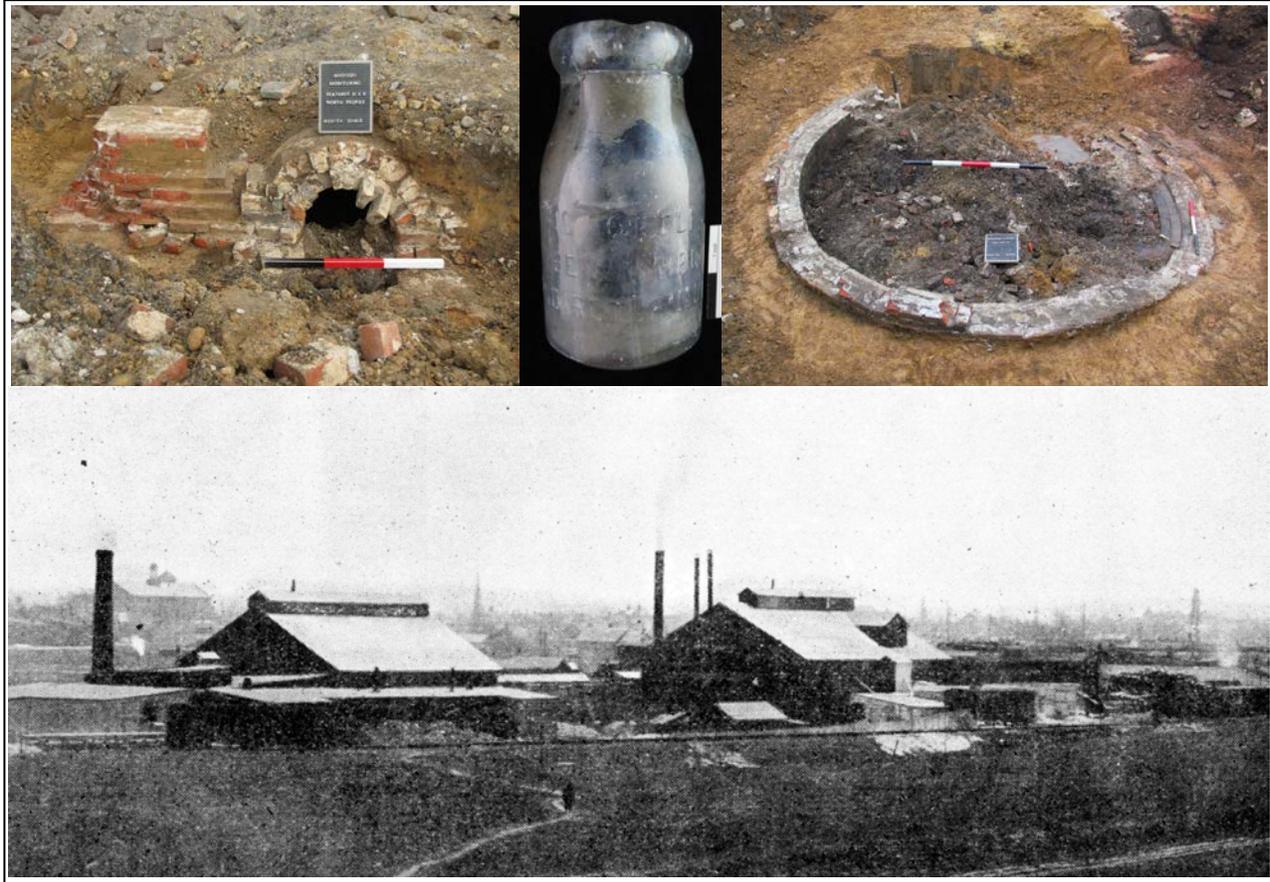


**ARCHEOLOGICAL EVALUATION OF SITE 44AX0125**  
**THE BELLE PRE BOTTLE COMPANY**  
*800 North Henry Street*  
*City of Alexandria, Virginia*



“Birdseye View of Alexandria, Showing Northwest Section, Belle Pre Glass Works in Foreground”

Image Source: *Souvenir Virginia Tercentennial of Historic Alexandria, Va., Past and Present, Illustrated.*  
By Alex John Wedderburn, 1907. Sprouse Room Rare Book Collection, Kate Waller Barrett Branch Library, Alexandria

June 2012  
WSSI Project #21509.02

Prepared for:  
Equity Residential - Development  
1953 Gallows Road, Suite 340  
Vienna, Virginia 22182

Prepared by: Thunderbird Archeology  
Wetland Studies and Solutions, Inc.  
5300 Wellington Branch Drive, Suite 100  
Gainesville, Virginia 20155



# Archeological Evaluation

## **800 North Henry Street (Madison)**

City of Alexandria, Virginia  
WSSI #21509.02

*Prepared for:*

Equity Residential - Development  
1953 Gallows Road, Suite 340  
Vienna, Virginia 22182

June 2012

*Prepared by:*

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## ABSTRACT

The third of Alexandria's glassworks, the Belle Pre Bottle Company, was founded in 1902 and was in operation until 1921. The factory originally produced green beer bottles, soda bottles, and packers' bottles, but had switched to producing milk bottles by 1906. The Belle Pre Company held a patent that stylistically improved on the milk bottle: a grooved section in the mouth of the bottle and a paper cap with a tab that fit into this groove, which would serve as a handle. This innovation allowed for the bottle to be easily resealed.

Archeological investigations of the 800 block of N. Henry Street were required under the Archeology Protection Code, located in Section 11-411 of the Zoning Ordinance of the City of Alexandria, Virginia. The archeological fieldwork, conducted between October 2011 and February 2012, was limited to archeological monitoring of footer/foundation demolition of the 1955 warehouse and periodic monitoring of contaminated soil abatement from the site. Because of the unexpected contamination at the site, the goal of the investigation shifted to documenting all identified features to the greatest extent possible. All fieldwork was conducted in consultation with Alexandria Archaeology.

Brick foundations and other features associated with the former Belle Pre Bottle Company were located on the city block during the investigation and were recorded with the Virginia Department of Historic Resources as site 44AX0215. The site spans the entire city block between Madison, North Henry, Montgomery, and North Fayette Streets; the site limits are based on the historic extent of the glass factory and the structural features located therein. The identified architectural features included foundation walls and floors in the vicinity of the main furnace and lehr ovens, structural piers, remnants of the ventilation system and the foundation for a gas producer. In addition, several post holes, brick/concrete piers, soil features and the foundation for the vault were found in the vicinity of the Belle Pre Company office.

The artifacts assemblage from Site 44AX0215 included cullet/wasters, glass bottle stoppers, cane and other decorative twisted glass- evidence that skilled glass workers were employed at the company. The majority of bottles recovered from the site were produced with an automatic bottle machine. By 1908, the Belle Pre factory was utilizing seven machines to produce quarter, half pint, pint and quart sized milk bottles. Although very few milk bottles were recovered from Site 44AX0215 during the archeological monitoring, the assemblage appeared to confirm the reported widespread distribution network for Belle Pre bottles. Bottles embossed with the names of dairies from California, Wisconsin, Philadelphia and the District of Columbia was recovered. Only one bottle was embossed with the Belle Pre company name, but not with a dairy name, which may suggest this bottle was a salesman's sample.



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## INTRODUCTION

This report presents the results of an Archeological Evaluation of the 1.75-acre Madison property, located at 800 N. Henry Street in the City of Alexandria, Virginia (Exhibit 1 and Exhibit 2). Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc., of Gainesville, Virginia, conducted the study described in this report for Equity Residential of Vienna, Virginia. The fieldwork was carried out from October 2011 through February of 2012. One new archeological site, 44AX0215, was recorded within this city block and is described in this report.

John Mullen, M.A. RPA, served as Principal Investigator on this project. Jeremy Smith, M.Sc., RPA and Edward Johnson conducted the fieldwork with the assistance of Andrés E. Garzón-Oechsle and Benjamin Pollack. Tammy Bryant, M.A., RPA served as Laboratory Supervisor, and Ms. Bryant and Beth Waters Johnson, M.A. conducted the artifact analysis. The background material was prepared Boyd Sipe, M.A. RPA and Johnna Flahive, with additional contributions by Mr. Mullen.

A Documentary Study (Flahive and Sipe 2007) for the property was completed and submitted to Alexandria Archaeology on April 18, 2007 and November 19, 2007. The documentary research identified the locations of historic structures and features related to the Belle Pre Bottle Company, but also indicated the possibility of 19<sup>th</sup> and 20<sup>th</sup> century domestic sites that may be associated with the historic African American Uptown community.

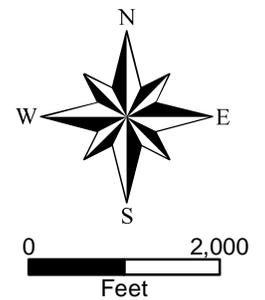
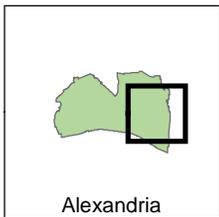
The archeological work described in this report was originally to follow a Scope of Work (SOW) approved by Alexandria Archaeology (Appendix I); however, the SOW was revised in the field based on the discovery of Asbestos Containing Materials (ACM) and other contamination associated with the historic glass factory. In consultation with Alexandria Archaeology staff, the SOW was subsequently revised to exclude all exploratory trenches and formal consultation with an industrial archeologist; however, limited machine excavation and exploration around one brick foundation at the southern end of the property was added. The goal of this modified scope was to document all features associated with the Belle Pre Bottle Company, with consideration given to the safety of the archeologists.

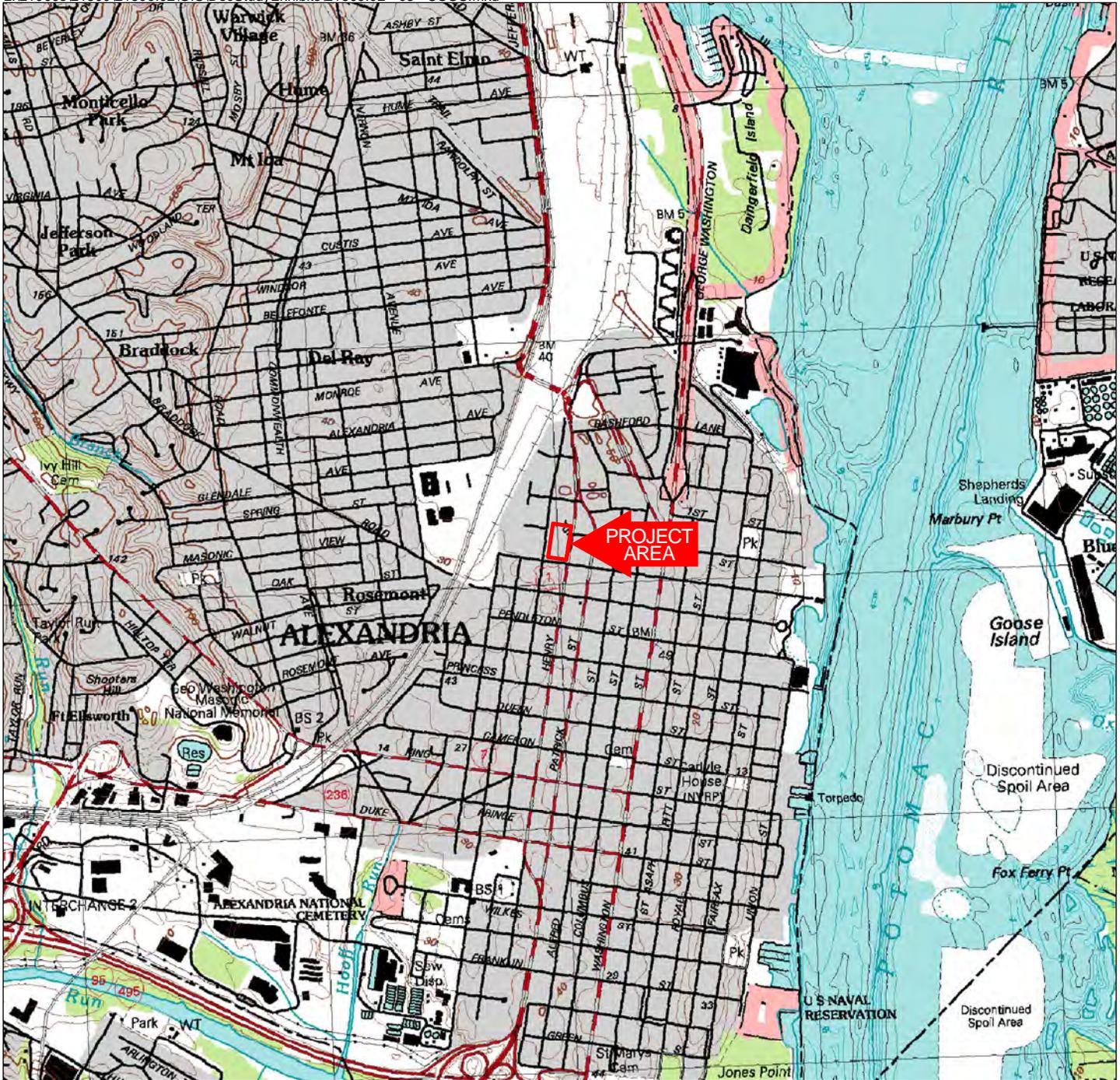
Fieldwork and report contents conformed to the *City of Alexandria Archaeological Standards* dated January 1996 and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. All artifacts, research data and field data resulting from this project are currently on repository at the Thunderbird offices in Gainesville, Virginia; the permanent repository is expected to be with Alexandria Archaeology.



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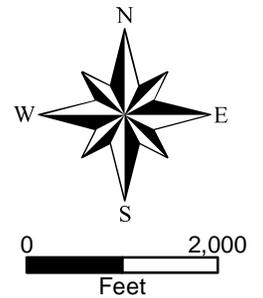
**Vicinity Map**  
**800 North Henry Street (Madison)**  
**Archeological Investigations**  
**WSSI #21509.02**  
**Original Scale: 1" = 2000'**





**USGS Quad Map**  
**Alexandria, VA-DC-MD 1994**  
**800 North Henry Street (Madison)**  
**Archeological Investigations**  
**WSSI #21509.02**  
**Original Scale: 1" = 2000'**

Latitude: 38°48'51" N  
 Longitude: 77°03'00" W  
 Hydrologic Unit Code (HUC): 020700100302  
 Stream Class: II  
 Name of Watershed: Cameron Run  
 COE Region: Atlantic and Gulf Coastal Plain



## PREVIOUS INVESTIGATIONS

A Documentary Study for the Madison property has been completed (Flahive and Sipe 2007); the property history is summarized below, along with a review of historic maps and photographs.

### **The Belle Pre Bottle Company**

The third of Alexandria's glassworks, the Belle Pre Bottle Company, was founded in 1902 and chartered under the laws of the state of Delaware, with William H. Cissel appointed as President. According to an article in the Alexandria Gazette, the directors purchased two squares of ground (four acres) between the Washington Southern Railroad tracks on Henry Street from Madison Street north to First Street. Joseph H. Ramsey and Edward S. Reeve (formerly employed by the Virginia Glass Company) were hired to run the plant (Alexandria Gazette [AG] 1902).

According to the City of Alexandria building permits, construction of a one story frame building was approved on 21 July 1902. The 180 by 70 foot building was to be constructed on a brick foundation and covered by a pitched fell roof accessible by ladders. The estimated cost of construction was given as \$5000 (City of Alexandria Building Permit No. 19).

The plant opened on 30 October 1902, with the first anticipated production on the following day. John D. Miller, the patentee of the signature Belle Pre milk bottle, was reportedly hired to "look after the financial end of the business" (AG 31 October 1902). Miller's 1899 patent is for a bottle with a grooved section at the top and a paper cap designed to fit into the groove. This patent is described in detail in the *Artifacts* section later in this report (see page 83).

Table 1 presents the factory equipment used and products from the Belle Pre Bottle Company, as listed in the Glass Factory Directories (Flahive and Sipe 2007:58). Originally, the factory produced green beer bottles, soda bottles, and packers' bottles but, by 1906, had switched to producing milk bottles. By 1913, no information was being reported in the directories; by 1915, the company was no longer listed.

