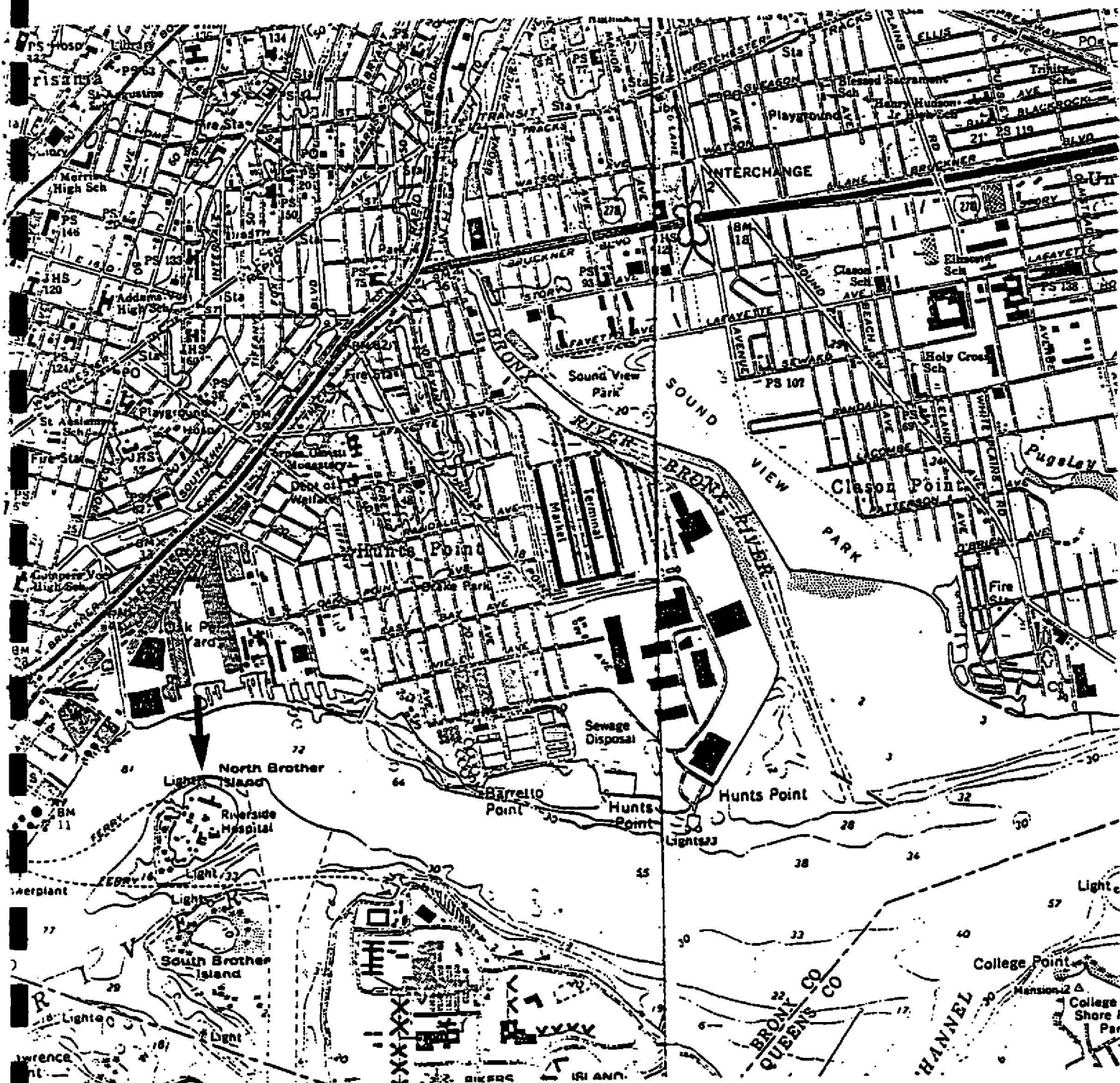
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Figure 1

