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STAGE I
ARCHAEOLOGICAL SURVEY

NEVINS STREET
Butler Street to President Street

Contract 3F
RED HOOK WATER POLLUTION CONTROL PROJECT
BROOKLYN, NEW YORK

for

Mason & Hanger-Silas Mason Co., Inc.
under their contract No. 213085

with

Department of Water Resources
City of New York

by

Ralph S. Solecki, Phd.
597 Piermont Road
Demarest, New Jersey 97627

May 10, 1977

269

597 Piermont Road
Demarest, New Jersey
07627

May 5, 1977

re: Archaeological Survey
Contract 3F
Red Hook WPCP

Mr. August Matzdorf, P.E.
Area Manager
Mason and Hanger-Silas Mason Co., Inc.
437 Madison Avenue
New York, New York 10022

Dear Mr. Matzdorf,

I am sending you enclosed my archaeological Stage 1 survey report of the Red Hook Water Pollution Control Project PW-152, Contract 3F on Nevins Street between President and Butler Streets.

In my opinion, the proposed sewer cuts in Nevins Street and adjacent streets will have no adverse affect on the archaeology and early history of this area. One of the early mills, Freeke's mill, which figured heavily in the tragedy of the American retreat in 1776, lies just outside (as I calculate) the project. In all likelihood, this mill was destroyed by the construction of the canal and the later commercial buildings standing on the approximate spot.

So far as I could determine, this area was outside the range of Indian habitation, since no clues were found, and the records indicate that the Indians of this area lived elsewhere.

Very sincerely yours,

Ralph S. Solecki, Ph.D.

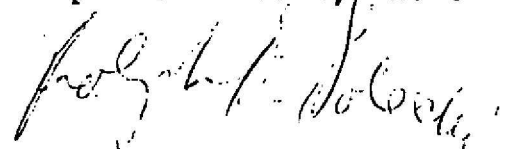


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INTRODUCTION

Nevins Street at the Gowanus Canal in Brooklyn is that part of Brooklyn with torn or uncertain local geographic identity. On the one hand, it appears to belong to the outer limits of Park Slope and on the other hand, it would appear to be part of South Brooklyn, although the canal and close environs appear to be recognized as the eastern limits of the latter area. It had been a tidal backwater area to Brooklyn proper in early times and of no apparent cultural importance. It appears to be the same today.

In any case, with the exception of the Gowanus Canal, which in effect is presently hardly more than an open sewer, Nevins Street, in the area surveyed between Carroll and Butler Streets, does not appear to have any distinguishing features. Its sole function evidently was to service the canal-facing lumber yards, coal yards and other commercial enterprises whose heavy bulk merchandise was transported cheaply by water to their destinations, or in reverse direction. This commercial importance cannot be minimized in the light of the contributory growth of the canal to the city.

The line of oily stain on the canal sides not more than a few feet below the top (Plate 1A) indicates that much of the area was "made" land or filled-in land, as the U.S. Geological Survey maps of the city indicates.

Thus, it is with surprise that one finds that this part of the Gowanus area had figured importantly in the history of the

American Revolution just a little over two hundred years ago in the Battle of Long Island. It all happened in a few hours of a single day, and the movements of the combatants went elsewhere, leaving numerous dead on the field. Nevins Street was not in existence then, and indeed was not planned until over sixty years later. The canal actually fostered the birth of the southward extension of Nevins Street to the area where the proposed sewer connection is to be made.

The single most useful documentary history in the library research appears to be Stile's History of Kings County and Brooklyn, 1884, which covers the most interesting history of this part of Brooklyn up to the date of printing. From that time to today, there appears to be little one could add to these pages except that perhaps the Gowanus Canal became more foul.

There is the story of a professor, who bent on doing some investigations in the canal in an aluminum canoe, foundered in mid-voyage when the canoe literally dissolved in the chemical-laden liquid. (Source: Prof. Arthur Pollock, St. Francis College, Brooklyn).

I am very much obliged to Mr. James Hurley, Director of the Long Island Historical Society for his suggestions and aid in research leads in the documentary search. The maps and atlases and the block records of the Nevins Street area were researched in the same institution. Records at the Dept. of Transportation, 40 Worth Street were also consulted for data relative to street openings. The library facilities at Columbia University were also used in the documentary researches. The office of Mr. I.

Ostrofsky, Chief Subsurface Exploration Section, N.Y.C. Dept. of Public Works in Manhattan, was very helpful in the compilation of geological data. Two field trips were made to the area, one on April 14th and one on April 30th.

Ralph S. Solecki, Ph.d.
May 10, 1977

HISTORY

According to Stiles (1884, Vol. 1, pp. 80, 84), a William Adriaense Bennet and Jacques Bentyn bought a tract of land comprising about 930 acres from the Indians, presumably the Canarsies, who were resident there, in 1636. The land around Gowanus bay and creek was occupied by Indians whose chief at the time of the early Dutch settlement in the 17th Century was called "Gowanes", according to one interpretation (Bolton, 1922, p. 144). This presumably gave the name to the area. Bennet and Bentyn had a house erected on the land, and made agricultural improvements of unspecified nature. Three years later, a Thomas Bescher moved next to Bennet, receiving a patent for a tobacco plantation close to Gowanus. For our information and most relevant to the area under discussion here, the next settler in the Gowanus region was a Frederick Lubbersen.* He took out a patent in 1640 for a large tract lying on the northern side of Gowanus Cove, including a large portion of that part of Brooklyn called South Brooklyn today (see also VanWyck, 1924, pp. 568-9; Colonial Documents New York, Vol XIV, pp. 31, 32).

These early settlers presumably found the village of Werpos at the head of Gowanus Creek (Bolton, 1922, p. 141 ff. and map VIIIa), (Fig. 1, 2). This was the closest village to present Nevins Street. It was situated at about Hoyt Street, between Butler and Warren Streets to the north of the present head of the Gowanus Canal. There was maize planting land just to the north of this village, which appears to have been part of a larger area of Indian lands called Marechkawingh (various spellings) or Marechawick. There was

a large Indian burying ground at Werpos near Frederick Lubbersen's house, which was disturbed when leveling took place there at a later time (Bolton, 1922, pp. 137-9). It was a small hillock at the intersection of Baltic and Hoyt Streets, about where the Gowanus Housing Development is, a couple blocks to the northwest of Nevins Street and the head of Gowanus Canal. Lubbersen's dwelling supposedly stood at Warren and Hoyt Streets, just a block north of the hillock.

Governor Kieft of New Netherlands granted land to a Cornelis Cool at Gowanus, but the exact location with respect to the area under consideration is not precisely known (Bolton, 1922, p.144).

Two Labadist monks, whose narrative is famous in the annals of early New York history, visited the Gowanus area on their journey to the New World in 1679. They enjoyed the hospitality of DeHart Bergen at their dwelling near the present location of 3rd Avenue and 37th Street. These monks evidently relished good food, and made much comment about the foot long oysters to which they were treated (Bolton, 1922, p. 142).

We are very much obliged to these monks for having recorded their observations on the customs of the local Indians and times, since these writings are virtually the only available records we have on this part of Brooklyn.

A road to Gowanus was established in 1704, and shortly after that a road and landing place was established near Denton's mill, which was within reach of vessels coming from Gowanus Bay (Fig. 3). Another road and boat landing place was laid out in 1709 at Freeke's mill (Stiles, 1869, Vol. 2, p. 178). Adolphus Brower and John Horn had houses near the present line of Butler Street on the Old Gowanus Road. This road ran on the present line of

Fifth Street. It deflected southwest toward the present junction of Middle Street with 3rd Avenue and followed the line of this avenue down to the shore (Stiles, *ibid.*). A Tom Poole lived near present DeGraw Street, but the cross street was not specified by Stiles. Stiles (*op.cit.*, p. 180) mentions that Jeremiah Brower who lived between Union and Sackett Streets, was the owner of the Brower's mill, later called Freeke's mill (Stiles, *op.cit.*, p.180). Nehemiah Denton lived near the present intersection of Powers and Carroll Streets (Stiles, *op.cit.*, pp. 180-1).

There was quiet in this area for the next some sixty seven years when the events of a single day shattered the calm of this tranquil backwater scene.

There is little to suggest in the area today that this was a bloody battle ground just over two hundred years ago during the American Revolution. What had been an important part of the American defenses against the British, turned out to be a two edged sword, leading to the death of hundreds of American troops.

The area of the present sewer project on the edge of the Gowanus Canal had originally been a slow moving creek and marshland. It was here that the mill ponds were constructed at the turn of the 17th Century and two mills, Freeke's and Denton mills, were established. The mill ponds and the Gowanus Creek formed a strategic part of the defenses taken in conjunction with the Wallabout Creek to the north. The line of American defenses was strung between these two waterways, strengthened by forts and other military lines. In effect, Brooklyn, or that part of Brooklyn facing on the East River including the important ferries, was rather like a peninsula constricted at the point between the head

of the Gowanus Creek to the south, and the head of the Wallabout Creek to the north (Figs. 4,5,6). The American defenses ran from the dock at Wallabout across Schencks Meadow to Fort Putnam, then southward through Johnson's farmland, across the Jamaica Road at Fort Greene at the head of the Gowanus Creek. Nevins Street line formed the boundary of the peninsula-like Brooklyn area from the rest of Long Island. This constriction was a bare mile across. The marsh in which the Gowanus Creek lay was rendered impassable at high tide as far north as the line of Baltic Street (Stiles, 1884, Vol. I, p.51). The lower part of the area of Brooklyn now called South Brooklyn was for the most part wet, marshy and swamp lands two hundred years ago.

There were two tidal mills which played a most important part in the history of early America. These were Denton's or the Yellow Mill, and Freeke's or the Old Gowanus Mill. Freeke's mill is reportedly the oldest in Brooklyn. It was located on the mill pond which was formed by damming off the head of Gowanus Creek or kill. Across this dam was built a road which led from Brooklyn to the mill, located at the eastern side of the mill pond just north of Union Street and west of Nevins Street, and reportedly between Nevins Street and Bond Street to the west (Stiles, op.cit., p.87). A closer look at the Perris (1855) Map compared with the Johnson map (Fig. 6) would have the Old Gowanus Mill situated more easterly than the above location. The publication by Clark (1910, p.8) places Freecke's (or Freeke's) mill near the present corner of Union Street and Gowanus Canal. Accordingly, Freeke's mill would have stood somewhere just about between Sackett and Union Streets, just to the east of the present Gowanus Canal

on the former south side of Freeke's mill road (also called the Porte Road) hard against the side of Freeke's mill pond. This mill was occupied as early as 1661 by DeForrest and Adam Brower, and was called Brower's mill as well as the Old Gowanus mill. It passed through ownership to John C. Freeke, who occupied the house during the time of the American Revolution. The tide mill, which was attached to Freeke's house, motivated a flour mill. An early mid-19th century print shows Freeke's mill as a single story structure with the mill on one side of the house. It had a gabled roof, with a single window in the roof (Field, 1868, p.35). This mill is wrongly identified as the Yellow Mills on Johnson's Map (Fig. 6).

The other mill, Denton's mill, was within almost hailing distance of the Freeke's mill to the south of the latter. It was situated to the south of the Old Porte or Freeke's mill road and according to Stiles (1884, Vol. 1, p.87) located at the foot of the Denton's mill pond on the northeast side of the present First Street, about midway between Second and Third Avenues. If we trust Clark (1910, p.8), we have a different location for Denton's mill, placing it farther north by a couple blocks at the corner of Carroll Street west of Third Avenue.

There was evidently a separate dwelling house on Carroll Street, midway between Nevins and Third Avenue. Stiles (ibid.) says that this house was burned down in 1852. There seems to be some discrepancy, or perhaps the mill was not used as a residence, since the illustration of Denton's mill shows a very substantial two story structure with a peaked and gabled roof. There are two windows in the upper story under the roof. At the base of the

structure, toward one end of it is illustrated a mill wheel (Field, 1868). Denton's mill was built by Adam and Nicholas, the sons of Adam Brower, who was the large land owner in this area in 1709. The mill pond was formed by damming off one of the side branches of the Gowanus Creek or Kill.

A visit today to the site of these mills is a depressing one, and it takes considerable strength and imagination to visualize the bucolic scene drawn up by the early lithographs. The former situation of Freeke's mill is best viewed from the Union Street bridge just west of Nevins Street, from a position on the west side of the bridge (Plate 1A). Looking north or toward the head of the Gowanus Canal, the location of the mill was about the location of the T. E. Conklin Brass and Copper Co., which faces on the Gowanus Canal. The canal can best be described as a Stygian mess, with a thick oily smear on the canal sides, and a thick coating of the same on exposed land surface, especially at the southern side of the bridge on the west side. Bubbles of gas erupting from below break the surface of the filmy liquid intermittently and continually.

A visit to the site of the Denton mill is even more of an adventure (Plate 1B). Second Street from Third Avenue to the Gowanus Canal leads one through a narrow lane between a high chain link fence and an abandoned warehouse. Threading your car through a double row of parked railway car sized trailers, one emerges at the foot of 2nd Street over a heap of garbage. The brick warehouse, several stories high, appears to have been vacant for some time. It fronts on Gowanus Canal. Looking south along the canal is the facility of a telephone company, and this is just about the point where Denton's mill had been located. The best

vantage point for photography is from the western end of the Third Avenue bridge over the Gowanus Canal, facing up the canal or north (Plate 2A). The mill had been situated on the east side of the canal about where the present telephone company facility mentioned above is located. The water of the canal is no less turgid than the water to the north, since it is one and the same. A hungry-looking stray young Shepherd dog was observed sunning himself in a clump of weeds just to the northern side of the western bridge-head on the Third Street bridge. Opposite the telephone facility on Third Street near the bridge is a junk yard.

Resuming our description of the history of this area during the American Revolution, from the old village of Brooklyn, the Porte Road or Freeke's mill road across the dam made a connection with the Gowanus Road. It was the first passage point across Gowanus Creek up from Gowanus Bay (Fig. 3, 4, 5). The creek continued on northward with low ground and marshes for some distance. Commanding the approach and overlooking the mill dam from the heights to the west was a fortification known as Fort Box (Figs. 6,7). It was shaped like a diamond, and located on or near the line of Pacific Street, just above Bond Street (Stiles, 1884, Vol. I, p. 54-55). About three hundred yards to the north of Fort Box was the more substantial fortification of Fort Greene (Fig. 6) situated a short distance above Bond Street between State and Schermerhorn. This fortification, also dug out of the earth, was built in a star shape. It six cannons commanded the Jamaica Road, which led to the Brooklyn ferry. There was a connecting entrenchment line from the northerly swinging curve of the Gowanus Canal to Fort Greene. Between Fort Greene and the next fortification,

Fort Putnam, also star shaped, was a series of entrenchments terminating at the head of Wallabout Creek which entered Wallabout Bay near a point on Flushing Avenue. In theory, it appeared to be a good line of defense for Brooklyn. But tragically, the Gowanus Creek became a ghastly horror for the retreating American troops, who piled up at the burned out bridge at Freeke's Mills. During the War of 1812 with England the fortifications were reconstructed between the head of the Gowanus Creek and the Wallabout, in evident fear that Brooklyn would be again threatened from the land side of Long Island (Stiles, 1884, Vol. I, pp.60-61).

The story of the rout of the American troops from the south of Gowanus Creek has been told and retold in many history books. One of the versions is that of John H. Lindenbush, then executive director of the Long Island Historical Society at the Hearings before the Subcommittee on National Parks and Recreation of the Committee on Interior and Insular Affairs, House of Representatives 92nd Congress, First Session on H.R. 1370 and H.R. 1121 and Related Bills (1972, pp.155-63). Mr. Lindenbush pointed out that the Wallabout-Gowanus Creek fortifications line was the second line of defense during the American Revolution. The old Porte Road which connected with the Gowanus Road from Brooklyn was paralleled by First Street (Fig. 6). And it was down this road to Freeke's mill pond dam and crossing that General Sullivan retreated with his troops (Plate 2B, Fig. 7). Quoting Mr. Lindenbush (1972, p. 159) in large part, "Abominable lack of concern for our history has characterized another site of historic significance. That is the area around Gowanus Canal. As indicated earlier, in 1776, this part of Brooklyn was swamp land across which had been con-

structed a single road. Down that road, following the action in and around Prospect Park, flowed the retreating force and control of the roadway was obviously crucial to the Americans.

"The Vechte-Cortelyou house (the old 'Gowanus House'), around which the Maryland troops took up positions, stood near the present intersection of Fifth Avenue and Third Street [Plate 3A, Fig. 8]. The house was destroyed in the closing years of the 19th century when Third Street was cut [Plate 3B]. The stones from it were buried near the site and the structure was re-erected in 1934 under the Works Progress Administration. It is now used as what must be the most historic comfort station in the entire systems of Parks of the City of New York. It is in a deplorable state of repair.

"The old creek's banks have been sheathed with concrete and its waters are under the jurisdiction of the Federal Government. It is an urban cesspool which local residents sometimes call, in the blackest of humor, 'Lavender Lake'. Men fought and died here as part of our American Revolution. To date, we have honored them with our sewage. We can as a nation do better than that and I sincerely hope that this subcommittee will give serious consideration to including at least a few hundred acres of land around the former creek bed in the Gateway National Recreational Area. -- The land seems to be doomed for use as an industrial park." (Lindenbush, 1972, p. 160). Nothing seems to have come of his plea.

There had been a tablet placed on the sidewalk of Fifth Avenue, which was successively moved to the north gable of the reconstructed "Old Stone House of Gowanus", and finally deposited

with the Long Island Historical Society when it was learned that children had placed firecrackers behind it. On the tablet is the legend, "Here on the 27th of August, 1776, Two Hundred and Fifty out of Four Hundred Brave Maryland Soldiers, under the Command of Lord Stirling, were killed in Combat with British Troops under Cornwallis" (Dillard, 1945, p. 72). This battle and the area is depicted in the publication by Higgins, "Brooklyn's Neglected Battle Ground" (1910), showing the condition of the historic spot over 60 years ago.

I visited the Gowanus house April 30, 1977 to verify Mr. Lindenbush's observations about the condition of the place, and found it hardly recognizable for the use intended by the W.P.A. (Plate 4A). Perhaps the only thing that has saved it from complete destruction is the fact that the walls are of thick stone. Nothing breakable is intact within the graffiti covered walls, and it takes extreme resolution to enter the portals erected in 1699. A chance conversation with some young boys playing in the playground which surrounds the house brought the happy remark that they really liked and appreciated the old house and used it to play "Army" in it.

