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ASSESSMENT OF ARCHAEOLOGICAL SENSITIVITY

BROOKLYN EASTERN DISTRICT TERMINAL SITE

LONG RANGE SLUDGE MANAGEMENT PLAN

GEIS III

July 1991

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126

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 some residential lots may have been undisturbed.

The proposed 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.

B. BACKGROUND HISTORY

The area that is now Williamsburg was purchased from the Canarsie Indians in 1638, and sparsely settled around 1660 as part of the larger town of Bushwick. After the Revolutionary War, an agricultural community developed. Ferry service from the foot of Grand Street, established ca. 1797, allowed farmers to sell their produce in Manhattan. The village of Williamsburg was founded in 1810, named for the engineer who surveyed the land, Colonel Jonathan Williams. In 1819, the first industrial building in the area, a distillery, was established at the foot of North 2nd Street by Noah Waterbury.

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 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 Figure 3). 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, into 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 site 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.

As ferry service to Manhattan expanded in the mid-19th century, so eventually did waterfront industrial uses, and this area became known as the "Eastern District." These industries included shipbuilding, manufacture of machinery and hats, baking, sugar refining, manufacture of rope, glass and porcelain production, and cast-iron manufacturing. Cooperages supplied all the barrels for the sugar refineries in the area and often had docks used by local industries for shipping. Petroleum refining was also an important industry in Williamsburg, concentrated along Kent Avenue. The largest gasoline refinery in the world, 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.

By 1869, maps indicate that 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, and the area had become primarily industrial (see Figure 4). The 1869 map shows small unidentified structures along First Street (now Kent Avenue) — most likely stores and dwellings — with industrial uses closer to the water, including shipyards, an iron works, and a large coal company.

In the 1870's, Lowell Palmer, a Brooklyn entrepreneur who owned a dock at North 5th Street, established a railroad terminus there. Soon, many industries were using the depot, and it was expanded to include a network of tracks, several docks, a carfloat, transfer bridge, and freight yard, serving as a transfer station for freight. Among the early uses attracted to the terminal were oil refineries, two sugar refineries, and several large cooperages that made the barrels required for shipping supplies such as sugar and oil. By 1887, Palmer's facility occupied the waterfront land between North 4th and North 10th Streets.

By the late 1880's, the project site's western portion was occupied by railroad tracks and several cooperages, a sugar refinery, coal bins and a large coal yard, and part of the Pratt Oil Works. Along Kent Avenue, dwellings and small businesses — including a brewery and a rubber manufacturer — stood between North 6th and 11th Streets (see Figure 5).

As the freight terminal grew, it came to occupy almost all of the project site. By the 1890's, almost all of the site between North 5th and 10th Streets — particularly the western portion — was occupied by uses related to the terminal: extensive railroad tracks, with a railroad depot along the south side of North 6th Street, coal pockets, and several industries, including the large new Brooklyn Cooperage Company (see Figure 6). The sugar refinery and a nearby cooperage had been destroyed in a large fire in the 1880's, but the rubber manufacturer at North 8th Street remained. The site's northernmost block (between North 10th and 11th Streets) was occupied by buildings of the Standard Oil Company. Small

dwellings or commercial buildings occupying the eastern ends of the blocks between North 7th and 11th Streets.

By the turn of the century, the terminal served a number of local railroads and steamships lines, and included three transfer bridges, a freight shed, many railroad tracks and sidings. In 1906 it was incorporated as the Brooklyn Eastern District Terminal (BEDT). Industries close to the terminal were similar to those in the 1890's, including the rubber factory, now Eugene Doherty's Rubber Works; 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 7 and 8). Later, in the 1930's, the largest bulk flour storage facilities in New York City were built at BEDT, for storing bags of flour that were delivered for area bakeries (see Figure 9). 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 10).

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.

C. EXISTING CONDITIONS

The Eastern District Terminal project site is currently unused. Some railroad tracks and large storage buildings remain on the site, as do an office building from the Brooklyn Eastern District Terminal (at the northwest corner of Kent Avenue and North 9th Street, ca. 1890's), the Eugene Doherty Rubber Works building (ca. 1880's), 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

Prehistoric Period

According to Grumet's *Native American Place Names in New York City*, there are no known Native American habitation sites or trails on or near the project site. Further, there has been substantial alteration to the site as shown both by the change in the shoreline configuration and by the development and redevelopment that has occurred on the project site. Because prehistoric remains are usually shallow deposits, it is unlikely that any undisturbed prehistoric archaeological resources exist on site.

Historic Period

Early 19th Century Archaeological Resources

According to Armbruster's history of the area, in the 1830's the project site was the site of the Willow Grove picnic ground; the Regatta pavilion, with a circular pleasure railway; a boathouse; and a mansion. The potential for archaeological sensitivity of the site for each of these resources is discussed below.

The Willow Grove picnic ground, with facilities for fishing, bathing, and boating, occupied the waterfront between North 8th and 10th Streets. By 1869 (see Figure 4), this area was partly occupied by small buildings, and had been divided into two blocks by the addition of North 9th Street. This development, together with the extension of the East River shoreline, would have involved extensive earthmoving and grading that most likely destroyed any evidence of the picnic ground facilities. In 1887, dwellings, small stores, and a brewery were shown on the map (see Figure 5). In 1905, railroad tracks and related commercial buildings, including large warehouses close to North 10th Street, occupied most of the two blocks (see Figure 7). Similar activities continued on the site through the 1950's. By the 1950's, 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.

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. By 1869, this block was occupied by small buildings along Kent Avenue, and a shipyard on the rest of the block (see Figure 4). In 1887, dwellings lined the eastern end of the block, and a large cooperage the rest of the block (see Figure 5). By 1898, the entire block was filled with a new cooperage building, which remained until the 1930's. Although the block's eastern end was once a bluff, the entire block is currently level. Construction activities must have required considerable earthmoving and grading, particularly to build the cooperage, which covered the entire block. It is not likely that any remains of the pavilion survived this activity.