U.S.G.S/ Topographic Map, 7.5' Series

Central Park Quad

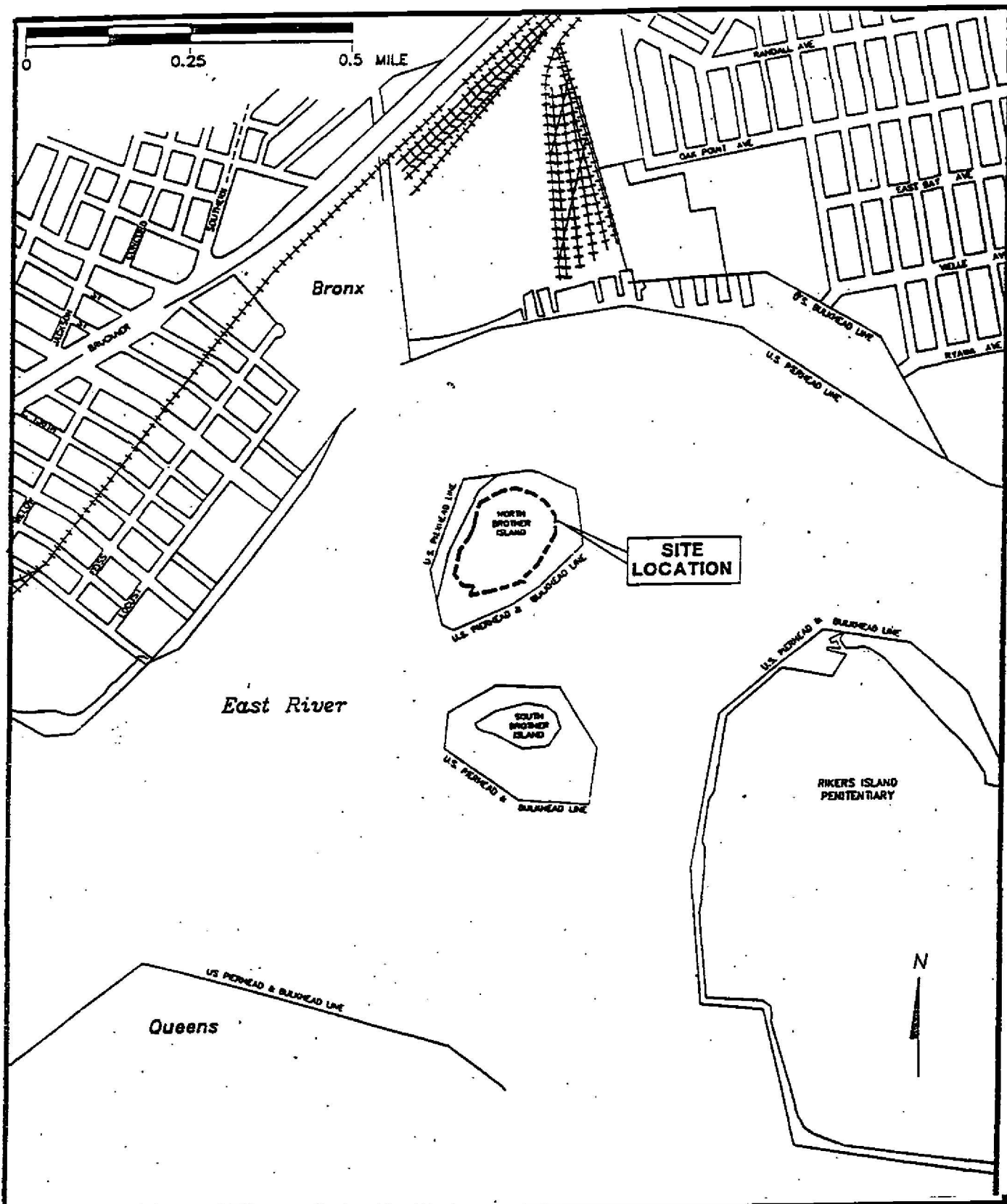
Flushing Quad



scale: 1:24000

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Figure 2



New York City Department
of Environmental Protection

**SLUDGE
MANAGEMENT
PLAN**

**Generalized Land Use
Bronx Site 28
North Brother Island**

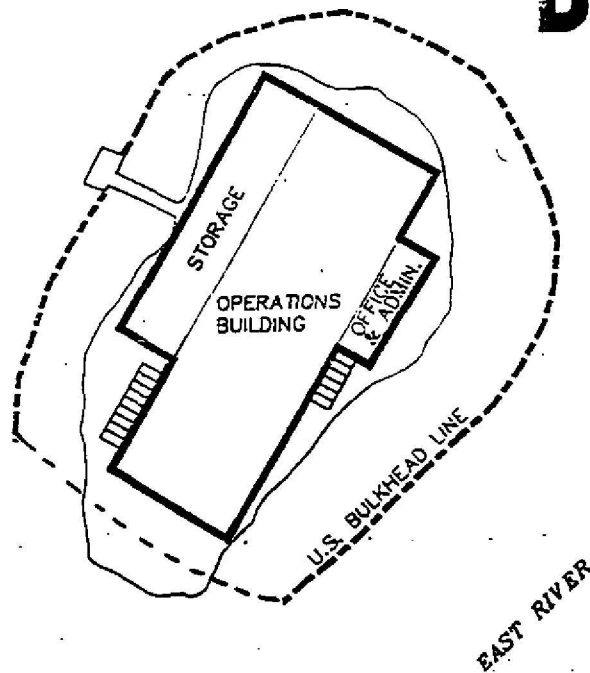
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Figure Bx28 3-1