**Table 1: Glass Factory Directories**

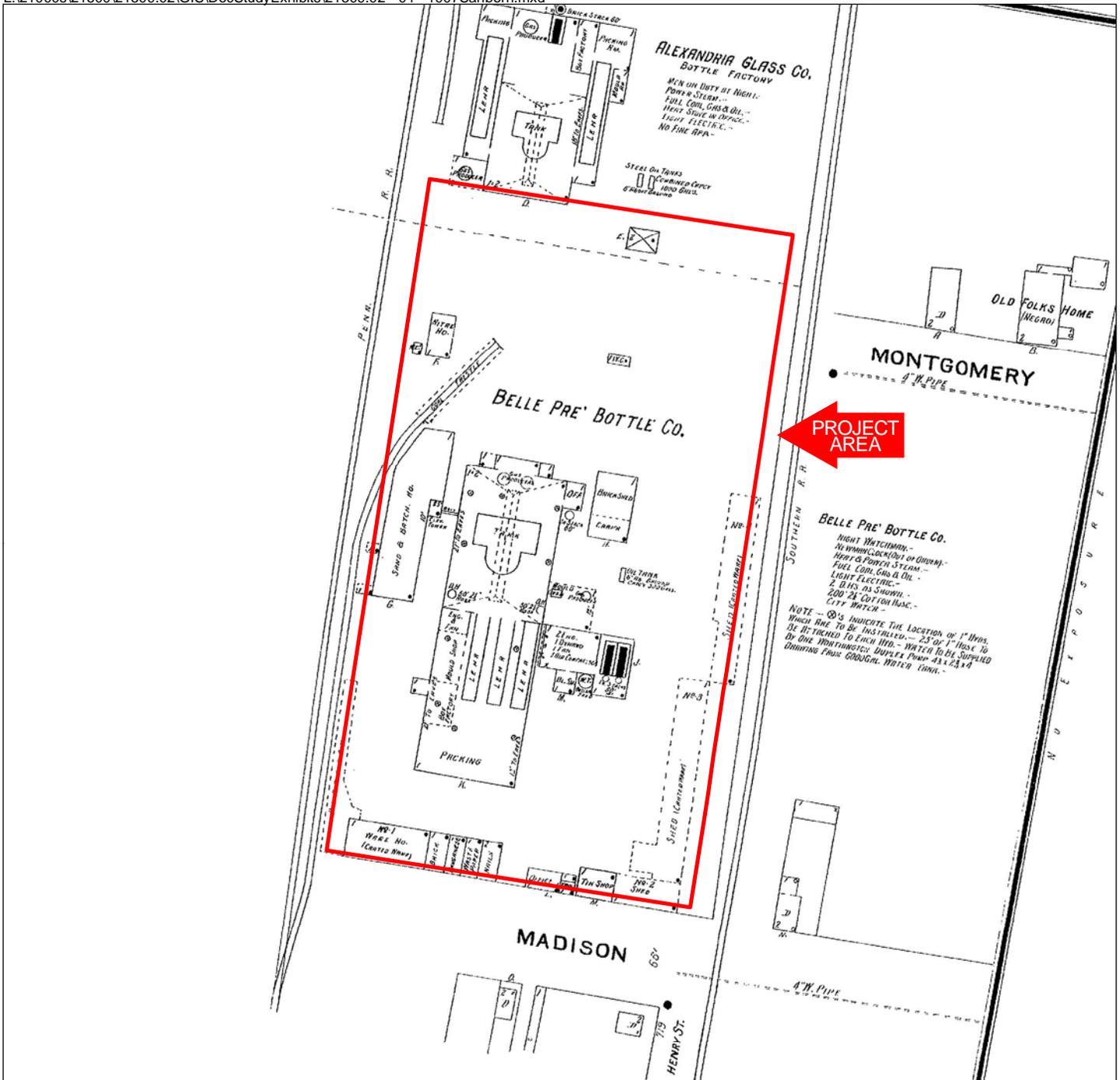
<b>Year</b>	<b>Equipment</b>	<b>Products</b>
<b>1904</b>	one furnace, ten pots, one continuous tank, ten rings	green beers, sodas, and packers
<b>1905</b>	one continuous tank, (no pot furnace), ten rings	same
<b>1906-1910</b>	one continuous tank, eight rings	Flint milks, machine made bottles and jars
<b>1911-1912</b>	Same	Flint sodas, flasks, milks, packers
<b>1913-1914</b>	No report	
<b>1915</b>	No longer listed	

Early photographs and Sanborn<sup>®</sup> Map Company Insurance Maps provide details of the spatial layout of the glass factory. The November 1907 Sanborn<sup>®</sup> Map of Alexandria, Virginia, shows the Belle Pre Bottle Company factory and various ancillary buildings located between Henry Street and the Southern Railroad to the east and Fayette Street and the Pennsylvania Railroad to the west (Exhibit 3). Several of the buildings on the map are identified by the letters F-M, which are arbitrarily assigned identifications by the Sanborn Company in the absence of official street numbers posted on the buildings (Sanborn 1949:7).

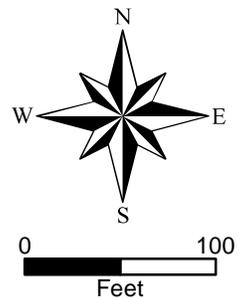
Details of the interior of the main factory building shown on the 1907 map include the locations of the following: the continuous tank and two gas producers in the northern end (underneath a roof that soared 21 feet above the floor), three lehr ovens in the southern half of the main building, a mould shop and engine room to the west of the lehrs (also covered by a 21 foot high roof) and the plant's packing room and box factory in the southern end beneath a one-story roof that measured 12 feet to the eaves.

A larger engine room housing two engines, a dynamo, a fan, and an air compressor, and the boiler room with two horizontal steam boilers were located to the east of the lehr ovens. The one-story roof of the boiler room was pierced by two 50-foot high iron smokestacks. A small blacksmith shop and a water tank (feeding the boilers) were located adjacent to the south of the engine room. A side note to the map describes a 6,000 gallon water tank that was to supply the water for the new hydrants to be installed.

A third gas producer and mould oven are shown in an addition to the north of the engine room. Another small addition in the northeast houses the office, and a 60 foot iron stack stands against its southern wall.



November 1907 Sanborn Map  
 800 North Henry Street (Madison)  
 Archeological Investigations  
 WSSI #21509.02  
 Original Scale: 1" = 100'



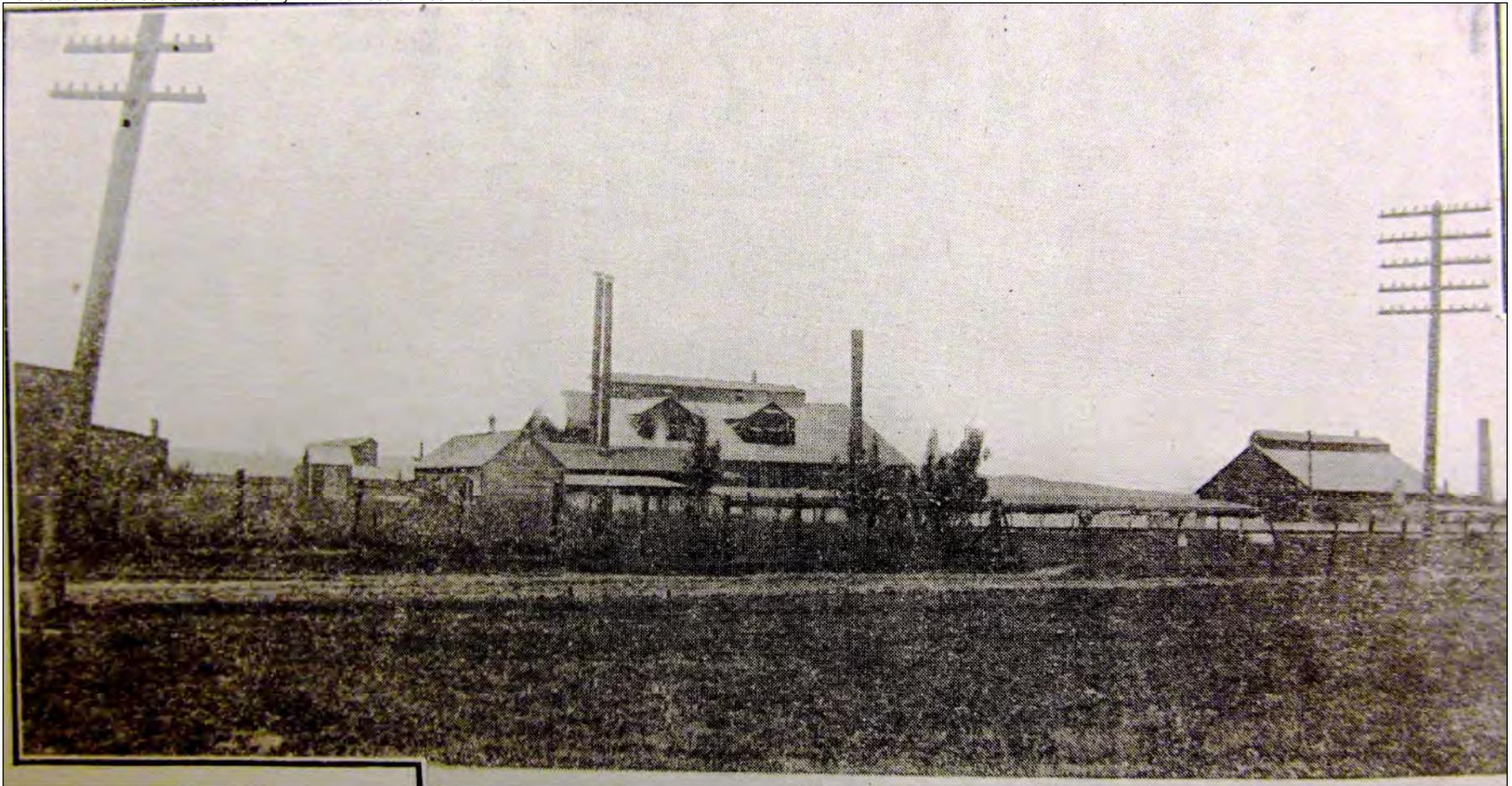
Map Source: "Insurance Maps of Alexandria Virginia, November 1907". Sanborn Map Company Obtained from ProQuest Information and Learning's "Digital Sanborn Maps, 1867-1970" catalog. ©2001 Sanborn Map Company, Sanborn Library, LLC. Original scale: 1"=50'.

Other buildings on the lot include an unidentified building in the northeastern end of the property, a nitre house, coal trestle, and a sand and batch house along the western boundary of the project area, and a brick shed, carpentry shop and oil tank just east of the main factory building. A railroad platform, warehouse, office, tin shop, and shed are shown along Madison Street and two long storage sheds for crated wares were located along Henry Street. Side notes on the map indicate that the plant used coal, gas, and oil.

An undated photo from a newspaper clipping (likely 1907) shows the Belle Pre factory from the east (Exhibit 4). Two dormers pierce the roof of the main building and several low sheds/outbuilding are visible to the left of the photo. Even more intriguing are the domestic outbuildings shown in the foreground. A two-story dwelling with a metal roof is shown on the 1907 Sanborn<sup>®</sup> map on the southeast corner of Henry and Madison Streets- across the street from the Belle Pre factory (see Exhibit 3). A one story outbuilding with a shingle roof is located at the rear of the lot. The photograph depicts not only the rear outbuilding, but a second unmapped building on the left, which may possibly be a privy. The roof of the second story house is also just visible on the left hand side of the photo. It is less clear if the dirt road (lined with telegraph poles) in the foreground is an alley to the east of this house; this road does not appear to be Alfred Street.

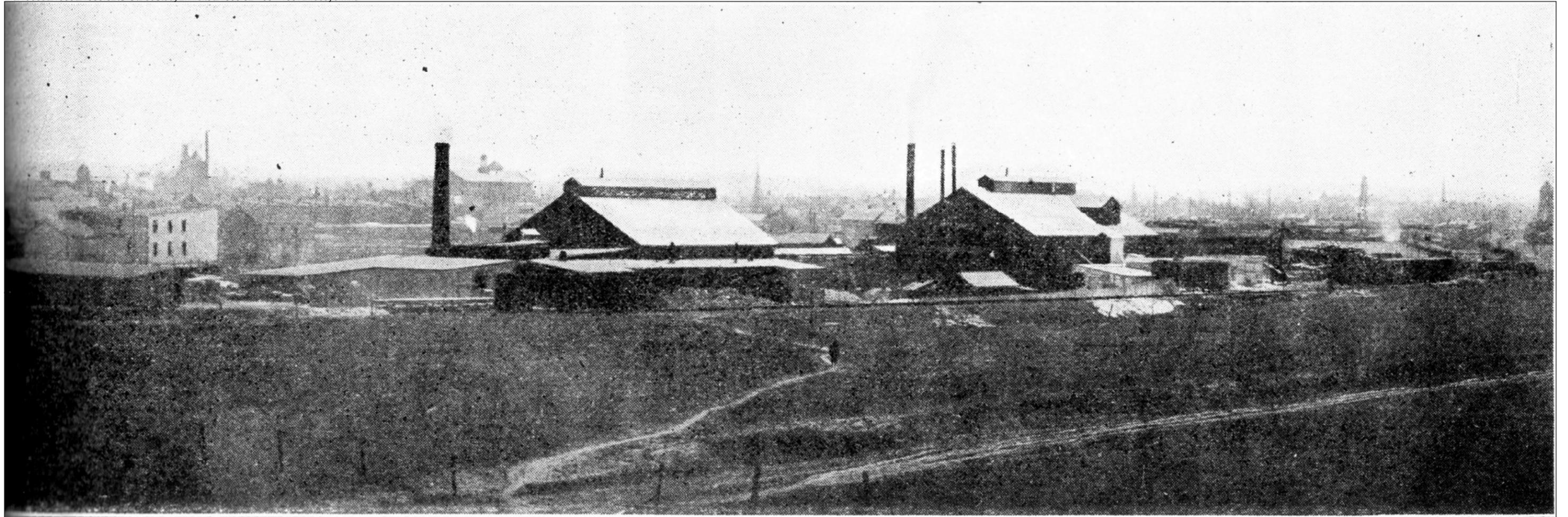
A second circa 1907 photograph shows a lone figure walking up a dirt path toward the Alexandria Glass Company and the Belle Pre Bottle Company (Exhibit 5). Only the main building at the Belle Pre factory with three smokestacks is visible. Numerous sheds or stacked crates are barely discernable to the west and south of the main building. The former tracks of the Alexandria and Washington Railroad (Pennsylvania Railroad) are shown in the foreground along Fayette Street.

In contrast, at least three buildings from the Alexandria Glass Company are clearly seen. The Mt. Vernon Cotton Mill building (located on Washington and Pendleton Streets) is also visible between the smokestack and the main building.



**Circa 1907 Photograph of the Bell Pre Bottle Company  
800 North Henry Street (Madison)  
Archeological Investigations  
WSSI #21509.02**

Image Source: Wedderburn, Alex John 1907  
"Souvenir Virginia Tercentennial of Historic Alexandria, Va.,  
Past and Present, Illustrated." Sprouse Room Rare Book  
Collection, Kate Waller Barrett Branch Library, Alexandria Virginia



BIRDSEYE VIEW OF ALEXANDRIA, SHOWING NORTHWEST SECTION, WITH BELLE PRE GLASS WORKS IN FOREGROUND.

Image Source: Wedderburn, Alex John 1907  
"Souvenir Virginia Tercentennial of Historic Alexandria, Va.,  
Past and Present, Illustrated." Sprouse Room Rare Book  
Collection, Kate Waller Barrett Branch Library, Alexandria Virginia

**Circa 1907 Black and White Aerial**  
**800 North Henry Street (Madison)**  
**Archeological Investigations**  
**WSSI #21509.02**



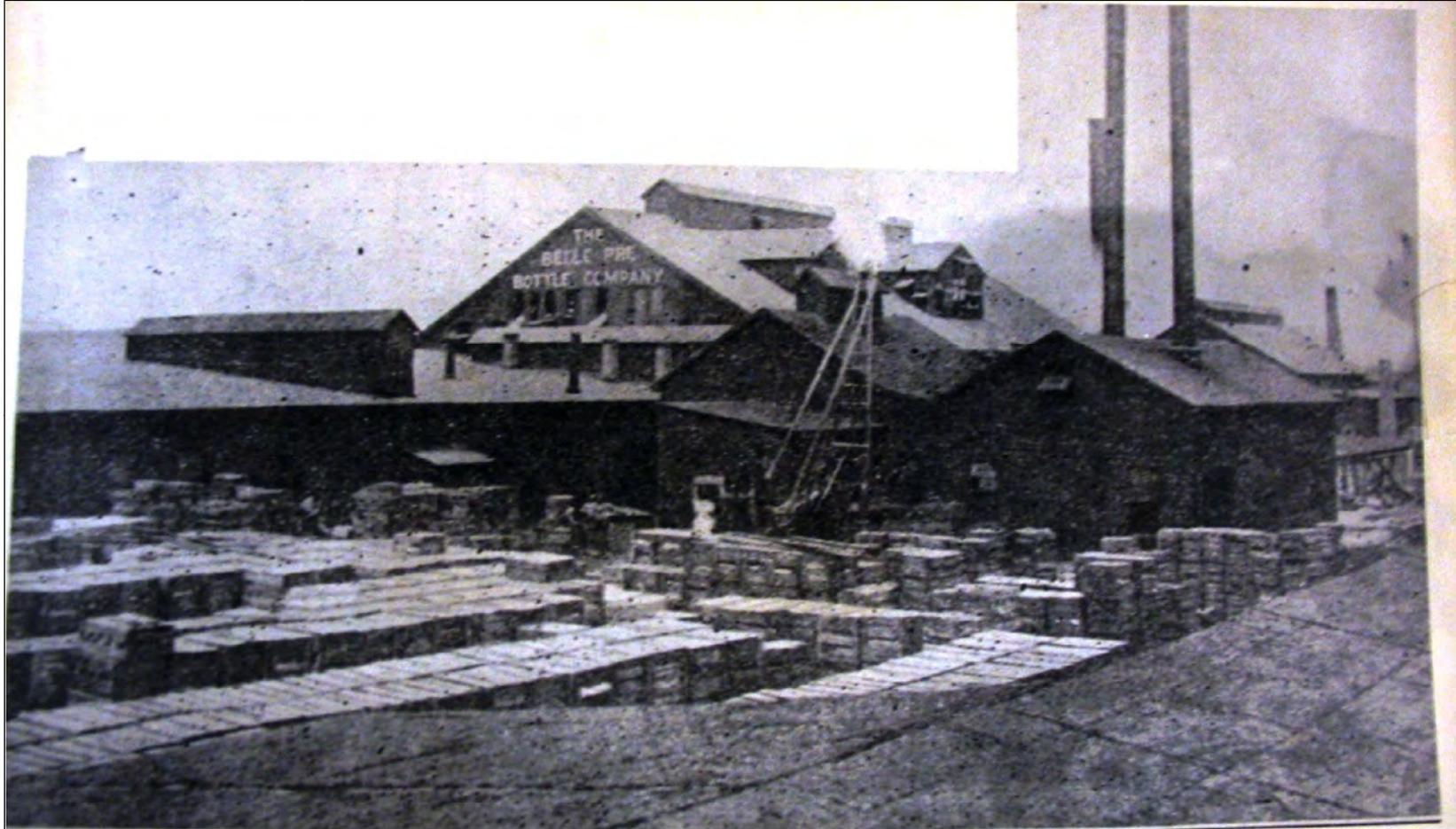
A third photograph shows the main factory building of the Belle Pre Bottle Company with “crated ware” stacked in the southwestern yard (Exhibit 6). Two additional buildings housing the engine/dynamo and the boilers are shown. A small attached shed to the front may be the blacksmith shop that is shown on the 1907 map (see Exhibit 3). The two 50 foot iron stacks can be seen piercing the roof of the boiler room; the third stack is shown in the background. The roofs of the sheds along Henry Street can be seen in the foreground of the picture, suggesting that the photograph may have been taken from the upper story of the house on the corner of the Madison and Henry Streets, across from the factory.

