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WEST 60th STREET REZONING PROJECT

CEQR No. 90-113M

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LAND. MALION COMMISSION

PHASE 1A ARCHAEOLOGICAL ASSESSMENT REPORT

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INTRODUCTION

For a proposed development project on West 60th Street in Manhattan, <u>KAM West_60th</u> Street Associates has requested the rezoning of a portion of Block 1152 (CEQR No. 90-113M). The area of the proposed rezoning occupies the western part of the block which is bounded by West End Avenue, West 60th Street, West 61st Street, and Amsterdam Avenue. The lots to be affected are Lots 1, 5, 8, 10, 11, 12, 13, 52, 53, 55, 56, 57, 58, 61, and 43 (See Figures 1 and 2). The application procedure for the proposed rezoning requires review by a number of city agencies, including the New York City Landmarks Preservation Commission (NYCLPC). In reponse to concerns expressed by the NYCLPC, the following Phase 1A Documentary Assessment concentrated on the history of the lots in relationship to the potential for recovery of Native American archaeological materials from the project area.

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METHODOLOGY

Data necessary to assess the probability of there being Native American archaeological resources present on the project site were gathered from a variety of sources. The most valuable repository was the Manhattan Topographic Bureau which furnished maps and soil boring reports unobtainable elsewhere. A report by Dr. Dennis Weiss which entailed a reconstruction of the paleoshoreline of the Hudson River in the vicinity of the project site, provided information about the shoreline during prehistoric times. The record of previous subsurface disturbance during the historic era was compiled from New York City Buildings Department Records, land use atlases, and soil boring logs. Information was sought from New York State agencies regarding any previously recorded archaeological sites in the study area. Supplementing these archival sources were histories, conveyance records, maps, photograph collections, technical reports, and historical accounts. A site visit was made, during which questions were asked of workers on the block, and photographs were taken.

REPOSITORIES RESEARCHED

New York City Department of Buildings - Division of Blocks and Lots

New York City Historical Society - Research Library

New York City Landmarks Preservation Commission

New York City Municipal Archives - Old Surrogate Court House

New York City Public Library - General Reference Library, Local History Division, Map Room, Science and Technology Division

New York City Topographic Bureau - Rock Data Maps, Historic Maps

New York State Museum (Albany) - Prehistoric Site File

New York State Office of Parks, Recreation, and Historic Preservation, State Historic Preservation Office.

ARCHAEOLOGICAL POTENTIAL

1) Prehistoric Background

Established models of prehistoric settlement and subsistence patterns for the metropolitan New York area are based on regional models developed by years of archaeological investigations. These patterns varied through time with the availability and diversity of resources, environmental fluctuations, and numerous other factors. In order to attempt to predict the likehood that the project site was utilized prehistorically on an extended basis, it is necessary to reconstruct the prehistoric environment (Kearns, Kirkorian, and Schneiderman-Fox 1989).

During the last episode of the Pleistocene in the Northeast, the Wisconsin, ice reached its maximum advance between 18,000 and 16,000 years ago. Following this, glaciers slowly retreated north, depositing gravel along their melting margins. By 13,000 years ago the ice had retreated north, leaving the New York area open for the establishment of flora and fauna. Shortly thereafter, between 12,000 and 9,500 years ago, Paleo Indians occupied the area, settling on high bluffs, river edges and along lowland swamps. No settlements have been identified within Manhattan.

Settlement pattern studies show that the following Archaic Period (7,000 to 3,000 years ago) is "represented by numerous, small, nearly always multi-component sites, variously situated on tidal inlets, coves and bays, particularly at the heads of the latter, and on fresh-water ponds on ...Manhattan Island...and along the lower Hudson River on terraces and knolls, at various elevations having no consistent relationship to the particular cultural complexity" (Ritchie 1980: 143).

During the subsequent Woodland Period (3,000 to 500 years ago), Native Americans had a preference for knolls or well-drained terraces in close proximity to fresh water resources. Sites of this period are often located near lakes, streams and rivers (Ritchie 1980:201). By approximately 3,000 years ago the current sea level had been reached and the topography/ecozones dominant at the time of European arrival were in place.

The Contact Period in Manhattan was rather short, due to rapid colonial expansion, war, and epidemics. In 1609, the Hudson River was first explored and the Indians sold the island in 1625 to the Dutch. The Native Americans were "a large collection of Munsee Delaware-speaking groups" (Grumet 1981:59-62), and were living in villages predominantly on the northeastern part of Manhattan. Their subsistence pattern was mostly based on agriculture, but included also significant amounts of game and shellfish (Grumet 1981:15; Barlow 1971:12).

There is no ethnographic or archaeological report that associates the project area with a Native American site. Neither the New York State Museum nor the New York State Office of Parks. Recreation, and Historic Preservation/SHPO have an inventoried "site" within close proximity to Block 1152 (Personal communication, Hartgen Archeological Associates, 9/15/89). Grumet's research on habitation sites, planting fields, and trails does not place any Native American activity on Manhattan's West Side shoreline, between West 14th Street and West 160th Street (Grumet 1981:68; Figure 4).

