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Prepared for:

Bayrock/Sapir Organization, LLC

Archaeological Investigations of the Spring Street Presbyterian Church Cemetery, 244–246 Spring Street

New York City, New York

1138

Prepared by:

URS

Burlington, New Jersey

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December 2008

Abstract

Between December 19, 2006 and January 25, 2007, archaeologists with AKRF and URS Corporation completed investigations of a series of burial vaults contained within the former Spring Street Presbyterian Church property, located near the corner of Spring and Varick Streets in Manhattan. Human skeletal remains from these vaults were initially identified on December 11, 2006 during the excavation of foundations for a proposed new hotel property. The New York City Department of Buildings, in conjunction with the New York City Landmarks Preservation Commission, requested the ensuing historical background research and the archaeological recovery and documentation of funerary remains from the site.

The Spring Street Presbyterian Church was initially established in the early nineteenth century, on land purchased from the Trinity Church Farm, and remained a venerable community institution for 166 years. The cornerstone of the first church building, a modest 30-x-60-foot structure, was laid on July 5, 1810. Over the next few decades, the church flourished and quickly developed a reputation for its progressive racial views and for the abolitionist activities of its members. By the 1820s, the church had forged a partially integrated congregation, and by the end of the decade had established a multiracial Sunday school. During the turbulent years of the 1830s, however, these progressive attitudes attracted the disdain of anti-abolitionist activists, and on July 11, 1834 an angry mob attacked and seriously damaged the church. Following this assault, church members decided to construct a new, larger brick church on the property; the construction of this second sanctuary was completed on June 19, 1836. The Spring Street Church remained on this site for another 130 years, although by the middle of the twentieth century, the congregation was badly in debt and had been reduced to fewer than 50 members. In 1963, the New York Presbytery officially dissolved the congregation; and in 1966, a fire destroyed the church. Later that same year, the church's shell was demolished and replaced by a public parking lot.

Surviving church records do not indicate exactly when the burial vaults were constructed on the property, but fragmentary evidence suggests that they were in active use as early as 1820 and continued to receive remains until at least 1835. These documents unfortunately contained little information regarding the identities of individuals buried in the vaults, though a partial list of those who purchased interment rights has survived. Church financial records only contain vague references to the fact that many children were interred in those chambers, and that the vaults filled rapidly. In May 1831, church minutes record that the construction of two additional vaults had been completed. No information related to the vaults has thus far been located for the years following 1835.

Archaeological investigations of the site have helped to fill at least some of the gaps in the church's historical records, and resulted in the identification of four burial vaults located in what was then an open side yard, at the far southeast corner of the property. These vaults were contiguous to one another, with each exhibiting an interior space measuring 14 x 9 feet in size. The northern burial chambers were constructed of stone, with a brick dividing wall and sand floors, and likely represent the original vaults constructed on the property. The southern two chambers appear to be the ones added in 1831, and were built of brick with a dry-laid brick floor. While the northern three vaults were preserved remarkably well, nearly the entire southernmost vault had been destroyed by construction machinery prior to the involvement of AKRF and URS archaeologists.

The northern three burial vaults were found to contain large quantities of primarily disarticulated, disassociated human skeletal remains. The preservation of remains within these vaults ranged from excellent to very poor, and all bore evidence of having been extensively previously disturbed. At least some disturbance of the remains was likely caused by the normal "regulation" of the vaults by sextons during the early nineteenth century, and occurred in conjunction with internal structural repairs made to the vaults at some unknown time in the past. However, the most significant impacts appear to have resulted from the demolition of the property in the 1960s.

Despite the highly disturbed, jumbled nature of the vault contents, a sample of 45 partially intact sets of skeletal remains, representing probable discreet individual interments, were able to be identified during field investigations. These burial remains included adult men and women, children of varying ages, and infants, and represent one of only a handful of well-documented early-nineteenth-century cemetery populations excavated within New York City. Archaeological investigations additionally recovered significant quantities of associated funerary artifacts, including coffin wood, hardware, and fabric, as well as 32 decorative metal coffin plates. Examinations of these plates revealed the names, ages, birth, and death dates for many of the individuals entombed in these vaults.

Unfortunately, because the coffin plates were found separate from skeletal elements, they were of limited utility in helping to determine the specific identities of the deceased. Dates on lid plates serve to show that the use of the vaults for interment extended much later than indicated by surviving records, until at least 1843.

Following their exhumation, all recovered human remains were subjected to detailed forensic examination and documentation under the direction of URS Principal Physical Anthropologist Thomas A. Crist. These analyses resulted in the determination that remains from the Spring Street vaults derived from a minimum of 93 distinct individuals, although the total number of persons originally interred likely far exceeds this number. Forensic studies performed were non-destructive in nature and sought to collect basic demographic data from the remains (age at death, gender), as well as to note evidence of physical trauma and pathologies that could be used to make inferences about the health of the larger population of the city. This work documented significant evidence of disease related abnormalities among the Spring Street congregation, and identified a single individual subjected to postmortem autopsy.

By agreement, all human remains from this cemetery will be transferred to the care of the Presbytery of New York City following the conclusion of forensic examinations. Consultation will be undertaken between the developer (Bayrock/Sapir) and the Presbytery of New York City regarding the reinterment of the remains. At this time, the exact manner and location of that reburial has yet to be determined.

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Acknowledgments

URS would like to recognize those individuals and organizations that provided invaluable assistance in the conduct of this investigation. Key among these were Mr. John Lawrence and the staff of the Bayrock/Sapir Organization LLC, as well as the management and staff of Bovis Lend Lease – LMB. URS would especially like to extend our thanks to those individuals with AKRF who provided much thoughtful guidance and project coordination, and who identified, compiled, and synthesized critical background information pertaining to the historical development of the Spring Street Presbyterian Church, its congregation, and the burial vaults. Specifically, we would like to recognize AKRF Vice President Claudia Cooney, Director of Archaeology Diane Dallal, and Archaeologist Elizabeth Meade. Without the help of all these persons and organizations this investigation could not have been successfully completed.

URS would also like to acknowledge the efforts of its contributing staff on this project. The Project Manager for this investigation was Edward M. Morin, M.A., RPA. Field recovery of human remains from the Spring Street Presbyterian Church burial vaults was directed by Senior Archaeologist Douglas B. Mooney, M.A. The field crew for this project consisted of Project Archaeologists Tony McNichols and Eileen Krall, along with Patience Freeman, Drew Oberholtzer, Scott Hood, Drew Stanzeski, Matt Olsen, Ada Prieto, and Kate Carlson. All field photo documentation was performed by Messrs. Mooney, McNichols, and Oberholtzer.

The osteological analysis of all recovered human remains for this project was directed by URS Principal Physical Anthropologist Thomas A. Crist, Ph.D. Documentation of the remains was performed by Dr. Crist, Molly H. Crist, P.T., D.P.T. (Utica College, NY), and Shannon A. Novak, Ph.D. (Syracuse University, NY). Photodocumentation of the remains was performed by Thomas A. Crist, Dana Kollmann, and Shannon Novak.

This report was written by Mr. Mooney, Mr. Morin, Dr. Thomas A. Crist, URS Laboratory Director Robert G. Wiencek, and URS Material Culture Specialist Rebecca L. White. Mr. Mooney, Mr. Morin, Dr. Crist, and Mr. Wiencek all exceed the requirements of the Secretary of the Interior's *Professional Qualifications Standards* (36 CFR 61) for archaeological investigators. Report editing and production was performed by Paul Elwork. Report graphics were produced by Scott Hood. See Appendix F for the qualifications of key URS project personnel.

1
Introduction

The following report presents the methods and findings of archaeological efforts to recover and document human skeletal remains from the former Spring Street Presbyterian Church property in Manhattan. Officials from the New York City Department of Buildings (DOB) and the New York City Landmarks Preservation Commission (LPC) required these investigations following the unexpected impact and discovery of these remains by construction crews excavating the foundations of a proposed hotel complex. Cultural resource experts with AKRF, Inc., and URS Corporation (URS) were contracted by the Bayrock/Sapir Organization, LLC, to perform archaeological investigations of the site and, more specifically, to recover, study, and prepare for reburial any intact interments and/or impacted human remains that might be present within the site.

All work performed for this investigation complied with the *Standards for Cultural Resource Investigations and the Curation of Archaeological Collections in New York State* (New York Archaeological Council 2005), the State Historic Preservation Office/New York State Office of Parks, Recreation and Historic Preservation's *Human Remains Discovery Protocol*, as well as accepted professional archaeological standards and practices. Additional project specific guidelines and protocols were established jointly by AKRF and URS, in consultation with DOB and LPC.

PROJECT OVERVIEW

The study area for this investigation consisted of the footprint of a planned hotel located at 244–246 Spring Street, New York, New York (Figure 1.1). The site encompassed New York City Tax Block 491, Lots 34 and 36 in their entirety; measured approximately 175 feet (north-south) by 130 feet (east-west) in total size (0.52 acres/0.21 hectares); and was bounded by Spring Street to the north, Varick Street on the west, Dominick Street to the South, and an extant commercial/office building on the east (234–242 Spring Street; Figure 1.2). In recent decades, this site was utilized as a public parking lot; however, portions of this property formerly contained the Spring Street Presbyterian Church, which was located at 246 Spring Street between circa 1810 and 1966.

Construction crews (Bovis Land Lease-LMB) discovered human remains were at this site on December 11, 2006, during mechanized excavations for planned sub-grade building foundations. Once identified, construction staff immediately ceased further excavation and, in accordance with established procedures, notified both the New York Police Department (NYPD) and the Office of the Chief Medical Examiner (OCME) of the finds. Christian Crowder, Ph.D., a forensic anthropologist with the OCME, visited the site shortly after their initial discovery, inspected and photo-documented the remains, and ultimately determined that they were historical in nature and not associated with any recent homicide or related criminal activity (Figures 1.3 and 1.4; overview of findspot, detail of initial remains). Based on preliminary observations of the original findspot, it was also initially reported that some of the remains seemed to consist of articulating skeletal elements, and therefore might be associated with intact, or at least only partially disturbed, human burials. At the conclusion of his inspection, Dr. Crowder recovered all visibly exposed human remains at or on the ground surface, taped off the initial findspot, covered the location under plastic sheeting, and removed the collected skeletal remains to secure facilities at the OCME. The OCME's subsequent examinations of these remains determined that a minimum of 15 individuals was represented among this initial skeletal collection, including the remains of both adults and juveniles (Crowder et al. 2007; see Appendix A).

Following the OCME inspection, Bayrock/Sapir Organization project personnel notified representatives of the DOB and the LPC of this discovery. DOB requested at that time that all construction work be stopped on the site pending further investigation by a qualified archaeologist. On December 13, archaeologists from both AKRF and URS were called to the site at the behest of the client in order to make preliminary assessments of the site and the identified human remains. Those inspections resulted in the observation that human remains did not appear to be scattered across large portions of the site, but were rather primarily concentrated in a relatively small section of the project area's northeast quadrant, within and immediately adjacent to the initial findspot. Moreover, limited test excavations in the vicinity of the findspot failed to find any evidence of either intact soils, preserved grave shaft features, or undisturbed/in situ skeletal elements. Although a significant amount of skeletal material was identified in this section of the project area, as well as quantities of possible decayed coffin wood, all funerary remains were

Figure 1.1 Project location (Source: USGS Map, Brooklyn and New Jersey Quadrangles).

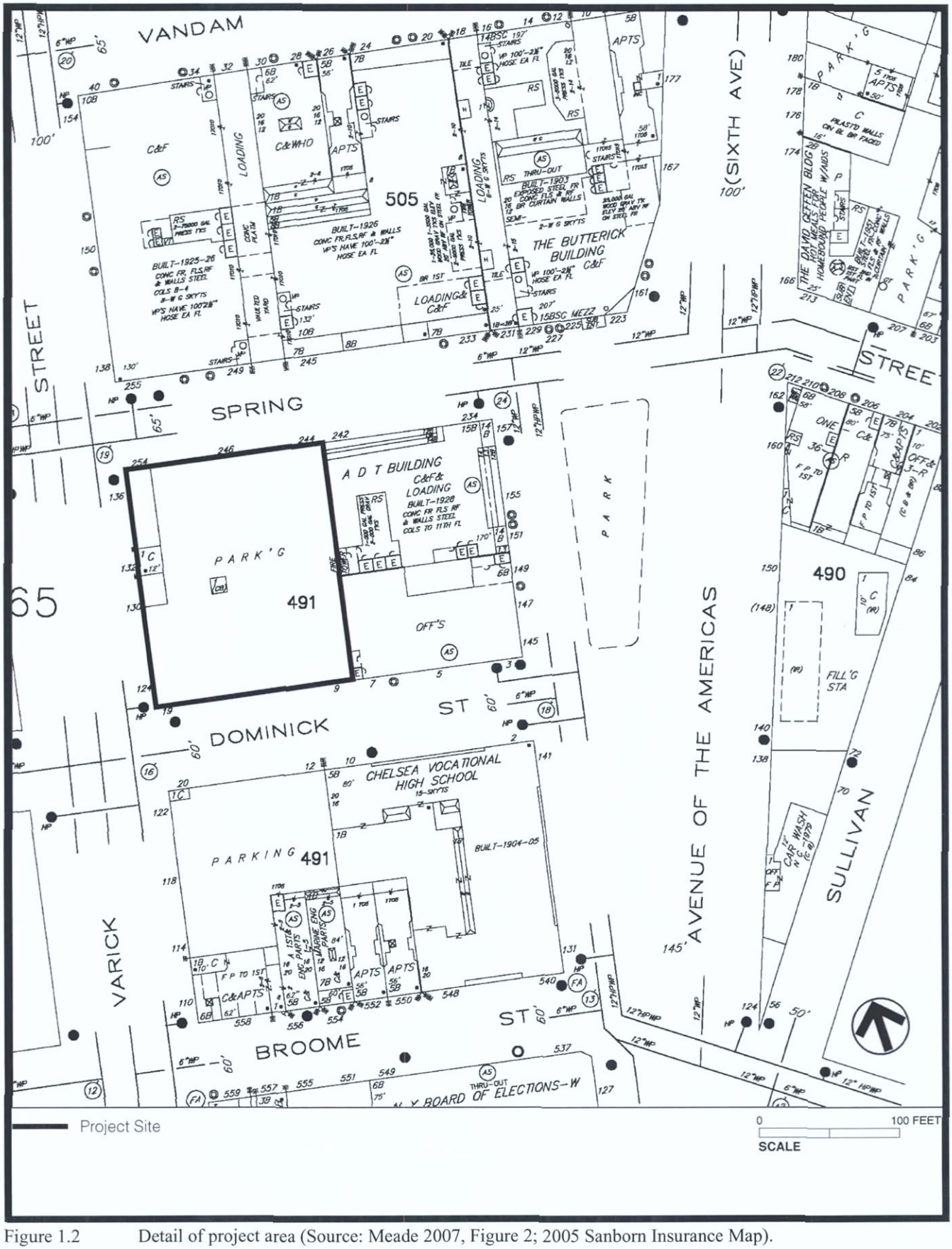

Figure 1.2 Detail of project area (Source: Meade 2007, Figure 2; 2005 Sanborn Insurance Map).

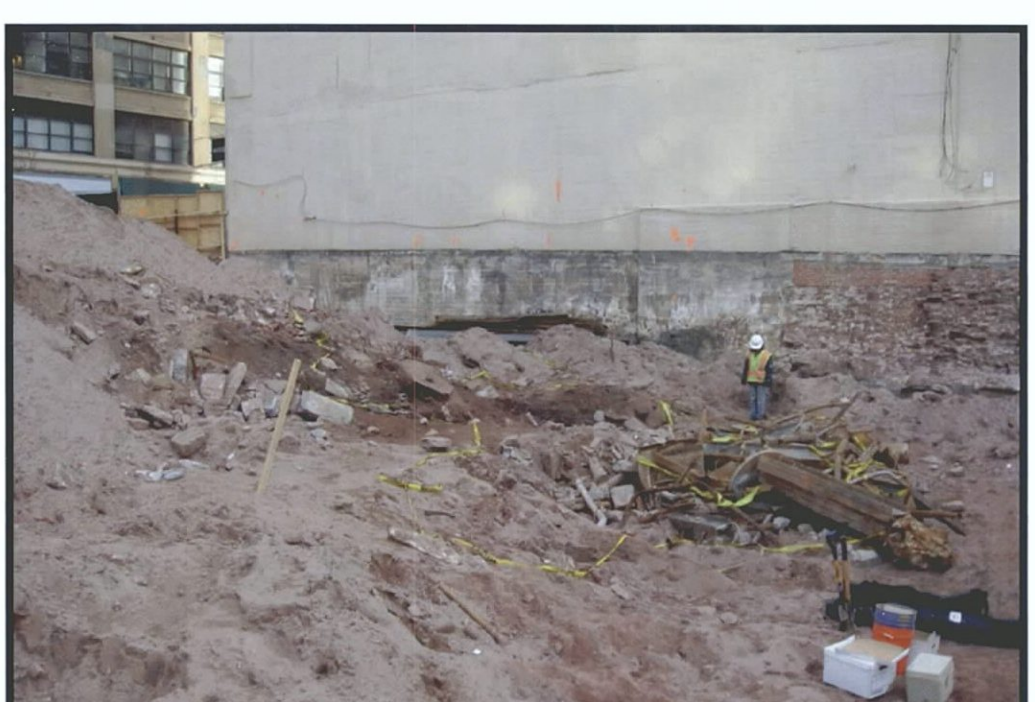

Figure 1.3 Overview of the initial Spring Street human remains findspot.

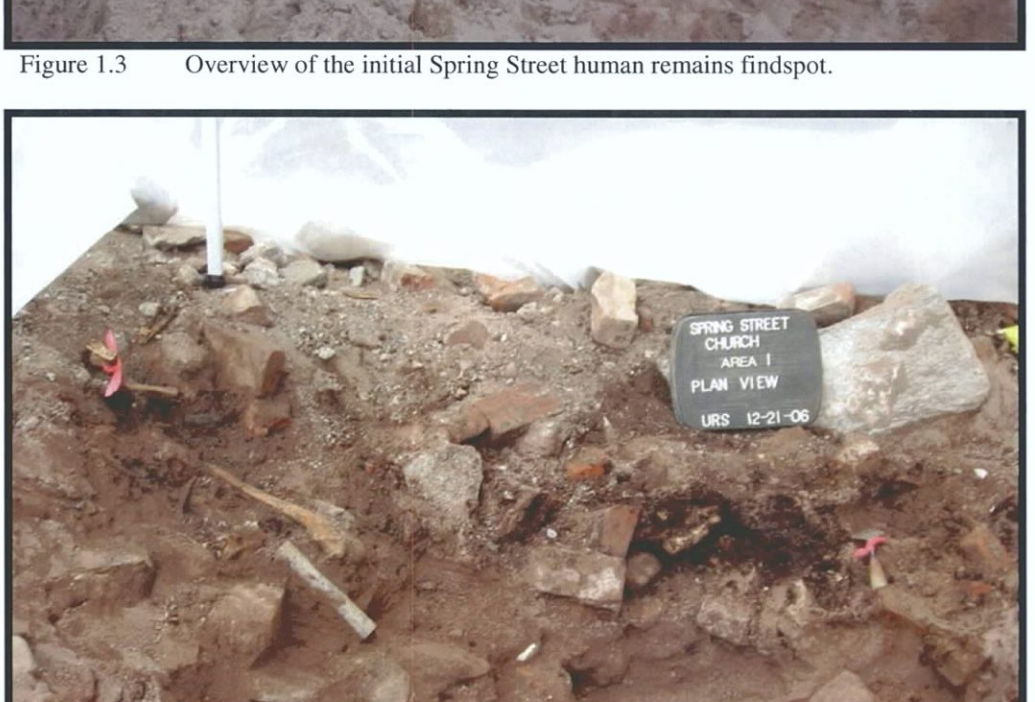

Figure 1.4 Detail of the initial find spot, showing human remains within demolition rubble.

found to have been badly disturbed and were contained entirely within what appeared to be recently excavated construction rubble and associated debris.

ARCHAEOLOGICAL WORK PLAN

After the conduct of this initial assessment, the client contracted AKRF and URS, tasking them with developing a comprehensive archaeological work plan that would ensure the recovery and documentation of all human remains contained within the site, as well as guide all construction related activities while archaeological investigations were ongoing. The work plan was prepared in conjunction with representatives from LPC and was accepted by DOB on December 19, 2006. In its final form, this plan consisted of eight key components: 1) the conduct of detailed background research regarding the sequence of historical occupation of this site; 2) the identification of potential existing descendant populations; 3) the collection and documentation of previously disturbed skeletal remains; 4) the monitoring of construction activities in previously unexcavated, or partially excavated portions of the site; 5) the exhumation and documentation of any intact historic burials that may be present; 6) the analysis and inventorying of all human remains and associated funerary artifacts recovered from the site (including materials previously collected by the OCME staff); 7) the reburial of recovered skeletal remains, in a manner to be decided in consultation with identified descendant populations; and 8) the preparation of a final project report.

Under this work plan, Tasks 1 and 2 were completed by AKRF and were included in a separate, stand-alone report (see Appendix B). The remaining tasks are specifically documented in this report, and more detailed discussions of the methods and results of each are presented in the following chapters.

2
Historical Summary

The Spring Street Presbyterian Church was a venerable and well-respected institution in the lower west side of Manhattan for 166 years, and over the course of its long life developed a strong reputation for openness, ardent anti-slavery activism, and for serving the needs of the oppressed and downtrodden members of its local community. The following section presents a brief summary of the historical development of the Spring Street Presbyterian Church, and of what is known about its associated burial vaults. Except where indicated, the information in this discussion has been taken from AKRF's topic intensive documentary study of the church property and congregation (Meade 2007).

BEGINNINGS AND THE FIRST CHURCH

The Spring Street Presbyterian Church grew out of the congregation of the Wall Street Presbyterian Church in the first decade of the nineteenth century. Early meetings among the members of the new congregation were initially held at various private homes and other buildings in the neighborhood of Spring and Varick Streets before land for a formal church building was purchased, sometime around 1808. The property the congregation purchased was originally part of the Trinity Church Farm lands and measured 100 feet square in total size. The cornerstone for the new church building was officially laid on July 5, 1810, with construction finished a short time later at a total cost of nearly $11,000.

The original Spring Street Church building was a handsome but simple shingled wood frame structure measuring 60 x 30 feet in size and crowned by a cupola. Materials to build this edifice were borrowed largely from the recently dissolved Wall Street Church and included wood framing, pews, and the pulpit. Though relatively small in size, this building contained enough space to seat some 126 pews on the main floor, with another 50 in a second-floor gallery. A simple picket fence was erected around the perimeter of the property and set the new church off from the largely pastoral setting surrounding it. A few years later, this church was modified slightly during the construction of a small lecture or session room on its eastern side.

This church was probably centrally located within the property, and early accounts describe it as having sat 40 feet south of the rear wall of the second edifice, constructed here a few decades later. This description has caused some confusion about the exact placement of this first building, and would at first glance seem to place the church outside of its own property. However, any lingering questions can be simply resolved if one takes into consideration that what is considered the *rear* of the second church is a relative matter. When standing outside of that later building, the rear of the church would have been along the far south property line. When standing inside the church, on the other hand, the rear of the church (the rear of the sanctuary) would be on the north side, facing Spring Street. If this second situation is what was meant in early descriptions, and there is no other interpretation that fits, then the original church building sat back some 40 feet from its Spring Street frontage and aligned on the south with the south property edge (Figure 2.1).

The first Spring Street Presbyterian Church was incorporated on April 23, 1811, and was formally brought into the Presbytery of New York on May 5 of that year. For a time the congregation did not possess a minister of its own, and was instead served by a series of rotating interim pastors drawn from other churches in the vicinity. This situation changed on October 31, 1811, when the Reverend Dr. Matthew La Rue Perrine became the first official minister of the fledgling congregation. Reverend Dr. Samuel Hanson Cox took over as Pastor on Christmas Day 1820 and quickly—some at the time would have said radically—transformed the young church body into a stronghold of anti-slavery sympathy and activism. Cox was a dynamic minister and an ardent abolitionist who preached openly and with passion in favor of emancipation for enslaved Africans. Under his leadership, the congregation was greatly enlarged and its abolitionist reputation grew rapidly. Within a few years, some 11 African Americans from the surrounding community had joined the church as members, and at some point a multiracial Sunday school was established. While the church body evidently embraced these activities, the same could not be said about the Presbytery as a whole, and the course the church embarked on would one day lead it into open conflict.

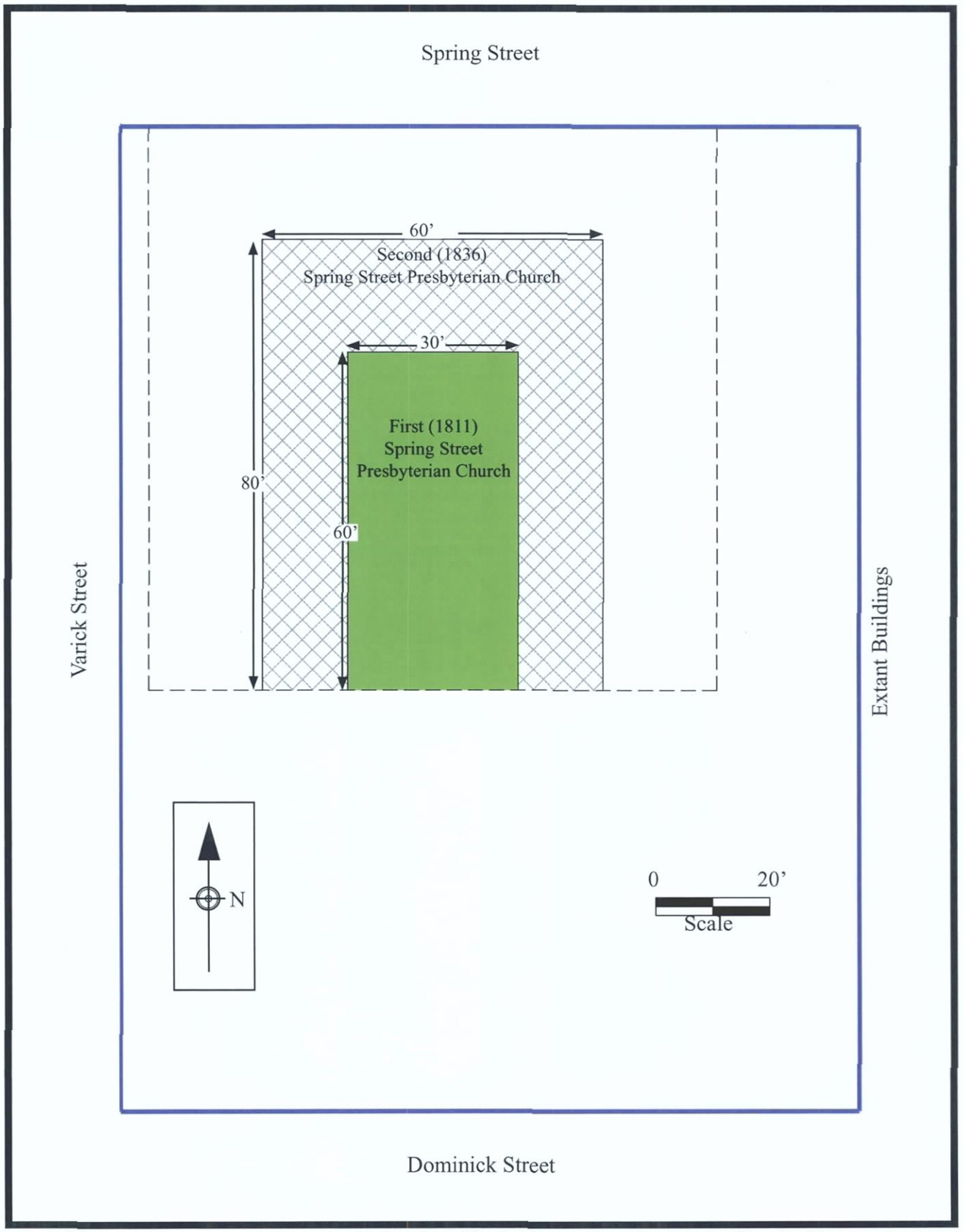

Figure 2.1 Diagram showing the probable location of the first Spring Street Presbyterian Church with respect to the second (1836) church building (Source: New York City Atlas; G.W. Bromely & Co., 1909, updated through 1915).

Reverend Cox continued as Pastor of the Spring Street Church until 1825, when a schism of sorts in the congregation appears to have developed. Cox and a large number of members left Spring Street that year and established another congregation, called the Laight Street Presbyterian Church, a few blocks to the south. For several years after, the remaining members of the Spring Street congregation soldiered on once again under the leadership of interim ministers until Reverend Henry G. Ludlow was installed as pastor in late 1828. At the time of his arrival, the Spring Street Church consisted of approximately 330 members, the majority of which appear to have been drawn from among the less affluent of New York society.

Like Cox, Reverend Ludlow was also an ardent abolitionist who continued into the 1830s the work of preaching an end to slavery started by his predecessor. In the early years of that decade, Ludlow also joined with other progressive Presbyterian ministers in making efforts to put an end to the practice of segregated seating during Sunday services. Those actions, along with persistent rumors that Ludlow had performed interracial marriages in the Spring Street Church, helped spark a wave of anti-abolition riots that swept through the city in the summer of 1834. On July 11, angry crowds turned their attention toward the Spring Street Church, attacked the building, and destroyed much of its interior furnishings. Although the congregation continued on in the aftermath of this assault, the destruction wrought on the building itself effectively brought an end to the first phase of the church's history.

THE SECOND CHURCH

Following the attack on the church, members of the Spring Street congregation sought to reorganize and to construct a new, larger church building. Having raised some $10,000 by 1835, the congregation commissioned this new edifice, and while it was under construction temporarily worshipped at the West Presbyterian Church on Carmine Street. The second church was completed on June 19, 1836, and consisted of a brick building in the Greek Revival style, measuring 60 x 80 feet (Figure 2.2). This new church was essentially built over the foundations of the earlier building and had its sanctuary on the second floor, with a basement underneath that contained both lecture and Sunday school rooms. Although the opening of this new house of worship was greatly welcomed, its construction placed the congregation deeply in debt.

In the years after the erection of the second church building, the Spring Street congregation at first grew rapidly, expanding to nearly 800 members by the mid-1840s. The ensuing decade, however, saw a stark reversal of fortune as the church struggled with issues of increasing debt, and many members of the congregation sought other places to worship. Financial hardships continued to plague the congregation into the 1860s, and for a time during that decade worship services appear to have been held primarily in the church's lecture room and in the basement of an elderly African American woman named Nancy Henry. While the Spring Street congregation eventually rejuvenated itself and briefly emerged from debt in the late 1860s, this period of solvency would not last long. Over the later decades of the nineteenth century, the congregation vacillated between periods of financial independence and returns to indebtedness. These frequent reversals of fortune evidently were not limited to the congregation or its bank account alone, and in the late 1870s the church building itself had declined into a dilapidated and dirty state.

Despite repeated financial hardships, the congregation kept on going, and in the early twentieth century was able for a time to expand its land holdings through the purchase of several surrounding lots of land. Ultimately, however, revenue shortfalls and accompanying loss of members sealed the fate of the church. By 1963, the congregation had been reduced to just 49 members and the church itself had been allowed to fall into disrepair. In early 1966, the Salvation Army finally purchased the church property with the intention of tearing it down. However, just a few months later, a sudden fire broke out in the church, possibly started by vagrants who may have been living there at the time, and the entire edifice was quickly consumed.

POST-CHURCH SITE HISTORY

In November 1966, the New York Department of Buildings (DOB) issued notice that the burned-out shell of the Spring Street Church was in imminent threat of collapse and would be demolished. That work was completed a short time later, and the church land and a number of adjacent lots were subsequently converted into a 50–75-car public parking lot. Later plans on file with the DOB indicate that by the late 1990s, nearly all the properties bordering the church land in the western half of this city block had been similarly demolished, consolidated into a single lot, and subsumed beneath pavement. While no details have been found describing what actions were taken when the church lot was cleared of building remains, it can be reasonably assumed, based on other examples of

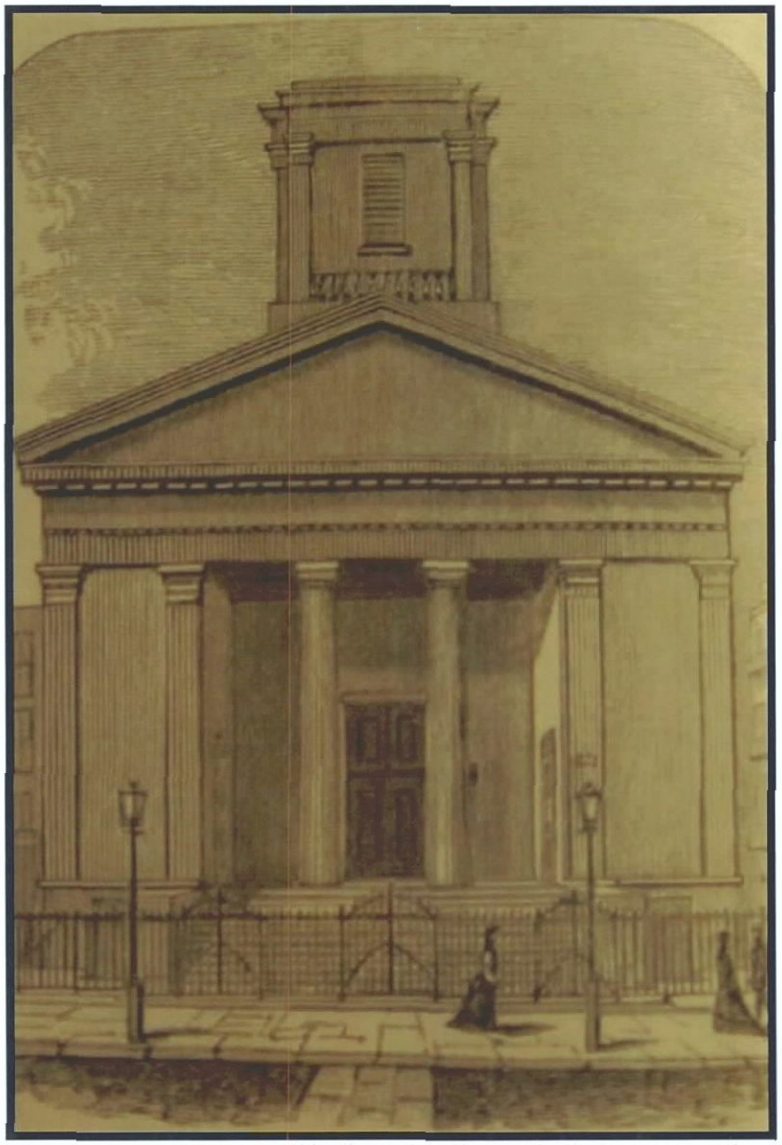

Figure 2.2 The second (1836) Spring Street Presbyterian Church building (Source: Moment 1877).

similar clearing projects, that construction machinery were employed to remove foundations and other surface obstructions, to fill in exposed cellar holes and related subsidences, and to grade the site level in advance of parking lot construction.

SPRING STREET CHURCH VAULTS

Although the history of the Spring Street Church is relatively well documented, corresponding information relating to the burial vaults has been more difficult to identify. Surviving church records themselves contain only trace data pertaining to their form and period of operation, and only fragmentary details regarding the congregants entombed in them. Based on information discussed above, it seems highly unlikely that the vaults were constructed prior to the first church building, and therefore their installation almost certainly post-dates 1811. Church records at the Presbyterian Historical Society in Philadelphia provide the best clues for the earliest usage of these chambers and indicate that deceased members of the congregation were being actively interred in them by at least July 1820, shortly before the installation of Reverend Samuel Cox as pastor.

Additional clarifying information related to the construction and start date for the vaults may be provided in early church insurance records and historic maps. These records indicate that a detached lecture or session room was added to the eastern side of the church property sometime in or before 1818 (see Meade 2007; Figure 4), in the general vicinity of where the vaults were eventually identified. It is possible that the vaults were initially constructed at the same time as this structure, or maybe even as a sort of basement beneath it. Some precedent for this last possibility may be found in the use of a contemporary Presbyterian session house in Philadelphia. The Second Presbyterian Church built this latter structure within their graveyard on Arch Street, and surviving documents do note that the basement of that building was utilized at some point as a crypt or funeral vault (Coxey Toogood, historian, Independence National Historical Park, Philadelphia, personal communication 2008). Unfortunately, other Protestant denominations utilized the Philadelphia Second Presbyterian session house building at various times, and it remains unclear exactly when, or by which group, interments were established there. If the Spring Street Church session house was built atop the vaults, then the earliest interments in those chambers could have occurred by 1818, if not slightly earlier.

Church vault records for 1820 through 1828, though incomplete and lacking in specific detail, seem to indicate that at least 28 members of the congregation, many of them children, were interred over this period. In some instances, the names of persons purchasing space in the vaults are recorded in these documents, along with limited personal information about the deceased. Unfortunately, very little else has been preserved about the identities or accurate numbers of congregants who eventually came to rest in these chambers.

By March 1830, space within the vaults may have been getting limited, as the church at that time appointed a committee from the congregation to "regulate" these spaces. Unfortunately, no further explanation is provided regarding exactly what activities were involved in vault regulation; however, the presumed purpose of these activities was to move or rearrange burials and funerary remains in order to clear additional space. This may have not been completely successful, because in February 1831, a separate church committee was tasked with determining the cost of constructing additional vaults. Ultimately, a man named R. B. Wynant was contracted for this purpose, and church documents show that by May 18 of that year, two additional burial chambers had been completed at a cost of $274.00. Church records do not indicate where on the property these new vaults were placed or provide any additional details of their size or subsequent usage.

It is not known when the vaults ceased being actively used by the church. Although an act of the local government banned burials in this part of New York City by at least 1832, trace evidence does show that the Spring Street congregation continued to utilize their vaults for a time after this, despite the legal jeopardy potentially incurred. Surviving documents indicate that burials were still occurring in the vaults as late as March 1835; however, no evidence has yet been identified in any archives to show that they continued to be used following the construction of the second church edifice in 1836. Nevertheless, archaeological evidence shows that individuals were interred as late as 1842.

3
Preliminary Evaluations and Assessments

In accordance with the work plan developed for this project, initial archaeological explorations within the site sought to determine if additional human remains were contained in other portions of the construction site, outside of the original findspot, and to establish the precise source and context from which previously identified burial remains were derived. At the start of this work, preliminary historical research had already revealed the presence of the former Spring Street Presbyterian Church within the construction site, had identified the church property on maps dating from the late nineteenth through twentieth centuries, and had provisionally shown the original findspot location to correspond with the southern end of what appeared to be an undeveloped, open yard space along the eastern side of the church building (Figure 3.1). However, no documents available at that time contained information indicating the past existence or precise location of any associated cemetery. Moreover, identified historical maps suggest that the church property at one time may have extended the full distance from Spring Street to Dominick Street. As such, it was initially considered possible that a cemetery or other burial facilities associated with this former church and congregation could have once been contained within any number of locations throughout the present construction site.

Conduct of these initial investigations incorporated two separate, though concurrently performed, components. The first of these components involved the monitoring of ongoing construction work and foundation excavation, while the second consisted of thorough examinations of the original human remains findspot. In both instances, members of the archaeological team were tasked with the goal of identifying and recovering any additional loose/disturbed remains that may be present, as well as verifying whether or not intact burials and related funerary deposits or features might yet be preserved somewhere within the site.

INITIAL SITE CONDITIONS

By the time archaeological work was enjoined, construction excavations and related disturbances had progressed to varying degrees of completion across the site. Prior to the initial discovery of human remains, the upper few feet of the project area had been impacted during the removal of a 1960s asphalt parking lot, and the driving of steel soldier piles for construction shoring disturbed the street-side periphery of the parcel. Once steel piles had been driven, excavation work focused first on the perimeter of the site, where wood shoring needed to be installed, and where the foundation of an extant office building required underpinning. This early excavation was completed along the northeast, eastern, and southern margins of the property and extended to a final depth of approximately 20 feet below street grade (Figure 3.2).

Interior parts of the site were excavated next, with work starting in the south and moving to the north. The south central and southeastern interior site areas had been stripped to a depth of approximately 10 feet below surface by the time archaeologists were called in, and it was during the excavation of the northeast quadrant that human remains were first identified, at about 8 feet below grade. For the most part, excavated construction rubble and culturally sterile subsoil had been immediately loaded onto trucks and removed from the site during the creation of these internal elevations; however, soils removed from the northeast periphery and adjacent interior spaces remained stockpiled in the north-central portion of the property. The only areas where excavation had not progressed substantially consisted of the northwest site quadrant, containing the main entrance gate and adjacent equipment access-egress ramp, the far southwest corner, and along the extreme western site edge.

The completion of this early excavation work had impacted the remnants of historical structures that formerly existed on this parcel, and associated brick and concrete demolition rubble were scattered in pockets across the site. For the most part, foundations were confined to the upper 6 to 10 feet of the site matrix, with only a few truncated wall fragments visible at the time, primarily in the southern portion of the project area. Dense brick rubble, demolition debris, and ash/cinder fill was piled in low mounds across the area of the initial human remains findspot; however, no intact walls or other structural elements were evident in this location. Deeper cuts along the margins of the site revealed no evidence of any intact historical ground surfaces, and showed the underlying subsoil to consist of coarse-grained, unconsolidated sands.

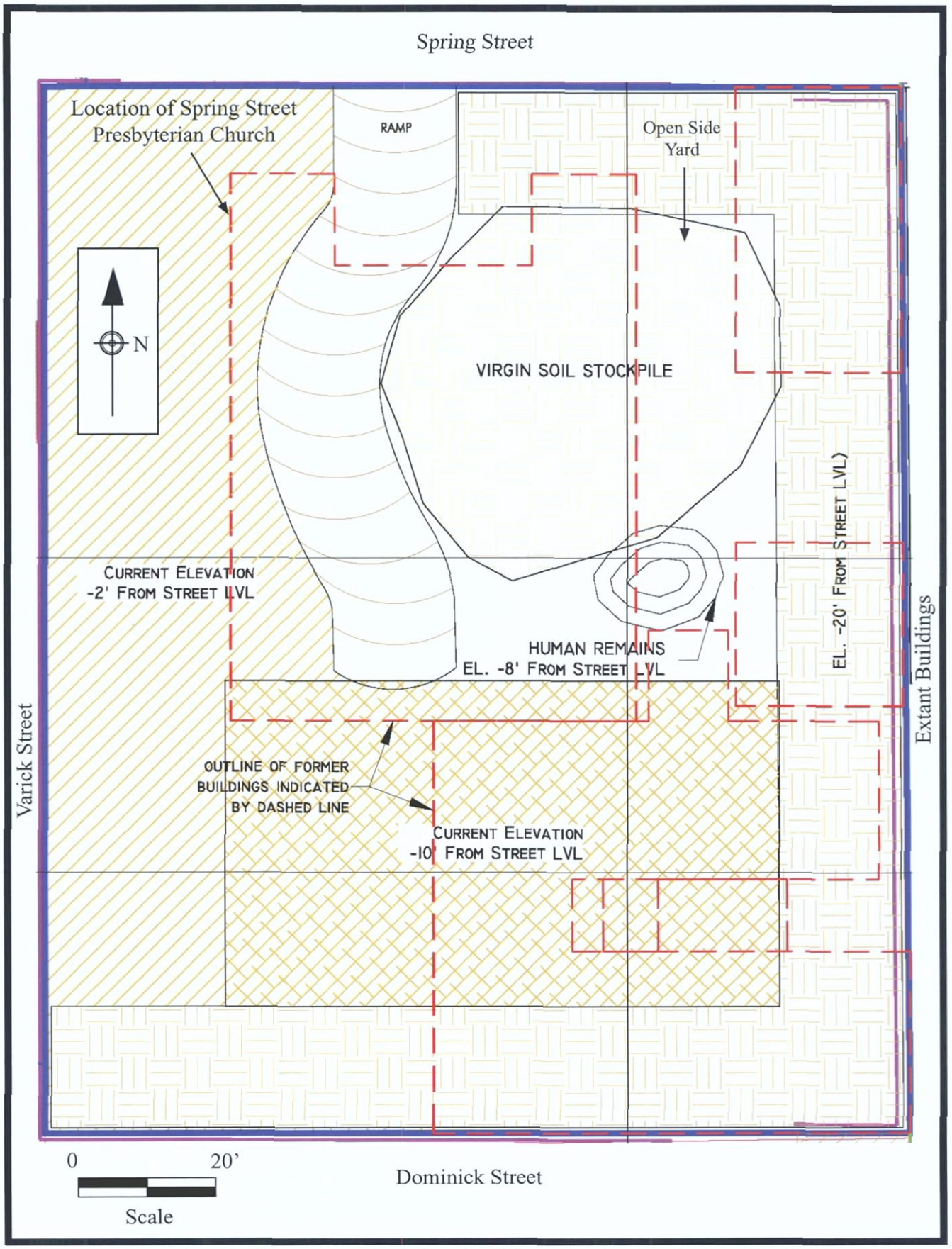

Figure 3.1 Location of initial human remains findspot in relation to the historic Spring Street Presbyterian Church, church property, and later site buildings (Source: Bovis Lend Lease-LMB 2006).

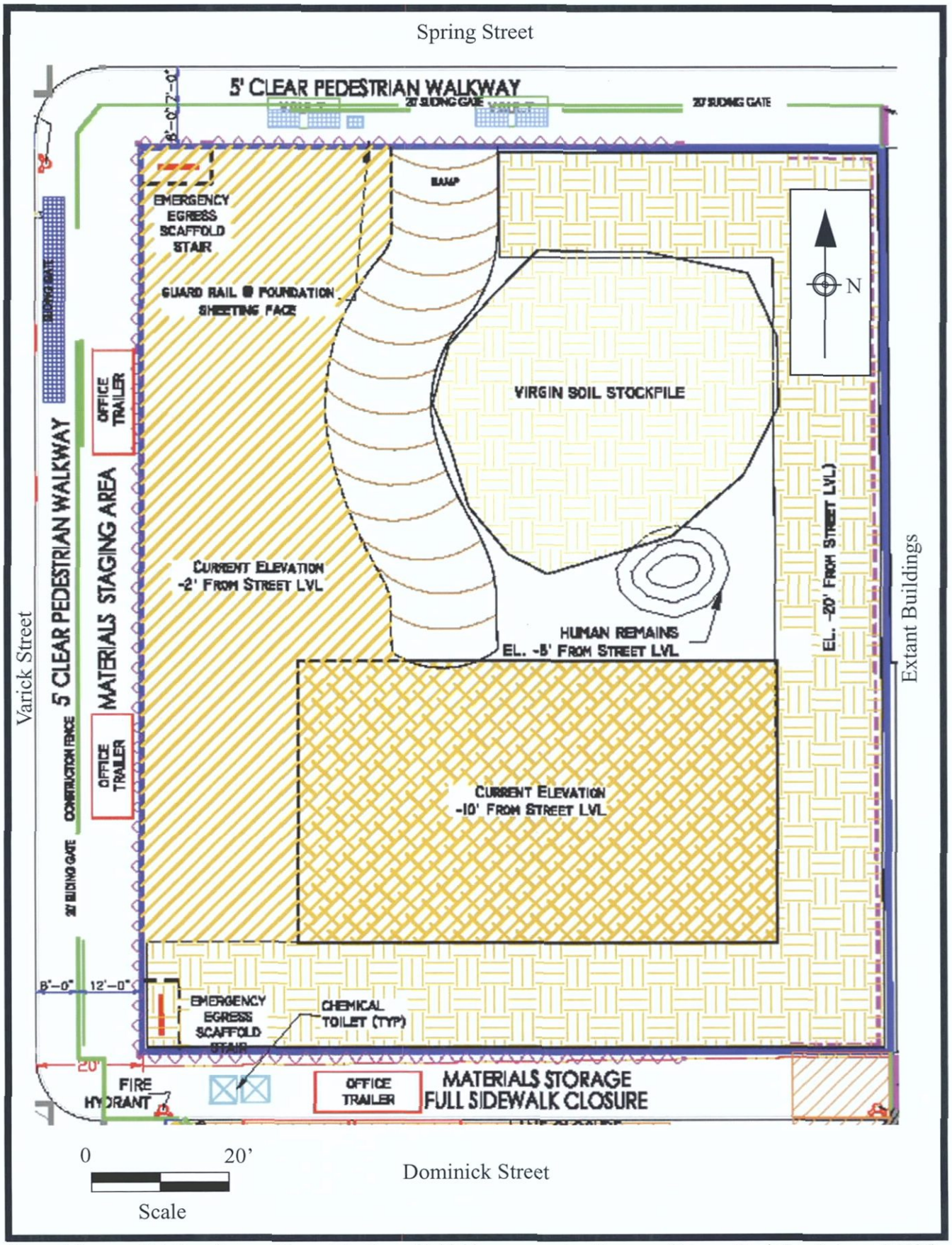

Figure 3.2 Existing site conditions at the time of initial human remains discovery (Source: Bovis Lend Lease-D2006).

CONSTRUCTION MONITORING

As archaeological work commenced on the site (December 19, 2007), construction crews cordoned off the vicinity of the initial human remains findspot in order to establish a safe work zone for the archaeological team in that location, and to demarcate archaeologically sensitive areas in the northern half of the property where additional human remains potentially could have been contained. Archaeological monitoring of construction activities first focused on the removal of stockpiled soils sitting immediately to the northwest of the initial findspot. Members of the archaeological team carefully observed construction machinery remove the stockpile and load it into trucks for transport off site. Monitoring revealed the stockpile to consist almost entirely of culturally sterile sands removed from deeper excavated parts of the site, along with small amounts of intermixed stone and brick building rubble. However, no evidence of additional quantities of previously disturbed human skeletal remains was identified.

Once the stockpile had been cleared from the site, archaeological monitoring efforts shifted to the task of visually examining the removal of previously unexcavated soil and rubble matrix within the construction footprint. This task was completed intermittently over the course of the ensuing four weeks and was primarily driven by the schedule of construction contractors. Figures 3.3 and 3.4 depict the gradual transformation of the site during the period of archaeological monitoring, as construction excavation progressed.

Monitoring was initially confined to the southern half of the project area, where the site had previously been excavated to a depth of approximately 10 feet below street grade, and then progressed gradually to the north. During the monitoring process, 100% of the mechanized excavation conducted within the project area was closely watched by one or more members of the archaeological team, with those individuals afforded full authority to temporarily halt digging as necessary to evaluate potential cemetery or burial related finds. Within the immediate vicinity of the former Spring Street Church building, and especially within the footprint of the former church building and the location of the open yard at the western margins of the church property, construction monitoring was supplemented with more controlled examinations of near-surface soil horizons in order to identify possible evidence of undisturbed burial shafts or related funerary features. Such examinations involved the use of manual shovel-scraping techniques designed to expose any more subtle signs of cemetery activity that might have been obscured by mechanized excavation alone.

The completion of construction monitoring determined that all human skeletal remains and burial-related artifacts were confined exclusively to the immediate vicinity of the original findspot. No similar materials were identified in any portion of the site outside this very specific and confined location. Monitoring did result in the identification of multiple historic building foundations in both the southern and northern halves of the site, including the foundations of the former Spring Street Presbyterian Church (the investigation and documentation of non-church-related historic structures was not included in the scope of this project).

Church foundations were encountered in the north-central portion of the site and corresponded both in terms of location and scale with surviving historical data collected during concurrent background research. More specifically, monitoring activities uncovered portions of the east, north, and west walls of the former church edifice; however, the southern wall was not identified, and was likely removed in its entirety during pre-investigation construction excavations. The foundations themselves were represented by 2-foot-thick stone walls spaced 60 feet apart, and extending to depths of approximately 8 feet below street grade (Figure 3.5). Excavation monitoring and controlled shovel scraping of intact soils within the church footprint revealed no evidence of any interior subterranean grave shafts, vaults, crypts, or similar funerary receptacles. Evidence of a shallow basement was identified beneath the church, however, and was measured to extend only some 5 feet below street grade. This discovery suggests that basement spaces described in historic accounts of the second Spring Street Church building were only partially subterranean in construction, and is consistent with details preserved in surviving photographs of the church showing the main floor elevated approximately one half story above street level.

INITIAL FINDSPOT EVALUATIONS

Thorough investigations of the initial human remains findspot were conducted concurrently with the onset of construction monitoring, and were preceded by the erection of temporary shelters within this location. These shelters initially consisted of small portable canopies that could be moved around as needed; however, these were

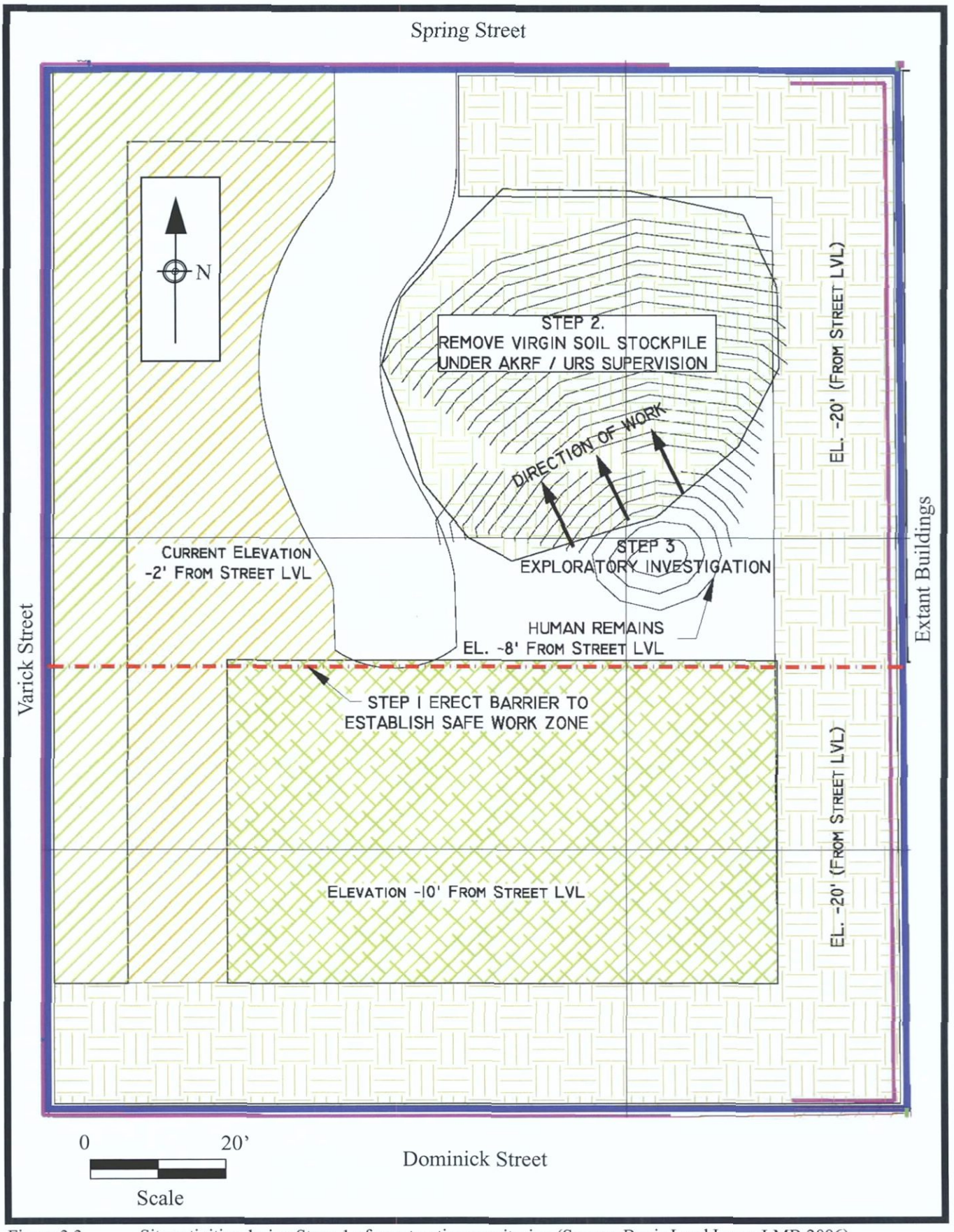

Figure 3.3 Site activities during Stage 1 of construction monitoring (Source: Bovis Lend Lease-LMB 2006).

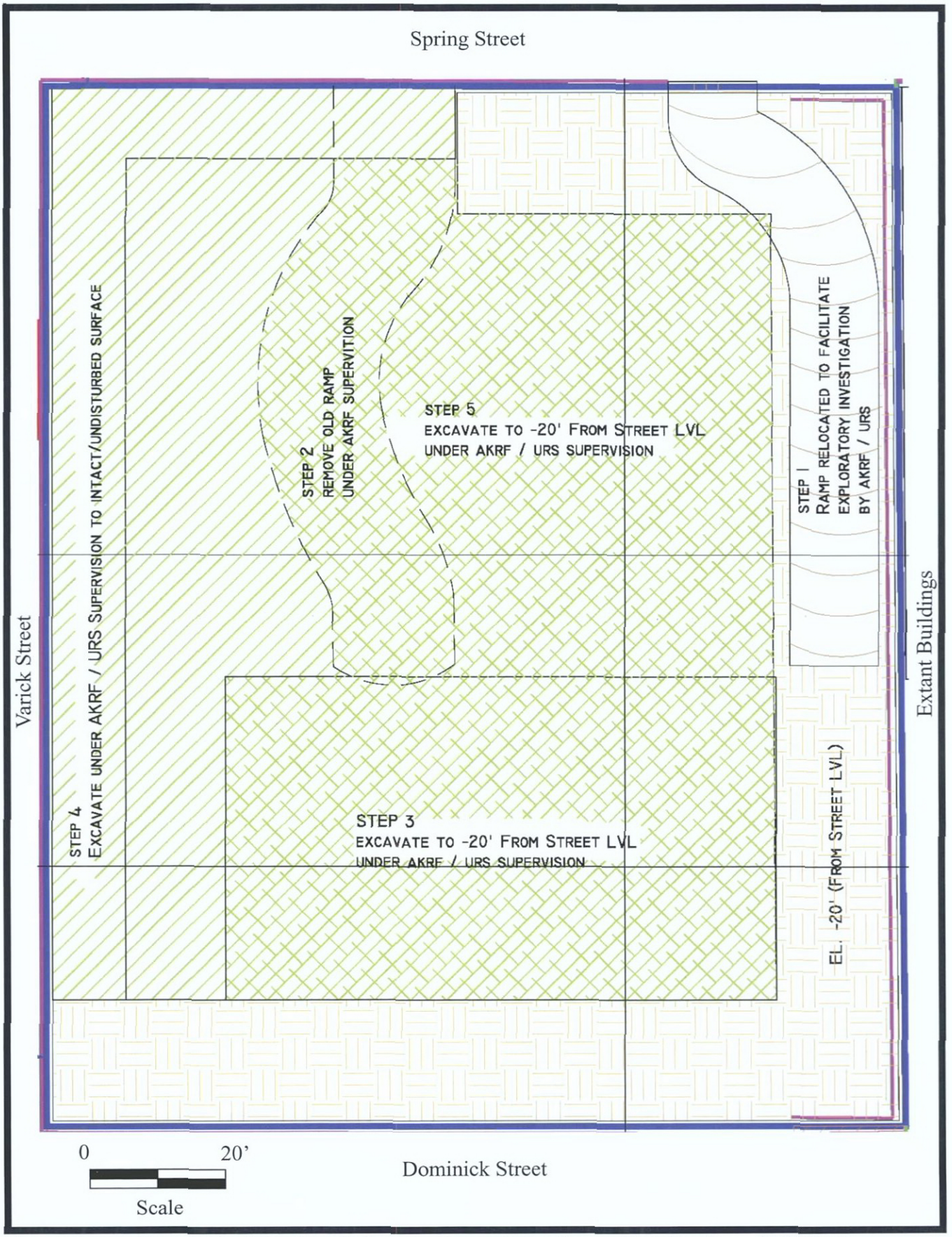

Figure 3.4 Site activities during Stage 2 of construction monitoring (Source: Bovis Lend Lease-LMB 2006).

Figure 3.5 View to northwest, showing remnant foundation of the second Spring Street Presbyterian Church building.

replaced by a larger, weather resistant, greenhouse-like temporary structure as work progressed (Figure 3.6). The function of such shelters was to protect any exposed remains from the elements, to provide members of the archaeological team with cover during periods of inclement weather and, most importantly, to shield the remains from public view and help retain a measure of dignity for the deceased. The latter goal was deemed especially critical after it was learned that individuals in adjacent high-rise buildings had attempted to photograph and record video of the exposed remains, and in some instances had succeeded in posting images to the Internet.

Subsequent evaluations of the initial findspot vicinity generally involved three somewhat fluid steps: 1) the recovery of disturbed skeletal remains and funerary artifacts not collected by the OCME staff; 2) the limited use of mechanized excavation equipment to remove dense, mounded demolition rubble and fragmentary architectural elements, and to facilitate more extensive exploration; and 3) the conduct of targeted subsurface testing to develop archaeological and stratigraphic contexts for this location, and to determine whether or not intact, undisturbed burial remains were present. In instances where construction machinery was employed, all work was closely monitored by members of the archaeological team, while more delicate activities associated with the collection of skeletal remains and subsurface testing were performed exclusively by hand. During the recovery of remains, the horizontal distribution of such material was recorded on hand-drawn maps, marked on the surface with pins flags, and subsequently mapped within the overall site by construction survey personnel. Concentrations of bone and/or related artifacts were further documented via digital photographs, and all identified disturbed remains were retained in paper or plastic artifact bags labeled with corresponding locational information. Finally, all recovered human remains were placed in sturdy cardboard banker's boxes and stored in secure facilities on site, pending the conclusion of the investigations and the start of osteological studies.

When members of the archaeological team began their evaluations, all skeletal remains lying on the surface of the findspot had been collected by OCME officials and removed from the site, and the area of their distribution had been marked out with plastic caution tape. However, URS field personnel quickly determined that large quantities of additional loose, disturbed remains were present just below the surface of the original findspot and adjacent rubble mounds located within a 30-foot radius to the north and west. These first explorations were conducted in a non-systematic fashion, but revealed that the location of skeletal remains largely corresponded with the distribution of pockets of dark, richly organic soil containing a high density of decayed wood fiber and fragments (Figure 3.7). Close inspection of these soils suggested that the source of wood in these deposits was very likely decomposed coffin boards—an interpretation further supported by the identification of significant amounts of rusted nails, screws, and possible other coffin hardware in direct association. As members of the archaeological team picked through the near-surface demolition rubble, it became evident that concentrations of organic soil and human remains existed within the rubble matrix as both seemingly isolated pockets of a foot or more in depth, as well as in thin, more widespread layers, and exhibited no sign of either vertical or horizontal systematic organization or patterning.

The densest concentration of human remains was identified within the area of the initial findspot, and immediately below the surface where OCME staff had recovered possible evidence of at least one partially intact burial. During URS examinations, large quantities of bone were recovered from a single large pocket of organic soil and decomposed coffin wood. This location was investigated entirely by hand and specific care was taken to look for any evidence of *in situ* remains—in the form of articulating skeletal elements. Despite the large quantities of remains present, including both cranial and post-cranial components, and representing multiple individuals of varying age and gender, no unambiguous evidence of intact or partially undisturbed burials was detected, nor was any indication of undisturbed soils or burial features identified. Instead, remains were observed to be intermixed with and underlain by dense brick demolition debris, and were found in a jumbled, disassociated, and frequently fragmented state (Figure 3.8).

Beyond the main findspot, human remains were confined to a series of discontinuous pockets (initially assigned supplemental findspot numbers) and were found in similar highly disturbed contexts near the surface of the demolition rubble. As within the main concentration, all outlying skeletal remains consisted entirely of isolated finds or loose groupings of non-articulating elements, and were recovered in association with deposits of decayed coffin wood and intermixed historic debris, including coal ash/cinder, dense brick and stone rubble, and an assortment of architectural and domestic rubbish of widely varying dates of manufacture (metal rain gutter, brass and cast-iron machine parts, twisted metal scrap, industrial wiring, window glass, sewer pipe, mold-blown and machine-made bottles, aluminum cans, and mixed ceramic vessel sherds [redware, whiteware, ironstone, stoneware, porcelain, etc.]; see Table 3.1). Given this total lack of depositional integrity, initial efforts to carefully map the

Figure 3.6 Overview of vault site, showing temporary work shelter.

Figure 3.7 Detail of initial find spot showing concentration of decayed coffin wood (dark area in center).

Figure 3.8 North profile of bisected initial findspot, showing pocket of human remains and decayed coffin wood within demolition rubble.

Table 3.1 Summary of Artifacts Recovered from Demolition Rubble

Artifact Class and Type	Quantity	% of Total
Architectural	317	36.6%
Ceramic	19	2.2%
Glass	175	20.2%
Metal	119	13.7%
Other	4	0.5%
Commercial	5	0.6%
Ceramic	1	0.1%
Metal (electrical wire)	2	0.2%
Other	2	0.2%
Household	421	48.6%
Ceramic		
Creamware	3	0.3%
Ironstone/White Granite	119	13.7%
Pearlware	24	2.8%
Porcelain	13	1.5%
Redware	59	6.8%
Stoneware	8	0.9%
Whiteware	7	0.8%
Yellowware	5	0.6%
Other Earthenware	17	2.0%
Glass		
Vessel Glass	160	18.5%
Other Glass	6	0.7%
Personal	42	4.8%
Buttons	6	0.7%
Smoking Pipe	9	1.0%
Comb	2	0.2%
Pin	3	
Toy (dolls/marbles)	4	0.5%
Shoe	15	1.7%
Fabric	3	
Funerary	13	1.5%
Coffin Plate	4	0.5%
Coffin Hardware	2	0.2%
Coffin Wood	7	
Other/Unidentified (primarily metal)	69	8.0%
Totals	867	100.0%

Artifacts summarized above include all objects recovered from the initial find spot and related disturbed portions of the site. Human remains recovered from these contexts are not included in this summary.

distribution of these remains were eventually abandoned, and findspot skeletal concentrations were instead collected together and labeled simply as disturbed remains.

After members of the archaeological team completed the recovery and documentation of disturbed remains from the initial findspot vicinity, exploratory efforts shifted to determining the source of these impacted human remains. Toward that end, demolition rubble was gradually cleared by hand in the vicinity of the densest concentration of skeletal material, and a series of small test pits were completed in an attempt to identify any evidence of intact, and possibly more deeply buried, funerary remains and/or features. This work was started under the assumption that the original findspot corresponded to the location of a formerly open side yard to the east of the Spring Street Church; however, continued exploration of this spot soon uncovered evidence of partially undisturbed structural foundations of an unknown source or function beneath the rubble cap.

The first section of this structure to emerge consisted of a low east-west oriented brick wall fragment located a few feet south of the initial findspot, and just to the north of where previous construction excavation had been temporarily terminated. A single exploratory excavation on the south side of this wall encountered no evidence of any interior flooring or other structural elements, but instead bottomed out within an apparently undisturbed deposit of course sand subsoil. A second test pit completed adjacent to the north side of this wall encountered approximately 6 inches (0.5 feet) of concentrated ash and cinders mixed with brickbats, and then exposed a dense cluster of human skeletal remains (Figure 3.9). The latter materials were represented by a series of stacked parallel upper leg (femurs) and partial pelvic bones (innomnates), along with numerous mixed hand and finger elements (metacarpals, phallanges). Based on observations within this limited window of visibility, the identified human remains appeared to be positioned tightly against the brick wall, and were thought to possibly be associated with intact or partially undisturbed historic burials. Moreover, their association with an intact wall section suggested that the remains might have been contained within some sort of underground crypt or vault.

Following this discovery, mechanized construction equipment was used to expose more of this burial chamber and to define its structure and full dimensions within the site. Clearing the overlying rubble in this manner eventually exposed a network of interconnected stone and brick walls defining three adjacent rectangular rooms. These rooms were observed to measure approximately 15 feet across (east-west), and collectively spanned a total length of more than 40 feet (north-south). Subsequent hand excavated test pits completed in each of the two more northern spaces of this structure resulted in the exposure of additional massed human skeletal remains mere inches below the remaining rubble fill. This discovery served to verify the structures' function as subterranean funeral vaults, and immediately raised the possibility that large numbers of relatively undisturbed human burial remains could still be contained within them (Figure 3.10).

Continued exploration of the vaults eventually determined that a fourth burial chamber had originally been located at the south end of this complex, and produced evidence suggesting that this chamber had been substantially destroyed by initial construction excavation activities. As indicated in the previous chapter, concurrent historical research into surviving church records did confirm the existence of a total of four burial vaults within the church's property. Given these findings, it was reasoned that skeletal material originally discovered by construction personnel, and collected by members of the OCME staff and archaeological team from adjacent rubble piles, most likely represented burial remains from that southernmost vault that had been inadvertently disturbed and redeposited by construction equipment. The following chapter describes the intensive investigation of these four funeral vaults in greater detail, and discusses the skeletal remains recovered from within them. Further information related to the study of disturbed remains collected during these initial evaluations are presented in Appendix D.

Figure 3.9 Overview of early test excavations, showing the concentration of disarticulated human remains north of an intact section of vault wall.

Figure 3.10 Shovel test pit excavated within vault space, showing exposed intact coffin wood at bottom.

4
Burial Vault Investigations and Findings

PROJECT OBJECTIVES AND PROTOCOLS

The primary objective of this investigation was the identification, recovery, and documentation of human skeletal remains within the former Spring Street Church property, and to complete these tasks while at the same time preserving the greatest possible degree of respect for the deceased. In keeping with efforts to provide the most respectful possible treatment of the remains, and in order to ensure that no further damage was inflicted on them, the vast majority of work related to the recovery effort within the burial vaults was performed entirely by hand. In addition, all recovery work was performed within a weather-resistant shelter that served to both protect the remains from further damage and to shield them from the view of the press and curious onlookers (Figure 4.1). A secondary, but no less important, goal was to make certain that all skeletal and dental portions of each individual burial, including fragmentary remains, were identified and recovered, as well as any accompanying funerary artifacts.

Additional protocols applied throughout the exhumation process included:

- Members of the URS team at all times acted in a respectful manner intended to preserve the dignity of the deceased;
- In order to respect the privacy of deceased individuals, all project information was considered confidential and maintained as such for the duration of the project;
- Wherever possible, all funerary artifacts (e.g., coffin hardware, coffin nails, and personal effects) were maintained with the individual with whom they were associated;
- Photographing and/or video recording of human remains by unauthorized non-project personnel was absolutely prohibited;
- Arrangements were pursued to allow all human remains to be reburied as soon as possible after the completion of the project.

FIELD METHODOLOGY

By the end of the evaluation and assessment portion of this investigation, construction machinery had succeeded in exposing the remnant walls of the burial vaults and had removed as much of the overlying unconsolidated demolition rubble (dense brickbats, large foundation stones, sections of mortared brick wall) from the interior of the vault chambers as possible without causing further damage to the skeletal remains contained therein. At the start of the recovery and documentation phase of the project, then, the contents of the vaults consisted of an unknown quantity of in situ human remains (presence verified in all but the southernmost vault by prior testing) capped by a variable deposit of ash/cinder, soil, gravel, and dense brick rubble approximately 6 inches to 1 foot in overall thickness (Figure 4.2). These deposits effectively formed a protective barrier over the burial remains and were purposely left in place so that members of the archaeological team could continue to move and work inside the vaults without damaging skeletal materials below.

The subsequent archaeological excavation and recovery of remains within the vaults was conducted exclusively by hand, primarily using shovels and trowels, with specific approaches to this task and sequences of work dictated by the preservation and distribution of skeletal material within each vault. At the start of this phase of work, it was decided that each burial vault would be treated as independent units of study, documentation, and recovery. Consequently, these spaces were assigned sequential identifying numbers, from 1 to 4, with the southernmost chamber arbitrarily designated Vault 1 and the northernmost Vault 4. All human remains and associated artifacts within each of these chambers were subsequently excavated, recorded, and mapped separately from those in adjacent rooms, and were identified by sequential field sample (FS) numbers that clearly indicated their vault of origin.

In general, excavation within the better-preserved vaults began along the southern side of each chamber and moved progressively toward the north. In Vaults 2 and 3, the spacing of identified remains permitted the entire chamber to be cleared of rubble and non-burial debris in this manner before associated skeletal material was documented and removed. In Vault 4, interior remains were sufficiently dense that this process could not be likewise followed, and instead a more staged approach was required. Within the northernmost vault, human remains were excavated and

Figure 4.1 Overview of vault excavations in progress within temporary shelter.

Figure 4.2 Overview of Vault 4 after initial clearing of demolition rubble, showing layer of ash/cinder and brick construction debris covering in situ burial deposits.

documented in a series of 2-foot-wide trenches that extended east-west across the entire chamber space. As in the adjacent vaults, the first of these trenches was completed along the southern margins of the room, with subsequent trenches completed sequentially northward (Figure 4.3). Given its highly impacted nature, Vault 1 was handled in a different, less systematic manner, in which excavation focused primarily on the identification and delineation of remnant structural/architectural features. Here, excavation started at the northern vault wall and radiated outward until the discernable limits of the chamber space were uncovered. Associated human remains were very few in number in this instance, derived from exclusively disturbed contexts, and were recovered as they were exposed in the course of exploratory excavations.

Within Vaults 2–4, once the protective cinder fill layer had been removed and human skeletal remains began to be exposed, excavation was performed exclusively using smaller hand tools such as trowels, wooden dowels, spoons, and clay modeling implements (Figure 4.4). These tools were used to remove soil from around the remains, to expose them for subsequent documentation, to prepare them for ultimate removal, and to facilitate the recovery of all skeletal material and associated funerary artifacts present in the vaults. Wherever possible, excavations proceeded downward until the bottom of each vault was reached, with documentation and removal of remains occurring after all skeletal material in a given location had been fully exposed. However, in places where densely stacked piles of previously disturbed, disassociated/non-articulated remains were encountered (i.e., those that could not be positively determined to belong to any single past burial event), excavations proceeded downward in stages. In these situations, skeletal remains were excavated to the fullest extent possible, and were then documented and removed in arbitrary levels.

A primary focus of the recovery plan was to identify all discrete sets of articulated skeletal remains that might be present, and that could be reasonably attributed to separate burial events. Whenever such individual sets of remains were uncovered, they were assigned unique numerical designations consisting of two parts: vault of origin and a sequential burial number within that vault (e.g., Vault 2 Burial 5; Vault 4 Burial 16). During this project, discrete burials were identified based on the presence of both nearly complete sets of remains, as well as partially complete sets of articulated skeletal elements. In making such determinations, no universal standards or well-defined minimum criteria were employed, other than that identified sets of remains were required to be clearly and unambiguously associated with a single distinct person. Ultimately, each instance of potentially articulated remains was evaluated independently, and determinations about assigning discrete burial designations were judgment calls made by the Principal Investigator. All designated discrete burials were fully documented on standardized paper forms, were documented in situ using black-and-white print and high-resolution digital photography, and, where possible, were additionally hand sketched in order to record any additional relevant burial details.

Another main focus of this project was the recovery of 100% of all human remains contained within the vaults. Given that a significant proportion of identified remains exhibited poor to outright deplorable states of preservation, recovery efforts were augmented by screening associated soil matrix through standard ¼-inch hardware cloth. In instances where pockets of crushed bone were encountered, efforts were made to collect and bag both the pulverized bone and associated soil matrix. While such severely impacted remains were of no analytic value whatsoever, they were nonetheless recovered for purposes of reburial. Unlike identified discrete burials, all disturbed/disassociated and crushed remains were assigned only a general provenience according to their respective vaults of origin, and were collected, bagged, and boxed as single mass units.

Beyond those methods discussed above, additional photographs were taken as necessary to document the general progress of the recovery plan and to further record details of coffin construction and/or the nature and arrangement of any associated funerary hardware or personal effects. Following documentation, all remains and any accompanying funerary objects (buttons, shroud pins, coffin nails, lid screws, lid plates, hinges, etc.) were manually removed, placed in individual plastic bags and cardboard boxes labeled with pertinent identifying and locational information, and transferred to an adjacent secure steel storage locker, where they were temporarily maintained pending transfer offsite for analysis and eventual reburial.

EXCAVATION RESULTS AND FINDINGS

The first task involved in investigating the vaults was the systematic removal of the fill layer left in place to protect the human remains. As stated above, this material capping the burial deposits consisted primarily of ash/cinder, soil, gravel, and dense brick rubble. However, the excavation of this matrix revealed that quantities of domestic and

Figure 4.3 View to southwest in Vault 4, showing 2-foot-wide trench excavation and exposed disarticulated human remains beneath ash/cinder fill.

Figure 4.4 Detail of URS cemetery team exhuming human remains from Vault 2.

other artifacts were also present in variable quantities. To some extent, these fill artifacts were stratigraphically separate from the burial remains below, although prior impacts associated with the deposit of construction rubble was observed to have caused some mixing of these two internal strata.

Given that the primary goal of this investigation was the recovery of human remains, these remaining fill deposits were not carefully screened for artifacts; instead, only a random sample of potentially diagnostic items were collected in the field and retained. During subsequent laboratory studies, artifacts in this sample were identified and cataloged (see Table 4.1 and Appendix E), and did produce information relating to the sequence of events impacting the vaults. Artifacts in this fill level consisted primarily of a large assortment of domestic ceramic and glass vessel fragments, metal objects (can fragments, machine parts, electrical wire), architectural debris (brick, plaster, mortar, nails, window glass), and lesser amounts of food remains (clam and oyster shell, animal bone). In many ways, this layer and the artifacts contained in it are reminiscent of redeposited secondary privy fill.

An examination of the artifacts reveals that they exhibit a wide range of possible manufacture dates, spanning the late eighteenth through mid-twentieth centuries. Beginning manufacturing dates for a large proportion of these objects strongly suggests that the fill matrix they were contained in could not have been introduced into the vaults prior to the last quarter of the nineteenth century, at the earliest. The inclusion of modern toilet parts, plastic coated industrial wiring, and other recently manufactured objects in this assemblage, however, suggests that these materials were not deposited into the vaults until sometime around the middle of the twentieth century. Taking all this evidence together, it is believed that this fill matrix overlying the intact burial remains was likely used to fill the vaults when they were exposed during the demolition of the site in the 1960s. It is also possible that some portion of this fill was placed in the vaults during the late nineteenth century, possibly as a means of controlling the odor of decay from the remains.

Burial Vaults

In addition to recovering human remains, controlled archaeological investigations also sought to document details of the construction of the burial vaults themselves. Ultimately, however, this task was made more difficult because the vaults had been impacted to varying degrees prior to the start of these investigations. These impacts resulted in the differential preservation of specific construction details, with some significant portions of the vaults having been nearly completely destroyed, and several of the surviving walls having been dislodged to varying degrees. To further confuse matters, evidence was produced during the excavations suggesting that the vaults may have been impacted on multiple occasions since their original construction.

As discussed above, explorations of the initial human remains findspot resulted in the uncovering of a total of four subterranean burial chambers. Constructed by the church in two stages between circa 1820 and 1831, these chambers were determined to be located at the far southeastern margins of the church property, within the perpetually open side yard to the east of both the first and second church edifices. Based on measurements documented in the field, the vaults were located only some 2 feet east of the foundations for the second (1836) church building, and sat 30 feet south of that building's northeast corner. Assuming that reconstructions of the original (1811) frame church are accurate, the vaults would have been located approximately 17–18 feet more or less directly east of that earlier structure's northeast corner (Figure 4.5). No evidence has yet been identified, whether derived from historical documents or archaeological discoveries, to suggest that any of these burial chambers were ever connected via a passageway or other access to the church itself.

In terms of their exterior dimensions, the burial vaults were found to measure some 42 feet (north-south) by 17 feet (east-west) in total length, were contiguous to one another, and were constructed of a combination of both stone and brick (Figures 4.6–4.10). Of these four chambers, the northern two (designated Vaults 3 and 4 for the purposes of field recordation) almost certainly represent the earliest vaults constructed on the property, in or about 1820, and exhibited the best overall degree of preservation (Figure 4.11). The exterior foundations for these chambers consisted of approximately 1.75-foot-thick stone walls with rough dressed interior surfaces. Although portions of these outer walls were partially truncated during the removal of demolition rubble from this portion of the site, wall segments along the western and northern sides remained intact to a height of approximately 5 feet above the vault floor. Within these foundations, space for Vaults 3 and 4 was created through that construction of a 1-foot-thick east-west oriented brick dividing wall. The interior space for each chamber measured 9 feet north-south by 14 feet east-west, and encompassed a total area of 126 square feet. Excavation revealed these northern chambers

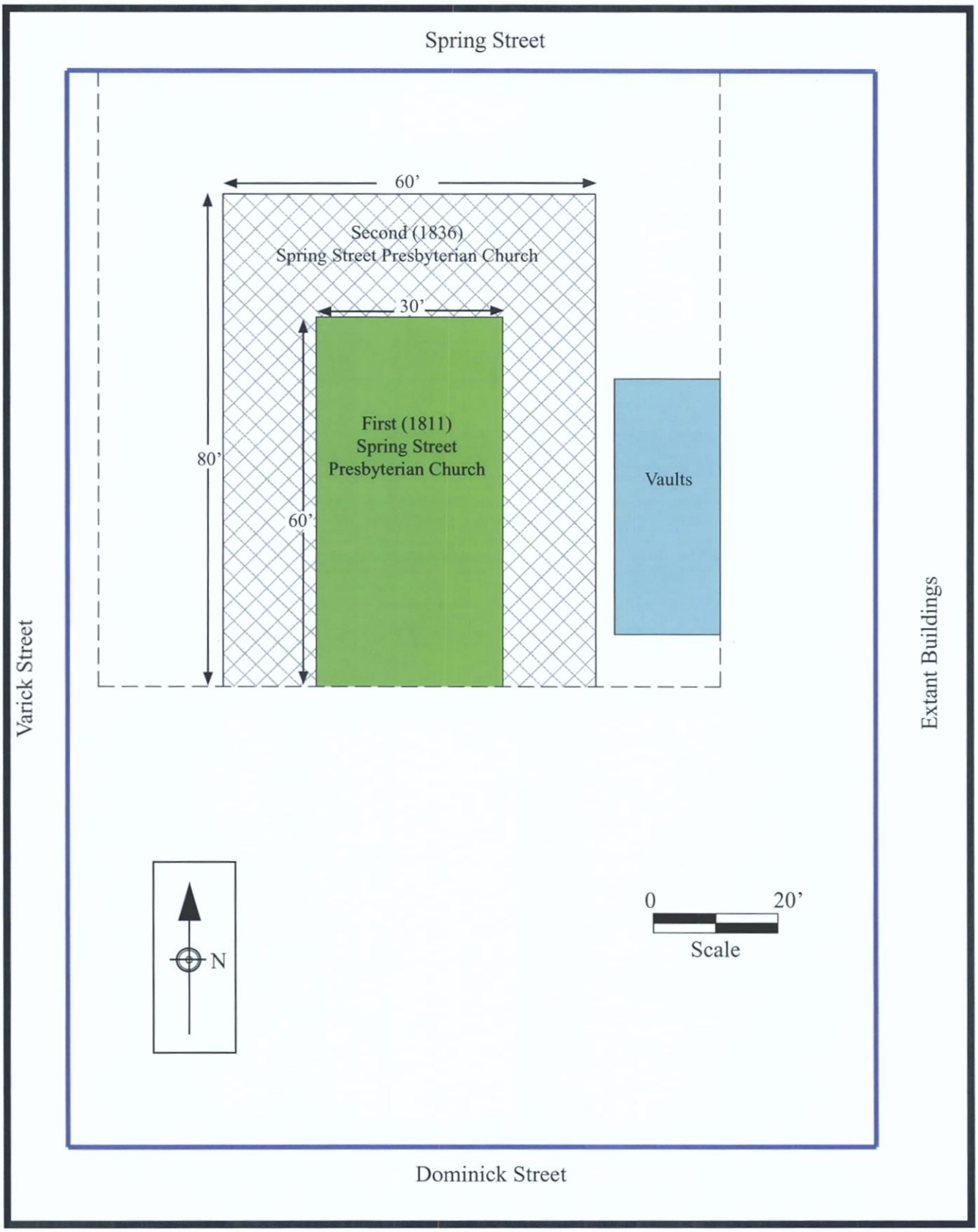

Figure 4.5 Location of burial vaults within the Spring Street Church property, and with respect to the first and second church buildings.

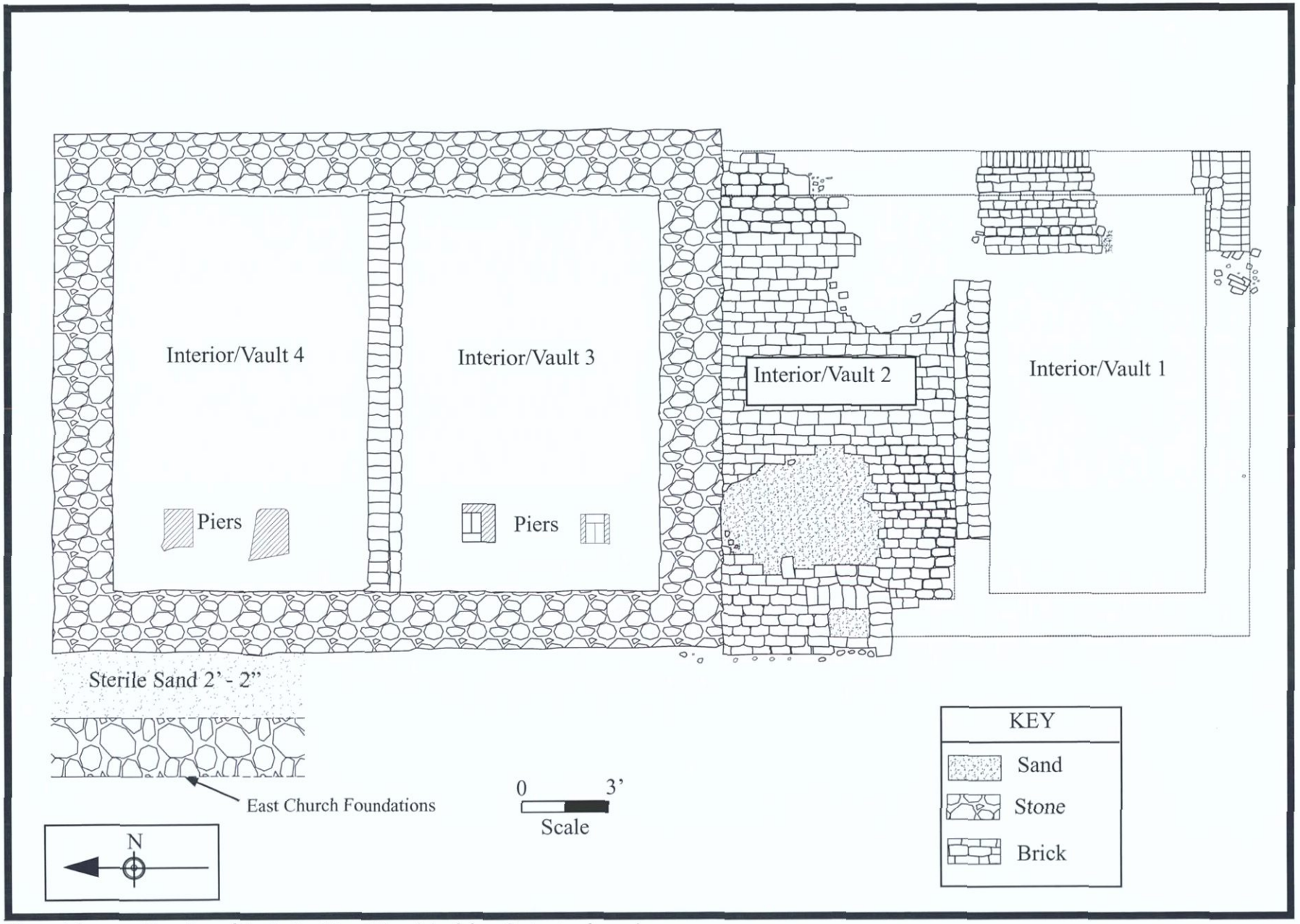

Figure 4.6 Plan view of the Spring Street Church burial vault structural remains.

Figure 4.7 Overview facing north of the Spring Street burial vaults as initially exposed. Note the earlier (circa-1820) stone chambers of Vaults 3 and 4 in background.

Figure 4.8 Overview facing south of the Spring Street burial vaults as initially exposed.

Figure 4.9 Overview facing north of the burial vaults as fully exposed, after the exhumation of human remains.

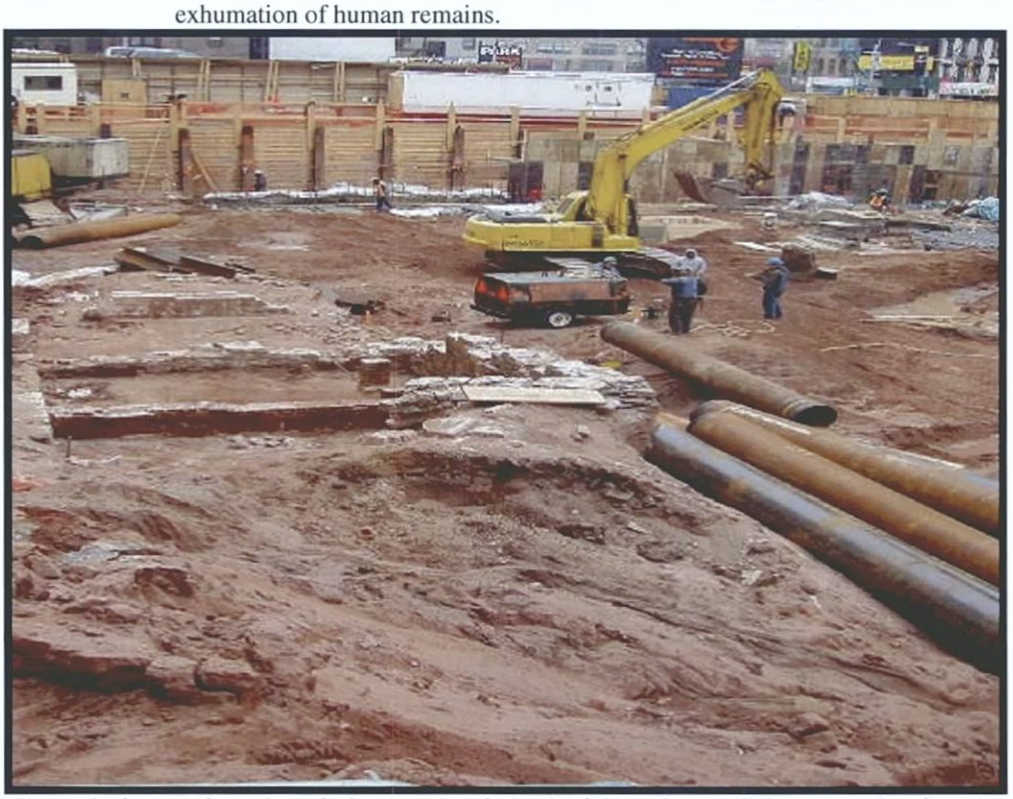

Figure 4.10 Overview facing south of the burial vaults as fully exposed, after the exhumation of human remains.

Figure 4.11 View to northwest, showing the details of construction for Vaults 3 (left) and 4 (right), after the exhumation of human remains.

Table 4.1 ***Summary of Artifacts Recovered from Vault Fill above Burials***

Artifact Class and Type	Quantity	% of Total
Architectural	754	33.4%
Ceramic	4	0.2%
Glass	411	18.2%
Metal	249	11.0%
Other	26	1.2%
Commercial	32	1.4%
Ceramic	1	0.0%
Glass (insulator)	1	0.0%
Metal (electrical wire)	28	1.2%
Other	2	0.1%
Household	660	29.3%
Ceramic		
Creamware	7	0.3%
Ironstone/White Granite	210	9.3%
Pearlware	31	1.4%
Porcelain	23	1.0%
Redware	81	3.6%
Stoneware	27	1.2%
Whiteware	29	1.3%
Yellowware	16	0.7%
Other Earthenware	22	1.0%
Glass		
Container Glass	192	8.5%
Other Glass	22	1.0%
Personal	92	4.1%
Buttons	2	0.1%
Smoking Pipe	12	0.5%
Comb	4	0.2%
Toy (dolls/marbles)	12	0.5%
Shoe	62	2.7%
Faunal	60	2.7%
Shell (clam/oyster)	46	2.0%
Animal Bone	14	0.6%
Floral	98	4.3%
Wood (poss. Coffin related)	98	4.3%
Other/Unidentified (primarily metal)	560	24.8%
Totals	2,256	100.0%

to contain no prepared floor; instead, both vaults bottomed out onto naturally occurring moderately coarse sand subsoil.

The southern two chambers, designated Vaults 1 and 2, respectively, were constructed entirely of brick and likely comprise the funerary structures added to the site in 1830–1831. These newer vaults directly abutted the south side of Vault 3 and utilized the earlier foundation as a shared common wall. Overall, the construction of Vaults 1 and 2 was somewhat less substantial than the earlier structures, and possessed outer walls measuring an estimated 1.5 feet thick. As with the earlier chambers, the interior spaces within Vaults 1 and 2 were created by the construction of a 1-foot-thick east-west interior dividing wall. The interior spaces of these southern vaults appear to have been slightly smaller that those adjacent, and measured approximately 8.8 feet north-south by 14 feet east-west. Unlike their older neighbors, Vaults 1 and 2 both were constructed with prepared floors consisting of dry-laid brick arranged in a running bond pattern. Based on evidence from Vault 2, these newer chambers were also slightly shallower in construction, with the floor of Vault 2 sitting approximately 0.5 feet above the bottom of Vaults 3 and 4.

Unlike Vaults 3 and 4, the foundations and physical structure of Vaults 1 and 2 had been extensively impacted during initial site construction excavation. Vault 1 was the most adversely affected of the two chambers, and was extensively disturbed by site machinery. Archaeological investigations eventually revealed that the only fragments of this vault that survived in situ consisted of a small segment of the eastern wall and interior floor, along with a tiny section of the southeast corner foundation and associated brick floor (Figure 4.12). All remaining portions of this chamber had been completely removed. Vault 2, on the other hand, retained a considerably greater degree of preservation, and was represented by truncated and fragmentary outer walls and a 60–70% intact brick floor (Figure 4.13). Intact sections of Vault 2's floor were preserved in the southern, central, and northeastern portions of the chamber, while sections of the southeast and northwest quadrants had been removed at some point in the past. Based on the available evidence, it was not possible to determine with certainty whether the latter sections of the Vault 2 interior and floor had been impacted by site construction machinery, or had been removed in conjunction with some unknown earlier event.