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 (approximately midblock in the current blocks), 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. It is highly unlikely that any evidence of the boathouse remains.

Armbruster also mentions the "old Parks mansion" at North 10th Street and Kent Avenue. Which corner of that intersection this house was located on is unclear. However, like the recreational uses to the south, it is likely that any evidence of this mansion was destroyed by the extensive earthmoving necessary to create the current shoreline and configuration of the block.

Mid-19th Century Archaeological Resources

As mentioned above, early residential uses were located along Kent Avenue for the entire length of the project site. It is not clear when these houses were built, but they

appeared on the first detailed map available, in 1869. Water lines were installed in the streets around the project site in the 1860's and 1870's, so it is possible that some of these residences used wells and privies for an unknown period of time after their construction but before hook-up to public services. (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 late 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. Along Kent Avenue, water mains were installed in 1904, but since mains were indicated on the 1887 map, these must have been replacements.) 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.

North 5th to 6th Street

By 1887, all the small buildings along Kent Avenue on this block had been demolished, and this end of the block was occupied by railroad tracks and a cooperage. The land had been extended farther west, most likely involving earthmoving and grading activities close to Kent Avenue as well. By 1898, the entire block was filled with railroad tracks and a freight depot. The site has remained similarly occupied, with the addition of a large freight shed, to this day. All of this activity probably destroyed any remains from the mid-19th century houses on the site.

North 6th to 7th Street

The small buildings in the 12 residential lots along Kent Avenue on this block were indicated as dwellings and stores on the 1887 map. By 1898, however, these had all been replaced by the massive Brooklyn Cooperage Co. building, which occupied the entire block. If this building had a basement or deep foundations, it would have destroyed any remains from the residential lots on the block. However, if it did not, these 12 residential lots may be undisturbed.

North 7th to 8th Street

By 1887, small stores (possibly the same buildings as indicated on the 1869 map) lined Kent Avenue, except at the corner of North 8th Street, where a rubber factory and brass foundry had been built. Behind many of the stores on Kent Avenue and on North 7th and 8th Streets were dwellings. By 1905, however, railroad tracks extended through much of the block. Ten undisturbed residential lots remained, some with extant buildings and some cleared — 39-43 North 7th Street, 114-126 Kent Avenue, and 37 North 7th Street. In 1914, four more of these lots had been cleared, but all remained undisturbed by new construction. In 1941, most of the block was filled with large new, one-story flour storage warehouses with concrete floors, covering 8 of the 10 residential lots. If the warehouses do not have basements, backyard areas from eight house lots may remain undisturbed — 39-43 North 7th Street and 118-126 Kent Avenue. The two other house lots (114 and 116 Kent Avenue) have had minimal construction activities since demolition of the houses, and are currently vacant; these may also not have been disturbed.

North 8th to 9th Street

Small structures along Kent Avenue stood on this block from at least 1869 to the turn of the century, except for two lots that were occupied by a brewery by the 1880's. However, by 1916, the southern half of the block was filled with railroad tracks, leaving only five lots undisturbed — 32 North 9th Street and 90, 94, 96, and 98 Kent Avenue. A flour-loading

facility (which may or may not have a basement) now occupies the site of 32 North 9th Street, but the other two lots are vacant.

North 9th to 10th Street

In 1885, along or near Kent Street on this block there were 11 residential lots, occupied by about 14 stores or dwellings and several outbuildings. All these lots remained undisturbed, with eight stores or dwellings remaining, until the early part of the 20th century, when a new office building for the Brooklyn Eastern District Terminal 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). This portion of the block remains similarly occupied today. Basements are not indicated for the buildings on the block, so it is possible that at least 10 residential lots on this block remained relatively undisturbed.

North 10th to 11th Street

The nine lots along Kent Avenue between North 10th and 11th Streets were occupied by small stores and dwellings from at least the 1860's until ca. 1915, when seven of the lots had been cleared but remained vacant. 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, which would have destroyed any archaeologically sensitive areas. A relatively new warehouse structure now occupies the rest of the Kent Avenue frontage of the block. If this building does not have a basement, some remains from the four 19th century residences at 52-58 Kent Avenue may exist on the site.

Summary

As described above and evident in the maps provided, the entire project site was subject to intense construction and development activity related to the Brooklyn Eastern District Terminal. This activity must have included extensive landmoving operations, as indicated in the boring logs, which showed fill materials up to 28 feet deep in some locations. This activity would have been necessary to change the shoreline from its original configuration — a bluff sloping down to a wetter area — and make it suitable for the extensive railroad tracks indicated on 20th century maps. As described above, the site is currently flat and extends up to 500 feet beyond the original shoreline. It is likely that any potentially sensitive areas on the project site dating to before the mid-19th century were disturbed by the extensive earthmoving activities on the site and the intensive use of the site during the late 19th and early 20th centuries.

In addition, the site once hosted small dwellings dating to before 1869 along Kent Avenue and on the side streets close to the avenue. Water and sewer lines were installed below area streets between the 1860's and 1880's, so residents of some of these houses may have used wells, cisterns, or privies for some period of time. Although none of these houses remain today, it is possible that their wells, cisterns, or privies may be undisturbed beneath the surface of the site or beneath buildings with only slab construction. Figure 11 shows the location of all the possibly undisturbed homelots on the project site. As can be seen by comparing the various maps with Figure 11, almost every former homelot on the site experienced some degree of disturbance by later buildings, even if those only had slab foundations. Further research is required to determine the archaeological sensitivity of these lots, particularly whether the houses were built before sewers were available, if they were used as dwellings at that time, and the amount of disturbance from later buildings.

E. PROBABLE IMPACTS OF THE PROPOSED PROJECT

Details regarding site planning and design for the sludge management facility proposed for this site are not yet available, so a worst-case scenario has been analyzed for archaeological impact assessment. This scenario assumes that the entire site would be developed with one or more structures for use as a sludge management facility supported by spread-footing foundations 5 to 6 feet deep and by 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 19th century house lots are buried on the site. Further research is necessary to determine if these house lots are archaeologically sensitive. If they are, the proposed project would have a significant impact on archaeological resources unless mitigation measures are devised.