The story of the debacle at Freeke's mill pond is that the bridge located there was precipitatedly destroyed before the trapped Americans could retreat over it. This seems to have been the fault of a Col. Ward, who had a regiment of almost 600 men whose duty it was to construct the defenses at this point. The Freeke's mill and bridge were ordered burned on August 27, 1776, and similarly Denton's mill and bridge were set fire to (Field, 1868, pp. 35-37; Bergen, n.d. p.478; Memoirs 1869, Vol. II, pp. 206-7). Col. Ward was able to effect his escape with his men but

hundreds of Americans were left to die on the other side of the Gowanus Creek. The high tide made the well-nigh impassable marshes and creek even worse, and Vechte's Canal, dug between the Old Gowanus road and the creek became a death trap for many Americans who thought it was easy to leap across (Memoirs, 1869, Vol. II, p. 206; Field, 1868, p. 37). General George Washington visited the area and viewed it from high ground to the west of Freeke's mill pond just opposite the terminus of the Porte Road, sadly viewing the battle in progress, with the Hessians pounding the Americans across the narrow pass over Freeke's mill dam where they were crowded together (Field, 1868, p. 35; Memoirs, Vol. II, 1869, pp. 194-210). The Hessian guns were located in the vicinity of Ninth Avenue. The bodies of nearly a thousand men were counted in the area after the battle between Washington and Third Street and the low ground in the neighborhood of Greene and Fourth Avenues and the heights overlooking Flatbush (Fig. 6). They were buried at the intersection of Third Avenue between 7th and 8th Streets on a miniature island (Fig. 6) (Memoirs, 1869, Vol. II, pp. 194, 195, 203).

According to Booth (1859, pp. 497-498), the battle around Gowanus Creek was very sanguine. Stirling's troops were thwarted in their attempt to cross Gowanus Creek, which was about 80 feet wide. They had charged Cornwallis' troops with fixed bayonets, but were surrounded by DeHeister just when the enemy were on the point of yielding. Some of the bloodiest conflicts of the war took place around the old Gowanus house, where Lord Stirling had made his residence previous to his capture (Denton, 1845, p. 31).

Undoubtedly the tragedy at Freeke's mill must have impressed the American soldiers for the duration of the conflict, not to speak of the effect on the local people. We can assume that during the next conflict with England during the War of 1812, there must have been some old campaigners around who gave sober advice to the younger men at arms about the failures in the Brooklyn campaign of defense (Fig. 9).

Following this last war, in which no action was seen in this part of Brooklyn, the Gowanus area appears to have fallen back into its erstwhile bucolic state. The city however to the west was flexing its muscles, and the Brooklyn ferries began to work harder to bring new people to the island, and slowly at first, the landscape began to be transformed. One of the earlier ideas dating from toward the middle of the 19th Century was to construct a canal between the Wallabout creek and the head of Gowanus Creek, so that goods could be moved back and forth conveniently and easily (Clark, 1910, p.22). This same plan was advocated years later when a politician advocated building the same kind of waterway, but for a different reason. This idea, which might be even a good one, was not followed as can be plainly seen.

*Lubbersen, Lubbirtse, Lubbertsen, Frederick, pp. 137-8, 139, 139 in Bolton, 1922-all the same man, but Lubbersen appears to be used most in the literature. Lubbertsen, Frederick is used in Van Wyck, 1924, pp. 549, 568, 595. Lubbersen, Frederic is used in Colonial Documents, Vol. XIV, pp. 31, 32; also VanWyck, 1924. p. 568.

SURVEY OF THE NEVINS STREET AREA BETWEEN BUTLER AND PRESIDENT
STREETS ON NEVINS STREET

I walked the area of the projected sewer on two occasions: April 14, 1977, which was essentially a photography survey; and a second survey on April 30, 1977, which was a reconnaissance plus photography survey to review spots which documentary research indicated special interest. Views of Nevins Street are illustrated in Plates 5A-12.

Starting from the junction of Butler and Nevins Street, on the west side of the street between Butler and DeGraw Street are a walled up brick building built in a single story and a double story stage. The sign over the front of the building indicates that it is owned by the McNally Bros. On the east side of Nevins Street between Butler and Douglass Streets is a walled up single story brick building bearing the legend "Lehigh and Scranton Coal Co.". North of this building on the corner of Butler and Nevins Street is a two story walled-up brick building, evidently a commercial building. Further down the street, on the east side of Nevins Street between Douglass and DeGraw is a fenced-in school yard. On the west side between DeGraw and Sackett Streets is a single story brick building owned by the T. E. Conklin Brass and Copper Co. Opposite it on the east side of Nevins Street is a single story brick warehouse of undetermined ownership. Between DeGraw and Union Streets, T. E. Conklin Brass and Copper Co. buildings continue on the west side of Nevins Street. The structures are more varied on the opposite side, with a three story tenement (apartment?) house on the corner of Nevins and Sackett Streets, a single story building, and a Getty gasoline station on the corner

of Union and Sackett Streets. Between Union Street and President Street, on the west side, is a large single story warehouse made of brick, which appears to have a lot of business. Opposite this building on the east side of Nevins Street is respectively an eating place, called the "Original Franks Corner", whose business must have gone elsewhere because the doors and windows are barred shut, and next to it an empty lot containing several worn-out automobile tires. All of the buildings, with the exception of the one on Butler Street, are fairly modern.

About a hundred years ago, The Bromley and Co. Atlas (1880) indicates that the commercial pattern of the area had already been determined by the canal's presence. It was already flourishing with industry, with a few scattered empty lots and some residences. Between Nevins and the Gowanus Canal from Carroll Street to Butler, the only through street is Union Street.

Starting from the north again, using Bromley's Atlas as our guide, on the west side of Nevins Street between Butler and Douglass Streets respectively were the G. Ross and Sons Lumber Yard, and the Kelsey and Loughlin Coal Yard. On the east side of Nevins Street were empty lots and houses. Between DeGraw and Douglass Streets on the west side of Nevins Street was the J. and T. Story Coal Yard. Empty lots were present on the east side of Nevins Street in this block. Between DeGraw and Sackett Streets on the west side of Nevins was the Fulton Municipal Gas Works, facing houses and empty lots on the opposite side of the street. Between Sackett and Union Streets on the west side of Nevins Street was the G. and T. Ross establishment. Opposed to this building on the east side of the street were again houses and empty lots. On

the west side of Nevins Street between Union and President Streets was the Kenyon and Newton Lumber Yard. On the opposite side of the street were houses and lots and the Union Planing Mill, which was connected with a Kenyon and Newton Co. structure. Lastly, between President Street and Carroll Street on the west side of Nevins Street was the continuation of the Kenyon and Newton Lumber Yard and the J. S. Loomis Lumber Yard. Empty lots and houses are indicated on the opposite or east side of this block.

Taking back the scene to over a hundred years ago, the Perris (1855) map shows that the entire area between Tubler Street and Carroll Street on Nevins was owned by a John C. Freeke. The canal is shown as running through a marshy area. Houses are not indicated on this map.

The area between Union Street and DeGraw Street on Nevins Street appears to have been part of the original dry land zone so far as can be told from a study of the early atlases and the Earth and Rock Borings of New York City Borough of Brooklyn map (1937), (Fig.12), and corroborated by the geological borings on Nevins Street (Fig.13).

Several block numbers of conveyances were examined by me in the library of the Long Island Historical Society, which has a set of the Commissioner Records of Kings County. These were examined conveniently, copies and photographed as need be, at the Long Island Historical quarters.

The old block numbers and the new block numbers are given below for the area of our concern from south to north, from Carroll Street to Butler Street on Nevins:

<u>Ward 10</u>	<u>Old Number</u>	<u>New Number</u>	
	250	446-447	south
	251	439-440	
	254	432-433	
	255	425-426	
	258	418-419	
	259	259-412	north

I made a search through what appears to be the most possibly productive blocks of records from between 1699, when the records began, to 1894, when the records ceased. These were all Section 2, Blocks 444, 447, 438, 439 440, 432, -433.

It is recorded in Liber 7, Page 266 of the County Records that Gerardus Beeckman conveyed land to Abram and Nicholas Brower on October 30, 1701. The latter were the enterprising proprietors of the first mill in Brooklyn, Brower's mill, later known as Freeke's Mill, or the Gowanus Mill. Adolph Brower conveyed the same parcel of land to John C. Freeke on March 24, 1798 according to the records in Liber 7, Page 188. This parcel was on the west side of Nevins Street, between Carroll and President Streets. Nevins Street appears to be mentioned for the first time in a conveyance from Issac Lefferts to N. Denton on December 22, 1794, in Liber 11, Page 223. However it appears that this was just a "paper" street at this time. Nevins Street is noted and evidently not yet put through President and Carroll Streets in a conveyance from James Brady to Arthur Benson on September 9, 1853, in Liber 334, Page 481.

In the records for Block 438, the heirs of Abram Brower conveyed to another Abram Brower land between Union and President Streets, part of a large track, on October 10, 1700 in Liber 2, Page 267. A most interesting bit of evidence surfaced in the form of an agreement from Henry Hungerford to John Wilson, dated October 1, 1853 (Fig. 11) to construct a canal and grant a right of way through proper in Block No. 432, recorded March 24, 1855, in Liber 389, Page 490. Nevins Street is mentioned in writing. The canal was to be 50 feet wide cut across the lands of Henry Jones, James Brady, Erasmus Bushnell and A. A. Benson. The canal

was to average 30 feet deep. This seems to be in error, because a ship with a draught of this size would never squeeze through the canal.

Another interesting record is the one given for Block 432, in a land conveyance from Daniel Hood to Stephen Nuckolls on November 10, 1864, Liber 647, Page 478 (backside of record). It shows that the Gowanus Canal was built, and that the relic of the old Mill Road was still in existence (Fig.10).

Nevins Street is mentioned in the records for Block 433 in the land conveyance of K. Clarke to Charles Hoyt on July 13, 1849, Liber 201, Page 304. The marshy character of the area is indicated in the last record examined in 1894, wherein Nevins Street appears to lie in a creek between Sackett and DeGraw Streets in a land conveyance from a M. Remsen to George Powers in Liber 412, Page 303. A check of the geological profile drawing (Fig.14) shows that this was all too true. It is very reminiscent of some land purchases today in the swamps of Florida or submerged acres elsewhere.

THE ROUTE OF THE PROPOSED SEWER CONSTRUCTION

The proposed sewer and its facilities between President Street and Butler Street on Nevins will have a length of 1075 feet (Fig. 13). There will be a branch intercepting sewer about 190 feet long entering Nevins Street from the west end of Sackett Street, and another branch intercepting sewer about 215 feet long leading in from the western end of DeGraw Street. There will be a parallel sewer line between Douglas Street and DeGraw Street. The sewer cut is proposed to be about five feet wide to accomodate the sewer pipes, which will vary in dimensions from 10 inches to 18 inches in diameter. Most of the sewer lines however, will be about 12 inches. There are some tide gate chambers, etc. for the control of the water flow because of the proximity to the low level here.

The invert line of the proposed sewer at President Street at Manhole No. 1 (or Regulator R-22) is about -2.9 feet, and slopes down northward along Nevins Street where at DeGraw Street the elevation is -7.20 feet at Manhole No. 7. The Regulator, Diversion and Tide Gate Chamber R-24 will have a depth of about Elev. -8.7. The short spur sloping from north to south to join at Manhole No. 8 (depth Elev. -6.38) will begin at about Elev. -1 near Douglass Street. There will be a pumping station at the north side of DeGraw Street and Nevins, reaching down to about Elev. -22. The main sewer line proposed between Butler Street and DeGraw Street will have a jog in its descent from the former to the latter streets. It will start at a depth of about Elev. +2.5 at Manhole No. 12, and slope down sharply from Elev. -0.5 to Elev. -6.0 in a distance of about 50 feet at Douglass Street, (Fig. 14).

The proposed sewer will make a cut about five feet wide on

the east side of Nevins Street. The branch interceptors are proposed to be put on the south sides of Sackett and DeGraw Streets respectively. These cuts will be about five feet wide to accomodate the pipes, with larger excavations for the facilities.

THE GOWANUS CANAL

According to Clark (1910, p. 21), who we take the liberty of quoting extensively here, "This canal occupies the valley of the old Gowanus Creek a very tortuous tide-water estuary, which served as the drainage outlet for a large section of Brooklyn. Portions of it were dammed up at an early date to create tide-water mill ponds. Its original situation is shown on the Ratzer Map, and that part of it north of Carroll Street on a map in Liber 42 cp. 412 (S.33). When the development of the surrounding territory for residential purposes became extensive the problem of drainage became of great practical importance and was first dealt with in a report made in 1847 by Major David B. Douglass, Engineer of the Croton Water Works, "On the Drainage and Gradation of that part of the City of Brooklyn which lies over, and adjacent to, the Gowanus Meadows", in which he submitted two plans:

"First, by excavating one or more basins near the head of the meadows, and connecting it, or them, by a channel way (navigable or otherwise), with Gowanus Bay. Secondly, by cutting a navigable canal through and through, from Gowanus Bay to the Wallabout."

Thorough investigation developed the impracticability of the second plan, and the first one was carried out instead.

The City of Brooklyn was authorized to lay out the Gowanus Canal, 100 feet wide, extending northerly from Hamilton Avenue, according to a description which is set forth in detail in the statute, and which has not been materially altered since; it included, however, a basin 300 feet long on the south side of Butler Street which was never constructed.

Mention is made of improvements in the canal in 1866, 1867 and 1872.

The idea of extending the canal between the Wallabout and Gowanus appears to have died hard, because a William John Gaynor, (1911) a politician, advocated the connection as a means of flushing out the Gowanus Canal through the action of tides. He would have the tides of Hell Gate rip through the Gowanus Canal, which in retrospect, having seen the canal and marveled at its condition, could do nothing but help it. However, such a project might backfire into the Long Island Sound on the one hand, and into New York Harbor, on the other, with the immense amount of self-contained sewage and oil contained in the canal. Mr. Gaynor (ibid.) deplored Old Gowanus and its bad smells.

Stiles (1884, Vol. 1) has some pertinent information about the Gowanus Canal. It appears that a Mr. Daniel Richards, the same man who built the Atlantic docks, petitioned in 1848-9 for the construction of a large navigable canal from Gowanus Bay to Douglass Street through the center of the meadows, into which the sewers from the higher ground on each side of the canal would empty. The canal was to be five feet deep below the low water mark, four feet from the high water mark, a hundred feet in width and about a mile in length, draining about 1,700 acres of land in the southern part of Brooklyn (Stiles, 1884, Vol. 1, p.151). An anonymous author (1890, Industries and Wealth of Brooklyn, pp. 66-67) mentions the healthfulness of Brooklyn which has unequaled artificial advantages of sewage disposal as a "highly desirable sanitary measure" because of its lateral sewers feeding into the Gowanus Canal.

Mr. Richard's great objective was to remove the "marsh miasma" which hung about Prospect Hill and other parts of the city, and to lay the lands open for use. The canal was estimated to cost about \$78,000, and the canal was to become a central depot for heavy water freighted materials, like cement, lumber, coal, lime, metals, etc., which indeed it did as events proved very soon after construction.

The canal did become a stimulus to Brooklyn, and Stiles (op. cit., p.152) estimates that at least 2,100 buildings were constructed as a result of the operations (op. cit. p.3).

Stiles (op.cit. p. 592-3) notes that the Commissioners of the Brooklyn Water Works decided that Gowanus Canal would be designated as one of the four larger divisions of sewer outlets. Plans were prepared in 1858, and in all cases, the main sewers discharged their loads into the tide water. While the higher areas were relatively easy because of their elevation to drain, the lower areas, such as around the Gowanus Canal presented a problem of drainage. The land was made mostly by filling in the large number of salt marshes and the mill ponds, raising the land a few feet above the bay. Because of the necessarily small fall, there was always the danger of sewer stoppage in the low lying land areas, such as around Nevins Street.(Plate 1A, 1B).

Concerning ship traffic on the Gowanus Canal, Stiles (1884, Vol. 2, p.643) gives us some dimensions. Accordingly, for vessels not over 15 feet draught, the canal has a depth of 12 feet at low water and 16 feet at high water. On the canal are lumber yards, coal yards, flouring, plaster and other mills and brick and stone yards, a sample of which we have seen in our surveys of April and May, 1977. The sides of the canal were docked in 1866, as noted above.

STREETS AND STREET PAVINGS

The history of roads in the area of our concern begins not with thoroughfares in the north and south direction, but rather in the east and west direction, when the early colonists sought some way to cross the Gowanus Creek. Before the cross was effectuated at Freeke's mill, the only way to the area on the south side of Gowanus Bay was very roundabout. One had to go south and east by Jamaica Road to the Old Gowanus Road, thence parallel to the creek to the bay. The construction of the Gowanus mill (later Freeke's Mill), and its sister Denton's or the Yellow Mill made connecting roads necessary. Both of these mills had landings which conveniently were reached by boats (Furman, 1824, pp. 39-40). The Brooklyn Commissioners ordered the road to the Gowanus Mill to be four rods, or 66 feet wide, and to be laid down in 1704. The road to the Yellow Mill was ordered laid down five years later, in 1709. This road, only two rods wide, appears to have been a branch off the main or Porte Road. The latter road (later called Freeke's Mill Road) connected Brooklyn with the Gowanus Road at the Cortelyou House at 3rd Street and 5th Avenue (Figs. 6 and 8). The roads were unpaved, and indeed were never paved so far as records searched indicate.

There is confusion among the early map makers and recorders concerning the location and naming of the two mills. Freeke's mill has been confused with Denton's or the Yellow Mill, and Furman (ibid.) appears to have gone astray in his description, so far as can be checked by other sources.

In the Brooklyn Compendium, List of Paved Streets in the Borough of Brooklyn, the records show that Nevins Street was laid

down on maps in 1835 (p.22). DeGraw and Butler Streets were also indicated (pp. 20,21) even though the land was still creek and marsh, and the Gowanus Canal was not to be built for another generation. On Schedule C (p.34) of the same publication for the year 1835, Nevins Street was indicated as planned for a width of 50 feet between Fulton Street southwest to Carroll Street. It should be noted that the east-west streets took their identifications from the already named streets farther to the west in Brooklyn proper, and these street alignments were simply pushed eastward. Similarly for the north-south streets, which took their identities from the Fulton Street latitude.

According to Burt's annotated Brooklyn Compendium (p.333), although Nevins Street had been progressively paved to the north in the area of Atlantic Avenue, which was paved in 1836, Nevins Street between Baltic and Carroll Streets did not see paving until the Civil War. It was paved with granite blocks about December, 1868. There is no indication of how wide the street was at this time, but it must have been fairly narrow then, or no wider than at present. It saw repaving between Baltic and Carroll Streets with grade No. 1 granite blocks on six inches of concrete with a contract date of October 1, 1912. The street was recorded as 26 feet wide. It appears to have kept the same width today, necessitating (we suppose) that it be made a one way (southward) street, where cars with one set of wheels up on the sidewalk is a normal occurrence. It is presumed that the spur to the street activity (even though belatedly) came about with the construction of the Gowanus Canal, authorized in 1850 (Brooklyn Compendium, pp. 83-4). It may be noted that Nevins Street was regulated as 50 feet wide between Pacific Street to Fulton Street

in 1835 (Brooklyn Compendium, p. 65), indicating that this southerly extension of Nevins Street was relatively not important or trafficked as much as the area around Fulton Street. This also indicates that the actual streets did not conform to the original street plans as laid down originally (viz. the 1835 plans for a street width of 50 feet for Nevins Street between Fulton Street south to Carroll Street).

