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HUNTER'S POINT INDUSTRIAL ARCHEOLOGY

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HUNTERS POINT INDUSTRIAL ARCHEOLOGY  
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OBJECTIVES

This study sets forth history, function and significance of all railroad-related structures within the Port Authority's Hunter's Point Waterfront Development project area and the adjacent blocks. It also provides material with which to judge the potential significance of any other industrial structures within the project area, although the scope of work did not provide for visits to the interiors of any of these structures, necessary to final recommendations concerning significance.

Potential significance was considered within two frameworks affecting this site. The first was that of the NYC Landmarks Preservation Commission's potential analysis of historical resources, giving special consideration to those sites mentioned in letter of Oct. 28, 1987.

The second framework was the set of criteria used for evaluating potential entries for the National Register. Coastal regulation by New York State or the U.S. may require attention to these criteria, at least for parts of the site actually on the waterfront.

SUMMARY AND CONCLUSIONS

The Hunter's Point waterfront has had two notable industrial aspects since the beginning of its urban development in 1856. As a rail terminal it was important for rail-to-water transfer of freight until fairly recently, and all through the second half of the 19th century it was well known for its dangerous and malodorous chemical industries, especially oil refining and varnish manufacture.

The project area contains within its boundaries essentially all of the former Hunter's Point freight terminal, as far east as Vernon Ave. In the past ten or 15 years all rails have been removed west of 5th St. and the ground has been plowed up. Fill has been placed west of the bulkhead and most of the structures have been removed or altered. Thus the freight terminal as a whole is completely without integrity (for example, compare photos 1 and 2).

The question remains whether any individual structures within this terminal are potentially significant. Functionally and visually the most important structures on the site were the transfer bridges (also called float bridges), last rebuilt 1925. The tower portions of these (resembling gantries) remain, but major pieces of the bridge portions have been cut off and removed, leaving the structures little historical integrity (see comparison photos). Because of this, and because there are transfer bridges of this type in better condition still extant in New York City these structures are not appropriate for landmark designation. However the tower structures contain the original lifting machinery in fairly intact form, and thus contain potentially important information about transfer bridges in this region, especially since no other transfer bridges have been recorded to modern standards. Also this machinery differs from that in the two other remaining transfer bridges of its type, in some of its arrangements. Because of the potential value of this information in understanding a technology that was formerly very important at New York, it is recommended that these transfer bridges be recorded to Historic American Engineering Record (HAER) standards. After such recording there is no regulatory need to keep them, unless it

should be determined that despite their lack of structural integrity they have landmark quality as impressive visual reminders. In any case they should be fenced off as soon as possible to prevent further vandalism.

The most important local railroad structure is the Long Island City Powerhouse, built by the Pennsylvania RR 1903-1906 to power the New York Extension (to Pennsylvania Station on Manhattan) and the Long Island RR's then-new electrification. It was probably the first major railroad electrification powerhouse and a handsome and powerful piece of architecture as well. While this is not located on the project site, it is just across 5th street from important elements of the project, and its quality and scale and potential landmark status must be respected.

As for the second aspect of Hunter's Point's industrialization, there may be remains of the early oil refining industry in the Pepsi Cola bottling plant site which would be significant in light of the former importance of the industry in this area, but this is impossible to determine without full access to the site. Records of building permits (as gathered by AKRF) and analysis of real estate atlases have not allowed even a summary reconstruction of the sequence of events on the site. Thus a judgement about the significance of this portion of the site would require further work, including thorough interior inspection.

The varnish factory site ("National Varnish") on 5th St. does not appear to date to the 19th century as a varnish factory. Parts of the present structural complex may have been completed just before 1900, but it was apparently a clock factory at the time. It is therefore not an historic remnant of the era in which such factories flourished in Hunter's Point. It also does not appear sufficiently distinctive architecturally to warrant landmark status. Flues of this type are extant in other locations in New York City, so it is not the "last remaining" example of a type.

It is possible the factory may contain some processing equipment or features such as interior flue connections that would make it potentially significant by the criteria for the National Register, as embodying the distinctive characteristics of a type of industrial process. Determining this would require interior inspection and further documentary research.

There may be some important remains of much older varnish factory sites in the block (17) southeast of the rail freight terminal, but they are not located on the project site.

#### OVERVIEW OF INDUSTRIAL DEVELOPMENT OF THE STUDY AREA:

With respect to the study area and its surroundings, the industrial development of Hunter's Point began in the 1850's with the filling in of lands along the East River by representatives of Union College of Schenectady, owner. The first factory was apparently constructed in 1856 (Edward Smith's varnish factory; see below) along with the first railroad terminal. The area developed rapidly during the 1860's and 1870's, with two primary functions: rail-to-water transfer, and hazardous and noxious industrial operations.

This site was once very important for rail-to-water transfer of passengers and freight by the various railroads that eventually merged into the Long Island RR. During the first 20 years of rail development here three different terminals were developed; with shifting alliances and mergers these changed their functions from time to time. By the 1870's some stability had been achieved, with the merger of all lines into one Long Island RR. At the foot of Borden Avenue the LIRR had its chief passenger terminal, once one of the

heaviest used in the U.S., where passengers transferred to ferries for Manhattan (shown on Map 1). North of this terminal was the chief LIRR transfer bridge facility. Here freight cars were interchanged with all other railroads at the Port of New York via carfloats, barges with rails on them that could hold from 8 to 21 freight cars. These were unloaded via specially designed transfer bridges and marshalled for delivery to the industries of Long Island. From the 1870's through the end of WW I essentially all freight cars to and from all of Long Island (except for a few places along the waterfront in Brooklyn, such as Bush Terminal) passed through this yard. After that time, alternate routes became available but traffic remained heavy up to the Penn Central merger and subsequent reroutings in 1968-69. Even after the merger, freight cars from non-Penn Central lines such as Erie-Lackawanna and the B&O RR's were delivered via the bridges. The bridges probably went out of use in the late 1970's.

The other major development in the area was of hazardous chemical operations, principally oil refining and varnish manufacture, for which this area of Queens (as well as Greenpoint in what is now Brooklyn) was well known. Other local industries included the conversion of bone and other animal products (carcasses, manure), and foundries making iron products such as tanks for the chemical industries. So characteristic were these types of industry at Hunter's Point that travelers who passed through the ferry terminals were told to expect to have to hold their noses as they came through Hunter's Point (Brooklyn Times in 1867; quoted by Seyfried, 1984, p.91). The area's newness and relative lack of residential development (and town government) led to a lack of what would now be called environmental regulations, attracting these industries. In that age the chief objection to having these factories around was not pollution but the fact that oil refining and varnish making were very hazardous businesses, with frequent explosions and fires. Munsell commented in 1882 (p. 310) "It is probable that today as many hazardous manufactories are centered there at Hunter's Point as at any other place in this country". Map 1 shows some of these in 1891.

Another major reason for the location of these industries here was that the East River and Newtown Creek gave excellent access to the rest of the city by intraport water transport.

During the first decade of the 20th century the patterns began to change. The rail facilities were completely rebuilt, and the passenger ferry operation was made obsolete, though it did not end until the 1920's. In any case, the freight facilities became more important than the passenger ones. The two dominant chemical operations, oil refining and varnish (and paint) making, grew relatively less important.

The small oil companies were all absorbed by Standard Oil and its subsidiaries, who moved their local refining capacity to huge installations in New Jersey and continued to use their Hunters Point property mostly for local distribution purposes. Paint and varnish making also became less important locally, for similar reasons: larger operations than could be accommodated at Hunter's Point took over the business. Other industries moved in. For example, a major sugar refiner located at the southern end of the study area, where Newtown Creek joins the East River. Thus the area remained industrial but much less concentrated on the making of chemicals (and less heavily polluted).

Also during the first decade of the 20th century the Pennsylvania RR bought the Long Island RR and constructed its "New York Improvement". This work was probably the largest construction project ever accomplished by private industry up to that time and included tunneling from New Jersey through Manhattan to Long Island City, the building of Pennsylvania Station on



Manhattan, the extensions of the LIRR's lines through its tunnels into Pennsylvania Station, the building of the world's largest passenger train servicing facility just east of Hunter's Point in the Sunnyside area, and the construction of a connection to New England via Hell Gate Bridge, among other projects. Included was the electrification of both the line through Manhattan and several lines of the LIRR. Local freight yards were also modernized at the time, and grade crossings eliminated. The project had a major impact upon Hunter's Point: not only did it result in changes in the landscape, such as the building of Sunnyside Yard a few blocks east of the waterfront, a huge power station on 5th St., and changes in the freight yards, but also it eventually led to the discontinuance of the ferry to Manhattan, leading to stagnation of the commercial district nearby (Seyfried, VII).

Since WW II the area has been in a long industrial decline, with the replacement of many primary industries by service establishments and local suppliers. In this process many landmarks of the earlier era have been destroyed or drastically modified. For example, in the 1970's the Daily News built a "gravure inserting" plant after demolishing most of the remains of the sugar refinery, but this plant closed only a few years after it was opened, leaving only an almost new, large, rather unsightly building, now unused.

#### SITES WITHIN THE STUDY AREA:

##### LONG ISLAND RAILROAD FREIGHT TERMINAL:

This terminal was an important water-to-rail transfer point, reached from the main LIRR freight yards through the cut, and mostly built around 1910; it went out of service about 1980. As a terminal it now lacks all integrity. Tracks between 5th St. and the transfer bridges have been removed, and the ground is torn up (see photos 1 and 2).

The former yard office remains, in poor condition. It is a composite of various materials including cinder block and appears to have been rebuilt or greatly modified several times in its life span. It is not historically or architecturally significant. The bridge carrying Vernon Blvd. over the cut is a heavy steel truss bridge, something of a hybrid between a Pratt and a Warren type; this bridge is not of special significance. The two remaining steel floodlight towers are not unusual and of no historic significance.

The transfer bridges (also called float bridges) in their present form date from 1925 (Port Authority Annual Report, 1925) and are of an important type, and (as the Landmarks survey pointed out) are now unique in New York in being paired. See Appendix for background.

There are two other transfer bridges of this type in the region, one in better condition in the Brooklyn Navy Yard and the other, at the foot of 69th St. in Manhattan. Both are threatened by potential development and/or lack of maintenance. Because of the historic importance of transfer bridges at New York - they were essential to the system of carfloating which made New York Port's characteristic interchange of freight cars over water possible - it would be very desirable to preserve an example of this type at New York.

The Hunter's Point bridges differ somewhat from the other examples of the type. For example the tower structures contain a block and hoist on a monorail extending the full length of both of the north pair of towers (presumably used to pull machinery out for repairs), not found in other examples (visible in photos 3 and 7). They are also some of the few remaining landmarks of important aspects of the industrial past of this neighborhood, being remnants of an important rail-to-water transfer operation. The machinery in the towers remains fairly intact, as shown in photo 7.

However the historical integrity of these bridges has been destroyed by

vandals or thieves who have ruined the bridge portions of these structures by cutting large sections of them away (see photos 3-6 for appearance now as contrasted with appearance a decade ago). In addition fill has been placed in the water around the bridges, probably to get access to the girders for the cutting torches. While the fill can be removed it would be difficult or impossible to restore the bridge girders in a historically correct way. Without restoration, they are impressive but fragmentary (and even misleading: some observers have not realized that the towers are supposed to stand in water, at the outshore end of a bridge), making museum-type preservation pointless. Adaptive reuse of the structures is highly unlikely, given their specialized nature. Unless they are to be presented as a kind of industrial sculpture there is no obvious rationale for their preservation.

