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**PRELIMINARY ASSESSMENT OF ARCHAEOLOGICAL SENSITIVITY**

**BROOKLYN EASTERN DISTRICT TERMINAL SITE**

**LONG RANGE SLUDGE MANAGEMENT PLAN**

**GEIS III**

August 1991

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## **EASTERN DISTRICT TERMINAL SITE**

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## PRELIMINARY ASSESSMENT OF ARCHAEOLOGICAL SENSITIVITY

### EASTERN DISTRICT TERMINAL SITE

#### A. INTRODUCTION

This report addresses the potential for archaeological sensitivity on the Eastern District Terminal site proposed for New York City's Long Range Sludge Management Plan (GEIS III). It concludes that the entire project site was subject to intense construction and development activity that would have disturbed most potential archaeological resources, but that six 19th century residential lots and one early industry may have been undisturbed.

The project site comprises the six blocks bounded by North 5th Street to the south, North 11th Street to the north, Kent Avenue to the east, and the East River to the west in the Williamsburg section of Brooklyn (see Figure 1). The 20-acre site occupies Lots 1, 5, 10, 11, 15, 18, 60, 76, and 79 of Block 2294; Lots 1, 50, 60, and 70 of Block 2301; Lot 1 of Block 2308; Lot 1 of Block 2324; Lot 1 of Block 2332; and Lot 1 of Block 2316 (see Figure 2).

This site slopes uniformly and gradually to the East River from a surface elevation of 12.5 feet above Mean Sea Level (MSL) at its eastern boundary along Kent Avenue, to an elevation of 6.5 feet above MSL next to the East River. Borings taken north of the site along North 12th Street indicate that the area consists of a surface layer of fill up to 28 feet thick in some locations. The fill material consists of gravel, brick, sand, vegetation, cinders, wood, and timbers. Groundwater at the site is tidally influenced and ranges between 2 feet below MSL and 2 feet above MSL (Stone & Webster Engineers, 1991).

#### B. BACKGROUND HISTORY

##### Environmental Setting

The project area was predominantly wooded at the time of colonization, accounting for the name given to the original settlement, Bushwick, meaning town of woods. Undetectable on today's landscape, the original course of Bushwick Creek meandered from its mouth at approximately North 14th Street to the east and to the south, removed from the project site. The old Bushwick Creek meandered through meadows and mud flats, with two deep channels and many tributaries. The surrounding meadows were sometimes covered by the tide to form a bay (Hazleton, 1925:1103). Inland, Williamsburg was characterized by dense thickets, acres of bog, and low land from Wallabout Bay to Newtown Creek (Armbruster, 1912:34).

By mid-18th century, the project area had been somewhat tamed, with dense woods giving way to the occasional farm, orchard, and crop field along the riverfront and on the hillocks above the East River and the Bushwick Creek. According to Ratzer's 1767 *Plan of the City of New York* and other early topographic maps of the area, including the Taylor and Skinner Map of 1781, the project site roughly comprises what had been land submerged by the East River, a narrow strip of shoreline, and the sand bluff that rose from the river's edge (see Figures 3 and 4). A "common salt meadow" bordered the southern edge of Bushwick Creek, north of the project site.



## Prehistoric Period

At the time of European contact, Native American populations spanned Long Island. Western Long Island was inhabited by Native Americans of the Delaware group, speaking a Munsee dialect. Ethnographic reports of Indian villages at the time of contact show that there were large settlements along the Newtown Creek in Queens, north of the project area, and a number along Jamaica Bay, southeast of the project area. The closest village reported is Quandus Quaricus along Newtown Creek in the town of Bushwick. To the south along the East River, the Rinnegachonck occupied a tract of land near Wallabout Bay (Kearns, *et al.*, 1988:9).

The Brooklyn area was occupied by the Canarsee Indians, whose extensive planting grounds surrounded their settlement. No settlements or trails were reported for the project site coastline, but the route of historic Wood Point Road, approximately 12 blocks to the east of the project site, follows a Native American trail. This trail was once the Rockaway foot-path to Newtown Creek, where the Mispat Indians were located (Armbruster, 1912:102). Apparently, the extensive wetlands surrounding Bushwick Creek forced foot trails inland from the shore.

According to the New York State Office of Parks, Recreation and Historic Preservation (OPRHP), no archaeological resources have been reported on the project site. Within a one-mile radius of the project site in Brooklyn is the New York State Museum-inventoried site #3613: an Arthur C. Parker notation of "traces" of prehistoric occupation located at the mouth of Newtown Creek, approximately 22 blocks north of the project site (Kearns *et al.*, 1988:Appendices A and B; Kearns *et al.*, 1989:Appendix.)

## Historic Period

### 18th to Mid-19th Century

The area that is now Williamsburg was purchased from the Canarsee Indians in 1638, and sparsely settled around 1660 as part of the larger town of Bushwick. After the Revolutionary War, an agricultural community developed. As portrayed on the 1767 Ratzer map, two early farmsteads were located on the project site near what later became Kent Avenue and North 6th Street and Kent Avenue and North 11th Street (see Figure 3).

The village of Williamsburg was founded in 1810, named for the engineer who surveyed the land, Colonel Jonathan Williams. Ferry service from the foot of Grand Street was established at the same time, allowing farmers to sell their produce in Manhattan. Williamsburg's original shoreline development was concentrated at the ferry landing, five blocks south of the project site at Grand Street. In 1819, the first industrial building in the area, a distillery, was established at the foot of North 2nd Street. Development expanded north toward the project site in the mid-1820's, when businessmen Luther and Richardson purchased sites for two ropewalks -- long buildings where rope was manufactured -- between what are now North 3rd and 4th Streets. They contracted for a survey of adjacent lands and proposed the laying out of streets and lotting of the blocks north to Bushwick Creek (Stearns, 1884:294-295).

With a population that had grown to approximately 1,000, Williamsburg was incorporated as a town in 1827, including the area generally bounded by North 12th Street, Union Street, South 11th Street/Division Avenue, and the East River. At this time, it

included 23 farms, 10 of which were located on the East River. The Village Incorporation Act of 1827 stipulated that the new community would provide water to the residents "with several well and pump districts established in the said village" (*Digest ...*, 1857: n.p.).

The Williamsburg area became a popular resort, with hotels located near the Brooklyn Ferry (several blocks south of the project site) that attracted a wealthy cosmopolitan crowd. The beach rose to a sand bluff, where a road, then known as Shore Road (later known as First Street, and now Kent Avenue) was established in 1829. Before extensive filling began in the 19th century, the project site's original shoreline was 360 to 500 feet east of its current location (see Figures 5 and 6). A bluff at the southern end of the site flattened out farther north, turning to swampland nearer to Bushwick Creek.

The project site contained a mix of uses, primarily recreational, in the early 19th century. According to E. Armbruster's *Brooklyn's Eastern District*, North 7th and 9th Streets were opened in the 1830's, and the project area was known as Willow Grove because of the trees that grew there. The Willow Grove picnic ground, with facilities for fishing, bathing, and boating, occupied the waterfront between North 8th and 10th Streets, and the Regatta Pavilion, a tavern and hotel, stood on a bluff between North 6th and 7th Streets. The pavilion's grounds ran to the river's edge, and included a garden and a circular pleasure railway. Hunt's Boathouse was at the foot of North 7th Street as early as 1834. Armbruster also mentions the "old Parks mansion" at North 10th Street and Kent Avenue, possibly the same house as shown on the 1767 map. The 1898 E. Belcher Hyde map indicates that part of the project site was originally the Silas Butler estate.

#### Mid-19th Century through the 20th Century

In 1855, Williamsburg was annexed to the growing city of Brooklyn, and became known as the "Eastern District" to distinguish it from downtown Brooklyn, which was slightly to the west. Despite two failed speculative efforts to establish upper-class residential neighborhoods close to the waterfront, Williamsburg's shoreline was developed with industries as ferry service to Manhattan expanded in the mid-19th century. Various manufacturers and warehouses were established along the waterfront. The bluff along Williamsburg's shoreline was levelled, and the soil used as landfill for swampy areas near Bushwick Creek, to remove the threat of fevers and diseases that people believed swamps could cause (Danforth, 1978:6). Surrounding the commercial district, speculators erected "cottage" houses for workers and leased land to allow workers to build their own houses (Danforth, 1978:11).