In 1907, the Belle Pre Company drilled a well on the property in order to supply water for the boilers and for other uses in the factory. The well measured six-inches in diameter and reached a depth of 185 feet to the underlying Patuxent sand beds (Sanford 1913: 139). The photograph shows what appears to be the drilling rig (dating this image to 1907). The rig and scaffolding can be clearly seen in front of the engine room/blacksmith shop in the background. It also appears the rig is venting water from the top, which is seen as a white cloud in contrast to the darker roofline of the main factory building.

The Belle Pre Bottle Company declared bankruptcy on October 15, 1912. The company’s real estate and machinery was sold at auction for \$15,000, to F.R. Horner, trustee for the bondholders. The sale was conducted at the plant and was overseen by Captain Robert F. Knox for E.A. Thompson (AG 10 May 1913).

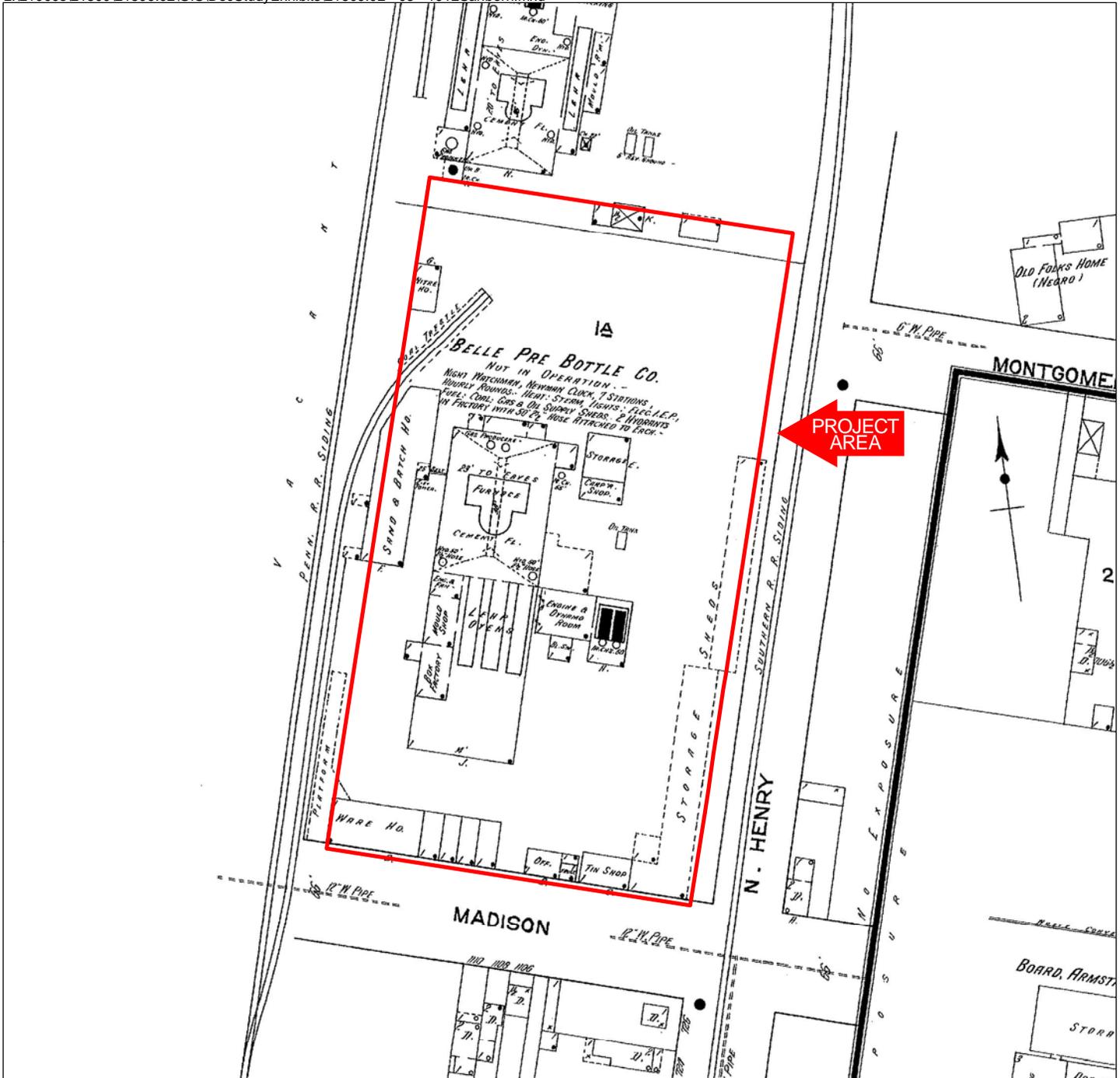
The factory was “not in operation” as noted on the 1912 and 1921 Sanborn<sup>©</sup> Company maps (Exhibit 7 and Exhibit 8); however, no significant changes to the layout of the factory – or in the surrounding neighborhood – are evident on these maps.

The third gas producer and water tower (by the boiler room) may have been inadvertently omitted from the 1912 map, but are shown on the 1921 map (see Exhibit 8). However, in 1921, two elevated, 18 foot high water towers are shown, but the maps indicate that they are not in use. Also by 1921, several of the storage sheds along Madison and North Henry Streets have been removed. Other minor changes between 1912 and 1921 include the description of the furnace floor from “cement” to “earth floor”. Finally, the office located at 1105 Madison Street is now identified as a dwelling, and may have been occupied by the day and night watchman listed on the map notation.

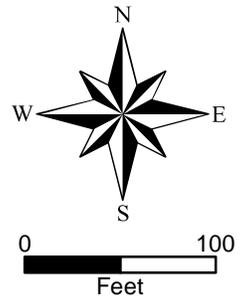


**Circa 1907 Photograph of the Bell Pre Bottle Company  
800 North Henry Street (Madison)  
Archeological Investigations  
WSSI #21509.02**

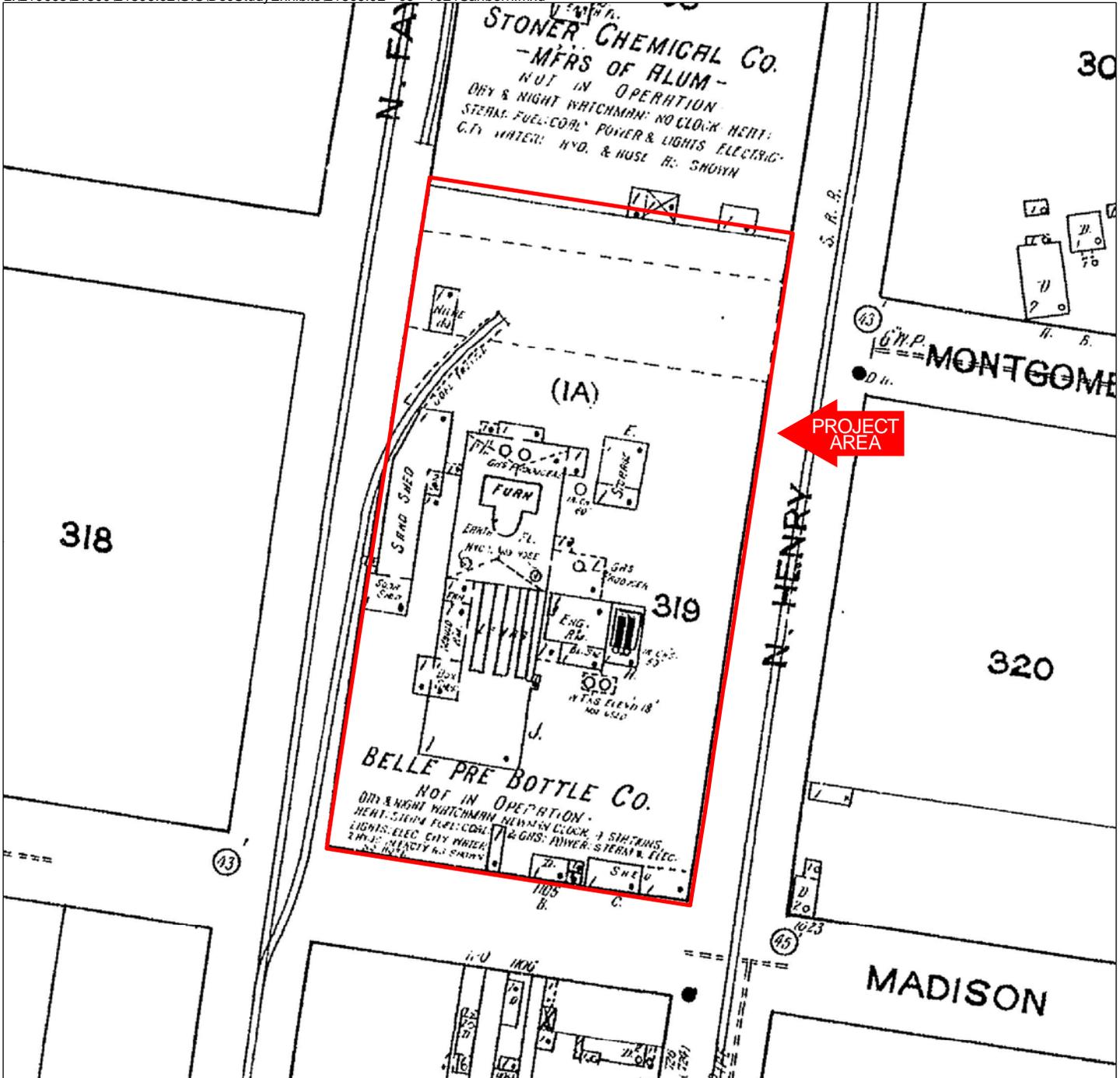
Image Source: Wedderburn, Alex John 1907  
"Souvenir Virginia Tercentennial of Historic Alexandria, Va.,  
Past and Present, Illustrated." Sprouse Room Rare Book  
Collection, Kate Waller Barrett Branch Library, Alexandria Virginia



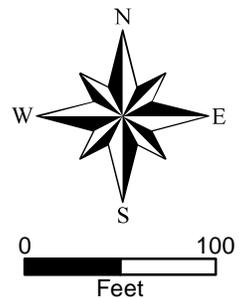
**November 1912 Sanborn Map**  
**800 North Henry Street (Madison)**  
**Archeological Investigations**  
**WSSI #21509.02**  
**Original Scale: 1" = 100'**



Map Source: "Insurance Maps of Alexandria Virginia, November 1912". Sanborn Map Company  
 Obtained from ProQuest Information and Learning's  
 "Digital Sanborn Maps, 1867-1970" catalog.  
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 Original scale: 1"=50'.



November 1921 Sanborn Map  
800 North Henry Street (Madison)  
Archeological Investigations  
WSSI #21509.02  
Original Scale: 1" = 100'



Map Source: "Insurance Maps of Alexandria Virginia, August 1921". Sanborn Map Company  
Obtained from ProQuest Information and Learning's "Digital Sanborn Maps, 1867-1970" catalog.  
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Original scale: 1"=50'.

## FIELD AND LABORATORY METHODS

### Fieldwork

The field methodology for the archeological investigation was specifically defined in the SOW (see Appendix I). All ground-disturbing activities within the project area were monitored or directed by an archeologist, depending upon the extent of hazardous material contamination in a specific area. Generally, the soils across the project area were mechanically removed to subsoil and the interface of the overlying fills with the underlying subsoil was carefully examined for the presence of features. The monitoring work was documented with digital photographs and field notes. Additionally, a project map showing the extent of monitored areas was updated on a daily or weekly basis.

Exploratory backhoe trench excavations were originally proposed across the property. These trenches were designed to further investigate features identified during the demolition monitoring and to investigate the projected location of features identified on historic maps from documentary research. After trenching determined the nature of the soil stratigraphy, all areas with the potential for containing significant cultural resources were to be scraped using a backhoe with smooth-bladed bucket, to the appropriate depth to identify glass factory features. However, Asbestos Containing Materials (ACM), associated with the historic glass factory, were identified during the demolition monitoring; these materials necessitated the removal of all contaminated soils and required a modification to the approved scope of work.

It was determined that although the site may eventually be visually cleared of ACM, further archeological work within the historic glass factory footprint, including trenching and especially any excavation involving screening of dirt for artifact recovery, would not be safe for archeologists – based on discussions with Alexandria Archaeology, an industrial hygienist from APEX, and archeologists from Thunderbird Archeology.

Instead, machine stripping was conducted in portions of the property outside the footprint of the glass factory with a backhoe equipped with a flat-bladed bucket. Representative soil strata column profiles from the stripped areas were drawn and photographed. Additionally, archeological monitoring of the excavation of soils from across the property to the top of sterile subsoil or the limits of proposed construction depths was also conducted.

Features observed within the footprint of the glass factory were photographed. Features identified outside the glass factory foundation were bisected and portions of the feature soils screened. Vertical excavation was by natural soil levels or by arbitrary sublevels if determined necessary by the staff archeologist. All excavated soils were screened through 1/4-inch mesh hardware cloth screens, in areas where full artifact recovery was deemed necessary, and were classified and recorded according to standard pedological designations (A, Ap, B, C, etc.); excepting the terms Fill and Fill horizon, which are used

to describe culturally modified, disturbed or transported sediments and soils. Such use of the terms is consistent with use in standard geomorphological studies and recordation of geo-boring profiles in environmental studies. Soil colors were described using the Munsell Soil Color Chart designations and soil textures were described using the United States Department of Agriculture soil texture triangle. Artifacts were bagged and labeled by unit number and by soil horizon. The work was documented with field notes, sketch plans, and photographs; unless otherwise noted, the graphic representation of the test pits and other features depicted in this report are not to scale and their field location is approximate.

Two 2 by 2 foot and one 3 by 3 foot test units were hand excavated to investigate potentially significant archeological features and/or buried ground surfaces that were identified during the archeological monitoring. Each test unit was given a number, and vertical excavation was by natural horizons or by cultural levels, as warranted. All soils were screened through 1/4 inch mesh hardware cloth.

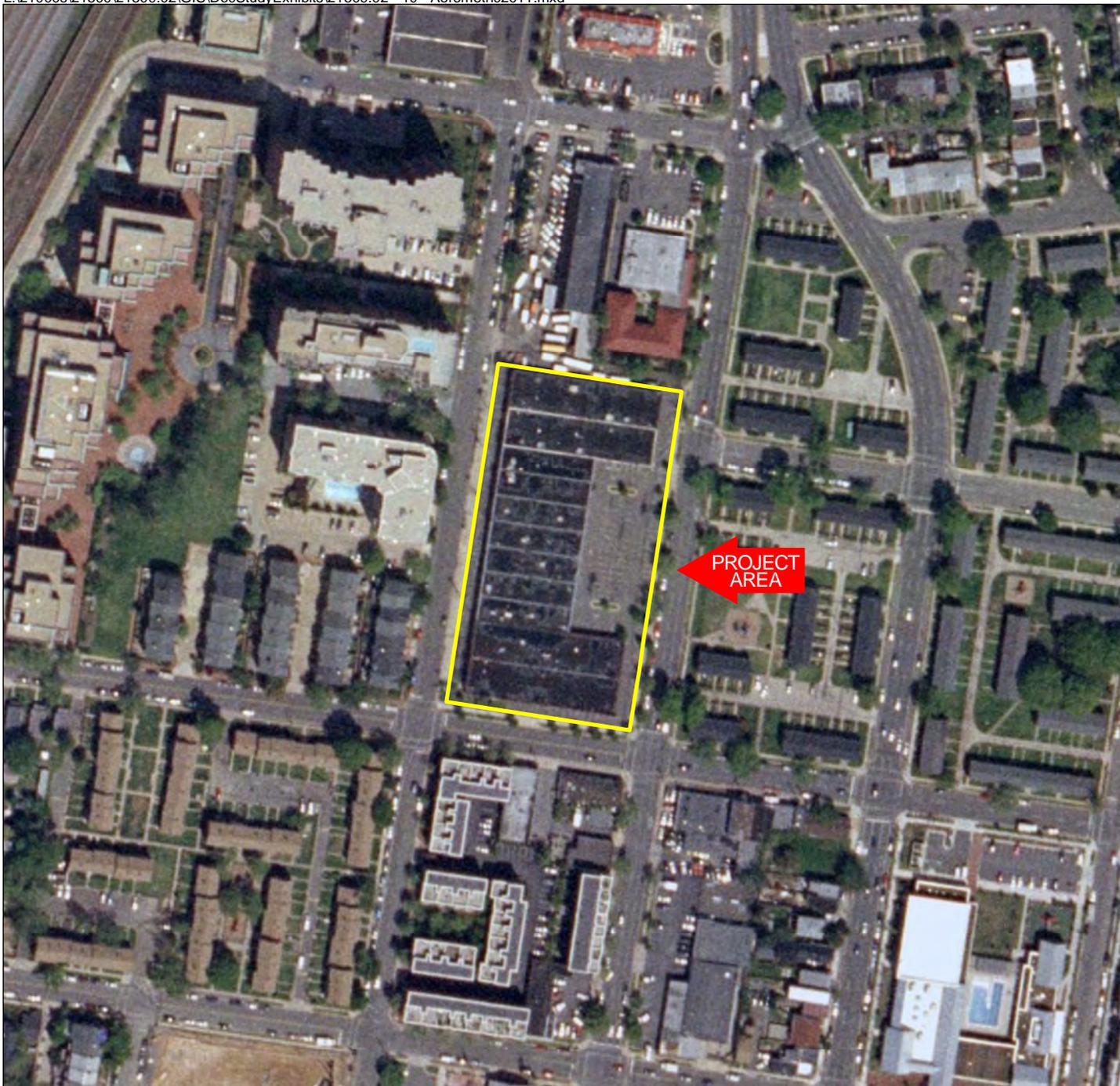
### **Laboratory**

All recovered artifacts were cleaned, inventoried, and curated in accordance with the guidelines set forth in the City of Alexandria Archaeological Standards. Historic artifacts were separated into four basic categories: glass, metal, ceramics, and miscellaneous. The ceramics were identified by ware type, method of decoration, and separated into established types following South (1977), Miller (1992) and Magid (1990). All glass was examined for color, method of manufacture, function, etc., and dated primarily on the basis of method of manufacture when the method could be determined (Hurst 1990). Metal and miscellaneous artifacts were generally described; the determination of a beginning date for these artifacts is sometimes possible, as in the case of nails.