Figure 3

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----- APPROXIMATE PROPERTY BOUNDARY

NEW YORK CITY DEPARTMENT
OF ENVIRONMENTAL PROTECTION

BRONX SITE 28; N. BROTHER ISL
BUILDING SITE PLAN

SLUDGE MANAGEMENT PLAN

0 200 400 FT.



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ANNES

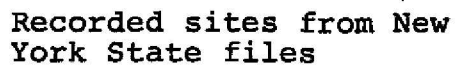
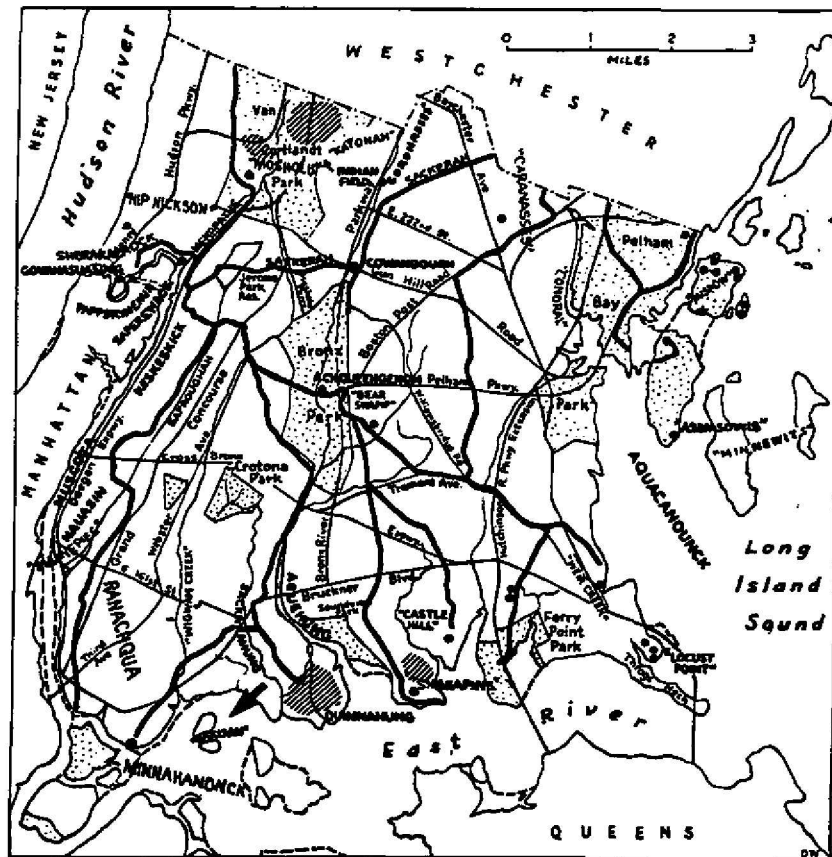