Excavation of these vaults produced no evidence, architecturally or otherwise, to suggest that any were constructed with features related to the interior partitioning of burial space, and that might be associated with the intentional segregation of remains by familial association, socioeconomic status, or standing within the church hierarchy. None of the chambers contained any trace, either in the surviving floors or walls, of having been once separated into smaller spaces by additional interior walls or other dividers. Burial vaults in other parts of the country, such as those associated with Christ Church in Philadelphia, are known to have been constructed with benches or shelves attached to the walls so that coffins could be raised off the floor, and not stacked on top of one another (John Hopkins, Director of the Christ Church Cemetery, Philadelphia, personal communication, December 7, 2007). However, no visible sign of any similar attachments or modifications was identified in any of the Spring Street Church vaults walls. While preservation issues in this instance prevent a conclusive determination regarding the possible prior existence of such internal status-related subdivisions, all evidence documented during these investigations suggests that these vaults functioned in accordance with more egalitarian principles.

It is presumed that the Spring Street burial chambers would have originally been constructed with arched (technically vaulted) brick ceilings. Descriptions of contemporary funerary vaults within public burying grounds in the greater New York City vicinity (e.g., National Board of Health 1879) note this as a very common construction feature, and suggest that ceilings in the Spring Street burial chambers may have been perhaps 8 feet tall at their apex. Although in this instance the incorporation of such a ceiling configuration cannot be confirmed, evidence supporting this interpretation was observed during the excavation process. Both Vaults 3 and 4 were found to contain large fragmentary sections of mortared brick in the fill matrix immediately overlying, and in some cases intermixed with, preserved human skeletal remains (see Figure 4.2). Some of these fragments did exhibit a curved appearance consistent with their having once been part of some arched structure. If the Spring Street vaults were constructed in this manner, then the roof arch probably protruded somewhat above the surrounding ground surface and was likely covered by a mounded earthen cap several feet thick. Entrance to the vaults is presumed to have been through metal doors at the surface of this mound and, because no evidence of doors or other passages connecting the various chambers was identified, it is thought that each vault may have been equipped with its own set of entrance doors. It is not known whether or not these vaults were vented to the open air in any way.

Figure 4.12 View to west, showing the details of construction for Vault 2, after the exhumation of human remains.

Figure 4.13 View to south, showing the trace surviving wall and floor remnants for Vault 1.

The presence of possible ceiling remnants within Vaults 3 and 4 also constitutes one piece of evidence suggesting that the Spring Street burial chambers had been impacted to some extent prior to the start of hotel construction in 2006. Specifically, the presence of ceiling fragments within these chambers is believed to indicate that the vaults were probably broken into, and the ceilings collapsed inward, when the church was demolished and cleared to create a public parking lot in the mid-1960s. This situation would, in fact, be expected if the vault ceilings and/or an associated earthen cap extended above the surrounding ground surface, and therefore would have required leveling. Artifact evidence supporting the timing of this event was found within the fill matrix capping the human remains in the northern two vaults, and included pieces of asphalt paving, plastic coated industrial wiring, and at least one hobble skirt Coca-Cola bottle (manufactured 1915–1970; see Appendix E). If this interpretation is accurate, then other materials (gravel, ash/cinder, demolition rubble, etc.) capping human remains within these vaults were likely added after the ceilings were collapsed in order to fill remaining voids and to prevent the subsequent subsidence of the parking lot surface.

Lastly, evidence of even earlier impacts to the vaults was found during the controlled excavation of remains from Vaults 3 and 4. Those chambers were found to contain remnants of four internal supporting piers/columns that were probably installed as a means of correcting a structural failure in the ceilings (see Figure 4.6; Figure 4.14, and 4.15). Support columns were aligned north-south along the western foundation of Vaults 3 and 4, two in each chamber, and were constructed of mortared brick atop simple stone slab footers. Columns in Vault 3 were the better preserved examples, and consisted of vertical members measuring 0.8 and 1.6 feet in total height, while those in Vault 4 were represented by only the stone slab footers. In both chambers, the sand floor surrounding the columns contained variable amounts of both lime and mortar, suggesting that the mortar used to construct these supports was mixed within the bottom of the vaults. The construction of these supports, in turn, may have resulted in some disturbance to adjacent in situ human remains (see the discussion in the following section). No evidence of similar support piers was found within either Vaults 1 or 2.

While it is not known with certainty when these support columns might have been installed, it is possible that these repairs were made during the period when Vaults 3 and 4 were in active service and still receiving burials. Perhaps more likely, however, is that the columns were added in the years following their closing, when regular inspections and/or maintenance of the vaults were still being performed. Historic documents indicate that later in the nineteenth century, such vault inspections may have been carried out, at least at times, by city health officials, and also suggest that failures to the vault ceilings may not have been uncommon. On April 6, 1880, the *New York Times* reported the following instance of similar, though far more severe, structural failure.

> An inspection was made yesterday by Dr. E. H. Janes, Assistant Sanitary Superintendent of the Health Department, of the vault of the Attorney Street Methodist church, which caved in on Friday morning... A contract has been made by the Trustees for the repair of the break in the roof of the vault, and the work will be commenced forthwith. Two brick walls for the support of the arch will be erected, and the exposed remains will be covered by the earth excavated for the foundations of these walls.

Interestingly, this case too was rectified through the construction of secondary interior support structures to brace the ceiling, and may have resulted in the unavoidable disruption of some of the preserved remains.

Human Remains

As preliminary testing had suggested, controlled excavation of the burial vaults determined that, with the exception of Vault 1, these chambers did continue to contain large amounts of in situ human skeletal remains and associated funerary deposits. Human remains were found to be primarily represented by previously disturbed deposits of disassociated skeletal elements, and exhibited widely disparate states of preservation, from completely intact to badly crushed, and all states and combinations in between. Remains were interspersed with large quantities of coffin wood remnants, the majority of which were poorly preserved and badly crushed. Better-preserved sections of coffin wood were evident in some instances, however, and allowed insights to be gleaned regarding their appearance and method of manufacture. A considerable amount of brickbats and other construction debris was also mixed in with the remains, although at significantly lower densities than in the overlying fill matrix.

Despite the generally jumbled condition and variable preservation of the overall burial deposits, URS archaeologists were able to identify a total of 45 sets of partially articulated skeletal remnants within this assemblage that did

Figure 4.14 View to west, showing Vault 3 support piers.

Figure 4.15 View to west, showing Vault 4 support pier footings.

appear to be associated with separate burial events and distinct individuals. Evidence was also recovered that suggested that disturbances responsible for the disarticulation of remains likely occurred on multiple occasions in the past, and derived from a variety of causes. Details of the archaeological documentation of these remains are presented below. Bioarchaeological/forensic information related to the post-excavation analysis of both discreet burials and the large volume of recovered disassociated remains is contained in Appendix D.

Of the four vaults present, the southernmost (Vault 1) stands out from the others in that at the time of this investigation it was found to contain only trace evidence of human remains. Those remains that were recovered consist of a small amount of fragmentary skeletal material found in direct association with the remnant foundation wall at the chamber's southeast corner. While the rest of the vault was found to be completely devoid of in situ remains during archaeological examinations, all available evidence suggests that at least some number of burials were still contained within this space prior to the start of construction excavation. Observations in the field suggest that skeletal remains recovered from fill material within the initial findspot, representing a minimum of 15 individuals, were likely those originally contained within Vault 1.

In Vaults 2, 3, and 4, human remains were identified lining the floors of the chambers and were contained in deposits that varied between just a few inches and 1.5 feet in total thickness. Within each vault, the largest proportion of remains were represented by highly jumbled stacks of disarticulated skeletal elements; however, large quantities of remains crushed beyond recognition and better-preserved pockets containing articulated burial remains in variable states of completeness were also identified. Skeletal material was not distributed evenly between these three spaces, but rather exhibited marked contrasts in terms of the overall volume of remains within each. Vault 4 produced, by far, the largest amount of skeletal material, followed next by Vault 3, and lastly by Vault 2 (as documented in Appendix D, a larger quantity of bone present did not necessarily equate with a larger minimum number of individuals represented). In terms of general preservation characteristics, Vault 2's interments generally showed the least degree of completeness and integrity, while Vault 3 was found to possess the greatest relative proportion of articulated remains, and Vault 4 the largest amount of disarticulated skeletal elements.

Burial remains were not distributed evenly across the interior space of the chambers, but rather exhibited a particular pattern of dispersal that was at least broadly consistent between all three. Excavations revealed that the largest volume of remains was found within relatively limited areas immediately adjacent to the north, east, and south vault walls. Conversely, spaces near the center and western margins of these vaults tended to contain dramatically reduced quantities of bone and related artifacts, and in some instances no more than trace, ephemeral amounts of remains were present in these areas. Within the high-density areas of each room, remains located along the north and south vault walls clearly showed a much higher degree of preservation and produced the largest number of articulated skeletal elements. In contrast, remains along the eastern walls were generally very poorly preserved, frequently showed signs of extreme crushing, and were often represented by multiple stacked coffins that had been pancaked in situ, one on top of the other (Figure 4.16). Of these three chambers, the above internal patterning of remains was most pronounced in Vaults 3 and 4, while in Vault 2 the internal distribution of burial deposits tended to be slightly less clear cut (Figures 4.17 and 4.18). As mentioned in the section above on vault construction, no obvious evidence was found, in terms of the distribution of human remains within or between vaults, to suggest that any intentional segregation or division of burials based on socioeconomic status or other variables had been established or regularly practiced by the church congregation.

As indicated above, despite the generally disassociated nature of the Spring Street skeletal material, members of the archaeological team were able to identify 45 separate instances of apparent articulated remains within the burial deposits, representing distinct sets of intact or partially intact individual interments. Of the delineated burials, 12 were found in Vault 2, 16 in Vault 3, and 18 in Vault 4 (Figure 4.19). Remains of these discreet individuals were discovered in a variety of specific depositional contexts and, like the larger assemblage, consisted of skeletal material exhibiting widely variable states of preservation. The majority of the intact burials were identified at the bottom of dense piles of disarticulated skeletal material adjacent to the north and south walls of the separate vault spaces. Burials in this context were represented both in multiple sets of more or less intact remains stacked one atop the other (Figure 4.20), in single and stacked truncated remains (Figure 4.21), and in those that were apparently complete, but badly crushed (Figure 4.22). In several instances, primarily in Vault 4, nearly complete and partial burials were found inserted within deep pockets of jumbled, disarticulated remains (Figure 4.23). Lastly, in a small number of cases, partially intact burials were identified in more central parts of the vaults, away from walls, and directly beneath dense fill and demolition rubble deposits. Burials recovered in these latter contexts were nearly

Figure 4.16 Crushed remains and pancaked coffins in Vault 3.

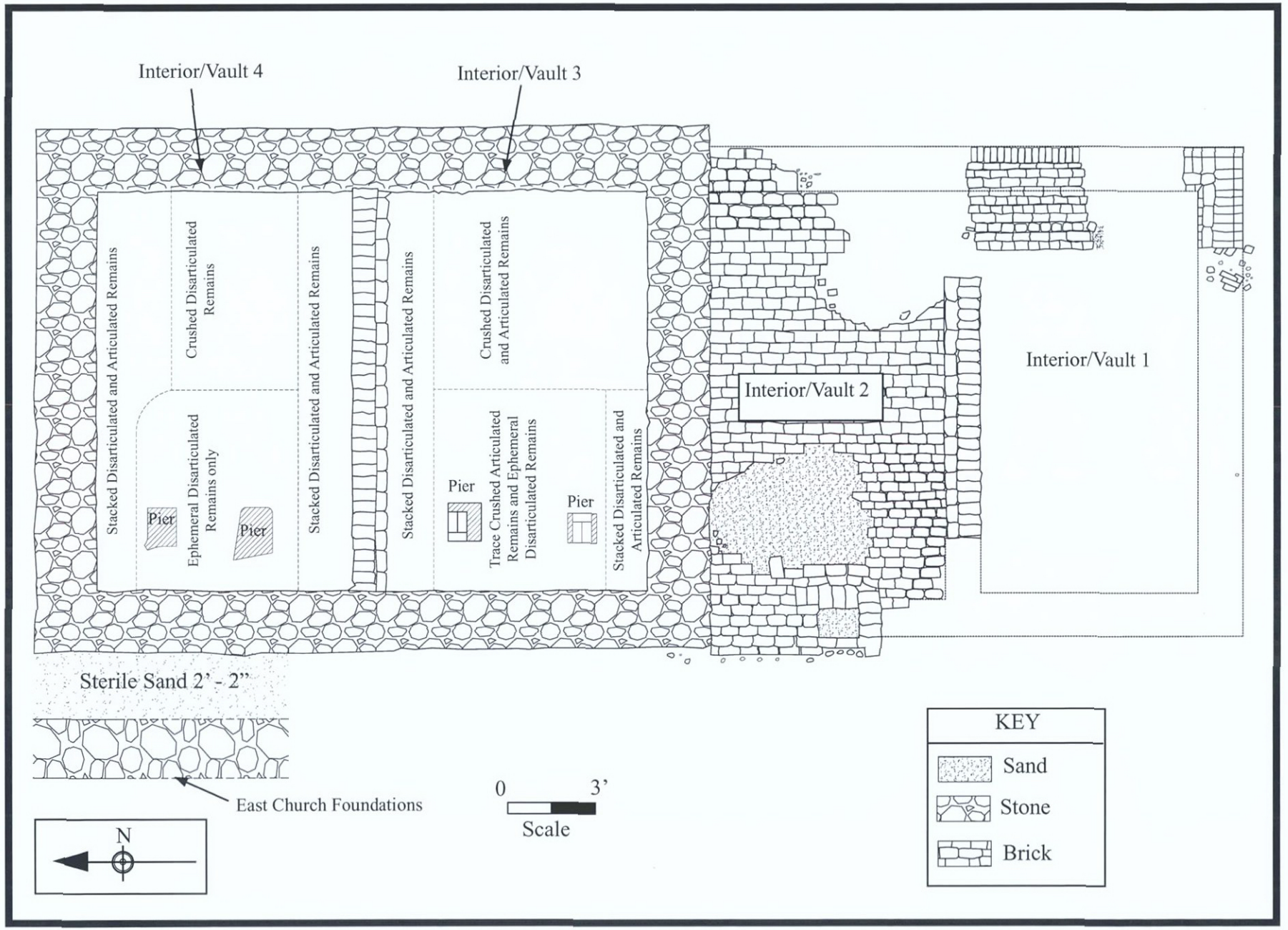

Figure 4.17 Distrution of human remains within Vaults 3 and 4.

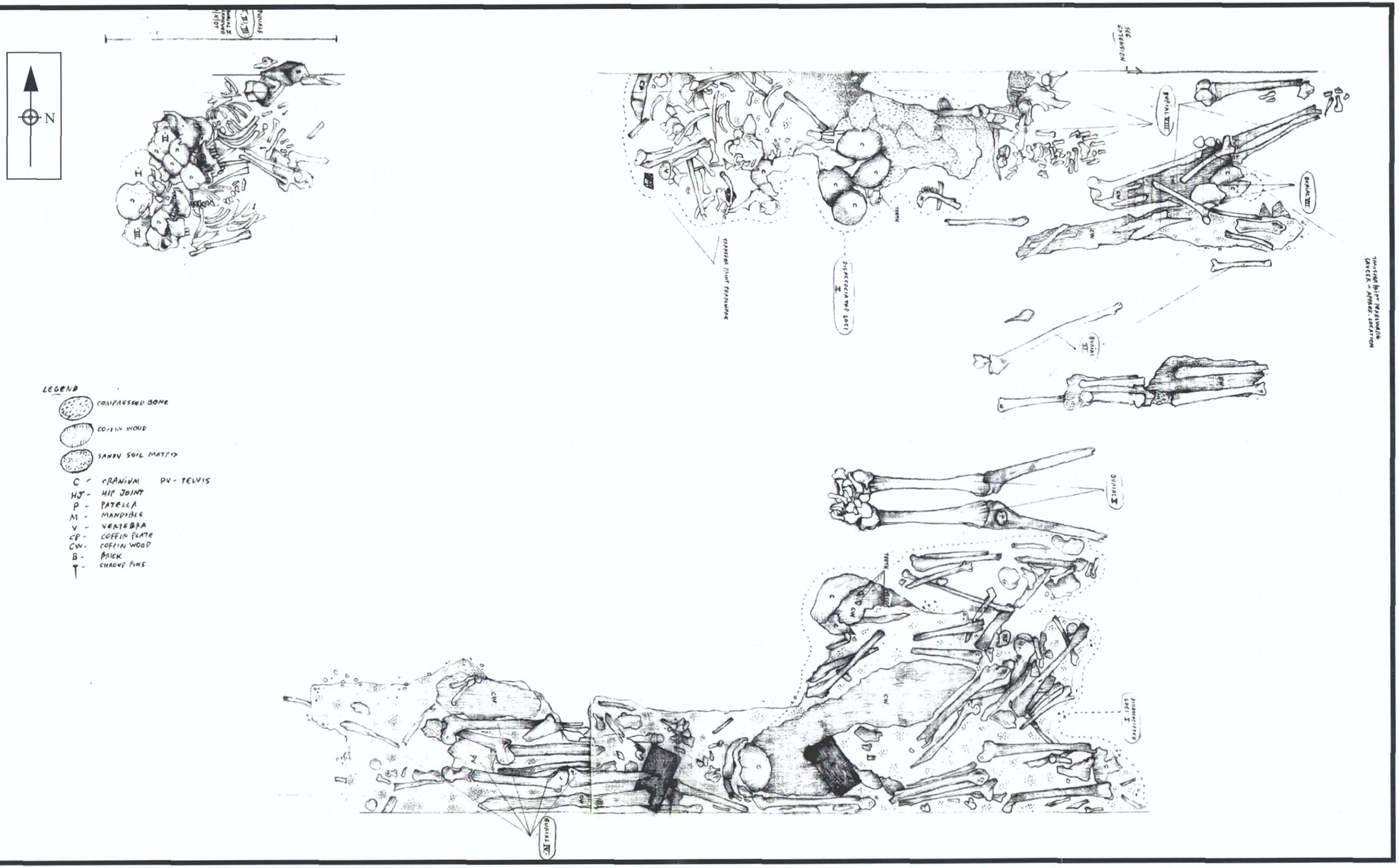

Figure 4.18 *Distribution of human remains within Vault 2.*

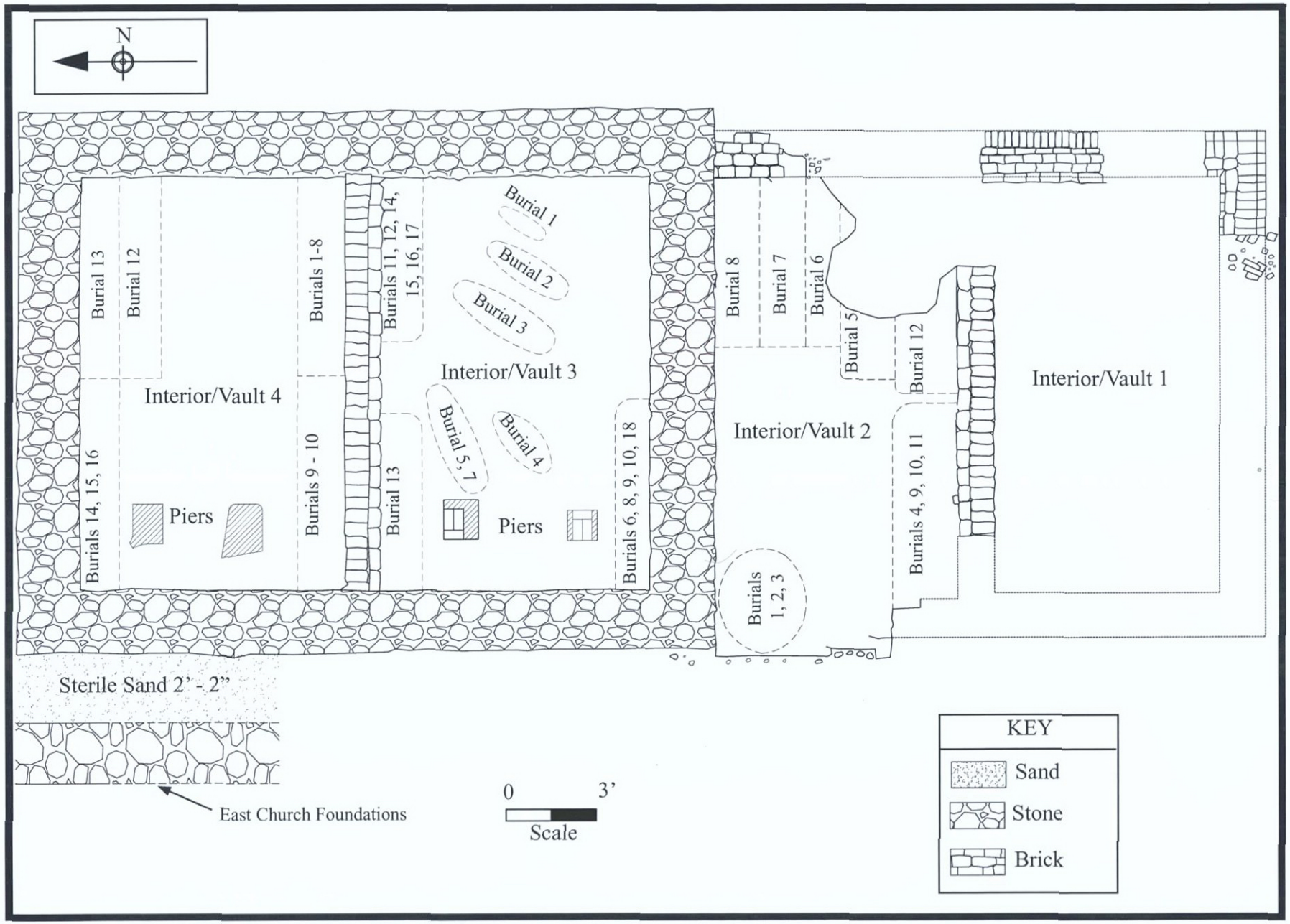

Figure 4.19 Distribution of identified intact/partially intact burials within Vault 2, 3, and 4.

Figure 4.20 Stacked intact burials within Vault 3.

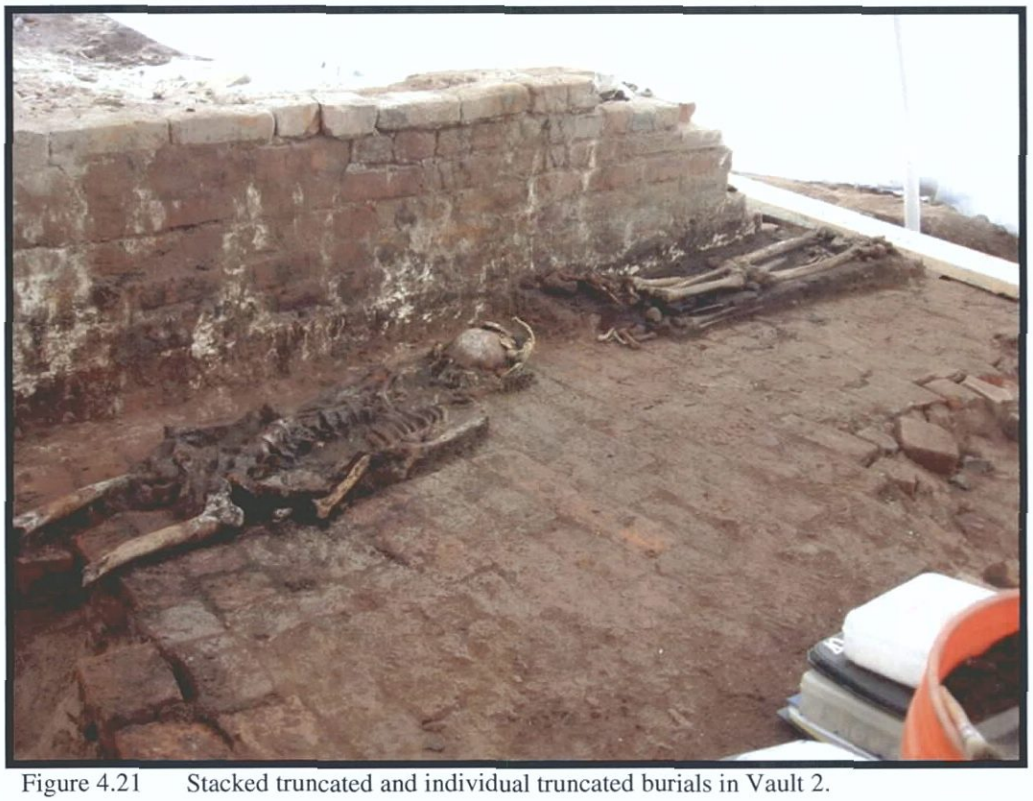

Figure 4.21 Stacked truncated and individual truncated burials in Vault 2.

Figure 4.22 Crushed intact remains within Vault 4.

Figure 4.23 Partially intact burial within disarticulated remains in Vault 4.

always very badly crushed, with almost no intact bone remaining (Figure 4.24). Despite the overall disturbed and disassociated appearance of the larger assemblage, the physical arrangement of most intact and partially intact burials continued to comply with common Judeo-Christian funerary practices; all but a few examples were found oriented in an east-west direction, with the head to the west.

Preliminary field examinations suggested that individuals interred in these vaults likely comprised a reasonably accurate and representational cross section of the larger church congregation. Males and females of all life stages were identified, with a significant proportion of the total collection represented by subadults; this latter finding being consistent with historical documents indicating that large numbers of children were among those persons buried here (Meade 2007: II-8). While articulated remains indicate that at least 45 distinct individuals were contained within the vaults, the presence of large numbers of intact skulls and partial crania among the disarticulated skeletal elements suggested that the total burial population was significantly greater. Photographs of all numbered intact and partial articulated burials identified during this investigation are presented in Appendix C. Basic demographic data for the 45 discreet burials identified in the field, as determined from post-excavation bioarchaeological analyses of remains, are summarized in Table 4.2 below, while the full report of findings for those studies are presented in Appendix D.

Although coffin remains and associated funerary artifacts were often poorly preserved and found out of direct burial contexts, sufficient data was recovered to allow some insights to be gleaned regarding the burial customs and practices associated with the Spring Street vaults. Based on characteristics of surviving coffin samples, it appears that burials were comparatively simple affairs unattended by extravagant decoration or displays of status. Coffins were all likely hexagonal in shape (Figure 4.25) and primarily manufactured with flat lids to facilitate the stacking of burials along the floors of the vaults, although portions of at least one gabled coffin lid was examined in the field. While some coffins appear to have been stained or painted in sometimes bright colors (examples of red and yellow/gold colored wood were observed), most appear not to have been associated with a great deal of exterior ornamentation. No coffin handles, escutcheons, or other adorning furniture were recovered during the investigations, and other identified coffin hardware (hinges, screws, etc.) was for the most part purely functional in form and appearance.

The most significant funerary artifacts recovered were a series of more than 30 preserved metal coffin plates, engraved with the names and birth/death dates of persons interred in these vaults. Unfortunately, all coffin plates still exhibiting legible personal information had long since separated from their original coffin lids, and were discovered as loose artifacts mixed in with the jumbled disarticulated remains. Consequently, only one can be associated with certainty to specific remains—those of Rudolphus Bogert (Burial 12, Vault 3), as discussed in the following chapter and in Appendix D. Additional burial artifacts, such as buttons, articles of jewelry, and other personal items, were very few in number and suggest that efforts to prepare the deceased for burial generally also involved little pomp and ceremony. One specific personal artifact that stood out during fieldwork was a single gold wedding band found with the remains of Burial 8, in Vault 3; no inscription or other markings that might have been used to determine the identity of its owner were present. Aside from largely functional coffin related artifacts (nails, screws), the most commonly found funerary objects consisted of a variety of simple straight pins that would have been used to hold a burial shroud in place around the body. Shroud pins were recovered in both disturbed contexts and in direct association with many of the better-preserved numbered burials. More detailed descriptions, images, and additional analyses and interpretations of the Spring Street funerary artifacts are presented in the following chapter.

Assessment of Prior Disturbance

In addition to recovering human remains from the vaults, these investigations also sought to determine what factors contributed to the largely disturbed appearance of the burial deposits. Background research and evidence documented in the field suggest that as many as four separate factors may have contributed to this condition. These factors likely involved natural processes of decomposition, intentional actions on the part of members of the congregation and other persons, and events that were, at least in part, accidental in nature.

Natural Decay. One of the primary factors affecting the integrity of individual burials within the vaults was almost certainly the natural process of bodily decay. As documented in graphic detail by public health researchers in the nineteenth century, the human body after death quickly decomposes and in due course emits an assortment of

Figure 4.24 Crushed partially intact burials from the central sections of Vault 3.

Table 4.2 Age at Death and Gender Summary for Field Identified Burials

Burial	Sex [1]	Age Range	Burial	Sex [1]	Age Range
Vault 2			Vault 4		
1	F	<35	1-4A	C	5 mos. fetus
2	C	2.5-2.5	1-4B	C	<6 mos.
3	C	4.5-5.5	1-4C	C	<6 mos.
4	F	40-49	1-4D	C	2-3 mos.
5	M	<35	1-4E	C	6 mos.
6	F	<35	1-4F	C	6 mos. – 1.5 yrs.
7	C	4.5-5.5	1-4G	C	6 mos. – 1.5 yrs.
8	F	25-29	1-4H	C	6 mos. – 1.5 yrs.
9	M	40-49	1-4I	C	4.5-5.5
10	M	20-29	1-4J	C	5.5-6.5
11	C (F)	14.5-15.5	1-4K	C	2.5-3.5
12	M	20-24	1-4L	C	6 mos. – 1.5 yrs.
			1-4M	C	5.5-6.5
			1-4N	C	6 mos. – 1.5 yrs.
Vault 3			1-4O	C	1-3
1	F	25-29	5	M	20-24
2	F	20-24	6	M	35-39
3	F	20-24	7	F	30-34
4	M	25+	8	M	60+
5	M	<35	9	M	50-59
6	M	25-29	10	M	40-44
7	F	20-24	11	F	30-34
8	F	25-29	12	M	50-59
9	M	35+	13	F	20-24
10	M	30-34	14	M	30-34
11	M	25-34	15	M	40-44
12	M	70+	16	C (F)	14.5-15.5
13	F	30-34			
14	M	35-39			
15	M	45-49			
16	M	30-34			
17A and B	F	25-29/full-term			
18	F	25-29			

[1] Male is M; female is F, and child or infant is C.
This information excerpted from the analysis of human remains report (Crist et al. 2008; Appendix D, Table D.1 in this volume).

Figure 4.25 Intact coffin lid, showing hexagonal construction.

"offensive gases and putrid liquids," which in turn soon impregnate the surrounding coffin wood, causing it to weaken and decay as well (Eassie 1875). As the coffins themselves decompose the remains inside are eventually exposed and are permitted to naturally disarticulate. While few descriptions verifying these conditions inside vaults appear to have been preserved in the historic record, two accounts, one of which is particularly vivid, have been identified. Cremation advocates investigating burial conditions in England during the last quarter of the nineteenth century concluded "that entombment in vaults was a more dangerous practice than interment in the earth, because of the liability of the coffins to burst" (Eassie 1875: 60). During this same period, health inspectors visiting cemetery vaults in Jersey City, New Jersey, described the interior space of these chambers as "gloomy and wet," and noted that "the condition of the wooden coffins exemplifies every gradation from soundness to complete decay. A few have been renovated, while others have been permitted to crumble until they are disgusting to the sight; two or three exposing their dead" (National Board of Health 1879: 203).

It should be noted that the natural disturbance and disarticulation of burial remains would be further expedited if coffins within the Spring Street vaults were stacked on top of one another, as it appears they were. The decomposition of stacked coffins would make them more prone to collapse, crushing, and possibly toppling and violent rupture. A particularly gruesome account of conditions befalling stacked coffins in vaults was recorded in 1850 at the church of St. Mary at Hill in England: "In one spot thirteen coffins are piled one upon the other, many of them broken and crushed; the bones from the upper coffins dropping down among those of the lower, and mixing with them in all stages of decay" (quotation cited in Reeves 1993: 74). Although it is doubtful that coffins in the Spring Street vaults were ever stacked to this extreme, the implications raised by this example are nonetheless clear and valid.

Yet another natural, though unpleasantly contemplated, process of decay possibly affecting the integrity of vault deposits is the action of rodents and other burrowing creatures. For interments made in the ground of a churchyard, the potential impacts of this type of bioturbation is more limited by space restrictions inside the grave shaft and coffin; however, the effects of rodent activity on the dispersal of remains in large cavities like vaults would be much more pronounced. Although no direct evidence of this disturbance was documented in the Spring Street vaults, the ubiquitous nature of rodents in urban settings, and in environments of decay, suggests that its past occurrence here was likely.

Vault Regulation. As burials gradually accumulated within the Spring Street vaults, there must have eventually arisen a need to redistribute coffins and remains along the floor in order to make room for additional interments. This task may have involved the collection and repositioning of loose, disarticulated skeletal materials dispersed by the process of natural decay discussed above, and might have resulted in the creation of additional disturbed remains as decomposed coffins were moved, restacked, and/or removed if damaged. Given that persons entering the vaults would have needed space in which to move around, it is reasonable to hypothesize that central areas would have been kept reasonably clear of remains—by moving older interments to the periphery of the chambers—thereby eventually creating the distribution of remains identified during this investigation.

Some historical documentation has been identified to indicate that remains within the vaults were likely moved or repositioned at least intermittently over the period of their use. Records show that in March 1830, the church's trustees appointed a committee to "regulate" the two existing vaults (3 and 4), probably as a way of extending their use life. While it is not known what actions were implied by the term "regulate," the normal definition of that word suggests that some reordering of remains within the chambers was called for. At the time, Vaults 3 and 4 were likely quite full, considering that just a few months after this action the church began gathering estimates for the cost of constructing additional burial chambers (Vaults 1 and 2) (Meade 2007: II-8). Potential evidence indicating that burials had at some point been moved around in this manner was identified during excavation, and was represented by a small but significant number of skeletal remains (primarily hand and foot elements) within the largely vacant central parts of Vaults 3 and 4. These remains were found pressed down several inches into the sand floor of those chambers, and appear to have been trampled by persons walking and working in these rooms.

Vault Repairs. As discussed previously, archaeological investigations discovered evidence, in the form of internal support piers, that Vaults 3 and 4 were subjected to structural repair at some point during or after their period of active use, and it is possible that these activities also contributed to the disturbance of burial remains. The construction of these brick columns would have required raw materials to be imported into the burial chambers and presumably also the establishment of suitable workroom. Evidence documented during these investigations

suggests that mortar used in this construction was mixed directly within the vaults. Portions of the sandy floor immediately surrounding the piers in both Vaults 3 and 4 were found to contain sometimes-dense concentrations of lime, along with occasional globs of unused cement mortar. Given the environment within these spaces, it seems probable that sand for use in the mortar was excavated directly from the exposed natural floor.

The distribution of remains within Vaults 3 and 4 may support this interpretation. In both instances, areas immediately surrounding the support columns were almost entirely devoid of burial remains, as were spaces just to the east, in the center of the chambers. It seems likely that the creation of necessary workspace to accommodate the temporary storage of raw materials (brick, lime), the movement of laborers, and the collection of sand for the mortar may have required at least some burial remains to be moved out of the way, and stacked on top of others along the outer walls. Perhaps the dislodged and crushed intact burials in Vault 3 (1–3 and 7–8) are evidence of this activity.

Site Demolition. Potentially the most significant impacts to the Spring Street burial deposits were caused by the exposure and subsequent infilling of the vaults during the demolition of the site in the late 1960s. Fill deposits immediately overlying the burials remains produced a number of artifacts manufactured during the mid-twentieth century, and that were almost certainly introduced into the vaults when they were (probably) inadvertently broken into by machinery used to clear and grade the site in advance of the construction of the subsequent parking lot. The presence of dense brick rubble overlying the burial deposits, including large sections of wall and curving ceiling elements, indicates that demolition activities caused the vaults to collapse in on themselves. The remaining void would then have been filled with additional site rubble in order to level the area for eventual paving.

The introduction of this large amount of demolition debris, and its necessary subsequent compaction, very likely accounted for the majority of damage observed within the burial remains and probably accounts for much of the pattern of crushing identified. Any remains located in more central portions of the vaults would have born the brunt of impacts from the collapse of the roof and the dumping and compaction of rubble fill, while those arranged tightly along the outer, only partially demolished vault walls would have been afforded a more pronounced measure of protection from these activities.

5
Analysis of Funerary Artifacts

Archaeological investigations of the Spring Street Church vaults resulted in the recovery of significant numbers of artifacts directly associated with the deceased and the circumstances of their entombment. As summarized in Table 5.1, the overwhelming majority of these artifacts consisted of hardware, such as nails, screws, and hinges related to coffin construction. The coffin hardware and the other burial-related artifacts recovered from the site convey important information regarding funerary customs and practices in the first half of the nineteenth century, or about the specific individuals interred within these chambers.

Research has concluded that there are few published documents on vault burials in New York City, or elsewhere in this country, during this period. Therefore, it seems reasonable to augment analyses in this instance through the examination of comparable burial data from sites in England (circa 1820–1840), for which there has been extensive documentation and study. Dr. Julian Litten (personal communication 2008), an expert in English vault burials, has helped to put the Spring Street excavations and funerary artifacts into perspective, and believes that the findings at Spring Street generally mirror data and objects retrieved from early-nineteenth-century English burial vaults. The major difference he identified between English customs and those observed in the Spring Street vaults was in the manner in which the deceased person's remains were packaged prior to placement in a crypt:

> It was standard practice in England at that time (and indeed still is) for bodies destined for vault/mausoleum/catacomb/brick-grave deposit to be placed into three coffins: an inner coffin of wood (usually elm), then a sealed lead shell, and finally an outer wooden case. Such items were known as a "coffin, shell and case" construction. Usually there was a lead nameplate affixed to the lid of the inner lead shell (as a means of identification following the eventual disintegration of the outer case) and a much grander nameplate affixed to the lid of the outer case [Julian Litten, personal communication 2008].

As discussed previously, excavations in the Spring Street vaults found no evidence of such a "coffin, shell, and case" burial practice, or the use of any lead or other metal funerary containers. Instead, entombment in the Spring Street vaults seems to have been a much simpler affair, with remains placed only in comparatively austere hexagonal coffins. A description and analysis of other artifacts found in association with the Spring Street burials is presented below.

COFFIN PLATES

Without question, the most informative artifacts recovered from the Spring Street Church excavations are the metal coffin plates. These plates contain a wealth of personal information and are engraved in elegant script with the name, date of death, and exact age (i.e., years, month, and number of days) of the deceased. The recovered coffin plates were manufactured from a variety of metals, including silver, plated copper alloy, and "Britannia" metal, a soft white metal. Although there are no marks on the plates to identify individual engravers, some similarities in the style of lettering suggest that the same person engraved eight of the coffin plates. An advertisement for Stout and Company engravers offered "silver and plated coffin plates (at two hours notice)" among a variety of goods and services advertised (*New York Herald*, February 4, 1830). By way of comparison, Dr. Litten provided the following description of coffin plates commonly used in British burials:

> The nameplates themselves (commonly known as "coffin plates") were usually quite large—12 by 8 inches—either rectangular or square. Quality of manufacture depended on the social status and wealth of the deceased, with a plated nameplate coming out a little more expensive than merely a brass one. They were all available from coffin furniture warehouses—it is almost practically unheard of for an undertaker to make his own coffin furniture—though it was usual for the undertaker to either engrave the inscription himself or, if he did not have the talent, to engage the services of a local plate-chaser or engraver working in the locality [Julian Litten, personal communication 2008].

Closer inspection of the Spring Street coffin plates identified a number of differences with typical English examples. The Spring Street sample exhibited two basic shapes—oval and rectangular with rounded corners, instead of rectangular or square. Analysis also revealed that the size of the plates varied in accordance with the relative age of

Table 5.1 Summary of Recovered Funerary Artifacts

Artifact Class and Type	Quantity	% of Total
Coffin Related	1792	90.5%
Nails	1170	59.1%
Screws	276	13.9%
Hinges	21	1.1%
Coffin Plates (intact)	32	1.6%
Coffin Plates (fragments)	157	7.9%
Coffin Lid Letters	4	0.2%
Coffin Wood	132	6.7%
Personal Items	189	9.5%
Shroud Pins	94	4.7%
Buttons	31	1.6%
Other Clothing Fasteners	13	0.7%
Fabric Samples	6	0.3%
Ribbons	5	0.2%
Combs	4	0.2%
Jewelry	2	0.1%
Shoes/footwear related	3	0.1%
Coins	4	0.2%
Whistle	1	0.1%
Ceramic Saucers (Pearlware/Whiteware)	26	1.3%
Totals	1981	100%

Note: human remains are not included in this summary.

the deceased: plates for infants averaged 3 x 2.1 inches in size; older children and adolescents had plates that averaged 4.1 x 3 inches; and adult plates measured 5.8 x 4.5 inches. Table 5.2 details changes, by inscribed dates, in the basic design and manufacturing characteristics of the recovered coffin plates.

The above distribution shows a clear shift, over a relatively short period of time, in the aesthetic characteristics and style of these plates, with the majority manufactured before 1825 exhibiting an oval shape, and all but one of those made after that date having a more rectangular outline. While this shift may simply be evidence of changing personal tastes, other aspects of these artifacts suggest that changes in the broader funerary industry could also be playing a role. Inspection of the earlier oval coffin plates revealed them to exhibit a much less decorative and more irregular overall appearance, suggestive of having been handmade. Alternately, the later rectangular plates are more regular in form, and appear to have been mass-produced through machine stamping. Only two fragmentary pieces from coffin plates exhibit a stylized design (laurel branch type decoration).

Coffin plates were usually attached to the head end of the coffin lid with small nails or tacks through four small, round perforations along the edges of the plates. Although none of the intact Spring Street coffin plates were found attached to the coffin boards, one coffin lid fragment shows a clear shadow (including four small holes), indicating where the plate would have been attached. Remnants of varnish can still be detected beneath where the plate once rested. Many of the coffin plates were heavily encrusted with unidentified debris and insect larva (maggot) casings, rendering them illegible (Figure 5.1). Meticulous mechanical cleaning performed at the URS laboratory in Burlington, New Jersey, transformed the plates and revealed the identities of some of the individuals interred in the Spring Street Church vaults.

Beyond providing information about the individuals interred in the vaults, the plates expand the previously established timeline for the use of these specific burial vaults. Table 5.3 provides a compilation of personal information recovered from the most complete coffin plates. The dates of death of the individuals recorded on the 32 surviving coffin plates serve to extend the date range for active interment in the vaults from January 1820 through March 1843. Research into the names appearing on the plates has uncovered fascinating information about several of these individuals.

A direct result of the cleaning/identification of names on the coffin plates led to additional research into the historic record (i.e., newspapers, census data, church records). Through this research, new stories and details were discovered about the people interred in the Spring Street vaults.

Nicholas Ware

The coffin plate of Nicholas Ware was one of only a few legible examples at the time of its discovery (Figures 5.2 and 5.3). Ware was born on February 16, 1776, in Caroline County, Virginia, but later grew up in Edgefield, South Carolina, and Augusta, Georgia. Brought up as a well-educated young man, he for a time studied medicine before receiving his law degree, and was eventually admitted to the bar in Augusta. After establishing his legal practice, he twice served terms in the Georgia House of Representatives (1808–1811, 1814–1815) and was appointed mayor of Augusta in 1819 to serve out the remaining term of Freeman Walker, who had been elected to the United States Senate. When Walker resigned from the Senate in 1821, Ware was elected as a Democratic Republican (later Crawford Republican) to serve out the remainder of his term. He remained a U.S. Senator from Georgia until his untimely death in New York City in 1824 (DeGidio 2003: 89–90, Biographical Directory of the United States Congress 2008).

Senator Ware was in New York City in late 1824, at the time of Lafayette's visit to the United States, when he took ill and died on September 7 (Walker 1934: 22). On September 22, 1824, a Connecticut newspaper, the *American Sentinel* reported: "Died. At New York, on the 7th inst. after a protracted illness for relief from which he had recently visited the springs, the Hon. Nicholas Ware, a Senator in Congress from Georgia." After his death, Ware County in his home state (taken from a portion of Appling County) was established in his honor by act of the Georgia General Assembly, on December 15, 1824. His extravagant home in Augusta, called "Ware's Folly," still stands and is maintained as a house museum by the Augusta Art Club (DeGidio 2003).

Table 5.2 Characteristics of Datable Coffin Plates

	1820	1822	1823	1824	1825	1826	1827	1829	1830	1832	1835	1840	1841	1842	1843	Total
Plated copper alloy																
Oval slightly, domed	1	2	3		1											7
Oval flat		1														1
Rounded rectangular, domed no flanged edge			1	1												2
Rounded rectangular, domed with flanged edge				2	2	1	1	2	1	3	1	1	3	1	1	19
Oval with flanged edge									1							1
Silver																
Oval slightly, domed		1														1
White metal (Britannia metal)																
Rounded rectangular, domed with flanged edge															1	1
Total	1	4	4	3	3	1	1	2	2	3	1	1	3	1	2	32

Figure 5.1 Coffin plate from Vault 4 prior to mechanical cleaning.

Table 5.3 Coffin Plate Inscriptions Chronologically by Provenience

Machine-Disturbed Contexts		
Elizabeth Bush Died 27th March 1832 Aged 37 Yrs	James McGregor Died 5th April 1832 Aged 45 Yrs	Sarah Ogden Hubbard Died 29 Dec 1840 Aged 28 Yrs
Vault 3		
James Rea Junr died 28th April 1823 Aged 19 Yrs 8 Mos 12 Da	John Radcliff died 25th June 1823 Aged 50 Yrs 4 Mons 13 Dys	Joseph C Smith Died 18th April 1825 Aged 20 Yrs 4 Mos 3 Days
Joseph R Murden Died April 20 1841 Aged 74 Yrs 7 M 12 D	...Crawford ...Nov 7 1841 ...Y...	Rudolphus Bogert Died 15th Nov 1842 Aged 76 Yrs
Vault 4		
Charles Morgan Died 1(6)th Jany 1820 1 Yr 1 Month 12 Days	Samuel Curtis Died 22nd Jany 1822 Aged 34 Years	Lewis Evens died 24th July 1822 Aged 46 Years & 5 Months
Emma Fitz Randolph died 16th Aug 1822 Aged 5 Yrs 8 Mo 12 Da	Oswald Williams Roe Died 27th Nov 1822 Aged 10 Mon 5 Days	Jas Wadsworth Died 23rd May 1823 Aged 47 Ys 4 Ms 12 Ds
Ellinor Moore died 4th November 1823 Aged 48 Years	Nicholas Ware Died 7th Sept 1824 48 Years & 7 Mos	Mary Sturges Died 15th Sept 1824 Aged 76 Years
John R Clark died 21st Septr 1824 Aged 12 Yr & 10 days	Louisa Hunter died 1st Febry 1825 Aged 16 Yrs 7 Months	Ann Semantha Whelpley Died Febr 19th A 1825 Aged 14 Yrs & 2 Dys
Elizabeth Cleveland Died 23 Nov 1826 Aged 70 Yrs 5 Mos 13 D	Sarah Sherwood Died 31 Dec 1827 Aged 18 Yrs 1 M 23 D	G. Morgan Died June 24 1829 Aged 40 Yrs
James Kauck Died 24th Sepr 1829 Aged 11 Months & 13 Das	J W Root Died Nov 26th 1830 Aged 4 Mos 5 D	Josephine Dunham Died 23 Dec 1830 Aged 2 Yrs 10 Mos 22 D
Alfred Roe Cox Born Febry 7, 1825. Edward Dorr Griffin Cox Born Septr 18, 1828. Died Jan 1, 2 1832.	Miles Ray Died 19th April 1835 Aged 1 Yr 8 Mos 17 D	David ... Died 2nd March 1843 Aged 71 Years...

Figure 5.2 Coffin plate of Nicholas Ware, excavated from the western half of Vault 4. Inscription reads "Died 7th Sept. 1824, Aged 48 Years & 7 Mo."

Figure 5.3 Portrait of Georgia Senator Nicholas Ware (1776–1824).

The recovery of Ware's coffin plate from the Spring Street Church's vaults helps to clarify one minor contradiction about his life, while at the same time identifying a different, more vexing problem. Historical accounts of Ware's life alternately give the year of his birth as either 1769 or 1776 (Walker 1934). His coffin plate is engraved with his age at the time of death (48 years and 7 months), indicating that the February 1776 date is the correct one. The bigger mystery, however, is how exactly Ware came to be buried in the vaults of the Spring Street Presbyterian Church. All identified histories of Senator Ware's life, including those maintained by the United States Congress and on the Ware County website, indicate that he was buried under the annex of Grace Episcopal Church, in the Jamaica, Queens County section of New York City. It is not known how or under what circumstances this account of his burial originated, or why the discrepancy about his burial site exists at all. At this time, there is no indication in any identified documents that Ware ever visited the Sprint Street Presbyterian Church during his time in New York, or that any members of this congregation had a personal relationship with Ware, or in any way were acquainted with him.

While the presence of Nicholas Ware's coffin plate in these vaults confirms that he was entombed at Spring Street, his remains were not able to be specifically identified, and likely were among the large quantities of disarticulated skeletal material removed from Vault 4.

Rudolphus Bogert

The coffin plate of Rudolphus Bogert was one of the few plates recovered from Vault 3. Bogert's broken, but mendable, coffin plate can clearly be seen in a field photograph taken of the stacked burials in Vault 3 (Figure 5.4). Dr. Thomas Crist's forensic analysis has positively identified Bogert's remains as Burial 12 in Vault 3.

Research indicates that in the 1790s, Bogert was a captain in the New York State Militia (Council of Appointment of the State of New York 1901: 367). During the nineteenth century, he worked as a merchant in New York City, and in 1829 was listed as a member of Fire Company #36 and residing at 20 Charlton Street (New York Common Council 1917: 299). Bogert died on November 15, 1842, at the age of 76. A miniature watercolor on ivory portrait of Bogert was painted in 1806 by New York artist Parmenas Howell (1784–1808) and is on display at the New York Metropolitan Museum of Art (Figure 5.5).

Oswald Williams Roe

Oswald Williams Roe was just 10 months and five days old (died November 27, 1822) when his small silver coffin plate was carefully engraved over faintly etched guidelines (Figure 5.6). He was the son of Peter Eltinge Roe and Susan Elizabeth Williams (Beam 2008). Roe's coffin plate was found in the fill of Vault 4. Despite close inspection of his small, oval coffin plate, no silversmith's hallmarks were discovered. However, further research indicates that Oswald Williams Roe's uncles, James and William Roe, were silversmiths in Kingston, New York (Ensko 1983:114) and were probably responsible for the manufacture of his silver coffin plate.

Louisa Hunter

The displaced coffin plate for Louisa Hunter was recovered close to Burial 13 in Vault 4. A mortuary notice appeared in the *New York Weekly Commercial*, February 4, 1825: "Died. This morning, about 3 o'clock Louisa Hunter, in the 17th year of her age, after a long and painful illness, daughter of John Hunter." Concurrent forensic examination has revealed that Burial 13 is an adult, while Burial 16 was identified as an adolescent approximately 15.5 years of age.

Elizabeth Cleveland

Moving and stacking of coffins within Vault 4 may have torn Elizabeth Cleveland's plate (Figure 5.7) from her coffin lid and ripped sections of the engraving; however, enough information survived to allow the identification of her name, and consequently of her very detailed mortuary notice. The *New York Weekly Commercial Advertiser* reported on November 28, 1826 that:

> At 10 o' clock A.M. on Thursday, the 23rd inst. At the house of her son-in-law, Rev. Samuel H. Cox, of this city, Elizabeth Cleveland, relict of the late Rev. Aaron Cleveland, of Connecticut... Having survived two

Figure 5.4 In situ skeletal remains of Rudolphus Bogert and his coffin plate from Vault 3.

Figure 5.5 Miniature oval portrait of Rudolphus Bogert (circa 1806). Image courtesy of the Metropolitan Museum of Art, New York.

Figure 5.6 Silver coffin plate of Oswald Williams Roe, recovered from the fill of Vault 4. Inscription reads "Died 27th November, 1822, Aged 10 Months & 5 Days."

Figure 5.7 The damaged coffin plate of Elizabeth Cleveland, found in the extreme northwest corner of Vault 4. Inscription reads "Died 23 Nov 1826, Aged 70 Yrs 5 Mos 13 D."

> husbands, three (of eight) children, and seen many vicissitudes, her extraordinary bodily vigour first yielded to a paralytick [sic] shock, which brought her to a bed of debility, suffering and death. She was thus exercised exactly eight weeks and one hour…

Family genealogy websites revealed that Elizabeth Clement Breed was the second wife of Reverend Aaron Cleveland. They married shortly after the death of his first wife Abiah Hyde in 1788. Aaron and Elizabeth named one of their daughters born in 1796 Abiah Hyde, for Aaron's first wife. Abiah Hyde Cleveland married Reverend Samuel Hanson Cox, the second pastor (1820–1825) of the Spring Street Presbyterian Church (Moment 1877: 12). As an interesting side note, Reverend Aaron Cleveland and his first wife Abiah were the great-grandparents of President Grover Cleveland (Leicester Productions, Inc. 2008).

Alfred Roe Cox / Edward Dorr Griffin Cox

One of the coffin plates (Figure 5.8) recovered from Vault 4 was unusual in that two names on the same plate were revealed after mechanical cleaning. Initially, this caused some confusion, since the first name on the plate appeared to be "Alfred Roe Cock" and the other name "Edward Dorr Griffin." Additional cleaning along the edge of the plate uncovered Edward's surname "Cox." It appears that the engraver mistakenly spelled Alfred's last name incorrectly and may have attempted to correct it (Cock to Cox).

Alfred and Edward were the offspring of Reverend Samuel Hanson Cox, of the Spring Street Presbyterian Church, and his wife Abiah (*née* Cleveland). Reverend and Mrs. Cox were married for 48 years, and over that period produced a total of 15 children. As was common for the times, many of these children died before reaching adulthood. Daughter Elizabeth Rowe Cox, (born November 14, 1822) was the first child to pass away, on July 29, 1823, and was likely one of the first members of the Spring Street congregation to be interred in the burial vaults. One year later, on July 20, 1824, son William Cooper Cox also died of unknown causes. Then, in late 1831 and early 1832, tragedy struck when four of the Cox children died within a three month span of time: daughter Mary Liddon Cox (born November 23, 1831) passed away on November 25, 1831, and was followed in early January by Alfred (born February 7, 1827; died January 1, 1832), Edward (born September 8, 1828; died January 2, 1832), and daughter Abiah Caroline Cox (born March 30, 1830; died January 4, 1832). Historic research into the Cox family produced the following remarkable account of the deaths and burial of Alfred, Edward, and Abiah Cox:

> Insatiate Archer, would not one suffice? – Abiah Caroline Cox, youngest daughter of the Rev. Dr. Cox, departed this life last evening, aged 20 months. Thus, in the course of four days and a half, three members of this afflicted family have been removed by death,—all by scarlet fever. Alfred Roe Cox, aged 6 years, died on Sabbath morning; Edward Dorr Griffin Cox, aged 3 years and 3 months, on Monday morning; and both were buried on Tuesday afternoon, in the same grave and the same coffin [*Rhode Island American and Gazette*, January 10, 1832].

It is very probable that all five of these Cox children, along with their grandmother—Elizabeth Cleveland (see entry above)—were interred in the Spring Street vaults, even though corresponding coffin plates were not recovered for each of them. Although Reverend Cox was no longer the pastor of the Spring Street Church, children Mary, Alfred, Edward, and Abiah were most likely placed in the Spring Street vaults after their deaths in order to be close to the remains of their younger siblings, Elizabeth and William.

Sarah Ogden Hubbard

The coffin plate for Sarah Ogden Hubbard was found in the fill prior to the excavation of the vaults; as a result, her plate could not be tied to a specific vault. Her mortuary notice mentions her two young sons, who died around the same time. As reported in *New Hampshire Patriot and Gazette*, February 12, 1841: "In New York City, Dec. 27, 1840, Theodore Frelinghuysen Hubbard, about 7, also suddenly, Dec 29 Sarah Ogden Hubbard, 28, And Jan 22, 1841 John Cleaveland Hubbard, about 5,—wife and children of Luther Prescott Hubbard, formerly of Hollis, N.H." Although coffin plates for the boys were not recovered they were probably interred in the same vault with their mother.

Figure 5.8 The coffin plate of Alfred Roe Cox and Edward Dorr Griffin Cox , recovered from the western half of Vault 4. Inscription reads "Alfred Roe Cock [sic], Born Feby 7, 1825 Edward Dorr Griffin Cox Born Septr 18 1828, Died Jan 1, 2 1832."

COFFIN LETTERS AND FIGURES

Three coffin letters and a single figure were recovered from Vault 4. Two Bs (Figure 5.9), an F (Figure 5.10), and an ampersand (&) (Figure 5.11), each measuring two inches in height and 1.5 to 1.8 inches across, were cut from a sheet of copper alloy. Although not found attached to a coffin, these letters would have been tacked to the lid to spell out individual's initials, age, and/or year of death. The application of these pre-cut letters would have required less time and may have been less expensive than having the information engraved onto a coffin plate. Similar brass letters and numbers have been recorded on eighteenth-century coffin lids excavated from St. Martin's churchyard in Birmingham, England (Birmingham Archaeology 2008). A search of early-nineteenth-century newspapers revealed an advertisement from the *Connecticut Courant* dated October 7, 1837 for Ogden Kilbourn's hardware that mentions "coffin letters and figures" for sale. While it may not be possible to match the surviving letters to a specific person or family, the recovery of an ampersand symbol is intriguing as it may suggest the presence of more than one individual in the coffin.

COFFIN WOOD

Several large sections of coffin wood and one nearly complete hexagonal coffin lid were recovered from Vault 3. The coffin fragment samples consist of light brown, red-painted light brown, medium reddish brown, and dark brown woods. Several of the fragments of dark wood exhibit remnants of a layer of clear varnish particularly evident around intact copper alloy screws. Newspaper advertisements from Massachusetts, Virginia, and South Carolina dating from the second quarter of the nineteenth century mention the use of pine, black-and-white-painted pine, cedar, mahogany, and varnished mahogany coffins. Analysis of coffin wood from the African Burial Ground (2006) documented pine and cedar as being the most common types of wood used for the coffins from that site. An advertisement for Thomas Buchannan's Coffin and Furniture Warehouse from the *New York Morning Herald*, dated July 22, 1830, offers "coffins of superior workmanship, various kinds and qualities of wood, ready made at reduced prices."

One of the samples of varnished coffin wood recovered from Vault 3 exhibits the remnants of a beveled oval cut out (Figure 5.12) near the head end of the coffin, below the shadow of where a coffin plate had been attached. This is the only evidence of a coffin with a viewing window recovered from the Spring Street vaults. Although more commonly associated with later-nineteenth-century coffins, there are other early examples of coffins with viewing glass. The *Jamestown Journal* on April 21, 1841, provided a description of President William Harrison's mahogany coffin: "At the head is a plate of glass, so to show the face distinctly, without exposing it to the air, or the touch of visitors."

COFFIN HARDWARE

A large number (n=1,170) of iron coffin nails were excavated from the vaults. A large portion of the nails had coffin wood still attached, making it difficult to identify method of manufacture. Some of the nails retain sufficient wood samples to show two pieces of wood being joined together, probably the sidewall and base of the coffin. Three different types of metal coffin screws are represented in the assemblage: iron, copper alloy, and iron with decorative white metal caps. The majority of screws (n=244) are iron, with some of the more intact examples appearing to have domed heads. Several copper alloy screws show evidence of hand manufacture and feature a narrow, slightly off-center slot on the head and irregularly spaced threads (Figure 5.13). The third type of screw is iron with a large white metal head. Some of the white heads have separated from their iron shafts, and only one example in the Spring Street sample retains its original silver head cap (Figure 5.14).

A total of 21 copper alloy coffin hinges were recovered, some with fragments of small iron fasteners still attached. Of this total, 17 are small, plain, rectangular "butt type" examples, with the remaining four represented by somewhat more decorative U- or butterfly-shaped types (Figure 5.15). The size of these more decorative hinges, and the pattern of corrosion evident on their surfaces, suggest that they were probably used on a divided lid coffin, rather than attached the side of the coffin. No examples of coffin handles or other more extravagant forms of hardware were recovered from any of the Spring Street vaults.

Figure 5.9 The letter B, trimmed from a copper alloy sheet, excavated from Vault 4.

Figure 5.10 Copper alloy coffin letter F, recovered from Vault 4.

Figure 5.11 An ampersand symbol trimmed from a sheet of copper alloy, found in Vault 4.

Figure 5.12 Top section of a coffin lid with the remains of an oval cut out view window from Vault 3.

Figure 5.13 Copper alloy hand made coffin screws excavated from the southwest corner of Vault 3.

Figure 5.14 Iron shaft coffin screw with white metal head recovered from Find Spot 1.

Figure 5.15 Decorative U- or butterfly-shaped coffin hinges, recovered in the eastern half of Vault 4.

COFFIN INTERIOR

A few samples of wood shavings and sawdust were adhered to the interior surface of some of the coffin wood that was recovered from Vaults 2 and 4. The excavations of eighteenth- and nineteenth-century burial vaults at Christ's Church Spitalfields, in England, uncovered over 200 coffins with varying amounts of sawdust, ranging from a thin layer to examples where it completely filled the interior spaces of the container. Descriptions from the Spitalfields vaults further note that:

> Coffin bases were filled with sawdust, wood shaving, etc, which are found on top of the mattresses, and were probably added after the body had been viewed, immediately prior to the coffin being sealed. Their purpose was twofold: firstly to absorb liquid from the body's decomposition, and secondly to stop the body rolling and bumping while the coffin was being moved [Reeve and Adams 1993:102].

While the wood shavings from Spring Street were not identified as to the specific tree species they were produced from, they are likely to have been cedar shavings. The use of sawdust and shavings from a fragrant wood such as cedar also would have helped to neutralize some of the odor resulting from bodily decay.

Various samples collected from the Spring Street vaults included a small clump of unidentified fibrous-looking material. Closer inspection (using a digital LCD microscope) subsequently revealed this sample to consist of the remnants of small quills, shafts, and plumulaceous and pennaceous barbs from feathers (Figure 5.16). The matted clump is thought to represent down stuffing from a fabric covered coffin pillow or mattress pad, similar to those recorded in the Spitalfield coffins (Reeve and Adams 1993:103).

FABRIC

A variety of fabric fragments were recovered from Vaults 2, 3, and 4. Most of the samples are small (only 1–2 inches in diameter). All are heavily stained, causing most to appear brown in color. There are no examples of stitched seams, buttonholes, printed patterns, embroidery, or punched embellishments. The fragmentary nature of the samples makes it difficult to assign the fabric to any specific purpose. A newspaper advertisement for Thomas Buchannan's Coffin and Furniture Warehouse in New York City details some of the mortuary clothing available at this time. The advertisement appeared in the *New York Morning Herald* on July 22, 1830, and offers "shrouds, caps, scarfs, &c [sic] furnished at the shortest notice."

RIBBONS

Pieces of finely woven ribbon, possibly silk, were among the fragments of fabric recovered from the vault excavations. A few of the ribbons exhibited picot finished lateral margins (Figure 5.17) that incorporated a series of small decorative loops projecting from the edges. Initially, the ribbons were thought to be associated with clothing and/or bonnet/cap ties; however, the Spitalfields Project report (1993) suggests another explanation:

> A number of ties were used to stop the body from moving out of position in the coffin. In particular the legs were tied together, either at the ankles or by the big toes, and the arms were sometimes tied to the sides of the body. In modern practice medical bandages are used, but at Christ Church, the ties were sometimes torn-up strips of other materials or more commonly they were plain commercially produced silk ribbons…The function of trussing a body in this manner is to keep it in a neat, seemly position while being viewed, and to prevent the limbs banging against the coffin sides while the coffin is being moved [Reeve and Adams 1993:104–105].

Re-examination of the ribbon fragments revealed that a few pieces had two ends tied together, forming a small knot. Inspection along the length of these examples showed heavy soiling, folds, and creases that seemed to be more consistent with having been used to bind the extremities of a cadaver, rather than with fastening articles of clothing to the deceased. Several other ribbon samples were tied in such a way as to form large decorative bows. One of these examples was found to have the remains of a copper alloy straight pin still attached near the knot. This bow may have been attached to the burial shroud or was used to decorate a pillow or coffin mattress (Figure 5.18). Two identical black bows, made of a slightly coarser woven thread, were also recovered, although their exact function remains unknown.

Figure 5.16 Magnified view of matted feathers, probably the remains of a coffin pillow or mattress, recovered in the eastern half of Vault 4.

Figure 5.17 Magnified view of section of cloth ribbon with decorative picot edge, excavated in the eastern half of Vault 4.

Figure 5.18 Cloth bow with copper alloy pin attached, possibly part of the coffin or shroud embellishment, recovered from the eastern half of Vault 4.

FASTENERS

Copper alloy straight pins were among the fasteners excavated from the Vaults 2, 3, and 4. Although many of the pins were corroded and extremely fragile, some examples had retained portions of their white metal plating. Pins were commonly used to fasten garments as well as to fix the burial shroud around the deceased. The Spring Street sample includes pins with both handmade wire wound spherical heads (Figure 5.19) and machine-made disk type heads (Figure 5.20).

A total of 31 buttons were recovered from the excavation of the vaults. Most of the buttons (n=24) were manufactured from bone (Figure 5.21) and featured recessed centers, and either four or five holes for attachment. The remaining buttons were made of shell (n=4) and porcelain (n=3), respectively. A few (n=4) of the bone buttons and all of the shell buttons were found associated with specific burials from Vaults 3 and 4. Two of the shell buttons were recovered from Vault 3, Burial 18, with one recovered from the neck area, and the other from the pelvis. The presence of buttons in these bodily associations suggests that this individual was wearing some sort of clothing when buried, rather than having been simply wrapped in a shroud. The report of findings from New York's African Burial Ground archaeological site (Perry et al. 2006) discusses several burials, in which individuals were determined to have been interred wearing street clothing or clothing beneath a shroud. Several copper alloy wire hooks (n=3) and eyes (n=5) were also recovered from the commingled remains in Vault 4, supporting the general interpretation that some of the deceased interred in these vaults were dressed in clothing of one form or another.

SHOES

Leather shoe fragments from Vault 4 included three heels from at least two different pairs of shoes (Figure 5.22). Two of the heels have a series of small iron nails in a U-shaped pattern around the outer edge. The other heel also has copper alloy nails arranged in a U-shaped pattern, but these are shadowed by a series of small iron nails and suggest that the heel had been repaired. The interior sole of this latter heel, and the exterior surface of several other recovered pieces of shoe leather, exhibited traces of an unidentified red substance, possibly from a paint or dye. A few pieces of fabric with a coarse twisted thread, possibly remnants of knitted stocking, were recovered with the shoe leather. In some of the burials excavated at Christ's Church Spitalfields, individuals were found to be wearing knitted stockings made from wool, silk, and cotton (Reeve and Adams 1993:108).

MISCELLANEOUS PERSONAL ITEMS

Some of the miscellaneous small finds from Spring Street are directly associated with human remains, while other objects were recovered in a disassociated state from collections of commingled skeletal remains, and therefore are of uncertain intentional placement with funerary remains. The following is a description of personal items recovered from the Spring Street Site.

Coins

A total of four copper United States large cents (Figure 5.23) were excavated from the site, all of which derived from Vault 4. All of the coins were minted in Philadelphia, but were in such a poor overall state of preservation that their dates of manufacture were extremely difficult to identify, even after cleaning. The earliest recovered large cent (Draped Bust Type) is dated 1806; the remaining three coins are Coronet type (Matron Head: 1816–1839) and dated 1819, 181_ (last digit unreadable), and 182_ (last digit unreadable), respectively. All of these coins were in circulation during the period the Spring Street vaults were in active use (1820–1843), and therefore could represent objects that were intentionally placed with the deceased. However, because none of these were recovered in direct association with well-preserved burial remains, such an assertion is completely speculative in nature, and cannot be verified based on the available evidence.

Jewelry

Only two pieces of jewelry were excavated from the burial vaults. One of the items is a small gold wedding band (Figure 5.24) exhibiting an interior diameter of just 0.73 inches. There are no hallmarks or engravings visible on the ring's interior or exterior surfaces. The wedding band was found in Vault 3, along the left-hand (ring) side of Burials 5 and 7. These sets of remains were badly crushed, one directly atop the other, and very poorly preserved.

Figure 5.19 Shroud or clothing pins, formed of copper alloy with spherical wire wound heads, excavated in the western half of Vault 4.

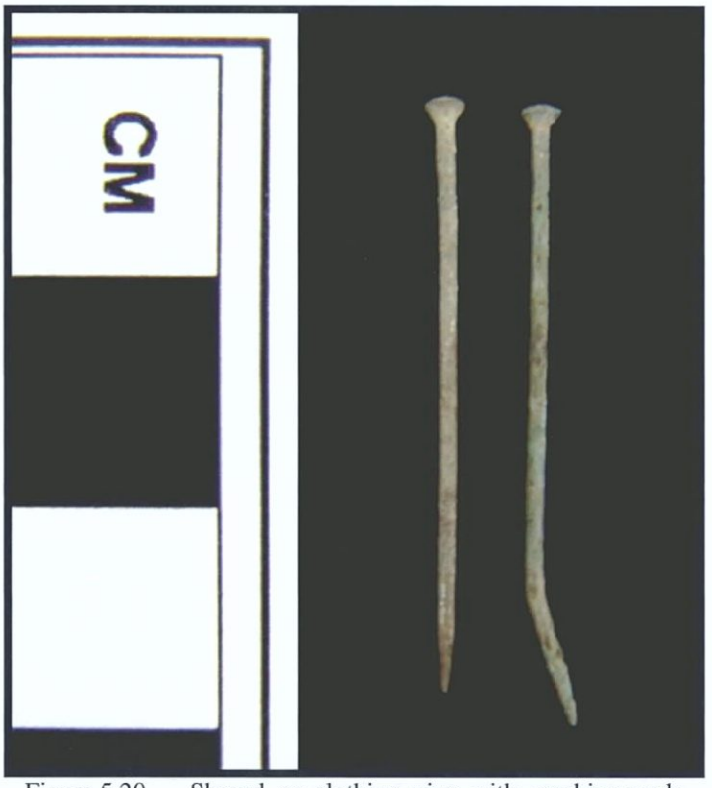

Figure 5.20 Shroud or clothing pins with machine-made flat disk type heads from Vault 3.

Figure 5.21 Bone button recovered from Vault 3, Burial 5.

Figure 5.22 Shoe heel with copper alloy and iron nails, excavated in the eastern half of Vault 4.

Figure 5.23 United States large cent copper coins, excavated in Vault 4.

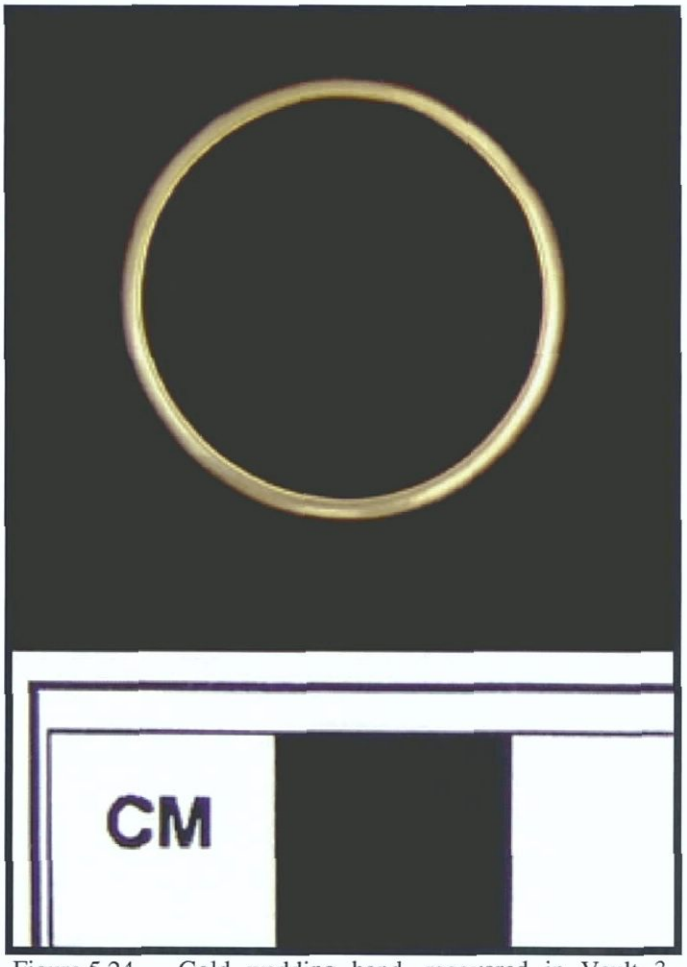

Figure 5.24 Gold wedding band, recovered in Vault 3, Burial 7.

Forensic analysis of Burial 5's remains identified this person as a young man less than 35 years of age at the time of death. Burial 7, on the other hand, was identified as a young woman somewhere between 20 and 24 years of age (Appendix D, pages D.33–D.35). Based on the diminutive size and appearance of this ring, it is believed to be a woman's wedding band, and therefore was most likely originally associated with the unknown woman represented by Vault 3, Burial 7.

The second item, an unidentified strip of gold with C-shaped curves at each end, appears to be some type of fitting for a piece of jewelry, possibly a setting for a broach. This piece is also flattened at the mid-section with two small holes, one with a broken tiny ferrous metal pin still attached. No decoration or other identifying hallmarks were noted (Figure 5.25).

Tortoise Shell and Copper Alloy Hair Combs

Large pieces of three tortoise shell combs (Figure 5.26) were recovered from the western half of Vault 4. Two of these combs have wide back/handle sections with widely spaced long teeth, suggesting that they were decorative combs used to hold hair in place. The third has a narrow back with closely spaced short teeth more consistent with the type of comb used for grooming. Two fragments of a decorative copper alloy hair comb (Figure 5.27) from the eastern half of Vault 4 mend to form an incomplete length of 4 inches. While one of the pieces of this comb was recovered with some dark hair still attached, DNA or other more intensive studies of this hair sample was beyond the scope of this investigation.

Copper Alloy Whistle

A small copper alloy whistle (Figures 5.28 and 5.29), with an elaborate stamped floral and scroll motif, measures 1.4 inches in length, has a width of approximately 0.45 inches, exhibits an intact loop and ring for attachment to a chain or ribbon, and is no longer in working order (partially crushed and missing the pea). The whistle may have originally been placed within a child's burial.

Ceramic Saucers

Three blue decorated saucers were recovered from Vaults 2, 3, and 4, where they were found in association with discreet sets of identified burial remains. Due to the disturbed nature of some of the burials and the poor preservation of the coffin wood, it was difficult to ascertain in all three instances whether the saucers were contained within the coffins or had been placed on the exterior of the coffin.

Although all three were found in fragmented states, one saucer mends completely; the remaining two saucers appear to have been whole when they were originally introduced into the vaults. Each of the saucers is decorated with a blue printed scene of a romantic or idealized landscape. The saucer excavated in association with Vault 2, Burial 7, features a young woman in a hat, wearing a traditional costume in a flower garden with exotic buildings in the background. Although there is no maker's mark, this type of "European scene" was a popular theme probably manufactured from 1830 to 1850 (Figure 5.30). Preliminary forensic analysis identified the remains from this burial as a child 4.5 to 5.5 years of age.

The scalloped edge saucer associated with Vault 3, Burial 7, is decorated in light blue, with a central scene of a costumed man and woman seated in a formal garden, with a small child leaning on the woman's knee (Figure 5.31). This unmarked piece dates to the same time period (1830–1850) as the saucer from Vault 2. Forensic analysis of the poorly preserved remains from this burial suggests that they belong to a woman 20 to 24 years of age at death. Her intact left thumb metacarpal was recovered from inside of the saucer.

The third piece, a "cup plate" measuring 5.5 inches in diameter, was found less than an inch below the mandible (lower jaw) of a skull from a burial in Vault 4 and was positioned with the central scene facing toward the deceased (Figure 5.32). This dark blue printed plate features Armitage Park, Staffordshire, England as the central motif with a grapevine border. The back is marked with an impressed maker's mark for Enoch Wood and Sons, an English pottery that produced this scene as part of a series from 1818 through 1846 (Coysh and Henrywood 1982:27).

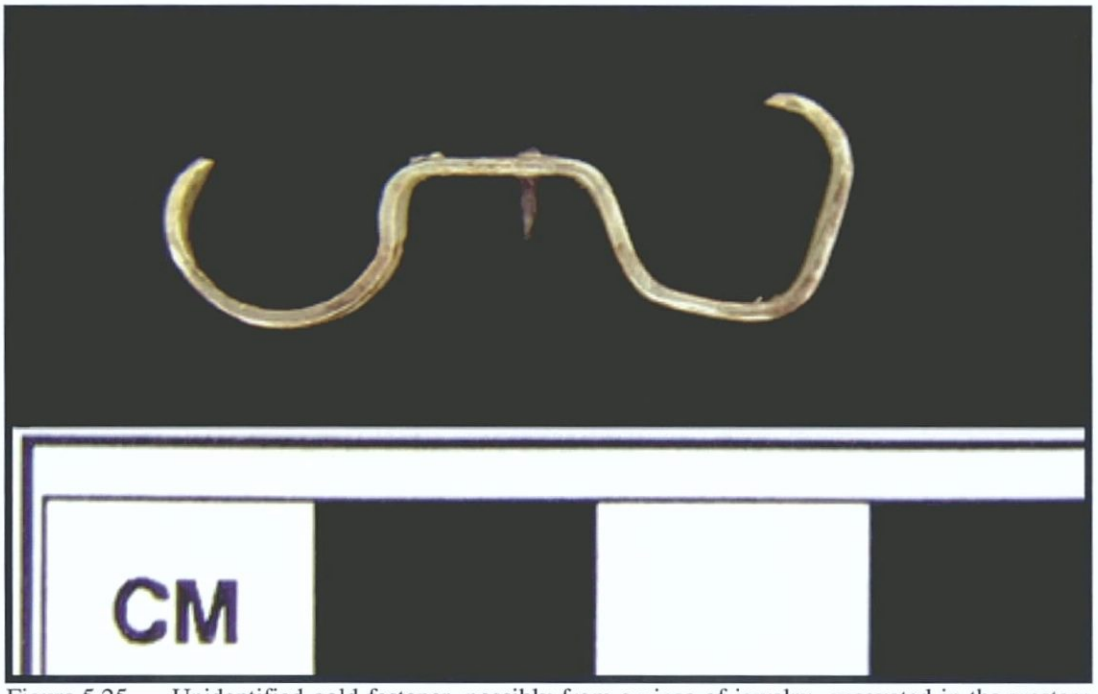

Figure 5.25 Unidentified gold fastener, possibly from a piece of jewelry, excavated in the western half of Vault 4.

Figure 5.26 Tortoise shell comb, recovered in the western half of Vault 4.

Figure 5.27 Fragment of a copper alloy decorative hair comb, excavated in the eastern half of Vault 4.

Figure 5.28 Small whistle recovered from Vault 2. The whistle is stamped from a sheet of copper alloy with a decoration that varies slightly from top to bottom, as seen here (top) and in the photograph below (bottom).

Figure 5.29 Bottom view of copper alloy whistle.

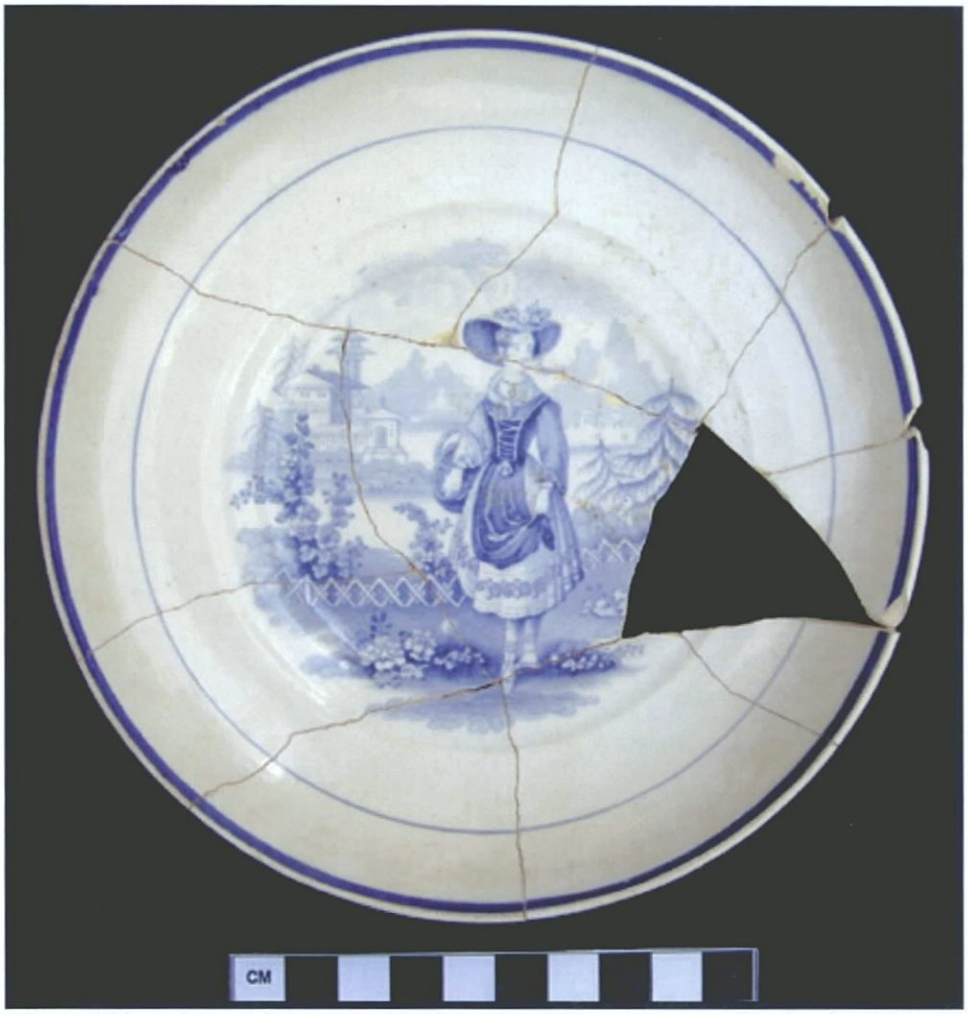

Figure 5.30 Saucer decorated with blue printed "European scene" and painted bands, excavated from Vault 2, Burial 7.

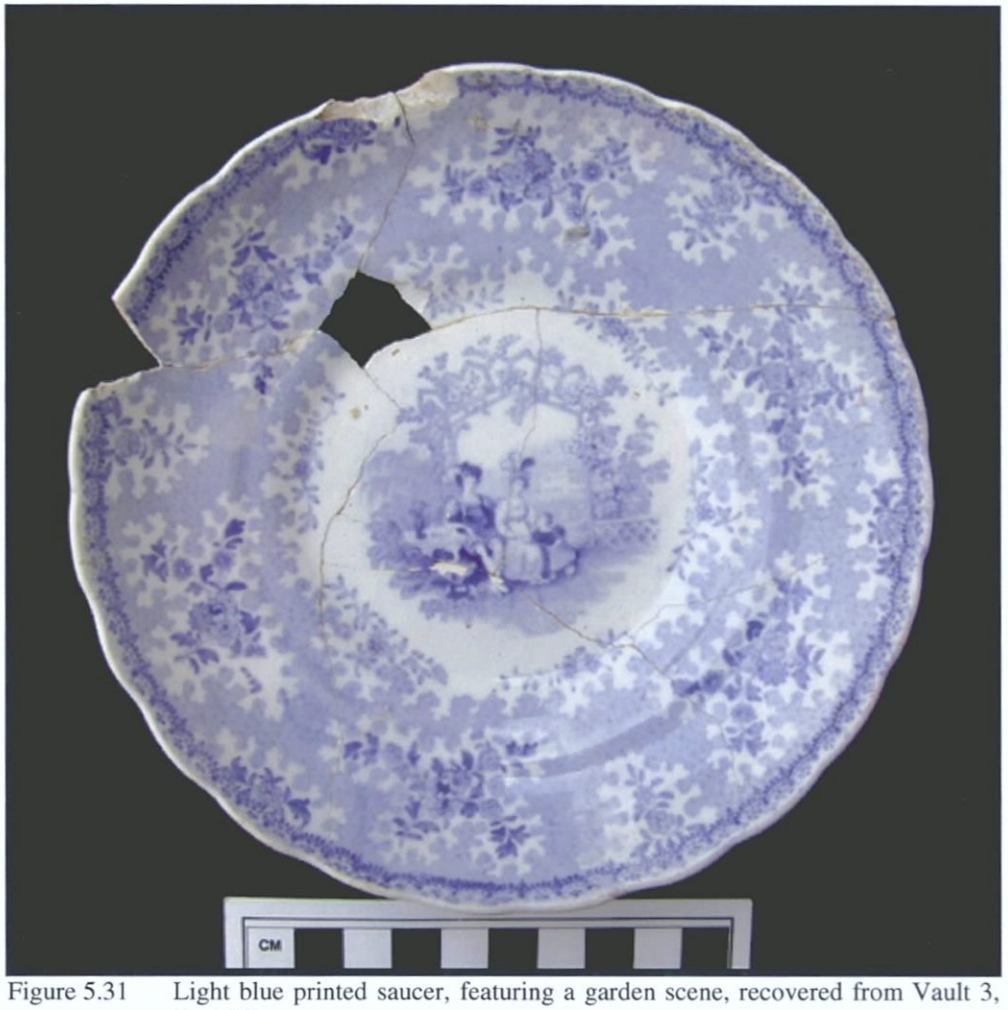

Figure 5.31 Light blue printed saucer, featuring a garden scene, recovered from Vault 3, Burial 7.

Figure 5.32 Dark blue printed cup plate in situ, recovered from Vault 4. The central motif featuring "Armitage Park"; the back is marked with impressed maker's mark of Enoch Wood and Sons.

Research indicates that saucers similar to those found in the Spring Street vaults have been found during excavations of burials from various archaeological sites in England, the United States, and Jamaica. Evidence suggests that the tradition of placing saucers/plates with the deceased can be associated with a variety of cultures, and several related functions. Examples have been found in both European and African American cemeteries (Fremmer 1973: 58; McCarthy 1998).

The *New York Commercial Advertiser* published a story in 1819 on the "Superstitions of Scottish Peasantry," including among the burial customs described: "When the body is dressed and laid out, a Bible is often put beneath its head, while a plate with salt and another with a piece of green turf is placed on the breast" (*The New York Commercial Advertiser*, June 16, 1819). Burial traditions involving saucers or plates were also observed in Wales and Ireland, as detailed in a book on Welsh folklore:

> Of superstitions regarding salt, there are many in Wales. I have even encountered the special custom of placing a plate of salt on the breast of the corpse. In the case of an old woman from Cardiganshire, who was buried at Cardiff, and who was thus decked by her relatives, I was told the purpose of the plate of salt was to 'prevent swelling.' There is an Irish custom of placing a plate of snuff on the body of a corpse; hence the saying, addressed to an enemy, 'I'll get a pinch off your belly yet.' The Irish also employ the plate of salt in the same manner (Sikes 1880:328).

McCarthy (1998) and other researchers have also raised the possibility that the placement of plates in graves might represent an aspect of traditional West African cultural practices retained by black populations transported to the New World. While this association remains a distinct possibility, few examples of this custom have been identified in African American cemeteries subjected to thorough archaeological study and documentation. In Philadelphia, two plates were excavated in 1984–1985 from burials at the First African Baptist Church Cemetery on Eighth Street. The plates were placed inside the coffins of the deceased, on the stomachs of each individual. Interments at the Eighth Street burial ground were established between 1823 and the 1840s (McCarthy 1998), a date range that corresponds closely with that for Spring Street vaults. Although the Spring Street Presbyterian Church did apparently possess a mixed-race congregation by the 1820s, and while it is tempting to hypothesize that the inclusion of plates in these burial vaults might indicate that African American church members were entombed here, forensic analysis of the skeletal remains recovered during this investigation found no conclusive evidence that any person placed in this burial ground was of African descent.

Another potential explanation for the presence of these plates in the vaults that deserves further scrutiny is their possible use in sanitizing or disinfecting the burial chambers. During the nineteenth-century, a considerable amount of time and effort was expended to study the effects on public health that resulted from the decomposition of human remains in both cemeteries and vaults. These studies were carried out within the context of a broader health, hygiene, and sanitation movement in the United States and abroad, and involved not only the documentation of the various liquid and gaseous *effluvia* produced by the body as it decomposed, but also the study of how these various noxious substances contributed to the (real or perceived) spread of disease and deleterious health effects among those persons living in close proximity to burial facilities. In conjunction with these investigations, efforts were also made to identify procedures and substances that could effectively neutralize or destroy the byproducts of decomposition. Based on a review of available published literature, it appears that the preferred method for accomplishing this task involved the use of relatively uncomplicated kitchen chemistry to produce chlorine-based or other acidic vapors for fumigating toxic enclosed spaces, such as sewers, privy pits, and burial vaults.

One of the earliest known applications of fumigation to destroy the unhealthy emissions from bodily decay occurred in 1773, when Louis Bernard Guyton de Morveau successfully employed chlorine gas (then called *muriatic acid gas*) to neutralize the putrid *effluvia* emanating from burial vaults beneath the floor of the Cathedral of Dijon, in France (Aiken 1803). In the early nineteenth century, the results of Morveau's experiment were recounted in numerous scientific journals on both sides of the Atlantic Ocean; by the 1830s and 1840s, his method of disinfecting confined spaces had become common subject matter in various domestic "encyclopaedias" and other widely circulated popular publications (e.g., Belinaye 1833, Webster 1845). As related to the ceramic plates recovered from the Spring Street vaults, these early accounts of "do-it-yourself" fumigation describe that the simplest way to produce chlorine vapor was to "put some common salt into an *earthenware dish* [emphasis added], and pour upon it some sulphuric acid" (Webster 1845: 138). This procedure, in turn, produces a chemical reaction that releases chlorine gas into the air of the room or building being disinfected. Accounts indicate that this specific process of

fumigation was utilized widely throughout Europe during the nineteenth century, and in the 1860s, Dr. Henry Letheby, Health Officer of London, reported that "in this manner all of the [burial] vaults of the city churches have been disinfected" (Letheby 1866; the container Letheby preferred to use in mixing his fumigation ingredients was a teacup).

Whether or not the ceramic plates found in the Spring Street vaults were used in conjunction with similar fumigation efforts is not known; however, this remains an intriguing interpretation that has not been discussed in prior archaeological investigations. From surviving historical accounts, it is known that the Spring Street Church vaults were entered periodically—to deposit deceased members of the congregation, for the purposes of "regulation" by members of the congregation or persons contracted by the church, and to repair the ceiling through the construction of interior column supports—and therefore occasional fumigation may have been desired, or required, in order to prevent injury to those carrying out these actions. While chemical analyses of the recovered plates could potentially shed light on their possible use in this manner, such studies were beyond the scope of this investigation.

6
Summary and Conclusions

The investigation of the Spring Street Presbyterian Church burial vaults is among the most important and most thoroughly documented archaeological studies of nineteenth-century cemetery populations thus far completed in New York City. Moreover, it is the only known intensive physical exploration of historic funerary vaults within this broader region of the country. These investigations have generated a considerable amount of new information and data not available from other contexts, related not just to historic period burial practices, but a variety of other subjects, as well. Employing an integrated research design incorporating intensive background research, archaeological excavation, and bioarchaeological analyses of recovered human remains, these efforts have served to rediscover a long-forgotten (but historically significant) religious congregation, accumulated baseline information pertaining to the operation of early-to-mid-nineteenth-century burial vaults and the varied factors influencing their preservation, and allowed the recovery of detailed health and comparative demographic data necessary for the reconstruction of daily life and common hardships experienced by members of this specific community, as well as by the broader population of New York at this time. Most importantly, however, these investigations allowed the members of the Spring Street congregation to be exhumed in the most respectful manner possible, and to be once again reinterred with the greatest degree of possible due reverence.

Published church histories and related documents show that the Spring Street Presbyterian Church was an important religious organization in New York City during the first half of the nineteenth century, with a congregation and leadership who promoted progressive attitudes toward racial integration and were among the vanguard of the emergent abolitionist movement. Records show that by the early 1820s, the church had opened its doors to African Americans to establish a multiracial congregation, even going so far as to create an integrated Sunday school program. These actions brought the church into conflict with others within the Presbytery of New York, and eventually incurred the wrath of non-members in the local community. Yet despite these forward-thinking attitudes, the church, during this period, seems to have never completely escaped the prejudices of its times or to have ever achieved full integration, and continued to maintain segregated seating arrangements during services. It also may not have afforded African Americans an equal treatment in death, by allowing black congregants to be buried in the church vaults. Osteological analysis of the human remains recovered during these investigations found no evidence that any of the persons entombed in these chambers was of African descent. African American congregants, at least throughout the period of the vaults' use, likely continued to find their final resting place among the nameless others buried within the city's potter's field.

Surviving church documents indicate that the Spring Street funerary vaults had been constructed sometime around 1820, were expanded in size in 1831, and continued in active use until at least 1835. However, information collected during this investigation—and specifically that derived from the still legible inscriptions on 32 recovered coffin lid plates—serves to significantly expand the period through which the vaults remained active. The earliest coffin plate found shows that an infant named Charles Morgan was interred in the vaults in early January 1820, and suggests that the vaults were in active service prior to the start of the third decade of the nineteenth century. This, in turn, lends credence to the interpretation that the vaults may have been established several years earlier and possibly in association with the construction of the church's session house, in or around the year 1818. The latest dated coffin plate recovered during the investigation was associated with an unknown congregant with the first name "David," interred in March 1843, and indicates that the vaults remained in use well after city government had banned burials in this section of Manhattan (1832). Interestingly, one of the coffin plates recovered bore the name of Nicholas Ware, a former U.S. senator from the state of Georgia. Historical documents indicate that Senator Ware had been interred at Grace Church in the Jamaica section of the city, and it is not known at this time how or why his remains came to reside in these vaults.