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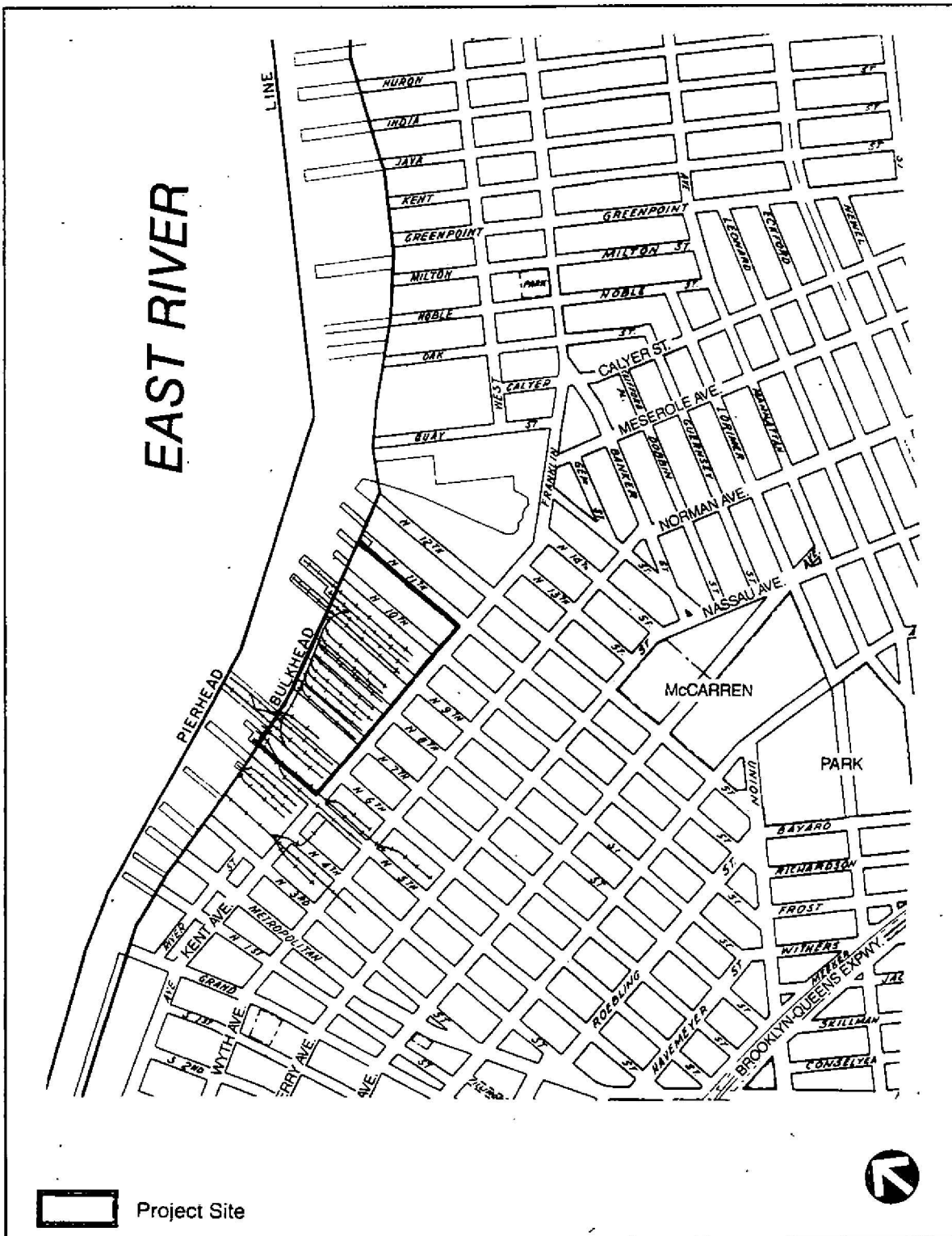
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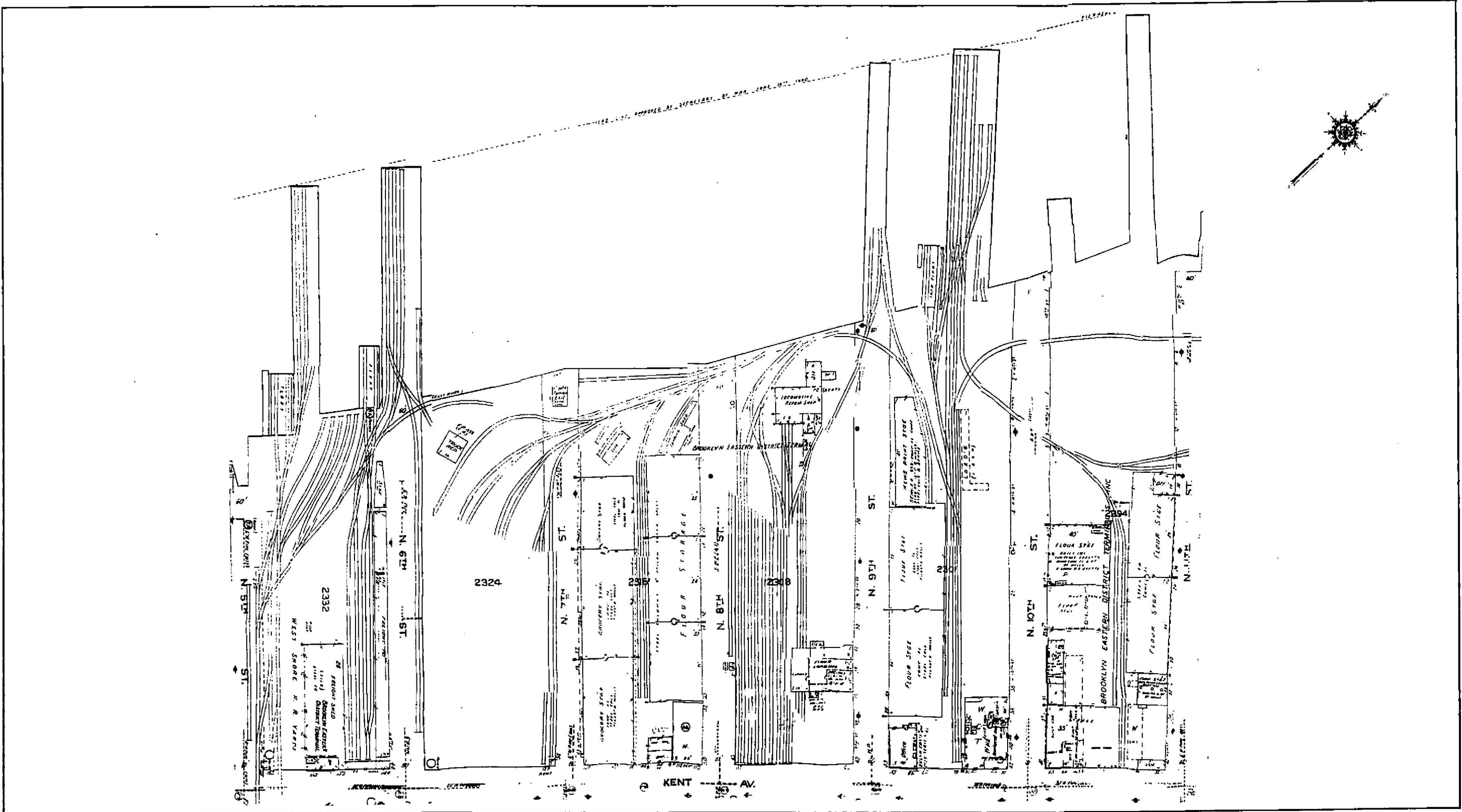
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Figure 1
Project Location