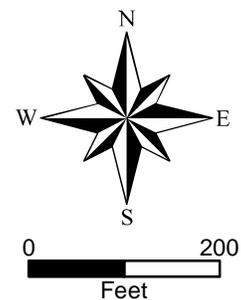
### **RESULTS OF ARCHEOLOGICAL FIELDWORK: SITE 44AX0215**

The archeological work consisted of demolition monitoring of the circa 1955 warehouse concrete slab, foundation and footers, and general excavation monitoring across the entire property (Exhibit 9; Plate 1 and Plate 2). In addition, as the proposed exploratory trenching was not possible, Alexandria Archaeology required machine stripping of soils around a brick foundation (Feature 4) located in the southern portion of the city block.

At least twenty features representing the remains of the Belle Pre Glass factory were identified beneath the footprint of the ca. 1955 warehouse (Table 4); these were recorded as site 44AX0215 (Exhibit 10). The site spans the entire city block between Madison, North Henry, Montgomery, and North Fayette Streets, which is based on the historic extent of the factory, as well as the subsurface remnants of brick foundations, walls, floors, flues, and other cultural features.



**April 2011 Natural Color Imagery  
800 North Henry Street (Madison)  
Archeological Investigations  
WSSI #21509.02  
Original Scale: 1" = 200'**



Aerial Source: Wetland Studies and Solutions, Inc.

**Thunderbird Archeology**  
A Division of Wetland Studies and Solutions, Inc.

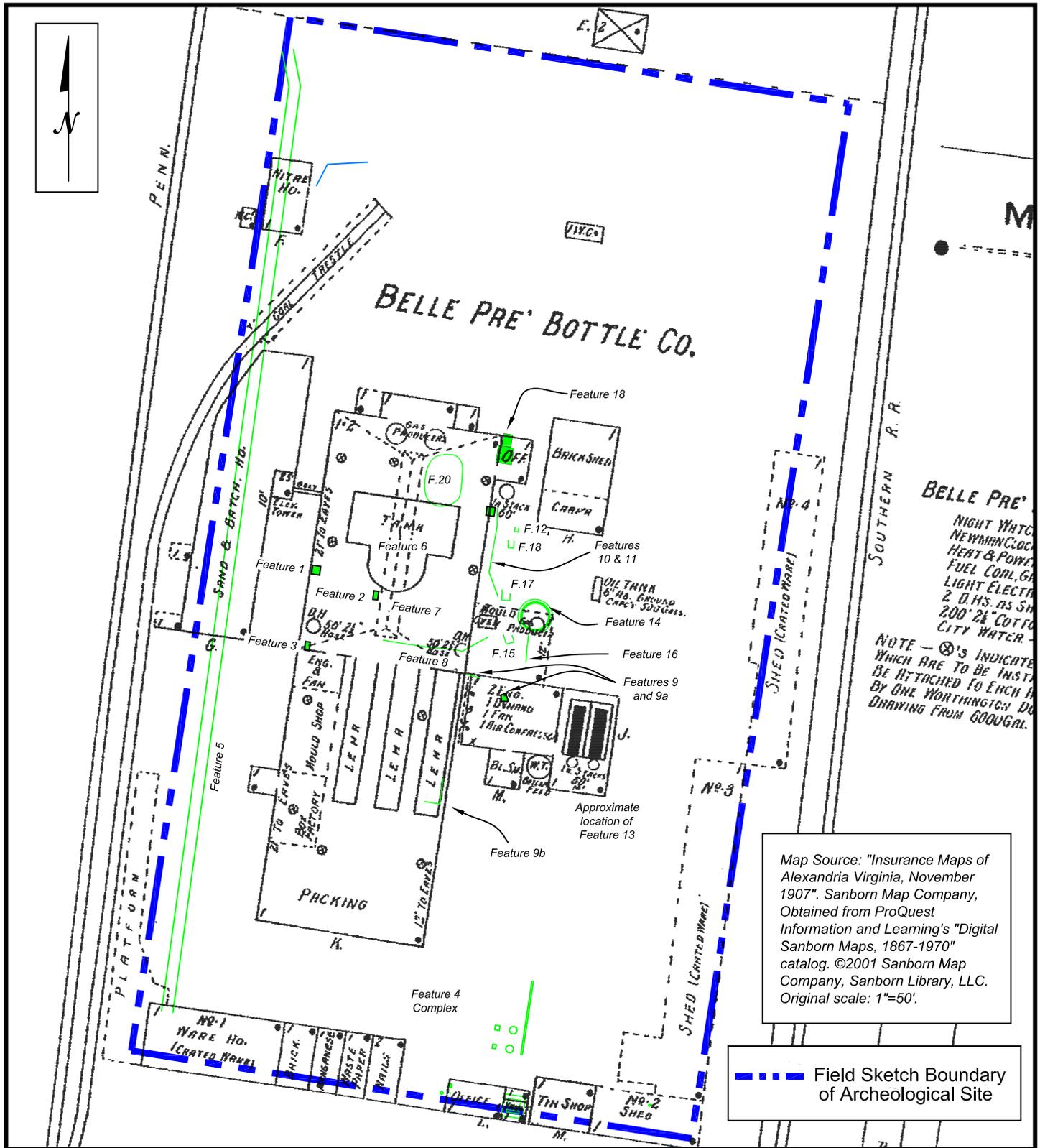
**Exhibit 9**



**Plate 1: Overview of Concrete Slab Foundation of Demolished Warehouse  
Looking North Along N. Fayette Street**



**Plate 2: General View of Demolition Monitoring  
Facing South**

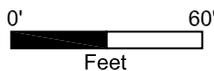


**Map of Site 44AX0215 with 1907 Sanborn Map Overlay**

**800 North Henry Street (Madison)**

**WSSI #21509.02**

**Scale: 1" = 60'**



**Table 2: List of Features**

<b>Feature</b>	<b>Description</b>
<b>Feature 1</b>	Brick pier
<b>Feature 2</b>	Brick foundation/wall remnants
<b>Feature 3</b>	Concrete floor, pipe, brick walls
<b>Feature 4</b>	Brick foundation (vault)
<b>Feature 5</b>	Railroad tracks
<b>Feature 6</b>	Brick foundations/walls and brick floor remnants
<b>Feature 7</b>	Ventilation features
<b>Feature 8</b>	Brick flue
<b>Feature 9a</b>	Brick foundation/wall remnants
<b>Feature 9a</b>	Brick junction box with ferrous metal lid
<b>Feature 9a</b>	Brick foundation corner
<b>Feature 10</b>	Brick pier
<b>Feature 11</b>	Brick flue
<b>Feature 12</b>	Brick furnace/gas vent?
<b>Feature 13</b>	Concrete blocks- possible foundation (not in situ)
<b>Feature 14</b>	Gas producer
<b>Feature 15</b>	Brick furnace – or ventilation feature?
<b>Feature 16</b>	Possible pipe trench
<b>Feature 17</b>	Brick furnace – or ventilation feature?
<b>Feature 18</b>	Brick furnace – or ventilation feature?
<b>Feature 19</b>	Brick furnace/oven
<b>Feature 20</b>	Brick floor

**Results of Footer Demolition Monitoring**

The architectural plans for the 1955 building showed that the concrete slab warehouse floor was resting on 0.5 feet of gravel and fill, and was secured by piers and concrete footings sunk 1.5 feet below the fill. The demolition monitoring revealed that the partition for each of the building’s 11 bays extended below ground surface. Rather than pier supports, each bay was resting on a continuous cinderblock foundation, one course in width (Plate 3 and Plate 4). The cinderblock foundations were anchored within concrete footers that measured approximately 2 feet in width and 1.5 feet high.

The footers were sunk into the underlying subsoil, which increased in depth from south to north across the property. Subsoil was exposed at 2-3 feet below the surface near Madison Street in the southern portion of the project area (Plate 5). Toward the center of the property, the concrete footers were observed resting in subsoil at depths of roughly 7-8 feet below surface (Plate 6). Finally, the footers extended to a depth of approximately eleven (11+) feet below the surface within the northern end of the property (Plate 7).



**Plate 3: Continuous Cinderblock Foundation Separating Bays  
View to the East**



**Plate 4: Excavation of Continuous Cinderblock Foundation  
View to the South**



**Plate 5: Footer Excavation in Southern End of Project Area**



**Plate 6: Footer Excavation in Central Portion of Project Area**



**Plate 7: Footer Excavation in Northern End of Project Area  
Showing Seep Fill Horizons (11+ feet)**

The uppermost fill overburden within the northern end was primarily an orange-brown sandy fill with small pebbles and cobbles. This was overlying an extremely dark black soil with a strong unpleasant petroleum odor, located near the base of the cinderblock foundation. The concrete footers appeared to be resting within marine clay. No archeological features associated with the Belle Pre glass factory were observed in the northern portion of the project area.

### *Features 1-5*

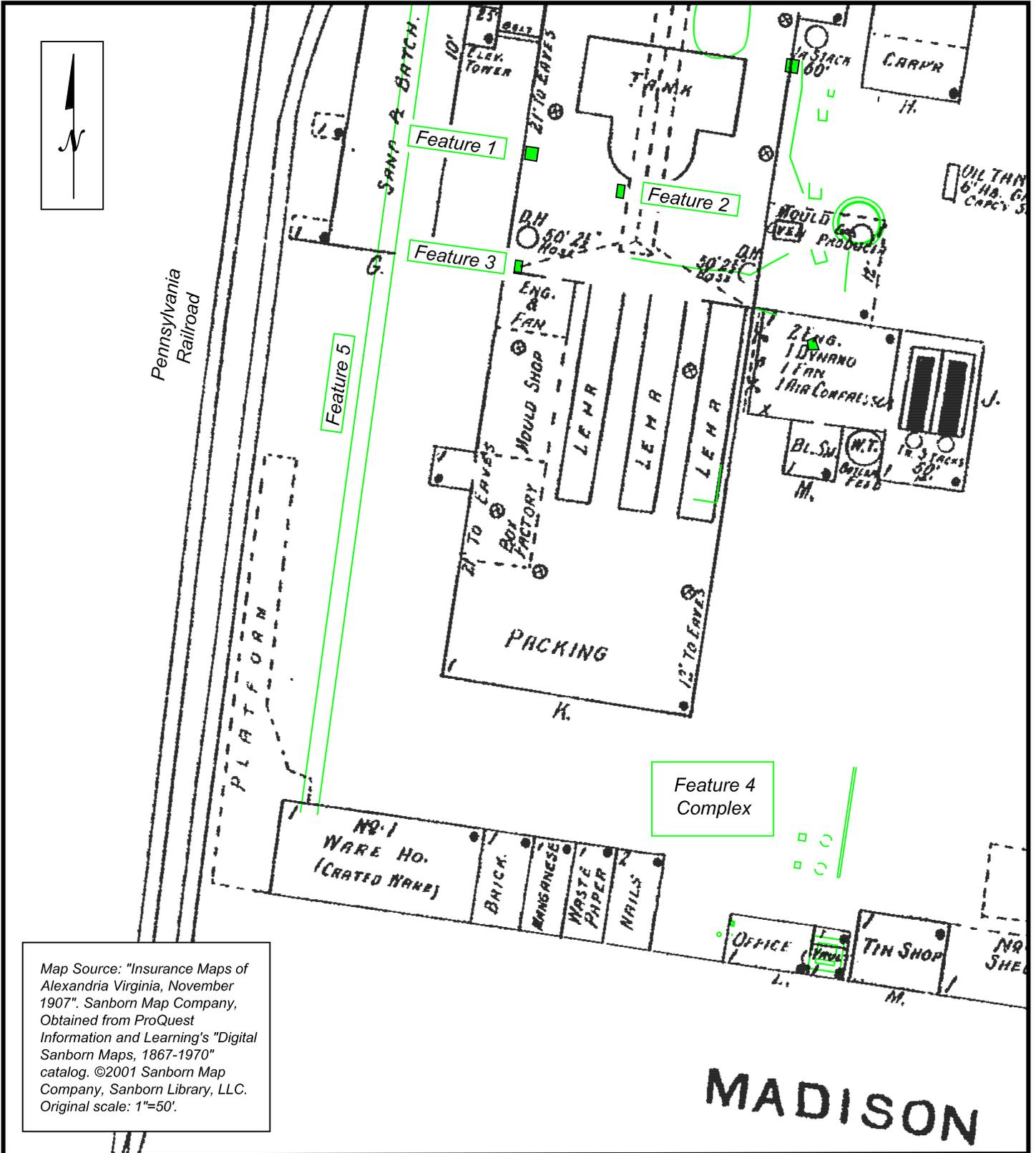
Several cultural features associated with the historic glass factory were observed during the footer demolition (Exhibit 11). A brick pier, designated Feature 1, was located within a footer demolition trench near the western edge of the former warehouse building (Plate 8 and Plate 9). The pier measured three feet square at the top and the three lowest courses were stepped out in pyramid fashion.

The remnants of the glass factory foundation were apparently not removed prior to the 1955 construction of the building, as the demolition excavation showed that the concrete footers has been poured over/on top of the older brick foundations (Plate 10). A brick foundation remnant (Feature 2) was located approximately 25 feet east of Feature 1 (see Exhibit 11).

Feature 3 was located in the footer demolition trench 30 feet south of Features 1 and 2 (see Exhibit 11) and consisted of a portion of a concrete floor, the remains of a north/south oriented brick wall, and an associated iron pipe (Plate 11).

Feature 4 was the remnant of brick foundation located at the southern end of the property, along Madison Street (Plate 12). The feature was more thoroughly investigated at a later stage in the monitoring and is discussed later in this report.

Finally, an abandoned rail line roughly paralleling the rear of the demolished 1955 warehouse was designated Feature 5 (Plate 13). These rails are in the approximate location of a turnout into the former glass factory from the Pennsylvania Railroad tracks along N. Fayette Street, as shown on the Sanborn maps; however, the northern end of the rails turned to the west rather than the east (see Exhibit 10). The tracks were carefully removed under supervision of an archeological monitor.

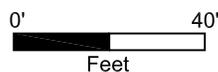


Map Source: "Insurance Maps of Alexandria Virginia, November 1907". Sanborn Map Company, Obtained from ProQuest Information and Learning's "Digital Sanborn Maps, 1867-1970" catalog. ©2001 Sanborn Map Company, Sanborn Library, LLC. Original scale: 1"=50'.