Industries established in the area included shipbuilding, manufacture of machinery and hats, baking, manufacture of rope, glass and porcelain production, and cast-iron manufacturing. Close to the project site were a number of sugar refineries. Cooperages supplied all the barrels for the sugar refineries and often had docks used by local industries for shipping. Petroleum refining was also important, concentrated along Kent Avenue. The largest petroleum refinery in the world at the time, Charles Pratt's seven-acre Astral Oil Works, opened in the 1860's between North 12th Street and the Bushwick Creek, one block north of the project site. The Pratt Oil Works, a technological leader of the 19th century petroleum industry, was the maker of "Astral Oil," a highly refined kerosene that was popular for lamps before the introduction of gas and electricity. In the late 19th century, this company combined with the Standard Oil Company, and continued to grow as it absorbed smaller companies in the area.

In the mid-19th century, the project site blocks were expanded into the East River and the lots on the expanded, or landfilled, portions were developed with new industrial enterprises. The original fast land remained in small, individually held lots. By 1850, filling along the project site's shoreline had moved the bulkhead line west of the original shoreline

location, although not as far west as it is now. Two of the blocks had industrial development — a shipyard, and the Pennsylvania Coal Dock (see Figure 6). Most of the project site blocks were sparsely developed with small buildings close to Kent Avenue. One house at the corner of Kent Avenue and North 6th Street did not align with the street grid, and may have been the same house as noted on the 1767 map. (see also Fig 5)

By 1859, the blocks between North 5th and 7th Streets were occupied by a "naval storeyard" (*Atlas of Brooklyn Stores and Sheds*, 1860). Within the yard of the naval complex was a large well. A survey of the property also included a two-story frame shingle-roof dwelling on Kent Avenue between North 5th and 6th Streets that was to be demolished by May 1, 1860 — probably the same house noted on the 1850 map.

Although Brooklyn had an early water and sewer piping system, the project site neighborhood, removed from the wealthier neighborhoods, public buildings, and community retail center, did not receive these municipal services until some years after public water was available in parts of Brooklyn. As mentioned above, the town of Williamsburg provided water through several well and pump districts, but it is not clear whether this public water system reached the project site. The large well at the naval storeyard may have been a community well, or it may have been for use only by that shipyard. According to later real estate atlases (e.g., the 1990 Sanborn insurance atlas, Figure 2), water lines were installed beneath the area streets between the 1860's and 1880's: North 5th Street, 1877; North 6th Street, unidentified; North 7th Street, 1865; North 8th Street, 1863; North 9th Street, 1862; North 10th Street, 1883; and North 11th Street, 1883. According to an "Inspection Tracing" made at the time of installation, a portion of the Kent Avenue sewer line was installed in 1872. As with many early residences and industries located along the waterways of New York City, the 19th century occupants of the project site installed "private earthen sewers" that dispatched waste directly into the East River (Brooklyn Department of Buildings [BDB], Blocks 2294, 2308, and 2316).

Between 1869 and 1874, six new sugar refineries were built in the mile and a quarter of waterfront in the Eastern District, including one at the foot of North 7th Avenue on the project site (Havemeyer, 1989:35). Atlases from 1868 and 1869 (see Appendix and Figure 7) indicate that much of the project site's western areas were occupied by industries, including shipyards and freight yards, a cooperage, an iron works, a rubber works, a sugar refinery, and the Philadelphia & Reading Coal and Iron Company. The Pratt Oil Works had expanded south to the project site block between North 10th and 11th Streets. The Works had a hydrant on the premises but it is unknown if water was supplied by the village, a well, or if it was pumped directly from the adjacent East River. One- to four-story brick and frame dwellings, combined dwellings and stores, and businesses, stood along Kent Avenue and the side streets close to Kent Avenue between North 6th and 11th Streets.

At the same time, the firm of Havemeyers & Elder, which operated a large sugar refinery six blocks south of the project site, had begun buying parcels of land on the project site. In the 1870's, Lowell Palmer, a Brooklyn entrepreneur who owned a dock at the foot of North 5th Street, established a railroad terminus and float bridge there to provide freight services for the area's sugar refineries. Soon after, Palmer began working with Havemeyers & Elder, developing a large freight terminal on several blocks of the project site (Havemeyer, 1989:71). Many industries were soon using the terminal, and it was expanded to include a network of tracks, several docks, a carfloat, transfer bridge, and freight yard. Palmer also operated a cooperage company between North 4th and 5th Streets to service all the refineries. (Another, competing cooperage also stood on the project site between North 6th and 7th Streets, close to the sugar refinery on the site.) In 1874, Havemeyers & Elder named the terminal on the project site the Brooklyn Eastern District Terminal (BEDT), and made Lowell Palmer the general manager. The BEDT provided shippers and receivers a single

railroad company through which to do business in the Eastern District. By 1887, the freight terminal occupied the waterfront land between North 4th and North 10th Streets, and provided railroad service for the entire area from Newtown Creek to the Brooklyn Navy Yard.

Along Kent Avenue, dwellings and small businesses — including a brewery and a rubber manufacturer — remained between North 6th and 11th Streets. However, as Havemeyers & Elder gained control of the vast majority of the project site, with Lowell Palmer often acting as agent, they demolished many of these small buildings to erect warehouses and freight rail depots for the BEDT. The company consistently employed the same architectural and fuel tank installation firms, unifying the appearance and workings of their holdings.

The refinery and cooperage on the project site were destroyed by fire in 1889. By 1890, Williamsburg's waterfront was dominated by one huge sugar refinery — the five-block-long Havemeyers & Elder plant between South 1st and South 6th Streets, six blocks south of the project site. The BEDT had grown to occupy almost all of the project site, and included extensive railroad tracks, coal pockets, and several industries, including the large new Brooklyn Cooperage Company facility, owned by Havemeyers & Elder and managed by Palmer (see Figures 8 and 9). This company was established in 1874, the same year as the BEDT, combining several different cooperage businesses. The northernmost block on the project site was occupied by buildings of the Standard Oil Company. Some small dwellings or commercial buildings still stood on the eastern ends of the blocks between North 7th and 11th Streets.

By the turn of the century, the BEDT served a number of railroads and steamships lines, and included three transfer bridges, a freight shed, and many railroad tracks and sidings (see Figures 9 and 10). Industries close to the terminal were similar to those in the 1890's, including Eugene Doherty's Rubber Works on Kent Avenue on the project site (established in 1885); the Brooklyn Cooperage Company; the coal pocket, a large hay shed, and the Standard Oil Company's Pratt Works. For the first 20 years of the century, the BEDT remained similarly occupied by industrial uses, and most of the remaining small stores and dwellings along Kent Avenue were gradually demolished (see Figures 10 and 11). Later, in the 1930's, the largest bulk flour storage facility in New York City was built at BEDT, for storing bags of flour that were delivered for area bakeries (see Figure 12). These replaced the cooperage, coal pockets, and oil refinery previously on the site. The terminal served the region in this way for many years (see Figure 13).

After World War II, there was a shift from shipping by water and rail to distribution by truck. Trucking companies soon occupied the warehouses on the project site. Following trends throughout the city and particularly along the Greenpoint-Williamsburg waterfront, industrial uses began a long and serious decline shortly thereafter. BEDT finally ceased operations in 1983, and many of its buildings were demolished thereafter.

### **C. EXISTING CONDITIONS**

The project site is currently unused. Some railroad tracks and large storage buildings remain on the site, as well as an office building from the BEDT (at the northwest corner of Kent Avenue and North 9th Street, ca. 1890's), the Eugene Doherty Rubber Works building (1885), and several buildings from the Pratt Oil Works, which were later used for flour storage. These are discussed in Thomas Flagg's report assessing the extant industrial buildings on the site.



## **D. POTENTIAL ARCHAEOLOGICAL SENSITIVITY**

### **Construction Disturbance**

The project site blocks experienced construction episodes that were most likely quite destructive to the subsurface integrity of the land. This activity included extensive landmoving operations. First, the bluffs along the eastern edge of the site were levelled, and small buildings were built on the project site blocks. Later, the blocks were extended past the original shoreline by filling. From the late 19th century through the 20th century, all of the project site blocks experienced several generations of building.