The "predictive model" developed by the New York City Landmarks Preservation Commission, emphasizes the combination of protected shorelines and availability of freshwater, and therefore the study area is marked as having a significant prehistoric potential (Figure 3).

2) Paleo Environment

As analyzed by Dr. Dennis Weiss, a paleo-geologist of City College, CUNY, the project site bordered an embayment by the Woodland Period. From approximately 6,000 years before the present (B.P.), the shoreline of the Hudson River moved eastwardly, resting immediately east of West End Avenue between West 60th and West 61st Street by c.1847 (Weiss 1988:4; Figure 5). The position of the embayment was controlled by the bedrock topography - a valley-like depression at the project site.

"Tributary streams of the Hudson River most likely flowed westward in these valleys prior to their inundation by estuarine conditions as sea level rose during the past 6,000 years. The valleys were underlain by either bedrock or till prior to the deposition of estuarine glacial organic silt sediments. These embayments appear to have been surrounded and sheltered by ridges (often mantled by till) rising at least 20 to 30 feet above the estuarine surface...

This distribution of till (sand and/or gravel) surrounding the embayments indicates the possibility of sandy or gravely beaches between the back of the ridges and the shoreline" (Weiss 1988:5).

The confluence of a freshwater system and the larger, estuarine river would have been an eco-zone of great importance during all periods of Native American culture. However, according to a paleo-shoreline reconstruction, the protected cove between West 60th and West 61st Streets, immediately west of the project block, does not appear to have been in place prior to about 1,500 years ago, during the Woodland Period (Weiss 1988).

The depth and shape of the small inlet are also determining factors in the prehistoric settlement pattern. In other words, would the cove be shallow enough to support shellfish beds and food gathering and would there be on the project site a sufficient beach shoreline at the base of the ridge or elevated above the cove terrace for harvesting and/or camping boring logs (1957) obtained activities. Soil at the Topographic Bureau/Rock Data Division indicate that the cove was relatively shallow before the post-1847 filling for the railroad track bed. Specifically, Borings #9, 12 and 14 place the upper sedimentary layer (i.e. organic silt or river mud) between 4'4" and 9'6" below datum (datum is 2.75 feet above mean sea level at Sandy Hook, New Jersey) at 40 and 100 feet outboard of the current shoreline (Figure 6, Appendix A). This shallowness, coupled with the notation of "shells" in a 1975 Soil and Foundation Evaluation from the West 60th Street area (Weiss 1988:10) strongly suggests that the embayment abutting the project block would have been a shellfish harvesting site during the Woodland Period.

3) Cartographic Analysis and Historical Accounts

The various maps which were consulted were all drawn at least at the beginning of the nineteenth century, to identify landownership during the period of farm usage. They usually lack precise information on the topography of the area under study (no elevation), and the original topography has been totally altered by both levelling and filling to accommodate the buildings. Furthermore, and to complicate the matter, different maps show different interpretations of the line of the watercourse near or into the site under study. Finally, the original shoreline, also of vital importance for the reconstruction of the prehistoric pattern of subsistence and settlement, has disappeared under successive episodes of land filling, railroad-bed earthworks and building construction.

Nineteenth century maps and accounts of the project neighborhood reinforce Weiss' paleo-shoreline reconstruction. As described by a nineteenth century observer, "Sixtieth and Sixty-first streets west from Tenth Avenue can boast of what are probably the steepest hills in all New York. The effect of the tenement roofs looking down those streets is novel in the extreme. The streets are poorly lighted, and the squalor is great." (Salwen 1989:95) The area was also "a headquarters of gangs of roughs, selected because of its wilderness and the hiding places among the rocks" (Ibid.). The reference to the rocks as hiding places is very useful information too, as it allows us to compare this description with pictures of the nineteenth century, one especially showing "Rock outcroppings of northern Manhattan, as seen in a water color by George Holston, 1875" (Barlow, 1971:11).

Colton's 1836 map (Figure 7) and Dripps' 1851 map (Figure 8) clearly show trees inside Block 1152, but these maps are too general to give more detailed information.

At least one if not two watercourses traversed the project block area, as the water flowed westward into the embayment, through two rivermouths. Various maps depict these watercourses:

- a) 2 watercourses on north and south sides of Block 1152 and their confluence on western end of the Block before flowing westerly into the Hudson: Commissioners' Map of 1811; Colton Map of 1836, Figure 7; and the Viele Map of 1874, Figure 9;
- b) 1 watercourse immediately southwest of Block 1152: Blue Book of 1815, Figure 10; Map Showing a Projecting Exterior Line of the City of New York Extending along the Hudson River from Hammond Street to 135th Street, 1837;

- c) 3 watercourses, at northwest and southwest corners of Block 1152: Randel Map of 1820, Figure 11;
- d) 1 watercourse at northwest corner of Block 1152, Harbor Commissioner's Map of 1857.

These watercourses may have been seasonal as there is no record of springs in this area. The steepness of the streets is obvious from the elevations on the Sectional Map of the Borough of Manhattan, # 68 (n.d.): -W 61st St: 79'0" - 79'4", to 24'5" - 24'4" -W 60th St: 77'8" - 76'9", to 25'2" - 25'3"; on this street, we have an additional figure: at the level of former lot 14 (present lot 13), the elevation is 45'0".