The Brooklyn Directory for 1854-1855 (P. 579), shows that there was a Nevins Street between Fulton and Bergen Streets, to the north of Butler Street. There must have been some great changes made in the next year, because the same directory for the year 1855-6 on page 7 indicates that Nevins Street reached between Fulton Street and Douglass and 9th Streets, in the area of our concern. This presumably came about, again, because of the Gowanus Canal, newly advanced.

No record of landfill in the area was found. However, the geological profiles suggest that a good bit of fill must have come from the excavation of the canal.

The Sewer Cut and the Stratigraphy

The invert line of the proposed sewers (Fig. 14) will reach into, for the most part, the fill layers. It will cut into Layers A¹, A², which constitutes fill and "possible fill", and affect about two feet thickness of Layer E in the area of Union Street, and a small projection of Layer E at a point north of Sackett Street. North of DeGraw Street, both branches of the sewer proposed in that section will lie exclusively in the fill zone, with the exception of a cut through Layer C, which consists of gray organic silt, clay, sand, etc. It is presumed that this is part of the original ground in this area. With the exception of the area:

1. lying between a point just south of Douglass Street to DeGraw Street,
2. a point just north of Sackett Street, and
3. the original low lying land area between a point midway between Union and Sackett Streets and between President and Union Streets (a distance of about 300 feet),

all of the area seems to have lain at or below sea level in this section. If we assume that the sea level had risen in the last couple of hundred years, there would have been more land surface exposed. But at present we cannot be positive about this in this area.

Study of the Geological Borings

Twenty borings were made by the geologists from Carroll Street to Butler Street along the line and in the vicinity of the proposed sewer line (see figure 13), as follows:

Carroll Street between Nevins and Gowanus Canal - 2 borings Nos. 1^A, 2.

Nevins Street between Carroll and President Streets - 3 borings, Nos. 3, 4, 5.

Nevins Street between Union and Sackett Streets - 2 borings, Nos. 6, 7.

Nevins Street between Sackett and DeGraw Streets - 2 borings, Nos. 9, 10.

DeGraw Street, northwest corner of Nevins and DeGraw Streets, and west of Nevins Street - 1 boring, No. 13.

Nevins Street, between DeGraw and Douglass Streets - 2 borings, Nos. 14 and 15.

Nevins Street between Douglass and Butler Streets - 3 borings, Nos. 16, 17 and 18.

Butler Street between Nevins Street and the Gowanus Canal - 2 borings, Nos. 19 and 20.

The "0" datum elevation on the profiles is Brooklyn Highway Datum which is 2.56 feet above mean sea level at Sandy Hook as established by the U.S. Coast and Geodetic Survey.

All of the borings were found by the city geologist Mr. Peter Kukk, who located them under the arches of the Brooklyn Bridge on the Manhattan side. I examined them on April 27, 1977. In the sampling procedure, samples were collected regularly every four or five feet, down to a maximum of about 30 feet depth.

Thus there were about six samples for each boring. These samples appear to be representative of the geological horizons encountered so far as I could determine, and the profile drawing (Fig. 14) seems to be an accurate representation of the situation. One peculiarity noted on the boring profiles was the occurrence of sand permeated with oil. I noted this in Samples 3, 4 and 5 of Boring 13; Samples 2 and 3 of Boring 6; Samples 4 and 5 of Boring 14; Sample 4 of Boring 12; and others, the oil smell clustering around a depth of ca. -10 feet. There is a note on one of the boring sheets indicating that "Strata from Elev. -7.6 to -20.6 contain large amounts of oil, probably seepage from Gowanus ship canal".

Only one sample, No. 3 of Boring 14 contained some shell fragments in peaty organic silt. The shells however, were not the type generally used by the Indians or colonists for eating purposes (like a limpet).

I have distinguished five soil horizons in the geological profile, lettered A, B, C, D and E. These layers are described as follows:

Layer A - This layer is divided into two parts, A¹ and A². Layer A¹ is a blanket of fill composed of sand, gravel, cinders, brick fragments and coal. It covers the whole area, averaging about ten feet thick. It begins at street level, which is about 8 feet above 0 datum at Carroll Street, 10 feet above datum at Butler Street and about 5 feet above datum at Douglass Street. The present ground surface elevation is about an average of 8 feet above 0 datum. Layer A¹ is thickest at between Butler and DeGraw Street, where it overlies Layer B. In this area, there appears to have been a former channel of the Gowanus Creek, because

of the concentration of brown peat and some organic silt (Layer B).

Layer A² seems to be a secondary "possible fill" blanketing in part under Layer A¹, lying between President Street on the south and halfway between DeGraw Street and Douglass Street to the north. It lenses at both ends, with a thickness in the middle of about 10 feet. Its lower part conforms to the undulations of the underlying Layers C and E to the north. Layer A² contains fine to medium brown sand, trace to some silt, a trace of gravel. I suspect that this is truly a fill, which was in all likelihood dredged out of the Gowanus ship canal during its construction in the 1850's, and dumped on the side of the canal. The unevenness of this fill was later smoothed over with land fill.

Layer B - This is a brown peat lens containing little organic silt situated between Douglass Street and Butler Street in a kind of swale. It must have represented an arm of the Gowanus Creek at this point since it lies below sea level (or about 8-10 feet below 0 datum elevation).

Layer C - This is a lense of gray organic silt with clay, a trace of fine sand, a trace of peat, a trace of shells, and occurs discontinuously in the profile, lying in the south and in the north of the geological profile between Carroll Street and Butler Street. Layer C has a varied thickness to a maximum of about 10 feet. This layer lies below 0 datum, and about below mean sea level.

Layer D - This is a curious wedge shaped section of peat about 3 feet thick cutting some 90 feet into the section between Layers C and E. It lies well below sea level, or about 12 feet below 0 datum elevation.

Layer E - This is a layer composed of 10 lenses of brown sand and silt, with and without gravel contents. It is presumably of late Pleistocene origin, of Wisconsin age. One lens is above sea level at Union Street where it is capped by the Layer A².

Much of the original land surface in this section appears to have lain under water (at least the present water elevation), as in a marsh, with the exception of a stretch between President Street and halfway between Union and Sackett Streets. It is the probable point of land west of which the old Gowanus Mill or the Freeke's Mill stood. There is another point of what was probably dry land between DeGraw and Douglass Streets. The possible lagoon or creek basin has been noted between Douglass and Butler Streets. It is known that the sea level is rising. Were the sea level even a foot lower a couple hundred years ago (a distinct possibility), there would have been more land exposed in the area.

The U. S. Works Progress Administration map (Fig. 12) shows some interesting surface details which taken in conjunction with the subsurface geology, appears to bear out the borings information. Thus, there appears to be a projection like a foot extending from the east along Carroll Street, expanding diagonally northwestward toward Nevins and Sackett Streets. The Gowanus Creek, which was followed to some extent in this area by the Gowanus Canal between Bond and Nevins Streets, branched northeastward in the area around Butler Street, accounting for the low point in the profiles, containing the peat (Layer B). The map does not exactly conform to the borings information, but this could be expected.

Of special interest is the fact that the shortest distance

between dry land points appears to be between the "foot" of De Graw, Sackett and Nevins Streets, and to the northwest, the projection formed by the land at Bond and Douglass Streets. This is the route chosen by the constructors of the Porte Road, or as it was called later, the Freeke's Mill Road. A dam was put across the creek, over which the road traversed at this point.

No trace or suggestion of archaeological evidence was found in my examination of the soil borings, nor was there any suggestion of the same in the geological profiles.

CONCLUSIONS

From my study of the history of the area and the physical evidence of the geological borings, plus the position of the proposed sewer cut, in my opinion the work will not have any adverse affect on the archaeology or history of this area. The remains of the Freeke's mill appear to be tantalizingly near somewhere close to the present canal between Sackett and Union Streets, but it will not be affected. The Old Mill Road must have passed close to the mill on the point of land between Union and Sackett Streets. No other buildings of early historical nature have been identified in the literature search around this mill. We have the advantage of possessing early pictures of the mill and surrounding terrain, which serve as excellent guides. Most of the area appears to have been marsh and swamp land, with the exception of the exposed land as noted. The origin of the fill is somewhat problematical, except that it would appear certain that some, at least Layer A² was probably dredged up out of the canal when it was excavated. The amount of soil from a cut 100 feet wide and about 12 feet below sea level would have constituted an enormous amount of fill, which had to be disposed of economically. The presence of the marshes and low ground along the route of the canal would have been the most logical choice for the dump. The Layer A¹, which contained coal, bricks, cinders and other materials, presumably came from the normal sources. Actual habitation of the area on some kind of scale was not possible until after the land was stabilized with the fill, which again was after the canal was put through. This date was about the 1860's at the earliest. As Richards predicted, the canal became a central point for heavy cargo industry.

The area does not seem to have been populated by Indians. According to all sources consulted, their habitations and planting fields were to the north and west of the area, in the region called "Werpoes". Undoubtedly they must have hunted and fished in this area, and probably like the colonists following them, used to traverse the Gowanus Creek at the then easiest crossing point, now the vicinity of present Union Street.

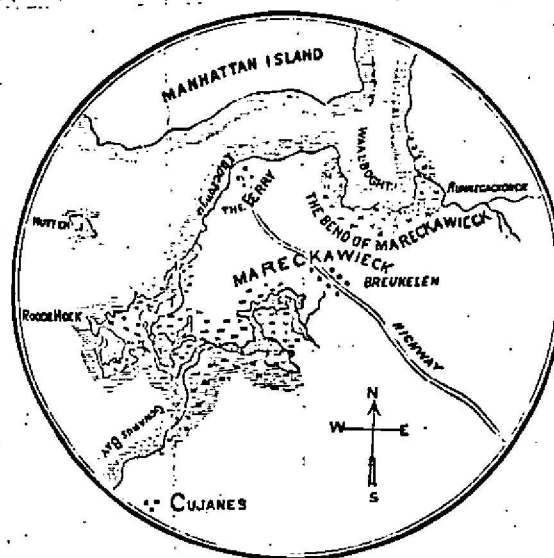
ILLUSTRATIONS

ILLUSTRATIONS

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- Figure 2 - Map showing the Indian sites of the 17th century, as documented in the early records, from Bolton, 1922.
- Figure 3 - Map showing the important features in the Gowanus Canal area in the late 17th and 18th centuries. From Fraser, 1909. The Freeke's Mill or Porte Road is shown running from the Gowanus Heights across the mill ponds toward Bergen Hill and Brooklyn. This road was laid out in 1704 as "four rods wide", or about 66 feet wide, which is a very ample width for a country road.
- Figure 4 - Map, originally in color, showing the disposition of the American and British troops in the American Revolutionary War in August, 1776. Reproduced from L. I. Historical Society Memoirs, Vol. 2, 1869.
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- Figure 7 - View of the Freeke's millpond, Freeke's mill and Fort Box, taken from Memoirs of the L.I. Historical Society, Vol. 2. This view is looking to the west over the Porte Road towards Brooklyn Heights. The mill stood about on the east side of the present Gowanus Canal, between Union and Sackett Streets. Porte Road in this view probably was located about where Sackett Street is today or slightly to the south of the present line of Sackett Street. The road, laid out in 1704, was about 66 feet wide. Present Nevins Street probably ran from left to right in this illustration, just the other side of the rail fence. There was a public landing place at the mill for boats connecting with Gowanus Bay.

- Figure 8 - View looking northwest from the Gowanus Heights overlooking the battle field of 1776 at Gowanus. In conjunction with Fig. 3 and Fig. 6 above, the Cortelyou House or the Stone House of Gowanus is to the left in the picture, about the line of 3rd Street and 5th Avenue. The road in the foreground is evidently the Gowanus Road which followed the line of 5th Avenue at this point. Its junction with the Porte Road leading to Brooklyn is just above the two standing figures. The house to the right of center is not identified, but may be the Denton House. Denton's Mill pond with what appears to be "Vechte's Canal" appears to be shown to the left of center. In the distance at the end of the mill pond is Denton's Mill, here seen vaguely. Taken from Memoirs of the L. I. Historical Society, Vol. 2, 1869.
- Figure 9 - The line of American fortification between the head of Gowanus Creek and the Wallabout during the War of 1812 with England. From Stiles, 1884, Vol. 1.
- Figure 10- Showing the location of the proposed Gowanus Canal cut, and the location of old Mill Road (in dotted lines). Freeke's mill stood at about the upper left hand corner of the darkened property line where the old Mill Road makes a sharp bend. From the land conveyance of Daniel Hood to Stephen Nuckolls, Nov. 10, 1864, Liber 647, Page 478, Ward 10, Section 2, Block 432.
- Figure 11- Agreement to construct a canal in Brooklyn at Nevins Street, October 1, 1853. The canal was proposed to be 50 feet wide. From Liber 389, Page 490, Brooklyn Records Office. Copy in the L. I. Historical Society.
- Figure 12- Rock Formations, traced from Earth and Rock Borings of New York City, Borough of Brooklyn showing Location of Borings, Excavations, etc. Works Progress Administration, Board of Estimate and Apportionment, City of New York, and Columbia University Department of Geology and Mineralogy, 1937.
- Figure 13- Route and Boring Location Plan.
- Figure 14- Section of Nevins Street showing proposed intercepting sewer and geologic profile.

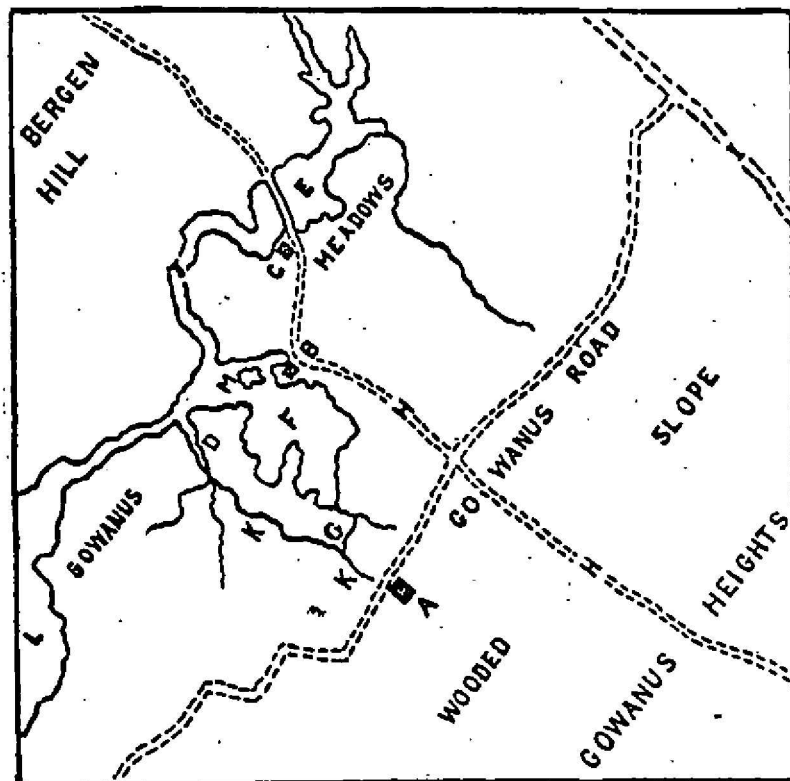


MAP SHOWING THE RELATIVE POSITIONS OF THE VILLAGE OF BREUCK-
ELEN AND ITS ADJACENT SETTLEMENTS, IN 1640.

Figure 1



FIGURE 2



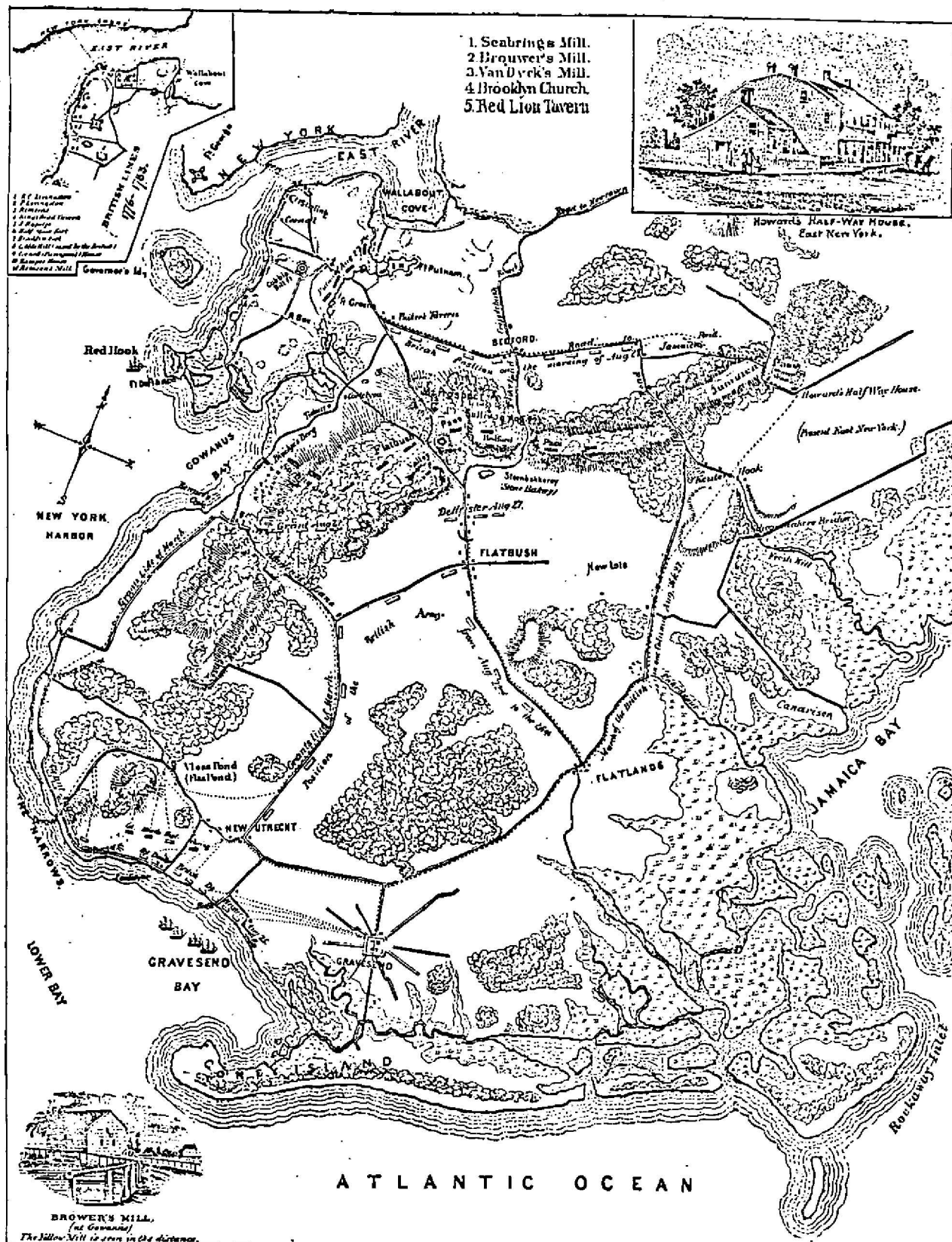
- A Stone House of Gowanus, owned by the Vechtes in 1699 and 1776.
- B The Lower Mill, built by Abram Brower in 1701. Owned by Nehemiah Denton during the Revolutionary War, and then called Denton's Mill.
- C The Upper or Gowanus Mill—Oldest Mill in Brooklyn, called Freeke's Mill during the Revolutionary War.
- D Branch of Gowanus Creek extending into Vechte Farm. At the present day an arm of Gowanus Canal.
- E Upper, or Freeke's Mill-Pond.
- F Lower Mill-Pond. Called Denton's Mill-Pond during the War.
- G Private canal of Nicholas Vechte, connecting Brower's Pond with his own creek.
- H Porte Road, running from Gowanus Heights across mill-ponds.
- I Flatbush Road, running from Flatbush, over Wooded Heights, to Brooklyn.
- J Gowanus Creek, now the Gowanus Canal.
- K Brook on the Vechte Farm, rising from spring beside the Stone House and emptying into arm of the Gowanus Creek.
- L Gowanus Creek widening to Gowanus Bay.
- M Island where many soldiers were buried.