**Detail of Features 1-5 on 1907 Sanborn Map Overlay  
800 North Henry Street (Madison)**

**WSSI #21509.02**

**Scale: 1" = 40'**





**Plate 8: Brick Pier Exposed in Floor of Footer Demolition Trench**



**Plate 9: Detail of Feature 1 (Brick Pier)**



**Plate 10: Feature 2 (in Profile)  
View to the Southeast**



**Plate 11: Overview of Feature 3  
View to the East**



**Plate 12: Feature 4 (Brick Foundation)  
View to the South**



**Plate 13: Overview of Feature 5 (Rails)  
Facing North Along N. Fayette Street**

## Results of Abatement/General Monitoring

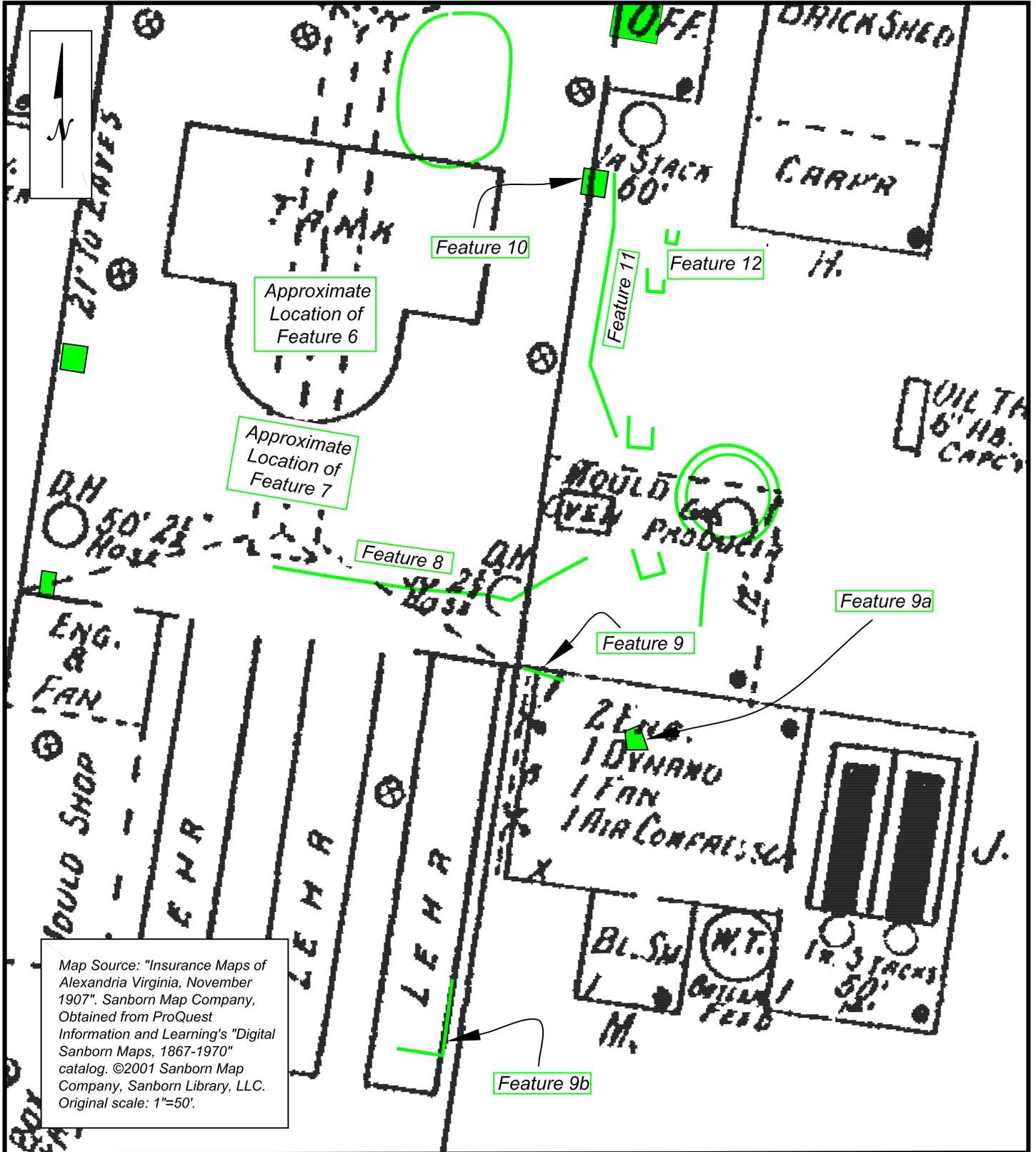
In addition to Features 1-3, Asbestos Containing Materials (ACM), presumably associated with the Belle Pre Bottle glass factory, were identified during the removal of the foundation footers in the central portion of the project area. The ACM soils were removed from the site and disposed of in an appropriate facility. Thunderbird staff archeologists were not present during most of the abatement as the conditions were not safe. However, in a meeting with Alexandria Archaeology, Allen Haddock of LVI Demolition, Inc. agreed to photo-document any brick foundations or features encountered. When conditions were considered safe, Thunderbird staff conducted site visits to photograph and map the locations of these features (Exhibit 12).

### *Feature 6*

The contaminated area covered the majority of the main Belle Pre factory building, including the main furnace area and lehr ovens (see Exhibit 12). As stated previously, Mr. Haddock photographed any features he observed in these areas during the excavation. He observed brick rubble piles in the former locations of intact features (Plate 14 and Plate 15). Feature 6 was assigned to all features exposed in the approximate location of the furnace. Thunderbird archeologists took a brief opportunity (when safe) to observe and photograph what appeared to be a brick floor (Plate 16 and Plate 17) and the remnants of several brick walls, which were also exposed in profile along the southern edge of the excavation (Plate 18, Plate 19, and Plate 20). One large articulated brick and cement “chunk” had been removed from this area (Plate 21). Finally, a slightly arched brick feature was apparent in the southern wall profile (Plate 22). This feature may have been part of the flue uncovered at a later time (Feature 8).

### *Feature 7*

Several circular vents were visible across the ground surface directly south of this first excavation block (Plate 23 and Plate 24). Most of the holes appeared to be ferrous metal chimney vents (Plate 25) and may be similar to those depicted in the “Night Scene in an Indianapolis Glass Works” (Plate 26). The vents were designated Feature 7.



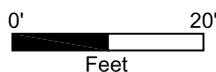
Map Source: "Insurance Maps of Alexandria Virginia, November 1907". Sanborn Map Company, Obtained from ProQuest Information and Learning's "Digital Sanborn Maps, 1867-1970" catalog. ©2001 Sanborn Map Company, Sanborn Library, LLC. Original scale: 1"=50'.

**Detail of Features 6-12 on 1907 Sanborn Map Overlay**

**800 North Henry Street (Madison)**

**WSSI #21509.02**

**Scale: 1" = 20'**





**Plate 14: Brick Features Observed During ACM Abatement  
View to the Southeast (Photo Courtesy of Allen Haddock, LVI)**



**Plate 15: Brick Pile Observed During ACM Abatement  
View to the Southeast (Photo Courtesy of Allen Haddock, LVI)**



**Plate 16: Vicinity of Furnace, Base of ACM Abatement Excavation  
View to the North**



**Plate 17: Vicinity of Furnace, Base of ACM Abatement Excavation  
View to the Southeast**



**Plate 18: Brick Floor/Foundation Exposed in Excavation Wall  
View to the Southeast**



**Plate 19: Detail of Brick Wall Exposed in Excavation Wall  
View to the South**



**Plate 20: Detail of Brick Wall Exposed in Excavation Wall  
View to the South**



**Plate 21: Large Brick “Chunk” Removed From Furnace Vicinity  
View to the East**



**Plate 22: Detail of Arched Brick Feature Exposed in Northern Excavation Wall  
View to the North**



**Plate 23: Overview of Ventilation Shafts (in Foreground)  
South of Furnace Area, View to the North**



**Plate 24: Overview of Ventilation Shafts South of Furnace Area  
View to the Northeast**



**Plate 25: Detail of Ventilation Shaft**



**Plate 26: Night Scene in an Indianapolis Glass Works**  
**Location Indianapolis, Indiana**  
**Photographer: Lewis Hines, 1908.**  
**Photo Source: Library of Congress**  
<http://www.loc.gov/pictures/resource/nclc.01167/>

### *Feature 8*

Feature 8 was identified as an approximately 3 foot wide arched brick flue located in the central portion of the site, about 30 feet east of Feature 2 (Plate 27, Plate 28, and Plate 29). The top of the flue was exposed, then was surveyed located using a Thales Mobile Mapper CE Handheld GPS receiver. The exposed portion of the feature extended approximately 50 feet and was oriented generally east/west; rising at least 1-2 feet in elevation toward the east. Toward the eastern end of the exposed portion of the flue, the feature angled northeast at a roughly 45 degree angle and extended for another 10 feet (Plate 30).

### *Feature 9*

Just south of the bend in Feature 8, a brick foundation/wall was also uncovered. The foundation was adjacent to the 1950s cinderblock footer and was heavily damaged (Plate 31). The foundation, designated Feature 9, measured approximately five feet in width and was 2.5 feet in depth (Plate 32). Further exploration of the remainder of feature was not possible during the abatement.

### *Feature 9a*

A small brick junction box was also located in this vicinity, approximately 10 feet southeast of Feature 9. The brick box, or Feature 9a, measured two feet square and may have been covered with a small square of sheet metal that was located nearby (Plate 33). Two metal pipes (three inch diameter) originated from the eastern and southern sides of the box, and an opening for a 4-5 inch diameter pipe was located on the northern side (Plate 34).

### *Feature 9b*

Finally, a corner of a brick foundation was exposed in the south-central section of the site, in the approximate location of the lehr ovens. The southern wall extended 7.6 feet from the inside corner and was 1.4 feet wide (Plate 35 and Plate 36). The western end of this foundation terminated in a clean break. The eastern wall extended 10-12 feet toward Feature 8. The foundation consisted of only one brick layer.



**Plate 27: Overview of Feature 8  
View to the Southwest**



**Plate 28: Detail of Feature 8  
View to the Southwest**



**Plate 29: Detail of Feature 8  
Facing West**



**Plate 30: Overview of Feature 8  
Facing East**



**Plate 31: Feature 8 (in foreground) and Feature 9  
Facing South**



**Plate 32: Detail of Feature 9**



**Plate 33: Overview of Feature 9a with Sheet Metal Lid  
View to the South**



**Plate 34: Detail of Feature 9a  
Facing Southwest**



**Plate 35: Overview of Feature 9b  
Facing East**



**Plate 36: Overview of Feature 9b  
Looking West**

### *Feature 10*

Feature 10 was a brick pier located approximately 50 feet north of Feature 7 and abutting Feature 11 (Plate 37). The brick pier was of similar size and construction as Feature 1 and measured about 3.9 feet square at its base, 2.2 feet square at the top and eight courses high (2.5 feet). The lowest five courses were stepped out in pyramid fashion. A builder's trench was evident in profile along the feature's northern edge (Plate 38). The builder's trench was intrusive into the subsoil, but also cut through a possible buried plowed horizon. An intrusive ferrous metal utility pipe and trench to were also observed along the northern end of the profile.

### *Feature 11*

A second flue was located to the north of Feature 7, but was oriented north/south (Plate 39 and see Plate 32). This flue, designated Feature 11, was three feet wide and extended approximately 28 feet to the south before turning to the southeast for an additional eleven feet. The exposed portion of the flue was approximately 50 feet in length and rose in elevation at least 1-2 feet as it extended southward (Plate 40). Only the top of the feature was exposed and was mapped with GPS Thales Mobile Mapper CE Handheld GPS receiver (Plate 41 and Plate 42). The flue changed direction and angled northeast at a roughly 45 degree angle for another ten feet into unexcavated areas.

### *Feature 12*

Feature 12 was located approximately 10-15 feet east of Feature 11 and was adjacent to the 1950s concrete foundation (Plate 43). The feature measured roughly one foot in width and was 2.5 feet high. A ferrous metal pipe junction or valve was located within the feature (Plate 44). The feature is similar in appearance to a feature depicted along the right-hand side of the historic photograph from the Indianapolis Glass Works (see Plate 26).



**Plate 37: Feature 10 and 11  
View to the North**



**Plate 38: Northern Profile of Feature 10**



**Plate 39: Feature 11, After Removal of 1950s Foundation/Footer  
View to the South**



**Plate 40: Extent of Exposed Top Portion of Feature 11  
Facing South**



**Plate 41: GPS Survey Location of Feature 11  
View to the Northwest**



**Plate 42: GPS Survey Location of Feature 10  
View to the Northwest**



**Plate 43: Feature 12  
Facing South**



**Plate 44: Pipe Junction/Valve Found in Association with Feature 12**

### *Feature 13*

Several large concrete blocks were observed at they were removed from the vicinity of the boiler room, as shown on the 1907 Sanborn© map (Plate 45 and see Exhibit 5 and Exhibit 13). The four large concrete blocks measured roughly five feet square and may have been the foundations for the two horizontal boilers.

### *Features 14 and 16*

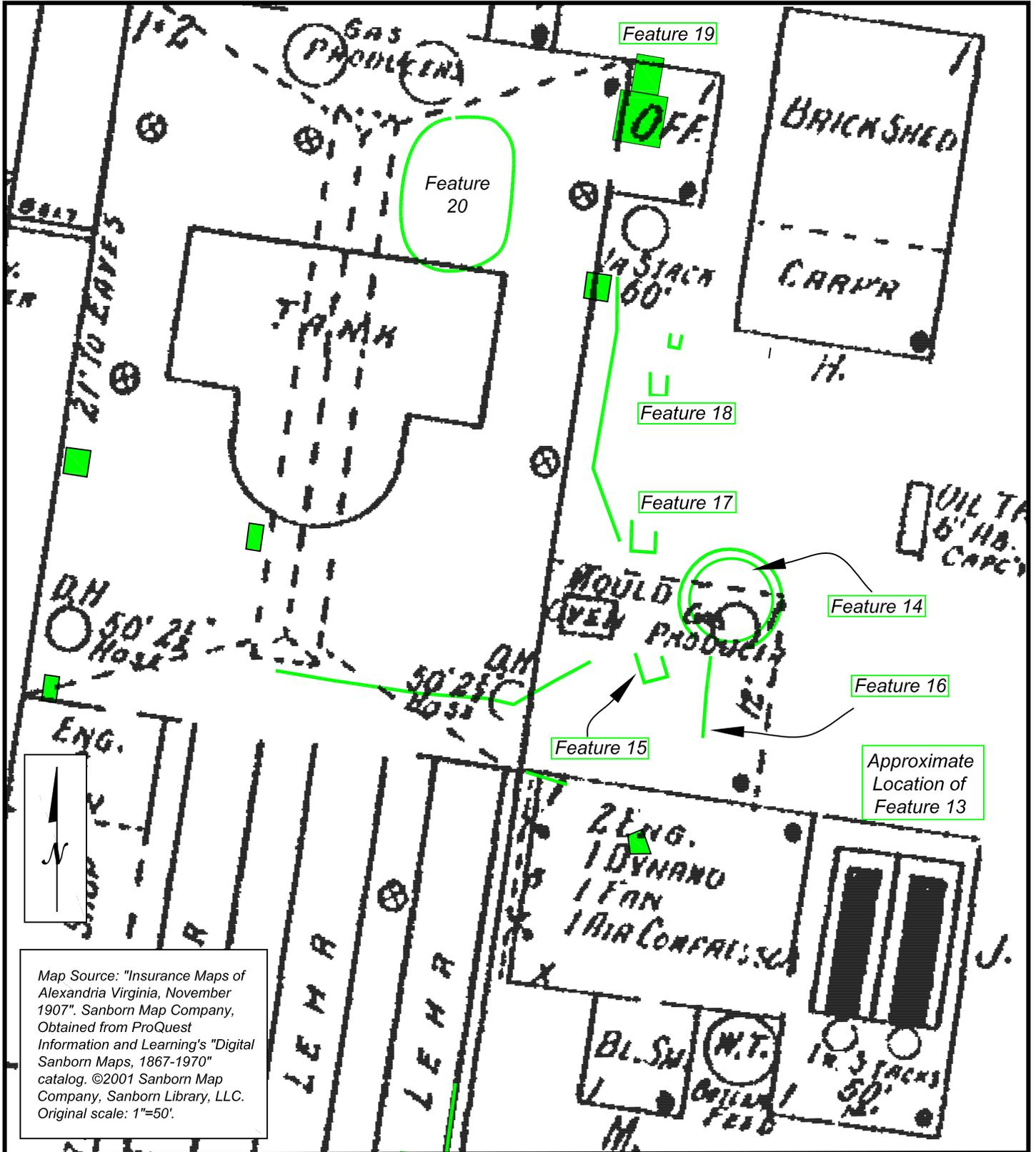
Feature 14 was a large circular brick feature exposed using a combination of machine and hand excavation, and located within the east-central portion of the site. The 1907 Sanborn© map shows a gas producer in the approximate area of this feature (see Exhibit 13). According to the Virginia Glass Company study, gas producers were iron tanks lined with refractory bricks, which were connected to the furnace ventilation system (Pfanstiehl et. al 1999:8-10).

Feature 14 measured 15.7 feet in diameter and consisted of a one foot thick mortared brick wall surrounding an interior brick floor that gently sloped 2 ½ feet toward a central depression (Plate 46 and Plate 47). The center, assumed to measure 12.2 feet in diameter, extended approximately 1.5-2 feet below the brick floor (Plate 48). Feature 14 was filled with dark fill soil which contained large amounts of refuse, including bottle glass, brick rubble and bone. Groundwater seeping into the feature precluded further hand excavation; however, machine excavation revealed the depth of the feature to be at least two feet deep. The base of the feature appeared to be smoothed with mortar.

A linear stain, designated Feature 16, was observed across the subsoil to the south of Feature 14 (Plate 49). The stain measured roughly 1.5 feet wide and extended southward for at least 10 feet. The feature was not investigated further; however, a 4" ferrous pipe was found earlier in this vicinity and may have been associated with this feature.

### *Feature 15*

The remnant of a small oven or furnace was located five feet southwest of Feature 14 (see Exhibit 13). The remaining portion of Feature 15 (the northern portion had been destroyed) was constructed of bricks measured 4.5 by 4 feet in width and was 1.6 feet deep (Plate 50 and Plate 51). The soil under the feature and immediately to the west was heat altered - colored bright red and black. The base of the feature appeared to be resting on white/tan builder's sand. Artifacts were noted within black fill soil, including small bones, glass fragments, and metal fragments.

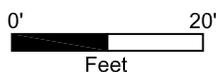


Detail of Features 13-20 on 1907 Sanborn Map Overlay

800 North Henry Street (Madison)

WSSI #21509.02

Scale: 1" = 20'





**Plate 45: Feature 13 Concrete Footers - Approximate Location of Boiler Room  
View to the North**



**Plate 46: Overview of Feature 14  
Facing East**



**Plate 47: Overview of Feature 14 and Feature 15 (Upper Right Corner)**



**Plate 48: Detail of Feature 14**



**Plate 49: Feature 16 in Association with Feature 14**



**Plate 50: Southern Profile of Feature 15**



**Plate 51: Plan of Feature 15  
Facing West**

### *Feature 17*

Another second partial small oven or furnace brick was located approximately 10 feet northwest of Feature 14 (see Exhibit 13). This feature (Feature 17) was similar in size and shape to Feature 15 (Plate 52). The northern end of Feature 17 had also been disturbed/ destroyed. Features 15 and 17 appeared to be generally aligned in the same direction but oriented at slightly different angles.

### *Feature 18*

A third brick rectangular feature was located north of Feature 17 (see Exhibit 13). Feature 18 contained a ferrous metal pipe lying horizontally, and was filled with ashy, contaminated soils (Plate 53). The feature appeared to extend to the north toward Feature 18. The contaminated section of this feature was photographed but not investigated further.

### *Feature 19*

Feature 19 was located approximately 60 feet to the north of Feature 14 (see Exhibit 13). This brick feature measured 11 by 7.5 feet and was divided into 2 sections (Plate 54). A 1 ½ foot wide brick arched flue, was located across the center of feature (Plate 55). The southern end of the flue had disintegrated into brick dust, and the northern end terminated at a ferrous metal plate/grate, which separated the two sections of the feature (Plate 56). The northern, smaller end measured 4 by 5.5 feet and was constructed of one foot wide brick walls on three sides. Each corner of the larger, 7 by 7.5 feet southern half was reinforced with one-inch thick iron rebar, which was anchored vertically into the bricks (Plate 57). In profile, the feature extended approximately nine feet below the exposed surface and appeared to be a solid brick foundation (Plate 58 and Plate 59).

