

REPORT ON
ARCHAEOLOGICAL WORK FOR
CREATING A DAY SPA IN THE
GOVERNORS ISLAND HISTORIC DISTRICT
BUILDINGS 111, 112 and 114
GOVERNORS ISLAND, NEW YORK, NEW YORK
OPRHP Project Review No. 15PR01840
LPC ID 19-27959



Breaking ground for the QC Terme Spa on Governors Island, East Courtyard facing east (Image 1625: July 9, 2019).

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EXECUTIVE SUMMARY

This is a report on archaeological work conducted in conjunction with the creation of a day spa at Buildings 111, 112 and 114 on Governors Island. This project involved excavation within the Governors Island National Historic Landmark District and the New York City Landmark District. This report is being prepared to comply with environmental review regulations and meets the standards of both the New York State Office of Parks, Recreation and Historic Preservation (SHPO) and the New York City Landmarks Preservation Commission (LPC). The work was conducted on behalf of QC Terme, Srl by Linda Stone, RPA.

The Spa project included excavations for two pools, a number of utilities and other related appurtenances. Research conducted to prepare the SHPO and LPC-approved Archaeological Work Plan documented areas of varying archaeological sensitivity and presented an approach to identify and document potentially significant resources. The approach included a combination of pre-construction archaeological testing and construction excavation monitoring.

Pre-construction archaeological work was conducted for the planned construction impacts in the areas of highest potential. Two of the seven test trenches were positive. Data recovery was conducted at one of those positive trenches, and the other was explored during subsequent monitoring. The data recovery excavations resulted in the conclusion the concrete feature identified in one positive test trench was not significant.

The other positive test trench unearthed a displaced section of mortared brick potentially related to the former Post Hospital. Later identification during monitoring of an *in situ* brick wall segment led to a second data recovery. Ultimately, six sections of brick wall and five sections of flooring/surface were documented. Two wall sections and two sections of the flooring/surface were entirely preserved, and others were removed to make way for construction. However, there is likely more of these building elements in the adjacent unexcavated parts of the APE. Samples of these building materials were retained.

Excavation monitoring of construction activities resulted in the identification of 21 additional features. These were sections of Old Carder Road (dating pre-1934), numerous defunct utility features (many along the perimeter of Old Carder Road), two ca. 1970s sand boxes, three concrete footings and a pair of vertical wooden posts. These features were all documented and most removed for construction. None were determined archaeologically significant.

In addition to the archaeological features, monitoring resulted in the documentation of deposits, disturbances and fill at the work locations. Notable among these stratigraphic observations were the presence of a large coal ash and heat-treated refuse fill layer strewn across much of the APE between Buildings 112 and 114 that appeared to pre-date the 1934 extant building construction, as well as the presence of historically modified fill soil to at least 5 feet (1.5 m) below ground surface across most of the APE. These fills, identified by well-dispersed small brick fragment inclusions and inclusions of defunct utility piping and encasements, indicate widespread landfilling and leveling across the APE.

No additional below ground work is planned for the Governors Island Spa project.

SHPO MANAGEMENT SUMMARY FORM

SHPO Project Review Number (if available): 15PR01840

Involved State and Federal Agencies (DEC, CORPS, FHWA, etc): Trust for Governors Island

Phase of Survey: IB/II/III

Location Information:

Location: Governors Island Historic District, New York City
Minor Civil Division: n/a
County: New York

Survey Area (Metric & English):

Pre-construction Testing and Monitoring
Length: Monitored areas up to 165 feet (50.3 m) long
Width: up to 45 feet (13.7 m) wide
Depth: up to 11 feet (3.4 m) deep
Number of Acres Surveyed: Appx. 1 acre, not including building footprints
Number of Square Meters & Feet Excavated (Phase II, Phase III only): 2 locations totaling approximately 4200 sq. ft. (390 sq. m.)
Percentage of the Site Excavated (Phase II, Phase III only): n/a

USGS 7.5 Minute Quadrangle Map: Jersey City, NJ - NY

Archaeological Survey Overview:

Machine Excavated Test Trenches
Number & Interval of Shovel Tests: 0
Number & Size of Units: 0
Number & Size of Test Trenches: 7 varying from 10 to 24 feet (305 - 732 cm) long, 1.5 to 2.0 feet (46 - 61 cm) wide and 2.1 to 6.3 feet (64 - 192 cm) deep
Width of Plowed Strips: n/a
Surface Survey Transect Interval: n/a

Results of Archaeological Survey:

Number & name of prehistoric sites identified: 0
Number & name of historic sites identified: 1 - Post Hospital site
Number & name of sites recommended for Phase II/Avoidance: 1 - Post Hospital site

Results of Architectural Survey:

Number of buildings/structures/cemeteries within project area: n/a
Number of buildings/structures/cemeteries adjacent to project area: n/a
Number of previously determined NR listed or eligible buildings/structures/cemeteries/districts: n/a
Number of identified eligible buildings/structures/cemeteries/districts: n/a

Report Author(s): Linda Stone, RPA

Date of Report: July 15, 2021

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INTRODUCTION

The Trust for Governors Island (TGI) entered into a relationship that has resulted in the creation of a spa in and around Buildings 111, 112 and 114 in the Governors Island Historic District (see Figure 1). The Historic District is both a National Historic Landmark District and New York City Landmark District. Because of its location in the Historic Districts, the work is subject to review and approval by both the New York State Office of Parks, Recreation and Historic Preservation (SHPO) and the New York City Landmarks Preservation Commission (LPC). The archaeological standards and requirements of both agencies apply.

Construction work for the Governors Island Spa project included building two outdoor pools, upgrading and installing new utilities, grading, landscaping and fencing. The Area of Potential Effect (APE) includes the courtyards and grassy lawns between and surrounding Buildings 111, 112, and 114, extending from Carder Road to Andes Road. The Archaeological Work Plan (AWP) for the project provided a means to assess archaeological potential of ground disturbing actions associated with that construction (see Appendix A). The AWP included both pre-construction testing and monitoring during construction, based on the archaeological potential of specific locations. This plan was approved by both SHPO and LPC.

The impacts to potential archaeological resources from the Governors Island Spa project included the potential of encountering part of the nearby Andes Road Native American site. Additionally, encountering numerous historic map-documented structures was also possible, most notably the Post Hospital which was formerly located in what is now the courtyard between Buildings 111 and 112 from ca. 1879 to the early 1930s. Finally, consideration was given to the identification of previously unknown archaeological resources.

No evidence of the Andes Road site was present. Many disparate sections of structural remains associated with the Post Hospital were identified and data recovered. No other historic map-documented structures were encountered.

Archaeological pre-construction testing and archaeological monitoring carried out between July 2018 and May 2021 led to identification of parts of the former Post Hospital, remnants of the 19th-century route of Old Carder Road, eleven defunct utility encasements, three defunct catch basins, a concrete overpour with catch basin or manhole lid access point, a pair of vertical wooden posts, two 20th-century sand boxes and three defunct concrete footings. Data recovery was conducted at the Post Hospital site and many, but not all, documented elements were removed during the course of construction. Portions of Old Carder Road identified during monitoring often continued beyond the limits of project excavation, as observed in trench profiles. Therefore, although sections of this feature were removed during excavation, some of Old Carder Road still remains *in situ*. The defunct utility encasements, catch basins, concrete footings, one vertical post and the sand boxes were removed after documentation.

Two data recoveries were completed: one for the ca. 1879 Post Hospital and the other for a concrete feature identified in a pre-construction test trench. Data recovery of the former Post Hospital explored and documented several elements of the former building, including sections of several brick walls, a related bluestone surface/floor and a concrete-covered surface/floor. A portion of each of these types of resources was left *in situ*. The data recovery of the concrete feature identified during pre-construction testing was initially considered to be part of one of a number of possible structures that once stood south of Building 114. The concrete feature was ultimately identified during data recovery as part of a large overpour for a manhole that was previously removed.

This report presents details of the findings of the Governors Island Spa project. It includes sections entitled Introduction, Site Context, Methodology, Results, and Conclusions and Recommendations.

The work was conducted for QC Terme, Srl, and facilitated by the Trust for Governors Island, by Linda Stone, RPA. Field work was conducted under the direction of Linda Stone, RPA, the Principal Investigator. Archaeological field supervisors were Lisa Geiger, RPA and Kelly M. Brit, RPA. Laboratory processing, artifact identification and analysis were done by Linda Stone and Lisa Geiger, who also co-authored this report. Pre-construction testing was conducted from July 27 - 31, 2018, and construction monitoring took place from July 8, 2019 to May 21, 2021.

The author would like to acknowledge the following individuals for their help in facilitating the archaeological work of the Governors Island Day Spa project; Filippo Nosotti, Lorenzo Del Bianco and Daniela Masala of QC Terme, Srl, Anthony Valinoti, Mike Pezzuto and Arlene Seabra of Noble Construction; Chris Spratta of Skyline Development Company and William Johnson of the Trust for Governors Island.

SITE CONTEXT

Pre-Contact Period

Three Native American archaeological sites have been identified on Governors Island, one near Castle Williams (directly southwest of the Spa project), another in Nolan Park and the third on the south side of Fort Jay. The site near the Spa project is known as the Andes Road Site and includes both a Native American component and a late-18th to early-19th-century cemetery component (SHPO 06101.007420). The Andes Road Native American site has Late Archaic and Late Woodland period artifacts found within the historic deposits associated with the historic period burial site. Additionally, Native American cultural material has also been found in redeposited contexts in many other places on the Island (PAL 1996: 11; Stone 2006: 10; UMass 2003:110-111). The Phase 1A Archaeological Assessment defined certain areas as sensitive for the preservation of prehistoric archaeological sites (PAL 1996: Figure 4-1). These included the open areas east of Castle Williams around Building 114 and east to Building 112. However, the Spa project impacts are not within the Native American site itself.

Historic Period

Governors Island was mainly a military post/outpost through most of its history. Expected historic period resources are related to buildings and usage by military personnel. The extant Buildings 111, 112 and 114 were originally constructed by the Army using plans of architects Rogers and Poor in 1934 (JCA 2003: Part 3: 68 - 73). However, prior to their construction, historic maps indicate there were other buildings within the Spa project area.

By 1867, the Army Engineers Department built a carpenter shop directly to the south of where Building 114 now stands (see Appendix A: Figure 5). They also built a blacksmith shop to the east of the carpenter shop in the area now between Buildings 114 and 112. By 1879, Andes Road had been laid in the vicinity and two additional “Engineers” buildings were located within the APE (see Appendix A: Figure 6). However, all these structures were soon demolished to make way for the “New Hospital,” referred to in this report as the Post Hospital, in 1879. The Post Hospital was partially within the footprint of what is now Building 112 and occupied much of the courtyard space between Buildings 112 and 111.

By 1879, the predecessor to today’s Carder Road had been laid. At that time, instead of running along the northern boundary of the Spa APE, historic Carder Road (called Old Carder Road here) was located running directly through all three Spa buildings. It wasn’t until after the Post Hospital was demolished (ca. 1934) that Carder Road was relocated northward. In the interim, a number of other small buildings were constructed and later demolished within the Spa APE. By 1934, the Post Hospital and all of these earlier structures once within the APE had been razed for construction of the existing buildings.

METHODOLOGY

Work Locations

Work locations for the Spa project were defined by the construction plans (see Figure 1). The space around buildings was described in reference to each building's number; 111, 112 or 114. The spaces between the buildings were referred to as courtyards. The East Courtyard (ECY) was also sometimes called Courtyard 1 (between Building 111 and 112) and the West Courtyard (WCY) called Courtyard 2 (between Buildings 112 and 114) in field documentation.

There were two primary types of excavation; trenches for utilities and larger footprint excavation dug for creation of the spa pools. Trench excavations were identified by utility type and where they began/ended. For example, storm water lines ran between catch basins (CBs); therefore, the trench between catch basins numbered 3 and 4 was called Storm Water (SW) CB 3 - CB 4 Trench¹. The pits for pool elements were recorded in reference to the pool or pit numbers on the contractor drawings (e.g. Pool A or Surge Tank C). However, these were also recorded on trench forms and referred to as trenches throughout this report. All excavations were mechanically conducted and were monitored and documented in terms of location, extent, stratigraphy and inclusions. All field forms were accompanied by copies of the contractor drawings showing the work locations for the day, in addition to the location descriptions recorded on the forms.

Elevations were recorded for all excavations based on the contractor's survey markings when they were available. In cases where these benchmarks were not visible, level lines were used to tie into them.

Archaeological Test Trenches

Seven Archaeological Test Trenches were excavated for the Governors Island Spa project as part of pre-construction testing. They are called Tests 1, 3, 4, 5, 6, 7, and 8. All trenches were mechanically excavated according to the protocols described in the AWP (see Appendix A).

Archaeological Excavation Units

Four archaeological excavation units were completed for the Governors Island Spa project. One unit was part of the data recovery of the concrete feature identified in Test 6. The three other units were associated with the data recovery of architectural remains associated with the former Post Hospital. Methods used were detailed in the two Data Recovery Plans (see Appendices B and C).

Monitoring

Construction excavation monitoring was the predominant field technique used for the identification of potential archaeological resources during the Governors Island Spa project. Monitoring followed the protocol established in the AWP. Briefly, the Monitoring Plan included giving the archaeologist authority to halt contractor excavations by communicating directly with the machine operator in order to document any archaeological resources, should they be encountered. If no archaeological features were encountered, the archaeologist documented the soils and fill deposits by making notes on preprinted forms, taking photographs and recording measurements for drawings. Stratigraphy was recorded using comparison to the Munsell Soil Color Charts. All pre-construction Archaeological Test Trench locations were also followed up with monitoring.

Laboratory Methods

Unique context numbers were assigned for each field bag of artifacts recovered as they were checked into the lab (FB #). That list of FB numbers constitutes all artifact proveniences (see Appendix D).

¹ The utility construction drawing did not provide numbers for the storm drainage features, so the excavation sub-contractor created and added them to the utility plan (see Figure 2).

Recovered artifacts (except bone and metal) were washed and rinsed in tap water and left to air dry before labeling and rebagging in clean 4-mil zip-lock bags. Bones and bone fragments were dry brushed, as were metal objects. Most artifact categories, with the exception of metal and bone, were individually labeled with the site abbreviation “GI”, project identifier “Spa”, the excavation year and the FB number. Labels were made from acid free paper and adhered to the artifact with a 25% B-72 solution in acetone. A paper provenience tag was placed inside each bag and all zip bags were labeled with the same information using the 2018 New York City Landmarks Preservation Commission Guidelines for Archaeological Work in New York City.

In the following discussion of results, possible dates of deposition are described based on *TPQ* (*terminus post quem*). The *TPQ* is the most recent manufacture start date of materials from a particular context, representing the earliest date a context could have been deposited. *TPQs* are identified using the “start date” column listed in the artifact inventory.

The artifact inventory is attached as Appendix E. All ceramic and glass artifacts listed are considered sherds or fragments, unless otherwise noted in the inventory. In the artifact inventory, ceramic identification and date ranges of manufacture for white-bodied refined earthenwares were based on style of decorations, when available, and are generally referred to in the inventory as “refined earthenwares.” If identifications and/or dates of manufacture were also based on ware type, such as creamware/pearlware/whiteware, then these terms are used as identifiers in the inventory, contributing to date ranges when appropriate. Upon acceptance of this report by the review agencies, the artifacts will be transferred to the Trust for Governors Island for donation to the New York City Archaeological Repository.

RESULTS

Results are presented here beginning with the results of the data recoveries, followed by other features and concluding with pre-construction testing and monitoring results. Monitoring results are further subdivided into six areas to enable grouping similar work activities and mapped locations together (see Figure 3).

Data Recoveries

Two archaeological data recoveries were conducted for the Governors Island Spa project. Data Recovery 1 was conducted in September 2019 to obtain data on a concrete feature identified in Test 6. The feature ultimately turned out to be concrete overpour around a manhole or catch basin structure that was not extant within the test trench. Data Recovery 2 was conducted to answer questions associated with brick structural remains of the former Post Hospital in December 2019. Additional elements of the Post Hospital were subsequently investigated once they were exposed during monitoring in February and November/December 2020 and in May 2021, using the same data recovery plan.

Data Recovery 1 – Concrete overpour feature - Test 6, EU 1 – Area 2

Excavation Dates: 9/26-30/2019

Test 6, excavated during pre-construction testing in July 2018, contained a concrete feature throughout the trench at 2.8 feet (85 cm) below ground surface (approximately 10.5 feet ASL). It had two breaks, presumably to accommodate utilities crossing the area (see Figure 4). This afforded the opportunity to assess the thickness of the concrete. It was 9-inches (23 cm) thick. Artifacts recovered from those cuts at levels adjacent to and beneath the concrete provide a *TPQ* of c. 1860 based on a clear glass sherd (FB 11), although it seems most likely the utilities were laid in the 1930s when Building 114 was constructed. Data Recovery 1 was planned to further examine this feature identified in Test 6.

The archaeological Data Recovery Plan (see Appendix B) called for a tiered approach: first determining the extent of the feature southward, then, depending on the outcome, examination of the deposits above, then those adjacent to and finally those beneath the feature. The first step was accomplished with excavation of an exploratory trench by having the backhoe remove deposits above the level of the concrete within Test 6 and the surrounding area where planned project excavation for utility lines which would cover the entire footprint. The DRP (data recovery plan) called for the exploratory trench to be up to 12.7 feet (3.9 m) north-south, or as far south as the concrete extended.

Coordinates had been recorded for Test 6 and field drawings showed the locations of the breaks in the concrete. To confirm in the field, a larger swath was removed. The excavated area measured approximately 16 feet (4.9 m) east-west and 10 feet (305 cm) north-south, covering the footprint of most of the original test (see Figure 4). This exposed the entire portion of the concrete between the two breaks documented in the test.

Prior to excavation of an archaeological unit, the trench profiles were examined. The north profile of the backhoe excavation cut revealed a pipe in the center of the profile (see Figure 5). This pipe's location corresponded to the eastern break in the concrete of Test 6. The deposits to the east and west of the pipe were markedly different. To the east, in the area initially explored in the test, the decaying concrete layer began approximately 2 feet (61 cm) below ground surface (approximately 11.5 feet ASL). The area to the west of the pipe was more homogeneous above the level of the

concrete.

Once the top of the concrete feature was exposed in the exploratory trench, excavation unit EU 1 was laid out adjacent to the trench on its western side at the ground surface to examine the deposits above the level of the concrete. The unit measured 4 feet (122 cm) north-south by 2 feet (61 cm) east-west, and it contained three strata. Table 1 presents the stratigraphy and inclusions recorded for EU 1. Stratum 1 was excavated in four levels and was comprised of redeposited material with some large rocks up to 1 foot (30 cm) in diameter. Part of Test 6 was exposed after Stratum 1 Level 2 in the northern 1 foot (30 cm) of the unit. Therefore, the footprint of the remainder of the unit was reduced from 4 feet (122 cm) to 3 feet (91 cm) north-south in order avoid re-excavating backfill material from the Test 6 trench. All the cultural material throughout Stratum 1 was quite fragmented and included a piece of celluloid film, a ceramic waster and several sherds of bottle glass of various colors (FBs 21 - 23). The *TPQ* of that deposit is 1889 based on the film (FB 23). The exposed surface at the base of this stratum sloped down slightly southward. Stratum 2 contained a lot of decaying concrete chunks and roofing tiles as well as some bath tile and metal hardware (FB 24). No temporally diagnostic artifacts were retained from Stratum 2, but the *TPQ* comes from the structural hollow clay tile (also referred to as fire brick, roofing tile, hollow tile or clay block). This type of material was used in popular use for construction in the late-19th century (Wells 2007). Towards the base of Stratum 2, the density of inclusions increased, and the pieces became larger. Stratum 3 was similar to Stratum 2 as far as inclusions; however, the matrix was siltier, looser and darker than above. The *TPQ* of Stratum 3 was the 1840s based on a refined earthenware possible waster (FB 25). However, other deposits containing wasters on Governors Island, where there is no history of ceramic production, generally date to the 1880s (Stone 2016: 20). The concrete feature was exposed in the base of the unit at 10.3 - 10.6 feet ASL in the northern and eastern parts of the unit (see Photo 1).

It was noted that the stratigraphy documented in EU 1 was quite different than the north profile of its adjacent exploratory data recovery trench, which was homogeneous. Therefore, two samples of the homogeneous deposit from the exploratory data recovery trench were also screened for artifact recovery. This deposit contained fragments of bisque head doll, ceramic, sewer pipe, tar paper, flat glass, clam shell and metal. Potentially temporally diagnostic materials were recovered from this sample; other material was noted and not retained. The *TPQ* of this deposit is 1840 based on the bisque doll sherd (FB 26), a little earlier than material recovered from EU 1.

The concrete surface in the base of EU 1 was not level or even. The concrete extended into the north profile of the exploratory trench, but its southern limit was further south than EU 1, and it extended east of EU 1 as well. Further, it appeared there was a separation with at least two pieces of concrete *in situ*. Therefore, the backhoe was directed to remove additional material from the levels above the concrete to identify a clear edge of the concrete within the limits of the planned contractor excavation footprint. Once the overburden was removed and the area was cleaned by hand, it was clear that there was no real edge to the concrete at all. Not only was the top of the concrete not a level surface, it did not appear to even be a surface at all. It looked more like an excess pour of concrete that trailed off to the south and east. Therefore, the backhoe was directed to pry off the concrete, if possible. This proved the concrete was, in fact, an overpour from around a circular structure such as a catch basin or manhole cover which was not present. There was a semi-circular ridge where the concrete was thickest, indicating the source of the overpour. An intact "EMPIRE" marked brick was adhered to the underside of the concrete (see Photo 2).

It was concluded this concrete feature was not archaeologically significant, and there would be no further need for hand excavation. As follow up, the area would be monitored during contractor excavations for the planned utility lines.

Table 1: Excavation Unit 1 stratigraphy

STR	LEV	ELEVATION ³		SOILS			ARTIFACTS ⁴		
		OPEN	CLOSE	MUNSELL	COLOR	TEXTURE	RETAINED	SAMPLED	NOT RETAINED
1	1	12.8/12.9	12.4/12.4	---	---	---	---	topsoil	---
1	2	12.4/12.4	12.0/12.0	10YR 5/4	yellowish brown	very dry compact sandy silt	waster, flower pot, green bottle glass, clear bottle glass, leather?	---	corroded nails, brick, coal, flat glass, sewer pipe
1	3	12.0/12.0	11.5/11.5	10YR 5/6	yellowish brown	loamy silt	ceramic, button, amber glass, butchered bone	---	corroded nails, corroded metal, coal, brick, flat glass, concrete, tar paper
1	4	11.5/11.5	11.0/11.0	10YR 4/6	dark yellowish brown	sandy silt	celluloid film	---	sewer pipe, corroded nails, slag, cinder, flat glass, coal
2	1	11.0/11.0	10.7/10.2	10YR 6/3	pale brown	coarse sand	metal strip, ceramic, fish scale	bath tile	corroded metal, flat glass, brick, corroded nails or wire, asbestos?
3	1	10.7/10.2	10.3/10.0	10YR 4/4	dark yellowish brown	loose silty sand	bottle finish, wood, ceramic	---	flat glass, corroded metal, bath tile, brick

³ Elevations are in feet above sea level. Two elevations were recorded for each level; one from the north and the other from the south. This column lists N/S.

⁴ All artifacts are fragments or sherds, unless otherwise specified. The complete inventory of retained artifacts is in Appendix E.

Data Recovery 2 – Post Hospital elements - EU 2, 3 & 4 - Areas 5 & 6

Excavation Dates: 11/25-27, 12/3-4 & 12/2019, 2/26-27, 11/18 & 12/2-3/2020 and 5/20-21/2021

Portions of the former Post Hospital were exposed during excavation for four different utilities within the East Courtyard. These were SW CB 4 - 112 Trench, 111 SW Trench, Secondary Electric 112, and trenches for Area Drains 1 – 3. The initial discovery was within the SW CB 4 - 112 trench where part of a three-course brick wall was exposed. This finding prompted consultation and creation of a data recovery plan which included two excavation units. The DRP specified that, should additional similar elements of the hospital be subsequently identified during monitoring, they could be similarly handled. Indeed, additional elements of the former Post Hospital were later identified during excavation for the 111 SW Trench, the Secondary Electric Trench and in Area Drain (AD) excavations (see Figure 6). Ultimately, one more excavation unit was added. Several of the exposed elements were partially preserved and others were documented and removed to make way for construction.

The storm drainage excavation for CB 4 - 112 Trench would encompass the footprint of pre-construction Test 4 which had exposed part of a mortared brick wall, likely in the fill, at elevation 12.8 feet ASL (approximately 3.2 feet/97 cm below ground surface). The construction excavation exposed an *in situ* wall segment which was three courses wide, oriented in the east-west direction and thought to possibly represent the southern foundation wall of the former Post Hospital. It was found at 11.8' ASL (approximately 3.2 feet/98 cm below ground surface at the time of excavation). This storm drainage excavation was planned to extend down to elevation 9.2' ASL (6 inches below the invert of CB 4), thereby necessitating data recovery.

Initial examination of the brick wall feature included probing the face of the brick to the north to determine if the feature was a wall or merely a section of displaced brick or another feature entirely, such as a drain. The brick continued solidly beneath the depth of the shovel blade, and exploration was stopped to consult with the client, TGI, SHPO and LPC and to develop a sound approach to data recovery. The Data Recovery Plan included two archaeological excavation units to recover data about the wall: one on the interior and one on the exterior (see Appendix C). Excavation revealed the footing of the wall as well as an additional parallel wall, one course wide, located approximately 2.3 feet (70 cm) to the north (see Photo 3).

The two excavation units (EU 2 and EU 3) measured 3 feet (91 cm) square and abutted opposite sides of the three-course wide brick wall. EU 2 was located on the northern side of the brick wall, and EU 3 was located to the south of it, offset 0.8 feet (24cm) east of EU 2 (see Figure 6). Excavation of EU 2 exposed another brick wall, one course wide, which was roughly parallel to the larger wall and located 2.3 feet (70 cm) to the north. Upon completion of EU 2 and EU 3, the two exposed brick walls were fully documented.

The larger three-course wide brick wall was constructed in a running bond pattern. There was a concrete spread footer on its south side (exterior) supporting the five upper courses of brick that remained. The western part of the exposed footer was partially covered with what looked like an overpour of mortar (see Photo 3). It was loose and friable. The base of the concrete was the base of the excavation in this portion of the storm drainage line, elevation 10.1 feet ASL. The northern side of the wall did not contain a spread footer, although there was some concrete present beneath the five courses of brick. It is possible a spread footer had previously existed there but was somehow compromised. Some roots found protruding from a void at the base of the feature suggest a tree could have undermined or destroyed a possible concrete footer at the north side of the wall (Photo 4). However, the remaining roots did not seem large enough to have affected the concrete. Therefore, it seems most likely this was the way the wall was built, and the roots later found the path of least resistance.

The one-course wide brick wall in EU 2 was also in a running bond pattern. As described in the excavation unit stratigraphy below and presented in Table 2, a coal ash deposit was identified to the

north of this wall. A segment of a similar wall at a similar orientation was documented during excavation monitoring for CB 4, approximately 8 feet (245 cm) to the northwest at 11.9 feet ASL. That wall segment was left *in situ* and also contained dense coal ash on one side (see Photo 5). A small-diameter metal pipe can be seen near the base of the bricks. It was at a slight angle to the brick and, if placed after the brick, would have compromised the wall. That may be the reason only part of it was still present in that location. A clay pipe was running parallel to the metal pipe but was removed prior to the photograph. The material on the north side of the wall was therefore all pipe trench fill. A sample of the ash was screened for artifact recovery and had a *TPQ* of 1875 (FB 32) based on two glass sherds.

EU 2 was excavated in two strata from elevation 11.3 to 9.2 feet ASL. Stratum 1 contained five levels of dark yellowish brown (Munsell 10YR 3/6 or 4/6) sandy silt. The upper two levels contained fragments of asbestos and, therefore, were not screened for artifact recovery. Level 3 excavation exposed the top of the second brick wall, one course wide, at elevation 11.3 feet ASL. The unit was then expanded northward one foot north of that wall. This second wall had been previously compromised prior to burial so that the exposed surface was not level. The lowest portion was at elevation 10.0 feet ASL. Subsequent excavation in Stratum 1 was confined to the southern half of the unit, between the two brick walls. The northern part of the unit, north of the wall, was designated as Stratum 2. It was excavated in two levels. Each was coal ash; however, Level 1 was black (Munsell 10YR 2/1) and Level 2 was pink (Munsell 7.5YR 8/3).

Retained artifacts from the lower levels of Stratum 1 included two sizes of bathroom-type hexagonal tile, a smoking pipe stem and a possible sewer pipe or earthenware sherd. The *TPQ* of 1850 comes from the pipe stem (FB 35). However, artifacts noted, but not retained, include brick and fire brick fragments, safety glass, corroded metal, corroded nails, a piece of leather and one sherd of clear flat glass. The safety glass updates the *TPQ* to 1892 (Miller et al. 2000: 9). No cultural material was present in Stratum 2, save the coal ash and possible decaying concrete.

EU 3 was excavated in five levels within one stratum. All material was fill (see Table 3). The soil ranged from dark yellowish brown to strong brown (Munsell 10YR 4/6, 7.5YR 4/6, 7.5YR 5/6 & 7.5YR 5/4) silt with some sand in the upper level. Due to its proximity to an active building downspout, the deposit was extremely waterlogged, hence the variable Munsell readings. The deposit was screened for artifact recovery. Recovered artifacts were all in Level 2 and include a curved glass sherd, small piece of copper alloy sheeting and several pieces of mortar or plaster (FB 36). Other artifacts noted in the EU 3 fill, but not retained, include brick and fire brick fragments, sewer pipe fragments, coal, corroded nails and a small strip of cut wood. Therefore, based on the fire brick, the fill likely dates from no earlier than the late-19th century. Artifacts became less dense with depth. By Level 4, virtually no cultural material was present, and there was none at all in Level 5.

The mortar sample from the fill was taken to a presentation on mortars by John Walsh, Senior Petrographer and President of Highbridge Materials Consulting, Inc². Mr. Walsh talked about the types of information that can result from analysis of mortars collected at archaeological sites from fill contexts. He briefly examined the 4 pieces and remarked on their variability. Surprisingly, he noted that one of the pieces is an example of caulking mortar used in British style brick construction. Although the Post Hospital was not built by the British, it is possible this style of mortar was used. However, it equally possible the fill was from elsewhere.

After documentation associated with the two units and the two brick walls, those exposed portions were removed and monitored during construction excavation, and samples of the brick and mortar were retained for Mr. Walsh. Additional monitoring in the area of the former Post Hospital for a storm line closer to Building 111 exposed a similar three-course wide brick wall to that explored in EUs 2 & 3 (see Photo 6). This portion of brick wall may have represented either a corner or the

² Mr. Walsh maintains an archive of mortars from archaeological and historic sites and has agreed to accept samples from the Governors Island Post Hospital. They will be sent to him upon acceptance of this report.

Table 2: Excavation Unit 2 stratigraphy

STR	LEV	ELEVATION ³		SOILS			ARTIFACTS ⁴		
		OPEN	CLOSE	MUNSELL	COLOR	TEXTURE	RETAINED	SAMPLED	NOT RETAINED
1	1	11.0/11.3	10.8/10.9	10YR 4/6	dark yellowish brown	mud	---	---	asbestos
1	2	10.8/10.9	10.6/10.5	10YR 3/6	dark yellowish brown	did not assess due to asbestos	---	---	asbestos, corroded nail, slag, coal
1	3	10.6/10.5	10.1/10.4	10YR 3/6	dark yellowish brown	sandy silt	ceramic tile, sewer pipe?	---	corroded nail, brick and brick fragments, fire brick, clear flat glass, slag
1	4	10.1/10.4	9.7/9.7	10YR 4/6	dark yellowish brown	silty sand fill	ceramic tile, smoking pipe stem	---	corroded nail, corroded metal, fire brick, 1 flat glass
1	5	9.7/9.7	9.2/9.2	10YR 4/6	dark yellowish brown	sandy silt	---	---	safety glass, brick and brick fragments, fire brick, leather
2	1	10.3/10.2	10.2/10.0	10YR 2/1	black	coal ash	---	---	slag, cinders
2	2	10.2/9.2	10.0/9.2	7.5YR 8/3	pink	coal ash & crushed concrete	---	---	---

Table 3: Excavation Unit 3 stratigraphy

STR	LEV	ELEVATION		SOILS			ARTIFACTS		
		OPEN	CLOSE	MUNSELL	COLOR	TEXTURE	RETAINED	SAMPLED	NOT RETAINED
1	1	12.3/12.3	11.6/11.4	---	---	loose material	---	---	---
1	2	11.6/11.4	11.3/11.2	10YR 4/6	dark yellowish brown	wet sandy silt	curved glass	plaster?	2 corroded nails, fire brick, coal, caulking? 1 wood strip, sewer pipe
1	3	11.3/11.2	10.9/10.8	7.5YR 5/6	strong brown	silt	---	---	decaying mortar /plaster, 1 corroded nail, 1 fire brick
1	4	10.9/10.8	10.7/10.3	7.5YR 4/6	strong brown	wet silt	--	---	1 fire brick, 1 plaster, mica/schist toward bottom of level
1	5	10.7/10.3	10.1/10.1	7.5YR 5/4	strong brown	silt	---	---	less mica/schist than above

³ Elevations are in feet above sea level. For EU 2, the two elevations listed for each level represent one from the east and the other from the west. For EU 3, four elevations were recorded for each level and the highest and lowest are listed here.

⁴ All artifacts are fragments or sherds, unless otherwise specified. The complete inventory of retained artifacts is in Appendix E.

articulation of the brick wall to a brick column. The portion of the brick wall within the south trench profile contained a corner that angled into the unexcavated area beyond the profile toward Building 111 (see Photo 7 and Figure 8). The visible part of that end of this wall segment may have terminated at that point, 1.01 feet (31 cm) west of the north-south wall segment, because the exposed brick was laid as if that were a façade, but because excavation was not going further towards Building 111 there, it was not exposed to confirm. This portion was four courses wide, further adding to the speculation that this was a different element. The top of the 111 SW Trench brick wall, the portion where the possible brick column was located, was identified at 14.8 feet ASL at its highest point in the south trench profile and extended down to 11.8 feet ASL in the base of the trench. This segment extended from profile to profile and measured 6.7 feet (204 cm) across the trench. The base of the wall was encountered 10.75 feet ASL, slightly higher than the 10.2 feet ASL of the original segment exposed in EUs 2 & 3. However, both had a similar concrete footer. Here it extended beyond the bricks toward the west. The fill surrounding the north-south wall was devoid of cultural material. A planview and profile were drawn and photographs taken to document this section of brick wall. Samples from this section of brick and mortar were also taken for Mr. Walsh, and the wall was removed to make way for construction.

As the 111 SW Trench continued westward to the corner of Building 111, a small additional section of three-course wide brick wall on top of a concrete footer was also identified running north-south at 12.65 feet ASL. The base of it was at 11.4 feet ASL. This piece measured only 1.1 feet (33 cm) across. It was unclear at the time if this section had been previously displaced because it was within a stratum that contained demolition debris. The section was preserved in place temporarily until excavation for connecting area drains could take place. During excavation for AD 2, this small piece of wall was re-exposed and indeed proved to be displaced material that was part of the fill for a pipe which was exposed at the base of excavation.

Monitoring excavation for the secondary electric connection to Building 112 enabled documentation of additional sections of the hospital, including more brick wall and the addition of a bluestone floor element. The brick wall here too was a corner, but most of it remained buried in the trench profile. The wall crossed the trench, measuring 6.3 feet (192 cm) long north-south (see Photo 8 with trowel pointing north and to the corner in the profile). This section of wall was one course wide and partially covered with stone at an elevation of 12.3 feet ASL. Only a portion of the stone surface was visible extending along the profile in the eastern part of the trench extending at least 7 feet (213 cm) from the brick wall. Although the stone was clearly a surface, it was not level, and it sloped downward into the unexcavated base of the trench and may have been cracked at that point. The overlying matrix was dark yellowish brown (Munsell 10YR 4/6) fill which contained fragments of brick, mortar and other demolition debris, but no temporally diagnostic artifacts were observed. No further excavation was required here, and both the brick and stone elements were preserved *in situ* with the new electrical duct resting on them.

