

CEGR



87-1647

TIBBETT GARDENS PROJECT SITE

BRONX, NEW YORK

SECOND LEVEL STUDY

SEPTEMBER 1, 1987

Prepared for: Allee King
Rosen and Fleming, Inc.
117 East 29th Street
New York, N.Y. 10016

Prepared by: Historical
Perspectives
Box 331
Riverside, CT 06878

59

P.O. BOX 331

RIVERSIDE, CONNECTICUT 06878

(203) 661-0734

INTRODUCTION

The Real Estate Board Housing Development Fund Corporation proposes to construct a middle-income housing project on a site in the Kingsbridge section of the Bronx. The project is referred to as Tibbett Gardens. Disposition of the property and rezoning of a portion of the site requires discretionary approval from the City; therefore an Environmental Impact Study, of which this study is a part, is being prepared.

A Phase IA Archaeological Assessment and Documentary Report was completed by Historical Perspectives in January of 1987. The purpose of the IA report was to evaluate the archaeological potential of the Tibbett Gardens site. A No Impact determination was made as regards cultural resources of the historic era. But a strong case was made for the possible existence of pre-historic or Native American resources on the project site.

However, because of a thick fill overburden covering the entire site and because of the high water table in some portions, it was concluded that testing to determine the presence/absence of resources would involve an extraordinary methodology, great expense, and a safety hazard to the archaeological crew. But fortunately, there were a number of sets of soil boring logs available for study. It was suggested that the data from those logs might provide a kind of remote sensing to predict possibilities of what might lie below the ground surface. The Phase IA Assessment was reviewed and accepted by the New York City Landmarks Preservation Commission who agreed with the recommendation that a Paleo-geologist study the information from the corings and attempt to reconstruct dry land areas, shorelines, and other indications of potential prehistoric site locations. On the basis of the reconstruction plus known information, the advisability of testing for significant prehistoric archaeological resources would be decided. Dr. Dennis Weiss of City College was engaged to assemble the study and his report accompanies this one.

DISCUSSION

Dr. Weiss' geologic study of the Tibbett Gardens area should be read before this paper because his findings are the basis for this discussion. There were some limitations in the data - such as differences of nomenclature or the lack of continuous samples in some borings - which made a certain amount of interpolation and extrapolation inevitable. Three areas on the project parcel have been identified which would have been attractive to Native Americans. Given the data limitation and the assumption of zero fill compaction (which is patently impossible), the delimitation of these areas is necessarily approximate. On Figure 4 of the geologic study (hereafter referred to as Figure G-4, etc.) which pictures the ground conditions during the Woodland Period - which we know from sites discovered nearby was a time of intense Indian activity - there are three loci suitable for exploitation indicated. (See pages 6 through 14 and page 23 of the Phase IA Documentary Study for a full description and discussion of the prehistoric potential of the Tibbett Gardens site; the reasons for the significance of data which might be obtained from excavations at this site is taken as an already established premise and has not been repeated in this further study.)

Dr. Weiss' findings - using subsurface data - corroborate the findings of the Phase IA study which used archival sources. The loci of archaeological sensitivity outlined in the geologic assessment correspond roughly with three areas of potential sensitivity cited in the IA Report because of their higher elevation and accessibility to resources exploited by Indians. These three areas of slightly elevated ground are shown on maps over time. Figures 1 and 2 are examples which show them quite clearly as being part of the shoreline of the Spuyten Duyvil Creek. The arrows mark the approximate areas of sensitivity.

Given the existence of suitable areas for Native American exploitation in an applicable time frame and granted the significance of data which could be obtained from any sites located, it is now the task of the archaeologists to examine how or if it is possible or feasible to extract such data from each of the three locations. In the interests of clarity, the following discussion, like Dr. Weiss' will make use of visual aids, in particular, an updated accurate map of the Tibbett Gardens site prepared by the Department of General Services. (Figure 3) Some of the notations on the map are extraneous to our purposes, but could not be removed without excising other pertinent information. Other information has been added to the map. The reader should be led by the accompanying text as to what to look for.

Area A

The thick solid line shown on Figure 3 in the southeast corner of the project site marks Area A of archaeological sensitivity as reckoned by Dr. Weiss for about 2,000 years before the present, or during the Woodland Period. (See also Figure G-4) There are a number of constraints which restrict archaeological investigation of this portion of the Tibbett Gardens site and are indicated on Figure 3. The dash-dot (-.-) convention marks the boundaries of a track easement which legally precludes any building activity within its confines. Neither will the small plot between the easement and the eastern property line be built on. (Personal communication, Will Dann, August 27, 1987) Mr. Dann, on the staff of the architectural firm of Liebman-Melting who has designed the project, also stated what would be done in the Tibbett Avenue extension (+++ convention) which traverses a major part of Area A. He said that existing utilities would be used if possible, but if they had to be replaced, the disturbance would be no greater than what had already been done. As for the projection of land which extends west from Tibbett Avenue extension, see Figure 4 which shows the path of the Harlem River Shipping Canal which was opened in 1895. That route effectively chopped off the finger of land which at that time extended out into Spuyten Duyvil Creek. Soil borings taken since that time substantiate that fact. Note that at two locations within the small peninsula the fill layers are 18 and 22 feet in thickness where the channel was filled in during the twentieth century.