Whether or not they are eventually preserved, because of the potential information they contain about the technology of this type of machinery, and because their towers retain intact most of their original mechanism, these bridges should be documented according to HAER (Historic American Engineering Record) standards and the results transmitted to HAER for deposit in the National Archives.

For the present, preservation in situ is recommended, until they are recorded and until the fate of the other two transfer bridges in the harbor of similar type is determined. In the meantime they should be fenced off to help prevent further vandalism.

#### Long Island City Powerhouse of the Pennsylvania RR (photo 9):

This powerhouse was built by the Pennsylvania RR 1903-06 to power its New York Extension, which included a line from Newark under the Hudson and Manhattan to Sunnyside Yard in Long Island City. It also provided power for the Long Island RR, and was the first powerhouse in the U.S. to be built specifically for standard high-density rail electrification (Carl Condit: Port of New York, vol. 1, pub. by Univ. of Chicago, 1980, p.81 & 393). It is likely that McKim, Meade and White had some influence in its design and architecture, although all references give Westinghouse, Church and Kerr Co. credit for the design and engineering. Although it has been out of service as a powerhouse for many years, it retains much of its architectural integrity. See Seyfried, LIRR, VII, pp. 53-58 for complete description.

According to Seyfried (p. 138) it is "the most solidly built structure in all Long Island City even today". It was built on 9113 piles overlaid by a concrete pad 8' thick. The side walls are of great granite blocks up to the first story level, with bricks above that. The smokestacks are 23' in diameter and 275' high. This was the first powerhouse to use horizontal steam turbines exclusively to turn its generators, and in many other respects as well (coal and ash handling arrangements, arrangement of boilers, condensing arrangements, etc.) it was innovative. At the time of its construction the engines and generators were the largest ever built.

This structure is historically and architecturally significant. It may be eligible for nomination to the National Register and designation as a New York City landmark. Although it is off the project site, the erection of a large building directly across the street from the powerhouse would clearly have an impact on it.

#### Pennsylvania RR (Amtrak) Tunnel Ventilation Buildings (photo 8): (5130-5200 2nd St.)

These buildings relate to the powerhouse architecturally; they were designed by the same firm, and both served the Pennsylvania RR's New York

Extension project. However architecturally they contain only faint traces of the distinction possessed by the powerhouse. Done in this size, and without the granite basement, they resemble ordinary small industrial structures of no great distinction. Nor are they sufficiently representative examples of Hunter's Point industrial past, to be designated as landmarks of that past.

#### PEPSI COLA SITE

This site was first developed in the mid-1860's for the processing of crude petroleum into kerosene for use as illuminating oil. In order to evaluate the site it must be placed in the context of the the oil refining industry at Hunter's Point.

Petroleum became available in quantity after Drake's first successful artesian oil well in 1859. Kerosene made from this oil rapidly replaced whale oil for lamps. Another factor in the rapid growth of oil refineries at this time was the Civil War, which increased demand for kerosene and lubricants. As discussed above, the reason for locating oil refineries in this area was that nuisance regulations were fairly restrictive in Brooklyn, and nonexistent in Hunter's Point (Brown & Ment).

An 1867 observer reported 20 kerosene oil factories in the Hunter's Point/Long island City area (Seyfried, 91). At first crude oil was shipped from Pennsylvania to terminals in New Jersey and transshipped to barges for the trip across the harbor and up the East River to the refineries. After refining, the kerosene was packed in barrels or in tin cans soldered shut. It was then loaded onto barges for delivery to various points. Obviously, good access to navigable water was essential. In 1879 the Crosstown Pipeline was completed, carrying oil from New Jersey under the harbor to both Greenpoint and Hunter's Point (Brown & Ment).

Thus Newtown Creek, and the shores of the East River near the creek, at an early date became the center for petroleum refining in the New York area, and the refiners of this area pioneered in this new technology. The best known of these works were those of Charles Pratt (maker of Astral Oil) in Greenpoint, just south of Newtown Creek, and those of his friend Frederick Devoe (maker of Brilliant Oil), located in Hunter's Point along a canal (Brown & Ment).

According to Seyfried, p. 92, this canal was created in 1868 by land developer Henry Anable (acting for Union College). However on Whiting's 1858 Coast & Geodetic Survey map (reproduced by Seyfried, opposite p.9) something similar was shown as already existing. Probably Anable added bulkheading to a pre-existing canal or stream, to make the lands next to the canal valuable for manufacturers.

In 1873 Standard Oil acquired the Devoe Mfg. Co. and in 1874 the Pratt company. The merger was kept secret until 1882. The various refineries remained somewhat independent until 1892 when they were officially absorbed into the Standard Oil Co. of NY. After the turn of the century demand for illuminating oil declined rapidly and the works turned increasingly to producing gasoline (Brown & Ment).

In 1876 Pratt (at the request of Standard Oil) bought two refineries on the North Shore of Newtown Creek and consolidated them as "Pratt's Queens County Works" (Brown & Ment). One of these was earlier called the Queens County Oil Works and was in operation as early as 1863, as shown by a news item mentioning its complete destruction by fire June 9, 1863 (Seyfried, 89). This works was the last of the numerous refineries to close, in 1950. (Brown & Ment). A kerosene works on the north shore of Newtown Creek, about a mile inland from Hunters Point, may have been even older, having been erected to

produce coal oil and converted later to kerosene production. It went up in smoke in 1865 (Seyfried, 89). It is not certain how destructive these fires were: although local newspapers talk of total destruction, it is possible that the masonry remained after the fire. In any case they were often quickly rebuilt, probably with few changes.

#### Buildings on the Site:

In 1882 or 1883 Standard Oil erected a large 3-story brick building on the site for making barrels. Shortly thereafter this operation was moved to NJ and the site turned over to Devoe. Devoe installed can-making and oil packing machinery in the building and in 1884 added three one-story brick and timber buildings on the site, chiefly for storage warehouses (L.I. City Star, Dec. 26, 1884, 2:4; quoted by Seyfried). Pepsi-Cola took over the plant in 1937 and began operations within the earlier structures (Martin, 1969, p. 85). Although Pepsi modified the facades (Photo 11) it is possible that much 19th century construction is still in place. Inspection of the sequence of Maps 6-11 suggests that certain walls could date to the 1870's.

Conclusion: The structures at the Pepsi-Cola site may well retain structural evidence of their use by the early oil processing industry. It is possible that the buildings may date from the early days of the industry in the area; they may be the only structures remaining from the earliest era of industrialization at Hunter's Point. Many modifications to the buildings were made with changes of ownership and use within the oil era (as in the conversion from refining to distribution), and later by Pepsi-Cola, but traces of these changes are in themselves significant information about the evolution of the chief industry at Hunters Point. It has proved impossible to deduce from real estate atlases or building permit records what the physical transformations were: for example it is not possible to deduce from them whether structures were completely replaced or whether earlier wall fabric was retained. Inspection of the site and company records is essential to that determination and any cultural resource survey of the site must remain incomplete until that has been accomplished.

The structures located further up Newtown Creek, at the Queens County Oil Works site, have more historic interest as monuments of the local oil industry, since the buildings appear less modified, the site was in use even earlier, and it continued in oil-related use much later. This fact diminishes the potential loss of the Hunter's Point site as an historic survival, but not its potential for yielding information as described above; thus mitigation in the form of recording may be more appropriate than any kind of preservation.

#### VARNISH WORKS

Background: Paint and varnish manufacturers also concentrated significantly in the Hunters Point neighborhood. Like the oil industry they were drawn by access to a good waterfront and lack of restrictions against their sometimes dangerous presence.

The first arrival was the firm of Edward Smith & Co., said to be the oldest varnish and paint manufacturer in the U.S. (it began in a converted house on Manhattan in 1827). In 1829 the company erected a plant - the first varnish factory built in America - on the property of one of its owners at Astoria. But that community was in the process of making itself a choice and growing residential area, and prevailed upon the varnish maker to move out. It did so in 1856, moving to Hunter's Point and building the first factory buildings there (Seyfried, p. 19-20; Munsell, 1882, p. 308; Kelsey, p. 127).

According to Kelsey (1896, p. 127) the factory was built at the foot of 5th St., and was still there in 1896. It is in fact shown there in the Wolverton real estate atlas (1891), on block 17; see Map 1. By 1928 (Hyde atlas) the Edward Smith Co. had moved, taking over the buildings of the Lawson Valentine Varnish Co. on West (now 5th) St. between 6th and 7th Sts. (shown on Map 4 as of 1911). By 1935 (Hyde atlas) Hub Paint & Varnish Co. had taken over the works, and still were there in 1973; the buildings have since been demolished.

Several other varnish companies located on block 17, and in 1973 Eaglo Paint & Varnish Co. was still there, in a building that may consist partly of walls of the older companies (though not of Edward Smith Co, as far as can be discerned from the real estate atlases).

There may be walls, etc., remaining from varnish factories in the historic block where Edward Smith was located (block 17) but that block is not in the project site. In any case, the only remaining intact structure that served this industry in the past is the National Varnish Co. site: (SW corner of 47th AVE (8th St) and 5th St (West Ave).) This complex is located on block 20, at 47-02 Fifth St. (photo 10).

#### History of site, from maps and atlases:

1858: (U.S. Coast & Geodetic) no building on site

1873 (Beers): Buildings on site, not present ones. The western half of the block contained Capt. Tyson's Shipyard; the bldgs. were presumably part of yard.

1891 (Wolverton): previous bldgs. gone; now only one small wooden bldg. shown. Block now occupied by stone yards replacing shipyard (Map 7).

1903 (Hyde) site now occupied by Caesar Bros. Clocks; map shows masonry bldgs. but only along 5th (West) St. (see Map 3).

1909 (Hyde) Still Caesar Bros. Clocks. Masonry structure completed along 8th St.; as shown on plan it could be present bldg. (see Map 4).

1913 (Hyde) unchanged

1928 (Hyde) Now owned by National Varnish Co. and additions completed; site now closely resembles modern map.

1955 (Hyde) Now owned by Tempo Chemical Co. (see Map 5).  
However city building permit records show owner or occupant as National Varnish Co. in this year.

1973 (Hyde) Still shown as Tempo Chemical.

Thus the buildings in question were probably converted to varnish making, after apparently serving as a clock factory originally. The addition of the flue system has given it the characteristic look of a varnish works. As a surviving structure of the varnish industry, possibly the only one (in this area) that shows the characteristic flues, it is a reminder of an important phase of Hunter's Point's former importance in this industry.

However the historic significance of the site itself is reduced by the fact that it was not a varnish factory during the period when varnish making was a dominant industry in Long Island City. According to research conducted



to date, the complex was not associated with a major or innovative firm in the business. Neither the company nor the site is mentioned in the sources consulted for the history of varnish making in Long Island City (primarily because they dealt with the industry at its height, in the 19th century). Therefore it is unlikely this site is deserving of landmark status.

Similar flues can be found elsewhere in this city, e.g. on Red Hook and on the North Shore of Staten Island, so these are not unique.

It is not known whether historic equipment or structural elements related to varnish making remain inside the structures, as the site was not visited. For purposes of determining eligibility for the National Register, on the grounds that the complex embodies the distinctive characteristics of varnish factories, the site interior would need to be inspected physically.