The excavation for the secondary electrical duct bank continued at the same elevation eastward until it turned the corner between the “L”s of Buildings 111 and 112. After turning the corner, excavation was required to go deeper toward Andes Road. Additional stone flooring was exposed on either side of that turn at 12.4 feet ASL. Two sections of bluestone floor were exposed spaced approximately 5 feet (152 cm) apart (see Photo 9). A sample of the material in that gap was screened for artifact recovery and had a *TPQ* of 1876 based on a glass bottle finish (FB 47). No temporally diagnostic material was recovered from the fill above the level of the bluestone. Because the new electrical duct had to dip down, a 3-foot (91 cm) wide section of the bluestone was cut out. A sample was retained. This cut-out was used to place an additional excavation unit to examine the deposit beneath the floor.

EU 4 was placed within the cut-out of the flooring that would be used by the contractor to install the conduit. The top of the bluestone was at 12.4 feet ASL and the bottom was at 12.0 feet ASL. EU 4 was excavated in two strata. Stratum 1 was merely a cleaning out of the concrete and stone chips

imbedded in the matrix after saw cutting. Stratum 2 was very compacted strong brown (Munsell 7.5YR 4/6) silty sand, and it was excavated in two arbitrary levels. No temporally diagnostic artifacts were present. Level 1 contained some small brick fragments, mortar, a few pieces of coal and two corroded nails which were not retained. Level 2 contained no cultural material. The base of excavation was at 11.0 feet ASL.

The final section of the Post Hospital exposed during the Spa project was within the three area drain trenches and included both brick and stone elements at 12.6 feet ASL (see Photo 10). Here, the elements were articulated with the brick abutting the bluestone. The bluestone was exposed in AD 1 – 2 Trench and continued into the north profile, but it ended within the excavation area approximately 6.4 feet (195 cm) southward and measured up to 4.5 feet (137 cm) east-west. There was a 4-inch (10 cm) thick layer of concrete over the bluestone here. The brick wall segment was present in both AD 1 – 2 and AD 2 – 3 Trenches. It was three bricks or 1-foot (30 cm) wide east-west and totaled 10 feet (305 cm) in length. The deposit to the west of the brick was shoveled by hand after a section of concrete and stone floor was removed. The brick extended down 1.4 feet (43 cm) to a concrete footer which was 0.9 feet (27 cm) high. Samples of soil were screened for artifact recovery, one from above the floor and the other from the level beneath the stone adjacent to the brick wall that was hand shoveled. Both had minimal cultural material with an inferred *TPQ* of 1880s coming from a ceramic waster retained from the deposit beneath the floor (FB 50). Although the actual manufacture date of the sherds is earlier, deposits on Governors Island containing wasters date from the 1880s (Stone 2016: 20).

In hindsight, earlier monitoring also exposed portions of the former Post Hospital. A concrete surface was exposed after the removal of a large tree in the East Courtyard, part of a one-course wide brick wall with coal ash to one side was exposed during the previously mentioned CB 4 excavation and some broken concrete with a few embedded bricks was documented in CB 2 - CB 4 Trench. Both remain *in situ*. The removal of a large tree in the East Courtyard unearthed a large quantity of loose, whole, unmarked bricks mainly adhering to the root ball. Once removed, the tree pit was examined. It measured approximately 20 feet (6 m) north-south by 16 feet (5 m) east-west and was 2.5 feet (76 cm) deep. The pit contained a large boulder which was likely part of the fill deposited when the hospital had been demolished. Once the boulder was also removed, the pit was examined to determine if any *in situ* deposit remained. A concrete surface was present at approximately 11.7 feet ASL. The concrete was troweled and probed to determine its extent and any possible relationship with the brick. The concrete was in two layers. The top layer was approximately 1 inch (2.5 cm) thick, and the bottom layer measured 3 inches (8 cm) thick (see Photo 11). The concrete did not appear to be articulated with the brick. No deeper excavation was planned for this area, and the feature re-buried and thus preserved. Additional concrete was documented in the west profile of CB 2 – CB 4 Trench beginning directly north of the CB 4 Trench brick wall segment and adjacent pipe fill, and extending northward for approximately 13.5 feet (411 cm). The concrete was broken in pieces measuring between 1 and 4 feet (30 - 122 cm) across. It was not level and ranged in elevation from 11.2 feet ASL closest to the brick wall segment in CB 4 Trench to 11.9 feet ASL at the top of the stratum at the northern end of the CB 2 – CB 4 Trench. This corresponds to the elevation of the top of the truncated brick wall identified in CB 4 Trench. The concrete was underlaid by a matrix containing many large boulders.

Discussion

Governors Island was home to a number of hospitals over time. The Post Hospital was formerly located within the Spa project APE in an area previously depicted as vacant land on historic maps. It was constructed prior to 1879 and stood until the early 1930s when it was razed to make way for the extant buildings. Questions regarding the construction methods, whether a distinct foundation is present archaeologically and whether the structure, along with its contents were demolished in place and buried, have been outstanding.

Historic maps depict the hospital location, and historic photographs depict the style of the building (see Photos 12 & 13). It was rather ornate with multiple verandas and wings. The historic photos depict a large number of brick columns supporting the wooden verandas. The superstructure also appears to have wooden siding. The National Park Service, quoting the Army Historic Context Study, describes “Nineteenth-century military hospitals generally had a central block with ward wings and two-story verandas around the building....” (NPS 2007: 67). This Post Hospital seems no exception. However, comparison of the historic images with the historic maps and reconciliation with the archaeological findings don’t necessarily jive.

The 1902 Hilton map is the only detailed depiction found that shows not only the building footprint, but also the verandas and a footpath from the main block of the building leading southward (see Figure 7). The map depicts one veranda on the west side and two on the south side in front of each wing, as well as one on the west side of the wing that extends south toward Andes Road. However, while the historic photographs depict a similar situation on the south side of the building, they depict verandas encircling the north, west and east sides of the hospital. The footpath can be seen in the photograph of the south façade (Photo 13) at the face of the two staircases leading down from the west-facing veranda. However, in the photograph, it appears to end adjacent to the southernmost point of the hospital and, on the map, it continues to Andes Road. One other discrepancy between the map and photographs is the symmetry of the hospital. Looking at the north façade photograph (Photo 12), an equal number of windows is visible on both wings indicating they are the same length, whereas on the map, the distances between the central block and the east and west extent of the wings differs. The eastern wing measures 50 feet (15 m) on the map, but the western wing measures 46 feet (14 m). However, if the depicted western veranda is included in the measurement, then it measures 50 feet (15 m). Clearly, there was some liberty taken by the map maker. These liberties seem to have been perpetuated in subsequent maps and photographs as evidenced by the 1928 set (see Appendix A: Figure 9). Other discrepancies are also brought to light by comparing the archaeological findings to the map. The three largest brick elements identified archaeologically align closely with the mapped hospital, but the three small brick elements do not. This could be because the smaller elements represent interior walls or containments and one of those elements, the first identified in the data recovery, aligns with the center of a veranda on the map, thereby calling into question its purpose. There is also some discrepancy between the floor elements. The two northern elements are within the footprint of the hospital itself, but the three clustered near the front of the former building straddle the building, veranda and footpath when the map is overlayed. It is possible there was once a continuous surface in that area, or even perhaps throughout the hospital complex, but it is clearly not depicted on the historic photograph. In summary, although the 1902 Hilton map is quite accurate in its location of the former Post Hospital, it is not accurate in its details.

No clear relationship between the brick and concrete elements regarding construction methods was identified, although two locations contained abutting elements. No clear archaeological evidence of footings for the structure were identified, save the possible brick footing located at the easternmost section of wall on its south side. That could represent a building support footing rather than a veranda support based on its location. Regarding demolition, it appears the building contents were removed and the structure was razed and its constituent construction materials partially taken off-site prior to burial of the remnants under the remaining demolition debris fill and subsequent landscaping fill. The area fill contained several larger sections of disarticulated mortared brick, including that found in Test 4 and in the AD 2 - 111 Trench, and there were many loose bricks in the fill throughout the area. However, no other building materials, such as wooden elements from verandas, siding or stairs depicted in the historic images, were documented. Although no clearly hospital-related artifacts were found within the excavations for the Post Hospital structural elements, a bottle embossed “USA MEDL DEPT” was recovered from the fill to the north of the former hospital (FB 17). This was the only artifact clearly related to medical use.

Features

Twenty-three archaeological features were identified during the Governors Island Spa project. In addition to the remains of the Post Hospital (detailed with Data Recovery 2 above) and the Data Recovery 1 concrete feature, other features include remnants of the former Carder Road before it was relocated north of the project site, eleven defunct utility encasements, three defunct catch basins, a pair of vertical wooden posts, two twentieth-century sand boxes and three defunct concrete footings (Table 4).

Table 4: Archaeological features documented during spa excavation and pre-construction testing

FEATURE	AREA(S)	DETAILS
Pair of vertical timber posts	Area 1	Found in West Courtyard Tunnel Trench Segment 3
Defunct utility encasement	Area 1	Found in Existing Water Exploratory Trench
Defunct concrete overpour	Area 2	Concrete overpour with manhole access shape retained Originally thought to be concrete surface (see Data Recovery 1)
Old Carder Road	Areas 2, 3, 4, 5	Road base and surface of ca. 1879 former Carder Road alignment
Defunct utility encasement	Area 3	Found in CB 11 Trench, at north side of Old Carder Road route
Sand box	Area 4	1970s era sandbox found in Pool Trench 1
Sand box	Area 4	1970s era sandbox found in Pool Trench 1
Concrete footing	Area 4	Found in Pool Trench 1 below western sandbox footprint
Concrete footing	Area 4	Found in Pool Trench 1 below western sandbox footprint
Concrete footing	Area 4	Found in Pool Trench 1 below eastern sandbox footprint
Defunct utility encasement	Area 4	Found in NE Tunnel Pit Trench, at north side of Old Carder Road route
Defunct utility encasement	Area 4	Found in Pool Trench 1, at north side of Old Carder Road route
Defunct catch basin	Area 4	Found in CB 6 Trench, at south side of Old Carder Road route
Defunct catch basin	Area 4	Found in Pool Trench 1, at south side of Old Carder Road route
Defunct catch basin	Area 4	Found in Pool Trench 1, constructed of white concrete brick
Post Hospital elements	Area 5	Three brick walls and two flooring areas (See Data Recovery 2)
Defunct utility encasement	Area 5	Found in CB 2 Trench, at south side of Old Carder Road route
Defunct utility encasement	Area 5	Found in SW NE 112 Trench
Defunct utility encasement	Area 5	Found in SW NE 112 Trench
Defunct utility encasement	Area 5	Found in CB 8 Trench
Defunct utility encasement	Area 6	Found in 111-112 Electric Trench
Defunct utility encasement	Area 6	Found in 111-112 Electric Trench
Defunct utility encasement or	Area 6	Found in 111-112 Electric Trench

Old Carder Road – Areas 2, 3, 4 & 5

The historic alignment of Carder Road once traversed the entire Spa project APE, cutting through the middle of the planned large pool in the East Courtyard and the center of the West Courtyard (see Appendix A: Figures 6 and 7). Sections of Old Carder Road were found during monitoring for utility trenches in the West Courtyard (Areas 2 and 3) and the East Courtyard pool (Areas 4 and 5) (see Figure 9). The surface of the former road was generally found at 8.95 to 11 feet ASL.

The Old Carder Road feature was identified running northeast to southwest through the West Courtyard. It was documented within Areas 2 and 3 in several trenches: CB 12 Trench, the southern portion of CB 11 Trench, the northern portion of SW Trench 1 Segment 3 and SW CB 9-11 Trench. The feature within these trenches contained two strata. The lower stratum was dense brick, mortar and gravel fragments which acted as a dense road base. The upper stratum was a thinner asphalt and tar surface that covered the dense road base. The lower road base stratum measured 13.5 feet (4.1m) wide, and the upper stratum asphalt and tar surface measured 20.5 feet (6.2 m) wide from north to south before tapering off into fill, as exposed in the east profile of CB 12 Trench. It appears the upper level was effectively “overpoured” across the road base in this area. This was the only location where the apparent full extent of the former roadway was exposed (see Photo 14 and Figure 10).

The feature was cleaned and probed with a trowel in profile within CB 12 Trench. It did not contain any artifact inclusions. The layer of dark asphalt and tar ranged from 0.1 to 0.4 feet (3 – 12 cm) thick, while the lower stratum dense brick, mortar and gravel fragment road base was 0.8 to 1 foot (24 - 30 cm) thick (Table 5). The feature’s surface was exposed at 9.25 feet ASL in SW CB 9-10 Trench and trowel scraped. The dark asphalt and tar upper stratum identified here formed a dense road surface without artifact inclusions. After documentation, the upper stratum was removed during trench excavation to expose a lower stratum road base of dense brick, mortar, and gravel, consistent with that noted in CB 12 Trench and other Area 2 and 3 locations.

The Old Carder Road feature was also exposed in the East Courtyard across the southern portion of Area 4. Much of the East Courtyard remnants of the Old Carder Road feature were exposed in Pool Trench 1, which was excavated and backfilled in multiple stages across the planned pool area. Compacted gravel, asphalt and coal ash were identified as remnants of Old Carder Road in the southeast corner of Pool Trench 1, appearing at approximately 11 feet ASL or 1 foot (30 cm) below ground surface. The *TPQ* of this deposit is 1875 based on a bottle glass sherd collected from the lower road base stratum there (FB 16). A nearby similar stratum also had the same *TPQ* (FB 20). This date conforms with ca. 1879 construction of Old Carder Road across this area.

The compacted gravel, asphalt, and coal ash that identified Old Carder Road material was not found further to the east in the Tunnel Trench Pit to 111, CB 6 Trench, or CB 7 Trench, suggesting Old Carder Road was previously disturbed or removed within 25 feet (7.62 m) of Building 111. Similar asphalt and gravel material was found loosely distributed in the eastern portion of CB 1 Trench at 8.95 feet ASL, immediately east of Building 112, suggesting Old Carder Road ran through this area but was previously disturbed, likely by the construction of Building 112.

All of these sections of Old Carder Road were removed during the course of excavation; however, in many locations, the feature continued into trench profiles indicating portions of it remain preserved.

Table 5: West Courtyard Area 3, Old Carter Road feature stratigraphy (CB 12 Trench)

STRAT	DEPTH FT ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	11.75'-11.25/ 0-0.5'	10YR 4/3 SaLo	A horizon	Found below landscaped ground surface.
2	11.25'-5.9/ 0.5'-5.85'	7.5YR 4/4 SiSa	Fill	Small brick fragment and shell fragment inclusions, well-distributed. Cut by Stratum 3/Old Carter Road.
3	10.25'-9.15/ 1.5'-2.6'	Asphalt, tar and gravel	Old Carter Road surface and base.	Asphalt, tar, and gravel surfacing atop 0.8 – 1' thick dense layer of brick and mortar fragments and gravel. No artifact inclusions.

It should also be noted that Andes Road also had a shift in alignment at the time the Post Hospital was built. No evidence of the historic alignment was identified. However, there were three locations beneath the current Andes Road where buried asphalt was documented.

Defunct Utility Encasements and Catch Basins - Areas 1, 3, 4, 5 & 6

Defunct utility encasements and catch basins were found in several Areas of the Governors Island Spa project. The utility encasements were typically of brick construction, with holes cut in some areas to allow utility pipe entrance to the interior, rectangular in form and measuring less than 3 feet (90 cm) per side. The catch basins were typically concrete and generally larger than 3 feet (90 cm) per side, with square or circular manhole access from above where the upper portions were preserved. It was suspected some of these utility features may have been placed at the edge of Old Carder Road as utility or drainage support to the roadway (see Figure 9). Figure 9 depicts these features in relation to the historic road alignment. Most of these features do, in fact, align with the sides of Old Carder Road. Others may be associated with either the former Post Hospital or the extant buildings and roads.

Area 1

A 2 foot-wide by 1.5 foot-high (60 x 45 cm) square mortared brick utility encasement was exposed in the Existing Water Exploratory Trench's southeast profile. This encasement's squared sides were oriented northeast-southwest, perhaps corresponding to the northeast-southwest alignment of historic Carder Road, identified proximately 45 feet (13 m) to the south. It alternatively might have been associated with a concrete lightpost base immediately to its south. The encasement was documented in the southeast trench profile from 1.1 to 2.6 feet (91 – 152 cm) below ground surface (10.5 to 9 feet ASL) within fill. Its northwest corner was located 19 feet (5.8 m) from the trench's northeastern terminus. No associated utility lines were documented.

Area 3

A 2-foot wide by 2-foot high (60 x 60 cm) square mortared brick utility encasement was present in the east profile of CB 11 Trench. This encasement was visible in the trench's east profile below the Old Carder Road layer, from 3 to 5 feet (91 - 152 cm) below ground surface (8.75 – 6.75 feet ASL) within fill (see Photo 15). Its south side was located 6.5 feet (198 cm) north of CB 11 Trench's south profile. An east-west oriented clay utility line ran west from a hole in the encasement, extending into the surrounding brown silty sand fill (Munsell 7.5YR 4/4).

Area 4

Two defunct brick utility encasements were identified in Area 4. One was a 2.5-foot wide by 2.5-foot high (76 x 76 cm) square mortared brick utility encasement that was identified in the east profile of NE Tunnel Pit Trench, 18 feet (5.49 m) west of Building 111. This encasement was found at 11.7 feet ASL/1.3 feet (40 cm) below ground surface, below a thin layer of asphalt and gravel that may indicate a former ground surface had lain atop the encasement. A defunct, broken clay utility pipe was extant extending west from a hole in the encasement for less than 1 foot (30 cm). The second encasement measured 0.7 feet by 1.6 feet east-west (21 x 49 cm), found within excavation for Pool Trench 1, and located 2 feet (61 cm) east of Building 112. Both Area 4 defunct encasements were located on the north side of Old Carter Road.

Three defunct concrete catch basins were also identified in Area 4. Two of these defunct catch basins were associated with a defunct drainage system that previously surrounded Building 111. One catch basin was located in CB 6 Trench at 10.35 feet ASL, beginning 1 foot (30 cm) west of Building 111. It was poured concrete and measured 5-feet square (154 cm). The second defunct concrete catch basin was identified during Pool Trench 1 excavations. It was located approximately 14 feet (4.27 m) west of Building 111 and 2 feet (60 cm) north of the previously mentioned defunct catch basin. This catch basin was found approximately 11 feet ASL and appeared to be associated with a defunct clay utility pipe that was exposed running southwest-northeast across the east side of Area 4. The third Area 4 defunct catch basin was found in the center of the Eastern Courtyard

beginning at 0.5 feet (15 cm) below surface (10.45 feet ASL) in Pool Trench 1 excavations. This shallow catch basin was constructed of white concrete block without mortar, and its upper level that would have likely preserved a collar or squared entrance had been previously impacted and removed. All three defunct catch basins were found within silty sand fill soils.

Area 5

Four defunct utility encasements were identified in Area 5. One, a 2.5-foot wide by 2-foot high (76 x 61 cm) brick utility encasement, was identified in the center of CB 2 Trench's south profile. This brick utility encasement began at 1.8 feet below ground surface or 11.2 feet ASL, at the same level of nearby asphalt and gravel-laden material thought to be associated with a previously impacted portion of Old Carder Road.

Two Area 5 brick and concrete defunct utility encasements were found abutting the north foundation wall of Building 112's "L" within SW NE 112 Trench. One was a 3-foot by 2-foot (91 x 61 cm) brick rectangular encasement with poured concrete cap found at 13.8' ASL. The second was a 3-foot by 1.7-foot (91 x 52 cm) brick rectangular encasement with poured concrete cap found at 11.2 feet ASL. Both of these encasements extended north from, and were adhered by cement and brick mortar to, the Building 112 foundation wall, indicating they were related to the building's utilities.

The fourth Area 5 defunct utility encasement was found loose within historic fill soil in CB 8 Trench. It was revealed after the trench's south profile slumped in overnight following heavy rain, revealing a 1.7-foot wide by 1.5 foot tall (52 x 46 cm) rectangular mortared brick encasement at 12.4 feet ASL, although this depth was reflective of the slumped profile fill soil. No utility lines were uncovered associated with this encasement.

Area 6

Three defunct utility features were identified in Area 6, including two possible utility encasements and a possible brick manhole. One encasement was found abutting the east foundation wall of Building 112's "L". This rectangular encasement measured 2.6-feet east-west by 4-feet north-south (79 x 123cm), its southern boundary obscured by the slope of the 111-112 Electric Trench south profile. It featured two-course thick mortared brick walls and a poured concrete top at 12.5 feet ASL and a poured concrete bottom at 10.5 feet ASL, visible through the partially destroyed north face. The west side of this encasement abutted the stepped Building 112 foundation wall, and it was overlaid by the asbestos-wrapped steam pipe connecting Buildings 111 and 112. As the south boundary was not exposed due to the limits of trench excavation, it is possible the feature continued south and acted as a larger encasement or a concrete-floored brick drain. No extant utility lines were identified running to or from this encasement.

The second Area 6 utility encasement was found abutting the west foundation wall of Building 111's "L". This rectangular encasement measured 3.5 feet east-west by 1.6 feet north-south (107 x 49 cm), although its northern boundary was not exposed due to the slope of the 111-112 Electric Trench north profile. This encasement was formed of poured concrete with a 1.5 foot (46cm) squared opening accessible from above at 13.1' ASL. It abutted the Building 111 foundation, with the stepped foundation cut back 1.1 feet (34cm) to allow room for the encasement. The asbestos-wrapped steam pipe connecting Buildings 111 and 112 passed above this defunct utility feature. No extant utility lines were identified running to or from this encasement.

The third Area 6 encasement, a 4-foot wide (121 cm) mortared brick utility encasement or manhole, was found in 111-112 Electric Trench at 12.25 feet ASL. Its northern side was not exposed by project excavation, so its full dimensions cannot be confirmed, but its mortared brick form appeared similar in construction to the other squared encasements identified across the project area. Only 1.6 feet (49 cm) of this encasement's vertical depth was exposed. A partially destroyed concrete pour was found west of and abutting this encasement at 12.25 feet ASL, likely remnants of concrete encased

defunct utilities that ran into this brick utility encasement. The soil matrix overlying and filling the interior of this encasement included pull-tab soda cans, suggesting mid-20th century or later deposition.

Sand Boxes – Area 4

Two large sand boxes were identified in the northern part of Area 4 within Pool Trench 1 (see Figure 11). They dated from the 1970s and were previously depicted on the pre-construction site survey. The western sand box measured 35 feet north-south by 45 feet east-west (10.7 x 13.7 m), and the eastern sand box measured 35 feet north-south by 20 feet east-west (10.7 x 6.1 m). The bases of the sand boxes were found at approximately 8.6 feet ASL. A number of children's toys were documented in the sand but not retained. These include an action figure, a plastic truck, a plastic bubble bottle and a rubber ball.

Concrete Footings – Area 4

Three large concrete footings were identified in Area 4, within Pool Trench 1. They were all similar in size with dimensions ranging from 4.4 to 6 feet (134 – 183 cm) each side. Two were found adjacent to each other at the northwest portion of the excavation roughly centered within the footprint of the western sand box, separated by 10 feet (305 cm) (see Figure 11). The two were slightly different in size, but both had a 1-foot (30 cm) square opening in their middles. The footings were found buried approximately 1 foot (30 cm) deep (11.5 feet ASL). The third concrete footing was similar in form and found at the eastern sandbox, near the west side of Pool Trench 1 East Extension. The purpose of these footings remains unknown. No historic map-documented structures are depicted in that area.

Vertical Posts – Area 1

Two vertical timber posts were documented in Area 1, within West Courtyard Tunnel Trench Segment 3. These two rounded, 8-inch diameter (20 cm) timber posts were visible in the trench segment's south profile. The center of the easternmost timber was located 26 feet (7.9 m) from Building 112 and the center of the westernmost timber was an additional 8.5 feet (2.6 m) further west. The timbers were located along the same east-west axis. Each timber had a jagged top, indicating they were previously broken, appearing at 5.5 feet (1.7 m) below surface (6.5 feet ASL) (eastern timber) and 5.25 feet (1.6 m) below surface (6.75 feet ASL) (western timber). Both timber posts were found within the same brown silty sand fill (Munsell 7.5YR 4/3) found across Area 1 at similar depths, and their jagged tops corresponded to the depth of a stratum change to overlying sandy fill (Munsell 7.5YR 5/6). It is likely the timbers once extended higher but were previously cut and covered by deposition of this sandy fill. The western timber post was dislodged during trench excavation and had a flat cut base 6.5 feet (2 m) below surface (5.5 feet ASL). The eastern timber post was left in place. No artifacts or defunct utilities were found associated with these timber posts. They possibly were related to previous construction or temporary use, but they do not appear to be associated with significant historic structures or features. It is also worth mentioning that the base of the posts was directly above a dense coal ash deposit which extended westward through the West Courtyard. This stratum was documented throughout the West Courtyard and it dates prior to the 1934 building construction.

Pre-Construction Testing Results

Archaeological Test Trenches

Pre-construction archaeological testing for the Governors Island Spa project was specified in the approved archaeological work plan (Appendix A). It included excavation of seven test trenches which were strategically located to identify potential archaeological resources in the most sensitive parts of the project area and/or to ground truth GPR anomalies. Figure 12 depicts the location of the tests⁵. Tests 1, 5, 6 and 7 were located in the West Courtyard, and Tests 3, 4 and 8 were located in

⁵ There were originally to be nine test trenches, but construction site plans changed resulting in the elimination of impacts to two of the locations.

the East Courtyard. Table 6 presents a snapshot of the results of the testing with details about each location below. Three locations tested positive during pre-construction work: Tests 3, 4 and 6. Of those locations, only Test 6 resulted in the need for an archaeological data recovery. A data recovery plan was created to identify the extent, integrity and potential significance of the concrete feature within the project impacts (see Appendix B). The other two positive tests were recommended for monitoring to further evaluate.

Test 1 – Areas 2 & 3

Excavation Date: 7/31/2018

Negative test

Test 1 was excavated in the West Courtyard in the location of a planned storm drain line. Its purpose was to both ground truth a ground-penetrating radar (GPR) anomaly, a void at 3.2 feet (98 cm) below ground surface (approximately 8.3 feet ASL) and to identify possible remains of both a building mapped in 1919 and of the original shoreline (see Appendix A: Figures 4, 8 and 11). No void nor structural remains nor evidence of the original shoreline were identified. The test measured 13.6 feet (414 cm) long, 1.8 feet (55 cm) wide and 4.8 feet (146 cm) deep (approximately 6.7 feet ASL). The upper 4 feet (122 cm) was comprised of mottled strong brown sandy or sandy silt fill (Munsell 7.5YR 4/6 and 7.5YR 5/8). This was underlain by a coal ash deposit that extended to the base of excavation. Two samples of it were screened for artifact recovery which resulted in the recovery of a bottle finish and a corroded metal padlock (FB 14) as well as a chicken bone fragment that was noted, but not retained.

Table 6: Results of pre-construction archaeological testing

TEST	POTENTIAL RESOURCE	FINDINGS	RECOMMENDATION
1	GPR void 38" bgs, orig.shore, 1919 Building #67	Not found.	Monitoring
3	GPR tunnel 27" bgs & unknown anomaly 18-24" bgs, 1906 road	Not found. However, test contained some compaction.	Monitoring
4	GPR surface 24" bgs, 1919/1928/1906 hospital	Two courses of part of a possible brick wall or surface, or a displaced section thereof, in the eastern profile of the trench buried approximately 3.2' below ground surface.	No further excavation planned for utility line, monitoring recommended
5	1919/1928 Building #142?	Not found.	Monitoring
6	1867 carpenter shop, 1879 Building #44, 1906 Com Sgt Qrs, 1919/1928 Building #1?	A 9-inch thick layer of concrete throughout most of the trench at 2.8' below ground surface.	Data recovery (see Data Recovery 1)
7	1967 blacksmith shop, 1879 Building #43	Not found.	Monitoring
8	1879 Building #42	Not found	Monitoring

Test 3 – Areas 4 & 5

Excavation Date: 7/31/2018

Positive test

Test 3 was placed in the East Courtyard to provide a window into the planned pool excavation area. Its purpose was to identify two GPR anomalies and remains of the former location of Carder Road as mapped in 1879 and 1906 before it was moved northward to where it exists today (see Appendix A: Figures 6, 7 and 11). One unknown GPR anomaly was expected at 1.5 - 2.0 feet (46 - 61 cm) in the southern end of Test 3 (approximately 11.2 - 11.7 feet ASL). The other was described as a "tunnel" and expected at 2.3 feet (69 cm) deep in the northern part of Test 3 (approximately 10.3 feet ASL). Based on the location of the tunnel anomaly, it could have been part of Old Carder Road.

However, the sources of the GRP anomalies were not found, remains of a possible roadway were identified buried only 1.2 feet (36 cm) below ground surface in the northern 5.3 feet (162 cm) of the test (approximately 11.4 feet ASL). One refined earthenware ceramic sherd, too fragmentary to determine precise production dates, was recovered from this test (FB 13). It was from the interface beneath the buried asphalt and its subbase.

The test measured 24 feet (732 cm) long, 2 feet (61 cm) wide and the depth varied from 2.1 feet (64 cm) deep at the southern end to 6.3 feet (194 cm) in the northern end of the test (approximately 6.3 - 11.1 feet ASL). The variation in depth was due to the presence of boulders toward the base of excavation which created dangerous instability, and the test was stopped. Because the area of this test would be part of the larger pool excavations during construction, it was felt additional information could be collected during construction monitoring. In hindsight, after construction monitoring, it seems likely the series of unknown GPR anomalies in the East Courtyard reflect the presence of glacial boulders.

The other interesting finding in Test 3 is the presence of a compacted layer identified beginning at 2.7 feet (82 cm) below ground surface (approximately 10.2 feet ASL). It was mottled strong brown or yellowish brown (Munsell 7.5YR 5/6 and 10YR 5/8) compacted clayey silt or compacted silt. Although no artifacts were observed in this stratum, it contained some cobbles beginning at approximately 4.2 feet (128 cm) below ground surface which became larger with depth, including many boulders (approximately 8.7 feet ASL). This stratum was present directly beneath the paving subbase and continued throughout the parts of the trench that reached that depth, with more in the southern half of the test which was further away from the shore. Archaeological monitoring was recommended as a follow up to this test to further explore the stratum.

Test 4 – Area 6

Excavation Date: 7/30/2018

Positive test

Test 4 was placed in the East Courtyard to identify possible remains of the former Post Hospital as well as a GPR anomaly at 2 feet (61 cm) below ground surface (approximately 13.2 feet ASL), presumed to be part of the former hospital. This is the location of a new storm line. The test measured 16 feet (488 cm) long, 2 feet (61 cm) wide and was excavated to 5.3 feet (162 cm) (approximately 10.2 feet ASL).

Test 4 contained two courses of part of a possible brick wall or surface in the eastern profile of the trench buried approximately 3.2 feet (97 cm) below ground surface (12.8 feet ASL). It was not possible to conclusively determine if the bricks were *in situ* or previously displaced. Only two courses were present over a length of approximately 6 feet (1.8 m), and they were surrounded by loose fill, a possible indication the brick feature was previously displaced. However, the trench was not stable enough for safe entry to evaluate further. A sample of soil from directly above the brick was screened for artifact recovery. One ceramic tile was retained (FB 12). However, the deposit also contained debris that was noted, but not retained. This included brick fragments, window glass fragments, coal, corroded nails and slag. Also of note was a coal ash deposit beneath the northern half of the brick in the base of excavation continuing northward to the north end of the trench. No cultural material was observed in that deposit.

No additional excavation to widen the footprint was planned. However, the trench would be the subject of monitoring to ensure the feature is not further impacted by construction and to document any additional archaeological information that may be unearthed at that time.

Test 5 – Area 3

Excavation Date: 7/30/2018

Negative test

Test 5 was placed in the West Courtyard, in the location of the planned pool, to identify potential remains of a building mapped in 1919 and 1928 (see Appendix A: Figures 8 and 9). No structural

remains were identified. The test measured 23 feet (701 cm) long, 1.5 feet (46 cm) wide and 6.3 feet (192 cm) deep (approximately 5.2 feet ASL).

A defunct utility pipe, possibly previously displaced based on the fact it was not connected to anything at its northern end, was exposed running the length of the test from the south for approximately 10 feet (301 cm) northward at 5.5 feet (168 cm) below ground surface (approximately 6 feet ASL). The fill above the pipe continued throughout the entire trench, also indicating the pipe may have been part of the fill itself or may have been connected further north at some point in the past. The deposit contained an almost entirely intact unmarked stoneware jug (FB 6) and two ceramic sherds (FB 5). These could have been manufactured as early as ca. 1795, based on one of the ceramic sherds (FB 5). However, the deposit also contained, among other debris that was not retained, a brick marked "M B Co," which provides the 1886 *TPQ* (Loatman n.d.). Otherwise, the fill itself contained asphalt fragments, a few clay sewer pipe fragments, brick fragments, cinders and one shell fragment that were noted, but not retained.

The deposit beneath the defunct pipe and throughout the trench, to the base of excavation, was strong brown silty sand (Munsell 7.5YR 4/6) with no cultural material documented. An unusual observation in Test 5 was the presence of a green colored decaying stone found approximately 5.5 to 6 feet (167 – 183 cm) below ground surface (approximately 5.5 – 6 feet ASL). This material was also later documented during excavation monitoring in the vicinity and was considered a relic of the unusually greenish stone material used as fill.

Test 6 - Area 2

Excavation Date: 7/30/2018

Positive test

Test 6 was in the West Courtyard in the location of multiple planned utilities lines to potentially identify structural remains of a series of historic map-documented structures which once stood there (see Appendix A: Figures 5 - 9). The test measured 23.8 feet (725 cm) long, 1.5 feet (46 cm) wide and up to 4 feet (122 cm) deep (approximately 9.2 feet ASL). A 9-inch-thick layer of concrete was found through most of the trench at 2.8 feet (85 cm) below ground surface (approximately 10.5 feet ASL). This seemed likely part of one of the former buildings that once stood on that spot. There were two breaks in the concrete which were excavated by hand to the extent possible for their small/narrow size.

Samples of soil from the two breaks were screened for artifact recovery. Artifacts retained from the western of the two had a *TPQ* of 1850s based on a glass sherd (FB 10). Additionally, brick fragments, corroded nails and coal were noted, but not retained. The soil in the eastern break in the concrete had a *TPQ* of ca. 1860 based on another glass sherd (FB 11). This deposit also contained coal and brick fragments that were not retained. It was concluded these cuts in the concrete feature were likely made to accommodate utility crossings for Building 114 in the 1930s.

A data recovery plan was created to identify the extent and potential significance of the concrete feature within the project impacts (see Appendix B). Results are detailed above with Data Recovery 1.

Test 7 – Area 2

Excavation Date: 7/30/2018

Negative test

Test 7 was in the West Courtyard to the east of Test 6 and also in the location of multiple planned utility lines where two historic map-documented structures once stood (see Appendix A: Figures 5 and 6). The test measured 19 feet (579 cm) long, 1.5 feet (46 cm) wide and up to 3 feet (91 cm) deep (approximately 10 feet ASL). No structural remains were identified. The test contained only one stratum beneath the topsoil, identified as a fill deposit. The soil was dark yellowish brown sandy loam (Munsell 10YR 4/6). The fill contained some building debris and cobbles. A brick marked "Brigham" was documented, and two white ceramic tiles were retained (FB 8).

Test 8 – Area 4

Excavation Date: 7/31/2018

Negative test

Test 8 was in the East Courtyard in the path of a planned storm line. The location is where a historic map-documented structure which once stood (see Appendix A: Figures 6). The test measured 10 feet (305 cm) long, 1.7 feet (52 cm) wide and 2.8 feet (85 cm) deep (approximately 8.7 feet ASL). No structural remains were identified. This test contained just one stratum beneath the topsoil. It was loose mottled strong brown loamy sandy (Munsell 7.5YR 4/6 and 5/6). The deposit contained a large amount of fragmented building debris as well as a piece of red and blue colored plastic. No cultural material was retained from this test.