Eastern District Terminal

Figure 2
Project Site



Eastern District Terminal

Eastern District Terminal

Figure 4
M. Dripps, Map of Kings County, 1869

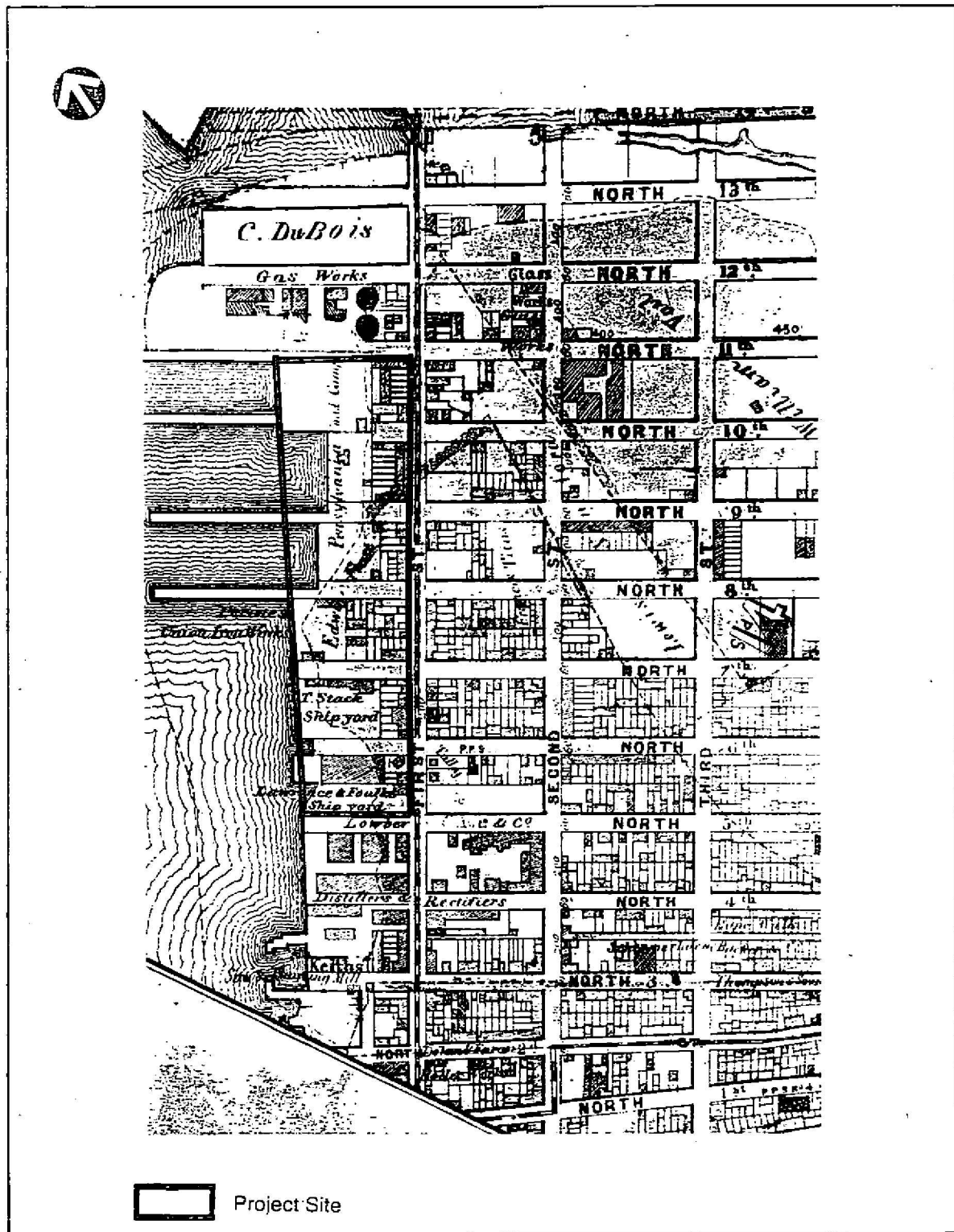


Figure 5
Sanborn Insurance Map, 1887

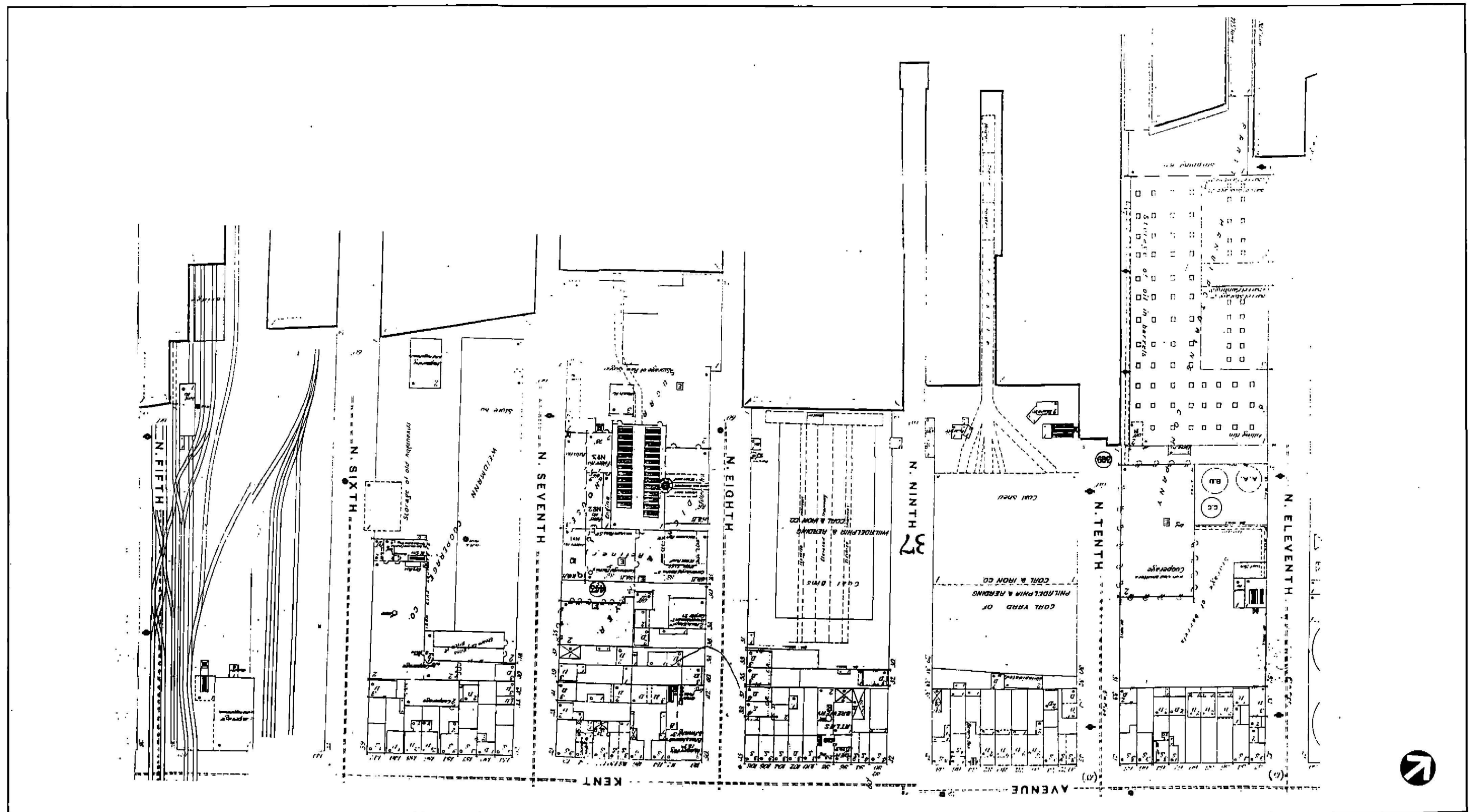
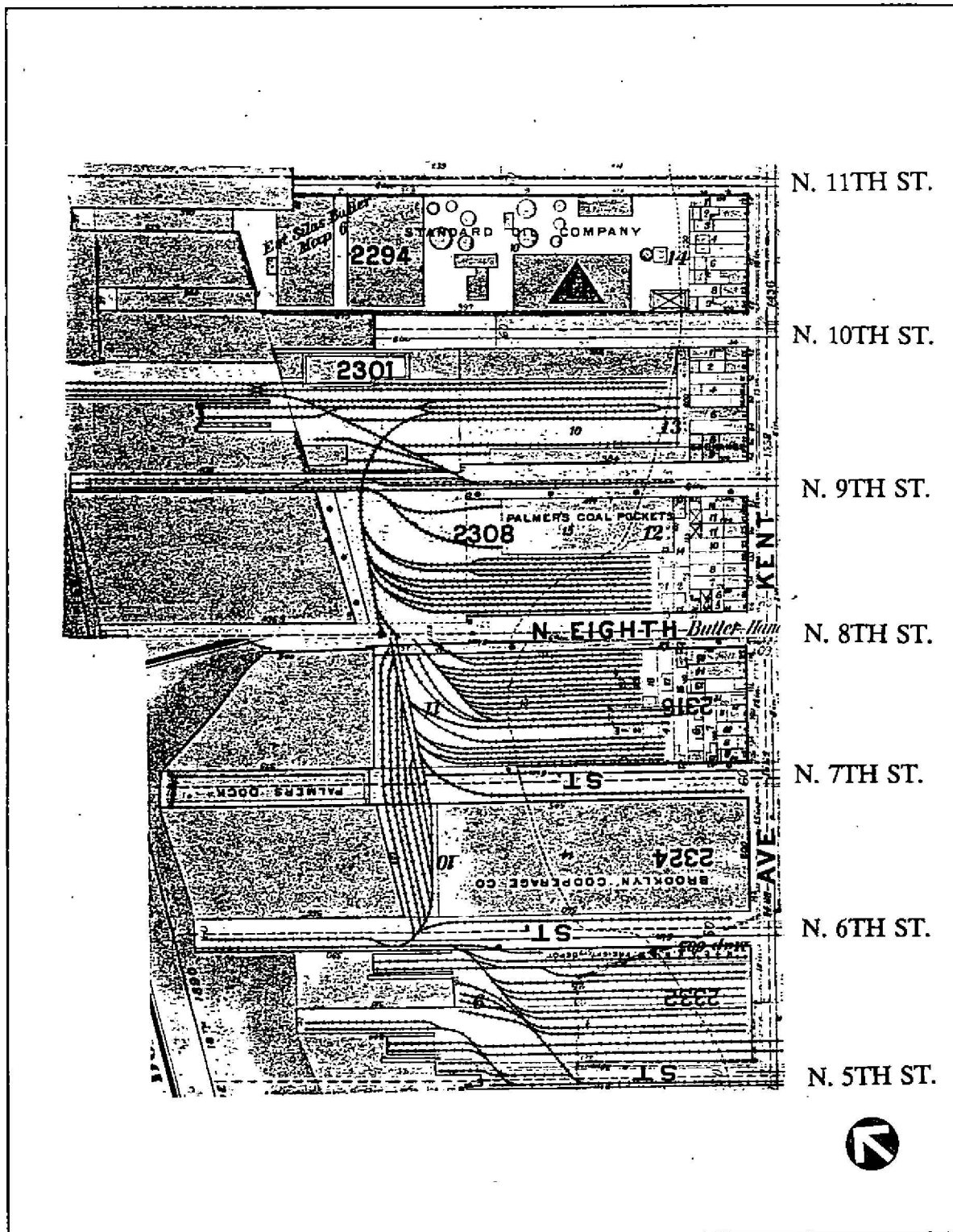