Most often, late 19th century and 20th century buildings on the site did not have deep cellar foundations, but did have massive clusters of piles. The architectural specifications reviewed in the Brooklyn Department of Buildings indicated that most of the buildings on the site had very shallow foundations, usually less than 7 feet. However, because of the unstable nature of the shorefront land and landfill, both new construction and successive alterations entailed extensive pile foundation support systems. New construction permits were often amended to take into account the soil foundation problems encountered once construction activities began, and there are many recorded alteration permit applications to both replace and reinforce existing pilings that were deteriorated because of fluctuations in the water table. For example, the store/dwelling at the northwest corner of Kent Avenue and North 8th Street needed to replace support piers underneath the 7-foot-deep, 18-inch-thick foundation walls by 1890 (BDB: Block 2308/Alt Permit # 636). One 1911 BEDT warehouse "piling plan" included 40 pile clusters, 3 to 7 piles per cluster, based on five alternative designs that detailed subsurface disturbance at each support column base at approximately 11 feet across (BDB: Block 2301/corner of Kent Avenue and North 10th Street). Also, the rail beds and loading platform areas required massive grading and filling with "dry cinder fill tamped" or "fresh cinder fill" to guarantee consistent weight-bearing capabilities. Each of the BEDT's facilities also experienced later construction for elevator and hoisting equipment installation, further disturbing subsurface integrity. Because Havemeyers & Elder consistently employed the same architectural and fuel tank installation firms for work at the BEDT, similar construction techniques were used at all of the BEDT buildings.

### **Prehistoric Period**

As described above, there are no known Native American habitation sites or trails on or adjacent to the project site. Further, there have been substantial alterations to the site, including grading and levelling, filling of the shoreline, and development and redevelopment. Because prehistoric remains are usually shallow deposits, it is unlikely that any undisturbed prehistoric archaeological resources exist on site.

### **Historic Period**

#### **18th to Mid-19th Century Archaeological Resources**

Two farmsteads were located on the project site as early as the 1760's, and one may have survived almost 100 years. In addition, according to Armbruster's history of the area, in the 1830's the project site was the location of the Willow Grove picnic ground, the Regatta

pavilion, a boathouse, and a mansion. However, the episodes of grading and construction that occurred later most certainly destroyed any evidence of most of these early uses, as explained below.

18th Century Farms. The 18th century farmsteads shown on the 1767 map were located near what later became North 6th Street and North 11th Street, just west of Kent Avenue. Both these locations later experienced considerable construction activity, including grading and the installation of massive pile clusters, described above.

A house at North 6th Street that was out of alignment with the new street grid was indicated on atlases of 1850 and 1869. This may have been the same house as indicated on the 1767 map. Railroad tracks were extended through the former house site in 1887. By 1898, a freight shed was constructed on part of the site, along North 6th Street, and another large freight shed was constructed by 1941 to its south. These uses would have severely disturbed or destroyed any evidence of the 18th century farm.

? adequate  
evidence

At North 11th Street, it is unclear exactly where the 18th century farmstead was located; it may have been off of the project site. Armbruster mentions the "old Parks mansion" at North 10th Street and Kent Avenue in the 1830's. This may have been the same house as the 18th century farmhouse. Close to North 11th Street, the earliest detailed 19th century atlas (1850) does not show any structures that do not align with the street grid; the 18th century farmhouse appears to have been demolished by then. In 1918, a garage was built on the southern half of this part of the block. Like the other construction in the area, this garage most likely had a large number of pilings, and certainly had numerous underground gasoline storage tanks. The rest of the eastern part of the block is now occupied by train tracks and a relatively new warehouse, which also likely has extensive pilings. Any evidence of the farmhouse and/or mansion once in this area was most certainly destroyed by the extensive earthmoving necessary to create the current shoreline and configuration of the block, and by subsequent construction episodes.

Willow Grove Picnic Ground. The Willow Grove picnic ground, with facilities for fishing, bathing, and boating, occupied the waterfront between North 8th and 10th Streets in the 1830's. By 1850, this area was partly occupied by small buildings, and had been divided into two blocks by the addition of North 9th Street. The bluff once located close to Kent Avenue had been levelled. By 1869, rowhouses lined Kent Avenue, and the blocks had been extended beyond the original shoreline for use by a railroad company. This development would have involved extensive earthmoving and grading that most likely destroyed any evidence of the picnic ground facilities. Industrial development continued on these blocks through the 1950's, and by then, all of the area between North 8th and 10th Streets had been developed with buildings or rail yards at some point. It is not likely that any remains of the picnic area survived.

Regatta Pavilion. The Regatta Pavilion, a tavern and hotel, stood on a bluff between North 6th and 7th Streets in the 1830's. The pavilion's grounds ran to the river's edge, and included a garden and a circular pleasure railway. As with the former picnic grove site, however, the bluff on this block was levelled ca. the 1840's, and the block extended beyond its original shoreline by landfilling. Later development on the block included small buildings on Kent Avenue, a shipyard, and two different large cooperages. Any remains of the pavilion most certainly were destroyed by all this activity.

Hunt's Boathouse. Hunt's Boathouse was at the foot of North 7th Street after the street was opened in 1834. Since then, the shoreline at North 7th Street has been extended approximately 360 feet farther west, involving considerable filling and landmoving at the original shoreline. On either side of North 7th Street close to the original shoreline, there

has been extensive development, including the addition of industrial buildings, rail yards, and the large Brooklyn Cooperage Co. building. An emergency exit for a railroad tunnel under the East River, constructed in the 1920's or 1930's, is located at the current end of North 7th Street. Any evidence of the boathouse was most certainly destroyed.

### Mid-19th Century Residential Archaeological Resources

As mentioned above, early residential uses were located along Kent Avenue for the entire length of the project site. Some of these houses appeared on the first detailed map available, in 1850, and were therefore most likely built in the 1840's (since they were not mentioned in Armbruster's description of the area in the 1830's). The rest were constructed between 1850 and 1868. Water lines were installed in the streets around the project site in the 1860's through the 1880's, so it is possible that some of these residences used wells and/or cisterns for an unknown period of time before hook-up to public services. However, many of the area residents directed their sewage through private sewer lines into the East River, so privies were probably not in use on the site. Some of these residential lots saw limited later construction activity, and may remain relatively undisturbed. These are described below, block by block, from south to north.

documentary  
field  
? Evidence  
for privies

#### North 5th to 6th Street

hypothesis to be tested - needs supporting evidence

On this block, the only residence in 1850 was the house that may have been an 18th century farmhouse, discussed above. (The two small buildings indicated on the 1869 map were associated with the shipyard on the site.)

may have  
potential

#### North 6th to 7th Street

All the residential lots on this block were covered by the massive Brooklyn Cooperage Co. building, constructed in the 1890's, which occupied the entire block. This building, like the others at the BEDT, would have required extensive grading and pilings (described above). This most likely would have disturbed any remains from the residential buildings on this block.

ok  
NT

#### North 7th to 8th Street

A number of small residential buildings stood on this block by 1850, and other small buildings were added by 1868. By 1905, however, railroad tracks extended through much of the block. In 1941, most of the block was filled with large new, one-story flour storage warehouses with concrete floors, covering all but two of the residential lots. These warehouses, like the other buildings at the BEDT, would have had extensive piles that would have destroyed any remains of these 19th century homelots. One lot (114 Kent Avenue, just south of the extant Eugene Doherty Rubber Works and dating to between 1850 and 1869) saw minimal construction activities since demolition of the house and is currently vacant; this lot may not have been disturbed.

before  
extension  
est. to blm  
date  
bldg built  
& connected  
to water & sewer

#### North 8th to 9th Street

The 1850 map shows no structures on this lot. By 1868, perhaps as many as 14 residences and stores stood along Kent Avenue and the side streets. However, by 1916, the southern half of the block was filled with railroad tracks and only three residential lots were undisturbed — 32 North 9th Street and 90 and 94 Kent Avenue. A flour-loading facility now occupies the site of 32 North 9th Street. The other two are vacant, and may have been undisturbed.

RR track not barrier for  
disturbance

### North 9th to 10th Street

A row of houses along Kent Avenue was constructed on this block by 1850. The 1868 atlas indicates that these were as many as 15 brick and frame dwellings and/or stores. Later, a new BEDT office building was constructed at the corner of North 9th Street and Kent Avenue (ca. 1890's), a large flour storage warehouse was built at the corner of North 10th Street and Kent Avenue (1911), and tracks were extended to Kent Avenue in the center of the block (1930's). The office building had extensive construction in its backyard area, including a three-story brick building demolished in 1923, and a one-story toilet building occupying most of the rest of the lot, added in 1938. Therefore, on this block, only Nos. 80, 82, and 84 Kent Avenue may be undisturbed.

### North 10th to 11th Street

The 1850 map shows as many as five small buildings on this block. These appeared to remain in 1868, and new structures had also been built, for a total of as many as 16 dwellings and/or stores. In 1917, a garage was constructed at the corner of North 10th Street and Kent Avenue that still stands today. Over its more than 70 years on the block, the garage most likely had underground gasoline storage tanks in numerous locations throughout its footprint, and, like the other buildings in the area, would have had extensive pilings as well. These would have destroyed any archaeologically sensitive areas beneath the garage. A relatively new warehouse structure — which likely also required pilings and/or grading — and railroad tracks now occupy the rest of the Kent Avenue frontage of the block. Therefore, it is unlikely that any evidence of 19th century residences remains on this block.