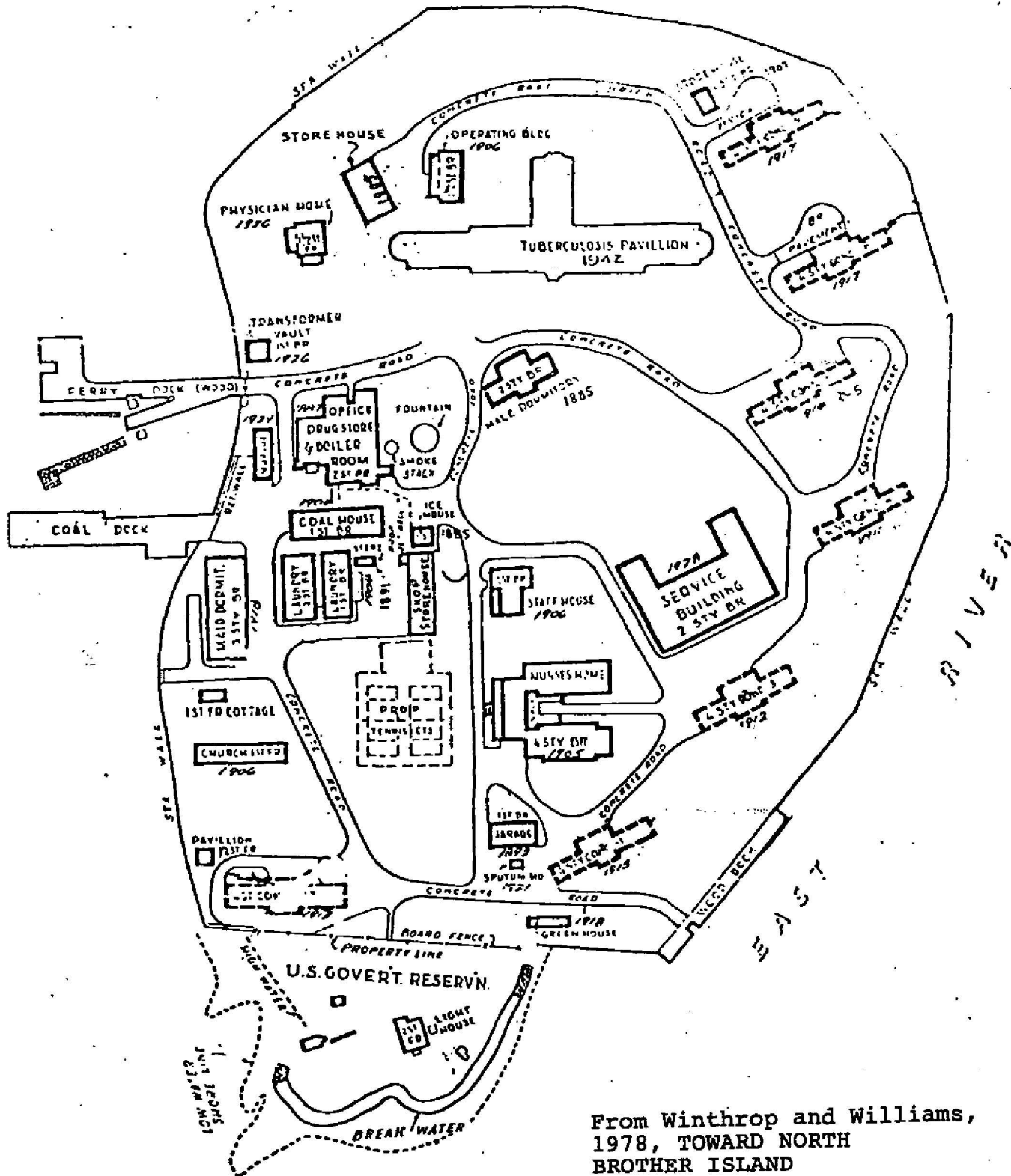
Figure 5



From Grumet, 1981, NATIVE AMERICAN PLACE NAMES IN
NEW YORK CITY.