If we now examine the Randel and Robinson maps superimposed (Figures 11 and 13), we get the following picture. A natural terrace appears on what is now lot 43, more precisely from Lots 43 to 48, if we take a conservative approach (the lots 49, 50 and 51, as we shall see, may have been on the edge of the terrace, and therefore at a lower level); the area would be about 100' (depth of the lot) by 150' (row of six 100' by 25' lots). As a natural terrace overlooking the Hudson River may have prehistoric potential, the disturbance record of the individual lots will be precisely examined later. We then have a series of slopes and shoulders, and a small depression; a knoll is visible on the west, partly in West End Avenue. The boring logs obtained at the Topographic Bureau Rock Data Section, (Appendix A), confirmed the general picture given by the Randel map. On the west side of the block (Figure 6) we find, over the natural rock, the glacial till and then the riverine silt, topped by fill (see especially Boring 177), which are on the edge of small depression. While in the vicinity of the so-called "terrace", in Block 1153, boring logs show an irregular layer of sand over the natural "soft rock", which is believed to be Manhattan schist (the irregularity of the rock surface has already been noted). On another hand, boring logs from lots west of the "terrace" show fill over the soft rock: for example in the case of Boring 2A, there is a 5' "clay, sand, gravel and rock fill" over a "very soft rock" (see Appendix A).

One of the three specific geographic locales associated with Paleo Indian sites are lowland waterside areas near coniferous swamps and near larger rivers (Eisenberg 1978:138). The area of lots 61, 1, and 5 correspond to this locale-type and may have archaeological potential of this Paleo Indian Period.

Upland bluffs and ridge tops dominated by deciduous trees (Eisenberg 1978:138) were the other locales-types favored by Paleo Indian settlements, and this description fits nicely the reconstructed description of part of the study area. Also, Late Archaic Period sites include rockshelters, and the slopes with their outcrops of rock may have hosted such shelters at one time. Early Woodland Period sites favored well drained areas near fresh water (Ritchie 1980:201), and the "terrace" on 43 appears to correspond to this locale-type.

To summarize, it can be said that a combination of three natural features: a cove, watercourses and protected hill or elevated knoll, which separately or combined, had attracted prehistoric settlement, during all periods, gives the study area, which comprises a steep hill and old watercourse beds, a high prehistoric potential.

However, as the Division of Research and Collection of the New York State Museum states: "Probability of prehistoric remains is low unless original deposit remains e.g. covered and protected by sidewalks etc. or buried by fill from earlier construction" (Kearns, Kirkorian, and Schneiderman-Fox 1989:Appendix). Therefore, the development record of the project site was studied.

4) Historic Background

a/ The Farms Period (Colonial and Federal Period)

It is not until 1714 that we have the first record of European settlement in the block area: according to the Indexed Conveyances (Section 4, Block 1152), a Dutch couple, Johannes and Catharine Van Brough granted the area of the project block to Tunis-Cornelius Stilla, probably a Dutchman too, on November 25. The same source gives the following statement on the early owners of the block:

This block lies wholly within the John Somarindyck Farm (Farm Histories, Somarindyck Farm, Vol 1, p. 37).

John Somarindyck died intestate. His farm was in 1809 divided by agreement among his children and the part included in the block passes to Abigail Thorn, afterwards the wife of William T. Cock. A mortgage on the property made by Abigail Cock was foreclosed and it was sold in 1815 to John S. Roulet (109 Conveyances, p. 19). Roulet by declaration of trust (125 Conveyances, p. 354) asserted that he purchased the property for and on account of the estate of J.V.M. Moreau and conveyed it in 1817 to the widow of Moreau (125 Conveyances, p. 252).

The property in 1824 came into possession of Adelaide J. Low (289 Conveyances, p. 582) and in 1868 was conveyed by her heirs to John Paine and William T. Blodgott (1066 Conveyances, p. 15, 17 and 18, and 1091 Conveyances, p. 478)" (Indexed Conveyances, Section 4, Block 1152, General Statement of Early Title).

On an 1815 compilation of old Farms (Blue Book: Figure 10), the study area, Block 1152, lies inside the limits of the property of "Will. T. Cock" whose property was surrounded by parcels belonging to G.W. Somarindyke on the east and the south, and by one belonging to Will A. Hardenbrook on the north (the west side being the shoreline of the Hudson River). The last farm owner recorded on the maps is John Low (Figure 11).

Probably as a result of its topography, the surface of what is now Block 1152 experienced no development during the first third of the nineteenth century, and we find no building on it ("Farms Maps Set", nineteenth century; Colton Map, 1836, Figure 7), nor any other facilities such as wells (Smith 1938). By comparison, we find a hamlet called "Little Bloomingdale" located on Tenth Avenue and West 61st St, not far from the Bloomingdale Road (Commissioner's Map of 1811; Stokes 1915, VI:140). b/ The Hudson River Railroad and the Beginning of Industrialization

While the presence of the Bloomingdale Road (Indian trail, now Broadway), seemed to have had no impact on the development of the study area in the first half of the nineteenth century, the construction of the Hudson River Railroad in 1847, on the contrary, contributed significantly to its change. A map of 1847 shows the line of the Hudson River Railroad on 11th Avenue, passing by Block 1152. The line itself did not encroach on the block, which at that time belonged to the estate of Anthony E. MacDonald, but it is most probable that the necessary earth moving affected in some way the western part of Block 1152, through levelling and filling. In fact, the lines of the watercourses, described above, disappear from the maps after 1847.