Monitoring

Archaeological monitoring resulted in the identification of a number of findings that contribute to the understanding of the infilling and soil modification that took place over time on this part of Governors Island. One consistent finding of the Spa project monitoring was the presence of a layer of coal ash through many parts of the site. This deposit has previously been documented at many other locations on Governors Island and is likely the result of spent coal furnace refuse. Information on this stratum and other general results of archaeological monitoring across the project area are presented below, organized into Areas 1-6 (see Figure 3). Areas were created to organize monitoring results together based upon groups of trenches and portions of the project area that shared similar stratigraphy. Sixty-two trenches were documented during monitoring across the six Areas (Table 7).

Area 1 (West Courtyard)

Area 1 is the northern portion of the West Courtyard, between Buildings 114 and 112. It measures 80 feet (24 m) east-west between Buildings 114 and 112 and 60 feet (18 m) north-south, beginning on the south side of Carder Road and extending southward to Areas 2 and 3 (Figure 13). The opening elevations ranged from 9.6 feet ASL in the north rising to 10.75 feet ASL in the southeast corner of Area 1 and to 11.8 feet ASL in its southwest corner.

Nine trenches were excavated in Area 1: Existing Water Exploratory Trench, West Pool 112 Tunnel Trench, West Courtyard Tunnel Trench (excavated in Segments 1-4, beginning on the east side of Area 1 and continuing counterclockwise to form a rectangular trench), Defender CB 2 Trench, West Pool Trench, Sanitary Connection from 114 to Carder Road, Defender CB 2 to Street Trench, Defender CB 2 Connector and West Courtyard Fence Trench. Area 1 excavation focused on installing the West Courtyard pool and its surrounding tunnel, which enabled connection of multiple utilities into Building 112.

Area 1 excavation reached a depth of 4.5 feet ASL (7.3 feet/2.2 m below ground surface) within all four West Courtyard Tunnel Trench segments. Targeted deeper excavation extended to 12 feet (3.7 m) below ground surface or -0.2 feet ASL in the northwest corner at Defender CB 2 Trench for drainage installations and to 9 feet (2.7 m) below ground surface or 2.6 feet ASL in the northeast corner of the Existing Water Exploratory Trench.

The Area 1 general stratigraphy is detailed in Table 8. There was an A horizon measuring approximately 1 foot (30 cm) thick atop multiple layers of silty sand fill. A coal ash fill layer was present in the south side of Area 1, within West Courtyard Tunnel Trench Segment 3. This layer was similar to a 0.75-foot (23 cm) thick band of coal ash found to the south in Area 3, also within similar fill soil. Sandy utility fill appeared in West Courtyard Tunnel Trench Segment 1 surrounding two existing, defunct metal utility pipes oriented east-west near the base of excavation at 5.4 feet to 4.7 feet ASL. The extensive fill soils and this clean utility backfill deposit indicate Area 1 saw deep late-historic or early-modern disturbance, likely for grading and utilities serving Buildings 114 and 112.

Table 7: Trenches documented by area during spa excavation monitoring

AREA	TRENCH	START DATE	DIMENSIONS	DEPTH (BGS/ASL)
Area 1	Existing Water Exploratory Trench	10/18/2019	56' SW-NE x 10' E-W	9'/2.6'
Area 1	Defender CB 2 Trench	11/1/2019	20' N-S x 16' E-W	12'/-0.2'
Area 1	West Pool #112 Tunnel Trench	10/31/2019	18' N-S x 16' E-W	5.5'/6.25'
Area 1	West Courtyard Tunnel Trench (4 Segments)	11/4/2019	Segment 1: 38.5' N-S x 13' E-W; Segment 2: 14' N-S x 71' E-W; Segment 3: 14' N-S x 42' E-W; Segment 4: 44' N-S x 11' E-W	Segment 1: 6.2'/4.5' ; Segment 2: 6.2'/4.5' ; Segment 3: 6.2'/4.5' ; Segment 4: 7.3'/4.5'
Area 1	West Pool Trench	12/3/2019	14' N-S x 58' E-W	4'/8'
Area 1	Defender CB 2 to Street Trench	10/22/2020	23.2' N-S x 5.5' E-W	7.6'/4.2'
Area 1	Defender CB 2 Connector	10/22/2020	14.3' N-S x 4.8' E-W	5'/2.1'
Area 1	Sanitary Connection from 114 to Carder Road	10/21/2020	7.4' N-S x 4.4' E-W	4.9'/2.2'
Area 1	West Courtyard Fence Trench	3/21/2021	5' N-S x 94' E-W	4.2'/6.8'-10.7'
Area 2	CB 10 Trench	10/8/2019	15' N-S x 15' E-W	8'/6.8'
Area 2	SW CB 9-10 Trench	10/31/2019	13' N-S x 8.5' E-W	5.5'/6.75'
Area 2	CB 9 Trench	10/30/2019	12.5' N-S x 14' E-W	8.25'/4'
Area 2	SW Trench 2 (3 Segments)	10/9/2019	Segment 1: 12' N-S x 4' E-W; Segment 2: 4.5' N-S x 43' E-W; Segment 3: 43' N-S x 4.5' E-W	Segment 1: 5'/9' ; Segment 2: 4.7'/12.3' ; Segment 3: 7.5'/7.4'
Area 2	Andes Road Water Connection 1	10/26/2020	11.7' N-S x 4.4' E-W	4.5'/8.3'
Areas 2-3	Ceramic Utility Exposure Trench	10/17/2019	5' N-S x 38' E-W	3.8'/10.1'
Areas 2-3	SW CB 9-11 Trench	10/31/2019	4.5' N-S x 35' E-W	4.3'/8.2'
Areas 2-3	Electric 114-112 Trench	10/28/2019	3' N-S x 83' E-W	3.1'/9.9'
Area 3	CB 11 Trench East Extension	9/27/2019	7' N-S x 7' E-W	5.5'/6.25'
Area 3	SW Trench 1 (3 Segments)	9/25/2019	Segment 1: 4' N-S x 24' E-W; Segment 2: 36' N-S x 5' E-W; Segment 3: 38' N-S x 6'-11' E-W	Segment 1: 6.5'/8' ; Segment 2: 4.5'-6.5'/10'-8' ; Segment 3: 4.6'-6.5'/7.9'-6'
Area 3	CB 12 Trench	10/23/2019	15' N-S x 8' E-W	5.8'/5.9'
Area 3	CB 11 Trench	9/27/2019	18' N-S x 14' E-W	5.5'/6.25'
Area 3	Andes-112 Fire Trench (Segments 1-2)	9/18/19 (recorded), 2/25/20 ,	14' N-S x 7.5' E-W	7'/7.25'
Area 3	112 Fire Connection	10/27/2020	13' N-S x 4' E-W	5.3'/10.7
Area 3	111 Fire/Water Trench	10/27/2020	12.4' N-S x 4.5' E-W	5.2'/14.3'
Area 3	SE 111 Water Trench	10/27/2020	11.8 N-S x 4.3' E-W	5.6'/14.2'
Area 3	Andes Road Water Connection 2	10/26/2020	10.8' N-S x 3.9' E-W	5.7'/8.2'
Area 4	EW to 111 Trench (6 Segments)	7/24-8/2/19	Segment 1: 25' x 6'; Segment 2: 35' x 7'; Segment 3: 40' x 10'; Segment 4: 20' x 4'; Segment 5: 16' x 4'; Segment 6: 27' x 10.5'	Segment 1: 3.5'/7.3' ; Segment 2: 7.9'/4.1' ; Segment 3: 8.6'/3.4' ; Segment 4: 8.2'/3.8' ; Segment 5: 8.2'/3.8' ; Segment 6: 7.3'/4.7'

continued

Table 7 (continued):

AREA	TRENCH	START DATE	DIMENSIONS	DEPTH (BGS/ASL)
Area 4	Existing Clay Pipe Exposure Trench	7/30/2019	75' SW-NE x 5' E-W	6.5'/6'
Area 4	NE Tunnel Pit Trench	10/3/2019	28 N-S x 24' E-W	11.5'/0.5'
Area 4	Pool Trench 1 East Extension	9/18/2019	25' N-S x 30' E-W	3.5'/9'
Area 4	Pool Trench 1	9/12/2019	37' N-S x 55' E-W	4.8'/8.2'
Area 4	Defender CB 1 Trench	10/1/19, 3/10/20	45' N-S x 16' E-W	South Half: 11.5'/0.5' ; North Half: 4'/4'
Area 4	CB 1 Trench	11/14/2019	20' NW-SE x 14' E-W	8.05'/3.4'
Area 4	CB 6 Trench	11/7/2019	13.5' N-S x 14.5' E-W	9.1'/3.4'
Area 4	CB 5 Trench	11/7/2019	12' N-S x 12' E-W	9.2'/3.3'
Area 4	Tunnel Trench Pit to 111	11/4/2019	38.5' N-S x 13' E-W	6.2'/4.5'
Area 4	CB 7 Trench	11/26/2019	18' N-S x 14' E-W	8.9'/4'
Area 4	Defender CB 1 SW Trench	10/23/2020	14' NE-SW x 6' NW-SE	7'/2.5'
Area 4	112 Sanitary Trench	10/21/2020	9.8' N-S x 3.6' E-W	4.2'/3.5'
Area 4	Defender CB 1 SW Connector	10/21/2020	14.2' N-S x 4.7' E-W	6.8'/0.5'
Area 4	111 Combo SW Sanitary Trench (seg 1-5)	9/30-10/2/20, 10/19-20/20	Segment 1: 23' x 6.7'; Segment 2: 14' x 6.7'; Segment 3: 12' x 6.7'; Segment 4: 10' x 8'; Segment 5: 7.3' x 5.2'	Segment 1: 5'/2.1' ; Segment 2: 5'/2.3' ; Segment 3: 5.3'/2.1' ; Segment 4: 5.2'/2.2' ; Segment 5: 3.3'/4.1'
Area 4	111 E SW Trench (N and S segments)	10/1-2/20	South Half: 38.5' N-S x 4' E-W; North Half: 12.7' N-S x 3.5' E-W	South Half: 4.3'/7.7' ; North Half: 2.4'/8.6'-4.9'
Area 5	CB 2 Trench	11/18/2019	10' N-S x 13' E-W	7.2'/5.8'
Area 5	CB 1 – CB 3 Trench	11/18/2019	18' N-S x 9.5' E-W	4.1'/7.9'
Area 5	CB 3 Trench	11/15/2019	12' N-S x 14' E-W	5'/7'
Area 5	SW CB 4 - 112 Trench	12/11/2019	18' NW-SE x 7' E-W	3.5'/11.5'
Area 5	SW CB 3 - 112 Trench	11/27/2019	25.5' N-S x 8' E-W	4.8'/9.2'-7.9'
Area 5	CB 2 – CB 4 Trench	11/26/2019	15' NW-SE x 8' E-W	5.5'/8'
Area 5	CB 4 Trench	11/25/2019	10.5' N-S x 15' E-W	7.6'/7.9'
Area 5	111 SW Trench	2/28/2020	8' N-S x 57' E-W	7.1'/10.4'
Area 5	CB 7 – CB 8 Trench	2/25/2020	45' N-S x 8' E-W	7.4'/7.6'
Area 5	CB 8 Trench	2/24/2020	25' N-S x 26.5' E-W	10.1'/6.2'
Area 5	SW NE 112 Trench	12/12/2019	7' N-S x 21' E-W	4.7'/11.3'
Areas 5-6	Secondary Electric Trench (N and S segments)	11/18/2020	Area 5 N Segment: 6.5' N-S x 72' E-W; Area 6 S Segment: 37' N-S x 6.5' E-W	Area 5 N Segment: 6'/12.65' ; Area 6 S Segment: 4.6'/12.4'
Area 6	111-112 Electric Trench	11/18/2019	9'-14' N-S x 9'-12' E-W	8.1'/11'
Area 6	111 Fire Trench	9/18/2019	9.3' N-S x 5' E-W	5'/14.1'
Area 6	NE 112 Pit	12/12/2019	12' N-S x 6' E-W	4.5'/12.5'
Area 6	NW 111 Pit	12/12/2019	12' N-S x 6' E-W	4.2'/13'
Area 6	SE 111 Gas Trench	11/4/2020	14' N-S x 6' E-W	3'/17'
Area 6	AD 2 - 111 Trench	5/20/2021	4' N-S x 14' E-W	2'/10'
Area 6	AD 2 – 3 Trench	5/21/2021	15.5' NE-SW x 4' NW-SE	1.8'/10.2'
Area 6	AD 1 – 2 Trench	5/20/2021	4' N-S x 20' E-W	1'/12'

Area 1 excavation exposed natural soil at its northwest side within the Defender CB 2 Trench installed outside Building 114's northeast corner. Natural reddish brown coarse sand (Munsell 5YR 4/4) with pebbles was present from 6.8 feet to -0.5 feet ASL (below the water table) beneath the brown (Munsell 7.5YR 4/3) silty sand fill typical across the area.

Table 8: Area 1 representative stratigraphy (West Courtyard Tunnel Trench)

STRAT	DEPTH FT ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	10.7-9.4'/ 0-1.1'	10YR 3/2 SaLo	A horizon	Found below landscaped ground surface. Asphalt and concrete path present across multiple Area 1 trenches.
2	9.4-7.5'/ 1.1-3.2'	7.5YR 4/4 SiSa	Fill	Small brick fragments and cobble inclusions, well-distributed.
3	7.5-7.0'/ 3.2-3.7'	7.5YR 4/2 SiSa	Fill	Small amount of gravel and coal ash inclusions, well-distributed.
4	7.0-6.6'/ 3.7-4.1'	Coal ash and 7.5YR 4/3 SiSa	Coal ash fill	Coal ash inclusions and dense coal ash concentrations within silty sand. Found in Segments 1 and 3. FB#31 collected.
5	6.6-4.5'/ 4.1-6.2'	7.5YR 4/3 SiSa	Fill	Small brick fragments and cobble inclusions, well-distributed.
6	5.4-4.7'/ 5.3-6.0'	5GY 1/7 Sa	Utility fill	Clean fill sand surrounding two existing, defunct east-west utility pipes, found in Segment 1.

The Defender CB 2 to Street Trench, excavated extending 23.2 feet (7 m) north from the Defender CB 2 Trench towards Carder Road, exposed fill soils typical of Area 1, but it also exposed a possible buried surface from 7.9 feet to 6.5 feet ASL formed of very dark brown (Munsell 10YR 2/2) sandy silt which contained mortar, concrete and coal ash. Alternatively, this layer may represent a similar coal ash/fill layer found further south in West Courtyard Tunnel Trench Segments 1 and 3 from 7 feet to 6.6 feet ASL (see Table 8: Stratum 4). Similar layers of coal ash material appeared to have been strewn across fill soils further south in Area 3 as well.

Materials from the construction of Building 112 were also present in Area 1. Area 2 excavation exposed brown sand (Munsell 7.5YR 5/2) mixed with mortar debris and broken hollow brick fragments extending 5 to 8 feet (152 - 244 cm) from the Building 112 façade (see Figure 14). This debris stratum generally appeared from 10 to 6 feet ASL adjacent to the foundation of Building 112. The bottom of the debris stratum tapered to shallower depths further from the building and may have been either a builder's trench or former utility trench. At the base of this debris stratum where it abutted Building 112, many portions of a partially damaged clay pipe which once serviced the building's drainage were observed embedded in pea gravel.

Area 2 (West Courtyard)

Area 2 is the southwest portion of the West Courtyard, located both between Buildings 114 and 112 and to the south of Building 114. From east to west, Area 2 measures 40 feet (12 m) east from Building 114 and approximately 80 feet (24 m) in the portion south of Building 114. Area 2 extends from Area 1 south 120 feet (37 m) to Andes Road (Figure 15). The opening elevations ranged from 12.25 feet ASL in CB 9 Trench at northwest corner of Area 2 to 13.9 feet ASL in the Ceramic Utility Exposure Trench at the southeast corner of Area 2, rising to 14.9 feet ASL at the southwest corner in SW Trench 2 Segment 3.

Eight trenches were excavated in Area 2: CB 9 Trench, CB 10 Trench, SW CB 9-10 Trench, SW Trench 2 (excavated in three segments), Andes Road Water Connection 1 and the west halves of SW CB 9-11 Trench, Electric 114-112 Trench and the Ceramic Utility Exposure Trench. These trenches were generally excavated to between 4 feet and 6.5 feet (122 - 198 cm) below ground surface. A maximum depth of 8.25 feet (251 cm) below ground surface (4 feet ASL) was reached in CB 9 Trench.

The general stratigraphy in Area 2 was an approximately 1-foot (30 cm) thick A horizon atop silty sand fill with well-distributed small brick fragment inclusions (Table 9). Deeper excavation within CB 9 Trench at the northern portion of Area 2 exposed a layer of lighter colored silty sand fill with few brick fragment inclusions from 6.4 feet to 4.5 feet ASL, found below the typical Area 2 fill matrix. Natural coarse sand was documented below this stratum from 4.5 feet to 4 feet ASL in CB 9 Trench, the deepest excavation in Area 2 and the only natural soil identified in this area.

Table 9: Area 2 representative stratigraphy (SW Trench 2 Segment 1)

STRAT	DEPTH FT ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	14-12.9'/ 0-1.1'	10YR 4/3 SaLo	A horizon	Found below landscaped ground surface.
2	12.9-10.8'/ 1.1-3.2'	7.5YR 4/3 SiSa	Fill	Small brick fragments and cobble inclusions, well-distributed.
3	10.8-9.0'/ 3.2'-5'	7.5YR 4/4 SiSa	Fill	Small brick fragments and cobble inclusions, well-distributed.

The two-stratum Old Carder Road road base and asphalt surface was documented in the western portion of Area 2 within CB 9-10 Trench (Figure 16). A layer of coal ash and brown (Munsell 7.5YR 5/3) sand was present in the eastern half of Area 2. This layer was documented within SW CB 9-10 Trench from 4.05 feet to 5.05 feet (123 - 154 cm) below ground surface (8.2 - 7.2 feet ASL) within the silty sand fill generally found across Area 2. This coal ash fill layer included heat-altered glass, metal and brick fragments. The deposit tapered out before reaching Building 114. A similar coal ash fill layer was documented to the east in Area 3's SW Trench 1 Segments 2 and 3, but at shallower depths (1.75 - 2.5 feet/53 - 76 cm below ground surface/10.75 - 10 feet ASL). The coal ash layer may have been sourced from spent coal furnace refuse distributed across a formerly sloping area between Buildings 114 and 112.

As also seen in Area 1 at Building 112, materials from Building 114's construction were also present in Area 2. Area 2 excavation exposed brown sand (Munsell 7.5YR 5/2 & 5/3) mixed with mortar debris and broken hollow brick fragments extending 5 to 8 feet (152 - 244 cm) from the Building 114 façade. This debris stratum generally appeared from 10.15 to 6 feet ASL adjacent to the foundation of Building 114. The bottom of the debris stratum tapered to shallower depths further from the building and may have been either a builder's trench or former utility trench. Sections of partially damaged clay pipe which once serviced the building were also documented abutted Building 114,

Area 2 work also included excavation for nine fence post footings along the Andes Road sidewalk, two of which contained a noteworthy brick concentration. The excavation for the footings extended to 4 feet (122 cm) below ground surface. This represents 7 to 10.9 feet ASL, with lower elevations to the west, following the natural slope. The upper 3 feet (91 cm) contained similar fill deposits to those seen throughout Area 2. The two locations depicted on Figure 15 are those where a stratum with a dense concentration of loose unmarked brick was documented at 3.0 to 3.7 feet (cm) below ground surface (10.3 - 11 feet ASL) in a dark yellowish brown (Munsell 10YR 4/6) sandy silt matrix. No mortar, nor any other cultural material, was observed. Area 3 included three additional fence post footings, but those locations contained modern fill only.

Area 3 (West Courtyard)

Area 3 is the southeastern portion of the West Courtyard between Buildings 114 and 112. It measures approximately 120 feet (37 m) south from Area 1 to Andes Road and extends from Building 114 westward for approximately 40 feet (12 m) (Figure 17). The opening elevation ranged from 11.75 feet ASL at in the north rising up to 16 feet ASL towards Andes Road to the south.

Twelve trenches were excavated in Area 3: 111 Fire/Water Trench, SE 111 Water Trench, Andes-112 Fire Trench (excavated in two segments), 112 Fire Connection, CB 11 Trench, CB 11 Trench East Extension, CB 12 Trench, SW Trench 1 (excavated in three segments), Andes Road Water Connection 2, and the east halves of CB 9-11 Trench, Electric 114-112 Trench and the Ceramic Utility Exposure Trench. These

trenches were excavated to a maximum depth of 6.5 feet (2 m) below ground surface (6 feet ASL), reached in CB 11 Trench.

The general stratigraphy in Area 3 was an approximately 0.5 foot (15 cm) thick A horizon atop silty sand fill with well-distributed small brick fragment inclusions, overlaying natural cobble-laden sand (Table 10).

A layer of coal ash and dark brown (Munsell 7.5YR 3/2) sand was documented in SW Trench 1 Segments 2 and 3 from 1.75 to 2.5 feet (53 - 76 cm) below ground surface (10.75 - 10 feet ASL) within the silty sand fill typical across Area 3 (see Photo 16 and Figure 18). This coal ash fill layer included heat-altered glass, metal and brick fragments. When SW Trench 1 Segment 3's coal ash fill layer was trowel scraped, only one artifact was recovered: an aqua glass octagonal, post-bottom molded bottle base produced ca. 1850 to 1890 (FB 27). A similar stratum noted in SW CB 9-11 Trench was also scraped for artifacts, but it produced only one aqua glass sherd, three burned and undatable refined earthenware sherds and a single annularware sherd with a wide production range (FB 28).

Table 10: Area 3 representative east profile stratigraphy (SW Trench 1)

STRAT	DEPTH FT ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	14.5'-13.7'/ 0-0.8'	10YR 4/3 SaLo	A horizon	Found below landscaped ground surface.
2	13.7'-8.5'/ 0.8-6.0'	10YR 4/4 mottled with 10YR 5/4 and 10YR 4/3 SiSa	Fill	Small brick fragment inclusions, well-distributed.
3	12.75'-12'/ 1.75-2.5'	Coal ash and 7.5YR 3/2 Sa	Heat-altered fill	Coal ash, melted glass, metal, and heat-treated brick fragment inclusions. Present only in SW Trench 1, Segments 2-3.
4	8.5-8.0'/ 6.0-6.5'	7.5YR 4/4 Sa	Fill	Dense cobble and rock inclusions, disturbed and redeposited by existing utilities near Building 112.

The coal ash fill deposit followed the local elevation drop northward within Area 3. This layer had been cut and backfilled to install an existing east-west ceramic-encased, asbestos-wrapped steam utility line connecting Buildings 114 and 112 (see Photo 17). This steam utility line was exposed and remediated by the contractor via the Ceramic Utility Exposure Trench in Areas 2 and 3. If the single recovered bottle base is used to date the coal ash fill layer in this portion of Area 3, it was likely created across the area after ca. 1850 but before the 1930s construction of Buildings 112 and 114, as the steam line connecting these buildings cut through the coal ash fill layer.

Area 4 (East Courtyard)

Area 4 is the northern portion of the East Courtyard, between Buildings 112 and 111 and north to Carder Road. It measures 166 feet (50.6 m) east-west between the buildings and approximately 250 feet (76 m) along Carder Road. It then extends southward 100 to 120 feet (30 - 37 m) from Carder Road to Area 5 (Figure 19). The opening elevation of the East Courtyard rose from Carder Road southward. Area 4 opening elevations were relatively even, from 11.45 feet ASL in CB 1 Trench at the southwest corner of Area 4 to 13 feet ASL at Pool Trench 1 across the center of the area. Defender CB 1 Trench's opening elevation was far lower than the rest of Area 4. This trench opened at 8 feet ASL and was located at the far north side of Area 4, where the land surface sloped more dramatically downward approaching Carder Road.

Sixteen trenches were excavated in Area 4: Pool Trench 1, Pool Trench 1 East Extension, NE Tunnel Pit Trench, Defender CB 1 Trench, CB 1 Trench, CB 5 Trench, CB 6 Trench, CB 7 Trench, Tunnel Trench Pit to 111, Existing Clay Pipe Exposure Trench, EW to 111 Trench (excavated in six segments), Defender CB 1 SW Trench, Defender CB 1 SW Connector, 111 Combo SW Sanitary Trench (excavated in five segments), 111E SW Trench (excavated in two segments) and 112 Sanitary Trench. The trenches at the center of Area

4, Pool Trench 1 and Pool Trench East Extension, were excavated to 8.2 feet ASL, while the catch basin trenches were excavated from 4.0 to 3.4 feet ASL. The deepest elevations reached were in Defender CB 1 Trench, excavated to 0.5 feet ASL, and at the NE Tunnel Pit Trench located northeast of the planned pool and excavated to below the local water table (-0.5 feet ASL).

The general stratigraphy in Area 4 featured an approximately 1 foot (30 cm) thick A horizon following the slope of the surface elevation. Below this topsoil was silty sand fill with well-distributed small brick fragment inclusions extending to 7 feet ASL at the east side of Area 4 approaching Building 111 (CB 6 Trench and CB 7 Trench) and extending to 4 feet ASL at center and west side of Area 4 (Pool Trench 1, CB 1 Trench). Below this fill was natural sandy soil with few pockets of clay, angular rock inclusions and large boulders over 1 foot (30cm) in diameter (Table 11).

Material possibly related to Old Carder Road was present in Area 4. This included a layer of coal ash with few heat-treated metal and glass fragments, which was documented in CB 1 Trench, CB 7 Trench and Existing Clay Pipe Exposure Trench EW to #111 Trench, within gray or dark gray (Munsell 7.5YR 4/1 and 10YR 5/1) sandy matrices. The deposit appeared around 2 feet (61 cm) below ground surface (8.5 - 9 feet ASL). This layer was 0.5 feet (15 cm) thick in CB 1 Trench and CB 7 Trench, but extended wider, distributed within disturbed fill soil 3.5 feet (101 cm) thick, within the center portion of the Existing Clay Pipe Exposure Trench to #111 Trench. This layer was roughly contemporary with Old Carder Road based on its depth, but it could have also merely been spent coal ash distributed across a previous ground surface.

Materials from the construction of Buildings 111 and 112 were also present in Area 4. Excavation exposed brown sand (Munsell 7.5YR 5/2 & 5/3) mixed with mortar debris and broken hollow brick fragments beginning approximately 2 feet (61 cm) below ground surface (12 - 11 feet ASL) and continuing as deep as 5 feet (152 cm) below ground surface (9 - 8 feet ASL) near the foundations of Buildings 111 and 112 (Tunnel Trench Pit to 111, CB 1 Trench, CB 5 Trench, CB 6 Trench) (Table 11: Stratum 4). The bottom of the debris strata at Buildings 111 and 112 tapered to shallower depths further from the buildings, as was seen in Area 2 and 3. These strata appeared to be associated with foundation construction and surrounding building drainages and also contained hollow brick fragments and mortar fragments.

Table 11: Area 4 representative stratigraphy (CB 1 Trench)

STRAT	DEPTH FT ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	11.45-10.7'/ 0-0.9'	10YR 3/2 SaLo	A horizon	Found below landscaped ground surface.
2	10.7'-8.95'/ 0.8-6'	7.5YR 4/4 SiSa	Fill	NCM
3	8.95-8.45'/ 1.75-2.5'	Coal ash and 7.5YR 4/1 Sa	Heat-altered fill	Coal ash, melted glass, metal, and heat-treated brick fragment inclusions. Similar to coal ash and heat-treated deposit found west of Building 112 in Area 3.
4	8.95- 7.95'/6.0- 6.5'	7.5YR 5/2 SiSa	Building 112 construction fill	Mortar and hollow brick fragments inclusions. Consistent with similar construction fill found surrounding Buildings 111-114 foundations.
5	8.45-4.0'/ 3.0-7.45'	7.5YR 4/3 SiSa	Fill	Small brick fragment inclusions, some cobble and boulder inclusions.
6	4.0-3.4'/ 7.45-8.05'	5YR 4/4 Sa	Natural soil	Many angular rock inclusions.

Area 5 (East Courtyard)

Area 5 includes the central portion of the East Courtyard, between Buildings 112 and 111 north of their “L”s (Figure 20). It measures 166 feet (50.6 m) between the buildings and approximately 50 feet (15 m) north-south. The ground surface elevation continued to rise southward, although portions of the landscaped surface were impacted earlier in the project by the stockpiling and removal of soil from Pool Trench 1 excavation. Opening elevations ranged from 12 feet ASL at the western side of Area 5 (CB 3 Trench, CB 1 – CB 3 Trench) to 17.5 feet ASL at the northern side of Building 111’s “L” (111 SW Trench).

Twelve trenches were excavated in Area 5: CB 2 Trench, CB 3 Trench, CB 4 Trench, CB 8 Trench, CB 1 – CB 3 Trench, SW CB 3 - 112 Trench, SW CB 4 - 112 Trench, CB 2 – CB 4 Trench, CB 7 – CB 8 Trench, 111 SW Trench, SW NE 112 Trench and Secondary Electric Trench (northern segment). These trenches were excavated to a maximum depth of 10.1 feet (3.1 m) below ground surface (6.2 feet ASL), reached in CB 8 Trench. Most Area 5 trenches were excavated to between 8 and 7 feet ASL.

The general stratigraphy in Area 5 featured an approximately 0.8-foot (24 cm) thick A horizon following the slight slope of the surface elevation. The A horizon was disturbed or not present across most of the central part of Area 5, as this area had been used to store backdirt from Area 4 Pool Trench 1 and subsequently backhoe scraped when this backdirt was moved elsewhere. Below this topsoil was silty sand fill with well-distributed small brick fragment inclusions extending to 8 feet ASL (7.5 feet/229 cm below ground surface) at the east side of Area 5 approaching Building 111 (CB 8 Trench) and extending to 10.5 feet ASL (5 feet/152 cm below ground surface) at the west side (CB 4 Trench). Below this fill was natural sandy soil with few pockets of clay, angular rock inclusions and large boulders measuring over 1 foot (30 cm) in diameter, exposed as deep as 7.9 feet ASL (CB 4 Trench) and 6.2 feet ASL (CB 8 Trench) (Table 12). This boulder-laden natural sandy soil was similar to the deepest soils exposed in Area 4, which included large boulders beginning approximately 8.5 feet ASL (CB 1 Trench) and transitioned to more angular rocks with clay pockets where excavation proceeded deeper, below 7 feet ASL (CB 8 Trench, Tunnel Trench Pit to #111).

A layer of strong brown (Munsell 7.5YR 4/6) dense sandy fill with large concrete fragments was documented in CB 4 Trench and CB 2 – CB 3 Trench from 12 feet to 10.8 feet ASL (Table 12). The concrete fragments were mostly 1 to 4 feet (30 - 122 cm) in diameter and had rough top and bottom surfaces, suggesting the concrete had not been previously smoothed or finished. This concrete fragment-laden layer was overlaid and underlaid by typical historic fill soils identified across Areas 4 and 5. Given that brick features, likely related to the historic Post Hospital, were identified south of these trenches (see Data Recovery 2 above), this concrete fragment-laden layer is thought to be related to the demolition and leveling of the Post Hospital or related structures razed for the construction of Buildings 111 and 112.

Table 12: Area 5 representative stratigraphy (CB 4 Trench)

STRAT	DEPTH ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	15.5-13.1’/ 0-2.4’	10YR 3/2 SaLo mixed with 7.5YR 4/4 SiSa	A horizon mixed with fill	Landscaped ground surface mixed with underlying fill during backhoe scraping/removal of backdirt.
2	13.1-12.0’/ 2.4-3.5’	7.5YR 4/6 SiSa	Fill	Few brick fragment inclusions.
3	12.0-10.8’/ 3.5-4.7’	7.5YR 4/6 Sa	Fill	Large (1-foot [30 cm]) diameter concrete fragments inclusions.
4	10.8-10.5’/ 4.7-5.0’	7.5YR 4/6 SiSa	Fill	Few brick fragment inclusions.
5	10.5’-7.9’/ 5.0-7.6’	5YR 4/6 Sa with clay pockets	Natural fill	Few clay pockets, 1’ to 3’ diameter boulder inclusions.

Materials possibly related to Old Carder Road were also present in Area 5. A layer of dark gray (Munsell 7.5YR 4/1) sand with asphalt and pebbles was documented in CB 2 Trench and the north half of CB 2 – CB 4 Trench from 11.6 to 11.2 feet ASL and from 11.9 to 11.7 feet ASL, respectively. This layer was overlaid and underlaid by brown (Munsell 7.5YR 4/3) silty sand fill. The location of these trenches and the asphalt and pebble inclusions suggest this layer may be related to Old Carder Road, which ran northeast to southwest across the extreme northern portion of Area 5 (see Feature section above). This layer was possibly associated with spillover material from construction or use of Old Carder Road.

Materials from the construction of Buildings 111 and 112 were also present in Area 5. Excavation exposed brown sand (Munsell 7.5YR 5/2 & 5/3) mixed with mortar debris and broken hollow brick fragments beginning approximately 1.5 to 2 feet (46 - 61 cm) below ground surface and continuing as deep as 3.5 feet (107 cm) below ground surface near the exposed building foundations (CB 1 – CB 3 Trench, SW CB 4 – 112 Trench and SW NE 112 Trench). The bottom of the debris strata at Buildings 111 and 112 tapered to shallower depths further from the buildings. These strata appeared to be associated with construction of the buildings' foundations and surrounding building drainages. Matching strata featuring hollow brick fragments and mortar fragments were also documented in Areas 1–4 around all three buildings.

Two large trees with root balls up to 20 feet (6.1 m) across were removed in Area 5. A previously displaced brick footing and a large quantity of unmarked loose brick were exposed in the western stump pit. Additionally, an unmarked electrical line was exposed. It is not clear if the installation of that utility had disturbed what may have been an *in situ* feature or if the demolition debris was already part of the fill. In hindsight, the deposit, although not *in situ*, was indicative of the Post Hospital remains discussed above. The western stump removal also exposed a profuse amount of loose brick, but that location did contain an *in situ* concrete surface which was interpreted as an element of the Post Hospital discussed above.

Area 6 (East Courtyard)

Area 6 is south of the East Courtyard. It is located between the closest parts of Buildings 111 and 112 and extends southward to Andes Road, where it spreads out to Area 3 on the west and to the east of Building 111 where utility excavation ended. Area 6 measures 35 feet (10.6 m) between the buildings, approximately 200 feet (61 m) along Andes Road and 57 feet (17 m) from Area 5 to the curb (see Figure 20 E Courtyard Area 5-6 Planview). The ground surface elevation rose slightly south of Area 5 between Buildings 111 and 112 before dropping again slightly heading to Andes Road. Opening elevations ranged from 17 feet ASL at the northern side of Area 6 (NE 112 Pit) to 19.1 feet ASL at the center (111-112 Electric Trench) and dropping again to 17.7 feet ASL near Andes Road (SE 111 Gas Trench).

Nine trenches were excavated in Area 6: NE 112 Pit, NW 111 Pit, 111-112 Electric Trench, 111 Fire Trench, SE 111 Gas Trench, Secondary Electric Trench (southern segment), AD 2 - 111 Trench, AD 2 – 3 Trench and AD 1 – 2 Trench. These trenches were excavated to a maximum depth of 8.6 feet (2.6 m) below ground surface (10.5 feet ASL) in 111-112 Electric Trench, and their deepest elevation (10 feet ASL) in AD 2 - 111 Trench. Most Area 6 trenches, other than the AD trenches, were excavated to between 14.7 and 12.5 feet ASL.

The general stratigraphy in Area 6 included a landscaped A horizon following the slight slope of the surface elevation. It measured approximately 1.5 feet (46 cm) thick. Fill soils typical of the East Courtyard continued south into Area 6 below the landscaped A horizon. This was typically brown or strong brown (Munsell 7.5YR 4/3 & 4/6) silty sand with well-distributed brick fragments and cobble inclusions. Natural sandy soil with boulder inclusions was identified in areas of deepest excavation, below 11.5 feet ASL (Table 13). The only portions of Area 6 where these natural sandy soil boulder inclusions did not appear at this depth were in the highly disturbed area between the Buildings 111 and 112 “L”s, where elements of the Post Hospital, later electric and steam utilities and fill soils appeared to 10 feet ASL, where natural soil had likely historically been displaced.