#### PIDGEON ST. TRANSFER BRIDGE

At the foot of a now-vanished street (55th Ave., formerly Pidgeon St.), behind the Daily News building, stands a railroad transfer bridge of a simpler design than the bridges of the LIRR to the north. This bridge is almost all that now remains of a former railroad terminal that had no other connection with any other railroad except via carfloat, reached over this transfer bridge.

The first railroad at this site was the Flushing RR, already shown here on the 1858 map. In fact its ferry terminal was completed in 1854 (Seyfried, LIRR, II, 145). This ferry terminal was built in the middle of a lumber terminal, and the lumber terminal remained there for some time (Yellow Pine Lumber Co.). The terminal apparently changed hands and was used only for freight after 1869, and probably went out of use entirely in the 1870's when the rival lines of Long Island all merged, at which time freight handling was concentrated at the transfer bridges north of the ferry terminal (Seyfried II, 135; III, 124). The 1873 Beers and 1891 Wolverton atlases show no tracks in this area.

By 1903, however, a sugar refinery was built just south of Pidgeon St. (55th Ave.) and a very short railroad had been placed on the street. Its function was apparently entirely to serve the refinery, and it received all cars by carfloat (see Map 2). In later years the sugar refinery expanded in all directions, eventually building over the lumberyard in the block north of the railroad and also in the blocks east of 5th (West) St. The railroad expanded to the east, where it built team tracks to serve other local shippers besides National Sugar.

At an early date the railroad became part of the Brooklyn Eastern District Terminal RR and was operated as one of the latter's terminals. The engine that served this terminal was often brought in by carfloat, along with the freight cars. This terminal line was still in heavy use in 1970 (aerial photo), after the sugar refinery had been torn down in favor of the Daily News Bldg.

The basic design of this transfer bridge is simple: one end of the bridge is hinged at the bulkhead face and the other end rests on a floating pontoon, causing automatic adjustment of the outshore end of the bridge to the tides. The bridge structure is a through type pony truss, rather than the through girder type used on all other currently extant bridges of this type in the harbor.

In itself this bridge is a slightly unusual example of a simple railroad transfer bridge (it is a truss type rather than a girder type, as is more common). It is associated with a type of railroad operation very characteristic of New York Harbor, the terminal line connecting via carfloat with all other lines in the harbor. However this context is now entirely vanished, and the bridge by itself is not highly significant without that context.



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"SUSPENDED APRON" TYPE  
TRANSFER BRIDGES AT NEW YORK  
Thomas R. Flagg

The railroad "transfer bridge" or "float bridge" is a structure used for loading freight cars onto or off a ship or barge, and was developed in the second half of the 19th century. In fact it is one of the most efficient freight handling devices known, allowing the loading or unloading of 800 tons of cargo in about 15 minutes, faster even than modern container cranes operate. It was once common at several ports of the world, but at none was the float bridge so extensively used as at the Port of New York, where 80 or 90 of them were in active use in the 1920's. Because of the geography of the port, with its many waterways and its high land costs, it would have been quite difficult for each railroad to serve the whole region without the invention of the transfer bridge, which made it possible to move freight cars over the harbor waters to any point on the waterfront.

Trucks on our highway system now move most of the freight that the railroads previously handled by carfloat. A few transfer bridges remain in use but almost all of them are of a very simple type, not the more technologically advanced (and more interesting) type that was required to handle the large volumes of freight moved in the heyday of railroad traffic at New York.

The simpler type of transfer bridge was first built at the Port of New York about 1866. It is essentially a railroad bridge, about 80 feet long, with one end attached to the shore by a hinge, and the other end supported by a floating pontoon that automatically rises and falls with the tide. One end of a carfloat (a long flat barge with tracks on it) is connected to the watery end of the bridge, the rails are joined, and freight cars can then be pulled off or onto the carfloat. This type of float bridge is relatively cheap to build but cannot be operated very rapidly as it takes considerable time to connect it to an incoming carfloat.

The more advanced type of transfer bridge has no pontoon. Instead its moving end is suspended from an overhead structure containing a system of motors, lifting jacks, cables, and counterweights that can directly adjust the end of the bridge to different carfloat deck heights. It is much faster in operation but also costs much more to build, as the mechanical structure must be designed to support heavy changing loads and to allow for strong torsional forces. This type of bridge was introduced about 1888 and during the next 25 years was improved continuously to make it faster and stronger.

At first only the largest railroad companies could use the suspended type of transfer bridge because of its high cost. In 1904 however the Long Island RR put into service a different type of suspended bridge that was much simpler than that in common use, and therefore cost less to build. Unfortunately the engineer who designed it overlooked certain requirements and this bridge destroyed itself after a few months of service, due to an apparently unforeseen (though not uncommon) combination of low tides and a heavy carfloat. A different engineer, F. B. French, was asked to rebuild the transfer bridge. He decided to salvage those elements of the new design that made sense, and rebuilt the bridge with some changes that would solve the original problem.

Not content to rest there, he invented an ingenious new method of adjusting the bridge to the twisting forces caused when a carfloat lists to one side due to loading or unloading. For this invention, called by him the "contained apron" design, he received patent No. 983617 on Feb. 7, 1911.

The first transfer bridge to be built to the new design was built in 1911

for the New York Central RR on the Hudson River waterfront of Manhattan, at the foot of West 69th St. (or what would be the foot, if it were extended to the water). This location was at the north end of the railroad's 60th St. yards. Compared to earlier suspended-type designs (an example of which lies in ruins just south of it) this bridge was faster and easier to operate, showed less inclination to dump boxcars into the river, and cost significantly less to build. It was so successful that every subsequent suspended transfer bridge at the Port of New York was built to that design, except for some replacements in kind.

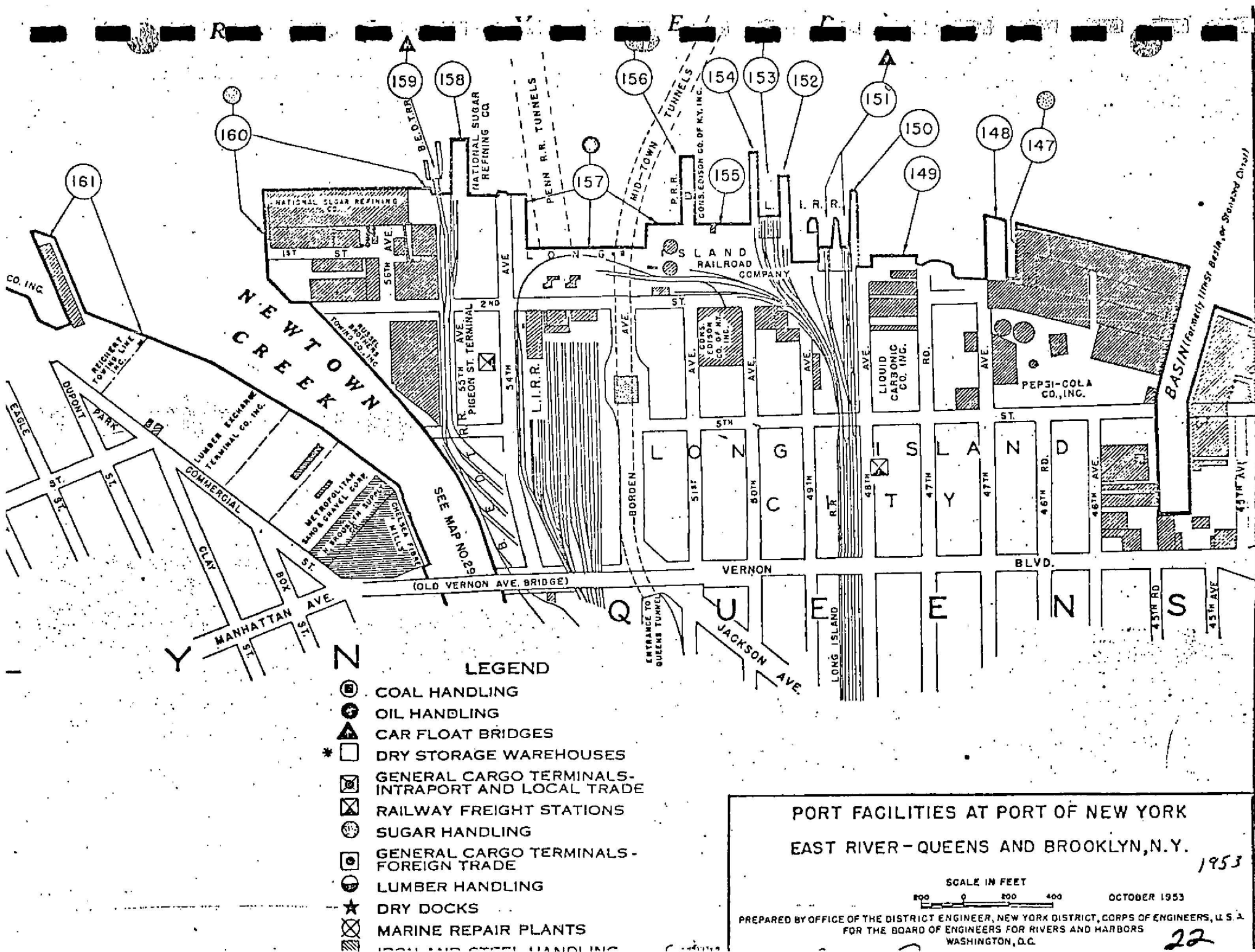
For example, the LIRR's Long Island City bridges were rebuilt to this design in 1925, and the bridge at the Brooklyn Navy Yard, built in WW II, is also of this design. These bridges still stand. Those at Long Island City are of interest in that they are disposed in two sets of paired bridges, for a total of four, and are thus more impressive than the single bridges at 69th St. and at the Navy Yard. The machinery in their towers is relatively intact but vandals or scrappers with welding torches have destroyed the bridge girders. The transfer bridge at the Navy Yard is fairly intact (or was until recently) and may even be operable.

There are two suspended-type transfer bridges at Greenville in Jersey City that are still in use. These were originally built in 1905 to the earlier, heavy-duty design, but have been extensively rebuilt and simplified in the intervening years. They are interesting, and show much evidence of their original design, but have less historical integrity than those on the New York side of the harbor.

#### REFERENCES

Anon.: "The 69th St. car-transfer bridge of the New York Central & Hudson River at New York City" in Eng. News, 66, 28 Dec. 1911, pp. 770-774.

Thomas Flagg: "The development of the transfer bridge at New York" (article in preparation; report for U.S. Army Corps of Engineers, N.Y. District)





Long Island City when it was only five years old in 1858; there are only seven streets laid out — 47th Road to 53rd Avenue.