FIGURE 3

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FIGURE 4



MAP OF THE BATTLE OF BROOKLYN, AUGUST 27, 1776.

FIGURE 5

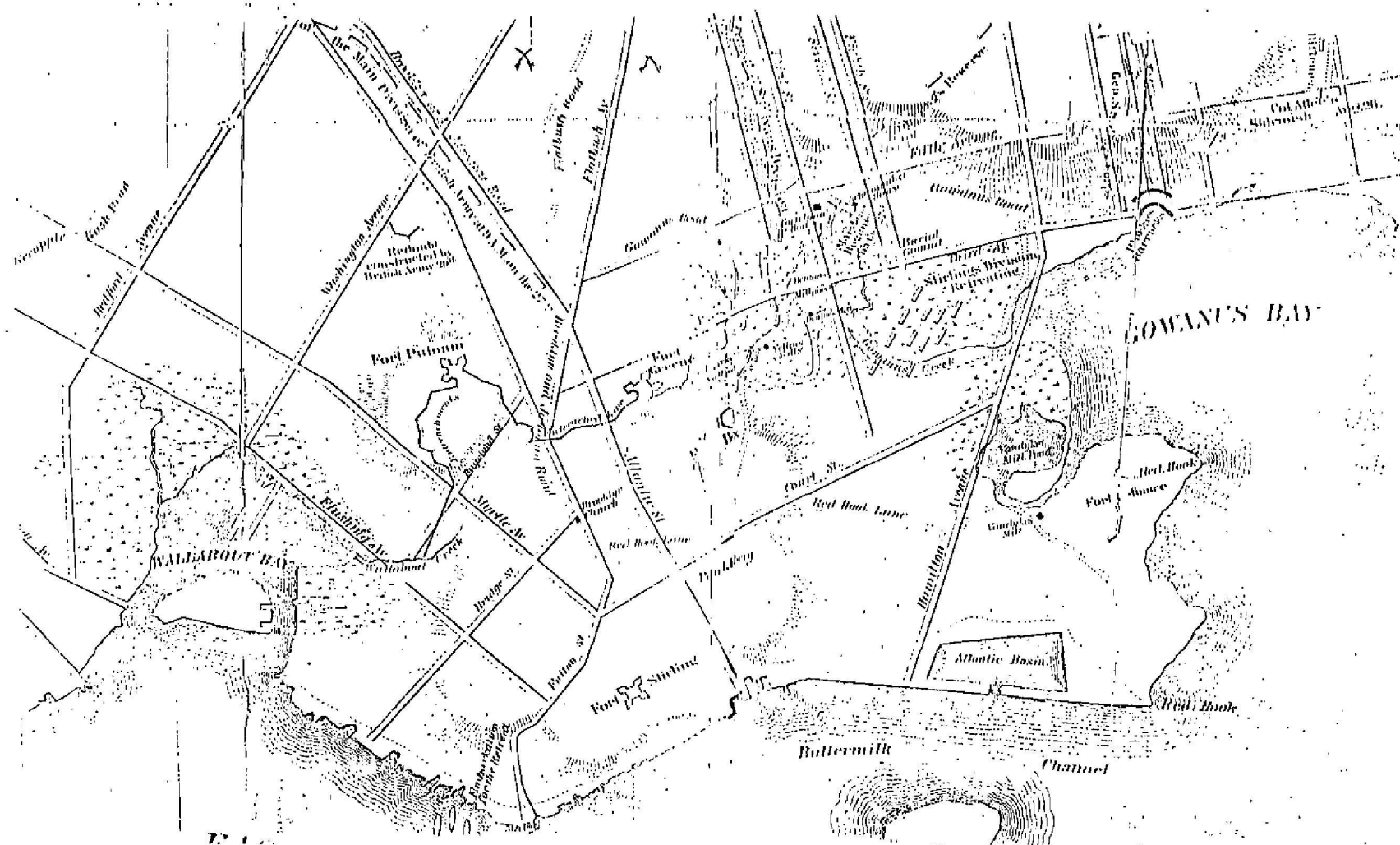
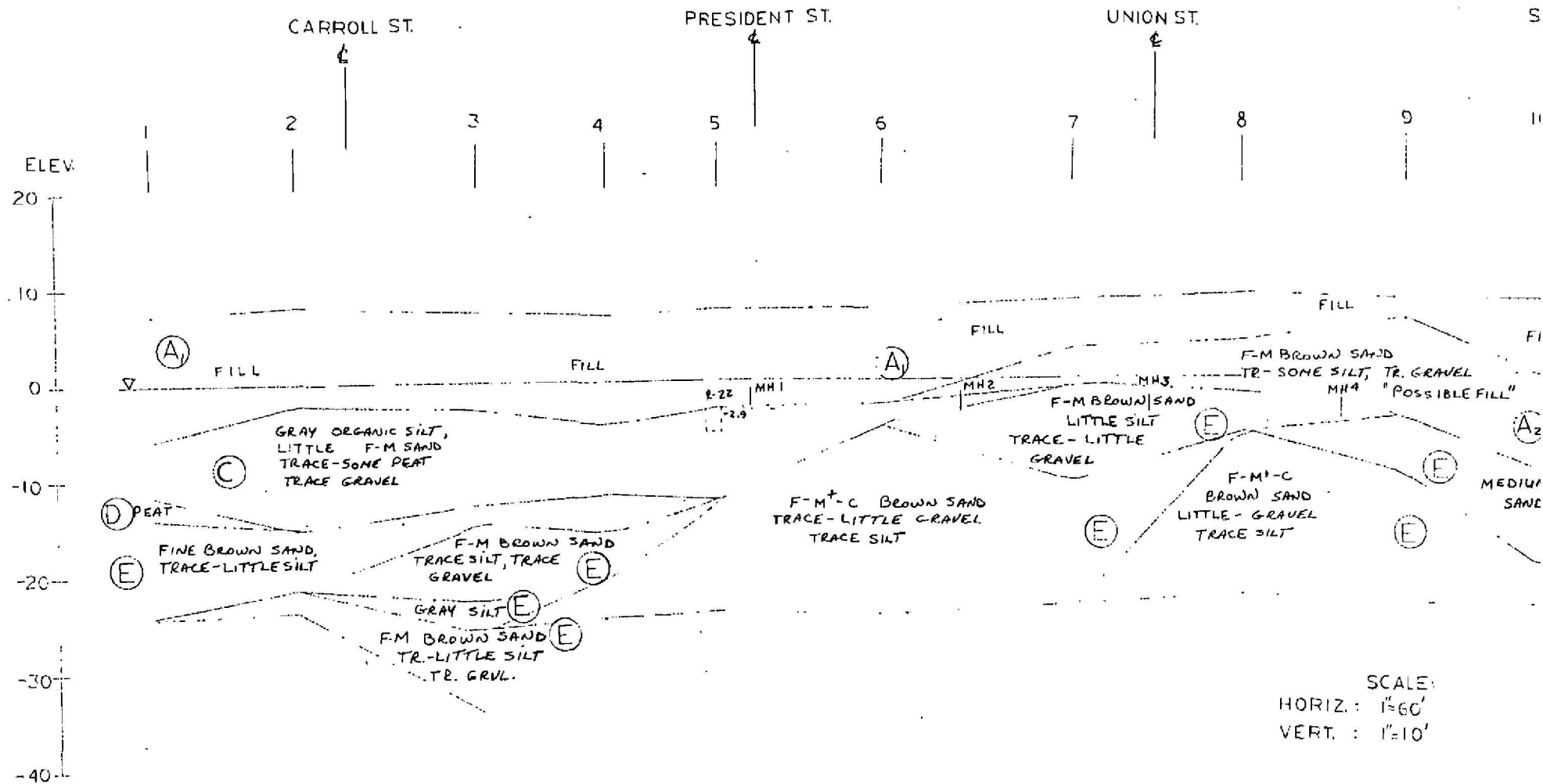
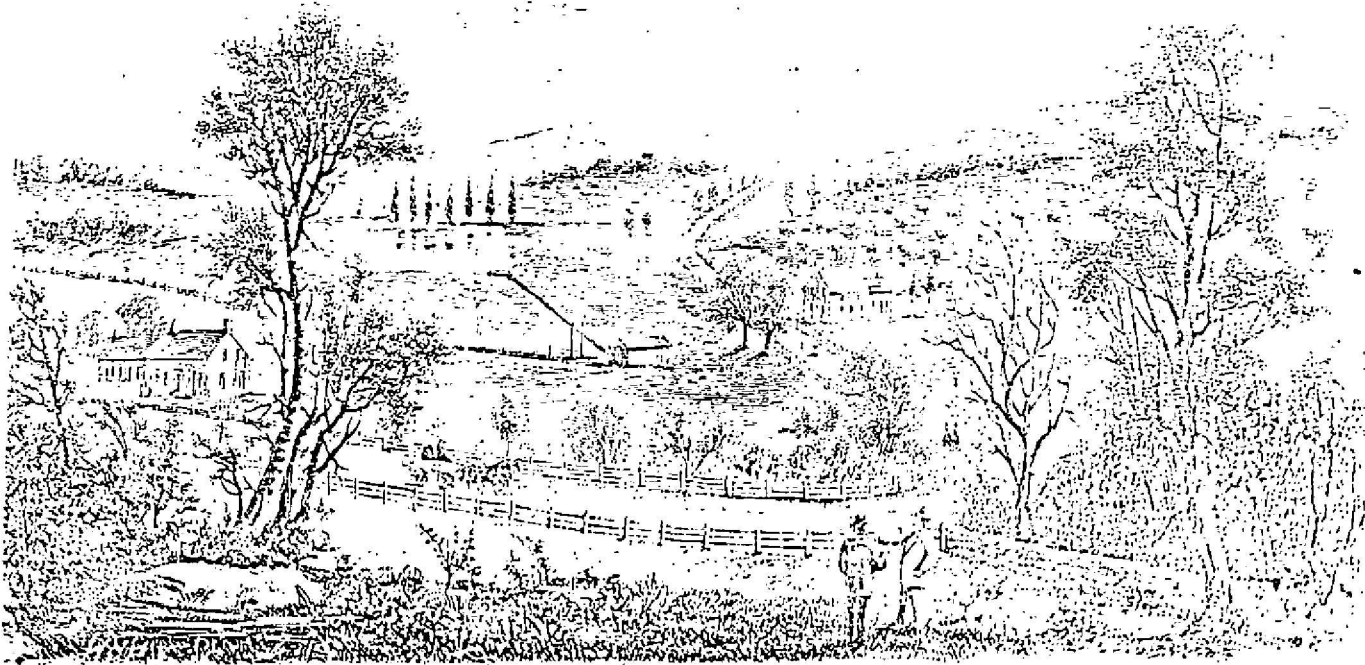


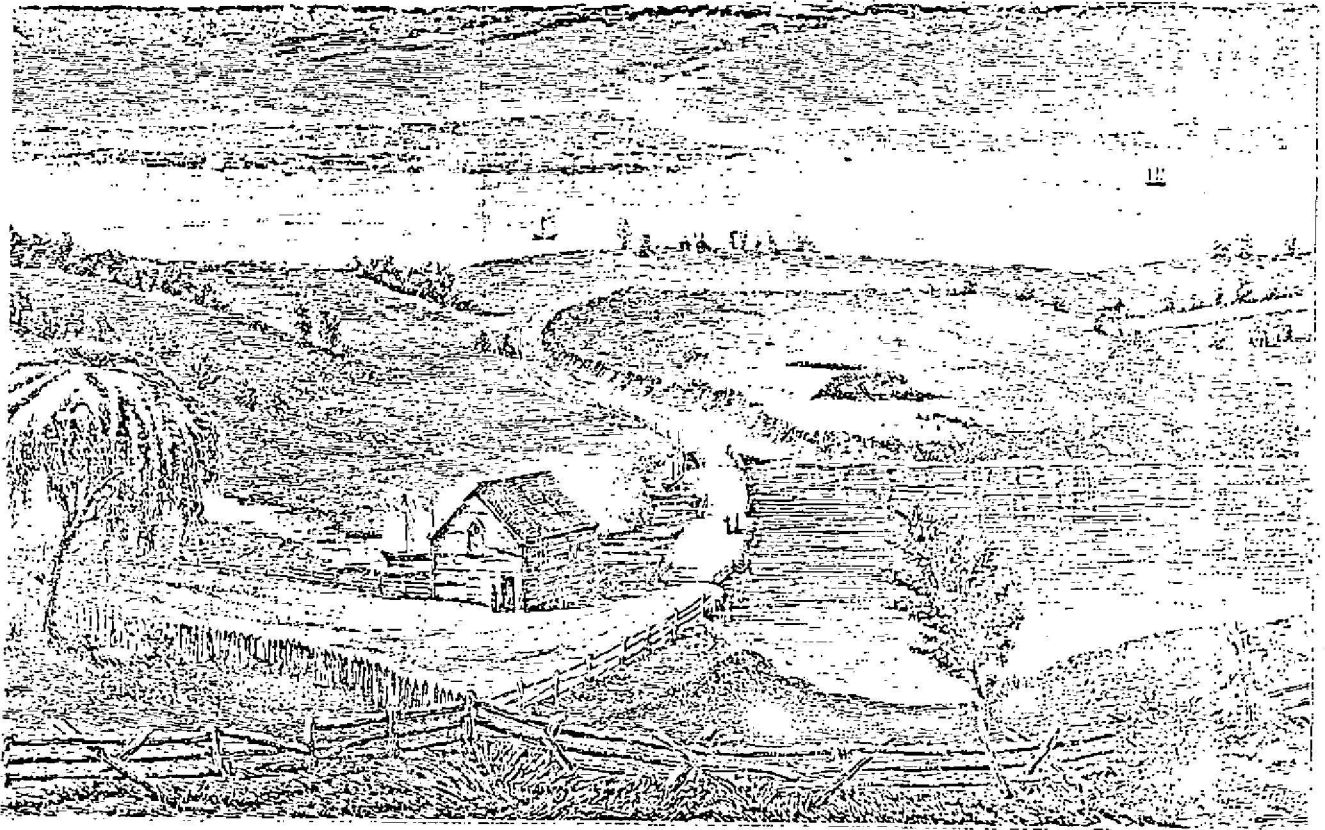
Figure 6





SITE OF THE ASSAULT ON THE BATTERY AT THE CORTELYOU HOUSE
BY THE MARYLAND BATTALION.

Figure 7



VIEW OF FREEKE'S MILLPOND AND FORT BOX.