### Mid-19th Century Industrial Archaeological Resources

As outlined in the "Background History," the project site was developed with industries as early as 1850. Industries on the site over the years included sugar refineries, cooperages, shipyards, a rubber works, a brewery, freight yards and coal yards, and part of an oil refinery. However, there is little potential that any significant archaeological evidence of these industries remains on the project site. The sites of all the early industries were redeveloped later in the 19th century with railroad tracks and freight terminals, construction of which would have required extensive grading. Only the site of the relatively late (1890's) Brooklyn Cooperage Company between North 6th and 7th Streets, the brewery at 96-98 Kent Avenue between North 8th and 9th Streets (built before 1868 and demolished in 1899), and the extant Eugene Doherty Rubber Works (dating to 1885) between North 7th and 8th Streets were not later redeveloped.

### Conclusion

As described above and evident in the maps provided, the entire project site was subject to intense construction and development activity related to the BEDT. Any potential prehistoric remains, 18th century farms, and early 19th century uses were certainly destroyed. However, several homelots — some dating to before 1850, and others to the 1850's and 1860's — may have survived. These include the following (see also Figure 14):

- o 114 Kent Avenue, dating to between 1850 and 1869, between North 7th and 8th Streets;
- o 90 and 94 Kent Avenue, dating to the 1850's or 1860's, between North 8th and 9th Streets; and

can't  
agree  
needs  
borings



- o 80, 82, and 84 Kent Avenue, between North 9th and 10th Streets, dating to before 1850.

Water and sewer lines were installed below Kent Avenue in the 1870's, so residents of the houses on these six lots may have used wells or cisterns for some period of time. As described above, residents of this part of Williamsburg used private sewer lines that emptied their wastewater into the East River; therefore, it is unlikely that any of these lots had privies. It is possible that these houses used Williamsburg's public well system for their water, but this is not certain. Although none of these houses remain today, it is possible that their wells or cisterns may be undisturbed beneath the surface of the site. Further research is required to determine whether information from these lots could address specific research issues. This research would include examination of the census records and directories to determine whether residents can be identified for these addresses, and, if so, the length of their occupancy.

The cooperage company is not likely to yield significant archaeological information, because it is of late date and much information is already available about the cooperage process. More research is required to determine whether the brewery can answer important archaeological questions. Breweries were common throughout New York City and Brooklyn in the middle of the 19th century, and it may be that enough information already exists. The rubber works should not be considered an archaeological resource, since it is still standing. Further, according to Buildings Department permits, the subsurface area within the rubber works building did not include any manufacturing equipment.

#### **E. PROBABLE IMPACTS OF THE PROPOSED PROJECT**

The sludge management facility proposed for this site would consist of several structures, occupying almost all of the site except Lot 49 of Block 2316, the site of the former Eugene Doherty Rubber Works building. The new structure would have spread-footing foundations 5 to 6 feet deep, and piles around the perimeter of the structure, to bedrock.

As described above, it is most likely that any potential archaeological resources were destroyed by the intensive activities on the project site, but it is possible that some remains from six 19th century house lots are buried on the site. Further research is necessary to determine if these house lots have the potential to address important archaeological research questions. The site also once housed a mid-19th century brewery. This feature also required further research to determine its importance. If these resources are found to be potentially significant, the proposed project would have a significant impact on archaeological resources unless mitigation measures are devised.