The southern portion of the area between Buildings 111 and 112 was highly disturbed by extant concrete-encased utilities and a large ceramic-encased and asbestos-wrapped steam pipe running between the buildings from 14.5 to 11 feet ASL (Table 13: Stratum 5). Two defunct brick and concrete utility

encasements and a defunct brick manhole with a partially destroyed poured concrete utility encasement were identified from 13 to 10.5 feet ASL. These defunct encasements were crossed by the asbestos-wrapped and ceramic-encased steam pipe, similar to a steam pipe found in the West Courtyard connecting Buildings 112 and 114.

Table 13: Area 6 representative stratigraphy (111-112 Electric Trench)

STRAT	DEPTH ASL/BGS	SOIL DESCRIPTION	SOIL TYPE	NOTES
1	19.1-17.7' / 0-1.4'	10YR 3/2 SaLo	A horizon	Landscaped ground surface.
2	17.7-11.5' / 1.4-7.6'	7.5YR 4/3 SiSa	Fill	Few brick fragment inclusions.
3	11.5' - 11' / 7.6-8.1'	5YR 4/4 Sa	Natural soil	Few angular rock inclusions.
4	17.7 - 13' / 1.4-6.1'	7.5YR 5/1 Sa	Buildings 111 and 112 construction fill	Found within 3 feet (91 cm) of Buildings 111 and 112. Mortar and hollow brick fragments inclusions. Consistent with similar construction fill found surrounding Buildings 111- 114 foundations.
5	14 - 12.8' / 5.1-6.3'	7.5YR 4/3 to 7.5YR 4/1	Fill surrounding defunct utilities	Brick fragments, concrete fragments, tar paper, pull-tab soda bottles. Surrounds defunct utility pipes and defunct brick utility encasement.

Materials from the construction of Buildings 111 and 112 were also present in Area 6. Excavation exposed brown (Munsell 7.5YR 5/1) sand mixed with mortar debris and broken hollow brick fragments within 3 feet (91 cm) of Buildings 111 and 112 beginning at 1.4 feet (43 cm) below ground surface and continuing as deep at 6.1 feet (186 cm) below ground surface. This matrix appeared to be associated with foundation construction and surrounding building drainages. The same strata were also documented in Areas 2-5 around Buildings 111 – 114.

South of Buildings 111 and 112, exposed soils below the landscaped A horizon continued to be consistent with brown and strong brown (Munsell 7.5YR 4/3 & 4/6) silty sand fill documented further north in the East Courtyard. Several extant and defunct utility service lines were identified running north to Buildings 111 and 112 from Andes Road, typically installed within sandy clean fills.

112 Interior Monitoring

There was limited excavation monitoring conducted for work in the interior of Building 112, within the building's basement/foundation area. Monitoring excavation within the interior of Building 112 was conducted to determine if the extant buildings had archaeological potential or if building construction itself had obliterated historic deposits that may have once existed beneath. Excavation for a new elevator shaft and for a new electrical line in the basement of Building 112 was archaeologically monitored. This work uncovered strong brown (Munsell 7.5YR 4/6) natural silty sand soil densely packed with large cobbles and boulders, indicative of glacial till, directly beneath the flooring. Therefore, the 112 interior basement/foundation area had no potential for the preservation of archaeological resources, and no further interior monitoring was conducted.

CONCLUSIONS AND RECOMMENDATIONS

The Governors Island Spa project involved archaeological work in and around Buildings 111, 112 and 114 where both pre-construction testing and excavation monitoring were conducted. The vast majority of site excavations involved utility work and building two large pools.

The impacts to potential archaeological resources from the Spa project included the possibility of encountering part of the nearby Andes Road Native American site, as well as identifying numerous historic map-documented structures, most notably the Post Hospital. Finally, consideration was given to the identification of previously unknown archaeological resources.

No evidence of the Andes Road site was present. Many disparate sections of structural remains associated with the Post Hospital were identified and data recovered. No other historic map-documented structures were encountered.

Pre-construction archaeological work unearthed a previously disturbed section of what was likely part of a brick wall associated with the former Post Hospital and a concrete feature that was later determined to be an overpour for a defunct manhole.

Several *in situ* brick, concrete and stone elements of the ca. 1879 Post Hospital were subject to data recovery excavations. Very little cultural material was found in association with those structural remains and no wooden building elements were present. Historic photographs show that the building exterior was primarily wooden, including verandas and siding, and that the verandas were supported by brick columns. Therefore, prior to demolition, the Post Hospital was likely cleaned of its contents, its superstructure torn down and removed from the site before the more durable elements were buried under fill.

Other features identified during monitoring include remnants of the 19th-century route of Old Carder Road, many defunct utility encasements and defunct catch basins, two vertical wooden posts, two 20th-century sand boxes and three concrete footings of unknown origin. These features were all documented archaeologically, but not considered potentially significant.

Many of the features identified continued beyond the limits of project excavation, as observed in trench profiles, and were preserved in places where additional construction excavation was not needed. The preserved resources include elements of the Post Hospital and sections of Old Carder Road, in addition to one of the two vertical wooden posts. Other features, including the defunct utility features, the sandboxes and concrete footings were generally removed during construction.

In addition to the identified features, monitoring including documenting the stratigraphy within the construction excavations. One of the more interesting of these findings was a large coal ash/heat-treated refuse layer present across much of the APE between Buildings 112 and 114 (West Courtyard). It pre-dated the 1934 extant buildings. While coal ash deposits are pervasive on Governors Island, there has not previously been an opportunity to document such a large and continuous stratum of this material. It is notable this deposit did not exist to the same extent in the East Courtyard. This is presumably because, historically, there were many episodes of building construction and demolition in the West Courtyard, whereas, this was not the case in the East Courtyard.

Recommendations

No additional below ground work is planned for the Governors Island Spa project and; therefore, no additional archaeological work is recommended. However, should additional ground disturbing actions be added in the future, plans to address archaeological concerns should be included.

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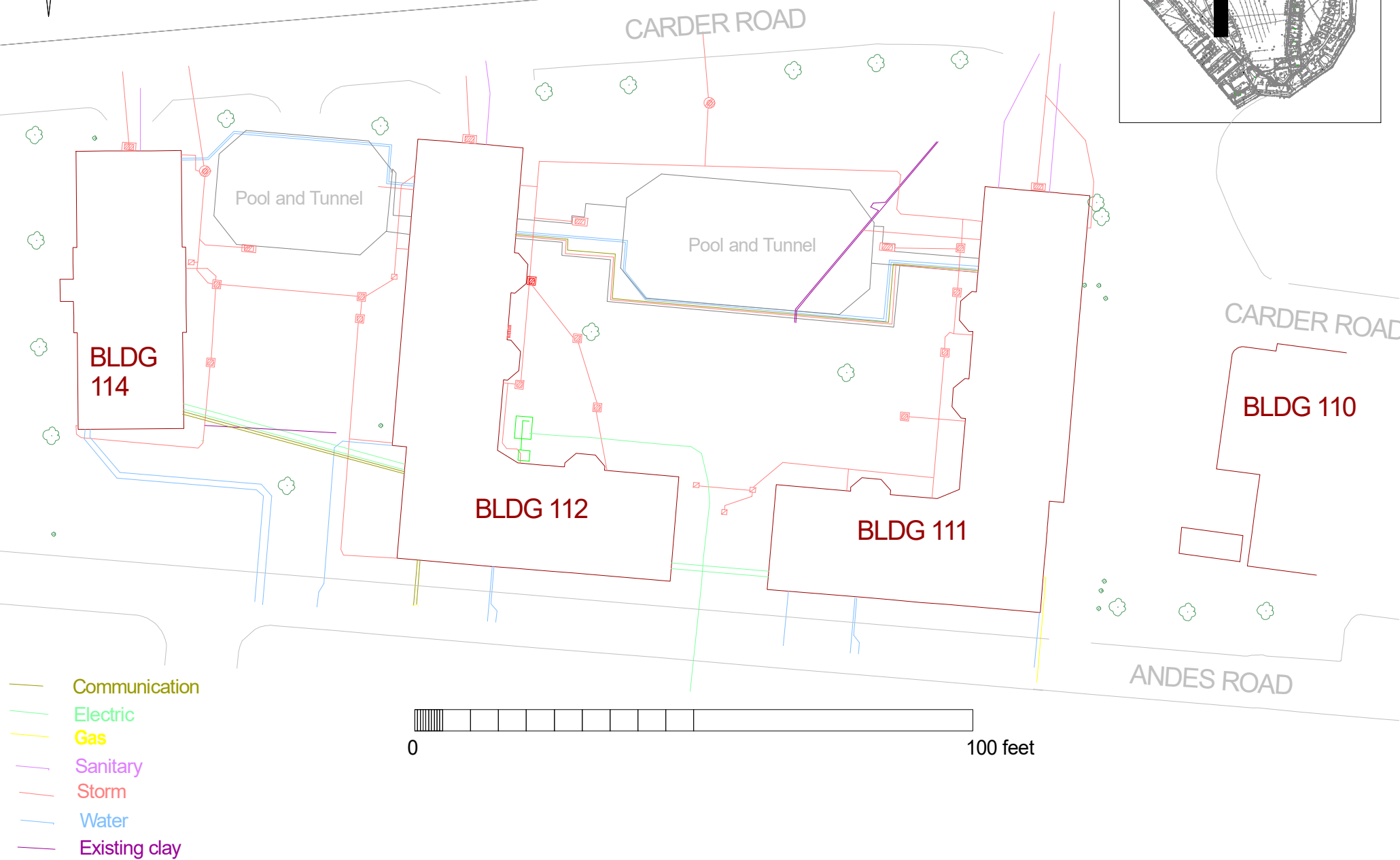
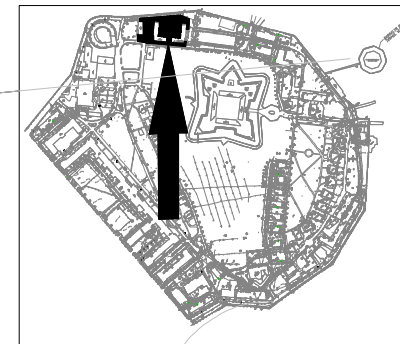
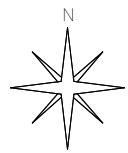


Figure 1 Governors Island Spa location within the Governors Island Historic District showing project utilities.

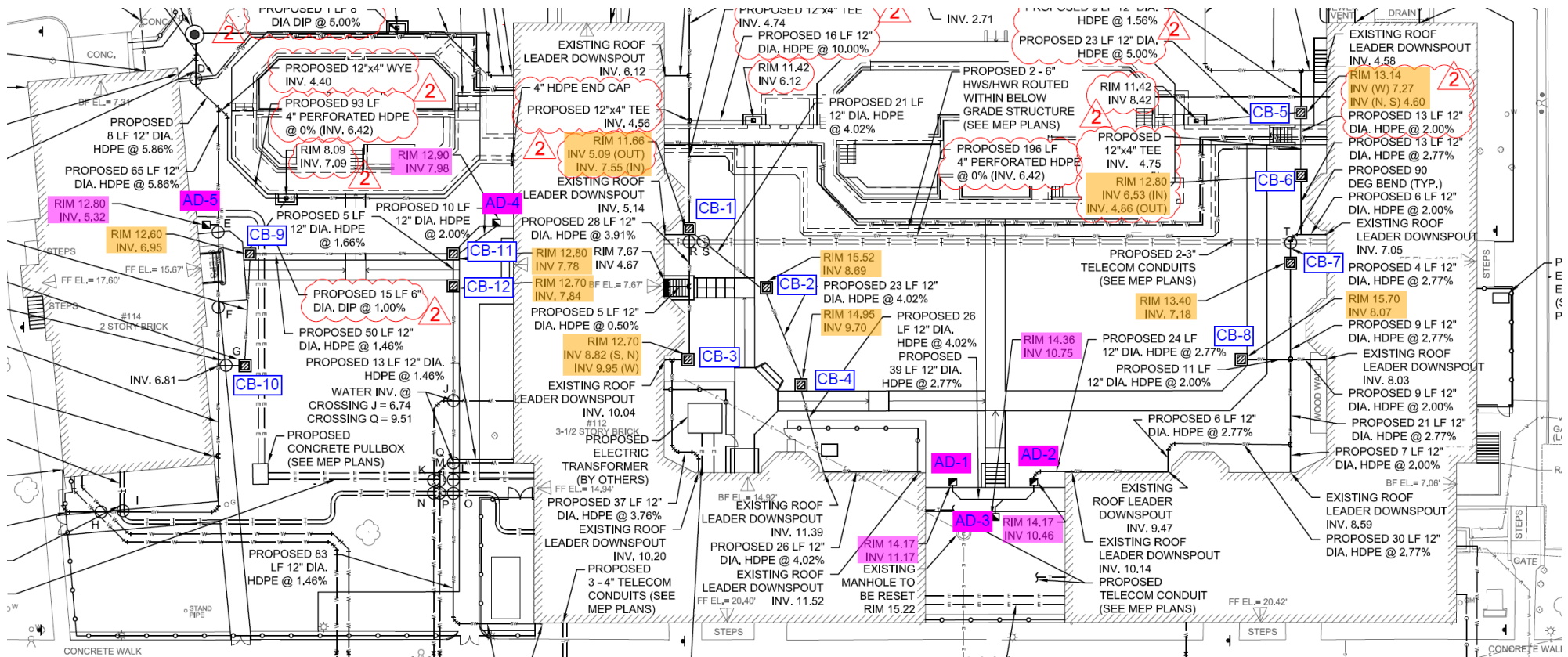


Figure 2 Part of the Construction Drawing C-106.02 Buildings 111, 112, 114 Composite Utility Plan showing the numbers assigned by the contractor to catch basins (CBs) and area drains (ADs).

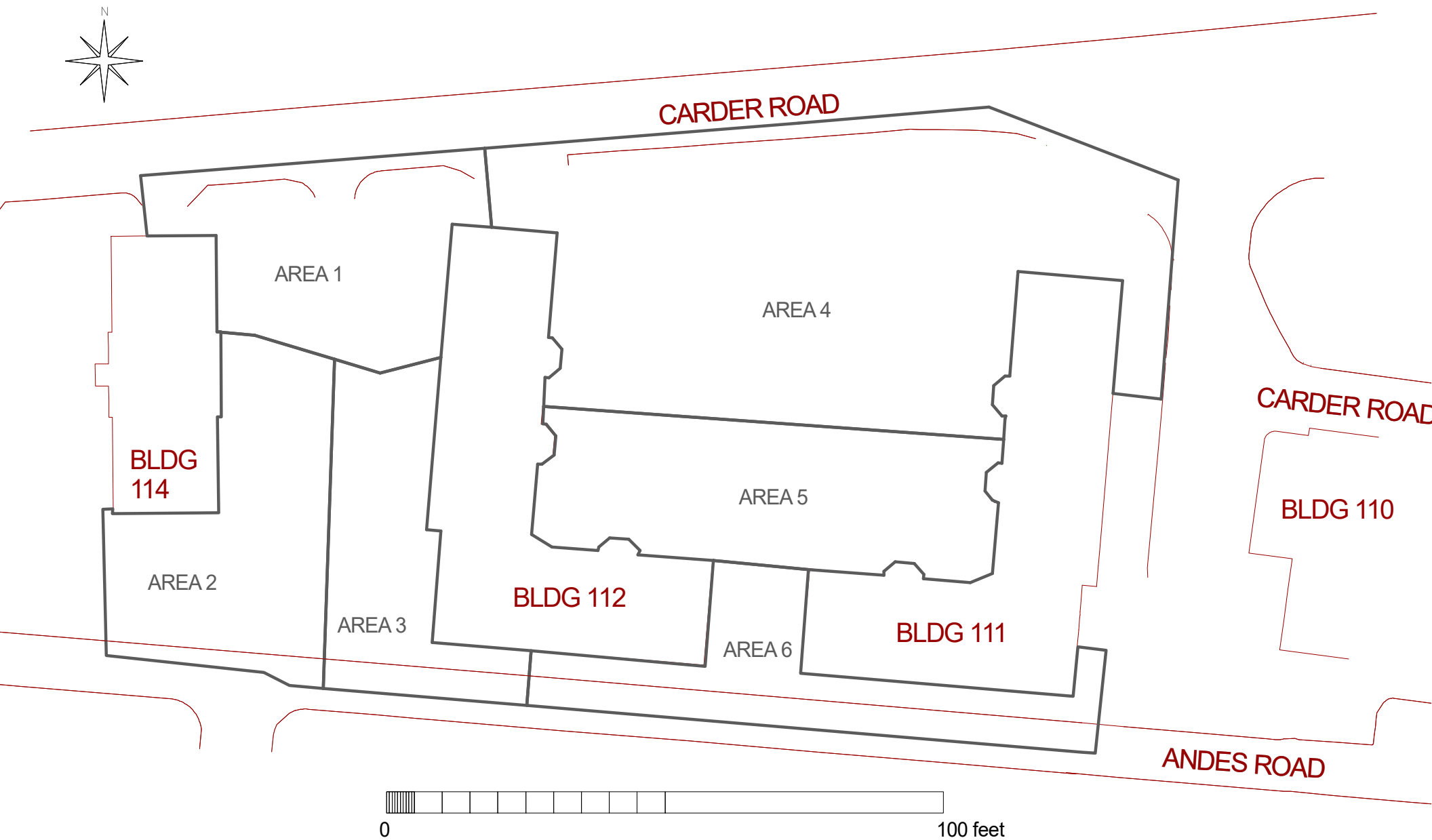


Figure 3 Governors Island Spa report Areas.

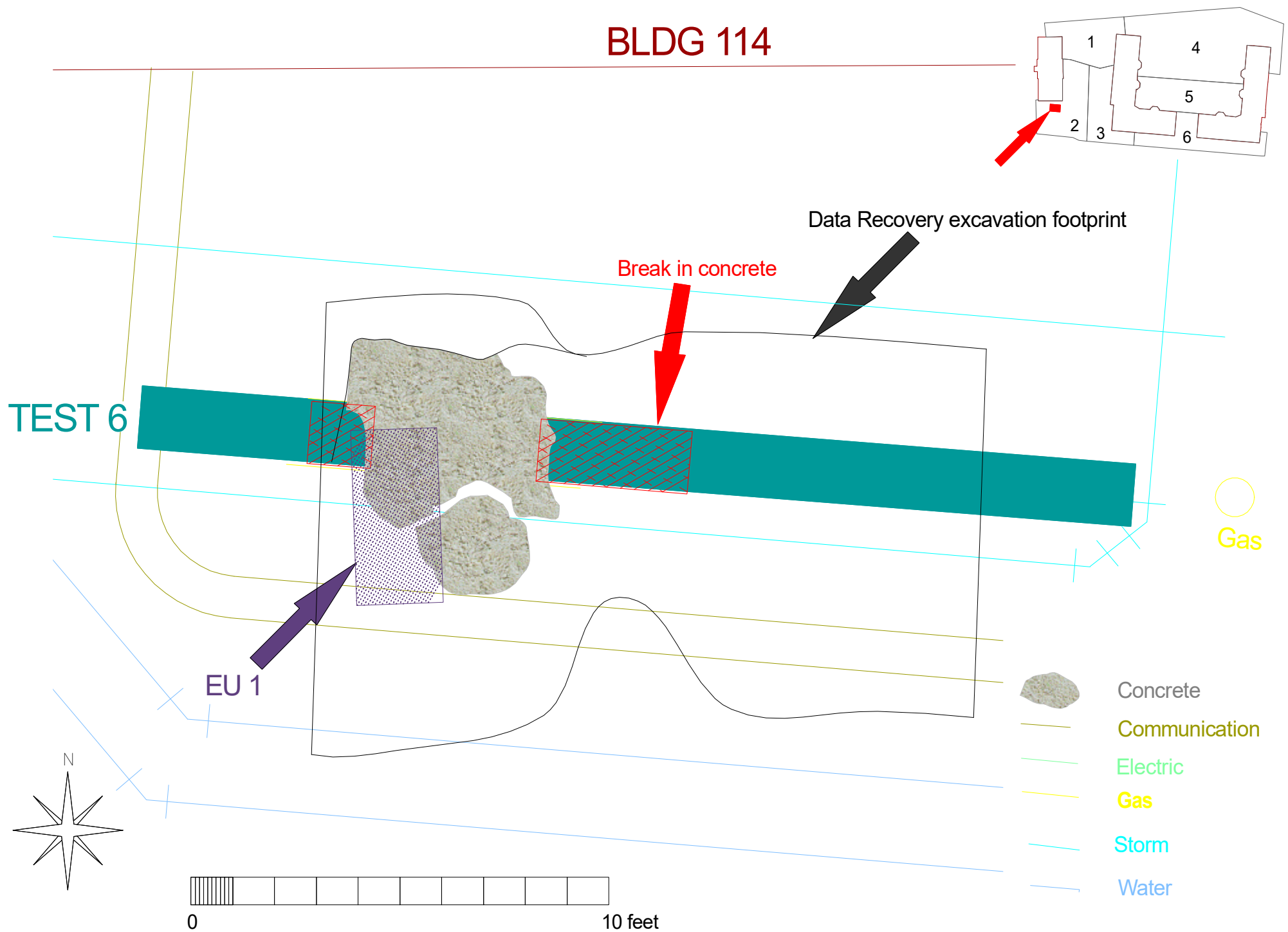


Figure 4 Data Recovery 1 planview.

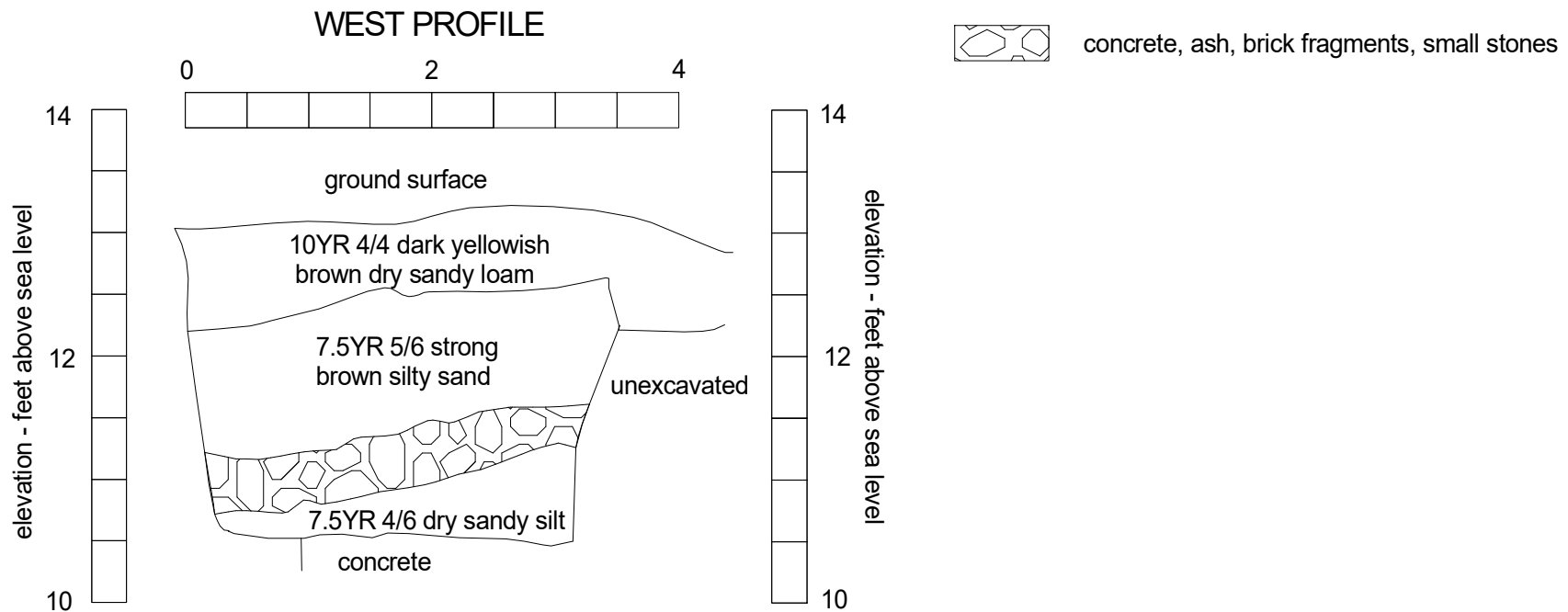
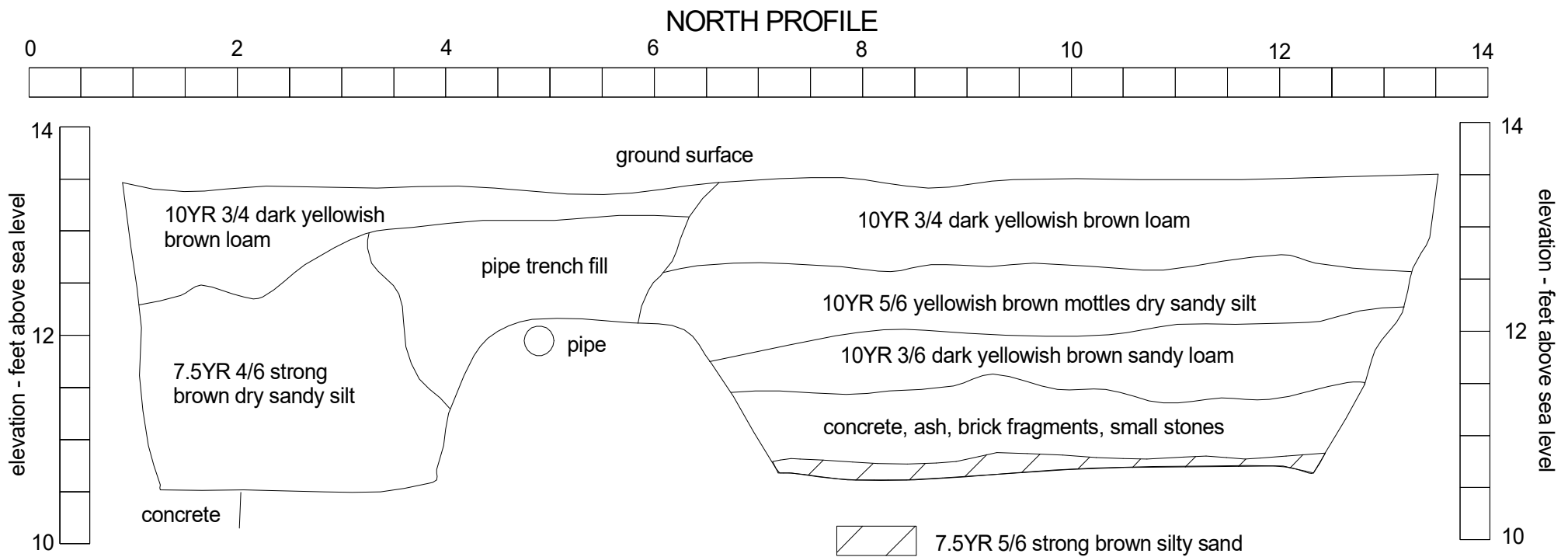


Figure 5 Data Recovery 1 - North and West Profiles of the data recovery excavation footprint.

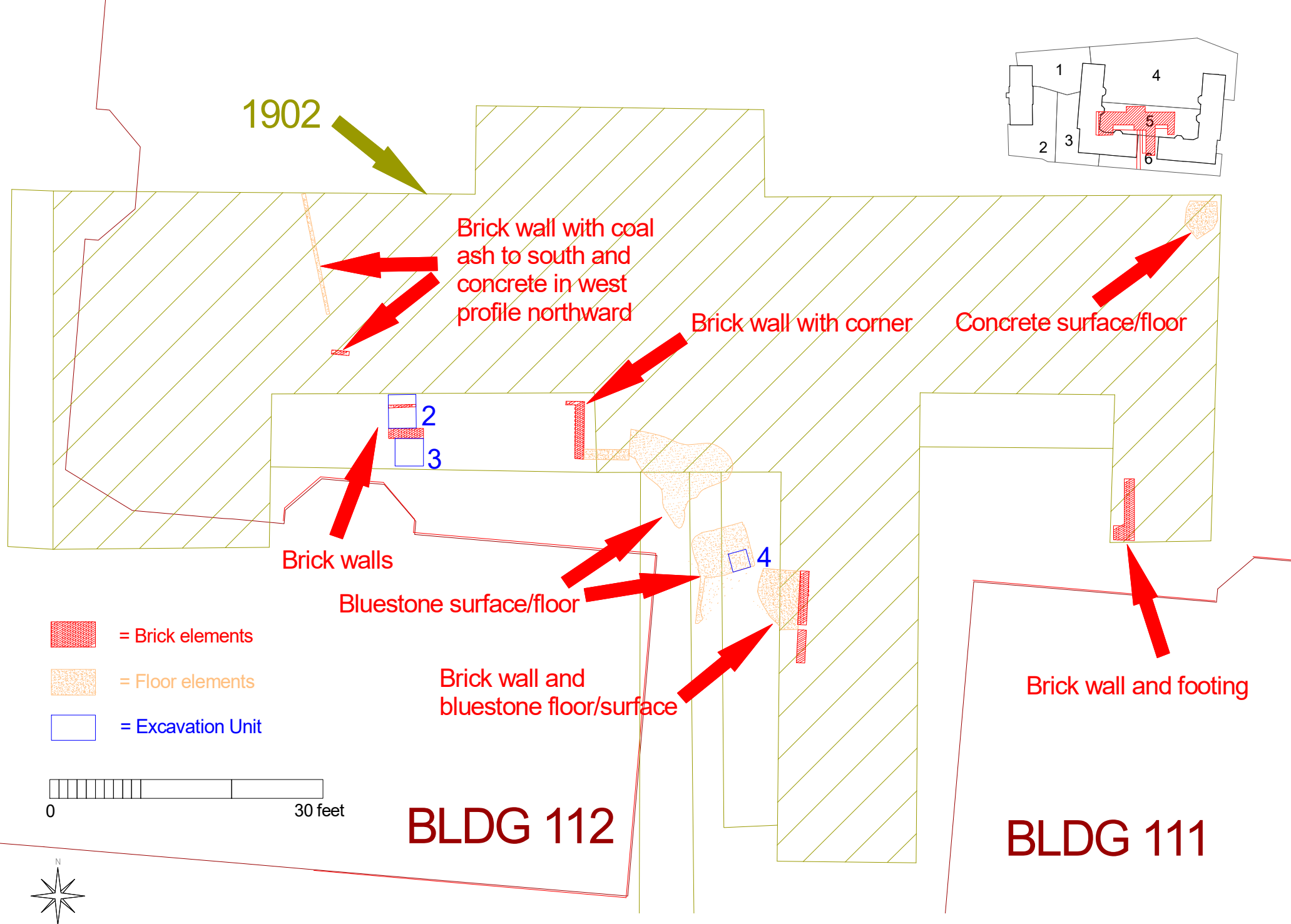
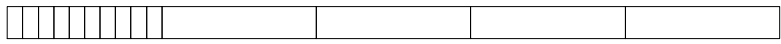
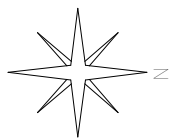


Figure 6 Post Hospital excavation units and findings planview with a tracing of the Post Hospital from the 1902 Hilton map.



Figure 7 Part of the 1902 Hilton map showing the hospital with its verandas and footpath southward to Fort Jay.



0

5 feet

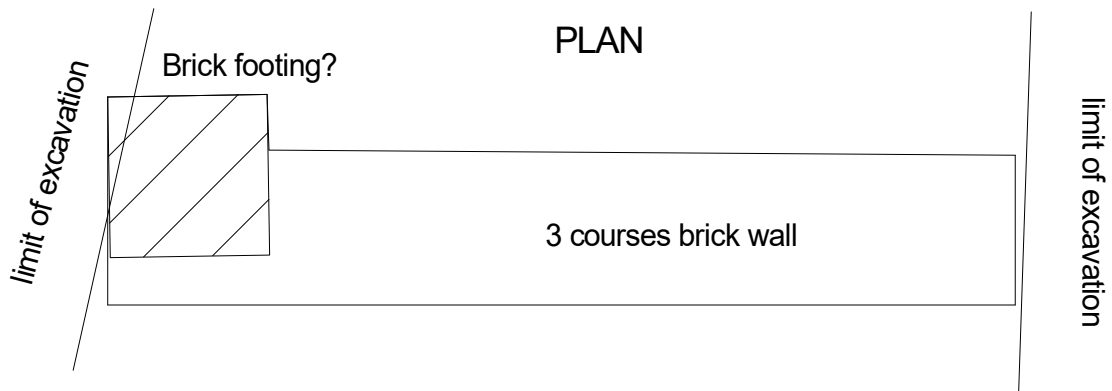
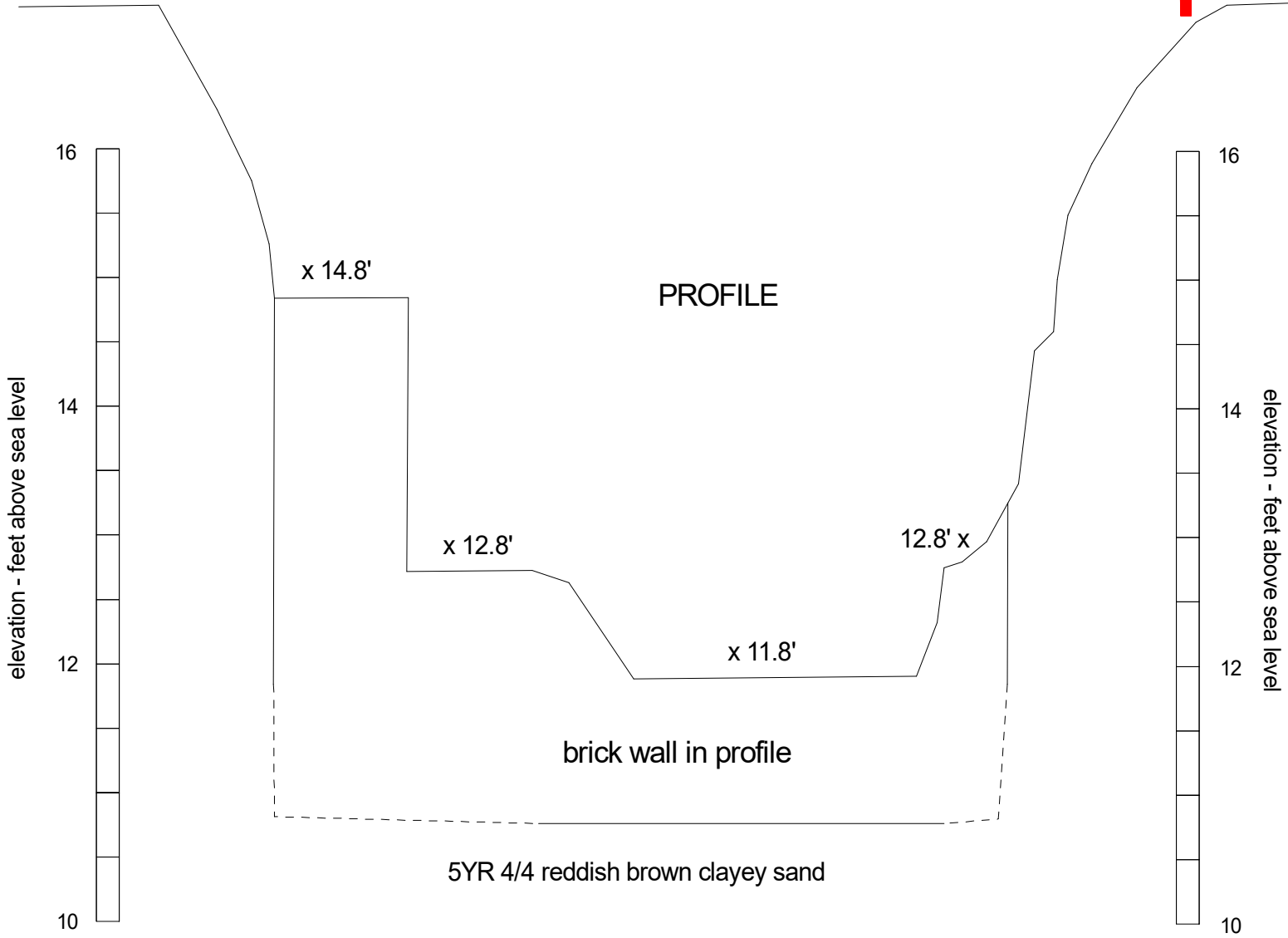
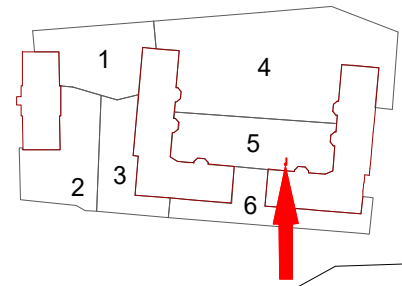


Figure 8 Plan view (bottom) and profile (top) of the brick wall segment in 111 SW Trench.