Figure 8

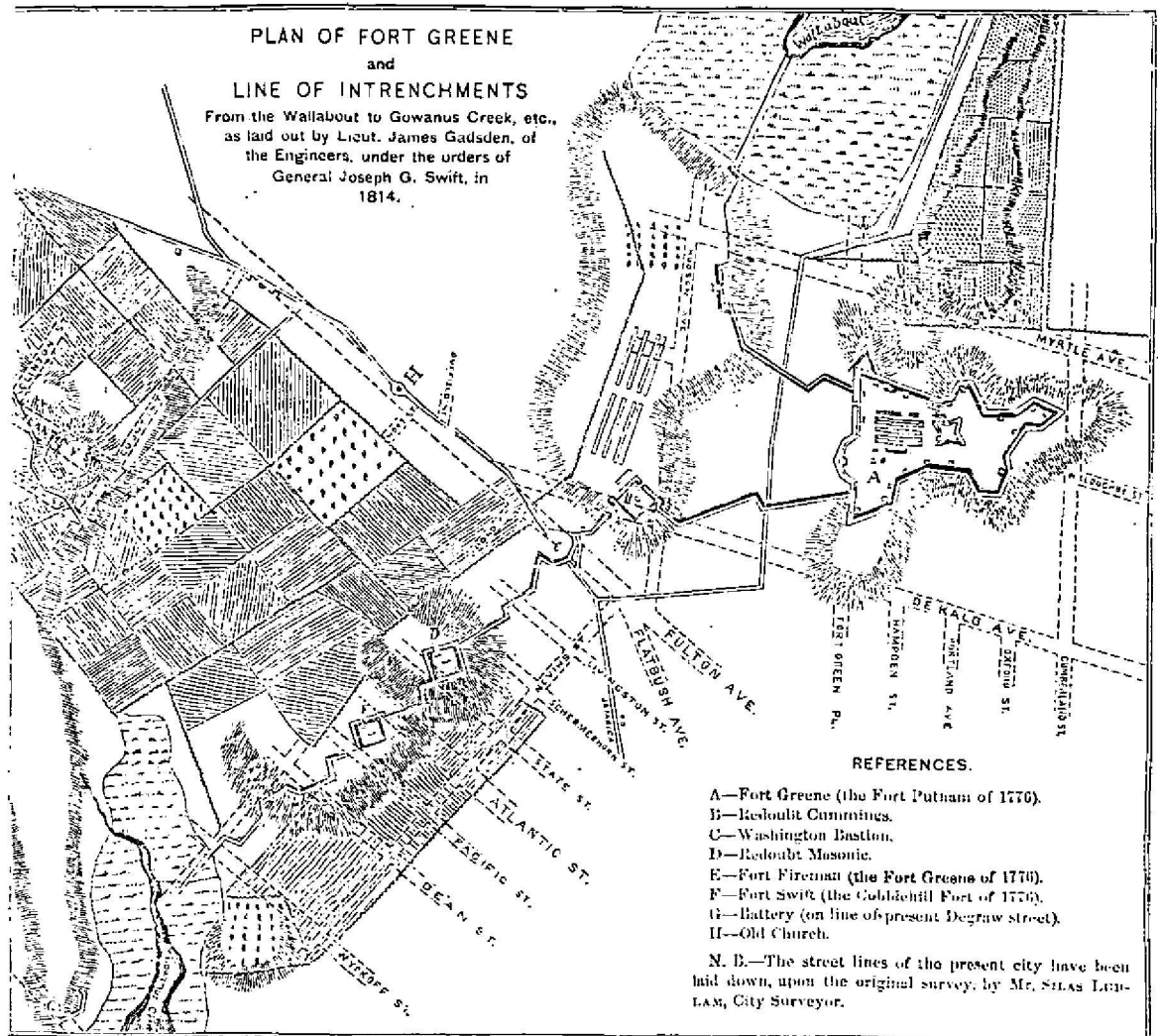


Figure 9

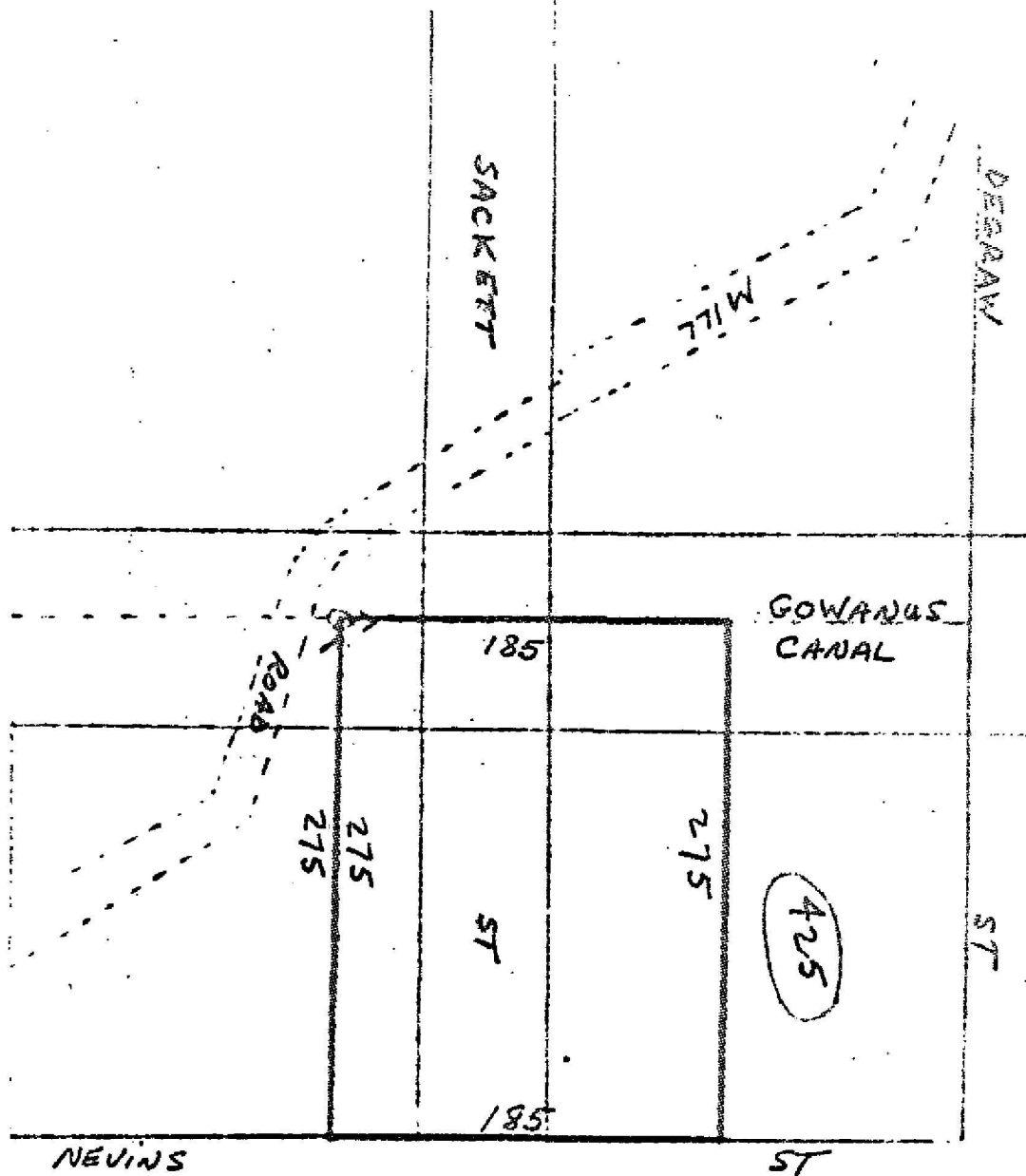
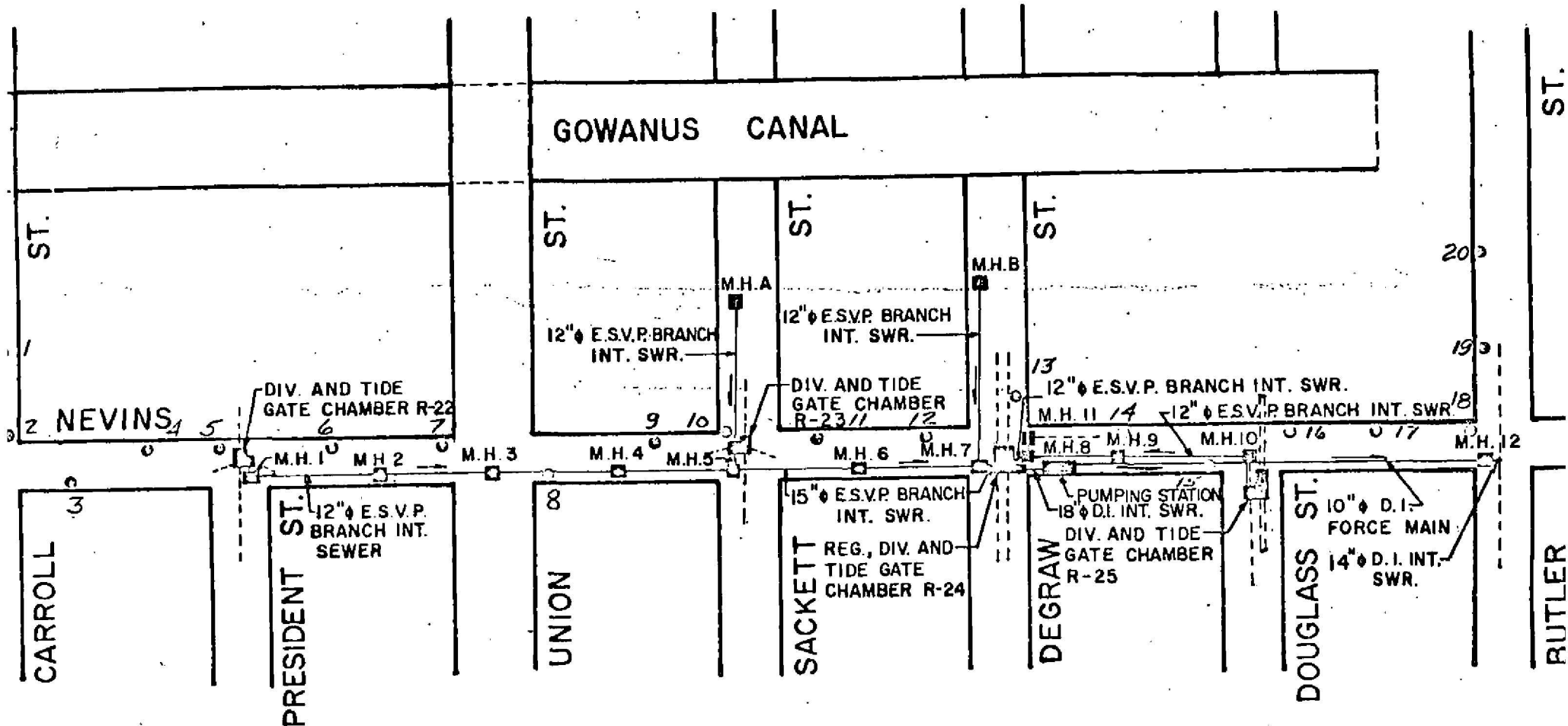


FIGURE 10

CONTRACT 3F
RED HOOK INTERCEPTING SEWER
PRESIDENT STREET TO BUTLER STREET
BROOKLYN



SCALE: 1" = 150'

BORINGS -

FIGURE 13

ROUTE AND KEY PLAN
W/ BORING LOCATIONS

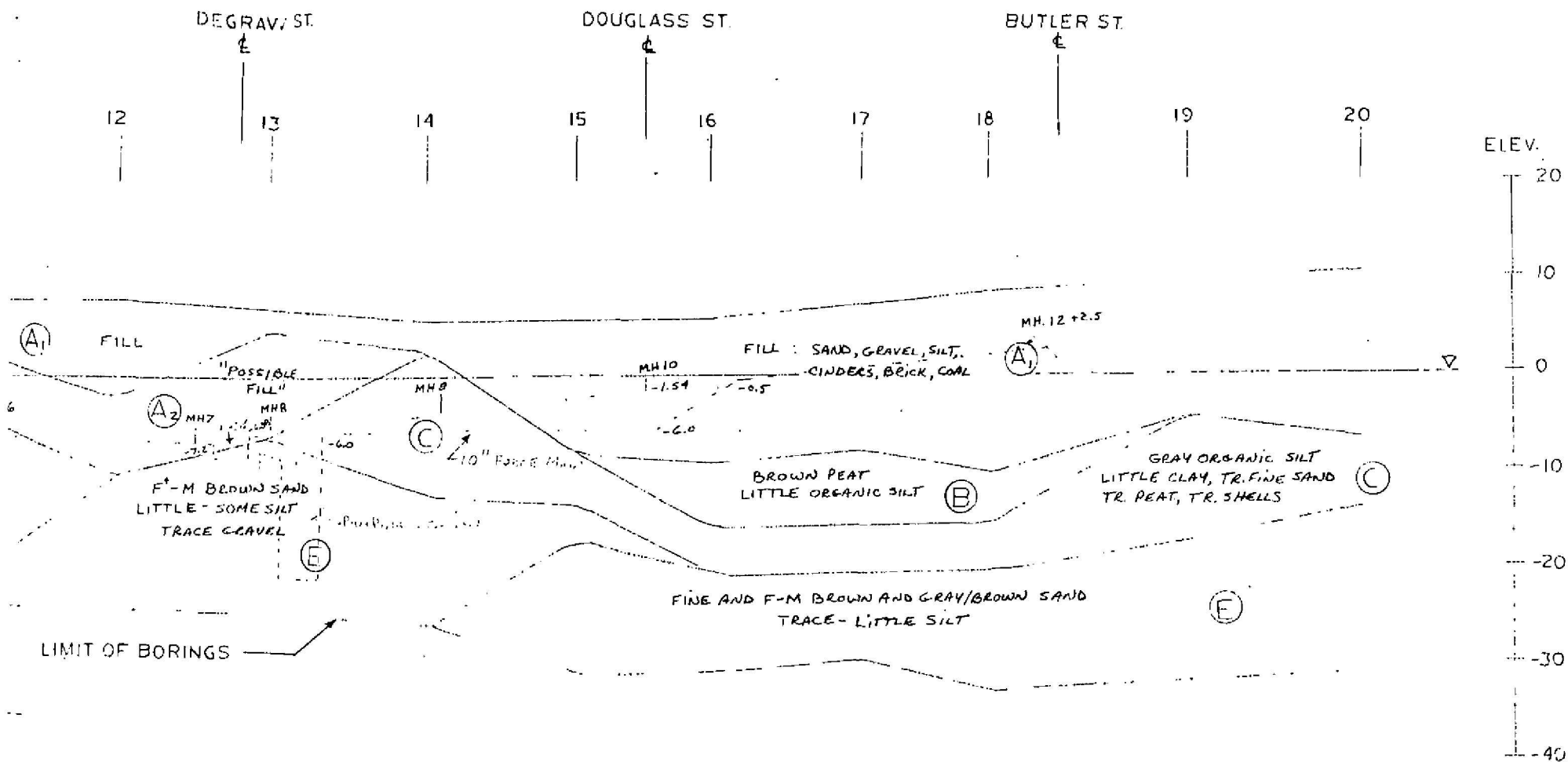


FIGURE 14
GEOLOGIC PROFILE

LIST OF PLATES

- Plate 1A - View looking northeast over the Gowanus Canal from the western end of the Union Street Bridge. Freeke's Mill, or the "Old Gowanus Mill" stood about where the T.E. Conklin Brass Co. building now stands. The mill dam, over which the Porte or Freeke's mill road passed, extended across the former Gowanus Creek near this point. The Union Street Bridge is just to the west of Nevins Street.
- Plate 1B - View looking south from the western end of the Union Street Bridge over Gowanus Canal toward the general area of the site of Denton's mill, also called the "Yellow Mill" or the "Lower Mill". One opinion places the mill at the end of 1st Street near the canal, while a majority opinion places it between 2nd and 3rd Streets also on the east side of the canal.
- Plate 2A - View looking northwest from the western end of the 3rd Street Bridge over the Gowanus Canal toward the Union Street Bridge. Denton's Mill was reportedly situated between 2nd and 3rd Streets close to the present canal, just this side of the warehouse on the right side in this picture.
- Plate 2B - Denton Place and 1st Street to the south of which the tidal mill pond of Denton had been located. Down this street, originally called Porte Road, a major connecting link, 4 rods wide, between Brooklyn and the Gowanus Road, came General Sullivan's retreating American troops on August 27, 1776.
- Plate 3A - View showing the Old Stone House, or the Cortelyou (also Vechte-Cortelyou) house as it looked in its original setting before the area was built up. This illustration, from Georgia Fraser's "Stone House at Gowanus", is claimed to be the first reproduction of an oil painting by Lewis Grube, painted in 1845. The location of the house was reportedly given as "Gowanus and Battle Field of Long Island".
- Plate 3B - View where the Battle of Long Island around the Gowanus house took place on August 27, 1776. This view was from within vacant lots looking east toward the corner of 3rd Street and Fifth Avenue. The old willow tree situated in back of the tenement houses in an ash heap marks the former location of the Old Stone House after it was torn down to make way for 3rd Street. A poem was written about the tree, begging that it be spared. From Higgins, "Brooklyn's Neglected Battle Ground".

- Plate 4 - The Old Stone House (also called the Cortelyou, or Vechte-Cortelyou house) at it looked May, 1977. It had been reconstructed stone by stone by the W.P.A. to function as a comfort station in a playground at 3rd Street and 5th Avenue. This view of the house, with the numerals "1699" on the exterior wall indicating its original construction, was taken looking toward the southwest.
- Plate 5A - View looking northeast over the corner of Nevins and Butler Streets. The structure with the French Mansard roof surmounting the single story building presents a strange marriage. The original building probably dated from the late 1800's, and appears to be oldest building along the length of the projected sewer construction.
- Plate 5B - Another view looking north up Nevins Street from the corner of Butler and Nevins. The cobble stone pavement on Butler Street is seen in this view. All of Nevins Street had its original cobblestone pavement covered with a layer of asphalt as seen here.
- Plate 6A - Looking south down Nevins Street from the northwest corner of Butler and Nevins Street.
- Plate 6B - Looking south down Nevins Street from the northeast corner of Butler and Nevins Street. Cobble stone paving is seen on the east side of Butler Street in this view.
- Plate 7A - Looking south down Nevins Street from a point on the west side of the street between Butler and Douglass Streets, showing the nature of the buildings, etc. found on this part of Nevins Street. This area is marked with many one way street signs controlling the traffic flow.
- Plate 7B - View looking north up Nevins Street toward the junction of Douglass and Nevins. The cranton and Lehigh Coal Co. building is on the right side of this photograph.
- Plate 8A - View looking north from near the northwest corner of Sackett and Nevins Street. The corner of DeGraw and Nevins Streets is just behind the automobile between the playground and the building.
- Plate 8B - Looking west toward the Gowanus Canal from the southeast corner of Nevins and DeGraw Streets.
- Plate 9A - View looking north toward the head of the Gowanus Canal from the terminal end of DeGraw Street on the canal. This had originally been part of Freeke's mill pond in the 18th century. The concrete sides of the canal are blackened with oil.

- Plate 9B - View looking east from the canal's edge over DeGraw Street and its junction with Nevins Street.
- Plate 10A- View looking south down Nevins Street from the northwest corner of DeGraw and Nevins Streets. T. E. Conklin Brass Co. on the right side of the street.
- Plate 10B- View looking northwest from the southeast corner of Sackett and Nevins Streets.
- Plate 11A - Looking west toward the Gowanus Canal and the yard of the Conklin Brass Co. on Sackett Street and from the southeast corner of Nevins and Sackett Streets. It was down this street, or in its very close proximity, that the four rod wide Porte Road, or the Freeke's mill road connected with the Gowanus Road to the east in the 1700's.
- Plate 11B- Looking south down Nevins Street from the northeast corner of Sackett and Nevins Streets. Union Street crossing is on the next corner at the stop light.
- Plate 12 - The corner of Union and Nevins Streets, looking south from a point on the northeast corner. President Street is the next cross street down Nevins Street. The Union Street Bridge is to the right of this view.