Data from the investigations has provided much new information regarding the burial traditions practiced by the Spring Street congregation in the first half of the nineteenth century, and about the operation and internal organization of remains within their funerary vaults. Although comparative information from contemporary vaults in this country are not available, analyses show that conditions within the Spring Street burial chambers did share a number of broad characteristics with English vaults from the same period. Burials at the Spring Street church seem to have been relatively simple affairs typical of the times and, aside from small metal lid plates, were accompanied

by little decorative or ceremonial extravagance. Congregants were laid to rest in common hexagonal coffins that were sometimes stained or painted, occasionally in bright colors like red or gold, but which received little in the way of additional embellishment. At least one coffin was constructed with an early viewing window in the lid. Inside the coffins, the deceased were typically wrapped in burial shrouds, though some were dressed in clothing of some sort as well, and may have had their limbs bound together with ribbons to prevent shifting of the body during funeral observations and transportation into the vaults. Evidence suggests that some coffins may have been equipped with pillows or other interior lining, while others were lined with wood shavings, probably cedar, to help mask the inevitable odors of death.

Because of the generally poor preservation of remains within the vaults, it remains unknown, or at least unclear, whether the Spring Street burials originally exhibited any characteristics indicative of status differences between members of the congregation. One measure of status might be indicated in the lid plates recovered. Though not extravagant in their form or manufacture, the purchase of these burial elements may have been beyond the means of many of the poorer members of the congregation. The recovery of fewer plates than the number of persons interred here (minimum of 93 individuals) could point to possible status differentiation; however, poor preservation renders it unclear how many of the burials were once associated with these artifacts. It is also possible that entombment in the vaults itself was a sign of elevated status within the church and community, with this manner of burial reserved only for those individuals who could afford the cost of reserving space in these chambers. Unfortunately, surviving church records are not complete enough to provide further insight into this possibility.

Evidence from the excavations suggests that burial remains inside *individual* vaults were not intentionally segregated or spatially organized in any way that might reflect differences in status or other social factors. The interior spaces of these chambers were not physically separated or divided in any way, and coffins seem to have been simply placed in rows along the floor. Over time, as more interments were added, sextons or others responsible for the care of the vaults apparently moved burials and decomposing remains within the chambers to create more space. In the process, remains were typically stacked one on top of the other around the perimeter of the vaults, in some cases perhaps as many as four or five coffins high, if not higher. If any spatial differentiation of remains had once been present, this process of "regulating" the vault interiors likely served to obscure any such original patterning.

When considering patterning across vaults, however, there are several gross characteristics that could potentially be indicative of the intentional differential use of, or access to, these chambers by members of the congregation. The principal and most obvious difference between vaults pertains to numbers 3 and 4, and involves the disparity in overall volume of remains, and the demographic representation of individuals contained within each. Both chambers were built at the same time (circa 1820 or earlier) and were presumably in use for the same duration; however, despite this shared use-life, Vault 4 contained a total volume of human remains that was several orders of magnitude greater than that recovered from Vault 3 (while much of Vault 4's remains were represented in disassociated skeletal elements, it was clear that a significantly larger total number of individuals were contained in this chamber than in Vault 3). Given a situation where all factors were equal, and access to the vaults for burial by members of the congregation was not restricted in any way, this is not the pattern that would be anticipated for these two chambers. Rather, both vaults would be expected to contain a proportionally similar number of individuals. Likewise, it would be expected that the demographic profile of individuals contained in each vault would approach some level of at least approximate parity. Instead, Vault 3 was found to contain only adult burials, with no subadults/children present, while Vault 4 contained large numbers of men, women, and children.

Taken together, the disparity between Vaults 3 and 4, in terms of the minimum number of persons present and their representation by age at death, could potentially indicate that the potential to be buried in one chamber or the other was in some way conditioned on the basis of social/church status or some other factor(s). Unfortunately, the absence of more detailed burial vault records and/or the accurate identification of a significant portion of persons interred in each chamber prevents any historically or statistically based evaluations of this hypothesis. Without such additional sources of reliable data, it also cannot be determined whether or not the patterns noted within these chambers were the result of intentional behavior on the part of the congregation, or were produced by some other action, such as vault regulation. Vaults 1 and 2, both established in or about 1831, seem to be more homogenous in terms of their burial content, although that fact is difficult to determine with a great deal of reliability, given the disturbed nature of Vault 1's burials and the uncontrolled manner in which they were forced to be recovered.

The physical reordering of remains within these chambers during regulation almost certainly served to expedite the decay of coffins and remains, and likely was responsible for creating the extensive intermixing and disassociation of skeletal elements documented during the excavations. Evidence from Vaults 3 and 4 indicate that these chambers required repair at some point in time, apparently to mend a failing or weakened ceiling, and this process also may have contributed to the disturbance and redistribution of remains within these chambers. By all appearances, the primary factor affecting the preservation of remains was the disturbance of the vaults by demolition and construction activities in the mid 1960s. During the demolition of the church following its consumption by fire, construction machinery appears to have impacted the vaults, collapsing the ceilings and walls inward, and consequently causing much of the crushing of coffins and remains observed during the excavations. Based on data collected in the field, it seems probable that burial remains within the Spring Street vaults retained a substantially greater degree of integrity prior to this event.

Archaeological investigations of the Spring Street Church vaults resulted in the recovery of large volumes of poorly preserved and disarticulated human remains, but they also succeeded in identifying 45 sets of intact and/or partially intact remains associated with distinct individuals. Subsequent bioarchaeological analyses of all recovered remains resulted in the determination that skeletal materials exhumed from Vaults 1–4 were associated with a minimum of 93 individuals. These studies also served to positively identify one of the persons buried within these chambers. Vault 3, Burial 12 was directly associated with a coffin plate bearing the name of Rodulphus Bogert, a prominent merchant and businessman who died in 1842 at the age of 76 years. Bioarchaeological examination of this set of remains confirmed that skeletal data for this individual was consistent with a male of Mr. Bogert's age. Unfortunately, additional positive identifications from this burial population were not possible because of their largely disturbed and poorly preserved state, and because in other instances legible coffin plates were not found in direct association with the remains.

Detailed information collected from the osteological study of 76 individuals from Vaults 2–4 (Appendix D) revealed much important demographic and pathological data related to this congregation, and which can help to better understand the health issues faced by the broader population of Manhattan at a time of profound social and economic change. Information gleaned from this population reveals that children made up a significant proportion of the deceased (approximately 40%), and reflects both the high susceptibility of this segment of society to disease and others stresses, as well as the overall poor state of medical care available in the city during this period. Analysis of the subadults from the vaults shows that individuals experienced the greatest risk of serious illness and death during the first year and a half of life, with nearly half (43%) of all children in this population having died before reaching the age of 18 months. For those children who did successfully reach this milestone, the chances of reaching adulthood improved steadily as they matured. Children between the ages of 3 and 10 experienced a 30% mortality rate, while for those between the ages of 10 and 15, the odds of premature death were halved and dropped to slightly more than 16%. For individuals who reached their later teen years, life expectancy continued to improve, and the rate of mortality dropped to a low level of less than 5%.

Adults identified among the remains are representative of the full span of age categories; however, ages at death for these persons indicate that life expectancy for the members of the Spring Street congregation was significantly shorter than is experienced today. In the antebellum United States, the average age at death was only about 45 years, and skeletal data for this population show that slightly more than 76% of all adults died before reaching this age. For men and women collectively, the highest mortality rate (35.7%) was witnessed during the second decade of life, as individuals left the relative safety of home, moved into the workplace, and began families of their own. The odds of death for persons reaching their 30s dropped only slightly, to just under 30%. Of the 42 adults studied in this population, only eight (19%) lived past their 45th birthday, and only three (<1%) lived beyond the age of 60.

When studied according to sex, adult skeletal remains from the Spring Street vaults show that males were over-represented in the population, by a ratio of approximately 1.6:1. It is unclear whether or not this ratio reflects the actual gender makeup of the congregation (which would normally be expected to exhibit a male/female ratio of closer to 1:1, as in the larger population of the city) or is the result of some unknown bias, possibly resulting from the overall poor state of preservation of many of the individuals studied. Analysis of the remains by gender show that, although both men and women were most likely to die before the age of 45, men were much more likely to surpass this average life expectancy than were women. Among the women, just over 56% died before reaching the age of 30; a statistic that reflects the increased health risks faced by women in association with childbirth. The dangers posed by pregnancy during this era are perhaps most obviously represented in the remains of the young

mother identified as Burial 17 in Vault 3, who appears to have died of some unspecified infection while still carrying her full-term fetus. Conversely, of the adult men in this population, nearly 70% passed away after the age of 30. Interestingly, this life expectancy trend among the Spring Street vault population stands in marked contrast with health data for the nation as a whole during this period, where women were statistically more likely to outlive men and to exhibit a higher overall average age at death. It is unclear whether the Spring Street data is an accurate reflection of life characteristics among the larger congregation or is indicative of some skewing introduced by the incomplete, co-mingled, and poorly preserved nature of much of the recovered skeletal remains.

Despite the low overall life expectancy for these individuals, data relating to pathology and trauma suggest that the Spring Street congregation was generally a healthy and robust population. Evidence of life-threatening disease was relatively uncommon, indicating that most individuals had likely died of unspecified acute soft-tissue diseases. Although cramped living conditions and poor sanitation are historically known to have spawned rampant disease and infection among the population of New York City during this era, individuals buried in the Spring Street vaults showed little evidence of having suffered from the most common of these socially transmitted afflictions. Tuberculosis was the leading cause of death among antebellum Americans; however, only two individuals in this population displayed clear evidence of the skeletal lesions often associated with this disease. Likewise, only two individuals showed bone modification attributable to advanced stage syphilis. It is possible that more individuals within this population suffered from social diseases of this sort, but experienced short-term acute outbreaks that left no physical trace on their skeletons. Also, it seems likely that the poor state of preservation and badly eroded surfaces of much of the skeletal material recovered served to mask or obscure evidence of such diseases in many cases.

Although historical accounts of the Spring Street Church suggest that a large proportion of its congregants were drawn from the poorer, laboring classes of New Yorkers, skeletal studies revealed comparatively little evidence of the sorts of trauma and degenerative joint disorders that commonly result from prolonged hard labor and physical exertion. In those few instances where signs of healed fractures and other trauma were observed, evidence indicated that these injuries were relatively minor, and in no case was associated with or indicative of the cause of death. Likewise, occurrences of periostitis, arthritis, and other joint degeneration were relatively uncommon among the population, and evidence suggests that none of those individuals afflicted with these disorders would have experienced pronounced mobility difficulties as a result. Once again, it is possible, if not likely, that the poor preservation of much of the remains recovered from these vaults has served to obliterate skeletal evidence of the pathologies suffered by members of this congregation.

Following the conclusion of this investigation, current plans call for the remains from the Spring Street Church vaults to be turned over to the care of the Presbytery of New York City. Consultation will be undertaken between the developer (Bayrock/Sapir) and the Presbytery of New York City regarding the reinterment of the remains. At this time, the exact manner and location of that reburial has yet to be determined.

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Appendix A
New York City Office of Chief Medical Examiner – Report of Findings

OFFICE OF CHIEF MEDICAL EXAMINER

THE CITY OF NEW YORK

CHARLES S. HIRSCH, MD
CHIEF MEDICAL EXAMINER

520 First Ave.
New York, NY 10016-6419

COPY
T. Crist

Bradley J. Adams, PhD
Christian M. Crowder, PhD
Forensic Anthropologists

M-06-6910
Not Forensically Significant

Tel. (212) 447-7571
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BACKGROUND:

On 11 December 2006 skeletal remains were discovered at a construction site on the corner of Varrick Street and Spring Street in Manhattan (Figures 1 and 2). According to the site supervisor, the bones were discovered in an area of the construction site that was once occupied by a Presbyterian Church constructed in the 1800's. The scene was visited by Dr. Christian Crowder and Jeannette Fridie on 11 December 2006, but a thorough assessment of the scene could not be performed due to loss of daylight. A NYPD officer was posted at the site overnight until a proper evaluation could be performed during daylight hours. Dr. Crowder, Ms. Fridie, and Megan Ingvoldstad returned on 12 December and the determination was made that the scene was not forensically significant. Skeletal remains exposed on the surface were collected and transported to the Manhattan medical examiner's office for temporary storage. Amanda Sutphin from Landmarks Preservation Commission was notified.

Figure 1. Overview of the scene with surface deposits of human remains. The left picture faces north and the right faces east. Arrows indicate the concentration of skeletal material. The crime scene tape demarcates the dispersal of remains.

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Figure 2. Example of skeletal remains on the surface disturbed by a backhoe during excavation. Multiple individuals are represented. Non-contemporary bricks are intermixed with the remains.

FIELD ASSESSMENT:

Evaluation of the scene indicated that skeletal elements from multiple individuals, both adult and subadult, were present on the surface. The area from which the remains were excavated by construction workers contains several feet of construction fill. The stratigraphic layer from which the remains were removed contains bricks and other construction material that the site superintendent described as pre-1960 material. An old building foundation was evident and was believed to be the foundation of a Presbyterian Church constructed in the 1800's. Wood fragments, nails, glass and ceramics were associated with the remains (Figure 3). The wood was extremely friable and the hardware was oxidized suggesting possible coffin artifacts. One intact coffin outline was noted and was not disturbed. The scene was determined to be historical and, therefore, not forensically significant. The skeletal material exposed on the surface was collected and the remaining, unexposed remains were left at the site.

SKELETAL FINDINGS:

The remains consist of skeletal elements from multiple individuals representing both males and females of various ages (see Appendix). The minimum number of individuals collected from the surface of the site is sixteen (13 right adult femora and 3 subadult innominates at different stages of development) (Figures 4 and 5). The remains are completely skeletonized and show evidence of cortical erosion and soil staining indicative of an extended postmortem interval within a burial environment.

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Figure 3. Coffin wood fragments, nails, glass, and ceramics associated with the remains.

Figure 4. Thirteen right adult femora providing the adult MNI.

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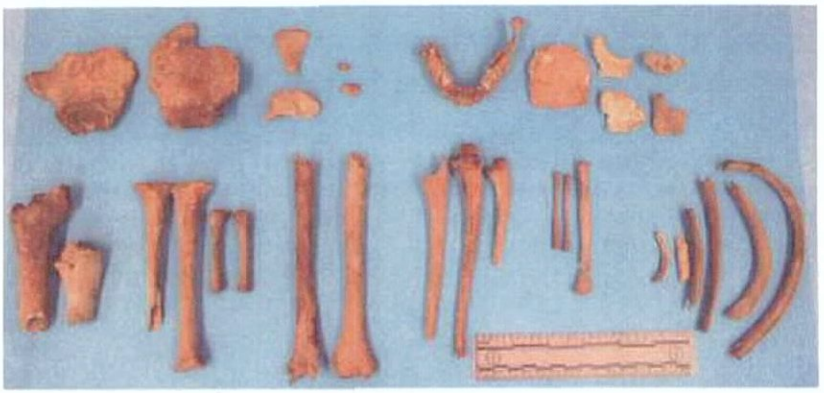

Figure 5. Subadult remains within the skeletal assemblage.

SUMMARY:

Skeletal elements from a minimum of sixteen individuals were recovered from a construction site on the corner of Varrick Street and Spring Street in Manhattan. Only the disturbed, surface remains were removed, while other buried remains or features were left in place for proper archaeological excavation. The overall taphonomy of the skeletal elements, the proximity of the church foundation, and the association of coffin wood, coffin hardware, and ceramics, are indicators of an historic cemetery. The site and remains are not forensically significant and the Landmarks Preservation Commission was notified. The remains collected from the surface will be held at the Manhattan medical examiner's office until directed otherwise or contacted by the company designated to excavate the site.

Date 14 February 2007

COPY

Christian Crowder, Ph.D.
Forensic Anthropologist

COPY

Megan Ingvoldstad, B.A.
Anthropologist

COPY

Jeannette Fridie, B.A
Anthropologist

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COPY

APPENDIX

MNI Assessment

Subadult Skeletal Elements	FRAG #	MNI
Cranium	6	1
Left Humerus	1	1
Right Humerus	1	
Ribs	6	1
Left Radius	2	2
Right Radius	1	
Left Ulna	2	2
Right Ulna	1	
Left Tibia	2	2
Right Tibia	2	
Left Femur	1	1
Right Femur	1	
Left Innominate	3	3
Right Innominate	3	
Total Subadult MNI =		**3**

Adult Skeletal Elements	FRAG #	MNI
Left Scapula	2	2
Right Scapula	4	
Sacrum	5	1
Left Innominate	1	2
Right Innominate	6	
Cervical Vertebrae	2	3
Thoracic Vertebrae	16	
Lumbar Vertebrae	12	
Vertebrae Fragments	8	
Left Fibula	10	7
Right Fibula	9	
Left Femur	11	13
Right Femur	21	
Left Tibia	9	9
Right Tibia	14	
Left Patella	2	2
Right Patella	1	
Left Calcaneus	4	4
Right Calcaneus	2	
Left Talus	6	6
Right Talus	3	
Left Clavicle	2	2
Right Clavicle	2	

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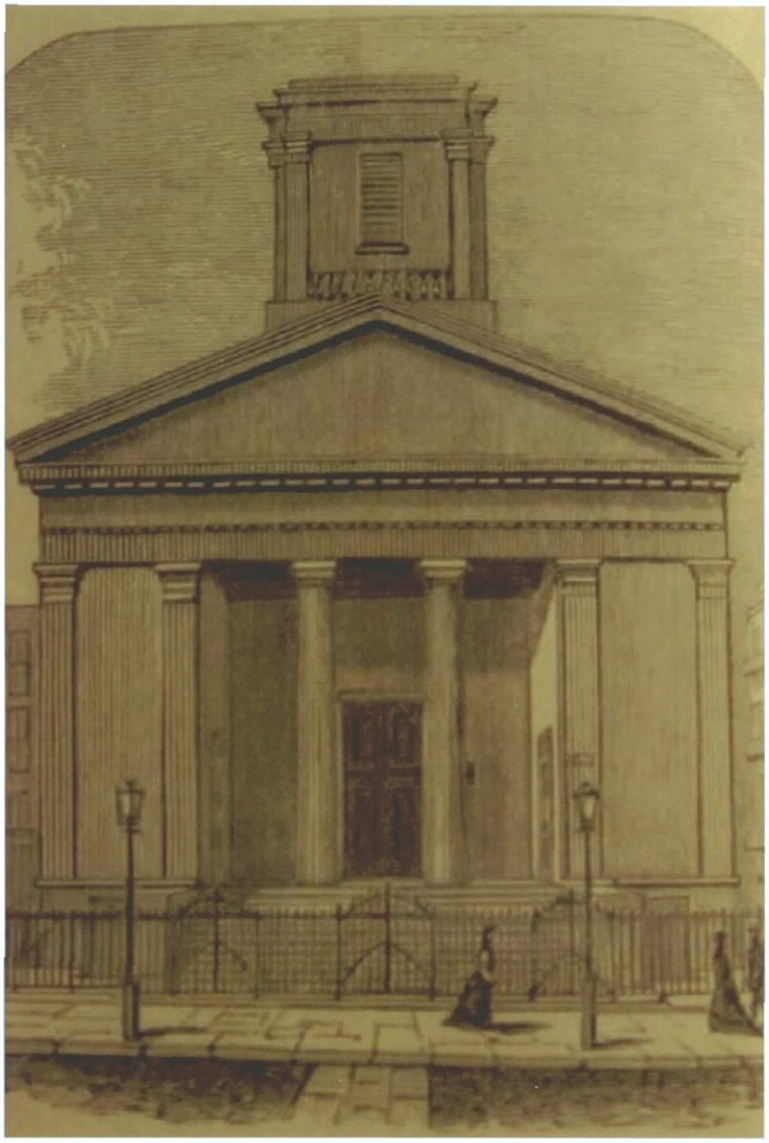
Adult Skeletal Elements cont.	FRAG #	MNI
Left Ribs	20	2
Right Ribs	19	
Rib Fragments	7	
Left Radius	6	5
Right Radius	3	
Left Ulna	3	3
Right Ulna	3	
Left Humerus	4	5
Right Humerus	5	
Sternum	1	1
Hand Bones	18	2
Foot Bones	13	2
Cranial Fragments	50	9
Teeth	4	1
Total Adult MNI =		**13**
Total MNI =		**16**

Appendix B
Spring Street Presbyterian Church Historical Context (AKRF, Inc.)

AKRF

Topic Intensive Documentary Study



Spring Street Presbyterian Church

244-246 Spring Street

New York, New York

January 26, 2007

Topic Intensive Documentary Study
Spring Street Presbyterian Church
244-246 Spring Street
New York, New York

January 26, 2007

Prepared for:
Bayrock/Sapir Organization, LLC
Trump Tower
725 Fifth Avenue, 24th Floor
New York, New York 10022

Principal Investigator:
Diane Dallal, R.P.A.

Report prepared by:
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Cover image from *Old Spring Street Presbyterian Church, New York City: the Sixty-Fifth Anniversary*, by Rev. Alfred H. Moment (1877).

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Chapter I: Introduction

A. PROJECT HISTORY AND OVERVIEW

AKRF, Inc. has been contracted by Bayrock/Sapir Organization, LLC to perform documentary research for the site of a planned condominium hotel complex located at 244 to 246 Spring Street, New York, NY **(Figure 1)**. The site encompasses New York City Tax Block 491, Lots 34 and 36 in their entirety. The project area is bounded by Spring Street on the north, Varick Street on the west, Dominick Street on the South, and a standing building on the east **(Figure 2)**. The site was the former location of the Spring Street Presbyterian Church, which was located at 246 Spring Street between ca. 1810 and1966.

Human remains were discovered at this site by construction crews (Bovis Land Lease-LMB) on December 12, 2006. Construction staff subsequently ceased further excavation and notified both the New York Police Department (NYPD) and the Office of the Chief Medical Examiner (OCME) of the finds. Christian Crowder, PhD., a Forensic Anthropologist with the Office of the Chief Medical Examiner visited the site, inspected the exposed remains, and determined that they were historical in nature and not associated with any recent homicide or related criminal activity.

Project officials also notified representatives of the New York City Department of Buildings (DOB) and the New York City Landmarks Preservation Commission (LPC) of the discovery. DOB requested that all construction work be stopped on the site pending development of an archaeological work plan for further investigation by a qualified archaeologist. This work plan was prepared by AKRF, Inc. and URS Corporation and was accepted by DOB and LPC on December 20, 2006. The accepted plan consisted of three key components 1) a protocol for conducting on-site archaeological investigations to further identify, document, and disinter human remains on the site, 2) the documentary research to establish history of the site and provenience of the human remains, and 3) identification and consultation with the appropriate descendant community regarding treatment and disposition of the remains.

To date, archaeological investigations at the site have identified a series of burial vaults in the former alley east of the Spring Street Presbyterian Church. The remains within these vaults are being documented and disinterred to all appropriate archaeological standards and as outlined in the archaeological work plan. These remains consist of both adults and children, with the vast majority of recovered remains existing in a disturbed context due to the initial demolition of the church building in the 1960s. The Presbytery of New York and the First Presbyterian Church have been consulted, representatives have visited the site, and ongoing discussions regarding the treatment of the human remains and reinterment options are proceeding.

This report summarized the results of the second component of the work plan, the documentary research undertaken for the site.

B. RESEARCH GOALS AND METHODOLOGY

The study documents the history of the Spring Street Presbyterian Church in an attempt to determine the historic use of the property in order to identify the physical and temporal boundaries of any burial ground which may have been located on the site. Another goal of this research was to locate any records of interments and/or reinterments in order to further ascertain and document the provenience of the human remains. Finally, the research attempted to locate any and all of the Spring Street Presbyterian Church's descendant group(s) (e.g. Presbytery of New York) to determine the appropriate treatment and disposition of human remains (e.g. re-interment in an alternate location), including those at the Medical Examiner's Office.

As part of the background research, published and unpublished resources were consulted at various information repositories, such as the Humanities and Social Sciences Branch of the New York Public Library (including the local history and map divisions), the Manhattan Office of the Register of the City of New York, the Manhattan Department of Buildings, the Manhattan Topographical Bureau, the New York City Municipal Archives, the Presbyterian Historical Society in Philadelphia, Pennsylvania (which holds the church records for the Spring Street Presbyterian Church), the New York Genealogical and Biographical Society, and the New York Historical Society. In addition, interviews with the Pastor and Archivist of the First Presbyterian Church, John Walton and David Pultz, respectively, were conducted to ascertain if old Spring St. Church records could be located in the church's archives and to gather any other additional information the First Presbyterian Church may have on the site and its history.

The background research included an analysis of primary sources including historic maps, real estate conveyances, census records, historic street directories, real estate tax assessments, land and tax photographs, and newspaper articles, as well as secondary sources such as local civic and church histories.

*

Chapter II: Research Results

A. HISTORY OF SPRING STREET CHURCH

The Spring Street Presbyterian Church was constructed on land that was originally part of the Trinity Church Farm. Stokes' map of original Dutch Grants (1927) further indicates that the portion of land on which the church was situated was granted to John Seals in 1638 and to Tunis Nyssen in 1647 (Stokes 1927). This area remained largely rural, and was characterized by "meadows [that] stretched down to the river, flocks and herds [that] grazed in the open fields, and the fragrance of new-mown hay [which] scented the air" (Halsey 1886: 8).

The Mangin-Goerck Plan of New York (not pictured) shows that in 1803, only Spring Street, then known as Brannon Street, had been cut through the area. The site of the future Spring Street Church is depicted as hilly and wooded. Only two structures are shown in the immediate vicinity, one to the west near what would later become the southwest corner of Spring and Hudson Streets, and another to the north near what would become the southeast corner of Varick and Charlton Streets. The latter was Richmond Hill, the home of Aaron Burr, Vice President of the United States under Thomas Jefferson who later became infamous for the duel which resulted in the death of Alexander Hamilton.

There is a great deal of conflicting information regarding the church's beginnings. A history of the church written in 1877 by former Pastor Alfred H. Moment indicates that the church was begun by John Morris and John Mills in 1809, but this is inconsistent with information recorded in historic conveyances. A deed recorded in 1807, states that Samuel Osgood, Henry Rutgers, J.R.B. Rutgers, and John Mills, then members of the Wall Street Presbyterian Church (Halsey 1886), purchased the church property from the Trinity Corporation for $4,835.90 (*New York times* 6/22/1896). The purchase included four lots, numbered 30 through 33, which encompassed an area measuring 100 feet by 100 feet (Halsey 1886, this area is shown as Lot 37 or 1547 on **Figure 5**).

Prior to the purchase, regular prayer meetings had been held in the neighborhood, although the exact location is unclear. An 1874 article published by the *New York Times* asserts that these meetings were first held in a private residence — possibly near the corner of Spring and Thompson Streets (Works Progress Administration [WPA] 1940) — and then in another location that "was not thought favorable" (*New York Times* 8/24/1874: 2). The meetings were finally relocated to a frame building which was either the home or grocery store (the two may have been one in the same) of a woman named Jane, located at 244 Spring Street (WPA 1940, Halsey 1886, Moment 1877). "Jane" grew fruit on the property and sold it in her store. Some sources claim that she initially refused to sell her land to the budding congregation, although she later agreed (*New York Times* 8/24/1874).

As the original deed lists the Trinity Church Corporation as the seller, it is unclear what role "Jane" had in the transfer of the property. Not much else is known about her, although she may

be one of two women named Jane who are listed in the 1810 census as having lived in the 8th Ward at this time;[1] a "widow" named Jane Smith or an African-American woman named Jane Stephens. Upon Jane's death she was "buried near by," although the location of her grave is unknown (Moment 1877: 20).

The cornerstone of the first church, was laid on July 5, 1810 (Stokes 1927), and construction costs totaled $10,557.35, causing the church to be in debt from its inception (Halsey 1886). The building — which was large enough to hold 126 pews as well as 50 more in the upstairs gallery — was a shingled wood frame structure "crowned with a graceful cupola" (Ibid: 9). It was constructed in large part from materials recycled from the recently dissolved Wall Street Presbyterian Church, including timbers, pews, and the pulpit (WPA 1940). On April 23, 1811 the church was incorporated (WPA 1940) and on May 5 it was formally organized by the Presbytery (Moment 1877).

The church first appears on the Bridges Plan of 1807-1811 **(Figure 3)**, on which it is labeled "Presbyterian Church in Spring Street." It measured approximately 60 feet by 30 feet and was located 40 feet south of the front[2] of the church building that was later constructed on the site (see below for discussion of the second church building).

Tax records **(Appendix C)** indicate that prior to 1818, a lecture or session room was constructed on the eastern side of the church and the entire property was surrounded by "an old fashioned picket fence" (Halsey 1886: 9). The 1828 Hooker map **(Figure 4)** appears to depict this building as well as another building to the west of the church. The western building may have been a fire engine house referenced in both the Minutes of the Common Council (MCC) (6: 317) and the church's Trustees Minutes.

The church did not get a pastor of its own until October 31, 1811, when Reverend Dr. Matthew La Rue Perrine was installed as the leader of the congregation (Moment 1877). He remained Pastor until 1820, when he was replaced by Reverend Dr. Samuel Cox (Ibid). Cox was an ardent abolitionist and publicly preached in favor of emancipation (Burrows and Wallace 1999).

The church's abolitionist reputation grew throughout the 1820s. The church's Session Minutes note that on September 27, 1820, "Phebe, a free woman of colour was admitted to full communion as a member of this church." Thirteen women named Phebe are listed in the 1820 census,[1] but only one, Phebe Turner, was an African-American. Her household was located in Manhattan's 7th Ward and contained one "free colored male" under 14 and two "free colored females" between the ages of 14 and 26.

One source states that the church established a multi-racial Sunday school in 1822 (Halsey 1886) while others indicate that the Sunday school was started in 1828 (Moment 1877). In addition,

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[1] The 1810 and 1820 censuses only records the names of individuals identified as "heads of family," and therefore did not record everyone by name.

[2] There are several sources (Moment 1877, Halsey 1886) which claim the first building was located 40 feet south of the *rear* wall of the later church building. If this were true, the wood frame church would have extended into Dominick Street, which was constructed in 1827, after the construction of the first Spring Street Church building but before the construction of the second. In addition, historic maps indicate that the church was located close to Spring Street, which topographic maps show has not changed significantly since the early 19th century.

eleven African-American congregants were listed "in the first published manual"[3] of the church and "there were always...a number of [African-Americans] among its members" (Ibid: 26).

However, the Presbyterian Church as a religious institution was not entirely supportive of the integration of African-Americans into Presbyterian religious life or into white society as a whole. Segregated seating, racist ministers, and the opinion that uneducated emancipated slaves would "be in many respects more dangerous to the community," resulted in many African-Americans avoiding the Presbyterian faith.

Cox was an influential preacher and the Spring St. congregation grew under his leadership. In 1822, he proposed that a new and larger church be constructed further downtown. Many of the congregants who lived near the present church did not wish to travel the extra distance (Halsey 1886). However, in 1825, Reverend Cox and many members of the congregation seceded from the Spring St. Church and went on to establish the Laight Street Church at the corner of Laight and Varick Streets,[4] just six blocks to the south (Ibid).

Officially, the Spring Street Church congregation (as recognized by the Presbytery) was transferred to the new location and re-named "Laight Street Presbyterian Church." The old church and any congregants who chose to remain there were no longer formally part of the Presbytery of New York. It is not clear if the Presbytery of New York ever officially recognized the new congregation, but it became part of the Third Presbytery[5] in 1831 (WPA 1940). Forty-three worshippers who chose to remain at the old Spring Street Church re-organized themselves as the "New Spring Street Presbyterian Church" and set about finding a new pastor (Moment 1877, WPA 1940). The church building was purchased from the presbytery and re-organized as a "free church for the people" (Halsey 1886: 12) by Brick Presbyterian Church member George P. Shipman, whom census records show was a resident of the 9th ward in 1830. No such deed was located, although a deed was recorded in 1825 which indicates that the property and the church edifice were transferred from the Presbyterian Church on Spring Street to Abijah Fisher. In the 1830 census, Abijah Fisher[6] was recorded as living on Greene Street in the 8th Ward, not far from the church.

The congregation was led by temporary pastors for more than a year, until Reverend Henry G. Ludlow was officially installed as pastor on Christmas Day, 1828 (Halsey 1886). In November 1828, Ludlow wrote to Caroline Ludlow Frey (presumably his sister) that the church's congregation numbered more than 330 individuals, "most of whom belong to that class of person who cannot afford to purchase or hire a pew in our city churches" (Frey Family Papers, New York Historical Society [FFP] 1828). Ludlow had great success and the church flourished under his leadership.

As Spring Street Church entered the 1830s, it continued to thrive and it also continued to support the abolition of slavery. Although slavery had been outlawed in New York State in 1827, it was

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[3] The date of this manual is unknown.

[4]

[5] Ideological differences within the Presbyterian Church during the early 19th century led to the secession of the Third Presbytery from the Presbytery of New York in 1831. The two were reunited in 1870 (WPA 1940).

[6] The 1830 census indicates that Fisher's household included six free white males and 4 free white females at the time.

still a heated national issue. The Laight Street Church, which had become a separate institution, was also equally, if not more vocal about its views on slavery. Although both churches and many of their members shared this view, the entire Presbytery did not. Presbyterian schools refused admission to the children of African-American Presbyterian ministers and even churches that promoted abolitionism, such as the Spring Street Church, maintained segregated seating facilities (Burrows and Wallace 1999). In 1831, the Trustees of Spring Street Church voted to provide gallery seats for African-Americans. It is therefore unclear where African-Americans, such as Phebe, who was recorded as having joined the congregation in 1820, had previously been seated or if the 1831 record was merely an official resolution of a previously-established practice.

Tensions peaked in 1834, fueled by a speech given by Reverend Cox at the Laight Street Church. Arthur Tappan had allowed Samuel Cornish — an African-American Presbyterian Reverend who had once presided over the First Colored Presbyterian Church and was a founding editor of *Freedom's Journal* — to share his pew during services at the Laight Street Church. While many church members were infuriated by this, Reverend Cox supported Tappan's attempt to promote church integration by declaring that Jesus Christ was "probably of a dark Syrian hue" (Burrows and Wallace 1999: 556).

Word of Cox's statement spread throughout the city and an angry mob attacked the Laight Street Church as well as the private home of Reverend Cox. Reverend Ludlow was also a target of the anti-abolitionist mob, in part due to rumors that he had conducted interracial marriage ceremonies (Ibid). Both churches, as well as the private homes of both Reverends were attacked by anti-abolitionist mobs. Fortunately, Ludlow, whose home was located at 148 Thompson Street (New York Historical Society n.d.), was not home at the time of the riots (*Journal of Commerce 7/12/1834).*

The Spring Street Church was attacked on July 11, 1834 by a crowd shouting "let's wipe out the Presbyterian barn!" (*New York Times* 5/14/1956 p. 27). The length of Spring Street between Varick and MacDougal "was barricaded with carts, barrels, boxes, ladders, etc...brick-bats, stones, and missiles of various kinds were flying from all quarters...[and]...prominent politicians were haranguing the maddened rabble to go on with their work of destruction and demolish the obnoxious building to the ground" (Moment 1877: 15).

The rioters entered the church through smashed windows and destroyed much of the interior. They then took the remnants of the demolished organ, pews, and galleries and used them to create a barricade outside against the approaching National Guard, who had been called out to control the crowd (Burrows and Wallace 1999). In his diary, former Mayor Philip Hone wrote that the church was "nearly demolished" and that the "residences of Cox and Ludlow [had been] attacked and rifled and the furniture burnt in the street" (Auchincloss 1989: 45). The attacks, however, did not prevent the church from continuing to support the abolition of slavery and civil rights. In 1839, for instance, the trustees' minutes record that meetings of the Spring Street Church Anti-Slavery Society were taking place at the church, although it is not clear when that society was formed.

Dr. Cox had expressed an interest in constructing a new, larger church building as early as 1822 (Halsey 1886). The Trustees' Minutes note that in May, 1830, George P. Shipman had agreed to obtain a loan so that a new church building could be constructed. However, it is unclear if this loan was obtained, as the new church was not constructed for another five years. The Minutes also show that in December, 1830, the church expressed an interest in purchasing the engine house located on adjoining land. It appears that the church purchased the land, as the Minutes

show in 1831 that the engine house was to be rented out. Later in 1831, the Trustees also planned to re-design the church's façade in the same fashion as that of the Nassau Street Church, although it does not appear that this or any other construction projects took place at this time. A mortgage was taken out with the Howard Insurance company in 1831, so money might have been a factor in the postponement of the construction efforts.

By 1835, the church had managed to raise $10,000 to construct a new, larger building made of brick which was completed on June 19th, 1836 (Halsey 1886) at a cost of $22,000 (Spring Street Church 1931). Meanwhile, the congregation temporarily worshipped at West Presbyterian Church on Carmine Street (Moment 1877). In a letter dated April 14, 1836, Reverend Ludlow wrote, "we hope to get into our new church in a month...we have had and still have an interesting time..." (FFP n.d.). This building was constructed with a basement featuring "a lecture room in front and a Sunday-school room in the rear" (Ibid: 16)[7]. However, the construction of the new building caused the church to fall back into debt (Ibid).

Regardless of the debt, the church continued to thrive and had nearly 800 congregants in 1846 (Moment 1877). This number was inflated by the return of many congregants from the Laight Street Church, which had recently closed, although in 1842, many members left the church to form their own congregation to practice "*entire sanctification in this life*" (Halsey 1886: 17). In 1851, the Spring Street Church was redecorated with new paint and upholstery (*New York Times* 9/27/1851).

Throughout the next decade, however, membership declined and by the early 1860s, the church's debt had swollen to more than $18,000 (Moment 1877). In 1857, the church took bids on their property from other interested churches, including the Duane Street Methodist Episcopal (M.E.) Church — depicted on the 1807-11 Bridges Map **(Figure 3)** on Duane Street between Hudson and Greenwich Streets, in the City's 5th Ward — and the Thirteenth Street Presbyterian Church (Halsey 1886). According to historic deeds **(Appendix B)**, a deal was struck with the Thirteenth Street church in 1862 in exchange for $11,000, the same amount that Spring Street Church had received for a mortgage in 1859. It appears that the Thirteenth Street Church held the property hostage and would only transfer it back to the Spring Street Church for an additional sum of $5,000 (Halsey 1886).

The Thirteenth Street Church may have placed the church up for sale. A history of the Spring Street Church reported that an April 21, 1862 newspaper article allegedly advertised that the Duane Street ME Church would move into the Spring Street location (Moment 1877). While such an article could not be located, there are reports from the *New York Times* which document the Duane Street Church's sale in 1860 and relocation to the corner of Hudson and Spring Streets — one block to the west of Spring Street Church **(Figure 10)** — by May 16, 1863. Therefore, if the Duane Street ME Church congregation had been seeking a new house of worship, it is entirely possible that they might have been interested in purchasing the Spring Street Church location. However, there is no evidence that the land was ever transferred to or occupied by the Duane Street M.E. Church, nor to any other church with the exception of the Thirteenth Street Presbyterian Church[8] (Duane Street Church is discussed further below).

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[7] Documents related to a proposed heating system installation in the church during the 1930s and 1940s on file at the Presbyterian Historical Society in Philadelphia, PA also indicate that there existed a 10 by 15 foot store room existed under the portico of the church.

[8] It was suggested in a recent article published in the *New York Sun* (12/13/2006, p. 1) that the Spring Street Church site had also been home to an African Methodist Episcopal (A.M.E.) congregation. An

According to church histories, the Spring Street Church congregation banded together and raised the money to repurchase the church in 1863, and the Thirteenth Street Church returned the deeds for $8,001, without having been paid the extra money (Moment 1877).

During Spring Street Church's financial troubles in the early 1860s, there was not enough money to pay for a pastor to preach to the congregation. However, from those troubles arose "the most fascinating story in...[the]...church's history" (Halsey 1886: 21). "Aunt" Nancy Henry was an elderly, free, African-American woman, who on account of poor health had attended services at Spring Street Church for approximately 20 years, rather than the Greene Street M.E. Church, where she was a member (Ibid). On New Year's Day, 1863, two Spring St. Church congregants asked Aunt Nancy if church members could hold prayer meetings in her basement apartment on Van Dam Street and she agreed (Moment 1877). The 1850 census shows a 66 year-old African-American woman named Nancy Henry in the 8th Ward at that time. The 1860 census also lists a woman named Nancy Henry (no race is given) in the 8th Ward, although it lists her age as 68 years (this may be a discrepancy or typographical error); her profession was also recorded, but it is illegible but may read "nurse." Both women were recorded as living alone and having been born in New Jersey.

Meetings continued to be held there until March or April, when Aunt Nancy went to live in a home for the elderly. Afterwards, meetings were held in the homes of other congregants or in the lecture room of the church and they eventually evolved into the "Young People's Prayer Meeting" which continued for more than a decade afterward. Another elderly African-American woman, "Aunt" Sarah Cornell, was also a key member of the congregation in the second half of the 19th century. It was said that she "prayed more for Spring Street Church than any other person" (Moment 1877: 21).

The meetings held at Aunt Nancy's home allowed the members of the Spring Street Church congregation to remain a cohesive unit and "a new heart was put into the discouraged people" (Halsey 1886: 22). They were able to generate enough funds to hire a new pastor and by 1867, the church was free from debt, albeit temporarily (Ibid). The church would fall in and out of debt throughout the remainder of the 19th century, and in 1877 the building was described as being in a "dilapidated and dirty condition" (Ibid: 27). The church continued to raise money from its congregants and from the Presbytery and managed to overcome its debt on several occasions. It finally became self-sufficient in 1888 (*New York Times* 6/22/1896). The church also did a great deal of missionary work, both home and abroad at the end of the 19th century, including conducting Chinese-language Session Classes (Ibid). By 1901, Sunday school classes were also being held in Chinese as well as Italian (*New York Times* 5/14/1956), reflecting the new composition of the neighborhood and allowing the church to better serve its congregation.

A.M.E. Church is depicted on the Dripps Map of 1852 **(Figure 7),** fronting on Dominick Street just west of Varick Street; one block south of the Spring Street Church. The A.M.E. church does not appear on maps until approximately 1844 **(Figure 6).** It is labeled on several mid-19th century maps as "Primitive Methodist Church." It is clear that the A.M.E. church was constructed after Dominick Street had been cut through the area. Topographical Bureau records indicate that Dominick Street was constructed in 1827, although the land for the street was ceded to the City by the Trinity Church Corporation in 1813 and the Common Council Minutes make reference to the street as early as 1808 (5: 140). Current Sanborn maps show that both Spring and Dominick Streets are currently the same widths as they were in the early 19th Century (65 feet and 60 feet wide, respectively). It is not clear if this church had a direct relationship with the Spring Street Church, other than its close proximity, but it does not appear that the two churches ever shared land.

In the late 19th and early 20th centuries, the church came into control of additional land within the western half of Block 491, where the church was located. The church appears to have purchased the 5-story building immediately east of the church at 244 Spring Street by at least 1905, when it is labeled on a Sanborn map (not pictured) as "Kindergarten and club rooms." It is shown on subsequent maps **(Figure 13)** as "Neighborhood House" or "St. Social Settlement." The building is shown in a photograph dated 1927 **(Photograph 3)** as being the "New York University Community Center."

At some point between 1905 and 1915, a 3-story Dormitory and Gymnasium building was constructed adjoining the church's southeastern edge. It is unclear if this was a church-owned building because it is later referred to as New York University's "Varick House" **(Figure 13)**. To the southwest of the church, at numbers 15 and 17 Dominick Street, stood two small houses, which were purchased from Mrs. C. Kruse on the church's behalf by Charles S. Coffin in 1916 (*New York Times* 11/8/1916). Both houses were torn down before 1922. In addition, Varick Street was widened between 1905 and 1915, eliminating several lots to the west of the church.

Spring Street Church remained active until the mid-20th century. The congregation was dissolved by the Presbytery in 1963 due to low attendance, lack of funds, and the recent death of its Reverend (Montgomery *1963*). The church, now "threadbare and musty," had been designed to hold 530 individuals, but had only 49 regular attendees (Ibid: 16). However, the church, which was scheduled to be torn down by the Salvation Army, who deeds indicate had purchased the property just a few months before, burned down in a fire presumably caused by "derelicts" who may have been living there (*New York Times* 11/7/1966 p. 59).

On November 30, 1966, a few weeks after the fire destroyed the church, the Department of Buildings (DOB) issued a letter to the owners of a diner that was situated at 132 Varick Street, west of the former church building on Lot 34 of Block 491. The letter ordered the diner to be vacated because of the "actual and immediate danger that the [burned remnants of the] adjoining structure at 246 Spring Street...*will* collapse" (Cohen 1966). It was around this time that the site was cleared and converted into a parking lot. It is not clear if the area was graded for the construction of the parking lot.

DOB records show that a 50- to 75-car parking lot with attendants' shelter was proposed for the then-vacant land at 248 Spring Street. The property was at that time owned by the Salvation Army. Subsequent plans dated 2002, also on file at DOB, indicate that the entire western half of Block 491 had been converted into parking facilities with the exception of the southeast corner, where the buildings previously known as "Varick House" or "Dormitory and Gymnasium" still stood. Those buildings appear on historic maps until at least 1951 and DOB records indicate that they still stood in 1969. They may have been demolished in the late 20th century, after the Salvation Army sold the property **(Appendix B)**. By the end of the 20th century, almost the entire project area had been consolidated into one lot (36) and transformed into a parking lot.

Additional subsurface work was conducted at the site in 1969 and again in 1973, at which time Consolidated Edison applied to the DOB for permission to construct sidewalk vaults one story below grade between 246 and 254 Spring Street. It is not clear if excavation for these vaults would have extended past the sidewalk into the parking lot which had replaced the former Spring Street Church.

B. BURIAL VAULTS

It is unclear if the original church building was initially constructed with burial vaults used for the interment of deceased parishioners or if the vaults were added after the church's construction. However, it is clear that burial vaults located on the church property were in use by at least 1820. While the earliest Trustees Minutes (dating from 1811 to 1828) do not appear to mention these vaults, financial accounts (dating from 1818 to 1828) record payments made to the church for use of the vaults **(Appendix A)**. These records sometimes include the names of the purchaser. Attempts were made to cross-reference the names with early 19th century census records **(Appendix D)** and coroner's reports in order to investigate the age and race of those individuals, although the results were inconclusive. In addition, the financial records indicate that many children were interred in the vaults

The Trustees Minutes (dating from 1826 to 1841) note that on October 16, 1827, the trustees passed a motion that required the sexton[9] to "furnish the board [with] an account of all interments during the last year up to the first of November and from that date to render a monthly account with names, dates, of interments [hereafter] and that the treasurer keep an account of the same for the information of the board." If such a list was created, it could not be located.

The vaults were still in use in March, 1830, when the Trustees appointed a committee was appointed to "regulate" them. That committee was made up of William Shay and William Beach, and any other individuals whom they might have hired to assist them. The definition of "regulate" in this context is not known. However, the removal and rearranging of bodies from coffins by a sexton has been observed at other churches (Cox 1996) and it is possible that this occurred at Spring Street Church as well. In April, 1830, the trustees reported that Shay and Beach had paid "Mr. Day" $25 "to do all that was necessary in the business." It is unclear if Mr. Day was a member of the Spring Street Church congregation or if he was simply hired to "regulate" the vaults.

In February of the following year, a committee consisting of W.H. Elting, R.B. Wynant, Wm. Johnson, and Horace Southerwayd, was appointed to determine the costs of constructing additional burial vaults. The 1830 census indicates that at least three of the men lived in the 8th Ward, Elting and Southerwayd on Charlton Street and Wynant on Spring Street. There were too many William Johnsons listed in the census (and within the 8th Ward itself) to positively identify the individual noted above. By March the committee had determined that at least two additional vaults should be constructed on the church property.

The trustees ultimately hired R.B. Wynant to build the additional vaults "at the lowest terms offered and as large as the ground will admit without detriment to the foundation of the church and the building [illegible] one other vault." An entry in the trustees minutes made on May 18, 1831 noted that the vaults had been completed. On May 25, the trustees established a price list for interment in the vault, which was adjusted in June **(Table II-1)**.

Around this time, the city's increasing regulations regarding human burials in Manhattan were becoming more stringent. Burials had been banned south of Canal Street in 1823, with the exception of private vaults (MCC 12: 694). It is unclear when burial vaults themselves were also

[9] Church histories show that the first sexton was a man named John Parsells, who was also a church Trustee.

outlawed; however, the Minutes of the Common Council (17: 679) make reference to the Duane Street M.E. Church having been fined in 1829 because the church's sexton, William M. Carter,[10] interred his daughter, Mrs. Hyer, within that church's vaults.

Burials south of 14th Street were banned in 1832 (Burrows and Wallace 1999) and south of 86th Street in 1851 (Inskeep 2000), although it is unclear what effect these laws had on burial vaults. In addition, the use or construction of burial vaults (as well as vaults of any kind) had been forbidden below public streets since 1809 (MCC 5: 611). The city also prohibited the use of vaults on a case-by-case basis. The A.M.E. Zion Church, formerly located on Church Street between Duane and Worth Streets, allegedly had vaults so full that they generated a foul odor that affected the whole neighborhood and the city closed it down (Inskeep 2000).

The trustees knew of the changing nature of the laws regulating human interment in Manhattan and stipulated in their minutes on June 15, 1831 that there existed a possibility that future burials in the vaults might become impossible. Wynant was to be paid $274.00 for constructing the vaults and the trustees stated that if the money could not be raised through the sale of vault spaces, they would have to pay Wynant with money from another source. The vaults were still in use in March, 1835, however, when the church adjusted the price for interments **(Table II-1)**.

No references to the vaults appear in the trustees' minutes after the last price adjustment and the new church building was in place by 1836. It is not known if the burial vaults were abandoned after the church's reconstruction.

Table II-1
Cost of interment in the burial vaults of Spring Street Church

Age Category	Original Price (May 25, 1831)	Revised Price (June 15, 1831)	Revised Price (March 16, 1835)
Adults	$10.00	[$7.50?]	$10.00
Children under 1	$2.00	$2.00	$2.00
Children ages 1-2	$3.00	$2.50	n/a
Children ages 2-5	$3.50	$3.00	n/a
Children ages 5-10	$5.00	$4.50	n/a
Children ages 10-15	$7.00	$6.00	n/a
Children ages 1-3	n/a	n/a	$3.00
Children ages 3-6	n/a	n/a	$4.00
Children ages 6-12	n/a	n/a	$6.00
Children ages 12-15	n/a	n/a	$8.00
Note: Most of the age categories were changed for the price revisions that took place in 1835			

*

[10] A William M. Carter was recorded in the 1820 census as living in the 5th Ward in a house that contained 15 free white individuals and 4 male slaves. Two other William Carters were also listed in that census, one in the 5th Ward in a house containing 2 free white individuals and another in the 7th Ward in a home with 3 white individuals, all described as "foreigners, not naturalized."

Chapter III: Conclusions and Recommendations

A. CONCLUSIONS

The documentary evidence presented in the previous chapter suggests that the human remains recovered from the construction site at the southeast corner of Spring and Varick Streets were associated with the underground burial vaults of the first Spring Street Presbyterian Church, which stood on the property from 1811 until 1835. In addition to the human remains, dozens of coffin lid plaques have been found at the site, as well as the partial remains of coffins, coffin hardware, shroud pins, and coffin nails and screws.

To date, no evidence has been uncovered to suggest that a congregation of another denomination ever occupied the site. Therefore, it is even more unlikely that another religious institution would have interred their dead in the Spring Street Presbyterian Church vaults. Regarding the racial composition of the congregation, church records indicate that African-Americans were admitted into the congregation as early as 1820. However, church seating was segregated by the 1830s, around the time that the burial vaults were abandoned, suggesting that burial vaults could have been segregated as well. However, there is no mention in church records of a separate burial section for African-Americans nor is there mention of any African-American buried in the vaults. Therefore, the ethnicity of the individuals interred in the burial vaults is unknown at this time.

Interments in the church vaults may have taken place as early as 1811, when the first church was constructed, but it is certain that vault burials were definitely occurring by 1820. As indicated by both church records and city ordinances regulating human burials in Manhattan, it does not appear that interments took place at the site after 1835. The vaults were apparently abandoned amidst a flurry of changing burial legislation during the early 19th century, the construction of a new church between 1835 and 1836, and the economic and social strife that subsequently plagued the church for the next 130 years. The burial vaults might have been forgotten as older members of congregation passed away or the families of the deceased moved to distant neighborhoods, an occurrence which is not unique to New York City's burial grounds.

Church records do not refer to the burial vaults after 1835, at which time the original church was razed. The second church structure — which was completed in 1836 and stood until 1966 — was located north of the previous building. Historic atlases indicate that the second church was situated approximately 15 feet south of the southern curbline of Spring Street and documentary resources indicate that the original 1811 church building (which measured 60 feet by 30 feet) was located 40 feet south of the front wall of the second church. Based on the locations of the burials uncovered by both construction workers and archaeologists at the site, it appears that the burial vaults were situated in a side yard area of the first church. The vaults were located between 2 and 5 feet from the wall foundations of the second church building. The placement of the foundation walls of the second church suggests that the congregation was aware of the vaults at that time and made an effort to avoid them.

Archaeologists have determined that there were four burial vaults extant at the site. These were numbered 1 through 4 by the archaeologists, with Vault 1 being the southernmost vault and Vault 4, the furthest north. Vaults 3 and 4 were constructed of stone and were separated by a brick wall. It has been postulated that these were the oldest of the vaults. The documentary evidence presented above indicates that additional vaults had been constructed by the church in 1831, presumably because the older vaults were filled to capacity. A coffin lid plaque dating to 1822 was recovered from Vault 3, suggesting that the stone vaults pre-date the brick vaults. With the exception of Vault 1, which had been impacted and the remains scattered within the area of the vault location, human remains have only been discovered within the vaults themselves, and not at other locations on the site. The individual vaults are described below:

- **VAULT 1:** The remains discovered during demolition activities on December 12, 2006 appear to have been associated with Vault 1, which was destroyed at that time. Many of the bones discovered in this area were broken and/or fragmentary. The Medical Examiner concluded that the remains recovered from the general area of Vault 1 represented a minimum of 15 individuals.
- **VAULT 2:** The walls and floor of Vault 2 were constructed of brick and could represent the more recent vaults constructed in 1831. At least 3 partial child burials were laid out on the brick floor within this vault, and additional human remains representing both adults and children were also identified. A minimum of 11 individuals were identified in Vault 2, which also contained a large quantity of commingled and disassociated remains.
- **VAULT 3:** Vault 3 is assumed to be one of the earlier vaults and was constructed of stone and had a sand floor. A minimum of 18 individuals were identified in this vault in addition to a large quantity of fragmentary and commingled remains. Among the intact burials were those of a pregnant woman and her unborn child. In addition, a silver coffin lid plaque was recovered by archaeologists from this vault on January 19, 2007. It had the following inscription:

  Oswald Williams Roe

  Died 27th November 1822

  Aged

  10 Months & 5 Days

  Church records indicate that on December 3, 1822 an individual named "P. Roe" paid $5.00 to inter a child in one of the church's burial vaults **(Appendix A)**. Census records indicate that many individuals with the last name "Roe" (or variations Row and Rowe) lived in New York City in the 1820s and 1830s. The 1830 census **(Appendix D)** shows that a woman named Phebe Row lived on Smith Street,[1] located approximately 500 feet northeast of the Spring Street Church. It is possible that she is the same individual mentioned in church records.
- **VAULT 4:** Vault 4 was constructed in a fashion similar to that of Vault 3, with stone walls and a sand floor. It contained the remains of at least 16 individuals and, like the others, also yielded a large quantity of crushed and disassociated human remains.

[1] Smith Street formerly bisected the block bounded by King, Varick, Houston, and MacDougal Streets. It has since become integrated into Sixth Avenue, but is labeled on **Figures 4, 7, and 9**.

Another coffin plaque recovered during the archaeological investigation was inscribed:

Nicholas Ware

Died 7th Sept 1824

Aged 48 Years and 7 Months.

An entry in the Treasurer's Minutes dating to September 10, 1824(Appendix A), indicates that a person with the last name of Wane or Ware might have been interred in the vaults around that time.

Although church records dating to the 1820s **(Appendix A)** provide various family surnames and the age category of the deceased individual (adult vs. child), characteristics such as age, race, and the full names of interred individuals are not provided. Other documents conveying such information undoubtedly existed at one time but these could not be located or are no longer extant despite an intensive search. Given the inconclusiveness of the documentary evidence, coffin lid plaques may provide the best evidence for determining the identities of those interred in the Spring Street Church vaults. Unfortunately, most of these plaques are presently illegible. Once they have been cleaned and conserved, however, the plaques could yield useful information.

B. RECOMMENDATIONS

Based on the documentary research presented above, it is recommended that the human remains recovered from the burial vaults at the Spring Street Church site be analyzed by a Forensic Anthropologist. This analysis will generate a demographic profile of the individuals interred at the site (including age, sex, ancestry, etc.) in order to better understand who they were and how they lived. It is also recommended that conversations with the descendant community (i.e. the Presbytery of New York) continue in order to establish a plan for the final disposition of the human remains and the funerary artifacts.

Funerary artifacts recovered from the site, including coffin lid plaques, coffin wood and nails, shroud pins, etc., should be processed (washed, catalogued, and photographed) and, when appropriate, conserved. These artifacts should then be carefully analyzed in order to gather information about early 19th century burial practices and death rituals, including coffin construction methods and burial techniques.

Once artifacts that could potentially identify deceased individuals (i.e. coffin lid plaques) have been made legible by an artifact conservator, additional documentary research should be conducted based on any new information the plaques might yield. Such research could involve searching census records, city directories, genealogies, and other sources of information which could provide information about the deceased individuals, their families, and the society in which they lived.

Finally, a Final Report documenting the archaeological field and laboratory work should be completed, incorporating the results of the documentary research and the forensic analysis of the human remains. This report will be submitted to Bayrock/Sapir Organization, LLC, the New York City Department of Buildings, the New York City Landmarks Preservation Commission, and the Presbytery of New York for review. ✷

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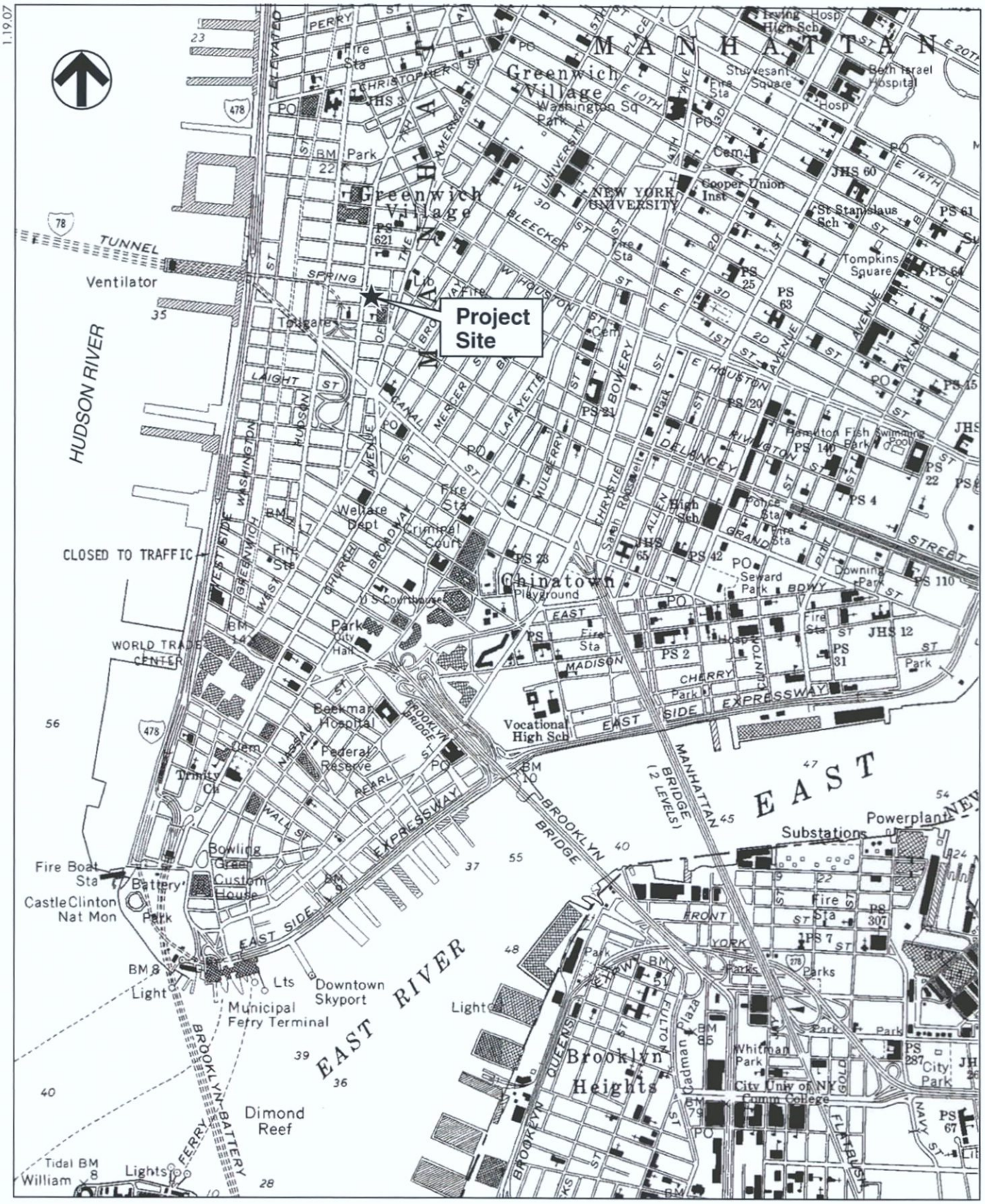


Figure 1

Project Location

USGS Map: Brooklyn and Jersey City Quadrangle

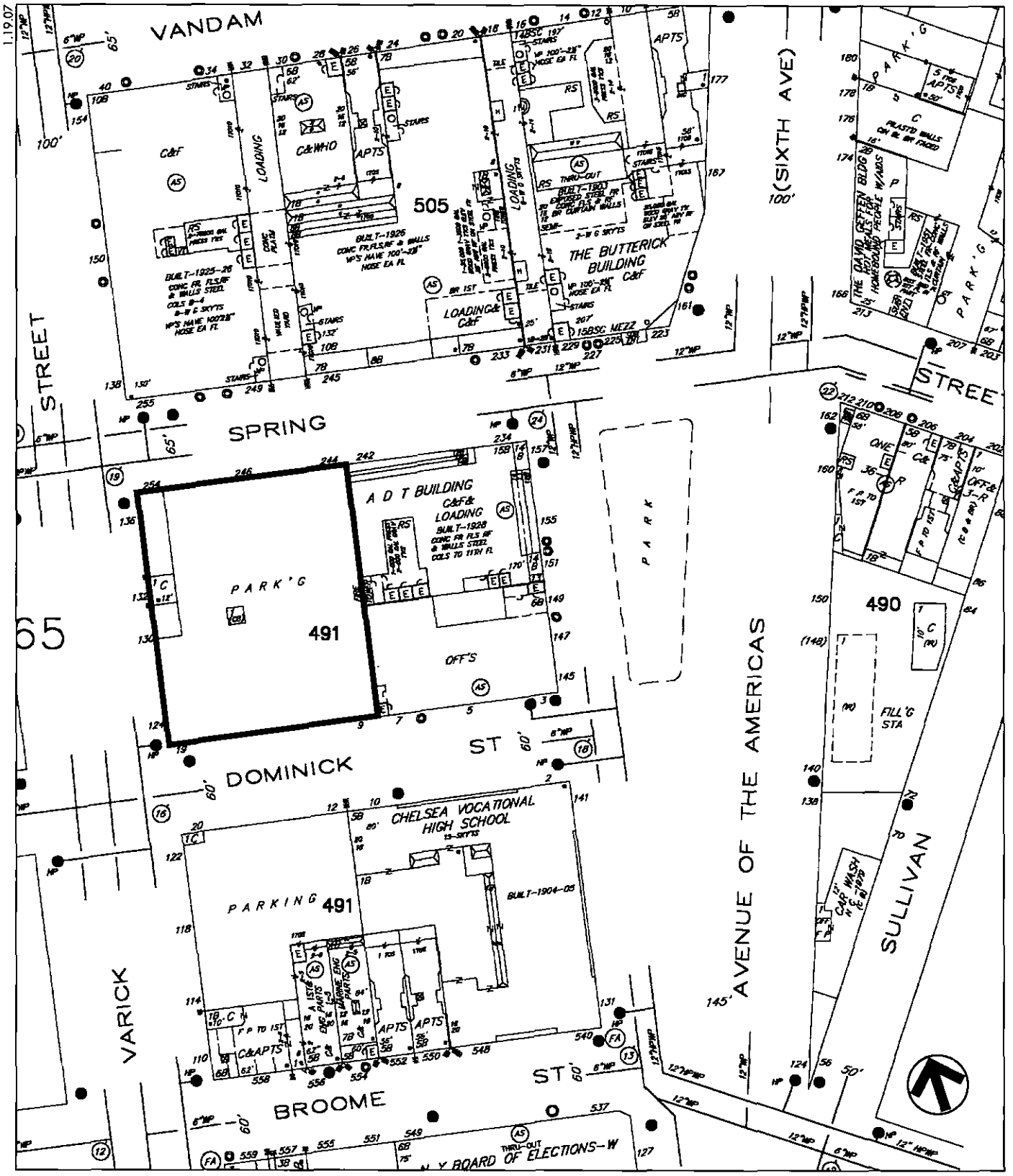


Figure 2
Project Area
2005 Sanborn Insurance Map

1.19.07

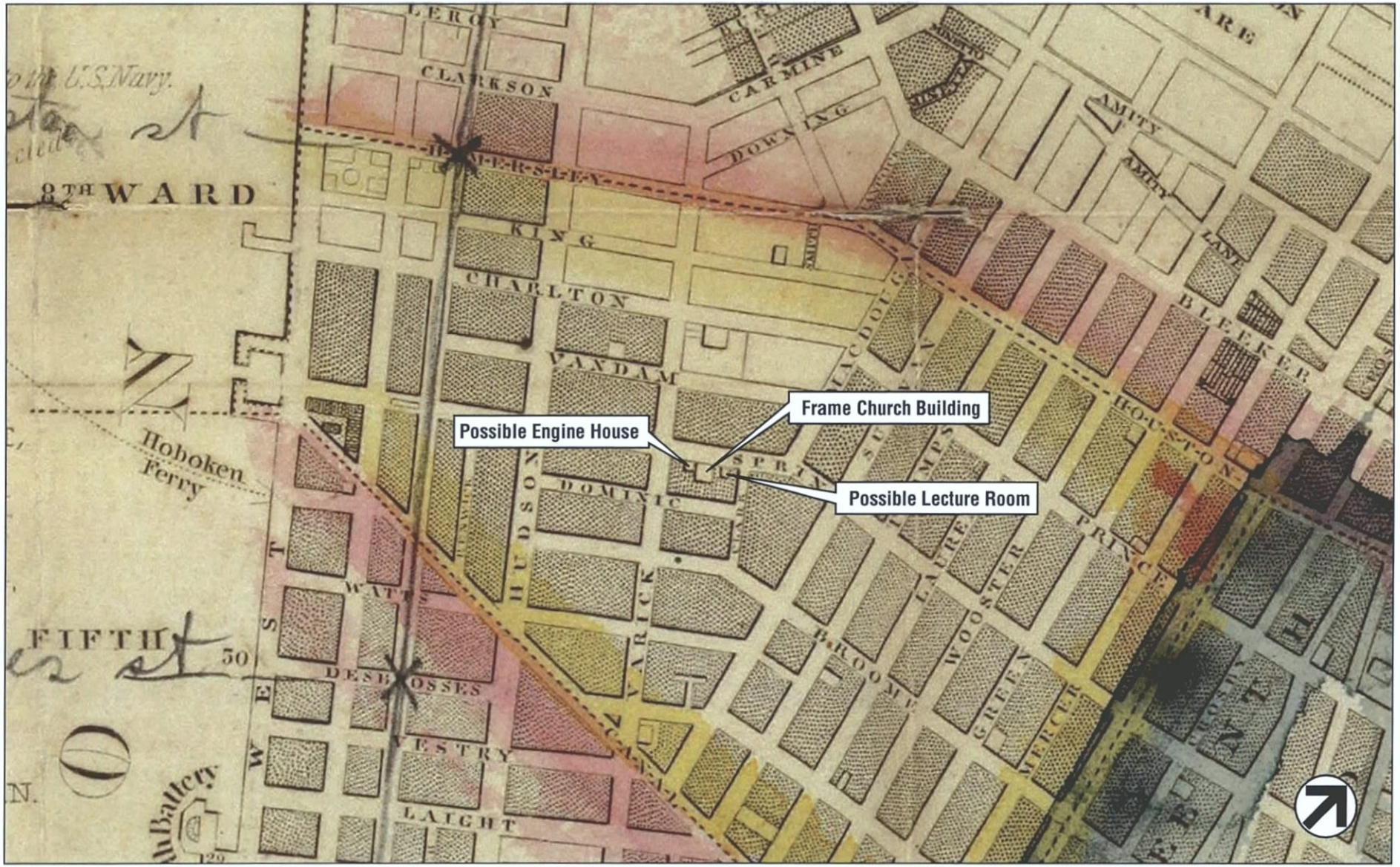
Schematic Not to Scale

Figure 3

"Bridges Survey" or "The Commissioners Plan"

William Bridges, 1807-1811

1.19.07



Schematic Not to Scale

Figure 4

Hooker's New Pocket Plan of the City of New York

William Hooker, 1828

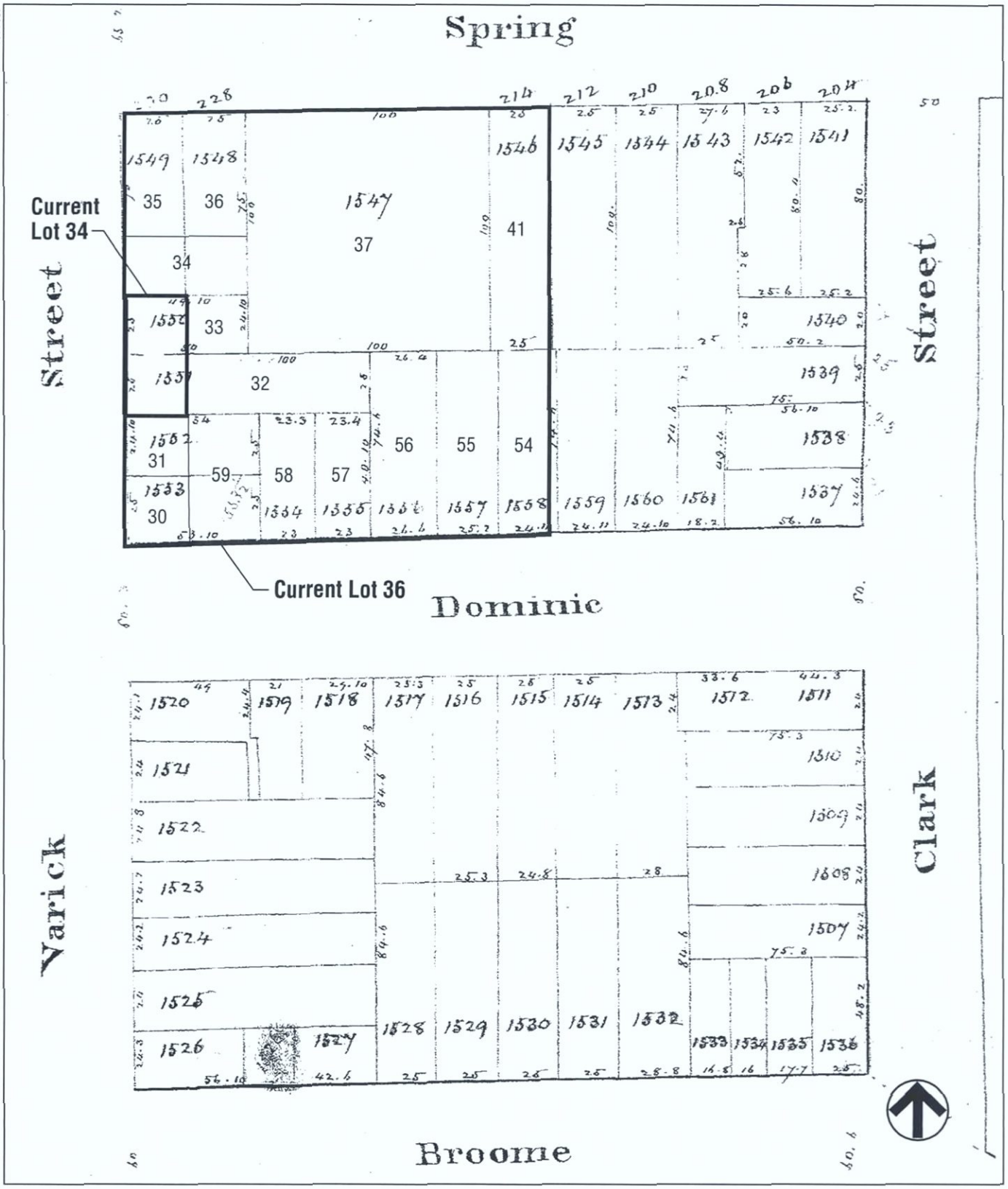


Figure 5
Map of 8th Ward
Gardner Sage, ca.1830's

1.19.07

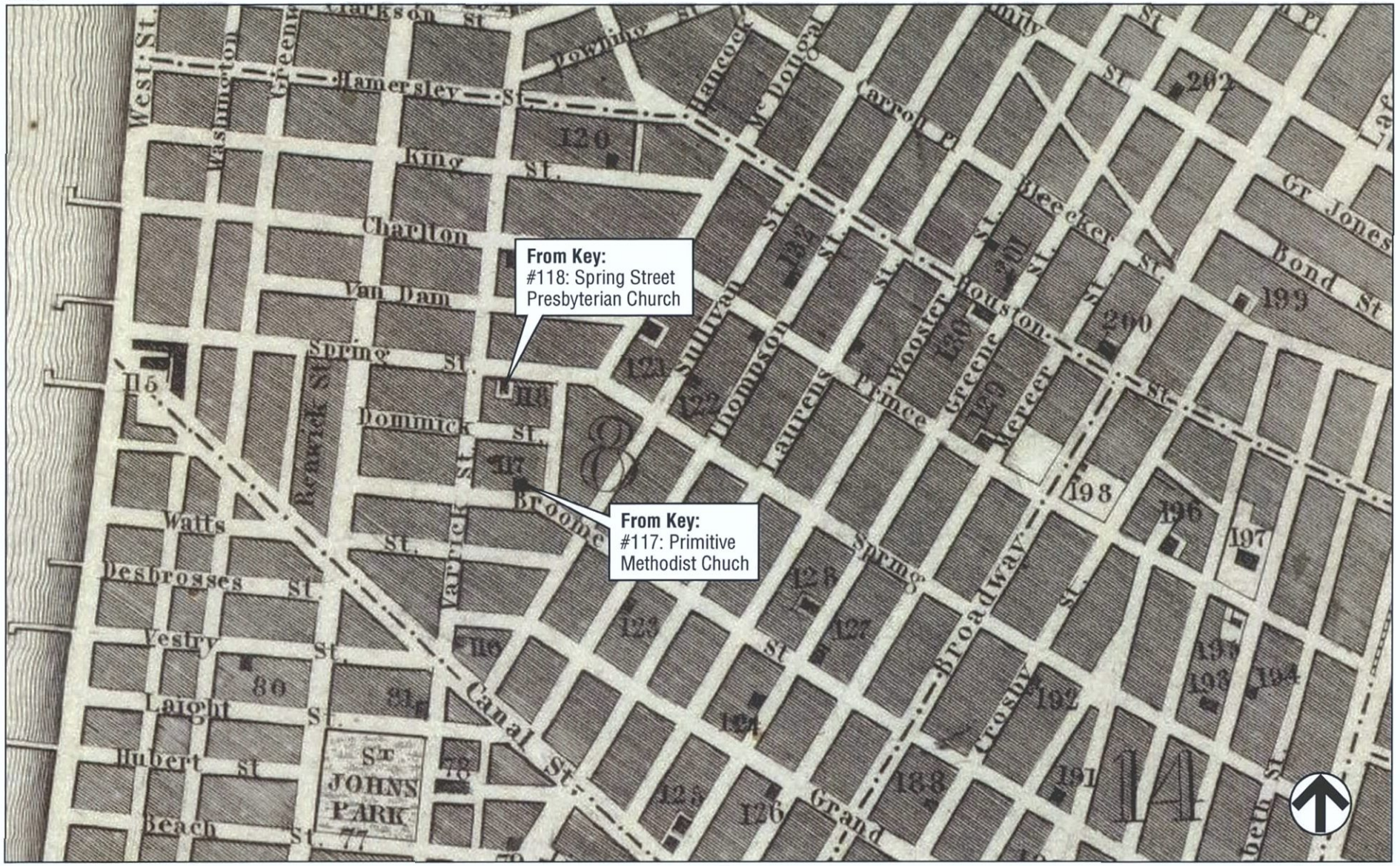
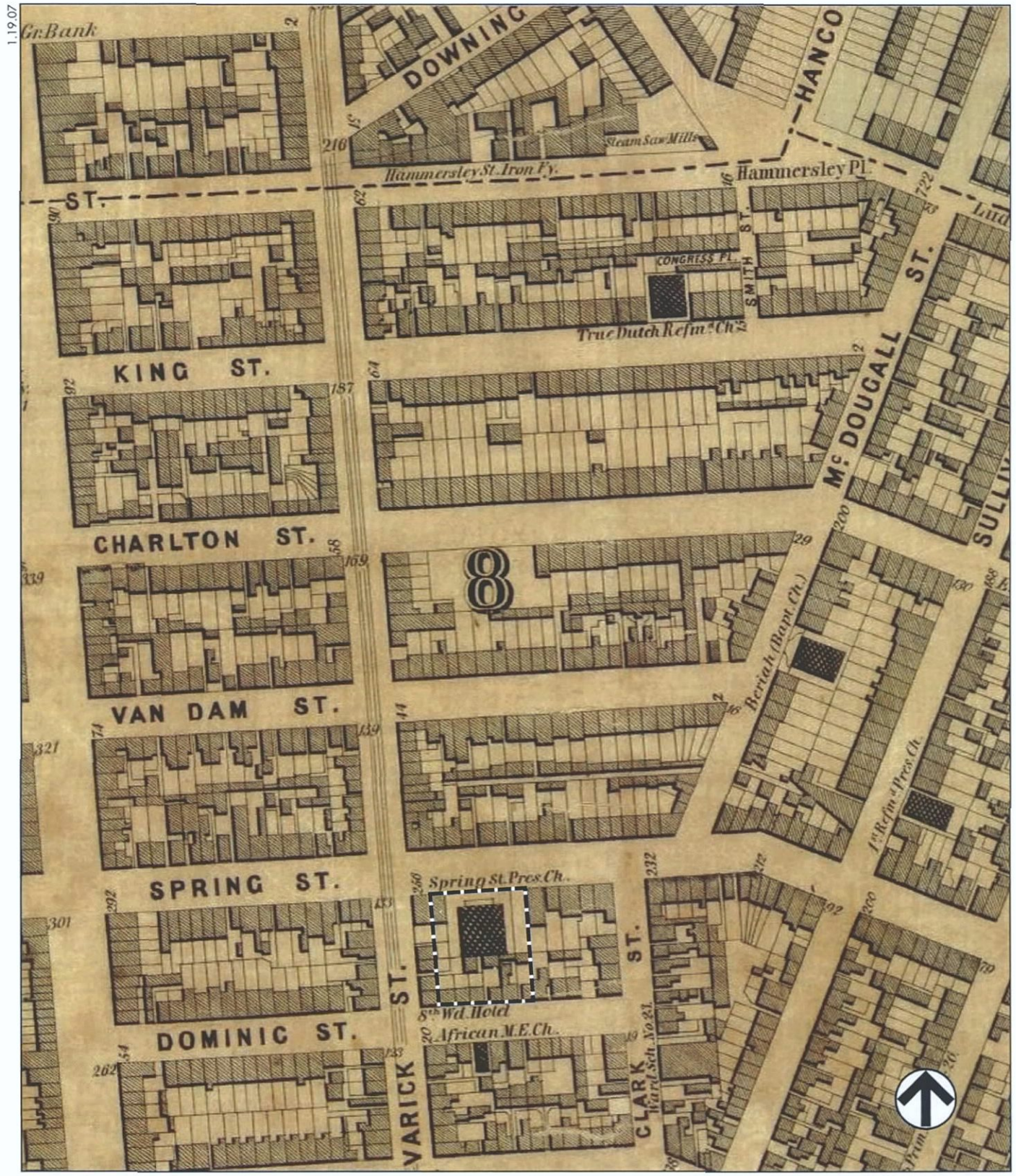


Figure 6

New York, Plan von.