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Figure 1  
Project Location

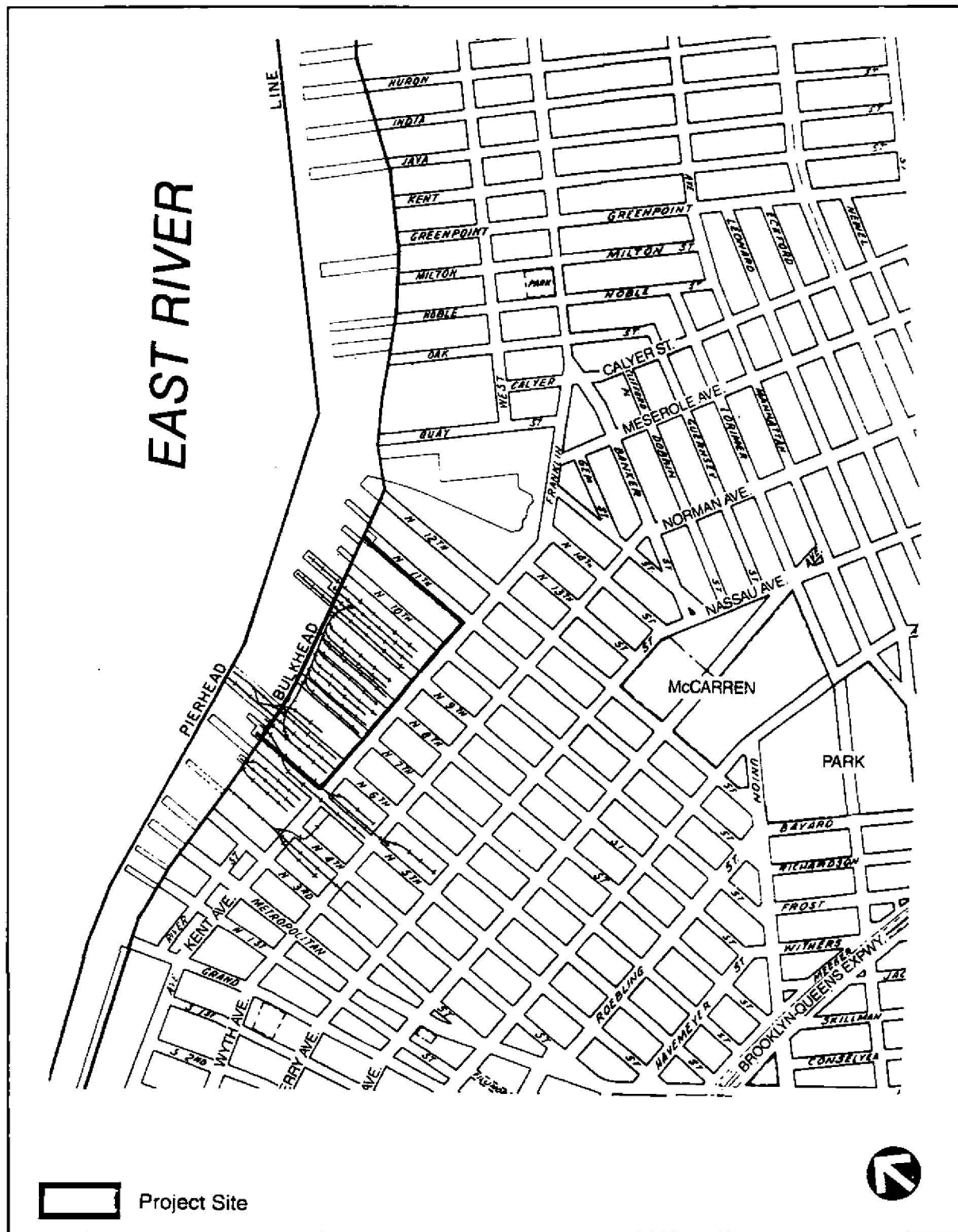
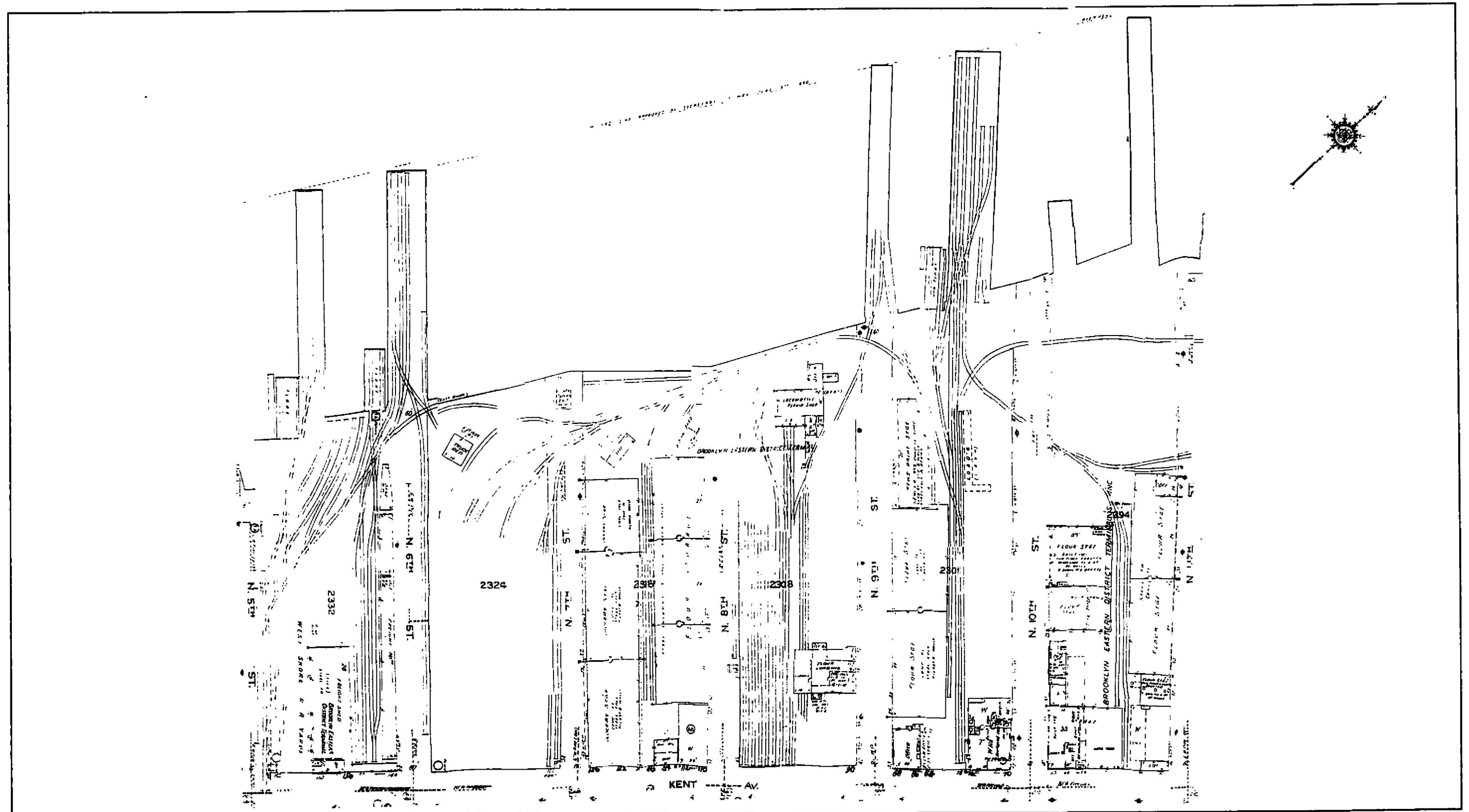
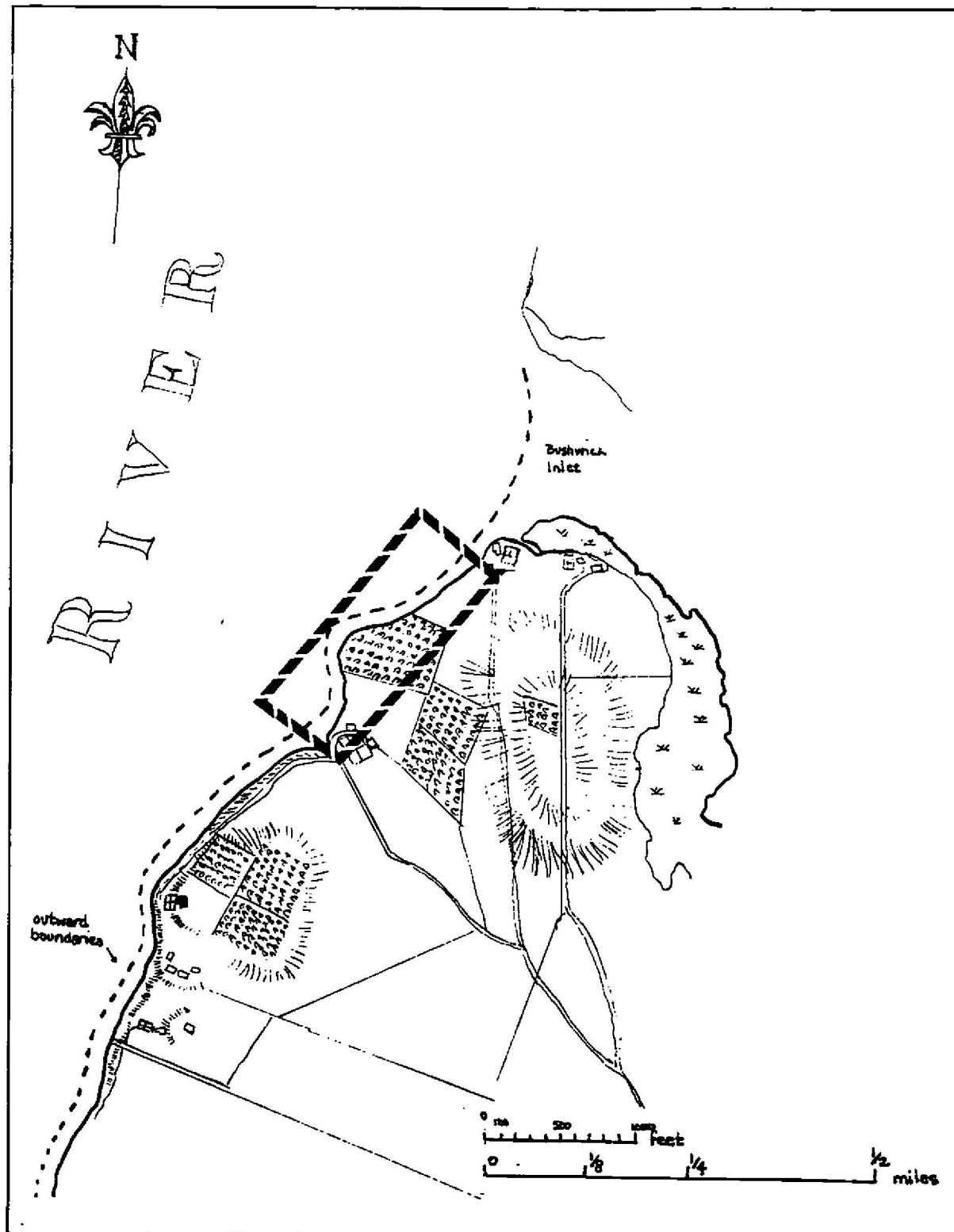


Figure 2  
Project Site, 1990 Sanborn Map



Eastern District Terminal

Figure 3  
Ratzer, Plan of the City of New York, 1767



**MAP**  
OF  
**NEW YORK & STATEN ISL.**  
And Part of  
**LONG ISLAND**  
Surveyed by Order of the Honorable  
General Sir Henry Clinton & B.  
Commander in Chief of the British  
Forces.

NEW YORK  
STATEN ISL.  
LONG ISLAND  
HUDSON RIVER  
NORTH RIVER  
THE CITY OF NEW YORK  
THE COUNTY OF NEW YORK  
THE COUNTY OF QUEEN'S

1793

### Eastern District Terminal



also the village of Williamsburg, 1893

Map showing the layout of streets in the Village of Williamsburg, 1893. The map includes a grid of streets labeled North Thirteenth St., North Twelfth St., North Eleventh St., North Tenth St., North Ninth St., North Eighth St., North Seventh St., North Sixth St., North Fifth St., North Fourth St., North Third St., North Second St., North First St., Grand St., and South First St. The map also shows various landmarks and buildings, including the William Grove Cottage, the Yarnish Farm, the William's Shipyard, the Shipyard, the Lumber Yard, the Coal Dock, and the Houston St. Ferry. A legend at the bottom right indicates that a white rectangle represents the 'Project Site' and a black arrow points North.