A brick foundation wall extended off the southwest corner of Feature 19 toward the south and may have been a continuation of Feature 18.

### *Feature 20*

A remnant of a brick floor was located approximately 50 feet southwest of Feature 17 (see Exhibit 13). The exposed portion measured roughly 20 by 15 feet and the eastern side appeared extend to the edge of the floor (Plate 60). This area was heavily contaminated and was not investigated further.



**Plate 52: Overview of Features 14-16  
Feature 16 (foreground), Feature 14 (on left) and  
Feature 15 (background), View the South**



**Plate 53: Feature 18  
View to the North**



**Plate 54: Plan View of Feature 19  
View to the East**



**Plate 55: Detail of Arched Flue – Feature 19  
Facing South**



**Plate 56: Detail of Arched Flue and Metal Grate – Feature 19  
Facing North**



**Plate 57: Plan View of Feature 19  
View to the East**



**Plate 58: Feature 19 South Bisection  
View to the North**



**Plate 59: Feature 19 West Profile**



**Plate 60: Feature 20, Brick Floor  
View to the North**

## Results of Machine Stripping Around Feature 4

Because of the risk of ACM contamination, the exploratory backhoe trenches across the entire site were not excavated; however, the scope of work was modified (in consultation with Alexandria Archaeology) to include mechanical excavation around Feature 4. The purpose of the machine stripping was to identify any additional features associated with the buildings shown on the Sanborn<sup>®</sup> fire insurance maps in this area. Any buried surfaces or features located within this testing area would be then evaluated as to their significance.

### *Feature 4*

Feature 4 was a brick and concrete foundation that was identified during the footer demolition monitoring and was situated three-feet north of the existing Madison Street sidewalk (see Exhibit 11). The foundation walls were one foot wide and formed an enclosed structure that measured roughly nine-feet square (Plate 61 and Plate 62). The feature was divided into two sections by a central foundation wall. Feature 4 was located in the vicinity of the former office for the Belle Pre Factory and was specifically identified on the Sanborn<sup>®</sup> fire insurance maps as a “vault” (Exhibit 14).

A 3 by 3 foot test unit was excavated adjacent to the southwestern corner of Feature 4 in order to examine the stratigraphy, as no builder’s trench was apparent, and to determine the depth of the foundation (see Exhibit 14). The fill overburden was removed by the backhoe but the underlying soils were hand excavated. Three soil horizons were observed in the southern profile of TU 3 (Exhibit 15 and Plate 63).

### **Test Unit 3 South Profile**

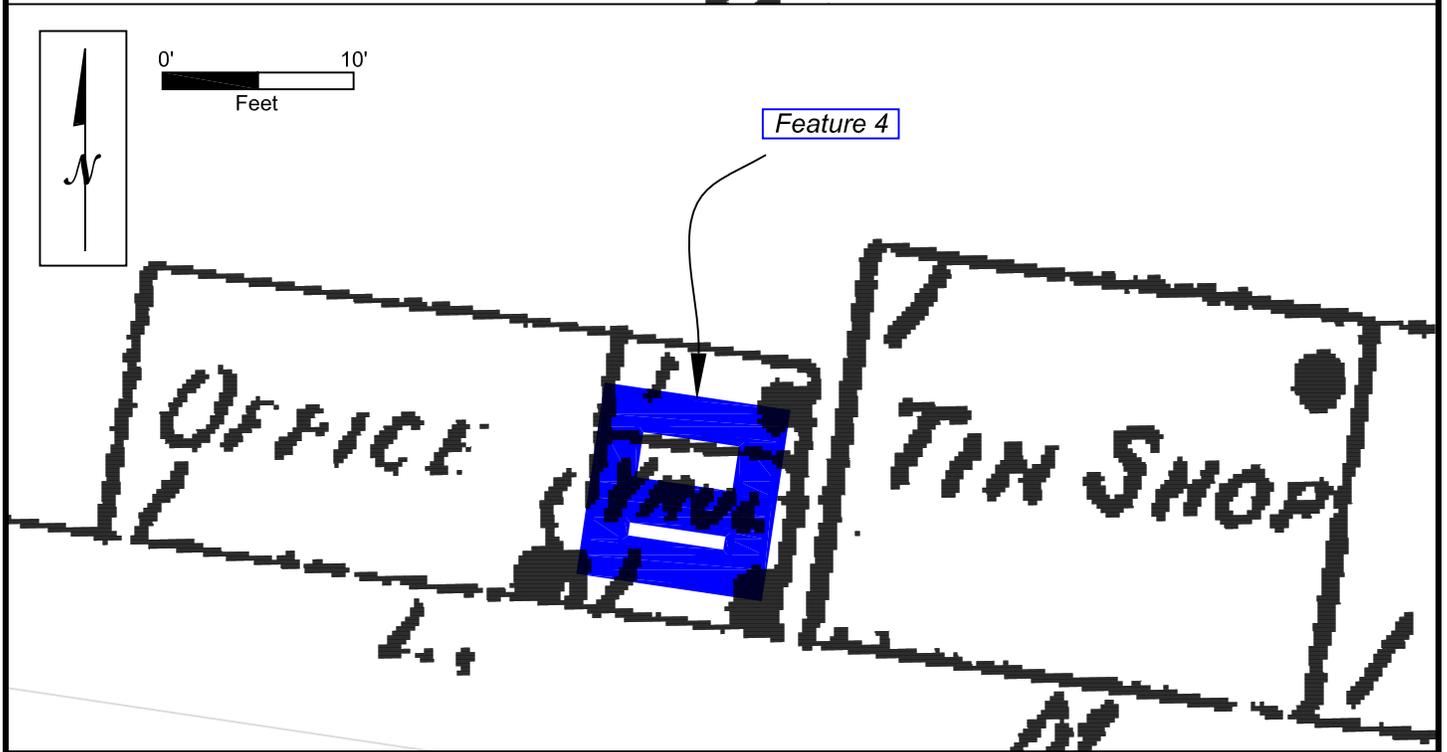
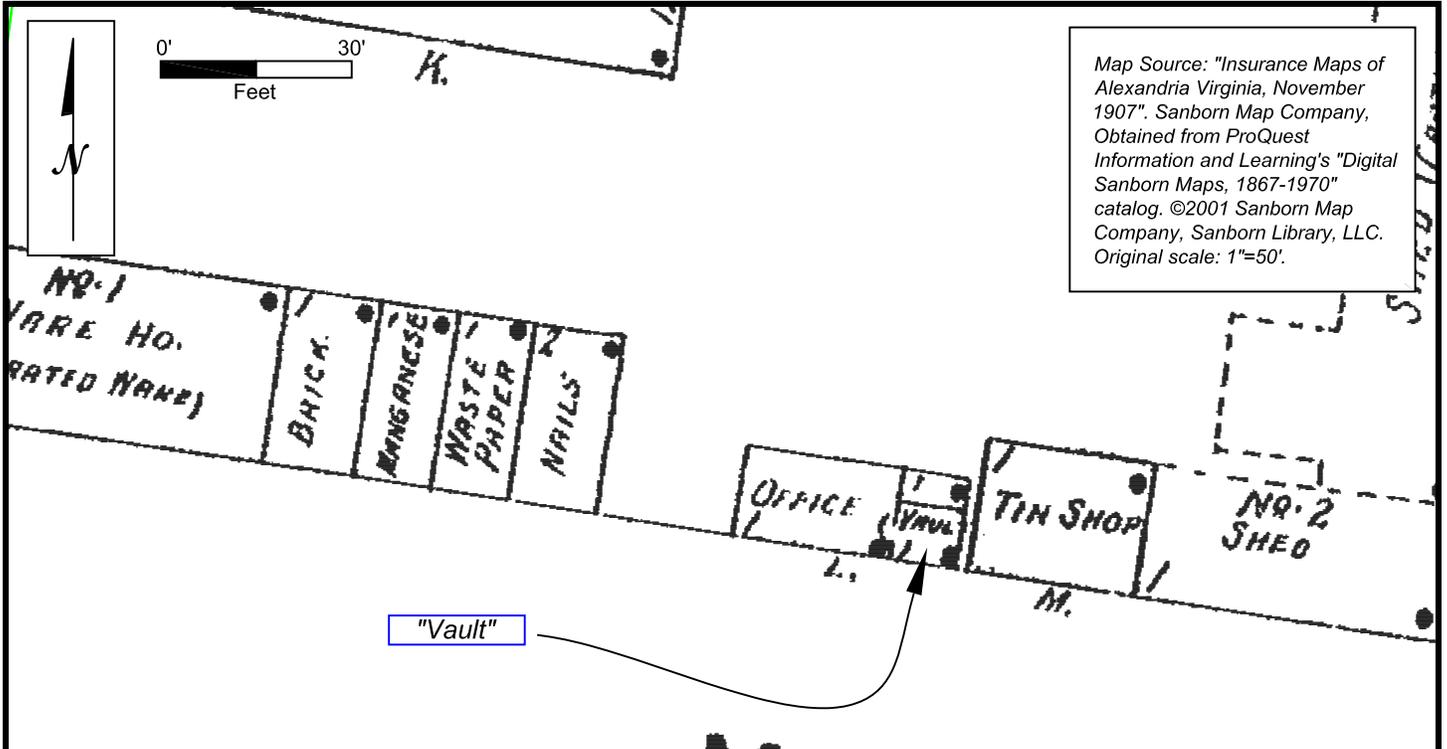
- Fill overburden: 0-6 inches below ground surface – [10YR 2/1] black sandy loam
- Fill 1 horizon: 6-12 inches below ground surface – [10YR 4/3] brown coarse sandy loam with pebbles and cobbles
- Fill 2 horizon: 12-14.4 inches below ground surface – [10YR 4/4] dark yellowish brown silt loam with iron manganese flecking
- B horizon: 14.4-27.6 inches below ground surface – [10YR 6/6] brownish yellow clay loam



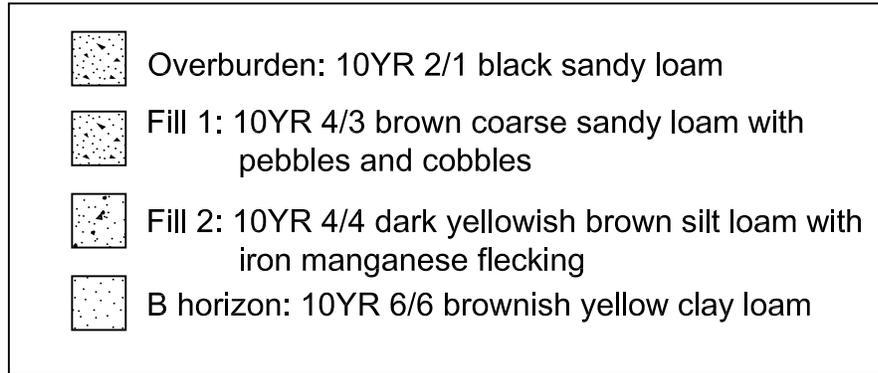
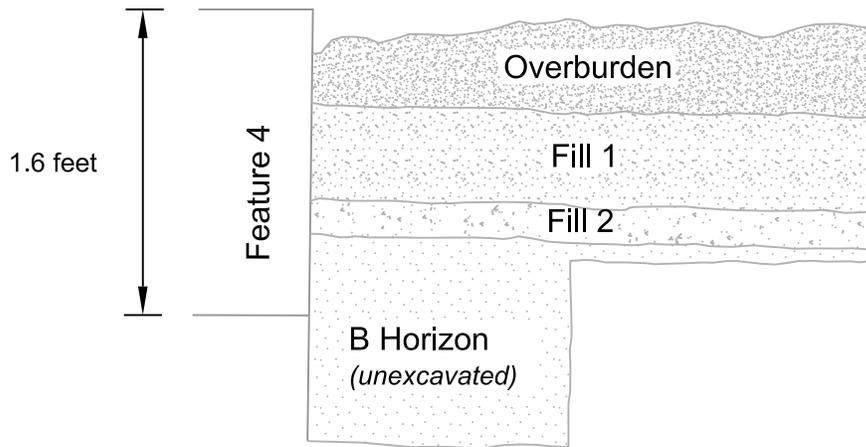
**Plate 61: Feature 4 (Vault)  
Facing West**



**Plate 62: Feature 4 (Vault)  
Looking East**



Feature 4 on 1907 Sanborn Map Overlay  
800 North Henry Street (Madison)  
WSSI #21509.02  
Scale: As Noted



**South Profile of Test Unit 3**  
**800 North Henry Street (Madison)**  
**WSSI #21509.02**  
**Scale: 1" = 1'**



**Plate 63: South Profile of Test Unit 3**

The uppermost fills were associated with the recent demolition of the 1955 warehouse building. The overburden extended to a depth of about six inches below the top of Feature 4. Fill 1, which was present across the majority of the machine stripped area, extended to approximately 12 inches below the upper portion of Feature 4 and contained a high percentage of poorly sorted cobbles, pebbles, and sand. The Fill 2 horizon extended to a depth of about 14.4 inches below the top of Feature 4 and overlay the subsoil (B horizon).

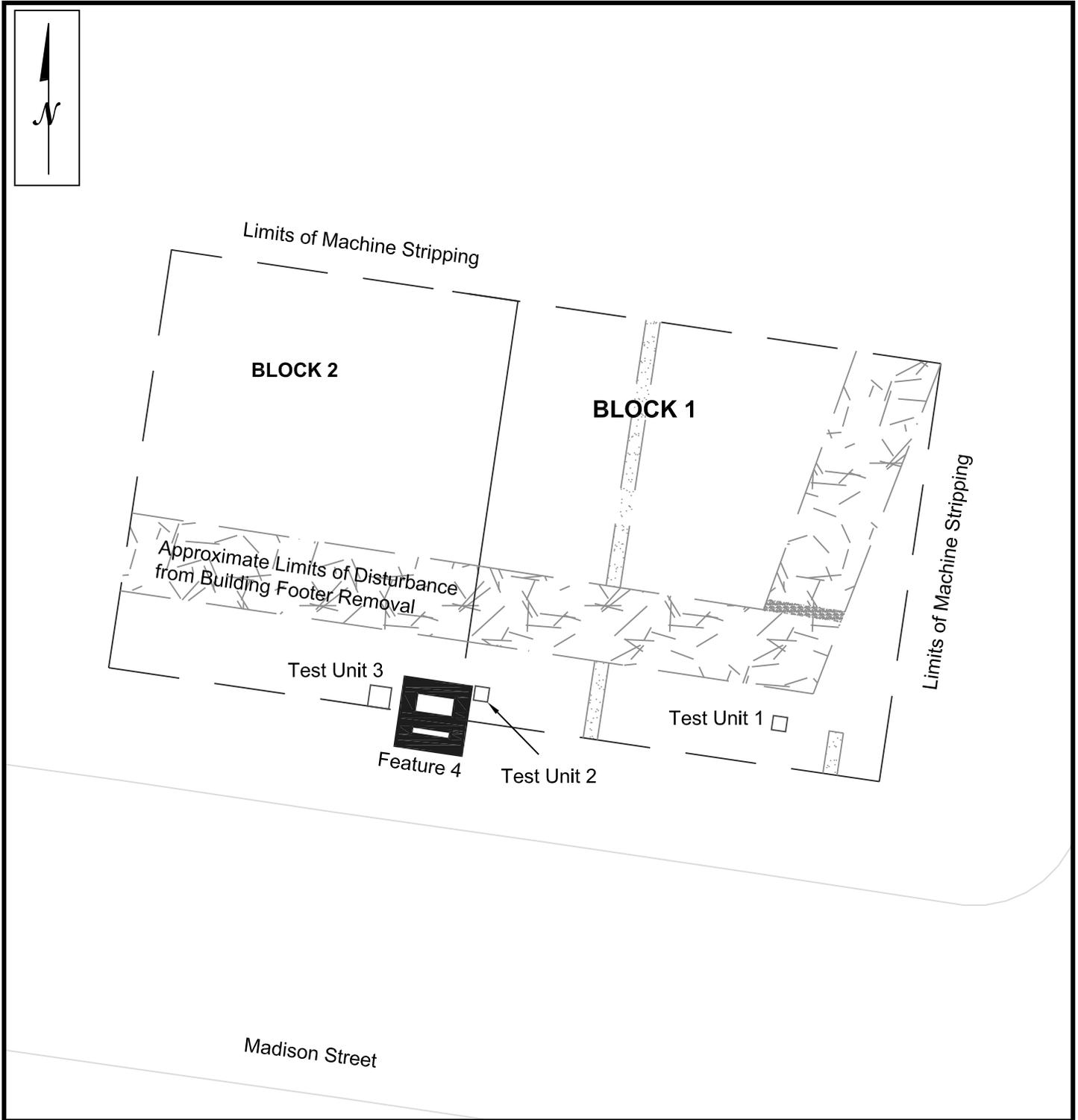
Feature 4 was exposed in the eastern profile of TU 3 (see Plate 63). The foundation was constructed of seven brick courses mortared with cement and extended roughly 1.6 feet deep. The foundation was resting directly on top of subsoil and no builder's trench was evident. The fill horizons directly abutted the western edge of the foundation, suggesting they were deposited after the foundation has been constructed.

Few artifacts were recovered from Fills 1 and 2 of TU 3 (see Appendix II). A single undecorated whiteware sherd (1820-1900+) was the only artifact recovered from TU 3 that could be dated. The remaining artifact assemblage included one ferrous metal fragment, two unidentified nail fragments, three brick fragments, five charcoal fragments, and one possible piece of chert ballast.