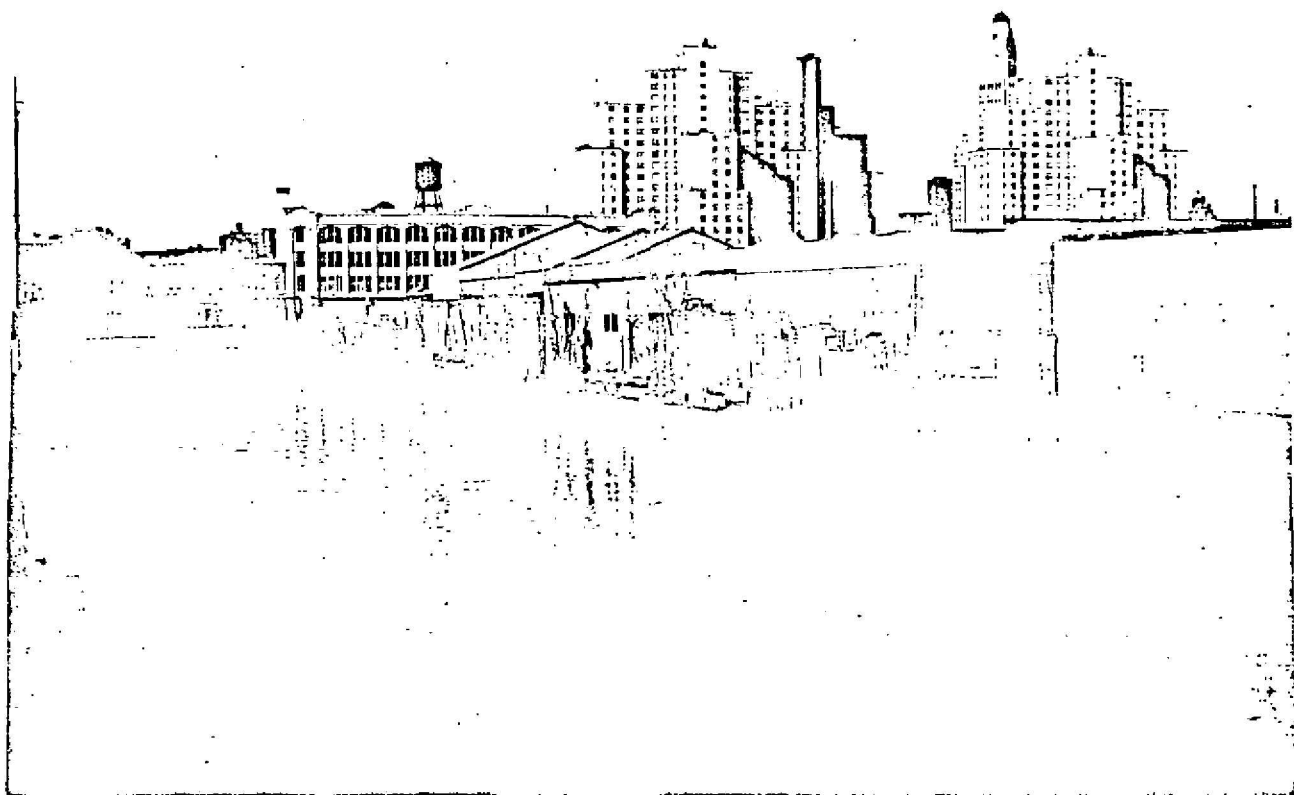


Plate 1A

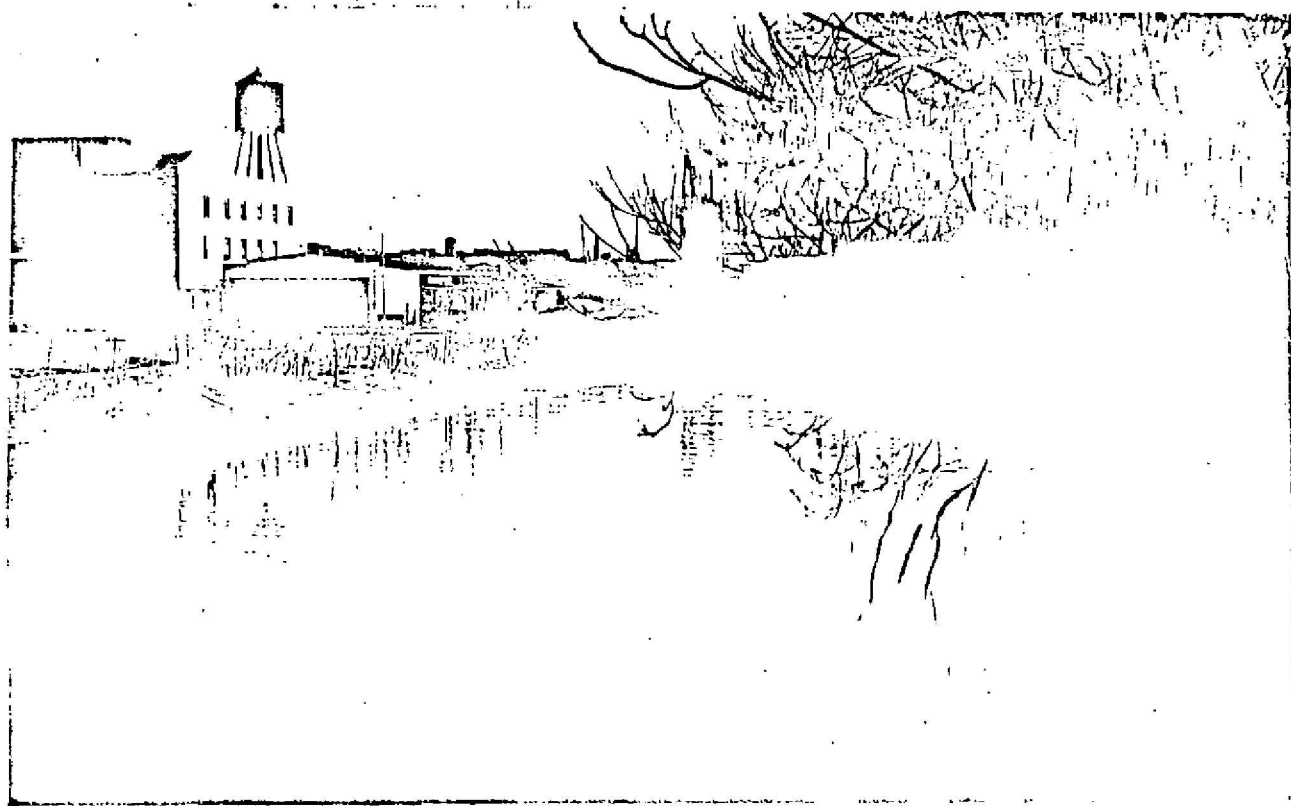


Plate 1B



Plate 2A

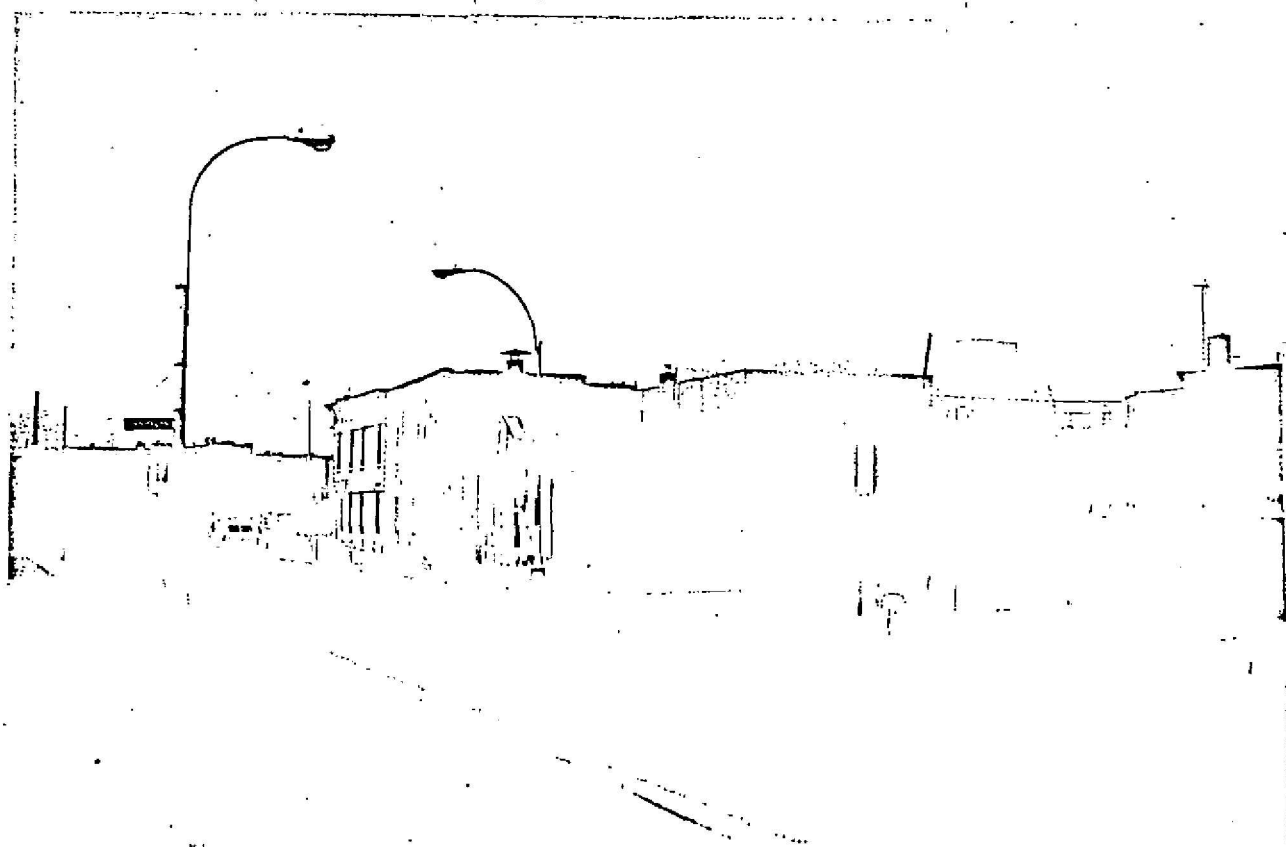
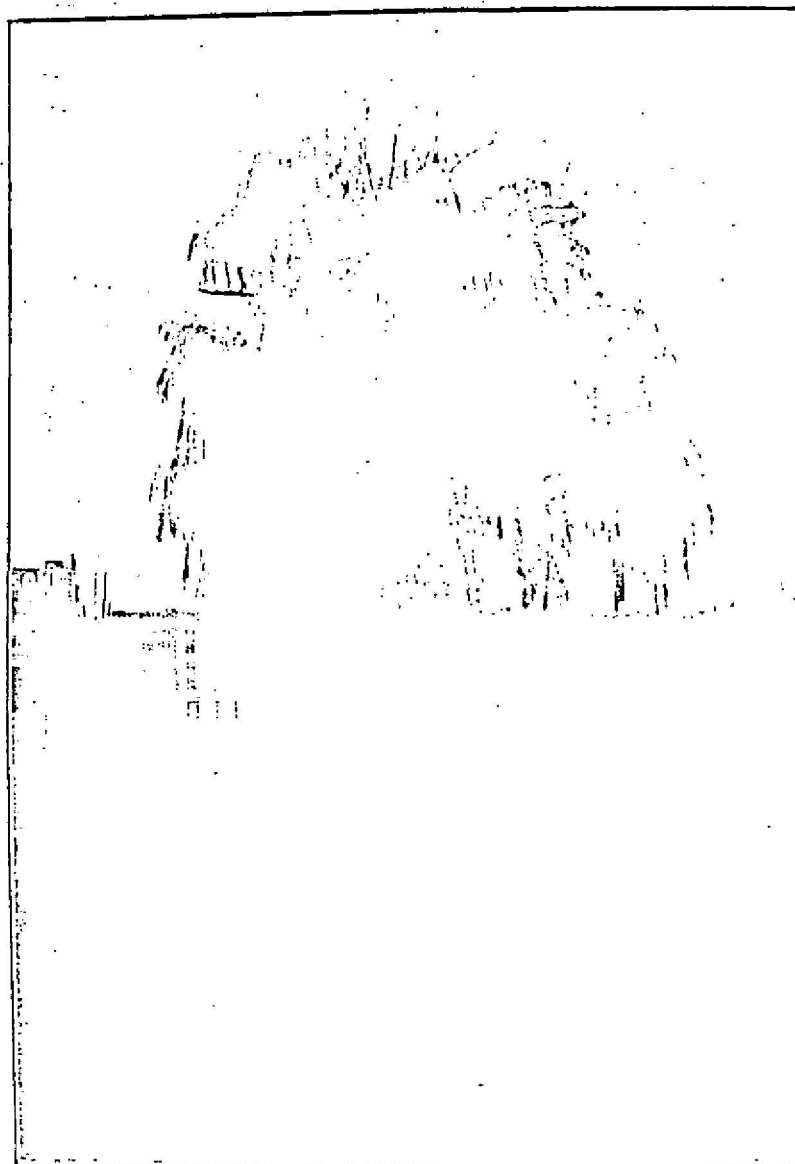


Plate 2B



THE STORK HOUSE AT GOWANUS AND THE BATTERY FIELD OF LONG ISLAND
 First reproduction of oil painting, by Louis Gruber, 1890, as frontispiece to "The Stork House at Gowanus" by Louis Gruber

Plate 3A

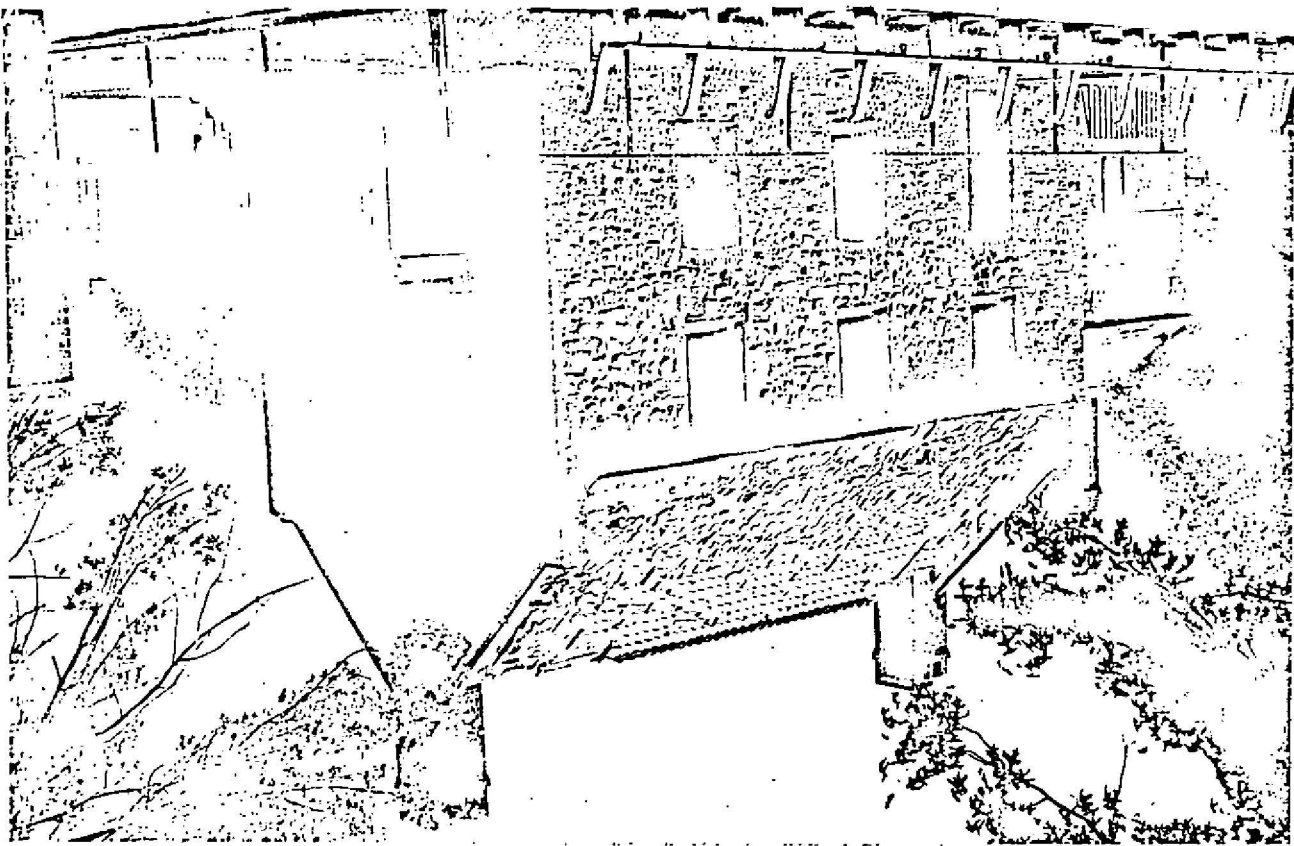


Copyright 1909 by Walter D. Hays.

THE OLD WILLOW TREE, ~ 1909.
From "THE STONE HOUSE AT HOWANUK."