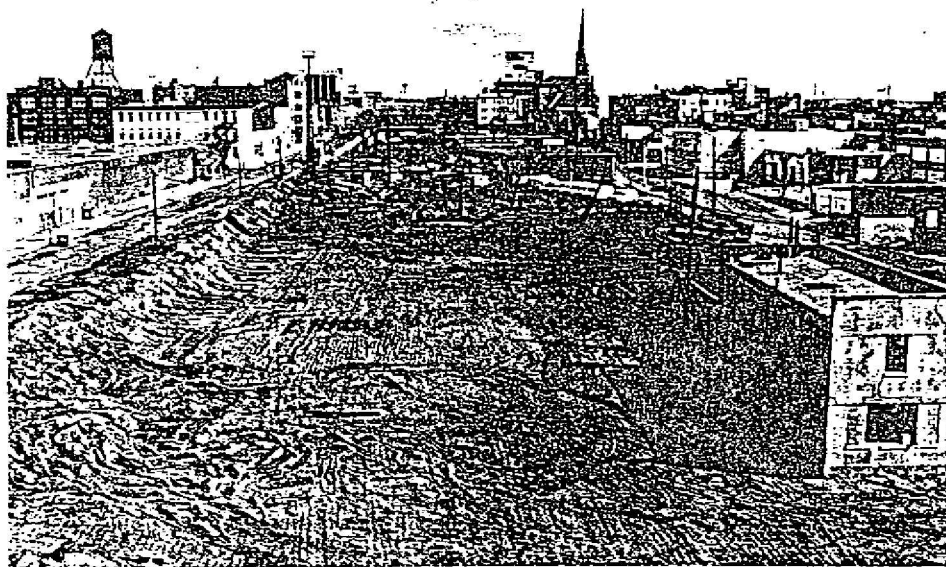


Photo 1 (March 1988): Long Island RR freight terminal site as seen from transfer bridges. Camera faces east. Building at right was yard office. Floodlight tower and Vernon Ave. bridge in distance.

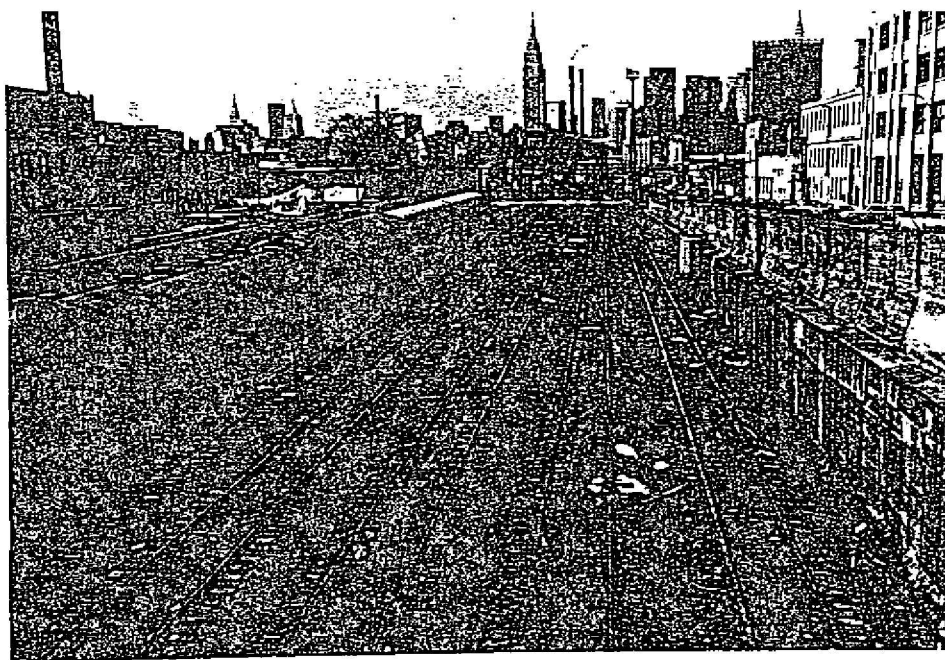


Photo 2 (April 1972): Same scene as in Photo 1, except direction of view is reversed; that is, camera faces west from Vernon Ave. bridge toward transfer bridges.



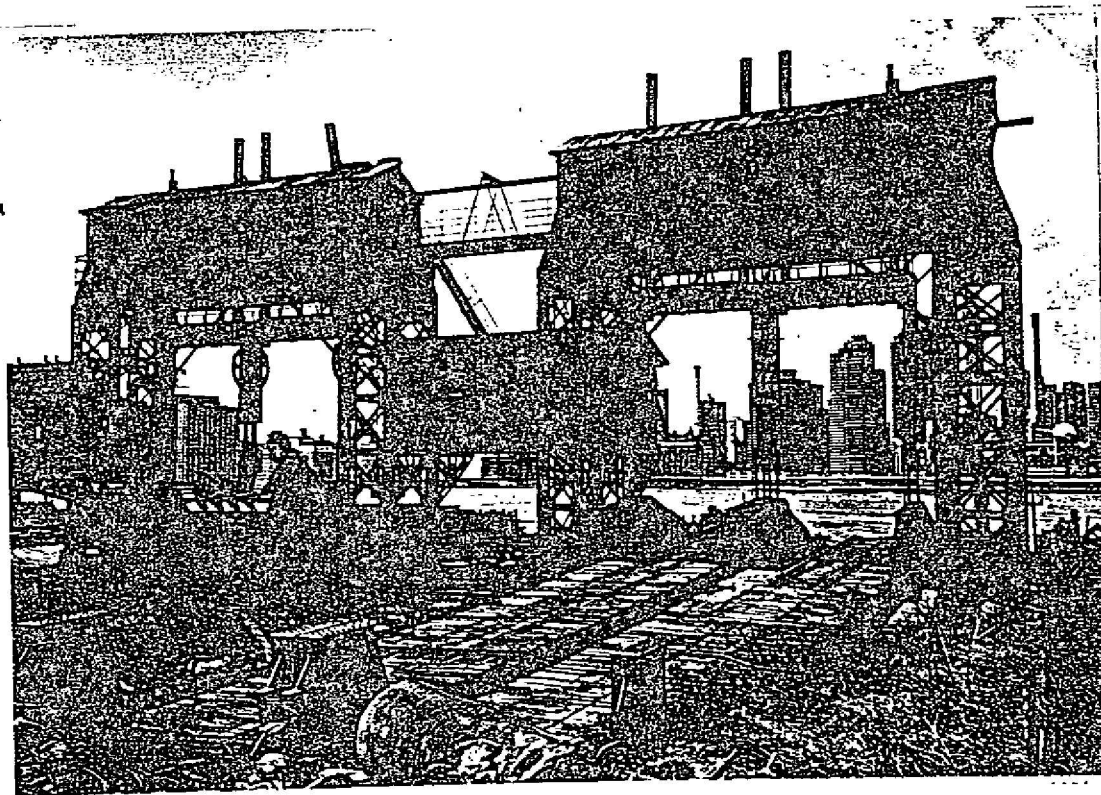


Photo 3 (March 1988): LIRR transfer bridges, north pair, showing damage.

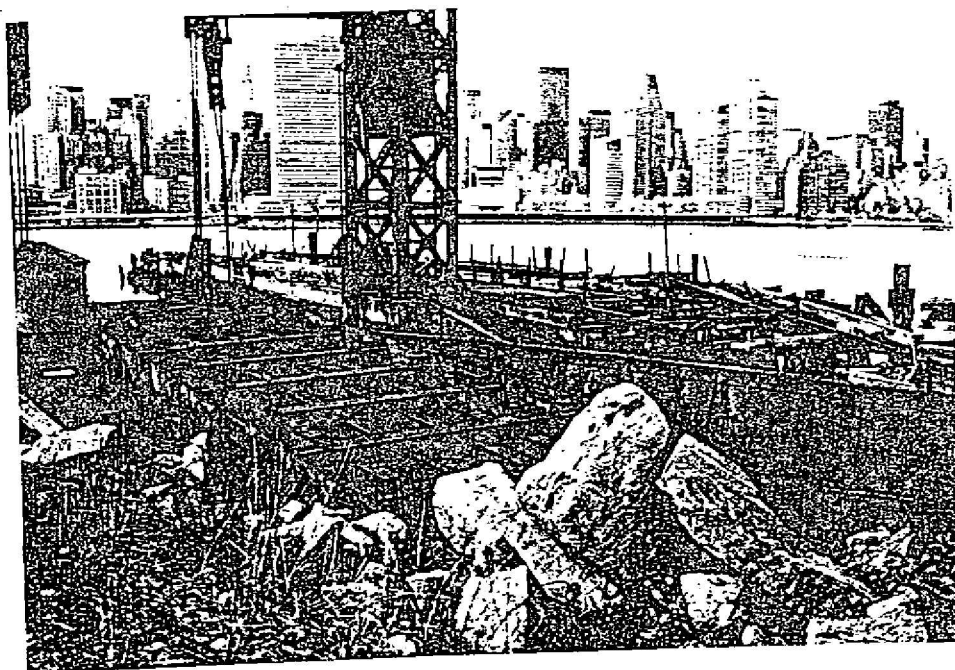


Photo 4 (March 1988): LIRR transfer bridges, south pair.

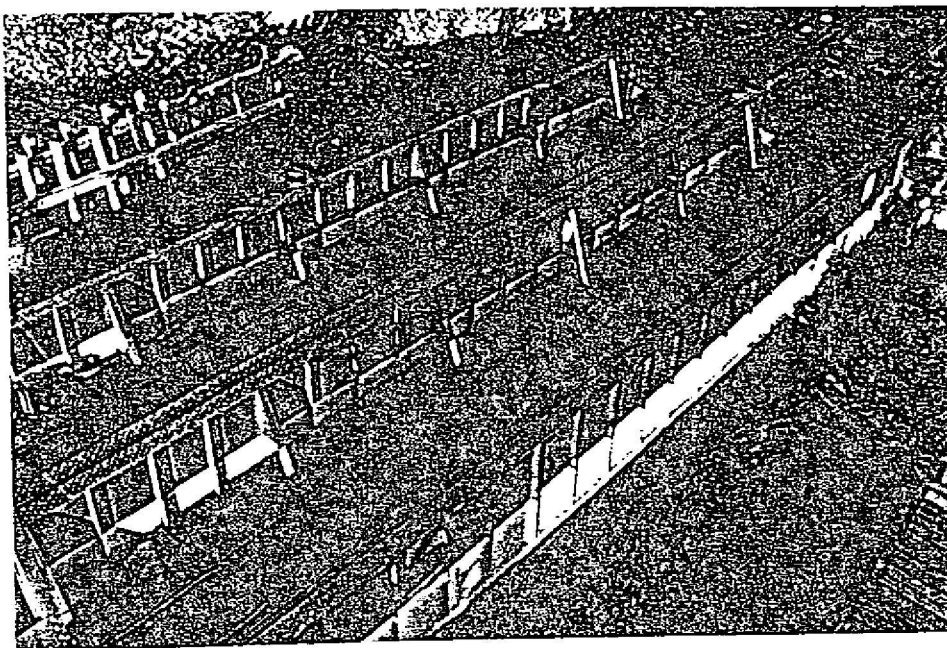


Photo 5 (March 1977): Girders of northernmost transfer bridge, as seen from tower.  
*- when intact*