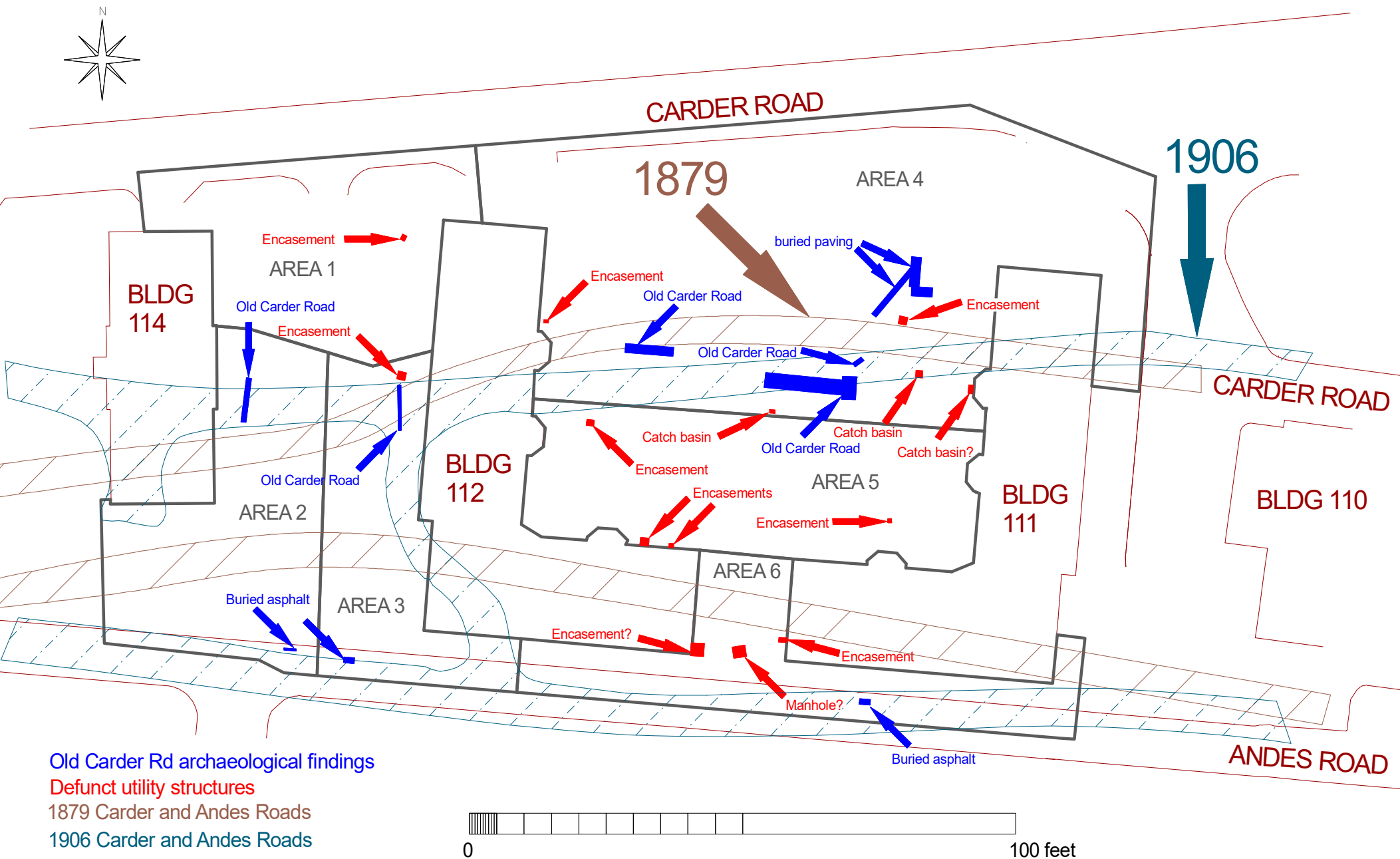


Figure 9 Old Carder Road findings and defunct catch basins, manholes and utility encasements unearthed during excavations for the Governors Island Spa project with traced historic locations of Carder and Andes Roads.

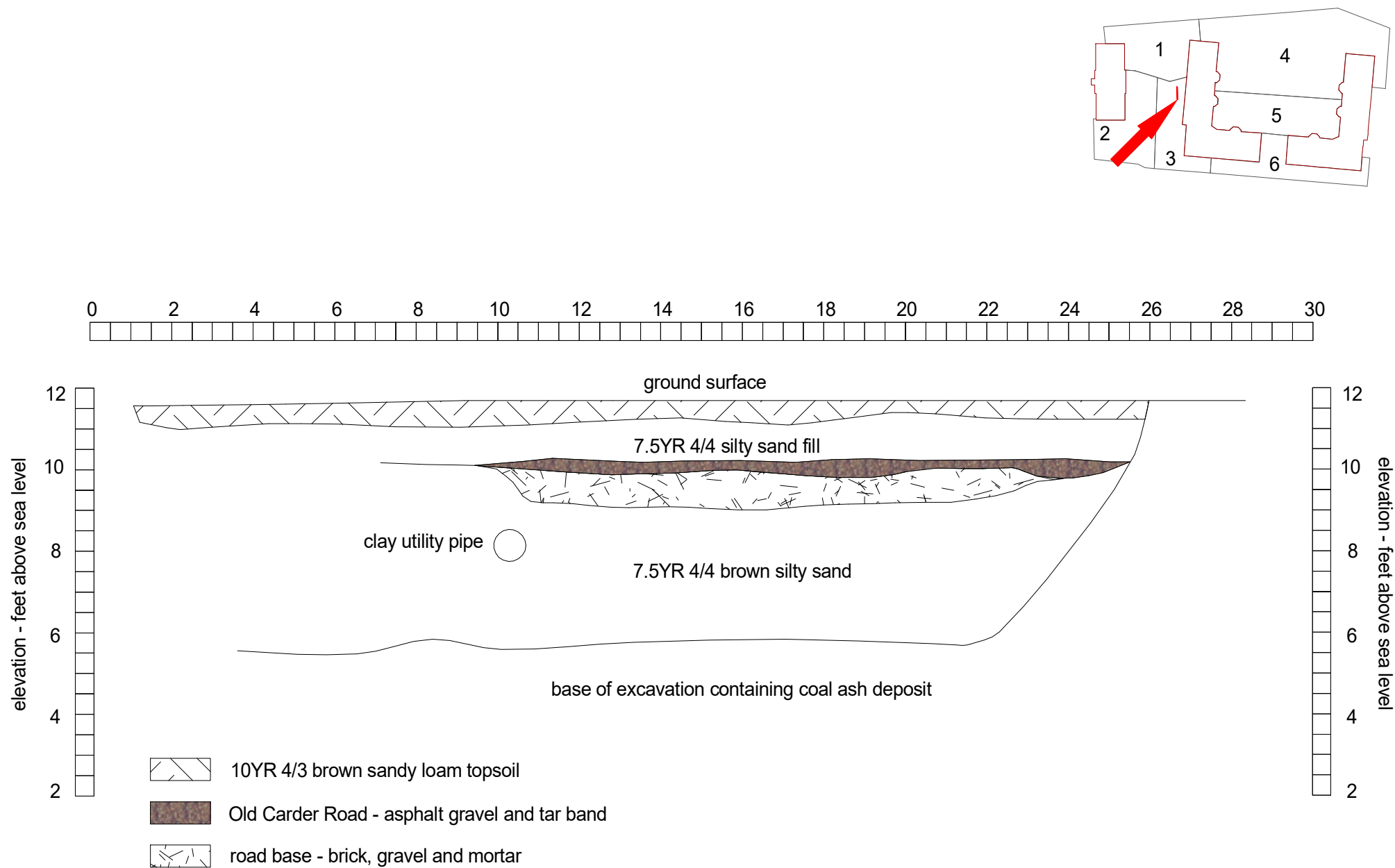


Figure 10 East Profile of CB 12 Trench showing Old Carder Road.

AREA 4

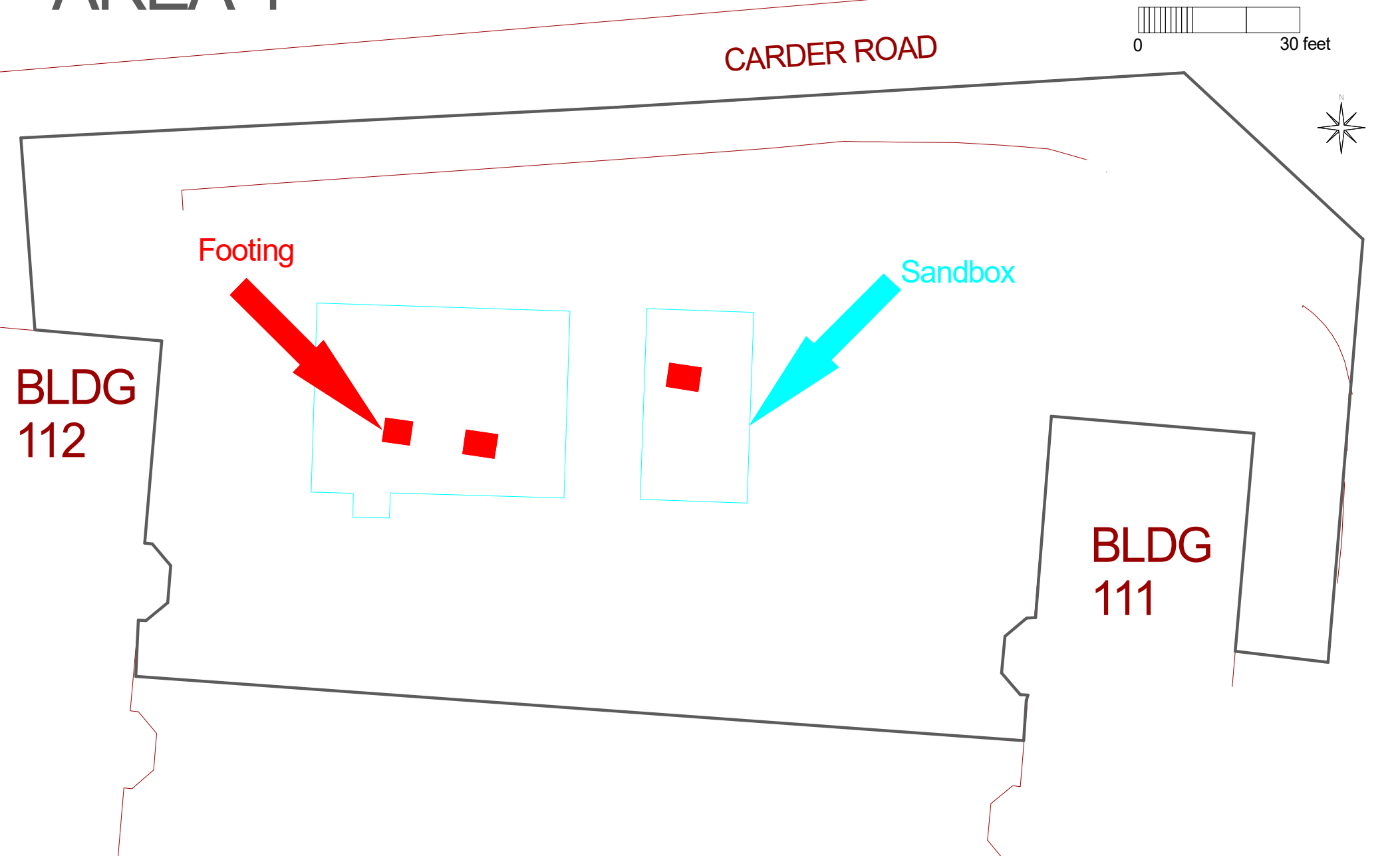


Figure 11

Former sandboxes and buried concrete footings found in Area 4 during excavations for the Governors Island Spa project.

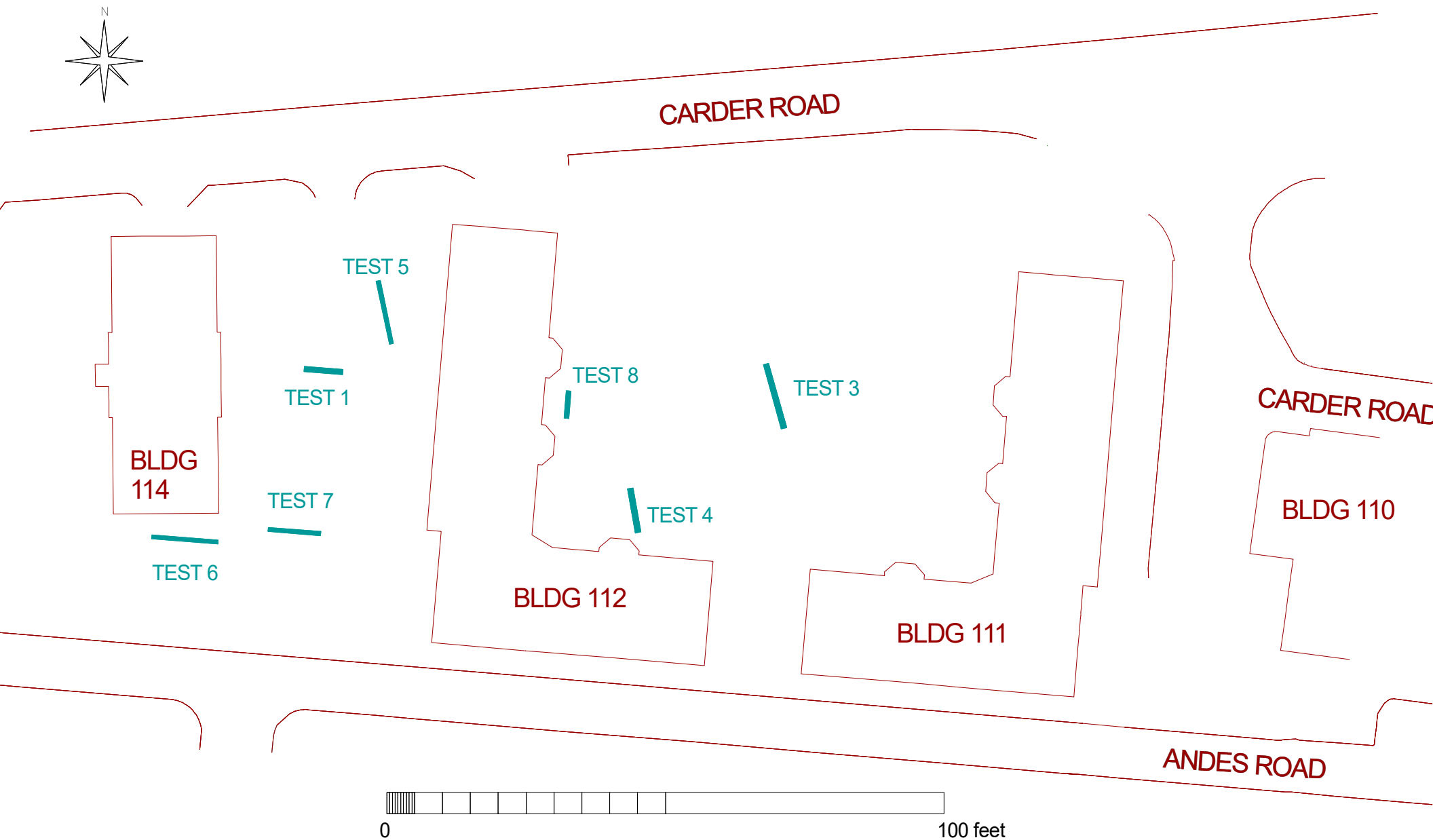


Figure 12 Pre-construction archaeological tests for the Governors Island Spa project.

AREA 1

CARDER ROAD

Possible surface

Defunct utility encasement

West Courtyard
Pool and Tunnel

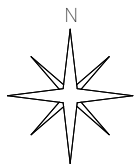
TEST 5

2 wooden vertical piles

AD 4

BLDG
114

BLDG
112



- Communication
- Electric
- Gas
- Sanitary
- Storm
- Water
- Existing water



Figure 13 Governors Island Spa Area 1 findings planview.

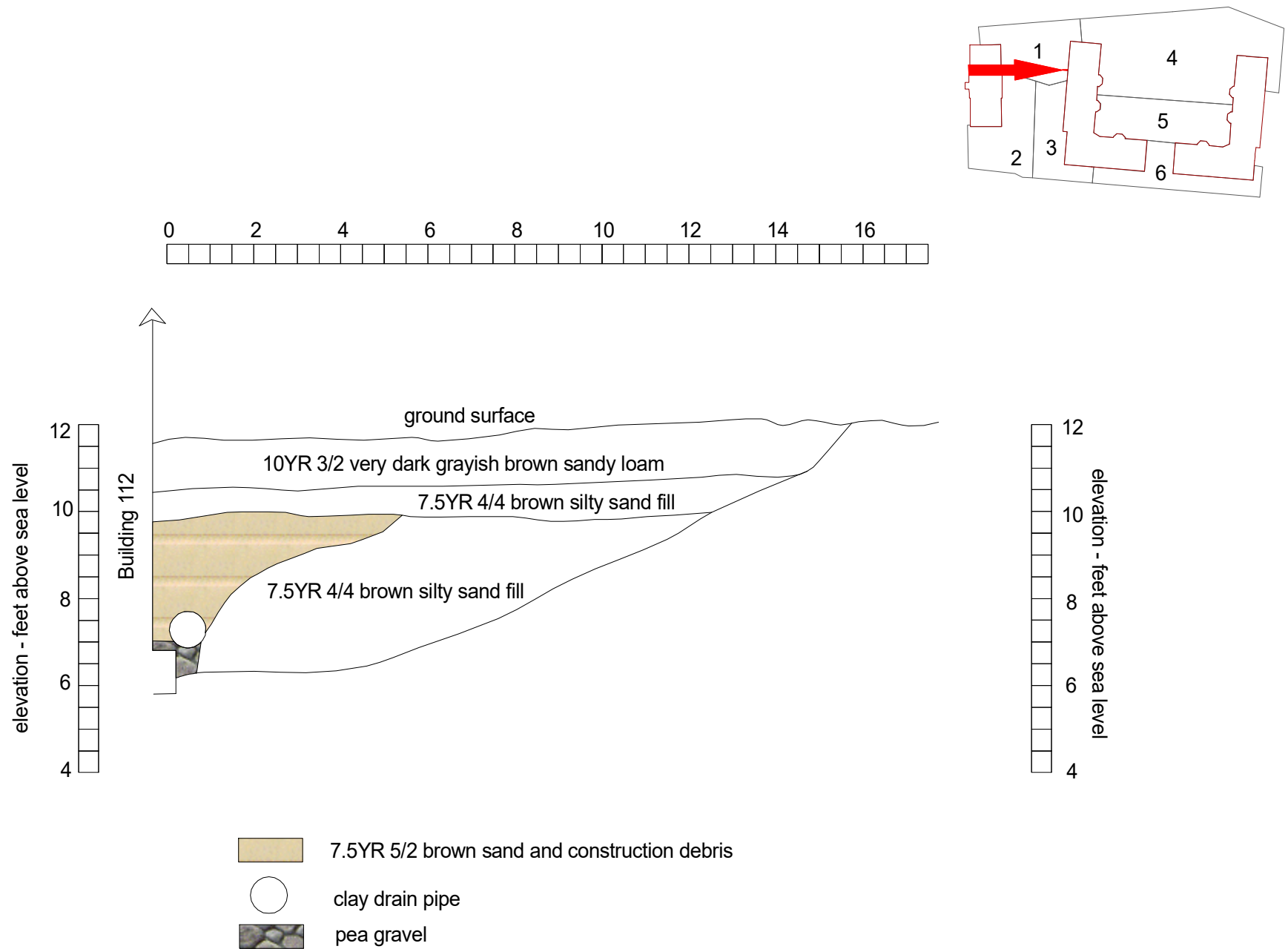
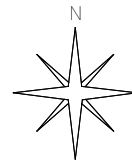


Figure 14 South Profile of West Pool 112 Tunnel Trench showing building drainage with pea gravel.

AREA 2

0 30 feet



AD 5

CB 9

TEST 1

Old Carder Rd.

BLDG
114

CB 10

TEST 7

TEST 6

Data Recovery 1

fence post exc
with brick strat

buried asphalt roadway

ANDES ROAD

Communication

Electric

Gas

Sanitary

Storm

Water

Existing clay

Figure 15

Governors Island Spa Area 2 findings planview.

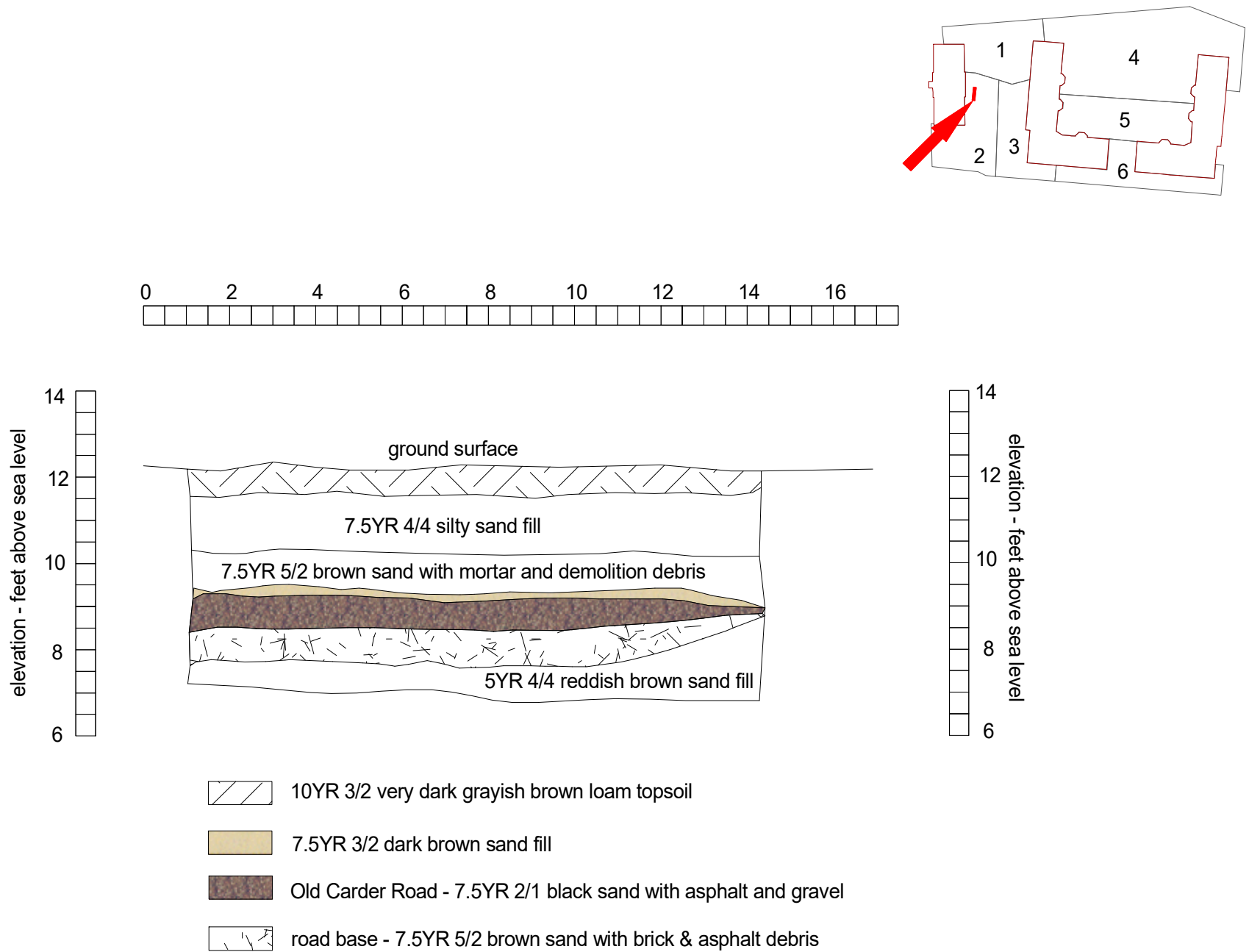


Figure 16 West Profile of SW CB 9 - 10 Trench showing Old Carder Road.

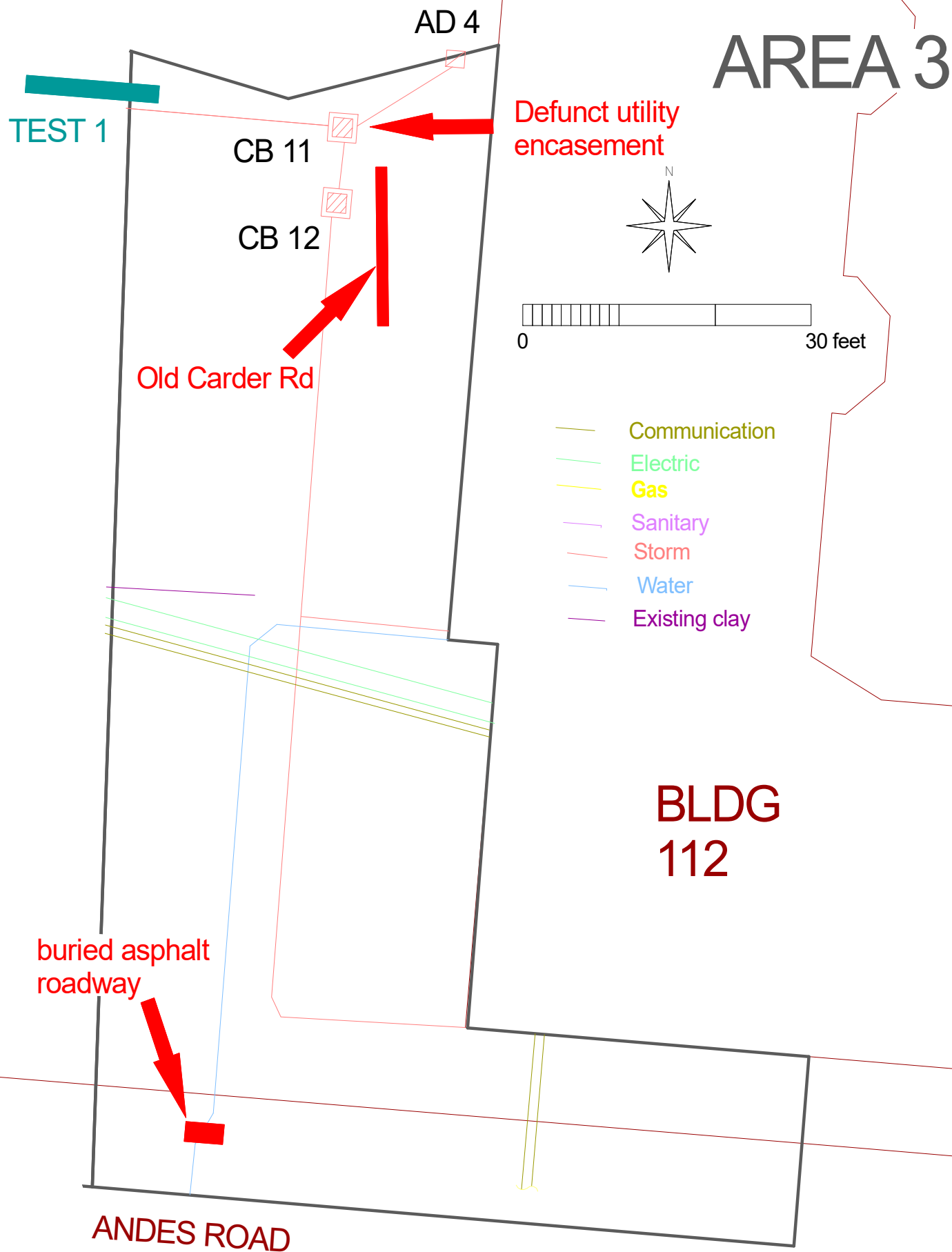


Figure 17 Governors Island Spa Area 3 findings planview.

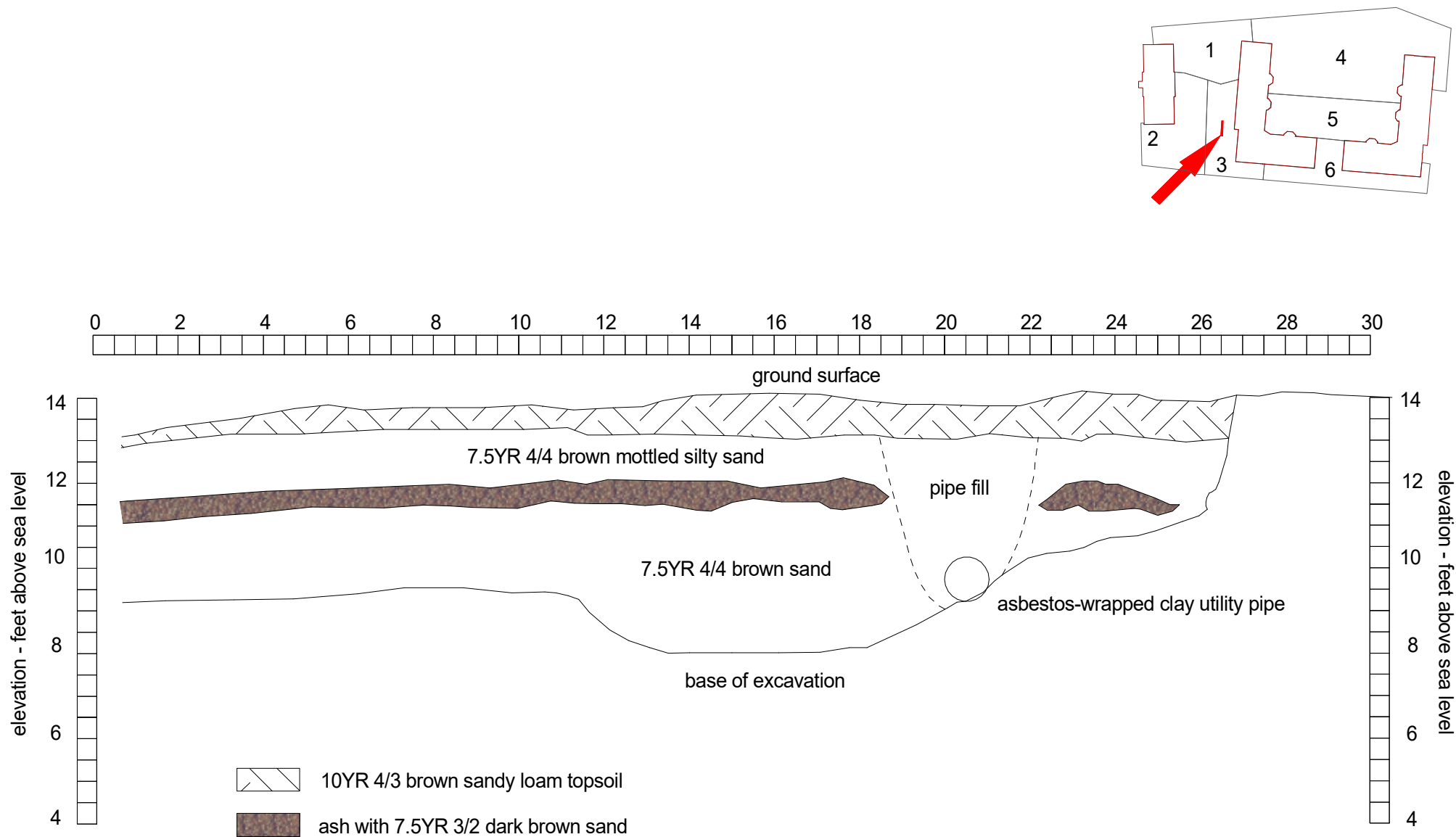


Figure 18 East Profile of SW Trench 1 Segment 3 showing coal ash deposit.

AREA 4

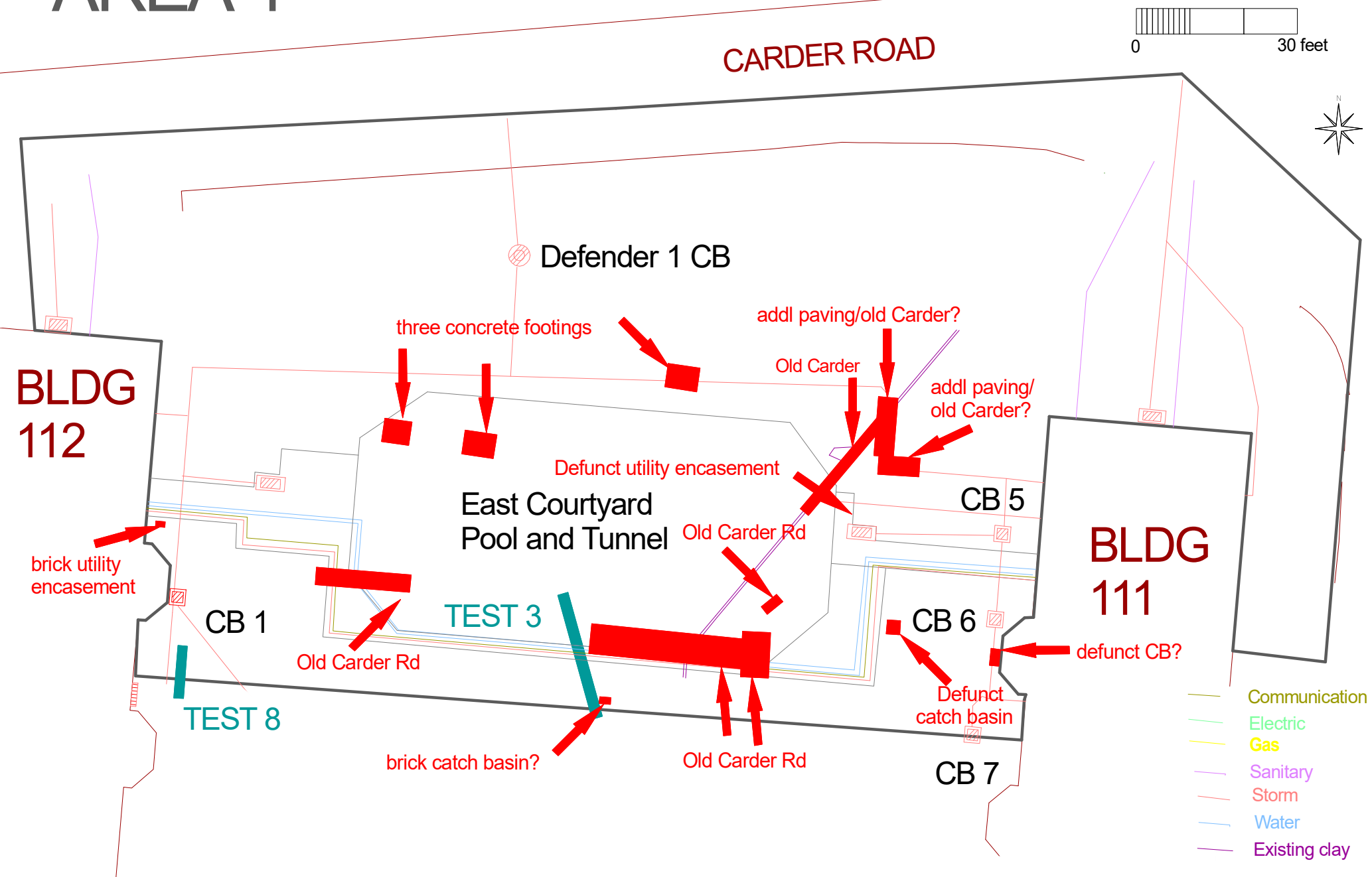


Figure 19 Governors Island Spa Area 4 findings planview.