Joseph Meyer, 1844



Project Site

0 100 FEET
SCALE

Figure 7
City of New York Extending Northward to 15th Street
M. Dripps, 1852

1.19.07

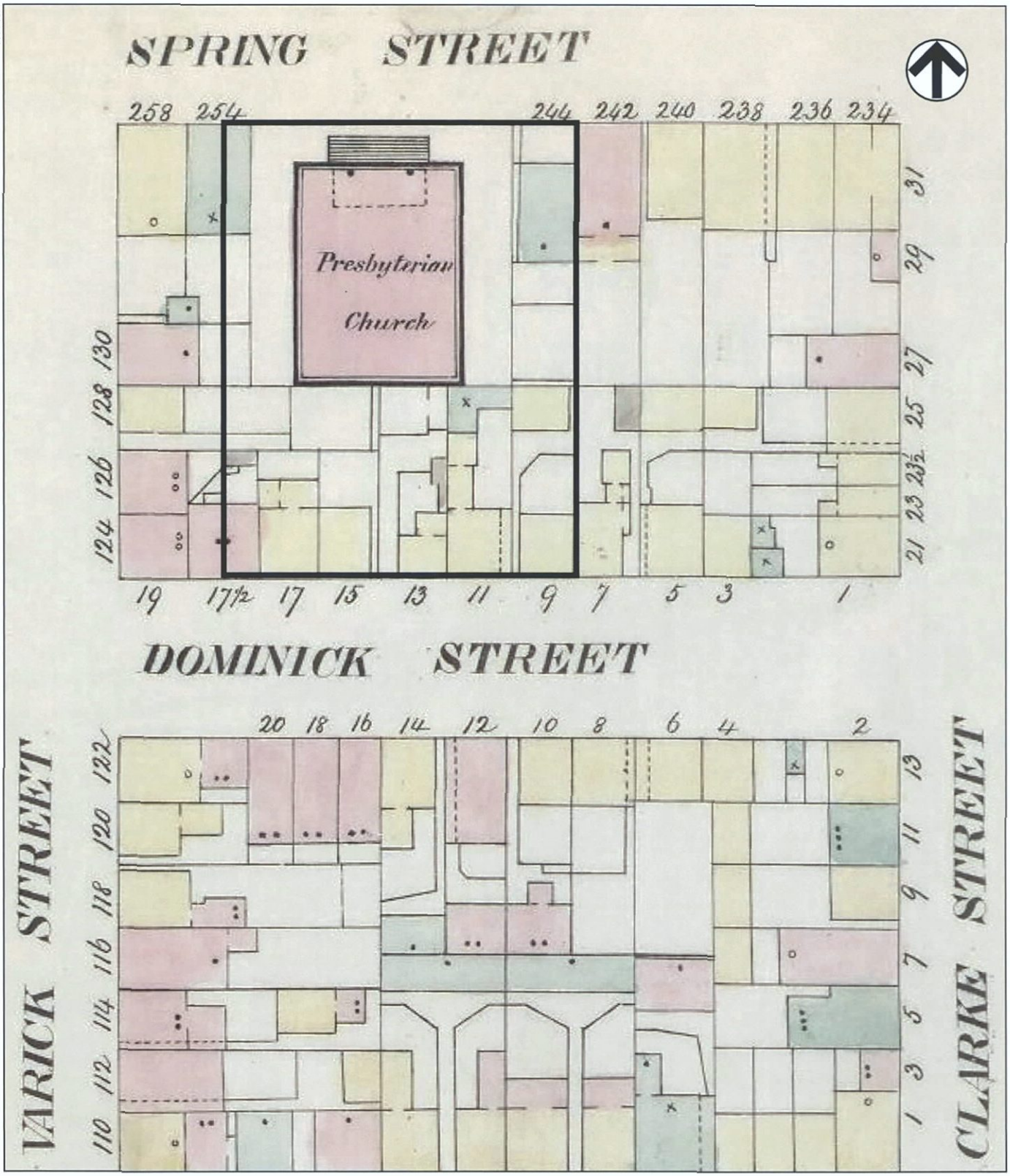
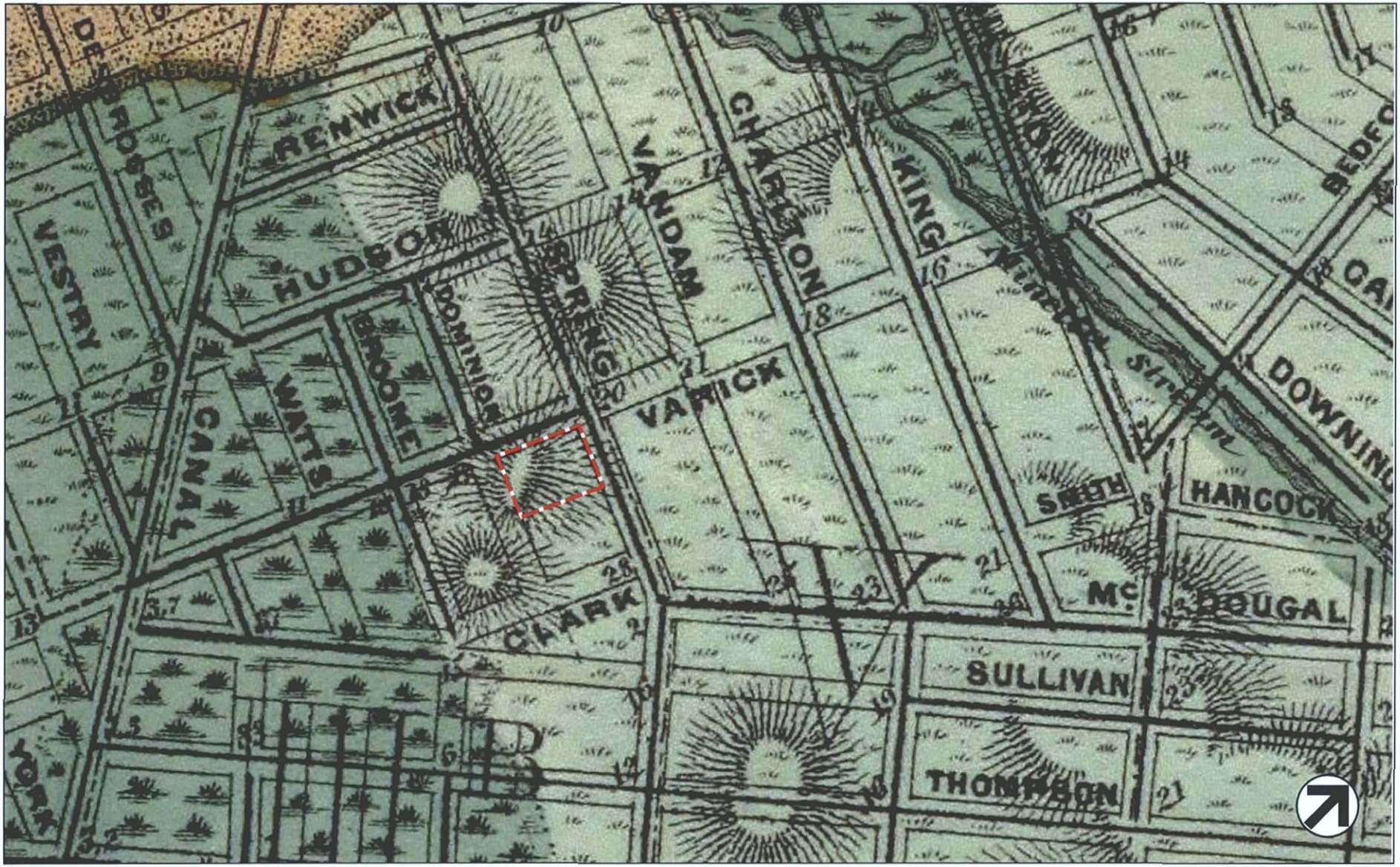


Figure 8

Map of the City of New York

W. Perris, 1857 -1862

1.19.07



Project Site Boundary

Schematic Not to Scale

Figure 9

Sanitary and Topographical Map of the City and Island of New York

E. Viele, 1865

1.19.07

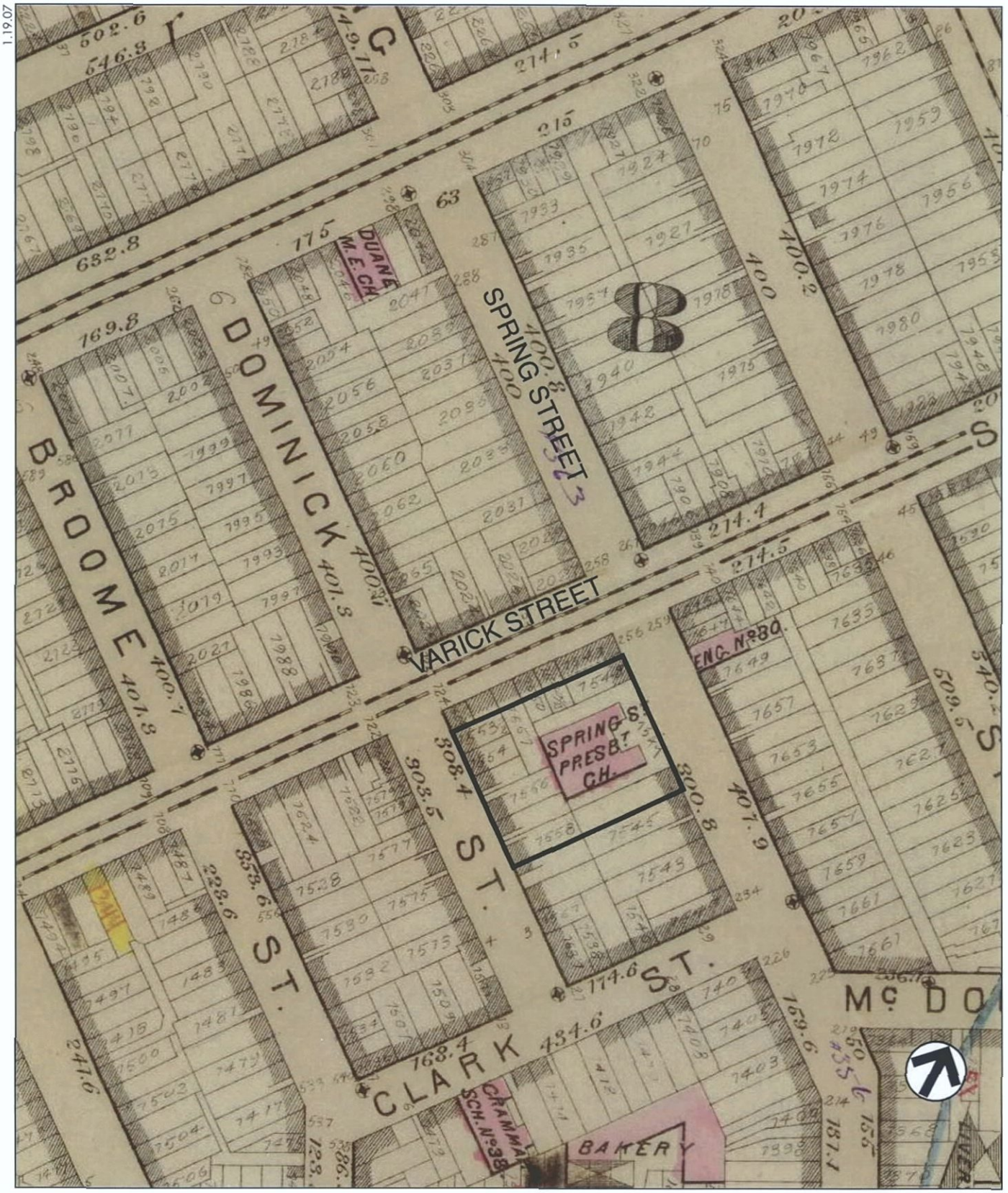


Figure 10

Part of Wards 5 and 8, New York City

G.W. Bromley & Co., 1879

1.19.07

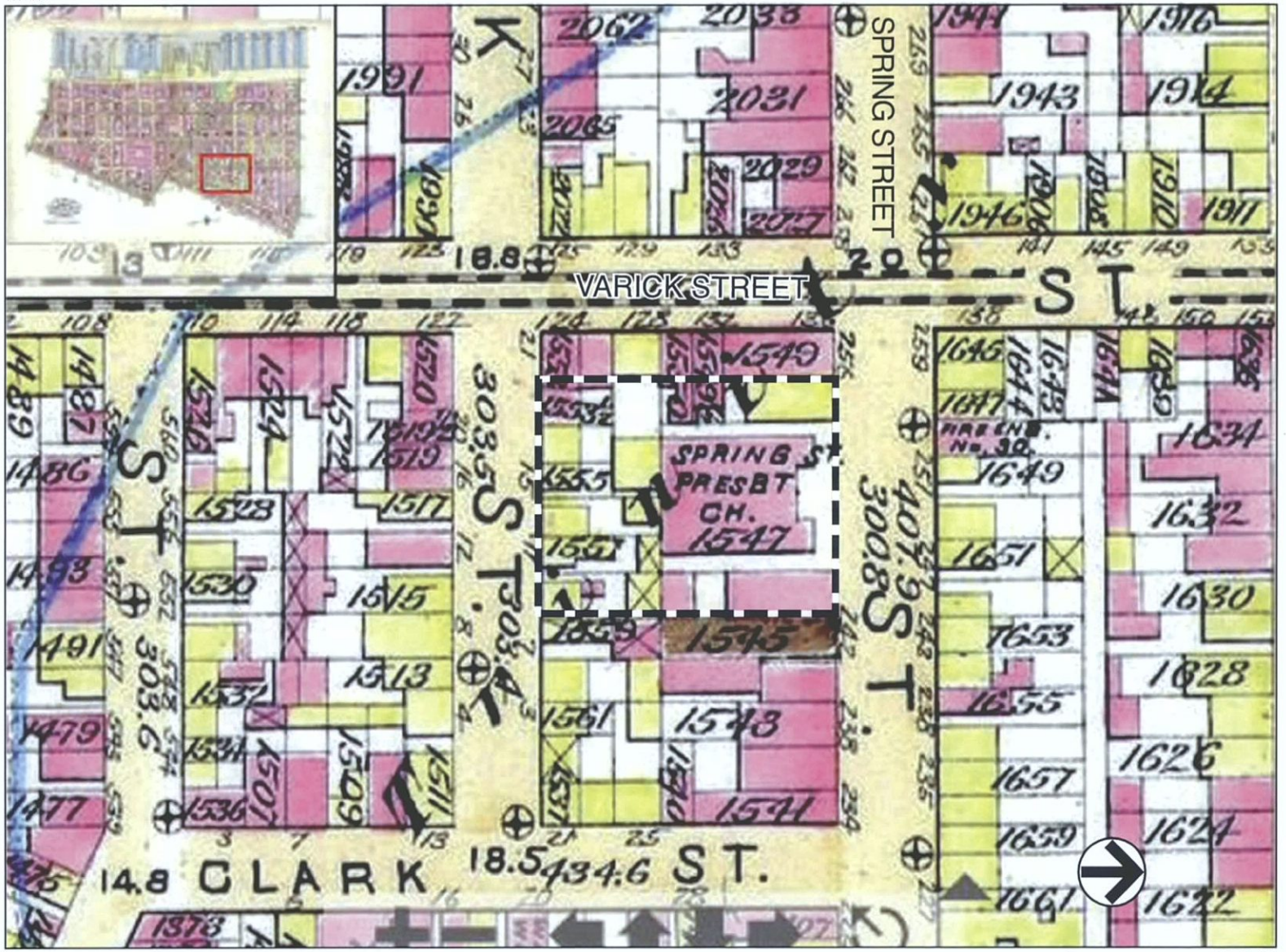
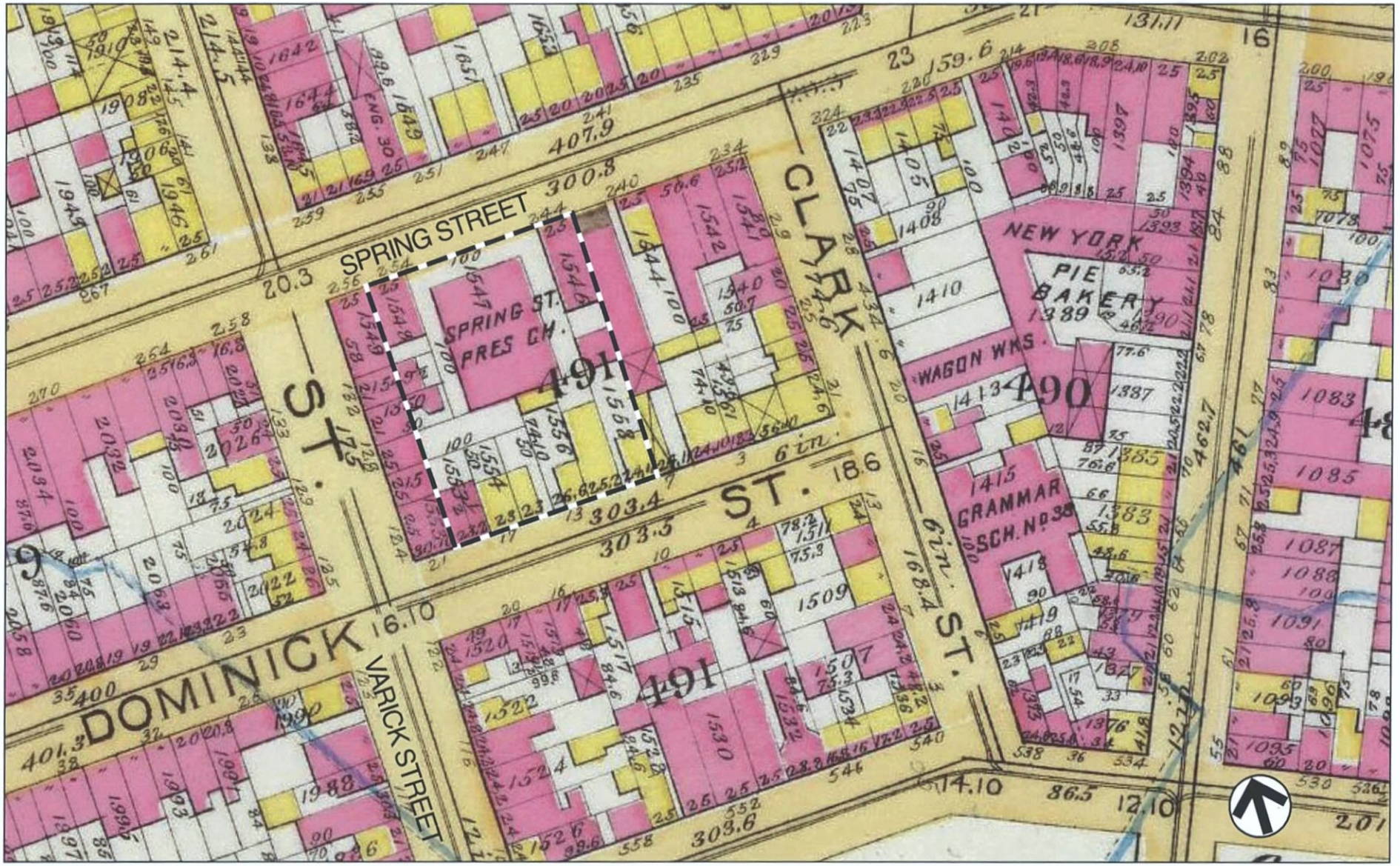


Figure 11

New York City Atlas

E. Robinson, 1885

1.19.07



Project Site Boundary

0 100 FEET
SCALE

Figure 12

Part of Wards 8, 9, and 15, New York City

G.W. Bromley & Co., 1891

1.22.07

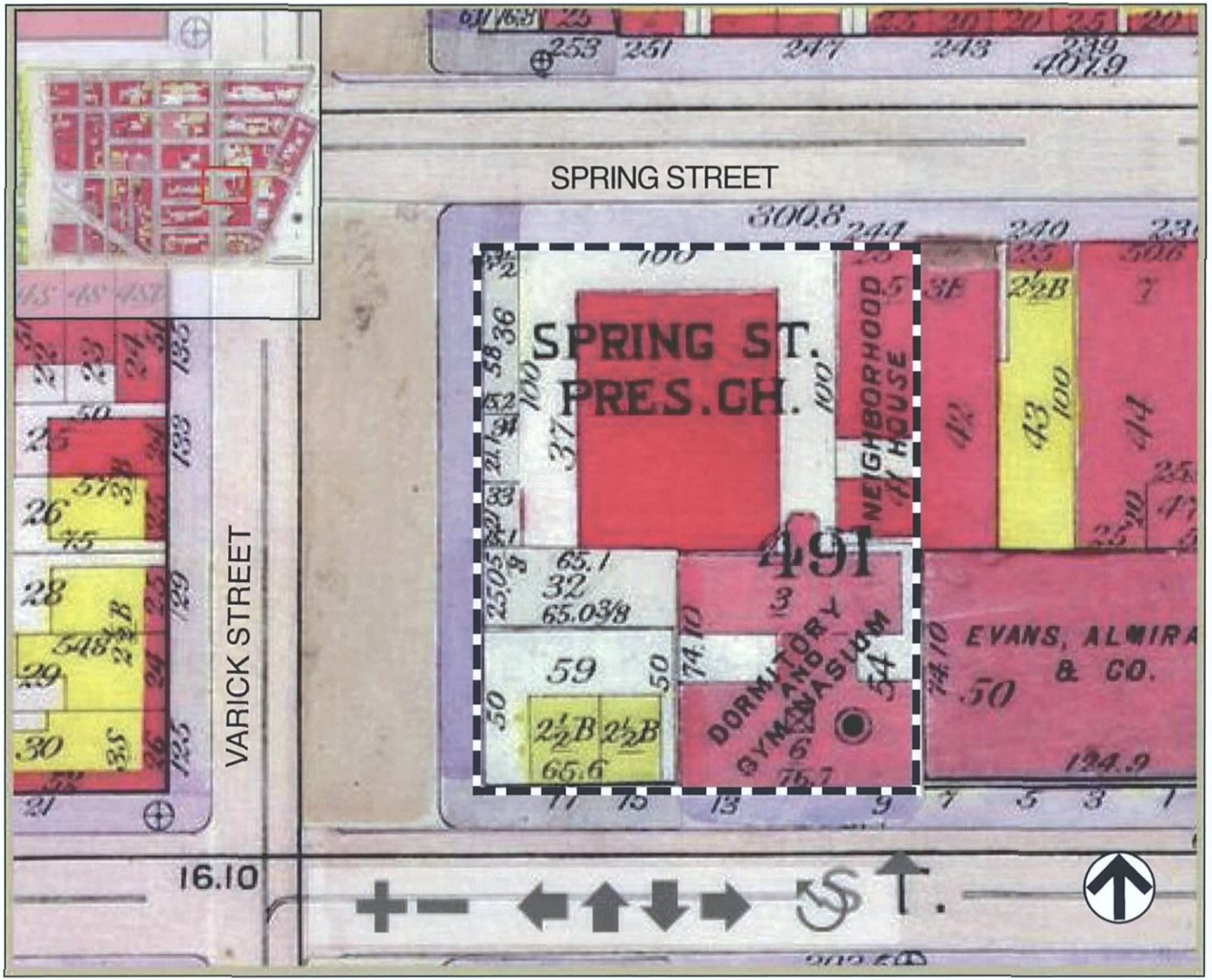


Figure 13

New York City Atlas

G.W. Bromley & Co. 1909; updated through 1915

1.22.07

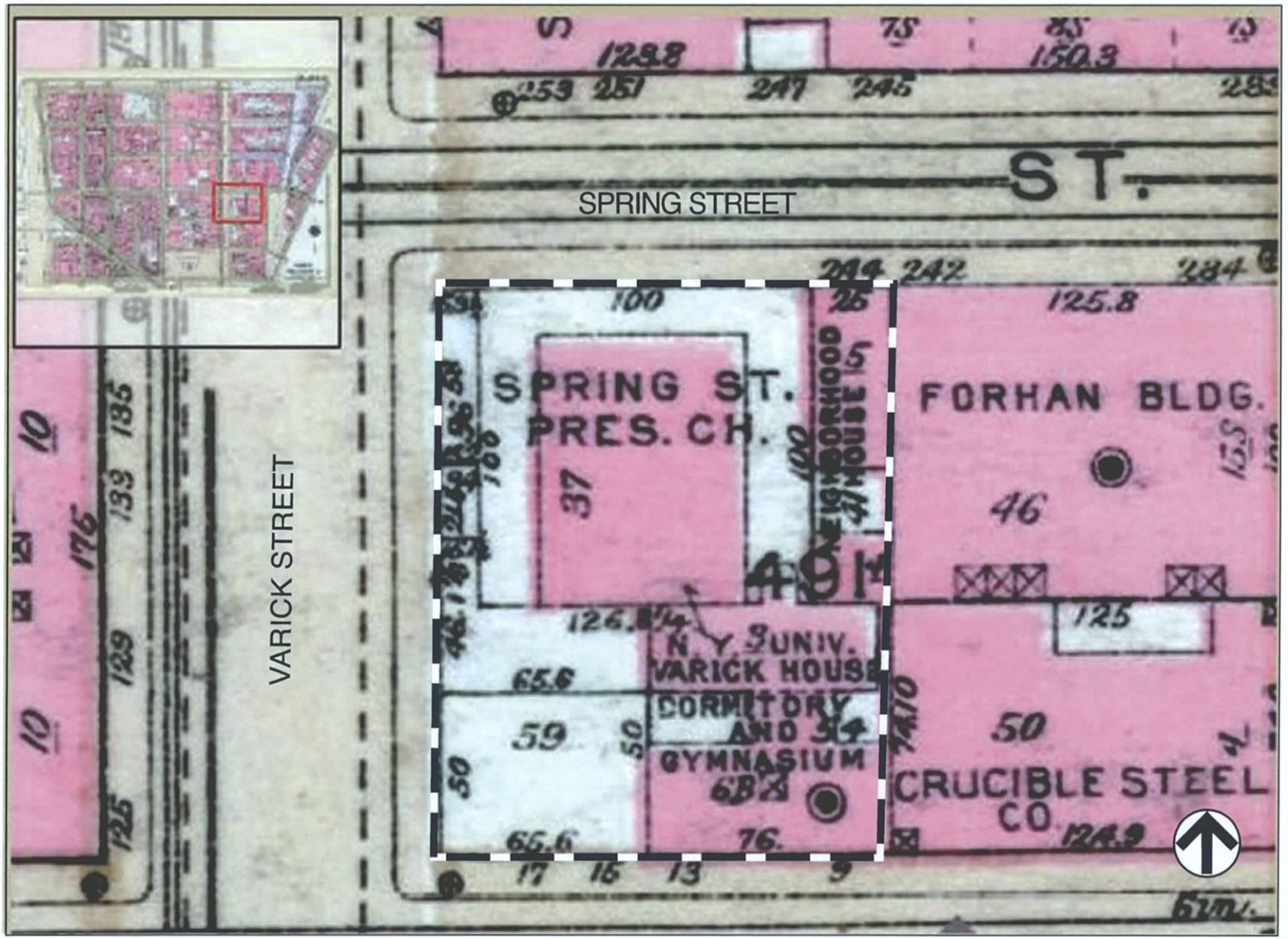
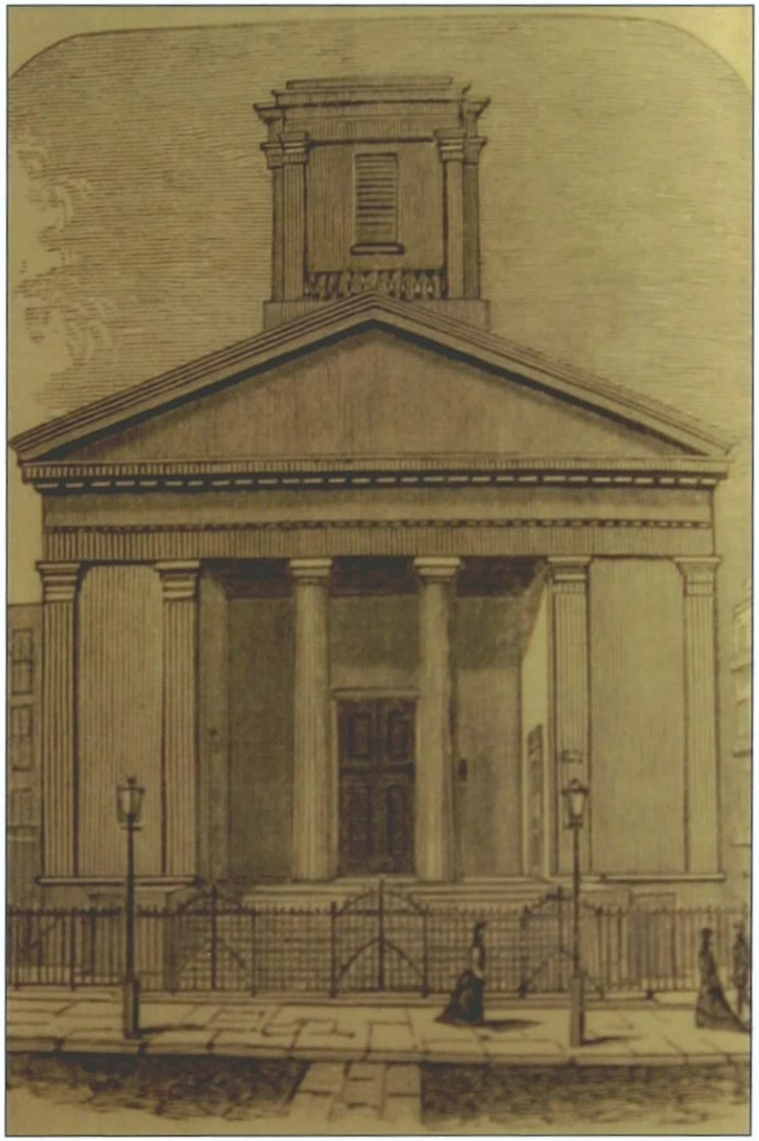


Figure 14

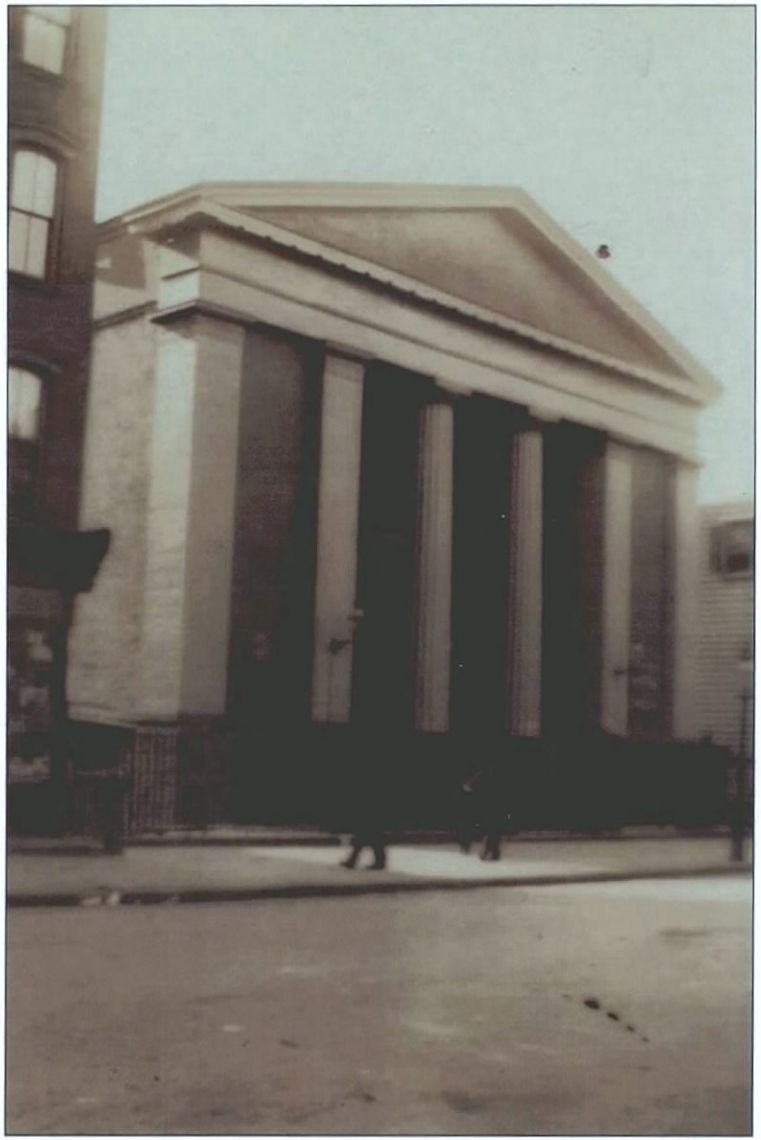
Manhattan Land Book

G.W. Bromley & Co., 1930

Photographs



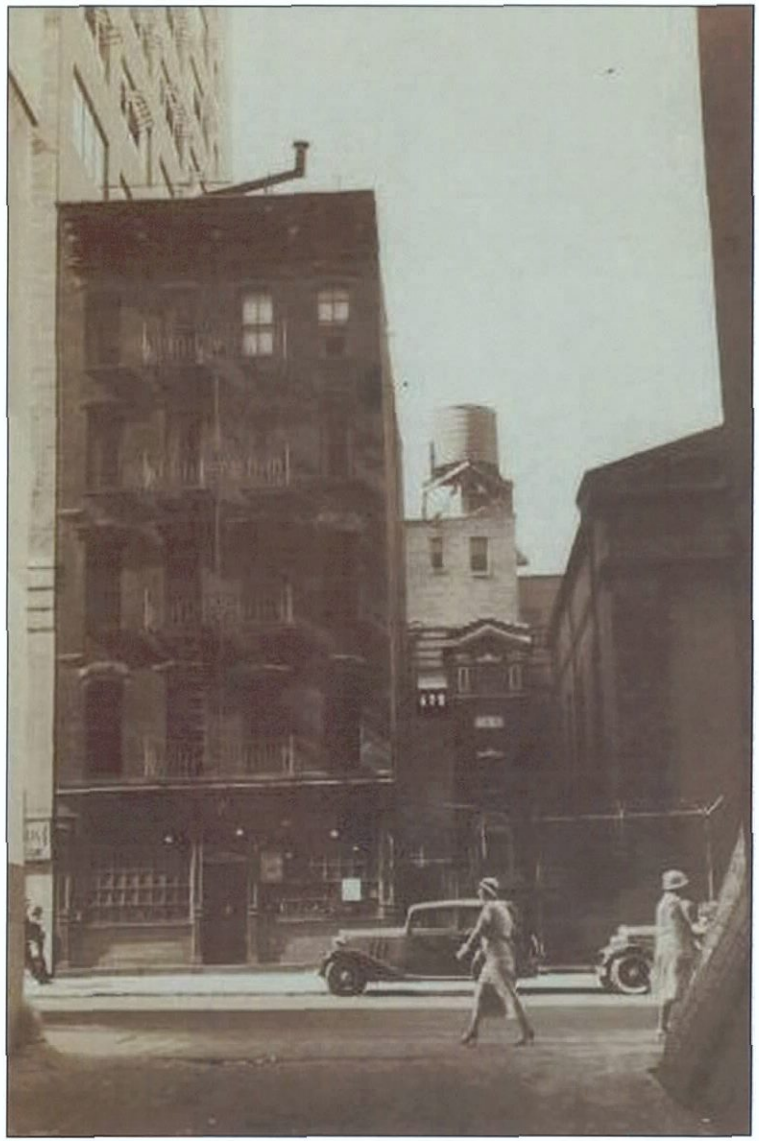
Spring Street Presbyterian Church ca. 1877, from Moment (1877) **1**



Spring Street Church Facade ca. 1900, facing southwest. New York Public Library Digital Image ID #723378F **2**

Spring Street Church ca. 1927, facing southeast. **3**
New York Public Library Digital Image ID #723378F

Spring Street Church ca. 1933, facing southwest.
New York Public Library Digital Image ID # 723379F **4**



"Neighborhood House" (left) and eastern side of Spring Street Church (right) ca. 1933 facing south. New York Public Library Digital Image ID #723376F

5

Southeast corner of Spring and Varick Streets ca. 1999, facing east. Shows parking lot project area. New York Public Image #520022

6

Appendices

Appendix A: Entries in Spring Street Presbyterian Church Treasurer's Minutes (1818-1828) Relating to Burial Vaults

Date	Entry	Fee
7/22/1820	2 children in the vaults	$5.00
8/5/1820	vault	$2.50
8/26/1820	vault	$3.50
7/23/1821	[elloins?] Sexton for vault	$8.50
7/23/1821	[fresh bone?] in vault	$3.50
8/3/1821	I. Arnet in vault	$3.50
8/3/1821	Mrs. Simmons in vault	$3.50
8/3/1821	a child in vault	$2.50
8/3/1821	a child in vault - Sherman	$2.50
10/4/1821	D. Boldwine [possibly Baldwin] vault 1 child	$3.50
10/5/1821	Mordan vault 2 children	$7.00
10/29/1821	Bass vault 1 child	$3.50
12/20/1821	vault paid for by D. Covell	$8.50
12/20/1821	vault paid for by [Baldwin?] 1 child	$3.50
2/2/1822	vault paid for by Em. Laughlin	$6.50
2/2/1822	vault [illegible] child	$3.50
3/1/1822	vault [illegible] child	$3.50
5/8/1822	vault [eller County?]	$8.50
5/8/1822	vault T. [F?] Woodruff	$8.50
5/29/1822	vault P. Thaves (possibly Travis?) child	$5.00
7/6/1822	vault J. [ellish?] child	$5.00
8/8/1822	Mrs. Johnson 1 child	$5.00
8/21/1822	vault Sifts child	$5.00
12/3/1822	P. Roe vault child	$5.00
12/3/1822	A. Field vault child	$5.00
12/27/1822	Wells vault child	$5.00
12/30/1822	McLarent vault child	$5.00
1/11/1823	vault fees	$30.00
3/10/1823	Newton vault child	$5.00
5/13/1823	vault fees	$5.00
5/20/1823	M. Rea 1 adult	$10.00
6/16/1823	M. Radcliffe 1 adult	$10.00
8/5/1823	O.C. Taylor 1 child	$5.00
8/22/1823	I. or J. Halstead 1 child	$5.00
10/12/1823	[ell Slatple?] 1 child	$5.00
10/31/1823	I.R. Westervelt 1 child	$5.00

Date	Entry	Fee
11/3/1823	vault fees N.J. Spear	$70.00
11/4/1823	Henry Moore 1 adult	$10.00
12/19/1823	I. or J. Parker 1 adult	$10.00
1/5/1824	I. or J. Hinter 1 child	$5.00
1/13/1824	[M.] Brown 1 child	$5.00
5/22/1824	Apollos Hall 1 child	$5.00
5/25/1824	Benjamin Denton 1 child	$5.00
8/3/1824	vault fees rec'd by J. Aspece	$40.00
8/3/1824	[late] 1st May 1823	(combined with preceding entry)
8/3/1824	ditto 1st May 1824	$75.25?
8/3/1824	cash for ditto	$200? (combined with preceding entry)
9/21/1824	vault M. Laughlan for [illegible]	$5.00
9/24/1824	vault D.H. Wickham [illegible] S. [Wane]	$10.00
1/10/1825	John Higgins 1 adult	$10.00
4/9/1825	vault feed rec'd by David S. [illegible]	$61.00

Notes: The Treasurer's Minutes are hand-written, therefore the transcriptions may not be completely accurate.

Sources: Spring Street Presbyterian Church Treasurer's Minutes (1818-1828), on file at the Presbyterian Historical Society, Philadelphia, PA.

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Appendix B: Deeds, Mortgages, Conveyances, and Bonds for Block 491

Date	Grantor	Grantee	Liber	Page	Historic Lot Number	Remarks
1807	The Rector and Inhabitants of the City of New York in Communion of the Protestant Episcopal Church in the State of New York	Samuel Osgood, Henry Rutgers, John R.B. Rutgers, and John Mills	76	270	37 (formerly 30 through 33)	Property consisted of four lots (numbered 30, 31, 32, and 33) and was sold for $3,700.00
1807	The Rector and Inhabitants of the City of New York in Communion of the Protestant Episcopal Church in the State of New York	Samuel Osgood, Henry Rutgers, John R.B. Rutgers, and John Mills	79	379	37	
1814	[Kindek]	The City of New York	105	109	n/a	Land granted back to the City for the construction of streets
1815			111	483	37	
1817	John Mills [Wills?]		120	401	37	
1817	John R. and Harriet Murray	Spring Street Church	120	406	37	$9,000
1825	Presbyterian Church on Spring Street	Abijah Fisher	193	192	37	Deed covers the church edifice plus the four lots noted above.
1825	The Rector and Inhabitants of the City of New York in Communion of the Protestant Episcopal Church in the State of New York	David Clarkson	195	509	41 and 42	
1828	William Green	Spring Street Church	228	416	37	Declaration of Trust
1831	William Green, Jr. and Cornelia Green	Spring Street Church	273	51	37	$8,000

Date	Grantor	Grantee	Liber	Page	Historic Lot Number	Remarks
1838	The Rector and Inhabitants of the City of New York in Communion of the Protestant Episcopal Church in the State of New York	John Buckley	390	230	55 and 56	Lease
1845	The Rector and Inhabitants of the City of New York in Communion of the Protestant Episcopal Church in the State of New York	Michael Burke	469	88	30 and 31; 57 through 59	
1859	Greenwich Street Bank	Spring Street Church	n/a	n/a	n/a	Bond -- $22,000.00
1859		Spring Street Church				Mortgage -- $11,000.00
1862	Spring Street Church	Thirteenth Street Presbyterian Church	854	627	37	$11,000
1863	Thirteenth Street Presbyterian Church	Spring Street Church			37	$8,001
1897	Sarah [Parleek]	Trinity Church	56	466	33	$800
1910	Ellen S. James	Spring Street Presbyterian Church	n/a	n/a	n/a	Conveyance of $25,000 as long as at least 50 people attend Sunday Services each week.
1921	Spring Street Church	New York State Bridge and Tunnel Authority	579	42	Property near the intersection of Dominick and Hudson Streets	Property purchased for the construction of the Hudson River Tunnel
1938	80-82 Carmine Street Corp.	Spring Street Church			25 Vandam Street	Bond and Mortgage, $10,250.00
1940	Spring Street Church	Salvation Army			Alley on East Side of Church	Sold to the Salvation Army for $1.00 so that they could use the alley as an emergency exit.
1966	Presbytery of NY City	Salvation Army	40090	309	Current Lot 36	
1968	Paul J. Zarras	Jerry Panayos	40278	110	Current Lot 34	
1970	Jerry Panayos	Calliope Panayos	182	486	Current Lot 34	

Date	Grantor	Grantee	Liber	Page	Historic Lot Number	Remarks
1981	Salvation Army	Spring Street Realty Corp.	557	1175	41, 54, 59, and Current Lot 36	
1985	Spring Street Realty Corp.	Dominick Realty Corp.	887	1454	Current Lot 36	
1998	Heidi Zarras	Meyers Parking System, Inc	2711	234	Current Lot 34	
1999	Estate of Calliope Panayos	Meyers Parking System, Inc	2839	442	Current Lot 34	
2004	Meyers Parking System, LP	246 Spring Street LLC	n/a	n/a	Current Lots 34 and 36	$25,000,000
2005	246 Spring Street LLC	Bayrock/Zar Spring LLC	n/a	n/a	Current Lots 34 and 36	

Notes:

Some data was obtained from primary documents (i.e. original deeds, etc.) which did not contain all pertinent information.

Sources:

Grantor/Grantee Indices on file at the Manhattan Office of the Register of the City of New York

Automated City Register Information System

Various papers on file at the Presbyterian Historical Society, Philadelphia, PA.

*

Appendix C: Real Estate Valuation Records for Church Property, Block 491

Name of Owner or Occupant	Location	Description of Real Estate	Value of Real Estate	Date of Assessment
Presbyterian Church (John Mills)	Spring Street, South Side	4 Lots	$1200	1808
J. Mills	Spring Street, South Side	-----	(Value of personal estate listed as $100)	1815
Presbyterian Free Church and Session Room	Spring Street, South Side, Varick to Clark	-----	----	1818
Presbyterian Free Church	Spring Street, South Side, between Varick and Clark	-----	----	1830
Spring Street Church	Spring Street, South Side, between Varick and Clark	100 feet; lot 1507 (see Figure 5)	-----	1847
Sources: Real Estate Records on file at the New York City Municipal Archives.				

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Appendix D: Summary of Census Research

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
I. Arnet	Catharine Arnett	Ward 8	2 FWM < 10 1 FWM 16 < 26 1 FWF < 10 C 1 FWF 26 < 45	n/a	n/a
	Samuel Arnet	n/a	n/a	Watts Street, Ward 8	1 FWM 5 < 10 1 FWM 30 < 40 1 FWF < 5 2 FWF 5 < 10 1 FWF 20 < 30
Simmons	James Simmons	Ward 7	2 FCM 26 < 45 1 FCM 45 < 1 FCF 45 <	Sullivan Street, Ward 8	1 FCM < 10 1 FCM 36 < 55 1 FCF < 10 1 FCF 24 < 36
	Peter Simmons	Ward 8	1 FWM < 10 1 FWM 26 < 45 1 FWF 10 < 16 1 FWM 16 < 26	Spring Street, Ward 8	1 FWM < 5 1 FWM 5 < 10 1 FWM 10 < 15 1 FWM 20 < 30 1 FWM 30 < 40 1 FWM 60 < 70 1 FWF 20 < 30 3 FWF 30 < 40
Sherman	William Sherman	Ward 8	1 FWM 45 < 1 FWF 45 <	n/a	n/a

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
D. Baldwin	David Baldwin	n/a	n/a	Charlton Street, Ward 8	1 FWM < 5 2 FWM 10 < 15 1 FWM 30 < 40 1 FWF < 5 1 FWF 30 < 40
Mordan	Many individuals named Martin, Morton, Morten, etc. were recorded in both censuses.	----------	----------	----------	----------
Bass	Jason N. Bass	Ward 8	2 FWM < 10 1 FWM 26 < 45 1 FWF 16 < 26 1 FWF 45 <	n/a	n/a
D. Covell	Jas. Covell	Ward 8	1 FWM < 10 1 FWM 10 < 16 1 FWM 16 < 26 1 FWM 45 < 1 FWF 45 <	n/a	n/a
	John C. Covell	n/a	n/a	Spring Street, Ward 8	1 FWM 20 < 30 1 FWF 20 < 30
Em. Laughlin	Many individuals named Laughlin were recorded in both censuses, none in the 8th Ward.	----------	----------	----------	----------
[illegible] County	Mrs. County	Ward 7	1 FWM 26 < 45 1 FWF 16 < 26 1 FWF 45 <	n/a	n/a

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
T.F. Woodruff	Thomas J. Woodruff	Ward 8	2 FWM < 10 1 FWM 10 < 16 2 FWM 16 < 26 1 FWM 45 < 2 FWF < 10 2 FWF 10 < 16 1 FWF 26 < 45 1 FCF < 14	n/a	n/a
P. Thaves	Jno Travis	Ward 8	1 FWM < 10 2 FWM 10 < 16 1 FWM 16 < 26 1 FWM 45 < 1 FWF 16 < 26 1 FWF 26 < 45 1 FWF 45 <	n/a	n/a
	Jno H. Travis	Ward 8	2 FWM < 10 1 FWM 16 < 26 1 FWF 16 < 26	n/a	n/a
	Simon Travis	Ward 8	1 FWM < 10 1 FWM 26 < 45 1 FWF 16 < 26	n/a	n/a
	Joseph Travis	n/a	n/a	King Street, Ward 8	1 FWM < 5 1 FWM 5 < 10 1 FWM 20 < 30 1 FWF < 5 1 FWF20 < 30 1 FWF 30 < 40
J. [Ellis?]	Many individuals named Ellis were recorded in both censuses, none in the 8th Ward.	----------	----------	----------	----------
Sifts	No name correlates found in either census	----------	----------	----------	----------

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
P. Roe	Phebe Row	n/a	n/a	Smith Street, Ward 8	3 FWF 20 < 30 1 FWF 40 < 50
	Thomas Rowe	n/a	n/a	Spring Street, Ward 8	1 FWM < 5 1 FWM 5 < 10 1 FWM 10 < 15 2 FWM 15 < 20 1 FWM 40 < 50 1 FWF 10 < 15 1 FWF 15 < 20 1 FWF 30 < 40
A. Field	Edward Field	Ward 8	1 FWM < 10 1 FWM 26 < 45 3 FWF < 10 1 FWF 16 < 26	n/a	n/a
	Samuel Field	Ward 8	2 FCM 26 < 45 2 FCF < 14 2 FCF 26 < 45	n/a	n/a
Wells	Jas Wells	Ward 8	2 FWM 10 < 16 2 FWM 16 < 18 1 FWM 26 < 45 2 FWF < 10 2 FWF 16 < 26 2 FWF 26 < 45	n/a	n/a
McLarent	Jno McLarent	Ward 8	2 FWM < 10 1 FWM 16 < 26 1 FWF 26 < 45	n/a	n/a
Newton	Thomas Newton	n/a	n/a	Varick Street, Ward 8	1 FWM 15 < 20 1 FWM 20 < 30 1 FWF 20 < 30

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
N.J. Spear	Barnet Spear	Ward 8	2 FWM < 10 1 FWM 26 < 45 1 FWF< 10 1 FWF 26 < 45	n/a	n/a
Mrs. Johnson (many present in several wards, including others in Ward 8)	Elizabeth Johnson	Ward 8	2 FCM < 14 2 FCF < 14 1 FCF 45 <	n/a	n/a
M. Rea	Matthew Ray	Ward 8	1 FWM 26 < 45 1 FWF < 10 1 FWF 26 < 45	n/a	n/a
	William Ray	Ward 8	1 FWM < 10 1 FWM 26 < 45 3 FWF < 10 3 FWF 10 < 16 2 FWF 26 < 45	n/a	n/a
M. Radcliffe	Sam'l Radcliff	Ward 8	2 FWM < 10 1 FWM 10 < 16 2 FWM 26 < 45 2 FWM 45 < 2 FWF 16 < 26 1 FWF 26 < 45 1 FWF 45 <	n/a	n/a
O.C. Taylor	Many individuals named Taylor were recorded in both censuses, none in the 8th Ward.	----------	----------	----------	----------

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
I or J Halstead (many present in several wards, including others in Ward 8)	Jno D. Halstead	Ward 8	3 FWM < 10 1 FWM 16 < 18 1 FWM 26 < 45 2 FWF < 10 1 FWF 10 < 16 1 FWF 16 < 26 2 FWF 26 < 45 2 FWF 45 <	n/a	n/a
	John Halstead	Ward 8	2 FWM < 10 1 FWM 26 < 45 1 FWF 10 < 16 2 FWF 26 < 45	n/a	n/a
	Susan Halstead	Ward 8	2 FWF 16 < 26 2 FWF 45 <	n/a	n/a
[ell Slatple?]	No name correlates found in the 1820 Census	----------	----------	----------	----------
I. R. Westervelt	Many individuals named Westervelt were recorded in this census including many in the 8th Ward.	----------	----------	----------	----------
Henry Moore	Henry Moore	Ward 7	1 FWM 26 < 45 1 FWF 10 < 16 1 FWF 16 < 26 1 FWF 26 < 25	n/a	n/a
	Henry Moore	Ward 5	1 FWM 10 < 16 2 FWF < 10 1 FWF 10 < 16 2 FWF 16 < 26 1 FWF 26 < 45	n/a	n/a
	Henry Moore	n/a	n/a	[Lamend?] Street, Ward 8	1 FWM 10 < 15 1 FWM 15 < 20 1 FWM 60 < 70 1 FWF 20 < 30

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
I. or J. Parker	James Parker	n/a	n/a	Spring Street, Ward 8	1 FWM 30 < 40 3 FWF 20 < 30
M. Brown	Many individuals named Brown were recorded in both censuses including many in the 8th Ward.	----------	----------	----------	----------
[J? I? Q?] Hinter	Gilbert Hunter	Ward 8	4 FWM < 10 1 FWM 26 < 45 1 FWF 26 < 45	n/a	n/a
	John Hunter	n/a	n/a	Hammersly Street, Ward 8	2 FWM < 5 1 FWM 5 < 10 1 FWM 10 < 15 1 FWM 30 < 40 1 FWF 10 < 15 1 FWF 20 < 30
Benj. Denton	Thos. Denton	Ward 5	3 FWM < 10 1 FWM 26 < 45 1 FWF < 10 1 FWF 10 < 16 2 FWF 26 < 45	n/a	n/a
	Benj. Denton	n/a	n/a	Sullivan Street, Ward 8	1 FWM < 5 1 FWM 5 < 10 2 FWM 15 < 20 1 FWM 40 < 50 1 FWF < 5 1 FWF 5 < 10 1 FWF 20 < 30 1 FWF 40 < 50
Apollos Hall	Many individuals named Hall were recorded in this census including many in the 8th Ward.	----------	----------	----------	----------
John Higgins	Jno P. Higgins	Ward 10	1 FWM 16 < 26 1 FWF 16 < 26	n/a	n/a

Possible correlates from Appendix A	Name as listed in Census	Place of Residence in 1820	Listed Ages of Household Members in 1820	Place of Residence in 1830	Listed Ages of Household Members in 1830
	John Higgins	n/a	n/a	Varick Street, Ward 8	1 FWM 20 < 30 1 FWM 40 < 50 4 FWF 15 < 20 1 FWF 20 < 30 1 FWF 40 < 50
M. Laughlin (variations of this name present in several wards, including others in Ward 8)	M. Locklin	Ward 10	1 FWM 26 < 45 1 FWF 26 < 45	n/a	n/a
D. H. Wickham	Daniel H. Wickham	Ward 8	1 FWM 45 < 1 FWF 10 < 16 1 FWF 16 < 26 1 FWF 26 < 45 1 FCF 14 < 26	n/a	n/a
David S. [illegible]	David S. Jones	Ward 8	2 FWM < 10 1 FWM 16 < 18 1 FWM 16 < 26 1 FWM 26 < 45 1 FWF < 10 4 FWF 16 < 26 1 FWF 26 < 45	n/a	n/a

Notes:

FWM = Free White Male

FWF = Free White Female

FCM = Free Colored Male

FCF = Free Colored Female

In most cases, numerous individuals with the same name (with various spellings) appeared in the census. In such instances, only those individuals who were listed as having lived in the 8th Ward (the same ward as Spring Street Church) were recorded in the table above. Therefore, other individuals by these names resided in neighboring wards and elsewhere in the city. Blank entries in the table above represent names that were too common to even attempt to identify potential Spring Street Church member. Because the 1820 and 1830 censuses only recorded the names of the heads of household, it is not clear if these are, in fact, the same individuals listed in the Church's financial records **(Appendix A)**. The above represents possible matches, but it may not be entirely accurate.

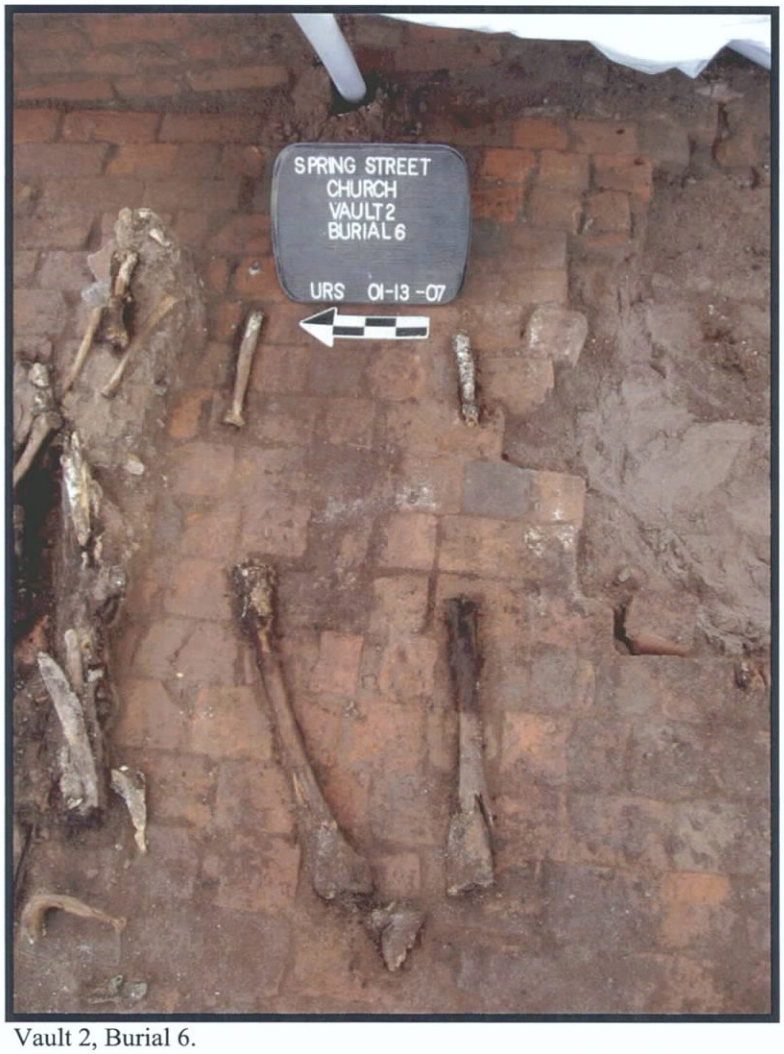
Sources: United States Census Records accessed at http://ancestry.com

Appendix C
Intact Burial Photograph Record

Vault 2, Burials 1-3.

Vault 2, Burial 4.

Vault 2, Burial 5.



Vault 2, Burial 6.

Vault 2, Burial 7.

Vault 2, Burial 8.

Vault 2, Burial 9.

Vault 2, Burial 10.

Vault 2, Burial 11.

Vault 2, Burial 12.

Vault 3, Burials 1-3.

Vault 3, Burial 4.

Vault 3, Burial 5.

Vault 3, Burial 6.

Vault 3, Burial 7.

Vault 3, Burial 8.

Vault 3, Burials 9-10.

Vault 3, Burial 11.

Vault 3, Burial 12.

Vault 3, Burial 13.

Vault 3, Burial 14.

Vault 3, Burial 15.

Vault 3, Burial 16.

Vault 3, Burial 17.

Vault 3, Burial 18.

Vault 4, Burial 1.

Vault 4, Burials 3-6.

Vault 4, Burial 6.

Vault 4, Burials 7-8.

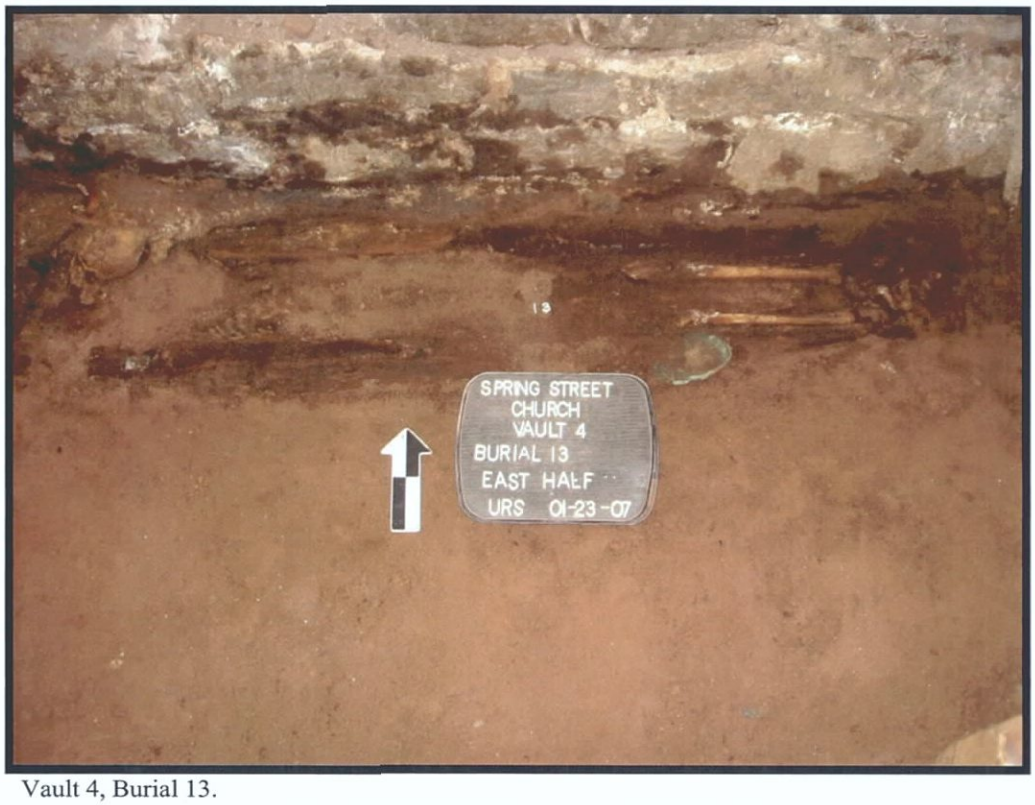
Vault 4, Burial 8.

Vault 4, Burial 9.

Vault 4, Burial 10.

Vault 4, Burial 11.

Vault 4, Burials 12-13.



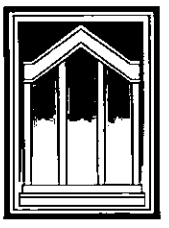
Vault 4, Burial 13.

Vault 4, Burial 14.

Vault 4, Burial 15.

Vault 4, Burial 16.

Appendix D
Analysis of Human Remains



UTICA COLLEGE

Analysis of Human Remains

Spring Street Presbyterian Church Burial Vaults

Manhattan, New York City

by

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1. Introduction

The remains of members of the Spring Street Presbyterian Church were interred in the vaults at the southeast corner of Spring and Varick Streets as early as 1811. Based on historical documents, the congregation regularly interred their loved ones in the vaults by 1820 and continued through 1835, when Manhattan ordinances prohibited burials south of 14th Street (Meade 2007:III-1). Legible coffin plates recovered during excavations in late 2006 and early 2007, however, indicate that at least two individuals were interred in Vault 3 in 1841 (Joseph R. Murden) and in 1842 (Rudolphus Bogert). Consequently, the most likely period of use for the vaults is circa 1811–1842.

This was a period of intense socio-economic transition in both New York City and the nation. The rise of the urban-based industrial manufacturing economy brought waves of young people and immigrants to the large East Coast cities, by 1850 increasing America's composite urban population five times over its level in the 1820s. New York City was particularly attractive to young men and women from the rural counties of the Mid-Atlantic region due to its expanding economy and the social opportunities offered by the vast anonymity of life in the urban landscape. Dramatic shifts in demography followed. In 1800, New York City's population was about 60,000, but by 1850, it had reached 600,000 people, of which more than half had been born abroad (Gorn 1987:393). Cheap labor became plentiful, leading to wide swings in unemployment and inflation through the 1840s and 1850s. Social changes were inherent in the new urban community; in particular, Srebnick (1995:59) notes that urban women during this period were caught in a society where "new sexual codes emerged that disassociated female sexuality from bourgeois discourse and family life and associated it with venality, danger, and most of all working-class culture."

New York's working-class culture included withdrawal from conservative, organized religion and consequent freedom from its social limitations; the establishment of new, more liberal sexual codes and mores; greater social differentiation based on widening class differences and racial tensions; the rise of the sensationalistic "penny press"; a perception of increased violence on the streets; and changes in consumer choices based on the incomes generated by the burgeoning manufacturing economy. Virtually all aspects of society were affected by the new economy and its ripple effects, including a rapid increase in tenement housing and an upsurge in infectious disease and infant mortality rates.

It is within this historical context that the skeletal remains from the Spring Street Presbyterian Church's burial vaults were analyzed and interpreted. A true example of bioarchaeology, the Spring Street project combines data from the archaeological excavations of the vaults with the results of historical research and the skeletal analysis to create a unique portrayal of the people who comprised the congregation during New York City's pivotal antebellum years.

Agency Requirements for Skeletal Analyses in New York City and the Spring Street Site

At present, the New York State Historic Preservation Office does not maintain a protocol for the post-excavation analysis of human remains. Like all archaeological resources discovered in New York City, however, historical human remains fall under the jurisdiction of the city's Landmarks Preservation Commission's (LPC). In April 2002, the LPC published its *Guidelines for Archaeological Work in New York City*, which includes a section (Section 7.0, Burials and Human Remains) devoted to the appropriate treatment of historical burial grounds and analysis of human remains.

Section 7.6 of the *Guidelines for Archaeological Work in New York City* sets out the required procedures that must be followed when potentially historic-period human remains are unexpectedly discovered within the city's boundaries. As with any discovery of human remains, the police and medical examiner's office must first be notified. It is their combined responsibility to then determine whether the remains are of medico-legal significance or represent an archaeological discovery. If the remains do not require any further police investigation, the LPC's guidelines are invoked for the subsequent treatment of the discovery.

On December 11, 2006, construction crews from Bovis Land Lease-LMB excavating the property at 244–246 Spring Street for a new hotel complex unexpectedly discovered human skeletal remains. In accordance with the LPC's requirements, construction supervisors immediately ceased work and contacted the New York Police Department to report the discovery. Forensic anthropologist Christian Crowder, Ph.D. from the Office of the Chief Medical Examiner (OCME), examined the scene later that day, but could not adequately evaluate the discovery due to the loss of daylight. The OCME assigned the discovery case number M-06-6910. Dr. Crowder returned to the scene on December 12 with two assistants and determined that the remains were historical and not forensically significant. He

and his assistants then collected the remains that were visible on the surface (later identified as originating from Vault 1) and transported them to the OCME's office on First Avenue until their final disposition could be decided. Dr. Crowder also notified Amanda Sutphin, the LPC's Director of Archaeology, to inform her of his determination that the site contained additional historic-period human remains.

Archaeologists from URS began preliminary site evaluations shortly after the initial discovery was made. At the same time, the New York City Department of Buildings (DOB) requested that work cease at the site until an archaeological work plan to address the discovery could be developed. On December 20, 2006, the DOB and LPC accepted the work plan AKRF and URS prepared, and archaeological excavations of the remaining human remains subsequently commenced.

The LPC's guidelines (Section 7.3) also specify that archaeological projects involving human remains require the services of a properly qualified physical anthropologist. In particular, the guidelines state:

> A physical anthropologist must be available to come to the field as needed to identify and appropriately treat any human remains that may be encountered as defined in the Scope of Work. This individual should have a graduate degree in a relevant field and significant research experience with human remains found in archaeological contexts.

URS Senior Physical Anthropologist Thomas A. Crist, Ph.D., leads the physical anthropology team conducting the study of the Spring Street skeletal remains. Among many other projects, Dr. Crist previously directed the excavation and analysis of skeletal remains from the Second Presbyterian Church Cemetery in Philadelphia, in use between circa 1750 and 1864. His team also analyzed human remains from beneath Chambers Street in Manhattan (Crist et al. 2000), and he analyzed infant remains discovered during excavations at Manhattan's former Five Points district in 1993 (Crist 2005). Dr. Crist was a member of the team that wrote the research design for the analysis of the human remains from the New York's African Burial Ground. Dr. Crist assisted in the excavations at the Spring Street Site in January 2007.

The LPC's guidelines also define the post-excavation analytical work that the client whose activities disturbed the historical cemetery is responsible for, together with a report. In Section 7.3 (Use of a Physical Anthropologist; pg. 18), this document states that an appropriately qualified physical anthropologist must:

> ...submit a scope for analysis to the LPC after fragmentary human remains have been found. This analysis should, when possible, identify the minimum number of individuals these bones may represent, sex, age, cause of death, pathology, etc.

On behalf of their client Bayrock/Sapir Organization LLC, URS and AKRF submitted a work plan for the physical anthropological analysis of the human remains from the Spring Street burial vaults to the LPC in March 2007. The LPC approved this work plan in June 2007.

Accordingly, the following analysis fulfills the LPC's guidelines for this type of bioarchaeological study. It is modeled on the results of previous bioarchaeological projects, as well as standards for data collection and reporting established by the appropriate professional physical anthropology societies.

Significance of the Spring Street Skeletal Remains

Every set of human remains provides some information about the people of the past, particularly the common people who do not appear in modern history books. This is especially true of those people for whom limited documentary information exists, including women, children, religious and ethnic minorities, immigrants, and the poor of all backgrounds.

For example, skeletal remains representing over 400 people in Manhattan's African Burial Ground were found in 1991 during excavations for a new federal office building along Broadway between Duane and Reade Streets. These individuals had been buried during the seventeenth and eighteenth centuries, and at least 70% were of African descent. Analysis of their skeletal remains was completed over the next 13 years and provided a broad range of data regarding a virtually forgotten component of early New York society (Blakey and Rankin-Hill 2004; African Burial Ground Project Office of Public Education and Interpretation 2008). Given the historical significance of the skeletal

remains and unique nature of the information that they provided, President George W. Bush signed legislation in February 2006 designating the African Burial Ground site as a National Monument.

Even though some historical records about the former Spring Street Presbyterian Church exist, very little is known about the people themselves who made up the congregation. The church's role in American history is clearly significant—in 1820, it became one of the earliest churches in New York City, if the not the first, to admit people of African descent into the vestry. In July 1834, a mob attacked the church because of the abolitionist stance of its former pastor Reverend Dr. Samuel Cox, and rumors that its current pastor Reverend Henry G. Ludlow had performed interracial marriages (Meade 2007:II-2-II-4). But apart from these two prominent church leaders and their successors occasionally noted in city newspapers, only a few other members of the church had reached a level of social recognition that information about them exists today. A hint regarding the socioeconomic status of the congregants is inferred through a quote about the church's 330 members from Reverend Ludlow in 1828: "most of whom belong to that class of person who cannot afford to purchase or hire a pew in our city churches" (quoted in Meade 2007:II-3).

Beyond the personal stories of the congregants themselves, however, the Spring Street skeletal assemblage is significant because, to date, it represents the only collection of remains of New York City residents from the first half of the nineteenth century.

In their broad review of archaeology in New York City, Cantwell and Wall (2001) note the aforementioned African Burial Ground as the only major bioarchaeology project conducted in the city. A recent review of the bibliography of archaeological reports maintained by the New York City Landmarks Preservation Commission (City of New York 2008) confirms that no other large-scale bioarchaeological projects have been conducted in Manhattan.

It is true that other historical burials have been found in Manhattan, most of which date from the eighteenth century. These include previously disturbed remains presumably from the city almshouse formerly located at City Hall Park, found during utilities repairs under Chambers Street in 1993 (Hunter Research, Inc. 1994) and again in 1998 (Crist et al. 2000), as well as the remains of almshouse residents and other municipal burials discovered in City Hall Park itself in 1999 (London 2004; Anderson 2000). In January 2008, the remains of at least four intact burials and other previously disturbed remains were uncovered during construction activities in Washington Square Park in Greenwich Village, the site of a former potter's field between 1797 and 1825 (Chan 2008).

Nineteenth-century human remains have also been uncovered in New York City, but most of these have been isolated discoveries. For example, the remains of two full-term neonates and a fetus were discovered in strata that dated to the 1840s during excavations of a privy shaft associated with a nineteenth-century tenement at 12 Orange Street in New York City's former Five Points district (Crist 2005). In August 2006, the remains of about 50 immigrants buried during the mid-nineteenth century in a mass grave for typhus patients quarantined at the former Marine Hospital were found beneath a municipal parking lot in St. George, Staten Island, prior to construction of a courthouse (Labarre 2007).

Given the dearth of other bioarchaeological projects, analysis of the human remains from the Spring Street burial vaults provides unique information unavailable from any other source about the health, diseases, and activities of a sample of New Yorkers who lived and died during the city's tumultuous antebellum period.

Objectives of the Skeletal Analysis

To fulfill the LPC's requirements for the analysis of the human remains from the Spring Street burial vaults and generate comparable data useful to other bioarchaeologists, several major objectives for the physical anthropological component of the project were defined, including:

- determine the minimum number of individuals represented by the bones and bone fragments discovered in the excavation trench;
- when possible, establish a biological profile (sex, ancestry, and age at death) for each individual;
- provide a description of the paleopathology and personal characteristics of the individuals represented by the remains; and
- attempt to identify a cause of death for each individual.

As part of the analysis, the project team systematically collected osteometric and paleopathologic data from each individual, as well as the many commingled partial remains from the site. These data have been recorded in summary form to be made available to other researchers for comparative purposes.

2. Methods

This section of the report describes the methods used to examine and analyze the human remains from the former Spring Street Presbyterian Church's four burial vaults discovered in December 2006 at 244–246 Spring Street in Lower Manhattan.

Data Collection Standards

The primary goal in collecting osteological and dental data from skeletal remains found in archaeological contexts is to generate information that may be compared to other historical and modern skeletal collections. This is accomplished by following standard physical anthropological procedures for collecting and recording morphological and metrical data according to recommendations set forth in:

- *Skeletal Database Committee Recommendations* (Paleopathology Association 1991);
- *Standards for Data Collection from Human Skeletal Remains* (Buikstra and Ubelaker 1994); and
- *Data Collection Procedures for Forensic Skeletal Material* (Moore-Jansen et al. 1994).

The skeletal and dental inventories, information on demographic assessments, and selected osteometrics were recorded using standardized forms from both Buikstra and Ubelaker (1994) and Moore-Jansen et al. (1994).

Burial Designations

Four contiguous burial vaults were discovered at 244–246 Spring Street in December 2006. URS archaeologists numbered these vaults 1 to 4 from north to south. Vault 1 was the first one disturbed by construction activities and from which the OCME anthropologists collected the first skeletal remains identified as human at the site.

Each individual whose remains were clearly discernable in situ during excavations was subsequently assigned a unique identifying number, generally in the order in which the burials were discovered within each vault. For example, the in situ individuals in the second vault were designated as Vault 2, Burial 1; Vault 2, Burial 2; and so forth. The first individual found in situ in the third vault was then designated Vault 3, Burial 1, followed by Vault 3, Burial 2, and so forth. No distinctions were made in numbering the burials based on the presumed age of the individuals (i.e., the remains of infants and children were numbered in the same manner as the remains of adults).

When received at the Utica College Anthropology Laboratory in January 2007, the following numbers of individuals had been identified:

- Vault 1: 16 individuals (as determined by the OCME's forensic anthropologists);
- Vault 2: 12 in situ individuals;
- Vault 3: 16 in situ individuals; and
- Vault 4: 16 in situ individuals.

In addition to these 60 individuals, hundreds of intact and fragmentary bones and bone fragments (collectively grouped as "disassociated remains") that had been previously disturbed also were recovered from each of the vaults. Many of these remains, particularly the crania and mandibles, represented distinct individuals and were subsequently assigned unique identifying numbers during the laboratory analysis.

Project Team Members and Laboratory Facilities

The URS physical anthropology team consisted of:

- URS Senior Physical Anthropologist Thomas A. Crist, Ph.D., Associate Professor of Anatomy and Anthropology at Utica College;

- URS Physical Anthropologist Shannon A. Novak, Ph.D., Assistant Professor of Anthropology at Syracuse University; and
- URS Paleopathologist Molly H. Crist, PT, DPT, Assistant Professor of Physical Therapy at Utica College.

All three URS physical anthropologists possess extensive experience in bioarchaeology and forensic physical anthropology, with specific expertise in the identification and diagnosis of pathologic lesions, trauma, and nutritional disorders.

The washing, sorting, examination, and analysis of the Spring Street remains were conducted at the Physical Anthropology Laboratory at Utica College in Utica, New York, and the Syracuse University Anthropology Laboratory in Syracuse, New York.

Skeletal Washing and Sorting Procedures

Upon completion of field excavations, all of the human remains from the Spring Street burial vaults were transported to the Physical Anthropology Laboratory at Utica College in Utica for examination and analysis. The first shipment of 30 banker's boxes of human remains arrived at Utica College on January 16, 2007. The second and final group of 40 banker's boxes arrived on January 25, 2007. The OCME of New York City sent the remains that their forensic anthropologists had collected on December 12, 2006 to Utica College on August 9, 2007, together with a report of their conclusions.

The skeletal remains from the Spring Street vaults comprised four types of material:

- intact individuals including most or all skeletal portions;
- incomplete but identifiable individuals with some articulated skeletal portions;
- unassociated but intact diagnostic bones and large bone fragments (including individual crania and mandibles); and
- unassociated and poorly preserved non-diagnostic bones and bone fragments.

The skeletal remains in the first three categories, many of which had been identified as individuals in situ, were sorted; cleaned of adherent soil with dry brushes and sparingly with water; allowed to air dry on steel drying racks; examined; documented; and analyzed. Since they yield no analytical information, poorly preserved and badly fragmented remains were examined and then placed in bags and boxes for reburial. They were not cleaned or analyzed.

To most efficiently examine and analyze the thousands of commingled remains recovered from the burial vaults, the physical anthropology team split the collection into two parts according to the vault numbers. At the Utica College Anthropology Laboratory, URS Laboratory Technicians Brittany Wolanin and Laura Prestia, together with undergraduate intern Tinh Nguyen, began by sorting and washing the remains from Vault 2 that had been identified in situ as individuals (Figure D.1). Disassociated remains that possessed analytical value were then washed and sorted. Once dried and re-bagged, these remains were transported to the Syracuse University Anthropology Laboratory for examination and data collection.

At the Syracuse University laboratory, Dr. Novak and her graduate assistant Meredith Ellis screened the soil from Vault 2 that contained disassociated and commingled remains (Figure D.2). The recovered remains that possessed analytical value were then processed and analyzed there. Nineteen individuals recovered from this screened material were designated as Burials A through S.

Likewise, the human remains from Vault 3 that had been labeled as individuals during excavation were washed and sorted at the Utica College laboratory and then examined and analyzed there, followed by the disassociated remains from Vault 3. The remains from Vault 1 had been cleaned at the OCME's office, but were rewashed as necessary and also analyzed in Utica.

The greatest number of remains originated in Vault 4. The individuals whose remains were assigned burial designations in situ were washed and sorted at Utica College and then transported to Syracuse University for examination and analysis. Students enrolled in Bioarchaeology (ANT 400/600) during the Spring 2008 semester assisted with the examination and recordation of these remains. The disassociated remains from Vault 4 were then

washed and sorted, and also transported to Syracuse. Finally, the soil from Vault 4 that contained additional disassociated remains was screened at Syracuse University and the recovered remains sorted and analyzed there.

Photodocumentation

The Spring Street burial vault project was extensively documented using digital cameras. Each in situ burial was photographed upon complete exposure, as were overviews of the commingled remains found in each vault. In the laboratory, close views of the mandibular and maxillary arcades of the discernible individuals were recorded, as were diagnostic pathologic lesions and unusual anomalies of the crania and postcranial bones. Skeletal evidence of trauma, cultural modifications, occupations, and repeated activities was also recorded digitally.

Skeletal and Dental Inventories

The process of inventorying the remains from each individual identified in situ began by laying out each person's remains in the anatomical position to determine the elements present and identify any patterns of pathology or trauma. Inventory data were then entered onto the standardized forms used by the Forensic Data Bank at the University of Tennessee (Moore-Jansen et al. 1994).

The teeth from each individual were identified according to the standard Universal System of tooth charting. In this system, adult teeth are number 1 through 32 and deciduous teeth are lettered "a" to "t." This system was used throughout the analysis for purposes of recording all dental observations (pathologic, metrical, and non-metric).

Each tooth was inventoried by type (incisor, canine, premolar, or molar); jaw of origin (maxilla or mandible); position within the tooth group (i.e., first, second, or third, where appropriate); and the side from which it came (left or right). In addition, the status of each tooth as either present or absent was noted. Teeth recorded as present were further recorded as "present-tooth only" (i.e., with no observable supporting bony socket) or "present-tooth in socket." Absent teeth were reported as either: 1) lost postmortem, 2) lost antemortem, or 3) not observable, the latter in cases where there was insufficient bone matrix available upon which to make a determination.

Skeletal Data Collection

Erosion and Fragmentation

Upon completion of each individual's skeletal inventory the degree of erosion and fragmentation of each bone was recorded. Erosion refers to complete destruction of bony tissue and is not reversible. Fragmentation denotes the breakage of bones into smaller fragments without destruction of the bone tissue comprising the fragments. Fragmentation is reversible using consolidants and supports to reconstruct the original morphology of the skeletal element.

Determination of Sex, Age Range at Death, and Ancestry

The sex of each adult individual was determined using a combination of morphological, metrical, and multivariate techniques. Sexual dimorphism is reflected by many skeletal components after puberty is attained, particularly the innominates (pelves) and cranium. Analysis of the innominates provides the most accurate assessment of sex due to morphological differences related to female adaptations for childbirth, but the crania and long bones also grossly reflect sex when assessed for size and robusticity of muscle attachment sites.

An age range at death was also estimated for each individual using a combination of macroscopic methods involving most of the skeletal components. Age ranges are reported rather than specific ages at death because the aging techniques document only general trends in the human aging sequence, which is variable for each individual and population subgroup as well. No single age estimation method provides as accurate a range as does a combination of estimates from multiple techniques applied to various portions of the skeleton. Similar to the methods used to determine sex, the multifactorial approach was utilized to estimate the age range at death for each individual. The most accurate information about sex is provided by the innominates and cranium, although the mandible and long bones may also indicate sex at a high level of accuracy if the other skeletal elements are absent or fragmentary.

Racial ancestry is a controversial topic among physical anthropologists, biologists, and medical researchers. Most debate centers on whether "race" is a biologically valid phenomenon that reflects the variation of human populations and if the concept, which is laden with social attitudes that have been used to gain and manipulate socioeconomic and political power, is the appropriate framework through which research on human variation should be conducted. The present analysis focuses on the identification of clusters of morphological traits, particularly of the skull and dentition, which confer on an individual an ethnic identity within the context of his or her social milieu (Gill and Rhine 1990). Race or social identity is typically reported as European (white), African (black), or Asian/Native American. The cranium, particularly the facial skeleton, provides the most useful information about the ancestry or social identity of an individual. Ancestral determinations of the Spring Street remains comprised both morphological and multivariate (statistical) analyses.

Personal Characteristics

The personal characteristics of each individual were also recorded. These attributes include stature; non-metric morphological traits; evidence of biomechanical stress; the location and severity of enthesophytes and osteophytes (evidence of skeletal degeneration and arthritis); evidence of occupational activities; and evidence of intentional cultural or social modifications to the bones and teeth.

Classification of Antemortem, Perimortem, and Postmortem Lesions

In order to identify and assess skeletal lesions, the bones and teeth from each individual were examined grossly and with the aid of a magnifying lens. Each skeletal element was assessed for morphological variations, as well as for types, locations, and severity of pathologic and traumatic lesions. Traumatic lesions were classified as either antemortem (healed), perimortem, or postmortem. Perimortem lesions are those skeletal modifications that occurred around the time of death, and in some cases exhibit partial healing. Unhealed fractures that may have been related to the cause of death are also classified as perimortem.

Postmortem damage refers to lesions that occurred from taphonomic processes associated with normal post-interment decomposition, intrusions from other burials and/or features, and damage from interment (Haglund and Sorg 1997, 2001). The nature of each lesion relative to the time of death was assessed according to fracture patterns, degree of erosion on fractured edges, color differences between fractured and periosteal surfaces, and the archaeological context of each interment.

Documentation of Pathologic Lesions and Differential Diagnosis

Each pathologic lesion was assessed grossly and with the aid of a magnifying lens. The phrase "periosteal reaction" was used to describe proliferative bony lesions grouped under the terms periostitis, porotic hyperostosis, cribra orbitalia, and osteomyelitis (Grauer 1993; Ortner 2003). Each lesion was described in detail using these specific terms where appropriate. "Periostitis" typically refers to infectious lesions or inflammation of the periosteum or outer surfaces of the bone, while the term "osteomyelitis" indicates an infection that involves the cortical bone tissue and frequently the medullary cavity.

Following terminology suggested by Buikstra and Ubelaker (1994), Ortner (1994), and the Paleopathology Association (1991), periosteal reactions were recorded by location (proximal, middle, and distal thirds of each shaft diaphysis), extent of involvement (widespread or localized), amount of associated swelling, and degree of remodeling. Reactions were graded as mild, moderate, or severe, and were listed as either remodeled (healed) or unremodeled (active).

Human bone can essentially respond in only two ways to infection or trauma: through hypertrophy (proliferative growth) or atrophy (loss of mass). The distribution of lesions throughout the entire skeleton is used to arrive at a differential diagnosis regarding the etiology of the lesions; however, several different disease processes may result in the same patterns of lesions and, therefore, in many cases no conclusive diagnosis can be rendered.

When possible, a differential disease diagnosis was made to account for the observed lesions presented by each skeleton or skeletal portion. These diagnoses were based on the nature and distribution of the observed lesions and were determined through comparisons with lesions previously described in standard references on paleopathology (e.g., Mann and Hunt 2005; Ortner and Aufderheide 1994; Ortner 2003; Steinbock 1976; Zimmerman and Kelley

1982). Among the lesions analyzed for this study were those related to nutritional disorders, biomechanical stress (enthesophytes), and degenerative joint disease or osteoarthritis (osteophytes).

Anthropometry

Anthropometry is the "technique of expressing quantitatively the form of the body" (Montagu 1960:3). Osteometry is the subdivision of anthropometry that deals with measurements of the skeleton and the skull, the latter measurements of which are often grouped under the term craniometry. When possible, measurements of the recovered skeletal remains were taken following standards for the University of Tennessee Forensic Data Bank (Moore-Jansen et al. 1994). The physical anthropology team used standard sliding and spreading calipers and a steel tape to generate these measurements. The resulting data were entered onto standardized forms generated by the Data Bank Project and analyzed using the FORDISC 3.0 computer program, also developed by the University of Tennessee.

Dental Data Collection

Antemortem and Postmortem Tooth Loss

In addition to the complete dental inventory described above, many other dental features were assessed and recorded to form an overall representation of each individual's health.

Trauma, dental care (clinical tooth extraction and artificial fillings), and cultural practices such as tooth evulsion may account for tooth loss in some individuals. Most cases of antemortem tooth loss, however, are pathologic in origin. The pathologic processes that contribute to antemortem tooth loss generally begin with diseases of the periodontal structures or with exposure of the dental pulp (Shafer et al. 1983). Frequencies of antemortem tooth loss, therefore, become one means of comparing dental health between population samples.

Regardless of the cause for the loss of a tooth, the root socket undergoes a healing process in which the empty space becomes filled or remodeled with new bone. The degree of healing can be used to assess the type of tooth loss: either antemortem or postmortem. Tooth sockets in the process of remodeling present poorly defined margins with some degree of new bone deposition. Teeth lost postmortem exhibit deep sockets, present no signs of healing, and are characterized by clean walls with sharp rims.

Dental Abscesses

Dental abscesses are openings or crater-like holes (cloacae) in the alveolar portions of the maxilla or mandible which expose the tooth roots and provide a channel through which the discharge of white blood cells, dead tissue, and bacteria can be eliminated (Steinbock 1976:66). Lesions of this type are often classified as periapical abscesses and are generally initiated by infections of the dental pulp (Shafer et al. 1983:498).

Periapical abscesses were recorded independently as well as in their co-occurrence with dental pulp exposure due to attrition or carious lesions. In addition, the less common dental pulp exposure associated with alveolar crest resorption was noted.

Nonmetric Traits

Several morphological variants of the permanent dentition were observed and recorded. Identification followed the Arizona State University Dental Anthropology System described in Turner et al. (1991). These traits included evidence of maxillary central incisor "shoveling," the presence of Carabelli's cusps on the maxillary first molars, and occlusal cusp patterns.

Data Collection from Incomplete Remains

Many of the techniques used to analyze human skeletal remains can be applied to individual bones recovered from disturbed contexts. When poorly preserved or previously disturbed remains were examined, the data collection and analytical methods were tailored to the specific bones recovered. First, the minimum number of individuals represented by the remains was determined. Subsequently, the sex, age range at death, and ancestry of the

individual(s) represented in the partial remains were assessed. Personal characteristics and documentation of lesions and anomalies were also recorded. Dental analyses likewise followed the methods described above.

Thousands of commingled bones, teeth, and fragments were recovered from all three vaults, but especially from Vaults 2 and 4. Sorting these remains to determine the minimum number of individuals, assess the analytical potential for individual bones, and record pathologic and osteometric data is an ongoing process that will serve as future research to complement the present study.

3. Results and Conclusions

The human remains from the Spring Street Presbyterian Church burial vaults reflect the lives of people who were born and died around the turn of the nineteenth century. While each individual comprises a unique set of biological characteristics that results from their genetic profiles and life experiences, as a group the demographic and pathologic data they generate allow bioarchaeologists to more accurately reconstruct the nature of life and death in antebellum New York City.

The following descriptions of each individual's skeletal remains follow a standard format. Each description begins with the individual's state of preservation and an inventory of recovered elements. The individual's demographic profile follows, including determinations of age at death, sex, and ancestry. When present, descriptions of pathology, trauma, cause of death, evidence of biomechanical stress and repeated activities, cultural modifications, and postmortem treatment complete each osteobiography.

Minimum Number of Individuals

The number of individuals from the Spring Street burial vaults identified during the laboratory analysis phase of the project exceeds the number labeled during fieldwork by the URS archaeologists due to the high degree of postmortem disturbance and commingling. Once in the laboratory, the commingled remains were separated and given letter designations distinct from the burial numbers assigned in the field.

Completion of the analysis indicates that the number of individuals from each vault is as follows:

- Vault 1: 16 individuals;
- Vault 2: 31 individuals;
- Vault 3: 19 individuals (including one set of fetal remains found in utero); and
- Vault 4: 27 individuals.

A description of each of these 93 individuals from the four vaults follows.

Individual Osteobiographies

Vault 1

On December 11, 2006, construction crews excavating the property at 244–246 Spring Street for a new hotel unexpectedly discovered fragmentary human skeletal remains among several feet of fill. Forensic anthropologist Christian Crowder, Ph.D. from the Office of the Chief Medical Examiner (OCME) examined the scene later that day but could not adequately evaluate the nature of the discovery due to the loss of daylight. Dr. Crowder returned to the scene on December 12 and determined that the remains were from a historical burial ground and not forensically significant. He and his assistants then collected the remains that were visible on the surface (later identified as originating from Vault 1) and transported them to the OCME's office on First Avenue. These remains were subsequently sent to Utica College for analysis.

The remains from Vault 1 were significantly fragmented, commingled, and eroded. While the OCME staff initially reported one intact coffin outline, subsequent excavation of the area in and around Vault 1 by URS archaeologists revealed that no in situ burials remained, only a small number of bricks from the floor of the vault. Apparently, this section of the four adjoining burial vaults had been previously disturbed, either during demolition of the former Spring Street Church building or demolition of the parking lot that replaced it in the 1960s. Consequently, the badly fragmented remains from Vault 1 were not individually labeled in the field nor assigned specific numbers during the laboratory analysis phase of the project.

The remains from Vault 1 included 32 elements from subadults. Among these were the mandible of a child, several cranial vault fragments, two humeri, three radii, three ulnae, four tibiae, and two femora, as well as three left and three right os coxae. Since this group of bones representing several individuals were disarticulated and commingled, the minimum number of individuals (MNI) was based on the duplicated os coxae. Consequently, there were at least three subadults represented by these 32 skeletal elements.

Among the 308 adult skeletal elements were 50 cranial fragments, four teeth, and numerous fragmentary long bones and vertebrae. While many of the remains were duplicated, since they were so badly fragmented and commingled, only a MNI could be determined, rather than specific individuals discerned. Accordingly, the MNI for the adults from Vault 1 is 13 people, based on the identification of 11 left femora and 21 right femora, each one of which may have originated with a discrete individual.

Given the incomplete nature of the remains, the age, sex, and ancestry determinations for the minimum number of 16 individuals from Vault 1 are indeterminate. None of the remains from Vault 1 presented evidence of pathology or trauma.

Vault 2

Built of brick with a brick floor, historical documentation indicates that Vault 2 was most likely constructed and used after 1831 (Meade 2007:III-2). No coffin lid plates with legible dates were recovered from this vault, so the latest date that individuals were buried within it remains unknown. It is likely, however, that individuals were not interred in the vault after about 1835 or 1836, when the vestry constructed a new church building to replace the first one at the site.

Archaeologists discerned the remains of 12 individuals in situ when they excavated Vault 2. The remains of an additional 19 distinct individuals were identified after the backdirt from Vault 2 was screened at the Syracuse University Anthropology Laboratory. These 19 additional individuals were designated as Burials A through S.

Burial 1. Present are the fragmentary, incomplete and poorly preserved remains of a young adult, probably female. The few cranial and postcranial elements representing this individual are bleached white from a caustic environment and there is little of the original cortical bone remaining. The remains were associated with four shroud pins and a small opalescent fragment of glass.

Sex of this individual was determined to be female based on the small and gracile clavicle and small radius diaphysis. Age was estimated to be young adult based on the relatively youthful endocranial surface, limited dental attrition, and lack of dental pathology. Ancestry is indeterminate. No skeletal pathology was observed.

Dental pathology includes carious lesions, primarily on the occlusal and interproximal surfaces. A large carious lesion is present in the root of the mandibular left first molar. The location of this molar and hypercementosis indicates periodontal disease. This individual's teeth also displayed patches and rings of tobacco stains, but calculus deposits were very limited.

Burial 2. Present are the nearly complete remains of a subadult (2.5–3.5 years old) who was probably male. The remains are in good condition, although there is postmortem damage to the cranium and lower appendicular elements. The bone is golden brown in color and well preserved. This individual was found in situ interred together with Burial 3 and notes on the storage bags from the field state that the remains were found "along west wall." At least two shroud pins were identified with this individual. One is nearly complete, bent at a 45-degree angle, and capped by a small ball-shaped head. The pins are encrusted with green oxidated metal, but are silver below the corrosion. Black and green shroud pin stains are present on the superior surface of the right clavicle and the shafts of the right and left middle ribs. Cranial and appendicular elements were partially reconstructed to facilitate osteometric analysis and the assessment of ancestry.

As noted above, this individual was determined to be a probable male. In the cranium, the occipital condyles are large and robust, the nuchal line developed, and the internal and external occipital crest prominent. The mastoid processes are long and thick. The lateral margins of the orbits are thick and there is a fairly prominent temporal line. The mandible displays a prominent bilobed chin. Overall, the postcranial elements already look fairly robust, especially the deltoid tuberosity of the humerus and the linea aspera of the femur. The ilium has a flat auricular surface and the sciatic notch is fairly deep.

Measurements of the long bones indicate that this individual was 2.5–3.5 years of age at death. Dental calcification standards of the maxillary first permanent molar and the mandibular deciduous canine also indicate an age of between 2.5 and 3.5 years of age.

It is difficult to determine the ancestry of young children and this individual has a complex mix of morphological traits associated with several population groups. The lambdoidal suture is complex and contains at least two accessory ossicles. Such characteristics are more consistent with Asian ancestry, as is the very flat face of this individual. Yet, the nasal aperture exhibits a sharp nasal spine, but it is bordered by a smooth inferior rim that hints at guttering. The spine is characteristic of European ancestry, while the guttering of African ancestry. Further supporting African ancestry is a slight nasal depression, the crenulated occlusal morphology of the maxillary and mandibular first permanent molars, and an arched palatine suture. In addition, this subadult has a bifurcated frontal crest; a characteristic common in individuals from this burial vault.

No carious lesions or linear enamel hypoplasia were observed among the teeth. Attrition is mild and concentrated on the anterior dentition.

Patches of porosity exhibited by the cranium are noticeable but not necessarily pathologic. The palate appears to be quite porous and there is a patch of porosity under the nasal spine, as well as bilaterally around the infraorbital foramina.

For such a young individual, the attachment sites for the deltoids on the lateral humeri are developed. In addition, the right clavicle is curved superiorly at midshaft and more robust than the left side. This would suggest rather strenuous activities, especially with the right upper arm.

Burial 3. Present are the nearly complete remains of a subadult (4.5–5.5 years old) who was probably male. The remains are in good condition, with postmortem breakage of the cranium and lower appendicular elements. The bone is golden brown in color and well preserved. This individual was identified in situ immediately adjacent to Burial 2. Two shroud pins were identified with this individual; one beneath the skull and the other near the right rib cage. This is consistent with green stains observed on the posterior surface of the occipital and on the shaft of a right rib. Both pins are highly corroded and maintain little of their original structure. A bag of soil also contains what was identified as a "possible" coffin plate. The metal is fragmentary and little of the item remains. Also associated with these remains were three ceramic fragments. The two rim fragments appear to be from different vessels, although both have a plain white finish. The third fragment appears to be from a third vessel, as the temper is pink. The finish on this fragment has a blue and white indeterminate design. Cranial and appendicular elements were partially reconstructed to facilitate osteometric analysis and the assessment of ancestry.

This individual was determined to be a male. In the cranium, the nuchal line is developed, and the internal and external occipital crests are prominent. The mastoid processes are long and thick. The lateral margins of the orbits are thick and there is a fairly prominent temporal line. The mandible exhibits a bilobed chin. The ilium has a flat auricular surface and the sciatic notch is broad. The ilium is quite robust, as is the ischiopubic ramus.

Measurements of the long bones indicate that this individual died around 4.5–6.5 years of age. Although the ulna and radius both indicate the lower end of this age range, the humeri are quite long and fall within the 5.5–6.5 age category. Dental calcification standards, however, are more consistent with 4.5–5.5 years, especially the mandibular first and second molars.

The maxillary permanent first incisor (unerupted) presents mild shoveling, indicative of Asian ancestry. Most other indicators are consistent with European ancestry, including the flat face, vertical mastoid processes, narrow nasal aperture, and bilobed chin. The frontal crest is bifurcated and there is a small accessory ossicle in the lambdoidal suture. The developing crown of the maxillary left second incisor is still in the crypt, but has a noticeable peg-shaped morphology.

Numerous carious pits are present among the deciduous dentition. The lesions are located primarily on the occlusal, buccal, and interproximal surfaces. Most lesions are pinhole in size, although the interproximal caries have expanded along the smooth surface. No linear enamel hypoplasia were apparent. Attrition is mild and concentrated on the anterior dentition.

The midshaft of the fragmentary left tibia exhibits mild, active, and widespread periostitis across the medial aspect. Because only the midshaft of this element was recovered, the extent of the inflammation, as well as its etiology, cannot be assessed.

Burial 4. This individual is an incomplete but well-preserved female about 40–49 years in age. Only elements of the right lower arm, pelvis, and legs are present. The bone is a light golden brown and it is in good condition. There is some excavation damage. Nails and coffin wood are associated with the body and spots of oxidized iron have stained the bone. A number of skeletal elements that were bagged with this burial belonged to other individuals, including the subadults from Burials 2 and 3. These elements were removed and placed with the appropriate individuals.

This individual was probably female based on the morphology of the innominate, the flat sacrum, and the small joint surfaces. At 44 mm in diameter, however, the femoral head is large for a woman. More masculine in appearance are the robust femora and tibia. Both show robust muscle attachments, although the joint surfaces are small overall.

Age of this individual was broadly determined to be 40–49 years at death. The right auricular surface indicates the older range of 45–49 years, although the left auricular surface is more indicative of 40–44 years. Supporting the lower end of the decade is the limited degenerative joint disease and dense cancellous bone.

Ancestry is indeterminate, though the femora exhibit anterior-posterior curvature and a fairly narrow intercondylar fossa. These traits are more consistent with European ancestry.

Skeletal pathology is limited to mild osteophyte formation on the margins of the joints. The lipping is mild.

Activity markers are most evident in the femora of this individual. The intertrochanteric line is pronounced, as is the greater trochanter. A third trochanter has developed and the linea aspera is especially pronounced at midshaft. This individual presents a small Poirier's facet, asymmetrically located on the right side. The proximal third of the right tibia is noticeably rotated laterally. This rotation is so extreme that the tibial tuberosity is positioned under the lateral condyle.

Burial 5. Present are the incomplete and poorly preserved remains of a young adult, probably male. The elements present are limited to bones of the legs and feet. The bones are very dark brown in color and organic soil adheres to the elements. The bones are associated with coffin wood and nails. Like Burial 6, the fragmentary nature of these bones appears to be due to compression and warping from a damp environment.

The sex of this individual was determined to be a probable male based on the robusticity of muscle attachments, especially the pronounced elevation of the linea aspera. He was determined to be a young adult based on the limited degenerative joint disease and the very smooth and dense cortical bone. Ancestry is indeterminate.

Skeletal pathology is limited to mild osteophyte development on the margins of the distal femoral joints. The tibiae display large squatting facets.

Burial 6. These remains comprise the incomplete and poorly preserved bones of a young adult, probably female. Elements present include the diaphyses of the humeri, the femora, and proximal right tibia. The bones are very dark brown in color and fragments of soil and coffin wood adhere to their surfaces. The fragmentary condition of the elements appears to be due to compression after burial. There were no grave goods or coffin hardware associated with this individual.

The sex of this individual was determined to be a probable female based on the small and gracile appearance of the long bones. The determination that she was a young adult was based on the smooth texture of the femoral cortical bone and minimal degenerative joint disease. Ancestry is indeterminate.

Skeletal pathology is limited to mild osteophyte development on the distal joints of the femora and on the proximal joint of the right tibia.

Burial 7. Present are the incomplete remains of a subadult, 4.5–5.5 years of age. The remains are in fair condition, although incomplete. The skull is in poor condition due to a corrosive postmortem environment and warping from ground pressure. The bone ranges from a light golden brown in the vault to a dark golden brown in the femora and lower lumbar vertebrae. Most of the elements were excavated and identified as Burial 7 (FS #98). Nails and coffin wood were associated with this burial.

Sex of this individual is indeterminate, although morphological indicators lean towards a male. The sciatic notch is deep, the auricular surface is flat, and the permanent dentition large. Age of the individual was determined using dental calcification and long bone length standards.

This individual exhibits pronounced shoveling of the maxillary central and lateral incisors, a trait found in high frequency with Asian ancestry. This individual has a bifurcated frontal crest similar to that presented by Burials 2 and 3.

Pit caries were present in the deciduous maxillary molars on the occlusal, interproximal, and buccal surfaces. No calculus deposits were present.

This individual displayed moderate, active cribra orbitalia in both orbits. Associated with this condition was the expansion of the diploë in the frontal near the frontal sinus. Although there is some expansion throughout the frontal, this porosity has not broken through the ectocranial surface to create porotic hyperostosis. Other flat bones also exhibit this expansion of cancellous bone. The pelvis, in particular, is noticeably affected. The ilium is thickened and dense and the ischium and pubis are expanded to the point that the pubis seems malformed. Similar expansion can be seen in the proximal ends of the femora. At the distal ends of these shafts the cancellous bone appears to be very dense, filling the medullary cavity.

Lytic lesions pock the anterior and left lateral surfaces of the centra in vertebrae T8 through L2. The lesions are most pronounced in T11 and T12. Vertebrae T9 through T11 present noticeable, horizontal defects along the midline where the vascular channels penetrate the centrum. These vascular channels, however, are not typical but cut deeply into the body of the centra (approximately 2 mm) and are surrounded by porous and sclerotic bone. The porosity has extended along the lateral surface of the pedicle and onto the transverse process; the left side being more noticeably afflicted. The defects in T12 are more noticeable and are lytic in nature. In T12, the lesion to the right of the midline is 5.5 mm in width and extends 3 mm in depth. The lytic lesion to the left of the midline is smaller, measuring 4 mm in width. Just posterior to this lesion is a small indentation where a third lesion is developing. The first and second lumbar vertebrae do not exhibit the large lytic lesions, but rather pitting and sclerotic bone on the left side of their bodies. This condition seems to be consistent with the onset of tuberculosis, with a focus on the left side of the vertebrae and the porotic and lytic nature of the condition. This condition may represent the manifestation of the infection prior to ankylosis and collapse produced by Pott's disease.

Burial 8. These remains consist of the incomplete cranial and postcranial bones of an adult female, 25–29 years old at death. The cranial vault has the most extensive postmortem erosion due to a caustic and wet environment. The left parietal is warped. Green stains from shroud pins are present on the left auricular surface, the lateral surface of the proximal left tibia, and on the medial surface of the left fibula. An oxidized nail fragment adheres to the distal third of the posterior surface of the left humerus.

This individual was determined of be a female based on the morphology of the pelvis and cranium. The sciatic notch is very wide, the auricular surface elevated, the preauricular sulcus pronounced, and the sacrum straight. The cranium has a moderate-sized mastoid process, but the supraorbital ridges are very small and the superior margin sharp. Measurements of the femur and humerus head fall within female standards. Overall, the joint surfaces are small.

This individual was determined to be a young adult, 25–29 years of age. Using the Meindl and Lovejoy auricular surface standards, the left auricular surface was scored as Phase II (25–29 years). The sternal rib end was scored as Phase IV (24–31 years). Although the cortical bone looks smooth and youthful, infectious disease has resulted in wastage resulting in the cancellous and cortical bone becoming thin. This thinning is especially noticeable on the anterior neck of the femora, where a Poirier's facet would normally be observed, but instead is found a web of exposed trabecular bone. The blades of the ilia and scapula are also thin and transparent.

This individual was determined to be of European ancestry based on morphology of the face, including the high and arched nasal bones, a narrow nasal aperture with a sharp sill, blade-form of incisors, and a dip or z-shaped palatal suture. The anterior bowing of the femur and narrow intercondylar space supports this determination. Similar to many other individuals in this vault, this female exhibits the remnant of a bifurcated frontal crest.

The maxillary dentition was present in occlusion, although no mandible or mandibular teeth were identified for this individual. This individual has extensive dental pathology, including carious lesions, active abscesses, and teeth that have abscessed out. Large carious lesions are observed on the interproximal surface between the right first and second incisors, and on the occlusal and buccal surface of the left second molar. In the latter, the carie has undermined the structure of the crown, so that the lesion on the lingual surface can be observed through the lesion on the buccal surface. Another large interproximal carie is present on the mesial surface of the third left molar and the second right molar. Surprisingly, none of these teeth show evidence of abscessing. The first left molar, however, has an active periapical abscess that has perforated the external cortex of the maxilla. The circular perforation measures 3 mm in diameter. The crown of this tooth has been completely destroyed by caries, and the pulp chamber is exposed. In addition, three teeth—the first molars and the second right molar—have abscessed out and the alveolar bone has completely resorbed. No calculus is evident on these teeth and there are no linear enamel defects. Tobacco stains are evident on the first molars and the left second premolar. The anterior dentition exhibits fairly extensive activity-related chipping on the labial and occlusal surfaces. Two "seamstress notches" have also developed; one in the left second incisor and another in the right canine.

This individual exhibits skeletal lesions consistent with tuberculosis, including layered periostitis on the visceral surface of the ribs, periostitis on the tibiae and right femur, and overall wastage and osteoporosis. The upper left ribs (identified as ribs 1 and 3 through 5) have enlarged and porous visceral surfaces where periostitis has developed (Figure D.3). The necks of these ribs are doubled in size due to the inflammation. Rib 1 is represented only by the neck and angle, and the entire superior visceral surface is inflamed with active and healed patches of periostitis. Rib 3 is missing the head and the last third of the sternal end. This shaft presents inflammation along the entire visceral surface, with the most extensive deposits at the angle. Porous and active regions are seen near the head and towards the sternal end of the shaft. Rib 4 presents the heaviest periosteal deposits on the neck and angle, and the inflammation continues onto about a third of the shaft. The entire deposit exhibits porosity and active inflammation. Rib 5 is similar to that of rib 4, although the periostitis continues onto about half of the shaft. All of the ribs have lesions that appear to have been through cycles of inflammation and healing.

The right femur and both tibiae exhibit mild, widespread periostitis across the anterior surface of their shafts. For the most part, the periostitis appears healed with only faint striae remaining. There are, however, some small patches of porosity, although it is difficult to determine which areas were due to inflammation as opposed to wastage and thinning of the cortical bone.