Avoidance is an accepted means of protection for archaeological resources; much of the Area A sensitive zone will be avoided by construction activity for the Tibbett Gardens project. The integrity of any cultural resources in the remainder of the area has surely been destroyed by previous disturbances.

Area B

From the earliest days of mapping, the acreage in Area B has been shown as marshland. (For example, the 1782 British Headquarters; an 1847 property map; Matthew Dripps' 1853 Map of Westchester County; or the 1873 Topographic Map which is Figure 4 of this report.) Whatever Native American procurement sites may have been there were subject both to tidal action and to silting during the historic era. By 1887 the land projection was silted and/or filled sufficiently to support a small building. (See Figures 1 and 5) During the twentieth century it was partly encroached upon by a one story garage as seen on Figure 2 which was followed by 1938 by a gas station on the same spot where one stands today. There are twelve 550 gallon tanks buried between the gas station and 230th Street. The location of these tanks is shown on Figure 6. The copy of this document is so poor that the reader will not be able to glean much first-hand knowledge; it is included for the record. "There is also a brick vault located within the confines of the gas station parcel, of which the exact location is unknown at this time." (Written communication from Jody Kass, Office of Housing Coordination, August 27, 1987) Evidence that extensive filling has also taken place is shown by the thickness of fill layers - 23 and 17 feet respectively - in two soil borings taken slightly east and slightly west of the eastern border of the sensitive zone. (● convention)

It seems certain that a mélange of ground changes and disturbances - both man-made and natural - during the historic period have destroyed the integrity of any prehistoric cultural resources which may have once existed in Area B.

Area C

The discovery of numerous sites in the Tibbett Gardens section of the Bronx attests to extensive Native American activity in the vicinity. Area C could easily have been an attractive site for a procurement station especially during the late Archaic and early Woodland periods when it was a wide sandy beach. (See Figure G-5) In later centuries it was somewhat cut off by the rising water table which isolated it against the steeply rising slope of Spuyten Duyvil Hill. (Figure G-4 shows its approximate shape at about 2000 Before Present)

There are several factors to consider when determining whether or not to test the sensitive zone for intact archaeological resources. In the Recommendations section of the IA Assessment (pages 23-25) it was suggested that after the existing boring logs had been analyzed it might be prudent to do more borings for purely archaeological reasons. The purposes would be to determine presence or absence of resources and to further delimit a realistic testing field, if necessary. This information is usually obtained by sub-surface testing, but that procedure was held in abeyance in this case because it was thought that the fill overburden could be as thick as twenty-five feet and the water table as high as four feet below grade. Field testing under such conditions would have been onerous both logistically and financially. However, we now know that these strictures do not apply. Dr. Weiss analysis of the boring logs data shows that there is about ten feet of fill over Area C (See Figure G- 2, the Isopach Map). Also, ground water in that portion is about 15 feet below grade. It is Dr. Weiss' opinion that enough borings have been taken in that sector to offer about as much information as possible. They are spaced closely enough and reveal what it is necessary to know about the underlying soils. He commented that looking for any actual sites with borings would be literally like looking for a needle in a haystack. He means there is no precise location - no X to mark the spot - for which to aim. We feel, therefore, that additional borings would be neither time nor cost efficient.

We also agreed that the testing universe could be restricted to certain geologic units immediately below the fill. That is, known wet areas as well as the sections where fill comes down directly on bedrock may be eliminated. Figure 7 and Figure G-3 show the re-defined sensitive zone which covers a relatively small area. If sub-surface testing were required, two or three trenches could be excavated by machinery down to the interface between the fill and the A horizon stratum. At that point excavation would be by hand using accepted archaeological techniques until whatever tasks had been enunciated in a scope of work had been completed. Another option is that the project layout could be redesigned to avoid the sensitive zone.