Figure 6  
W. Perris, Map of the City of Brooklyn, 1855

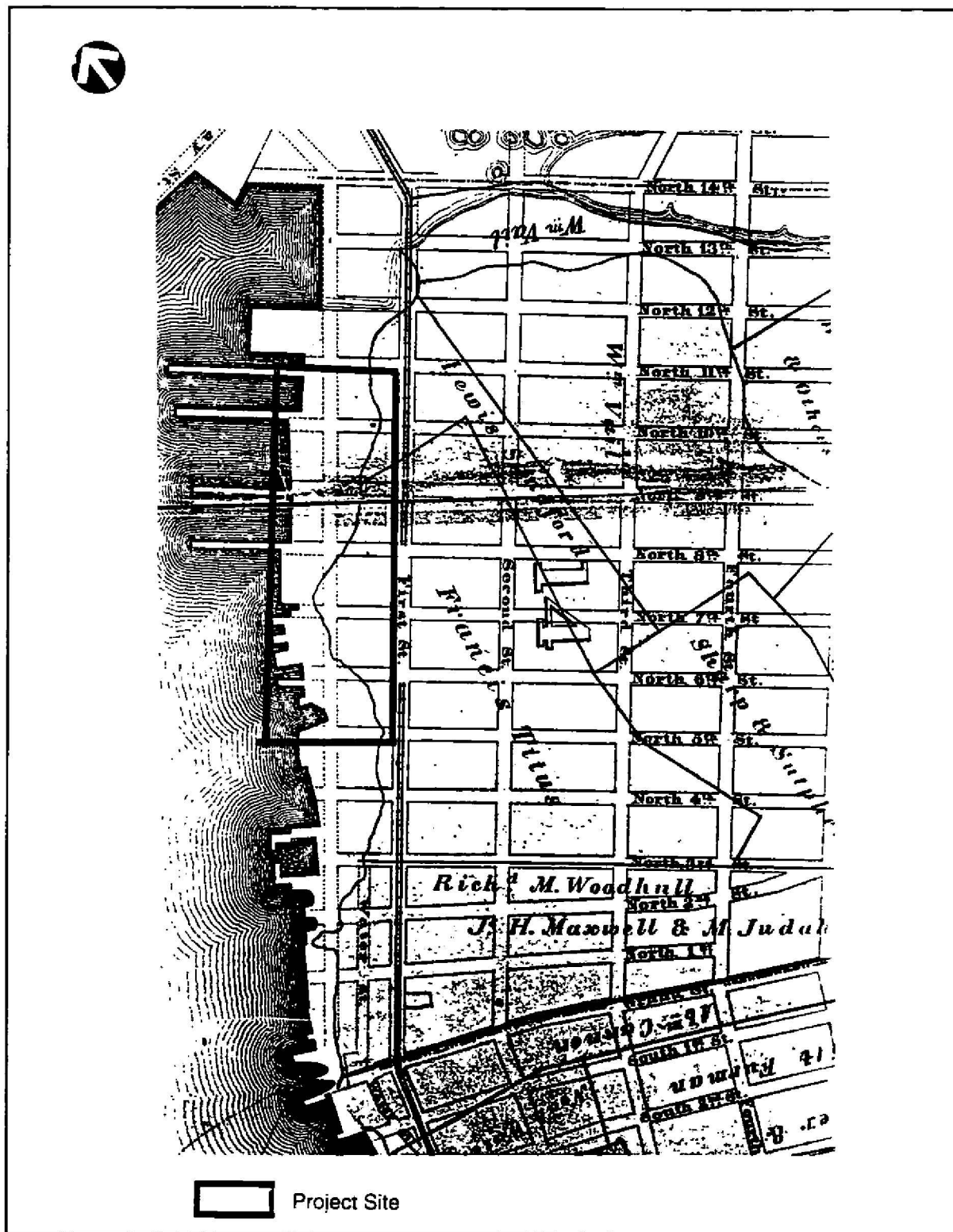
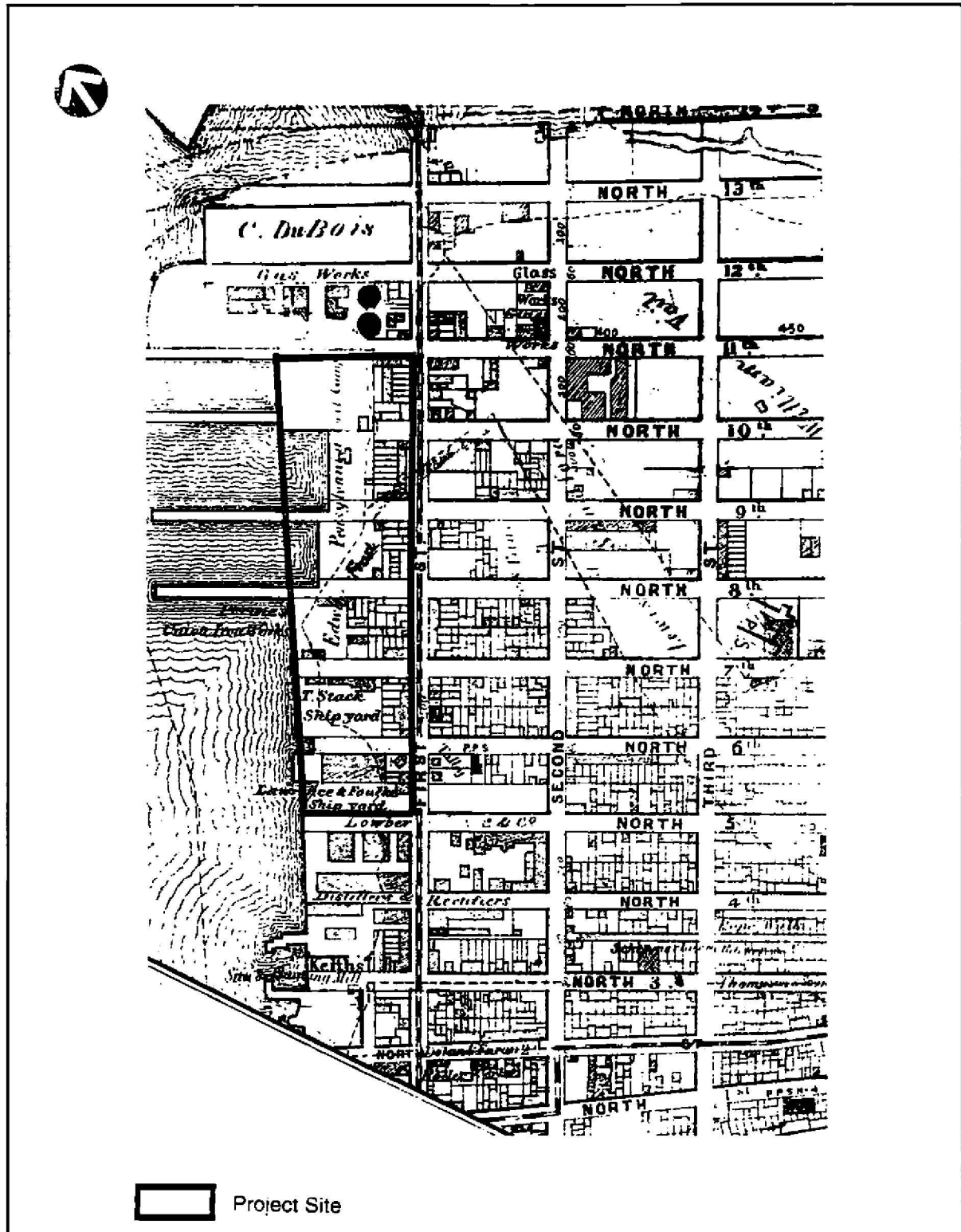


Figure 7  
M. Dripps, Map of Kings County, 1869



[illegible]