A Dripps map of 1851 (Figure 8) shows the changes in the area after the construction of the railroad: a "Hamersley Forge" has been installed by the river one block south, and we notice new buildings in surrounding blocks. It is worth noting that a small building appears on the edge of Block 1152 and West 61st Street, but just outside of the study area. Two other observations can be made about the Dripps map of 1851: the watercourses on the west of the block are not shown, probably as a result of their disturbance by the railroad construction, and the block has no indication of topography, but only of trees.

The grid system of streets and avenues, instigated in 1811 (the Blue Book map of 1815, Figure 10), totally disregarded the actual topography; its impact on the steep hills of Block 1152 was probably significant, through grading and filling to enable the creation of streets. In 1854, the avenue and streets surrounding the study area were opened according to "A map of street openings" in the New York City Topographic Bureau. On the east, 10th avenue had been already opened in 1815.

A map of the Harbor's Commissioner of 1857, and one of the "New York City Surveyor's Maps of the Wharves and Piers" of 1860, show the continuing development of the Hudson River shoreline as it expanded westward.

c/ Evolution of the Character of the Neighborhood

The 1880 Bromley map (Figure 12), which shows the very beginning of building on Block 1152, gives also various interesting information about the neighborhood. The area between the Hudson River Railroad and the shore of the river is being expanded with fill, and is marked "Union Stock Yard".

South of this we find "Abattoirs", while in the two blocks south of Block 1152, we find a brewery and a mill. All of these new businesses seem to be connected to the presence of the Hudson River Railroad.

Interestingly enough, the Robinson map of 1883 (Figure 13) shows West 61st Street still "unpaved" along Block 1152, and only a few buildings have been erected in the project area itself, while West 60th Street is more developed, with a new "Glycerine Refinery" on the block to the south. This is consistent with what had been said about the inhospitable terrain of the project block which was not attractive for building development (see the previous section).

Although situated in an industrialized neighborhood, the original buildings on the project site consisted entirely, except 3 lots, of row houses which were erected by 1902 (Bromley map, Figure 15), and were "tenements" (see above, page 7). It was not until 1907 that the first non-residential structure was depicted on a map (Sanborn Land Atlas, Figure 16). It is labelled a "Contractor Wagon-Yard" and is discussed in some detail in the following Lot Histories section of this report. There is another description of the neighborhood in 1910:

"from West 60th Street to Saint John's Park, smokebelching steam engines pulling cars laden with milk, hay, grain produce, and coal tumbled down the surfaces of Eleventh and Tenth Avenues and West Street, threatening the lives of pedestrians, interfering with vehicular traffic, and stunting the economic growth of the Lower West Side" (Buttenwieser 1987:117).

The picture of a working class neighborhood is reinforced by the presence of "Public Baths" on the opposite side of lots 15 and 16, on West 60th Street. Since 1907, most buildings on the project site, except two remaining row houses, have evolved towards different kinds of businesses, mostly involving car maintenance. It is interesting to note that the specialization began just after World War I, which corresponds exactly to the development of the automobile industry in the U.S.

LOT HISTORIES AND DISTURBANCE RECORD

This section will describe the evolution of buildings on each lot. The main issue is subsurface disturbance, which could impact cultural resources. The discussion will concentrate on this aspect, and will not detail the ownership of the buildings.

Originally, the area under study comprised 38 lots, more or less of similar sizes (see Figure 12); since consolidation, there are currently 15 lots, of various dimensions (see Figure 2). In order to clarify the lot histories, and to concentrate on the specific problem of disturbance, we shall examine the lots in the following order:

- 18 lots on West 61st Street, now consolidated into 7 lots, namely 43, 52, 53, 55, 56, 57, 58.
- 2) 8 lots on West End Avenue (11th Avenue), now consolidated into 2 lots, namely 61 and 1.
- 3) 12 lots on West 60th Street, now consolidated into 6 lots, namely 5, 8, 10, 11, 12, 13.

Only lot numbers are used in this report because street numbers changed over time. A complete listing may be found in Appendix B. Prior to the twentieth century, Block 1152 was called Block 195. The Perris Atlas of 1862 records no construction on the entire block, nor parcelling. The Crofton Map of 1872 details the lot dimensions and numbers, but records no building. All the lots perpendicular to either West 60th Street or West 61st Street, have the same dimensions of 25' by 100'5"; the lots perpendicular to West End Avenue are 25' by 100, except the two lots on the corners, which are 25'5" by 100'. These figures are consistent through the whole period studied.