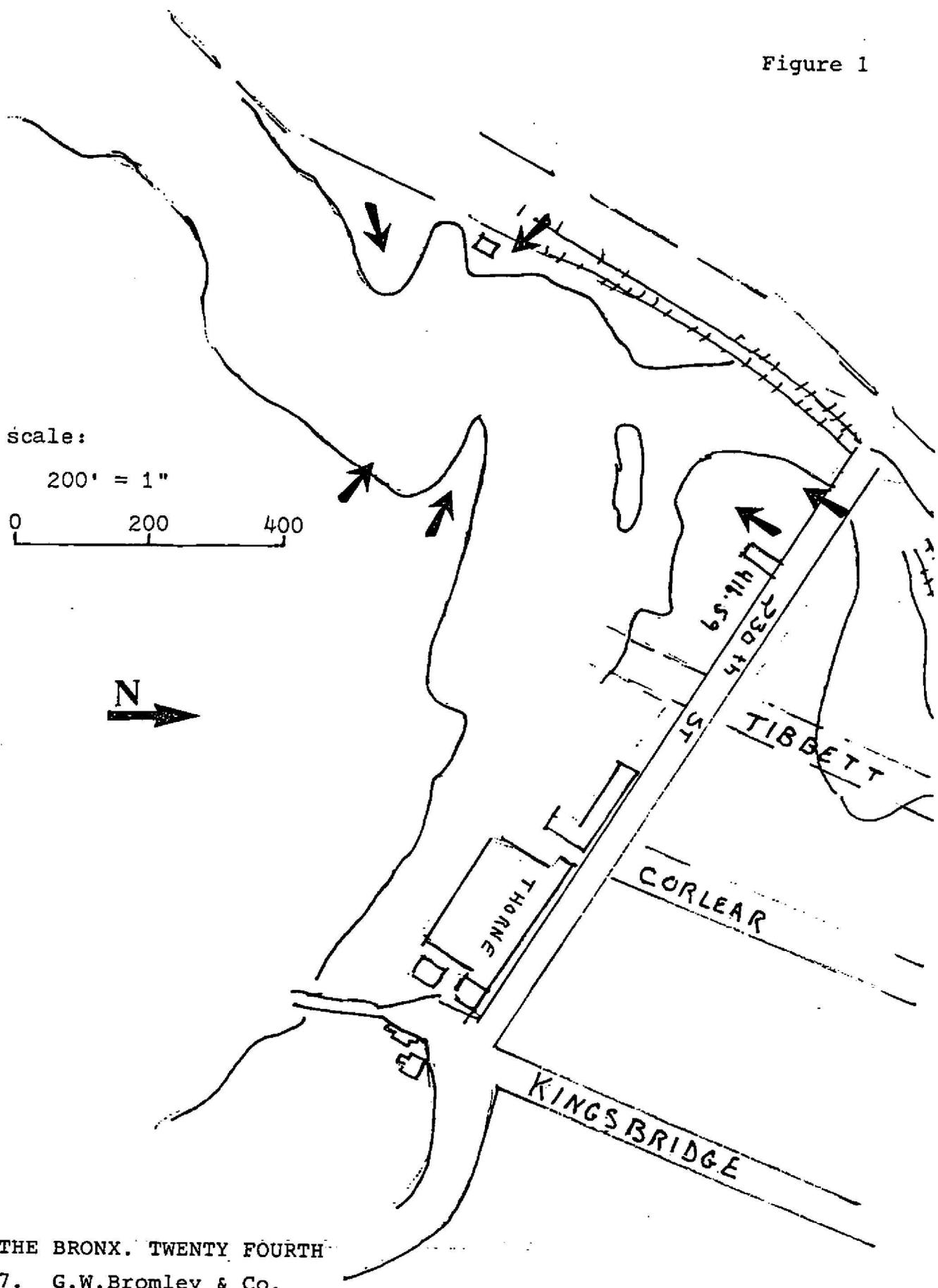
However, an archaeologist is on tenuous ground if he recommends avoidance unless there is proof of something significant to avoid. On the other hand, the project design calls for piling foundations for the buildings; the placement of pilings constitutes an "encumbrance" on a site but may not completely destroy it. (Louise Basa, NYSDEC, personal communication, August 28, 1987) Thus, the pilings, as opposed to more disruptive foundation methods, represent a partial avoidance and might serve as a satisfactory compromise between conflicting interests.

Another factor to consider is the chance for survival of aboriginal sites at this location. There were one or more small buildings in Area C by the turn of the century. (See Figures 1, 8, and 9) It was later covered with enough landfill to make it suitable for use as a freight yard. The activities concomitant with the use of the parcel as a home or commercial site as shown on a circa 1900 photograph (Figure 9) may or may not have obliterated vestiges of Indian occupation. Likewise, one cannot determine what effect the compaction of the fill placed in the twentieth century had on sub-surface archaeological deposits. It is entirely possible that the fill served as a protective buffer over cultural resources. In particular, the fill would not have harmed lithic materials (Ron Anazolone, Advisory Council on Historic Preservation, personal communication, September 1, 1987), though its effect on other type resources such as shell middens is less well known. A far more potent destructive force would have been water action before the area was covered with its fill overburden. Archival sources abound with references to extreme tidal fluctuations and strong currents in the Spuyten Duyvil Creek. (Two examples among many available may be found in the IA Report - bottom of page 15 and page 21, second paragraph.) Also, Area C is located at the bottom of a sharp slope which would have produced water run-off. According to Valerie DeCarlo, archaeologist at Wave Hill in the Bronx, shell middens all along the Hudson River and in Inwood Park in nearby Manhattan are eroding at an alarming rate due to wind and water run-off. (Personal communication, September 1, 1987) It is speculative to believe that a beach site could have survived the water turbulence to which it was subject.

CONCLUSIONS

For Areas A and B of the Tibbett Gardens Project Site, we conclude that a no adverse effect determination is appropriate because of avoidance of sensitive loci or because of prior disturbance. For Area C the case is not so clear-cut. Unless the architectural layout can be redesigned to avoid it, the sensitive zone is slated to be at least partially destroyed by pilings sunk as building foundations. It may not be feasible to request avoidance unless sub-surface testing has proved that there are intact, significant archaeological resources that warrant protection. There is also the concern as to whether or not Native American occupation sites could have survived the powerful water action caused by tides, currents, and run-off during at least the recorded historic era. The problem is enunciated in the Advisory Council on Historic Preservation's Handbook, TREATMENT OF ARCHAEOLOGICAL PROPERTIES, Principle V. "Treatment of an archaeological property depends on its value for research, balanced against other public values." That is, one must weigh "other societal needs, most obviously those needs that stimulate the Federal [in this case, City] undertaking that may affect the property." (1980,p.8) The decision is ultimately a subjective value judgment and thus is open to other interpretation. The final ruling in this instance properly rests with the empowered review agency.