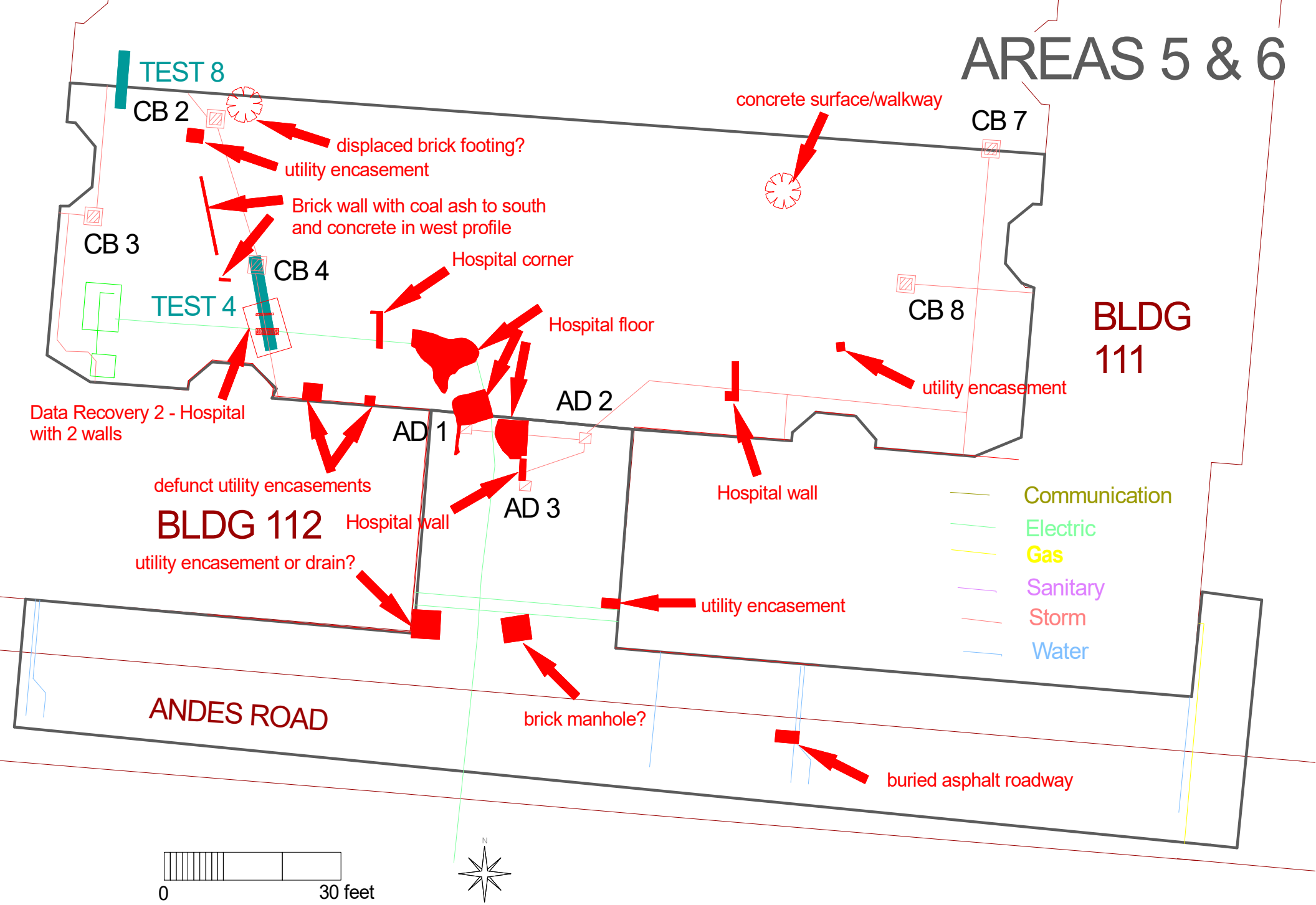


Figure 20 Governors Island Spa Areas 5 and 6 findings planview.



Photo 1 Concrete feature in the base of Excavation Unit 1 in the northern part of the unit beneath the trowel, facing southwest (Image 3650: September 27, 2019).



Photo 2 The underside of the concrete feature in Data Recovery 1 showing the semicircular edge on the lower right and the imbedded Empire brick in the upper left (Image 3672: September 30, 2019).



Photo 3 Data Recovery 2, Excavation Unit 3 (left) and part of Excavation Unit 2 (right), showing the three-course brick wall segment and its concrete spread footer in the center of the photo and the one-course brick wall at the right, facing west (Image 3728: December 4, 2019).



Photo 4 Excavation Unit 2 showing the base of the three-course brick wall on its north side, revealing no spread footer, and the one-course brick wall beneath the trowel, facing south (Image 3698: December 3, 2019).



Photo 5 CB 4 Trench completed excavation with the previously compromised one-course thick brick wall and the metal pipe at its base, as well as the coal ash deposit to its south, facing southeast (Image 2569: November 25, 2019).



Photo 6 Three-course brick wall segment crossing #111 SW Trench, facing west (Image 2988: February 27, 2020).



Photo 7 Three-course brick wall segment crossing #111 SW Trench, showing possible footing, facing south (Image 2957: February 27, 2020).



Photo 8 One-course thick brick wall segment covered with stone crossing Secondary Electric Trench, showing part of a stone floor extending from there eastward (right side of photo), facing east (Image 7930: November 18,2020).



Photo 9 Two sections of bluestone surface/floor identified in Secondary Electric Trench, facing northwest (Image 7964: December 2, 2020).



Photo 10 Three-course thick brick wall segment abutting concrete covered bluestone surface/floor identified in AD 1 - AD 2 Trench, also showing the previously installed concrete-encased secondary electric duct bank to the west beneath the marking tape, facing north (Image 3306: May 21, 2021).



Photo 11 Two layers of concrete surface/floor identified after a large tree was removed in the East Courtyard, facing south (Image 1640: July 9, 2019).

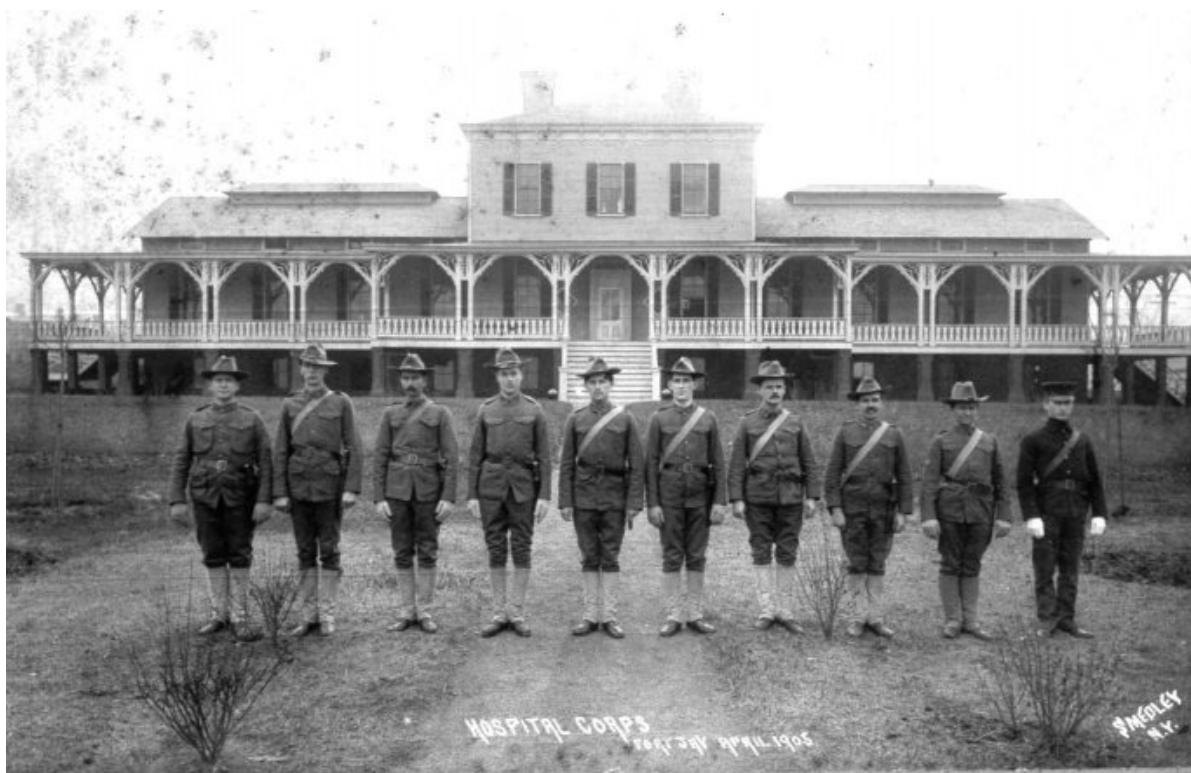


Photo 12 Postcard of the Post Hospital north facade, ca. 1905 (National Park Service Museum Collection).



Photo 13 Postcard of the Post Hospital south facade, ca. 1907 (National Park Service Museum Collection).



Photo 14 Old Carder Road in CB 12 East Profile, facing southeast (Image 2222: October 23, 2019).



Photo 15 Defunct Brick Utility Encasement CB 11 Trench E Profile, facing east (Image 2059: September 27, 2019).



Photo 16 SW Trench 1 Segment 2 East Profile, facing northeast (Image 2230: October 24, 2019).



Photo 17 SW Trench 1 Seg 3 E Profile and Ceramic Utility Exposure Trench crossing, facing west (Image 2169: October 17, 2019).

Appendix A

Archaeological Work Plan

REVISED¹ ARCHAEOLOGICAL RESEARCH AND WORK PLAN FOR
CREATING A SPA IN THE
GOVERNORS ISLAND HISTORIC DISTRICT
GOVERNORS ISLAND, NEW YORK, NEW YORK

February 18, 2016

The Trust for Governors Island (TGI) has entered into a relationship that will result in the creation of a spa in and around Building #s 111, 112 and 114 in the Governors Island Historic District (see Figure 1). The Historic District is both a National Historic Landmark District and New York City Landmark District. Because of the location in the Historic Districts, the work is subject to review and approval by both the New York State Office of Parks, Recreation and Historic Preservation (SHPO) and the New York City Landmarks Preservation Commission (LPC). The archaeological standards and requirements of both agencies will apply.

Building #s 111, 112 and 114 were originally constructed in 1934 (JCA 2003: Part 3: 68 - 73). Building #s 111 and 112 are L-shaped buildings that are mirror images. The below ground impacts from the construction of the spa will be primarily for pools planned in the larger courtyard space between Building #s 111 and 112 and also between Building #s 112 and 114. Other impacts will be from utilities and lighting (see Figure 2). A small amount of grading will also be included. In most places up to 2 feet (61 cm) of soil will be added, but grade will be lowered by approximately 1 foot (30 cm) in the interior corner of Building #112. Building #112 will also have several interior excavations for indoor spa features. Finally, some planting and landscaping will be conducted, primarily the planting of hedges to conceal above ground utility features (see Figure 1).

The excavation depth for the pool footings will be approximately 3 feet. However the connection from the large pool to Building #112 will require 5 feet of excavation. A large slab will be placed to the south of the large pool. It will require excavation up to 10 feet below ground surface. Impact depths for utilities will vary. They will generally range from 2 - 8 feet deep. The interior excavations inside Building #112 will be up to 3.7 feet deep for spa features and up to 7 feet for the elevator pit.

The research for this report is focused on potential impacts to archaeological sites that may exist within the footprint of the area depicted on the proposed site plan (Figure 1). This area will be referred to as the Area of Potential Effect (APE) for the Spa Project. This report includes information on known archaeological sites in the APE, an evaluation of a series of historic maps that will depict locations of potential historic period archaeological resources and a summary of previous archaeological work in and around the planned spa. Areas of archaeological sensitivity will then be defined and ranked. Finally, the field approaches for each defined area will be presented.

There is one known site in proximity to the APE, in the parking lot across the street from Building #114. The Andes Road Site includes both a late-18th to early-19th century cemetery component and a Native American component (SHPO 06101.007420) (see Figure 3). The Andes

¹ The original version of this report was dated March 17, 2015 and based on the conceptual design plan. This version has been updated to include the December 23, 2015/current design drawings and was dated January 19, 2016. That AWP was further amended on February 18, 2016 to add the SHPO Human Remains Discovery Protocol.

Road burial site was initially discovered while the Coast Guard was excavating for a high-voltage electrical line in the parking lot at the southeast corner of Hay and Andes Roads, across the street from Building #114. Emergency archaeological data recovery was conducted at that time and followed by monitoring of the remainder of the high-voltage line right-of-way in Andes Road eastward in front of Building #s 114, 112 and 111 toward Soissons Landing. The burials were found buried less than 2 feet (61 cm) below ground surface (LBA 1995: 58 - 59). They were limited to the parking lot area, however one of the grave shafts extended all the way north into the sidewalk, an indication that the burial site is not confined to the parking lot. During the Phase 1B testing, PAL also explored this possibility. Two mechanically excavated trenches were placed to establish the limits of the previously identified burials, one to the south and the other to the north, north of Andes Road to the southwest of Building #114. The northern trench exposed a possible grave shaft at approximately 1.5 feet (46 cm) below ground surface, however no human remains were found (PAL 1997: 39-49).

The Andes Road Native American site has Late Archaic and Late Woodland period artifacts found within the historic deposits associated with the burial site. Three Native American archaeological sites have been identified on Governors Island; one near Castle Williams (Andes Road site), one near Fort Jay and the other in northern Nolan Park. The closest site is the Andes Road Native American Site. It is just west of the planned spa, near Castle Williams and was identified during archaeological excavations of the Andes Road burial site. Extensive Phase 1B archaeological testing throughout the Governors Island Historic District resulted in the definition of areas of archaeological sensitivity for the preservation of Native American sites (see Figure 3). The only location previously identified as sensitive for the preservation of Native American archaeological resources for the Spa Project is the area south of Building #114 and continuing between Building #s 112 and 114.

Historic map overlays² show that a small portion of the work will be outside of the original Governors Island landform. The 1813 Mangin map depicts the northern limits of the Spa Project outside of the original high water mark (see Figure 4). By 1867, the Army began shoreline modifications including constructing a seawall that extended from the northern end of the area where Building #112 now stand southwestward within the APE. Construction of several buildings had also occurred in the APE by that time (see Figure 5). The Engineers Department built a carpenter shop directly to the south of where Building #114 now stands. They built a blacksmith shop to the east of that in the area now between Building #s 114 and 112.

By 1879, Andes Road had been laid in the vicinity of the APE. Interestingly, there are two different 1879 maps, both attributed to the First U. S. Army Engineers and surveyed by First Lieutenant Eugene Griffin and Mr. Frederick Owen. However, they are dramatically different from one another in the area of the spa APE (see Figure 6). Although the source of the discrepancy was not identified, the most likely reason for the difference is that the old building demolitions and the new building episode were at the same approximate time - 1879. Figure 6 depicts both maps with the larger image being the more detailed version. It depicts four buildings within the APE. They are labeled with the numbers 42 - 45. Number 42 is located inside the L of Building #112, number 43 between Building #s 112 and 114, number 44 at the south end of Building #114 and number 45 in and to the north of Andes Road. All those numbers are keyed as "Engineer Buildings." Although 45 is depicted to the south of Andes Road

² Historic map overlays presented in this report were made by scaling and orienting the images to north and then aligning the nearby extant buildings, based on the 2012 Langan survey, without skewing.

in 1879, the course of Andes Road has changed over time and part of that building is now within the APE. The version of the 1879 map inset on Figure 6 does not depict any of those buildings, but instead shows the New Hospital in the larger area around where building 42 is depicted on the larger map. The hospital is partially within what is now Building #112 and also takes up a good part of the courtyard space between Building #s 112 and 111. Both versions of the 1879 map also depicts Building #110 which was constructed between 1870 and 1879 (JCA 2003: 66). Finally, in addition to Andes Road, there is another road depicted on the north side of APE buildings that is the predecessor to today's Carder Road.

By 1902 several smaller buildings have sprung up within the APE, with the new Post Hospital still present. Figure 7 is the 1906 update to the 1902 map. In addition to the hospital, several other structures were added. These include a bakery (67) under and around the northern end of what is now Building #114, Comsy. Sgts Qrs. (57) south of Building #114, MS. Qrs. (61) east of Building #112 and Amb. Ho. to the east of that. Furthermore, Andes Road is shown close to the same configuration as it is today and the seawall was firmly established to the north of the APE by then. All the same conditions are also depicted on the 1908 map.

There is even further development by 1919, with several other structures built. Unfortunately, that map is not well proportioned and does not label the buildings or provide a key. Additional structures are depicted southwest of Building #114, between Building #s 114 and 112 and to the east of the hospital in the courtyard between Building #s 112 and 111 (see Figure 8). The numbers added to the figure are those depicted on the 1928 Fort Jay map. The 1919 conditions persist through 1928 when an aerial photo captured the situation (see Figure 9). By 1934 all of these structures within the APE are gone and the current buildings in place.

A number of prior archaeological projects have taken place in and around the spa APE. Figure 10 depicts those work locations and provides more detailed location information on the previously discussed Andes Road site. Since that time, additional archaeological testing and monitoring has been conducted within and on the north side of Andes Road, both in front of the spa APE and in the grassy area to the southwest of Building #114. Trenching in Andes Road was conducted to a depth of 2.7 feet (82 cm) for electrical lines and to 5 feet (152 cm) for the potable water main. No graves, grave shafts, displaced human remains or Native American artifacts were found (Stone 2014: 15; Stone 2015).

A second archaeological site was identified during the Governors Island Potable Water Distribution Project that is currently under analysis (SHPO Project 13PR03803). A concrete corner was identified buried 2 feet (61 cm) below ground surface in the profile of an excavation located to the southwest of Building #114, in the grass adjacent to the Andes Road sidewalk and the paved foot path to the west of Building #114. The corner would have been the southeast corner and therefore any former structure associated with it would have been away from the direction of Building #114. Although, at this point in time, it is not known if the concrete corner was part of a former structure or a utility encasement, its proximity to the APE warrants consideration of this potentially significant finding.

The high-voltage monitoring and electrical monitoring locations are also depicted on Figure 10 in Andes Road. No additional findings were reported for the high-voltage monitoring. Electrical line trench monitoring revealed a buried former curb adjacent to the area between Building #s 111 and 112, testament to the changing configuration of Andes Road (Stone 2014: 17). Trenching for the potable water main was further toward the center of the road than the electrical line

excavation. No potentially significant archaeological finds were encountered in that work adjacent to the spa APE.

A transect of four shovel test pits was placed in the grassy area between Castle Williams and Building #114 as part of Phase 1B archaeological testing. Disturbance was noted to the base of excavation, 3.3 feet (100 cm). The material remains included a preponderance of demolition debris. It was hypothesized this was debris from the demolition of the former nurses quarters that stood in that area from the at least 1936 through around 1980 (PAL 1997: 40). Excavation monitoring of sign posts was conducted along Andes Road on either side of Building #111. Three post holes were augered to 4 feet (122 cm) below ground surface. No features were encountered in any of them. There was no cultural material noted in the eastern hole, the one between Building #s 110 and 111. The other two holes contained brick fragments in the bottom stratum and one also contained a clay sewer pipe fragment (Stone 2008a: 5-6). Therefore these deposits were not in a natural undisturbed state. Excavation of several post holes along a transect was also conducted directly north of the signs between the short side of the ells of the buildings. These posts were excavated to 2 feet (61 cm) below ground surface. One of the posts adjacent to the path between the buildings contained a loamy deposit to the base of excavation. Another contained demolition debris including a piece of marble in the bottom stratum. Although no temporally diagnostic artifacts were encountered, it was concluded the area likely contained debris associated with the Post Hospital (Stone 2009: 2). Further north, between Building #s 111 and 112, excavation for a tree planting hole was monitored. The location was in an area that was formerly a playground during part of the 20th century, at least through 1994 and likely to 1996 when the Coast Guard left Governors Island. The tree planting hole was excavated to 2.6 feet (79 cm) below ground surface. Artifacts were recovered from the bottom stratum and included a plastic toy truck (dated post-1940), part of a marble slab and part of a marked porcelain wall tile (Stone 2008b: 1-2). It is possible this was a mix of both playground related and hospital related material.

In addition to the more ground intrusive work, one boring was also monitored within the spa APE, as part of a larger project, located north of Building #111. It was used to evaluate the presence or absence of original shoreline deposits. No evidence of it was found, however it was assumed the depth was that of the first non-artifact bearing stratum at 11 feet (335 cm) below ground surface (Stone 2011: 3). The spa team recently conducted three borings within the APE without archaeological oversight, but provided the results to be incorporated here (see Figure 10). All three borings contained fill to 7 feet (213 cm) which was the water table. No information on was provided on cultural material that may have been contained in the fill. S1 and S-3 were advanced to 17 feet (518 cm). S-2 had a refusal at 12 feet (366 cm) (IVI 2015: 6 - 9).

In addition to completing three borings, the spa team also conducted a ground penetrating radar survey (see Figure 11). The drawing depicts nine anomalies (RA Consultants 2015). Eight of these are between Building #s 111 and 112. Six small, 18 -24 inch (46 - 61 cm) deep, anomalies were found in the center courtyard. There is a larger anomaly depicted inside the corner of the Building #112 L at 2 feet (61 cm) deep and a moderate size anomaly buried 3.7 feet (112 cm) between the short sides of the building ells. The locations of the smaller anomalies correspond to the north and south sides of the former hospital. The larger anomaly is within the foot print of the hospital west wing and could represent a section of the basement floor, based on the size. One large anomaly was identified between Building #s 112 and 114 at 38 inches (97 cm) deep. It was described as a "possible void." The location coincides with the area of a former bakery and adjacent building mapped in 1919.

None of the existing conditions surveys depict the utilities between the buildings in the APE. However, some pipes are shown on the GPR survey (see Figure 11). No other below ground disturbances that would have obliterated potential archaeological resources are known for the APE.

Based on the historic map analysis coupled with the known below ground deposits documented in earlier archaeological work within the spa APE, there is a large area that is considered archaeological sensitivity for this project, mainly as a result of historic map-documented structures. Figure 12 depicts the areas of highest sensitivity for the preservation of remains of these buildings. It was created by combining the historic map overlays and using a 5 - 10 foot (152 - 305 cm) buffer around the mapped locations. The combined building footprints for structures that are depicted on multiple maps is generally larger than on a single map because they are not centered on each other due to scaling issues with the individual old maps. Any below ground activities that are planned for these sensitive areas would require pre-construction archaeological testing.

Fortunately, the GPR survey has provided an obvious starting point for pre-construction archaeological testing. The pre-construction archaeological work should focus on ground truthing the anomalies that fall within the final design for the Spa Project. These included three areas in the courtyard between Building #s 111 and 112 where the Hospital once stood; part of the 27-inch deep tunnel anomaly that goes through where the larger pool is planned, one of the small 18-27 inch deep anomalies and part of the 24-inch deep unknown surface layer that are both within the paths of planned utilities. Also included is the possible void identified in the GPR survey where part of building number 142? on the 1919 and 1928 maps cross the path of where lights are planned.

Ground truthing would consist of selecting a finite location within the anomaly commensurate the the size of the planned spa impact (see Figure 12). For example, archaeological work would be confined to the footprint of only the portion of the planned impact rather than the entire anomaly footprint. Of the three areas identified associated with the former hospital, the two larger anomalies (the tunnel and surface) would require a test trench of no more than 3 feet (91 cm) wide by 10 feet (305 cm) long to assess the presence or absence of remains of the hospital in that area. A smaller test pit would cover the area of where an unknown anomaly was found where an electrical line will be placed. Up to three similarly sized test pits³, one for each light, should also be adequate to identify potential archaeological resources in the former building number 142? area where lights are planned. The depth of these proposed excavations would be sufficient to determine the identity of the anomaly as specified in the GPR survey (see Figure 11).

Pre-construction testing should also be conducted in other archaeologically sensitive areas where the spa will require excavation (see Figure 12). These include a sample of all utility locations within the crosshatch, the western pool (the eastern pool testing is described above regarding ground truthing the GPR survey), and the slab area to the south of the western pool. One trench per historic map-documented structure location should be sufficient to identify potentially significant archaeological resources. Ultimately, in addition to the areas where GPR ground truthing was recommended, this includes six locations. From west to east; 1) the western end of the planned water line to identify possible remains of the 1867 Carpenter shop on Figure 5,

³ Three lights will be placed in that footprint. However, if the initial test pit unearths the expected remains, there would be no need for additional test pits in that anomaly.

building number 44 on Figure 6 and building number 57 on Figure 7, 2) the area of the parallel telephone, electric and water lines and the nearby lighting to identify possible remains of the 1867 Blacksmith shop on Figure 5 and building number 41 of Figure 6, 3) at the western pool and storm drainage line to identify possible remains of building 142? on Figures 8 and 9, 4) the storm drainage line east of Building #112 to identify possible remains of building number 42 on Figure 6, 5) the water line parallel and south of the large pool to identify possible remains of the Post Hospital and 6) the eastern end of the planned electrical line east of Building # 111 to identify possible remains of the former MS. Qrs/number 61 on Figure 7.

Archaeological monitoring of contractor excavations is recommended to follow-up on areas that were previously tested as described above within the highly sensitive areas, as well as for excavation of other locations within original Governors Island landform as depicted on Figure 12. In addition to potential for identifying remains of historic map-documented structures, the area between Building #s 112 and 114 south of the original shoreline and to the south and west of Building #114 are sensitive for the preservation of Native American resources.

No archaeological work is recommended for areas without historic map-documented structures that are located outside of the original Governors Island landform as depicted on Figure 12.

The pre-construction trenching will use a combination of backhoe and manual labor to remove overburden and expose the anomalies or potential archaeological features. Hand excavation of the potential feature(s) will be completed to expose the extent within the excavation. Should intact remains of the historic map-documented structures be identified, consultation will take place to determine whether the project can be redesigned in those specific locations or what type of archaeological data recovery work will be needed in order for the project to go ahead as planned.

The monitoring protocol gives the archaeologist authority to halt contractor excavations to document any archaeological resources, should they be encountered. The archaeologist will communicate directly with the machine operator should excavations need to temporarily stop for archaeological purposes. Should this be necessary, excavations will be temporarily suspended in that location while the archaeologist hand excavates, measures and records the find(s). The amount of time necessary for this will be relative to the extent of the find(s) and the weather conditions. A minimum of one half hour will be needed for each location where an archaeological resource is encountered. The contractor may need to resume their excavation activities elsewhere when an archaeological find is identified. Should an archaeological feature be encountered, it will be archaeologically exposed. Samples of soil may be screened for artifact recovery. Measurements will be taken for field drawings and the find(s) will be photographed. Should the feature prove to be potentially significant, the Spa Team, TGI, SHPO and LPC will be consulted and either the project will be redesigned or a plan for further archaeological work will be prepared and implemented. Although potential to identify human remain and/or burials is low for the Spa Project, should they be encountered, the SHPO Human Remains Discovery Protocol will be implemented (see attached).

Should no potentially significant archaeological resources be encountered during monitoring, the stratigraphy in the excavation will be documented. If the excavation is safe for entry, the documentation will be conducted from within. If an area is unsafe for entry/deeper, and the exposed deposits are fill and clearly do not contain potentially significant archaeological resources or if the exposed deposits are culturally sterile, that trench will not be entered and will

be documented from above by dropping a measuring tape and examining soil from the backdirt. If backdirt is not available for direct inspection because it is loaded directly into dump trucks, then visual estimation of soil will be recorded. Soil colors will be compared to the Munsell Soil Color charts. Measurements and photographs will be taken. If no *in situ* deposits and no archaeological features are encountered, no further archaeological documentation will be done.

Any changes to the project plans will also be archaeologically evaluated, not only for locations where alterations to the work are proposed, but also should additional excavations be added. Those locations would be assessed archaeologically for their potential to impact archaeological resources and this plan amended.

Standard methods of artifact processing, labeling, identification, evaluation and documentation will be done on the recovered materials. Upon completion of all archaeological work specified in this plan, a written report will be provided to the Spa Team and TGI for submission to SHPO and LPC. The report will detail the archaeological results. It will include map(s) at appropriate scales showing the locations of excavations and of archaeological resource that may be identified, as well as the soil profiles from the monitored trenches.

MONITORING PLAN

All construction monitoring for the Spa Project will take place according to the following plan.

- The archaeologist has the authority to halt contractor excavations to document any archaeological resources, should they be encountered.
- The archaeologist will communicate directly with the machine operator should excavations need to temporarily stop for archaeological purposes.
- Should any potentially significant archaeological resources be identified, the contractor will be instructed to stop excavation until the resources can be evaluated and the archaeologist hand excavates, measures and/or otherwise records the find(s).
- The amount of time necessary for this will be relative to the extent of the find(s) and the weather conditions, but a minimum of one half hour should be expected for any given location. More time may be necessary if it is rainy, snowy or below freezing.
- The objective of investigations will be to identify any potentially significant archaeological resources, as identified in this plan or its amendments, if any. If identified, these resources will be documented in a number of ways, depending on and appropriate to the resource. Archaeological field techniques may include hand excavation to expose the resource, screening of soil for artifact recovery, taking measurements, producing field drawings, and /or photographing the resource(s).
- It is possible the archaeologist will require assistance from the excavation contractor, such as erecting protection for potentially significant archaeological resources, moving backdirt or providing shelters to work under winter conditions if data recovery excavations are needed.
- Should the initial inspection determine the resources are potentially significant, the Spa

Team and TGI would be immediately contacted. In such a case, the Spa Team, TGI, SHPO and LPC will have to be consulted and either a plan to recover archaeological data will have to be produced or other mitigation measures developed, including possible project redesign. Should additional archaeological excavations be determined necessary, then the consultations will also include a discussion of time frames for conducting and completing that work.

- If the potentially significant archaeological resource requires immediate action, the archaeologist will have up to one week from the time the verbal agreement is reached between the Spa Team, TGI, SHPO and LPC to prepare a written plan for their review. The agencies will have up to one week from verification of receipt to review the plan. Their concurrence in writing will be needed prior to field work.
- If any unexpected finds are identified in the field during monitoring, those too will need to be addressed in a similar manner. However, it may be necessary to conduct additional documentary research as it may relate to the unanticipated resource.
- Should potentially significant archaeological resources be identified and the project redesigned as a result, then any changes to the project plans will also need to be archaeologically evaluated and additional archaeological field effort may be necessary.
- If no archaeological features are encountered, the archaeologist will document the soils and fill deposits. This will include taking photographs and measurements for drawings. Stratigraphy will be recorded using comparison to the Munsell Soil Color Charts.
- Any recovered artifacts will be subject to standard methods of artifact processing, labeling, identification, evaluation and documentation. It is expected items such as coal, cinder, brick fragments and modern garbage will be recorded but not retained. Upon completion of the excavations, documentation, artifact processing and analysis, a report detailing the work will be prepared, according to the current standards of practice.

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**State Historic Preservation Office/
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Preservation
Human Remains Discovery Protocol
(June 2015)**

In the event that human remains are encountered during construction or archaeological investigations, the New York State Historic Preservation Office (SHPO) recommends that the following protocol is implemented:

- At all times human remains must be treated with the utmost dignity and respect. Should human remains or suspected human remains be encountered, work in the general area of the discovery will stop immediately and the location will be immediately secured and protected from damage and disturbance.
- Human remains or associated artifacts will be left in place and not disturbed. No skeletal remains or materials associated with the remains will be collected or removed until appropriate consultation has taken place and a plan of action has been developed.
- The SHPO, the appropriate Indian Nations, the involved state and federal agencies, the coroner, and local law enforcement will be notified immediately. Requirements of the coroner and local law enforcement will be met. A qualified forensic anthropologist, bioarchaeologist or physical anthropologist will assess the remains *in situ* to help determine if the remains are Native American or non-Native American.
- If human remains are determined to be Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO and the Indian Nations. The involved agency will consult SHPO and appropriate Indian Nations to develop a plan of action that is consistent with the Native American Graves Protection and Repatriation Act (NAGPRA) guidance. Photographs of Native American human remains and associated funerary objects should not be taken without consulting with the involved Indian Nations.
- If human remains are determined to be non-Native American, the remains will be left in place and protected from further disturbance until a plan for their avoidance or removal can be generated. Please note that avoidance is the preferred choice of the SHPO. Consultation with the SHPO and other appropriate parties will be required to determine a plan of action.

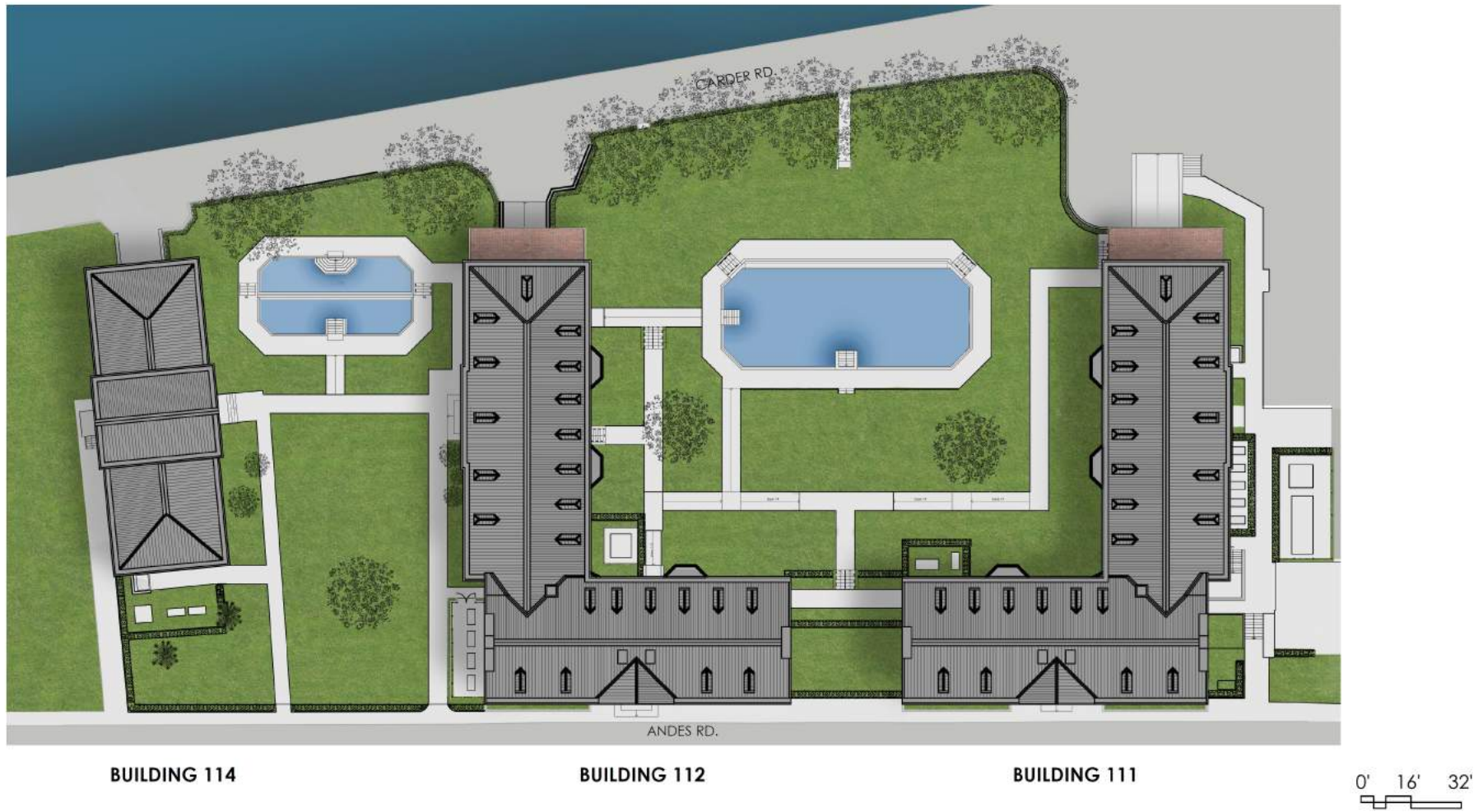


Figure 1 Proposed site plan for the Governors Island spa in and around Building #s 110, 111, 112 and 114.