This individual has only limited degenerative joint disease, including a patch of mild porosity in the left acetabulum and mild osteophytes on the distal joint margin of the left femur. The lateral condyle of this femur is noticeably flat on the inferior margin. This condyle is broken postmortem, so it is difficult to determine how far back the deformation extends. The articulating condyle on the tibia is also missing, so the condition cannot be further assessed. The change in the condyle appears to be related to activity that has habitually forced the lateral condyle into the articulating joint.

The individual's palate is porous and a palatine torus has formed, indicating strenuous use of the mouth. This morphology coincides with the chipping seen in the front teeth. Strenuous upper body activity is indicated by the very flat scapular margin of the clavicle and pronounced attachment sites for the deltoids, especially for someone who overall is quite gracile. Habitual and strenuous activity is also indicated by the rugosity of the ischial tuberosities and the tear-dropped shaped femur.

Burial 9. Present are the incomplete facial and postcranial remains of an adult male, 40–49 years of age. All that represents this individual are a partial left maxilla and fragmentary appendicular elements and pelvic girdle. The recovered bones are golden brown in color and in good condition. A rust stain is present on the lateral third of the right femoral diaphysis.

This individual was determined to be male based on the flat auricular surface, narrow sciatic notch, large acetabulum, and overall robusticity of the bones. The femoral head measured 49 mm in diameter, well within the range of male standards.

This individual has a mix of characteristics that do not allow ancestry to be definitely determined. The femora are very straight, the bone is dense, and the intercondylar space is quite wide. Such traits are typically associated with

African ancestry. The left maxilla fragment, however, delineates a narrow nasal aperture and a flat face. The later traits are consistent with European ancestry.

Age of the individual was broadly determined to be an older adult. Based on the morphology of the fragmentary left auricular surface, this individual was more narrowly defined as being 40–49 years of age. This age is consistent with the mild to moderate degenerative changes in the joints, limited dental pathology, and mild dental attrition.

The fragmentary left maxilla containing some teeth was identified through sorting soil from Vault 2. This fragment articulated with the frontal process associated with Burial 9. The teeth were in very good condition. The anterior dentition presented mild attrition. Only a single large carie was identified in the maxillary left first molar on the distal interproximal surface and neck. Dental calculus was mild and no linear enamel defects were identified. Both lateral incisors had enamel build-up near the cingulum, giving the teeth the appearance of being barrel-shaped in this region.

Skeletal pathology included limited degenerative joint disease, an enthesophyte on the right calcaneus, and lesions most likely associated with metastatic cancer centered in the abdominal region. The degenerative changes included mild osteophytes that encircle the fovea capitis on both femoral heads, as well as mild lipping around the margins of the distal joint. The distal right femoral joint surface also exhibits a small patch of mild porosity on the joint surface and a small smooth nodule of bone on the surface of the lateral condyle. Mild osteophytes are also present on the intercondyloid eminence of the proximal left tibia joint surface. The left acetabulum has only mild osteophytes on the margin of the joint and a small patch of porosity on the joint itself. The right acetabulum exhibits more extensive changes, much of which may be related to the neoplastic condition rather than degenerative change. While mild osteophytes also surround this joint, extensive porosity and bone nodules have formed on the margin and joint surface along the superior-posterior margin of the acetabulum. The porosity is moderate to heavy with noticeable macroporosity, and the bone formations are smooth nodules rather than the spongy spicules of bone observed on the ilia. Finally, the margins of the joint surface of the right calcaneus have mild osteophytic lipping. This bone also has a fairly large enthesophyte on the lateral surface. The enthesophyte results from ossification of the peroneus longus and brevis muscles, which attach to the peroneal tubercle. Enthesophytes extend from around the tubercle, especially on the superior margin.

The most noticeable skeletal pathology presented by this individual is neoplastic growth most likely caused by metastatic cancer. The neoplasm has resulted in both bone formation and extensive lytic pitting, primarily in the abdominal region. The bone-forming condition appears bilaterally across the visceral surfaces of the ilia. The new bone has a fuzzy, velvet-like appearance (Figure D.4). The growth is denser and more prominent on the left ilium. This condition is similar to that seen on bodies from historic lead-coffin burials at the National Museum of Natural History at the Smithsonian Institution and considered to be prostate cancer. Such cancer is bone forming, as opposed to many others that are only destructive in nature. Whatever the primarily source of the cancerous growth, it had clearly spread throughout the os coxae, sacrum, and long bones. The os coxae are especially pitted with lytic lesions, although most of these pits remain smaller than the larger lesions, which measure 4 mm in length (Figure D.5). The posterior surfaces of the ilia are particularly afflicted by the lytic condition. These lesions also appear to be quite extensive in the three fragments of sacrum that were identified. The pathology in these fragments, from the area near and including the articular facets, is characterized by large pores that are surrounded by denser bone.

The cancer had also spread into the long bones. The femora exhibit microporosity across the proximal thirds of the shafts and, like the bone formation on the ilia, the condition seems to be more pronounced on the right side. The porosity extends down the medial surface of the right shaft, gradually becoming fainter in expression. While there was no right tibia identified for this individual, the left femur and tibia also have mild porosity extending along the diaphyses, although the porosity runs along the lateral surfaces. The only upper extremity bone identified with this individual is his right ulna. This bone too exhibits microporosity, especially in the distal third of the shaft along the posterior surface. On the anterior surface of the shaft, there is a small patch of mild but active periostitis in a groove below the extensor carpi ulnaris ridge.

The left maxilla also displays evidence of this pathologic condition. The palate is especially porous, as is the maxillary sinus. Like the sacral fragments, the bone has a porous, yet dense structure.

The individual appears to have been engaged in habitual and strenuous activities involving the legs. The linea aspera is pronounced and elevated, the intertrochanteric line is also well developed, and the third trochanters are elevated

and rugged. In the right arm, the pronator quadratus ridge is particularly well-developed and prominent. A single hand phalange displays prominent lateral ridging on the palmar surface.

Burial 10. This individual is represented in the partial remains of a probable male, 20–29 years of age. The bone is in good condition, although the skeleton is incomplete. The bone is a light golden brown and exhibits little postmortem erosion. Nails and thumbscrews were associated with the body, as were two buttons. The larger button measures 16 mm in diameter and has four holes drilled in the center. The second button measures 10 mm in diameter, is made from shell, and also has four holes drilled in the center.

This individual was determined to be a male based on the morphology of the pelvic girdle and overall robusticity. The ilia are quite vertical and the sacrum has an anterior curvature. The femora head measures 44 mm in diameter, which is indeterminate for sex.

This individual is clearly a young adult, although joint surfaces used to directly assess age are missing. A broad age range of 20–29 was determined based on the overall density of the bones and their youthful appearance, the limited degenerative changes, and the youthful auricular surface on the sacrum. There is also a remnant of fusion of the proximal epiphyses of the tibiae.

Indicators of ancestry were limited to morphology of the long bones. Overall, the femora have an anterior curvature, tear-drop shape, and very narrow intercondylar fossa. These traits are most consistent with a European ancestry.

Skeletal pathology was limited to mild degenerative joint disease and periostitis. The most extensive degenerative change was seen on C1. The articular facet for the dens had large and thick osteophytes surrounding the articular facet. Yet, the superior and inferior articular facets were unremarkable. The right acetabulum exhibited mild porosity on the joint surface, the distal joints of the femora had mild osteophyte development around the margins, and the proximal tibiae had mild osteophytes on the margins, as did the patellae. Mild, active periostitis is present along the entire anterior surface of the femoral diaphyses. The inflammation is more pronounced on the left side, although both sides have mild, active inflammation. Similar to Burial 11, the non-articular surface in the acetabulum is very thin and transparent.

In the arms, the pronator quadratus of the ulnae are elevated. Most of the activity-related changes can be observed in the legs. Very large Poirier's facets developed bilaterally and the linea asperae are elevated. The distal joints of the femora appear to have a small fold in the mid-line. This does not look pathologic but was merely the result of habitual activity from a young age. Similar stress on the knees can be seen in the proximal joints of the tibiae, where the medial condyles are noticeably concave. The distal thirds of the tibiae and fibulae are bowed posteriorly.

Burial 11. This individual comprises the incomplete postcranial elements of a subadult, approximately 14.5–15.5 years of age. Sex is indeterminate, although probably female. The bone is in very good condition, although the remains are incomplete. The bones are a light golden brown, but stained black by iron oxide. A mandible from the commingled and screened soils was added to this individual based on overall color and dental calcification standards that closely matched the remains bagged in the field as Burial 11.

Coffin hardware is attached to the medial surface of the right ulna. Shroud pins and numerous nails were also in association. One shroud pin is similar to that associated with Burial 2, with a small ball topping off a long shaft. It measured 28.2 mm in length.

Sex determination was difficult to assess for this individual due to the lack of post-adolescent skeletal changes. Male indicators included ilia that were fairly vertical, a pubic bone was somewhat short and compressed, although fragmentary, and a fairly large acetabulum and femoral head (45 mm). The latter, however, falls into the indeterminate range for sex. Female indicators include a wide sciatic notch, somewhat elevated auricular surface, and gracile and small bones of the forearms. The tibiae, however, are more robust and masculine in appearance. Moreover, the mandible is feminine: a small corpus, angled ramus, small mandibular condyle, and inverted gonion.

The age range for this individual was determined by epiphyseal union and long bone length. Measurements of the radius and ulna indicated an age of death greater than 12.5 years. The epiphyses were all open in the forearms, indicating an age less than 14–17 years. The proximal femur, greater trochanter, and distal tibia and fibula were just

at the onset of fusion, indicating an age range of 13–17 years. The mandible that was added from the screened soil exhibits dental calcification consistent with 14.5–15.5 years, although at the younger end of this age category.

This individual's femora are very straight with little anterior-posterior curvature. The occlusal patterns of the first molars are a mix of the Y-5 cusp pattern, yet the occlusal surfaces are somewhat crenulated.

No skeletal pathology was observed. There was, however, slight roughening of the cortical bone on the medial surface of the left femur, suggesting slight periosteal inflammation. The blade of the ilium and the nonarticular area of the acetabulum are very thin for an individual of this age. The diaphyses of the fibulae are also very thin, almost atrophied in appearance.

This individual had an elevated extensor carpi ulnaris crest. The popliteal line is pronounced on the tibiae, as is the interosseous crest. The connecting interosseous crests on the fibulae are also well developed. Small Poirier's facets are developing bilaterally.

Burial 12. Present are the nearly complete remains of a young adult male, 20–24 years old at death. The condition of the bone is good, although the skull is fragmentary and there is postmortem erosion on the ectocranial surface. The bone is a light golden brown color.

This young man's sex was determined based on the morphology of the pelvis, skull, and overall robusticity. The pubic bones are missing, but the ilium and ishium exhibit masculine traits. The vault is large with robust muscle attachments. The supraorbital torus is developed, the mastoids pronounced, and the chin square and slightly bifurcated. All of the postcranial elements have robust muscle attachments, though the femoral head measurements are indeterminate for sex.

This individual's age was estimated using the auricular surfaces, ribs, and vertebrae. The left auricular surface has lost some billowing and was classified as 25–29 years, although the right joint surface is more youthful and characteristic of 20–24 years. The sternal end of one of the ribs is consistent with a Phase 3, placing this individual in the 24–29-year age category. The first sacral vertebra remains unfused and the epiphyses on the rib heads are only partially fused. There are no degenerative changes in the joints, and dental attrition is moderate.

Most of the skeletal indicators are consistent with European ancestry, including the narrow nasal aperture with a sharp inferior margin. The face has a flat profile, a depressed nasion and towering nasals, canine fossa, bilobate chin, and undulating mandible. The palate is narrow and the dentition crowded. There is, however, frontal bossing, which is typically associated with African ancestry, and complex sutures with accessory ossicles, associated with Asian ancestry.

This individual appears to have skeletal and dental manifestations of congenital syphilis. The cranial vault has mild ectocranial porosity on the frontal and parietals. The parietals are eroded and so interpretation of the pathology is difficult. The left parietal, in particular, appears to have had a thickened diplöe and possibly remnants of lesions. Such lesions have more of a melted appearance, although this may be due to a caustic postmortem environment. The porosity on the vault is also observable around the nasal aperture and in the palate. The porosity inferior to the nasal aperture coincides with a bilateral concavity. The palate is v-shaped, deep, and the dentition crowded.

The maxillary first molars are small and present mulberry morphology (Figure D.6). A mulberry molar is a tooth whose occlusal surface is characterized by enamel nodules. This is a developmental anomaly that results from congenital syphilis. The alveolar bone has receded, exposing the roots. The left second premolar is also deformed along the interproximal surface. The deformed teeth present dark discoloration on the cusps. The central incisors exhibit subtle notching (Hutchinson's incisors) and present moderate wear. This attrition is paralleled in the mandibular incisors, although no notching is evident. Both mandibular first molars have abscessed out and the alveolar bone is resorbed. The right first premolar, however, is deformed and banded by a deep hypoplasia and irregular cusps. This tooth is dark in color like the deformed maxillary teeth.

Postcranial deformities that appear to be associated with congenital syphilis include alteration to the scapulae, distal epiphyses of the femora, and the diaphysis of the right tibia. The cancellous bone in the scapula near the glenoid fossa appears expanded, and the left glenoid fossa itself appears swollen. The right glenoid fossa has broken off postmortem, but the fracture reveals small lytic pores. The fragmentary spines on the scapulae seem to have anomalous nodules of bone across the surface. These nodules are smooth and do not appear to be any kind of active or healed lesion.

The long bones are very heavy, and those elements that were fractured postmortem exhibit very thick cortical bone and narrow medullary cavities (right humerus, left radius). The distal epiphysis of the right femur exhibits osteochondritis dessicans. The lesion appears on the lateral condyle, just inferior to the patellar articular surface. The lesion measures 19 mm anteroposteriorly and 14 mm mediolaterally, with a maximum of 4 mm in depth. Roughly square in shape, a patch of porosity is located along the anterior margin of the defect. The lesion is smooth and well healed. The defect in the right femur is much more subtle. Here, there is only a small lozenge-shaped depression in the lateral condyle. The depression is shallow and lacks porosity.

Only a fragmentary right tibia was recovered and is bowed laterally, somewhat atrophied, with mild periostitis. The popliteal line is concave and marked by ossific nodules similar to that seen on the scapulae. Striae from mild periostitis are widespread along the lateral surface of the diaphysis and patchy along the medial surface. The inflammation has healed and active regions. The lateral bowing is most prominent in the proximal third of the shaft at the level of the nutrient foramen. While the other long bones appear to have very dense cortical and cancellous bone, both types of bone are thin in the tibia. A similar pattern of periostitis is seen on the diaphysis of the left femur—striations are widespread with some active and others healed. Slight striations are seen in the left femur, but were not coded. A small patch of periostitis was located on the middle third of the right ulna shaft. The patch, gray in color and active, was localized along the anterior surface of the shaft.

Dental caries were seen primarily in the maxillary dentition. The first molars, with their irregular shape, had occlusal surface caries, while small pit caries were observed on a number of the maxillary and mandibular interproximal surfaces. The mandibular first molars had abscessed out, presumable due to their irregular shape, thin enamel, and carious lesions. The maxillary first molars exhibit considerable alveolar resorption. Linear enamel hypoplasia were recorded on the mandibular left canine (3.97 mm) and the left and right first premolars (3.42, 4.81/3.09 mm). In the maxilla, defects were recorded in the right first and second premolars (1.52, 2.63 mm). Dental calculus was mild to moderate across the teeth. Attrition was mild except on the incisors and first molars. Consistent with congenital syphilis, the enamel is thin and wears very quickly. Bands of stains, possibly from tobacco, were observed on the right molars.

This individual presents pronounced muscle attachments in the arms and curvature of the bones consistent with performing habitual heavy labor. The deltoid tuberosities are elevated and enlarged, and the supracondylar ridges elevated. On the ulnae and radii, the interosseous crests are sharp and prominent, and on the ulnae, the pronator quadratus attachment site is elevated, especially on the right side. Because of activity, the proximal epiphyses and the proximal third of the shaft are bowed anteriorly.

The thoracic vertebrae also display indicators of heavy workload. Schmorl's nodes are present on T9 though L1, though most are small, round depressions. The most pronounced defect is seen in the T10 inferior endplate. Small Poirier's facets have developed on the femora, which also present third trochanters. The linea aspera is elevated, although most of the response to biomechanical activity appears to be focused in the arms.

Burial A. These remains are from a newborn infant and include only the partial skull, vertebrae, and appendicular elements. The bone is in good condition and no staining is evident.

Age was determined using dental calcification and long bone length standards. These standards indicate that the infant died between nine lunar months (each lunar month is 28 days long and is used in one method for calculating prenatal age) and one month of age, indicating a newborn.

Skeletal pathology includes a parietal, mandible, ischium, and rib that are very spongy in appearance. The ischium appears expanded, overall, while the right parietal fragment is covered by micro and macro porosity on the ectocranial surface. The mandibular ramus and condyle are also very porous and expanded. A single sternal rib end also appears expanded.

Burial B. Present are the partial remains of an infant. These remains were sorted and separated from Burial A based on size differences. The long bones of this individual were identified in the field and bagged as being "below #68." The bone is in good condition, has a slightly pink color from soils, and no noticeable staining from coffin or metals is evident. No pathology or anomalous conditions were identified.

Burial C. These are the incomplete and fragmentary remains of a subadult, 6 months–1.5 years of age. Though cranial, dental, and postcranial elements were identified, most of the bone is very friable. The bone is a golden brown with patches of dark brown staining due to coffin wood. The age of this infant was determined by dental calcification and estimated long bone length.

The remains are in poor condition, although some pathologic conditions are evident. The proximal end of the right femur, in particular, is especially swollen and there is densification of the cancellous bone in the distal third of the shaft. This thickening is also apparent in the shaft of the ulna. The scapular end of the right clavicle is also noticeably expanded.

A fragment of left rib has mild, active periostitis along the visceral surface of the shaft. The inflammation is widespread, extending from the costal groove towards the angle to just short of the sternal end. Toward this sternal end, the inflammation is pronounced and extends up to the superior margin. The attachment for the deltoid on the right clavicle is pronounced, to the extent that it appears to have a small enthesophyte.

The unerupted crown of the maxillary first molar has especially pronounced cusp tips. These are not quite mulberry molars, but are unusual. This morphology should be considered in light of the other skeletal anomalies.

Burial D. Present are the incomplete remains of a subadult, 3.5–4.5 years of age. The postcranial elements are in poor condition. The bone is a golden brown color, stained dark brown from coffin wood.

The age of this individual was determined by dental calcification and estimated long bone length. No skeletal or dental pathology was identified. The left clavicle is very straight and has a pronounced lip for the attachment of the deltoid.

Burial E. Present are the long bones of a subadult that was 7.5–8.5 years old at death, based on long bone growth standards. The sex was indeterminate. No skeletal pathology was observed.

Burial F. This individual was a subadult, 7.5–8.5 years old at death based on long bone measurements. Sex was indeterminate and no skeletal pathology was present.

Burial G. This individual was also a subadult, about 10.5–11.5 years old at death. This individual was probably female, based on the thin and gracile femora. There is little to no anterior-posterior curvature and the diaphyses of the femora are very round.

Burial H. This is a probable female child, 9–11 years old. The bones are in good condition, with only minor postmortem damaged. The color of the bone is a golden red-brown. A small green stain from copper salts is present on the visceral surface of the right ischium.

Sex was determined to be a probable female based on the morphology of the left ilium and ischium. The sciatic notch is wide, auricular surface elevated, and there is a small preauricular sulcus. The vertebrae are also gracile.

Age of this individual was determined to be approximately 9–11 years old. The ischium was unfused, although nodules of bone had appeared to initiate this process. In the vertebrae, the thoracic and lumbar arches still displayed a distinct line of fusion to their bodies. The proximal epiphyses of the humerus remained open. No skeletal pathology was observed, although the blade of the ilium is quite thin for an individual of this age.

Burial I. These are the incomplete remains of an adolescent, probably a male around 13 years old. The bone is in very good condition with only minor postmortem breakage and erosion on the left side. The color of the bone is a golden pink and quite distinct from some of the other individuals.

Sex was determined to be a probable male based on the shape of the ischiopubic ramus, shape of the mandible, and overall robust muscle attachments. This person's age was determined by long bone growth standards, epiphyseal union, and dental calcification. This individual appears to be approximately 13 years of age. Ancestry is indeterminate, although the mandibular first molars present a crenulated surface. There is anterior-posterior curvature to the femur, however, and some slight platymeria.

This individual has numerous carious lesions, especially for such a young age. Compared to others in this sample, the carious lesions and the dental attrition are more advanced. Pathology is unremarkable, although there is porosity in the anterior femoral neck where Poirier's facet would develop and a third trochanter is developing.

Burial J. These are the cranial remains of another adolescent male, about 13.5–14.5 years old at death. No postcranial remains were associated with this individual. The bone is a dark golden brown and in good condition. The parietals are warped due to postmortem pressure. There is a small fragment of coffin wood and hardware that adheres to the left external auditory meatus. There was no staining from shroud pins or other mortuary artifacts. This individual is particularly interesting because his cranium had been transversely sectioned with a saw during an autopsy.

Sex was determined to be a probable male based on the long mastoid process, robust nuchal lines, and large occipital condyles. His age was estimated to be 13.5–14.5 years old based on dental calcification standards. Such standards, however, were applied to the development of the maxillary teeth, as no mandible was identified for this individual.

Ancestry indicators for this individual are predominately European. The mastoid process is vertical and pointed, the nasal aperture is long and narrow, and the sill sharp. The zygomatico-maxillary suture is S-shaped, the malars retreating, and the lateral incisor is spatulate and has a distinct cingulum. Other indicators, however, are not consistent with European ancestry and include a parabolic dental arcade, a straight palatine suture, and the nasals have a flat Quonset hut shape. Finally, the frontal crest exhibits a bifurcated morphology.

Only the maxillary dentition is present in occlusion, with only eight teeth present for observation. A noticeable defect is present in the left lateral incisor and the right third molar. The incisor has a small notch in the occlusal surface. An initial interpretation was an activity-related alteration, although when viewed under a microscope this notch appears to be a developmental defect. The groove is smooth, does not have striations, and the groove extends as a shallow depression along the lingual surface of the crown. Both this and the other teeth present a gray band of enamel discoloration. A dark brown discoloration is also present, primarily on the lingual and buccal surfaces. The brown staining, however, is consistent with tobacco use.

The right third molar is unerupted but appears in the crypt as a small peg-shaped crown. The crown displays a distinct linear enamel defect, 2 mm from the cemento-enamel junction. The development of the tooth is incomplete, with only the root initially formed. This defect is also presented by the left third molar, which presents normal morphology and is also at the same early stage of development. Small pit caries are present in the occlusal and buccal surfaces of the molars, and there are small flecks of calculus.

There are distinct flat wear facets on the lingual cusps of the left premolars and molars. These facets are very flat, discrete on each cusp, and have striae that run mesial buccal. These facets are not present on the right side and appear to be the result of some sort of repeated activity.

Active, mild, and bilateral cribra orbitalia is present. There is also an expansion of the diplöe around the internal occipital protuberance and in the maxillary hard palate. The ectocranial porosity, however, is patchy and not diffuse, as is usually the case. There is a distinct lytic lesion developing over the right orbit. Here, a lozenge-shaped patch of macroporosity extends from just above the supraorbital notch to the autopsy cut, some 25 mm superior. Similar lytic defects are located bilaterally on the maxillae, just superior to the first molars.

Based on the dental lesions, it is likely that this young boy suffered from syphilis, most likely a congenital form.

This individual presents a distinct transverse autopsy cut through the cranium that had removed the superior half of the vault (Figure D.7). Although not intact, the individual cranial vault bones exhibit evidence of this procedure.

A small fragment of the frontal is present. This piece of bone is from the midsection and includes the frontal crest and a section above the right eye orbit. The superior margin of the fragment is delineated by a saw cut located 35 mm superior to nasion (see Figure D.7). The cut runs horizontally and exhibits smooth striae from the teeth of a saw. The fine striations suggest that a very thin, fine-tooth saw was used. The striae parallel the cut and there is a breakaway spur on the endocranial surface at the frontal crest. On the opposite ectocranial surface, a small radiating fracture runs inferiorly for 7.44 mm. A fragment of oxidized metal is attached the cut at this location and drops of rust are seen in the frontal crest groove. A large false-start kerf is present on the ectocranial surface to the right of

the midline. The cut runs parallel and just inferior to the autopsy cut. The kerf is 14 mm in length, square, and 0.85 mm wide. The kerf is shallow and the striae parallel the kerf floor. The false-start kerf is more shallow laterally and deeper toward the midline. There is scratching around the kerf and chipping on the margins. Given this appearance, it is likely that the saw was moving in a medial direction from the individual's right side.

A second fragment of the frontal delineates the superior margin of the midline cut. The fragment is a rectangular midline fragment that parallels the appearance of the previous fragment. This fragment has smooth striae on the inferior margin, a bulb of metal that has oxidized and trickled down the frontal crest, and a small radiating fracture on the ectocranial surface that extends superiorly from the cut. Given the anatomy of the frontal crest, it appears that 2 to 3 mm of bone wastage has been removed between these two cut surfaces. Radiographs indicate that a small metal pin had been inserted into the frontal to rearticulate the top of the cranium after the autopsy.

The right parietal was also present and exhibits a section of the autopsy cut. In this bone, the cut runs inferior to the temporal muscle line and approximately 3 mm superior to the temporal squama (Figure D.8). The inferior fragment has a breakaway spur on the endocranial surface of the cut and scratching from the blade is seen on the anterior portion of the fragment.

The parietal fragment that delineates the superior margin of the autopsy cut has a distinct false-start kerf on the anterior surface, near the coronal suture. The kerf runs horizontal for approximately 15 mm, and it is 0.5 mm in width. A series of shallow scratches are present below this kerf. A large breakaway spur, 20 mm wide, is present on this portion of the parietal near the lambdoidal suture.

The transverse autopsy cut is also observable in the occipital (Figure D.9). It is located 20 mm superior to the internal occipital protuberance and 20 mm inferior to lambda. The cut in the occipital is slightly V-shaped, with fairly large triangular portions removed from both sides of the midline. On the right side, the superior margin of the cut comes in from a superior angle, though the inferior margin is parallel or has a slight inferior slope. This has resulted in a gap of approximately 14 mm along the right lambdoidal suture. A small false-start kerf, measuring 8 mm in length, is present on the right side, just superior to the superior autopsy cut.

The autopsy cut on the left side of the bone is more irregular in shape. A similar large triangular fragment has been removed, but the bone has a postmortem break on the suture that precludes measurement. The inferior margin of the cut on this side has a stepped appearance, as the saw angle had changed to deal with the curvature of this region. Two deep false-start kerfs are observed on the left side of the cut, extending from the superior margin of the cut. The large square kerfs measure 9 mm and 5 mm in length, 9 mm in width, and approximately 3 mm deep.

Similar to the frontal bone at the midline, the occipital also has a large glob of oxidized metal. This metal droplet is approximately 6 mm in width and is observed on both sides of the cut. A radiograph of this fragment indicates that, like with the frontal, a thin metal pin had been inserted into the diplöic space to rearticulate the cranial vault after the autopsy.

In observing the left temporal, the cut through the left side of the head occurred lower on the vault than the cut on the right side. The left lateral cut sections the squamous portion of the temporal, 33 mm superior to porion. The postero-inferior margin of the cut lines up cleanly with the cut in the occipital. A false-start kerf parallels the cut, just inferior from the lambdoidal suture forward for 21 mm. The kerf is deeper on the posterior surface and becomes more shallow anteriorly as it intersects the complete cut. The inferior surface of the autopsy cut runs through the parietal and the superior margin of the temporal. The entire cut is delineated by striations that parallel the kerf. The most anterior margin of the cut is missing due to postmortem damage. No breakaway spurs are present along this surface. The superior surface of the autopsy cut is delineated from the lambdoidal suture to the coronal suture. The extreme postmortem warping of this bone, however, precludes articulation of the surrounding cranial elements.

Burial K. Present are the incomplete but well-preserved cranial and postcranial remains of a young adult female. The individual is represented primarily by fragments of the frontal, temporal, innominates, and long bones. The bone is a dark golden brown and postmortem damage is related to a caustic environment and excavation.

The individual was determined to be a female based on the morphology of the pelvis, including a large sciatic notch, auricular surface elevation, and preauricular sulcus. In the cranium, the mastoid process is moderately developed,

although the supraorbital ridge size and sharpness is consistent with a female. The joint surfaces are small and gracile.

Age was determined by observing the right auricular surface, which presented a uniform sandpaper appearance, although some horizontal striae were still visible. While such morphology is more consistent with 35–39 years of age, the overall age of the individual was determined to be in the lower half of the thirtieth decade due to smooth and healthy joint surfaces and dense cortical bone.

Skeletal pathology is limited to mild osteophyte development on the distal radii and distal ulnae. Mild lipping and porosity was also noted on the margins of the acetabulum.

Heavy work with the upper body is indicated in the pronounced deltoid tuberosities and anterior bowing of the distal third of the humerus shafts. The bones of the legs, however, are relatively gracile with little development of the muscle attachments. Yet, the right iliac crest and ischial tuberosity both display enthesophytes. The right acetabulum, in particular, seems to have developed a buffering shelf along the superior-posterior margin of the joint. This plateau measures approximately 6 mm in diameter and has osteophytes and porosity on the surface. The diaphysis of the right femur also appears to be slightly swollen, though it is difficult to determine whether the asymmetry is due to activity or postmortem damage.

Burial L. This individual includes the incomplete postcranial remains of a young adult male, 30–34 years at death. The bone is dark brown in color with good preservation. Most of the elements sorted for this individual were right appendicular elements.

The individual was determined to be a male based on the relatively narrow sciatic notch, the flat auricular surface, and lack of preauricular sulcus. The joint surfaces are also large and the muscle attachments robust. The age of this individual was broadly estimated to be 30–39 years old. While the pubic symphysis and auricular surface indicate the older end of that decade, the bone density, lack of degenerative joint disease, and cortical excavations favored classification as a young adult.

No skeletal pathology was evident.

Burial M. These incomplete remains represent an older adult male, 60+ years of age. The bone is a dark brown color and shows some postmortem erosion, as well as damage from excavation.

The individual was determined to be a male based on the morphology of the pelvis, including a flat auricular surface, vertical ilia, narrow sciatic notch, curvature of the sacrum, and overall robusticity of the elements. The individual's age was estimated to be 60+ years based on morphology of the auricular surface and the extensive degenerative joint disease. Dense bone formation and macroporosity cover the auricular surface. The postauricular surface has extensive osteophyte formation and porosity, as well. The overall cortical bone structure is thin and the cancellous bone is also thinning.

Skeletal pathology include moderate osteophyte formation on the distal joint surface of the left femur. Large rolling osteophytes surround the joint surface and nodules of osteophytes are present on the medial condyle. Similar degenerative changes can be seen on a fragment of the proximal right tibia medial condyle. Mild lipping and porosity can be seen on the perimeter of the acetabulae. The lumbar vertebrae all exhibit degenerative changes to the centra and articular facets. Moderate lipping and porosity were observed on the margins of the centra. The inferior endplate of L2 also exhibit moderate porosity on the body itself. The facets all present mild to moderate osteophyte formation around the margins. Finally, L5 exhibit sponylolysis. The neural arch is completely separated from the body at the lamina and osteophytes has grown around the articular facets to stabilize the joint. Activity-related changes include enthesophytes on the gluteal lines of the ilium and on the ischial tuberosities.

Burial N. Present are the very incomplete remains of an older adult male. This individual was identifiable by color—a golden pink—and robusticity. The bone is in good condition, although all of the elements had been damaged postmortem. Present are fragments of the sacrum, coccyx, ilia, left ulna and radius, and left patella.

The sex of this individual was determined by the robusticity of the elements and joint surfaces. Age was determined to be 50+ based on degenerative joint disease and thinning cortical bone in the ilia.

Skeletal pathology consists of moderate to severe osteophyte development and mild to moderate porosity surrounding the promontory of the sacrum. The acetabulae, however, only exhibits mild osteophytic lipping. The left patella presents moderate to severe osteophyte development around the margins of the joint and moderate porosity on the joint surface.

The distal left ulna and radius joint surfaces exhibit extensive degenerative changes due to a dislocation of the radius onto the diaphysis of the ulna. After the dislocation, the bone had not realigned in its normal anatomical position but rather a pseudarthrosis had formed on the medial aspect of the ulnar shaft. This new joint had been established numerous years before death, as the new joint was ringed by osteophytes and covered with porosity and eburnation.

The distal joint of the radius is circumscribed by moderate osteophyte development, but the ulnar notch has pronounced osteophytic lip on the superior margin for articulation with the new joint on the ulna. The lip has a semi-lunar shape and exhibits mild to moderate porosity on the new joint surface. Inferior to the lip, on the original ulnar notch, mild porosity pits the anterior margin of the joint and eburnation and erosion has impacted this region as well.

The distal joint surface of the ulna appears flattened and extremely porous across the surface. There is moderate osteophytic lipping on the joint proper. The new joint is lozenge-shaped, measuring 16 mm anterior-posterior and 18 mm superior-inferior. The center of this joint presents moderate to heavy porosity across the articular surface and eburnation across the inferior margin.

Burial O. This individual is represented by an incomplete skull, probably a female approximately 35–39 years old at death. The skull fragments were identified from a sort of the commingled and screened materials. Present are a fragment of the right frontal with the orbit, the left parietal, left half of the occipital, right temporal, and mandible. The bone is a dark golden brown, in good condition, with postmortem damage. The right side of the vault is missing and there is extensive postmortem erosion from a caustic environment. The left parietal is warped from ground pressure.

This individual was determined to be a female based on the small vault, sharp supraorbital margin, small TMJ, and gracile parietal line and nuchal lines. The ramus of the mandible slopes posteriorly, the chin is pointed (though with a small cleft), and the teeth are small. The age of this individual was estimated broadly to be an older adult, approximately 35–39 years of age. The lambdoidal suture is fused and obliterated on the endocranium, though only moderate bridging binds the ectocranial surface. The grooves for the meningeal arteries are smooth and still quite youthful in appearance. The dentition displays moderate anterior attrition and interproximal caries. One molar has abscessed out and there is active abscessing in the third. This degree of attrition and pathology is consistent with individuals in this assemblage who are in the second half of their third decade.

Skeletal pathology includes healed cranial trauma and degenerative changes to the mandibular condyle. The occipital has a very small, well-healed depression fracture superior and to the left of the external occipital protuberance. The lesion is elliptical in shape, measuring 6 mm transversely and 3 mm supero-inferiorly. It does not appear that the force penetrated the endocranium, although there is a raised area of bone on the endocranial surface. This lump is smooth and consistent with the surrounding surface. The left mandibular condyle presents noticeable degenerative changes, including erosion, osteophytes, and porosity. The lateral half of the joint is flat and the medial half irregular and pointed. This condition appears to be only on the left side as the right TMJ is unremarkable.

Dental pathology includes carious lesions, active abscessing, and calculus deposits. Large interproximal caries are noticeable in the right mandibular premolars. The pulp chamber has been exposed in both teeth, although no active abscessing can be seen. The left second molar is abscessed out and the socket nearly completely resorbed. The left third molar is missing postmortem, though the socket appears expanded and actively abscessing. The calculus deposits range from flecks to moderate deposits. The latter appear on the lingual surface of the anterior dentition, where a smeared layer coats the incisors and canines. Tobacco stains are observable on the interproximal surfaces of the left second premolar and the first molar. The left lateral incisor has a small seamstress notch along the midline of the occlusal and labial surfaces.

Burial P. A fragmentary and incomplete cranium represents this individual. This person was most likely a young adult male, 18–22 years of age at death. The bone is a dark golden brown color and in good condition, although the left side of the vault has been eroded by a corrosive postmortem environment. The individual is represented by a complete frontal and left parietal, and a fragmentary left temporal, right parietal, and basilar portion of the occipital.

Sex was determined by the prominent brow ridges, rounded and blunt supraorbital margin, prominent temporal line, and large mastoid process and supramastoid crest. Age was broadly determined to be a young adult, approximately 18–22 years of age. This age estimate is based on the incomplete fusion of the basilar suture and the dense and youthful appearance of the cortical bone. Ancestry indicators lean heavily toward European descent. The towering nasals, depression at nasion, sloping orbits, and simple sutures are consistent with European descent.

Skeletal pathology included mild, active cribra orbitalia in the left orbit and a band of porosity across the supraorbital torus.

Burial Q. Present is the fragmentary cranium of an adult male, approximately 40 years of age. Nearly the entire cranial vault is present, although fragmentary. The bone is gray brown and in fair condition. Most of the postmortem erosion affects the occipital and the temporal. Rust stains are present on the frontal.

Sex was determined by the large and robust cranial elements. The elements are very thick and the muscle attachments pronounced. The supraorbital ridge is developed and the supraorbital margin blunt. The mastoid process is large and robust and the TMJ wide and deep. The frontal crest is very large and elevated, but only a single ridge.

Age was broadly determined to be an adult, approximately 40 years at death. This age estimate is based on the deeply carved meningeal grooves and the fusion and obliteration of the coronal suture at the lateral articulation with the sphenoid. The bone is very dense, however, and not consistent with someone in their later decades.

No skeletal pathology was observed.

Burial R. These remains include a fragmentary and incomplete skull of a young adult male, approximately 18–22 years of age. There are only fragments of the frontal, parietals, temporal, and the midline of mandible from this individual. The bone is a distinct gray-brown color and quite chalky in texture.

The individual was determined to be a male based on the thick and robust cranial elements, the large teeth, and the prominent chin. Age was broadly determined to be a young adult, consistent with the open cranial sutures, youthful endocranial surface, and limited dental attrition and pathology.

No skeletal pathology was observed. Dental pathology was limited to flecks of calculus and tobacco stains on the right mandibular first molar. There was a small chip in the buccal surface of the left second premolar crown. The chip was superficial and did not penetrate the pulp chamber. The chip occurred sometime before death, as the margins were smoothed over by wear.

Burial S. Present are the incomplete cranial and postcranial elements of an old adult male. The bones are a dark golden brown but in very poor and fragmentary condition. Cranial fragments primarily represent this individual, though there are fragments of the sacrum, left tibia, hand phalanges, and a rib fragment.

The individual was determined to be a male based on the robusticity and large promontory of the sacrum, the supramastoid crest, and the prominent chin. Age was determined to be 50+ based on the extensive degenerative changes in the joints, the edentulous mandible fragment, cranial suture closure, and pacchionion pits. Ancestry is indeterminate. There is a fairly large accessory ossicle at bregma.

Degenerative changes included mild osteophyte development on the margin and joint surface of the proximal left tibia. The promontory of the sacrum displays mild osteophytic lipping on the margin of promontory and moderate porosity on the left half of the joint surface. The right articular facet of the sacrum presents severe osteophytes on the margin and surface of the joint, as well as moderate porosity.

Vault 3

URS archaeologists identified the remains of 16 individuals buried in Vault 3 during excavations. Located immediately adjacent to the north wall of Vault 2 and constructed of stone with a sand floor, Vault 3 was most likely in use as early as 1811, but certainly by 1820 (Meade 2007:III-1-III-2). Legible coffin lid plates discovered in Vault 3 listed death dates for seven individuals as: 1823 (two plates); 1825 (two plates); 1827; 1841; and 1842. It is

curious that two of the individuals buried in Vault 3 postdated 1835, when the city enacted ordinances that prohibited burials in Manhattan.

Burial 1. This adult individual comprises only portions of the lower limbs. The left femur is missing only the proximal third, but the remaining shaft is badly eroded. Only the distal third of the right femur is present. Both femoral distal joint surfaces are intact. Both tibiae are present and intact, as are the left patella, both tali, and both calcanei. Five unidentified long bone fragments, probably from the right femur, are also present. It appears that some lime is adherent to the distal left femur. Lime is also present on the left distal femur and both tali.

All joint surfaces are free of degenerative changes and no epiphyseal lines are visible. Consequently, this person is a young adult probably 25–30 years old at death. Ancestry is indeterminate. The long bones are gracile, suggesting that this individual was a woman.

Both adductor tubercles are present and slightly marked. Widespread mild, healed periostitis is present along the posterior shafts of both tibiae. This pinpoint porosity is continuous along the entire shafts. There is a slight osteophyte present on the infero-medial border of the left patella, which also presents a slight vastus notch. Both soleal lines are slightly raised. Both sustentaculum tali present double facets separated by a plateau.

Burial 2. This individual consists of the fragmented and eroded right upper extremity, the left radius and ulna, three rib fragments, a large portion of the right ilium with half the acetabulum visible but the auricular surface eroded, the left femur represented by a portion of its eroded shaft and its head. The right femur is missing its distal articular surface only, but is eroded. The right tibia is represented only by its shaft, which is also badly eroded. A portion of the left sciatic notch is present. The shaft of the right clavicle is present, as are nine hand phalanges and metacarpals, along with the left trapezium. The cranial remains comprise only three small fragments of the occipital. The mandible is present and represented by intact body extending from the left first premolar to the right third molar. The right ascending ramus is absent; the left horizontal ramus is broken at the socket for left second premolar. The left second premolar is present, as are left first and second molars in their sockets. The left third molar is present but its socket is broken. There is no ascending ramus. Maxillary teeth are also present, including the left central incisor, both lateral incisors, both canines, all four premolars, and all six molars. All of these teeth are loose, as no maxillary remains are present. A number of these teeth have lost portions of their enamel postmortem. Both thumb metacarpals and the right scaphoid are also present. A bag with maggot casings was associated with this burial.

This individual was probably a woman, based on wide sciatic notches. She was 20–24 years old at death, as all four third molars were fully erupted and present very mild wear. The mandibular right first molar presents one small pinpoint dentin exposure and the right second molar shows very slight wear. Pinpoint dentin exposure is also present on both mandibular canines. All four mandibular incisors present 1-mm-wide lines of dentin exposure. There is mild crowding of the anterior teeth. The molars present the +4 cusp pattern and all four mandibular premolars present single lingual cusps, indicating European ancestry. The maxillary first molars do not present Carabelli's cusps.

Among the mandibular teeth, there is a pinpoint carie on the labial surface of the right third molar and a small interproximal carie on its mesial surface. The right first molar presents a small interproximal carie on its mesial surface. Both first molars present deformations of their occlusal surfaces within the frame of the four cusps.

Of the maxillary teeth, the left central incisor presents a line of dentin exposure. Both canines present pinpoint dentin exposure. All of the incisors are spatulate shaped. The maxillary first molars also present mild deformation within their crowns. The left first molar presents a large distal and occlusal carie. The second molar also presents a distal carie. Both third molars present slight wear. All four premolars present preliminary darkening of their mesial and distal surfaces, but no carie development at the time of death.

None of the appendicular bones present any evidence of degenerative changes. The left femur presents a mildly raised attachment site for the medial head of the gastrocnemius.

Burial 3. This individual is represented only by fragmentary lower limb bones, portions of both ilia, a portion of the sacrum (S1), and all five lumbar vertebrae (L1 is represented by a partial body, L2 is missing its posterior portion, and L3-5 are intact). The sacrum consists of only the body and the right half of S1. It appears to have been fused to S2. The ilia are both represented by the central portions, but the auricular surfaces are not observable. The left

femur is represented by an eroded portion of the middle third of the shaft. The right femur includes only its distal two-thirds and is eroded, with the distal surface only 60% observable. Both patellae are intact. The left tibia includes only its proximal one-third, but is also eroded, with 40% of the proximal surface observable. The right tibia includes only the proximal one-quarter, but no joint surface is present.

Both sciatic notches appear wide, indicating a probable female. The epiphyseal rings of the lumbar vertebrae are completely fused, but retain some areas of observable epiphyseal lines. There is no evidence of degenerative changes. The epiphyseal ring of S1 is completely fused with no line visible. The surfaces of the shafts of the right femur and left tibia are too badly eroded to evaluate the presence of infection. Overall, this individual was probably female, aged 20–24 years at death. Her ancestry is indeterminate.

Burial 4. This person is represented only by the shafts of both femora and both tibiae. Both femora are missing their proximal portions and include only the distal two-thirds. Both are very heavy and appear robust, with 40% of each distal surface observable. Both shafts are eroded. Both tibiae include only their middle one-thirds, with no observable joint surfaces, and are also moderately eroded.

Based on the robusticity and weight of the femora, this is a probable male. No epiphyseal lines are visible, so he was over 25 years old at death. Ancestry is indeterminate.

Evidence of burning of the bones is present along the interior distal surface of the right femur, with mild charring in the intercondylar notch. Similar charring is present along the medial surface of the right tibia and lateral surface of the left tibia.

Burial 5. This individual consists primarily of portions of both upper and lower limbs. These are mildly to moderately eroded and fragmented. Also present is a mandible missing its horizontal rami with one tooth present (the left canine). The middle one-thirds of both humeri are present and are eroded. The right radius is present, except for its proximal surface. Both ulnae are represented by their middle one-thirds only and are eroded. Both ilia are fragmented and only a portion of the left auricular surface is observable. The left acetabulum is intact. Both femora are represented by their middle one-thirds only. The left femur head is present and 75% intact. Both distal femoral surfaces are 25% present. The right patella is intact and the left is marginally eroded. The left fibula and tibia are missing their proximal articular surfaces. The entire surface of the tibia is eroded. The right talus is present and intact as is the right navicular. Also present are two metacarpals and three hand phalanges.

This person was probably male, based on a wide ascending ramus and narrow sciatic notches. In terms of age estimation, no epiphyseal lines are observable and the left auricular surface presents slight striation along the anterior border and microporosity along its face with mild transverse organization. There is no evidence of degenerative changes. The mandible is robust with mild eminences, but thick bodies at the molar regions. Despite antemortem tooth loss and dentin exposure, the joint surfaces suggest this person was a young adult below 35 years at death. His ancestry is indeterminate and there is no evidence of pathology.

No maxillary remains are present. The right horizontal ramus presents mild gonial eversion and a wide vertical ramus (minimum 32 mm). The only tooth present in its socket is the left canine; about half of its crown is absent due to attrition with almost complete dentin exposure. In the left quadrant, it appears that the left central and lateral incisors were lost postmortem. The left canine is present in its socket. The left first premolar was lost postmortem. The left second premolar was lost antemortem with 90% socket resorption. The left first molar was also lost antemortem, with full resorption. The left second molar was lost antemortem, but with only half of the socket resorbed at death. In the right quadrant, both incisors, the canine, and the first premolar were lost postmortem. Both the second premolar and the first molar were lost antemortem with full resorption. The second molar had been lost antemortem, with half the socket resorbed.

No pathology or degenerative changes were observed.

Burial 6. This individual comprises the cranial vault (absent the temporals); partial maxillae; mandible (missing both ascending rami); the humeri (both missing their proximal one-thirds); both radii and ulnae; the innominates (both fragmented); the femora and tibiae; the left fibula; and the right calcaneus. Both pubic bones were present and their symphyseal faces observable. The auricular surfaces were also both present. The sacrum is present and intact above S3, as are the four lowest lumbar vertebrae. The cranial vault and limb bones are moderately eroded.

This man was 25–29 when he died, based on the eruption of the mandibular third molars, minimal dental attrition, open cranial sutures, and lack of degenerative changes in his lumbar vertebrae and lower limb joints. The epiphyseal rings around the heads of the femora are still slightly visible, while the epiphyseal rings of the lumbar vertebrae are all completely fused. All of the sacral vertebrae were completely fused, as well. The pubic symphysis was scored as a Phase IV (35.2 +/- 9.4 years). The auricular surfaces present some transverse organization, but no billowing. This person was most likely of European descent, based on a narrow nasal aperture, nasal sill, the mandibular first premolar cusp patterns and femoral torsion and curvature.

All of the left mandibular molars are present in their sockets, as is the right first molar. The right second and third molars had been lost postmortem. Both lateral incisors, canines, and first premolars were also present in their sockets; the right second premolar was also present, but the left one had been lost antemortem with complete resorption. The anterior teeth present minimal dentin exposure. The molars exhibited slight dental wear, with the left third molar presenting one cusp with pinpoint dentin exposure. An interproximal carie was located in the mesial surface of the right first molar.

Among the maxillary teeth present in their sockets are both first and second molars, all four premolars, and both canines. The sockets for the central incisors were present but empty. Gaps are present bilaterally between the canines and first premolars. It appears that this individual did not have lateral incisors. The crown of the right second premolar had been lost to caries, and had almost 75% of the left second molar. The distal surface of the left first molar presented a large carie that extended to the occlusal surface and had breached the pulp chamber. The maxillary teeth exhibited only minimal wear, with pinpoint dentin exposure on the canines and first molars.

No evidence of infection, inflammation, or degenerative changes to the joints was present.

Burial 7. This individual consists of a partial cranium, fragmented mandible, numerous loose teeth, the middle one-thirds of both ulnae, and both femora. The long bones are badly eroded. No joint surfaces are present. No measurements can be taken. The cranium consists of two cranial fragments, possibly occipital, both eroded. The major part that is observable is the portion of the frontal, which is also badly eroded, with both orbits partially preserved. One bag associated with this burial includes an intact left thumb metacarpal that was unremarkable. It was noted as FS 109, "Bone inside of plate."

Since both supraorbital borders are thin and the teeth generally small, this person is probably female. Both third molars were fully erupted and present very slight wear. Pinpoint dentin exposure on the canines and molars indicate that this person was a young adult, 20–24 years old. Both mandibular first premolars include single lingual cusps and all four maxillary incisors are spatulate-shaped, indicating she was of European descent.

The mandible is represented by the anterior portion along with the right horizontal ramus to the level of the ascending ramus. The left horizontal ramus is absent posterior to the left first premolar socket. Present in socket are the right third molar, both right incisors, the right canine, and both premolars. Both the right first and second molars were lost antemortem with complete resorption.

Also present but loose are the left lateral incisor, canine, both premolars, and all three molars. Both lateral incisors and the left canine present a thin line of dentin exposure. The right canine presents pinpoint dentin exposure. A large interproximal carie is present on the distal and occlusal surfaces of the left first molar. A matching small carie is present on the mesial surface of the left second molar. Both first and second molars present mild cusp wear and pinpoint dentin exposure.

From the maxillary arcade, all four incisors are present, as are the right and left first premolars, the right first molar, and the left first and second molars. Both molars present pinpoint dentin exposure. Both central incisors present thin lines of dentin exposure. Both lateral incisors exhibit pinpoint attrition. The left central incisor presents an interproximal carie on its distal surface.

Burial 8. This individual was commingled with at least two other individuals, both represented by crania. Both crania appear to represent people much older than the individual represented by the postcranial remains labeled as Burial 8. The postcranial remains include the right radius, the middle one-third of the left humerus, the intact femora, tibiae, and fibulae, both tali, the left ischium and acetabulum, the right sciatic notch, and the bodies of nine thoracic vertebrae.

This individual was female and died around 25–29 years of age. None of the appendicular joints present any degenerative changes, and all of the vertebral epiphyseal rings are fused. Both tibial tuberosities are mildly roughened. None of the vertebral bodies present any osteophytic changes.

Burial 9. This individual consists primarily of lower limb bones and the mid-shaft of the right ulna. The overall preservation is poor with moderate erosion and fragmentation. The right ulna is middle one-third present only. Both femora are middle one-third present only, but portions of both femur heads are present, with 40% joint surfaces viewable. Neither distal surfaces are present. Both patellae are present, but the right one is moderately eroded. The left fibula is intact, but the right one is distal one-third missing only. The left tibia is distal one-third missing only, but the distal surface is present. The right tibia is distal one-third present only with the distal surface absent. The distal surface of the right tibia is present. The right talus and calcaneus are also present and intact, along with the right navicular. Four right metatarsals are present, along with the distal phalanx of the right great toe. Eight unsided hand phalanges are present, as is the right trapezoid. Two additional right tali are also present. Both naviculars are also present. Both joints surfaces of the left fibula are present; the proximal right fibular surface is present.

This is a young adult (35+) based on the lack of degenerative changes, no visible epiphyseal lines, and mild enthesopathy of the left tibia and fibula. This person was most likely male based on the robusticity of the talus and tibia. The ancestry is indeterminate.

An area of healed periostitis measuring 40 mm in length and 9 mm wide is present on the lateral surface of the left fibula, 110 mm superior to the inferior end of the bone. Mild periostitis is also present along the medial and lateral surfaces of the distal two-thirds of the right fibula. Widespread mild healed periostitis is present along the entire medial surface of the left tibia and the distal third of the right tibia.

The ulnar tuberosity for the distal attachment of brachialis presents mild enthesopathy with raised borders. Both fovea capiti present mild porosity and marginal lipping. Mild enthesopathy (hypertrophic bone) is present just superior to the distal articular surface of the left fibula. The left soleal line is mildly raised. Slight enthesophytic ridges are present along the margin of the calcaneus, where the Achilles tendon attaches.

Burial 10. This individual comprises the right humerus, proximal third of the right ulna, the distal two-thirds of both femora, the right patella, both intact tibiae, the intact right fibula, the left fibula (all present except the proximal articular surface), both tali, both calcanei, the right navicular, and three fragmentary unsided metatarsals. The right humerus and both femora are mildly eroded. The joint surfaces of both ankles and knees are completely intact and observable. A coffin nail has been driven into the proximal right tibia and projects out of it.

This individual is a young adult male (30–34 years old) with minimal degenerative changes in his lower limbs, which are robust. There are no epiphyseal lines visible. Ancestry is indeterminate.

There is little evidence of degeneration. There is a slight lipping of the supracondylar ridge. Both calcanei present slight enthesopathy of the Achilles tendon attachments. The right patellar surface presents slight enthesopathy of the anterior surface.

There appears to be some sort of healed injury of the left knee. The left intercondylar notch measures 22 mm transversely, while the right one measures 19mm transversely. There is mild marginal lipping within the left intercondylar notch, while there is none on the right side. The cortical bone surrounding the left notch presents a 2-mm-wide groove around the margin of the notch, widening to 4 mm at the anterior part of the notch. This groove reflects bone-on-bone wear at the joint. Unfortunately, half of the medial condyle surface is eroded away and unobservable. The wear along the margins of the notch correspond with a flattened, worn area along the lateral surface of the left tibia's lateral eminence. There is an area of shiny eburnation along this eminence's surface. The medial eminence is unaffected.

The left tibia's lateral condyle (surface only) presents an area of remodeling including a small projection of bone that measures 9 mm anteroposteriorly located in the center of the plateau. The anterior portion of the plateau presents an area of porosity, while the lateral margin presents two ridges of raised bone. The medial plateau is unaffected. There is a slight marginal lip of the lateral eminence. This injury most likely reflects a displacement of the meniscus. The head of the left fibula is unavailable for observation.

The tibiae present no evidence of infection, but the lateral surfaces of both are markedly scalloped, with the anterior borders curving inferolaterally and then medially. The fossae for the tibialis anterior and the extensor digitorum longus muscles are well marked on both fibulae. Both fibulae both present well-marked lateral fossae that are deeply scalloped with sharp anterior borders.

Burial 11. This individual consists primarily of eight lower vertebrae, fragments of the sacrum and left ilium, the left femur, badly eroded shaft of the right femur, an extra femoral shaft, both patellae, and the eroded shaft of the left tibia. Present are T10-12 (intact), L1-4 (intact) and most of L5, although the laminae are absent.

This person was probably male based on the robusticity of the bones. The epiphyseal rings are completely fused and just beginning to grow inward. There are no osteophytes or laminal spurs. The vertebrae are generally unremarkable, indicating that he was most likely 25–34 years old at death. Ancestry is indeterminate, although the left femur presents mild curvature and torsion suggesting European descent.

The right acetabulum presents a slight marginal lip along its internal border. The left acetabulum is unremarkable. The superior border of the left auricular surface is present and presents small patches of microporosity, but no marginal changes. There is a mildly raised bump on the left femur where the medial head of the gastrocnemius attached. The proximal quarter of the linea aspera is mildly raised.

Burial 12. This older male's remains include most of the facial skeleton (intact but detached from the vault); several large vault fragments; the mandible (missing both ascending rami); all vertebrae except L5; the intact right humerus, femora, and tibiae; intact ilia and ischia (both pubic bones absent); all but the proximal end of the left fibula; the middle third of the right fibula; the left radius; the middle third of the right radius; the left clavicle; the medial third of the right clavicle; both patellae; virtually all of the ribs (most fragmented; both first ribs present and intact); and the sternum (present and fragmented in large pieces that mend). The scapulae and sacrum are absent. Three teeth are present in the mandible; five are present in the maxillae.

The remains are dark brown in color. A legible coffin plate found in association with these remains identified this man as Rudolphus Bogert, who was 76 years old when he died in 1842.

The overall robusticity, large brow ridges and mastoids, and flat auricular surfaces indicated that this individual was a male. The sciatic notches are wider than normal for a male, but do not approach the width typical of women.

This was clearly an older individual (70+) based on extensive antemortem tooth loss; severe attrition; the almost complete fusion of both first ribs to the sternum (Figure D.10); partial fusion of the lower ribs to the sternal body; extensive ossification and protrusions from the medial ends of the ribs; and almost complete obliteration of the sagittal suture. The coronal sutures are visible but partially obliterated. In addition, the entire spinal column presents significant degenerative changes, including fusion of C5 and C6. The left auricular surface is dense, without porosity or marginal osteophytes. Curiously, the joints of the lower extremities present no evidence of degenerative changes, suggesting that this was a gentleman rather than a man who labored physically.

The man was of European descent, as reflected by a narrow nasal aperture with a deep root, mild nasal sills with a short spine, and orthognathic maxillae (Figure D.11). His femora present torsion and curvature.

There is widespread porosity across the right half of the hard palate—the left half is absent. A raised, narrow plateau of bone is present on the lateral surface of the right maxilla superior to the position of the third molar. This small lump measures 13 mm superoinferiorally and 5 mm in width, and is characterized by fine porosity. There is no corresponding plateau on the left maxilla; rather, there is a remodeled area with some fine porosity. Since all of the posterior mandibular teeth were lost antemortem with complete resorption, these areas may reflect inflammation where the muscles of mastication attach.

Mild pinpoint porosity with an "orange peel" effect is present on the ectocranial surface of the frontal and parietals around bregma.

This man presents extensive dental loss and attrition commensurate with old age. All of the posterior mandibular teeth had been lost antemortem with complete resorption of the sockets. Present in their sockets, although barely held in place, are the left canine, right lateral incisor, and right canine; all present moderate dentin exposure (Figure

D.12). The other incisors were lost antemortem with complete socket resorption. The left canine presents an interproximal carie on its mesial surface at the CEJ, moderate dentin exposure, and a flat, oval wear facet on its lingual surface. The right lateral incisor also presents an interproximal carie on its distal surface at the CEJ and oblique occlusal wear with moderate dentin exposure. The right canine exhibits an interproximal carie on its mesial surface at the CEJ and occlusal wear mesially and distally, with severe enamel loss at the top of the crown. All three teeth show distal drift, with the buccal surfaces moving laterally.

Among the maxillary teeth present in their sockets are both right incisors, the right canine, and the right second premolar. All of the other anterior right teeth had been lost antemortem with complete resorption. The left arcade includes only canine in its socket and the third molar. All of the other left teeth had been lost antemortem with complete resorption. Alveolar overgrowth obscures about one-quarter of the occlusal surface of the left third molar, which also presents a large open carie on its lingual surface. The mesial half of the left canine has been lost to wear; this wear facet continues past the CEJ to the tooth's root. The pulp chamber is open and there is an associated active abscess in the maxilla at the tip of its root. The right incisors and canine present moderate dentin exposure. The right lateral incisor presents a large interproximal carie on the mesial surface that extends from the occlusal surface past the CEJ to the root. The pulp chamber of the right canine is open. The right second premolar presents interproximal caries on both its mesial and distal surfaces with moderate attrition and mild dentin exposure.

Evidence of skeletal degeneration is manifest by the spinal column but not the appendicular skeleton. The hips, knees, and ankles are all unremarkable, and there are no patellar osteophytes present. A mild osteophytic projection is present on the lateral eminence of the right tibia; this may reflect a healed tear of the anterior cruciate ligament of the knee. Both soleal lines are slightly raised.

Among the upper limbs, both costoclavicular facets are mildly roughened and remodeled. The pronator teres attachment on the right radius is about twice the width of the one on the left radius. The attachment for the subscapularis on the lesser tubercle of the right humerus presents an enthesophytic ridge adjacent to a shallow groove, the result of repeated internal rotation of the right arm. The right deltoid tuberosity is robust, as are both lips of the bicipital groove, corresponding with repeated abduction and overall use of the right arm. The left humerus is too eroded for comparison; however, the attachment site for the deltoid on the lateral end of the left clavicle is raised and remodeled, with several enthesophytic spurs. These osteological markers indicate that this man used his upper limbs more than his lower ones performing whatever occupation or activities in which he was engaged.

The most remarkable degenerative changes had occurred to this man's spinal column. All of the cervical vertebrae presented osteophytes, and C5 was fused to C6 at the body and both articular facets. While the thoracic vertebrae presented no laminal spurs or arthritic changes to the articular facets, they did exhibit syndesmophytes and fusion. The lumbar vertebrae also presented marginal osteophytic lipping and syndesmophytes. Descriptions of the degenerative changes presented by each vertebra follow.

C1: an osteophyte extends inferiorly from the facet for the dens;
C2: a large osteophyte extends superiorly from the dens into C1;
C3: porosity and marginal erosion of the inferior endplate is present;
C4: porosity and marginal erosion of superior endplate is present; a marginal ridge extends anteriorly along the inferior endplate; the inferior surface of the left articular facet presents flattening and eburnation;
C5: fused to C6 at the body and both articular facets; the superior surface of the left facet is flattened and eburnated;
C6: fused to C5; an osteophytic ridge extends along the anterior surface of the inferior endplate; a large osteophyte extends laterally to the left from the inferior margin; porosity is present across the inferior endplate;
C7: a marginal ridge extends along the left half of the superior endplate, the articular surface is absent postmortem;
T1-T3: mild osteophytic lipping extends along the inferior endplates;
T4: mild osteophytes are present on the right side of the inferior endplate;
T5: mild syndesmophytes extend inferiorly from the right side of the superior and inferior endplates;
T6: mild syndesmophytes extend superiorly from the right side of the superior endplate, matching the one from the inferior endplate of T5;
T7: a mild osteophytic ridge extends around the inferior endplate;

T8: large syndesmophytes extend inferiorly from the right side of the inferior endplate and is almost fusing with a similar growth from the superior endplate of T9;
T9: large syndesmophytes extend from the right side of both the superior and inferior endplates, almost fusing with T8;
T10: moderate osteophytes are present on the right side of the superior and inferior endplates; these are beginning to fuse with syndesmophytes on the right side of T9;
T11: a large syndesmophytes is located along the left side and extends inferiorly, almost meeting those on the superior endplate of T12; other osteophytes are present on the right side;
T12: moderate osteophytes are present along the superior margin; both rib facets present marginal osteophytes; the body exhibits mild superior anterior wedging;
L1: mild osteophytic ridges are located along both the superior and inferior endplates;
L2: an osteophytic area matching that on L1 is located on the right side with erosion of the margin and lumpy projections; a mild osteophytic ridge extends along the entire superior endplate;
L3: the right inferior articular facet is remodeled with eburnation; the left one is also remodeled but presents no eburnation; a mild osteophytic ridge extends along the superior endplate anteriorly, with large syndesmophytes extending superiorly on the right side; and
L4: a mild marginal ridge extends along the superior endplate; the left superior facet exhibits marginal osteophytes and is flattened (the right one is absent postmortem).

Burial 13. This individual includes a cranial vault, the mandible (missing both ascending rami), all of the upper and lower limb bones, the left patella, the sternum and manubrium, both clavicles, a portion of the right scapula, numerous rib fragments, three adjoining thoracic vertebral bodies, both ilia with intact auricular surfaces and acetabula, and both calcanei and tali. Five mandibular teeth are also present. The mandible itself is badly eroded and most of the alveolar surface is unobservable. The cranial vault is also eroded, although a green stain is still observable on the left side of the occipital. No facial bones were preserved.

This young woman was about 30–34 years old at death, based on the unfused sternum and manubrium, complete fusion of the vertebral epiphyseal rings, mild laminal spurs, complete fusion of both medial clavicles, and absence of visible epiphyseal lines among the long bones. The auricular surfaces are dense with microporosity, no transverse organization, and no marginal changes. Sex was clearly indicated by the raised auricular surfaces, wide sciatic notches, frontal bossing, and thin supraorbital border.

The mandibular left first molar presents pinpoint dentin exposure and root hypercementosis. Both mandibular central incisors present thin lines of exposed dentin and interproximal caries on both their mesial and distal surfaces.

While both clavicles are unusually thin and slender, the left one presents a healed fracture just medial to the attachment site of the deltoid on the anterior surface of the lateral end. This section of the shaft is bent more posteriorly than normal, with an enthesophytic ridge located on its inferior surface, where the coracoclavicular ligament attached. While deforming the left clavicle, this injury did not apparently affect the person's left upper limb, the bones of which appear almost identical to those from the right upper limb. The manubrium's joint surface for the left sternoclavicular does present mild remodeling with a mild osteophytic margin inferiorly.

None of the appendicular joints present evidence of degenerative changes. Both iliac crests present mild enthesophytes. Both tibial tuberosities present moderate enthesophytes that extend superiorly; these may reflect Osgood-Schlatter's disorder (Figure D.13). Both soleal lines are marked by raised enthesophytic ridges. The left patella presents slight enthesophytes on its anterior surface; the right patella was not present. The lateral eminence of the left tibia presents a mild osteophytic ridge, potentially associated with an anterior cruciate ligament injury. All three thoracic vertebrae (probably T6-T9) present Schmorl's nodes on their superior and inferior endplates.

Mildly excavated pre-auricular sulci are present bilaterally, typically indicating at least one pregnancy.

Burial 14. This individual consists of the generally intact postcranial remains of an adult male individual. Included are all of the long bones of both upper limbs, the left intact scapula, the generally intact innominates, the intact femora, intact right tibia. The right fibula is missing its proximal articular surface. The left femur is broken in three mendable pieces. The left tibia is broken into two mendable pieces and is missing its distal end. The left fibula and left patella are absent. The right patella is present and intact. An additional sacrum and two left tibiae are also present.

This individual is a male based on pubic bone morphology and overall robusticity. Ancestry is of probable European descent, based on femoral curvature and torsion. Overall, the joint surfaces present only minimal degenerative changes; however, some changes had occurred at the knees due to fusion of the sacroiliac joints. The most likely age range for this man is 35–39, as reflected by the Suchey-Brooks Phase V (45.6 +/- 10.4). All epiphyseal rings are completely fused and growth is just beginning across the faces of the bodies. The epiphyseal rings around both femoral heads are still slightly visible. The fovea capiti are unremarkable and there is no marginal lipping of the heads.

The left tibia presents evidence of healed osteomyelitis along its anterior and lateral superior half. It presents with swelling and smooth remodeled porotic bone that extends onto the medial surface in the upper half of the bone and onto the tibial tuberosity. The right tibia presents a small patch of healed periostitis along its lateral surface at the midpoint of the shaft only. The right fibula is unremarkable. The left fibula is not present.

The left humerus shaft is significantly larger than the right one. It may not belong with this individual. There is slight enthesopathy of the left common flexor attachment. The left scapula appears to belong with the left humerus, but both may actually be from another person. There is mild marginal lipping along the superior and posterior border of the glenoid and the attachment for the short head of the triceps is robust. Both radii present slightly raised tuberosities. The pronator teres attachment, however, on the right side is 38 mm long and 8 mm wide, whereas the left one is much smaller at 16 mm long and 5 mm wide. The ulnar tuberosities are also slightly raised, with the right one more remodeled than the left. The left supinator crest is mildly raised and about twice as high as the right one.

The right zygaphophyseal joint between T9 and T10 is mildly remodeled with the inferior facet of T9 flat and slightly mushroomed. The inferior border of T8 presents just the very beginning of marginal lipping along the right side. The superior facet of T9 has a crescent-shaped gap along the superior border.

Both sacroiliac joints are completely fused. The right joint is completely fused superiorly and an open line of non-fusion is visible interiorly. The sacrum unfortunately is broken in the middle. The left joint is also completely fused with the anterior line open and visible. Both the posterior halves of the iliac crests present mild raised lines of new bone primarily along the medial borders. Both acetabula are unremarkable, however, lumpy remodeling is present just superior to both acetabula. Both ischia present mildly raised enthesophytic ridges, particularly along their medial borders. The pubic symphysis is flat with no transverse organization (granular face). The rims do not appear to be fully formed posteriorly and there are no boney extensions.

The right proximal femur presents a mildly raised and remodeled oblique line. The lateral borders of both linea aspera are mildly raised and remodeled secondary to the sacroiliac fusion. The one on the right femur is a little more robust than the one on the left. Both linea asperae are robust and craggy through the upper two-thirds of the shaft. The attachment sites for the medial gastrocnemius muscles are both robust and very well defined with mild remodeling. The left femoral distal articular surface presents a small area of marginal lipping along the superior posterior border of the medial condyle. Slight lipping is also present along the entire intercondylar notch. A marginal ridge is present on the anterior surface along the superior border. An area of eburnation is present on the anterior surface along the supero-lateral quarter of the surface. It measures 21 mm anteroposteriorly and 9 mm transversely, and is the result of patellar wear. The left patella is absent. The right patella is present and presents a raised plateau along its medial border. No marginal osteophytes are present on the tibial surfaces, but a mild ridge projects superiorly from the medial eminence of the left tibia. The soleal line of the right tibia presents a raised ridge twice as high as that on the left side.

Burial 15. These remains of an older male consist of the generally intact cranium (the occipital and both temporals are present but detached and mildly fragmented); most of the facial skeleton (the right zygomatic is present but detached); the mandible (missing its left ascending ramus); and all seven cervical vertebrae. The postcranial remains include both clavicles; the fragmentary left scapula; both humeri (missing their heads); the intact radii and ulnae; the intact right fibula; the distal end of the right tibia; and most of the left femur head. All five lumbar vertebrae are present (L1 and L4 are fragmentary), as are thoracic vertebrae 6–12. The sacrum is fragmentary, as are the innominates. Both auricular surfaces along with the left pubic symphysis, however, are present and intact. The bones are all light brown in color and a greenish stain is present on the anterior surface of the third lumbar vertebra, most likely from a copper button or coffin nail. Nine mandibular and three maxillary teeth were present in their sockets.

The overall robusticity of the cranium, mandible, and long bones clearly indicate that this individual was male. The mastoid processes, supraorbital ridges, zygomatic crests are large, as is the external occipital protuberance, which appears as a large ridge overhanging the nuchal lines. The left pubic bone is short, the obturator foramen oval in shape, and both auricular surfaces are flat.

The age estimate for this man is 45–49, based on fusion of the cranial sutures, appearance of the auricular surfaces and pubic symphysis, and degenerative changes to the vertebrae. The palatal sutures are all open, as are all of the cranial vault sutures except for the middle section of the sagittal, which is partially obliterated. The manubrium and sternal body are unfused, and the first ribs present only minimal ossification of their sternal ends. The face of the right auricular surface is covered by fine porosity surrounding several islands of smooth, dense bone at the center of the joint. Mild marginal lipping is present, and the very initial stage of fusion with the sacrum is evident at the superior aspect of the margin. The left auricular surface is denser with a more "granite-like" appearance and only a small area of smooth, dense bone in the center of the joint. Initial fusion with the sacrum had begun along the superior margin of the left auricular surface. Neither face presents any macroporosity. Apart from the partial fusion, the auricular surfaces are consistent with men 45–50 years old at death. Marginal lipping is present along the inferior borders of both acetabula. The left pubic symphysis most closely resembles Phase V of the Suchey-Brooks system (45.6 +/- 10.4 years). Most of the thoracic vertebrae present only minor degenerative changes; however, extensive marginal osteophytic growth is present on L3–L5. Dental attrition is moderate. Overall, the most likely age range for this man is 45–49 years at death.

The facial skeleton and cranial vault clearly indicate that this man was of European descent. He presents a long, narrow nasal aperture with a sharp sill and short spine; angular orbits; undulating mandibular border, short persistent metopic suture, and retreating zygomatics.

Areas of pinpoint porosity creating an "orange peel" effect are present bilaterally on the frontal along the temporal muscles and across the squamous anterior to bregma. Pinpoint porosity is also present along the sagittal suture posteriorly to lambda. The ectocranial surface of the occipital between the EOP and lambdoidal suture also presents widespread, fine porosity with an area of raised periosteal bone specifically focused just superior to the EOP itself. Several arachnoid granulations are present in the endocranial surface of the left parietal, immediately lateral to the sagittal suture.

Additional porosity and associated remodeling is present on the lateral surfaces of both maxillae, superior to the position of the third molars. These lesions most likely reflect inflammation where the muscles of mastication attach.

Mild, healed, and active periostitis is present across the middle and lateral half of the left orbit's roof. The roof of the right orbit was lost postmortem. Porosity and remodeling characterize the anterior half of the hard palate as well.

All of this man's maxillary molars had been lost antemortem, with 80% resorption of the sockets on the right side and 50% on the left. Three maxillary teeth were present in their sockets: both right incisors and the left canine. All three teeth present moderate dentin exposure and present continuous zones of carious enamel loss at the CEJs along the entire buccal. The right canine and left lateral incisor had been lost postmortem, but the socket for the left central incisor reflected abscessing out of that tooth antemortem. Both first premolars were represented only by their roots still located in their sockets; the crowns were lost to caries. An active apical abscess that had pierced the maxilla was present at the tip of the root of the right first premolar.

Among the mandibular teeth, all three right molars had been lost antemortem, with 30% resorption of their sockets. The mesial root of the first molar was still present, the crown lost to caries. The left second molar had been lost antemortem with complete socket resorption; both the first and third molars were present. Both molars presented carious loss of the roots along the buccal surfaces along the CEJs, with the lesion on the first molar having exposed the pulp chamber. The first molar also presents a large carie that had consumed its mesio-buccal cusp and exposed the pulp chamber. The posterior half of the first molar's occlusal surface presents moderate attrition and complete dentin exposure.

All of the anterior mandibular teeth were present in their sockets, except the left central incisor (lost postmortem), the right central incisor (lost antemortem with complete socket resorption), and the right second premolar (lost postmortem). All of the anterior teeth presented moderate dentin exposure and buccal caries at the CEJs.

This individual presented evidence of cervical and lumbar spinal degeneration, but little other degenerative changes. Both deltoid tuberosities of the humeri are mildly raised and roughened, as are the attachment sites for the deltoids on the anterior surfaces of the clavicles. The superior surfaces of the lateral ends of both clavicles present unusual, pale-colored patches of fine porosity with smooth margins. The porosity extends along the superior surface of the right clavicle to the midshaft point, and is remodeled. The inferior surfaces of the lateral ends of both clavicles also present unusual macroporosity and remodeling. The attachment site for the coracoclavicular ligament on the right clavicle is raised and remodeled, probably reflecting a ligament tear. The attachment sites for the costoclavicular ligaments are unremarkable.

The supinator crests of the ulnae and radial tuberosities are mildly raised, with no enthesophytic development. Both acetabula present marginal lipping inferiorly and laterally, with a large osteophytic ridge extending 5 mm from the inferior border of the right acetabulum. The joint surfaces are normal. Both ischia present mild enthesophytic ridges where the hamstrings attach. The left iliac crest presents a mild remodeling. As noted above, the sacrum had just begun to fuse to the left ilium around the time of death. The right fibula and distal end of the right tibia are unremarkable.

Among the cervical vertebrae, the facet for the dens on C1 presents moderate marginal lipping. The dens itself is flattened anteriorly. The anterior margin of C2's inferior endplate extends inferiorly into the cupped superior endplate of C3; it is mildly remodeled. The superior margin of C3 is also mildly remodeled. A large cortical defect is present on the right side of the inferior endplate of C4; immediately adjacent to it the right margin of the endplate itself is oriented superiorly with an osteophytic ridge, indicating a herniation of the disc that separated it from C5. C4 also exhibits flattening of its left inferior articular surface. The superior endplate of C5 exhibits marginal lipping on both sides of its border and is remodeled in correspondence with the deformation of C4's inferior endplate. C5's right superior articular facet is flattened and remodeled. The right side of C5's inferior endplate is also remodeled, having been displaced superiorly although not as dramatically as C4's. The body of C6 presents a wedge fracture that is focused on the vertebra's right side (Figure D.14). The superior endplate is osteophytic and remodeled along its right lateral side and presents a marginal discontinuity along the anterior border, just right of the midline. The right superior articular facet is remodeled. Similar to C4, C6's inferior endplate also presents a cortical defect that consumed most of the right half of the body. The superior endplate of C7 is moderately remodeled to accommodate C6's deformed inferior endplate. A large osteophyte extends from its right margin. A crack extends posteriorly through C7's body to the neural canal; it is possible that the crack occurred perimortem as the vertebra collapsed from the weight of the head.

The facet for the head of the rib on the right side of T1 is flattened and presents slight eburnation. The superior demifacet on the right side of T2 is elongated inferiorly and remodeled, suggesting trauma to the second rib. One middle rib fragment from the right side of the thorax presents a well-healed fracture located 45 mm posterior to the sternal end. None of the rib fragments present any evidence of fracture.

One thoracic vertebra (T8) presents a syndesmophytes extending inferiorly from its left side. No other vertebrae exhibit similar growth. Interestingly, T9 is the only vertebra to exhibit laminal spurs; perhaps these two features are indicative of a localized injury. The upper two lumbar vertebrae are unremarkable, but the lower three all present extensive osteophytic lipping and remodeling across their inferior endplates (L3 and L4) and the superior endplate (L5).

Burial 16. This adult individual consists of a partial cranium with most of the vault represented by large fragments, the intact mandible with both condyles absent, portions of both innominates including both sacroiliac joints, and half of the right pubic symphyses. Also present is the intact left humerus, both femora, both tibiae, and the right fibula. The left fibula is missing the proximal one-third of its shaft. Both patellae are present and intact, as are both naviculars, the left talus, and left calcaneus. The left half of C1 is present. The left zygomatic and sinus portion of the left maxilla are present, as is the intact left temporal. The right temporal is represent by the petrous portion and the right TMJ. The central portion of the frontal is also present, along with a small segment of the brow ridges. The overall quality of the bone is excellent, with minimal erosion and only minor fragmentation. Two additional left tali and an additional left patella are also present. Two loose adult maxillary molars were also present with this burial, but there is no evidence that they are associated with this individual.

This is a young adult male most likely 30–34 years old at death. The cranial vault bones are robust, with mild zygomatic crest extension bilaterally and blunt supraorbital borders. Both mastoid processes are short but wide.

Although not robust, the long bones are larger than most female remains from this vault. Both sciatic notches are wider and the posterior margins of both auricular surfaces are slightly raised, but these features in this individual appear to be more representative of a male.

In terms of age estimation, both auricular surfaces are devoid of striae or transverse organization and are covered by fine microporosity with some minor macroporosity. No osteophytes are present along the margins. The lower half of the right pubic symphysis is present and best matches Phase IV-2 of the Suchey-Brooks system (35.2 +/-9.4). There is no evidence of degenerative joint disease at any of the lower extremity joints. The cranial sutures are all partially fused (scored as 2s), while the left sphenoidal suture is open. With respect to ancestry, this individual was of European descent based on the morphology of the cranial and facial bone fragments, as well as torsion and curvature of the femora.

This young man presented some evidence of inflammation in the joints of his lower extremities. The left talus presents a square patch of very fine porosity across its superior articular surface. Similar porosity is located across its inferior articular facet. The distal articular surface of the left tibia presents similar porosity, as does the distal right tibia. There is no right talus present for comparison. Similar porosity is present on the articular surfaces of the left navicular. The internal surfaces of the acetabula present very coarse porosity bilaterally; the joint surfaces and margins themselves were unremarkable.

Burials 17A and B. These remains represent a young woman (25–29 years old at death) and her unborn, full-term fetus. When initially excavated, the fetal remains were found in the normal prenatal position within the remains of the woman's abdominal cavity (Figure D.15). The skeletal remains of both mother and child are well preserved, with most skeletal elements present and intact. The bones range in color from light to dark brown.

The woman's cranium is present but fragmentary, with large pieces of the cranial vault present and mildly to moderately eroded. The maxillae and zygomatics are absent. The mandible is present, but both ascending rami have been lost postmortem. The frontal and occipital are intact. All of the upper limb bones are present and intact. The right clavicle is absent and the lateral end of the left clavicle has been lost postmortem. The manubrium and sternum are also absent, as are all of the cervical vertebrae and the upper five thoracic vertebrae. The lower thoracic and all of the lumbar vertebrae are present and intact. Eleven left and 10 right ribs are present, but in large fragments. The lower limb bones are all present and intact, but the patellae are absent. The left innominate is represented by the ilium only while the right ischium and ilium are both present. The sacrum is present, but, again, in large fragments. Both calcanei are present, as is the right talus. An extra left ulna is also present.

Almost all of the bones of the fetus are present, with the exception of the facial bones, the right os coxae, and portions of the unfused vertebrae (Figure D.16). Bones of the cranial vault were fragmentary, with only the unfused components of the sphenoid, the right temporal, and the inferior half of the occipital remaining intact. The petrous portion of the left temporal also was present and intact. The posterior portions of both halves of the mandible were present; including the ascending rami. No dental remains were present.

The sex determination of the adult was based on the morphology of the innominates, sacrum, long bones, mandible, and cranial elements. Both sciatic notches are wide and the posterior margins of the auricular surfaces are raised (Figure D.17). Both humeri present septal apertures, more common amongst women than men. The long bones are slender and gracile, and both scapulae and the left clavicle are small.

In terms of age, this woman's auricular surfaces present billowing and transverse organization across their faces (see Figure D.17), indicating that she was a young adult. Both iliac crests are completely fused, but the epiphyseal lines of the femoral heads are still visible posteriorly. The epiphyseal rings of the vertebrae are all fused. There is minimal wear on the mandibular first and second molars, with no dentin exposure. The mandibular incisors present minor dentin exposure. The epiphyseal rings were recently fused, but the epiphyseal lines are still visible. A gap persists between the bodies of the first and second sacral vertebrae.

This woman was of European ancestry, as indicated by the marked torsion and mild curvature of her femora and morphology of her frontal and mandible.

The sex and ancestry of the fetal remains are indeterminate, but his or her age was clearly indicated by fusion of the tympanic ring and petrous portion of the right temporal (Figure D.18), which occurs just before birth. The lesser

wings of the sphenoid were also fused to its body, another normal development in a near-term fetus. Measurements of the long bones indicate that the fetus was small relative to others at this same age range, but within normal parameters.

Initially, it appeared that no maxillary teeth from this woman had been recovered. There was one loose maxillary tooth present—a left canine with pinpoint dentin exposure and one LEH located 4 mm from the CEJ.

A group of maxillary teeth from Vault 3 Burial 16, however, do not appear to match that individual. This group of maxillary teeth was missing the left canine; the right canine from this group appears to match the left one from Burial 17. Consequently, these teeth were analyzed as part of Burial 17's profile.

The maxillary left lateral incisor presents a mildly expressed cingulum and a large buccal carie at the CEJ. The right central incisor also presents a slight cingulum. Both central incisors present thin lines of dentin exposure. Both of the left premolars present interproximal caries on their distal surfaces. Both the left and right canines display distinct LEHs located 4 mm from the CEJs; the right canine also presents a large buccal carie at the CEJ. The left third molar appears to have erupted but presents no wear, consistent with the age estimate from the innominates and other postcranial remains.

The mandible includes all teeth except the left third molar (either unerupted or congenitally absent) and the left first molar (AM loss with 60% socket resorption). The right first molar is present but loose due to the postmortem loss of the alveolar bone. Both central incisors present lines of dentin exposure; the left lateral a slight line, the right lateral incisor pinpoint exposure. Both canines present pinpoint exposure. A large interproximal carie is present on the distal surface and a bit of the occlusal surface of left second premolar. A small shallow interproximal carie is also present on this tooth's mesial surface. LEHs are present on both canines (3 mm from the CEJ on the left side and 4 mm on the right).

Although most of the ectocranial surface is too eroded for examination, there is a patch of active periostitis on the left parietal extending posteriorly from the left coronal suture and laterally from the sagittal suture. This area is characterized by pinpoint porosity grading into more elongated porotic lesions laterally. The frontal anterior to the coronal sutures is too badly eroded to determine whether periostitis was present there. There is also a small area of periostitis on the right parietal that corresponds to its location on the left one. There is a small similar area of "orange peel" porosity located superolaterally to the right orbit and directly superior to the frontal suture.

The endocranial surface of the frontal from the orbital plates superior to the coronal suture is characterized by the presence of a thin layer of whitish remodeled bone, except for just anterior to bregma. The endocranial surface is bumpy with widespread porosity and elongated cavitations (Figure D.19). The left parietal presents similar whitish endocranial porosity in the center of the bone and along the blood vessel depression beneath the sagittal suture (Figure D.20). The right parietal shows the same endocranial appearance, especially around the grooves for the meningeal arteries. The endocranial surface of the occipital is unremarkable.

Ectocranial porosity is also present on the right temporal just above the TMJ and posterior, and along the zygomatic crest extension superior to the mastoid process, which was lost postmortem.

Both auricular surfaces present patches of fine porosity across their superoposterior faces above the sciatic notches. There is additional porosity on the left auricular surface in its center and anterior part; transverse organization is present in this area on the right side and on both surfaces across their lower thirds. There are very slight pre-auricular sulci bilaterally. A small area of porosity and remodeling is present on the right auricular surface just above the lower third.

A small area of active, raised periosteal tissue is present in the middle third of the lateral surface of the right tibia. It measures 17 mm superoinferiorly and 10 mm transversely. This periosteal reactive bone is healed and remodeled superiorly. None is present on the left tibia. The vertebrae were unremarkable, and no evidence of degenerative joint disease was present.

Burial 18. The remains of this woman include the intact left humerus, left clavicular shaft, intact right radius and ulna, both the manubrium and sternum, five cervical vertebrae (C1–C5), two lumbar vertebral bodies, the intact femora, both patellae, both fibulae (distal one-thirds both missing); the lower two-thirds of the sacrum, the right

ilium (with intact auricular surface), and numerous rib fragments. An edentulous mandibular body (intact to the position of the first molars) is also present, as is a cranial vault. The right and left temporals are also present. It is unlikely that the mandible is associated with this individual, based on age differences.

The sex determination for this individual is based on the wide sciatic notch, raised auricular surface, and gracile long bones. A mildly scalloped pre-auricular surface is also present, suggesting at least one pregnancy. The cranium presents frontal bossing, but blunt surpraorbital borders. This woman's age at death was 25–29 years old, as the auricular surface presents some transverse organization with microporosity amid islands of dense bone. The ectocranial cranial sutures are all open. The manubrium and sternum are unfused. The vertebral epiphyseal rings are completely fused, and no osteophytes are present. Based on the curvature and torsion of the femora, this woman was of European descent.

Both patellae present mild marginal osteophytic lipping. None of the other appendicular joint surface exhibits any evidence of degenerative changes. A sternal ossification defect is present.

Vault 4

Like Vault 3, Vault 4 was constructed of stone with a sand floor. Of the four vaults discovered at the site, it was located the closest to Spring Street and was probably used as early as 1811. Among 20 legible coffin lid plates discovered with the human remains in Vault 4 were those dated: 1820; 1822 (four plates); 1823 (two plates); 1824 (three plates); 1825 (two plates); 1826; 1827; 1829 (two plates); 1830 (two plates); 1832; and 1835.

Vault 4 contained thousands of skeletal remains and teeth that had been disturbed prior to their discovery in December 2006. These remains were highly commingled and many had been damaged postmortem. In addition, a large number of crania and other bones were intact but disassociated from each other. Consequently, the URS archaeologists identified 16 individuals in situ but also recovered the remains of many other people who were represented only by a cranium or mandible.

During fieldwork, the archaeologists numbered Burials 1 through 4 as they were unearthed. Rather than four individuals, however, subsequent laboratory analysis indicated that these partially complete remains actually represent 15 commingled infants and children. These individuals were then labeled as Burials 1-4A–O.

Burial 1-4A. Present are the incomplete remains of a fetus, approximately five months in utero. This individual's elements included a right ulna, the right lateral portion of the occipital, and a temporal fragment. The bone is in fair condition and a light brown color.

Sex and ancestry are indeterminate. Age was determined by the length of the unfused lateral portion of the occipital. In addition, the length of the radius falls well below the standards for a newborn, indicating that the remains were fetal.

Burial 1-4B. Present are the incomplete cranial and postcranial remains of an infant, less than six months of age. The bone is in good condition and a dark brown color. The skull is represented by fragments of the occipital, frontal, and right half of the mandible.

The age of this infant was determined by long bone growth standards and epiphyseal union. Measurements of the ulna, radius, and femora consistently classify this individual as being newborn to six months. All of the epiphyses remain open, including the mental symphysis. The sex and ancestry are indeterminate.

Burial 1-4C. Present is a single right femur of an infant. This element was classified as an individual burial because it could not be associated with any other individuals by morphology, size, or taphonomy. The femur measures 80 mm in length, which is consistent with an infant that is less than six months of age. The sex and ancestry are indeterminate. The bone is in good conditions and exhibits no pathology.

Burial 1-4D. This individual is represented by the nearly complete remains of an infant, 2–3 months old at death. The cortical bone is in poor condition due to a pathologic condition that has undermined its structure, giving the bone a "spongy" appearance. It is light yellow in color (Munsell 10YR 7/6) with sections of cranial bone showing bluish to grayish staining. Some ribs, neural arches, and the partial scapula also show a dark gray staining.

The sex and ancestry of this infant is indeterminate. His or her age was determined by the length of the right radius and ulna, as well as an unerupted mandibular canine observed in its crypt. The lengths of both the radius and ulna were consistent with an age of less than six months. The mandibular deciduous right canine is at stage crown ½ complete, which yields a more precise developmental age of 2–3 months at death.

All observable bones display widespread porosity and flaring of the metaphyses. There is widespread destruction of the cortical bone, leaving a surface that is spongy and porous. The cranium is represented by 48 fragments, though reconstruction allowed the identification of a partial frontal; partial left and right parietals; a partial occipital; and a partial left temporal. All cranial elements are light in weight and very brittle. In addition, all cranial elements show cancellous expansions and no ectocranial cortical bone with the thin and porous endocranial cortical bone. The endocranial surface retains a mostly smooth appearance, with small sections of the parietal, frontal, temporal, and occipital showing some porosity.

In general, the postcranial elements are covered with micro and macroporosity. The bones are brittle and ragged in appearance. Of the long bones present, all display extensive flaring of the metaphyses, especially the proximal humerus and distal ulna and radius. The vertebrae are represented by unfused neural arches and centra that too are abnormal in appearance. The centra of the vertebrae have very little cortical bone remaining with macroporosity evident in the cancellous bone. There seems to be more microporosity present on the centra of the vertebrae; however, the neural arches present widespread porosity with extensive cortical destruction. The ribs are represented by a complete left rib one and a partial right rib one. There is also a complete right rib two. Additionally there are five left ribs, none of which are complete, and six right ribs, four of which are complete. There are ten unsided rib fragments. The rib shafts have less porosity than the cranial bones, although the sternal ends are widely flared and present dense microporosity. The underlying structure of the ribs has been compromised by the pathology, and healing fractures are present in the right ribs at the angle. At least four ribs display these mid-shaft fractures, and radiographs confirm similar microfractures in the surrounding ribs. A porous callus was actively forming around the rib fractures at the time of death.

The paleopathologic literature suggests that this widespread macro and microporosity is indicative of general anemia. Possible conditions that been attributed to such widespread anemia include thalassemia, scurvy, sickle-cell anemia, and rickets. For example, thalassemia manifests as cranial thickening, porotic hyperostosis, porosity on both rib shafts and long bone shafts, widespread loss of cortical bone, flaring of the long bone metaphyses and the sternal ends of the ribs, and rib fractures. Such a genetic predisposition, however, is found in individuals having a Mediterranean ancestry, which seems unlikely for this infant from antebellum New York City. Other possible etiologies for the lesions could include sickle-cell anemia, which is characterized by cranial thickening, porotic hyperostosis, and porosity on the long bone shafts. Attributes that are indicative of scurvy are flaring of the long bone metaphyses, flaring of the sternal ends of the ribs, and rib fractures. The "rosary-bead" appearance of the sternal rib ends is also a marker of rickets. It is also very likely that this individual suffered from a number of metabolic conditions that exacerbated the skeletal lesions.

Burial 1-4E. Present are the incomplete cranial and postcranial remains of an infant approximately six months of age. The bone condition is poor overall, although a couple of elements are well preserved. The bone is a brown to light gray color, with substantial patches of dark brown and gray stains on the frontal, mandible, and left zygomatic.

The cranium is represented by a partial frontal, temporals, sphenoid, and mandible. The left zygomatic is complete. The mandible shows postmortem erosion, which has resulted in the loss of the right ramus. The postcranial elements include a partial left scapula, clavicles, three right ribs and three left ribs, four neural arches, and a left humerus, radius, and tibia.

Age was established using long bone length standards for the humerus and radius. Both measurements are found to span the newborn–6 month and the 6–18-month categories. A single unerupted deciduous second molar had developed to nearly crown complete, indicating an age of 0.7 years. Thus, this individual is very close to six months in age. Sex and ancestry are indeterminate and skeletal pathology was limited to mild porosity in the greater wing of the right sphenoid.

Burial 1-4F. Present are the incomplete remains of a subadult, 6–18 months of age. The bone is poorly preserved due to pathology. The cortical bone is not well preserved, and there is flaking on the cranial bones. The bone is

consistently a dark golden brown. The skull is represented by an occipital, right temporal, a right sphenoid, a complete right zygomatic, and a partial maxilla and mandible. Most of the postcranial skeleton is present except for missing vertebrae, right humerus, and left leg elements.

Sex and ancestry are indeterminate and age was determined using long bone length standards. Measurements of the humerus, radii, and femur were, and tibia are consistent with a child, 6–18 months old at death.

