

Proposed Consolidated Edison Transmission Line Goethals to Fox Hills Substations

STATEN ISLAND, RICHMOND COUNTY, NEW YORK

Supplemental Phase 1A Archaeological Documentary Study for Revised Alignment

Prepared for:

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Management Summary

SHPO Project Review Number: 22PR08270

LPC Unique Site Identifier: 36739

Involved Agencies: New York State Department of Environmental Conservation
New York City Department of Parks and Recreation

Phase of Survey: Supplemental Phase 1A Documentary Study

Location Information

Location: Various locations, Staten Island, New York
Minor Civil Division: 08501
County: Richmond County

Survey Area

Length: Approximately 2.9 miles (15,200 feet)
Width: Approximately 10 feet along transmission corridor, variable at substations
Area: Approximately 3.5 acres

USGS 7.5 Minute Quadrangle Map: Arthur Kill

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A. INTRODUCTION

Consolidated Edison (Con Edison) is proposing the development of an approximately 8.1-mile, 138 kilovolt (kV) underground transmission line (or “transmission feeder”) between its Goethals and Fox Hills Substations located on Staten Island, New York City (see NYSDOT Quadrangle Map provided as **Figure 1** and Aerial Overview Map provided as **Figure 2 and Figures 2-01 to 2-10**). The proposed routing utilizes, to the maximum extent practicable, existing roadway rights-of-way (ROW) or Con Edison easements located on previously developed private land. Federal permits and approvals are not required for the project’s construction, and the project is subject to Section 14.09 of the New York State Historic Preservation Act and consultation regarding the project has been ongoing with the New York State Office of Parks, Recreation, and Historic Preservation (OPRHP) through the New York State Cultural Resource Information System (CRIS) (OPRHP Project Review Number 22PR08270) and New York City Landmarks Preservation Commission (LPC) (LPC Unique Site Identified 36739).

This Phase 1A Archaeological Documentary Study (Phase 1A Study) has been prepared as a supplement to a Phase 1A Study prepared by AKRF in January 2023 to assess the archaeological sensitivity of the project corridor as previously defined (see **Figure 1**). The Phase 1A Study concluded that because of the extent to which the study area had been disturbed by historical and modern development, the project would not result in impacts to undisturbed soils potentially containing archaeological deposits. However, given the presence of several historic period cemeteries in the general vicinity, the Phase 1A Study recommended that ConEdison’s existing Unanticipated Discovery Plan be implemented in the event that human remains or other were inadvertently encountered during the construction of the project. In comment letters dated January 23, 2023 and January 26, 2023, LPC and OPRHP, respectively, determined that the project corridor as originally proposed was not archaeologically sensitive and concurred that no further archaeological analysis was required and that the Unanticipated Discoveries Plan should be implemented if needed.

B. DEFINITION OF SUPPLEMENTAL STUDY AREA

Subsequent to the preparation of that document, a portion the proposed transmission feeder alignment was revised. A new 2.9-mile section of the alignment would replace the formerly proposed segment of the transmission feeder that extended between the intersection of River Road and Chelsea Road and continued east to the intersection of Morani Street and Victory Boulevard after passing through various streetbeds and a portion of Staten Island Industrial Park (see **Figure 1**). The new alignment would continue south along Chelsea Road from its intersection with River Road and would continue south to Edward Curry Avenue. It would continue along that road as far east as South Avenue, where it would continue south as far as Travis Avenue. The feeder line would run east along Travis Avenue before turning north and extending along Victory Boulevard. The line would run approximately 6,750 feet (1.3 miles) miles along Victory Boulevard to the intersection of Morani Boulevard, where it would intersect with the route of the feeder line as initially analyzed in the previous Phase 1A Study.

The project description and proposed impacts as described in the January 2023 Phase 1A Study remain the same for the new segment analyzed within this supplemental study. The research goals and methodology for this supplement are also the same as those outlined in the January 2023 Phase 1A Study.

C. CURRENT CONDITIONS

The newly proposed project corridor segment is situated entirely within paved roadbeds. Chelsea Road between River Road and Edward Curry Boulevard is a narrow, paved street lined with overhead utility lines. Edward Curry Boulevard between Chelsea Road and South Avenue is a two-lane road divided by center medians that is lined with light posts, manholes, and catch basins indicating the presence of subsurface utilities. The road is carried over the West Shore Expressway by an elevated viaduct. South Avenue is similarly a multi-lane road divided by center medians and lined with electric light posts, manholes, hydrants, and catch basins suggesting subsurface infrastructure. Travis Avenue is a narrow, paved road with overhead utility lines and manholes along the entire route between South Avenue and Victory Boulevard.

A. PREVIOUS ARCHAEOLOGICAL ASSESSMENTS

Information about the archaeological sensitivity of northern Staten Island has been collected over the last century by both professional and avocational archaeologists, and archaeological work in the area have documented some of the oldest archaeological sites in New York City. These investigations have varied greatly with respect to the availability of data and the degree to which they comply with modern professional standards for archaeological investigations. Previous archaeological investigations in the immediate vicinity of the newly proposed project corridor segment that were not previously examined in the January 2023 Phase 1A Study are summarized below.

NEW YORK STATE ROUTE 440 (WEST SHORE EXPRESSWAY), 2007

In 2007, a Phase 1B Archaeological Investigation was conducted by the Institute for Long Island Archaeology for three segments of New York State Route 440 (West Shore Expressway) between Edward Curry Avenue and Bloomingdale Road. The project was designed to in association with proposed access and safety improvements on ramps, service roads, and intersections. Of the three areas examined, one, referred to as the South Avenue study area, was located on a segment of Bloomfield Road west of the West Shore Expressway. Testing was completed in the three study areas, and the South Avenue study area was the only one to contain archaeological resources. The survey encountered Woodland Period precontact lithic and ceramic materials within disturbed contexts. The survey concluded that the study area was thoroughly disturbed and no further archaeological investigations were recommended.

FRESH KILLS PARK, 2008

In 2008, AKRF prepared a Phase 1A Archaeological Documentary Study in association with the proposed conversion of the former Fresh Kills Landfill into what is now Fresh Kills Park. The study area for the survey included the former landfill in its entirety, including the area southeast of the new project corridor segment on the southern side of Victory Boulevard. The study concluded that undisturbed sections of the former landfill outside existing leachate walls were sensitive for precontact archaeological resources and areas near map-documented structures had low sensitivity for historic period archaeological resources below the significant depth of fill material. It was recommended that archaeologists be consulted regarding specific development efforts to determine impacts to specific locations. In the area south of the new project corridor segment, the study concluded that the area was largely occupied by former wetlands filled with refuse associated with the landfill.

PROPOSED STATEN ISLAND BUS DEPOT, 2008

In 2008, Historical Perspectives, Inc. (HPI) prepared a Phase 1A Archaeological Documentary Study of the location of a proposed bus depot in the Chelsea neighborhood of Staten Island. The study area included an area on the west side of the existing Staten Island Railroad tracks and north of Chelsea Road to the west of the new project corridor segment. The Phase 1A Study concluded that the site was subject to extensive

disturbance caused by the construction of a former chocolate factory, and it was therefore determined that the site had low sensitivity for precontact and historic period archaeological resources.

PROPOSED STORM DRAIN INSTALLATION AT MEREDITH AVENUE AND CANNON AVENUE, 2012

In 2012, HPI prepared a Phase 1A Archaeological Documentary Study in association with the proposed installation of storm drains in the Travis area of Staten Island. The Phase 1A Study included two study located in wetland areas, one of which was situated in Meredith Woods to the southwest of the new project corridor segment. The study areas were determined to have moderate sensitivity for deeply-buried precontact archaeological resources potentially representing occupation prior to the formation of the wetlands due to sea level rise. The study area was determined to have no sensitivity for historic resources. A Phase 1B Archaeological Investigation was recommended for the study area.

B. ENVIRONMENTAL AND PHYSICAL CONDITIONS

GEOLOGY AND TOPOGRAPHY

The glacial history of northern Staten Island was outlined in the January 2023 Phase 1A Study of the full project corridor. The newly proposed project corridor segment is situated in a low-lying area northwest of the Terminal Moraine that is represented by a thick, rocky ridge that bisects Staten Island. West of South Avenue, the new project corridor segment is located in an area underlain by bedrock identified as Palisade Diabase, part of the Newark Group (Fisher, et al. 1995). Bedrock east of South Avenue is associated with the Stockton formation (comprised of arkose, conglomerate, and mudstone), also associated with the Newark Group (ibid). These rock types were formed during the Upper Triassic Epoch of the Mesozoic Era, which occurred between 230 and 190 million years before present (ibid; Isachsen, et al. 2000). Documented surficial geology in the vicinity of the new project corridor segment includes artificial fill in much of the western half and glacial till in the eastern half (Cadwell 1989). The modern topography of the streetbeds is generally level but with some areas of steeper slopes and hills.

The artificial fill is situated in areas where dense tracts of marshland were filled, including portions of the new project corridor segment west of South Avenue, as shown on the historical topographical survey of Staten Island completed between 1910 and 1912.¹ As shown on the survey, streams crossed the streetbed of what is now South Avenue south of Edward Curry Boulevard and in an area halfway between the two locations where the looped road known as Teleport Drive intersects South Avenue. An existing stream that runs north and south of Travis Avenue within what are now the Meredith Woods historically interrupted the road before it was diverted into a culvert below the street. Finally, streams crossed through what is now Victory Boulevard in the vicinity of the historical Bull's Head neighborhood in two locations: 1) between what are now Lisa Place and Arlene Place and 2) in the vicinity of modern Saybrook Street.

SOILS

The Web Soil Survey maintained by the United States Department of Agriculture (USDA)'s National Resource Conservation Service indicates that ten soil complexes are mapped within the revised project corridor segment, the majority of which were also mapped along the original path of the transmission feeder line route as analyzed in January 2023. These soil types are summarized below in **Table 3-1**.

¹ The full survey covering all of Staten Island was produced between 1906 and 1912; however, the three plates covering the new project corridor segment (Plates 28, 29, and 36) were issued between 1910 and 1912.

**Table 2-1
Project Area Soils**

Series Name	Typical Soil Profile			Slope (%)	Drainage	Landform
	Level	Soil Horizon Depth (inches)	Soil Type			
Greenbelt-Urban Land Complex (GUA)	^A	0 to 5	Loam	0 to 3	Well Drained	Summit
	^Bw1	5 to 16	Loam			
	^Bw2	16 to 30	Loam			
	^C	30 to 79	Sandy Loam			
Marinepark-Verrazano Complex (MVA)	^Au	0 to 4	Sandy Loam	0 to 3	Well Drained	Footslope
	^Bwu	4 to 19	Gravelly-Artifactual Sandy Loam			
	2^C	19 to 72	Sand			
Oil-Waste Land (Oi)	n/a	n/a	n/a	n/a	n/a	n/a
Urban Land-Flatbush Complex/Low Impervious Surface (UFA, UFAI)	M1	0 to 6	Cemented Material	0 to 3	Well Drained	Summit
	M2	6 to 20	Cemented Material			
	2^C	20 to 72	Coarse Sand			
Urban Land-Greenbelt Complex (UGA, UGAI)	M	0 to 15	Cemented Material	0 to 3	N/a	Summit
	2^C	15 to 79	Gravelly Sandy Loam			
Urban Land-Laguardia Complex (ULA)	M	0 to 15	Cemented Material	0 to 3	n/a	Summit
	2^C	15 to 79	Gravelly Sandy Loam			
Urban Land, Sandy Substratum (UsA)	M1	0 to 6	Cemented Material	0 to 3	n/a	Summit
	M2	6 to 20	Cemented Material			
	2^C	20 to 72	Coarse Sand			
Urban Land, Till Substratum (UtA)	M	0 to 15	Cemented Material	0 to 3	n/a	Summit
	2^C	15 to 79	Coarse Sand			

Sources: USDA Natural Resources Conservation Service Web Soil Survey: <https://websoilsurvey.sc.egov.usda.gov> (accessed March 2023).

C. PREVIOUSLY REPORTED PRECONTACT ARCHAEOLOGICAL SITES

In general, Indigenous habitation sites are most often located in coastal areas with access to marine resources and near fresh water sources and areas of high elevation and level slopes of less than 12 to 15 percent (NYAC 1994). The topographical survey cited above suggests that the project corridor was a historically diverse ecological setting with access to fresh- and saltwater resources along the entire route (see **Figure 3**). Further indication of the potential presence of human activity near a project site is indicated by the number of precontact archaeological sites that have been previously identified in the vicinity. Information regarding such previously identified archaeological sites within one mile of the new project corridor segment that was not previously included within the January 2023 Phase 1A Study was obtained from various locations including the site files of SHPO, LPC, NYSM, and from published accounts. Six additional archaeological sites have been identified within a half mile of the new project corridor segment as summarized in **Table 2-2**, below. Limited information is available for these sites, which were first documented in the early 20th century.