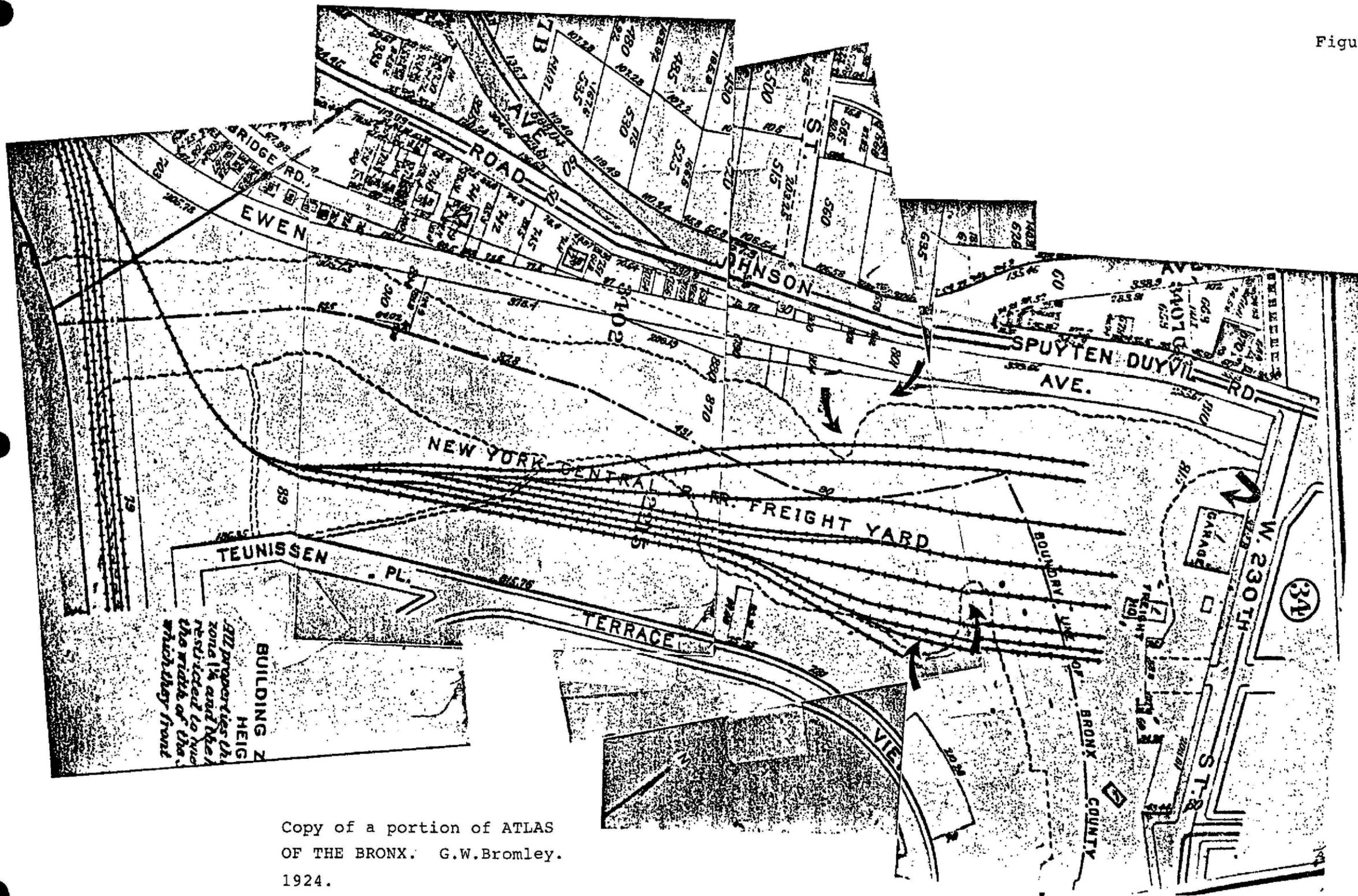
Figure 1



ATLAS OF THE BRONX. TWENTY FOURTH
WARD. 1897. G.W.Bromley & Co.

Tracing.