This infant presents extensive, widespread skeletal pathology that is very similar to that observed in Burial 1-4D. Microporosity covers the sphenoid, zygomatic, maxilla, and mandible, although the occipital is only beginning to manifest porosity and cortical bone has not been destroyed as in Burial 1-4D. Postcranially, all elements display some degree of porosity and flaring of the metaphyses. The ulnae, in particular, are misshapen due to the cortical bone structure being compromised by pathology. The ribs present microporosity across the visceral surfaces of the shafts, although the cortical bone at the sternal end of the ribs has thinned and there is localized macroporosity. The sternal rib ends are flared, exhibiting a rosary-bead morphology that is consistent with rickets. In addition, two of the right ribs show evidence of healing fractures at the neck where the bone has been structurally compromised. This condition too is characteristic of rickets. The long bone metaphyses are similarly flared and pocked by microporosity. The femur also exhibits metaphyseal flaring at both the proximal and distal ends, and dense macro and microporosity mark these surfaces. It also appears that the medullary cavity is expanded toward the anterior portion of the bone. While an exact etiology for this condition is not clear, the rosary-bead rib ends, microfractures, and flaring metaphyses are consistent with rickets. The expansion of the diplöe and loss of cortical bone may also be related to anemia and/or scurvy.

Burial 1-4G. Present are the incomplete and fragmentary postcranial remains of a child, approximately 6–18 months old at death. The preservation is fair to poor, with the long bones having the best preservation. Postmortem erosion has destroyed the left side of the mandible. Much of the cortical bone on the right clavicle, left ulna, and radii is woody and highly eroded. The bone color ranges from a light to dark golden brown, with patches of bleaching.

Age was determined by long bone growth standards. The radius and tibiae lengths are all consistent with an individual who is 6–18 month of age, although closer to the older end of this category. The sex and ancestry are indeterminate and no skeletal pathology was observed.

Burial 1-4H. Present are the incomplete remains of a child, 6–18 month old at death. The remains are represented by the nearly complete postcranial bones, which are in good condition. Overall the bone is a dark golden brown color with extensive bluish-gray staining on almost all of the elements. No cranium was associated with these remains, but both Burials 1-4N and 1-4O are cranial remains only, which are consistent with the age of this individual. The taphonomy, preservation, and color of these cranial remains, however, are different enough so as not to associate either one of them with this individual.

Age was determined by long bone growth standards and epiphyseal union. All long bone measurements were consistent with a range of 6–30 months old, with the majority classifying closest to 18 months of age at death. The sex and ancestry of this child are indeterminate.

Skeletal pathology includes swelling and initial periosteal inflammation of the visceral surface of three left ribs. The inflammation is localized to the neck and angle and is a lighter color and porous. Similarly, the pedicles of the corresponding vertebrae exhibit a similar expansion and porosity. The vascular channels in the anterior surface of the centra are also noticeably enlarged, though not necessarily pathological. Such a condition is likely associated with a respiratory infection.

Burial 1-4I. Present are the nearly complete remains of a child, approximately 4.5–5.5 years at death. The bones are a dark brown color (Munsell 10YR 6/4) and are generally well preserved. There is some gray discoloration on the mandible and cranium (Munsell 10YR 8/1).

The sex of this child is indeterminate. The child's age was estimated using several morphological characteristics and standards. Dental calcification indicated an age of 4.5–5.5 years based on the maxillary second molar at crown one-half complete and the maxillary first molar at root one-quarter complete. Vertebral fusion is also consistent with a child approximately five years of age. Due to pathology, the long bone measurements underestimate the age of this

child. Because rickets can cause stunting of growth, standards for long bone length are not appropriate for estimating the age of this child.

For ancestry, the cranium shows a mix of morphological features suggesting admixture. There are some indications of European ancestry, including a projecting nasal spine, jagged zygomatic sutures, and receding zygomatics (Figure D.21). There are also some indications of African ancestry, including nasal guttering, a broad nasal aperture, an arched palatine suture, prognathism, and square orbits. While this mix of characteristics hints at the possibility of mixed ancestry, subadults are difficult to evaluate because of the neotonous features and the lack of metric standards for comparison.

This individual has a nearly complete set of deciduous teeth in occlusion and unerupted permanent molars visible in the crypts. Carious lesions pock the labial and buccal surfaces of nearly every tooth, all occurring at approximately crown one-quarter. Numerous interproximal caries are also present, especially on the anterior dentition. The left maxilla and mandible have more pronounced pathology than the right side. In particular, all deciduous molars on the left side have deep occlusal surface carious that are in the process of destroying the crowns. Dentin is exposed on all occlusal surfaces and the mandibular second deciduous molar has developed a periapical abscess due to pulp exposure. The abscess has perforated the cortical bone along the mesial-lingual root and created a large oval lesion. Because of the pain from the abscessing tooth, the child appears to have focused chewing on the right side. The teeth on the right have much greater attrition. There are mild to moderate deposits of calculus and the caries appear to follow the horizontal bands of deposits on the deciduous molars.

This child presents skeletal pathology that is consistent with rickets. The cranium shows some porosity, including moderate and bilateral cribra orbitalia, and mild microporosity of the frontal bone. While individuals with rickets usually have costochondral rib flaring, Burial 1-4I does not manifest this condition. The ribs do, however, exhibit some porosity at the ends. The major pathology appears in the appendicular skeleton, particularly in the long bones of the legs. These bones show bowing and minor porosity. The partial humeri do not exhibit the warping or expansion seen in the legs. This may be due to the fragmentary nature of the elements or it may be due to the timing of the disease. Depending on when onset of the disease occurs, arm bones or leg bones may be more affected (crawling versus walking). In a study of pediatric rickets in historical England, researchers found that lower limb bone deformities were three times more frequent than upper limb bone deformities. Both partial ulnae do, however, display some posterior curvature to the proximal third of the shaft.

The femora exhibit anterior and lateral bowing at midshaft (Figure D.22). The cortical bone of these elements is thick, and fairly extensive porosity marks the elements near the metaphyses but also along the diaphyses. The tibiae and fibulae display anterior and medial bowing, but not as extreme as that seen in the femora. These elements also have expanded expansion and porosity in the cortical bone near the metaphyses and porosity is developing along the shafts. Overall, long bone growth has been stunted. The femora present cortical excavations at the gluteal tuberosities. The tibiae exhibit cortical excavations along the popliteal lines.

Burial 1-4J. Present are the incomplete remains of a child, 5.5–6.5 years at death. All that represents this individual is the occipital, fragmentary right humerus, fragmentary mandible, and miscellaneous teeth. The bone is a light golden brown and the vault is ringed by a fine sediment that accumulated at the back of the head. The perseveration of the occipital is in good condition, but the mandible and humerus are eroded and woody in appearance.

The age of this child was determined by dental calcification standards. The mandibular first molar was at stage root three-quarters complete, which corresponds to a mean age of 5.7 years. The maxillary central incisor was at least crown complete (5.1 years), and the maxillary second molar was at least crown complete (6.3 years). Sex and ancestry are indeterminate.

Burial 1-4K. Present are the incomplete postcranial remains of a child, 2.5–3.5 years of age. The bone is in good condition and is a golden light brown. There is dark brown staining on some of the ribs and vertebrae. Postcranial elements include a nearly complete vertebral column and ribs, should girdle and upper arms, along with a left radius, right innominate, the right proximal tibia epiphysis, and the right distal femur epiphysis.

Age was determined by long bone growth standards and confirmed by vertebral fusion standards. Sex and ancestry are indeterminate.

Burial 1-4L. This burial is represented by two long bones of a child, aged 6–18 months at death. The bone is well preserved and a light golden brown color. Age was determined using long bone growth standards. Sex and ancestry are indeterminate.

Burial 1-4M. Present are the incomplete cranial remains of a subadult approximately five years old at death. This individual is represented by cranial elements only, including a partial frontal, parietals, temporals, and occipital. The bone is light yellow in color (Munsell 10YR 8/4) on the ectocranium and darker yellow (Munsell 10YR 6/6) on the endocranium. The bone is in moderate condition with some flaking.

Sex and ancestry are indeterminate. Age was determined to be approximately five years based on seriation of the occipital. Skeletal pathology includes an endocranial surface with microporosity and a worm-eaten appearance, which is often called serpens endocranial symmetrica (SES). It is most prevalent around the internal occipital protuberance, as well as along the sagittal suture. The porosity resembles a maze and is present on all of the cranial remains. The fragmentary left orbit also exhibits mild and active cribra orbitalia. In addition to the rather common microporosity, however, is a fairly large lytic lesion on the superior lateral margin of the orbit. The lesion measures 6 mm mediolaterally by 4 mm anteroposteriorly.

Burial 1-4N. Present are the incomplete cranial remains of child, aged 6–18 months. Representing this individual is the occipital, a frontal fragment that includes the left orbit, and the right greater wing of the sphenoid. The bone is light golden brown (Munsell 10YR 6/6), and there is some cracking and erosion on the endocranial surface.

Age was estimated by seriation of the occipital and sphenoid. Sex and ancestry are indeterminate. Skeletal pathology consists of endocranial lesions on the occipital and sphenoid. "A worm-eaten" porosity appears around the internal occipital protuberance of this child. This condition is very similar to that observed in Burial 1-4M and others among this group of people. In this individual, however, the porosity and etching are distinctly gray in color. This condition is also observable on the endocranial surface of the right greater wing of the sphenoid, especially around foramen ovale.

Burial 1-4O. Present are the cranial fragments of a child that is approximately 1–3 years at death. All that represents this individual are the temporals, sphenoid, frontal fragments that include both orbits, and the basilar and lateral portions of the occipital. The bone is a consistent medium golden-brown color and well preserved.

Age was estimated using cranial suture fusion and development. The lateral and basilar portions of the occipital are all separate, which suggests that this is a child less than three years old at death. The petrous portion of the temporal and segments of the sphenoid have fused to form a single element. In addition, the foramen of Huschke has just fully formed, fully separating the foramen from the external meatus. This process occurs at approximately 2.5 years. Sex and ancestry are indeterminate.

Burial 5. Present are the nearly complete remains of a young adult male, 20–24 years old at death and of European ancestry. The preservation of the individual is good, with only minor postmortem damage to the left parietal. The skull is complete (Figure D.23), although elements of the lower right arm, thoracic vertebrae, and lower left leg were not associated. A general yellow to brown bone color is fairly consistent across the body, although a slight red staining is evident on some elements. This stain could be due to the red-brick dividing wall in the burial vault. Also, a large, green corrosive metal stain is present on the left ilium, probably from a copper shroud pin.

The individual was determined to be male based on the morphological characteristics of the cranium and innominate, extremely large mandible, and overall body size. Characteristics of a male innominate include less than a 90-degree subpubic angle; broad and flat ischiopubic ramus ridge; and narrow greater sciatic notch width. Characteristics of a male cranium include more pronounced muscle attachments in areas such as the mastoid process; rougher, more pronounced nuchal crest; raised and pronounced supraorbital ridges with thick; and rounded curvature of the supraorbital borders. Characteristics of a male mandible include a large mental eminence and a broad mental shape. Furthermore, measurements of the femur and humerus head are also consistent with male standards.

This individual was estimated to be between 20–24 years based on dental calcification, pubic symphysis appearance, auricular surface development, and ephiphyseal union. The stage of development of the mandibular third molars is apex complete, indicating and age at death beyond 20 years. The pubic symphysis exhibits a billowed surface (phase I) yielding a mean age of 18.5 with an age range of 15–23 years. Furthermore, the auricular surface presents a

granular texture and transverse billowing suggesting an age range of 20–24 years. The remnant of incomplete fusion of the iliac crest and incomplete fusion of the thoracic vertebrae rings suggest a young individual, although a widespread infection had probably slowed the growth process.

The cranial morphology of this individual is consistent with European ancestry, including a persistent metopic suture, pinched nasal bone, narrow nasal breadth, sharp nasal sill, and projecting nasal spine (see Figure D.23). The stature for this individual was estimated to be 163.6–176.5 cm using the maximum length of the femur. Usually lower long bones are most reliable for stature, but since the tibia could not be measured, ulna and humerus maximum lengths were also used for stature determination.

Skeletal pathology includes active periostitis on the visceral surfaces of right and left ribs. On the right side, three rib fragments exhibit inflammation on the visceral surfaces (Figure D.24). The inflammation is widespread and affects the neck to the sternal end. The severity is moderate and the plaque on the ribs exhibits gray patches of discoloration. On the left side, more of the rib cage is present and the inflammation can clearly be seen to afflict ribs two through six. Rib two presents a small patch of inflammation on the visceral surface of the neck only. Ribs three and four exhibit inflammation that is more widespread from the neck to the shaft. Rib five has the densest cluster on the neck, and rib six presents only a small patch on the shaft near the sternal end. On the left side, the plaque is also a porous gray color and the condition ranges from mild to moderate. Such a condition is associated with pulmonary tuberculosis (Manchester and Roberts 2005).

The palate exhibits a porous appearance, and mild, active cribra orbitalia is also present bilaterally. The endocranial surface also presents patches of etching, creating a "worm-eaten" appearance along the meningeal grooves. Such conditions seem to be very prominent in this earlier burial vault. In the literature, such endocranial lesions have been attributed to meningitis and other non-specific infectious diseases (Hershkovitz et al. 2002).

Mild, active periostitis is present on a number of the long bones. The left humerus presents a patch of inflammation on the anterior surface of the shaft, just superior to the capitulum. Similarly, the distal third of the right ulna has a mild patch of periostitis developing on the anterior surface. In both cases, the periostitis is active and localized. The medial surfaces of the femoral shafts present mild, active periostitis that is widespread along the diaphyses. The right tibia and fibula also exhibit mild, active periostitis along the length of their diaphyses. The inflammation on the tibia is focused on the lateral surface, while that on the fibular is on the medial surface.

All teeth are present and in occlusion except for the maxillary left incisors and maxillary left third molar, which were lost postmortem. The left first molar has abscessed out antemortem and the alveolar bone is reabsorbed. Active abscesses due to carious lesions are present in the maxillary first molars, the maxillary right second molar, and the mandibular first and second molars. In the maxillary left premolars, abscesses have perforated the cortex of the maxillary bone. Interproximal caries are present in the left and right canines and left and right premolars of the maxilla.

All of the right mandibular teeth, with the exception of first incisor, also exhibit interproximal caries. The destruction of most of the caries is severe, exhibiting half or complete destruction of the tooth surface. This individual presents mild calculus throughout the dental arcade. Mild tobacco stains affect the interproximal surfaces of the molars.

Numerous linear enamel hypoplasias (LEH) are observable throughout the dentition. Almost all of the anterior teeth have numerous enamel defects. For example, mandibular right canine presents three notable defects. Measurements taken from the cemento-enamel junctions (CEJ) are at approximately crown one-quarter (1.6mm; 1.4 years), the next at crown one-half (3.9 mm; 2.1 years), and the one farthest from the CEJ is at crown three-quarters (5.9mm; 2.9 years).

Burial 6. This 35–40-year-old male is represented by a nearly complete skeleton. The preservation of this individual is good, with nearly every element present and largely complete. Portions of the skull are missing, including the right zygomatic and left sphenoid. Of the postcranial elements, the C1 and C2 vertebrae, the left talus, several carpals, tarsals, metatarsals, and phalanges are missing. The bone is generally a dark golden brown with some elements, such as the vertebrae, showing darker staining. In addition, the bones on the right side appear consistently darker in color than those on the left, which appear more golden in color. Green stains are present on two elements of the body; the right third metacarpal and the left femur. The stain on the right third metacarpal

appears towards the base of the metacarpal and is a pale olive (Munsell 5Y 6/4). The stain on the left femur is located just proximal to the lateral condyle and is an olive gray hue (Munsell 5Y 5/2). For preservation and analysis, parts of the skull, some teeth, the mandible, the maxilla, the right ulna, and the right femur head were reconstructed.

This individual was determined to be male based on the morphological characteristics of the innominate, measurements of the humeral and femoral heads, and overall robusticity. The male characteristics of the innominate include a narrow greater sciatic notch; a broad, flat, and thick ischiopubic ramus ridge; and a convex subpubic concavity. Additionally, the ilium is high and vertical and the obturator foramen is ovoid in shape. The skull is also masculine, presenting a large and pronounced glabella, mental eminence, mastoid processes, and nuchal crest. The femur head measures 52 mm and the humeral head measures 51 mm, consistent with a male.

Age determination for this individual was challenging, given the range of characteristics manifest in the skeleton. The left and right pubic symphyses were scored as Phase IV (mean age 35.2). The auricular surface of the left innominate was scored as Stage IV and the right as Stage III (30–39 years). Also consistent with an age category in the third decade is little to no degenerative joint disease, dense and smooth cortical bone, and moderate dental attrition and pathology. Yet, a number of characteristics suggest an older individual, including nearly complete obliteration of the cranial vault sutures, ossified thyroid cartilage, and sternal rib cartilage calcification.

Indicators of ancestry for this individual were primarily European, especially the craniofacial morphology. The individual has a high cranium, a narrow nasal aperture, a sharp nasal sill, a projecting nasal spine, and a square, projecting chin. The individual's dentition also supports a European ancestry. The teeth are crowded, the palatal shape is parabolic, and the palatal suture is jagged.

Most of the front teeth in the mandibular and maxillary dental arcades are present and in occlusion, although several of the molars and premolars have abscessed out. The individual's teeth show the greatest wear on the incisors and canines. The individual has a congenital absence of the lateral right maxillary incisor. The individual's teeth have numerous carious lesions, many of which are located on the interproximal surface. Of the 25 teeth present, 10 of the teeth have caries and all 10 of those teeth have interproximal lesions. The mandibular right third molar presents a large carie that has destroyed the entire crown and resulted in periapical abscessing. A number of the premolars and molars have abscessed out, including the maxillary right second premolar and the left first and second molars, as well as the mandibular right second and third molars and the left first molar. This individual has rings of moderate to heavy calculus on most teeth, the heaviest occurring on the lingual surfaces. The calculus is also pocked with tobacco stains, and the enamel of the left maxillary molars has especially dark staining.

The individual shows evidence of a number of skeletal pathologies. Mild sinusitis is evident in the left maxillary sinus. The inflammation is mild and healing, and clearly associated with the abscessing of the left first and second molars, which had abscessed out before death. The individual shows evidence of active anemia, as indicated by porosity on a number of different elements. In the cranium, there is bilateral active, moderate cribra orbitalia, mild ectocranial porosity on the vault, and the palate has diffuse microporosity. More pronounced porosity is evident on the visceral surface of the sternum. On the manubrium, the cortical bone has a honeycomb appearance, as the cancellous bone has expanded and compromised the cortical surface. This condition is widespread across the visceral surface of the element. The sternal body has a similar appearance, though the porosity is more localized to the inferior third of the element.

Additionally, the individual shows the beginnings of osteoarthritis. In this individual, mild osteoarthritis is found in the acetabulum of the os coxae and the distal end of the femur. On both os coxae, the acetabula present arthritic lipping and the right os coxa exhibits porosity on the lunate surface. On the distal end of both femora, slight lipping has formed on the medial condyle on the medial edge, closest to the intercondylar fossa. The left tibia has diffuse, mild periostitis on the lateral surface of the tibia at midshaft. The inflammation is mild and striae indicate the inflammation was active at the time of death.

The individual shows signs of strenuous activity in the lower back, manifest as Schmorl's nodes. Such nodes are round or oval shaped and form on the vertebral centrum as a result of degeneration of the intervertebral discs. This individual's lower thoracic and upper lumbar vertebrae (T6 though L3) present Schmorl's nodes that vary in shape and depth. The muscle attachments on the arms and legs are large and well developed. In particular, the linea aspera and gluteal tuberosity are pronounced on both the right and left femurs. The acetabula on both os coxae are elongated, having a more oval than circular shape. There is also a bilateral fusion defect within the acetabula; on the

superior side of the of the lunate surface, approximately where the pubis, ischium, and ilium fused together, the lunate surface dips inward, and there appears a shallow facet superior to this dip. Large bilateral Porior's facets are located on the proximal superior surface of the femora. Small squatting facets are located on the distal ends of the tibiae.

Burial 7. This individual is represented by the incomplete remains of a young adult female, 30–35 years of age. Elements present include the os coxae, lumbar vertebrae, sacrum, and elements of the legs and feet. The bone is in fair condition, although there is some flaking and cracking of the cortical bone. The general color of the bone is consistently yellowish brown (Munsell 5/6) throughout. There is an olive brown staining on the left ilium visceral surface, possibly due to a shroud pin.

This individual was determined to be female based on the morphology of the os coxae, including wide subpubic angles and greater sciatic notches, and the presence of a preauricular sulcus. In addition, there is very little anterior curvature to the sacrum. The size of the femoral head is 38 mm, well below the 42.5 mm cutoff for sex determination. Overall, this individual is very small and gracile; a trend seen in the females in Vault IV.

The age of this individual was estimated to be 30–34 years at death. The auricular surface, bone density, and the lack of degenerative changes are all consistent with this age category. The auricular surface exhibits striae and is mildly granular (Phase III). Ancestry of this individual was indeterminate. Because of the lack of a skull, there are few definitive indicators of ancestry. The femora, however, have very little anterior-posterior curvature and the bone is quite dense. Such traits tend to be associated with individuals having African ancestry.

Skeletal pathology includes periostitis on the tibiae. The inflammation is mild, active, and widespread on the diaphyses. The medial surfaces (especially the left tibia near midshaft) have the greatest degree of inflammation. Similarly, the left tibia, at this same location, exhibits mild and active periostitis. Though not coded, this individual exhibits bowing in the tibiae and fibulae, and the right ilium seems somewhat flattened and elongated. Just superior to the tibiae midshaft, the diaphyses bow medially. This is near the same location as the more pronounced periostitis. In addition, the distal third of the fibulae diaphyses have a pronounced medial and anterior bowing, especially on the left side. The ilia present very large sciatic notches and the ilia are elongated anterior-posterior. These characteristics may indicate rickets when a child or osteomalacia as an adult. Anomalous traits include sacralization of the fifth lumbar vertebrae and a third trochanter on the left femur.

Burial 8. Present is the nearly complete skeleton of a male, more than 60 years of age and of probable European ancestry. Overall preservation of this individual is excellent. Despite breakage of the right ribs, scapula, and fibula, as well as the cranial vault (primarily in the facial region), first two cervical vertebrae, and the os coxae, nearly every element is present and nearly complete. All breakage appears to be postmortem. The bone is yellow to golden brown in color with several elements exhibiting patches of red staining. Red staining is most evident on anterior surfaces of the scapulae and sacrum, as well as several ribs. The staining is generally red (Munsell 2.5 YR 4/6) and is presumably from the leaching of brick used to construct the burial vaults. The medial epicondyle of the left femur shows evidence of possible coffin abrasion.

This individual was determined to be male based on overall robusticity, morphology of the os coxae, sacrum, and cranium, and measurements taken on the humeral and femoral heads. Male characteristics of the os coxae include: narrow greater sciatic notch, absence of a pre-auricular sulcus, and a flat auricular surface height. The sacrum is both narrow and acutely curved. The well-developed nuchal crest and large mastoid processes are further indicative of a male sex determination. Measurements of the relatively large humeral and femoral heads, 50.3 and 50.0 mm respectively, are also consistent with a male.

An age of more than 60 years was determined primarily from the auricular surfaces of the os coxae, which was classified as a Phase VIII according to the standards developed by Lovejoy et al. (1985). This phase is indicated by a marked irregular surface characterized by macroporosity and marginal lipping. Retroauricular activity is indicated in moderate osteophyte formation. The sternal end of the fifth rib was also used to help assess age and was scored as a phase VII, corresponding to an estimated age range of 44–85 years for white males. This phase is indicated by a deep pit with a wide U-shape, thin and fragile walls, and irregular edges and bony projections. The presence of mild to moderate degenerative joint disease and a nearly edentulous dental arcade provides further indication of advanced age.

European ancestry was determined based on skull morphology. Defining characteristics include the presence of: ovoid eye orbits, a nasal spine, a narrow nasal aperture lacking nasal guttering, and a steepled nasal root contour. The cranium also displays a rounded sagittal contour lacking any post-bregmatic depression.

Given this individual's age, it is not surprising to find degenerative joint disease. The third through fifth cervical vertebrae display mild osteophytic lipping. These, along with the first thoracic vertebrae, display moderate marginal lipping with pronounced osteophyte formation on the right lateral margins of the centra. The C7 and T1 are partially fused on the lateral and posterior margins of the centrum body. Mild osteophytic lipping is evident on the centrum margins of the first through twelfth thoracic vertebrae. The inferior surface of T8 and superior surface of T9 display mild osteophyte formation centered in the centrum bodies. Mild porosity is also evident on the centrum surfaces and margins, and appears consistent with normal aging.

The most acute degenerative joint disease is manifest on the lumbar vertebrae. This condition is represented in moderate osteophytic lipping on the margins of the centrum, with mild to moderate porosity located on the joint surface and margins. The inferior centrum of L5 and the superior surface of L6 display severe porosity, with moderate osteophyte formation, indicating significant breakdown of the joint surface, possibly indicating spondylosis. Shallow, broad depressions on the inferior and superior centrum surfaces reflect slight remodeling due to compression consistent with normal aging.

Moderate osteophytic lipping is also present marginally on the auricular surfaces of both the sacrum and the os coxae. Mild to moderate porosity is present on both the margins and surfaces of these joints, as well. Immediately anterior to the right temporomandibular joint is mild porosity indicating mild breakdown associated with slippage of the mandibular condyles during mastication. All remaining joint surfaces display only mild osteophytic lipping and/or porosity.

Overall, other skeletal pathology is limited. Bilateral, mild, and active cribra orbitalia is present, indicating a probable iron deficiency at time of death (Roberts and Manchester 2005). Two features on the endocranial surface of the frontal bone also appear to be evidence of some type of infection, although the exact nature of the pathology is undetermined. One of these features consists of a slightly swollen and enlarged frontal crest, exhibiting mild porosity. This terminates approximately where bilateral patches of lytic pitting occur. The patch on the right side clearly follows the meninges up to the mid-line of the frontal. Mild and active periostitis is evident on the right tibia. The inflammation is localized on the medial surface of the distal third of the mid-shaft. Mild porosity and decreased bone density throughout this individual's skeleton indicate mild osteoporosis consistent with advanced age.

The dental arcade is present, although incomplete. Nearly the entire maxilla is present, though only the right ascending ramus of the mandible remains. Despite being partial, it is clear that dental pathology is quite pronounced in this individual. The maxillary dental arcade is completely edentulous and, with the exception of one remaining tooth socket, displays complete resorption of the alveolar bone. This indicates that most of the teeth abscessed out well before the time of death. The remaining tooth socket appears to be for the right canine, suggesting that this individual may have had at least one tooth left at time of death. This remaining tooth, however, has an active periodontal abscess at apex.

Several indicators provide evidence of strenuous activity. A pronounced enthesophyte is evident along the inferior gluteal line on the posterior of the right ilium. The feature is approximately 49.5 mm long, 10 mm wide, and 16 mm deep, and indicates bone formation in response to a pull of the gluteus minimus muscle. The deltoid tuberosities of the humeri and the linea aspera of the femurs are significantly pronounced, indicating substantial muscle development. Overall robusticity of the major arm and leg bones is also consistent with an active lifestyle.

Burial 9. This individual is represented by the incomplete remains of an adult male, 50–59 years of age. Although the skull is nearly complete and in good condition, the axial elements are limited to the manubrium and a few rib and vertebrae fragments. Most of the long bones are represented, though few are complete. There is a very small piece of the left acetabulum, but otherwise the innominate is absent. Bright green shroud pin stains are seen on the left temporal and the lingual surface of the left mandibular body. Presumably, with decomposition, a pin fell into the mouth and continued to oxidize on this bone surface. Other bone surfaces exhibit similar stains, including the left zygomatic arch, the left side of the nasal aperture, the right petrous portion, and the distal ends of the left radius and humerus.

This individual was determined to be male based on the morphological characteristics of the vault, measurement of the femoral head, and robusticity of the joint surfaces. Male characteristics of the vault include a large vault with pronounced muscle attachments, a large mastoid process, a rounded and dull supraorbital margin, and a prominent glabella. The diameter of the right femoral head measured 49 mm, which places this individual firmly in the male category.

The age of 50–59 years was determined by cranial suture closure, nearly edentulous maxillary dental arcade, sternal rib morphology, and degenerative changes. This individual's cranial sutures were still remarkably open for his age. None of the sutures that were examined, if observable, were completely fused. The inferior and superior sphenotemporal sutures were completely open. The lambdoidal, obelion, and pterion landmarks were, however, unobservable. All other sutures were scored as 2 on the Meindl and Lovejoy system, indicating significant but not complete closure. The mean ages determined using cranial suture standards were 34.7 and 41.4 years of age (Meindl and Lovejoy 1985). Sternal morphology was assessed for two rib ends that were present. The first rib showed a marked U-shape with some porosity, and the walls of the bone are thinning along with bony projections, indicating a mean age of 25–51 years (Phase 5). The second rib examined was determined to be a Phase 6 due to the presence of more bony projections, a deeper U-shape, and increased porosity. This phase provides an age range of 27–62 years of age. Overall, a more narrow age range of 50–59 years was assigned.

This individual's cranial morphology includes traits characteristic of both African and European ancestry. African ancestry is indicated in a distinct post-bregmatic depression, a wide nasal aperture, wide nasal bones, a low and round nasal root contour, an oblique mastoid, and square eye orbits (Figures D.25 and D.26). In addition, the chin is blunt and vertical, and some mild mandibular alveolar prognathism is present. Characteristics of European ancestry, however, include a sharp nasal sill and spine, no nasal guttering, retreating zygomatic arches, and a dip in the palatine suture. The diaphyses of the femora are also quite straight; a trait more consistent with African ancestry.

The maxillary dental arcade is nearly edentulous, and only the anterior dentition remains in the mandible. Only the left central incisor and canine would have remained in the maxilla, though only sockets remain and the teeth themselves were lost postmortem. Small interproximal caries are also seen on the remaining anterior mandibular dentition. These teeth also exhibit pronounced periodontal disease with alveolar resorption resulting in pitting and exposure of the roots. The second right premolar has a linear enamel hypoplasia (LEH) that measures 4.5 mm from the cementoenamel junction. The defect is located at approximately crown one-half, suggesting that this individual would have been approximately 4.7 years of age when the growth disruption occurred. Calculus deposits are moderate to heavy on the mandibular dentition, especially on the lingual and interproximal surfaces. The mandibular left first premolar also has a distinct distal slope, suggesting the remnants of a possible pipe facet.

The degenerative joint disease is relatively limited given the age of this individual. Most of the joints present have mild to moderate porosity and mild osteophytic lipping. The small fragment of left acetabulum has moderate porosity and moderate osteophytes, while the right femoral head exhibits mild lipping on the margin and around the fovea capitis. Overall, this individual has a rather gracile build. The femora have some lateral bowing, though the linea aspera is only slightly elevated. Enthesophytes are seen bilaterally on the calcanei where the Achilles tendons insert. The right patella has a distinct notch in the lateral surface.

Burial 10. Present is the incomplete, primarily appendicular skeleton of a male, 40–44 years old at death. The only axial elements are six lumbar vertebrae. Appendicular elements include the femora, tibiae, right innominate, left radius, and a portion of the right humerus. Preservation is moderate with some postmortem erosion evident, giving the cortical bone a flakey, woody appearance. Red staining, with a hue of dark red (2.5YR 3/6) is present on the lateral surface of the centrum on the lumbar vertebrae. This is likely due to the brick dividing wall at the burial site. There is also coffin abrasion on the posterior surface of femoral condyles and on tibiae just inferior to condyles.

The sex of this individual was determined to be male based on the morphology of the pelvis, including a narrow greater sciatic notch, absence of a preauricular sulcus, and the flat auricular surface. The diameter of the right femur head measured at 51mm, which is consistent with a male sex determination. His age was estimated to be 40–44 years based on morphology of the auricular surface, overall bone density, and limited degenerative changes. The auricular surface is characteristic of Phase 5, characterized by the loss of a granularity and transition to a smooth and dense joint surface. Phase 5 corresponds to an age range of 40–44 years. Ancestry was indeterminate for this individual.

This individual exhibits mild degenerative joint disease in the form of osteophytic lipping on the margins of the distal femora and the proximal tibiae. The more pronounced skeletal pathology is found bilaterally on the diaphyses of the tibiae. Here, moderate periostitis has developed, especially on the anterior crest and medial surface. There are regions of healed inflammation, though the striae and porosity also indicate regions of active inflammation and new bone formation. It is quite possible that the inflammation is due to venereal syphilis, although such an etiology requires the ability to assess more of this individual's skeleton than was recovered.

This individual has fairly gracile musculature with only moderate development of the deltoids and round femora diaphyses. The right femur, however, exhibits extreme torsion. The greater trochanter is rotated posteriorly, while the neck and head rotate anteriorly. The distal joint of the right femur also rotates laterally. By contrast, the left femur is straighter in profile, though having more lateral bowing at midshaft. These activity-related differences, however, are not seen in the tibiae.

Burial 11. Present is the incomplete appendicular skeleton of a female aged 30–35 years. This individual is represented by only a few postcranial elements, including the right innominate, the femora, the tibiae, and fragments of fibulae. The remains have been severely eroded due to weathering and coffin abrasion, especially the distal femoral epiphyses and the proximal epiphysis of the right tibia. The auricular surface of the right innominate has been broken postmortem.

This individual was determined to be female based on the following os coxae traits: a wide greater sciatic notch, a deep and wide preauricular sulcus, and an elevated auricular surface. The diameter of the femoral head measures 37 mm, which falls well within female standards. Her age was estimated to be 30–34 years based on the morphology of the auricular surface. This surface was a Phase 3, which corresponds to a female 30–34 years in age. Supporting this age range is the lack of degenerative joint disease and the smooth and dense cortical bone. Ancestry was indeterminate, although the femoral shafts are very straight with little anterior-posterior curvature. Such morphology is associated with African American ancestry. There is no evidence of skeletal pathology.

Burial 12. Present are the nearly complete but poorly preserved remains of an adult male 50–59 years of age. The preservation of this individual is poor, though nearly every element is present. Most of the cranial vault is in small fragments, though the left frontal bone is still in tact from the supraorbital border to the coronal suture. Postcranially, nearly all of the bones are present, though many are fragmentary or heavily weathered. The bone is characterized by rough patches of cortical bone. There is also a moderate level of cracking and breaking especially in the ribs, os coxae, vertebrae, and the upper long bones. There is some warping of the long bones, especially in the tibiae. The color of the bone is a dark yellowish-brown for the lower extremities, and the upper extremities were a very pale brown. There are also deposits of limestone covering large portions of the bones, though more prominent on the upper extremities, specifically the humerus, ribs, ulnae, and radii.

The sex of this individual was determined by the morphology of the innominate, skull, and the size of the joints. The os coxae male characteristics include a narrow sciatic notch, a straight subpubic concavity, and a broad and round ischiopubic ramus. Both the supraorbital margins are blunt, the supercilliary arch robust, and the mental eminence is moderately pronounced. The femoral head measures 51 mm, which is well within males standards. Age was determined by the auricular surface, pubic symphysis, and the degenerative joint disease. The age range was determined to be 50–59 years in age, as the auricular surface showed no billows or striae. There was some lipping of the edges, as well as some porosity. The pubic symphysis scored a Phase 5+. The surface is very fine grained and slightly depressed. Nearly all of the joints present show evidence of mild to moderate degenerative joint disease.

This individual exhibits characteristics consistent with European ancestry. The nasal root is steepled, the zygomaxillary suture is S-shaped, the chin bi-lobed, and the ramus undulating. The femora also exhibit anterior-posterior curvature.

While the maxilla and mandible are fragmentary, extensive dental pathology can been seen in the palate. The dentition shows evidence of tobacco staining, moderate to heavy tooth wear, widespread tooth loss due to abscessing, and subsequent alveolar bone resorption. In the right maxillae, only the first and second molars remain in occlusion. The roots of these teeth are exposed on the buccal surface by large periodontal abscesses. The remaining teeth have abscessed out and the bone is remodeling. The crowns are covered in smeared calculus and tobacco staining permeates these deposits. A possible pipe facet is seen on the mesial-buccal surface of the first molar. Only the anterior mandibular dentitions remain in occlusion; all of the molars have abscessed out and the

alveolar bone has been resorbed. The incisors have heavy attrition and approximately half of the crown has been eroded. There is a linear enamel hypoplasias in the left canine, 4.3 mm from the CEJ. This disruption occurred when the individual was approximately two years of age.

The skeletal pathology of this individual consists of widespread mild to moderate degenerative joint disease. The elements and joints at the right elbow, in particular, have the most pronounced changes. Here, moderate osteophytes are seen on the joint surface of the humerus and large osteophytes extended superiorly from the margin of the ulna coronoid process. The area around the femoral head and the hip also has some evidence of porosity. The proximal end of the tibia has the greatest evidence of porosity due to degenerative joint disease.

This individual is one of the most robust males seen in this series. Hyper development of the bones of the arms indicates heavy, strenuous, and habitual lifting. The proximal third of the ulnae exhibit pronounced posterior curvature and hyper development of the ulnar tuberosity where the brachialis muscle inserts. The femora and pelvic girdle display similar hyper development. All gluteal attachments are extremely well developed, including along the iliac crest of the os coxae, and greater trochanter of the femora. The intertrochanteric line is broad and elevated, as are the linea aspera, especially at midshaft. Here, the femora midshafts bow medially. There are also enthesophytes around the ischial tuberosity, radial tuberosity, and tibial tuberosity. Even the palmar ridges of the hand phalanges are extremely elevated.

Burial 13. Present are the very incomplete remains of a young adult female, 20–25 years of age. The bone is not very well preserved. The colors are mottled and range from light yellow to dark brown. Most of the cortical bone has eroded off, and the proximal epiphyses of the tibiae and the distal epiphysis of the left femur show heavy coffin abrasion. The only elements that are mostly complete are the tibiae, calcanei, and tali. There are only small fragments of the frontal, right parietal, right occipital, left ilium, left pubis, right humerus, right femur, and right fibula. Associated with the remains are one hinge (4 x 2.5 cm), three nails (approximately 8 cm in length), and seven nails averaging about 5 cm in length. These are heavily rusted and were presumably part of the coffin.

Sex was determined to be female by the large sciatic notch and extremely gracile nature of the long bones and joint surfaces. An age range of 20–25 years was determined by the pubic symphysis, open cranial sutures, and dense youthful appearance of the cortical bone. The morphology of the left pubic symphysis is characterized in billows and ridges with increased activity at the margins, which is beginning to delimit the symphyseal face at the inferior border of the symphysis. This description places it within Phase II, providing a 95% age range of 19–34, with a mean of 23.4 and a standard deviation of 3.6 years. The only visible cranial suture, the right lambdoidal, is still open endocranially and ectocranially. Ancestry is indeterminate due to lack of facial bones. Dentition is absent.

Observable skeletal pathology consists of endocranial changes resulting in a "worm-eaten" appearance. The etching follows the meningeal grooves along the coronal suture and at other small pockets and depressions near the meninges. This pattern is common in this burial population and has been discussed in a number of other studies. Although the exact etiology of this condition is unknown, Lewis (2004:93) suggests that tearing or inflammation of the meninges resulting in new bone formation can be caused by trauma, primary or secondary infection, tumors, syphilis, and vitamin deficiencies, or TB. There does not appear to be any lesions on the ectocranial surface, but poor preservation renders this observation inconclusive. This individual is extremely small and gracile, with slight muscular development in the humerus deltoid. There are bilateral squatting facets on the inferior articular surfaces of the tibiae.

Burial 14. Present are the partial cranial and postcranial remains of a young adult male, 30–35 years of age. Preservation is generally good, with weathering limited to flaking of the cortical bone and patches of erosion. The bone is in good condition, a golden brown color (mottled 10YR8/4 and 10YR6/4), and has some postmortem erosion. The right femur, tibiae, and fibulae exhibit a higher degree of flaking and erosion that the rest of the elements, with flaking and warping penetrating deeper into the cortical bone. The rest of the skeleton is in the early stages of flaking, with patches of erosion throughout. The proximal third right femur was fractured postmortem, probably during construction or excavation activity. There is a circular red stain (10R5/8) on the proximal third of the medial diaphysis of the left tibia. This is possibly from the brick construction of the vault. There is a very dark brown (10YR2/2) stain on the distal third of the left femur, and within this stain there is a smaller, oblong green stain. These were possibly caused by coffin hardware or shroud pins. There is also brown staining on the distal epiphyses of both femora and the proximal epiphyses of the tibiae.

Missing are the facial bones, most of the arms, and most of the upper spinal column. The present craniofacial bones include fragments of both parietals, the occipital, and small fragments of the temporals. The postcranial skeleton includes the right clavicle, a fragment of the left scapula, a fragment of the sternal body, most of the lower right ribs, fragments of the middle left ribs, one C3-C6, three of the T1-T9, all of the lower vertebrae from T10-L5, the upper (S1-S2) portion of the sacrum, the left ilium and ischium, fragments of the right ilium and ischium, fragments of the ulnae and the left humerus, and all of the leg bones with the exception of the left patella, calcaneus, and talus. Most of the carpals and tarsals are either missing or commingled with those of Burial 15.

Sex was determined by the morphology of the pelvis, cranium, and overall bone and joint size. The narrow width of the greater sciatic notch, the absence of a preauricular sulcus, and the elevation of the auricular surface indicate that this individual was a male. The robustness of the nuchal crest and the large size of the mastoid process support this conclusion.

Age was determined using the auricular surfaces, cranial suture closure, sternal rib ends, limited degenerative age-related changes, and the fusion of the sacral vertebrae. The morphology of the auricular surface of the left ilium shows the billowing replaced by distinct striae and a coarsening of granularity. Following Lovejoy et al. (1985), this morphology is consistent with Phase 3, with an age range of 30–34. Cranial suture fusion was more advanced than the postcranial age indicators. Endocranially, the sagittal and lambdoidal sutures are completely obliterated. Ectocranially, the sagittal suture is obliterated at obelion and nearly obliterated at the lambda. This advanced suture fusion suggests an age over 35 years. Sternal rib ends could be observed for ribs six through eight on the left side and three of the middle ribs from the right side (exact location indeterminate). The sternal ends are moderately wide U-shapes. The edges have broken off in most cases, but those that are observable show a thinning of the walls and a mixture of round edges and sharper edges. Overall, the morphology suggests a score of Phase 4, although some of the ribs may be closer to the Phase 5 range. The age range for Phase 4 for white males is 22–35, with 95% falling between 25.7 and 30.6 and a mean age of 28.2. The onset of the fusion of S1 and S2 suggests an age range of 30–32 years. Ancestry is indeterminate due to lack of facial bones. Dentition is absent.

Skeletal pathology includes trauma in the lower thoracic vertebrae, which resulted in large osteophytes in T10. The osteophyte extends from the lateral inferior endplate, paralleling similar formations around the right inferior articular facet. Schmorl's nodes are located on all observable inferior endplates from T8 through L2. Nodes were also observed on the superior endplates of T10, T12, L1, and L2.

In addition to the spinal pathology, there is very mild osteophytic lipping on the margins of the glenoid fossa of the left scapula, the margin of the left acetabulum, and the distal joint margin of the left femur. There is mild enthesophyte formation on the coracoid process of the left scapula. The acetabulum of the left innominate is slightly elongated and there is a Porier's facet on the left femur. Mild ectocranial porosity is seen on the anterior surface of the left parietal. The left tibia does, however, display mild and diffuse periostitis along the lateral surface of the diaphysis.

This individual exhibits very little concerning observable activity markers and anomalous traits. The diaphyses of the femora are very round with only moderate development of the linea aspera, indicating a substantially lesser degree of muscle development when compared to other adult males in this burial vault. The pathology of the lower thoracic and lumbar vertebrae do, however, indicate that the individual experienced stress on his lower back, such as that which may be induced from horseback riding or heavy lifting. The mild elongation of the acetabulum and the presence of Porier's facets on the left femur support the evidence for horseback riding, while the presence of enthesophytes on the coracoid process of the left scapula and the robustness of the right clavicle support the evidence for developed upper body strength.

Burial 15. This individual is represented by nearly complete postcranial remains of an adult male, 40–45 years of age. The preservation of this individual is excellent, with several elements present and complete. Missing elements include all cranial bones with the exception of frontal, as well as both clavicles, all but one cervical vertebra, T 10, and two of thoracic vertebrae 1–9. Also missing are the sternum, several ribs, metatarsals, and phalanges. The phalanges were commingled with Burial 14. The yellow to brown bone color is consistent across the body, though there is some red staining present, probably from the brick wall.

The individual was determined to be male based on morphological characteristics of the innominate, curvature of the sacrum, and the overall robusticity and size of the long bones and joint surfaces. The male characteristics of the

innominate include a slight ridge of the ventral arc, lack of subpubic concavity, less than 90-degree subpubic angle, broad and flat ischio-pubic ramus ridge, narrow greater sciatic notch width, absence of preauricular sulcus, and the deep, prominent curvature of the sacrum.

The age range for this individual was estimated using the standards developed for the pubic symphysis and the auricular surface, as well as the limited age-related degenerative changes in the joints. This individual showed a slight depression on the symphyseal face, which is completely rimmed. This indicates Phase V with an age range of 27–66 years. Auricular surface aging showed replacement of transverse organization by dense bone, though some granularity remains evident. This morphology represents two age phases: 40–44 years (Phase V) and 45–49 years (phase VI). The age range of 40–45 years, however, was determined to more closely approximately the morphological changes in this individual.

Ancestry was indeterminate due to missing facial bones. There was, however, a slight post-bregmatic depression, bossing of the frontal, and vascularization—traits consistent with African ancestry. The femoral have significant antero-posterior curvature, which would be more consistent with European ancestry, although the very wide intercondylar fossa is more characteristic of African ancestry.

Skeletal pathology includes moderate degenerative joint disease, most of which appears to be related to heavy and habitual lifting. The elements of the arm exhibit mild osteophyte development. The acetabulum has moderate osteophytic lipping on the right side and both femoral heads have osteophytes on the joint surface at the fovea capitis. The vertebrae, however, have more pronounce osteophytes, though they are localized and appear to be related to trauma. The only cervical vertebra presents severe osteophyte development on the superior and inferior articular facets and the area between the two has some compression. In the lower thoracic, especially T11, moderate osteophytes extend from the body of the centrum and more severe osteophytes project from the inferior articular facet on the left side. Although T11 is incomplete, it appears that there is some compression to the left side of the element. Schmorls' nodes are also present on both superior and inferior endplates of four of T1-9 thoracic vertebrae.

The posterior surface of the left ilium exhibits an elliptical depression that appears to be a benign tumor. The depression is smooth and concave. The lesion measures 6.7 mm mediolaterally and 10.6 mm superoinferiorly, and is 1 mm deep. The sacrum exhibits complete spina bifida occulta. Spina bifida occulta is the incomplete fusion of the sacral spine. This occurs due to folic acid deficiencies during fetus development (Manchester and Roberts 2005).

This individual has prominent development of the deltoid tuberosity and gluteal attachments on the ilia. The intertrochanteric line and linea aspera in the femora and all muscle attachments in the tibiae are also very prominent. These pronounced muscle attachments suggest that this individual was highly mobile and performed activities that required heavy lifting. Enthesophytes have formed on the both iliac crests and the right calcaneus. This individual's activity markers and robusticity are very similar to those of the older individual in Burial 12.

Burial 16. This individual is represented by the nearly complete remains of a subadult female, approximately 14.5–15.5 years of age. The remains are in good condition, with many of the epiphyses recovered, including the epiphyseal rings from the vertebrae. The bone is a light golden brown, and there are areas of green staining from shroud pins present on the manubrium, first left metacarpal, spinous process of the sixth cervical vertebra, and the left femur near the midshaft. The cranial vault has been fractured postmortem. The right frontal bone exhibits postmortem erosion and warping from ground pressure. There is also some minor cracking and flaking on the bone. The bone is slightly weathered, showing signs of cracking parallel to the fiber structures, with some areas such as the auricular surfaces showing mosaic cracking and a more weathered appearance. The remains are mostly intact, missing only the left ribs, rib 12 on the right, most of the sternum, part of the sacrum, the right talus and calcaneus, the left ulna and radius, and some hand and foot bones. Most of the cervical and thoracic vertebrae were fractured and incomplete.

This individual was determined to be female based on the morphology of the innominate, the straight profile of the partial sacrum, and the overall gracile appearance of the remains. The morphology of the innominate displays a wide greater sciatic notch, clear preauricular sulcus, and an elevated auricular surface, which are all female characteristics. The pubic symphyses were not recovered. The small portion of the sacrum that was recovered is straight in profile, not curved like it is in males. Because this individual was clearly a subadult, the innominate and sacrum were the best indicators of sex. The gracile features of the cranium also helped conclude that this individual was a female. This individual has a small nuchal crest, mastoid process, and supra-orbital margins that all indicate a female. The mental eminence was indeterminate, as the individual has an obvious, blunt chin. The heads of the humerus and

femur were also measured to provide extra indicators. Both the diameters were 36 mm, which corroborates the sex determination.

This individual was determined to be 14.5–15.5 years old at death based on dental calcification and epiphyseal union. The dentition was the most reliable indicator, with the second mandibular molar at a stage of apex complete, corresponding to an age around 14 years. The mandibular third molar was at a stage root one-quarter complete, which indicates an age near 15 years. The stages of most of the epiphyseal unions indicate an age before puberty, which is consistent with this age determination.

This individual has an interesting mix of ancestral markers. Those traits that are consistent with African ancestry include a mandible that has a noticeably hyperbolic dental arcade, blunt chin, and a straight border. The maxilla exhibits alveolar prognathism and a bulging palatine suture. The mandibular first molars are crenulated. The interorbital breadth is moderately wide, the nasal suture is low with a rounded contour, and the mastoid process is oblique with a tubercle. There are, however, a number of traits that are consistent with European ancestry, including Carabelli's cusp on the maxillary left first molar, a very narrow nasal aperture, and no nasal guttering. The femora have a slight anterior-posterior curvature, though the intercondylar space is quite broad. Some traits could also be considered indicative of Asian ancestry, including the shape of the mandible, the complex cranial sutures and the accessory ossicle at lambda. This individual, overall, has the most consistent indicators of mixed ancestry in the burial vaults.

The dentition was mostly complete and in occlusion, both in the maxilla and the mandible. There is postmortem loss of the maxillary right lateral incisor, maxillary left medial incisor, and the mandibular right lateral incisor. The maxillary right third molar is partially erupted, but all of the other third molars are unerupted. The maxillary right canine and lateral incisor erupted in each other's sockets. Most of the carious lesions are on the occlusal surfaces of the molar. A carie in the mandibular left first molar has become quite large and has exposed the pulp chamber on the occlusal and lingual surfaces. There is a possible periapical abscess forming, as evidenced by a porous patch on the mandible. Dental calculus adheres to primarily the occlusal surfaces of the premolars and molars.

All of the teeth are stained a gray color from the cemento-enamel junction (CEJ) to approximately crown one-third. This entire region is banded by linear enamel hypoplasia (LEH), but there are two prominent bands at 5.5 mm and 3.8 mm from the CEJ in the mandibular left incisor. On the mandibular canine, the LEH starts at approximately crown one-quarter, indicating that this girl suffered metabolic insults between the age of 1.6–2.5 years. Among this individual's many odd dental morphologies is an unusual enamel formation of the maxillary right central incisor. The tooth is fairly large and the occlusal surface is curved lingually. A Carabelli's cusp is also present on the maxillary left first molar.

The cranial vault and the dentition show evidence of a chronic, non-specific infection. The endocranium has a "worm-eaten" appearance that follows the meninges. It is present on all of the bones in the cranial vault except the temporals and is also present on the sphenoid. This worm-eaten or maze-like appearance is present on the frontal bone, approximately 8 mm from the coronal suture, extensively on both parietals and on the sagittal sulcus of the occipital bone. A recently proposed term for this condition is serpens endocrania symmetrica (SES), which Hershkovitz et al. (2002:201) characterize as the "affected discolored bone area [that] exhibits disruption of the endocranial surface, lending it a maze-like appearance." SES has been associated with tuberculosis and syphilis as forms of specific meningitis by these authors (2002:210). These endocranial lesions, however, are not diagnostic. It is important to note that the gray dental enamel is characteristic of congenital syphilis, which may also explain the endocranial lesions, series of linear enamel hypoplasias, and periostitis.

The only postcranial skeletal lesion was mild, active periostitis localized on the left tibia. The periostitis is present on the middle third of the shaft, on the left lateral surface. The affected area measures 44 x 10 mm; it is located 113 mm from the proximal joint and 131 mm from the distal end. Overall, this individual is very small and gracile. There is no noticeable development of the muscle attachments in the arms or legs and the proximal diaphyses of the femora are very round.

Demography

The demographic data generated by the analysis of the human remains from the Spring Street Presbyterian Church burial vaults reflects the rigors of life in antebellum New York City. Tables 1–4 present the demographic data.

A total of 76 individuals were identified and analyzed from Vaults 2–4. This total excludes the unborn, full-term fetus discovered in the abdominal cavity of Burial 17A from Vault 3, a woman 25–29 years old at death. No subadults (infants and children) were present among the labeled individuals from Vault 3. Table 2 presents the numbers of individuals by vault location.

Table 3 presents the demographic data for the subadults in Vaults 2–4. Thirty subadults (39.5% of the total number of 76 individuals from the vaults) were identified and analyzed. Of these 30 subadults, 13 (43%) died before reaching the age of 18 months. Children between the ages of 3–10 years accounted for nine (30%) of the individuals. Just over 16% of the subadults were between 10–15 years old at death.

The demography of the adults is presented in Table 4. A total of 46 adults (60.5% of the 76 individuals from the vaults) were analyzed; two males and two females have been excluded from the demographic analysis because their incomplete remains precluded generating an age estimate (listed only as <35).

Analysis of the 42 adults indicates that the men (n=26; 61.9%) outnumbered the women (n=16; 38.1%) in the assemblage by just over one-and-a-half times. Both men and women tended to die more frequently between the ages of 20–29 (35.7% of the group), although this trend was only slightly more common than for deaths between the ages of 30–39 (28.6% of the group). Altogether, of the 42 adults only eight (19% of the group) had died after reaching the age of 45, the average age of death in the antebellum United States.

When analyzed by sex, more men reached their 40s than women—11 men to only two women. The highest percentage of women (56.3% of the 16 women) died before they reached 30 years of age, with only seven older than that at death. Conversely, 18 of the 26 men (69.2%) died after the age of 30. Death still came early for men—only six (23.1%) were older than 50 years when they died. When further analyzed by sex (Table 4), these trends are even more pronounced.

Clearly, infants and young children were at the highest risk for death among this group. Both men and women also died young, although the risks associated with childbirth are reflected in the higher percentage of women who died before reaching the age of 30. Men in this group tended to outlive the women; although this trend is at odds with typical life expectancy data from this period. It is likely that the actual data from these people are skewed, given the incomplete and highly commingled nature of the remains recovered from the vaults.

Paleopathology and Evidence of Trauma

The majority of the remains from the Spring Street burial vaults presented little to no evidence of infection and inflammation. This may be the result of the incomplete nature of many of the recovered individuals, as well as erosion of the surfaces of the bones that were excavated. Still, at least two of the individuals presented evidence of syphilis (Burial 12 from Vault 2 and Burial 10 from Vault 4), as well as cancer (Burial 9 from Vault 2), the latter a rare discovery among historical human remains. Other observations of periostitis were typically mild and active, and were primarily found on the bones of the lower limbs. At least two individuals (Burials 7 and 8 from Vault 2) presented evidence of tuberculosis, the leading cause of death in antebellum America. Again, other people buried in the vaults may have suffered from tuberculosis, but either they died acutely and the disease did not affect their skeletons or the recovered bones were too incomplete and eroded to observe the associated lesions.

Trauma was not well represented among these remains. Several fractures were presented, but all were healed and appeared to be of minor consequence to the people who exhibited them. None appeared to be perimortem or represent the cause of death. At least one individual (Burial 14 in Vault 3) presented bilaterally fused sacroiliac joints, a condition more likely related to a genetic anomaly than trauma.

One of the most interesting discoveries among these remains is the autopsied cranium of a young adolescent boy (Burial J in Vault 2) who was about 13 years old when he died. Unfortunately, none of his postcranial remains were present for analysis and his cause of death could not be determined. Yet, the presence of the autopsy cut through his cranial vault and the insertion of two pins to re-articulate the separated pieces raises a number of questions regarding the use of his remains for medical study or a forensic investigation. While not common, autopsies were not unfamiliar to the people of New York City, where in the eighteenth century riots had broken out due to the practice of removing freshly buried corpses for use in medical school dissecting rooms. Rarely were the remains of the

dissected bodies returned for a proper reburial in a cemetery—it is more likely that this boy had died of an unknown disease or disorder and an autopsy was performed to ascertain the cause.

Perhaps more compelling is the story associated with Burial 17 in Vault 3, a young woman whose death also took the life of her unborn, full-term fetus. There is no evidence that this woman died in childbirth, but her cause of death is not obvious and the possibility cannot be excluded. It is more likely that she had died of some form of brain infection or sepsis, based on the lesions of the internal surfaces of her cranial vault bones. But women in antebellum New York were all too familiar with the statistics that more than half of pregnant women died in childbirth; Burial 17 may be one of these tragic losses.

The general image portrayed by the 76 individuals analyzed for this component of the study is one of fairly robust, healthy people whose causes of death were most likely from acute soft tissue diseases. Poor dental health affected even younger adults, with many presenting significant antemortem tooth loss before attaining their 30s. Two loose teeth unassociated with any of the labeled individuals from Vault 4 presented gold fillings, the only evidence of dental care among the entire group. None of the individuals had died of trauma, and no gunshot wounds or cut marks were observed. Some of the individuals had worked hard physically, but others presented only minimal degenerative changes associated with labor. This was especially true of Burial 12 from Vault 3, presumably a merchant and gentleman named Rudolphus Bogert, who died in 1842 at the age of 76. Other gentlemen no doubt were buried in the vaults along Spring Street, their names now lost to history.

The rediscovery of the Spring Street Presbyterian Church burial vaults in many ways brings back to life the hundreds of people interred there, only a few of whom have the potential to be personally identified. The skeletal remains of these people highlight the unique place in the history of the abolitionist movement that the church holds and the progressive nature of its leaders and members. With this analysis, their biological histories may now be incorporated into the study of their lives and deaths, hopefully bringing a new appreciation for their contributions to the society of both antebellum and modern New York City.

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Tables

Table D.1. Demographic data for individuals from Spring Street Presbyterian Church burial vaults.

Burial	Sex [1]	Age Range
Vault 2		
1	F	<35
2	C	2.5-2.5
3	C	4.5-5.5
4	F	40-49
5	M	<35
6	F	<35
7	C	4.5-5.5
8	F	25-29
9	M	40-49
10	M	20-29
11	C (F)	14.5-15.5
12	M	20-24
A	C	Newborn
B	C	<6 mos.
C	C	6 mos. – 1.5 yrs.
D	C	3.5-4.5
E	C	7.5-8.5
F	C	7.5-8.5
G	C	10.5-11.5
H	C (F)	9-11
I	C (M)	13-13.5
J	C (M)	13.5-14.5
K	F	35-39
L	M	30-34
M	M	60+
N	M	50+
O	F	35-39
P	M	18-22
Q	M	40-44
R	M	18-22
S	M	50+
Vault 3		
1	F	25-29
2	F	20-24
3	F	20-24
4	M	25+
5	M	<35
6	M	25-29
7	F	20-24
8	F	25-29
9	M	35+
10	M	30-34
11	M	25-34
12	M	70+
13	F	30-34
14	M	35-39
15	M	45-49
16	M	30-34
17A and B	F	25-29/full-term
18	F	25-29
Vault 4		
1-4A	C	5 mos. fetus
1-4B	C	<6 mos.
1-4C	C	<6 mos.
1-4D	C	2-3 mos.
1-4E	C	6 mos.
1-4F	C	6 mos. – 1.5 yrs.
1-4G	C	6 mos. – 1.5 yrs.
1-4H	C	6 mos. – 1.5 yrs.
1-4I	C	4.5-5.5
1-4J	C	5.5-6.5
1-4K	C	2.5-3.5
1-4L	C	6 mos. – 1.5 yrs.
1-4M	C	5.5-6.5
1-4N	C	6 mos. – 1.5 yrs.
1-4O	C	1-3
5	M	20-24
6	M	35-39
7	F	30-34
8	M	60+
9	M	50-59
10	M	40-44
11	F	30-34
12	M	50-59
13	F	20-24
14	M	30-34
15	M	40-44
16	C (F)	14.5-15.5

[1] Male is M; female is F, and child or infant is C. Total N=76.

Table D.2. Spring Street Presbyterian Church demography, by vault.

Sex	Vault 2	Vault 3	Vault 4	Totals
Male	11	10	8	29
Female	6	8	3	17
Child/Infant	14	0	16	30
Totals	31	18 [1]	27	76

[1] Excludes Burial 17B, an unborn, full-term fetus.

Table D.3. Spring Street Presbyterian Church subadult demography, by age.

Age Range	Number of Individuals	Percentage [1]	Percentage of Total Group [2]
Fetus/Newborn	2	6.7	2.6
1-6 months	5	16.7	6.5
6 months-1.4 years	6	20.0	7.8
1.5-2.9	3	10.0	3.9
3.0-4.9	5	16.7	6.5
5.0-9.9	4	13.3	5.2
10-14.9	5	16.7	6.5

[1] Percentage of total number of subadults discovered (N=30); excludes unborn, full-term fetus in Vault 3.
[2] Percentage of total number of individuals, including adults (N=76).

Table D.4. Spring Street Presbyterian Church adult demography, by age and sex.

Age Range	Adults [1]	Percentage [2]	Males	Percentage [2]	Females	Percentage [2]
15-19	2	4.8	2	4.8	0	0.0
20-24	7	16.7	3	7.1	4	9.5
25-29	8	19.0	3	7.1	5	11.9
30-34	7	16.7	4	9.5	3	7.1
35-39	5	11.9	3	7.1	2	4.8
40-44	5	11.9	4	9.5	1	2.4
45-49	1	2.4	1	2.4	0	0.0
50-54	4	9.5	4	9.5	0	0.0
55-59	0	0.0	0	0.0	0	0.0
60-64	2	4.8	1	2.4	1	2.4
65-69	0	0.0	0	0.0	0	0.0
70+	1	2.4	1	2.4	0	0.0
Totals	42		26		16	

[1] Excluding two males and two females aged <35 years.
[1] Percentage of total number of adults (N=42).

Table D.5. Spring Street Presbyterian Church adult demography, within sex subgroups.

Age Range	Males	Percentage [1]	Females	Percentage [2]
15-19	2	7.7	0	0.0
20-24	3	11.5	4	25.0
25-29	3	11.5	5	31.3
30-34	4	15.4	3	18.8
35-39	3	11.5	2	12.5
40-44	4	15.4	1	6.3
45-49	1	3.8	0	0.0
50-54	4	15.4	0	0.0
55-59	0	0.0	0	0.0
60-64	1	3.8	1	6.3
65-69	0	0.0	0	0.0
70+	1	3.8	0	0.0
Totals	26		16	

[1] Percentage of total number of males discovered (N=26); excludes two males and two females aged <35 years.
[2] Percentage of total number of females discovered (N=16); excludes two males and two females aged <35 years.

Figures

Figure D.1. Overview of skeletal remains from Vault 2 after washing.

Figure D.2. Overview of skeletal remains from Vault 2 during examination.

Figure D.3. Vault 2, Burial 5; close view of periosteal reactive bone on visceral surface of ribs, indicative of tuberculosis.

Figure D.4. Vault 2, Burial 9; proliferative lesions of ilium indicative of cancer.

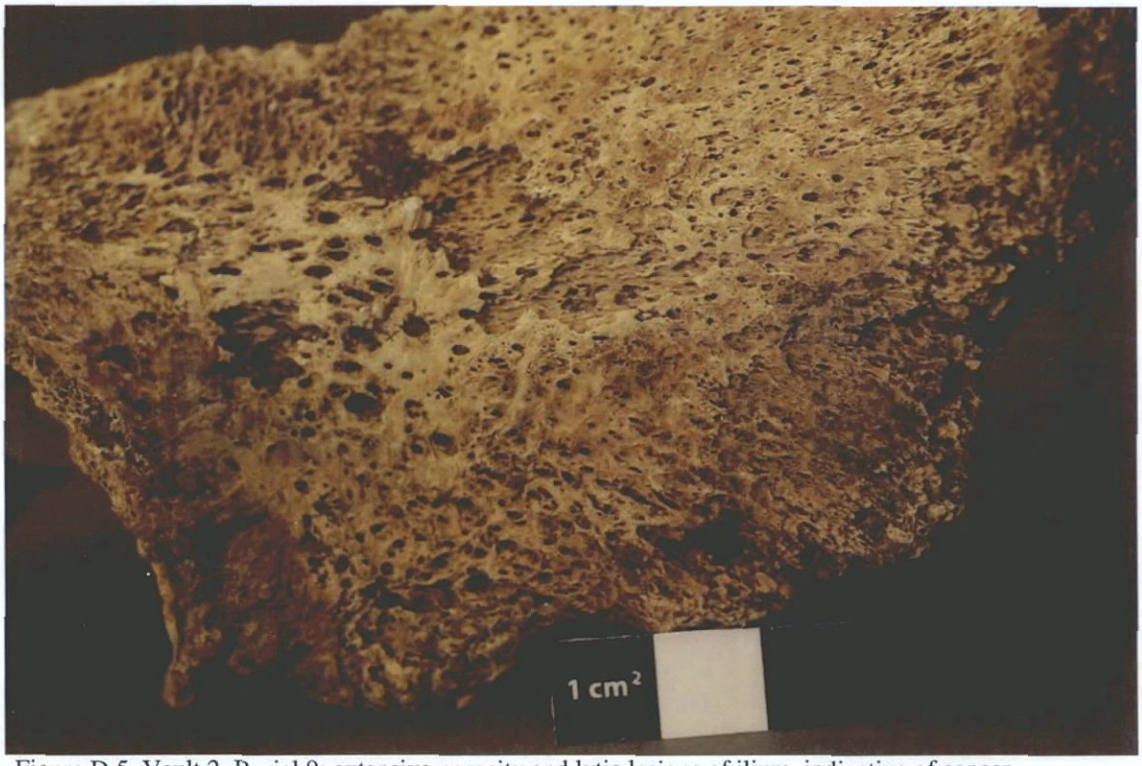

Figure D.5. Vault 2, Burial 9; extensive porosity and lytic lesions of ilium, indicative of cancer.

Figure D.6. Vault 2, Burial 12; mulberry morphology of maxillary first molar, indicative of congenital syphilis.

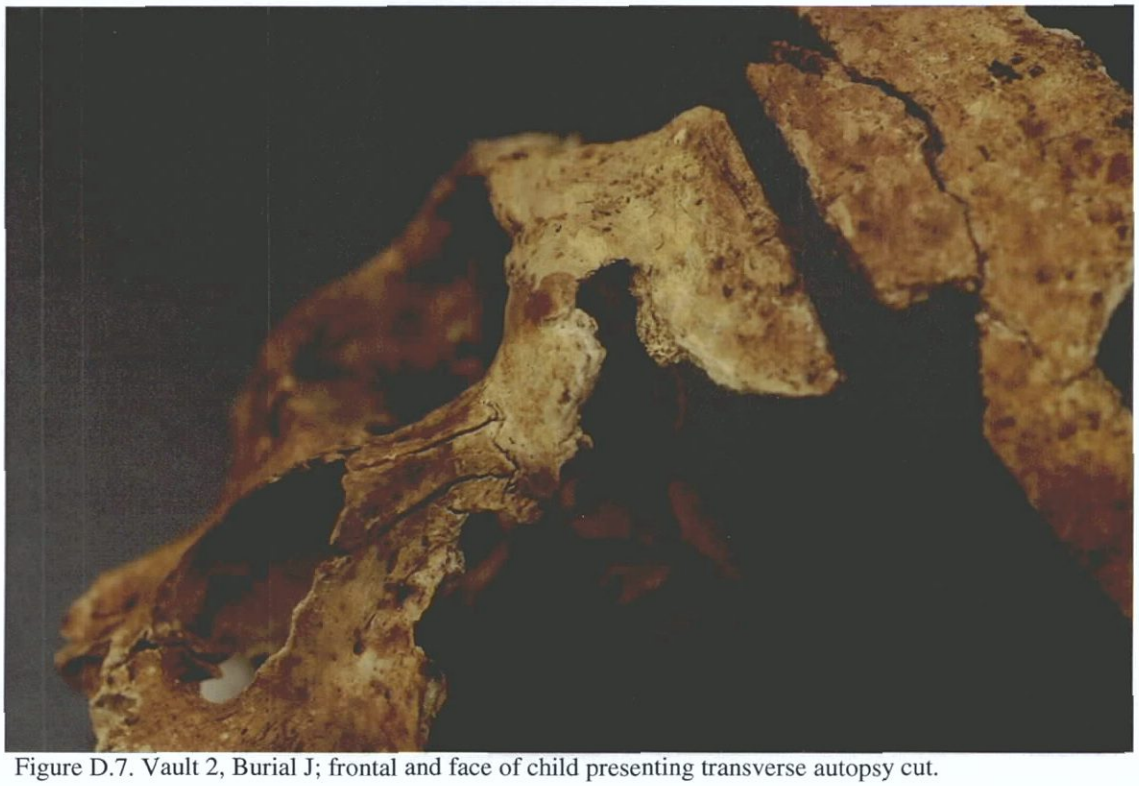

Figure D.7. Vault 2, Burial J; frontal and face of child presenting transverse autopsy cut.

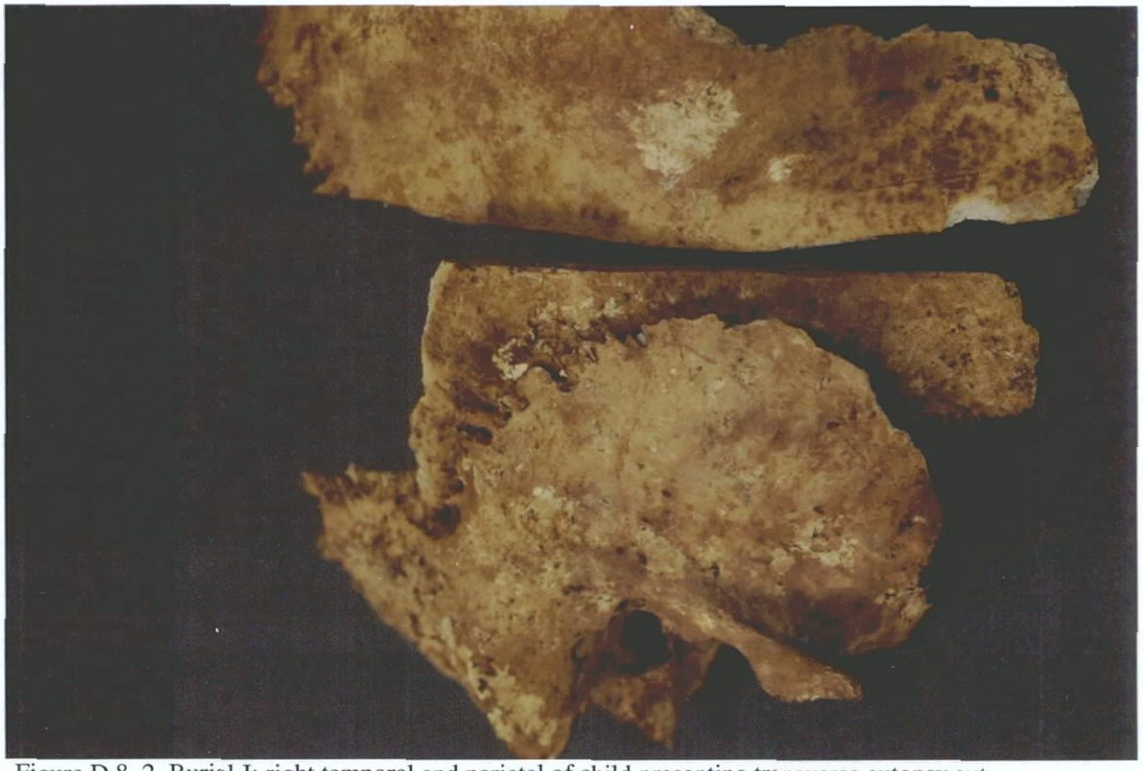

Figure D.8. 2, Burial J; right temporal and parietal of child presenting transverse autopsy cut.

Figure D.9. Vault 2, Burial J; occipital of child presenting transverse autopsy cut.

Figure D.10. Vault 3, Burial 12; first ribs partially fused to manubrium, indicative of older age.

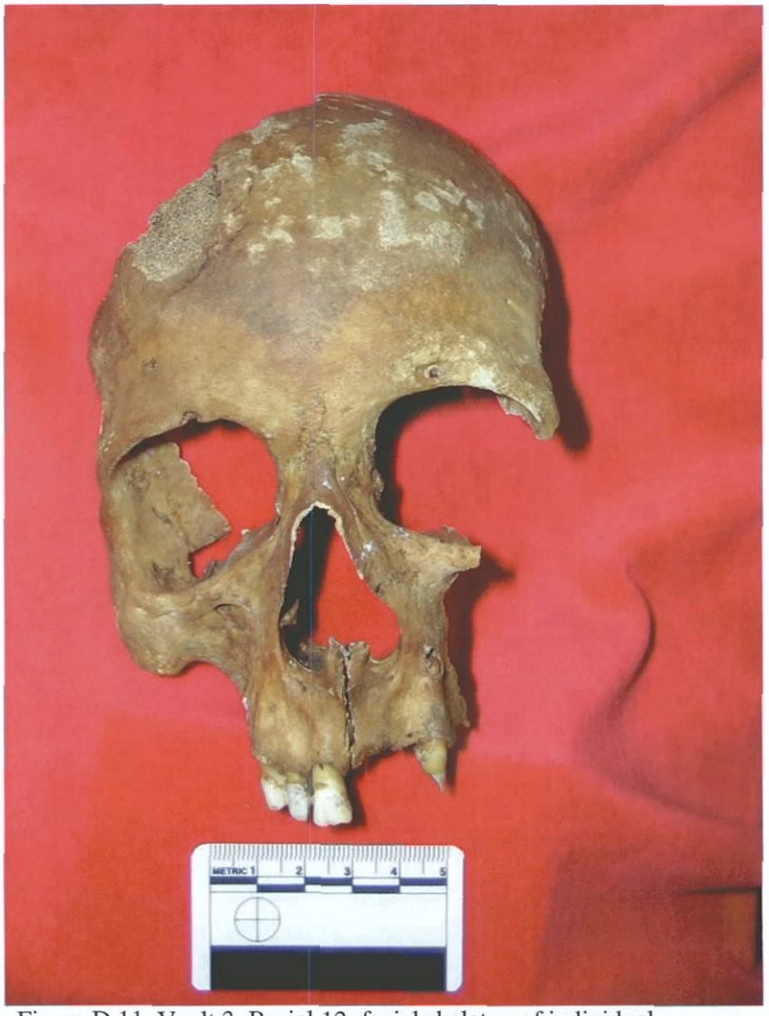

Figure D.11. Vault 3, Burial 12; facial skeleton of individual presumably identified as Rudolphus Bogert, who died in 1842 at age 76.

Figure D.12. Vault 3, Burial 12; mandible of individual presumably identified as Rudolphus Bogert, who died in 1842 at age 76.

Figure D.13. Vault 3, Burial 13; proximal tibiae presenting enthesophytic spurs at tuberosities, indicative of Osgood-Schlatter's disorder.

Figure D.14. Vault 3, Burial 15; cervical vertebrae presenting wedge fracture of C6 (second vertebra from bottom).

Figure D.15. Vault 3, Burials 17A and B; in situ view of unborn, full-term fetus located within abdominal cavity of mother.

Figure D.16. Vault 3, Burial 17B; postcranial remains of unborn, full-term fetus.

Figure D.17. Vault 3, Burial 17A; innominates and auricular surfaces, medial aspects.

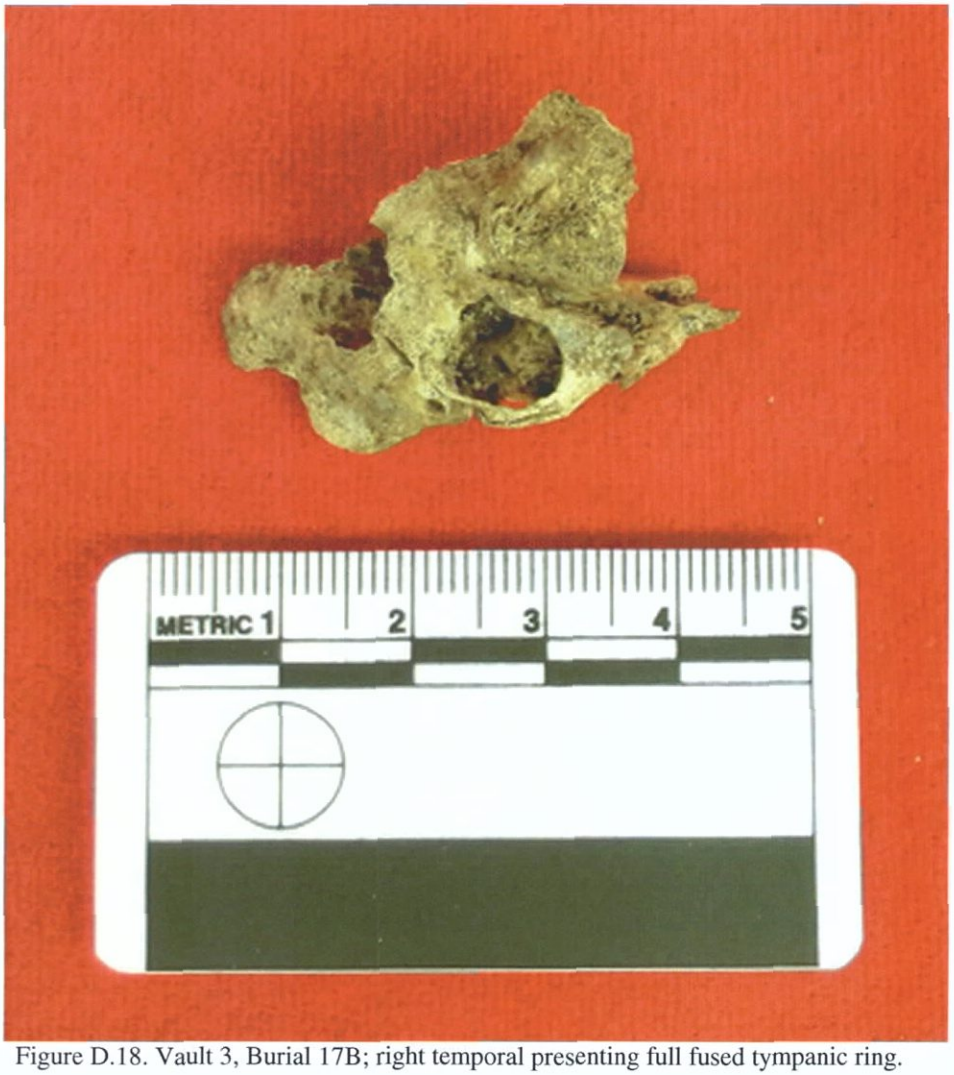

Figure D.18. Vault 3, Burial 17B; right temporal presenting full fused tympanic ring.

Figure D.19. Vault 3, Burial 17A; endocranial surface of frontal presenting reactive periosteal bone and remodeling.

Figure D.20. Vault 3, Burial 17A; endocranial surface of left parietal presenting area of reactive periosteal bone and remodeling in center of squama.

Figure D.21. Vault 4, Burial 1-4I; facial skeleton, anterior aspect.

Figure D.22. Vault 4; Burial 1-4I; left femur presenting curvature indicative of rickets (Vitamin D deficiency).

Figure D.23. Vault 4, Burial 5; facial skeleton and mandible, anterior aspect.

Figure D.24. Vault 4, Burial 5; close view of periosteal reactive bone on visceral surface of rib, indicative of tuberculosis.

Figure D.25. Vault 4, Burial 9; facial skeleton, anterior aspect.

Figure D.26. Vault 4, Burial 9; cranium, left lateral aspect.

Appendix E
Artifact Inventory

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
1	General Find from Fill	1	Funerary	Coarse Earthenware	Neck	Vase	Redware	Unglazed	Green	Narrow neck small terra cotta vase, molded floral rim, patchy green paint exterior		
1	General Find from Fill	2	Household	Refined Earthenware	Body/Rim Sherd	Ointment Pot	Creamware	Undecorated		Small bellied ointment pot with a string rim, possibly American made creamware		
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Hollowware	Yellowware	Other (see comments)	Polychrome	Small vessel, white slip painted blue, possibly art ware	1835	1930
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Hollowware	Yellowware	Unknown	Yellow		1835	1930
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Hollowware	Rockingham	Molded Pattern	Brown		1840	1930
1	General Find from Fill	2	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red	Probably press molded		
1	General Find from Fill	4	Household	Coarse Earthenware	Base/Body Sherd	Flower Pot	Redware	Unglazed	Red	*Wheel-thrown*		
1	General Find from Fill	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Brown	Mortar/cement adhered		
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Cup	Pearlware	Printed	Blue	Negative pattern	1818	1835
1	General Find from Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	Ironstone/Stone China	Painted, Lined	Blue	Line at rim	1830	1950
1	General Find from Fill	1	Household	Porcelain	Base Sherd	Plate	Porcelain, Hard Paste	Decal Underglaze	Polychrome	Hotel ware porcelain plate with a monogram "S" in a blue shield, pale brown and yellow border, possibly Trenton pottery New Jersey	1890	1950
1	General Find from Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated		Light bluish tint to glaze to whiten the plate	1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Undecorated		Possibly white granite or hotel ware	1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated			1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	White Granite	Molded Pattern		Interior molded panels	1850	1890
1	General Find from Fill	1	Household	Refined Earthenware	Rim Sherd	Basin	White Granite	Unknown			1850	1930
1	General Find from Fill	3	Household	Refined Earthenware	Lid	Hollowware	White Granite	Molded Pattern	Blue	Molded floral pattern, light blue tint to the glaze, possibly covered food vessel or chamber pot, two sherds mend	1850	1880

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
1	General Find from Fill	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Other (see comments)	Black printed lion & unicorn mark over "ROYAL IRONSTONE/ CHINA/ J.E.N." Mark stained some letters illegible "K.M." possibly James E. Norris, Anchor pottery, Trenton N.J.	1894	1910
1	General Find from Fill	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Unknown			1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Unknown			1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Rim Sherd	Saucer	Semi-Porcelain	Molded Pattern	White	Embossed small beaded rim.	1890	1950
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Unknown			1850	1930
1	General Find from Fill	1	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Unknown			1850	1930
1	General Find from Fill	1	Personal	Refined Earthenware	Pipe Bowl		White Ball Clay	Molded Pattern		Molded lines of small raised dots		
1	General Find from Fill	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Molded Pattern		Embossed Acanthus leaves in two rings around the stem		
1	General Find from Fill	1	Personal	Bone	Button					Four-hole shirt button		
1	General Find from Fill	1	Household	Stoneware	Rim Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Unknown		Probable horizontal handle, possibly New York or New Jersey made jar or churn		
1	General Find from Fill	1	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Painted	Blue	Blue painted leaf-like pattern, interior brown slip, possible jug or jar		
1	General Find from Fill	1	Personal	Copper Alloy	Pin		Machine Made			Machine-made straight pin		
1	General Find from Fill	1	Household	Milk Glass	Rim Sherd	Jar	Mold Blown	Molded Pattern	White	Ground rim, probably cosmetic.		
1	General Find from Fill	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless			
1	General Find from Fill	1	Household	Glass Non Leaded	Base Sherd	Stemware	Mouth Blown	Unknown	Colorless			
1	General Find from Fill	1	Household	Common Glass	Neck	Bottle, Panel Ball Neck	Mouth Blown	Unknown	Colorless		1870	1910
1	General Find from Fill	3	Household	Common Glass	Base/Body Sherd	Bottle, Panel Ball Neck	Mouth Blown	Unknown	Colorless	Embossed mold number on base, possibly "343"	1870	1910
1	General Find from Fill	3	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Aqua	Lipping tool finish, probable small medicine style bottle	1860	1910
1	General Find from Fill	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown	Unknown	Green		1850	1910

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
1	General Find from Fill	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Embossed	Green	Beverage bottle, embossed ". . . / ESTAB . . ./ . . ." probably mouth-blown	1860	1920
1	General Find from Fill	1	Household	Glass Non Leaded	Whole Vessel	Bottle	Mouth Blown	Undecorated	Colorless	French Square pharmacy bottle, 1.25 inches square	1870	1910
1	General Find from Fill	1	Household	Glass Non Leaded	Whole Vessel	Bottle	Mouth Blown	Undecorated	Colorless	French Square pharmacy bottle, 1.75 inches square	1870	1910
1	General Find from Fill	1	Household	Common Glass	Whole Vessel	Bottle	Two Piece Mold	Embossed	Green	Embossed "BARRY'S" Obv. Reads "TRICOPHEROUS/ FOR THE SKIN/ AND HAIR" other side "NEW YORK" rev. "DIRECTIONS IN THE PAMPHLET" (Fike 1987:122) 2.125 inches by 1.25 inches, lipping tool finish	1873	1900
1	General Find from Fill	1	Household	Common Glass	Whole Vessel	Bottle	Mouth Blown	Embossed	Aqua	Circular plate mold embossed "JACOB RUPPERT / BREWERY/ NEW YORK" and"7" on the base, crown finish with a lipping tool (Bull, Friedrich & Gottshalk 1984:205) American Breweries, Bullworks, Trumbull, Conn.	1892	1910
1	General Find from Fill	2	Architectural	Common Glass	Window Glass				Green, Pale			
1	General Find from Fill	1	Architectural	Common Glass	Window Glass				Colorless			
1	General Find from Fill	1	Architectural	Linoleum	Tile, Floor				Gray			
1	General Find from Fill	1	Fauna	Mammal	Bone					Sawn, limb, probably cow		
1	General Find from Fill	1	Hardware	Iron	Handle					Strap type handle.		
1	General Find from Fill	5	Architectural	Iron	Nail		Cut			Cut nails, wood adhered, possible coffin nails		
1	General Find from Fill	2	Architectural	Iron	Spike		Wire			Burned spike fragments, pieces mend		
1	General Find from Fill	2	Architectural	Iron	Nail		Cut					
1	General Find from Fill	4	Architectural	Iron	Nail		Unidentified					
1	General Find from Fill	1	Hardware	Iron	Wire							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	2	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
2	Privy Level 1, South End of Site	1	Personal	Refined Earthenware	Pipe Bowl		White Ball Clay	Undecorated				
2	Privy Level 1, South End of Site	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	White	Body of "Frozen Charlotte" type doll.	1850	1920
2	Privy Level 1, South End of Site	2	Household	Porcelain	Base Sherd	Platter/Dish	Porcelain, Chinese Export	Painted	Blue	Pagodas and landscape, sherds mend.	1760	1830
2	Privy Level 1, South End of Site	1	Household	Porcelain	Body Sherd	Jar	Porcelain, Chinese Export	Painted	Blue	Chinese ginger jar.		
2	Privy Level 1, South End of Site	1	Household	Porcelain	Base Sherd	Unidentified	Porcelain, Hard Paste	Unknown	White	Possibly America or European porcelain, probably a plate		
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Chamber Pot	Creamware	Unknown		Glaze with green tint	1770	1830
2	Privy Level 1, South End of Site	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Chamber Pot	Creamware	Undecorated			1770	1830
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base Sherd	Chamber Pot	Creamware	Undecorated		Probable chamber pot.	1770	1830
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Handle	Hollowware	Creamware	Unknown		Possibly chamber pot	1770	1830
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Handle	Hollowware	Creamware	Molded Pattern		Extruded handle with two grooved parallel lines	1770	1820
2	Privy Level 1, South End of Site	3	Household	Refined Earthenware	Body Sherd	Hollowware	Creamware	Undecorated		Probably chamber pots	1770	1820
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated		Slight hollow marley	1850	1930
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Tea Pot	Whiteware	Printed	Polychrome	Galleried rim to an oval green printed tea pot with red painting	1830	1860

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	Whiteware	Shell Edge	Blue		1800	1840
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base Sherd	Plate	Whiteware	Unknown			1820	1950
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated		Very vitrified	1850	1930
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base Sherd	Plate	Whiteware	Printed	Blue	Remnant of blue printed mark lettered "STA . . ." over, crown over, "WARR . . ./ STONE . . . " Probably Warranted Stone China, not vitrified	1825	1900
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Molded Pattern		Interior surface with fluted pattern	1870	1890
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Dipt	Polychrome	Brown annular lines with blue band white common cable decoration in white and brown and blue, probably small bowl	1820	1835
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Bowl	Whiteware	Dipt	Polychrome	London shape small bowl with annular brown slip lines with tan bands	1820	1850
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Molded Pattern		Pedestaled cup with 14 flat panels, 75% extant	1850	1880
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	Whiteware	Painted	Polychrome	Double curve cup with green and black floral sprig extant, probably chrome colors, 30% extant	1835	1870
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Painted	Polychrome	Cup with a flaring rim, sprig painted, black stem and green leaf	1835	1870
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Saucer	Whiteware	Painted	Polychrome	Green, blue and black painted floral spray	1835	1870
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	Whiteware	Painted	Polychrome	Large deep saucer, possibly Irish size, small painted floral sprig in green, blue, red and black	1835	1870
2	Privy Level 1, South End of Site	2	Household	Refined Earthenware	Lid	Hollowware	Whiteware	Painted	Polychrome	Round domed lid, tea pot or sugar bowl, painted green, blue and black floral sprays	1835	1870

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	Whiteware	Sponged	Polychrome	London shape cup with alternating red and blue sponging, chrome colors	1835	1860
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Saucer	Whiteware	Sponged	Polychrome	Saucer with alternating red and blue sponging, chrome colors	1835	1860
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Sponged	Blue		1830	1880
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Plate, Muffin	Whiteware	Flow Printed	Purple	Marley appears segmented into panels, flow printed purple-brown	1844	1870
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Printed	Blue, Light	Possibly an Irish size cup	1830	1880
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Printed	Blue	Double curved shape, floral pattern with meandering dotted lines filling background	1830	1860
2	Privy Level 1, South End of Site	2	Household	Refined Earthenware	Base Sherd	Plate	Pearlware/ Whiteware	Printed	Blue, Dark		1825	1835
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	Whiteware	Printed	Blue		1825	1850
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Base Sherd	Plate	Pearlware	Printed	Blue, Dark		1818	1835
2	Privy Level 1, South End of Site	2	Household	Refined Earthenware	Body/Rim Sherd	Plate	Whiteware	Printed	Blue	Plate with hollow marley and scalloped rim	1830	1860
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Rim Sherd	Plate	Whiteware	Printed	Blue	Plate with hollow marley, vignette on marley shows a man leading a mule with a woman and side baskets, possibly genre scene or biblical	1825	1870
2	Privy Level 1, South End of Site	1	Household	Refined Earthenware	Body Sherd	Chamber Pot	Yellowware	Dipt	Polychrome	Annular blue line and a brown band extant	1840	1900
2	Privy Level 1, South End of Site	4	Household	Stoneware	Base/Body Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Buff bodied cylindrical jar with a brown slip glazed interior		
2	Privy Level 1, South End of Site	1	Household	Stoneware	Whole Vessel	Bottle	Salt Glazed, Gray/Buff Bodied	Undecorated	Buff	Buff bodied cylindrical stoneware bottle, base with large incised "X"	1820	1900