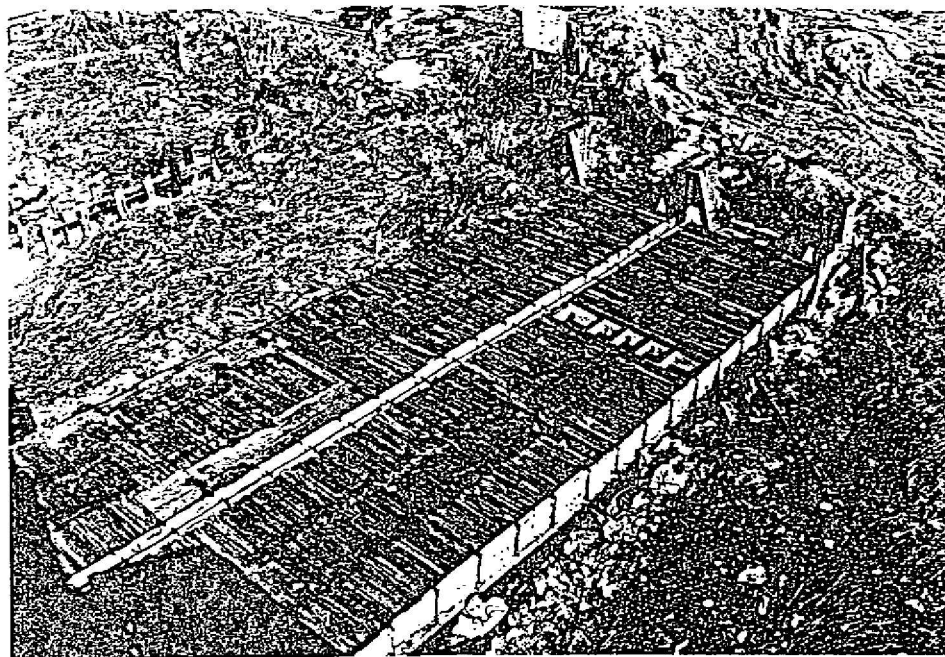
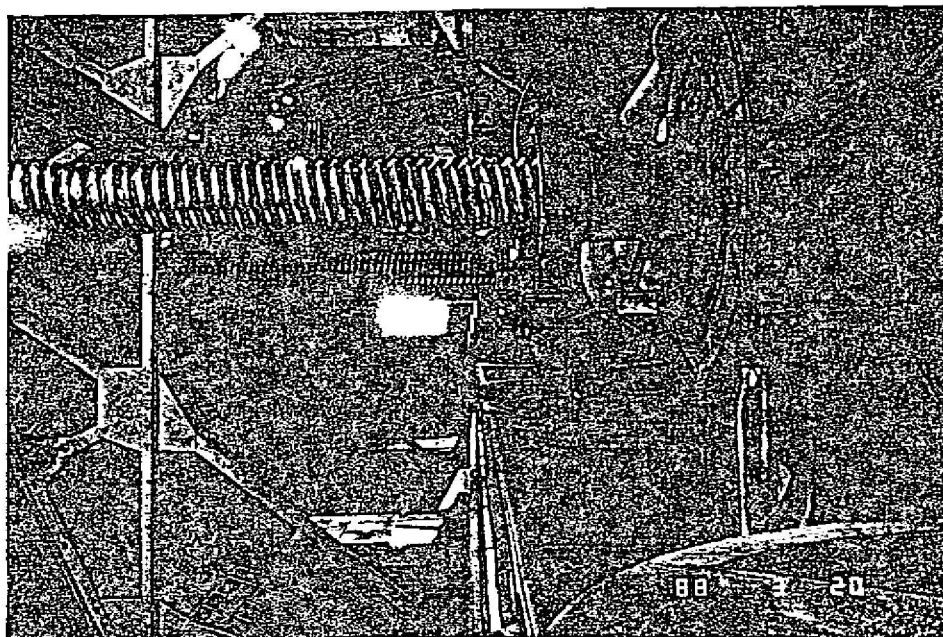


Photo 6 (March 1988): Same structure, from same viewpoint, in current state.  
 Note sections of girders removed.

Top of photo



Bottom

Photo 7 (March 1988): Interior of tower of north transfer bridge pair, showing machinery for lifting bridge. (Turn page for proper orientation)

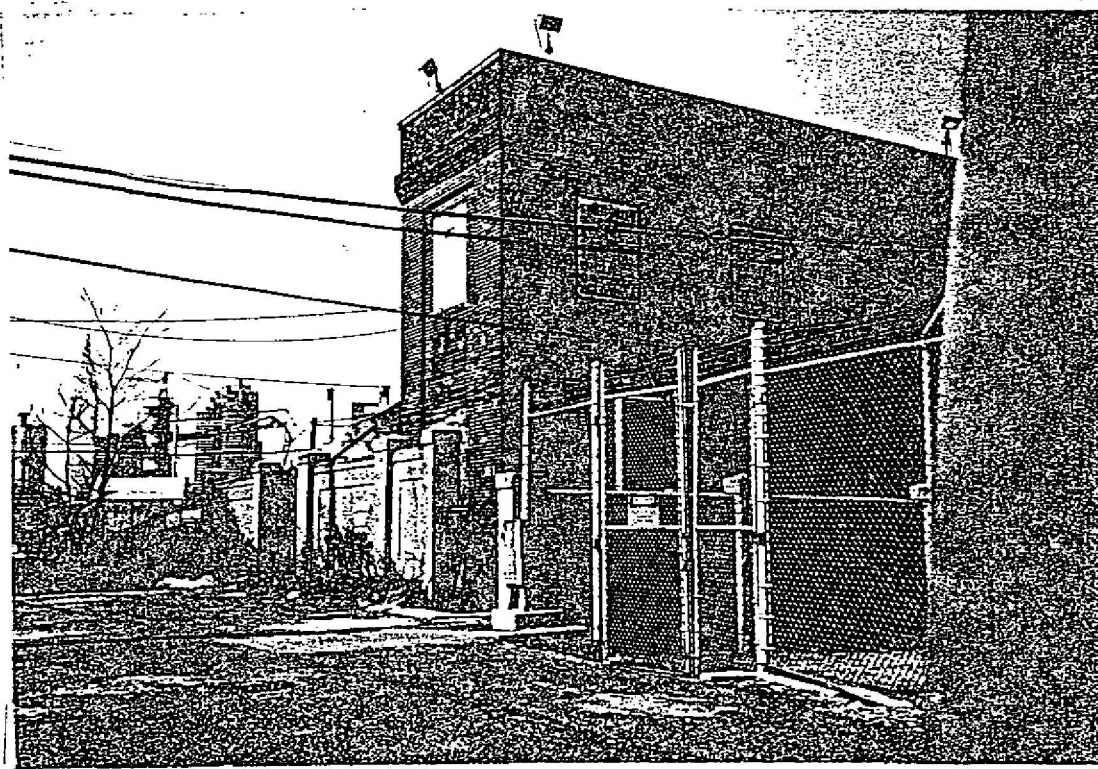


Photo 8 (March 1988): Amtrak (ex-PRR) ventilation building, over tunnels to Manhattan.



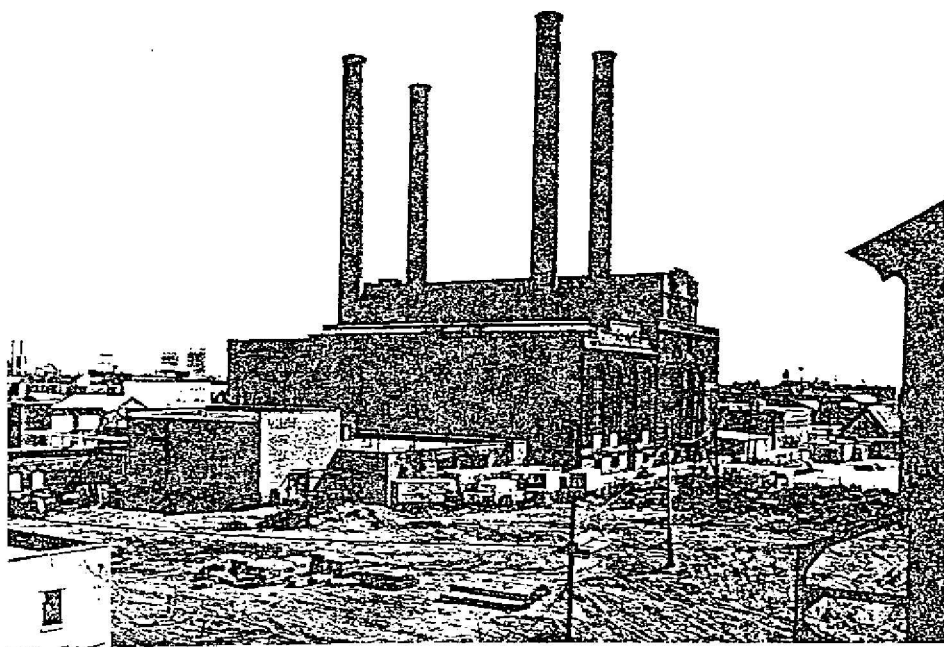


Photo 9 (March 1988): Long Island City powerhouse of Pennsylvania RR from transfer bridge.

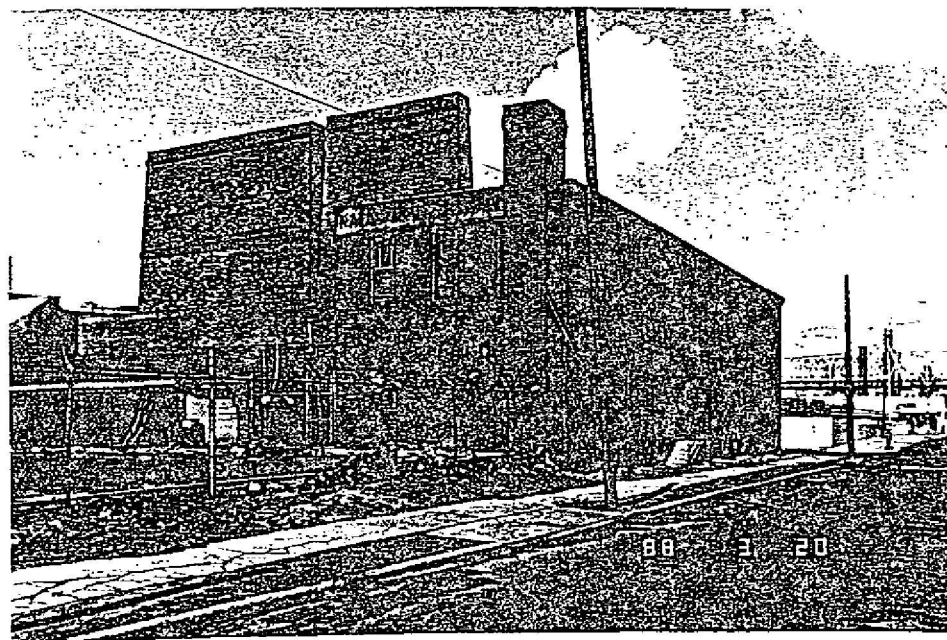


Photo 10 (March 1988): National Varnish Co. complex. Camera faces northwest. Note flues.