Table 2-2

Previously Identified Indigenous Archaeological Sites within One-Half Mile of New Project Corridor Segment

Site Number	Site Name	Distance to New Project Corridor Segment	Time Period	Site Type
NYSM 4598 Parker Richmond-08 Boesch 39B	Long Neck South (Linoleumville)	750 feet	Precontact	Groups of camps and middens along the neck, now disturbed by modern development
NYSM 8323 Parker Richmond-07B	n/a	2,000 feet	Precontact	Traces of occupation/"relics"
8501	n/a	1,500 feet	Precontact	Camp
8502	n/a	200 feet	Precontact	Traces of occupation

Sources: CRIS database (<https://cris.parks.ny.gov/>); Ritchie 1980; and Boesch 1994.

D. IDENTIFICATION OF MAP-DOCUMENTED STRUCTURES WITHIN NEW PROJECT CORRIDOR SEGMENT

To identify the presence of map-documented structures, cartographic research was conducted that involved an examination of the 1844 Hassler coastal survey; 1850 Sidney map; 1853 Butler map; 1857 Whiting and Dorr Coastal Survey; 1859 and 1860 Walling maps; 1866 Colton map; 1874 Beers atlas; 1887 Beers map; 1898 and 1907 Robinson atlases; and the 1917 Bromley atlas. Where coverage was available, Sanborn maps published in 1917, 1937, and 1950 were also consulted. Where relevant, maps were supplemented with aerial photographs taken in 1924; 1951; and 1996 through the present.¹ In addition, no known historic period cemeteries have been documented within or in the immediate vicinity of the new project corridor segment (Meade 2020).

CHELSEA ROAD BETWEEN RIVER ROAD AND EDWARD CURRY AVENUE

No map-documented structures were identified on the above-referenced maps within the streetbed of what is now Chelsea Road between River Road and Edward Currey Avenue (see **Figure 4-01**). A precursor to Chelsea Road appears on maps beginning in 1850. Beginning in 1859, maps begin to depict houses occupied by the Decker and Merrell families on the eastern side of Chelsea Road in the vicinity of the new project corridor segment. These houses appear to be depicted on the 1910 to 1912 Topographical Survey more than 250 feet south of the new project corridor segment.

EDWARD CURRY AVENUE BETWEEN CHELSEA ROAD AND SOUTH AVENUE

No map-documented structures were identified on the above-referenced maps within the streetbed of what is now Edward Currey Avenue between Chelsea Road and South Avenue (see **Figures 4-01 to 4-03**). The majority of what is now the streetbed west of Gulf Avenue is depicted within an area of swamp and marsh on the 1910 to 1912 Topographical Survey. The location of what is now the streetbed of Edward Curry Avenue east of Gulf Avenue is identified as a “thickly wooded” area on the survey. Aerial photographs

¹ All referenced aerial photographs are accessible at: <https://maps.nyc.gov/then&now/>.

taken in 1924 and 1951 continue to depict the wetlands and woodlands in this area. The modern streetbed was constructed as Vernon Avenue in the 1960s as part of the construction of the West Shore Expressway.¹

SOUTH AVENUE BETWEEN EDWARD CURRY AVENUE AND TRAVIS AVENUE

The segment of South Avenue located between what are now Edward Curry Avenue and Travis Avenue was constructed in the 20th century in the vicinity of the boundary between agricultural and commercial properties (see **Figures 4-03 and 4-04**). South of the line of Travis Avenue, South Avenue runs along the line of a historical thoroughfare formerly known as Chelsea Road. The road north of Travis Avenue is first depicted on the 1898 and 1907 Robinson atlases. The street was originally narrower and was widened to its current width in the second half of the 20th century. No map-documented structures were identified within this portion of the streetbed of South Avenue on the above-referenced maps.

TRAVIS AVENUE BETWEEN SOUTH AVENUE AND VICTORY BOULEVARD

A precursor to this portion of Travis Avenue is visible on the 1844 Hassler coastal survey. The road's original course began at Victory Boulevard and continued west into the historical community of Chelsea along what is now known as the southwestern extension of South Avenue. Two houses were located along the northern side of Travis Avenue in 1844, one approximately 625 feet west of the line of what is now South Avenue and the other at the northwest corner of Travis Avenue and Victory Boulevard. The original line of the road appears to have been more winding than the modern road in that location.

The 1850 Sidney and 1853 Butler maps identify the owners of these houses as W.F. Cary (also spelled Carey) and A. Ainsley, respectively and the 1860 Walling and 1866 Colton maps identify them as the homes of Mrs. Van Pelt and J. Jones, respectively. The 1857 coastal survey by Walling appears to depict two unidentified structures on the southern side of the road that are not shown on other maps; possibly suggesting that they were not houses but may have been used for other purposes such as stables or barns. W.F. Cary is identified as the owner of both parcels as well as the undeveloped land to the south of the road on the 1874 Beers atlas. That map is slightly more accurate than those published in earlier years, and it appears to depict a portion of the historical road surface slightly to the north of the modern road in the eastern portion of this segment of Travis Avenue. The 1887 Beers map depicts a similar curvature in that portion of the road; however, the 1898 and 1907 Robinson atlases depict the road in a manner consistent with its current alignment. The 1898 atlas identifies the street as "Cary Ave." but later maps, including the 1910 to 1912 topographical survey (see **Figures 4-04 and 4-05**) identify the street as "Union Avenue." By the publication of the 1917 Bromley atlas, the street was renamed Travis Avenue. Despite the presence of older historical houses in the area, all map-documented structures appear to have been situated to the north of the road within and north of the project corridor segment and no map-documented structures appear to have been located within or immediately adjacent to the project corridor segment.

VICTORY BOULEVARD BETWEEN TRAVIS AVENUE AND MORANI STREET

Like Travis Avenue, modern Victory Boulevard is situated in the location of an older colonial road. The road is visible on the 1844 Hassler coastal survey, which depicts at least six houses located on either side of the portion of the road included within the new project corridor segment (excluding the former Ainsley House at the corner of Victory Boulevard and Travis Avenue. While the line of the street appears to have remained generally consistent since the 19th century, the modern road is significantly wider than the

¹ Maps of the West Shore Expressway development issued by the Richmond Borough President's office in 1967 can be seen here: <https://nycdcp-dcm-alteration-maps.nyc3.digitaloceanspaces.com/cp19656.pdf>

historical road. As shown on the 1910–1912 topographical survey, the road then known as Richmond Turnpike was approximately 20 feet wide. The full mapped width of the modern road is 100 feet.

The 1910–1912 topographical survey suggests that the new project corridor segment was partially within and partially north of the historical streetbed (see **Figures 4-05 to 4-10**). The survey indicates that dozens of houses were situated on either side of the historical road, the majority of which were separated from the road by a front yard. As shown on that map, the route of the new project corridor segment did not pass thorough the rear or side yards of any map-documented structures. The map identifies only one building that was in immediate proximity to the new project corridor segment, located on the northern side of Victory Boulevard east of its intersection with Richmond Avenue. A house with a similar footprint is not depicted in this location on any other historical maps. A wider wood frame building is shown in a similar area on the 1917 Bromley atlas and possibly on the 1898 Robinson atlas, but not the 1907 Robinson atlas. The same building is clearly depicted on the 1917 Sanborn map, which identifies it as a 1.5-story wood frame dwelling known as 77 Richmond Turnpike. By the publication of the 1937 Sanborn map the house was demolished. Neither the side nor rear yards of the house appear to have been situated within the new project corridor segment.

E. ASSESSMENT OF LANDSCAPE MODIFICATION

As described previously, the project corridor was included within an extensive survey of Staten Island that was completed by the Richmond County Topographical Bureau between 1910 and 1911 (see **Figures 4-01 to 4-10**). To complete this assessment of landscape modification and disturbance, the information from this survey was compared with modern topographical information in order to identify any areas of landscape modification (e.g., areas that have been graded or filled). This involved the georeferencing of the 1910–1912 map sections to align them with the modern street grid and the overlay of topographical information obtained from Lidar information published by the City of New York in 2017 (New York City Department of Information Technology & Telecommunications 2019). The 1910–1912 map includes elevation data measured relative to the Richmond Borough Datum and the Lidar data was measured relative to the North American Vertical Datum of 1988 (NAVD88).¹ The Richmond Borough datum is located 2.092 feet below NAVD88. For example, an elevation of 10 feet above the Borough of Richmond Datum is 12.092 feet above NAVD88. Therefore, the Lidar elevations presented in **Figures 4-01 to 4-10** have been converted from NAVD88 to the Richmond Borough Datum for the purposes of this comparison. For the purposes of this assessment, all converted elevations have been rounded to the nearest whole number.

The review presented below divides the project corridor into smaller analytical segments.

CHELSEA ROAD BETWEEN RIVER ROAD AND EDWARD CURRY AVENUE

The new project corridor segment was situated in the eastern side or just east of the historical roadbed of a precursor to it (see **Figure 4-01**). Portions of this area are situated in filled marsh, as shown on the 1910–1912 topographical survey. These areas have been filled, resulting in an increase in surface elevation of approximately 4 to 6 feet. The portions of the road surface that were dry land in 1910–1912 were situated at elevations of 4 to 6 feet relative to the Richmond Borough Datum (6 to 8 feet NAVD88). Therefore, the historical ground surface is at approximately the same elevation as the modern ground surface, indicating

¹ A datum is the point from which surface elevations are measured (where the elevation is considered to be 0). Elevations of the same ground surface taken relative to different datum points will therefore differ despite the fact that they refer to the same location. Therefore, understanding the datum from which an elevation was measured is critically important to an analysis of historic elevations and landscape change. The elevations presented in the 1913 Topographic Survey are relative to a datum based on “Richmond High Water,” which is interpreted here as the modern Richmond Borough Datum.

that the construction of the road and any associated infrastructure disturbed the historical ground surface in those areas.

EDWARD CURRY AVENUE BETWEEN CHELSEA ROAD AND SOUTH AVENUE

The western portion of the modern location of Edward Curry Avenue between Chelsea Road and South Avenue was also partially inundated wetland and salt meadow (see **Figures 4-01 to 4-03**). The surface elevation of the filled wetlands appears to have increased by 6 to 8 feet along this stretch of the road. The eastern portion of this road segment appears to have been extensively modified as a result of the construction of the West Shore Expressway, which runs under the elevated road surface of Edward Curry Avenue. The surface elevation of the road has been increased by approximately 6 to 23 feet. Project related impacts in this location are therefore expected to extend through fill material or disturbed soils.

SOUTH AVENUE BETWEEN EDWARD CURRY AVENUE AND TRAVIS AVENUE]

The new project corridor segment would extend through the western side of the historical line of South Avenue as shown on the 1910–1912 topographical survey (see **Figures 4-03 and 4-04**). The ground surface in the northern half of this portion of the new project corridor segment appears to have been raised by 4 to 10 feet since c. 1910. The southern half of this portion of the new project corridor segment has experienced less drastic change, with the modern ground surface typically situated within 1 to 2 feet of the historical ground surface except in the locations of filled streams and areas where hills were eliminated through the addition of approximately 2 to 6 feet of material. Project related impacts in this location are therefore expected to extend through fill material or disturbed soils.

TRAVIS AVENUE BETWEEN SOUTH AVENUE AND VICTORY BOULEVARD

As described previously, the new project corridor segment would extend through or just south of the line of a historical road in the vicinity of what is now Travis Avenue, formerly known as Cary or Union Road (see **Figures 4-04 to 4-05**). At the western end of Travis Road near South Avenue, the grade appears to have been raised by up to 4 feet to accommodate the higher elevation of South Avenue. However, the surface elevation of the historical ground surface along the remainder of the road appears to be within 1 to 2 feet of the modern ground surface except in the location of filled streams and in limited areas with slightly higher amounts of fill. Project related impacts in this location are therefore expected to extend through fill material or disturbed soils.

VICTORY BOULEVARD BETWEEN TRAVIS AVENUE AND MORANI STREET

Victory Boulevard in the location of the new project corridor segment is one of the oldest roads in the region and the new project corridor segment extends within or immediately adjacent to the historical road surface. Along the majority of this route, the modern ground surface is within 1 to 2 feet of the historical ground surface as depicted on the 1910–1912 topographical survey (see **Figures 4-05 to 4-10**). Therefore, the construction of the modern road and its associated infrastructure is expected to have directly disturbed the historical road surface.

A. CONCLUSIONS

As part of the background research for this Supplemental Phase 1A Archaeological Documentary Study, various primary and secondary resources were analyzed, including historic maps and atlases, historic photographs and lithographs, newspaper articles, and local histories. The information provided by these sources was analyzed to reach the following conclusions.

PREVIOUS DISTURBANCE

The topography of the new project corridor segment has been significantly altered through grading or filling, predominately associated with the construction of historical and modern roads. As described in **Chapter 2, “Supplemental Background Research and Analysis,”** a detailed comparison of current and historical topography suggests that the construction of the existing roads resulted in extensive disturbance across the entire length of the new project corridor segment. In many locations, the ground surface of existing roads is within 1 to 2 feet of the historical ground surface or above the historical elevations by a difference of 4 to 23 feet. These changes appear to relate to efforts made to eliminate marshland, streams, and steep slopes to create navigable roads for modern automobiles—including the construction of the West Shore Expressway—and are therefore related to larger-scale landscape modification efforts that would have resulted in disturbance. In areas where limited changes to the ground surface appear to have occurred, it does not appear that a layer of fill thick enough to potentially have projected the historical ground surface was deposited across the project corridor in a manner that would have prevented disturbance. Certain areas where wetlands, ponds, streams, and other bodies of water were filled would be expected to have deeper fill levels. However, the depths of project-related impacts (6 to 10 feet across most of the project corridor) are not expected to extend below the depths of these deeper fill levels in areas that were not already disturbed by road construction.