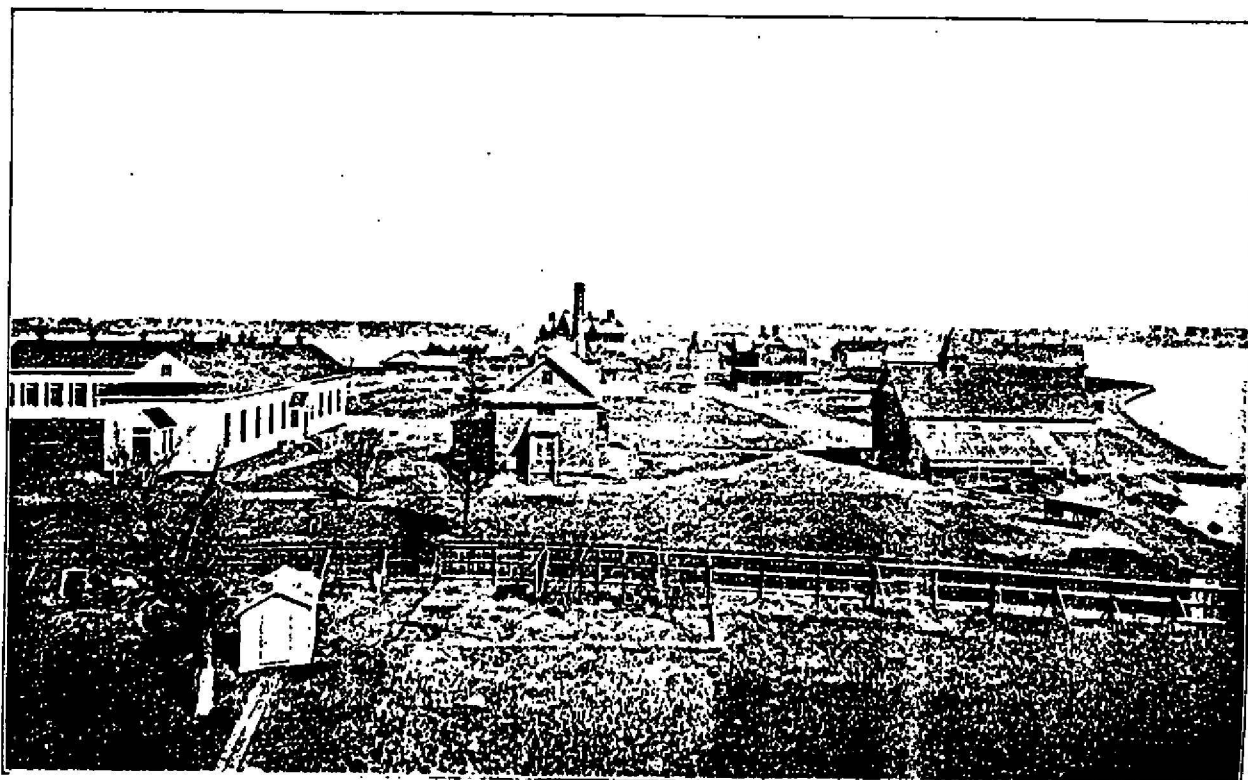
Figure 6

Figure 11: North Brother Island, circa 1944



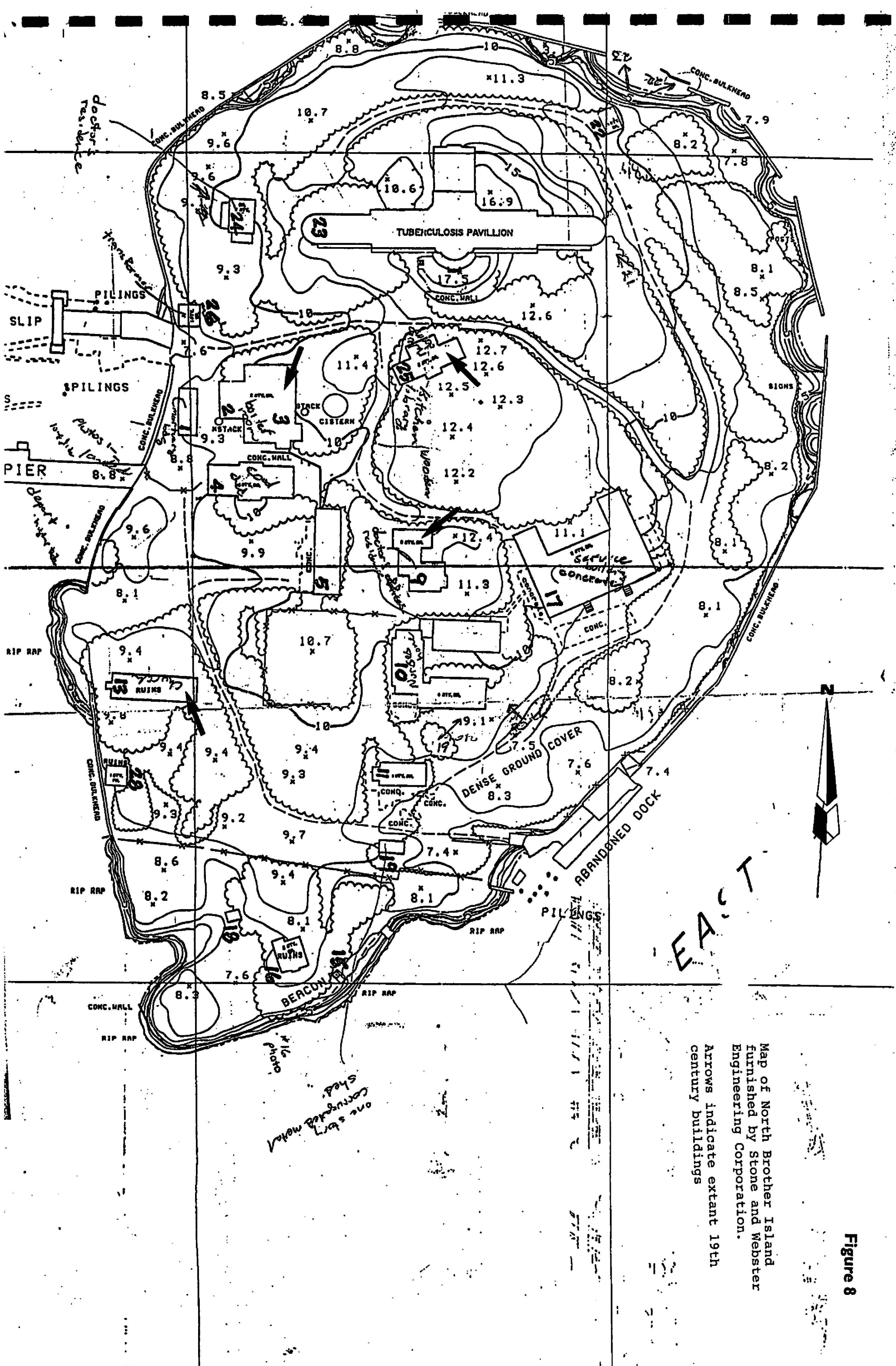
From Winthrop and Williams,
1978, TOWARD NORTH
BROTHER ISLAND

Figure 7



General View of North Brother Island, from Lighthouse.