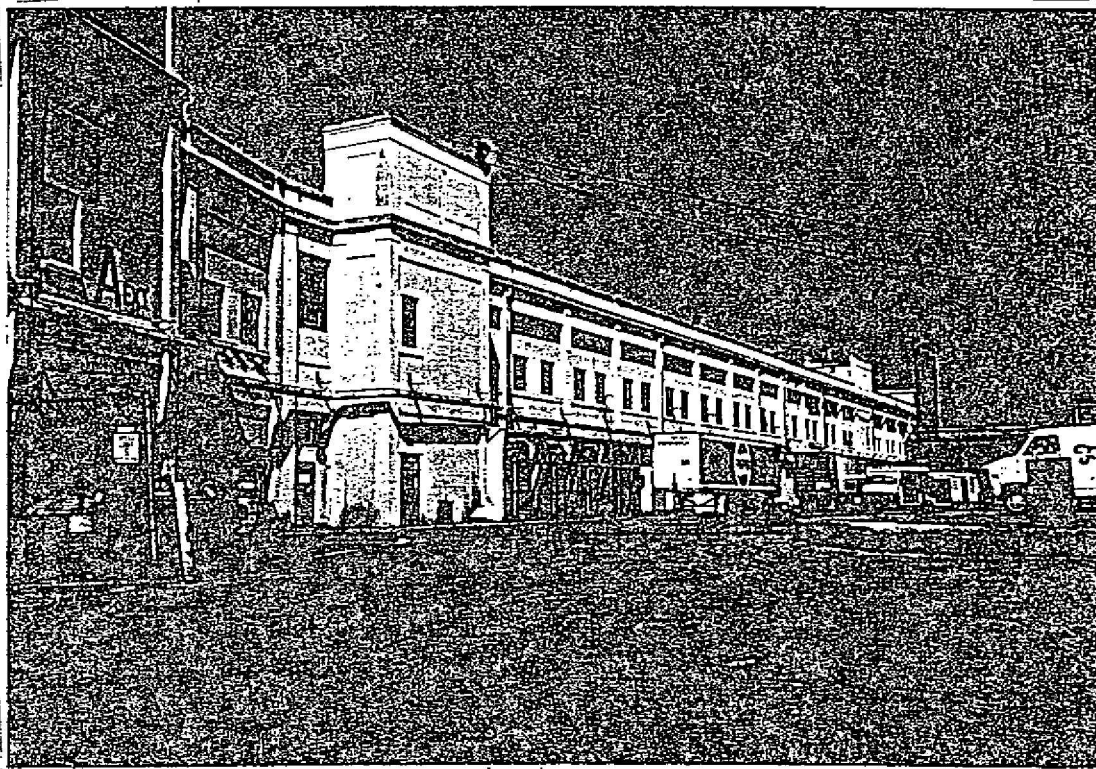
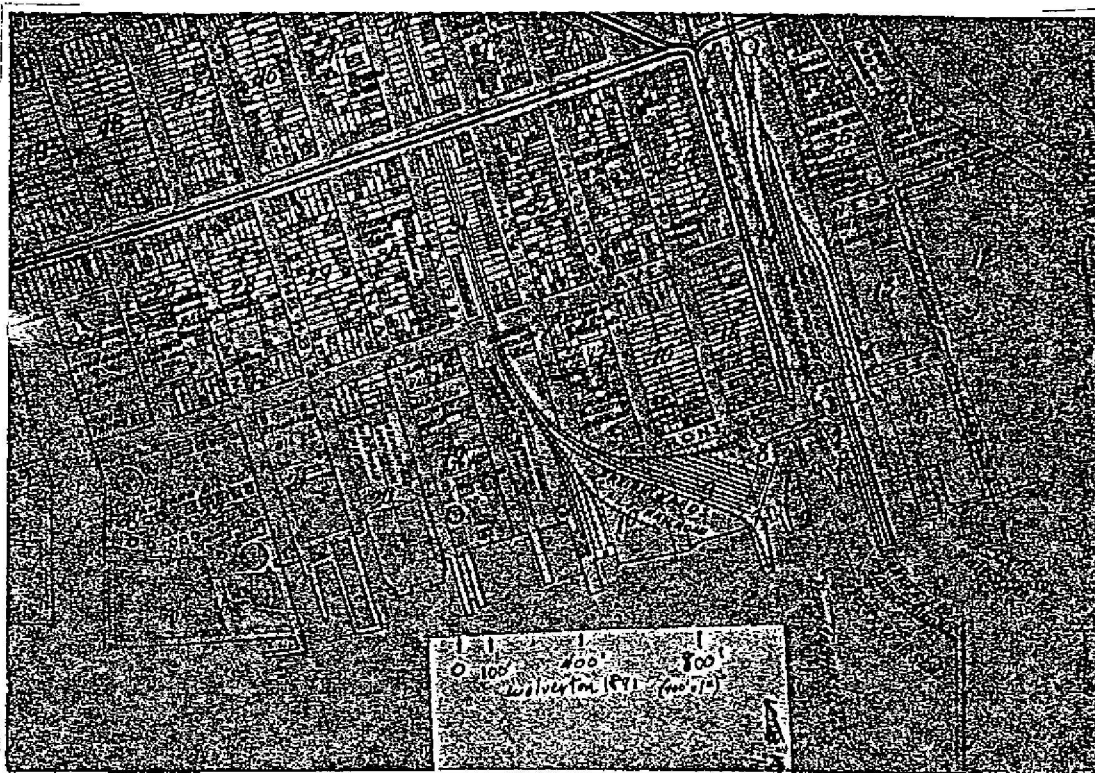


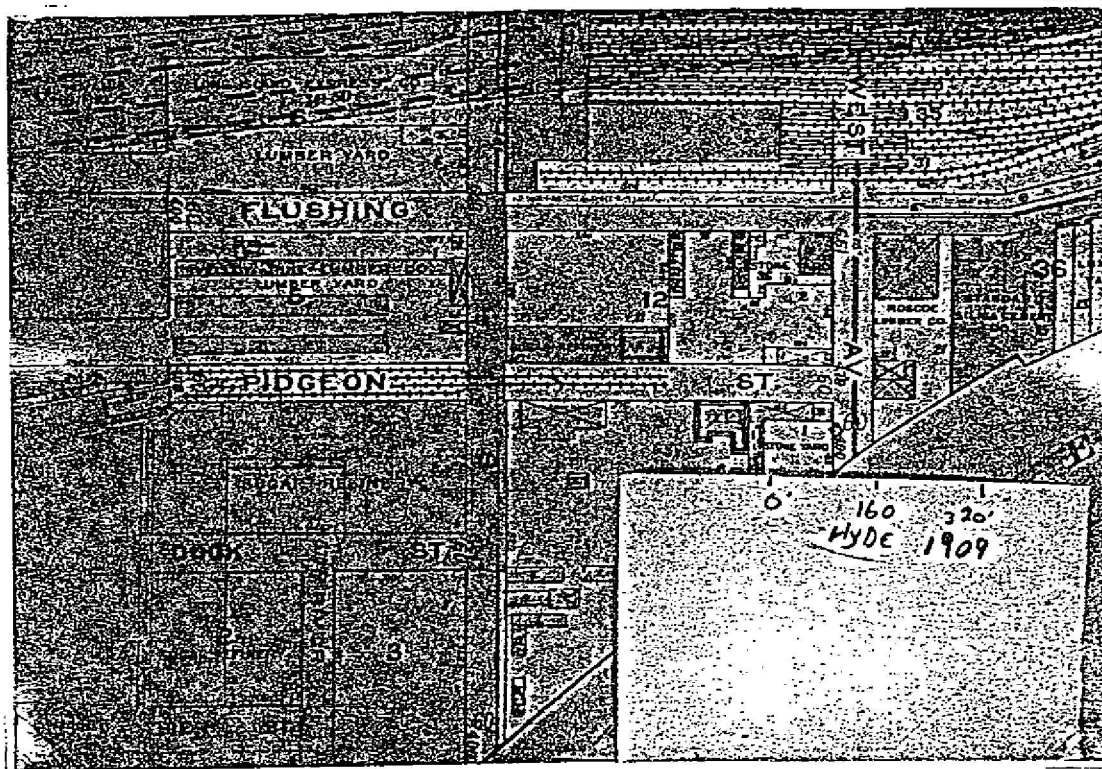
Photo 11 (March 1988): Pepsi Cola bottling works. Reinforced concrete walls may have been constructed by Standard Oil circa 1912, modified with glass block, etc. in 1930's by Pepsi Cola.



Photo 12 (March 1988): South bulkhead of Standard Canal, from 5th St. looking west.

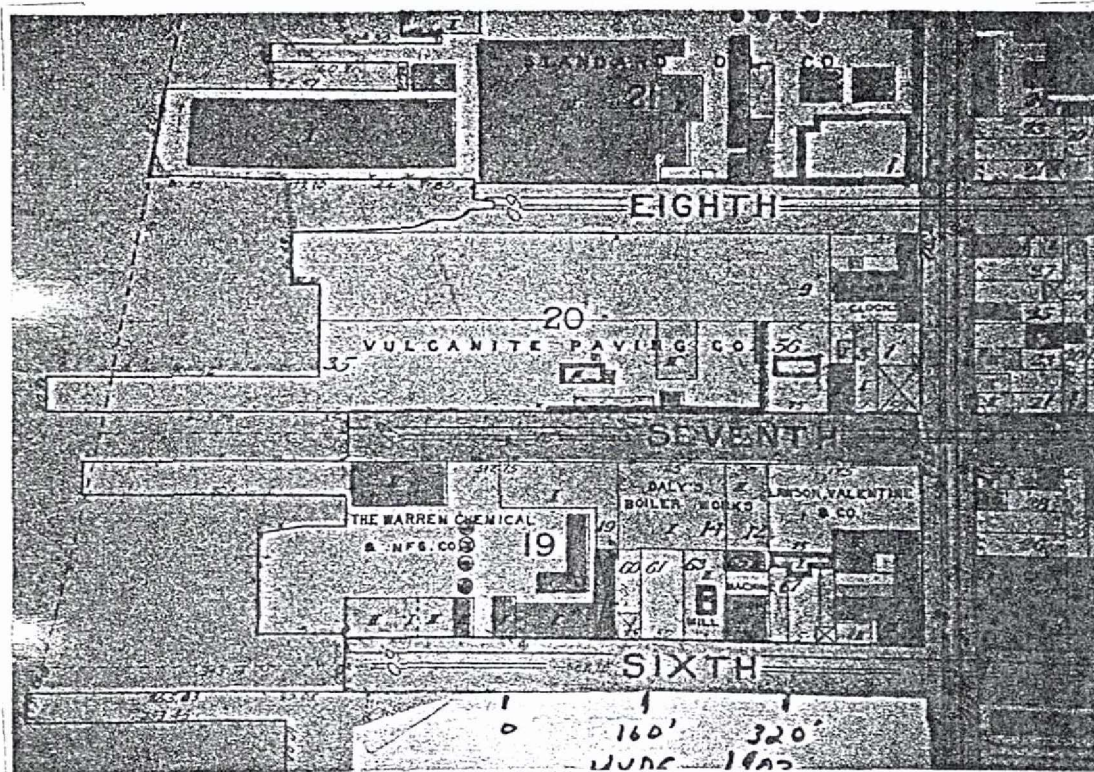


Map 1: Project area in 1891, from Wolverton. West Avenue then is 5th St. now. Note numerous varnish factories in block 17, including original Edward Smith varnish factory.