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	1	Household	Coarse Earthenware	Base Sherd	Hollowware	Redware	Lead Glazed	Red	Large bellied hollowware, probable bottle or jar, no use wear on interior, mortar/cement adhered		
2	Privy Level 1, South End of Site	1	Household	Stoneware	Base/Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Cylindrical stoneware bottle, brown slip glazed interior, gray body		
2	Privy Level 1, South End of Site	3	Household	Common Glass	Body Sherd	Bottle, Wine	Rickett's Mold		Green, Dark		1821	1910
2	Privy Level 1, South End of Site	1	Household	Common Glass	Neck	Bottle, Wine	Mouth Blown		Black/Green	Applied spring rim and possibly a lipping tool finish, rusted line below the string rim from the wire that tied off the cork, most likely blown into a dip mold	1820	1870
2	Privy Level 1, South End of Site	3	Household	Common Glass	Base/Body Sherd	Bottle, Wine	Dip Mold		Black/Green	No basal sag, sand pontil, very stable glass, no patina	1780	1870
2	Privy Level 1, South End of Site	1	Household	Common Glass	Base Sherd	Bottle, Wine	Paste Mold		Green, Dark	Probably a champagne bottle	1870	1920
2	Privy Level 1, South End of Site	1	Household	Common Glass	Base Sherd	Bottle, Wine	Dip Mold		Green, Dark	Cylindrical bottle, no basal sag, sand pontil, moderate wear on base	1780	1870
2	Privy Level 1, South End of Site	1	Household	Common Glass	Base Sherd	Bottle, Wine	Dip Mold		Green, Dark	Cylindrical bottle, possibly snap-case held, moderate amount of use-wear on base	1850	1915
2	Privy Level 1, South End of Site	1	Household	Common Glass	Body Sherd	Bottle, Wine	Mouth Blown		Green, Dark			
2	Privy Level 1, South End of Site	12	Household	Common Glass	Body Sherd	Bottle			Green, Dark			
2	Privy Level 1, South End of Site	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown		Green, Pale	Small cylindrical bottle base, blow pipe pontil mark	1780	1860
2	Privy Level 1, South End of Site	4	Household	Glass Leaded	Base/Body Sherd	Vial	Mouth Blown		Colorless	Empontiled vial, probably English during certain periods bottles under six ounces in size were required to be blown in lead glass	1780	1860
2	Privy Level 1, South End of Site	1	Household	Milk Glass	Body Sherd	Unidentified	Unidentified		White			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	1	Household	Glass Leaded	Whole Vessel	Bottle	Two Piece Mold	Molded Pattern	Colorless	Rectangular, embossed "N PRENTISS/ CO/ 28 / JOHN ST." empontiled, hand tooled finish, 2.75 inches by 1.375 inches, probably for cosmetics or hair oil	1830	1850
2	Privy Level 1, South End of Site	1	Household	Glass Leaded	Whole Vessel	Bottle	Multi Part Mold	Molded Pattern	Colorless	12-sided bottle with hand tooled finish, probably snap case held	1850	1900
2	Privy Level 1, South End of Site	1	Household	Glass Leaded	Base/Body Sherd	Stemware	Cut	Molded Pattern	Colorless	Three piece wine stem with cut flat panels that vary in size, the stem has a single knop		
2	Privy Level 1, South End of Site	2	Household	Glass Leaded	Base/Body Sherd	Hollowware		Unknown	Colorless	Possible decanter, no pontil probably ground off		
2	Privy Level 1, South End of Site	1	Household	Glass Leaded	Rim Sherd	Hollowware	Unidentified	Unknown	Colorless	Flaring rim, possibly carafe		
2	Privy Level 1, South End of Site	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Green, Pale	Very pale green lead glass		
2	Privy Level 1, South End of Site	16	Household	Common Glass	Body Sherd	Unidentified			Green, Pale	Small glass sherds		
2	Privy Level 1, South End of Site	20	Household	Common Glass	Body Sherd	Unidentified			Colorless	Small glass sherds		
2	Privy Level 1, South End of Site	7	Architectural	Common Glass	Window Glass				Green, Pale			
2	Privy Level 1, South End of Site	1	Household	Common Glass	Body Sherd	Unidentified	Unidentified		Green			
2	Privy Level 1, South End of Site	1	Personal	Fabric	Fragment				Black			
2	Privy Level 1, South End of Site	2	Unknown	Copper Alloy	Fragment					Possibly sheet copper		
2	Privy Level 1, South End of Site	1	Flora	Pit	Peach							
2	Privy Level 1, South End of Site	5	Fauna	Fish	Bone					Small fish bone fragments		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
2	Privy Level 1, South End of Site	39	Flora	Seed	Grape							
2	Privy Level 1, South End of Site	2	Flora	Wood	Cork, Bottle					Bottle cork fragments		
3	Find Spot 1, Fill	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
3	Find Spot 1, Fill	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Shell Edge	Blue		1775	1810
3	Find Spot 1, Fill	1	Household	Refined Earthenware	Body Sherd	Flatware	Pearlware	Printed	Blue	Probably to a muffin plate, stipple engraved	1807	1835
3	Find Spot 1, Fill	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Printed	Blue	Hollow marley blue printed plate, probably from the late 1820s or early 1830s	1820	1835
3	Find Spot 1, Fill	2	Household	Refined Earthenware	Body/Rim Sherd	Hollowware	Pearlware	Printed	Blue, Dark	Probable cup	1818	1835
3	Find Spot 1, Fill	2	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware	Unknown			1780	1835
3	Find Spot 1, Fill	1	Household	Refined Earthenware	Body Sherd	Unidentified	Yellowware	Unknown			1835	1930
3	Find Spot 1, Fill	1	Furniture	Porcelain	Body Sherd		Porcelain, Hard Paste	Unknown	White	Probably sanitary ware, sink or toilet, possibly demolition debris from church	1870	1966
3	Find Spot 1, Fill	1	Household	Coarse Earthenware	Rim Sherd	Dish	Redware	Lead Glazed	Red	Coggled rim, probably slip decorated	1750	1850
3	Find Spot 1, Fill	1	Household	Coarse Earthenware	Rim Sherd	Dish	Redware	Slip Decorated	White	Coggled rim	1750	1850
3	Find Spot 1, Fill	1	Household	Common Glass	Body Sherd	Bottle		Unknown	Amber	Probable beer bottle	1935	2006
3	Find Spot 1, Fill	1	Household	Common Glass	Body Sherd	Bottle		Unknown	Green, Emerald	Probably non-recyclable beverage bottle		
3	Find Spot 1, Fill	4	Household	Common Glass	Body Sherd	Bottle		Unknown	Colorless			
3	Find Spot 1, Fill	1	Household	Glass Non Leaded	Lamp Glass	Lamp, Chimney			Colorless			
3	Find Spot 1, Fill	8	Architectural	Common Glass	Window Glass				Green, Pale			
3	Find Spot 1, Fill	10	Architectural	Common Glass	Window Glass				Colorless			
3	Find Spot 1, Fill	1	Unknown	Copper Alloy	Unidentified					Strip of thin copper alloy		
3	Find Spot 1, Fill	1	Unknown	Copper Alloy	Unidentified				Green			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
3	Find Spot 1, Fill	2	Personal	Fabric	Fragment				Brown	Thin fabric fragments, possibly silk		
3	Find Spot 1, Fill	3	Fauna	Shell	Clam, Quahog							
3	Find Spot 1, Fill	1	Architectural	Wood	Wood Fragment					Remnant of iron nail intact, possible coffin wood, white staining		
3	Find Spot 1, Fill	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 5.4 in by 3.9 in, probably white metal plated, three line inscrition, "Sarah Ogden Hubbard" over, "Died 29 Dec 1840" over, "Aged 28 Yrs"		
3	Find Spot 1, Fill	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions (bent): 5.8 in by 4.5 in, possibly silver plated, four line inscription, "James McGregor" over, "Died 5th April 1832" over, "Aged" over, "45 Years", probably same engraver as FS 3 Entry 24	1832	1832
3	Find Spot 1, Fill	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions (bent): 5.6 in by 4.6 in, possibly silver plated, four line inscription, "Elizabeth Bush" over, "Died 27th March 1832" over, "Aged" over, "37 Years", probably same engraver as FS 3 Entry 23		
3	Find Spot 1, Fill	1	Household	Iron	Body Sherd	Pot	Cast			Fragment from a cast iron pot		
3	Find Spot 1, Fill	1	Unknown	Iron	Unidentified					Round iron rod with a piece of strap metal bent around it, possibly part of a hinged iron fence, the ends of the bar and the strap iron have been cut off		
3	Find Spot 1, Fill	2	Unknown	Iron	Unidentified					Thin strips of sheet iron that has been bent, possibly the edge of a wooden box or crate		
3	Find Spot 1, Fill	1	Funerary	Composite	Screw					Iron screw with large white metal flat top, domed head (0.7 in. diameter)		
3	Find Spot 1, Fill	11	Unknown	Iron	Sheet Metal					Fragments of sheet iron		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
3	Find Spot 1, Fill	1	Hardware	Iron	Rod					Twisted iron rods that look like over sized barbed wire, possibly part of a cast iron fence		
3	Find Spot 1, Fill	15	Architectural	Iron	Nail		Cut					
3	Find Spot 1, Fill	16	Architectural	Iron	Nail		Cut			Cut nails with wood adhering to them		
3	Find Spot 1, Fill	4	Architectural	Iron	Nail		Wire				1880	2006
3	Find Spot 1, Fill	4	Architectural	Iron	Nail		Unidentified					
4	Find Spot 2, Fill	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	White	Body fragment, appears to have been dust pressed, probably German made	1850	1920
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown	Black	Black printed maker's lion and unicorn mark "IMPERIAL/ IRONSTONE CHINA/ . . . ALCOCK & Co" most likely Henry Alcock of Cobridge, Staffordshire (Godden 1964:26-27)	1861	1910
4	Find Spot 2, Fill	2	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Brown	Brown printed maker's mark "PARISIAN PORCELAIN / HENRY ALCOCK & CO." Henry Alcock of Cobridge, Staffordshire (Godden 1964:26-27) also has an impressed "BG" possibly for "best goods"	1861	1910
4	Find Spot 2, Fill	2	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated		Sherds mend, possible hotel ware or white granite	1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Unknown		Light blue tint to the body, very vitrified ware	1850	1880
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated		Possibly white granite or hotel ware	1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	White Granite	Undecorated		Highly crazed and stained	1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Molded Pattern		Handle and rim to molded sauce boat, light bluish tint to the body	1850	1880

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
4	Find Spot 2, Fill	2	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Unknown			1850	1930
4	Find Spot 2, Fill	1	Household	Refined Earthenware	Base Sherd	Hollowware	Pearlware	Painted	Brown	Vertical ribbed molding originating from base with a brown annular line painted around base, possible pitcher or small teapot	1795	1830
4	Find Spot 2, Fill	3	Household	Refined Earthenware	Lid	Tooth Brush Holder	White Granite	Molded Pattern	Blue	Tooth brush holder lid, Ceres pattern, light bluish tint to body, pattern registered in 1851	1851	1890
4	Find Spot 2, Fill	2	Household	Stoneware	Base/Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Cylindrical stoneware beverage bottle, gray paste, brown slip glazed interior		
4	Find Spot 2, Fill	4	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red			
4	Find Spot 2, Fill	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
4	Find Spot 2, Fill	1	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red	High fired		
4	Find Spot 2, Fill	1	Architectural	Porcelain	Tile, Floor		Pressed	Unglazed		Round floor tile, dust pressed, cement on one side	1870	1950
4	Find Spot 2, Fill	1	Household	Glass Non Leaded	Lid	Hollowware	Pressed	Molded Pattern	Colorless	Round lid to a covered dish	1870	1960
4	Find Spot 2, Fill	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless			
4	Find Spot 2, Fill	1	Household	Common Glass	Neck	Bottle	Machine Made	Molded Pattern	Green, Pale	Possible hobble skirt coke bottle, which was designed in 1915	1915	1970
4	Find Spot 2, Fill	1	Household	Common Glass	Base/Body Sherd	Bottle	Two Piece Mold	Embossed	Aqua	Rectangular bottle base, one surface lettered ". . .RTER/ . . .YORK"	1840	1890
4	Find Spot 2, Fill	1	Household	Common Glass	Body Sherd	Bottle, Panel		Embossed	Green, Pale	Embossing on extant side panel lettered ". . .ONG . . "	1840	1920
4	Find Spot 2, Fill	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale			
4	Find Spot 2, Fill	1	Household	Common Glass	Body Sherd	Bottle, Milk	Machine Made	Embossed	Colorless	Embossed ". . .MILK . . ."	1890	1960
4	Find Spot 2, Fill	3	Household	Common Glass	Body Sherd	Bottle, Wine	Mouth Blown		Green			
4	Find Spot 2, Fill	8	Household	Common Glass	Body Sherd	Bottle			Amber	Probable beer bottle		
4	Find Spot 2, Fill	1	Household	Common Glass	Body Sherd	Bottle			Green			
4	Find Spot 2, Fill	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown	Unknown	Aqua	Probable beverage bottle	1840	1910

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
4	Find Spot 2, Fill	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown	Unknown	Colorless		1870	1910
4	Find Spot 2, Fill	2	Household	Common Glass	Base/Body Sherd	Bottle, Wine	Dip Mold		Green, Dark	Embossed "8" and a symbol on the base		
4	Find Spot 2, Fill	1	Household	Common Glass	Base Sherd	Bottle			Amber			
4	Find Spot 2, Fill	1	Architectural	Common Glass	Window Glass		Pressed	Molded Pattern	Colorless	Privacy window glass		
4	Find Spot 2, Fill	14	Architectural	Common Glass	Window Glass				Green, Pale			
4	Find Spot 2, Fill	1	Unknown	Plastic	Fragment				White	White sheet plastic	1950	2006
4	Find Spot 2, Fill	1	Personal	Bone	Comb				White	2-sided lice comb, fine teeth		
4	Find Spot 2, Fill	1	Personal	Shell	Button					4-hole sew through		
4	Find Spot 2, Fill	1	Personal	Copper Alloy	Pin					Plated straight pin		
4	Find Spot 2, Fill	1	Personal	Fabric	Fragment				Black			
4	Find Spot 2, Fill	8	Architectural	Iron	Sheet Metal					Galvanized sheet iron fragments		
4	Find Spot 2, Fill	1	Architectural	Iron	Spike		Wire					
4	Find Spot 2, Fill	4	Architectural	Iron	Nail		Cut					
4	Find Spot 2, Fill	2	Architectural	Iron	Nail		Wire				1880	2006
4	Find Spot 2, Fill	4	Architectural	Iron	Nail		Unidentified					
4	Find Spot 2, Fill	1	Hardware	Iron	Chain Link							
4	Find Spot 2, Fill	2	Unknown	Iron	Unidentified							
4	Find Spot 2, Fill	1	Unknown	Iron	Unidentified							
4	Find Spot 2, Fill	1	Hardware	Iron	Wire							
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Porcelain	Rim Sherd	Bowl, Punch	Porcelain, Chinese Export	Painted	Blue	Large deep bowl with steep sides, sherds mend	1700	1800

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Molded Pattern	Black	Remnant of black maker's mark "WARRANTED/ IRONSTONE/ CHINA/ NASSAU" The Nassau pattern may be made by one of the Trenton potteries. Coal cinders adhered to interior surface	1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown		Remnant of Impressed mark ". . . COB . . ." Possibly Cobridge, one of the pottery towns in Staffordshire	1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Plate	Ironstone/Stone China	Shell Edge	Blue	Well fired	1850	1880
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Architectural	Iron	Nail		Wire				1880	2006
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Shell Edge	Green		1800	1835
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Unidentified	Whiteware	Painted	Blue	Possible Nappie, molded pattern painted blue	1830	1900
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Plate	Pearlware/ Whiteware	Printed	Blue	Possible plate or small platter, landscape pattern	1825	1845
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Cup	Pearlware	Printed	Blue	Probably Chinese cup shape, stipple engraved	1807	1830
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware	Printed	Blue	Negative pattern with the background filled with small circles	1820	1835
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware	Printed	Blue		1820	1835
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Plate	Pearlware	Printed	Blue, Light		1825	1835
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Toy	Porcelain	Base/Body/Rim Sherd	Plate	Porcelain, Hard Paste	Painted	Polychrome	Child's toy plate, blue band and bright gilding annular lines	1890	1950
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	White Granite	Undecorated		Highly crazed and stained	1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	White Granite	Undecorated		Possibly white granite or hotel ware	1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Undecorated			1850	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Molded Pattern		Molded handle, rectangular in cross section suggesting a gothic shaped vessel, perhaps to a pitcher, the main vessel may have been decorated	1850	1880
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Cup	Whiteware	Printed	Blue, Light		1825	1860
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Lid	Hollowware	White Granite	Molded Pattern			1850	1900
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Molded Pattern		Light blue tint to the glaze	1850	1880
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Molded Pattern			1850	1880
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown		Possible platter, impressed unidentifiable date code fraction	1860	1900
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Unknown			1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Unknown			1820	1950
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Base Sherd	Unidentified	Yellowware	Unknown			1835	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Refined Earthenware	Body Sherd	Hollowware	Other (see comments)	Unknown	Buff	Possibly American creamware		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Spittoon	Rockingham	Molded Pattern	Brown		1840	1890
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Refined Earthenware	Rim Sherd	Nappie	Rockingham	Mottled Glaze	Brown		1840	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Refined Earthenware	Body/Rim Sherd	Pitcher	Rockingham	Molded Pattern	Brown		1840	1930
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	4	Household	Coarse Earthenware	Base/Body Sherd	Flower Pot	Redware	Unglazed	Red			
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Architectural	Coarse Earthenware	Tile, Wall		Unidentified	Molded Pattern	White	Molded ceramic tile for the borders, coarse buff body with an opaque white glaze	1850	1940
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Furniture	Porcelain	Body Sherd		Porcelain, Hard Paste	Unknown	White	Possible toilet or sink, end date from the demolition of the church	1870	1996
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Architectural	Porcelain	Tile, Floor		Pressed	Unglazed	White	Small rectangular porcelain dust pressed, mortar on back and sides	1870	1950
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	12	Architectural	Refined Earthenware	Tile, Wall		Unidentified Refined Earthenware	Uncolored Glaze	White	One fragment has embossed letters "WHEEL . . ." possibly Wheeling West Virginia		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Reeded				
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Leaded	Base Sherd	Stemware	Mouth Blown	Unknown	Colorless			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Architectural	Milk Glass	Tile		Pressed	Molded Pattern	White	Press molded milk glass tile with a lined pattern on one surface, possible shelf		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Lamp Glass	Lamp, Globe			White	Milk glass		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Furniture	Common Glass	Fragment				Colorless	Probably glass shelf, molded stippled one surface		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Non Leaded	Base Sherd	Bottle, Medicine	Mouth Blown	Embossed	Colorless	Pharmacy bottle, embossed "W T & Co/ W" for Whitall, Tatum & Co	1875	1910
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Non Leaded	Base Sherd	Bottle, Medicine	Mouth Blown	Unknown	Colorless	Probable French Square pharmacy bottle	1875	1910
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Non Leaded	Body Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Probably small pitcher	1870	1980
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Non Leaded	Body Sherd	Tumbler	Pressed	Molded Pattern	Colorless	Broad fluted pattern	1870	1940
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Glass Non Leaded	Body Sherd	Unidentified		Unknown	Colorless			
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Body Sherd	Bottle, Medicine	Mold Blown	Embossed	Green	Embossed letters ". . .YER'S" probably Ayer's sarsaparilla, possibly mouth-blown	1870	1920
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown	Unknown	Green	Probable beverage bottle, bare iron pontil mark	1860	1880
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Common Glass	Body Sherd	Bottle, Panel	Mold Blown	Unknown	Green, Pale			
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Embossed	Green	Probable beverage bottle, embossed "PHIL . . ."		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Base Sherd	Bottle	Mold Blown	Embossed	Green, Pale	Oval shaped bottle unidentified embossed letter on the front		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	4	Household	Common Glass	Body Sherd	Bottle			Green, Pale			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Common Glass	Body Sherd	Bottle			Green			
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	2	Household	Common Glass	Base Sherd	Bottle, Wine			Black/Green			
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	3	Household	Common Glass	Body Sherd	Bottle			Amber	Probable beer bottle		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	4	Household	Common Glass	Base/Body Sherd	Bottle, Milk	Machine Made	Embossed	Colorless	Embossed "... MILK ..."	1890	1960
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Arms	Copper Alloy	Bullet			Embossed		Center fired brass bullet shell, stamped "WRA Co./ 50 70" Western Repeating Arms Company.		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Household	Copper Alloy	Spoon					Fiddle back teaspoon, faded silver plate		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Copper Alloy	Button					Clothing rivet, such as used on blue jeans		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Copper Alloy	Pin					Bent straight pin		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Bone	Button					Fragment		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Bone	Button					Button blank single hole at center		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	103	Architectural	Common Glass	Window Glass				Green, Pale	sample retained		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Personal	Iron	Button							
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Funerary	Iron	Screw					Iron screw with a large white metal head, coffin hardware		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Hardware	Iron	Screw					Gimlet point screw	1846	2006

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	1	Hardware	Iron	Unidentified					Appears to be a wrought nail with an flange on one side		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	3	Unknown	Iron	Unidentified							
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	6	Architectural	Iron	Nail		Unidentified			Nails with wood adhered, possible coffin nails		
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	11	Architectural	Iron	Nail		Cut					
5	Find Spot 3, 3A, 3B, 5, Fill (Vault 2)	10	Architectural	Iron	Nail		Unidentified					
6	Find Spot 4, Fill (Vault 2/3)	1	Household	Refined Earthenware	Base Sherd	Saucer	Pearlware	Painted	Earth Tone Colors	Green, tan and brown floral pattern	1795	1830
6	Find Spot 4, Fill (Vault 2/3)	1	Household	Refined Earthenware	Body Sherd	Plate	Pearlware	Printed	Dark Blue		1818	1835
6	Find Spot 4, Fill (Vault 2/3)	1	Household	Porcelain	Body Sherd	Unidentified	Porcelain, Hard Paste	Unknown				
6	Find Spot 4, Fill (Vault 2/3)	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Red			
6	Find Spot 4, Fill (Vault 2/3)	2	Architectural	Refined Earthenware	Tile, Wall		Unidentified Refined Earthenware	Undecorated	White	Embossed on back ". . . ING Co." for Wheeling Co.		
6	Find Spot 4, Fill (Vault 2/3)	1	Architectural	Glass Non Leaded	Mirror Glass					Plate glass mirror fragment		
6	Find Spot 4, Fill (Vault 2/3)	2	Architectural	Common Glass	Window Glass				Green, Pale			
6	Find Spot 4, Fill (Vault 2/3)	1	Architectural	Common Glass	Window Glass				Colorless			
6	Find Spot 4, Fill (Vault 2/3)	1	Architectural	Composite	Mortar				Green	Green painted mortar or plaster		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
6	Find Spot 4, Fill (Vault 2/3)	1	Architectural	Wood	Wood Fragment			Painted	Green	Fragment of a board		
6	Find Spot 4, Fill (Vault 2/3)	1	Unknown	Copper Alloy	Unidentified					Band of copper alloy, possibly from a box or crate		
6	Find Spot 4, Fill (Vault 2/3)	1	Unknown	Iron	Unidentified		Cast			Cast iron fragment, possible stove part		
6	Find Spot 4, Fill (Vault 2/3)	1	Unknown	Lead	Unidentified							
6	Find Spot 4, Fill (Vault 2/3)	3	Architectural	Iron	Nail		Cut					
6	Find Spot 4, Fill (Vault 2/3)	4	Architectural	Iron	Nail		Unidentified			Nail fragments with wood adhered, possible coffin nails		
6	Find Spot 4, Fill (Vault 2/3)	4	Architectural	Iron	Nail		Unidentified					
6	Find Spot 4, Fill (Vault 2/3)	3	Unknown	Iron	Unidentified					Strips of thin iron, perhaps strapping for a crate or box		
6	Find Spot 4, Fill (Vault 2/3)	4	Unknown	Iron	Unidentified					Appears to be a sheet iron vessel with an enforced rim		
6	Find Spot 4, Fill (Vault 2/3)	2	Hardware	Iron	Wire							
7	Vault 1	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Embossed	Blue, Cobalt			
7	Vault 1	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware/ Whiteware	Shell Edge		Unscalloped plate with light molded pattern, appears earlier	1825	1940
7	Vault 1	1	Household	Refined Earthenware	Base Sherd	Plate	Pearlware/ Whiteware	Printed	Blue	Fragment of unidentified printed maker's mark	1825	1880
7	Vault 1	2	Household	Refined Earthenware	Body Sherd	Unidentified	Creamware	Unknown		Sherds mend	1770	1820
7	Vault 1	2	Household	Refined Earthenware	Body Sherd	Hollowware	Creamware	Unknown			1770	1820
7	Vault 1	1	Household	Coarse Earthenware	Body Sherd	Dish	Redware	Slip Decorated	White	Slip appears yellow under lead glaze	1750	1850
7	Vault 1	1	Household	Coarse Earthenware	Base Sherd	Hollowware	Redware	Lead Glazed	Black	Black interior glaze, exterior surface missing		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
7	Vault 1	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
7	Vault 1	4	Architectural	Refined Earthenware	Tile, Wall		Unidentified Refined Earthenware	Undecorated	White	Embossed on back of one tile "... CUSHION ...", another "...HELING Co."		
7	Vault 1	1	Architectural	Composite	Plaster				White			
7	Vault 1	3	Unknown	Iron	Unidentified							
7	Vault 1	1	Hardware	Iron	Screw					wood adhered, possible coffin screw		
7	Vault 1	11	Architectural	Iron	Nail		Cut			Several with wood adhered, possible coffin nails		
7	Vault 1	5	Architectural	Iron	Nail		Unidentified					
8	Vault 3	1	Household	Refined Earthenware	Body Sherd	Hollowware	Creamware	Dipt	Polychrome	Brown annular line and a buff band extant	1780	1840
8	Vault 3	1	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware	Printed	Dark Blue		1818	1835
8	Vault 3	1	Household	Refined Earthenware	Rim Sherd	Plate	Whiteware	Printed	Red	Probable muffin plate	1830	1860
8	Vault 3	1	Household	Refined Earthenware	Body Sherd	Plate	Pearlware/ Whiteware	Printed	Blue		1825	1840
8	Vault 3	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	Whiteware	Printed	Blue	Loping scalloped rim, embossed flowers, print made to fit plate, two sherds mend	1830	1860
8	Vault 3	1	Electrical	Porcelain	Unidentified				Black	Appears to be dust pressed, black glazed interior, very smooth base, exterior walls not extant, possible insulator		
8	Vault 3	1	Household	Common Glass	Lamp Glass	Lamp, Globe			White			
8	Vault 3	1	Household	Glass Non Lead	Body/Rim Sherd	Stemware	Pressed	Molded Pattern	Colorless	Pressed imitation of cut glass	1870	1960
8	Vault 3	2	Household	Common Glass	Base/Body Sherd	Bottle, Milk	Machine Made	Unknown	Colorless		1910	1960
8	Vault 3	4	Architectural	Common Glass	Window Glass				Colorless	One surface frosted, two different thicknesses present		
8	Vault 3	1	Architectural	Common Glass	Window Glass				Green, Pale			
8	Vault 3	2	Architectural	Common Glass	Window Glass				Colorless			
8	Vault 3	1	Personal	Bone	Button					five-hole sew through		
8	Vault 3	1	Personal	Bone	Button					Four-hole sew through		
8	Vault 3	5	Funerary	White Metal	Screw					Large white metal heads, coffin screws		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
8	Vault 3	14	Unknown	Iron	Sheet Metal					Sheet iron fragments, 6 discarded		
8	Vault 3	1	Unknown	Iron	Wire					Iron wire, possibly from a bail for a jar		
8	Vault 3	9	Architectural	Iron	Nail		Cut					
8	Vault 3	1	Architectural	Iron	Nail		Wire			Wire nail fragment with wood adhered	1880	2006
8	Vault 3	6	Architectural	Iron	Nail		Unidentified					
8	Vault 3	28	Architectural	Iron	Nail		Unidentified			Wood adhered, possible coffin nails		
9	Vault 3	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	Pearlware	Printed	Dark Blue	"Winter View of Pittsfield, Mass." an American view that was produced after 1826 (Larsen 1975:59-60). Impressed R. & J. Clews mark on the back, sherds mend, another mending sherd to the plate is in FS#14 entry 6	1826	1834
9	Vault 3	1	Household	Refined Earthenware	Rim Sherd	Hollowware	Pearlware	Dipt	Blue	Blue-Gray slip band below rim	1790	1835
9	Vault 3	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
9	Vault 3	3	Funerary	White Metal	Coffin Plate			Engraved		unidentified inscription, probably "Britannia metal"		
9	Vault 3	6	Funerary	Iron	Nail		Unidentified			Coffin fragments adhered		
9	Vault 3	1	Fauna	Shell	Oyster					Small oyster shell		
10	Vault 4	6	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
10	Vault 4	1	Personal	Refined Earthenware	Pipe Bowl		White Ball Clay	Molded Pattern				
10	Vault 4	1	Personal	Refined Earthenware	Pipe Bowl		White Ball Clay	Molded Pattern		Burned tobacco residue in the bowl		
10	Vault 4	5	Household	Refined Earthenware	Base/Body/Rim Sherd	Mug, Child's	Whiteware	Printed	Brown	Ivory body, brown printed farm yard scene, cow being milked, impressed "B" and another unreadable letter on the base. Date based on the ivory tinted glaze with a brown print	1870	1900
10	Vault 4	1	Household	Porcelain	Body Sherd	Plate	Porcelain, Chinese Export	Painted	Blue		1800	1830
10	Vault 4	2	Household	Porcelain	Body Sherd	Vase	Parian	Molded Pattern	Blue		1850	1900
10	Vault 4	1	Toy	Porcelain	Rim Sherd	Plate	Porcelain, Hard Paste	Unknown	White			
10	Vault 4	2	Household	Porcelain	Rim Sherd	Mug	Porcelain, Hard Paste	Other (see comments)	Polychrome	Cylindrical mug lettered ". . .VE'S / . . . KEN" in red, tan band below rim, bright gold gilding at the rim	1890	1950

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	2	Household	Porcelain	Rim Sherd	Mug	Porcelain, Hard Paste	Undecorated	White	Thick band below the rim, probably German or Austrian	1870	1940
10	Vault 4	1	Household	Porcelain	Base Sherd	Cup	Porcelain, Hard Paste	Unknown	White			
10	Vault 4	1	Household	Porcelain	Base Sherd	Saucer	Porcelain, Hard Paste	Unknown	White			
10	Vault 4	1	Household	Porcelain	Base Sherd	Unidentified	Porcelain, Hard Paste	Painted, Overglaze	Not Extant	Possible bowl, ghost image annular line interior surface		
10	Vault 4	1	Household	Porcelain	Base Sherd	Figurine	Porcelain, Hard Paste	Molded Pattern		Base to a figurine or vessel with a molded surface, "3667" written in black on base		
10	Vault 4	2	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Black	Black printed lion and unicorn mark "ROYAL PATENT/ IRONSTONE/ RICHARD ALCOCK/ BURSLEM ENGLAND" Several Alcocks are listed in Godden pp 26-29, but no Richard. Dates based on "England" being part of the mark, probably short lived pottery	1892	1930
10	Vault 4	2	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Black	Part of a black printed lion and unicorn maker's mark above mark ". . .NE CHINA", bottom half of the mark not extant	1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Black	Part of a black printed maker's mark lettered beneath a crown ". . .RADE MARK /. . ." use of the term trade mark dates it to after 1862 (Godden 1964:11)	1862	1930
10	Vault 4	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated		Very well fired with no crazing, could be a hotel ware	1850	1930
10	Vault 4	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Base/Body Sherd	Plate	White Granite	Unknown		Impressed oval maker's mark, difficult to read possibly ". . . EDWARDS/ IRONSTONE/ . . . " J. Edwards used a mark like this (Wetherbee 1985:69), probably his mark	1847	1900
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Molded Pattern		Most likely Sydenham shape by J. and G. Meakin, but similar patterns were made by other potters, dates from Godden 1964:427	1851	1880

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Unknown			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated	Black	Remnant of unidentified black printed maker's mark on the base	1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown		Impressed mark two figures over "P . . " two other letters, unreadable	1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	White Granite	Undecorated		Partial impressed maker's mark, ". . . & SONS/ . . . HALL / . . . " probably James Edwards and Sons, Dale Hall (Godden 1964:230-231)	1851	1882
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
10	Vault 4	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Baker	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Baker	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Baker	White Granite	Undecorated			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Baker	White Granite	Molded Pattern			1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	3	Household	Refined Earthenware	Base/Body Sherd	Unidentified	Pearlware	Unknown	Not Extant		1780	1835
10	Vault 4	1	Household	Refined Earthenware	Body Sherd	Cup	Whiteware	Printed	Blue	London shape cup	1825	1860
10	Vault 4	1	Household	Refined Earthenware	Body Sherd	Hollowware	Ironstone/Stone China	Printed	Blue	Possible oriental pattern	1830	1850
10	Vault 4	1	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware	Printed	Blue	Possible saucer	1815	1835
10	Vault 4	1	Household	Refined Earthenware	Body Sherd	Hollowware	Ironstone/Stone China	Flow Printed	Blue		1842	1880
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Mug	Pearlware	Unknown	Not Extant	cylindrical mug	1780	1835
10	Vault 4	1	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware/ Whiteware	Molded Pattern		Molded hoop decoration, possibly to a pitcher	1820	1835
10	Vault 4	2	Household	Refined Earthenware	Base/Body Sherd	Cup	White Granite	Molded Pattern		Pressed handled 12-sided cup that has a blue tinted body, vitrified	1850	1880
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	3	Household	Refined Earthenware	Body/Rim Sherd	Cup	White Granite	Undecorated	Blue	Light blue tint to the glaze, block handle	1870	1900
10	Vault 4	2	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated		Black specks suggests may have been a second	1850	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Molded Pattern			1850	1880
10	Vault 4	3	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Handle	Cup	White Granite	Molded Pattern		One handle block molded	1870	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Hollowware	White Granite	Unknown			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Cup	White Granite	Undecorated		Thick, possibly hotel ware	1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Household	Refined Earthenware	Base/Body Sherd	Cup	White Granite	Unknown		Part of the handle base extant	1850	1930
10	Vault 4	7	Household	Refined Earthenware	Body Sherd	Cup	White Granite	Unknown			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Molded Pattern		Thick handle with a thumb rest for stability, possible chamber pot	1850	1930
10	Vault 4	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Unknown			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Unknown			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Unknown			1850	1930
10	Vault 4	2	Household	Refined Earthenware	Base Sherd	Saucer	White Granite	Unknown			1850	1930
10	Vault 4	7	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown			1850	1930
10	Vault 4	16	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Unknown			1850	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Hollowware	Unidentified Refined Earthenware	Colored Glaze	Black	Black glazed exterior and a creamware like interior, the ware type is unknown		
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Hollowware	Whiteware	Unknown		Cylindrical jar/container, creamware like glaze on both surfaces	1820	1950
10	Vault 4	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Nappie	Yellowware	Undecorated	Yellow		1835	1930
10	Vault 4	3	Household	Refined Earthenware	Base Sherd	Unidentified	Yellowware	Unknown	Yellow		1835	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Hollowware	Yellowware	Unknown	Yellow	Possible custard cup	1835	1930
10	Vault 4	1	Household	Refined Earthenware	Base Sherd	Hollowware	Rockingham	Molded Pattern	Brown	Possible teapot, mottled brown exterior glaze, yellow interior	1840	1930
10	Vault 4	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Nappie	Rockingham	Molded Pattern	Mottled	Small nappie, octagonal	1840	1930
10	Vault 4	1	Household	Refined Earthenware	Rim Sherd	Tea Pot	Rockingham	Molded Pattern	Mottled	Probable teapot or sugar bowl	1840	1930
10	Vault 4	4	Household	Refined Earthenware	Body Sherd	Hollowware	Rockingham	Molded Pattern	Mottled		1840	1930
10	Vault 4	1	Household	Refined Earthenware	Spout	Tea Pot	Rockingham	Mottled Glaze	Mottled	Spout large tea pot	1840	1930
10	Vault 4	1	Household	Coarse Earthenware	Handle	Pipkin	Redware	Lead Glazed	Red	Clear lead glazed handle to a very large pipkin or pan		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Household	Coarse Earthenware	Rim Sherd	Bowl	Redware	Blotched	Brown	Sponge applied blotches of manganese brown on the interior and exterior surfaces		
10	Vault 4	1	Household	Coarse Earthenware	Rim Sherd	Dish	Redware	Exterior Spalled	Red	Coggled rim	1750	1850
10	Vault 4	1	Household	Coarse Earthenware	Rim Sherd	Spittoon	Redware	Mottled Glaze	Mottled	Rim with use wear as though the vessel was stacked on its rim when not in use, highly fired redware		
10	Vault 4	1	Household	Coarse Earthenware	Base Sherd	Unidentified	Redware	Unknown	Brown	Base exterior unglazed		
10	Vault 4	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Brown			
10	Vault 4	1	Household	Stoneware	Body Sherd	Bottle	Slip Glazed Stoneware	Bristol-Type Slip		English stoneware bottle, yellow glaze a white Bristol type slip glaze	1835	1920
10	Vault 4	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip		Probably a German mineral water or wine bottle, Rouge de Bois style slip glaze on the interior, tanish yellow appearance to the exterior glaze		
10	Vault 4	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip		Probably a German mineral water or wine bottle, light brown slip under the salt glaze on both surfaces		
10	Vault 4	1	Household	Stoneware	Base Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Probably to a jug or jar, salt-glazed on a brown slip, no sign of salt glazing on the interior		
10	Vault 4	1	Household	Stoneware	Rim Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Gray paste jar, brown slip glazed interior, salt glaze exterior		
10	Vault 4	1	Household	Stoneware	Handle	Hollowware	Slip Glazed Stoneware	Albany & Bristol Slips	White	Bristol style glazed exterior, brown slip glazed interior	1880	1940
10	Vault 4	1	Household	Stoneware	Base Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Gray paste, salt glazed exterior, brown slip glazed interior		
10	Vault 4	3	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Gray paste, salt glazed exterior, brown slip glazed interior		
10	Vault 4	6	Architectural	Coarse Earthenware	Tile, Drainage		Unidentified Coarse Earthenware	Lead Glazed	Brown	Buff colored coarse earthenware sewer pipe fragments, brown glaze on both surfaces		
10	Vault 4	1	Architectural	Refined Earthenware	Tile, Wall		Unidentified Refined Earthenware	Undecorated	White			
10	Vault 4	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red	Well fired, wheel thrown		
10	Vault 4	5	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red	Multiple vessels		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	3	Household	Coarse Earthenware	Base Sherd	Flower Pot	Redware	Unglazed	Red	Bases three flower pots		
10	Vault 4	12	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red			
10	Vault 4	2	Household	Milk Glass	Lamp Glass	Lamp, Globe	Mouth Blown	Unknown	White			
10	Vault 4	1	Household	Common Glass	Unidentified	Unidentified			White	Possible shelf		
10	Vault 4	2	Household	Glass Leaded	Base/Body Sherd	Bottle, Pharmacy Oval	Multi Part Mold	Unknown	Colorless	Embossed "W.T. & CO." Whitall, Tatum & Co., Millville, N.J. (Toulouse 1971:544) By 1880 they were producing "Flint" glass pharmacy ware that was not lead glass and it is unusual to see one of their Ovals in lead glass, hence the end date	1857	1880
10	Vault 4	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney	Mouth Blown	Undecorated	Colorless	Mold line and ground rim		
10	Vault 4	1	Household	Glass Leaded	Rim Sherd	Tumbler	Pressed	Molded Pattern	Colorless	Large fluted panels, pressed lead glass tumblers began to be replaced by "Flint" glass non-lead pressed ware in the 1870s, common pattern	1840	1880
10	Vault 4	2	Household	Glass Leaded	Base/Body Sherd	Stemware	Pressed	Molded Pattern	Colorless	Pressed glass begins around 1830, but complex vessel are later	1850	1900
10	Vault 4	1	Household	Glass Leaded	Body Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Pressed glass imitation of cut glassware	1830	1880
10	Vault 4	2	Household	Glass Leaded	Body Sherd	Unidentified			Colorless			
10	Vault 4	2	Household	Glass Leaded	Base Sherd	Tumbler	Pressed	Molded Pattern	Colorless		1830	1900
10	Vault 4	4	Household	Glass Non Leaded	Body/Rim Sherd	Tumbler	Pressed	Molded Pattern	Colorless	Common tumbler pattern	1870	1950
10	Vault 4	2	Household	Glass Non Leaded	Body/Rim Sherd	Stemware	Pressed	Molded Pattern	Purple/Solarized	Pressed drinking glass with tint of purple suggesting manganese was used as a whitener	1880	1920
10	Vault 4	1	Household	Glass Non Leaded	Base Sherd	Stemware	Pressed	Unknown	Colorless	Pressed stemware drinking glass, base and stem extant	1870	1950
10	Vault 4	1	Household	Glass Non Leaded	Base Sherd	Stemware	Pressed	Unknown	Colorless		1870	1950
10	Vault 4	1	Household	Glass Non Leaded	Body Sherd	Stemware	Pressed	Molded Pattern	Colorless		1870	1950
10	Vault 4	1	Household	Glass Non Leaded	Body Sherd	Unidentified	Pressed	Molded Pattern	Colorless		1870	1950
10	Vault 4	1	Household	Glass Non Leaded	Body Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Most likely a drinking vessel	1870	1950

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Household	Glass Non Leaded	Neck	Jar	Multi Part Mold	Molded Pattern	Colorless	Barrel shaped	1890	1915
10	Vault 4	1	Household	Glass Non Leaded	Neck	Jar	Multi Part Mold	Unknown	Colorless	Probable mucilage jar	1890	1910
10	Vault 4	1	Household	Glass Non Leaded	Body Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Small piece of tableware with molded fish-scale like imbrications on the interior and molded bands on the exterior		
10	Vault 4	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Unknown	Colorless		1880	1920
10	Vault 4	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Unknown	Colorless		1880	1920
10	Vault 4	1	Household	Glass Non Lead	Neck	Bottle	Mouth Blown	Unknown	Colorless		1880	1920
10	Vault 4	1	Household	Glass Non Lead	Neck	Bottle	Mouth Blown	Unknown	Colorless		1880	1920
10	Vault 4	1	Household	Glass Non Lead	Base Sherd	Bottle	Mold Blown	Unknown	Colorless		1880	1950
10	Vault 4	5	Household	Glass Non Lead	Body Sherd	Bottle	Mold Blown	Unknown	Colorless			
10	Vault 4	5	Household	Common Glass	Base/Body/Rim Sherd	Bottle	Multi Part Mold	Embossed	Green	Embossed "CARTER'S . . ." on base, conical ink, 80 % extant	1870	1910
10	Vault 4	1	Household	Common Glass	Base/Body Sherd	Ink Bottle	Multi Part Mold	Molded Pattern	Green	Eight-sided "Umbrella" ink, neck missing	1840	1910
10	Vault 4	2	Household	Common Glass	Base/Body/Rim Sherd	Bottle	Multi Part Mold	Unknown	Green	Embossed on base "J. & D. / S" *crown top*	1892	1920
10	Vault 4	3	Household	Common Glass	Base/Body/Rim Sherd	Bottle, Panel	Multi Part Mold	Unknown	Aqua		1870	1920
10	Vault 4	3	Household	Common Glass	Base/Body Sherd	Bottle, Panel	Multi Part Mold	Embossed	Aqua	On side panel ". . . R OIL"	1870	1920
10	Vault 4	1	Household	Common Glass	Base Sherd	Bottle	Machine Made	Molded Pattern	Green	Base sherd coke bottle, stippled base, ". . .N . . ."	1935	1980
10	Vault 4	1	Household	Common Glass	Body Sherd	Bottle	Multi Part Mold	Embossed	Green, Pale	Embossed "FOLG M. . ." and ". . . DS . . ." on another panel, possibly for Folger & Company who marketed coffee and spices (Zumwalt 1980:151-153)	1870	1920
10	Vault 4	1	Household	Common Glass	Neck	Jar	Multi Part Mold	Unknown	Green, Pale		1850	1920
10	Vault 4	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale	Long neck bottle, possibly olive oil	1850	1920
10	Vault 4	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale	Wide-mouth bottle	1850	1920

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale		1850	1920
10	Vault 4	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Aqua		1850	1920
10	Vault 4	2	Household	Common Glass	Base/Body Sherd	Bottle	Multi Part Mold	Embossed	Green, Pale	Embossed "W . . ."	1870	1910
10	Vault 4	7	Household	Common Glass	Body Sherd	Bottle	Mold Blown		Green, Pale			
10	Vault 4	2	Household	Common Glass	Neck	Flask	Mouth Blown	Unknown	Amber	Possible strap flask	1860	1920
10	Vault 4	1	Household	Common Glass	Neck	Bottle, Liquor	Mouth Blown	Unknown	Amber	Lipping tool finish with a string rim, common finish liquor bottle	1840	1910
10	Vault 4	3	Household	Common Glass	Base/Body Sherd	Flask	Multi Part Mold	Unknown	Amber		1860	1920
10	Vault 4	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Amber	Embossed ". . . 8" on base, possibly machine-made	1880	1930
10	Vault 4	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Embossed	Green	Embossed ". . . ESS & . . ." probable liquor or beverage bottle	1860	1920
10	Vault 4	1	Household	Common Glass	Body Sherd	Bottle, Wine	Mold Blown	Unknown	Green			
10	Vault 4	1	Household	Common Glass	Base Sherd	Bottle, Liquor	Mold Blown	Unknown	Black/Green	Probably to a turn-paste mold blown champagne bottle	1870	1920
10	Vault 4	3	Architectural	Common Glass	Plate Glass				Colorless			
10	Vault 4	2	Furniture	Common Glass	Mirror Glass							
10	Vault 4	38	Architectural	Common Glass	Window Glass				Green, Pale	Sample retained (GLM)		
10	Vault 4	176	Architectural	Common Glass	Window Glass				Colorless	One frosted surface, 166 fragments discarded after weighing (GLM)		
10	Vault 4	3	Fuel	Coal	Coal Fragment							
10	Vault 4	1	Architectural	Other	Fragment				Black	Possible sheet of tar from building or from a fire		
10	Vault 4	1	Unknown	Unknown	Fragment				Black	Composition, unknown function or group		
10	Vault 4	2	Electrical	Composite	Rod				Black	Carbon battery rods		
10	Vault 4	4	Architectural	Linoleum	Tile, Floor				Gray	Linoleum floor tile fragments		
10	Vault 4	1	Funerary	Copper Alloy	Metal Letter					Coffin letter "B", Ht: 2 inches, width 1.8 inches, ferrous metal corroded to exterior surface		
10	Vault 4	1	Architectural	Copper Alloy	Key		Cast			Skeleton key for door or pad lock		
10	Vault 4	1	Personal	Rubber	Comb				Black	Hard rubber comb fragment	1851	1940

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Personal	Rubber	Comb				Black	Hard rubber curved hair comb fragment	1851	1940
10	Vault 4	1	Personal	Rubber	Comb				Black	Hard rubber curved hair comb fragment	1851	1940
10	Vault 4	1	Toy	Porcelain	Marble		Porcelain, Hard Paste	Unglazed	Polychrome	Red and blue paint extant, unglazed		
10	Vault 4	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	Black	Molded doll's head with black painted hair		
10	Vault 4	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	White	Hand to a porcelain doll		
10	Vault 4	1	Architectural	Marble	Tile				White	Possible floor tile, one surface has been worn		
10	Vault 4	1	Architectural	Iron	Fence Fragment		Cast	Molded Pattern		Ornately decorated fence fragment		
10	Vault 4	1	Unknown	Iron	Unidentified		Other (see comments)			Rectangular fragment of sheet iron possibly galvanized		
10	Vault 4	1	Unknown	Iron	Unidentified		Other (see comments)			Possible section of iron pipe that is encrusted from having been burned		
10	Vault 4	1	Tack	Iron	Horseshoe					Half of a horseshoe that was worn through at the front end		
10	Vault 4	1	Architectural	Iron	Hook		Hand Wrought			Hook for hanging drain spouts off a roof		
10	Vault 4	1	Household	White Metal	Neck					Mouth to a metal container, cork stopped, rolled rim		
10	Vault 4	2	Hardware	Iron	Fragment					Fragment of galvanized iron, possible stencil		
10	Vault 4	4	Unknown	Iron	Sheet Metal					Galvanized sheet iron fragments		
10	Vault 4	2	Hardware	Iron	Barrel Hoop					Barrel hoop fragments		
10	Vault 4	1	Hardware	Iron	Unidentified		Cast			Looks like hardware or part of a machine, cast iron		
10	Vault 4	1	Unknown	Iron	Unidentified					Possibly cast iron, two posts with flat curved section at center		
10	Vault 4	1	Tool	Iron	Handle					Iron shaft with a white metal band, to an unidentified tool		
10	Vault 4	1	Unknown	Iron	Unidentified		Cast			Possibly from a cast iron stove or large vessel		
10	Vault 4	3	Hardware	Iron	Wire							
10	Vault 4	5	Unknown	Iron	Sheet Metal							
10	Vault 4	11	Unknown	Iron	Unidentified							
10	Vault 4	2	Hardware	Iron	Unidentified					Two twisted iron fragments with loops at one end		
10	Vault 4	5	Architectural	Iron	Nail		Unidentified			Wood adhered possible coffin nails		
10	Vault 4	1	Hardware	Iron	Bolt/Nut							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
10	Vault 4	1	Unknown	Iron	Rod					Thin iron rod, possibly part of a drill bit		
10	Vault 4	2	Architectural	Iron	Spike		Cut					
10	Vault 4	11	Architectural	Iron	Nail		Cut					
10	Vault 4	18	Architectural	Iron	Nail		Unidentified					
10	Vault 4	1	Personal	Leather	Fragment					Leather strap with one hole punched through it		
10	Vault 4	19	Personal	Leather	Shoe	Shoe/Boot Parts						
10	Vault 4	4	Personal	Leather	Fragment					Possibly part of a hat or piece of clothing		
10	Vault 4	2	Personal	Fabric	Fragment				Brown	Two textile fragments, different types of cloth		
10	Vault 4	5	Fauna	Shell	Clam, Quahog							
10	Vault 4	10	Fauna	Shell	Oyster							
11	Fill above East Wall (Vault 3)	1	Electrical	Porcelain	Insulator		Pressed		White	Part of a plug fuse, dust pressed	1870	1960
11	Fill above East Wall (Vault 3)	1	Personal	Coarse Earthenware	Pipe Bowl		Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
11	Fill above East Wall (Vault 3)	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	Black	Bisque porcelain doll head sherd, hair area painted black		
11	Fill above East Wall (Vault 3)	1	Household	Porcelain	Rim Sherd	Saucer	Bone China	Sprig Molded	Blue	Applied blue sprigs on interior	1830	1900
11	Fill above East Wall (Vault 3)	1	Household	Porcelain	Rim Sherd	Hollowware	Porcelain, Hard Paste	Unknown	White	Small bottle-like vessel with a lid seating		
11	Fill above East Wall (Vault 3)	3	Household	Porcelain	Base/Body/Rim Sherd	Hollowware	Porcelain, Hard Paste	Painted, Overglaze	Green	Possibly spray painted over a template, probably European		
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware	Dipt	Polychrome	Probable bowl, brown mocha on a tan band, annular brown lines	1795	1835
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Mug	Pearlware	Dipt	Green	Light green glazed reeded bands below rim	1790	1835

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware/ Whiteware	Printed	Blue		1825	1840
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Body Sherd	Plate	Ironstone/Stone China	Printed	Blue, Light	Geometric pattern typical in the 1840s through the 1850s	1840	1860
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Hollowware	Pearlware/ Whiteware	Printed	Blue	Galleried rim to a tea pot or sugar bowl	1825	1840
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Nappie	Pearlware/ Whiteware	Molded Pattern		Beaded rim sherd, possible nappie	1825	1845
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Lid	Hollowware	White Granite	Unknown	Blue	Domed lid tea pot/sugar bowl, light blue tint to the glaze	1850	1880
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Unknown		Possibly chamber pot	1850	1930
11	Fill above East Wall (Vault 3)	2	Architectural	Refined Earthenware	Tile, Wall		Whiteware	Undecorated	White			
11	Fill above East Wall (Vault 3)	2	Household	Refined Earthenware	Body/Rim Sherd	Hollowware	White Granite	Unknown			1850	1930
11	Fill above East Wall (Vault 3)	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	White Granite	Undecorated	Black	Remnant of unidentified black printed maker's mark	1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown	Black	Remnant of unidentified black printed lion and unicorn maker's mark	1850	1930
11	Fill above East Wall (Vault 3)	2	Household	Refined Earthenware	Rim Sherd	Cup	Pearlware	Printed	Dark Blue	Sherds mend	1818	1835
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Body Sherd	Unidentified	Ironstone/Stone China	Printed	Brown		1830	1950
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Bowl	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated		Highly crazed	1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Coffee Cup	White Granite	Molded Pattern		Probably 12-sided	1850	1890
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Coffee Cup	White Granite	Undecorated		press-molded block handle (later date)	1870	1890
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated		press-molded block handle (later date)	1870	1890
11	Fill above East Wall (Vault 3)	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated		Highly crazed and stained, possibly American made white granite	1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated		Highly crazed and stained, possibly American made white granite	1850	1930
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Rim Sherd	Coffee Cup	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated			1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated		Highly crazed, possibly American made	1850	1930
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Handle	Cup	White Granite	Unknown			1850	1930
11	Fill above East Wall (Vault 3)	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Base Sherd	Plate, Soup	White Granite	Unknown			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Molded Pattern		Light bluish tint to the ware	1850	1880
11	Fill above East Wall (Vault 3)	8	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown			1850	1930
11	Fill above East Wall (Vault 3)	9	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Unknown			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Hollowware	Yellowware	Undecorated	Yellow	Possible nappie or pie plate	1835	1930
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Unidentified	Unidentified	Unidentified Refined Earthenware	Colored Glaze	Black	Buff bodied thick ware with a black exterior glaze, interior unglazed, possible insulator		
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Lid	Hollowware	Rockingham	Molded Pattern	Mottled	Domed lid, to a tea pot or sugar bowl	1840	1930
11	Fill above East Wall (Vault 3)	2	Household	Refined Earthenware	Lid	Tea Pot	Rockingham	Mottled Glaze	Mottled	Domed lid, to a tea pot with a notch for lid seating	1840	1930
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Spout Sherd	Tea Pot	Unidentified Coarse Earthenware	Colored Glaze	Brown	Buff body brown glazed tea pot spout		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Body Sherd	Hollowware	Rockingham	Molded Pattern	Mottled		1840	1930
11	Fill above East Wall (Vault 3)	2	Household	Refined Earthenware	Body Sherd	Hollowware	Rockingham	Molded Pattern	Mottled	Rockingham glazed exterior, plain yellow ware glazed interior	1840	1930
11	Fill above East Wall (Vault 3)	1	Household	Stoneware	Rim Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Cordoned	Blue	Slightly everted rim, thicker at top of rim, cordoned band at shoulder filled in with blue band, swag/floral motif beneath cordoned band, probably locally manufactured		
11	Fill above East Wall (Vault 3)	1	Household	Stoneware	Base Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Unknown		Cylindrical, projected diameter 3 inches, probably mug/tankard, single wide rib lower body near base on exterior, patchy salt glaze interior, probably locally manufactured		
11	Fill above East Wall (Vault 3)	1	Household	Stoneware	Rim Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Rim to a jar, brown slip glaze on the interior		
11	Fill above East Wall (Vault 3)	1	Toy	Stoneware	Marble		Unidentified Stoneware	Unglazed	Gray	Gray stoneware marble		
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Base Sherd	Hollowware	Redware	Lead Glazed	Brown	Brown glazed interior, the exterior appears to be unglazed		
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Red			
11	Fill above East Wall (Vault 3)	2	Household	Coarse Earthenware	Body/Rim Sherd	Flower Pot	Other (see comments)	Unglazed	Buff	Buff body flower pot		
11	Fill above East Wall (Vault 3)	3	Household	Coarse Earthenware	Base Sherd	Flower Pot	Redware	Unglazed	Red	Base sherd that have wiring-off marks, unusual for flower pots		
11	Fill above East Wall (Vault 3)	2	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red	Simple uncollared rim		
11	Fill above East Wall (Vault 3)	4	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red	Flowerpots with a wide collard rim		
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Household	Coarse Earthenware	Rim Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	11	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	5	Household	Coarse Earthenware	Base Sherd	Flower Pot	Redware	Unglazed	Red			
11	Fill above East Wall (Vault 3)	1	Personal	Rubber	Comb				Black	Hard rubber two-sided lice comb, most of the teeth are not extant	1851	1940
11	Fill above East Wall (Vault 3)	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
11	Fill above East Wall (Vault 3)	1	Household	Milk Glass	Body Sherd	Hollowware	Mold Blown	Painted	Red	Small milk glass vessel, some red paint extant		
11	Fill above East Wall (Vault 3)	1	Architectural	Common Glass	Window Glass		Safety Glass		Colorless	Security window glass with embedded chicken wire	1880	2006
11	Fill above East Wall (Vault 3)	3	Architectural	Common Glass	Window Glass				Green, Pale	One surface frosted		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Glass Leaded	Lamp Glass	Lamp, Globe	Mouth Blown		Colorless	ground rim seating		
11	Fill above East Wall (Vault 3)	27	Architectural	Common Glass	Window Glass				Green, Pale	sample retained (GLM), one piece with curved edge, possibly fragment of oval view glass from coffin lid (see entry # 123)		
11	Fill above East Wall (Vault 3)	3	Household	Glass Non Leaded	Body/Rim Sherd	Stemware	Pressed	Molded Pattern	Colorless	Pressed stemware in imitation of cut glass	1870	1960
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Base Sherd	Stemware	Pressed	Unknown	Colorless		1870	1960
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Rim Sherd	Tumbler	Pressed	Molded Pattern	Colorless		1870	1960
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Rim Sherd	Tumbler	Pressed	Unknown	Colorless		1870	1960
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Base Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Molded ribs coming up from the base	1870	1960
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Body Sherd	Stemware	Pressed	Molded Pattern	Colorless	Stem sherd from a glass or goblet	1870	1960
11	Fill above East Wall (Vault 3)	2	Household	Glass Non Leaded	Body Sherd	Tableware, General	Pressed	Molded Pattern	Colorless		1870	1960
11	Fill above East Wall (Vault 3)	3	Household	Common Glass	Base/Body Sherd	Bottle	Machine Made	Molded Pattern	Green	Classic hobble skirt coke bottle, base embossed "NEWARK N. J. / BOTTLE TRADE MARK" stippled footring	1935	1960
11	Fill above East Wall (Vault 3)	2	Household	Common Glass	Base/Body Sherd	Bottle	Mouth Blown	Undecorated	Aqua	Olive oil bottle, lipping tool finish	1860	1910
11	Fill above East Wall (Vault 3)	2	Household	Common Glass	Neck	Bottle, Liquor	Mouth Blown		Green, Dark	Lipping tool finish with an applied string rim, probably a liquor bottle	1800	1910
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Body Sherd	Bottle, Wine			Green, Dark			
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Neck	Bottle, Panel Ball Neck	Mouth Blown	Unknown	Colorless	Lipping tool finish	1870	1920

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Unknown	Colorless		1870	1920
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Unknown	Colorless		1870	1920
11	Fill above East Wall (Vault 3)	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Molded Pattern	Colorless		1870	1920
11	Fill above East Wall (Vault 3)	2	Household	Common Glass	Body Sherd	Bottle	Mouth Blown	Unknown	Green	Large panel bottle, probably for a patent medicine	1860	1920
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Embossed	Aqua	Embossed "M" on the base, possibly for the Maryland Glass Corporation that made bottles for Emerson Drug Co. of Baltimore (Toulouse 1971:339)	1907	1916
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Base Sherd	Bottle	Mouth Blown	Unknown	Aqua	Rectangular bottle	1860	1920
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Embossed	Aqua	Rectangular medicine bottle, embossed ". . . R/. . .ORK"	1860	1920
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Aqua	Square bottle, probably a French Square for pharmacy use		
11	Fill above East Wall (Vault 3)	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Aqua	Lipping tool finish	1840	1920
11	Fill above East Wall (Vault 3)	7	Household	Common Glass	Body Sherd	Bottle	Multi Part Mold	Molded Pattern	Aqua	Possibly beverage bottle, embossed with trees around some lettering, extant includes "B . . ." and "HOUSH. . ." another sherd to this bottle FS# 82, Entry 59	1870	1920
11	Fill above East Wall (Vault 3)	4	Household	Common Glass	Body Sherd	Bottle	Mold Blown		Green, Pale			
11	Fill above East Wall (Vault 3)	48	Household	Common Glass	Base/Body/Rim Sherd	Bottle	Multi Part Mold	Molded Pattern	Green, Emerald	Flacon shape square bottle chamfered corners, possibly two bottles	1860	1920
11	Fill above East Wall (Vault 3)	1	Fauna	Shell	Other (see comments)					Moon Snail shell		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	2	Personal	Leather	Shoe	Shoe/Boot Heel				From two different style shoes		
11	Fill above East Wall (Vault 3)	13	Personal	Leather	Shoe	Shoe/Boot Parts						
11	Fill above East Wall (Vault 3)	1	Hardware	Copper Alloy	Toilet Fixture					Copper alloy arm, possibly from a toilet, black plastic part one end	1950	2000
11	Fill above East Wall (Vault 3)	3	Hardware	Iron	Furniture Part					Spring parts, probably from furniture		
11	Fill above East Wall (Vault 3)	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragment of rounded rectangular domed plate, flanged type edge, remnant of engraved lettering "...Abe..." over, "...May..."		
11	Fill above East Wall (Vault 3)	1	Hardware	Iron	Hook					Iron wall hook, probably had screw threads at one end		
11	Fill above East Wall (Vault 3)	2	Electrical	Copper Alloy	Wire							
11	Fill above East Wall (Vault 3)	2	Hardware	Iron	Barrel Hoop					Barrel hoop fragments		
11	Fill above East Wall (Vault 3)	7	Architectural	Iron	Nail		Cut					
11	Fill above East Wall (Vault 3)	2	Hardware	Iron	Wire							
11	Fill above East Wall (Vault 3)	2	Unknown	Iron	Sheet Metal					Thin strips of iron, possibly binding for a wooden box		
11	Fill above East Wall (Vault 3)	9	Unknown	Iron	Unidentified							
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, 17 inches long, 8.5 inches wide and 0.5 inches thick, appears to be pine, from Vault 3		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, 30 inches long, 8 inches wide and 0.5 inches thick, appears to be pine, from Vault 3		
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, 18 inches long, 10 inches wide and 3/8 inches thick, appears to be pine, from Vault 3		
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, 50 inches long, 8 inches wide and 1 inches thick, appears to be pine that shows signs of having been painted red on one surface, from Vault 3		
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, 57 inches long, 11.5 inches wide and 1/2 inches thick, appears to be pine, from Vault 3		
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Board Fragment					Coffin board fragment, L:25 in, W:18 in, T: 1/2 in, possibly hardwood, clear varnish finish, clean area along surviving upper edge where rounded rectangular coffin plate was attached, remnant large oval cut out, beveled edge for view glass		
11	Fill above East Wall (Vault 3)	1	Funerary	Wood	Coffin Lid					Hexagonal coffin lid, 51" long, 14" wide, 8 inches wide at both ends, lower half 35" long, upper half 17" long, stain from a missing coffin plate near top, child's coffin		
11	Fill above East Wall (Vault 3)	1	Household	Stoneware	Base Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Undecorated		blotchy interior, probably locally manufactured, small diameter vessel		
12	Find Spot 6, Fill	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
12	Find Spot 6, Fill	1	Household	Porcelain	Base Sherd	Plate	Porcelain, Chinese Export	Painted	Blue			
12	Find Spot 6, Fill	1	Household	Porcelain	Base/Body/Rim Sherd	Saucer	Porcelain, Chinese Export	Molded Pattern	White	Unusual Chinese porcelain saucer, No colored decoration		
12	Find Spot 6, Fill	1	Household	Porcelain	Base Sherd	Plate	Hotel Ware	Molded Pattern	Polychrome	Molded ribbed marley, rolled rim, and painted black and brown bands below the marley. Probably made in Trenton, New Jersey in the 20th century	1920	1950

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
12	Find Spot 6, Fill	1	Household	Refined Earthenware	Base Sherd	Plate	Creamware	Unknown	Other (see comments)	Dark, crude creamware, possibly American made, it has an unreadable impressed maker's mark "A . . . / . . . "		
12	Find Spot 6, Fill	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Tea Pot	Whiteware	Painted	Polychrome	Chrome colors, green, blue and red; footring broken off, use wear on base indicating continued use after footring was broken, charrred spots at center of base, areas where foot ring missing and on body of pot	1835	1870
12	Find Spot 6, Fill	1	Household	Glass Non Leaded	Base Sherd	Bottle, Pharmacy Oval	Multi Part Mold	Undecorated	Colorless		1870	1910
12	Find Spot 6, Fill	1	Household	Common Glass	Body Sherd	Bottle			Green, Pale	Possibly beverage bottle		
12	Find Spot 6, Fill	1	Architectural	Iron	Nail		Cut			Wood adhered, possible coffin nail		
13	Vault 2	2	Funerary	Copper Alloy	Pin					Fragments white metal plated straight pin, spherical head		
13	Vault 2	10	Fauna	Bone	Bone					Rodent limb fragments		
14	Vault 2	1	Household	Porcelain	Base Sherd	Unidentified	Porcelain, Chinese Export	Painted	Blue	Possible plate or platter, glazed on both surfaces not common on Chinese porcelain platters		
14	Vault 2	1	Household	Porcelain	Body Sherd	Hollowware	Porcelain, Chinese Export	Painted	Blue			
14	Vault 2	1	Household	Porcelain	Base Sherd	Saucer	Porcelain, Chinese Export	Painted, Overglaze	Polychrome	Orange, brown and green, mortar adhering to the sherd		
14	Vault 2	1	Household	Porcelain	Base Sherd	Unidentified	Porcelain, Hard Paste	Molded Pattern	Pink	probably Continental porcelain		
14	Vault 2	1	Toy	Porcelain	Doll Part		Porcelain, Hard Paste	Molded Pattern	White	Hair portion of the doll's head or part of a figurine		
14	Vault 2	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	Pearlware	Printed	Dark Blue	Winter View of Pittsfield, Mass." an American view that was produced after 1826 (Larsen 1975:59-60). Impressed R. & J. Clews mark on the back, the sherds mend, another mending sherd to the plate is in FS#9 entry 1	1826	1834
14	Vault 2	1	Household	Refined Earthenware	Body Sherd	Unidentified	Creamware	Unknown			1770	1820
14	Vault 2	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Unknown			1820	1900

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
14	Vault 2	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Shell Edge	Blue		1800	1835
14	Vault 2	1	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware	Dipt	Blue	Blue annular band, other colors may have been also used	1790	1835
14	Vault 2	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Molded Pattern		Possible gothic style pattern	1850	1880
14	Vault 2	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
14	Vault 2	2	Household	Refined Earthenware	Body Sherd	Plate	White Granite	Unknown			1850	1930
14	Vault 2	5	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Unknown			1850	1930
14	Vault 2	4	Household	Refined Earthenware	Body/Rim Sherd	Hollowware	Yellowware	Dipt	Polychrome	Annular blue and white slip lines	1835	1930
14	Vault 2	1	Household	Coarse Earthenware	Rim Sherd	Dish	Redware	Slip Decorated	White	White slip under a lead glaze that makes it yellow, coggled rim	1750	1850
14	Vault 2	4	Household	Coarse Earthenware	Base/Body/Rim Sherd	Flower Pot	Redware	Unglazed	Red			
14	Vault 2	1	Household	Coarse Earthenware	Body Sherd	Flower Pot	Redware	Unglazed	Red	Highly fired flower pot sherd		
14	Vault 2	1	Household	Stoneware	Body Sherd	Hollowware	Slip Glazed Stoneware	Bristol-Type Slip	Buff		1835	1920
14	Vault 2	1	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Gray body, brown slip glazed interior		
14	Vault 2	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Most likely a German wine or mineral water bottle, brown iron slip under the salt glazed exterior, the interior is unglazed and has a thin tan slip		
14	Vault 2	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
14	Vault 2	1	Household	Glass Non Leaded	Whole Vessel	Jar	Machine Made	Embossed	Colorless	Mucilage jar with a central brush well, on base "PATENTED UNITED STATES AND ENGLAND/ SEPT. 5, 1899/ MAY 23, 1899 / 534/ CANADA" part of a paper label extant, made on a semi-automatic press-and-blow machine, with an added center part	1899	1950
14	Vault 2	1	Household	Common Glass	Body/Rim Sherd	Ink Bottle	Multi Part Mold	Molded Pattern	Green	"Umbrella ink" eight sided cone, hand tooled finish	1840	1910
14	Vault 2	1	Household	Common Glass	Body Sherd	Bottle, Milk			Colorless	Probably machine-made	1910	1960

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
14	Vault 2	1	Unknown	Glass Non Leaded	Unidentified				Colorless	Lump of burned and melted glass		
14	Vault 2	1	Household	Common Glass	Body Sherd	Bottle, Wine			Green			
14	Vault 2	11	Architectural	Common Glass	Window Glass				Green, Pale			
14	Vault 2	1	Personal	Bone	Button					Five-hole bone button		
14	Vault 2	1	Personal	Bone	Button					Bone button blank with a center hole		
14	Vault 2	3	Funerary	Copper Alloy	Pin					Wire wound spherical heads		
14	Vault 2	15	Funerary	Copper Alloy	Pin					Straight pins with flat heads		
14	Vault 2	1	Funerary	Copper Alloy	Hinge					Small butt hinge, two holes for attachment on each side		
14	Vault 2	1	Funerary	Copper Alloy	Hinge					Decorative "butterfly-shaped" butt hinge		
14	Vault 2	1	Activities	Slate	Fragment				Gray	Possible writing slate, parallel lines inscribed on both surfaces		
14	Vault 2	2	Architectural	Wood	Wood Fragment					Particle board with a white prepared surface		
14	Vault 2	1	Architectural	Asbestos	Fragment					Possible asbestos sheeting for wrapping pipes		
14	Vault 2	5	Funerary	Fabric	Fragment				Brown	Fragments of loosely woven coarse fabric, possibly shroud or clothing related		
14	Vault 2	3	Funerary	Wood	Coffin Board Fragment					Coffin wood with copper alloy non-gimlet screws, the surface finish of the wood has been preserved by the copper oxides		
14	Vault 2	2	Funerary	Wood	Coffin Board Fragment					Coffin wood with copper alloy non-gimlet screws, the gimlet screw was patented in 1846		
14	Vault 2	7	Funerary	Copper Alloy	Screw					Non-gimlet wood screws, most likley from coffins		
14	Vault 2	1	Funerary	Wood	Coffin Board Fragment					End of a coffin board with iron nails		
14	Vault 2	6	Funerary	White Metal	Screw					Iron screws with large white metal heads, coffin hardware		
14	Vault 2	4	Hardware	Copper Alloy	Sheet Metal					Thin copper alloy sheet metal fragments		
14	Vault 2	1	Electrical	Copper Alloy	Wire					Electrical wire with black plastic insulation	1960	2006

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
14	Vault 2	1	Unknown	Iron	Unidentified					Round iron wire with two extending ends, looks like some kind of hose clamp		
14	Vault 2	2	Hardware	Iron	Wire							
14	Vault 2	1	Architectural	Iron	Spike		Cut					
14	Vault 2	1	Electrical	Copper Alloy	Wire					Small twisted copper wire fragment		
14	Vault 2	2	Unknown	Iron	Nail		Hand Wrought					
14	Vault 2	16	Unknown	Iron	Nail		Cut			Possible coffin nails		
14	Vault 2	33	Unknown	Iron	Nail		Unidentified			Possible coffin nails		
14	Vault 2	36	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, wood grain shows evidence of two pieces of wood being joined together, probably connected side wall to bottom of coffin		
14	Vault 2	1	Hardware	Iron	Sheet Metal					Small fragment		
14	Vault 2	24	Architectural	Iron	Nail		Unidentified			Wood adhered, probably coffin nails		
14	Vault 2	2	Architectural	Iron	Nail		Wire				1880	2006
14	Vault 2	12	Funerary	Wood	Coffin Board Fragment					Coffin fragments, dark reddish brown wood, five with remains of copper alloy screws, one large piece of wood with remnants of wood shavings and pieces of two types of fabric (tightly woven and loosely woven fabrics) adhered, stored in Lab refrigerator		
14	Vault 2	16	Funerary	Wood	Coffin Board Fragment					Coffin fragments, reddish brown wood, one with remains of copper alloy screw intact, stored in the Lab refrigerator		
14	Vault 2	13	Funerary	Copper Alloy	Coffin Plate							
14	Vault 2	1	Funerary	Fabric	Other (see comments)					Thin folded fragment of tightly woven, coarse fabric, dark brown to black, knotted at one end, probable shroud tie, L: 11 inches		
14	Vault 2	6	Funerary	Fabric	Other (see comments)					Thin folded fragments of tightly woven, coarse fabric, probable shroud ties		
14	Vault 2	8	Funerary	Fabric	Other (see comments)					Fragments of tightly woven, fine fabric, possibly shroud or coffin cloth		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	*Object Form*	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
14	Vault 2	2	Funerary	Fabric	Other (see comments)					Fragments of tightly woven, coarse fabric, possible clothing or shroud related		
14	Vault 2	1	Funerary	Fabric	Other (see comments)					Fragment wide piece of ribbon, tightly woven, reversed V shaped cut out of one end, L: approximately 5-6 inches, W: 1.5 inches		
14	Vault 2	2	Funerary	Iron	Nail		Unidentified			Dark coffin wood with clear varnish adhered		
14	Vault 2	11	Funerary	Iron	Screw					Coffin wood adhered, some with remnants of white flecking around badly corroded head, possibly fragments of white metal head screws		
14	Vault 2	6	Funerary	Iron	Screw					Domed head screws, remnant of coffin wood adhered		
14	Vault 2	1	Unknown	Composite	Other (see comments)					Fragment of folded iron with copper alloy screw adhered by corrosion		
23	Vault 2, Coffin Wood Sample	1	Funerary	Wood	Coffin Board Fragment					Possible short head or foot end board, decaying dark wood with some sawdust adhered to interior surface, remnants of 8 copper alloy screws intact, three along one edge, three along opposite edge and two along side edge		
23	Vault 2, Coffin Wood Sample	2	Funerary	Wood	Coffin Board Fragment					Small fragments coffin wood		
23	Vault 2, Coffin Wood Sample	2	Funerary	Wood	Coffin Board Fragment					Small pieces of coffin wood, *each* with one copper alloy screw intact		
26	Vault 4, S 2' Trench Gen. Prov.	5	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	Hotel Ware	Undecorated	White	Possibly white granite or hotel ware	1870	1950
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Rim Sherd	Basin	White Granite	Undecorated			1850	1930
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Rim Sherd	Baker	White Granite	Undecorated			1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
26	Vault 4, S 2' Trench Gen. Prov.	4	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate, Muffin	Whiteware	Undecorated		Beginning date based on footring	1870	1950
26	Vault 4, S 2' Trench Gen. Prov.	7	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Unknown			1850	1930
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Rim Sherd	Ointment Pot	Whiteware	Undecorated			1825	1900
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Painted	Chrome Colors	Possible bowl, painted floral pattern on both surfaces, black and green extant	1830	1870
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Body Sherd	Unidentified	Whiteware	Printed	Purple		1830	1860
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Shell Edge	Blue		1800	1825
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware	Unknown	Not Extant		1780	1835
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Refined Earthenware	Base Sherd	Unidentified	Yellowware	Unknown	Yellow		1835	1930
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Coarse Earthenware	Base Sherd	Hollowware	Redware	Slip Decorated	Brown		1750	1850
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Cylindrical		
26	Vault 4, S 2' Trench Gen. Prov.	5	Household	Coarse Earthenware	Body/Rim Sherd	Flower Pot	Redware	Unglazed	Red			
26	Vault 4, S 2' Trench Gen. Prov.	1	Architectural	Marble	Tile, Floor				White	Quarter inch-thick marble tile fragment, mortar on two surfaces		
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Leaded	Whole Vessel	Vial	Mold Blown	Undecorated	Colorless	Tube-blown pharmacy vial		
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Leaded	Base/Body Sherd	Bottle, Medicine	Multi Part Mold	Undecorated	Colorless	Small square medicine bottle with slightly chamfered corners, .75 inches by .75 inches		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
26	Vault 4, S 2' Trench Gen. Prov.	2	Household	Glass Leaded	Base Sherd	Mug	Pressed	Molded Pattern	Colorless	Eight-sided mug with a high standing ring		
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Leaded	Rim Sherd	Tumbler	Pressed	Molded Pattern	Colorless			
26	Vault 4, S 2' Trench Gen. Prov.	3	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless			
26	Vault 4, S 2' Trench Gen. Prov.	4	Household	Glass Non Leaded	Base/Body Sherd	Tumbler	Pressed	Molded Pattern	Colorless	Multi-sided tumbler	1870	1950
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Non Leaded	Body Sherd	Hollowware	Pressed	Molded Pattern	Colorless	Pressed patter imitation of cut glass	1870	1950
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Non Leaded	Neck	Unidentified	Mold Blown	Molded Pattern	Colorless	Optic mold-blown bottle or tableware with molded fish-scale imbrications on the interior		
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Non Leaded	Neck	Bottle	Mouth Blown	Unknown	Colorless	Wide-mouth bottle neck	1870	1920
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Glass Non Lead	Body Sherd	Bottle	Mold Blown	Embossed	Colorless	Embossed ". . .RK" probably for New York, possibly mouth blown patent medicine	1870	1920
26	Vault 4, S 2' Trench Gen. Prov.	3	Household	Glass Non Lead	Body Sherd	Unidentified	Mold Blown		Colorless			
26	Vault 4, S 2' Trench Gen. Prov.	1	Furniture	Glass Non Leaded	Mirror Glass							
26	Vault 4, S 2' Trench Gen. Prov.	7	Household	Common Glass	Base/Body/Rim Sherd	Bottle, Panel	Multi Part Mold	Unknown	Green		1865	1920
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Common Glass	Neck	Flask	Multi Part Mold	Unknown	Green	Strap flask	1860	1920
26	Vault 4, S 2' Trench Gen. Prov.	2	Household	Common Glass	Neck	Bottle, Liquor	Mouth Blown	Unknown	Amber	Lipping tool finish	1840	1910
26	Vault 4, S 2' Trench Gen. Prov.	47	Architectural	Glass Non Leaded	Window Glass				Colorless	One surface frosted, 40 discarded (GLM)		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
26	Vault 4, S 2' Trench Gen. Prov.	19	Architectural	Common Glass	Window Glass				Green, Pale	sample retained (GLM)		
26	Vault 4, S 2' Trench Gen. Prov.	2	Unknown	Copper Alloy	Wire					two diameters: 0.04 in, 0.11 in.		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge with three holes each side, length 1.9 in, full width 1.15 in, remnants of six iron screws intact		
26	Vault 4, S 2' Trench Gen. Prov.	5	Funerary	Copper Alloy	Pin					fragmentary shroud pins		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Metal Letter					coffin letter "B", Ht: 2 inches, W: 1.6 inches		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Metal Letter					coffin letter "F", Ht: 2 inches, W: 1.48 inches		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Metal Letter					coffin symbol "&", Ht: 2 inches, W: 1.8 inches		
26	Vault 4, S 2' Trench Gen. Prov.	2	Fuel	Coal	Coal Fragment							
26	Vault 4, S 2' Trench Gen. Prov.	1	Architectural	Composite	Plaster				White			
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Small rounded rectangular domed plate, flange type edge, dimensions (bent): 4.1 in by 3.1 in, white metal plated, three line inscription, "J. W. Root" over, "Died Novr 26 th 1830" over, "Aged 4 Mos 5 Ds"		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Small rounded rectangular domed plate, flange type edge, dimensions: 3.9 in by 3 in, white metal plated, four line inscription, "James Kauck," over, "Died 24th Sepr 1829" over, "Aged" over, "11 Months & 13 das"		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
26	Vault 4, S 2' Trench Gen. Prov.	3	Funerary	Copper Alloy	Coffin Plate			Engraved		Pieces mend, (also mend with FS 57 #2), Rounded rectangular domed plate, flange type edge, dimensions: 5.2 in by 3.6 in, three line inscription, "David..." over, "DIED 2nd March 1843" over, "Aged 71 Years..."		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	White Metal	Coffin Plate					Britannia metal, shiney white metal plated on one side, probably coffin plate		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Copper Alloy	Hinge					Fragment of small rectangular hinge, incomplete length 0.97 in, width 0.38 in. remains of two holes for attachment		
26	Vault 4, S 2' Trench Gen. Prov.	1	Architectural	Iron	Nail		Wire					
26	Vault 4, S 2' Trench Gen. Prov.	33	Funerary	Iron	Nail		Unidentified			Most with coffin wood fragments adhered		
26	Vault 4, S 2' Trench Gen. Prov.	6	Funerary	Iron	Screw					Coffin wood adhered		
26	Vault 4, S 2' Trench Gen. Prov.	5	Unknown	Iron	Sheet Metal					Sheet iron container fragments, some have a wire rim with the iron wrapped around it, possibly a bucket		
26	Vault 4, S 2' Trench Gen. Prov.	2	Unknown	Iron	Lid					Covers or lids for tin ware containers		
26	Vault 4, S 2' Trench Gen. Prov.	1	Household	Iron	Base Sherd	Can				Base to a tin can		
26	Vault 4, S 2' Trench Gen. Prov.	48	Unknown	Iron	Sheet Metal					Unidentified container or sheet metal fragments, 33 discarded (GLM)		
26	Vault 4, S 2' Trench Gen. Prov.	1	Unknown	Iron	Unidentified					Thick, rectangular fragment, with slight L shaped band near center, appears wrought, possible coffin hardware		
26	Vault 4, S 2' Trench Gen. Prov.	4	Fauna	Shell	Oyster							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
26	Vault 4, S 2' Trench Gen. Prov.	1	Fauna	Shell	Clam, Quahog							
26	Vault 4, S 2' Trench Gen. Prov.	11	Personal	Leather	Shoe	Shoe/Boot Parts				Sole and upper fragments, some with red color on one surface, upper section with small copper alloy grommets intact		
26	Vault 4, S 2' Trench Gen. Prov.	1	Personal	Fabric	Fragment				Brown			
26	Vault 4, S 2' Trench Gen. Prov.	6	Funerary	Iron	Nail		Cut			Most with coffin wood adhered		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Iron	Screw					Piece of dark brown coffin wood adhered, possibly varnished		
26	Vault 4, S 2' Trench Gen. Prov.	1	Funerary	Iron	Screw					Piece of light brown wood adhered, possible remnant of white metal screw head		
27	Vault 4, S 2' Trench Coffin Wood Samp.	6	Funerary	Wood	Coffin Board Fragment					Fragments of coffin boards, white powdery substance on both surfaces, thicker accumulation on one surface, seeped into cracks in boards, one iron coffin nail		
28	Vault 4, S 2' Trench Hair Sample	1	Funerary	Other	Other (see comments)					Several pieces of matted short, light brown hair		
41	Vault 4, S 2' Trench, Lev 1, Burial #3	45	Hardware	Iron	Unidentified					Thin, flat fragments		
41	Vault 4, S 2' Trench, Lev 1, Burial #3	1	Funerary	Iron	Unidentified					Heavily corroded, possible coffin screw/nail		
45	Vault 4, S 2' Trench, Lev 1, Burial #4	1	Architectural	Coarse Earthenware	Brick, Fragment					Over-fired		
45	Vault 4, S 2' Trench, Lev 1, Burial #4	8	Funerary	Iron	Nail	Unidentified				Fragments with wood adhered		
45	Vault 4, S 2' Trench, Lev 1, Burial #4	8	Funerary	Iron	Screw					Fragments of flat point coffin screws		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
45	Vault 4, S 2' Trench, Lev 1, Burial #4	2	Funerary	Iron	Screw					Domed head screws with coffin wood adhered		
46	Vault 4, S 2' Trench, Lev 1, Burial #6	1	Funerary	Copper Alloy	Pin					White metal plated straight pin, spherical head		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	2	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware	Printed	Blue		1815	1835
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless			
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Personal	Shell	Button					Fragment from a small shell button		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Personal	Bone	Button					Small four-hole button		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	2	Personal	Bone	Button					Small fragments from a bone button		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	2	Funerary	Copper Alloy	Pin					Shroud pin		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Personal	Fabric	Fragment					Badly preserved fragment of textile from sediment below burial 6		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Tool	Iron	Hammer					Small claw hammer remnant of wooden handle and nail to secure it		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Funerary	Copper Alloy	Coffin Plate					Fragment from a slightly domed coffin plate with flanged edge		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, two holes for attachment on each side, L: 1.58 in, full width: 0.7 in, remnants of four iron screws intact		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	4	Tool	Iron	Scissors					Pieces mend		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	3	Architectural	Common Glass	Window Glass				Green, Pale			
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	3	Architectural	Composite	Plaster				White			
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	131	Funerary	Iron	Nail	Unidentified				Fragments of coffin wood adhered		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	40	Funerary	Iron	Screw					Flat points, (pre-1846) some with coffin wood adhered		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Funerary	Iron	Screw					Fragment of dark brown varnished coffin wood adhered		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Unknown	Iron	Unidentified							
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	2	Architectural	Iron	Spike		Unidentified					
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	17	Unknown	Iron	Sheet Metal					Appears to be galvanized sheet iron, could be tin ware or to a container		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	2	Fauna	Shell	Clam, Quahog							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	51	Funerary	Iron	Nail		Cut			Coffin wood adhered		
47	Vault 4, S 2' Trench, Lev 1, below Burial #6	16	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, wood grain shows evidence of two pieces wood being joined together, probably used to connect side wall to bottom of coffin		
57	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: (bent) 4.7 in. by 3.8 in, possibly silver plated, three line inscription, "Sarah Sherwood" over, "Died 31 Dec 1827" over, "Aged 18 Yrs 1 Ms 3 d"		
57	Vault 4, S 2' Trench, Lev 1, below Burial #6	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Mends with FS 26 #43, Rounded rectangular domed plate, flange type edge, dimensions: 5.2 in. by 3.6 in, three line inscription, "David..." over, "DIED 2nd March 1843" over, "Aged 71 Years..."		
65	Vault 3 E1/2, Level 1, Burial #3	12	Funerary	Fabric	Fragment					Large fragments of same fabric with few small bone fragments adhered (removed to be reunited with rest of remains), woven coarse thread possibly wool, burial clothing or shroud fragment		
66	Vault 4 W1/2, Level 1	2	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
66	Vault 4 W1/2, Level 1	2	Household	Porcelain	Base/Body/Rim Sherd	Plate	Porcelain, Hard Paste	Undecorated	White			
66	Vault 4 W1/2, Level 1	1	Household	Porcelain	Rim Sherd	Cup	Porcelain, Hard Paste	Unknown	White	Multi-sided cup		
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Body Sherd	Hollowware	Creamware	Dipt	Brown	Possibly a dipt ware mug, engine turned to produce a checkered pattern through a brown slip	1790	1825
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Body Sherd	Hollowware	Pearlware	Painted	Blue		1780	1835

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Cup	Whiteware	Painted	Chrome Colors	Painted broad loops in red and green between two yellow lines	1830	1870
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Body Sherd	Plate	Pearlware	Printed	Blue	Probably willow pattern, to a plate or small platter, stipple engraved	1807	1835
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Flow Printed	Blue	Probably multi-sided cup	1845	1870
66	Vault 4 W1/2, Level 1	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	White Granite	Undecorated	Black	Remnant of unidentified black printed crown from a maker's mark, all sherds mend	1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
66	Vault 4 W1/2, Level 1	2	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated		Block type handle, sherds mend, possibly hotel ware	1870	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Base Sherd	Cup	White Granite	Unknown			1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Base Sherd	Mug	White Granite	Unknown		Appears to be cylindrical shape	1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Unknown		Block handle	1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Molded Pattern			1850	1880
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Hollowware	White Granite	Molded Pattern		Everted rim to a large hollowware, possible serving vessel	1850	1880
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Hollowware	White Granite	Molded Pattern		Everted rim to a large hollowware, possible serving vessel	1850	1880
66	Vault 4 W1/2, Level 1	5	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Unknown			1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Base Sherd	Hollowware	Unidentified	Unknown				

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	2	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Red			
66	Vault 4 W1/2, Level 1	2	Household	Refined Earthenware	Body Sherd	Hollowware	Unidentified	Unknown	Brown, Dark	Buff body with a dark brown-black glaze, possibly to a tea pot		
66	Vault 4 W1/2, Level 1	1	Household	Stoneware	Rim Sherd	Jar	Salt Glazed, Gray/Buff Bodied	Albany-Type Slip	Brown, Dark	Salt glazed exterior, dark brown Albany type slip glazed interior	1805	1920
66	Vault 4 W1/2, Level 1	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip		Cylindrical stoneware bottle, salt glazed exterior, possibly Rouge de Bois colored slip glazed interior		
66	Vault 4 W1/2, Level 1	1	Household	Stoneware	Base Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Brown	Cylindrical stoneware bottle, brown slip on both surfaces, salt glazed exterior		
66	Vault 4 W1/2, Level 1	2	Household	Stoneware	Base/Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Albany-Type Slip	Brown	Brown Albany type slip on both surfaces, exterior has a salt glaze	1820	1940
66	Vault 4 W1/2, Level 1	6	Household	Coarse Earthenware	Body/Rim Sherd	Flower Pot	Redware	Unglazed	Red	Probably same vessel, pressed, numerous cracks exterior surface possibly due to shrinkage during drying or firing		
66	Vault 4 W1/2, Level 1	14	Household	Coarse Earthenware	Base/Body/Rim Sherd	Flower Pot	Redware	Unglazed	Red			
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Rim Sherd	Lamp, Globe			White	Milk glass lamp globe rim		
66	Vault 4 W1/2, Level 1	1	Unknown	Milk Glass	Unidentified					Thick fragment, original surfaces not extant		
66	Vault 4 W1/2, Level 1	1	Electrical	Common Glass	Insulator		Pressed		Aqua			
66	Vault 4 W1/2, Level 1	2	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless	Hand scalloped rim		
66	Vault 4 W1/2, Level 1	2	Household	Glass Non Leaded	Body/Rim Sherd	Stemware	Pressed		Colorless	Faceted and fluted lower half of body.	1870	1950
66	Vault 4 W1/2, Level 1	1	Household	Glass Non Leaded	Base/Body Sherd	Tumbler	Pressed	Molded Pattern	Colorless		1870	1950

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Household	Glass Non Leaded	Rim Sherd	Tumbler	Pressed	Undecorated	Colorless		1870	1950
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Body Sherd	Bottle			Green			
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Base/Body Sherd	Bottle	Multi Part Mold	Unknown	Aqua			
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Base/Body Sherd	Bottle, Panel	Multi Part Mold	Embossed	Green	Front panel embossed "HALE'S / HONEY OF / HOREHOUND AND TAR", side panel "NEW YORK" the missing panel would have been embossed "C.N. Crittenton" (Fike 1987:165)	1865	1920
66	Vault 4 W1/2, Level 1	2	Household	Common Glass	Neck	Bottle	Multi Part Mold	Unknown	Green	Applied glass finish done with a lipping tool that left an interior ledge. Probable sauce bottle, sherds mend		
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green			
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Aqua			
66	Vault 4 W1/2, Level 1	2	Household	Common Glass	Body Sherd	Bottle, Panel	Multi Part Mold	Unknown	Green			
66	Vault 4 W1/2, Level 1	2	Household	Common Glass	Body Sherd	Bottle	Mold Blown		Green			
66	Vault 4 W1/2, Level 1	4	Architectural	Common Glass	Window Glass				Colorless	One surface frosted		
66	Vault 4 W1/2, Level 1	4	Architectural	Common Glass	Window Glass				Green, Pale			
66	Vault 4 W1/2, Level 1	25	Unknown	White Metal	Unidentified				Gray	Fragments from an unknown object that has a wheel with eight thin slots that have reeds in them.		
66	Vault 4 W1/2, Level 1	1	Personal	Iron	Button					Small iron disk heavily corroded, possible button		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Unknown	Iron	Unidentified					Sheet iron with holes punctured though it, possibly a colander or sieve		
66	Vault 4 W1/2, Level 1	8	Unknown	Iron	Wire					Small iron pin or wire fragment		
66	Vault 4 W1/2, Level 1	1	Unknown	Lead	Unidentified					Thin strip of scrap lead		
66	Vault 4 W1/2, Level 1	1	Personal	Other	Jewelry					Gold strip two C shaped curves at ends, probable jewelry setting		
66	Vault 4 W1/2, Level 1	3	Electrical	Copper Alloy	Wire					Bent fragments of thin copper wire		
66	Vault 4 W1/2, Level 1	26	Funerary	Copper Alloy	Pin					Plated straight pins and pin fragments		
66	Vault 4 W1/2, Level 1	1	Activities	Slate	Pencil				Gray			
66	Vault 4 W1/2, Level 1	1	Personal	Bone	Button					Bone button blank disk with a single center hole		
66	Vault 4 W1/2, Level 1	2	Personal	Bone	Button					Four-hole bone buttons		
66	Vault 4 W1/2, Level 1	5	Personal	Bone	Button					Five-hole bone buttons		
66	Vault 4 W1/2, Level 1	1	Personal	Bone	Button					Five-hole bone button		
66	Vault 4 W1/2, Level 1	3	Toy	Refined Earthenware	Marble		Unidentified Refined Earthenware	Unglazed	Gray	Two buff colored, one gray colored		
66	Vault 4 W1/2, Level 1	1	Commercial	Copper Alloy	Coin					USA Large cent, Coronet type (Matron head), badly corroded date illegible 182? (this type minted 1816-1839)	1816	1839