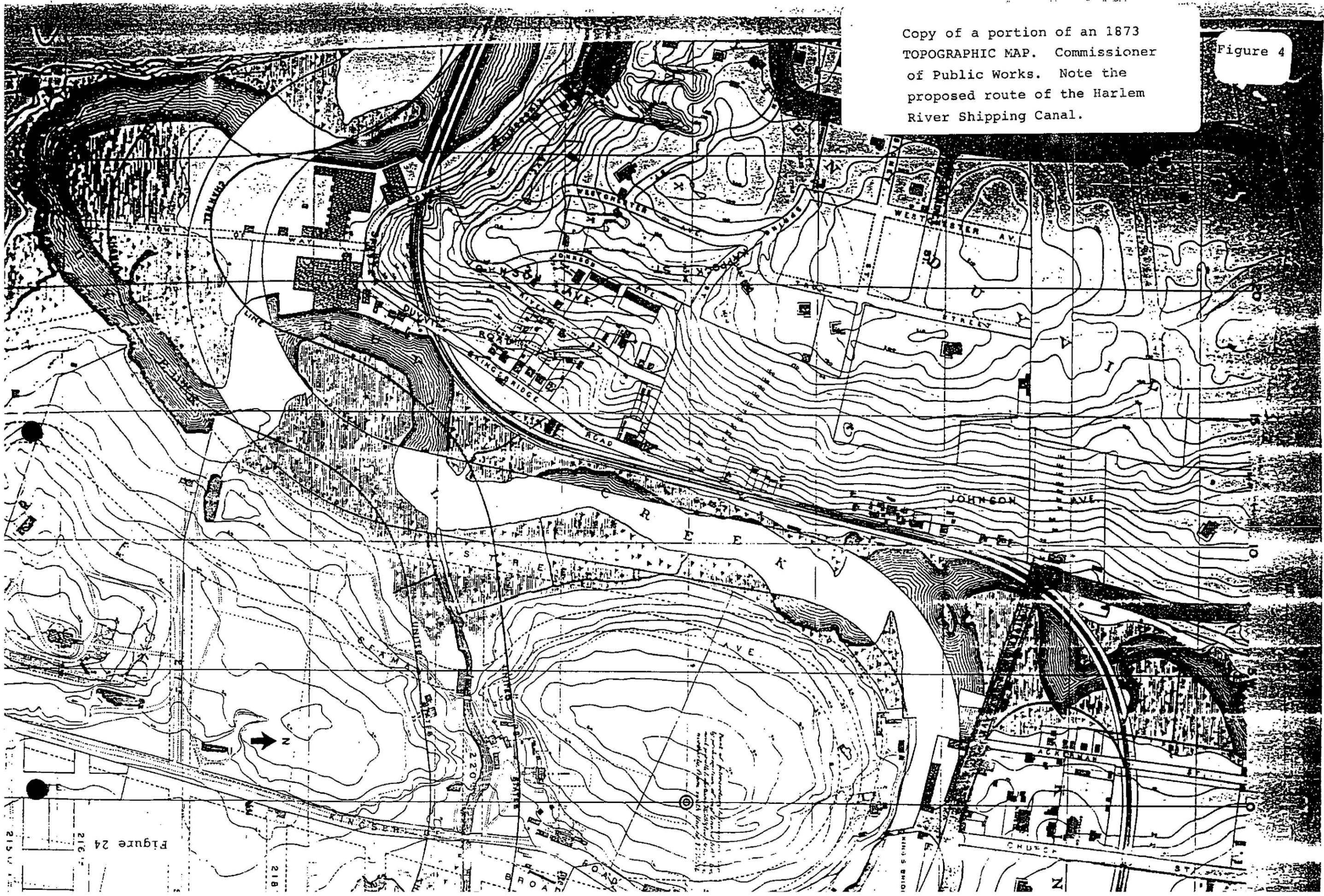
Figure 2



Copy of a portion of ATLAS
OF THE BRONX. G.W.Bromley.
1924.

Copy of a portion of an 1873
TOPOGRAPHIC MAP. Commissioner
of Public Works. Note the
proposed route of the Harlem
River Shipping Canal.