An area, extending approximately 60 feet east, 40 feet west, and 50 north of Feature 4, was machine stripped to subsoil to identify the presence/absence of additional cultural features. To facilitate fieldwork, the stripped area was divided into two excavation blocks (Exhibit 16); for ease of discussion, the results are described below by excavation block. The work resulted in the identification of seven additional features and a greater expanse of the potential buried ground surface.

### *Block 1*

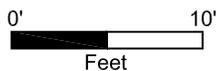
Block 1 was excavated adjacent to Feature 4 and extended 60 feet to the east and 50 feet to the north (see Exhibit 16). The soils surrounding this portion of Feature 4 consisted of fill overburden overlying what appeared to be a truncated plow zone and subsoil (Exhibit 17). With the exception of recently disturbed areas, this potential buried ground surface (designated Fill 2) was present across the entirety of the excavation block. The Fill 2 horizon was of varying thickness, and was much thinner towards the north, as shown in the eastern profile (see Exhibit 17; Plate 64). The southern profile of Block 1 along Madison Street demonstrated a similar stratigraphic sequence (see Exhibit 17; Plate 65).

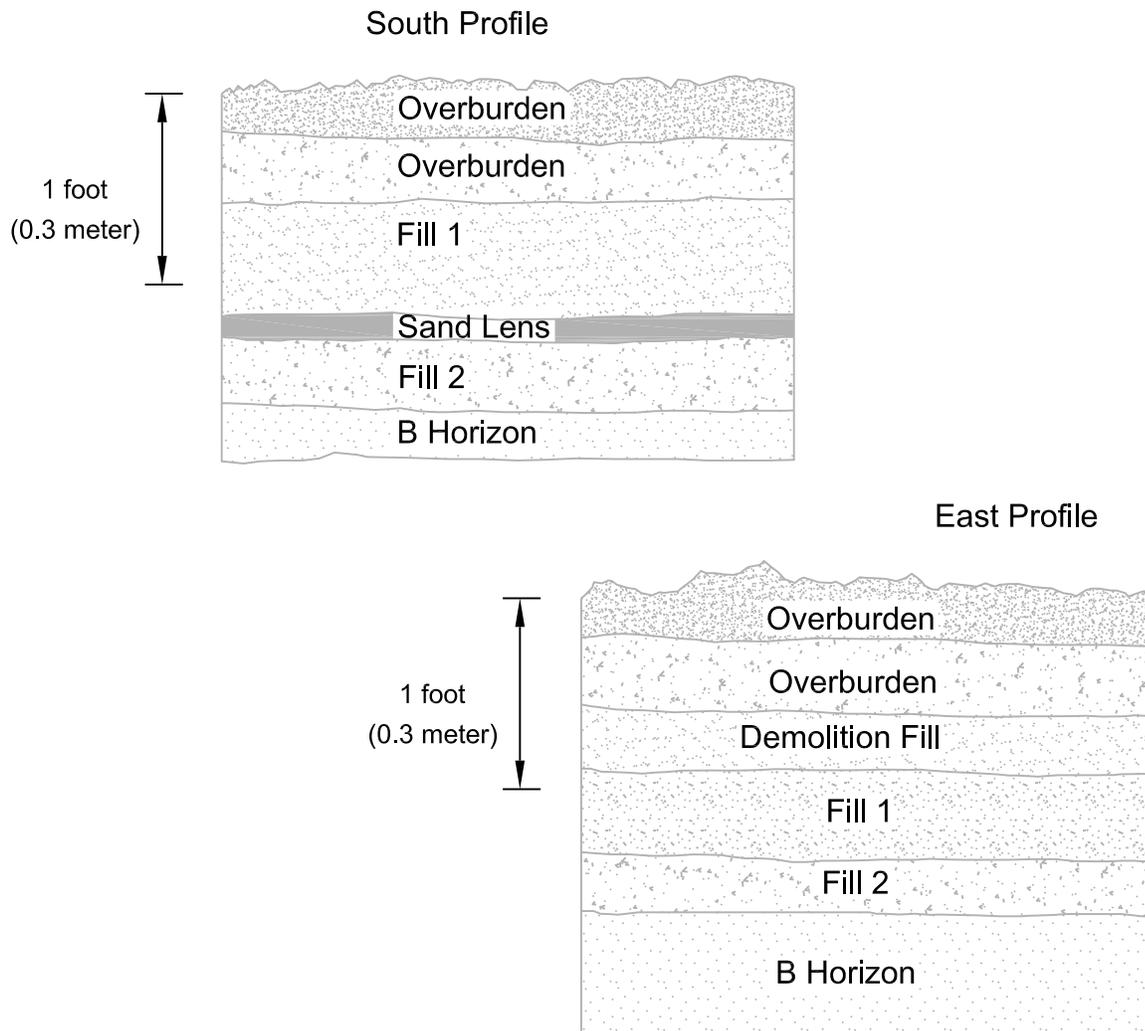


**Map Showing Excavation Blocks 1 and 2 and Location of Test Units  
800 North Henry Street (Madison)**

**WSSI #21509.02**

**Scale: 1" = 10'**





-  Demolition Fill : 10YR 4/2 dark grayish brown loam with asphalt
-  Fill 1: 10YR 4/3 brown sandy loam with pebbles and cobbles
-  Sand Lens: 10YR 6/4 light yellowish brown sand
-  Fill 2: 10YR 5/4 yellowish brown silt loam with iron and manganese flecking
-  B horizon: 10YR 6/6 brownish yellow silty clay

**Southern and Eastern Profiles of Excavation Block 1  
800 North Henry Street (Madison)  
WSSI #21509.02  
Scale: 1" = 1'**



**Plate 64: Eastern Profile of Excavation Block 1**



**Plate 65: Southern Profile of Excavation Block 1**

### **Block 1 South Profile**

- Fill overburden: 0-7.2 inches below ground surface – various fills
- Fill 1 horizon: 7.2-14.4 inches below ground surface – [10YR 4/3] brown coarse sandy loam
- Sand lens: 14.4-15.6 inches below ground surface – [10YR 4/4] dark yellowish brown silt loam
- Fill 2 horizon: 15.6-20.4 inches below ground surface – [10YR 5/4] yellowish brown silt loam with iron and manganese flecking
- B horizon: 20.4-24 inches below ground surface – [10YR 6/6] brownish yellow silty clay

### **Block 1 East Profile**

- Fill overburden: 0-12 inches below ground surface – various fills
- Fill 1 horizon: 12-18 inches below ground surface – [10YR 4/3] brown coarse sandy loam
- Fill 2 horizon: 18-21 inches below ground surface – [10YR 5/4] yellowish brown silt loam with iron and manganese flecking
- B horizon: 21-28.2 inches below ground surface – [10YR 6/6] brownish yellow silty clay

Upon closer examination, it was determined that the potential buried surface was more likely a fill horizon that was associated with the construction of the Belle Pre factory and/or later improvements to the property. This interpretation was made for two reasons:

- 1) the abrupt color and texture differences between the Fill 2 horizon and the subsoil are indicators of a discontinuity in the development of these soils; and
- 2) the interface between the buried horizon and the subsoil was uncharacteristically sharp, which is more indicative of construction grading and filling and not agricultural plowing.

### Test Units 1 and 2

Two test units were excavated into the potential buried ground surface to sample the horizon for artifacts. Both test units measured two feet square (2 by 2 feet). Test Unit 1 was situated approximately 45 feet east of Feature 4 and Test Unit 2 was located approximately two feet east of Feature 4 (see Exhibit 16). The Fill 2 horizon within TU 1 was approximately 3.6 inches thick and yielded one sherd of refined white earthenware with unidentified blue decoration, one clear sherd of flat glass, one brick

fragment and seven fragments of slag (see Appendix II). A temporal affiliation could not be determined for any of the recovered artifacts. No cultural features were observed within TU 1.

The Fill 2 horizon in TU 2 produced two whiteware sherds with a blue transfer printed decoration (1820-1900+), one of unidentified light green flat glass fragment, one brick fragment, and four charcoal fragments. Again, no cultural features were observed within the test unit.

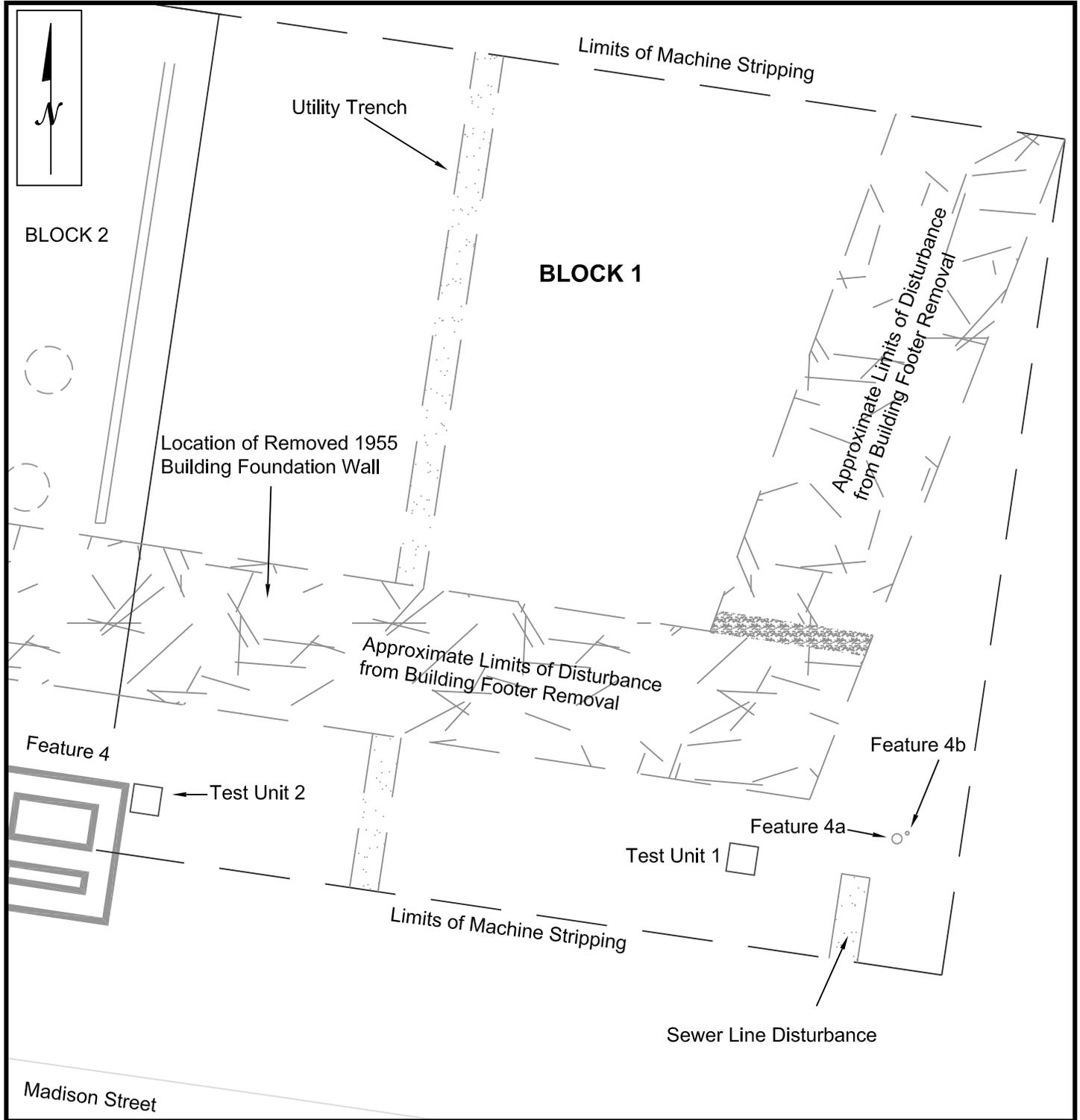
However, two cultural features (Features 4a and 4b) and several recent disturbances were located during the excavation of Block 1. The block excavation intersected the earlier footer demolition trenches, which had been previously archeologically monitored (Exhibit 18). The trenches measured approximately 10-15 feet in width. Other disturbances included two utility trenches. The first was located 18 feet east of Feature 4 (see Exhibit 18), and was a two foot wide utility trench running generally north/south. The trench extended from the southern limits of the excavation block and continued north beyond the limits of stripping. The second was also a two foot wide disturbance that was likely associated with a sewer line. The trench was located approximately 52 feet east of Feature 4, along the southern limits of machine stripping (see Exhibit 18).

#### Feature 4a

Feature 4a was uncovered approximately 55 feet east of the northeast corner of Feature 4 within the eastern portion of Block 1 (see Exhibit 18). The feature was roughly circular in plan, with a diameter of about 8.4 inches, and was interpreted as the remnants of a possible post hole. The feature was bisected across an east-west axis and the profile revealed that the feature had straight sides that tapered to a point (Plate 66). The feature was 16.8 inches deep and was filled with a [10YR 4/4] dark yellowish brown silt loam. The underlying subsoil was a [10YR 5/6] yellowish brown clay loam. One hundred per cent of the feature fill was screened for artifacts; however, no cultural materials were recovered.

#### Feature 4b

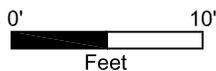
Feature 4b was exposed a few inches northeast of Feature 4a (see Exhibit 18 and Plate 67). The 6" diameter circular feature was bisected on an east-west axis and the southern half was excavated to approximately two feet below the subsoil interface. The feature was filled with a [7.5 YR 5/6] strong brown sand. Excavation was terminated after it was determined that this was a soil bore from earlier geotechnical testing on the property. One clear cylindrical bottle or jar sherd, one brick fragment, and one fragment of slag were recovered from the fill.



**Map Showing Disturbances and Features within Excavation Block 1  
800 North Henry Street (Madison)**

**WSSI #21509.02**

**Scale: 1" = 10'**





**Plate 66: North Profile of Feature 4a**



**Plate 67: Plan View of Features 4a and 4b**

## *Block 2*

Block 2 was situated adjacent to the northern and western portions of Feature 4, extending approximately 40 feet to the west and 50 to the north (Exhibit 19; Plate 68). One test unit was excavated to sample the buried horizon observed during exploratory trenching (TU 3) and five cultural features were identified cutting into the subsoil (Features 4c-4g). Additionally, one stratigraphic soil profile was drawn and photographed of the southern profile of TU 3 along the southern portion of the excavation block and adjacent to the western edge of Feature 4.

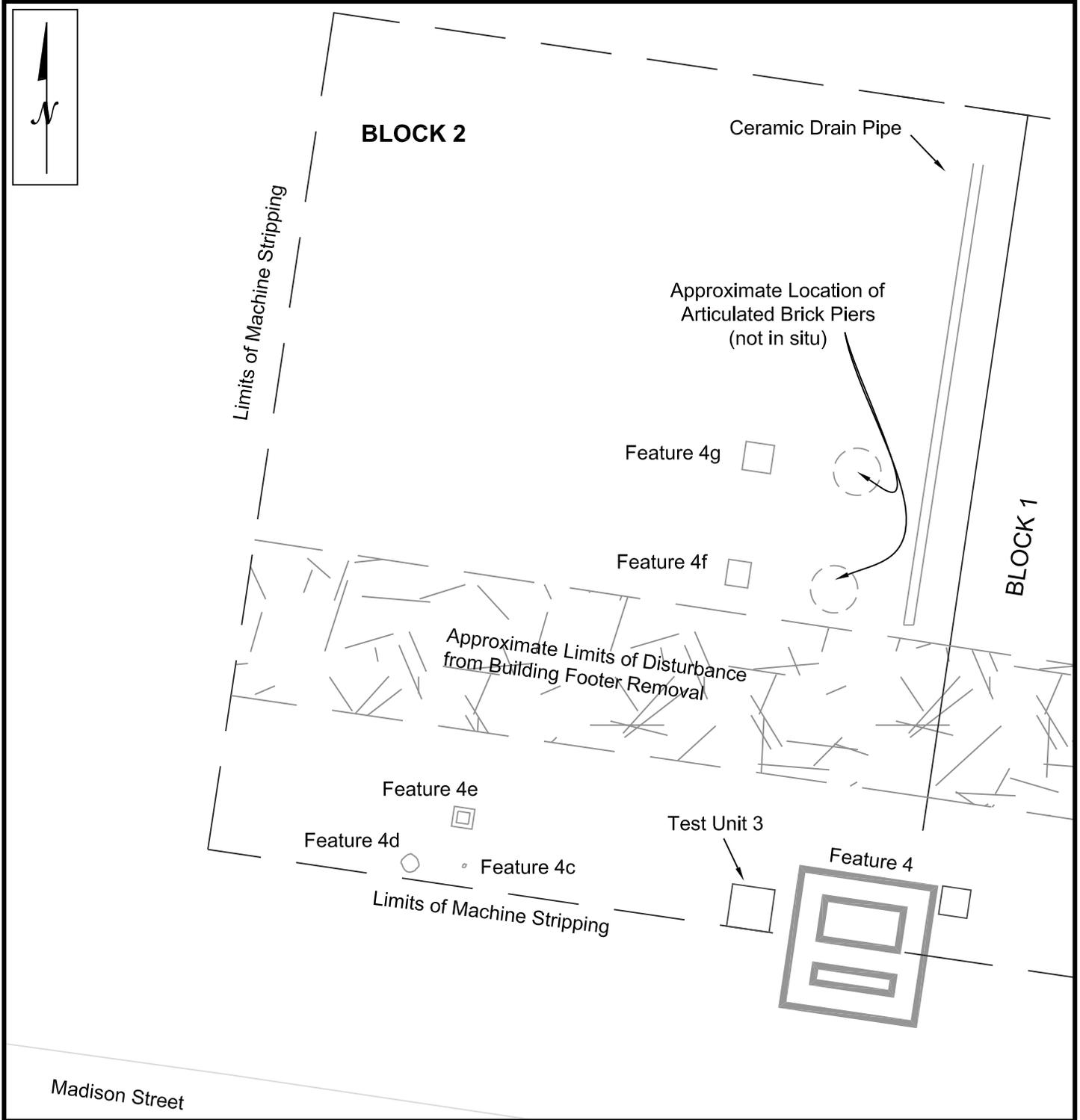
### Feature 4c

Feature 4c was located approximately 27 feet west of Feature 4 and about 5 feet north of the southern limits of Block 2 excavations (see Exhibit 19; Plate 69). Roughly circular in plan, the feature measured approximately 15 inches in diameter. The feature was bisected across an east-west axis; the profile of the feature showed curved sides and extended to a depth of about three inches from where it was first observed during stripping (Plate 70).