Plate 3B

Plate 4



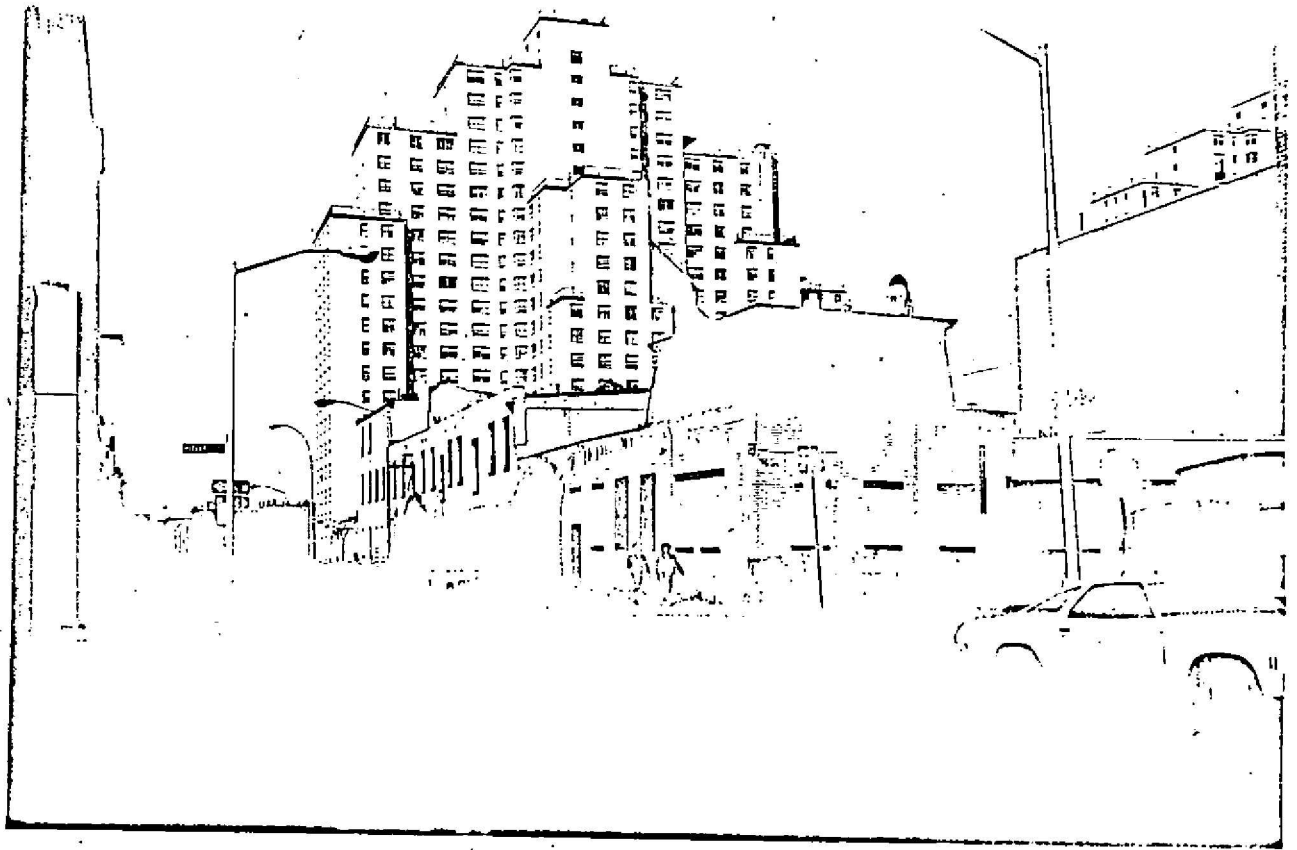


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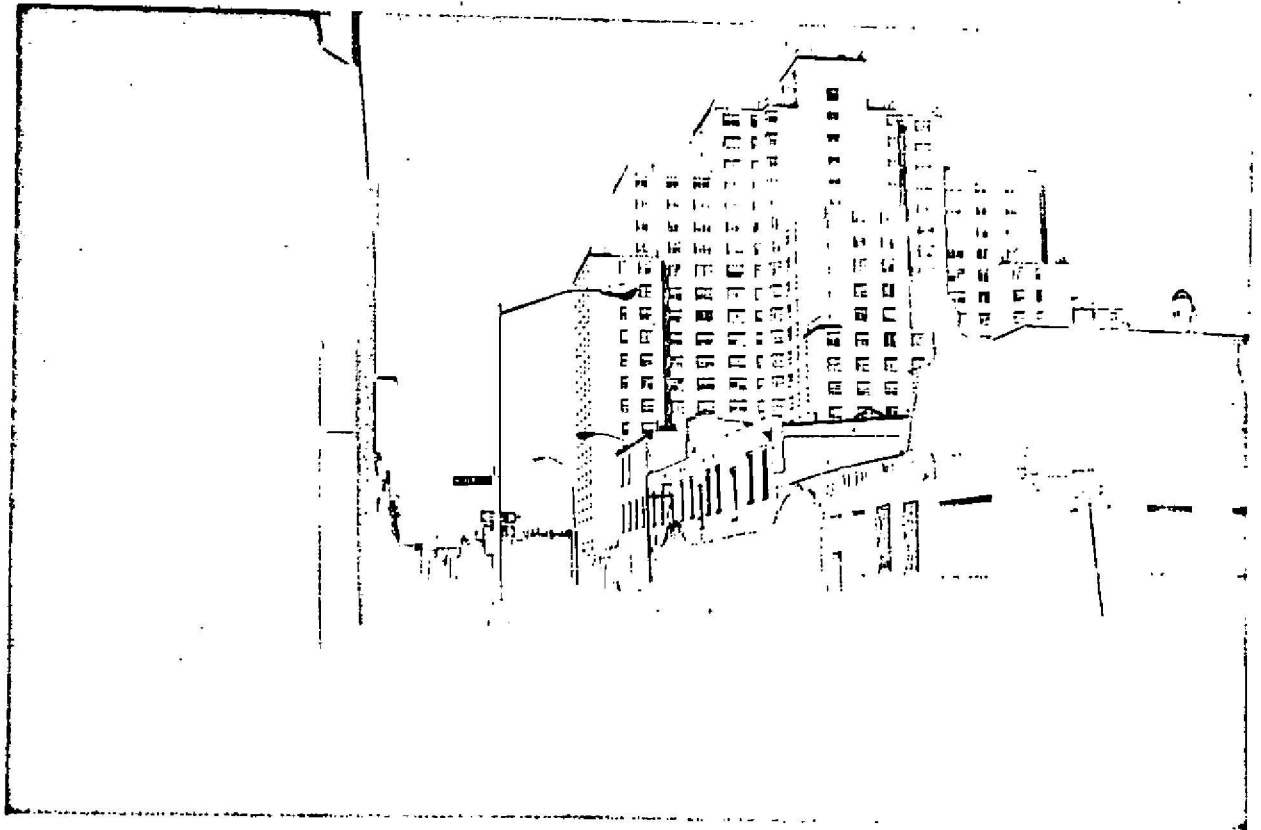
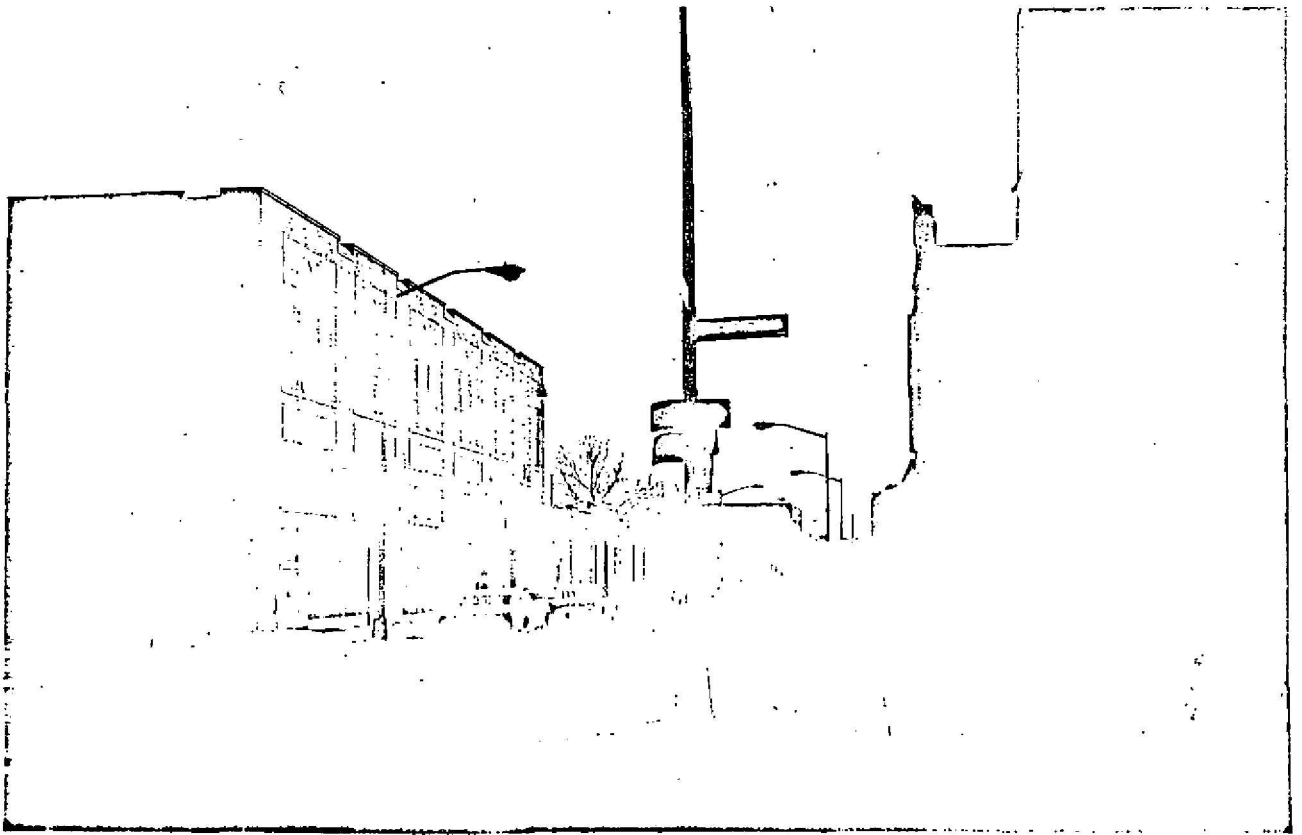


Plate 5B



Plato 6A



Plato 6B

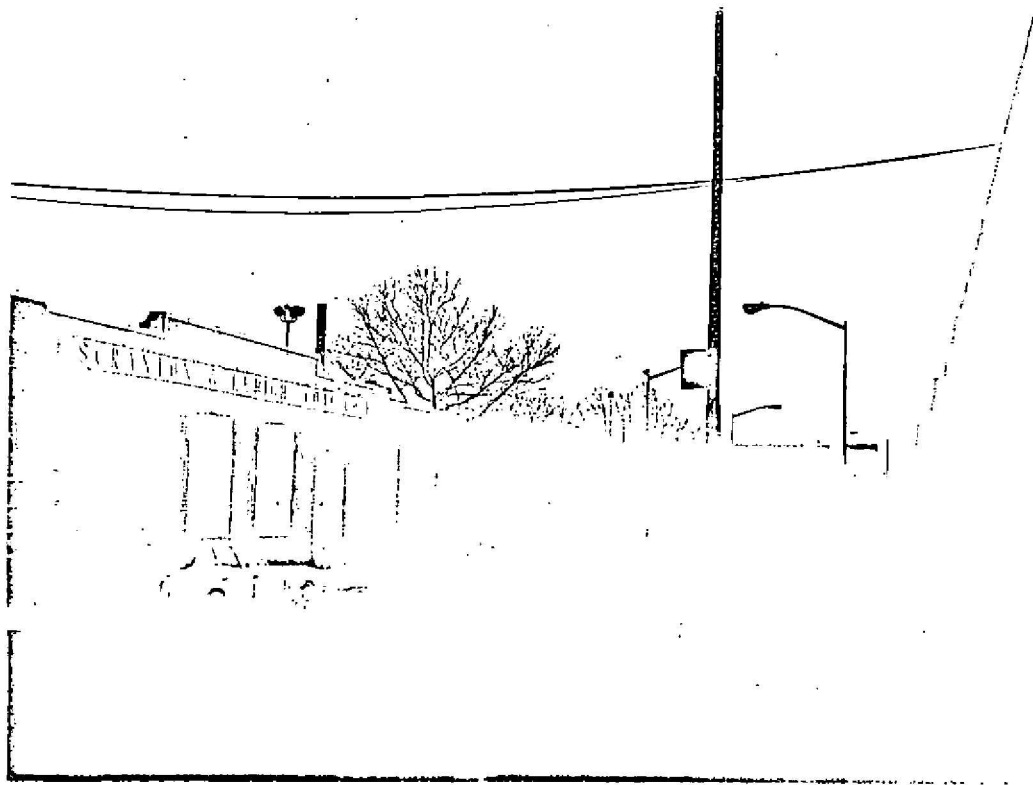


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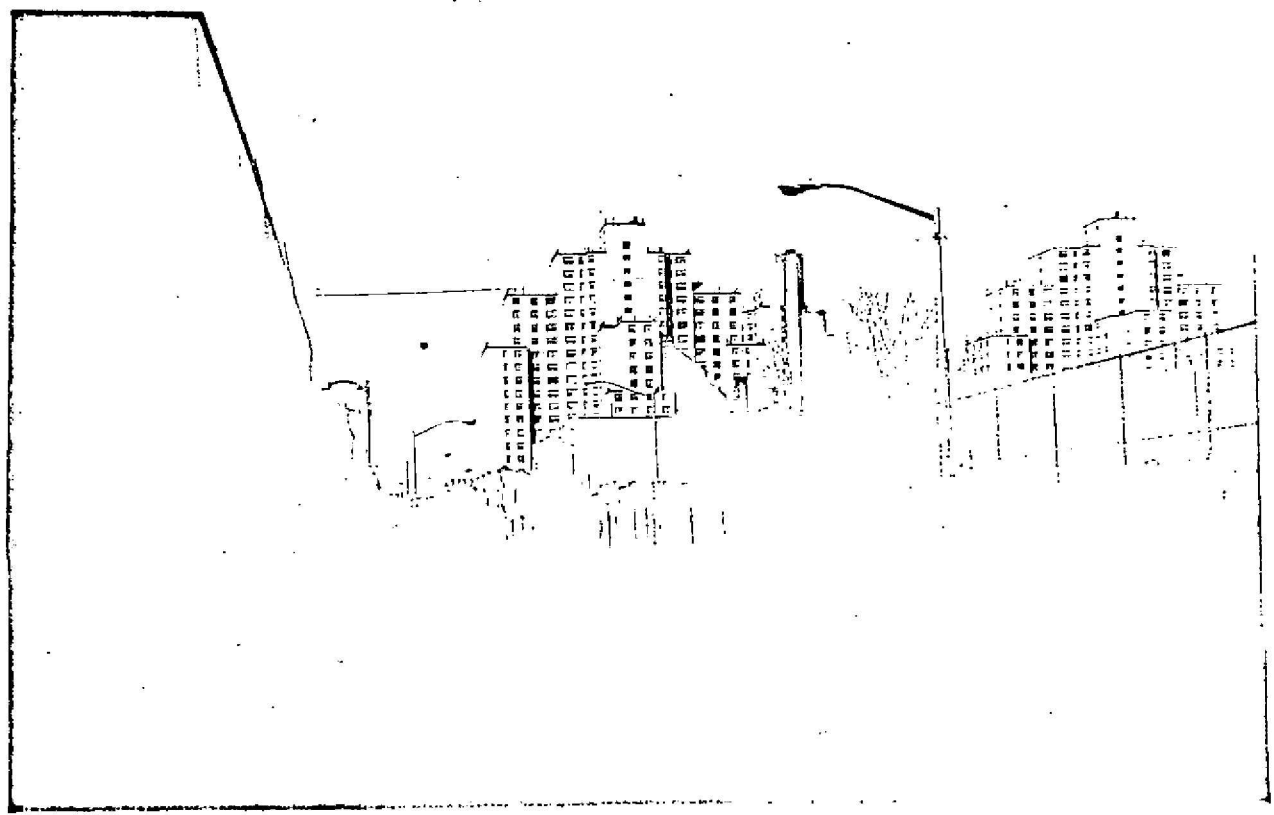