Figure 4

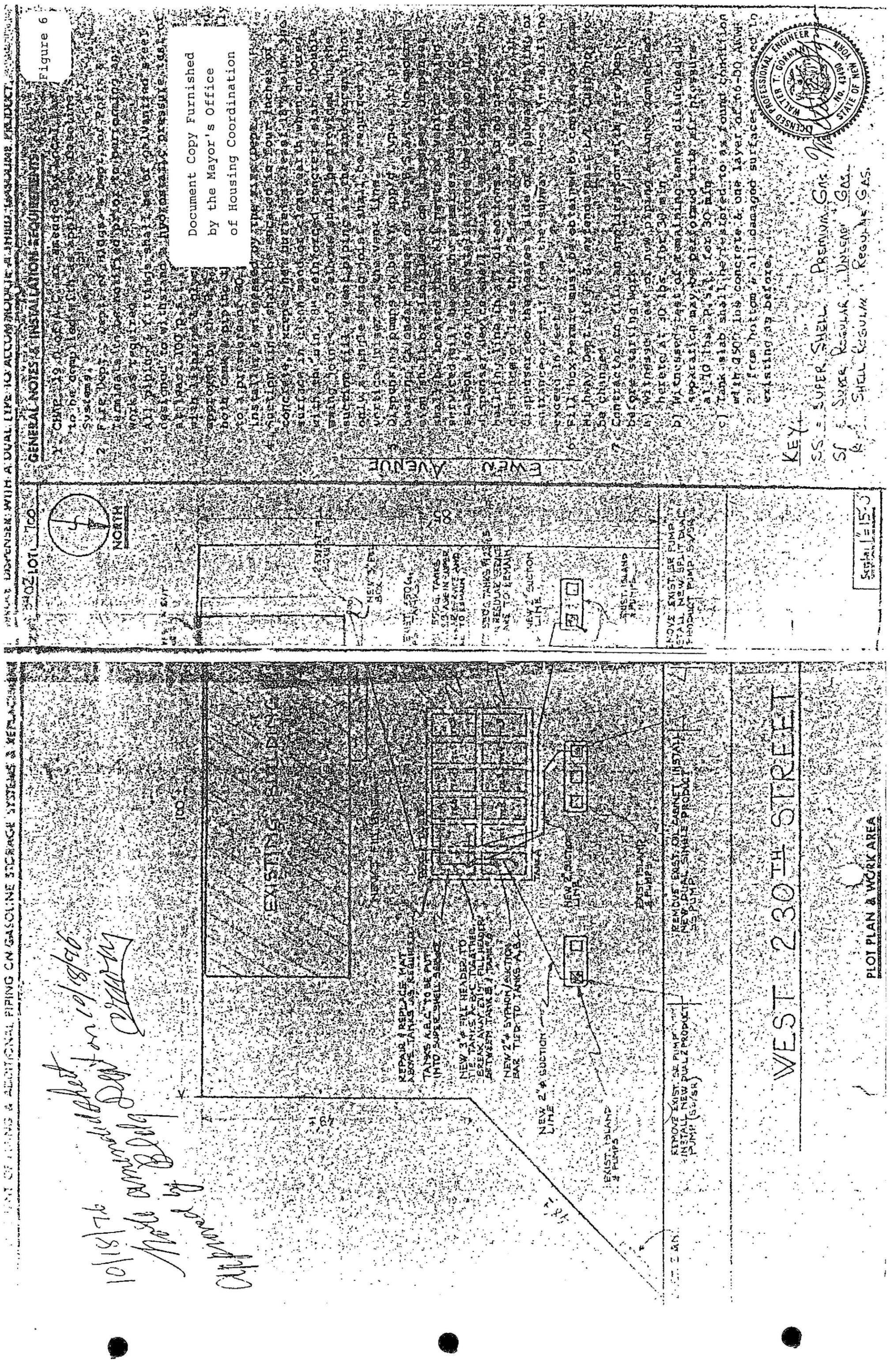




Looking east across Spuyten Duyvil
Creek. c.1887

· Photocopied from Tieck, 1968

Note small building which would be in Area B

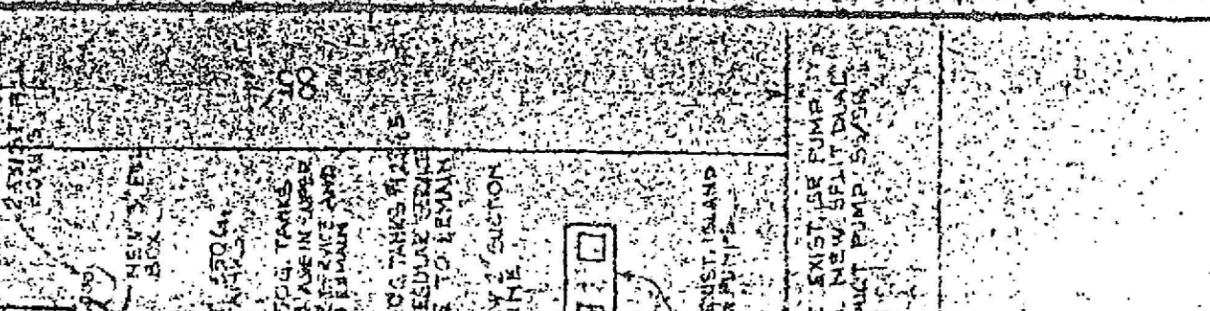


GENERAL NOTES & INSTALLATION REQUIREMENTS

1. CHIEF ENGINEER shall be notified by the contractor to be completed within 10 days of the start of work.
2. FIRE DEPT. shall be notified by the contractor to be completed prior to the start of work.
3. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
4. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
5. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
6. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
7. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
8. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
9. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.
10. ALL WELDING SHALL BE DONE BY A LICENSED WELDER AS DESIGNED TO WITHSTAND A HYDROSTATIC PRESSURE OF AT LEAST 100 PSI.

Document Copy Furnished by the Mayor's Office of Housing Coordination

1. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
2. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
3. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
4. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
6. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
7. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
8. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
9. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.
10. CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES AND STRUCTURES EXISTING ON THE SITE.



WEST 230TH STREET

WEST 235TH STREET

EXISTING BUILDING

NEW 2" SECTION LINE

EXIST ISLAND PUMPS

NEW 2" SECTION LINE

EXIST ISLAND PUMPS

REMOVE EXIST. OIL PUMP & INSTALL NEW DUAL SIMILE PRODUCT PUMP (S/SR)