1) West 61st Street (lots 43-60):

Lot 43 (former 43 through 51), Photos 1 and 2

The Bromley Atlas of 1879 records a little structure on each of lots 43 and 44, but the following edition of 1880 does not depict them. The next mention of buildings on these lots is from Robinson map (1883; Figure 13). At that time, only the lots 43, 45 to 50, and 51 (on the east side) were built upon; the map also gives street numbers, which were changed later. There were small wooden structures, about a third of the lot size on the front of the street, on lots 43 and 45; lot 46 had three small wooden structures (including one on the rear). These wooden structures had no basement and thus probably only a limited subsurface impact.

Most interesting on this 1883 Atlas are the four lots, 47 to 50, with brick row houses. Lots 48 and 50 have stone facades; the backyards are about a third of the lot depth, and the backs of the houses have irregular shapes. The map records an interesting toponym over the two western lots, 49 and 50: "Riverview". This toponym reflects a major aspect of the topography of the lot, the presence of a "terrace", which had been noted already (Salwen 1989:95). It is easy to appreciate why this area is called "Riverview": the houses of lots 49 and 50 were built on the edge of a natural west sloping terrace, which roughly corresponds to lots 43-48 (see above, page 8). This interpretation of the documents was confirmed by a site visit on May 31, 1990.

The Robinson map of 1889 (Figure 14) records new changes: lots 43 to 46, and lot 51 have row houses, with backyards occupying less than a quarter of the lot depth. All of these houses are labelled as having 5 stories, though it is not clear if a basement is one of them. The small wooden structure on lot 52 is indicated as 2 stories and a basement, which suggests that the other houses had no basements, since none were noted. That would also be consistent with the fact that it is a rocky surface.

According to atlases, the original buildings were demolished between 1926 and 1951. This is confirmed by photos taken in the 1930s which show a vacant lot on the south side in the middle of West 61st Street (Sperr: November 3, 1937 and October 24, 1939). That vacant lot appears on a 1951 map (Figure 18) as a parking lot (with a small "filling station") and replaced houses on former lots 43-48. This specific area has experienced no more change since then, though former lots 49, 50, and 51 which are empty but separate on the 1951 map are merged with the parking lot on later maps (Manhattan Land Book maps of 1955 and of 1989-90, Figure 19). However, from the information gathered during the site visit, it appears that the new consolidated lot 43 retains the original elevation differences between the older lots (lots 49-51, at lower and different elevations).

Lots 43 through 51 apparently had no basements at any time. They were situated either on a rocky steep slope or bedrockbased terrace which would naturally discourage any excavation not absolutely necessary. The original topsoil in this area would have been thin - if present at all - and subject to erosion especially on the slope. In the event that any archaeological resources had ever been present on lots 49 to 51, construction activity associated with the early buildings and later parking lot would very possibly have destroyed them. But the area of the former backyards situated on the terrace itself (lots 43 through 48), experienced only limited disturbance and therefore can be considered sensitive.

Lot 52

On a Robinson map of 1883 (Figure 13), and on 1902 and 1905 Bromley maps (Figure 15), lot 52 had one small wooden structure on the rear, with a basement (see above). On a 1907 map (Figure 16), lot 52 also now has a 1 story building fronting on the street. By 1926, a 1 story "Auto Repair" shop occupied most of the lot (Figure 17), and by 1951 there was a "Metal Works" shop (Figure 18). The small unbuilt rear space still visible on this last map, has disappeared on the 1990 Landbook map (Figure 19). As the lot is situated at a lower level than the terrace, on the slope, it is less likely to host cultural remains, and its disturbance record in this case makes any chance of recovering them unlikely.

Lots 53 (former 53, 54), 55, 56 and 57

Lots 53 to 57 were vacant until buildings appear on the Bromley atlas of 1902 (Figure 15). These were also row houses, also of 5 stories, and backyards of about 12 feet deep. From a 1907 map (Figure 16), we know that they have basements, but it is also worth noting that the open spaces between the houses are from the second floor up. On a 1951 atlas, building evolution is recorded:

-Lots 53 and 54:

These two lots are consolidated into lot 53, which is a new building hosting a "Private Garage" of 1 story (Sanborn map, 1951; Figure 18). A 1989-90 map (Figure 19) indicates a new change: it is now a warehouse, 1 story high. The former basements destroyed everything except small backyards in this sloping area. The new lot 53 has been subjected to a rebuilding episode, and therefore has been too much disturbed to allow the recovery of any prehistoric remains.

-Lot 55, Photos 3 and 4:

Similarly, change from the c. 1890 houses seen on the 1907 atlas (Figure 16) first occurs on the 1951 map, where the lot is empty; it has stayed empty since then. That was confirmed by the site visit, during which it was noticed that the rock surface had been levelled, as it was apparent on the east side of the lot.

-Lots 56 and 57, Photos 4, 5, and 6: These two lots, though not consolidated are similar; they have not been affected by any apparent change since the building of the houses sometime between 1889 and 1902 (Figure 15). They both have basements, but the subsurface of the backyards (c. 25' by 12') may have experienced only a limited disturbance. Nevertheless, these lots are on a steep rocky slope, and therefore are not considered sensitive.