PRECONTACT SENSITIVITY ASSESSMENT

The precontact sensitivity of project sites in New York City is generally evaluated by a site’s proximity to level slopes (less than 12 to 15 percent), watercourses, well-drained soils, and previously identified precontact archaeological sites (NYAC 1994). The new project corridor segment, like the original alignment, is located in close proximity to both fresh water and marine resources and in an area with varying topography, including level high ground. Previous archaeological investigations by professionals and amateurs have confirmed that there was an extensive Indigenous presence across northern Staten Island throughout all phases of human occupation prior to European colonization. Level areas within the project corridor near sources of fresh water and saltwater resources would therefore have been extremely likely to have been the site of long- or short-term occupation, resource exploitation, or tool manufacture by Indigenous populations. Those locations within the project corridor that prior to urban development and road construction featured slopes greater than 10 percent would be expected to have been less desirable settings for human activity.

However, precontact period archaeological sites are typically found at shallow depths within 5 feet of the historical ground surface. Given the extensive landscape modification that occurred as a result of the

construction and maintenance of historical and modern roads, utility installation, and other modern disturbances as documented previously, it is not likely that precontact archaeological sites survived within the new project corridor segment. While it is possible that in areas of filled wetlands, precontact ground surfaces could have been preserved at great depths below the fill layer, the impacts of the proposed project are not expected to result in large-scale impacts below the depth of any fill. Therefore, the new project corridor segment is determined to have low sensitivity for precontact archaeological resources.

HISTORIC SENSITIVITY ASSESSMENT

Much of the project corridor was constructed along some of the oldest roads in Staten Island, including those that were initially built along Indigenous roads or colonial thoroughfares. No map-documented structures built prior to the 20th century were identified within the new project corridor segment. Of those structures that lined historical roads, the new project corridor segment does not appear to include substantial portions of their rear and/or side yards. The project corridor therefore appears to have been sufficiently distant from any map-documented residential buildings that were built before the 20th century and could have been associated with deeply buried domestic shaft features (e.g., privies, cisterns, and wells) that could have survived the extensive disturbance associated with the later development of the modern roads. The extent of landscape modification and disturbance that occurred as a result of the construction of the modern roads and associated utilities is expected to have resulted in the disturbance of older road surfaces and associated surficial deposits. Other road surface may be buried beneath a layer of fill ranging between 4 and 23 feet thick. No cemeteries have been documented adjacent to or in close proximity to the new project corridor segment. The new project corridor segment is therefore determined to have low sensitivity for archaeological resources dating to the historic period.

B. RECOMMENDATIONS

The new project corridor segment is determined to have low sensitivity for archaeological resources dating to either the precontact or historic periods. Therefore, no further archaeological analysis is recommended. Con Edison has previously prepared a “Unanticipated Discovery of Archaeological Features Protocol” (see **Appendix A**). This protocol outlines the steps that would be followed in the event of the unanticipated discovery of archaeological resources and identifies the parties to be contacted in the event of such discoveries.

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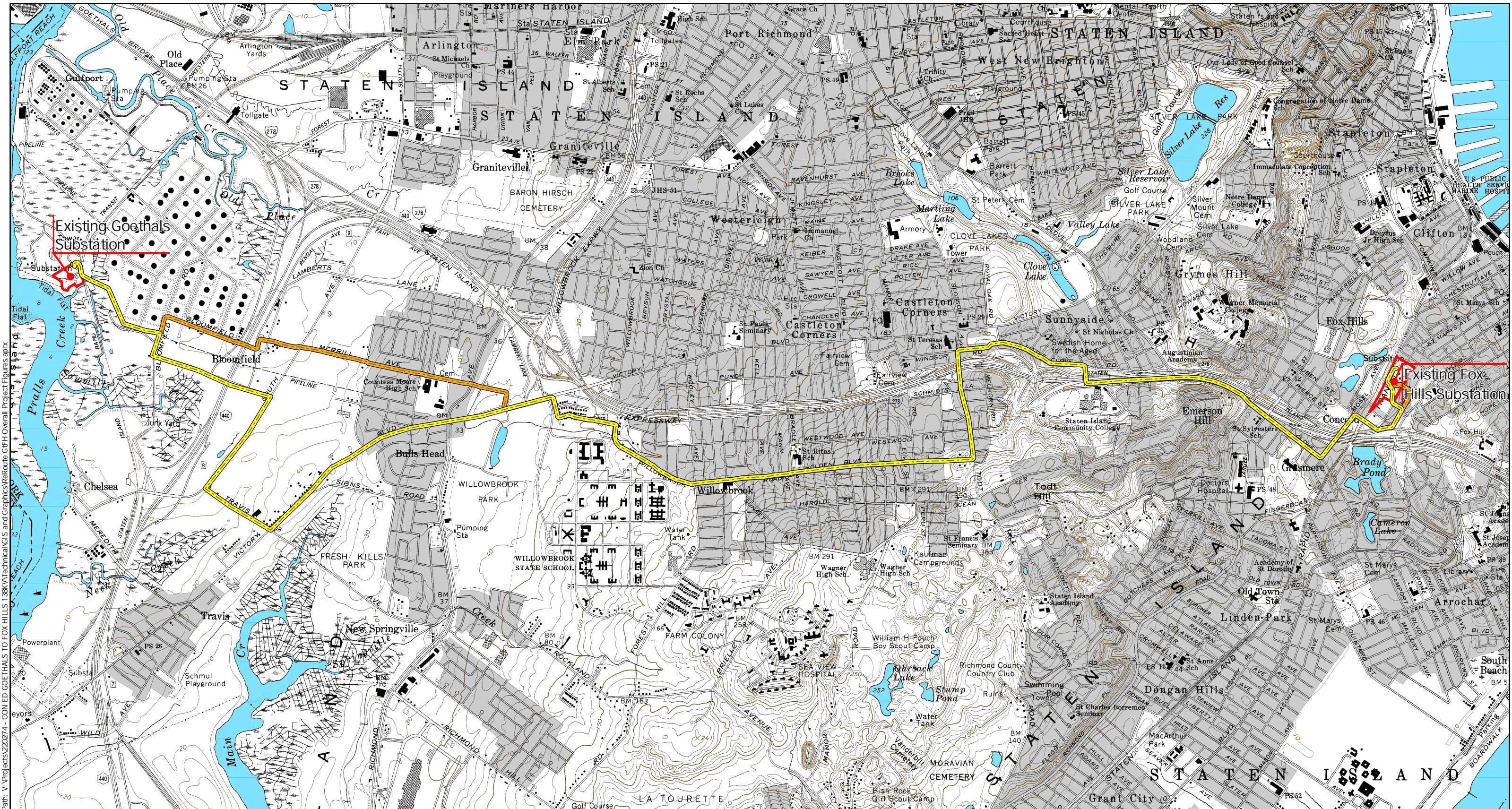
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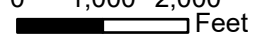
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0 1,000 2,000
Feet
1 inch equals 2,250 feet

- Existing Substations
- Previous Feeder Alignment
- Proposed Feeder Alignment

Notes:
1. The proposed project lies within the "Arthur Kill" and "The Narrows" NYSDOT 7.5 minute topoquads.

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Location Overview

MARCH 2023	Figure 1
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 Feet
 1 inch equals 2,250 feet

- Existing Substations
- Proposed Feeder Alignment


Consolidated Edison Company of NY Inc.
 Goethals to Fox Hills 138kV
 Underground Transmission Feeder
 Staten Island, Richmond County, NY

Project Aerial Overview

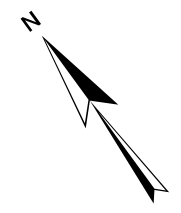
MARCH 2023

Figure 2

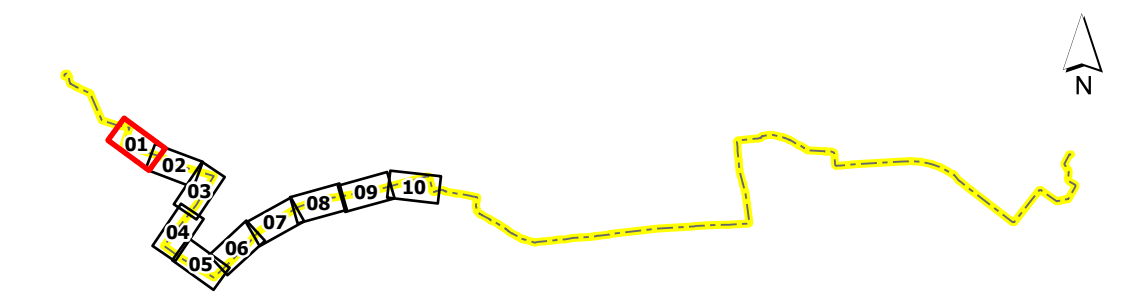
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Feet
1 inch equals 100 feet



--- Proposed Feeder Alignment




Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023

Figure 2-01

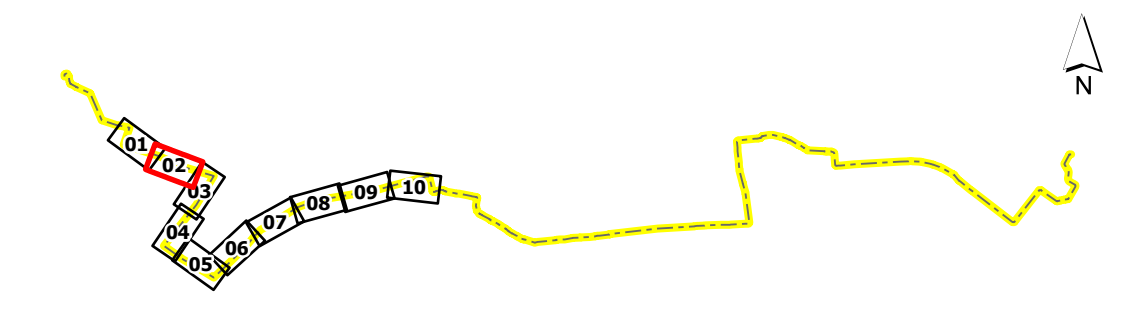
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1 inch equals 100 feet



--- Proposed Feeder Alignment



Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023	Figure 2-02
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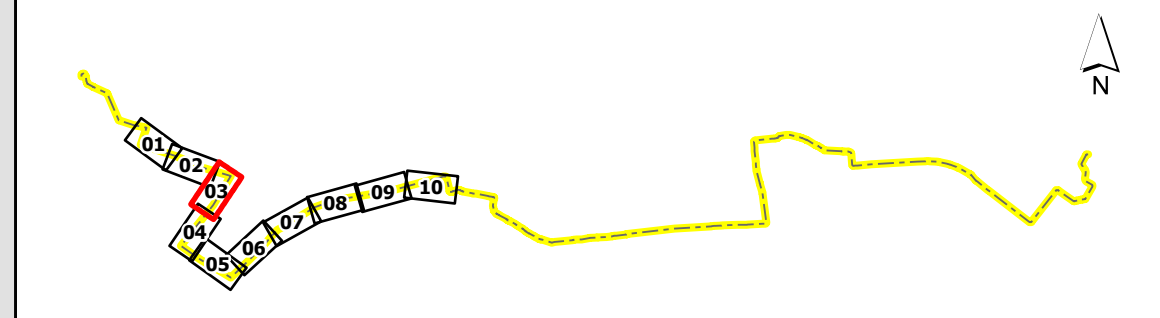
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0 50 100 Feet
1 inch equals 100 feet

Proposed Feeder Alignment



Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023	Figure 2-03
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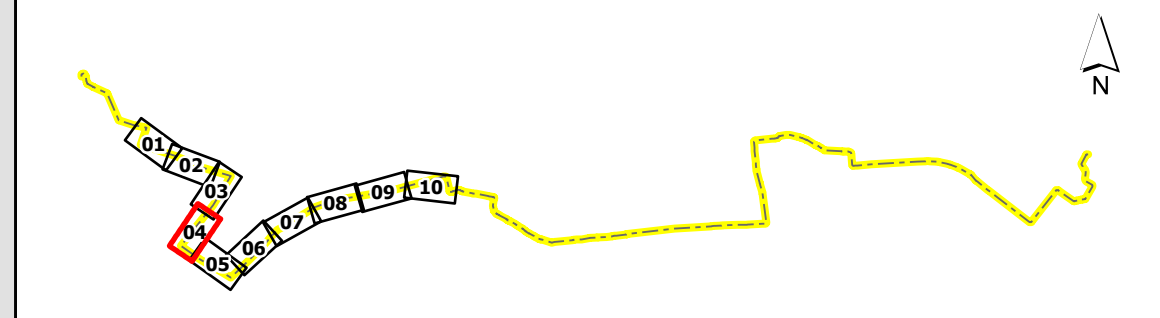
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1 inch equals 100 feet