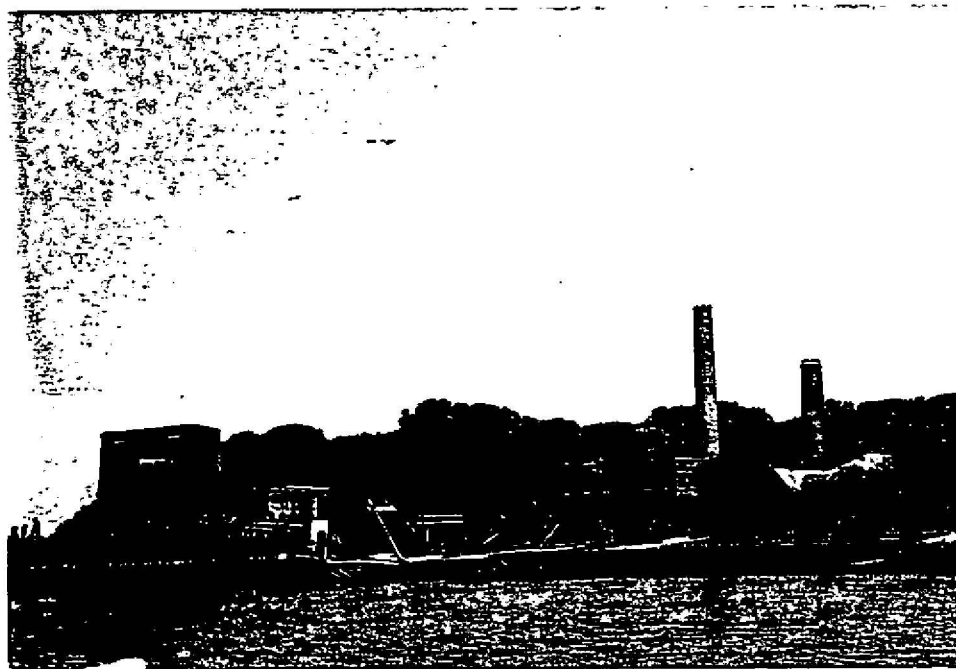
**From Municipal Reference Library Files
(looking north)**



General views of North Brother Island from the East River,
looking northeast.

Photograph 1: The west side of the island

Photograph 2: The east side of the island



Photograph 3: Front facade of the 1885 male dormitory.
It is building 25 on Figure 8.
Note the dense vegetation.



Photographs 4 and 5: Side and rear views of a c.1885-90 building, #9 on Figure 8.



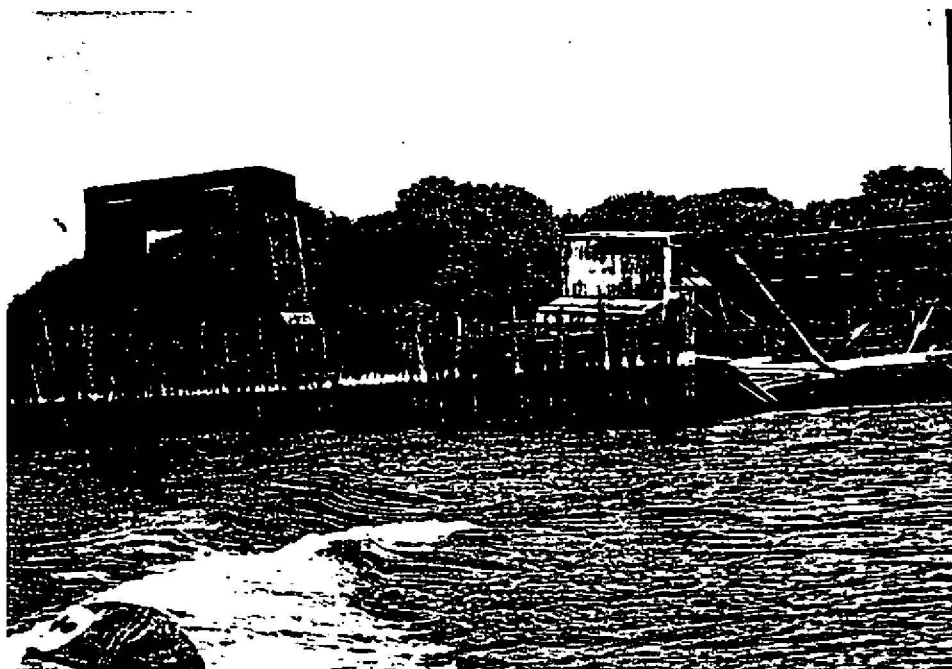
Photograph 6: Ruins of the ice house whose location is shown on Figure 6 as south of the cistern/fountain. This is a portion of the north wall, and the only wall that can be seen. The interior is inaccessible because of large, unstable building debris.



Photograph 7: Cistern behind the boiler house, #3 on Figure 8.
It is connected to the boiler by pipes.



Photograph 8: Looking northeast toward the coal and ferry docks. Note the deteriorated condition.



Photograph 9: Grade level opening or utility vault.

Photograph 10: View of interior of vault.