REMOVE EXIST. OIL CABINET & INSTALL NEW DUAL SIMILE PRODUCT PUMP

REPAIR & REPLACE MAT ABOVE TANKS AS REQUIRED

TANKS A,B,C TO BE PUT INTO SUPER SHELL SERVICE

NEW 3" FILL HEADER TO TIE TANKS A,B,C TOGETHER BREAK AWAY EYE FULL HEADER BETWEEN TANKS A & B

NEW 2" SYNCHRONIZATION BAR TIED TO TANKS A,B,C

Document Copy Furnished by the Mayor's Office of Housing Coordination

Professional Engineer Seal: WALTER T. GORMAN, No. 081470, State of New York

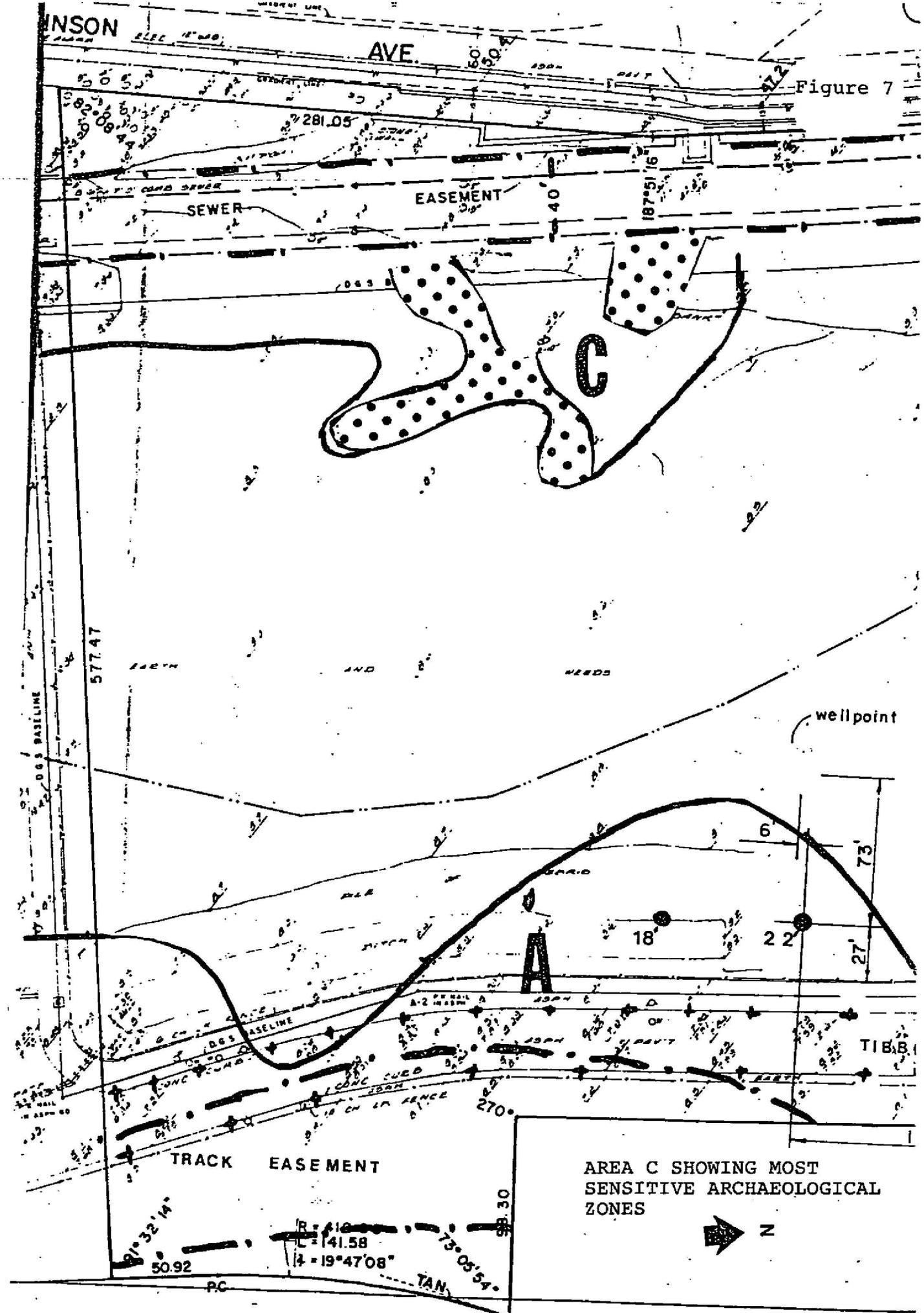
Scale: 1" = 15'-0"

PLOT PLAN & WORK AREA

INSON

AVE.