Plate 7B

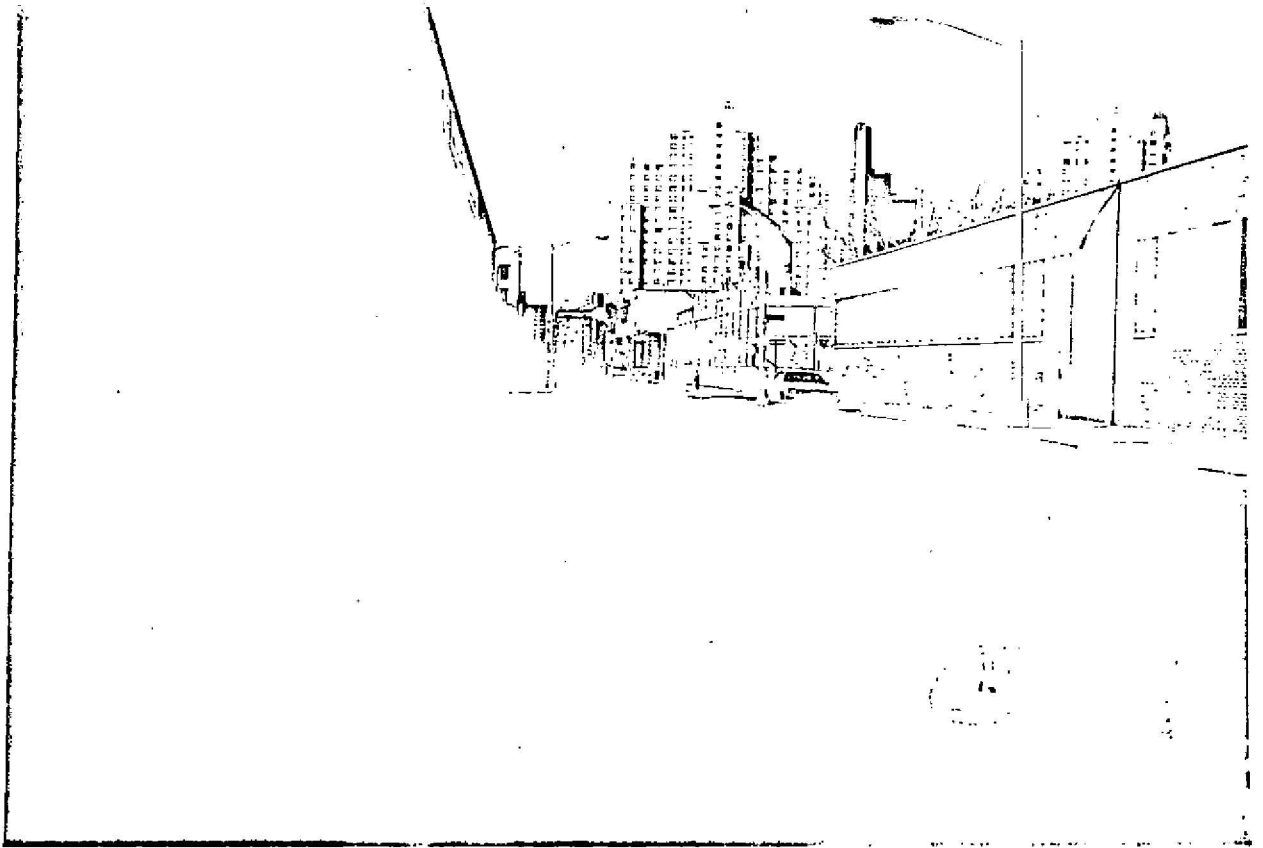


Plate 8A



Plate 8B

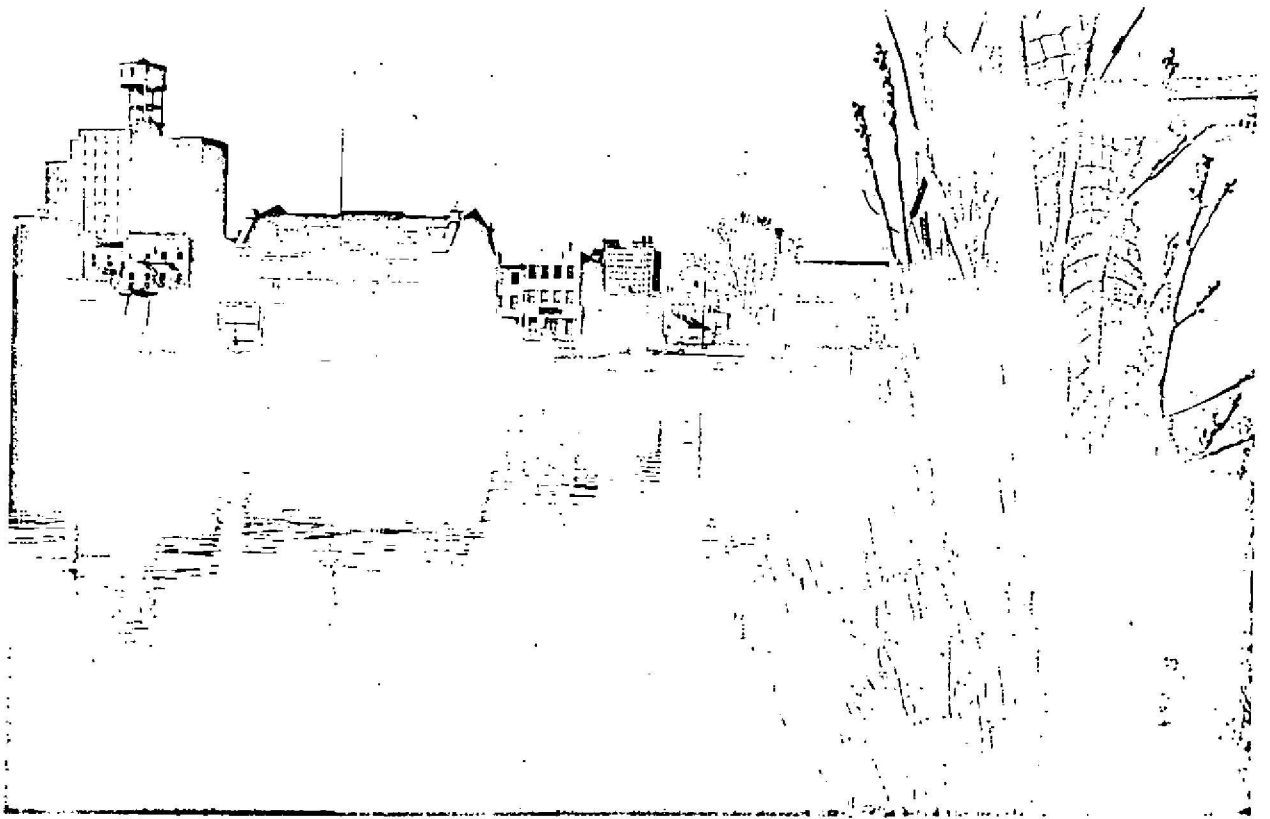


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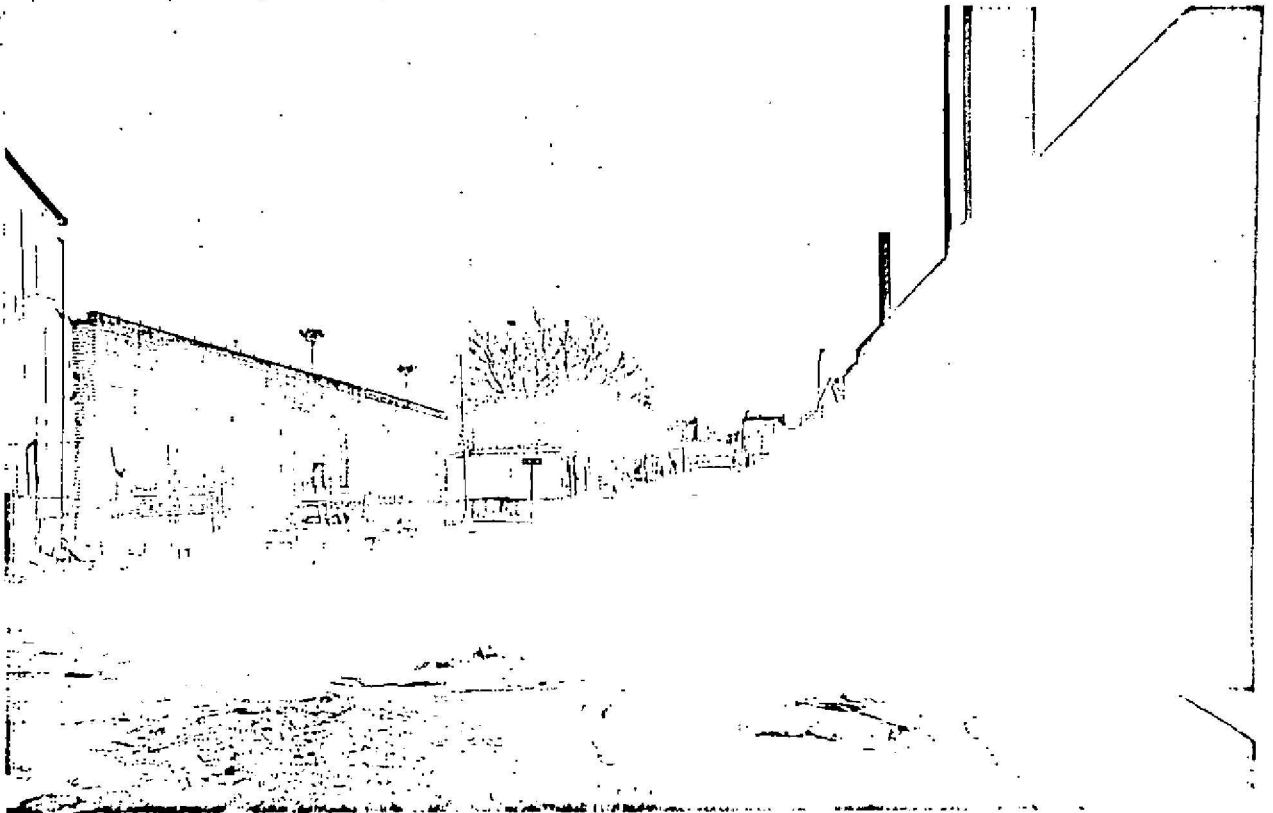


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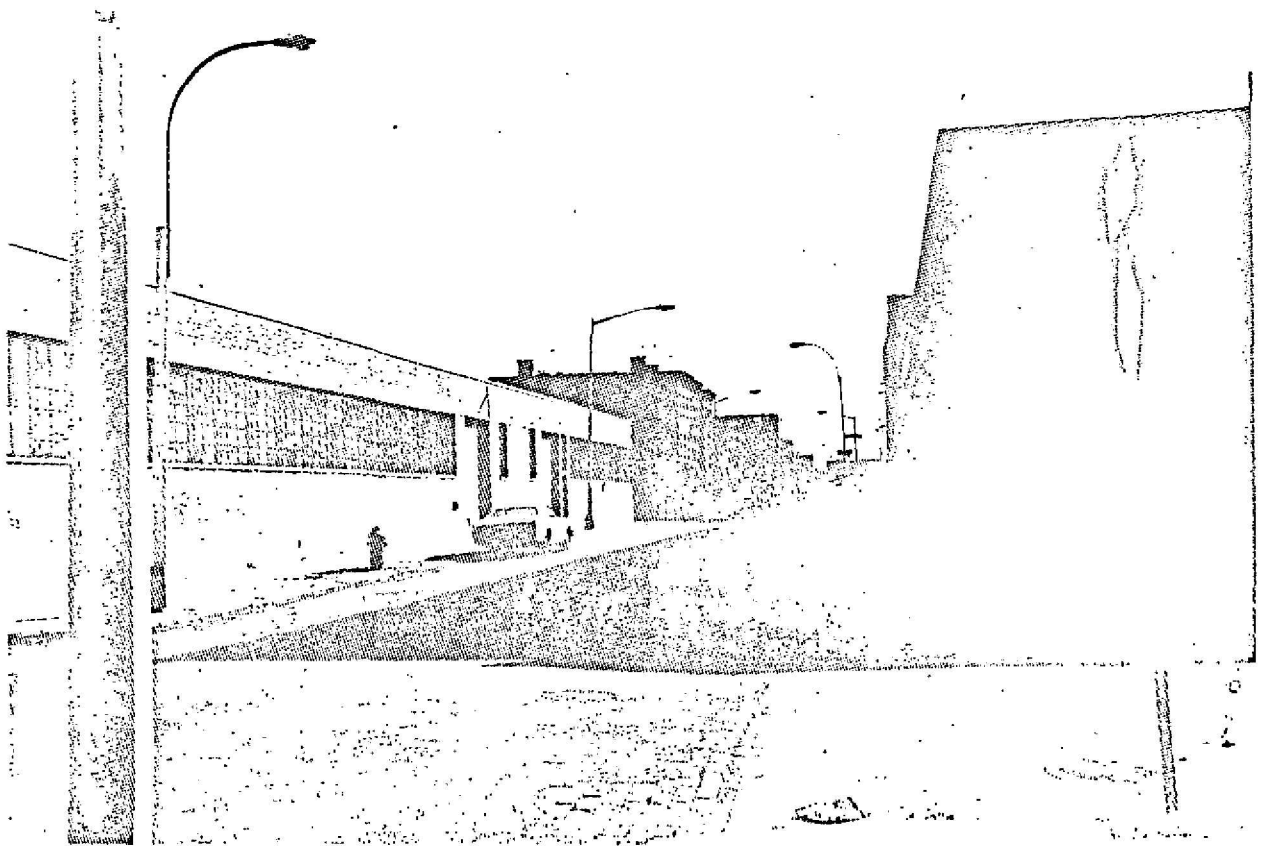
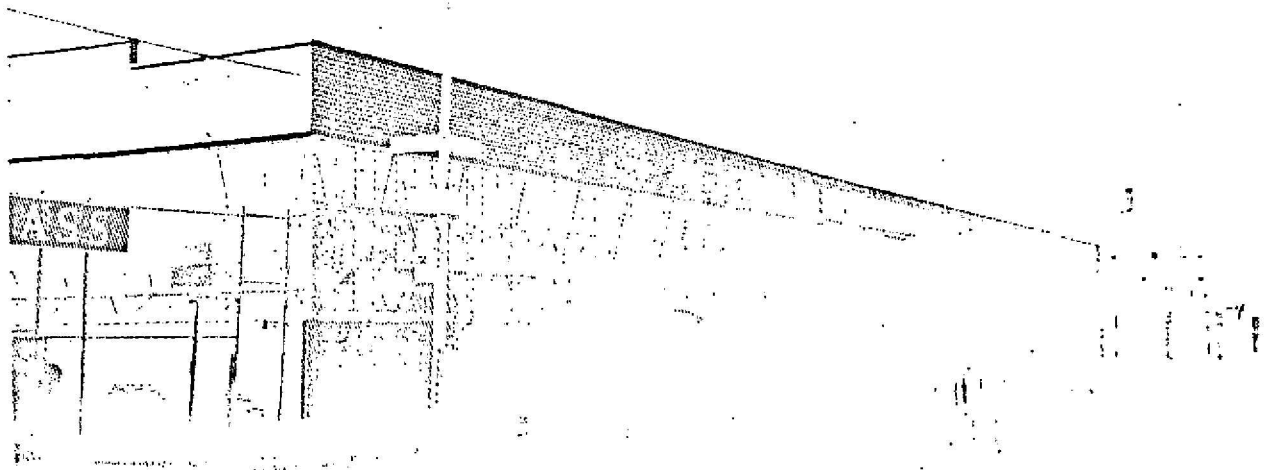


Plate 10A



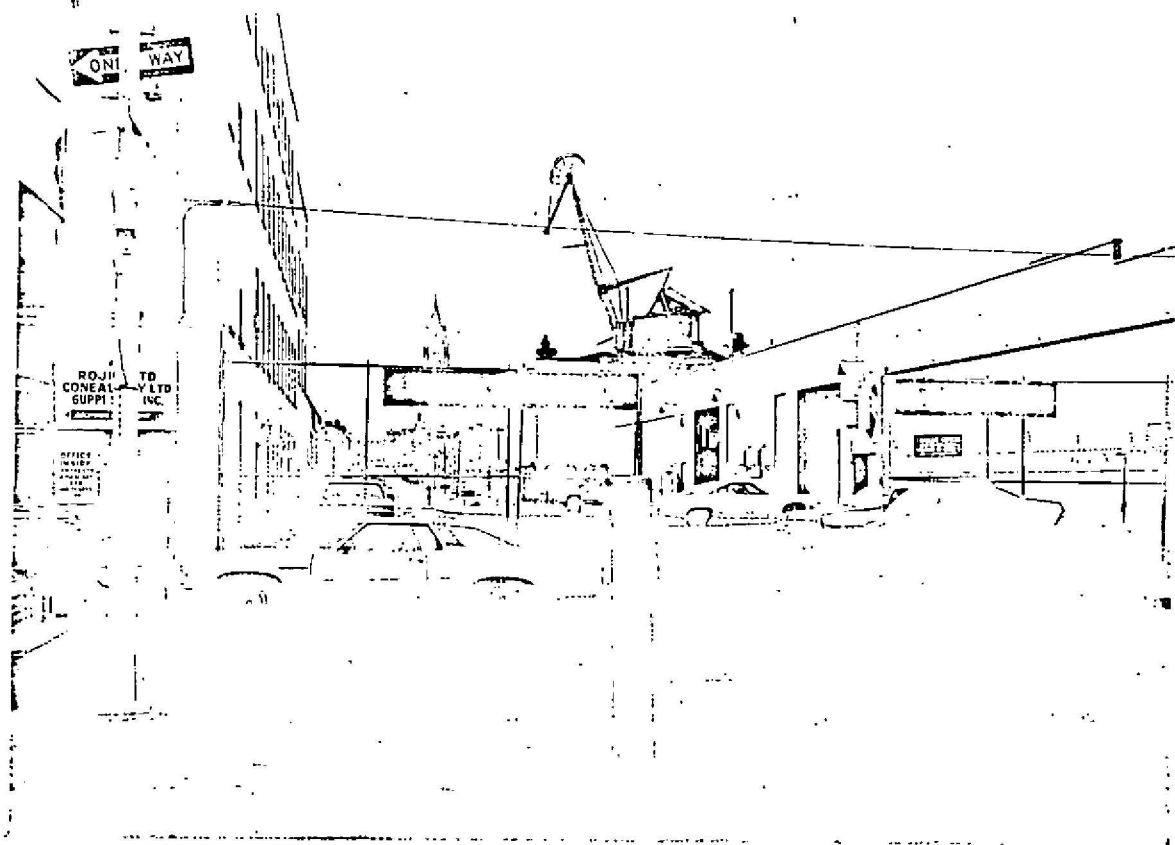


Plate 11A

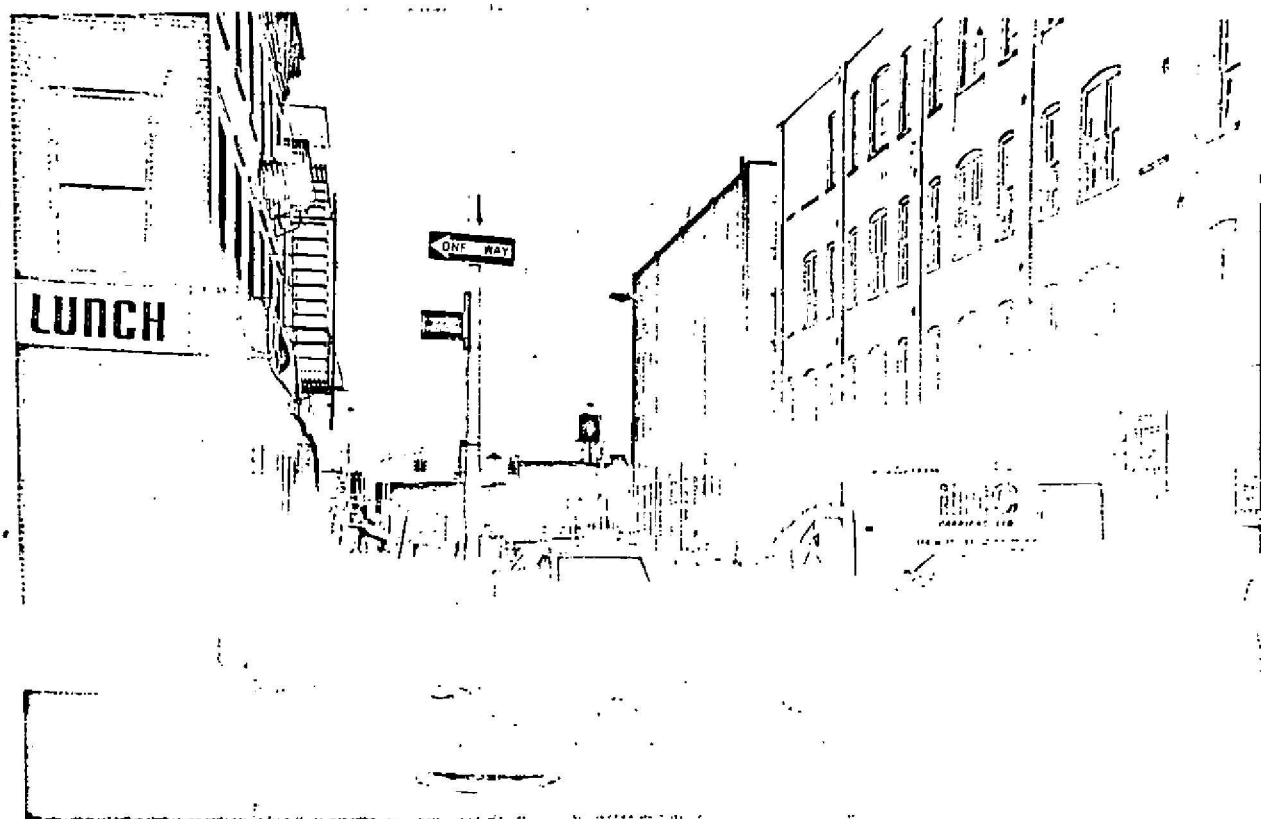


Plate 11B

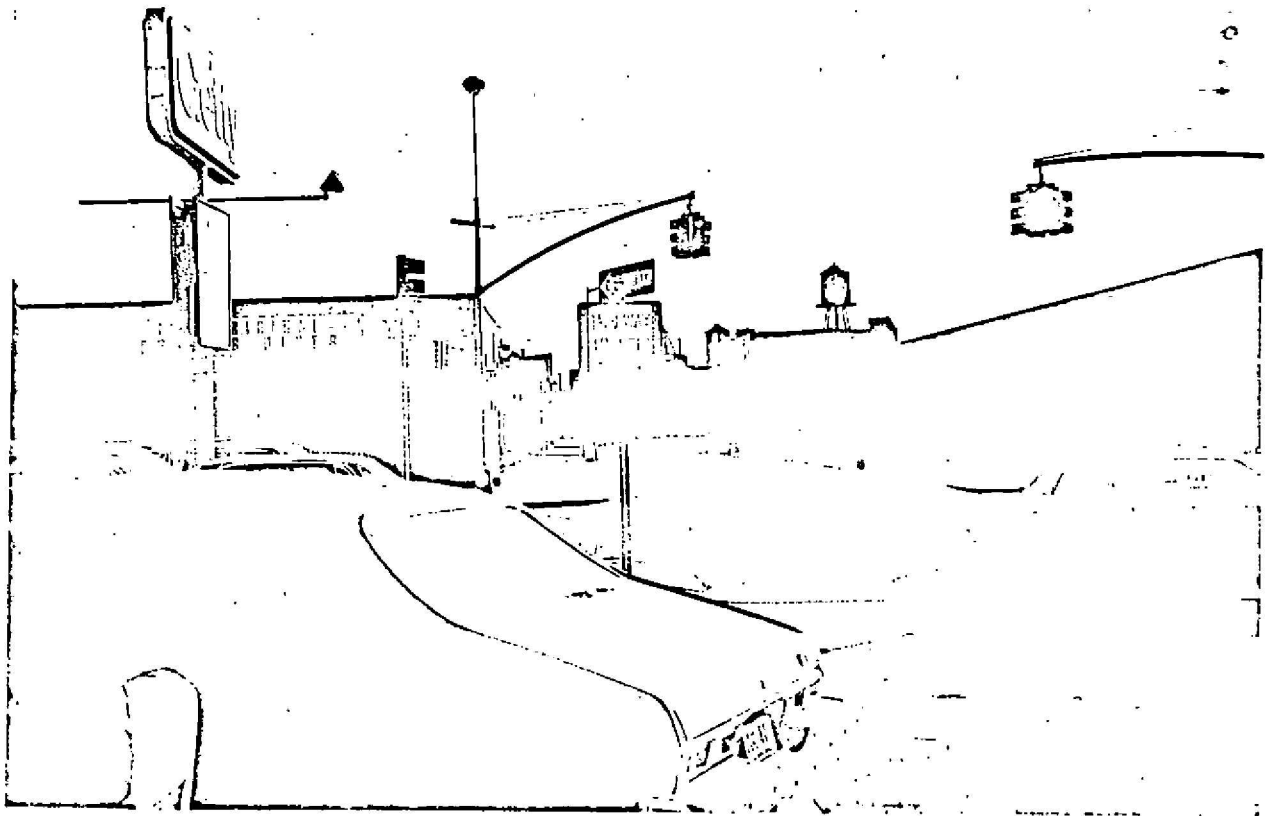


Plate 12

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