Lots 58 (former 58, 59, and 60)

These lots remained vacant until development noted on the 1907 atlas (Figure 16). They were the last empty lots on the entire block and the irregular, steep terrain probably accounted for their later development. As shown on the 1907 atlas (Figure 16), the three lots seem to be associated, with a "wagon yard" occupying all of lots 58 and 59 except for a small 1 story building labelled "contractor". On an Atlas of the Borough of Manhattan, 1921, lot 58 is now labelled "Garage", with 1 story and a basement. On a 1926 atlas (Figure 17), the former wagon yard is occupied by a one story building used for "Motor Vehicle Springs", and one can note a furnace, a basement, a basement wall, and a 12,000 gallon fuel oil tank in regards to subsurface disturbance. Its function changes again on a 1951 atlas (Figure 18), where it is labelled: "Auto Repairs and Painting" and an additional 550 gallon gas tank is indicated. Later maps (1955, 1989-90, Figure 19) confirm the existence of a basement on the entire lot. The amount of soil disturbance in this instance clearly precludes the possibility of there being intact prehistoric archaeological remains on lot 58.

2) West End Avenue: lots 61 (former 61 through 64) and 1 (former 1 through 4):

In 1879, only lots 1 to 3 were built upon, but very soon, in 1878-80, the other lots were developed as well, with 5 story row houses of identical size (Robinson 1883, Figure 13, and 1889, Figure 14), with backyards measuring about 25'5" by 25 (Robinson 1889, Figure 14, Bromley 1902, 1905, Figure 15). In 1907 (Figure 16), a bakery occupied part of the building on lot 4, and there were small structures (probably privies) in the backyards of lots 3 and 4. A detailed 1926 Atlas (Figure 17) also depicts the row houses fronting on West End Avenue. In 1921, 1 story buildings are recorded in the rear of lots 1 and 61, by the street, but they do not appear on the detailed 1926 map (Figure 17).

Lot 61 (former 61 to 64), Photos 7 and 8 In 1931, a new building was erected on the four lots now consolidated into lot 61, to house "Firestone Service Stores Inc.", for automobile tires (NB 61, 1931); a photograph in the collection of the New York City Public Library taken in 1939 by P.L. Sperr shows the building with a "Firestone" sign on its Between 1951 and 1955, the building became a garage, roof. which it is presently (Sanborn 1989-90, Figure 19; site visit). It is a 4 story building (BN 2548, 1956; BN 509, 1958), with no basement ("unexcavated", DW 31, 1933; ALT 479, 1933; which was verbally confirmed by one of the workers during a site visit). Nevertheless, equipment related to the business has heavily disturbed the soil, as recorded in the files of the Building Department in Manhattan: a boiler room in a cellar (CO 19065, 1933; ALT 699, 1964); dumbwaiter; drains and sewers (ALT 479, 1933); 2 elevators; an acid diluting battery sink buried in the ground (ALT 479, 1933). In addition, there are three buried gallon gasoline tanks as noted on the 1951 atlas (Figure This lot is one which is believed to have had a 18). significant archaeological potential, but because of these various buried items, and of small excavated areas, the undisturbed subsurface is both greatly reduced and noncontiguous.

Lot 1 (former 1, 2, 3, 4), Photos 9 and 10

The original row houses, visible on a 1939 photo already mentioned, were replaced by a new building in 1955 (DEM 586, 1954; NB 115, 1955). On the landbook maps of 1955 and 1989-90 (Figure 19), the building appears to have two parts: a narrow 4 story part, parallel to West End Avenue, with a 5 story building behind. The disturbance record is important: we note the presence of 30 piers and 99 piles which go to the rock (NB 115, 1955); the cellar is "on ground" and contains a boiler room, a garage, and a storage room. From this information, it is reasonable to assume that the presence of a cellar, and most of all, the disturbance caused by the piers and piles makes the recovery of any cultural remains highly unlikely.

3) West 60th Street: lots 5, 8, 10, 11, 12, 13 (former 5 through 16):

Between 1872 and 1879, lots 5 to 9 and 13 to 16, were built with row houses (Bromley 1879, Figure 12). By 1883 (Figure 13), lots 5 through 16 hosted 4 story houses, with backyards about two-fifths of the lot size.

Lot 5 (former 5, 6, 7)

Except for a very small 1 story shed in the backyard of lot 6 (Sanborn 1907, Figure 16), there is no change until the

houses on the three lots now consolidated as lot 5 were demolished to be replaced by a 2 story "Glidden Service Station" in 1919. The foundations are said to rest on "firm clay", at 10' and 13' below the curb (NB 280, 1919; Atlas Borough of Manhattan 1921). From a 1926 map, we know that there is a garage on the first floor and a repair shop on the A 550 gallon gasoline tank is buried in the second floor. The mention of "Trade School" on a 1951 map is ground. puzzling (Figure 18); in 1958, it is a motor vehicle repair shop (CO 48945, 1958). The disturbance record appears to be the following: a boiler room (20'0" deep by 22'6" wide) occupies the front of the cellar, leaving the rest of it "unexcavated", with only two piles in the center (ALT 1115, As the subsoil has apparently not been heavily 1956). disturbed, it may be worth testing its nature in the basement.