Proposed Feeder Alignment



Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

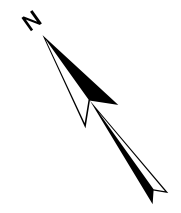
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MARCH 2023	Figure 2-04
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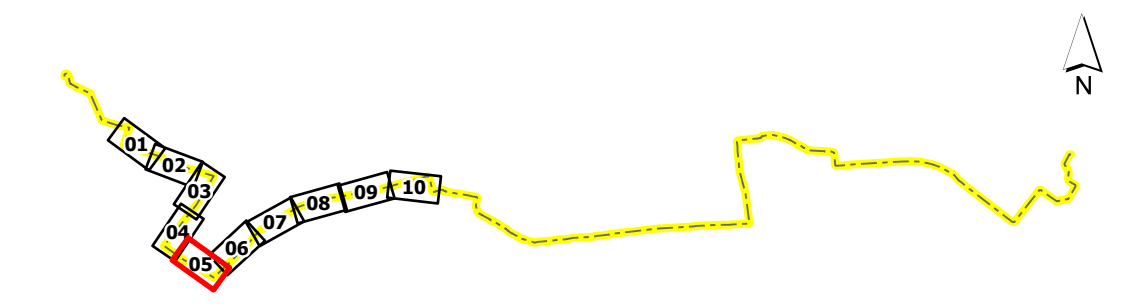
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0 50 100
Feet
1 inch equals 100 feet



Proposed Feeder Alignment




Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

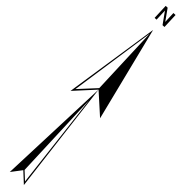
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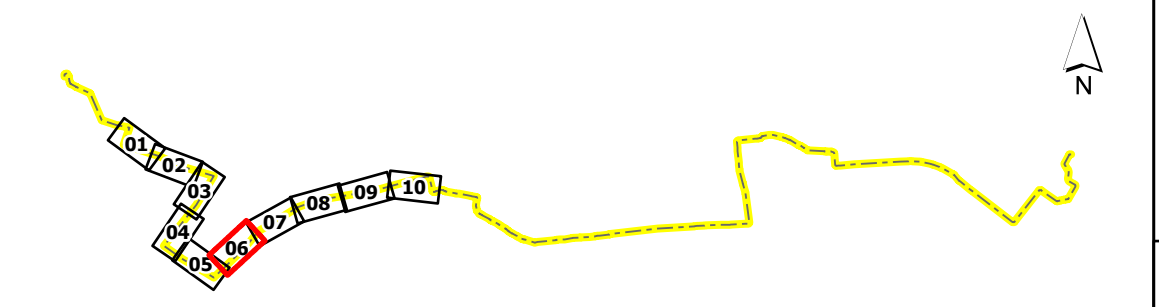
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1 inch equals 100 feet



 Proposed Feeder Alignment



Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

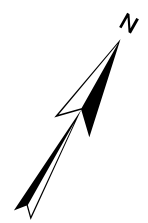
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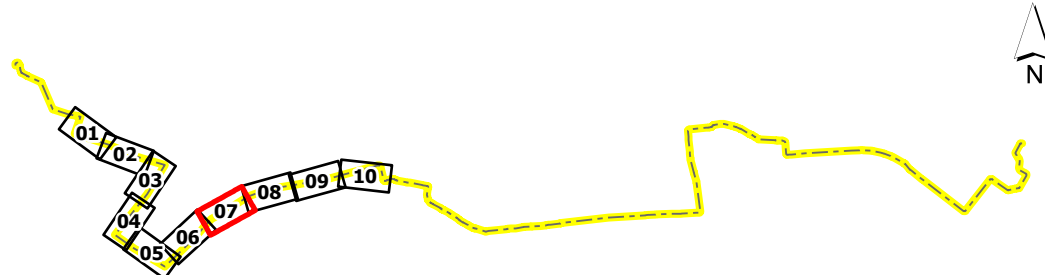
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1 inch equals 100 feet



--- Proposed Feeder Alignment



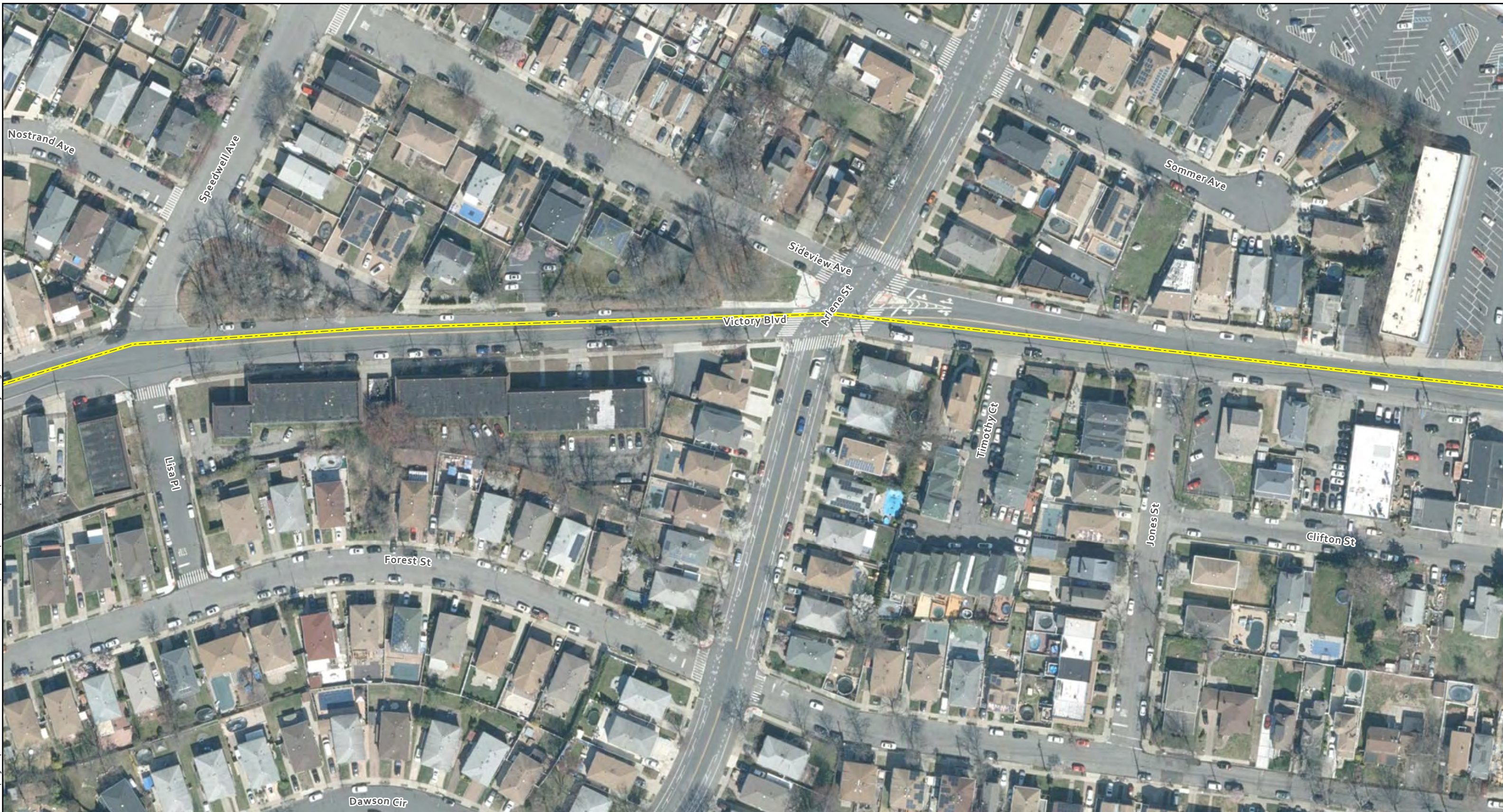

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023

Figure 2-07

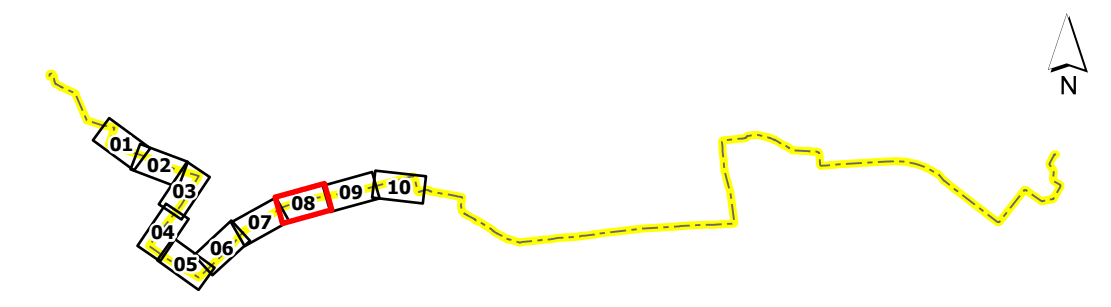
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1 inch equals 100 feet



 Proposed Feeder Alignment




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Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023

Figure 2-08

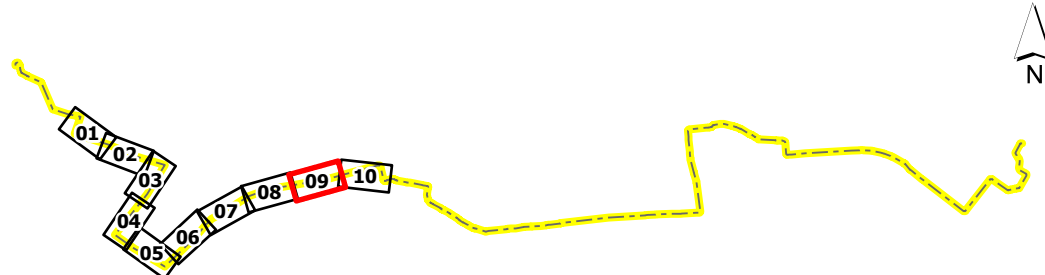
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1 inch equals 100 feet



--- Proposed Feeder Alignment




Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023	Figure 2-09
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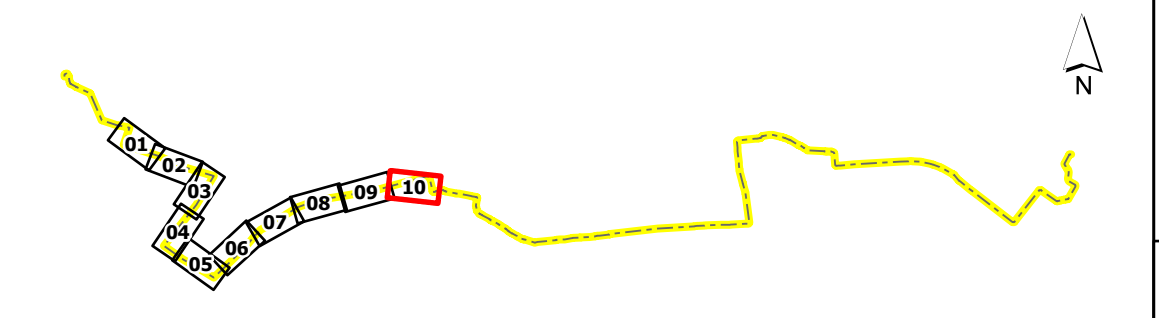
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Feet
1 inch equals 100 feet



 Proposed Feeder Alignment

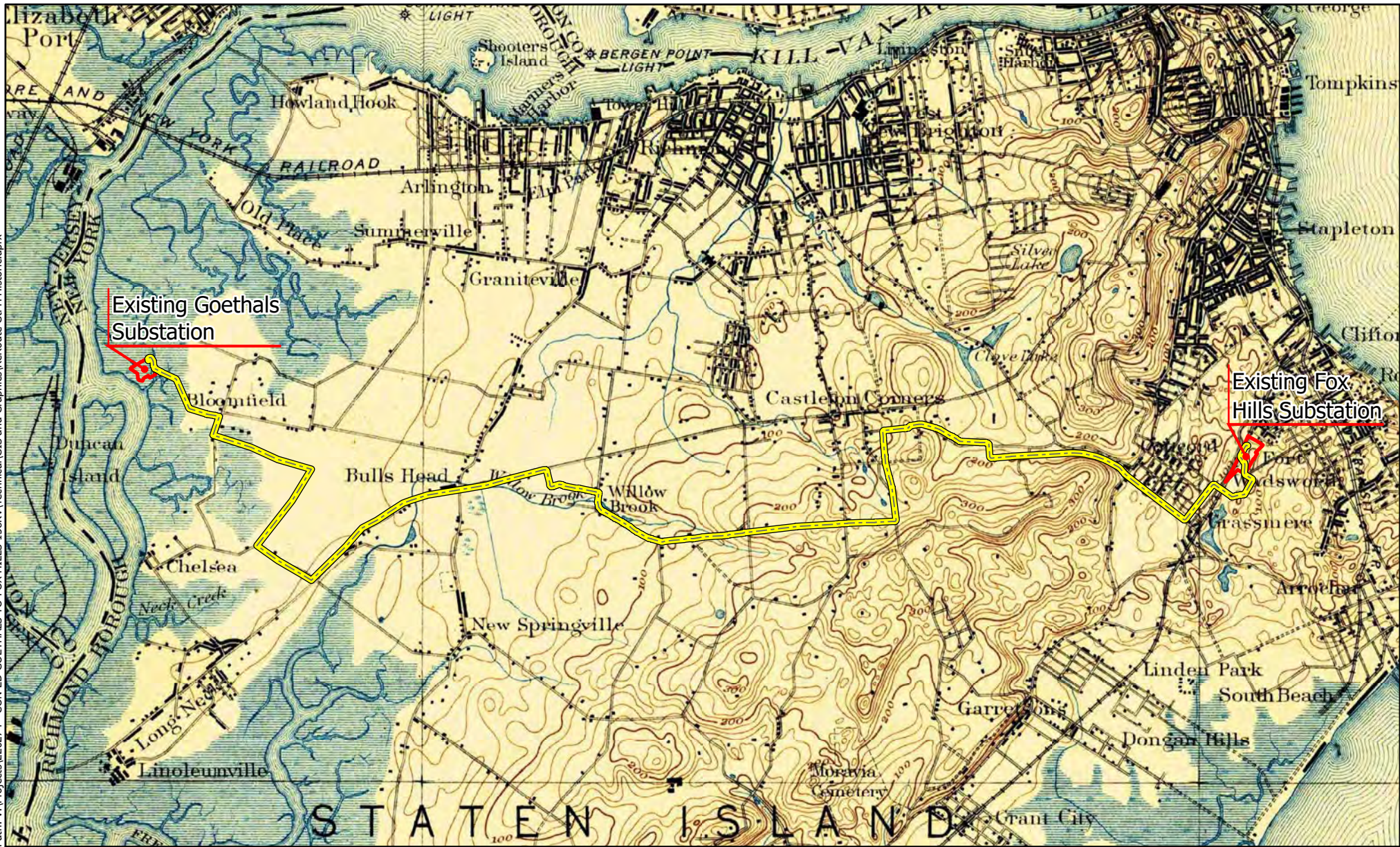


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Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