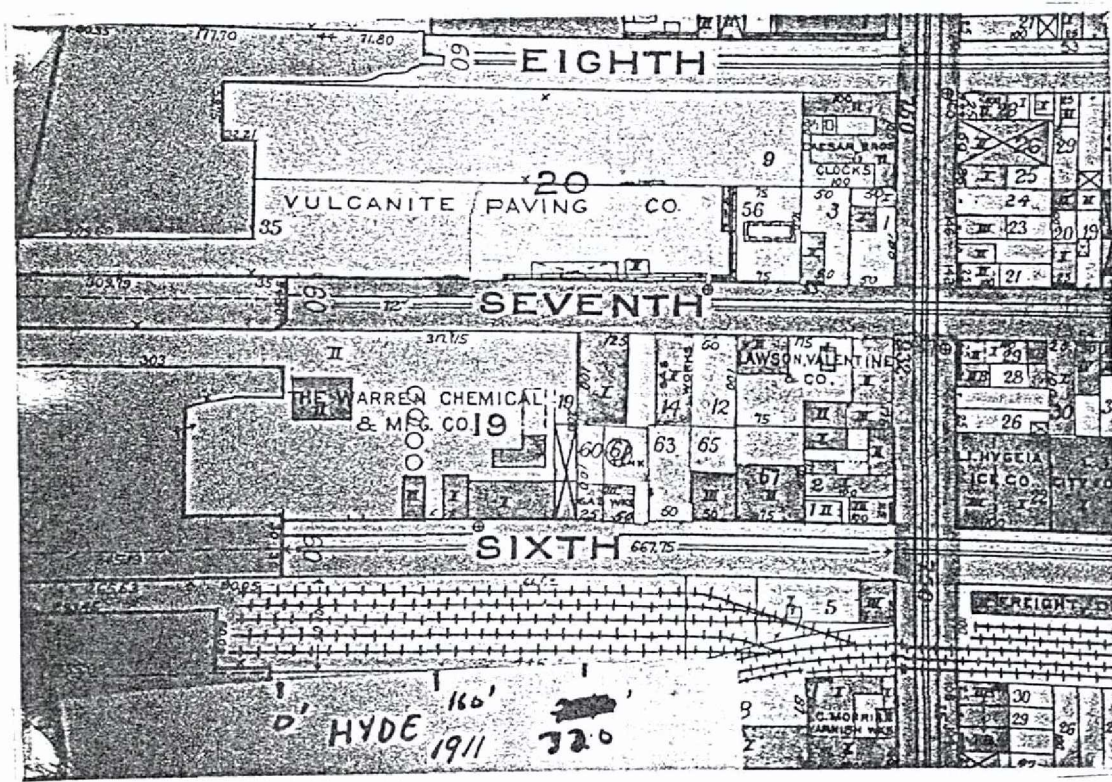


Map 2: Pidgeon St. RR in 1909, when it served only the sugar refinery. Lumber yard occupied same site as it did in 1854. (Hyde Atlas, amended to 1909)



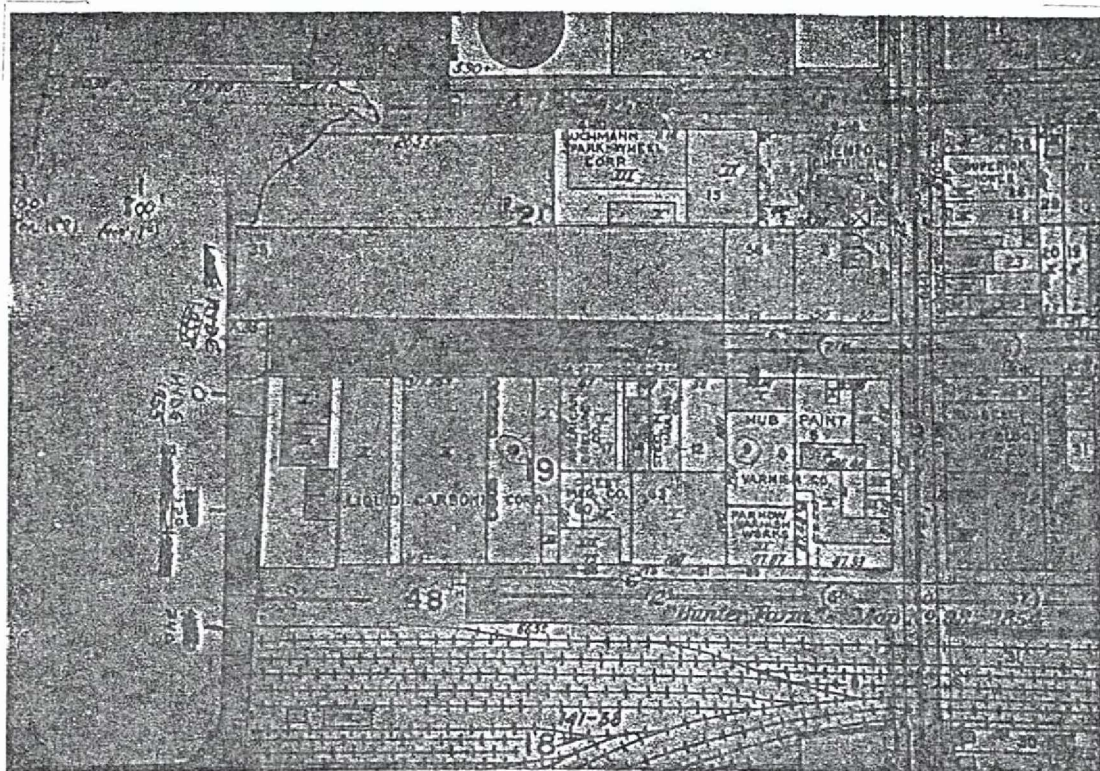


Map 3: National Varnish site in 1903, then occupied by Caesar Clocks. See northwest (upper right) corner of Block 20. (Hyde Atlas 1903)



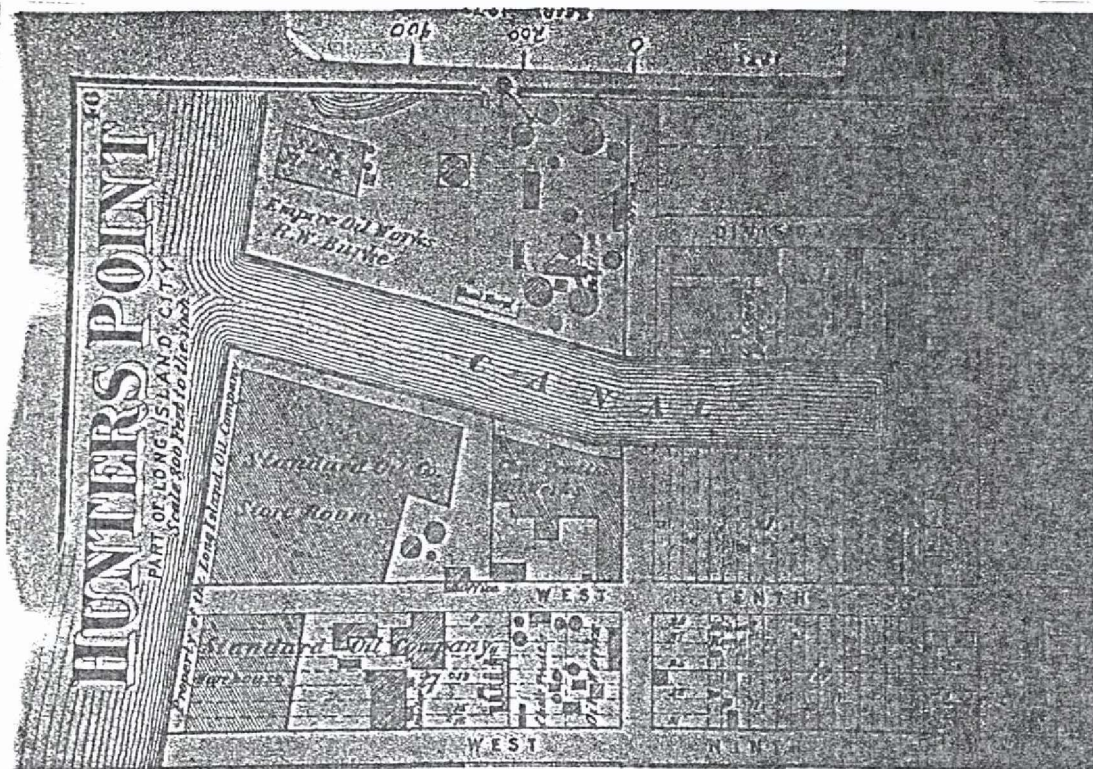
Map 4: Same area amended to 1911 (from Hyde Atlas). Structures on site now resemble modern arrangement more closely.



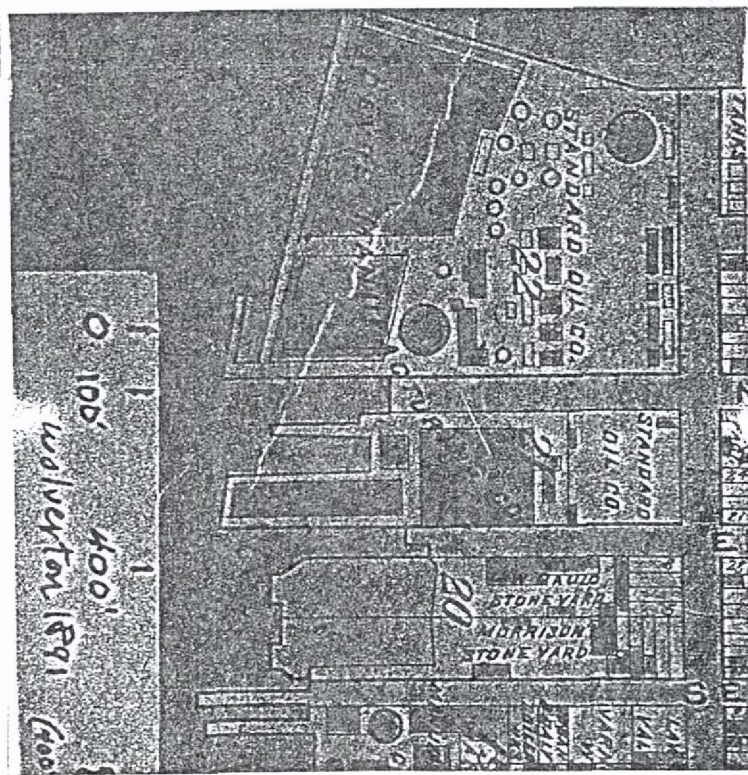


Map 5: National Varnish site in 1955, now called Tempo Chemical in this atlas. It has changed little since then. Next block south contains Hub Paint & Varnish CO., formerly Lawson, Valentine & Co. This site now vanished (Hyde Atlas, amended to 1955).  
 then Edward Smith (moved from block 17),



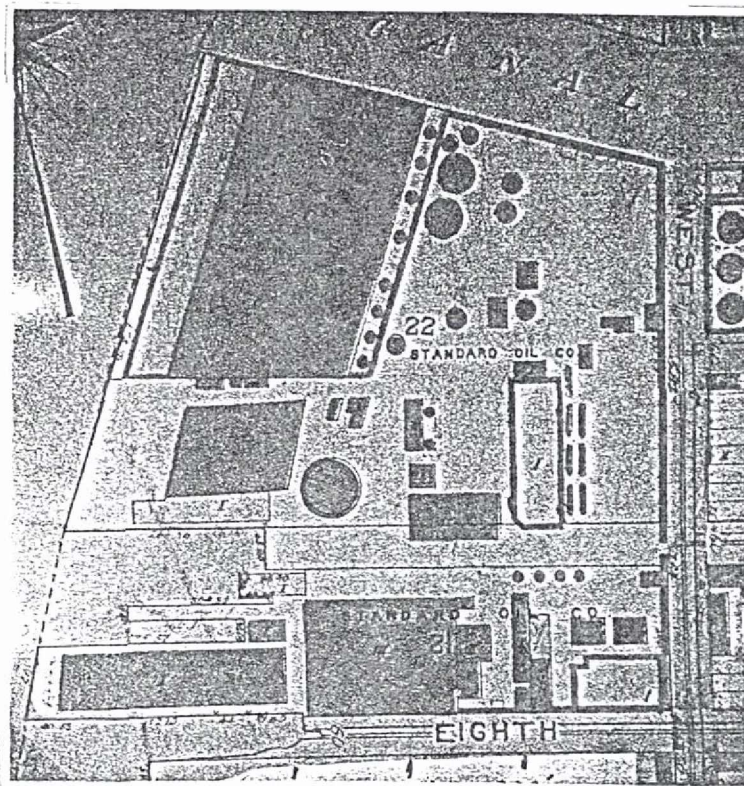


Map 6: Pepsi Cola site in 1873 (Beers Atlas). Top is north.