Figure 9  
E. Belcher Hyde, Atlas of Borough of Brooklyn, 1898

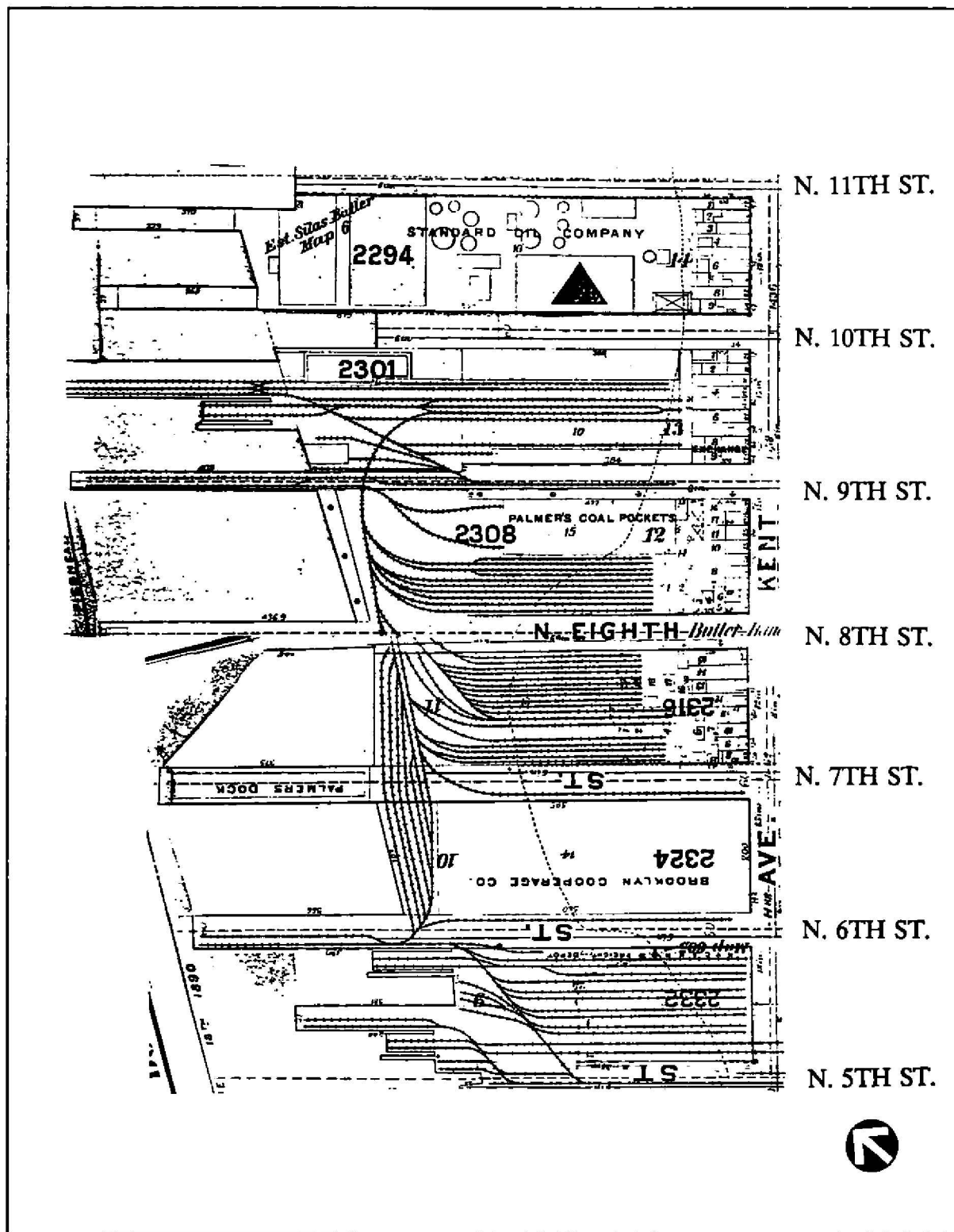


Figure 10  
Sanborn Insurance Map, 1905

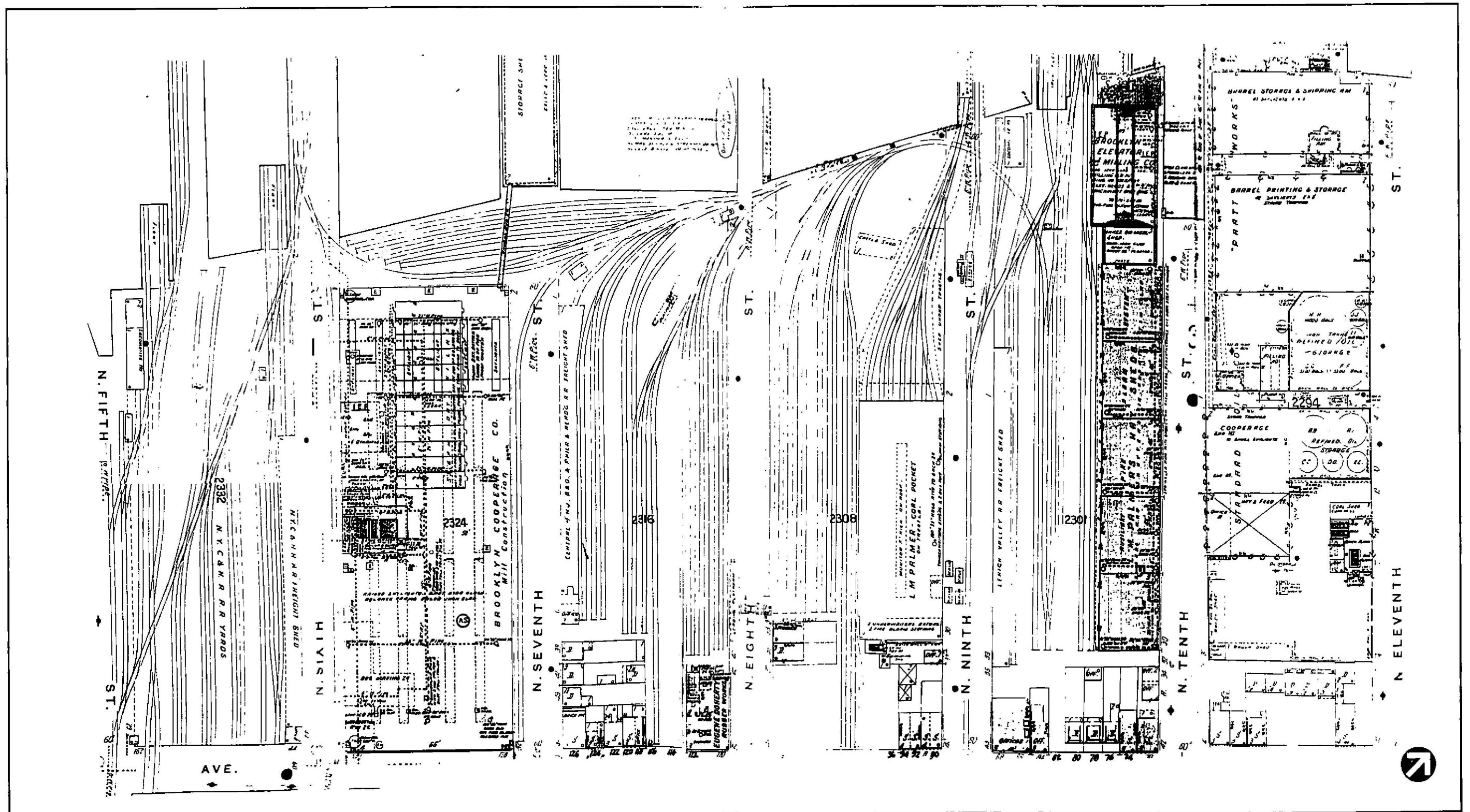
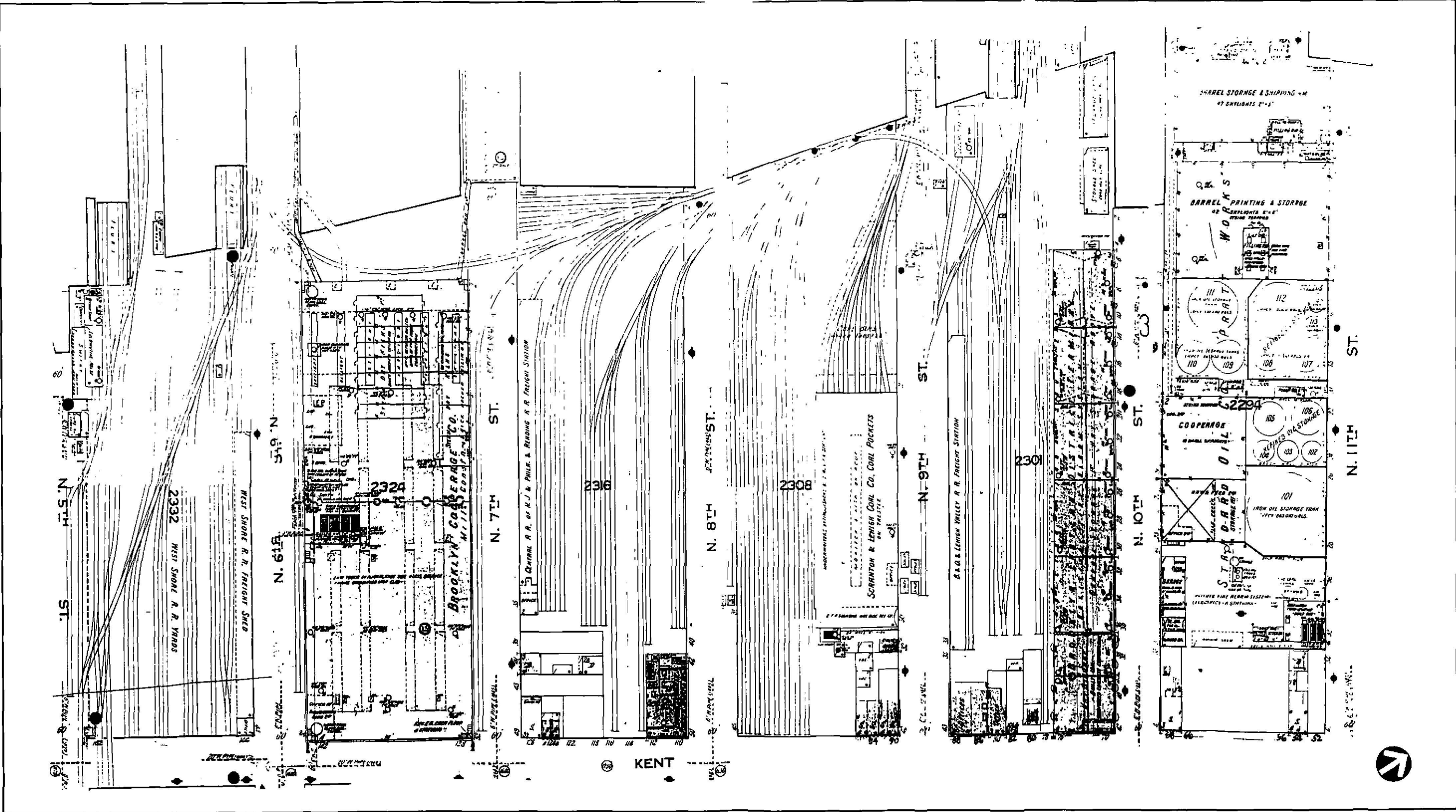