Figure 6
E. Belcher Hyde, Atlas of Borough of Brooklyn, 1898



Eastern District Terminal

Figure 7
Sanborn Insurance Map, 1905

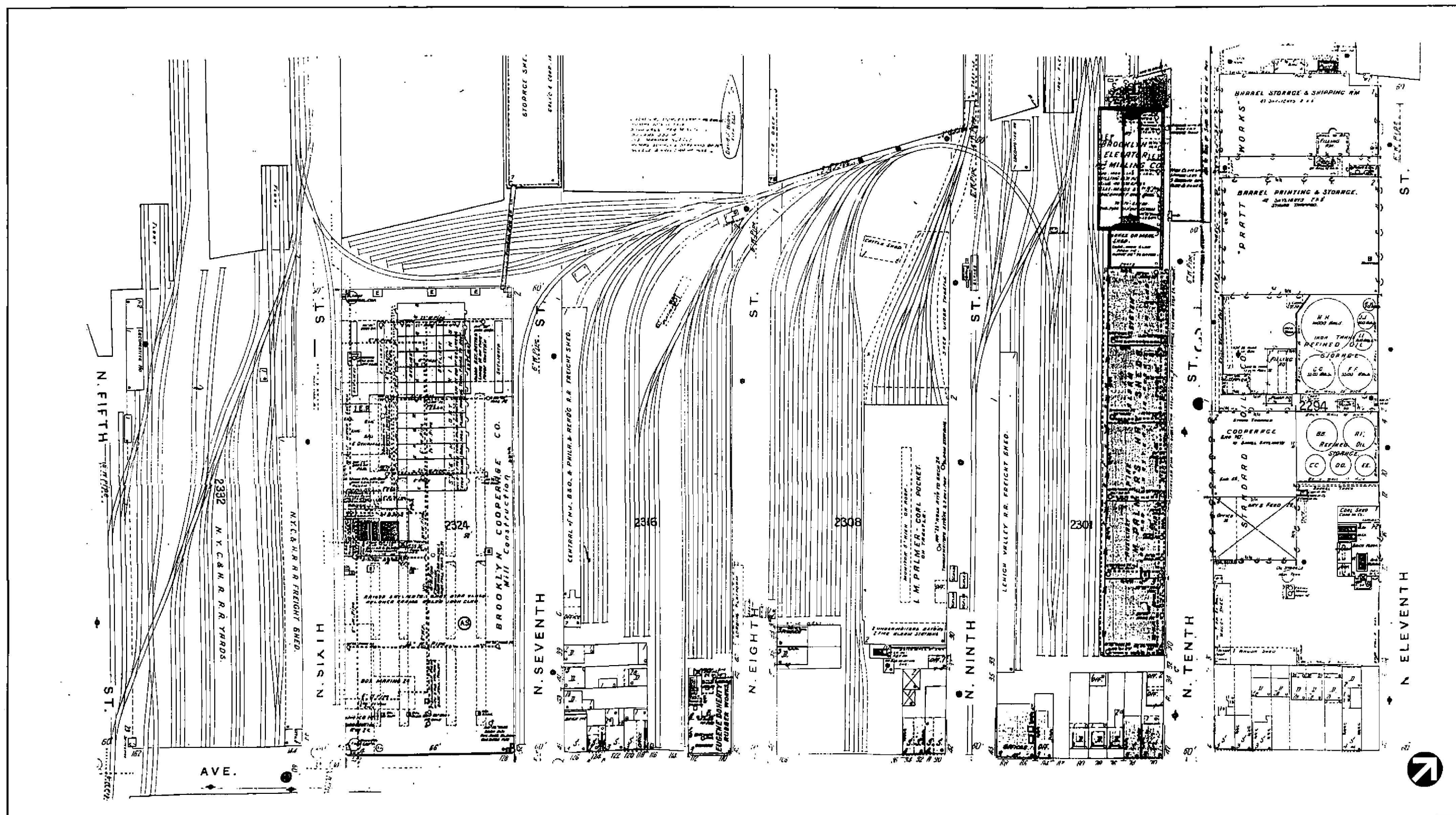
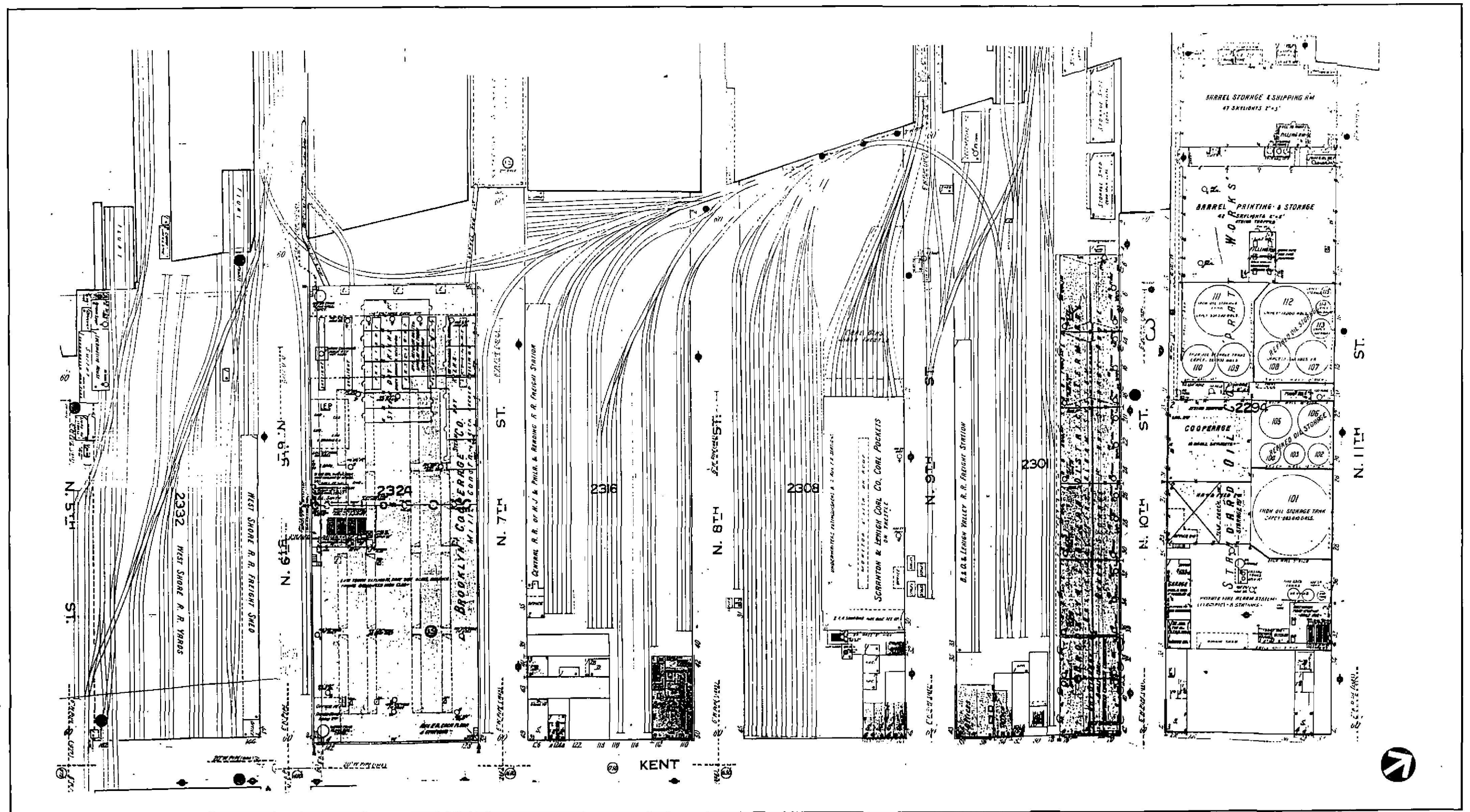