Project Aerials

MARCH 2023	Figure 2-10
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0 0.25 0.5 1 Miles
1 inch equals 0.75 mile



- Existing Substations
- Reroute Proposed Feeder Alignment

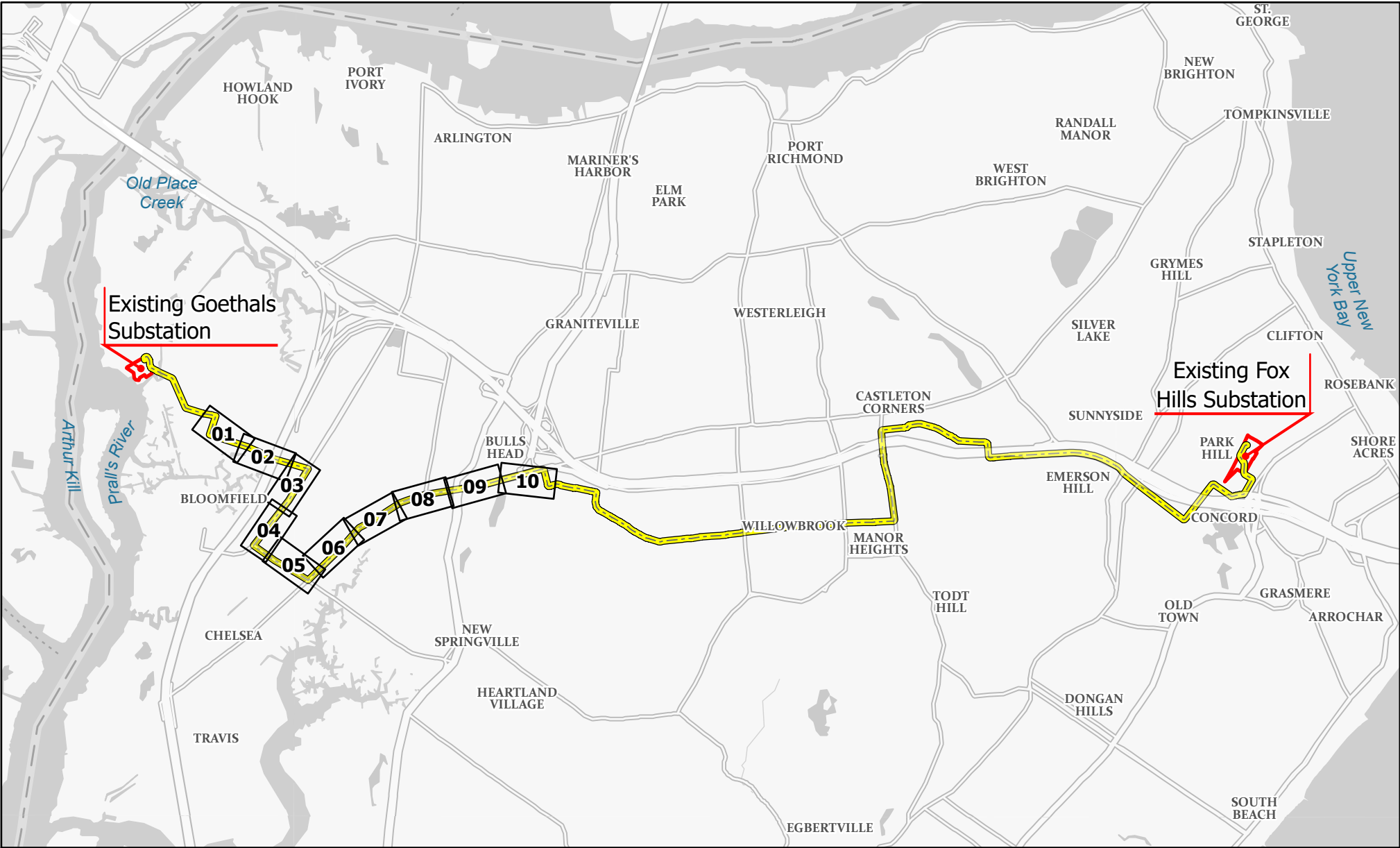
Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1898 USGS Map

MARCH 2023

Figure 3

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0 0.25 0.5 1 Miles
1 inch equals 0.75 mile



- Existing Substations
- Reroute Proposed Feeder Alignment

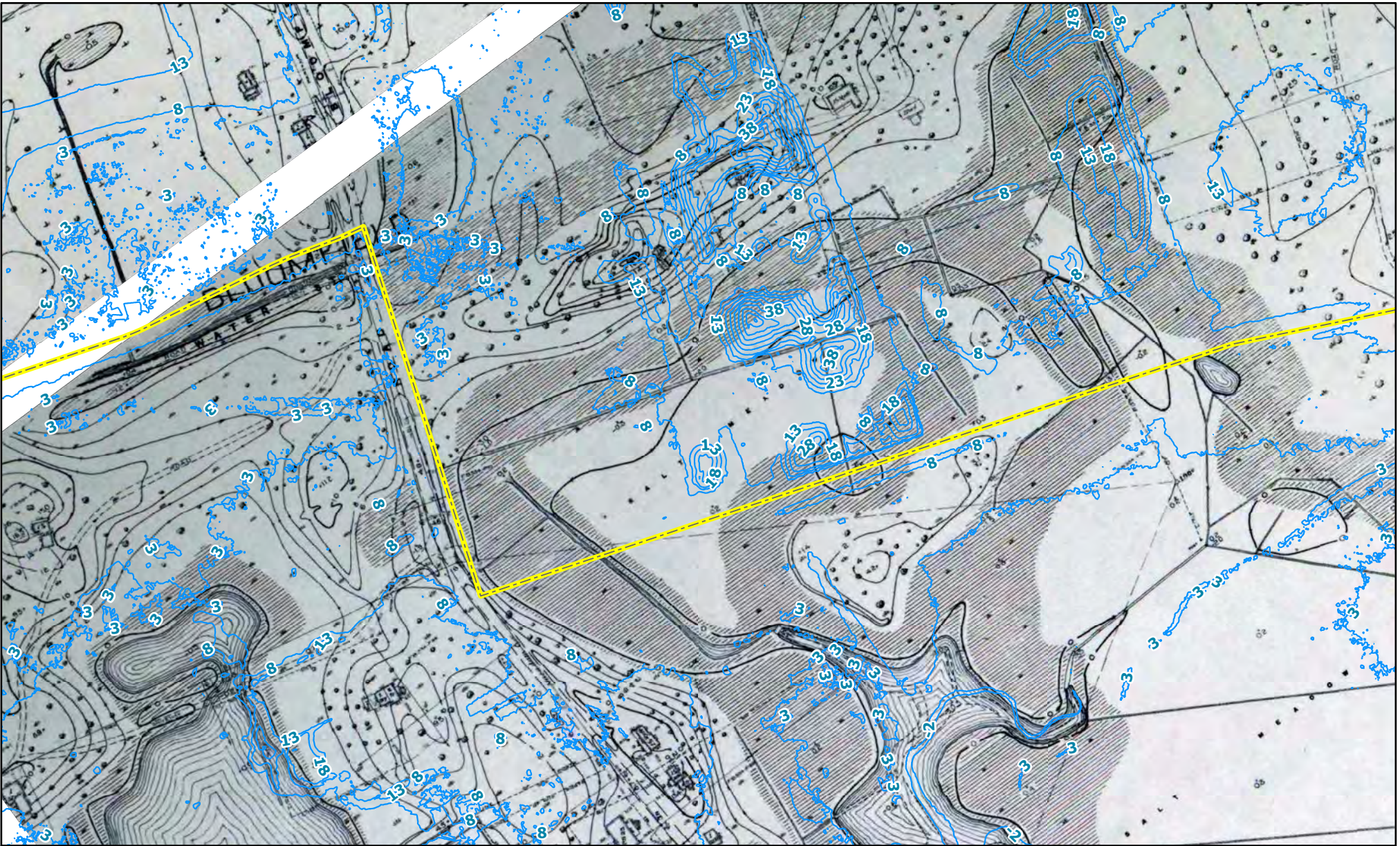
**Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY**

**Overview Map Key -
1910-1912 Topographical Survey**

MARCH 2023

Figure 4

Path: V:\Projects\220274 - CON ED GOETHALS TO FOX HILLS 138KV\Technical\GIS and Graphics\Reroute GFH Historic.aprx



AKRF

0 50 100 200 Feet
1 inch equals 200 feet

North arrow pointing up and slightly right.

Locator map showing the project area in red and yellow within a larger regional context.

Reroute Proposed Feeder Alignment
 Contours (5ft)

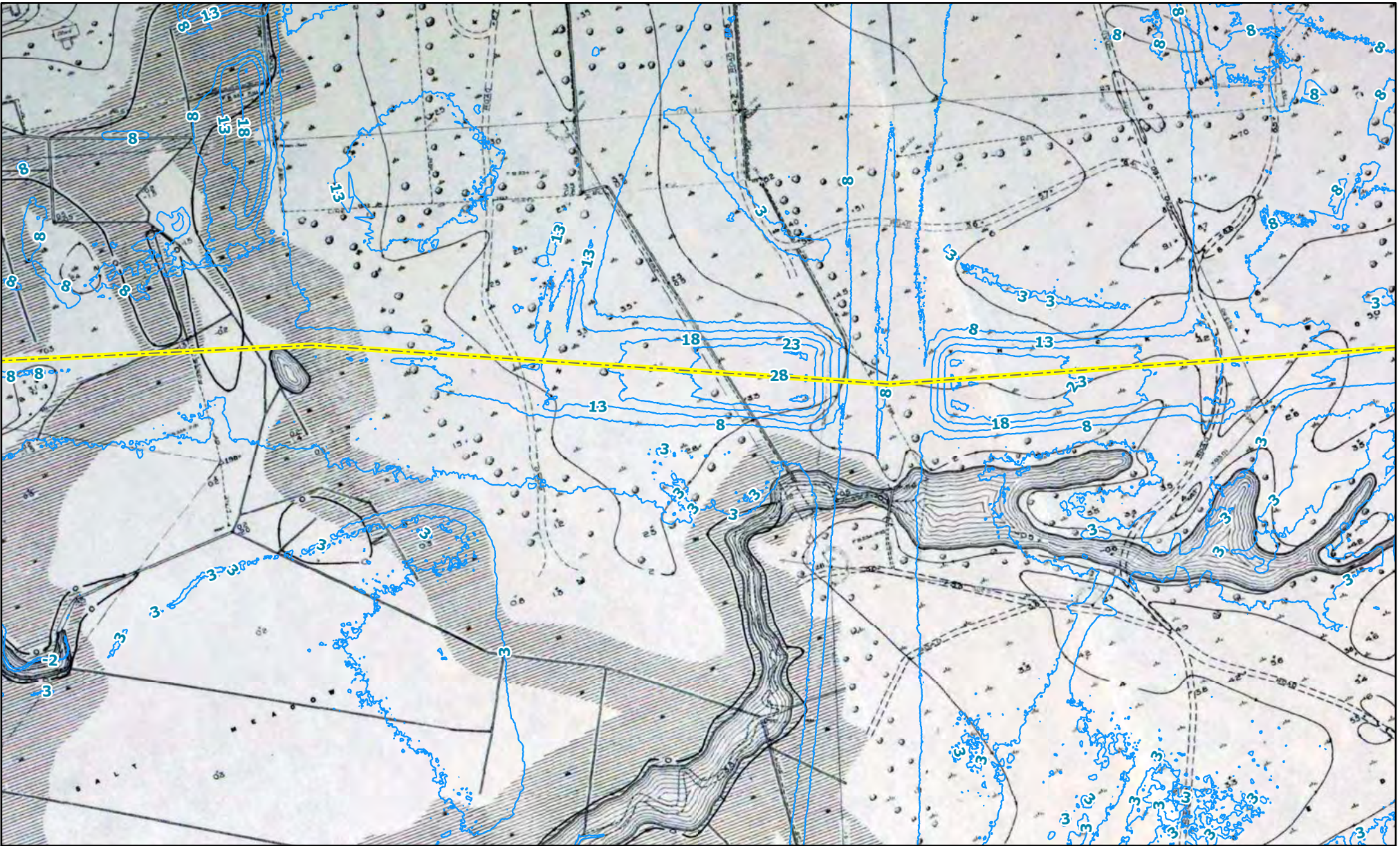
*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