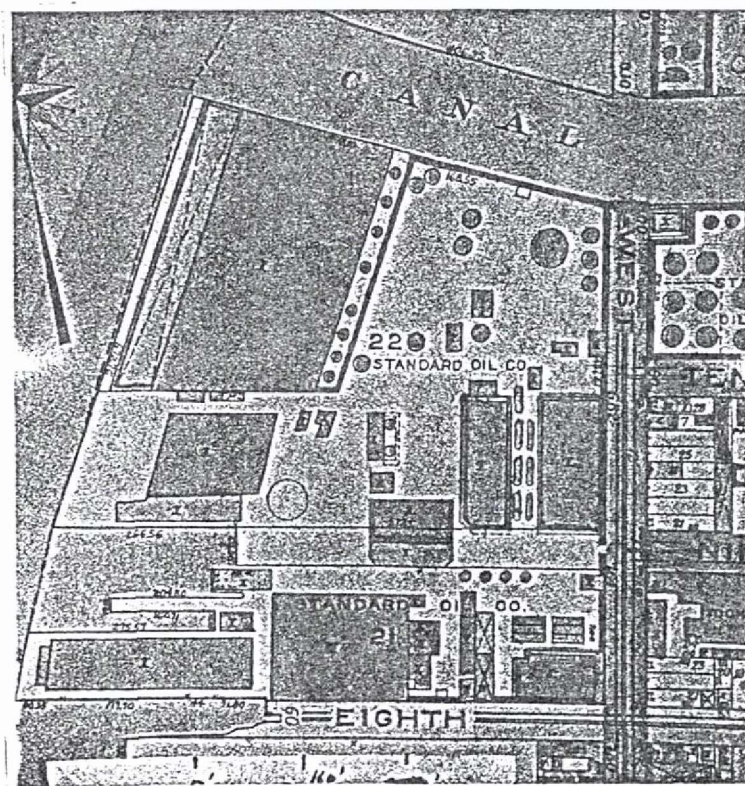


Map 7: Pepsi Cola site in 1891 (Wolverton atlas). Building labeled "storeroom" in 1873 appears to have been lengthened southward across former Tenth St., now closed, though it could be a new bldg.



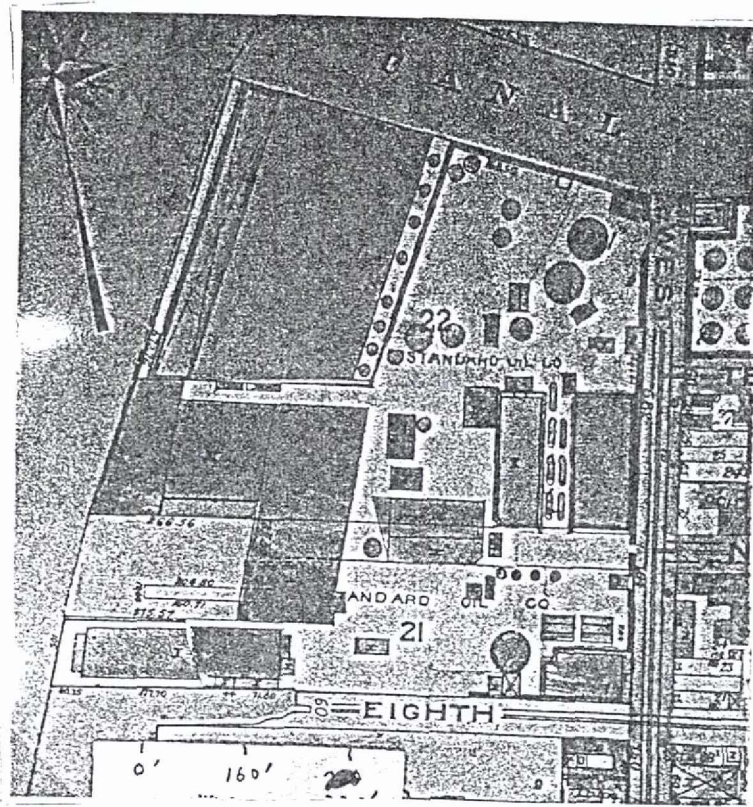


Map 8: Pepsi Cola site in 1903 (Hyde atlas). Upper left building is substantially same shape as in 1891 except without eastward projection, but with shed added along west side. Again, could be new building.

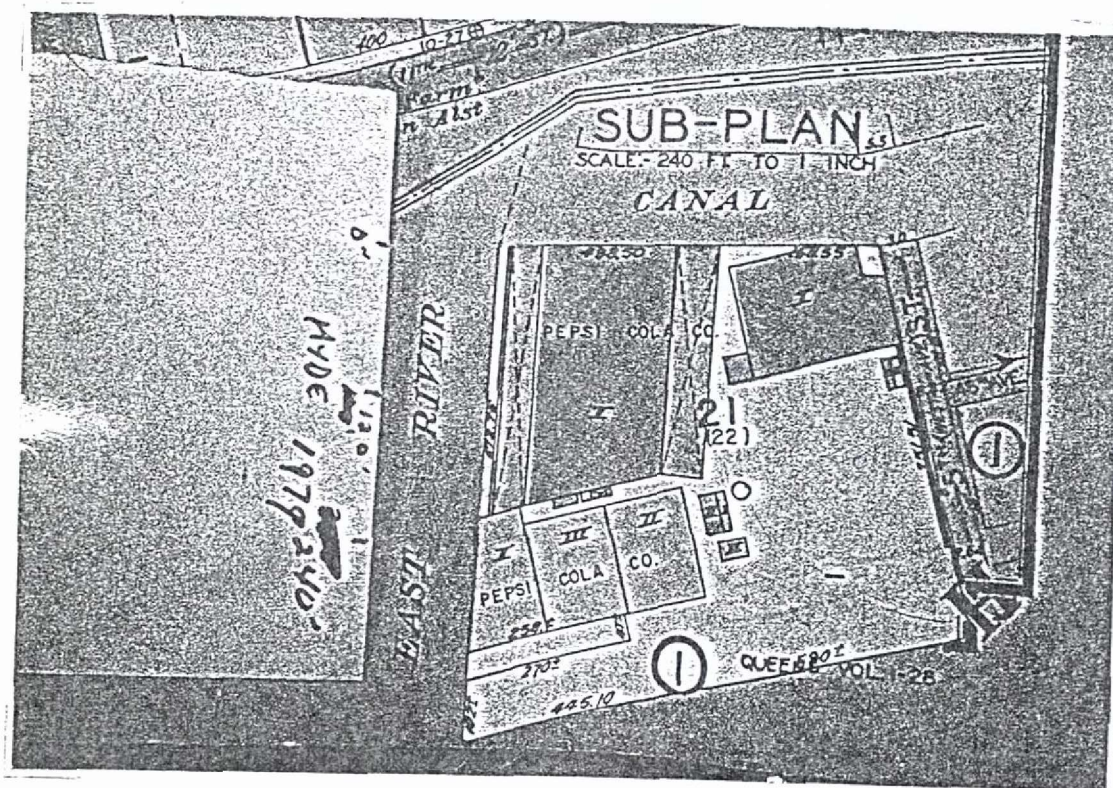


Map 9: Pepsi Cola site in 1911 (Hyde atlas, amended to 1911).





Map 10: Pepsi Cola site in 1913 (Hyde atlas amended to 1913). Three structures just south of large building have now appeared; a date of about 1912 for these seems justified.



Map 11: Pepsi Cola site in 1979 (Hyde atlas, amended to 1979). West half of site seems little changed from 1911, except for removal of two structures. Large building, or at least its essential outline (and therefore some original wall structure), could date back to 1873.



## MEMO: ADDRESSING PREVIOUSLY MENTIONED SITE FEATURES

The Oct. 28, 1987 "Assessment of Historic Resources in Hunter's Point Development Study Area" letter from Landmarks Preservation Commission mentioned some prominent features of the site. Most of these have been covered above. The purpose of this section is to deal directly with each site as listed in the letter. Headings used are those in the assessment letter.

### "RAILROAD-RELATED, PRE-ELECTRIFICATION PERIOD":

"Car float gantries" (B17L21 & B17L5): by these are meant the tower portions of the two groups of transfer bridges, which resemble gantry structures. In fact these date from the 1920's, considerably after the electrification era. They replaced more primitive types of transfer bridges which were present since the 1870's when the LIRR began interchange via carfloat.

These structures are indeed indicative of the era of heavy use of the harbor's waters to move local freight, but their historical integrity has been destroyed by scrap thieves. See discussion above.

"Crow's nest towers" (B18L5 & B44L27): These structures are simply common floodlight towers and not indicative of any particular era. Not significant.

Depressed right of way area from 5th St. to 11th St.: This cut, containing the approaches to the transfer bridges, did indeed keep road and rail traffic separated, a vital function on such a heavily used rail lead. Part of this grade separation, the "Vernon Boulevard Howe truss viaduct", is strictly speaking not a viaduct but a bridge, and it is not a Howe type (if it were it would indeed be a rare survivor) but a heavily built steel truss combining elements of Pratt and Warren types. It and the concrete retaining walls are rather common types of grade separation structures found throughout the city. These features depend on the use of reinforced concrete and thus very probably date from the modernization of rail facilities during the electrification era, though they have probably been modified since then. While these features may be reminders of the rail freight era (very much a 20th century era) they are not evocative of the specific operations that occurred in this yard as they can occur anywhere there are railroad or highway grade separations.

Queens County Bank: not in scope of this report.

### "RAILROAD RELATED PENNSYLVANIA PERIOD":

East River Tunnel ventilator buildings (B6L3): Description in Commission's assessment is accurate; the "restrained" Renaissance inspired details are very restrained indeed. For comments on significance, see above.

### MANUFACTURING AND COMMERCIAL:

National Varnish Company: My researches suggest a slightly later (than 1895) date for the construction of this building, and also suggest that it was not in use for varnish making (and therefore must not have acquired its present distinctive flues) until some time between 1913 and 1928, but it is apparently the only remaining site showing characteristics typical of the many varnish works that were an important part of Hunter's Point's industrial heritage. Landmark status is not recommended, but these conclusions are subject to modification if interior inspection should reveal historic equipment.



Pepsi-Cola Facility: As mentioned above, until access can be gained it is hard to say what remains of the late 19th century era oil refiner's structures. There may be important remains of Hunter's Point's most important past industry here, though this is unlikely due to continuous rebuilding over the years.

The neon sign is an entirely separate issue and is not dealt with here.

#### ADJACENT FEATURES:

"New York & Queens Electric Light and Power Co.": This should properly be termed the Long Island City powerhouse of the Pennsylvania RR. See commentary on page 5, above.