Lot 8 (former 8, 9)

In 1916, a new 2 story building was erected on lot 8, replacing the earlier buildings. The depth of the foundations below curb was 11'0", and they were to rest on "solid earth" (NB 161, 1916). According to a 1926 map (Figure 17), a 1 story "Glidden Warehouse" was erected in 1919, with a basement; it had a 550 gallon gasoline tank buried in the ground. Since 1955, it is a "United Warehouse" (Manhattan Landbook 1955, The mention of "solid earth" (i.e. not 1989-90, Figure 19). rock but perhaps a stream bed) means that this lot is in the small depression. Nevertheless, the presence of a basement has likely destroyed any possible cultural remains in this lot, except maybe for a very low probability in the extremely narrow unbuilt area in the rear of the building. But the adjacent constructions have probably disturbed it.

The mention of clay and earth for the foundations, in the building records, is consistent with our site description based upon the Randel map of 1820 (see Cartographic Analysis).

Lots 10, 11, 12

Apparently, these lots were built on a rocky soutwest slope, and had originally 4 story row houses, with no basement, but occasionally with cellars; their function changed, and they were demolished and replaced by 1 story buildings.

-Lot 10:

For an alteration done in 1916, we get the following information: the foundations are to rest on stone, described as a soil "of medium rock carrying capacity" (ALT 1534, 1916). This information is consistent with boring logs in the area,

labelling the rock as "soft and broken seamy rock" or "soft rock" (Appendix A). The depth of the foundation is 7'0" below curb, and there is a cellar (smaller than a full basement). It is labelled a "tenement house". In 1926 the original 4 story house is occupied by an "Auto Repairs" shop; the south part of the backyard is covered by a 1 story building. In 1938, the upper stories are demolished, and only the first story remains; the cellar is permanently closed off (NB ALT 2121, 1938); it is said to stay on "firm clay" (PD 1803, 1938). The depth of the rear yard is 24'0". In 1951, it is a 1 story "Packing case" business. A 550 gallon gasoline storage tank (3'6" high) is buried beneath the cellar. To summarize: this lot is probably at the limit between the depression and the slopes, and that would explain the two different accounts on the soil description: "medium rock" and "firm clay". The cellar, with its buried tank, probably disturbed or destroyed the subsoil very significantly, while the rear yard more than likely was on a rocky slope, according to the Randel map of 1818-1820 (Figure 11).

-Lot 11:

The building is described in 1906 as a 4 story house, with a cellar, for tenements and stores. The depth of the foundation walls below curb is 10'10" (ALT 2728, 1906). Its surface is fully covered between 1921 and 1926, with basement on the rear (Sanborn map 1926, Figure 17). It is believed that the upper stories were demolished in 1934 (ALT 519, 1934), to leave only a 1 story building, with basement. On a 1951 map, it is labelled as an "Auto Repair" shop (Sanborn, Figure 18). The mention of a cellar and basement means that the chance of recovering any cultural remains is very slight.

-Lot 12:

It had its backyard covered, beginning as early as 1907. It is assumed that the original building had the same alteration as the two other ones, on lots 10 and 11, between 1926 and 1951, for an "Iron Workshop". It is an auto-repair shop in 1962; the cellar is "on ground", and 4'0" deep (ALT 1451, 1962). The cellar has 18 posts. The conclusions for lot 11 can apply for this lot.

Lot 13 (former 13, 14, 15, 16), Photo 11

In 1919, the four row houses built on these lots in the 1870s were demolished (DEM 209, 1919), and a 2 story garage was built, with a basement. It was an "Auto Service Station", with a 1000 gallon gasoline tank buried, on a 1926 map (Sanborn, Figure 17), and a new storage gasoline tank is installed in the basement floor in 1931 (ALT 2360, 1931). In 1946, it is described as a 1 story and basement building, with 3 gasoline tanks installed (ALT 2432, 1946). A certificate of occupancy describes the basement as being on ground, with a boiler room (CO April 17, 1950). It was labelled "Garage and Repair" on a 1951 map, and simply "Garage" on Landbook maps (1955, 1989-90, Figure 19). In 1956, there are 5 tanks buried (3 existing ones, 2 new ones) below the basement level. In this case, the disturbance record makes any recovery of cultural remains impossible.

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CONCLUSION

In conclusion, Block 1152 definitely had high prehistoric potential at one time, but disturbance records we have observed indicate subsequent severe impacts to the subsurface integrity of the project site. The archaeological potential for prehistoric settlement is due mainly to three different factors, valid for various time periods, from Paleo Indian to Woodland periods:

-the presence of a protected cove, suitable for shellfish gathering;
-a source of fresh water with two and maybe three watercourses; and,
-the immediate proximity of a well-protected and well-drained terrace, with rock outcroppings.

In contrast with the high potential for a prehistoric occupation, it must be noted that the colonial and federal period (pre-1850) is not visibly represented on the study block. The factors analyzed above, which make the block area attractive to Native American settlement, were on the contrary unattractive to European colonization. One may infer that the lack of information for the colonial and federal period is probably an indication of this situation.

It is the proximity of the Hudson River Railroad, rather than the shoreline, which had a dominant impact on the block history, directly by disturbing its watercourses, the beds of which were most probably filled, and indirectly by boosting its development.