MARCH 2023	Figure 4-01
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0 50 100 200 Feet
1 inch equals 200 feet



--- Reroute Proposed Feeder Alignment
--- Contours (5ft)

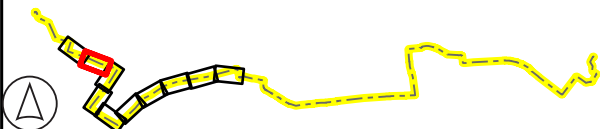
Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

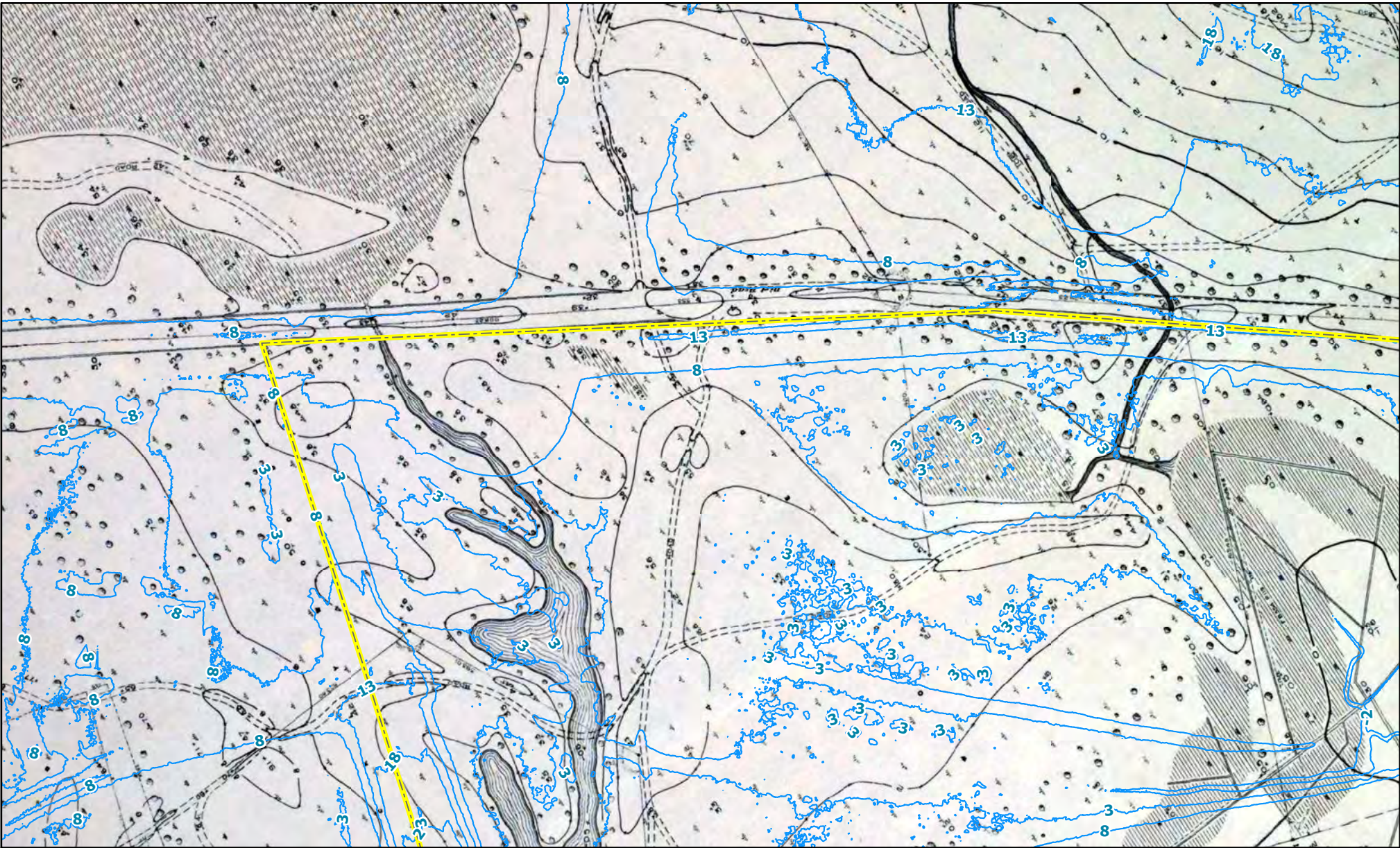
MARCH 2023

Figure 4-02

*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.



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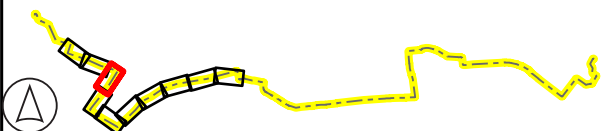
0 50 100 200 Feet
1 inch equals 200 feet



— Reroute Proposed Feeder Alignment
~ Contours (5ft)

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

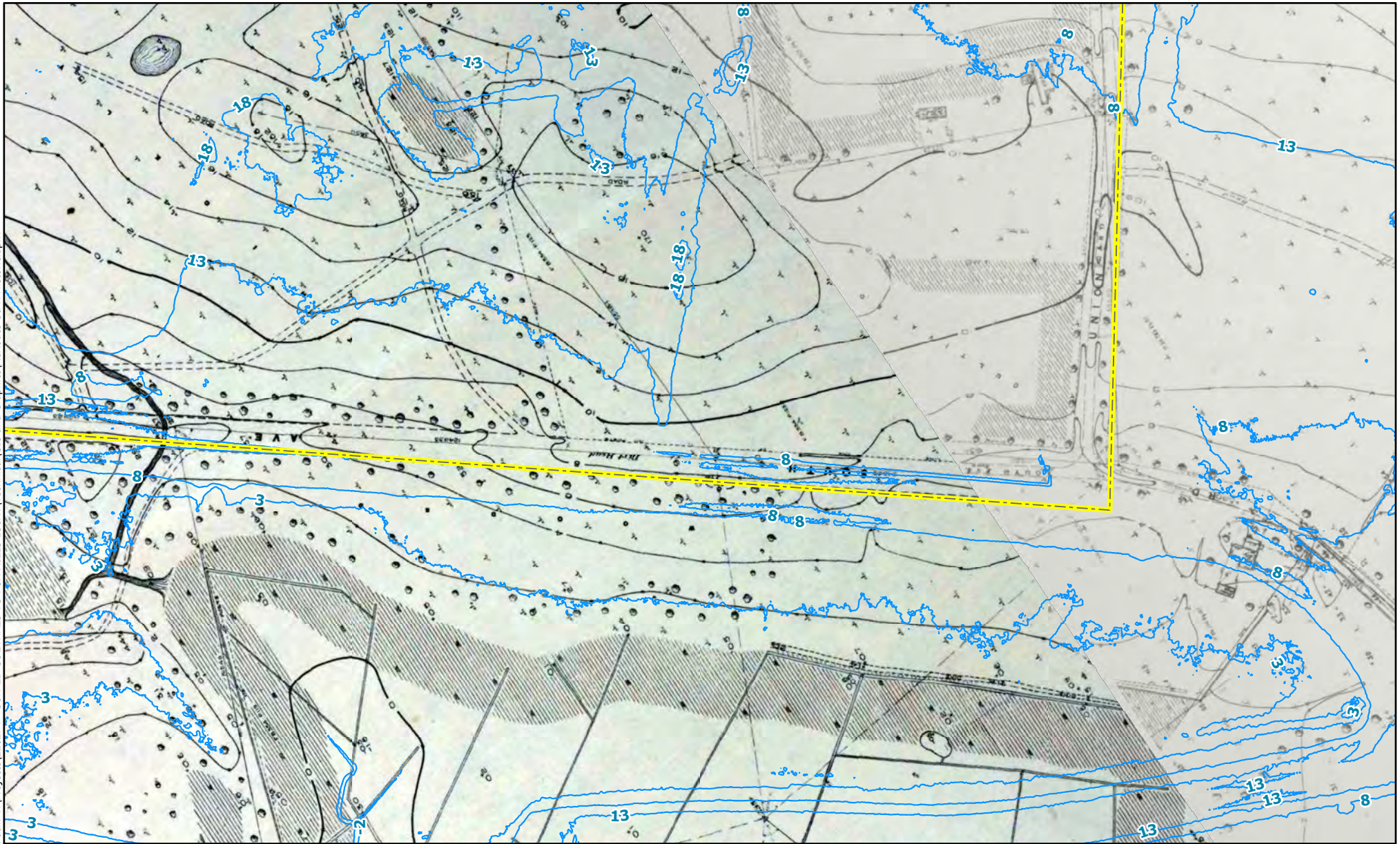


*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

MARCH 2023

Figure 4-03

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0 50 100 200 Feet
1 inch equals 200 feet



- Reroute Proposed Feeder Alignment
- Contours (5ft)

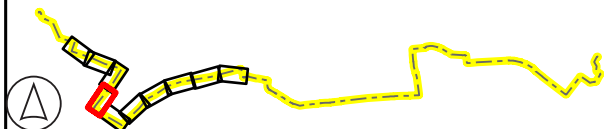
Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

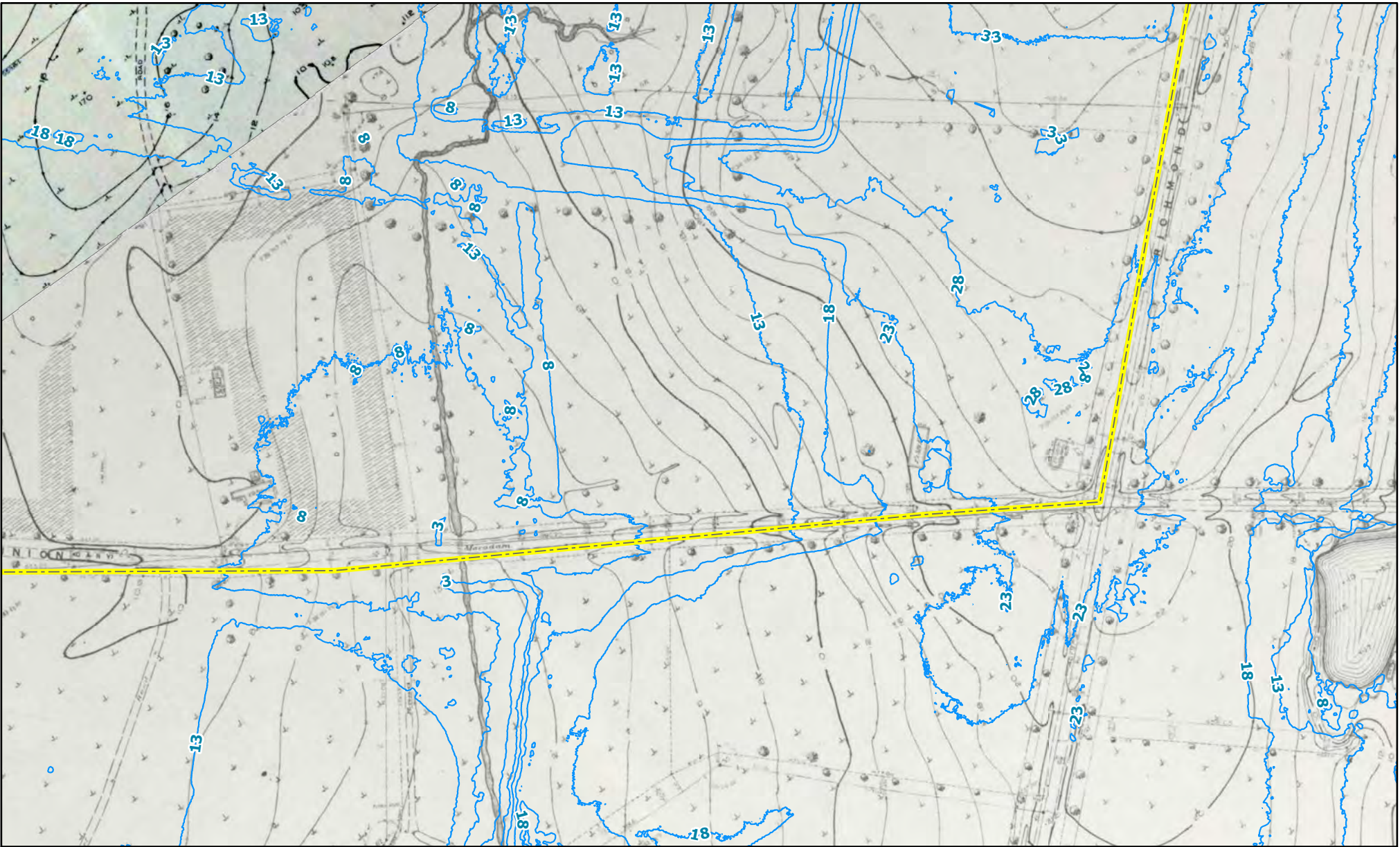
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Figure 4-04

*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.