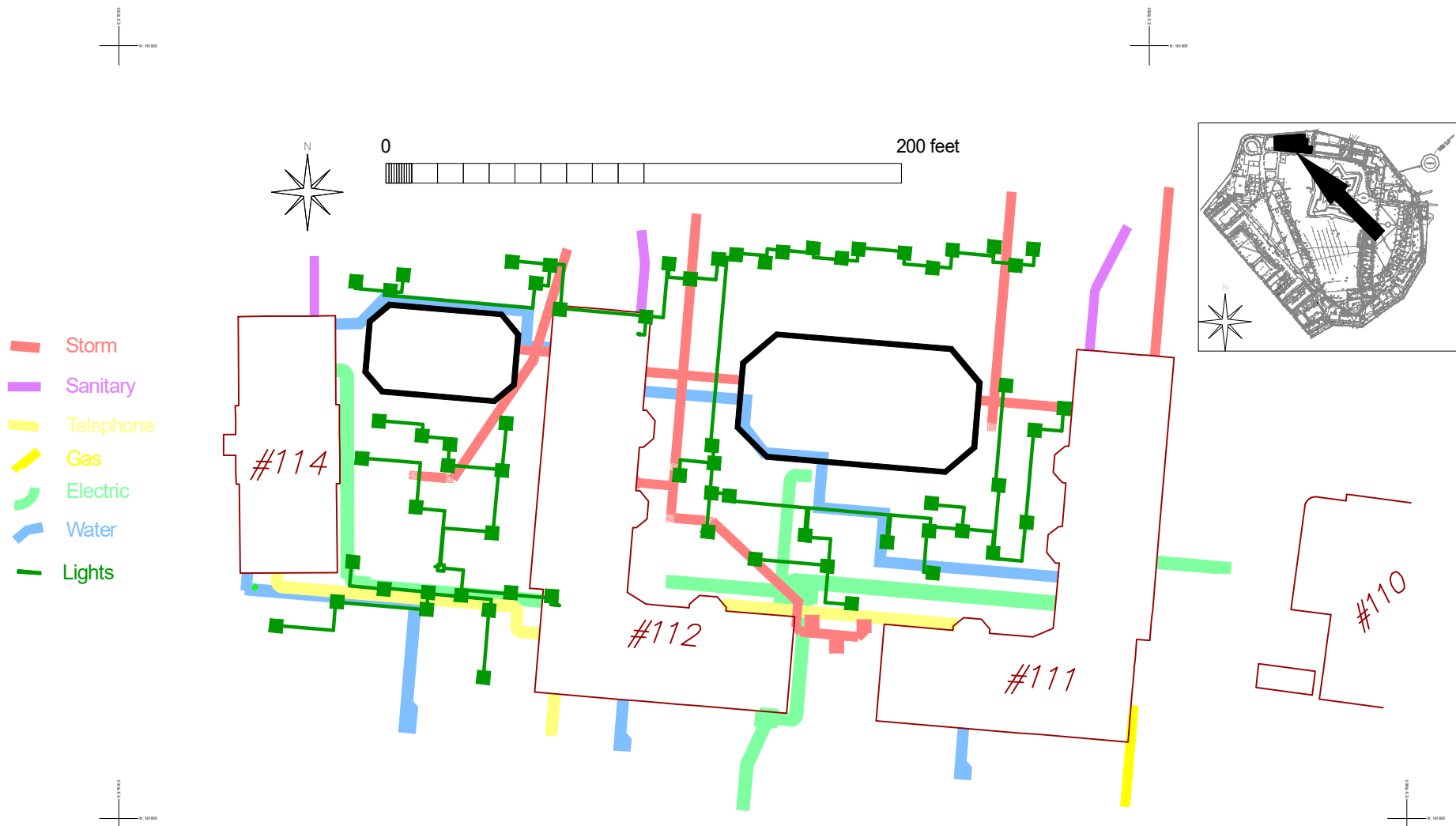


Figure 2 Location of planned utility excavation and pools for the Governors Island spa in and around Building #s 110, 111, 112 and 114.

LOCATION MAP

SITE PLAN
 U.S. COAST GUARD
 SUPPORT CENTER NEW YORK
 GOVERNORS ISLAND, NEW YORK
 JAN 1992

0 100 200 300 400 500'

UPPER NEW YORK BAY

1000' SEA WALL

CASTLE WILLIAMS 501

Spa APE

BUTTERMILK CHANNEL

YANKEE PIER

GOV. IS. LIMITS

EXHIBIT:

A. VEHICLE WT. (TOTAL)
 1. TRUCK/CAR, DUAL AXLES-----30 TONS
 2. TRUCK, TANDUM AXLES-----50 TONS

B. DIMENSIONS
 1. HEIGHT-----13'-6"
 2. LENGTH-----50'-0"
 3. LOAD WIDTH-----10'-0"
 4. WHEEL BASE WIDTH-----8'-10"

PIER:

A. PIER 78-----7500/4
 B. PIER 100-----7500/4
 C. PIER 101-----3000/4
 D. LIMA PIER-----25 TONS (DUAL AXLE)
 E. TANDU PIER-----15 TONS (DUAL AXLE)
 F. YANKEE PIER-----25 TONS (DUAL AXLE)

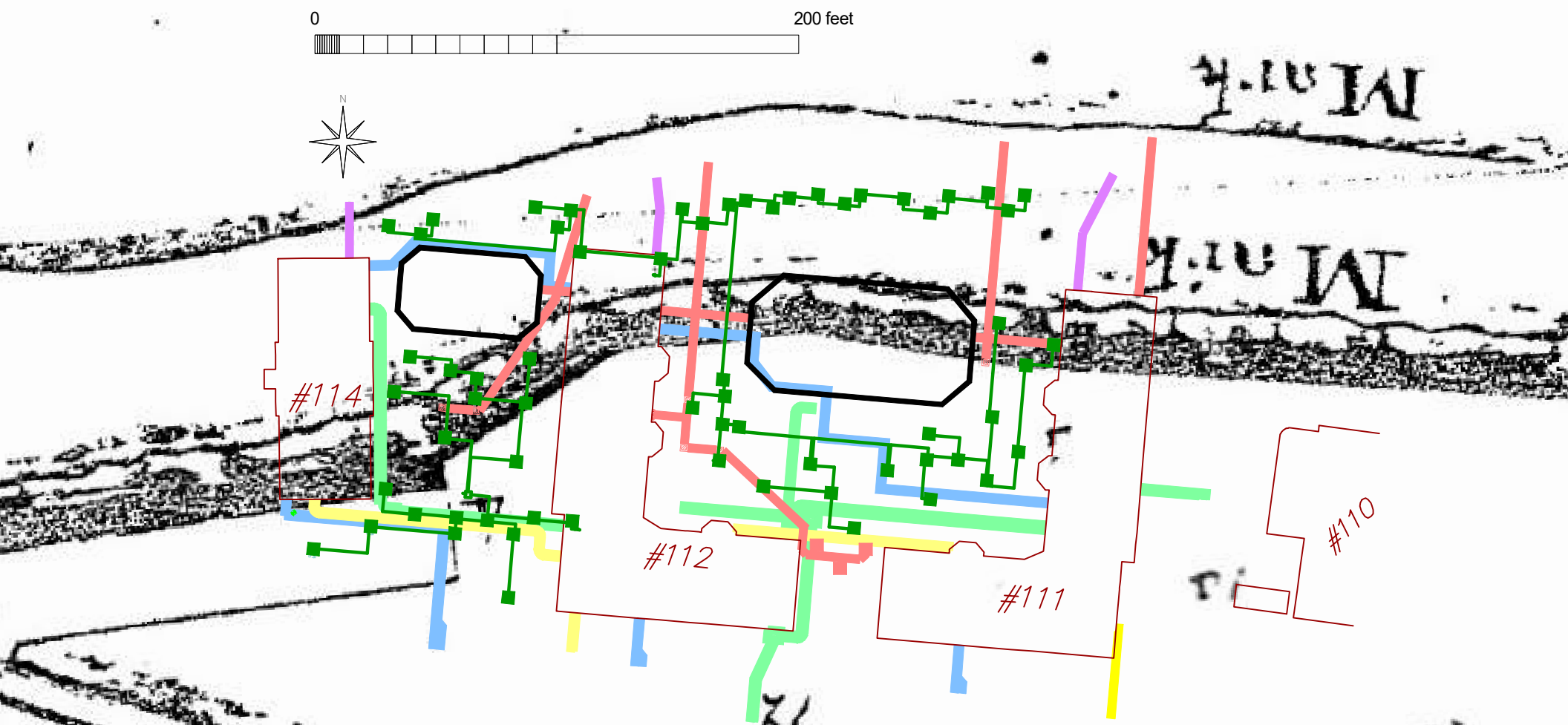


Figure 4 Part of the 1813 Mangin map showing the spa pools and utilities.



Figure 5 Part of the 1867 Barnard map showing the spa pools and utilities.

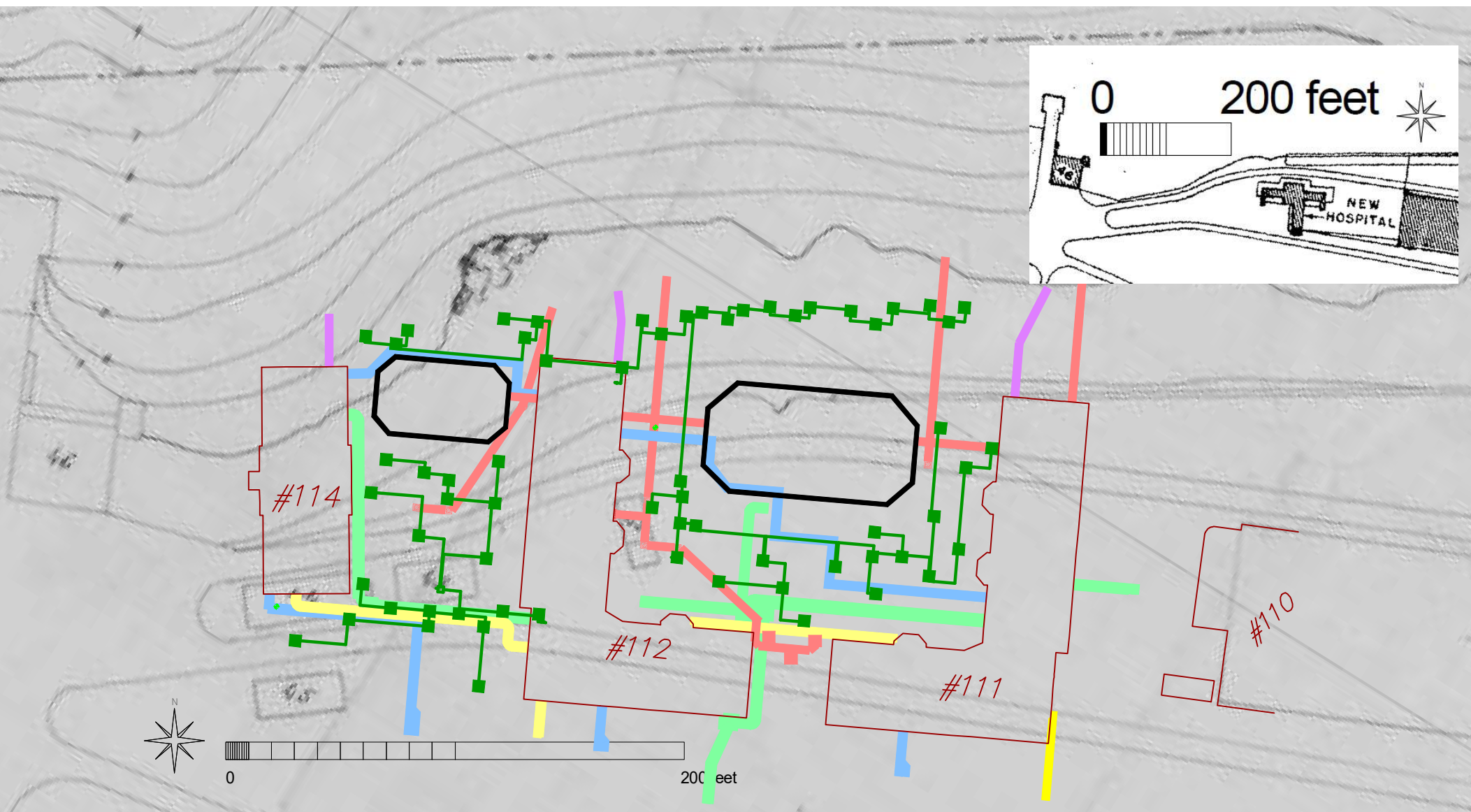


Figure 6 Part of the two versions of the 1879 Army map showing the spa pools and utilities.



Figure 7 Part of the 1906 Hilton map showing the spa pools and utilities.

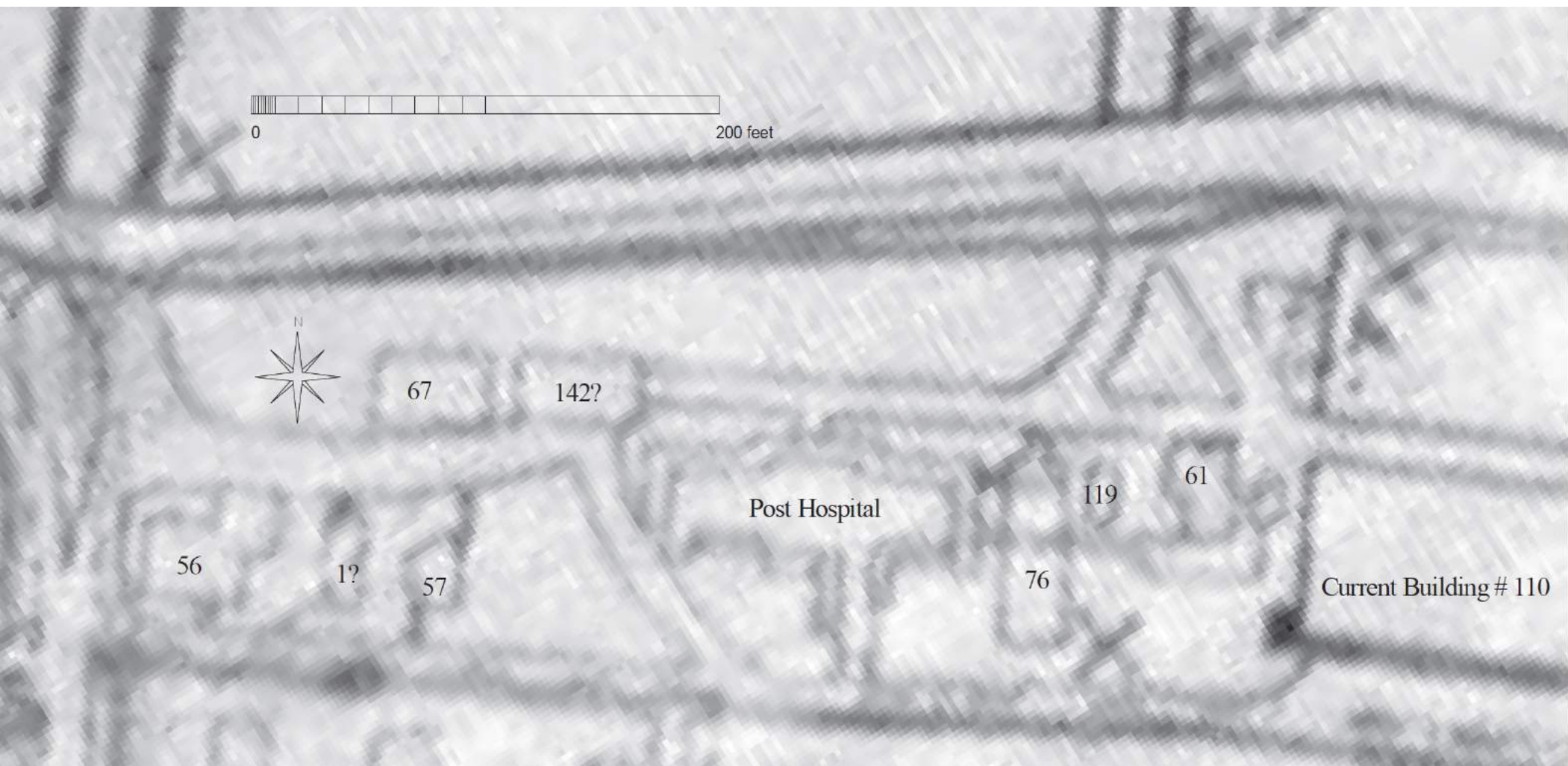


Figure 8 Part of the 1919 Utility map showing the area of the Spa APE and building numbers from the 1928 map.

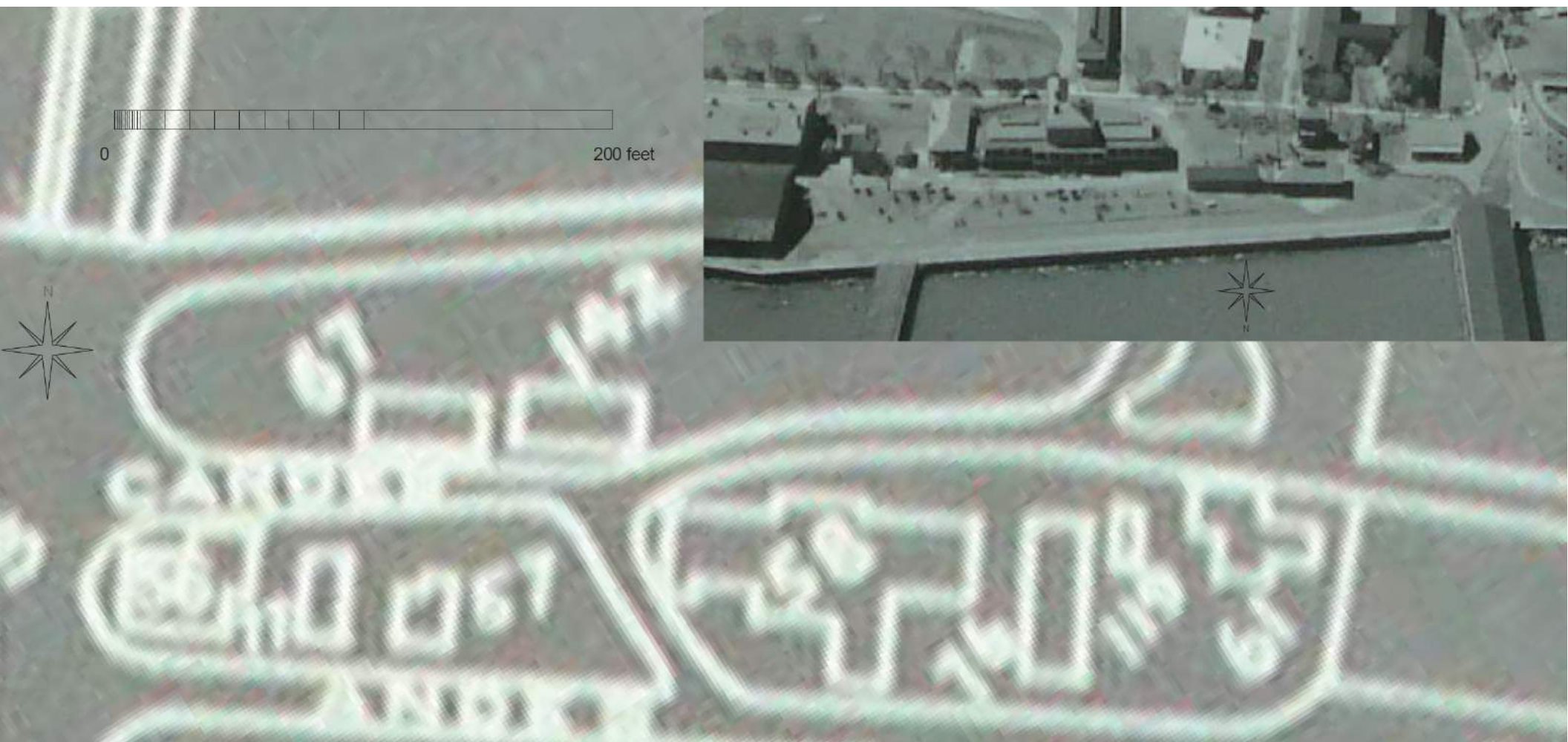


Figure 9 Part of the 1928 Fort Jay map showing the area of the Spa APE with an inset of the 1928 aerial photo.

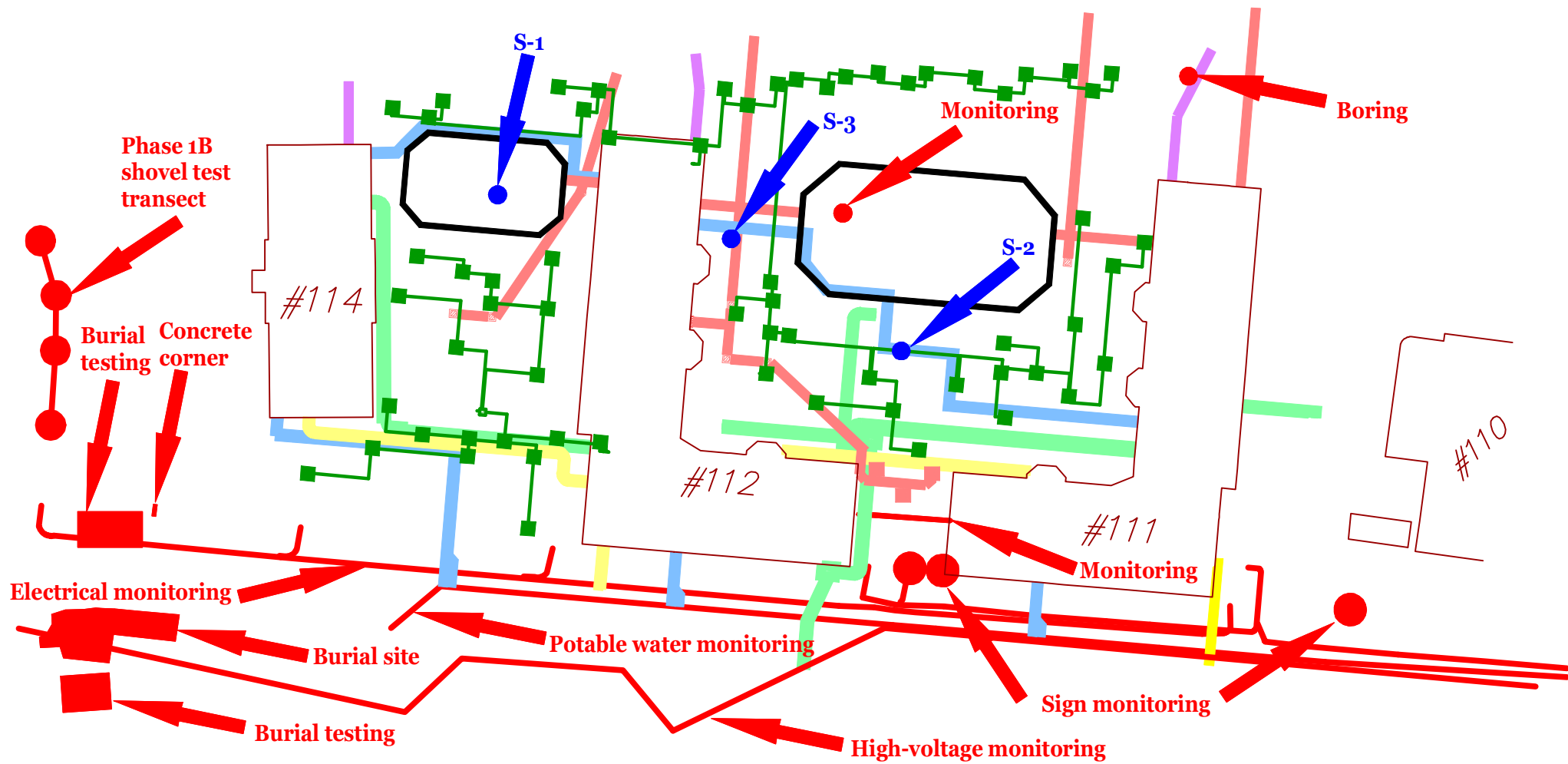


Figure 10 Past archaeological work (red) in the vicinity of the Governors Island spa APE and current borings (blue).

Linda Stone, MA, RPA

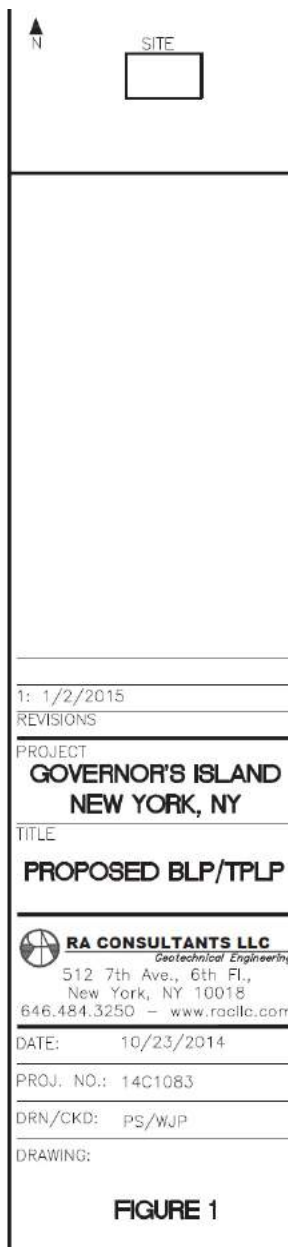
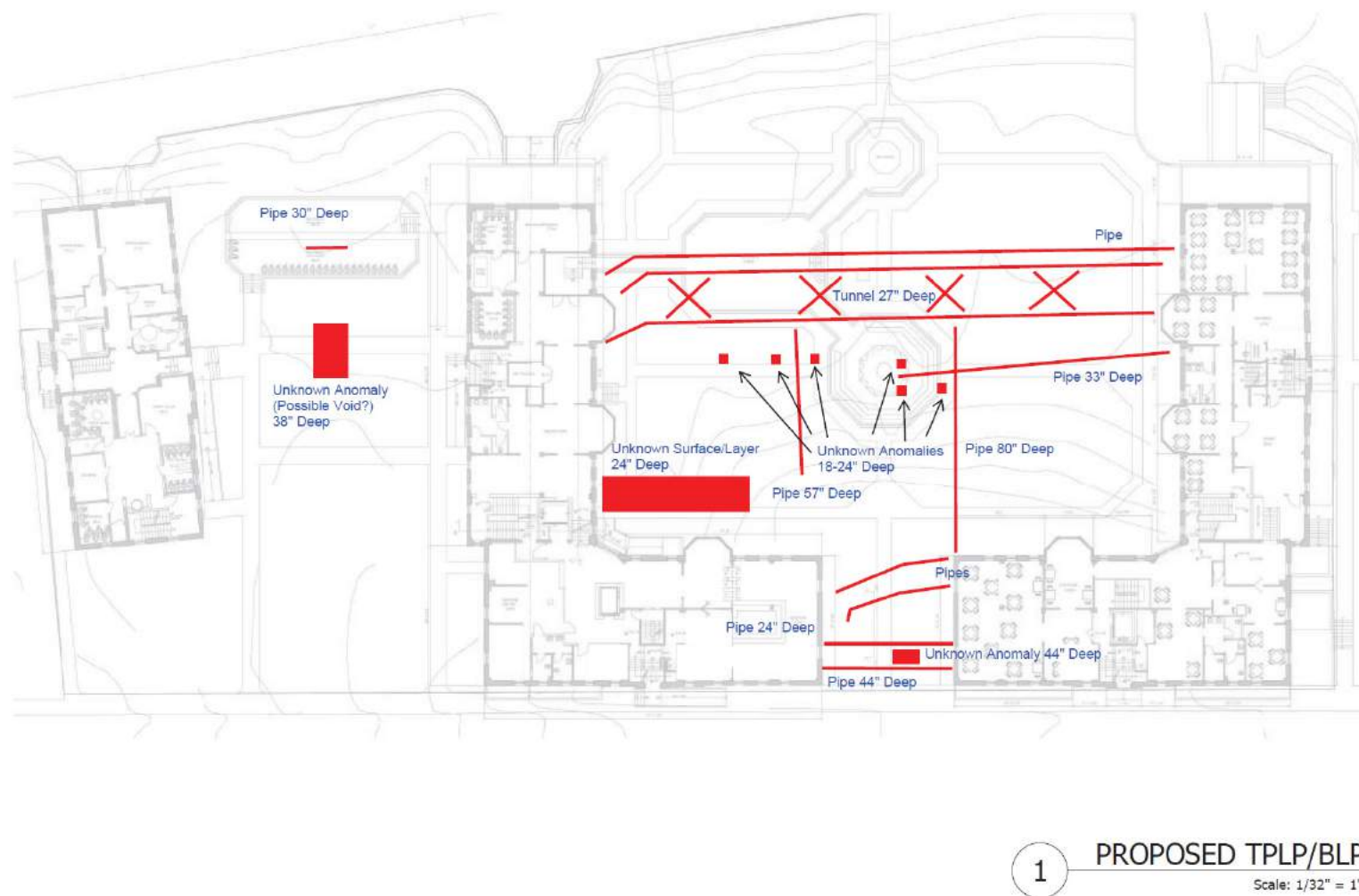


Figure 11 Ground penetrating radar survey results for the Governors Island Spa APE.



Figure 12 Areas of high archaeological potential (hatched) and recommended archaeological testing (ovals) for the Governors Island spa APE.

Appendix B
Archaeological Testing Results
and
Data Recovery Plan

MEMO ON RESULTS OF ARCHAEOLOGICAL TESTING FOR
THE GOVERNORS ISLAND SPA,
UPDATE OF PLAN FOR CONTINUING ARCHAEOLOGICAL WORK
and DATA RECOVERY PLAN FOR CONCRETE FEATURE
SHPO ID 15PR01840
LPC ID 19-27959
November 16, 2018

Pre-construction archaeological testing for the Governors Island Spa project as specified in the approved archaeological work plan (AWP) dated February 18, 2016 was conducted from July 27 - 31, 2018. Changes to the site construction plans were minimal between the time the AWP was issued and the field work conducted. The only notable change to the pre-construction work was the elimination of one of the nine previously planned test locations because below ground impacts were removed (Test 2). Figure 1 depicts the originally planned pre-construction test trench locations. Of the remaining eight test, one of those was not accessible at the time of testing and was therefore postponed (Test 9).

Preliminary testing results for the seven completed tests are provided here. The complete test results will be included in the final site report after construction monitoring has been completed.

TABLE 1
Results of pre-construction archaeological testing

TEST	POTENTIAL RESOURCE	FINDINGS	RECOMMENDATION
1	GPR void 38" bgs, orig.shore, 1919 Building #67	Not found.	Monitoring
3	GPR tunnel 27" bgs & unknown anomaly 18-24" bgs, 1906 road	Not found. However, test contained some compaction.	Monitoring
4	GPR surface 24" bgs, 1919/1928/1906 hospital	Two courses of part of a possible brick wall or surface, or a displaced section thereof, in the eastern profile of the trench buried approximately 3.2' below ground surface.	No further excavation planned for utility line, but monitoring recommended.
5	1919/1928 Building #142?	Not found.	Monitoring
6	1867 carpenter shop, 1879 Building #44, 1906 Com Sgt Qrs, 1919/1928 Building #1?	A 9-inch thick layer of concrete throughout most of the trench at 2.8' below ground surface.	Data recovery, plan below.
7	1967 blacksmith shop, 1879 Building #43	Not found.	Monitoring
8	1879 Building #42	Not found	Monitoring

Three locations tested positive during pre-construction work. Test 3 was placed to identify a ground penetrating radar (GPR) anomaly which could have been part of an earlier roadway. The test contained a compacted layer of soil with a lot of cobbles and some boulders approximately 4 feet (1.2 m) below ground surface with more in the southern half of the trench. The stones

are natural, but their presence was destabilizing the trench so excavation was halted before reaching the full 6.1 feet (1.9 m) planned construction excavation depth. Although the stones are natural, the compaction is not. This is the area of the eastern pool so there will be more excavation over a larger footprint during construction. The area will be documented during monitoring to see if the compaction and stones are due to man-made or natural reasons.

Test 4 was placed to identify possible remains of the former Post Hospital. This test contained two courses of part of a possible brick wall or surface in the eastern profile of the trench buried approximately 3.2 feet (97 cm) below ground surface. It was not possible to determine if the bricks were *in situ* or previously displaced. Only two courses were present over a length of approximately 6 feet (1.8 m) and they were surrounded by loose fill, a possible indication the brick feature was previously displaced. However, the trench was not stable enough for safe entry to evaluate further. This is the location of the former hospital and where a new storm line will be placed. No additional excavation to widen the footprint is planned. However, the trench will be the subject of monitoring to ensure the feature is not further impacted by construction and to document any additional archaeological information that may be unearthed at that time.

Test 6 was intended to identify structural remains of a series of former buildings which once stood there. This test contained a 9-inch thick layer of concrete through most of the trench at 2.8 feet below ground surface. This is likely part of one of a series of former buildings that once stood on that spot. The location is where a water line was planned. However, since the completion of testing, additional changes to the site construction plans have been made (November 12, 2018, see Figure 2 for the full plan and Figure 3 for an overview of changes from May to November). The plans are now finalized. All utilities in this area in front of Building 114 have been shifted southward with the water line in this location moved approximately 8 feet (2.5 m) and the storm and communications lines between there and Test 6. Although the archaeological feature is not within the footprint of any of these utilities it will be present in at least part of the trench along its northern side. However, its extent within the excavation footprint is unknown. Therefore, a data recovery plan for the feature is included below.

Changes to the site construction plans since May 2018 show a number of locations where utilities have been either shifted, eliminated or added (see Figure 3). Besides the shift in the location of the utilities in front of Building 114 discussed above, the other three significant shifts are the electrical the east of and parallel to Building 114, the water and storm lines into the western side of Building 112 and the storm line from Building 111 to the large pool. None of these other shifts has the potential to affect archaeological resources that were not already the subject of archaeological testing. Therefore, no additional archaeological testing is recommended and previously approved monitoring of construction excavations will be conducted.

The only significant elimination to the site plans is that of the previously planned electrical line to the east of Building 111. This is the area of the previously inaccessible Test 9. Therefore, that test is no longer necessary.

Two additions have been made to the site utility plans; communications lines connecting Buildings 111 and 112 south of the planned eastern pool and electrical lines connecting

those two buildings just north of Andes Road. The communications lines are to the north of the former Post Hospital and not within the footprint of any historic map-documented structures. Furthermore, most of the length of these communication lines are outside of the area of archaeological sensitivity depicted in the approved archaeological work plan. The potentially sensitive portion of the communication lines are adjacent to a series of unknown GPR anomalies, one of which was the subject of the testing phase (Test 3), but was not identified. The part of the planned communication lines adjacent to the anomaly locations will be subject to monitoring, as previously approved.

The added electrical lines are at the very southern side of the former Post Hospital. Two of the three historic maps depict the electrical lines to the south of the former hospital and one depicts it along the southern wall. Pre-construction testing for the Post Hospital has already been completed with possible remains of the building identified buried 3.2 feet (97 cm) below ground surface, a depth greater than the planned excavation for the electrical lines (see above Test 4 preliminary results). The new electrical lines are also within the footprint of one of the GPR anomalies. However, the anomaly was identified at 44 inches (1.1 m) deep and the electrical lines will be buried only 18 inches (45 cm) and thus below the project impacts. The approved AWP also includes follow-up monitoring for the Hospital and that will now also include these additional electrical lines.

Other changes to the site plans include the addition of irrigation lines, to be buried up to 1 foot (30 cm) and fences at places along the site perimeter and around some of the above ground utility features. Most of the irrigation lines will not penetrate below the depth of added fill. Those locations where excavation for irrigation will exceed the depth of fill and are archaeologically sensitive will be monitored as specified in the AWP.

The two main fences will be located along Carder Road on the northern side of the buildings and along Andes Road to the south (see Figure 2). The Carder Road fences are outside the original shoreline and out of archaeological concern. The Andes Road fences will be in two segments; one between the closest corners of Buildings 111 and 112 and the other between the southwest corner of Building 112 heading westward along the Andes Road sidewalk and then directly north to the southwest corner of Building 114 (see Figure 2). Only one of these segments, the piece headed westward along Andes Road between Buildings 112 and 114, crosses the path of one historic map-documented structures not previously the subject of archaeological testing. That is Building 45 (one of several Engineer Buildings) depicted on the 1879 Army map.