The imposition of the 1811 grid system, so unsuitable to the topography of Block 1152, was effected rather late in time mid-nineteenth century - and the pace of building was rather slow, especially on West 61st Street. From working class tenement housing before the First World War, the orientation of the block changed dramatically towards automobile business specialization after the war.

The building development episode had been rather late for Manhattan, and did not go through many generations, actually no more than two, and in the cases of Lots 56 and 57, only one. Nevertheless, its impact on the subsurface of lots with high potential was significant. An interesting point is that the original topography, which had been so totally overlooked by the imposed street-grid system, seemed to re-emerge through lot consolidation. This is especially visible in the case of Lot 43, which is on a natural terrace.

RECOMMENDATIONS

Based on the research presented above, certain recommendations can be made. First of all, it must be stressed that the chances of recovering prehistoric remains are low, considering the disturbance records; however, because of the special importance of the issue - Native American settlements in Manhattan, which are so rare - it is appropriate to recommend the analysis of soil borings, which will most likely be conducted, in order to examine the subsoil conditions of the most sensitive lots. These lots, or parts of lots, are:

Lot 43: areas of former backyards in consolidated lot 43, which covers an original well-drained terrace; Lot 61: the southeastern corner of lot 61, the estimated location of a watercourse; and, Lot 5: the north half of lot 5, the estimated location of a watercourse.

It is very possible that these boring tests will prove that there is no cultural-bearing soil layer of archaeological potential in these lots. Such a result could be interpreted in two different ways:

1) that predictive models are not sufficient to lead effectively to the recovery of archaeological remains in Manhattan; or

2) that the disturbance in Manhattan is too significant in general to allow the recovery of <u>in situ</u> prehistoric sites in areas already heavily developed.

We assume that for construction design purposes, soil borings will be taken. We recommend that the sensitive lots, or identified parts of them, be included in the testing, and that the results be communicated to us for archaeological analysis. Coordination between the archaeologists, the soilboring crew, and the geo-technical inspector will be necessary so that archaeological needs (e.g. continuous samples) can be met at the specified loci. Whatever will be the final conclusion about this project, the analysis will provide some necessary information on what can be expected in Manhattan in archaeologically sensitive areas for the prehistoric period. It is anticipated that information from the West 60th Street site will assist in refining and adapting predictive models to an urban landscape.

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Project Location



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Site Map furnished by Allee King Rosen & Fleming, Inc.

Figure 2





Photocopied from Grumet, 1981





1839 J. H. Colton Topographical Map of the City and County of New York



Photocopy of a portion of Dripps' 1851 Map of the City of New York North of 50th Street.





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Figure 9
Photocopy of a portion of
Topographical Atlas of the
City of New York
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Tracing of a portion of the ATLAS OF NEW YORK CITY, George W. Bromley. 1902-1905.







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Photo 1: Looking southwest toward project site from West 61st Street. Parking lot on Lot 43 is at the left of the photograph.

Photo 2: Looking west from Lot 43.

Terraced drop-off behind parking lot is visible in both photographs.





Photo 3: Looking south. Vacant lot between 5-story row houses and 2-story garage in photo below.

Photo 4: Looking southeast from 61st Street and West End Avenue.





- Photo 5: Looking east along 61st Street. Front facade of row house.
- Photo 6: Entrance into basement level of row house.





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Photo	7:	Looking	southeast	from	61st	Street	and
		West End	Avenue.				

Photo 8: Looking southeast along West End Avenue from 61st Street.





Photo 9: Looking east from West 60th Street and West End Avenue. Note upward slope going east.

Photo 10: Looking northwest from West 60th Street.

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Photo	11:	Looking	northwest	from	West	60th	Street.

Photo 12: Looking north. Railroad road bed between West End Avenue and the Hudson River.



Figure 19



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Areas of Potential Archaeological Sensitivity



Site Map furnished by Allee King Rosen & Fleming, Inc.



*65 Curb level <u>E.+23.0</u> Sand 4 Silt 0+90 EL+7.0 Mica Sand Syledge ar boaldor Board of Transport, # 44 11 Arc. Some 25. o North of 60 st.



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W. 60 ** 57.

APPENDIX B

LIST OF LOT NUMBERS AND STREET NUMBERS

Lot

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Street #

	Bromley 1880	Robinson 1883	Robinson 1889	Bromley 1902	Sanborn 1907
l	872	872	872	20	20
2			874		22
3	876	876	876		24
4			878	26	26
5	597	597	251	251	251
6			249		249
7	593	593	247		247
8			245		247
9	589	589	243	243	243
10 -		585	241		241
11		583	239		239
12			237		237
13	581	579	235	235	235
14			233		233
15	577	575	231		231
16		231	229		229
43			218	218	218
44			220		220
45			222		222
46		523	224		224
47			224	226	226
48		527	226	226 3	226 ¹ 2
49			228	228	228
50		531	230		230
51			232	232	232
52					234
53				236	236
54					238
55					240
56					242
57				244	244
58					246
59					248
60					250
61	886	384	886	34	34
62	884	(Analy 1990)	884		32
63			882		30
64	880	380	880		28