Figure 8
Sanborn Insurance Map, 1916

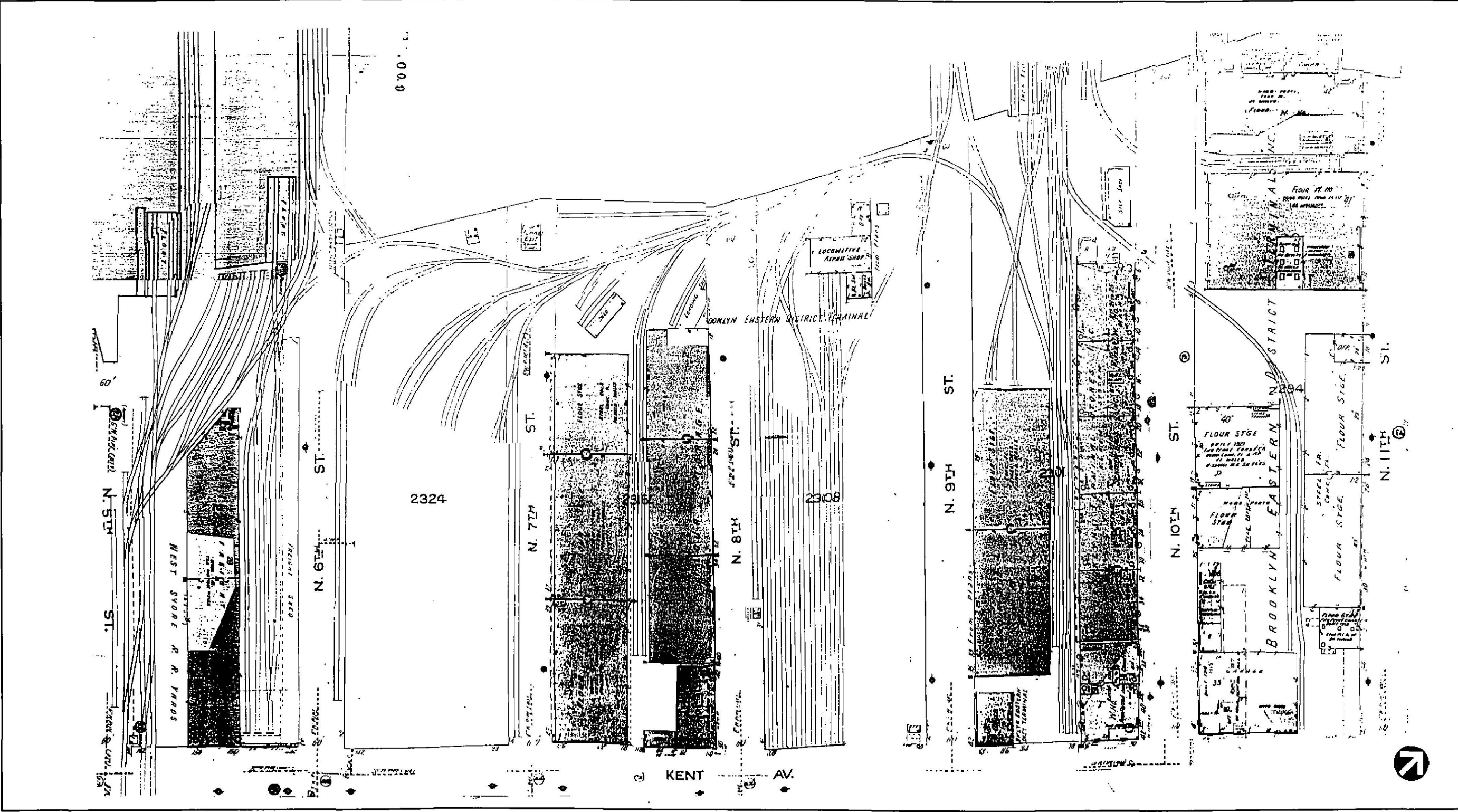


Eastern District Terminal

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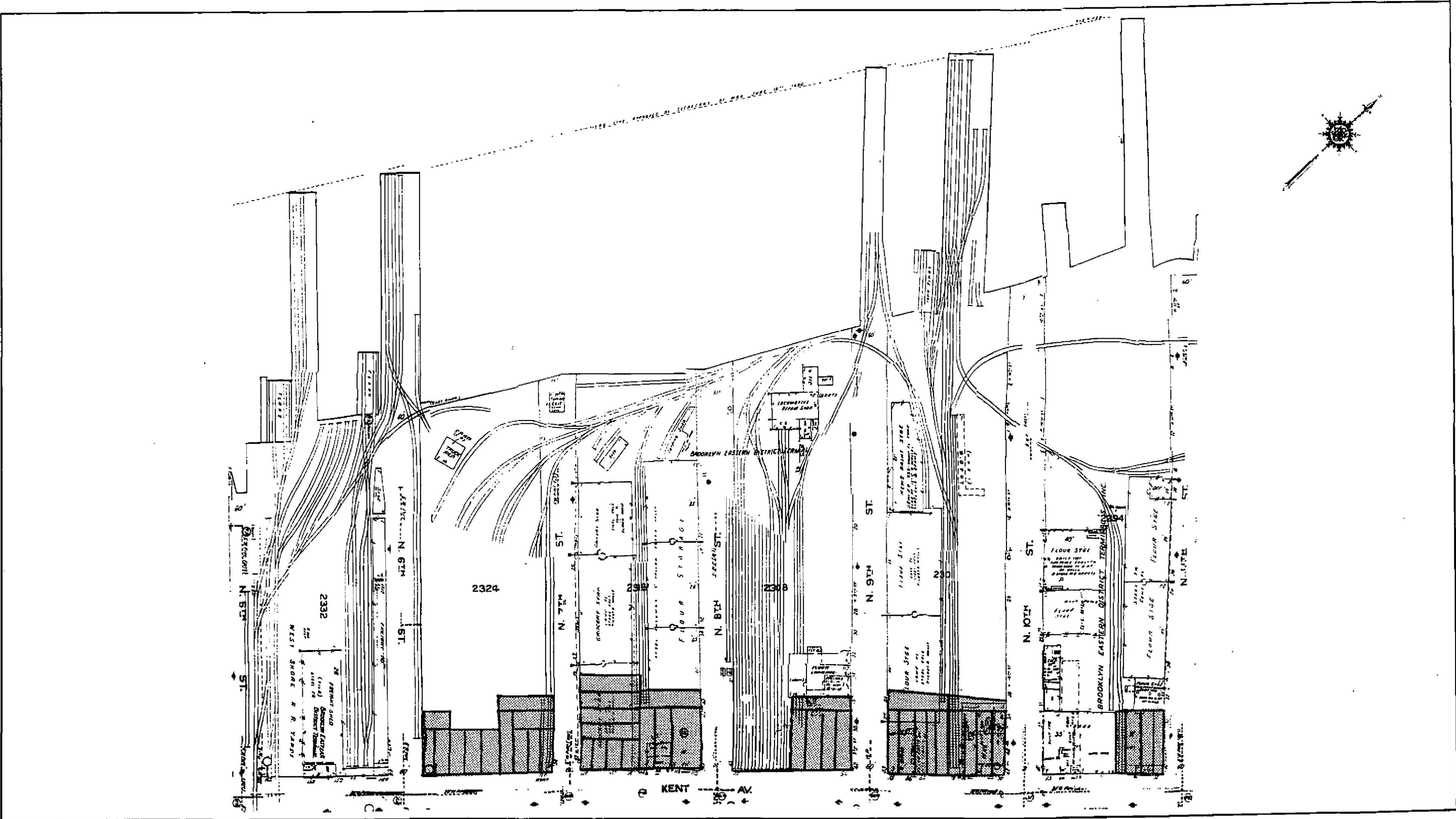


Figure 10
Sanborn Insurance Map, 1951



Eastern District Terminal

Figure 11
Potential Archaeologically Sensitive Areas
(Based on 1887 and 1990 Sanborns)



Potentially Sensitive Areas