Fence posts will be spaced approximately 7 feet (213 cm) apart and require excavation of approximately 4 feet (122 cm) below ground surface and gate posts approximately 6 feet (183 cm). Post holes will be approximately 2 feet (61 cm) in diameter. The former Building 45 as depicted on the 1879 Army map could be encountered in up to five fence posts. However, because the below ground impact of these posts will not extend beyond 2 feet (61 cm) in diameter, monitoring is recommended.

In all other locations not called out here, the additions and changes in the site construction plans do not change the original pre-construction testing recommendations or the monitoring location recommendations. In summary, all testing locations will be followed up with monitoring. Monitoring will also be conducted in all parts of the APE previously identified as archaeologically sensitive, as specified in the previously approved AWP.

DATA RECOVERY PLAN FOR THE CONCRETE FEATURE IDENTIFIED IN TEST 6

Test 6 falls within the excavation footprint of a concrete feature identified during pre-construction testing. The feature was identified buried 2.8 feet (85 cm) below ground surface and measured 9 inches (23 cm) thick. Figure 4 depicts the excavation limits for the relocated utilities planned for the south side of Building 114 providing the opportunity for data recovery of the archaeological feature. The combined trench width for the utilities will be approximately 12.7 feet (3.9 m). The communication and storm lines portion of the trench will be excavated to 3 feet (91 cm) below ground surface and the water line to approximately 5 feet (152 cm) deep. The concrete feature was identified at 2.8 feet (85 cm) below ground surface. This is just above the planned excavation depth of the northern part of the trench, but well above the base of excavation for the deepest part of the utility trench.

The first step of the data recovery is to determine the extent of the concrete southward. This will be done by re-exposing a section of the concrete found in Test 6 using the backhoe and then continuing with an exploratory trench southward. The trench would measure approximately 2-feet (61 cm) wide, or the bucket width, and the trench depth would be that of the concrete. The trench would continue southward until either the southern end of the concrete is identified or the trench length reaches 12.7 feet (3.9 m), the planned utility trench width, whichever is shortest.

At this point, there are two possible scenarios. One is that the feature continues throughout the entire width of the planned utility trench and the other is that it ends at a point less than that. In either case, an archaeological unit will be placed within the fill above the feature to collect data on its possible demolition date. If such data is collected, it could shed light on which of the series of historic map-documented structures the feature was once part of. The excavation unit will be placed at an opportunistic location adjacent to the exploratory backhoe trench and south of Test 6. The unit will measure 3 feet (91 cm) east/west and up to 3 feet (91 cm) north/south, or the maximum extent of the concrete, whichever is less.

Should the edge of the concrete be present in the exploratory backhoe trench, a sample of the abutting material will be archaeologically evaluated to determine if a builders trench is present and/or there is any archaeological data regarding the construction of the feature. The depth of the excavation unit will depend on where the edge of the concrete is identified; in the northern part of the trench where planned excavation will be only 3 feet (91 cm) or the southern part of the trench where excavations are planned to approximately 5 feet (152 cm). The unit will measure up to 3 feet north/south or the distance between the southern edge of the trench and the edge of the concrete, whichever is less, and 3 feet wide along the face of the concrete feature. If the excavation unit is within the deeper part of the trench, it will be excavated to the depth of culturally sterile soil, provided that is less than the planned depth of utility excavation. If the unit is in the shallower part of the utility trench, it will be excavated only to the planned utility excavation depth.

If no edge of the feature is exposed in the exploratory trench, but one is later exposed during continued utility trench excavations, then the hand excavated unit abutting the concrete feature would be placed in that location.

Should the concrete feature be present in the southern part of the utility trench where the water line is planned, there will also be an opportunity to examine the deposit beneath the concrete. This could provide data on the date of the construction and construction methods, as well as possibly on earlier use of that area. The most efficient way to examine this deposit would be to wait until the contractor has opened the trench and removed the concrete, but prior to installation of the water line. The excavation unit placed beneath the concrete would measure up to 3 feet (91 cm) square, or the width available within the limits of the trench, whichever is less.

Should the concrete be present only in the northern part of the trench where planned excavation depth is only 3 feet (91 cm) and concrete is anticipated to begin at 2.8 feet (85 cm), the contractor would partially jack-hammer the concrete to reach the required depth.

Upon completion of the excavation units, monitoring will continue throughout the trench. If additional information about the construction of the feature is unearthed, it will be collected. Opportunistic sampling of all relevant deposits will continue. Should other edges of the feature be exposed, they will also be more closely examined with screened artifact sampling to augment the excavation unit data. Screened sampling will also take place beneath the concrete in parts of the trench where the opportunity exists.

All hand excavated units will be excavated stratigraphically, if distinct strata are present, or in arbitrary levels, as appropriate to maintain provenience. All soil thus excavated will be screened through 1/4 inch mesh for artifact recovery. All temporally diagnostic artifacts will be retained for analysis. Non-temporally diagnostic artifacts such as coal, bricks/fragments and window glass will be recorded in the field, but not retained. All excavation and artifact procedures will conform to the New York City Landmarks Preservation Guidelines for Archaeological Work.

Excavations will be documented using pre-printed excavation unit and trench forms. Unit locations will be mapped on the site plan. Photographs of the feature(s) will be taken both to document the feature and to record the process. All artifacts recovered will be processed according to current standards, as per the AWP. The report on data recovery excavations will be included with the rest of the site report (pre-construction excavation and construction excavation monitoring). As part of the project close-out, the artifacts and documents associated with the archaeological work will be transferred to the New York City Archaeological Repository which houses most of the recent Governors Island collection. Construction excavation and monitoring is scheduled for early 2019.

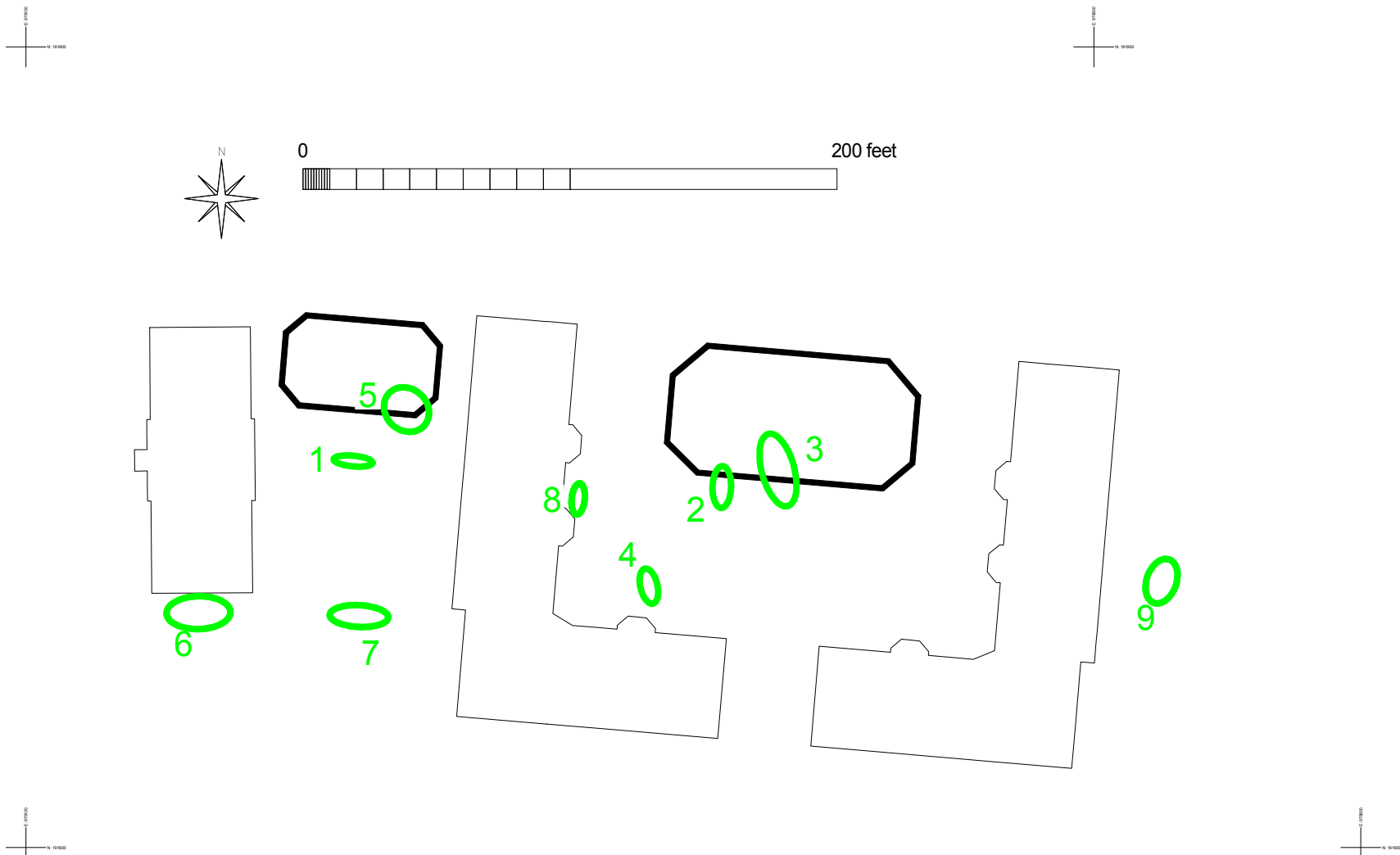


Figure 1 Pre-construction archaeological testing locations for the Governors Island spa.

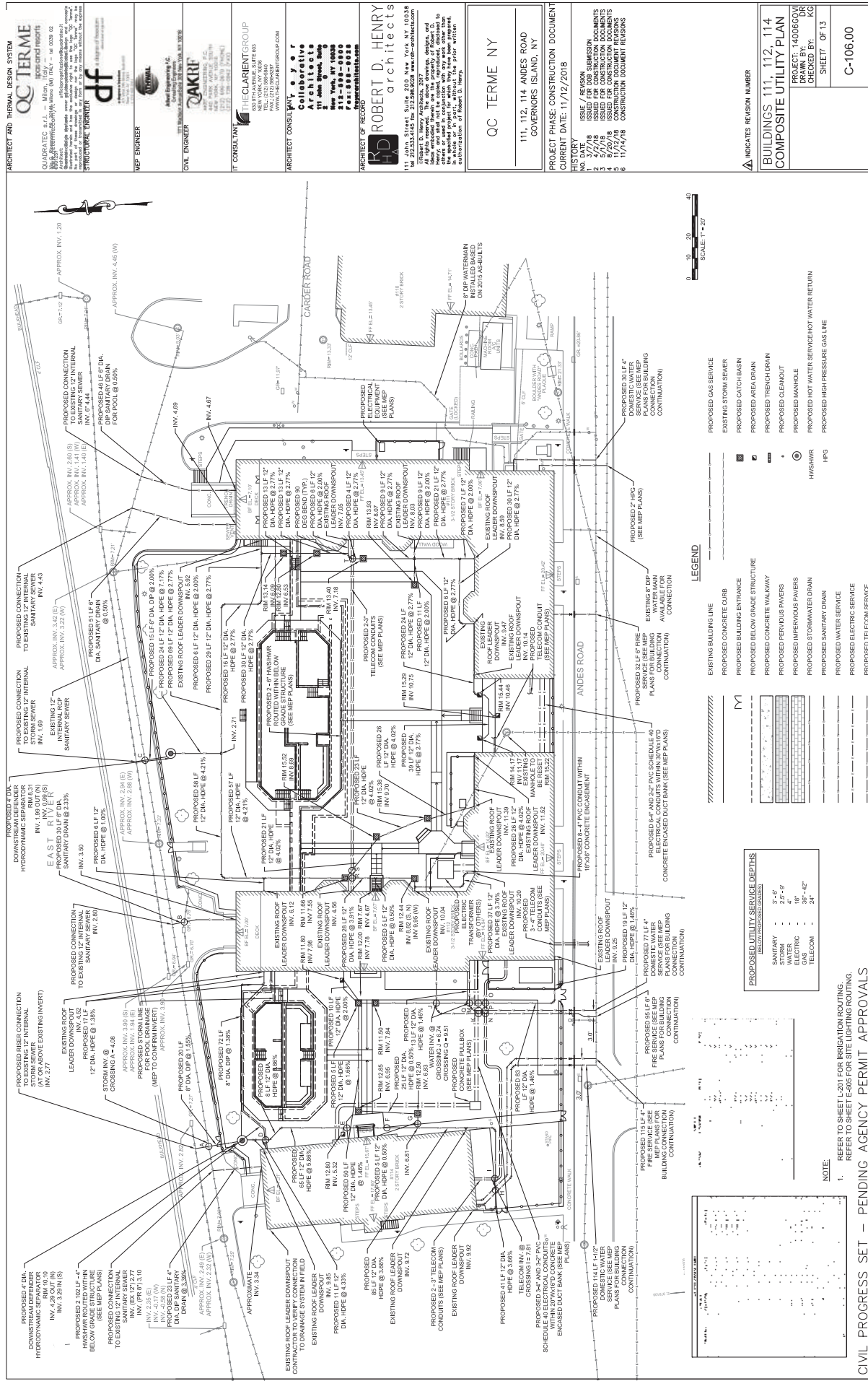


Figure 2 The Governors Island Spa finalized composite utility plan dated November 14, 2018, also depicting fencing.

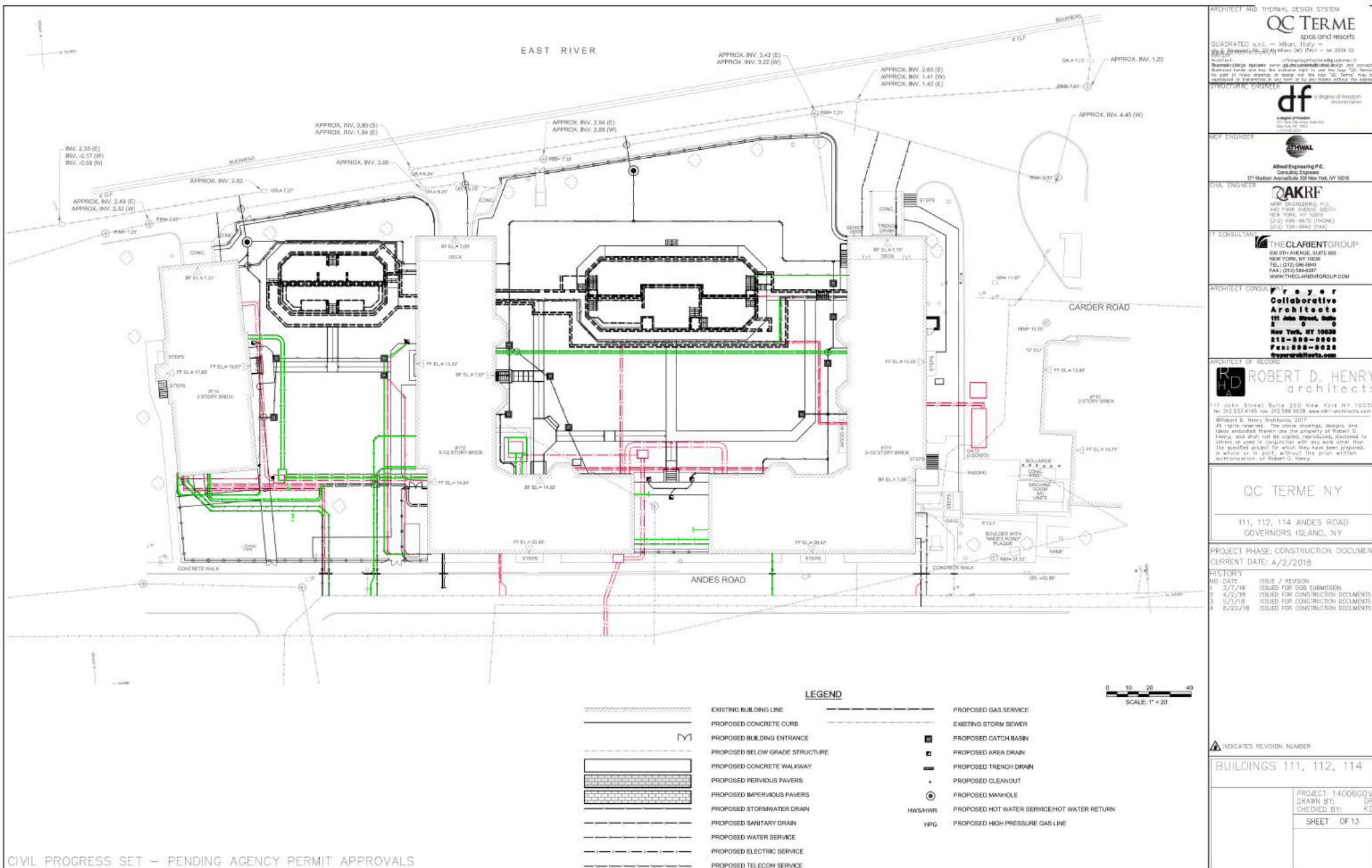


Figure 3 Governors Island Spa utilities drawing highlighting changes from May to November 2018 with eliminated locations in red, added/shifted locations in green and unchanged planned utilities in black.

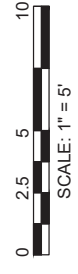
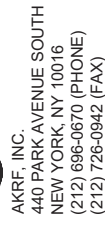


Figure 4 Governors Island Spa planned utility trench limits in front of Building 114.

PROJECT	QC TERM 111, 112, 114 AND ROAD GOVERNORS ISLAND, NY		
DRAWN BY	AP	CHECKED BY	KG
SCALE	AS SHOWN	DATE	10/22/2018
SHEET TITLE			
UTILITY TRENCH LIMITS			
SHEET NO.			SK-1

Appendix C
Data Recovery Plan for
Brick Wall Encountered During
Monitoring Construction for a
Storm Drain Line

DATA RECOVERY PLAN FOR BRICK WALL
ENCOUNTERED DURING MONITORING CONSTRUCTION FOR A STORM DRAIN LINE
FOR THE GOVERNORS ISLAND SPA PROJECT
SHPO ID 15PR01840
LPC ID 19-27959
November 27, 2019

Construction monitoring is underway for the Governors Island Spa project as specified in the approved archaeological work plan (AWP) dated February 18, 2016. This morning a potentially significant archaeological resource was exposed during excavation for a storm drainage line (see attached for location). It is part of a brick wall which is three courses thick (see attached photo). Based on historic maps in the AWP, this appears to be a wall of the hospital depicted on the 1879 maps (see attached map from AWP) and stood until it was demolished to make way for the current buildings.

Initial exploration included shoving the face of the brick to the north to determine if the feature was a wall or merely a section of displaced brick or another feature such as a french drain. The brick continued solidly beneath the depth of the shovel blade and exploration was stopped to have consultation with the client, TGI, SHPO and LPC and to develop a sound approach to data recovery.

The trench in which the brick was exposed is approximately 5 feet (152 cm) wide at the depth of exposure, but will be less as the trench deepens. The elevation at the top of the feature is approximately 12.5 feet ASL. The excavation for the drainage line required down to approximately 10.5' ASL.

Questions whose answers this work may provide include those about the construction methods, the depth of the wall and whether a distinct foundation is present. Although no artifacts were observed during the initial shovel exploration, any artifact recovered during data recovery could clarify how the hospital was demolished and whether medical supplies or equipment were disposed elsewhere. Some coal ash fill was observed to the interior of the wall, but not abutting, at least not at the levels exposed. The data recovery excavation may be able to identify any potential connection of the coal ash to the hospital structure.

Two archaeological excavation units are recommended to recover data about this wall; one on the interior and one on the exterior. They will measure 3 feet (91 cm) square abutting the wall on either side and be excavated to the depth of the planned storm trench, approximately elevation 10.5' ASL.

All hand excavated units will be excavated stratigraphically, if distinct strata are present, or in arbitrary levels, as appropriate to maintain provenience. All soil thus excavated will be screened through 1/4 inch mesh for artifact recovery. All temporally diagnostic artifacts will be retained for analysis. Non-temporally diagnostic artifacts such as coal, bricks/fragments and window glass will be recorded in the field, but not retained. All excavation and artifact procedures will conform to the New York City Landmarks Preservation Guidelines for Archaeological Work.

Excavations will be documented using pre-printed excavation unit and trench forms. Unit locations will be mapped on the site plan. Photographs of the feature(s) will be taken both to document the feature and to record the process. All artifacts recovered will be processed according to current standards, as per the AWP. The report on data recovery excavations will be included with the rest of the site report (pre-construction excavation and construction excavation monitoring). As part of the project close-out, the artifacts and documents associated with the archaeological work will be transferred to the New York City Archaeological Repository which houses most of the recent Governors Island collection.

Upon completion of the excavation units, this section of brick wall will be removed and monitoring will continue throughout the trench and other nearby utility trenches. If additional sections of the wall are exposed and are not distinct from that documented as part of this data recovery, they will be measured, mapped on the site plan and photographed prior to the contractor removing them to make way for their utilities. If there are unique elements, additional consultation will take place to determine how best to proceed.





Figure 7 Part of the 1906 Hilton map showing the spa pools and utilities.

Linda Stone 100.125

From AWP dated 2/18/16 showing approximate location of archaeological brick wall.

Appendix D

Artifact Proveniences

ARTIFACT PROVENIENCES

FB	AREA	DATE	PROVENIENCE
1	1	7/30/18	Preconstruction Test 5, 7' S, 3' bgs
2	1	7/30/18	Preconstruction Test 5, 9' S, 3' bgs
3	1	7/30/18	Preconstruction Test 5, 13' S, 3' bgs, or from profile scraping
4	1	7/30/18	Preconstruction Test 5, 3' N, 3' bgs
5	1	7/30/18	Preconstruction Test 5, S end near jug (FB 6)
6	1	7/30/18	Preconstruction Test 5, S end, 3' bgs
7	1	7/30/18	Preconstruction Test 5 backdirt
8	2	7/30/18	Preconstruction Test 7, Str 2, 4' E, 1.5' bgs
9	2	7/30/18	Preconstruction Test 6, 4' E, 1.7' bgs
10	2	7/30/18	Preconstruction Test 6, screened (#2) from western break btw 2 concretes, 5.5' W
11	2	7/30/18	Preconstruction Test 6, screened from eastern break pipe fill, 3.5'bgs
12	5	7/31/18	Preconstruction Test 4, Str 4 screened, 5' bgs, near possible wall
13	4	7/31/18	Preconstruction Test 3, Str 2/3 interface, 9' S, 1.2' bgs
14	1	7/31/18	Preconstruction Test 1, Str 4 coal ash screened BOE
15	4	7/11/19	In tunnel ~ 50' E of Building 112 from fill beneath old Carder Road ~9' ASL
16	4	7/12/19	From old Carder Road subbase @ Pool B
17	4	7/29/19	Unprovenienced from backdirt in excavation for drainage in landfill
18	4	8/15/19	N slope of tunnel excavation below asphalt @ 10' BGS, 10' N of tunnel
19	4	8/14/19	Tunnel excavation, from fill above old Carder Road, N/S next to Building 111
20	4	8/22/19	East Courtyard Surgetank C, troweling subbase of old Carder Road
21	2	9/27/19	EU 1, Str 1, Lev 2
22	2	9/27/19	EU 1, Str 1, Lev 3
23	2	9/27/19	EU 1, Str 1, Lev 4
24	2	9/27/19	EU 1, Str 2, Lev 1
25	2	9/27/19	EU 1, Str 3, Lev 1

FB	AREA	DATE	PROVENIENCE
26	2	9/30/19	Data recovery area screened from N profile above concrete
27	3	10/24/19	Storm trench 1, Segment 3, Str 3, E wall scraping for diagnostic artifacts
28	2	10/31/19	Storm trench between Catch Basins 9-11, Str 6, ashy deposit
29	2	10/28/19	Courtyard 2 general backdirt from Storm trench 2, Catch Basin 10 excavation
30	2	10/31/19	Courtyard 2 general backdirt
31	2	11/4/19	Courtyard 2, W Courtyard tunnel trench, segment 1, Str 5
32	5	11/25/19	Courtyard 1, Catch Basin 4 pit, screened from light ash
33	4	11/26/19	Courtyard 1, Catch Basin 7 trench, Str 1 (lower half)
34	5	12/3/19	EU 2, Str 1, Lev 3
35	5	12/3/19	EU 2, Str 1, Lev 4
36	5	12/3/19	EU3, Str 1, Lev 2
37	5	12/5/19	EU 2, single-course brick feature, S wall mortar sample
38	5	12/5/19	EU 3, 3-course brick feature, mortar sample between bricks
39	5	12/5/19	EU 3, 3-course brick feature mortar sample, concrete footing
40	5	12/11/19	Courtyard 1, Storm trench Catch Basin 4 - Building 112, brick with mortar sample, 3-course brick feature
41	5	2/25/20	Courtyard 1, Catch Basin 8 trench, Str 4, brick encasement mortar/cement sample
42	5	2/25/20	Courtyard 1, Storm trench Catch Basins 7-8 backdirt pile
43	5	2/26/20	Courtyard 1, Building 111 trench, 27" brick wall feature, brick and mortar, mortar from between bricks sample
44	5	2/27/20	Courtyard 1, Building 111 trench, brick wall feature, whole brick with mortar
45	5	2/27/20	Courtyard 1, Building 111 trench, eastern brick feature, fill on W side of feature
46	5	11/18/20	Secondary Electric trench, Segment 1 from transformer to Building 112 corner, fill above foundations
47	5	12/3/20	Secondary Electric trench, Segment 2 from north end screened from area between two bluestone sections, N or EU 4
48	6	5/21/21	AD 1 excavation above bluestone floor
49	6	5/21/21	AD 1 excavation fill above hospital remains
50	6	5/21/21	AD 1 excavation screed adjacent to brick wall

GOVERNORS ISLAND SPA - ARTIFACT INVENTORY

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FB#	EXC. DATE	MATERIAL	IDENTITY	FORM	#	COLOR	DESCRIPTION	START	END DATE
1	7/30/2018	Ceramic	porcelain		1	white			
2	7/30/2018	Ceramic	porcelain		1	white	tile?		
3	7/30/2018	Ceramic	refined earthenware		1	white	blue transfer print both sides	1784	1859
4	7/30/2018	Shell	abalone	button blank	1				
5	7/30/2018	Ceramic	refined earthenware		1	white			
5	7/30/2018	Ceramic	refined earthenware		1	white	polychrome; red & green	c.1795	1860
6	7/30/2018	Ceramic	stoneware	jug	1	buff	missing handle; 10"h x 7"dia; gray glaze below shoulder and Albany slip above	1805	1920
7	7/30/2018	Stone	marble		1	white	possible construction material; tapered; indentations on 3 sides; flat on 2 sides; broken on 1 side; 5.2-6" x 3.1-3.4" x 5.5-6"		
8	7/30/2018	Ceramic	refined earthenware	tiles	2	white			
9	7/30/2018	Ceramic	refined earthenware		1	white			
10	7/30/2018	Ceramic			1	white	blue transfer print; spall	1784	1859
10	7/30/2018	Unknown			1		possible concrete or mortar		
10	7/30/2018	Glass		curved	1	clear	devitrified	1850s	present
11	7/30/2018	Ceramic	redware		1	red			
11	7/30/2018	Glass		curved	1	clear		c. 1860	present
11	7/30/2018	Glass		flat	1	lt. aqua			
12	7/31/2018	Ceramic	refined earthenware	tile	1	white			
13	7/31/2018	Ceramic	refined earthenware	rim	1	white			
14	7/31/2018	Glass		bottle finish	1	amber	devitrified	c. 1800	1915
14	7/31/2018	Metal	copper alloy	padlock	1				
15	7/11/2019	Ceramic	porcelain	base	1	white	partial embossed maker's mark "...O?K..."/..ERICAN C....		
15	7/11/2019	Ceramic	porcelain	rim	1	white	soft paste		
15	7/11/2019	Ceramic	porcelain	rim	1	white	soft paste, scalloped edge		
15	7/11/2019	Glass		flat	1	white	ribbed one side		
16	7/12/2019	Glass		bottle neck	1	clear	sherd	1875	present
17	7/29/2019	Ceramic	porcelain	lid	2	white	mends; black transfer print; "BRIEDENBACH'S/CHERRY PASTE/EXTRA MOIST/FOR/THE TEETH and GUMS/ MADE BY/ BREIDENBACH & CO./Perfumers and Distillers of Wood Violet/ TO HER MAJESTY THE QUEEN./157 NEW BOND STREET./LONDON/(SOLE ADDRESS.)"	1872	1892

FB#	EXC. DATE	MATERIAL	IDENTITY	FORM	#	COLOR	DESCRIPTION	START	END DATE
17	7/29/2019	Glass		bottle	1	aqua	whole; post-mold base; embossed "U.S.A./MEDL DEPT"; 9" h x 3.6" dia	1850s	1890s
18	8/15/2019	Glass		bottle base	1	clear	partial embossed base; possible flask or medicine bottle fragment		
19	8/14/2019	Glass		flat	1	amber	edge or rim; rippled		
20	8/22/2019	Ceramic	refined earthenware		1	white			
20	8/22/2019	Ceramic	refined earthenware	rim	4	white	mends		
20	8/22/2019	Glass		curved	1	amber		c. 1860	present
20	8/22/2019	Glass		curved	1	clear		1875	present
21	9/29/2019	Ceramic	redware	base	1	red	flower pot	1725	present
21	9/29/2019	Ceramic	redware		1	red	fire brick?	c. 1850	c.1950
21	9/29/2019	Ceramic	refined earthenware		1	white	waster; floral transfer print	1880s	
21	9/29/2019	Ceramic	refined earthenware	kiln	1	white		1880s	
21	9/29/2019	Ceramic	refined earthenware	rim	1	white	brown glaze		
21	9/29/2019	Glass		curved	1	clear		1875	present
21	9/29/2019	Glass		curved	1	lt. green		1850s	present
21	9/29/2019	Other		tar paper	1		discarded in the lab		
22	9/27/2019	Bone	faunal		1		fragment, butchered		
22	9/27/2019	Ceramic	ball clay	pipe stem	1	white			
22	9/27/2019	Ceramic	redware	base	1	red	flower pot		
22	9/27/2019	Ceramic	refined earthenware		1	white	spall		
22	9/27/2019	Ceramic	refined earthenware	rim	1	white			
22	9/27/2019	Glass		bottle base	1	amber		c. 1860	present
22	9/27/2019	Metal	copper alloy	button	1		0.8" dia		
23	9/27/2019	Ceramic	creamware		1	white		1762	1820
23	9/27/2019	Ceramic	porcelain		1	white			
23	9/27/2019	Ceramic	refined earthenware		1	white			
23	9/27/2019	Ceramic	refined earthenware		2	white	spalls		
23	9/27/2019	Ceramic	refined earthenware	rim	1	white			
23	9/27/2019	Glass		curved	1	aqua		1750s	1920s
23	9/27/2019	Glass		curved	1	clear		1875	present
23	9/27/2019	Glass		flat	1	clear	painted red		

GOVERNORS ISLAND SPA - ARTIFACT INVENTORY

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FB#	EXC. DATE	MATERIAL	IDENTITY	FORM	#	COLOR	DESCRIPTION	START	END DATE
23	9/27/2019	Plastic	celluloid	film	1		partial; >1" strip	1889	
24	9/27/2019	Bone	faunal	fish scale	1				
24	9/27/2019	Ceramic	porcelain	tile	1	white	soft paste; bathroom type		
24	9/27/2019	Ceramic	refined earthenware		1	white			
24	9/27/2019	Metal	iron alloy	barrel stave?	1		heavy corrosion		
25	9/27/2019	Ceramic	refined earthenware	base	1	white	flat bottom		
25	9/27/2019	Ceramic	refined earthenware	rim	1		waster?; burned; gothic	1840s	
25	9/27/2019	Glass		bottle finish	1	aqua?	machine made; applied finish; devitrified	1820	1890
25	9/27/2019	Wood			1		cut; appx. 1" dia.		
26	9/30/2019	Ceramic	earthenware	rim?	1	brown	fire brick?; embossed "WAT..."		
26	9/30/2019	Ceramic	pearlware	base?	1	white	spall; blue decoration	1779	1820+
26	9/30/2019	Ceramic	porcelain	bisque doll	1	pink		1840	1900
26	9/30/2019	Ceramic	porcelain	rim	1	white			
26	9/30/2019	Ceramic	porcelain	rim	1	white	heavy concretion		
26	9/30/2019	Metal	copper alloy	screw?	1		corroded		
27	10/24/2019	Glass		base	2	aqua	mends; post-bottom mold; octagonal; 1.7" x 2.0" dia	1850s	1890
28	10/31/2019	Ceramic	refined earthenware	base	1	white	annularware; turquoise int.; turquoise stripe ext.; pale green base/heel	1770s	early-20th C
28	10/31/2019	Ceramic	refined earthenware	base	1	white	burned		
28	10/31/2019	Ceramic	refined earthenware	base	1	white	burned		
28	10/31/2019	Ceramic	refined earthenware	base	1	white	burned; floral pattern		
28	10/31/2019	Coal			2		discarded in the lab		
28	10/31/2019	Glass		flat	1	lt. aqua			
29	10/28/2019	Ceramic	ball clay	pipe bowl	1	white	gadrooning	1800	1892+
29	10/28/2019	Shell	abalone	button blank	2				
30	10/31/2019	Shell	abalone	button blank	1				
31	11/4/2019	Ceramic	yellowware?	base	1	buff	lt. yellow/clear? Glaze	1830	1900
31	11/4/2019	Glass		bottle	1	clear	whole; base embossed "493"; 2.6" h x 1.4" dia	1860s	1920
31	11/4/2019	Mortar			2		possible paint residue		
31	11/4/2019	Shell	abalone	button blank	5				
31	11/4/2019	Stone	quartz		1	white			
32	11/25/2019	Glass		curved	1	clear		1875	present
32	11/25/2019	Glass		curved	1	clear	devitrified	1875	present

GOVERNORS ISLAND SPA - ARTIFACT INVENTORY

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FB#	EXC. DATE	MATERIAL	IDENTITY	FORM	#	COLOR	DESCRIPTION	START	END DATE
32	11/25/2019	Shell	scallop		1				
33	11/26/2019	Glass		bottle	1	lt. green	whole; embossed side, encircled "B"/"FIDELIO BREWERY/NEW YORK", base "29N"; 9.5" h x 2.5" dia.	1916	1940
34	12/3/2019	Ceramic	earthenware	sewer pipe?	1	buff	brown glaze		
34	12/3/2019	Ceramic	porcelain	tile	1	white	hexagonal; 1" dia		
35	12/3/2019	Ceramic	ball clay	pipe stem	1	white	embossed "GREMEN./H.HEYE."; decorated	1850	1891
35	12/3/2019	Ceramic	porcelain	tile	1	white	hexagonal; 2" dia; heavy concretion		
36	12/3/2019	Glass		curved	1	aqua		1750s	1920s
36	12/3/2019	Metal		sheet	1		cut; appx. 2" dia.		
36	12/3/2019	Plaster			5	white			
42	2/25/2020	Glass		bottle	1	clear	whole; flask; embossed base, "3217"?; 8" h x 3.8" w x 2" w	c.1910	early 1930s
45	2/24/2020	Ceramic	porcelain	tile	1	white	soft paste; edge/corner fragment		
46	11/18/2020	Ceramic	coarse earthenware	sewer pipe?	1	buff			
46	11/18/2020	Ceramic	redware	roof tile?	1	red			
46	11/18/2020	Metal	copper alloy	sheet	1		triangular		
46	11/18/2020	Metal	iron alloy	nail?	1		heavy corrosion		
46	11/18/2020	Plaster			2	white	mends		
47	12/5/2019	Glass		bottle finish	1	clear	mends; medicine type; 2-piece mold made; hand finished lip; flat panel; concretion on shoulder	1876	1910s
47	12/5/2020	Unknown			1		flat metal?; appx. 1" dia.		
48	5/21/2021	Ceramic	refined earthenware		1	white	spalled		
49	5/21/2021	Ceramic	refined earthenware	base	1	white	black transfer print; Capitol Dome	1812	1842
50	5/21/2021	Ceramic	pearlware	rim?	1	white	waster?	1779	1820+
				TOTAL	128				