Figure 7

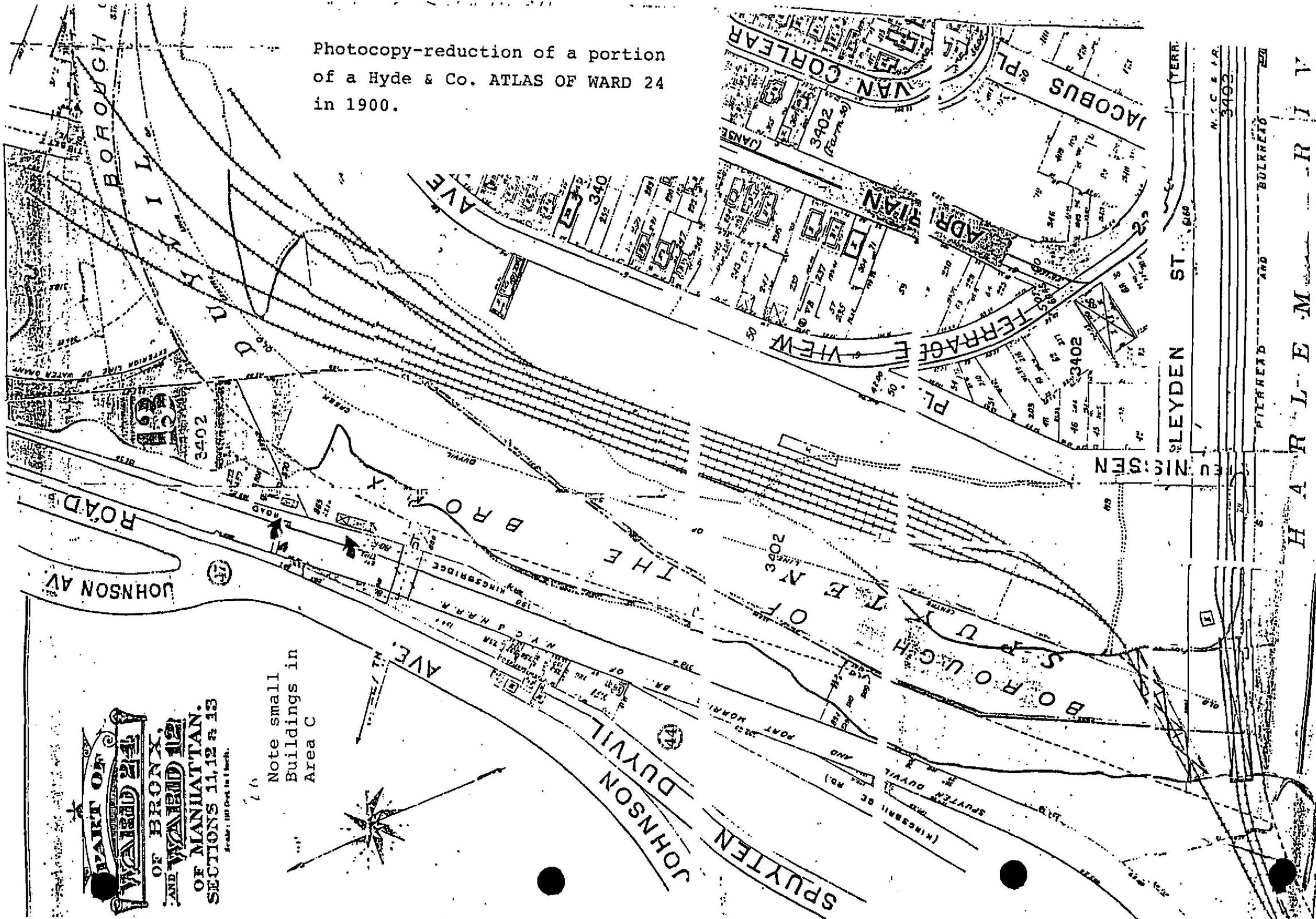


AREA C SHOWING MOST SENSITIVE ARCHAEOLOGICAL ZONES



Figure 8

Photocopy-reduction of a portion of a Hyde & Co. ATLAS OF WARD 24 in 1900.

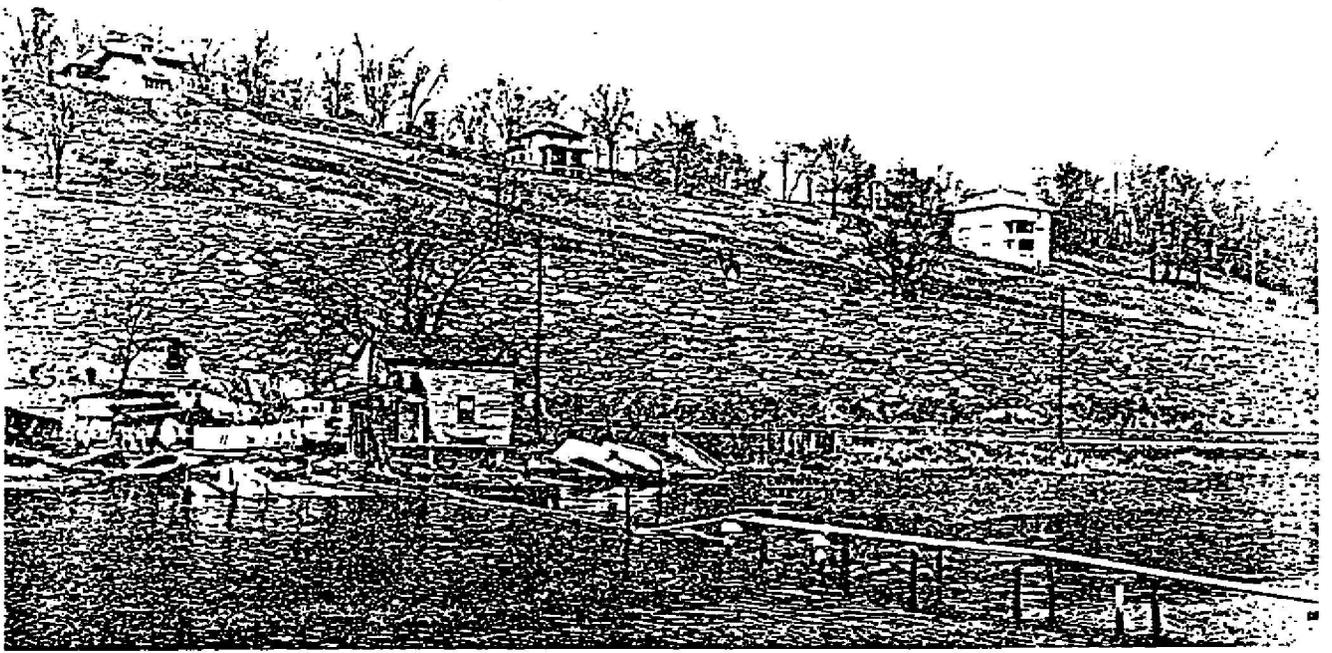


PART OF
WARD 24
 OF BRONX,
 AND WARD 12
 OF MANHATTAN.
 SECTIONS 11, 12 & 13
 Scale: 1/8" = 100 feet

Note small
 Buildings in
 Area C



BELOW: This view of Johnson Avenue and West 228th Street circa 1900 is dominated by the Johnson Avenue wall. At the center of the photograph, a policeman on horseback is climbing the hill. The small house beside Spuyten Duyvil Creek could be reached by a footbridge.



Photocopied from Ultan and Hermalyn,
1964. THE BRONX IN THE INNOCENT
YEARS.