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AKRF

0 50 100 200 Feet
1 inch equals 200 feet

The inset map shows a larger geographic area with a red box indicating the location of the main map.

 Reroute Proposed Feeder Alignment
 Contours (5ft)

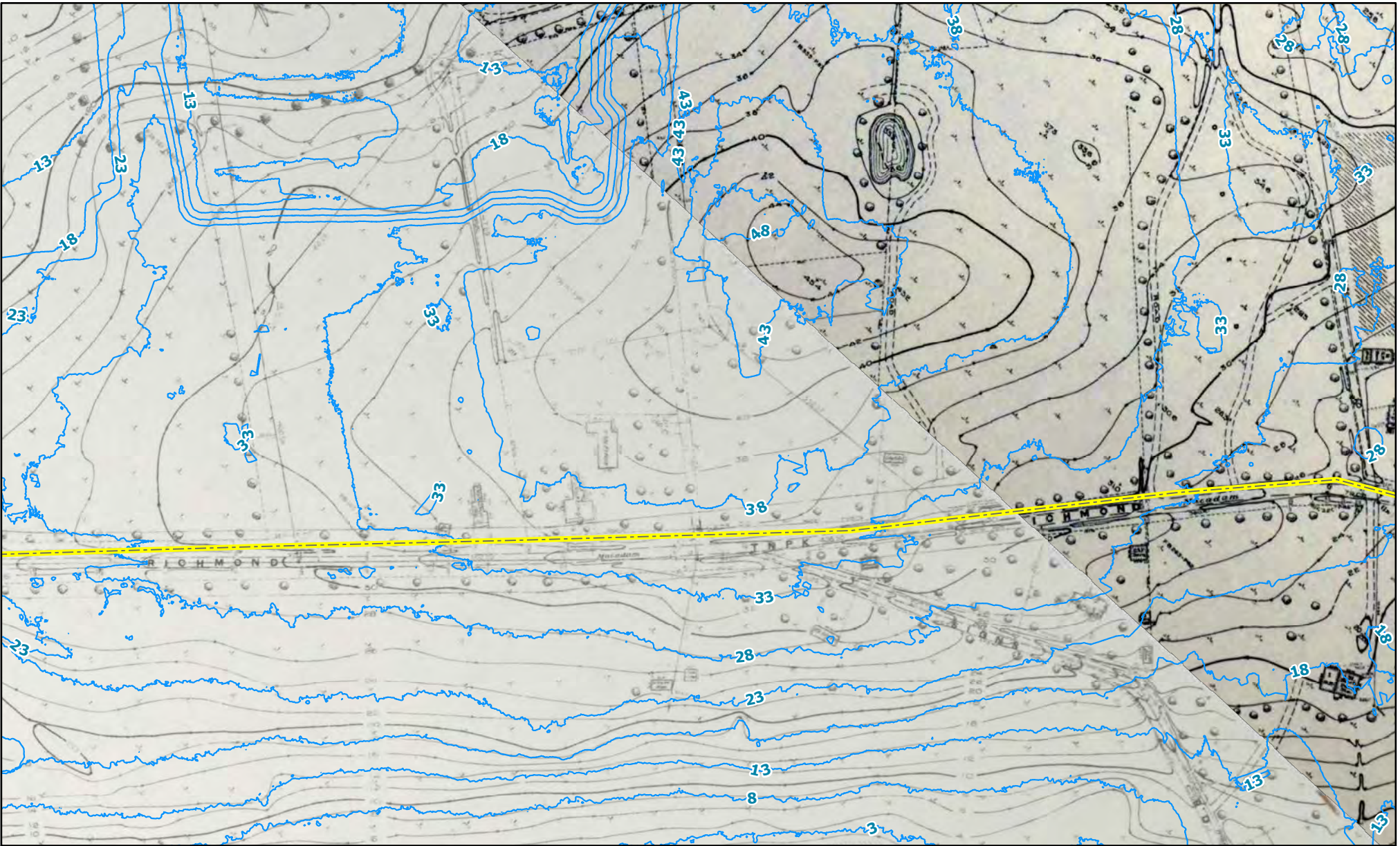
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Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

MARCH 2023	Figure 4-05
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Path: V:\Projects\220274 - CON ED GOETHALS TO FOX HILLS 138KV\Technical\GIS and Graphics\ReRoute GFH Historic.aprx



AKRF

0 50 100 200 Feet
1 inch equals 200 feet

The inset map shows a yellow line representing the project route, with a red segment indicating the specific area shown in the main map.

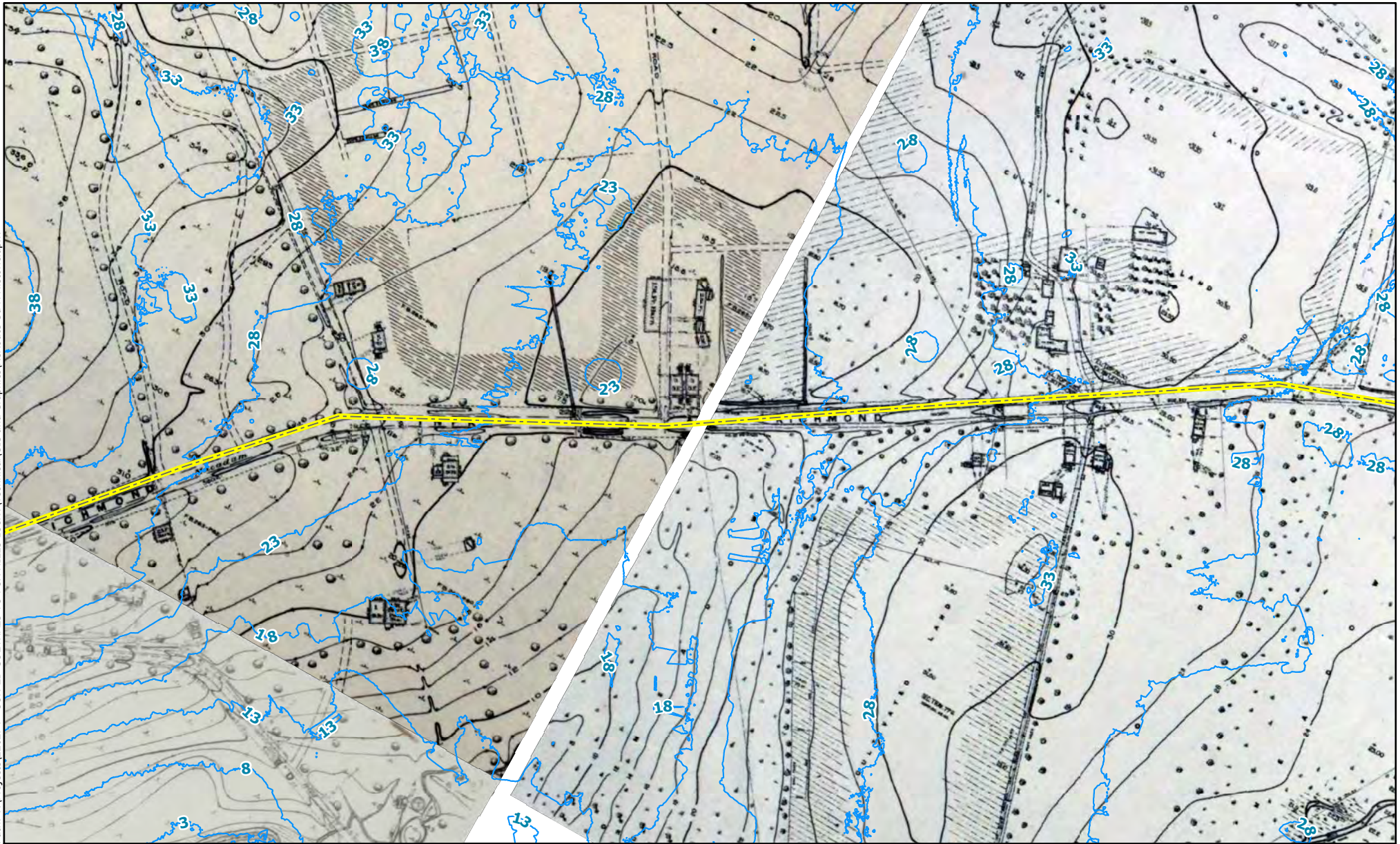
Reroute Proposed Feeder Alignment
 Contours (5ft)

*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

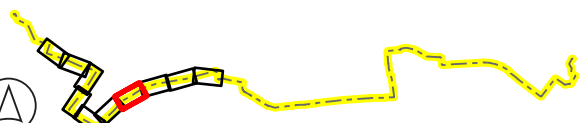

1910-1912 Topographical Survey

MARCH 2023	Figure 4-06
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AKRF

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1 inch equals 200 feet



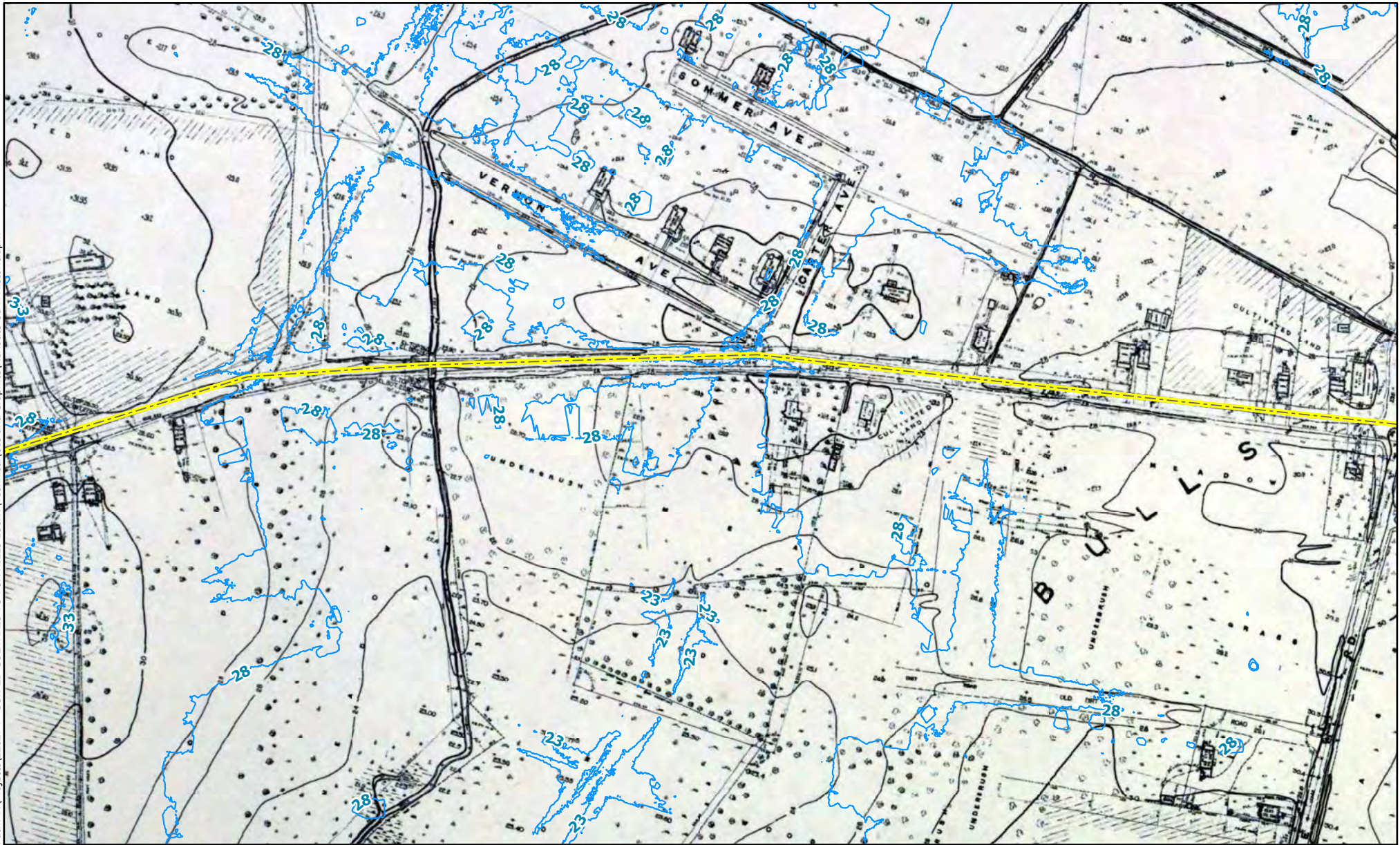
— Reroute Proposed Feeder Alignment
~ Contours (5ft)