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dim.: 4.9 in. by 3.6 in,probably white metal plated, faint guide lines, "Alfred Roe Cox" over, "Born Feb 7th 1825" over, "Edward Dorr Griffin Cox" over, "Born Sept 18th 1828" over, "Died Jan 1, 2 1832"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval plate, possibly slightly domed, dimensions: 5.3 in. by 3.6 in, appears to have been silver plated, three line inscription, "Samuel Curtis" over, "Died 22nd Jany 1822" over, "Aged 34 Years"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular slightly domed plate, dimensions: 4.8 in. by 3.0 in, probably white metal plated, three line inscription, "John R Clark," over, "died 21st Septr 1824" over, "Aged 12 Yrs & 10 days"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Medium oval plate, dimensions (bent): approx 4 in. by 3 in, white metal plated, three line inscription, "Emma Fitz Randolph" over, "died 16th Aug 1822" over, "Aged 5 Yrs 8 Mo 12 Da"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Small oval domed plate, flange type edge, dimensions (bent): 3.5 in. by 2.6 in, white metal plated, three line inscription, "Josephine Dunham" over, "Died 23 Dec 1830" over, "Aged 2 Yrs 10 Mos 22 D"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 5.2 in. by 3.8 in, white metal plated, "Ann Semantha Whelpley" over, "Died Feb 19th A 1825" over, "Aged 14 Yr & 2 D"		
66	Vault 4 W1/2, Level 1	6	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragmentary, rounded rectangular domed plate, flange type edge, remnant of engraving		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Architectural	Iron	Fence Fragment		Cast	Molded Pattern		Ornately decorated fence fragment		
66	Vault 4 W1/2, Level 1	1	Personal	Leather	Shoe	Shoe/Boot Heel						
66	Vault 4 W1/2, Level 1	2	Fauna	Mammal	Bone					Sawn on two sides		
66	Vault 4 W1/2, Level 1	1	Personal	Shell	Comb					Large tortoise shell comb with short, broad widely spaced tines, L: 6.3 inches, W: 2.7 inches, length of tine 1.36 inches.		
66	Vault 4 W1/2, Level 1	1	Personal	Shell	Comb					Large decorative tortoise shell comb with long, narrow widely spaced tines, L: 4.0 inches, W: 2.7 inches, length of tine 2 inches.		
66	Vault 4 W1/2, Level 1	1	Personal	Shell	Comb					Tortoise shell comb with short, narrow closely spaced tines, broken length: 4.4 inches, W: 1.06 inches, length of tine 0.87 inches.		
66	Vault 4 W1/2, Level 1	1	Personal	Rubber	Comb				Black	Thick hard rubber comb that has an impressed mark that reads" . . . OMB Co GOODYEAR 1851" Possibly for Goodyear Comb Co. It refers to the 1851 Goodyear patent for hard rubber	1851	1900
66	Vault 4 W1/2, Level 1	1	Fauna	Shell	Clam, Quahog							
66	Vault 4 W1/2, Level 1	2	Fauna	Shell	Oyster							
66	Vault 4 W1/2, Level 1	1	Fauna	Shell	Other (see comments)					Fragment of Measled Cowry shell probably from Caribbean		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge with two large holes for attachment on each side, L: 1.3 in, W: 0.6 in.		
66	Vault 4 W1/2, Level 1	2	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge with three holes for attachment on each side, L: 2 in, W (full): 1.1 in.		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	*Comments*	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Unknown	Copper Alloy	Sheet Metal					Triangular scrap of sheet copper		
66	Vault 4 W1/2, Level 1	25	Funerary	Iron	Screw					Flat tip with wood fragments adhered		
66	Vault 4 W1/2, Level 1	89	Unknown	Iron	Sheet Metal					Fragments of thin sheet iron, possibly container , 79 small fragments discarded (GLM)		
66	Vault 4 W1/2, Level 1	3	Unknown	Iron	Sheet Metal					Fragments from a sheet iron container, folded edges		
66	Vault 4 W1/2, Level 1	4	Unknown	Iron	Sheet Metal					Possible rim of sheet iron containers or tin ware		
66	Vault 4 W1/2, Level 1	13	Architectural	Iron	Nail		Cut			Some wood attached		
66	Vault 4 W1/2, Level 1	43	Funerary	Iron	Nail		Unidentified			Whole nails, some wood attached		
66	Vault 4 W1/2, Level 1	153	Funerary	Iron	Nail		Unidentified			Nail fragments, some with wood attached.		
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Bowl	White Granite	Molded Pattern		Molded panels below rim on exterior	1850	1880
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Base Sherd	Hollowware	White Granite	Unknown			1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Hollowware	White Granite	Unknown		Molded rib exterior rim.	1850	1930
66	Vault 4 W1/2, Level 1	1	Household	Porcelain	Base/Body/Rim Sherd	Dish	Porcelain, Hard Paste	Undecorated	White	Probably butter pat		
66	Vault 4 W1/2, Level 1	1	Household	Porcelain	Rim Sherd	Hollowware	Porcelain, Hard Paste	Undecorated	White			
66	Vault 4 W1/2, Level 1	1	Household	Porcelain	Rim Sherd	Hollowware	Porcelain, Hard Paste	Scalloped	White			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Household	Porcelain	Base/Body Sherd	Hollowware	Porcelain, Hard Paste	Molded Pattern	White	Unglazed, molded raised rib with slightly recessed, blue painted, stippled side panels		
66	Vault 4 W1/2, Level 1	1	Household	Glass Leaded	Lamp Glass	Lamp, Chimney			Colorless			
66	Vault 4 W1/2, Level 1	1	Household	Glass Non Leaded	Handle	Mug/Cup/Drinking Pot	Pressed		Colorless		1870	1950
66	Vault 4 W1/2, Level 1	1	Household	Glass Non Leaded	Body Sherd	Unidentified			Colorless			
66	Vault 4 W1/2, Level 1	1	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Aqua	Remnant of embossed lettering lower body "...N"		
66	Vault 4 W1/2, Level 1	4	Household	Coarse Earthenware	Shoulder	Jar	Redware	Lead Glazed	Colorless	Brown manganese sponged/dripped exterior surface, sherds mend.		
66	Vault 4 W1/2, Level 1	1	Household	Stoneware	Body Sherd	Unidentified	Salt Glazed, Gray/Buff Bodied	Interior Spalled				
66	Vault 4 W1/2, Level 1	1	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip		Reddish tan salt glazed both surfaces.		
66	Vault 4 W1/2, Level 1	2	Architectural	Iron	Nail		Hand Wrought			One with wood fragments adhered.		
66	Vault 4 W1/2, Level 1	41	Funerary	Iron	Nail		Square			Fragments, some with wood adhered.		
66	Vault 4 W1/2, Level 1	11	Funerary	Iron	Nail		Square			Whole, some with wood adhered		
66	Vault 4 W1/2, Level 1	1	Architectural	Iron	Nail		Wire					
66	Vault 4 W1/2, Level 1	2	Unknown	Iron	Unidentified					Possible seam of sheet iron container.		
66	Vault 4 W1/2, Level 1	1	Architectural	Composite	Unidentified					Possible large iron staple, with wood adhered		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
66	Vault 4 W1/2, Level 1	1	Personal	Copper Alloy	Other (see comments)	Unidentified	Cast			Possible clothing fastener, stylized feather/botanical motif on one surface		
66	Vault 4 W1/2, Level 1	1	Unknown	Wood	Unidentified					Possible fragment of coffin wood.		
66	Vault 4 W1/2, Level 1	1	Funerary	White Metal	Coffin Plate			Engraved		Small oval plate, possibly slightly domed, dimensions: 2.9 in. by 2.1 in, four line inscription, light guidelines etched on plate, "Charles Morgan" over, "Died 1(6)th Jany 1820" over " Aged 1 Yr 1 Month" over, "And 12 Days"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 4.2 in by 3.5 in, appears to have been silver plated, light guidelines etched on plate, three line inscription, "Miles Ray" over, "Died 19th April 1835" over, "Aged" over, "1 Yr 8 Mos & 17(D)"		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 5.3 in. by 4 in, appears to have been plated, three line inscription, "Nicholas Ware" over, "Died 7th Sept 1824" over, "Aged 48 Years & 7 Mos"		
66	Vault 4 W1/2, Level 1	16	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, wood grain shows evidence of two pieces wood being joined together, probably connected side wall to bottom of coffin		
66	Vault 4 W1/2, Level 1	1	Funerary	Iron	Screw					Domed head, coffin wood adhered		
66	Vault 4 W1/2, Level 1	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge with two holes for attachment on each side, L: 1.3 in, full width: 0.8 in.		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
70	Vault 3 SW Corner, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 5.2 in. by 3.9 in, possibly white metal plated, three line inscription, "Joseph R. Murden" over, "Died April 20 1841" over, "Aged 74 Yrs 7 Ms 12 D"		
70	Vault 3 SW Corner, Level 1	3	Funerary	Copper Alloy	Coffin Plate			Engraved		Pieces mend, Rounded rectangular domed plate, flange type edge, width: 3.8 in, three line inscription, "Benjamin N..." over, "Died 3rd Oct..." over, "Aged 3..."		
73	Vault 3, S 2' Trench	20	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragmentary, rounded rectangular domed plate, flange type edge, three line inscription, "... Crawford" over, "...Nov 7 1841" over, "...Y..."		
73	Vault 3, S 2' Trench	1	Funerary	Wood	Coffin Board Fragment					Dark wood with clear finish/varnish on exterior surface, several thin fragments of copper alloy adhered to exterior surface possibly part of a coffin plate or letters, 15-20 pieces of short light brown hair adhered to interior surface		
82	Vault 3 W 1/2	1	Household	Common Glass	Body Sherd	Bottle	Multi Part Mold	Embossed	Aqua	Embossed trees, most likely goes to a bottle in FS# 11 entry 102 that has embossed trees and "B . . ." along with "HOUSH . . ."	1870	1920
82	Vault 3 W 1/2	1	Toy	Porcelain	Base/Body/Rim Sherd	Mug	Porcelain, Hard Paste	Unglazed	White	Small cylindrical mug (HT: 1.3 inches) with an applied floral sprig, made in a two piece mold, small areas appear to have a glaze and the lack of a glaze may represent manufacturing flaw		
82	Vault 3 W 1/2	1	Toy	Porcelain	Base Sherd	Unidentified	Porcelain, Hard Paste	Molded Pattern	White			
82	Vault 3 W 1/2	1	Household	Porcelain	Body/Rim Sherd	Cup	Porcelain, Hard Paste	Undecorated		Handled cup, probably Continental porcelain, thickened area below rim	1870	1940
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Body/Rim Sherd	Cup	Pearlware	Printed	Dark Blue		1818	1835

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	Whiteware	Printed	Blue, Light	Double curve saucer, small scale floral motif interior rim, mends to saucer from FS 109 entry 1	1825	1850
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Unidentified	Whiteware	Printed	Blue, Light		1825	1860
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Printed	Blue, Light		1825	1860
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Unidentified	Yellowware	Unknown	Yellow		1835	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Lid	Hollowware	White Granite	Undecorated		Probable chamber pot lid	1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Hollowware	Rockingham	Mottled Glaze	Brown	Foot ring charred	1840	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Hollowware	Rockingham	Molded Pattern	Brown	Possible teapot	1840	1930
82	Vault 3 W 1/2	2	Household	Coarse Earthenware	Body Sherd	Hollowware	Unidentified	Single Glazed	Brown	Small hollowware unglazed interior		
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Handle	Hollowware	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Body/Rim Sherd	Basin	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body/Rim Sherd	Basin	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	3	Household	Refined Earthenware	Base/Body/Rim Sherd	Cup	White Granite	Molded Pattern		Handled cup, pressed with 14 flat panels, highly crazed, possibly American made, sherds mend	1850	1880
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Body/Rim Sherd	Cup	White Granite	Molded Pattern		Handled cup, pressed, probably has 14 flat panels, crazed, possibly American made	1850	1880
82	Vault 3 W 1/2	5	Household	Refined Earthenware	Base/Body/Rim Sherd	Hollowware	White Granite	Undecorated		Straight-sided oval shaped vessel with a thickened rim area, probably for food serving	1850	1930
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Body/Rim Sherd	Cup	White Granite	Undecorated		Highly crazed, possibly American made	1850	1890
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated		Block handle	1870	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Cup	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Hollowware	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Hollowware	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Hollowware	White Granite	Molded Pattern		Blue tint to the glaze	1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Hollowware	White Granite	Molded Pattern		Light blue tint to the glaze	1850	1900
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Unidentified	White Granite	Undecorated		Possible custard cup/ointment pot	1850	1900
82	Vault 3 W 1/2	6	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated		Impressed mark of intertwined letters for Griffen, Smith and Hill of the Phoenixville Pottery, Phoenixville, Pennsylvania (Lehner 1988:345)	1879	1882
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	Hotel Ware	Undecorated		Thick rim	1870	1950
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Black	Black printed and impressed marks T. & R. Boote, extant part "T. & R. . . . / ROYAL . . ." the impressed mark ". . . R. B", (Godden 1991:84)	1890	1906
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Plate	White Granite	Unknown	Black	Black printed and impressed marks for Thomas Hughes, printed lion and unicorn mark "IRO . . ." / "THOMA . . ." impressed mark ". . . UGHS / BURSLEM/ II" (Godden 1991:339)	1872	1894
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown	Black	Black printed mark that reads "TRADE MARK/ ROYAL SEMI PORCELAIN/ JOHN MADDOCK & SONS/ ENGLAND" (Godden 1991:406)	1906	1960
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown	Black	Black printed mark for J. & G. Meakin, extant part ". . . & G. MEAKIN/ HANLEY/ ENGLAND" (Godden 1991:427)	1890	1960
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown	Black	Remnant of unidentified lion and unicorn mark	1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated	Brown	Remnant of brown printed maker's mark "PORCELAIN / . . ."	1870	1900

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	2	Household	Refined Earthenware	Base/Body/Rim Sherd	Plate	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Base/Body Sherd	Unidentified	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	3	Household	Refined Earthenware	Base/Body Sherd	Unidentified	White Granite	Unknown			1850	1930
82	Vault 3 W 1/2	1	Household	Refined Earthenware	Body Sherd	Unidentified	Pearlware/ Whiteware	Unknown			1820	1840
82	Vault 3 W 1/2	4	Household	Coarse Earthenware	Base/Body Sherd	Flower Pot	Redware	Unglazed	Red			
82	Vault 3 W 1/2	3	Household	Stoneware	Body Sherd	Jug	Salt Glazed, Gray/Buff Bodied	Albany-Type Slip	Brown	Gray paste, brown slip glazed interior	1805	1920
82	Vault 3 W 1/2	1	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied	Albany-Type Slip	Brown		1805	1920
82	Vault 3 W 1/2	1	Household	Stoneware	Body Sherd	Bottle	Salt Glazed, Gray/Buff Bodied	Miscellaneous Brown Slip	Tan	Iron slip under a salt glazed exterior, salt glazed interior		
82	Vault 3 W 1/2	1	Architectural	Coarse Earthenware	Door Knob		Agate Ware, Coarse					
82	Vault 3 W 1/2	1	Household	Non Lead	Whole Vessel	Bottle	Multi Part Mold	Embossed	Colorless	slug plate, lettered "SWEET" over "BYE & BYE" over, entwined CORNING & TAPPAN/ N.Y." on base "198"	1870	1900
82	Vault 3 W 1/2	1	Household	Common Glass	Whole Vessel	Bottle	Multi Part Mold	Molded Pattern	Green, Pale	Square bottle with slightly chamfered corners (1.25" x 1.25"), lipping tool finish, snap case held, possible ink	1860	1910
82	Vault 3 W 1/2	1	Household	Common Glass	Base/Body Sherd	Bottle, Beer	Multi Part Mold	Embossed	Green	Beer bottle embossed "G. BURKHARDT/ PHILADA." brewery located 56 New Market above Callowhill St. (Bull, Friedrich & Gottschalk 1984:269)	1850	1857
82	Vault 3 W 1/2	1	Household	Glass Leaded	Base Sherd	Unidentified	Pressed	Unknown	Purple/Solarized		1880	1917
82	Vault 3 W 1/2	4	Household	Glass Leaded	Base/Body Sherd	Bottle	Multi Part Mold	Embossed	Colorless	Embossed on base "AC / W T & Co" for Whitall, Tatum & Co. Millville, N.J. (Toulouse 1971:544-5) Switched to non-lead colorless glass fairly early, 1880 estimated end date, square pharmacy bottle	1857	1880
82	Vault 3 W 1/2	1	Household	Glass Leaded	Rim Sherd	Unidentified	Mouth Blown	Unknown	Colorless	Possible tableware or jar with flaring lip		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	1	Household	Common Glass	Base Sherd	Vial	Multi Part Mold	Embossed	Green, Pale	Remnant of embossed lettering "...N' S" over, ". . . OPIUM", snap case	1840	1900
82	Vault 3 W 1/2	1	Household	Common Glass	Neck	Ink Bottle	Multi Part Mold	Molded Pattern	Green, Pale	Umbrella ink bottle, 8-sided	1840	1910
82	Vault 3 W 1/2	1	Household	Common Glass	Neck	Ink Bottle	Multi Part Mold	Molded Pattern	Green, Pale	Umbrella ink bottle	1840	1910
82	Vault 3 W 1/2	3	Architectural	Common Glass	Window Glass				Colorless	One surface frosted		
82	Vault 3 W 1/2	29	Architectural	Common Glass	Window Glass				Green, Pale	sample retained (GLM)		
82	Vault 3 W 1/2	3	Household	Glass Non Leaded	Body/Rim Sherd	Bottle, Panel Ball Neck	Multi Part Mold	Unknown	Colorless		1880	1920
82	Vault 3 W 1/2	1	Household	Glass Non Leaded	Base Sherd	Bottle, Pharmacy Oval	Plate Mold	Embossed	Colorless	Embossed letter on plate part ". . . PLACE & COURT ST/ BROOKLYN N.N.Y" on base "A" date based on color rather than plate mold	1880	1920
82	Vault 3 W 1/2	3	Household	Glass Non Leaded	Base/Body Sherd	Bottle	Multi Part Mold	Unknown	Colorless	Square pharmacy style bottle with slightly chamfered corners	1880	1920
82	Vault 3 W 1/2	3	Household	Glass Non Leaded	Base/Body Sherd	Bottle	Multi Part Mold	Molded Pattern	Colorless	Barrel shaped bottle with raised annular bands around the base and neck	1880	1920
82	Vault 3 W 1/2	1	Household	Glass Non Leaded	Base Sherd	Bottle	Multi Part Mold	Unknown	Colorless			
82	Vault 3 W 1/2	1	Household	Glass Non Leaded	Body/Rim Sherd	Stemware	Pressed	Molded Pattern	Colorless	Pressed stemware goblet imitation of cut glass	1870	1950
82	Vault 3 W 1/2	1	Household	Glass Non Leaded	Base Sherd	Stemware	Pressed	Molded Pattern	Colorless	Drinking glass		
82	Vault 3 W 1/2	2	Household	Glass Non Leaded	Base/Body/Rim Sherd	Dish	Pressed	Molded Pattern	Colorless	Footed dish with small hob-nail like pattern imitation of cut glass	1870	1950
82	Vault 3 W 1/2	1	Household	Glass Non Leaded	Rim Sherd	Tumbler	Pressed	Undecorated	Colorless	Conical tumbler with use wear on the exterior, possibly from stacking	1870	1950
82	Vault 3 W 1/2	3	Household	Glass Non Leaded	Body Sherd	Bottle	Mold Blown	Unknown	Colorless			
82	Vault 3 W 1/2	2	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Green, Pale	Square pharmacy style bottle with chamfered corners		
82	Vault 3 W 1/2	1	Household	Common Glass	Base/Body Sherd	Bottle, Panel	Multi Part Mold	Unknown	Aqua			
82	Vault 3 W 1/2	1	Household	Common Glass	Neck	Bottle	Multi Part Mold	Unknown	Aqua			
82	Vault 3 W 1/2	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	1	Household	Common Glass	Neck	Bottle	Mouth Blown	Unknown	Green, Pale			
82	Vault 3 W 1/2	2	Household	Common Glass	Base Sherd	Bottle	Multi Part Mold	Unknown	Green, Pale			
82	Vault 3 W 1/2	1	Household	Common Glass	Body Sherd	Bottle, Panel	Multi Part Mold	Unknown	Green, Pale			
82	Vault 3 W 1/2	6	Household	Common Glass	Body Sherd	Bottle, Panel	Mold Blown	Unknown	Green, Pale			
82	Vault 3 W 1/2	1	Personal	Bone	Button					Four-hole sew through, recessed center panel, 0.48 inch diameter		
82	Vault 3 W 1/2	1	Personal	Porcelain	Button		Pressed	Undecorated	White	Prosser type pressed porcelain button, 0.55 inch diameter	1840	1915
82	Vault 3 W 1/2	1	Personal	Porcelain	Button		Pressed	Molded Pattern	White	Domed button with one center hole and two holes on the reverse, Prosser type button of pressed porcelain 0.5 inch diameter	1840	1915
82	Vault 3 W 1/2	1	Personal	Bone	Sewing Implement					Three sets of three decorative raised ribs along length, probably sewing item, one end stained green from contact with copper alloy ferrule, other end broken, partially hollowed and interior threads for attachment L:2 in/ 0.24 in. diameter		
82	Vault 3 W 1/2	1	Activities	Slate	Pencil				Gray			
82	Vault 3 W 1/2	1	Fauna	Shell	Oyster							
82	Vault 3 W 1/2	1	Fauna	Shell	Clam, Quahog							
82	Vault 3 W 1/2	2	Architectural	Composite	Plaster				White			
82	Vault 3 W 1/2	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, corroded together, three round holes for attachment on each side, L: 1.8 inches, W (closed): 0.6 inch		
82	Vault 3 W 1/2	4	Funerary	Copper Alloy	Pin					Plated straight pins and pin fragments		
82	Vault 3 W 1/2	1	Funerary	Copper Alloy	Jewelry		Stamped			Die stamped oval fragment, possibly jewelry or furniture element		
82	Vault 3 W 1/2	1	Funerary	Copper Alloy	Coffin Plate					Small rectangular fragment white metal plating on one surface, probable coffin plate fragment		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
82	Vault 3 W 1/2	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval plate, probably slightly domed, dimensions: 5.8 in. by 4 in, probably white metal plated, 3 line inscription, "Joseph C. Smith" over, "died 18th April 1825" over, "Aged 20 Yrs 4 Mo's 3 days"		
82	Vault 3 W 1/2	20	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragments of rounded rectangular domed plate, flange type edge, remnant of engraved inscription		
82	Vault 3 W 1/2	1	Hardware	Iron	Sheet Metal					Large rectangular fragment of galvanized sheet iron		
82	Vault 3 W 1/2	1	Unknown	Iron	Bar					Fragment of an iron bar		
82	Vault 3 W 1/2	1	Hardware	Iron	Rod					Thick iron rod bent into a loop at one end, possible tool/hardware		
82	Vault 3 W 1/2	3	Funerary	White Metal	Coffin Plate					Possibly "Britannia Metal"		
82	Vault 3 W 1/2	5	Funerary	Iron	Screw					coffin wood adhered		
82	Vault 3 W 1/2	2	Funerary	Copper Alloy	Screw					Flat points, predate 1846 patent gimlet screws		
82	Vault 3 W 1/2	1	Funerary	White Metal	Screw					large white metal head with coffin wood adhered		
82	Vault 3 W 1/2	1	Architectural	Iron	Nail		Wire				1880	2006
82	Vault 3 W 1/2	39	Funerary	Iron	Nail		Unidentified			most with coffin wood adhered		
82	Vault 3 W 1/2	5	Funerary	Iron	Nail		Cut			some with coffin wood adhered		
82	Vault 3 W 1/2	5	Funerary	Iron	Nail		Unidentified			coffin wood adhered, wood grain shows evidence of two pieces wood being joined together, probably connected side wall to bottom of coffin		
85	Vault 2 S1/2, Level 1	1	Funerary	Copper Alloy	Hinge					decorative "butterfly-shaped" butt hinge, L: 3 inches, W: 2.2 inches		
85	Vault 2 S1/2, Level 1	3	Funerary	Copper Alloy	Pin					Plated straight pin and pin fragments		
85	Vault 2 S1/2, Level 1	2	Funerary	Bone	Button					Four-hole shirt buttons, recessed center panel, 0.5 inches, 0.52 inches diameter		
85	Vault 2 S1/2, Level 1	4	Funerary	Copper Alloy	Coffin Plate					Plated coffin plate fragments		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
85	Vault 2 S1/2, Level 1	1	Household	Common Glass	Body Sherd	Bottle, Panel	Mold Blown	Unknown	Green, Pale			
85	Vault 2 S1/2, Level 1	4	Household	Common Glass	Base/Body Sherd	Bottle	Mold Blown	Unknown	Green, Pale			
85	Vault 2 S1/2, Level 1	1	Architectural	Non Lead	Window Glass				Colorless	One surface is frosted		
85	Vault 2 S1/2, Level 1	3	Architectural	Common Glass	Window Glass				Green, Pale			
85	Vault 2 S1/2, Level 1	3	Funerary	Iron	Screw					coffin wood adhered		
85	Vault 2 S1/2, Level 1	3	Architectural	Iron	Nail		Unidentified			heavily corroded		
85	Vault 2 S1/2, Level 1	1	Fauna	Shell	Other (see comments)					Not counted, small fragments that the field notes list as maggot casings ** 4/11/2008 sample sent with Tom Christ for further study by an entymologist		
85	Vault 2 S1/2, Level 1	1	Funerary	Iron	Nail		Cut			probable coffin nail		
85	Vault 2 S1/2, Level 1	14	Funerary	Iron	Nail		Unidentified			coffin wood adhered		
94	Vault 3, Level 1, Burial #5	1	Personal	Other	Jewelry		Cast			Simple gold wedding band, 0.75 inches diameter, no engraving, from vault 3, burial 5		
94	Vault 3, Level 1, Burial #5	1	Personal	Bone	Button					Four-hole button		
94	Vault 3, Level 1, Burial #5	1	Toy	Refined Earthenware	Marble		Unidentified Refined Earthenware	Unglazed	Gray			
96	Vault 3, Level 1, Burial #11	8	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragments from a coffin plate, pulled for conservation		
96	Vault 3, Level 1, Burial #11	4	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragments from a coffin plate, pulled for conservation		
99	Vault 2, Level 1, Burial #7	10	Household	Refined Earthenware	Whole Vessel	Saucer	Whiteware	Printed	Blue	Cream colored body, center scene young woman in traditional costume carrying a basket in a flower garden, exotic buildings in background, probably "European scene", 2 narrow blue painted bands interior rim and body, unmarked, mends to almost whole	1830	1850

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
99	Vault 2, Level 1, Burial #7	1	Sample	Soil	Soil Sample					Soil saved from inside the plate described in Entry # 1		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval slightly domed, dimensions: 5.5 in. by 3.4 in, white metal plated, three line inscription, "Ellinor Moore" over, "died 4th November 1823" over, "Aged 48 Years"		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Household	Refined Earthenware	Body Sherd	Unidentified	Whiteware	Printed	Red		1828	2006
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Brown			
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Household	Non Lead	Body Sherd	Tableware, General			Colorless	contact molded unidentified geometric motif exterior surface		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Fuel	Coal	Coal Fragment							
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Household	Other	Other (see comments)					Carbon core from battery		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Architectural	Iron	Fence Fragment					decorative cast iron		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Porcelain	Button					Four hole sew through		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Other (see comments)	Other	Other (see comments)					Slag, possibly melted glass		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	103	Funerary	Iron	Nail	Unidentified				Coffin wood adhered		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	22	Funerary	Iron	Nail	Unidentified				Coffin wood adhered, wood grain shows evidence of two pieces of wood being joined together, probably connected side wall to bottom of coffin		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Unknown	Iron	Unidentified					Heavily corroded, possible nail/screw		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Flora	Wood	Wood Fragment	Unidentified				Possible decorative wood work, appears to be carved into scroll		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	12	Funerary	Wood	Coffin Board Fragment					Small fragments, mixed light and dark woods		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Funerary	Iron	Nail	Unidentified				Small clump of short reddish brown hair adhered		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Funerary	Iron	Nail	Unidentified				Small piece black fabric adhered by corrosion		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	4	Funerary	Iron	Screw					Domed head, coffin wood adhered		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	12	Funerary	Iron	Screw					Whole and fragmentary screws with coffin wood adhered		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Architectural	Common Glass	Window Glass				Aqua			

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Bone	Button					Four hole sew through, recessed panel at center, 0.5 inches diameter		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	3	Personal	Leather	Unidentified					Same material, possible shoe or clothing related		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Leather	Shoe					Fragment of sole of shoe with ferrous metal nails intact		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	5	Funerary	Fabric	Other (see comments)				Brown	Unindentified coarse woven or knitted fabric, probably stocking, one other piece was adhered to small fragment of bone		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Leather	Shoe					Heel, (Ht: 1 inch, L: 1.9 inches, W: 1.5 inches) 11 iron nails intact, nine in horseshoe pattern around outer edge, other two near center, possibly burial related		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Leather	Shoe					Fragmentary heel, (Ht: 1 inch, L: 1.89 inched, W: 1.5 inches) large number iron nails intact, remnant of one copper alloy nail, possible burial related		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	10	Personal	Leather	Shoe					Fragments of upper portion of shoe/boot, possibly burial related		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Leather	Shoe					Large fragment of sole of shoe with some iron corrosion and larger round perforations, possibly due to repair with nails, possibly burial related		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	6	Personal	Leather	Shoe					Pieces of heel, sole and upper, unidentified red substance on exterior and portion interior, heel with copper alloy nails and iron nails in horseshoe pattern around outer edge, probable repair, (Ht: 0.7 in, L: 1.9 in, W: 1.8 in, possibly burial related		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	1	Personal	Copper Alloy	Comb		Cast			Fragment decorative hair comb, with some short matted black hair intact, mends with FS # 113 entry 15		
106	Vault 4 2-4'section N of S wall, E 1/2, Level 1	2	Flora	Wood	Wood Fragment	Unidentified				Wood shaving, possibly from coffin padding/cushion		
109	Vault 3, Level 1, Burial #7	9	Household	Refined Earthenware	Base/Body/Rim Sherd	Saucer	Whiteware	Printed	Blue, Light	Double curve, scalloped rim center scene: costumed man and woman seated at a table in a trellised garden, small child standing, leaning on woman's knee, mansion in background, printed lace and small scale floral motif interior rim and body, printed "1" exterior base, mends to FS 82 entry 5	1830	1850
109	Vault 3, Level 1, Burial #7	1	Sample	Soil	Soil Sample					Soil sample recovered from inside of saucer Burial 7		
109	Vault 3, Level 1, Burial #7	1	Sample	Soil	Soil Sample					Soil sample from under the saucer Burial 7		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Unidentified	Unknown	Brown	Buff body with a white glazed interior and a brown glazed exterior		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Bowl	Pearlware	Printed	Dark Blue	Dark blue with the background filled with small circles, common type for the 1820s	1818	1835
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Refined Earthenware	Base Sherd	Unidentified	White Granite	Unknown			1850	1930
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Unknown			1850	1930
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Common Glass	Body Sherd	Bottle			Olive	To a wine or whiskey bottle		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Refined Earthenware	Rim Sherd	Pitcher	Rockingham	Molded Pattern	Brown	Embossed scroll and small beaded pattern near pouring lip	1840	1930
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	2	Household	Glass Non Leaded	Body Sherd	Unidentified	Mold Blown	Unknown	Colorless	Possible bottle or tableware		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Architectural	Common Glass	Window Glass		Safety Glass		Colorless	Safety glass with embedded chicken wire	1880	2006
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Furniture	Common Glass	Mirror Glass				Green, Pale			
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Architectural	Common Glass	Plate Glass				Green, Pale			
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	14	Architectural	Common Glass	Window Glass				Green, Pale			
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	21	Architectural	Common Glass	Window Glass				Green, Pale	One surface frosted		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Embossed	Green, Pale	Probable beverage bottle, embossed " . . . T . . ."		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Personal	Bone	Button					Four-hole sew through		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Copper Alloy	Comb		Cast			Decorative hair omb fragment, mends with FS # 106 entry 29		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Fauna	Shell	Clam, Quahog							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Personal	Leather	Shoe	Shoe/Boot Sole				Large size, probably man's shoe or boot		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Unknown	Fabric	Unidentified	Other (see comments)				Probably felt		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, no flange at edge, dimensions: 5.7 in by 4.0 in, probably white metal plated, three line inscription, "Jas Wadsworth" over, "Died 23 May 1823" over, "Aged 47 Ys 4 Ms & 12 Ds"		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, no flange at edge, dimensions: 5.4 in by 3.6 in, white metal plated, three line inscription, "Mary Sturges" over, "died 15th Septr 1824" over, "Aged 76 Years"		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flange type edge, dimensions: 5 in by 4 in, white metal plated, three line inscription, " G. Morgan" over, "Died June 24 1829" over, "Aged 40 Yrs 5 Mos"		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Personal	Copper Alloy	Unidentified					Possible jewelry or hair pin, large spherical head (0.3 inch in diameter) with pin like fragment of wire projecting		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, two large round holes for attachment on each side, L: 1.7 inches, full width: 0.9 inches		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	37	Funerary	Iron	Screw					Whole and fragments, coffin wood adhered		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	2	Electrical	Iron	Wire							

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	183	Unknown	Iron	Sheet Metal					Fragments of sheet iron, possible container, 140 discarded (GLM)		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	4	Unknown	Iron	Sheet Metal					Fragments with lap joints, possible containers		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	10	Funerary	Iron	Nail		Cut			Coffin wood adhered		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	137	Funerary	Iron	Nail		Unidentified			Many with coffin wood adhered		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Other	Other (see comments)					Sample, not counted, matted feathers/down, possibly coffin padding or pillow		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven ribbon (finished both edges) formed into bow with spherical head copper alloy straight pin attached to back, probably shroud or coffin decoration		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	7	Funerary	Iron	Nail		Hand Wrought			Fragments, coffin wood adhered to some		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	60	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, wood grain shows evidence of two pieces of wood being joined together, probably used to connect side wall to bottom of coffin		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	2	Hardware	Iron	Unidentified					Thin, folded fragments, possible can seam		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	2	Flora	Wood	Unidentified					fragments of twigs		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Flora	Wood	Unidentified					possible coffin wood		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Flora	Wood	Unidentified					possible tool handle or furniture fragment		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Architectural	Coarse Earthenware	Brick, Fragment				Gray	over-fired fragment		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven ribbon with decorative "picot" edging, probably silk, tied into small bow, possible shroud tie		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven wide ribbon, tied into bow, possible shroud or coffin decoration, approximate width 1.25 inches		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven narrow ribbon, tied into bow, possible shroud or coffin decoration, approximate width 0.75 inch		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven narrow ribbon, tied into bow, possible shroud or coffin decoration, approximate width 0.65 inch		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Thin, folded tightly woven, possible ribbon, probable shroud tie, approximate length 9 inches		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Thin, double folded woven fabric, possibly shroud tie or clothing related		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	4	Funerary	Fabric	Other (see comments)					Tightly woven fabric fragments, possible clothing/coffin related		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven wide ribbon with one decorative "picot" edge, possibly silk, approximate width 1.4 inches		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Funerary	Fabric	Other (see comments)					Tightly woven wide ribbon, possibly silk, approximate width 1.4 inches		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	3	Funerary	Wood	Other (see comments)					Wood shavings, probably from coffin padding		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	4	Funerary	Wood	Unidentified					Possible coffin fragments or wood shavings, some green staining on one piece		
113	Vault 4 4-6' N of S Wall E 1/2, Level 1	1	Sample	Shell	Other (see comments)					Unidentified insect shell casings from fabric		
115	Vault 3, Level 1, Burial #8	44	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragmented coffin plate, rounded rectangular domed plate, flange type edge, remnant of engraved inscription		
119	Vault 3, Level 1, Burial #12	9	Funerary	Copper Alloy	Coffin Plate			Engraved		Pieces mend, rounded rectangular domed plate, flange type edge, dimensions: 5.4 in. by 4 in, possibly plated, three line inscription, "Rudolphus Bogert" over, "DIED 15th Novr 1842" over, "Aged 76 Years"		
121	Vault 3 NW, Cluster Part	2	Funerary	White Metal	Coffin Plate			Engraved		Pieces mend, possibly "Britannia Metal", slightly domed, edges missing		
123	Vault 3, Burial #13	17	Funerary	Copper Alloy	Pin					Straight pin fragments, heavily corroded		
123	Vault 3, Burial #13	2	Funerary	Iron	Nail					Wood fragments adhered		
123	Vault 3, Burial #13	3	Funerary	Copper Alloy	Pin					White metal plated straight pins and fragment with disk type heads		
123	Vault 3, Burial #13	1	Funerary	Copper Alloy	Pin					Heavily corroded straight pin with spherical head		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	1	Personal	Bone	Button					Four-hole sew through, recessed panel at center		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
127	Vault 3 E1/2, Burials #11,12, 13, & 15	3	Funerary	White Metal	Coffin Plate			Engraved		Fragmentary, possibly "Britannia Metal", rounded rectangular domed plate, flange type edge		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	10	Funerary	Copper Alloy	Coffin Plate			Engraved		Pieces mend, rounded rectangular domed plate, flange type edge		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	11	Funerary	Iron	Nail		Cut			Coffin wood adhered		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	10	Funerary	Iron	Nail		Unidentified			Coffin wood adhered		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	2	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, heads painted white, possibly from painted coffin		
127	Vault 3 E1/2, Burials #11,12, 13, & 15	3	Funerary	Iron	Screw					Coffin wood adhered		
129	Vault 3, Below Burial #13 between Piers	1	Household	Porcelain	Base Sherd	Saucer	Porcelain, Chinese Export	Painted	Blue			
129	Vault 3, Below Burial #13 between Piers	1	Household	Refined Earthenware	Base Sherd	Unidentified	Pearlware	Unknown	Not Extant	Probably the base to a shell edged plate	1780	1835
129	Vault 3, Below Burial #13 between Piers	1	Household	Refined Earthenware	Rim Sherd	Plate	Pearlware	Printed	Blue		1795	1835
129	Vault 3, Below Burial #13 between Piers	2	Household	Refined Earthenware	Body Sherd	Unidentified	Whiteware	Unknown			1820	1950
129	Vault 3, Below Burial #13 between Piers	1	Household	Refined Earthenware	Body Sherd	Hollowware	Yellowware	Slip Decorated	Blue	White slip band with blue mocha, most likely American made, probably to a bowl or chamber pot	1850	1920

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
129	Vault 3, Below Burial #13 between Piers	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Red	Plaster or white mortar adhered to edges		
129	Vault 3, Below Burial #13 between Piers	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Slip Decorated	Brown	Areas of splotched brown slip on the exterior, use wear on both surfaces, possible bowl	1750	1850
129	Vault 3, Below Burial #13 between Piers	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Red			
129	Vault 3, Below Burial #13 between Piers	1	Household	Glass Leaded	Body Sherd	Bottle	Mold Blown	Embossed	Colorless	Square or rectangular bottle, embossed ". . .NDS / . . . SSR" probably English	1800	1830
129	Vault 3, Below Burial #13 between Piers	1	Household	Glass Leaded	Rim Sherd	Unidentified	Mouth Blown	Unknown	Colorless	Wide mouth, flaring rim, possible lamp globe		
129	Vault 3, Below Burial #13 between Piers	1	Household	Common Glass	Body Sherd	Bottle			Green, Dark	Small sherd, probably from a wine bottle		
129	Vault 3, Below Burial #13 between Piers	14	Architectural	Common Glass	Window Glass				Green, Pale			
129	Vault 3, Below Burial #13 between Piers	4	Funerary	Copper Alloy	Pin					White metal plated straight pins and pin fragments with disk shape heads		
129	Vault 3, Below Burial #13 between Piers	1	Architectural	Slate	Fragment				Gray	Possible shingle fragment		
129	Vault 3, Below Burial #13 between Piers	1	Architectural	Coarse Earthenware	Brick, Fragment				Red			
129	Vault 3, Below Burial #13 between Piers	9	Architectural	Granite	Fragment				Gray	Probable building material, some with mortar adhered		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
129	Vault 3, Below Burial #13 between Piers	6	Fauna	Shell	Clam, Quahog							
129	Vault 3, Below Burial #13 between Piers	1	Hardware	Iron	Hinge		Hand Wrought			Two piece hinge riveted to plate as illustrated in Peter Priess's Historic Door Hardware (Karklins 2000:54) Pintle portion missing		
129	Vault 3, Below Burial #13 between Piers	17	Architectural	Iron	Unidentified					Heavily corroded, possibly nails and/or screws		
129	Vault 3, Below Burial #13 between Piers	2	Unknown	Iron	Sheet Metal					Possible containers		
129	Vault 3, Below Burial #13 between Piers	14	Flora	Wood	Charcoal							
129	Vault 3, Below Burial #13 between Piers	2	Unknown	Wood	Wood Fragment					Structural or coffin board fragments, light wood with *remnant of red* paint or stain on one surface, sawn along one edge, with full thickness, round perforation at same end, possibly for nail or screw		
129	Vault 3, Below Burial #13 between Piers	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, two holes for attachment on each side, L: 1.3 in, full width: 0.8 in.		
129	Vault 3, Below Burial #13 between Piers	1	Funerary	Copper Alloy	Coffin Plate					Fragment of rounded rectangular plate, domed with flange type edge, remnant of engraved inscription		
129	Vault 3, Below Burial #13 between Piers	2	Funerary	White Metal	Coffin Plate			Engraved		Probably "Britannia Metal" pieces mend, Rounded rectangular domed *plate, flange type edge*		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
129	Vault 3, Below Burial #13 between Piers	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval slightly domed, dimensions: 5.4 in. by (approx) 3.5 in, appears to have been plated, three line inscription, "John Radcliff" over, "died 25th June 1823" over, "Aged 50 Yrs 4 Mos 13D"		1823
129	Vault 3, Below Burial #13 between Piers	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval slightly domed, dimensions: 5.3 in. by 3.4 in, probably white metal plated, three line inscription, "James Rea Junr" over, "died 28th April 1823" over, "Aged 19 Yrs 8 Mos 12 da"		
129	Vault 3, Below Burial #13 between Piers	1	Funerary	Copper Alloy	Pin					Remnant of white metal plating, head missing		
129	Vault 3, Below Burial #13 between Piers	1	Unknown	Copper Alloy	Pin					White metal plated, formed into U shape at end opposite point, possible jewelry fragment		
132	Vault 4 E1/2, 6-9' Section	1	Personal	Refined Earthenware	Pipe Stem		White Ball Clay	Undecorated				
132	Vault 4 E1/2, 6-9' Section	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Dipt	Polychrome	Narrow blue band flanked by orange bands on white ground.	1820	1835
132	Vault 4 E1/2, 6-9' Section	1	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Undecorated			1850	1930
132	Vault 4 E1/2, 6-9' Section	1	Household	Stoneware	Body Sherd	Hollowware	Salt Glazed, Gray/Buff Bodied			Unglazed interior, possible beer/mineral water bottle.		
132	Vault 4 E1/2, 6-9' Section	1	Household	Coarse Earthenware	Body Sherd	Hollowware	Redware	Lead Glazed	Brown			
132	Vault 4 E1/2, 6-9' Section	1	Household	Coarse Earthenware	Base/Body/Rim Sherd	Flower Pot	Redware	Unglazed	Pink	Uncollared rim		
132	Vault 4 E1/2, 6-9' Section	1	Household	Milk Glass	Lamp Glass	Lamp, Chimney			White			
132	Vault 4 E1/2, 6-9' Section	1	Household	Glass Non Leaded	Body Sherd	Bottle			Colorless			
132	Vault 4 E1/2, 6-9' Section	1	Household	Glass Non Leaded	Lid	Tableware, General	Pressed		Colorless	Molded disk type stepped knob		
132	Vault 4 E1/2, 6-9' Section	3	Architectural	Common Glass	Window Glass				Aqua	Fragment.		
132	Vault 4 E1/2, 6-9' Section	1	Fauna	Shell	Oyster							
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Copper Alloy	Screw					Fragment, flat point, pre 1846		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Copper Alloy	Screw					Whole, flat point, pre 1846		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Copper Alloy	Screw					Whole, flat point, head of screw with off center narrow slot, coffin wood attached, pre 1846		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Copper Alloy	Hinge					Two whole small rectangular butt hinges with three holes for attachment on each side, L: 2 in, W: 1 in.		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge sides corroded together, remnants of two (ferrous metal) fasteners corroded in place, L: 2 in, W: 0.6 in.		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Copper Alloy	Hinge					Two whole decorative "butterfly-shaped" butt hinges		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Composite	Coffin Board Fragment					Two dark wood fragments, each with fragment of handmade copper alloy screw intact, head of screws with off center narrow slot		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Iron	Screw					Fragment, flat point, domed head, head of screw with off center narrow slot		
132	Vault 4 E1/2, 6-9' Section	4	Funerary	Iron	Screw					Flat point		
132	Vault 4 E1/2, 6-9' Section	3	Funerary	Iron	Screw					Flat point, domed head, fragments of dark colored wood adhered		
132	Vault 4 E1/2, 6-9' Section	13	Funerary	Iron	Screw					Flat point, fragments of light colored wood adhered		
132	Vault 4 E1/2, 6-9' Section	6	Funerary	Iron	Nail		Cut			Some with fragments of coffin wood adhered		
132	Vault 4 E1/2, 6-9' Section	44	Funerary	Iron	Nail		Unidentified			Fragments, some with fragments of coffin wood adhered		
132	Vault 4 E1/2, 6-9' Section	27	Funerary	Iron	Nail		Unidentified			Whole, some with fragments of coffin wood adhered		
132	Vault 4 E1/2, 6-9' Section	13	Funerary	Composite	Coffin Board Fragment					Iron nails with fragments of two pieces of wood attached, probably held side wall to bottom of coffin		
132	Vault 4 E1/2, 6-9' Section	32	Funerary	Composite	Coffin Board Fragment					Iron nail or screw fragments intact		
132	Vault 4 E1/2, 6-9' Section	15	Funerary	Wood	Coffin Board Fragment					13 pieces light colored wood, 2 dark wood		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
132	Vault 4 E1/2, 6-9' Section	5	Funerary	Composite	Coffin Board Fragment					Varnished dark colored wood each piece with a domed iron screw, flat points, one is a corner piece varnished on two exterior surfaces		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Composite	Coffin Board Fragment					Light colored wood, red paint on both surfaces, each piece with remnant of iron screw intact		
132	Vault 4 E1/2, 6-9' Section	1	Hardware	Iron	Unidentified					Thin, flat fragment		
132	Vault 4 E1/2, 6-9' Section	1	Hardware	Iron	Unidentified					Thin fragment, rolled into cylindrical shape		
132	Vault 4 E1/2, 6-9' Section	1	Hardware	Iron	Unidentified					C shaped fragment, slightly tapered at both ends, possible coffin handle		
132	Vault 4 E1/2, 6-9' Section	4	Personal	Leather	Shoe	Shoe/Boot Sole				Small fragments		
132	Vault 4 E1/2, 6-9' Section	1	Unknown	Copper Alloy	Unidentified					Ring, round in section, overlapping ends flattened on interior edge, 0.76 inches diameter, two ends overlap 0.28 inches		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval flat plate, dimensions: 5.4 in by 3.4 in, probably white metal plated, four line inscription, "Lewis Evens" over, "died 24th July 1822" over, "Aged 46 years &" over, "5 Months"		
132	Vault 4 E1/2, 6-9' Section	1	Commercial	Copper Alloy	Coin					USA Large cent, Coronet type (Matron head) 1819	1819	1819
132	Vault 4 E1/2, 6-9' Section	1	Commercial	Copper Alloy	Coin					USA Large cent, Coronet type (Matron head) date illegible, possibly 181? (this type minted 1816-1839)	1816	1839
132	Vault 4 E1/2, 6-9' Section	12	Personal	Copper Alloy	Other (see comments)					Hook and eye clothing fasteners, three hooks, and fragments of at least five eyes, some pieces mend		
132	Vault 4 E1/2, 6-9' Section	2	Personal	Fabric	Other (see comments)					Thin folded fragments of tightly woven, coarse fabric, dark brown to black, probably burial related		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Fabric	Other (see comments)					Thin folded strip of tightly woven, fine fabric, ends tied in knot, possibly shroud binding/tie, approximately 8 inches in total length		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
132	Vault 4 E1/2, 6-9' Section	5	Funerary	Fabric	Other (see comments)					Fragments of tightly woven ribbon with decorative "picot" edging, probably silk, one with remnant of knot or bow, probably shroud ties, approximately 0.5 inch width		
132	Vault 4 E1/2, 6-9' Section	19	Funerary	Fabric	Other (see comments)					Fragments of tightly woven fabric, possibly shroud or coffin cloth		
132	Vault 4 E1/2, 6-9' Section	3	Funerary	Fabric	Other (see comments)					Fragments of tightly woven fabric, appear to be same type of fabric, possibly shroud or coffin cloth		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Fabric	Other (see comments)					Folded fragments of tightly woven, coarse fabric, probably shroud ties		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Fabric	Other (see comments)					Loosely woven, coarse thread fabric, heavily matted with fragments of insects, probably clothing or shroud related		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Fabric	Other (see comments)					Fragment of tightly woven, fine fabric, *finished edge*, probably clothing or shroud related		
132	Vault 4 E1/2, 6-9' Section	2	Funerary	Fabric	Other (see comments)					Two black or dark brown bows, formed for thin strips of tightly woven, coarse fabric, fragments of wood shavings adhered to one, probably coffin decoration		
132	Vault 4 E1/2, 6-9' Section	1	Funerary	Wood	Wood Fragment					Sample, numerous small wood shavings with one large tightly curled shaving green staining on one side possibly due to contact with shroud pins, probably coffin padding/cushion		
135	Vault 3 NE Corner, Burial #16	1	Personal	Bone	Button					Five-hole sew through, 0.86 in. diameter, recessed panel at center, surrounded by two raised ribs		
135	Vault 3 NE Corner, Burial #16	1	Personal	Shell	Button					Small four-hole sew through, 0.38 in. diameter		
135	Vault 3 NE Corner, Burial #16	4	Funerary	Iron	Nail		Unidentified			Fragments of coffin nails		
135	Vault 3 NE Corner, Burial #16	1	Funerary	Iron	Screw					Coffin screw with wood adhered		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
137	Vault 4, Fill atop burials	1	Funerary	Silver	Coffin Plate			Engraved		Small oval domed, 4 loops for attachment, silver coffin plate, dim. (bent): 3.8 in. by 2.3 in, faint guide lines,"Oswald Williams Roe" over, "Died 27th November 1822" over, "Aged" over "10 Months & 5 Days", Vault 4, on top of burials N.W. corner of vault	1822	1822
139	Vault 3, Burial #18	2	Funerary	Shell	Button					Small four-hole shell buttons, one from the neck area and the other from the pelvis area of the burial, 0.4 in. and 0.45 in. diameter		
139	Vault 3, Burial #18	1	Funerary	Copper Alloy	Pin					spherical head straight pin		
139	Vault 3, Burial #18	1	Fuel	Coal	Cinder							
142	Vault 3 SW	1	Household	Common Glass	Body Sherd	Bottle	Mold Blown	Unknown	Green, Pale	Small square bottle, probably for medicine		
142	Vault 3 SW	2	Activities	Slate	Pencil				Gray			
142	Vault 3 SW	4	Funerary	Copper Alloy	Screw					Domed heads, flat points, narrow slot, slightly off-center, pre-1846		
142	Vault 3 SW	17	Funerary	Iron	Screw					Coffin screws and fragments, flat points, pre-1846		
142	Vault 3 SW	3	Funerary	Composite	Screw					Iron screw with large white metal flat top, domed heads, (0.6 in. diameter) two with varnished coffin wood adhered, one without patina appears white metal plated		
142	Vault 3 SW	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge with wood adhering on one surface, L: 1.8 in, W: 0.6 in. (sides corroded together), three holes for attachment on each side		
142	Vault 3 SW	2	Fuel	Coal	Cinder							
142	Vault 3 SW	8	Funerary	Iron	Nail		Cut			Some with wood adhered		
142	Vault 3 SW	22	Funerary	Iron	Nail		Unidentified			Some with coffin wood adhered		
142	Vault 3 SW	5	Funerary	Iron	Nail		Unidentified			Coffin wood adhered, wood grain shows evidence of two pieces of wood being joined together, probably connected side wall to bottom of coffin		
142	Vault 3 SW	14	Funerary	Iron	Screw					Domed head, flat point, most with coffin wood adhered, some wood with clear varnish		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
142	Vault 3 SW	9	Funerary	Iron	Screw					Domed head, remnants of large white metal heads, some with varnished coffin wood adhered		
145	Vault 4, Burial #13	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Oval slightly domed, dimensions: 5.7 in. by 3.9 in, white metal plated, three line inscription, "Louisa Hunter" over, "died 1st Febry 1825" over, "Aged 16 Yrs 7 Months"		
145	Vault 4, Burial #13	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, two holes for attachment on each side, L: 1.6 inches, full width 0.9 in.		
145	Vault 4, Burial #13	8	Funerary	Iron	Nail	Unidentified				Fragments with coffin wood adhered		
145	Vault 4, Burial #13	5	Funerary	Iron	Nail	Unidentified				Coffin wood adhered, wood grain shows evidence of two pieces of wood being joined together, probably connected side wall to bottom of coffin		
146	Vault 4, Mortar Sample	1	Architectural	Composite	Mortar					One bag, sample		
153	Vault 4 W1/2	1	Commercial	Copper Alloy	Coin					*USA Large cent, Draped bust 1806*	1806	1806
153	Vault 4 W1/2	1	Fauna	Mammal	Tooth					Rodent tooth		
154	Vault 4 W1/2	5	Funerary	Refined Earthenware	Base/Body/Rim Sherd	Plate	Pearlware	Printed	Blue	Pieces mend, Grapevine border series, blue printed mark in decorative banner "Armitage Park" over, "Staffordshire", impressed mark "ENOCH WOOD..." arched over eagle, over, "BURSLEM". [Coysh and Henrywood Vol. 1 1982:27]	1818	1846
155	Vault 4 W1/2, Burial #16	1	Funerary	Copper Alloy	Hinge					Small rectangular butt hinge, L: 1.6 in, W (full): 0.9 in.		
155	Vault 4 W1/2, Burial #16	2	Funerary	Copper Alloy	*Pin*					Spherical head straight pin fragments		
155	Vault 4 W1/2, Burial #16	2	Funerary	Copper Alloy	Coffin Plate					Small fragments, white metal plated coffin plate, with flange type edge		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
159	Vault 4 extreme NW corner	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Rounded rectangular domed plate, flanged type edge, white metal plated, dimensions: 4.8 in. by 3.4 in, three line inscription, "Elizabeth Cleveland" over, "Died 23 Novr 1826" over, "Aged 70 Ys 5 Ms 13 Ds"	1826	1826
160	Vault 4 Burial 1-4	8	Funerary	Iron	Screw					Fragments with coffin wood adhered		
160	Vault 4 Burial 1-4	47	Funerary	Iron	Nail	Unidentified				Fragments with coffin wood adhered		
161	Vault 2, From a sort	1	Funerary	Copper Alloy	Coffin Plate			Engraved		Fragment of rounded rectangular domed plate, flanged type edge, engraved decoration branch with leaves above remnant of inscription, "...Howard Arnott..."		
161	Vault 2, From a sort	1	Household	Refined Earthenware	Base Sherd	Plate	Pearlware	Printed	Blue	Remnant of a figure with a hat in front of a building with a picket type fence	1815	1835
161	Vault 2, From a sort	1	Household	Refined Earthenware	Body Sherd	Unidentified	Unidentified Refined Earthenware	Printed	Blue			
161	Vault 2, From a sort	2	Household	Refined Earthenware	Base Sherd	Plate	Pearlware	Printed	Polychrome	Pieces mend, child's plate, remnant of molded flowers/letters on marly highlighted/clobbered with green, unidentified orange, yellow, brown and blue printed motif, remnant of maxim "...heart" over, "...n cart" over, "...orses part"	1783	1830
161	Vault 2, From a sort	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Undecorated			1825	1900
161	Vault 2, From a sort	1	Household	Refined Earthenware	Rim Sherd	Plate	Whiteware	Printed	Blue, Light	Remnant of scalloped rim with unidentified molded decorative motif, blue printed floral and scroll motif	1825	1850
161	Vault 2, From a sort	1	Household	Refined Earthenware	Body Sherd	Hollowware	Whiteware	Dipt	Blue	Remnant of flaring foot ring	1820	1835
161	Vault 2, From a sort	1	Household	Refined Earthenware	Rim Sherd	Plate	Unidentified	Shell Edge	Blue			
161	Vault 2, From a sort	1	Household	Refined Earthenware	Body Sherd	Unidentified	White Granite	Undecorated			1850	1930
161	Vault 2, From a sort	1	Household	Refined Earthenware	Body Sherd	Plate	White Granite	Undecorated		Marly fragment	1850	1930

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
161	Vault 2, From a sort	1	Household	Refined Earthenware	Rim Sherd	Plate	White Granite	Undecorated			1850	1930
161	Vault 2, From a sort	1	Household	Refined Earthenware	Rim Sherd	Saucer	White Granite	Undecorated			1850	1930
161	Vault 2, From a sort	1	Household	Refined Earthenware	Base Sherd	Dish	White Granite	Molded Pattern		Molded flutes interior body, probably saucer or bowl	1850	1930
161	Vault 2, From a sort	1	Household	Refined Earthenware	Handle	Unidentified	Ironstone/Stone China	Printed	Purple	Large handle, molded scroll and thumb rest	1830	1950
161	Vault 2, From a sort	2	Household	Refined Earthenware	Base/Body/Rim Sherd	Coffee Cup	White Granite	Undecorated		Pieces mend, remnant of molded block handle	1870	1930
161	Vault 2, From a sort	2	Household	Refined Earthenware	Body Sherd	Hollowware	Yellowware	Dipt	Blue	Same vessel	1840	1900
161	Vault 2, From a sort	2	Household	Coarse Earthenware	Base/Body Sherd	Flower Pot	Redware					
161	Vault 2, From a sort	1	Household	Porcelain	Body Sherd	Hollowware	Porcelain, Hard Paste	Molded Pattern		Molded scallop exterior surface		
161	Vault 2, From a sort	1	Architectural	Coarse Earthenware	Fragment	Other (see comments)	Unidentified Coarse Earthenware			Tile, dark brown glazed exterior surface		
161	Vault 2, From a sort	7	Architectural	Common Glass	Window Glass				Aqua			
161	Vault 2, From a sort	1	Architectural	Common Glass	Window Glass				Aqua	Press molded fine stipple type pattern one surface, privacy glass		
161	Vault 2, From a sort	1	Household	Common Glass	Body Sherd	Bottle			Aqua			
161	Vault 2, From a sort	1	Household	Common Glass	Unidentified	Other (see comments)			Aqua	Melted, drip		
161	Vault 2, From a sort	1	Household	Common Glass	Rim Sherd	Tumbler		Molded Pattern	Colorless	Molded panels and ribs on body		
161	Vault 2, From a sort	1	Household	Glass Leaded	Body Sherd	Tableware, General		Molded Pattern	Colorless	Possible vase, molded vertical bands of over lapping scalloped motif		
161	Vault 2, From a sort	3	Funerary	Iron	Screw					Fragments		
161	Vault 2, From a sort	3	Funerary	Iron	Screw					Domed heads, coffin wood adhered		
161	Vault 2, From a sort	1	Funerary	Iron	Screw					Domed head, dark coffin wood adhered, remnant of clear varnish on exterior surface of wood		
161	Vault 2, From a sort	1	Funerary	Composite	Screw					Iron screw with large white metal flat top, domed head (0.55 in. diameter)		
161	Vault 2, From a sort	1	Funerary	Composite	Screw					Iron screw with large white metal flat top, domed head (0.7 in. diameter)		

SPRING STREET CHURCH INVENTORY

Cat#	Provenience	Artifact Count	Group	Material	Object	Object Form	Ware Type/ Typology	Primary Decoration	Color	Comments	Begin Date	End Date
161	Vault 2, From a sort	9	Funerary	Iron	Nail		Unidentified			Coffin wood fragments adhered		
161	Vault 2, From a sort	2	Funerary	Iron	Nail		Cut					
161	Vault 2, From a sort	4	Architectural	Iron	Nail		Unidentified			Heavily corroded		
161	Vault 2, From a sort	2	Hardware	Iron	Unidentified					Thin, curved fragments		
161	Vault 2, From a sort	1	Hardware	Iron	Unidentified					Possible spike fragment, heavily corroded		
161	Vault 2, From a sort	1	Hardware	Iron	Unidentified					Wire rod, possible large nail		
161	Vault 2, From a sort	4	Funerary	Copper Alloy	Pin					White metal plated straight pins and pin fragments, disk type heads		
161	Vault 2, From a sort	2	Hardware	Copper Alloy	Wire	Unidentified						
161	Vault 2, From a sort	1	Personal	Bone	Button					Four hole sew through, recessed panel at center		
161	Vault 2, From a sort	1	Other (see comments)	Other	Unidentified					Slag fragment		
161	Vault 2, From a sort	5	Funerary	Wood	Coffin Board Fragment					Three pieces with clear varnish on exterior surface		
161	Vault 2, From a sort	1	Personal	Copper Alloy	Toy					Small whistle with stamped stylized floral and scroll motif, loop for attachment to chain/necklace, L: 1.4 in, W: 0.45 in.		

Appendix F
Qualifications of Key Project Personnel

URS

Douglas B. Mooney, M.A.

Senior Archaeologist

Areas of Expertise

Cultural Resource Management Studies

Section 106 of the National Historic Preservation Act

Archaeological Surveys and Excavations

Forensic and Crime Scene Investigations

Years of Experience

With Other Firms: 17 Years

Education

M.A./1994/Pennsylvania State University/Archaeology

B.A./1987/West Virginia University/Anthropology

Registration/Certification

40-Hour HAZWOPER Certification

Section 106 Review Certification

Overview

Mr. Mooney joined URS Corporation in 2006 and has twenty years experience in archaeology and cultural resources management. He has participated in the excavation of sites throughout the Mid-Atlantic Region and in England, and has served as Principal Investigator and Field Director on numerous and varied Phase I cultural resources surveys, Phase II site evaluations, and Phase III data recovery investigations. As a Senior Archaeologist with URS, his responsibilities include the conduct of historical research, the development and scoping of research designs, the direction of fieldwork, laboratory analysis, and report preparation, and project management. Mr. Mooney is the primary author of more than 50 technical reports and professional papers, and his experience encompasses prehistoric, historic, urban, and mortuary archaeological investigations.

Project Experience

Archaeological Investigations of the President's House Site, Independence National Historical Park, Philadelphia, Pennsylvania. Senior Archaeologist. Performed for the City of Philadelphia and Independence National Historical Park. Directed archaeological excavations of a portion of the former residential complex that served as the Executive Mansion for President's George Washington and John Adams (1790-1800). These investigations revealed substantial portions of the original foundations for these buildings, including architectural features that were associated with both the Office of the President and with the group of enslaved Africans who toiled on this land during Washington's tenure. Conceived from the start as an exercise in public archaeology, fieldwork for this project drew more than 300,000 visitors to the site over a four month period.

James Oronoco Dexter Site Data Recovery, Independence National Historic Park, Philadelphia, Pennsylvania. Principal Archaeologist. Performed for the National Constitution Center and the National Park Service. Directed historical and archaeological investigations of the home site of an important early African American leader in the city. Project included the conduct of intensive historical research, close interaction with members of the city's African American community, site excavation, artifact analysis, and the production of a narrative site report. Site investigations resulted in the identification of six historic features, one of which was attributed to the members of Dexter's household.

Phase I through Phase III Data Recovery, National Constitution Center Site, Independence National Historical Park, Philadelphia, Pennsylvania. Principal Archaeologist. Directed archaeological excavations of an entire 18th century city block. Investigations employed of crew of 60 professional archaeologists and resulted in the excavation of 115 historic house lots and nearly 300 features, the relocation of some 150 individuals from the former 2nd Presbyterian Church Cemetery, and the recovery of more than 1 million artifacts. Investigations also resulted in the documentation of an intact Native American encampment and the recovery

of artifacts associated with several intact 18th century African American home sites.

Pennsylvania Turnpike Bridge Replacement Phase I-III Archaeological Investigations, Dauphin County, Pennsylvania. Principal Archaeologist. Directed excavations of a stratified Early Woodland site for the Pennsylvania Turnpike Commission. Investigations involved the excavation of 84 one meter square test units, to a maximum depth of 7.0 feet below current ground surface. Testing also involved the use of geoprobe borings to evaluate the preservation of buried adjacent sections of the former Pennsylvania Main Line Canal.

Archaeological Investigations at Fort Dix, U.S. Army Training Center, Burlington County, New Jersey. Principal Archaeologist. Directed the survey of more than 2,600 acres within the Fort Dix Military Reservation, resulting in the documentation of more than 30 Native American and historic sites. Also directed Phase I and Phase II investigations of the National Register-listed Hanover Furnace historic ironworks complex.

Montgomery Square United Methodist Church Cemetery Relocation, Montgomeryville, Montgomery County, Pennsylvania. Principal Archaeologist. Directed efforts to relocate a 19th-20th century church cemetery threatened by urban sprawl. Project involved assisting the church congregation obtain necessary reburial permits and providing expert court testimony, the conduct of intensive historical and genealogical research, compilation of existing burial records and the creation of a searchable cemetery database, the mapping, exhumation, and forensic analysis of human remains from more than 420 historic burials, and the production of a comprehensive technical report.

Archaeological Investigations, Red Bank Battlefield, National Park, Gloucester County, New Jersey. Principal Archaeologist. Directed Phase I survey of a National Landmark-listed Revolutionary War battlefield, fort, and associated 18th century Quaker house and multiple Native American occupations. Additionally prepared a comprehensive long-term archaeological management plan for the site.

Phase I Investigations, Johnson House Historic Site, 6306 Germantown Avenue, Philadelphia, Pennsylvania. Principal Archaeologist. Directed cultural resources survey of, and created archaeological management plan for a historically significant Underground Railroad site, and the home of several important leaders in Philadelphia anti-slavery organizations.

Phase III Investigations, S.R. 11/15 Improvement Project, Perry and Juniata Counties, Pennsylvania. Principal Investigator/Senior Archaeologist. Directed five concurrent data recovery investigations of deeply stratified Native American sites along the Susquehanna River. The largest of these sites produced intact late Paleo-Indian and stratified Early Archaic site components dating back 11,500 years B.P.

URS

Professional Papers and Presentations

Mooney, Douglas B.

2008 "It's Beautiful!: Archaeological Discoveries from the President's House Site in Philadelphia." Society for Applied Anthropology Conference, Memphis, Tennessee, March 26-29.

2007 "The Brushmaker and the Water Well." Archaeology Month Open House, Independence Living History Center, Philadelphia, Pennsylvania, October 20.

Mooney, Douglas B., and Jed Levin

2007 "The Powerful and the Powerless: Archaeological Investigations of the President's House Site in Philadelphia." Council for Northeast Historical Archaeology (CNEHA) Conference, Buffalo, New York, October 26-28.

Mooney, Douglas B.

2006 "The James Oronoco Dexter Site Revisited: Final Excavation Findings." Archaeology Month Open House, Independence Living History Center, Philadelphia, Pennsylvania, October 14.

2005 "In Search of a Forgotten Founding Father: Archaeological Investigations of the James Oronoco Dexter Site." Archaeology Month Open House, Independence Living History Center, Philadelphia, October 15.

2005 "We the People: Blue Collar Archaeology at the National Constitution Center Site." Pennsylvania Archaeology Month Open House, Independence Living History Center, Philadelphia, October 15.

Morrell, Kimberly A., Douglas B. Mooney, Thomas A.J. Crist, and Petar D. Glumac

2004 "Rejected in Life, Forgotten in Death: The Rediscovery of a Cemetery Associated with the Blockley Almshouse, Philadelphia, Pennsylvania." Middle Atlantic Archaeological Conference (MAAC), Rehoboth, Delaware, March 11-13.

Mooney, Douglas B., and Kimberly A. Morrell, and Petar D. Glumac

2004 "Elusive But Not Gone: Recently Discovered Prehistoric Sites in the City of Philadelphia." Middle Atlantic Archaeological Conference (MAAC), Rehoboth, Delaware, March 11-13.

Glumac, Petar D., Douglas B. Mooney, Richard J. Lewis, and Peter Pagoulatos

2004 "An Embarrassment of Riches: Recent Archaeological Investigations at Fort Dix, Burlington and Ocean Counties, New Jersey." Middle Atlantic Archaeological Conference (MAAC), Rehoboth, Delaware, March 11-13.

URS

Teaching

Introduction to Cultural Anthropology, Rockview State Correctional Institution, Bellefonte, Pennsylvania, 1994.

Professional Societies/Affiliations

Philadelphia Archaeological Forum (PAF); current President
Council for Northeaster Historical Archaeology (CNEHA)
Society for Applied Anthropology (SfAA)

Chronology

2006-present:	URS Corporation
1999- 2006:	Kise Straw & Kolodner, Inc.
1998-1999:	KCI Technologies, Inc.
1994-1996:	Kittatinny Archaeological Research, Inc.
1993-1994:	Greenhorne & O'Mara, Inc.
1992:	3-D Environmental Services, Inc.
1990-1991:	Lantz Research, Inc.
1987-1994:	John Milner Associates, Inc.

URS

Edward M. Morin, M.S., RPA

Program Manager/Senior Archaeologist

Areas of Expertise

Cultural Resource Management Studies

Section 106 of the National Historic Preservation Act

Archaeological Surveys and Excavations

Historic Preservation

Regulatory Agency Liaison and Coordination

Public Outreach

Years of Experience

With URS: 8 Years

With Other Firms: 20 Years

Education

M.S./1980/Rensselaer Polytechnic Institute/Archaeology

M.A./1978/St. Louis University/American Studies

B.A./1975/Westfield State College/History

Continuing Education

OSHA 10-Hour Construction Safety (ClickSafety, 7/15/2008)

8-Hour Annual OSHA Refresher Course (URS HS&E, 11/2/2007)

4-Hour Field/Construction Safety Training (OSHA 29 CFR 1926) (URS HS&E 12/1/2006)

Two-Day Seminar in NEPA, Project Development & Section 4(f) (FHWA, Trenton, New Jersey, 2002)

Cultural Resource Management in New York State (Office of Parks, Recreation and Historic Preservation, Niagara, Canada, 2001)

Section 106 Principles and Practices (SRI Foundation, Dover, Delaware, 2000)

Registration/Certification

Register of Professional Archaeologists

Overview

Mr. Morin has over 28 years of experience in conducting and supervising urban archaeological investigations. He has directed archaeological and historical assessments, National Register evaluations, and archaeological data recovery efforts. Prior to joining URS, Mr. Morin served as Staff Archeologist with the National Park Service, Denver Service Center, Applied Archeology Center, and Senior Archaeologist for Louis Berger & Associates, Inc. In those positions, his responsibilities included conducting and contracting archaeological investigations at historic and industrial sites within the Northeast, and Mid Atlantic States; budgeting and design of research; direction of fieldwork, laboratory analysis, and report preparation; and project management. Mr. Morin's particular expertise is in the area of historic urban and industrial archaeology.

Examples of Relevant Experience

No. 7 Subway Line Extension Project, conducted for the MTA CC New York City Transit. Project Archaeologist responsible for protection of cultural resources and for conducting archaeological investigations of cultural resources encountered during construction of the subway line.

East Side Access Project, conducted for MTA New York City Transit/Long Island Railroad. Project Archaeologist responsible for helping to develop a Construction Protection Plan (CPP) and an Advance Field Testing Plan (AFTP) for the protection of historic structures and archaeological resources during the course of the project.

Phase IB Archaeological Investigations for Sunnyside Yard, Queens Rail Complex, Queens, New York, conducted for the MTA/NYC Transit. Principal Investigator for conducting a Phase IB investigation of Area 12 within the Sunnyside Yard complex. A previous investigation indicated that intact surfaces may be present beneath three to four feet of fill. The excavation of eight test units encountered buried horizon(s) that represent an inherently disturbed context because of agricultural activities, none of these buried horizon(s) represent intact, primary deposits. Furthermore, additional disturbances have severely truncated and disturbed most of the surviving plowzone horizon. The recovered artifacts were the product of secondary re-deposition and do not represent primary deposits or date to any specific occupation, such as the Hessian and/or British occupation of Sunnyside. No further archaeological work was recommended.

Phase I Cultural Resources Investigation, Gas Service Installation for Gateway National Recreation Area/Floyd Bennett Field, Brooklyn, New York, conducted for the MTA/Bridges and Tunnels. Project Manager for The Phase I field investigation consisted of 1) excavating a series of five shovel tests along the center of the proposed gas pipeline and 2) monitoring the overall excavation for the pipeline. The only material recovered from the shovel tests was a sherd of twentieth century hotel-ware. Since no evidence

of either intact deposits or features was encountered, no further work is recommended for this area prior to the installation of the gas line. The sections of the pipeline trenched that were monitored revealed similar strata to that recorded in the shovel test pits. Since no evidence of either intact deposits or features was encountered, no further work is recommended for this area prior to the installation of the gas line.

Phase IB Investigations of the Atlantic Yards Arena and Redevelopment Project, Brooklyn, New York, conducted for Forest City Ratner Companies. Project Manager for subsurface investigations that entailed he excavation of eight test trenches within two areas in Block 1119, Lot 1, and three test trenches in Block 1127, Lots 55 and 56. Since no evidence of either intact deposits or features was encountered, no further work is recommended for this area.

Geoarchaeological Assessment for Sunnyside, Queens Rail Complex (Queens Area 12), MTA/LIRR East Side Access Project, Construction Contract CH053, Queens, New York, conducted for MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a geoarchaeological assessment within Area 12 of the Sunnyside Yards Railroad Complex in Queens, New York. The goal was to provide the necessary information on the nature, location, and extent of intact and original soil surfaces within Area 12 and the depth of twentieth-century fills above these surfaces. Wholly or partially intact surface horizons marking the original land surface were identified at six locations. Therefore, additional investigations (Stage 1B) were recommended in order to determine the presence/absence of cultural deposits within the two locations of Area 12 that retain intact soils.

Spring Street Church Site, New York, New York, conducted for Bayrock/Sapir Organization, LLC. Project Manager for the investigation of human skeletal remains from 242-246 Spring Street These investigations were requested by the New York City Department of Buildings (DOB) and New York City Landmarks Preservation Office (LPC). The specific goals of the archaeological examinations were to recover previously identified human remains and to determine whether or not additional, potentially intact burials or related funerary features and artifacts were contained within portions of the site. The process involved eight primary steps or stages of work, including: 1) detailed background research regarding the sequence of historical occupation of the site; 2) the identification of potential descendant populations; 3) the collection and documentation of known skeletal remains; 4) the controlled investigation of previously unexcavated, or partially excavated portions of the site to verify the presence or absence of additional human remains or burials; 5) the exhumation and documentation of any intact historic burials that may be present; 6) the analysis and inventorying of all human remains recovered from the site (including materials previously collected by the ME staff); 7) the reburial of recovered skeletal remains in a manner to be decided in consultation with any identified descendant population; and 8) the preparation of a final project report.

Phase III Data Recovery of an 18th Century Section of Battery Wall, Battery Park, New York, New York, conducted for Dewberry/LMS. Co-

Principal Investigator for data recovery investigation of the remains of an 18th century stonewall associated with the Battery that once protected Fort George in Lower Manhattan.

Phase IA Documentary Study, East Side Access Ventilation Shaft, Park Avenue, New York, New York, conducted for AKRF and the MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a documentary study of a proposed site for a ventilation shaft. The purpose of the study was to provide information on the nature, location, and extent of intact and original soil surfaces within the project area and the depth of 20th-century fills above these surfaces. This information was needed in order to determine if proposed construction activities would extend to a depth that would encounter the historic and/or prehistoric surfaces that might contain archaeological resources.

Phase IA Archeological Investigation, Rehabilitate Battery Weed Seawall and Dock, Fort Wadsworth Unit, Gateway National Recreation Area, Staten Island, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for developing a program for an archaeological resources investigation at Battery Weed in Fort Wadsworth, Staten Island, New York. The goal of the investigation was to collect and synthesize documentary information regarding the prehistory and history of the project area; prepare a series of recommendations for further archaeological work, to include field testing if required; and to prepare a project report documenting the investigation for use by National Park Service personnel.

Modified Phase I Cultural Resources Inventory, Floyd Bennett Field, Jamaica Bay Unit, Gateway National Recreation Area, Brooklyn, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for a cultural resources inventory in support of the proposed replacement of aging electrical cables. The goals of the investigations were to 1) identify areas of disturbance and fill that may be excluded from further investigation; and 2) identify areas with the potential for prehistoric and historic archaeological sites that should be avoided or mitigated during the replacement of the electrical cables.

Addendum, Phase IA Archaeological Study, 3-7 Wooster Street, Borough of Manhattan, New York City, New York, conducted for Extended Management Company, Inc., Newark, New Jersey. Principal Investigator for an addendum Phase IA study in order to provide additional background research to adequately address revisions requested by the New York City Landmarks Preservation Commission to another firm's previously conducted study.

Phase IA Archaeological Assessment of the Shaft 17B Complex in Sunnyside, Queens, New York, conducted for Jenny Engineering Corporation, Springfield, New Jersey. Principal Investigator for conducting and archaeological assessment of a 63,950 square foot area for a proposed shaft complex. The study provided information on the potential for the presence of archaeological resources within the site that are associated with British military occupation during the Revolutionary War.

Phase IA Documentary Study, East Side Access Ventilation Shaft, 38th Street, New York, New York, conducted for the MTA New York City Transit/Long Island Railroad. Principal Investigator for conducting a documentary study of a proposed site for a ventilation shaft in a 25 x 100-foot lot. The purpose of the study was to provide information on the nature, location, and extent of intact and original soil surfaces within the project area and the depth of 20th-century fills above these surfaces. This information was needed in order to determine if proposed construction activities would extend to a depth that would encounter the historic and/or prehistoric surfaces that might contain archaeological resources.

Phase I Archeological Investigations within the Gateway National Recreation Area at the Jacob Riis Bathhouse, Jamaica Bay Unit, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for conducting archaeological investigations at the Jacob Riis Bathhouse, Breezy Point, New York. Excavations through the concrete floor of the courtyard revealed heavily disturbed sandy fill related to the construction of the bathhouse. Disturbance included numerous utilities and a buried roadbed composed of oiled clinker and gravel. No further work was recommended since the investigations revealed that the development of the courtyard would not impact any archeological deposits.

Phase I Archeological Investigations within the Gateway National Recreation Area at the Jamaica Bay Wildlife Refuge, Broad Channel Island, Jamaica Bay Unit, New York, conducted for the National Park Service, Denver Service Center. Principal Investigator for conducting archaeological investigations at the Visitor Contact Station and Building 101 of Jamaica Bay Wildlife Refuge. Excavations revealed levels of recently disturbed soil capping a thick layer of landfill. The recovered artifacts consisted of architectural/structural material (with a small number of container glass fragments). No further work was recommended because the investigations indicated that proposed development of the two sites would not impact any archaeological deposits.

Cultural Resources Assessment, 1440 Story Avenue, Bronx, New York, conducted for the MTA New York City Transit. Principal Investigator for conducting documentary sturdy or a 12-acre site proposed for a warehouse complex. The study provided information on the potential for the presence of archaeological resources within the site.

Phase IB/II Archaeological Field Investigation, 101-117 Worth Street, New York, New York, conducted for AKRF, New York, New York. Principal Investigator for Phase IB archaeological investigations of mid 19th to mid 20th century foundation remains and yard areas. Responsible for budgeting and design of research, direction of fieldwork, laboratory analysis, and report preparation. The Phase IB investigation consisted of both machine-excavated test trenches and hand-excavated test units, as well as monitoring of construction activities 150 x 260-foot site in lower Manhattan. The investigation identified two sections of intact stonewalls associated respectively with the Broadway Tabernacle Church (1835 – 1857) and a late-nineteenth-century commercial building, along with the truncated remains of a mid-nineteenth-century well and a buried Holocene surface.

Reconstruction of the Stone Street Historic District, New York, New York, conducted for the New York City Department of Design and Construction. Principal Investigator for archaeological monitoring of the Stone Street reconstruction project. Provided the oversight and inspection of an archaeological contractor conducting monitoring services associated with the installation of a water main, catch basins and streetscape improvements.

1983 – 1991 Archaeologist, Louis Berger & Associates, Inc.

Phase II Archaeological Investigation of the Washington Street Urban Renewal Area, Site I, for Shearson Lehman/American Express, New York, New York, conducted for the New York City Public Development Corporation. Field Supervisor responsible for conducting the day-to-day excavations and crew supervision at the site, in addition to involvement with analysis and write up. Involved the testing of nineteenth century industrial and commercial remains in a 450 x 500-foot project area. It was the first West Side archaeological site systematically tested in lower Manhattan.

Phase III Mitigation of Barclays Bank, 100 Water Street, New York, New York, conducted for London and Leeds Corporation. Crew Chief responsible for the supervision of a six-person archaeological field crew, in addition to involvement with analysis and report write up. Involved the mitigation of late seventeenth to early nineteenth century domestic deposits and structural remains on a 100 x 200-foot site for the proposed construction of the Barclays Bank Office Tower.

Professional Societies/Affiliations

Professional Archaeologists of New York City
Council for Northeast Historical Archaeology, Board Member
Society for Historical Archaeology, Associate Journal Editor
Society for Industrial Archaeology
Archaeological Society of New Jersey

Chronology

1999- present: URS Corporation
1991-1999: National Park Service
1983-1991: Louis Berger & Associates, Inc.
1980-1983: American Resources Group, Inc. 1980 - 1983
1980: Macon County Conservation District
1980: Center for Archaeological Investigations, Southern Illinois University
1979-1980: Turner Construction Company 1979-1980

URS

Robert G. Wiencek, M.A., M.S.

Laboratory Manager/Archaeologist

Areas of Expertise

Archaeological Laboratory Management/Operations
Artifact Cleaning/Conservation
Artifact Identification and Interpretation
Remote-Sensing
Archaeological Geomatics
Background Project Research
Artifact Photography
Preparation of Artifact Collections for Museum Curation
Public Outreach

Years of Experience

With URS: 2 years
With Other Firms: 14 years

Education

M.A./1997/Rutgers University/ Anthropology - Archaeology
M.S./1987/University of Louisiana/Mass Communication
B.A./1983/Cleveland State University/Mass Communication

Continuing Education

American Red Cross First Aid Training, March 2005

Colonial Williamsburg Foundation Conservation Laboratory, Artifact Conservation Workshop, August 2001

OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Training Course, July 1998 (8-hour OSHA HAZWOPER Refresher Training Course, February 2004)

Overview

Mr. Wiencek joined URS Corporation in July of 2006 and currently manages the day-to-day operations of the URS archaeological laboratory. He has over 16 years of experience in archaeological investigations within the Mid-Atlantic and Northeast regions of the United States, as well as the Arroux River Valley, Burgundy, France. His archaeological research in France was featured on The Learning Channel (TLC) television series *Ultrascience*, in an episode entitled "Hi-Tech Digs." Prior to joining URS, Mr. Wiencek managed the day-to-day operations of an archaeology laboratory and developed strategies for the cleaning, identification, conservation, and cataloging of both prehistoric and historic artifacts. He is also highly knowledgeable in the use of remote-sensing techniques such as ground-penetrating radar (GPR), metal detectors, and the use of archival aerial stereo photographs to detect the presence of crop, soil, or shadow marks that can help to identify potential archaeological features.

Project Specific Experience

Spring Street Church Site, New York, New York, conducted for Bayrock/Sapir Organization, LLC. Laboratory Manager responsible for the conservation, identification, and research of coffin plates excavated from the Spring Street Church burial vaults dating from the early 19th century (1820's-1840's). Supervised laboratory technicians in the processing and cataloging of funerary hardware and personal artifacts associated with the recovered human remains. Photographed site artifacts using both a digital microscope and digital SLR camera for technical report and presentation.

South Ferry Terminal, New York, New York, conducted for the New York City Metropolitan Transportation Authority. Laboratory Manager responsible for the supervision of laboratory processing of over 63,000 artifacts during the excavation of the remains of an 18th century stonewall associated with the Battery that once protected Fort George in lower Manhattan. Also responsible for the conservation, identification, research, and the desalination of select artifacts (ceramics and iron) recovered from the site.

Fort Billingsport, Paulsboro, New Jersey, conducted for Plains All American Pipeline, L.P. on the property of Pacific Atlantic L.L.C. Oil Storage Terminal. Fort Billingsport was the first property purchased by the U.S. federal government on July 5, 1776. The purpose was to secure a 96-acre tract of land to provide security to Philadelphia from invading British troops during the Revolutionary War. Conducted a ground penetrating radar (GPR) survey to determine the full extent of the Fort and to possibly identify specific locations of potential archeological resources including redoubt walls, trenches, magazines, roads, outbuildings, etc. Also conducted a metal detecting survey to locate metal artifacts associated with the fort.

National Park Service, Independence Living History Center Archaeology Laboratory, Laboratory Supervisor, Philadelphia, Pennsylvania. Laboratory Manager responsible for supervising URS laboratory technicians processing historic ceramics excavated from the building site of the National Constitution Center for the National Park Service. Other laboratory responsibilities include pulling, washing, labeling, mending, identifying, and assigning vessel numbers to 18th/19th century ceramics. Conducted interpretive informal talks about the National Constitution Center excavations and artifacts with visitors to the laboratory.

NJ Route 18 Extension, Section 2A, Raritan Landing Archaeological Data Recovery, Piscataway Township, Middlesex County, New Jersey. Conducted for the New Jersey Department of Transportation. Senior Archaeologist/Laboratory Supervisor responsible for researching, recovering, processing, analyzing, identifying, cataloging, and conserving artifacts of a Revolutionary War-era British encampment site associated with the Raritan Landing National Register Archaeological District. Conducted a systematic metal detector survey of the site using a Global Positioning System (GPS) receiver to record the locations of artifacts found. Performed a ground penetrating radar (GPR) survey of the site to identify features associated with the camp. Responsibilities also included archaeological monitoring within sites impacted by construction. Opened, identified, and conserved historic lead window cames from sites within the District.

NJ Route 29, Archaeological Data Recovery Project, Mercer County, New Jersey. Conducted for the New Jersey Department of Transportation. Senior Archaeologist/Laboratory Supervisor responsible for cataloging the historic and prehistoric artifacts found on site. Created artifact catalog and count forms to assist in the site analysis; treated, conserved, and identified important colonial artifacts recovered from the site; and monitored construction in archaeologically sensitive site areas.

Cemetery Investigation for a Water Treatment Plant Expansion, Chesterfield County, Virginia. Conducted for the Appomattox River Water Authority. Senior Archaeologist/Laboratory Supervisor responsible for researching, processing, analyzing, identifying, and cataloging coffin hardware and artifacts associated with human remains from 95 burials in an unmarked 19th century cemetery.

Phase I and II Archaeological Surveys, Thomas I. Agnew Property, New Brunswick, New Jersey. Conducted for the New Jersey Department of Transportation. Senior Archaeologist/Laboratory Supervisor responsible for conducting background research and assisting with a Phase I archaeological field investigation for the Thomas I. Agnew property, which is listed on both the National and New Jersey Registers of Historic Places. Phase II responsibilities included conducting a ground penetrating radar (GPR) survey of the property and artifact processing. Processed, identified, and cataloged artifacts associated with the site.

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Papers/Publication

2003 Wiencek, Robert. G., and Richard Veit
"Whither the Fates Call: Archaeological Insights into the Camp Life of British Troops During the American Revolution." Paper presented at the Council for Northeast Historical Archaeology Conference, Lowell, Massachusetts, October 2003.

2003 Wiencek, Robert. G., and Richard Veit
"You Would Not Know the Landing: Archaeological Evidence for the Revolutionary War at Raritan Landing. Paper presented at the Society of Historical Archaeology's 36th Annual Conference, Providence, Rhode Island, January 2003.

2002 Wiencek, Robert. G., and Richard Veit
"Where We Spent a Very Disagreeable Winter: Searching for a British Encampment from 1777." Paper presented at the Society of Historical Archaeology's 35th Annual Conference, Mobile, Alabama, January 2002.

1997 Wiencek, Robert G.
"A Geomatics Approach to Regional Archaeological Analysis: The Arroux River Valley, Burgundy, France." Masters Thesis, New Brunswick, New Jersey, 1997.

Professional Societies/Affiliations

Society for Historical Archaeology
Council for Northeast Historical Archaeology

Chronology

2006–present URS Corporation

2005–2006 US Radar, Inc.

1997–2005 Gannett Fleming, Inc.

1994–1997 Grant F. Walton Center for Remote Sensing and Spatial Analysis, Rutgers University

1992–1994 Rutgers University Center for Public Archaeology

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Areas of Expertise

Artifact Analysis and Interpretation
Creation and Management of Data Bases
General Archaeological Laboratory Tasks
Archaeological Surveys
Public Outreach

Years of Experience

With URS: <1 Year
With Other Firms: 10 Years

Education

B.A./1996/Rider University/ Liberal Studies

A.A./1994/Bucks County Community College/Liberal Arts

Continuing Education

OSHA 29 CFR 1910.120 HAZWOPER 40-Hour Certification Course Sept. 1999 (8-hour OSHA HAZWOPER Refresher Training Course, July 2007)

Rebecca White, B.A.

Material Culture Specialist

Overview

Ms. White has eleven years of experience in archaeological investigations and artifact analysis within the Mid-Atlantic and Northeast regions of the United States. Prior to joining URS, Ms. White managed the day-to-day operations of an archaeology laboratory and developed strategies for the cleaning, identification, and cataloging of both prehistoric and historic artifacts. Along with her involvement in the design and implementation of a variety of public outreach programs she has experience with the production and installation of artifact displays and museum exhibits.

Project Specific Experience

Archaeological Data Recovery of the Spring Street Presbyterian Church Cemetery in New York City. Material Culture Specialist responsible for identifying, cataloging and researching funerary artifacts including coffin plates and hardware excavated from four burial vaults (c. 1820-1843) at the site of the former Spring Street Presbyterian Church, in Manhattan.

New Jersey Department of Transportation Route 18 Archaeological Data Recovery. Material Culture Specialist responsible for identification and cataloging of artifacts excavated from data recovery efforts and monitoring of the Route 18 Highway Extension Project over the Raritan River, within the eighteenth century town of Raritan Landing also significant as a Revolutionary War-era British encampment site.

National Park Service and the City of Philadelphia at the President's House Site, Philadelphia, PA. Material Culture Specialist involved in cataloging artifacts excavated from the President's House Site in Independence National Historical Park (INDE) in Philadelphia, Pennsylvania. Given the juxtaposed themes of slavery and freedom inherent in this site, the archeological investigation of the President's House will promote innovative approaches, analysis, and pubic engagement. The URS Team represents a coalition of nationally recognized experts in African-American archeology, commercial enterprises, institutions of higher learning, and members of the local descendant community.

Old Barracks Museum Exhibit, Mercer County, N J. Senior Archaeologist/Guest Curator for *William Richards' Remarkable for his Industry* temporary exhibit of artifacts excavated from archaeological investigations along Route 29 in Trenton, NJ. Responsible for developing themes, artifact/object selection, display design and text for exhibit exploring the various business ventures and manufacturing enterprises of Merchant/Apothecary William Richards.

Phase I, II and III Archaeological Investigations, River Bend Prehistoric Site, Hazlet Township, Monmouth County, NJ. Laboratory Supervisor involved in the identification, cataloging and refitting of lithic materials from a short term Late Archaic camp site.

NJ Route 29, Archaeological Data Recovery Project, Mercer County, NJ. Conducted for the New Jersey Department of Transportation. Assistant Archaeologist involved in excavation and recording of multiple prehistoric and historic data recovery sites along the Route 29 corridor in Trenton, NJ. Assisted with monitoring during construction in archaeologically sensitive areas, that resulted in excavation and documentation of several 18th century manufacturing structures including storehouses, bake ovens and a stoneware kiln. As Assistant Laboratory Supervisor responsible for the supervision of laboratory staff in processing over 170,000 historic and prehistoric artifacts found on these sites. Created artifact catalogs and tabulated data to assist in the site analysis; identified and researched colonial era artifacts recovered from the sites. Responsible for cataloging, mending and researching over 13,000 stoneware vessel fragments and manufacturing materials from the William Richards' kiln site (c.1774-1778).

Archaeological Investigation at the Eagle Tavern/ James Rhodes Stoneware Pottery Site, Mercer County, NJ. Senior Archaeologist/Laboratory Supervisor responsible for monitoring construction for ADA renovations to the Eagle Tavern. During construction activities the remains of the James Rhodes stoneware kiln and workshop were partially excavated, documented, and sampled. James Rhodes was the potter at the William Richards' kiln until 1778 when he left and established his own pottery (c. 1778-1784).

Phase I Archaeological Investigations of the Hilltown Township Glasshouse, Bucks County, PA. Senior Archaeologist/Laboratory Supervisor assisted with the Phase I archaeological survey to locate structural remains and sample material culture from the mid-late 18th century Hilltown Glassworks (c. 1760-1784). Responsible for identifying, cataloging and researching over 4,500 pieces of glass vessels, window glass and manufacturing materials recovered during the Phase I survey.

Phase III Archaeological Investigations of the Wistarburgh Glassworks, Salem, NJ. Laboratory Supervisor responsible for supervising the processing of artifacts recovered from the site of the Wistarburgh Glass works. Created artifact catalog, tabulated data, identified and researched glass vessel fragments, window glass, crucibles and other manufacturing debris related to the mid-18th century manufacture of glass.

Archaeological Investigation at the Invention Factory, Thomas A. Edison Laboratory Site, Thomas A. Edison State Park, Menlo Park, Edison Township, Middlesex County, NJ Laboratory Supervisor responsible for processing, identifying, cataloging and researching over 500 experiment and invention related artifacts recovered from the Edison Laboratory Site. These artifacts included laboratory glass and porcelain, crucibles, cupels, experimental light bulb fragments and telephone chalks.

Archaeological Investigations for the Southard Street Bridge Replacement, Mercer County, NJ. Senior Archaeologist involved with monitoring placement of a storm drain. The construction trench uncovered portions of the foundation of the pottery decorator's building of the Willets Manufacturing Company, along with large amounts of pottery wasters and

kiln furniture. A sample of tableware, door knobs, keyhole covers and other types of knobs was recovered during the monitoring. The Willets Company operated a pottery on the property from 1879-1917.

Archaeological Data Recovery Project St. George's Blacksmith, Carriage and Wheelwright shop, New Castle County, DE. Senior Archaeologist assisted with the Phase III archaeological survey of a 19th to early 20th century Blacksmith and Wheelwright shop that had burned down circa 1920. As Laboratory supervisor responsible for identifying, cataloging and researching over 25,000 metal artifacts including carriage and wagon parts, plow parts, tools, cast iron toys and various types of hardware.

Phase I, II and III Cultural Resources Investigation, Heritage at Lederach Golf Club, Lower Salford Township, Montgomery County, PA. Senior Archaeologist involved in the excavation of prehistoric and historic sites within a 75 acre project site. Additionally, as the Laboratory Supervisor responsible for processing, identifying and cataloging over 11,000 artifacts from Late Archaic projectile points and various lithics materials to household assemblages from two Pennsylvania German farmstead sites (c. 1750-1880).

Professional Societies/Affiliations

Council for Northeast Historical Archaeology
Society for Historical Archaeology
Philadelphia Archaeological Forum
Potteries of Trenton Society, Board Member
Archaeological Society of New Jersey

Publications

2008 *The Smith-Fulper Stoneware Pottery Site Flemington, New Jersey* Ceramics in America, forthcoming, co-authored with William B. Liebeknecht and Nadine Sergejeff.

2003 *A Coxon Waster Deposit of the Mid-1860s Sampled in Trenton, New Jersey.* Ceramics in America, 2003, 241-244, co-authored with William B. Liebeknecht and Richard Hunter.

Presentations

2008 White, Rebecca
"William Richards: Colonial Pottery Manufacture in Trenton, NJ" Federated Genealogical Society, Philadelphia, PA, September.

2006 White, Rebecca
"Archaeology: The Basics" New Jersey Council for the Social Studies, Mount Laurel, NJ, October.

2006 White, Rebecca
"Teaching with Historic Places: Archaeology Activities" Drew University Preservation Program Summer Workshop, August.

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2006 White, Rebecca
"Trenton Bakes: Washington's Army Takes" New Jersey State Museum Lunchtime Lecture Series, Trenton, NJ May.

2006 White, Rebecca
"Cones & Rings & Props: Interpreting Trenton's Kiln Furniture" Potteries of Trenton Society Symposium. Newark, NJ April.

2006 White, Rebecca
"William Richards' Remarkable for his Industry" Daughters of the American Revolution Trenton Chapter Trenton, NJ March.

2005 White, Rebecca and Liebeknecht, William
"Interpreting Trenton's Kiln Furniture: Not Just Props" Council for Northeast Historical Archaeology Annual Conference Trenton, NJ October.

2005 Hunter, Richard and White, Rebecca
"Face to Face with James Rhodes Stoneware Potter" Trenton Historical Society, Trenton, NJ October.

2005 White, Rebecca
"Rebekah at the Marriott: Identifying Trenton's Rockingham from Recent Archaeological Evidence" Potteries of Trenton Society Symposium, Newark, NJ April.

2005 White, Rebecca
"Rockingham Wares from the Coxon Waster Dump in Trenton, New Jersey" Middle Atlantic Archaeology Conference. Rehoboth, DE March.

Chronology

2008 –Present: URS Corporation,
1997 – 2008: Hunter Research, Inc