Figure 11  
Sanborn Insurance Map, 1916



Eastern District Terminal

Figure 12  
Map, 1941



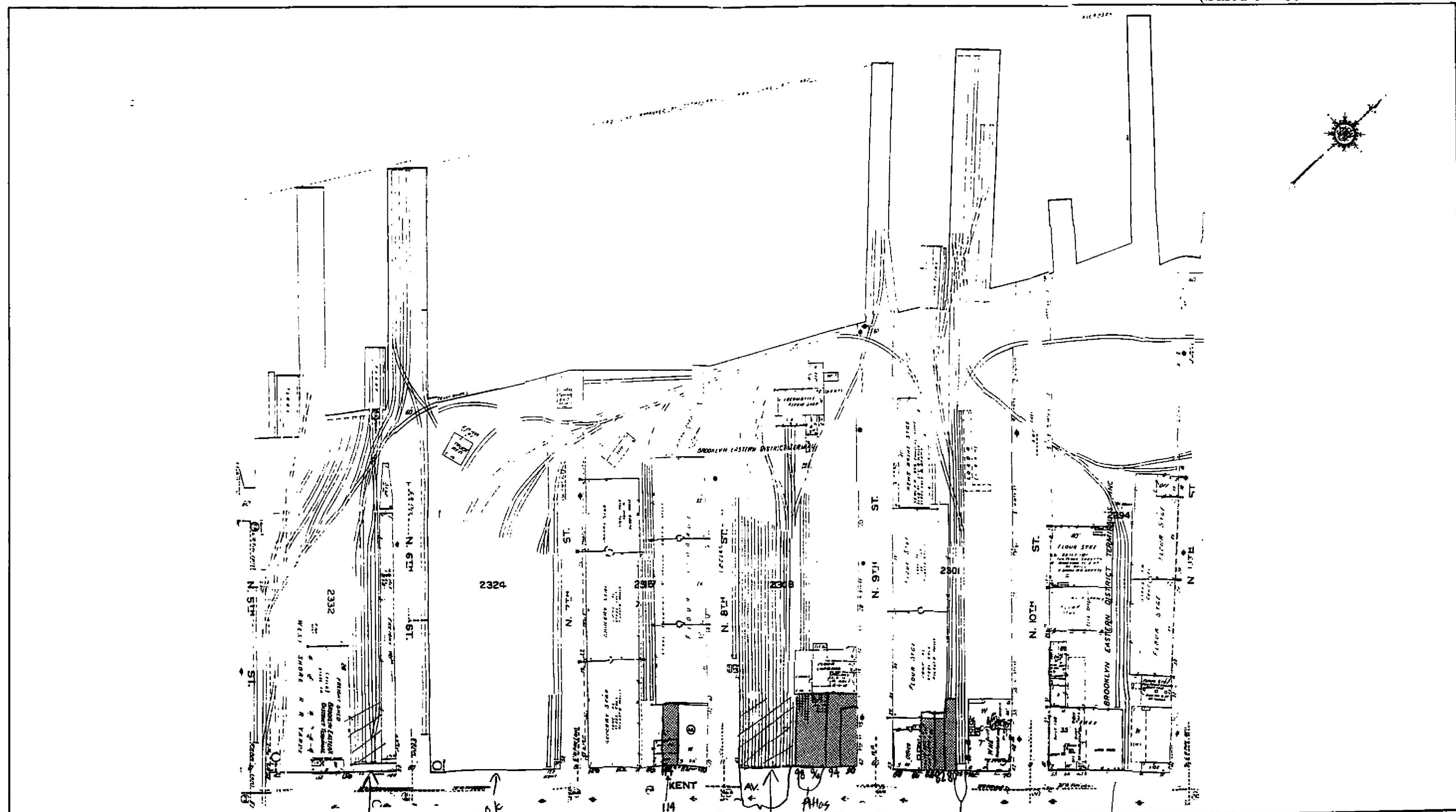
Sanborn Insurance Map, 1951



### Eastern District Terminal



Figure 14  
Potential Archaeologically Sensitive Areas  
(Based on 1887 and 1990 Sanborns)



Eastern District Terminal

## **APPENDIX**

### **LIST OF USES ON THE PROJECT SITE ACCORDING TO HIGGINSON'S 1868 INSURANCE ATLAS**

#### **North 5th to North 6th Street/Block 2332**

J.D. Leary Ship Yard and two 3rd class, frame, two-story businesses are on the north half of the block.

Old slate yard/shed and brick building are on the southeast corner.

Drying kilns and track siding for freight cars and a frame shed associated with the tracking are on the southwest quarter of the block.

#### **North 6th to North 7th Street/Block 2324**

Eight brick and frame dwellings, combined dwellings and stores, and 1st class businesses (ranging from 1 to 4 floors) occupy the Kent Avenue frontage. (Note: It is possible that certain of these structures were part of the earlier Brundage Naval Yard complex identified in the *Atlas of Brooklyn Stores and Sheds*, 1860.)

Weidmann Cooperage, containing 35 stoves, kilns, a barrel elevator, and a two-story brick-clad frame structure used for barrel storage, was located on the western two-thirds of the block.

#### **North 7th to North 8th Street/Block 2316**

Perhaps as many as 16 brick and frame dwellings, combined dwellings and stores, and 1st class businesses (ranging from 1 to 4 floors) occupy the Kent Avenue frontage and a portion of each side street.

At 50 North 8th Street is a three-story, brick Rubber Works (with steam boiler).

Dick & Meyer Sugar Refinery, with 6 retort furnaces, a smithy, a three-story drying building, and 14 steam boilers, occupies the west half of the block.

#### **North 8th to North 9th Street/Block 2308**

Perhaps as many as 14 brick and frame dwellings, combined dwellings and stores, and 1st class and 2nd class businesses (ranging from 1 to 4 floors) occupy the Kent Avenue frontage and a portion of each side street. A brewery, occupying one lot, is situated on Kent Avenue at mid-block.

### **Appendix A, continued**

The remainder of the block is devoted to the Philadelphia & Reading Coal & Iron Company's coal bins. A raised trestle and hoister, operated by steam produced on the neighboring block to the north, are on the bulkhead.

#### **North 9th to North 10th Street/Block 2301**

Perhaps as many as 15 brick and frame dwellings, combined dwellings and stores, and 1st class and 2nd class businesses (ranging from 1 to 4 floors) occupy the Kent Avenue frontage and a portion of each side street.

The remainder of the block is devoted to the Philadelphia & Reading Coal & Iron Company's coal shed, two-story office, and elevated tramway for loading coal to and from barges.

#### **North 10th to North 11th Street/Block 2294**

This block is considerably larger than the other project site blocks in 1868. Apparently, the waterfront from North 10th Street to North 12th Street experienced the earliest extensive landfilling in the project area.

Perhaps as many as 16 brick and frame dwellings, combined dwellings and stores, and 1st class businesses (ranging from 1 to 4 floors) occupy the Kent Avenue frontage and a portion of each side street.

The remainder of the block supports a portion of the C. Pratt & Co. Oil Works, including oil tanks, a two-story brick cooperage, two three-story brick oil-packing buildings with a connecting barrel run, a frame office, and a one-story structure housing steam boilers. Sheds extend along two piers into the river.