*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

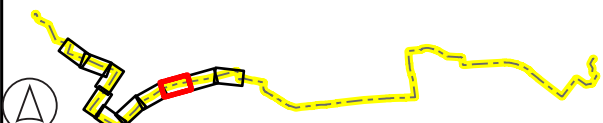

1910-1912 Topographical Survey

MARCH 2023	Figure 4-07
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AKRF

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1 inch equals 200 feet



--- Reroute Proposed Feeder Alignment
~ Contours (5ft)

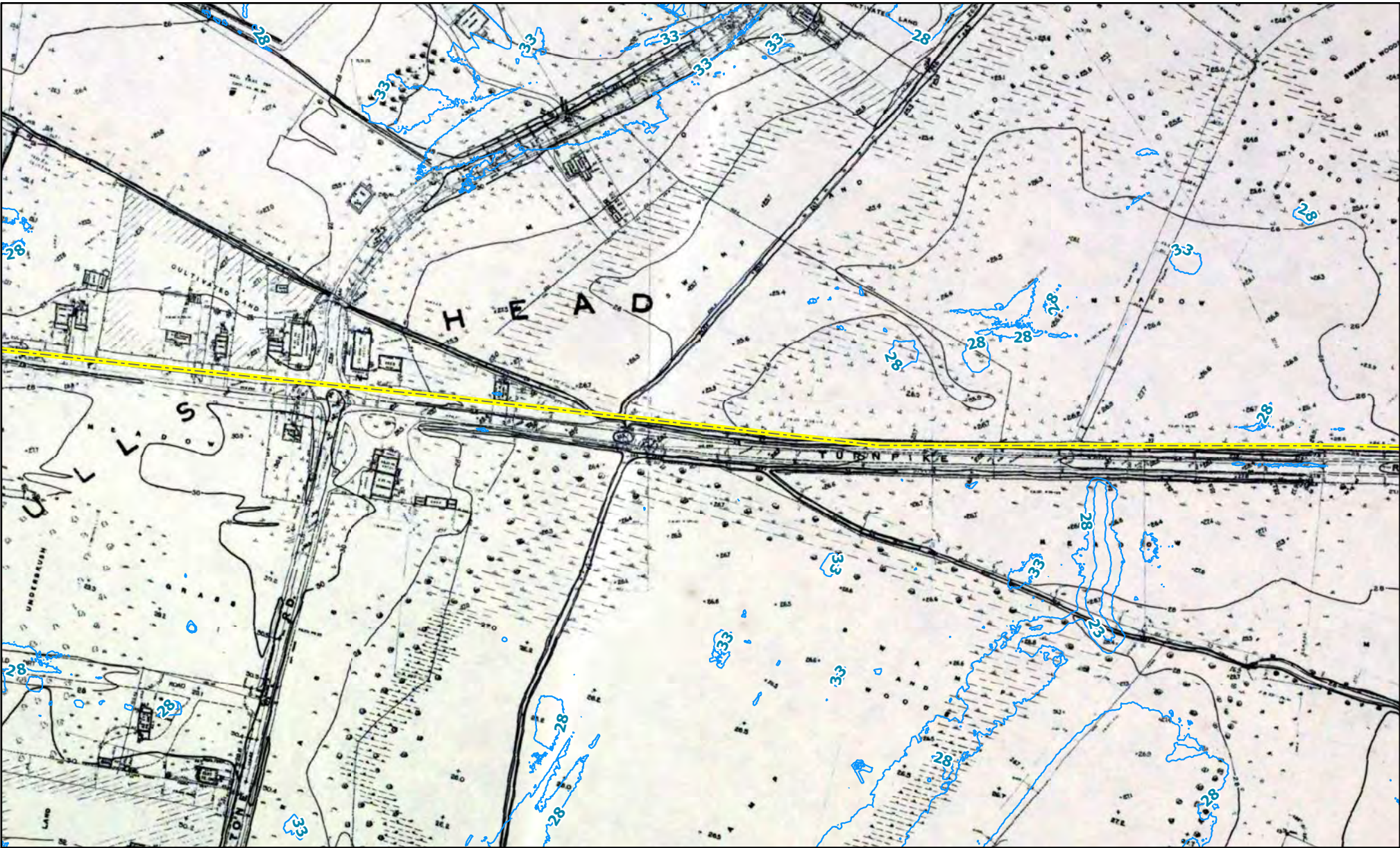
*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

MARCH 2023	Figure 4-08
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AKRF

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1 inch equals 200 feet

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— Reroute Proposed Feeder Alignment
~ Contours (5ft)

*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

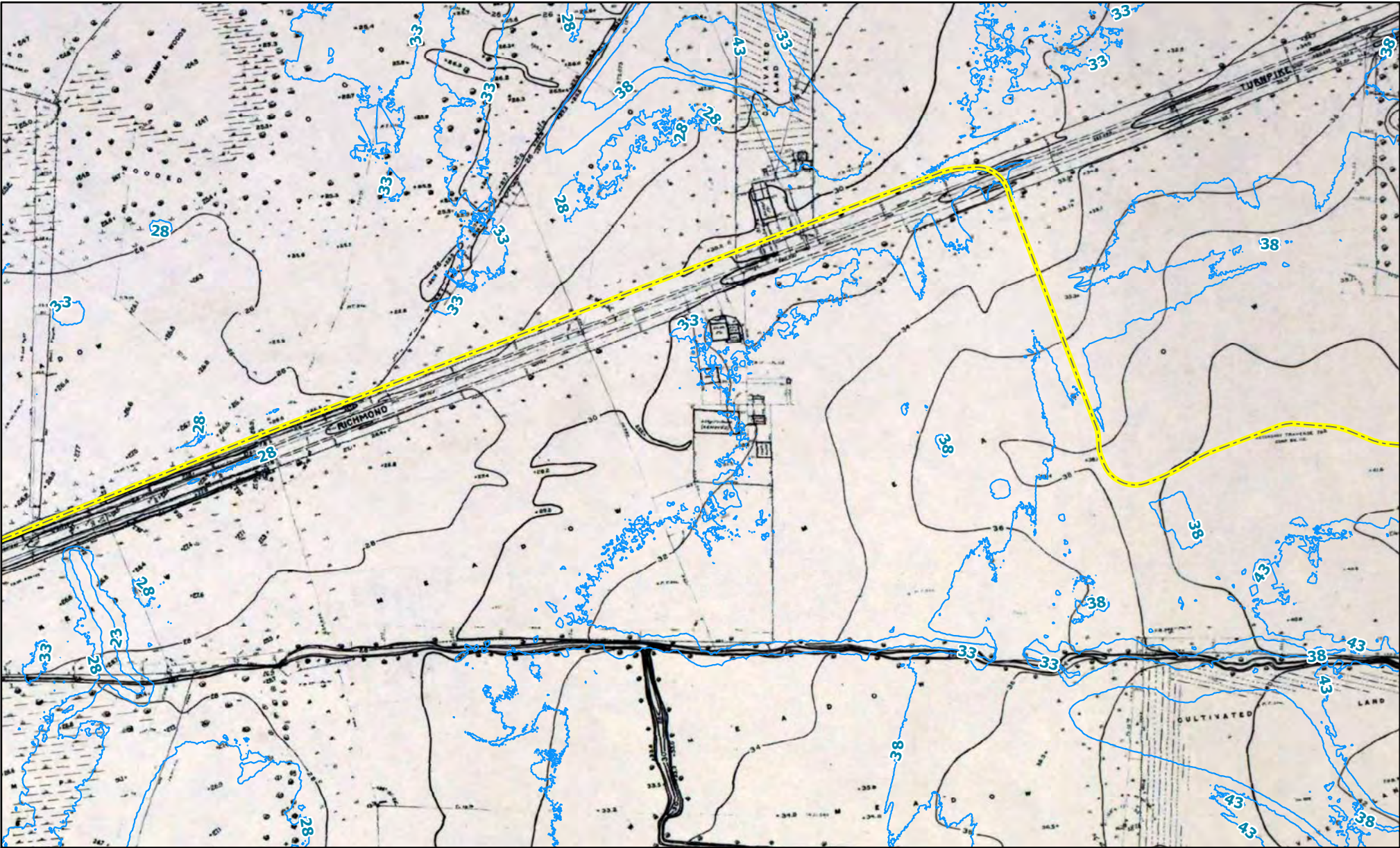
Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey

MARCH 2023

Figure 4-09

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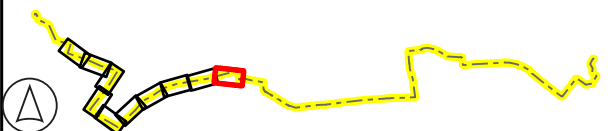
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1 inch equals 200 feet



--- Reroute Proposed Feeder Alignment
~ Contours (5ft)

Consolidated Edison Company of NY Inc.
Goethals to Fox Hills 138kV
Underground Transmission Feeder
Staten Island, Richmond County, NY

1910-1912 Topographical Survey



*Contours were derived from NYC 2017 LiDAR data and converted from NAVD88 to Richmond Borough Datum.

MARCH 2023

Figure 4-10

Appendix A

Unanticipated Discovery Protocols Developed by Con Edison

II. UNANTICIPATED DISCOVERY OF HUMAN REMAINS PROTOCOL

The following procedures must be adhered to in the event that human remains or suspected human remains (including both intact graves and disarticulated human remains) are identified during construction, whether anticipated or not:

1. When human remains are discovered during or after excavation, the excavation contractor must stop work immediately in the area of the human remains and provide for a distance of 50 feet (15.2 meters) around the human remains. The location of the human remains must be secured to protect the human remains and avoid potential impacts.
2. In all instances, on-site Con Edison personnel must immediately call the New York Police Department (NYPD) at 911 and the Office of Chief Medical Examiner (OCME) at 212-227-2030 and ask the operator to direct the call to the Forensic Anthropology Unit. OCME will determine whether the site is of forensic interest. If the site is of forensic interest, Con Edison personnel and the excavation contractor must follow OCME's instructions.
3. If the project is currently under review by LPC or was previously reviewed by LPC, Con Edison EH&S Natural Resources personnel must immediately call LPC's Archaeology Department at 212-669-7817 or LPC's main number at 212-669-7855.
4. If the site is located within state lands (e.g. parkland or state-owned rights of way), Con Edison EH&S Natural Resources personnel must notify the New York State Museum at 518-474-5877.
5. If the site is located within federal or tribal lands, Con Edison EH&S Natural Resources personnel must immediately call the responsible federal agency official or Native American tribe official. Con Edison EH&S Natural Resources personnel must subsequently provide written confirmation to the federal agency official or Native American tribe official.
6. At all times human remains must be treated with the utmost dignity and respect.
7. Con Edison EH&S Natural Resources personnel must notify other relevant parties as instructed.
8. In the event that the human remains are to be moved or removed from the site, Con Edison EH&S Natural Resources personnel must contact the New York City Department of Health and Mental Hygiene and the New York State Department of Health to inquire about disinterment and related permits. Con Edison may need to retain a registered funeral director or undertaker to apply for such permits. Such permits may not be necessary if the disinterment is ordered by OCME.
9. Following removal of the human remains as outlined above, EH&S, in consultation with the Law Department, may then grant clearance to the excavation contractor to restart work.

III. UNANTICIPATED DISCOVERY OF ARCHAEOLOGICAL FEATURES PROTOCOL

- When excavating in previously undisturbed locations or in areas that contain minimal prior disturbance, Con Edison crews could encounter potentially significant archaeological features. An archaeological feature implies the presence of historic human activity or occupation, and can be a collection of artifacts or remnants of artifacts.
- In the event potentially significant archaeological features are discovered during or after excavation, the excavation contractor must stop work immediately in the area of the features and provide for a distance of 50 feet (15.2 meters) until the significance of the feature can be evaluated by Con Edison EH&S Natural Resources personnel and work in the area of the feature is authorized to proceed. Con Edison's EH&S Natural Resources personnel must be notified in order to properly identify the features and make the necessary notifications to either the NYC Landmarks Preservation Commission or the NYS Historic Preservation Office.
- Here are some examples of significant archaeological features that could be found in previously undisturbed areas within our service territory:
 - Large stone implements (e.g. axes, gouges)
 - Historic pottery, glassware, and other housewares
 - Privies, cisterns, wells, and other colonial infrastructure
 - Large iron or other metal objects, including farm implements (e.g. hoes, rakes, plows, sleigh parts)
 - Transportation related objects (e.g. wooden wagon wheels, tracks, trolley support)
 - Ship and boat hulls and hardware
 - Gravestones, marked granite, coffin remnants, and hardware
 - Canons, canon balls, and other historic ordinances
 - Burial pits (darkened soil, textile, shell-lined) and/or human remains (for human remains, the protocol set forth in section II of this GEHSI should be followed)
- Here are some examples of material that is not considered to be a potentially significant archaeological feature:
 - Discarded/abandoned modern-day items (e.g. trash, concrete, construction and demolition debris, furniture, automobile parts, cinder blocks, modern bricks, etc.)
 - Geological materials (e.g. natural rocks, unmilled wooden logs, vegetative debris)