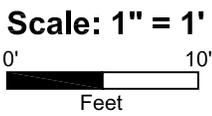
The feature was filled with a [10YR 5/4] yellowish brown silt loam and was intrusive into the [10YR 6/6] brownish yellow clay subsoil. All feature soils were screened, but few artifacts were recovered from Feature 4c (see Appendix II). Three unidentified sherds of glass recovered from the southern half; the northern half of the feature yielded one sherd of yellowware (1830-1940, Miller 1992).

### Feature 4d

Feature 4d was located about 23 feet west of Feature 4 and about five feet north of the southern limits of Block 2 excavations (see Exhibit 19). The feature was a possible posthole that measured roughly six-inched square; however, most of the feature had been removed during the machine stripping, leaving only a small portion of the feature intact (Plate 71). The feature fill soils were recorded as a [10YR 3/1] very dark grayish brown silt loam. The remaining shallow portion was not bisected and profiled, but was excavated and screened. One automatic bottle machine glass fragment (1907-present), one spall of amber glass, and one brick fragment were recovered (Appendix II).



**Map Showing Disturbances and Features within Excavation Block 2  
800 North Henry Street (Madison)  
WSSI #21509.02**





**Plate 68: Overview of Block 2**



**Plate 69: Plan View of Feature 4c  
View to the North**



**Plate 70: North Profile of Feature 4c**



**Plate 71: Plan View of Feature 4d  
View to the North**

## Feature 4e

Feature 4e represents the remnants of an approximately 1.5 foot square brick pier (Plate 72), located about 24 feet west of Feature 4 and approximately eight feet north of the southern limits of Block 2 excavations (see Exhibit 19). The builder's trench for the pier appears to have been filled with concrete, rather than backfilled with soil (Plate 73). The profile suggests that the builder's trench originated above and was intrusive through the Fill 2 horizon and subsoil. No artifacts were found in association with this feature.

## Features 4f and 4g

Two additional brick and concrete piers were located approximately eight feet west and north of Feature 4 (see Exhibit 19 and Plate 74). Feature 4f measured roughly 1.6 feet square (Plate 75) and Feature 4g measured almost 2 by 2 feet square (Plate 76). As with Feature 4e, the builder's trenches were filled with poured concrete.

Finally, the locations of two additional brick/concrete piers were observed just east of Features 4f and 4g, but unfortunately they were removed during the machine stripping. The general location is shown on Exhibit 19. The four piers appear to have been associated with a structure in this area; however, no buildings are shown in this location on the Sanborn© maps.



**Plate 72: Plan View of Feature 4e  
View to the North**



**Plate 73: North Profile of Feature 4e**



**Plate 74: Overview of Features 4f and 4g**



**Plate 75: North Profile of Feature 4f**



**Plate 76: North Profile of Feature 4g**

## Artifacts

Due to nature of the archeological investigations across site 44AX0215, artifacts were not systematically collected, and primarily consisted of collections from backdirt piles (Table 3). When present on site, staff archaeologists collected artifacts that would be diagnostic of or associated with the glass factory, which included bottles, cane, and wasters. The origin of the artifacts is not clear. Presumably most of the glass was produced at the factory; however, it is possible that some bottle glass fragments were deposited at the site after the plant was abandoned.

**Table 3: Artifacts Recovered from Site 44AX0215 Monitoring**

Artifact Type	General Collection
<b>Ceramics</b>	
hard paste porcelain	1
pearlware (1780-1830)	1
whiteware (1820-1900+)	3
<b>Glass</b>	
bottle, bottle/jar	10
cane	8
cullet/waste	20
rod	1
stopper	6
tube	2
tableware, pressed (post-1827)	1
bottle/jar , clear manganese (1880-1910s)	1
cane, clear manganese (1880-1915)	1
cullet/waste, clear manganese (1880-1915)	1
stopper, clear manganese (1880-1915)	1
bottle, capseat lip finish (1899-1950s)	1
bottle, (ABM)* (post-1907)	1
bottle, (ABM), capseat lip finish (1910-1950s)	3
cullet/waste, Ball blue (1909-1938)	2
bottle/jar , applied color label (post-1934)	1
unidentified glass	1
<b>Total Site 44AX0215 Monitoring</b>	<b>68</b>

\*automatic bottle machine (ABM)

## *Milk Bottles*

Based on documentary research, milk bottles were the primary product of the Belle Pre Bottle Company, who claimed at one time to be largest producer of milk bottles in the world. Ten whole bottles were recovered by archeologists during the investigations, only seven of which were milk bottles (Plate 77). The names embossed on the bottles included Washington D.C., Philadelphia, San Francisco, California and Wisconsin dairies; however, only one of the bottles was embossed with the Belle Pre Company name. Presumably if all bottles were produced at the factory, this may demonstrate the widespread distribution of Belle Pre bottles.

All of the recovered milk bottles contained the capseat finish which was patented in 1889 and is considered diagnostic of milk bottles. The capseat finish is described as an edge or groove approximately ¼ inch below the mouth of the bottle, which held the disposable paper cap or “pog” that was used to seal the bottle (Lindsey 2012). This bottle finish was in use until the 1950s.

The Belle Pre Bottle Company held a patent that stylistically improved on the capseat finish. The 1899 patent by John D. Miller was for a grooved section in the mouth of the bottle and a paper cap with an innovative extension or tab that fit into this groove and would serve as a handle (Exhibit 20). This would allow for the removal of the cap without a cap pick, a common metal tool used to remove older milk bottle caps. The design would also protect the paper cap from damage, allowing it to be easily resealed. Damage to the cap was considered a source of annoyance to milk consumers at the time. According to Lindsey (2012), the Belle Pre “slotted” finish may have seen only limited use, primarily in the Washington D.C. area.

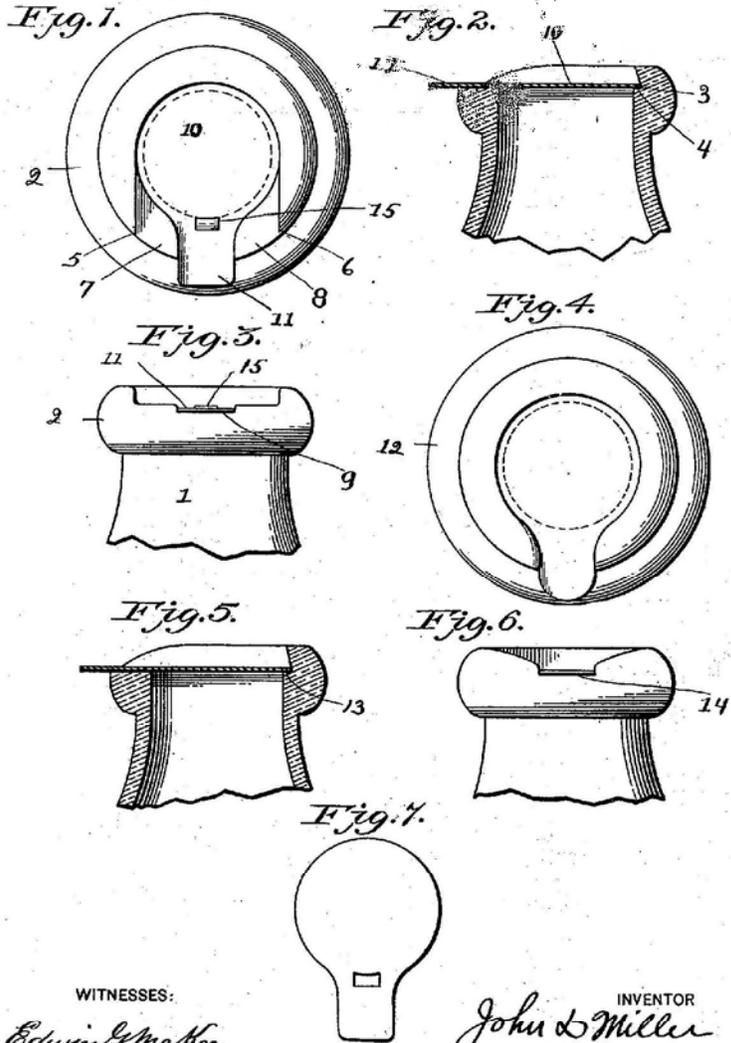
Only one recovered bottle exhibited the Belle Pre Company patented lip groove (Plate 78 and Plate 79). The “slugplate” of the bottle was blank; however, the back was embossed with “THIS BOTTLE TO BE WASHED AND RETURNED” and the base with “BELLE-PR.../PATENTED NOV...” Because the milk bottle was embossed with the Belle Pre Company name (1902-1921) and was manufactured with an automatic bottle machine (post 1910) with a capseat finish (1889-1950s), the manufacture date range for this bottle must fall between 1910 and 1921. Additionally, the bottle may have been used as a salesman’s sample because it did not contain a dairy name (Flahive and Sipe 2007: 57).

No. 637,740.

Patented Nov. 21, 1899.

J. D. MILLER.  
MILK JAR AND TOP.  
(Application filed May 1, 1899.)

(No Model.)



WITNESSES:

*Edwin S. McKee.*  
*B. D. Funk*

INVENTOR  
*John D. Miller*  
BY  
*Edwin S. Clarkson*  
ATTORNEY.

THE MORRIS PETERS CO., PHOTO-LITHO., WASHINGTON, D. C.

1899 John D. Miller Milk-Jar and Top Patent  
800 North Henry Street (Madison)  
Archeological Investigations  
WSSI #21509.02



**Plate 77: Representative Bottles from 44AX0215**

*Left to Right: Jas McCuen Alexandria, VA; Wills/1206/Montgomery Ave,  
San Carlos/N.S.N./Dairy; Locust Farms Co/812-6th Ave;  
E.W. Woolman's Dairies /4709/Lancaster Ave*

In 1904, three semi-automatic machines were reportedly in use at the Belle Pre factory and, by 1908, up to seven machines may have been used to produce quarter, half pint, pint and quart sized milk bottles (Glass Bottle Blowers Associations 1904:74; 1908: 24). The majority of whole bottles recovered from the site were produced with an automatic bottle machine, which may support the documentary evidence.

However, apparently skilled glass workers were employed at the company, based on the recovery of cane and other decorative twisted glass (Plate 80). According to Pfanstiehl et al. these canes and rods were used for stemware, marbles or other decorative uses, like to top wooden canes (Pfanstiehl et .al. 1999:9-33; 9-51). Similar to those found at site 44AX0181 (the Virginia Glass Company), the cane included clear twists, opaque twist and colored (teal, red and blue). Other artifacts that may have been produced at one time at the factory included six stoppers, which were recovered from the vicinity of Feature 3 (Plate 81).



**Plate 78: Recovered Bottle from 44AX0215 Showing the Notched Capseat Lip Finish  
John D. Miller Milk-Jar and Top Patent (U.S. Patent 637740, 1899)**



**Plate 79: Detail of Notched Capseat Lip Finish**



**Plate 80: Glass Cane Fragments from 44AX0215**



**Plate 81: Glass Bottle Stoppers from 44AX0215**

## Feature Discussion

At least twenty architectural features from the Belle Pre Bottle Company were documented during the demolition and abatement at site 44AX0215. Most of the features were only documented with photographs and notes, as it was not considered safe for the archeologists to work in contaminated areas. Architectural features included foundation walls and floors in the vicinity of the main furnace and lehr ovens, structural piers, remnants of the ventilation system and the foundation for a gas producer. In addition, several post holes, brick/concrete piers, soil features and the foundation for the vault were found in the vicinity of the Belle Pre Company office.

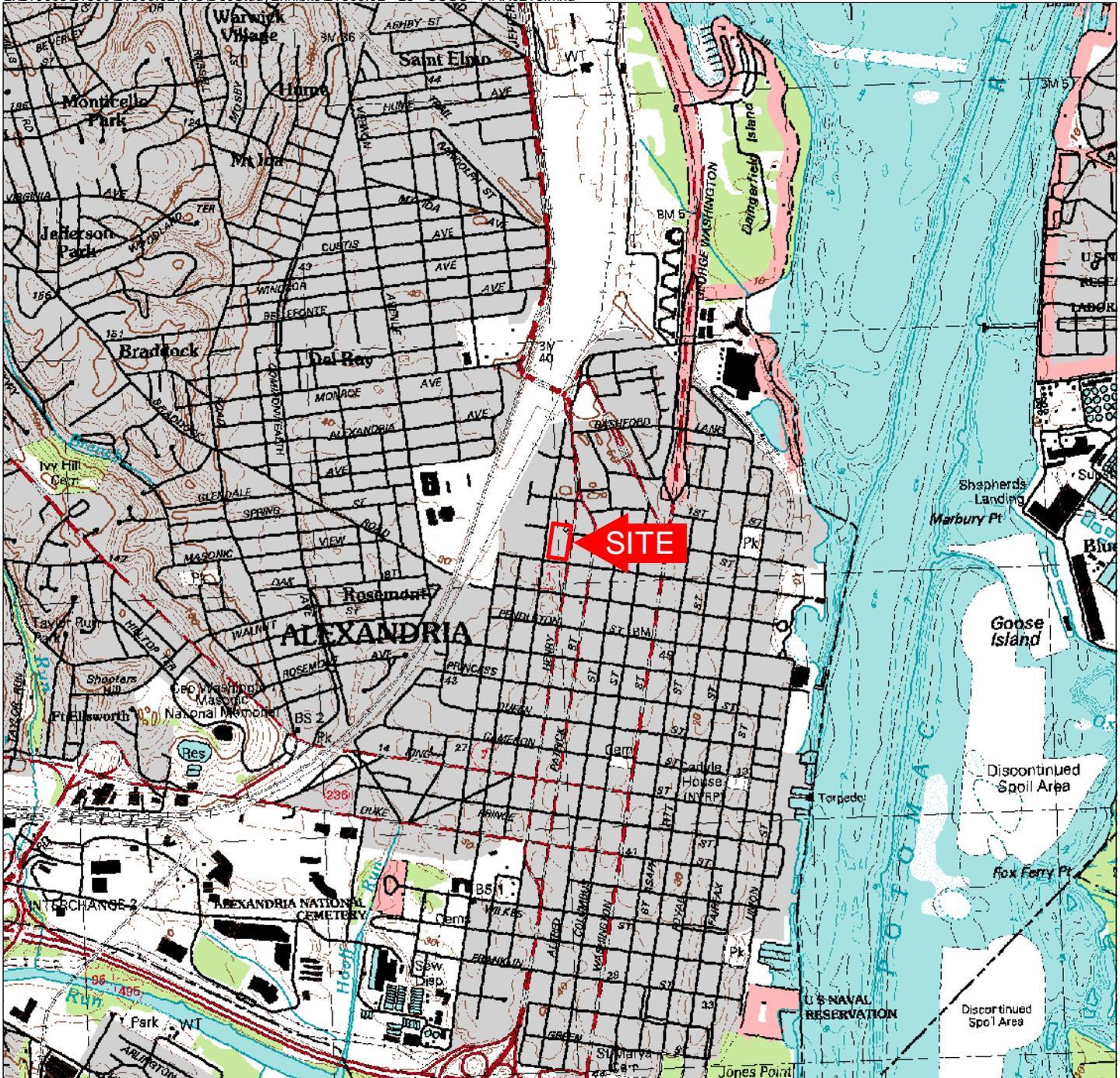
The remains of two arched brick flues were identified and mapped within the central portion of the site. One flue (Feature 11) was oriented north-south and appeared to terminate in the vicinity of one of the chimney stacks. The southern end of flue angled toward the location of the one of the three Belle Pre Bottle Company gas producers. This feature probably served as an air intake or exhaust flue. The second brick flue (Feature 8) also originated within the vicinity of the gas producer, but turned westward toward the lehr ovens and furnace area. It is possible that this flue was carrying producer gas toward the furnace area.

Only one of the factory's gas producers was located to the east of the lehr ovens and main furnace. Structurally, gas producers were iron tanks lined with refractory bricks, which were connected to the furnace ventilation system (Pfanstiehl et. al 1999:8-10). Feature 14 was located in the approximate location of this third gas producer and consisted of a 15.7 foot diameter circular brick foundation. Although the two flues described above appeared to originate in this vicinity, the actual connections were not visible.

Finally, a possible brick furnace, Feature 19, was located approximately 60 feet to the north of the gas producer. The feature measured 11 by 7.5 feet and extended nine feet into the underlying soils. The feature was reinforced with one-inch thick iron pipe set vertically into the four corners. The feature is located to the west of the mapped location of the main furnace, and to the north of a chimney stack.

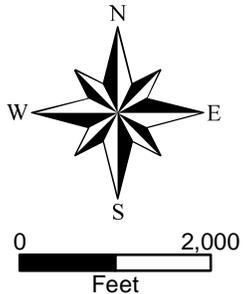
## SUMMARY AND CONCLUSIONS

Documentary research and archeological investigations of the 800 block of N. Henry Street were required under the Archeology Protection Code, located in Section 11-411 of the Zoning Ordinance of the City of Alexandria, Virginia. The Documentary Study for the property was completed in 2007 (Flahive and Sipe). The archeological investigation, conducted between October 2011 and February 2012, consisted primarily of archeological monitoring of footer/foundation demolition of the 1955 warehouse, and



Latitude: 38°48'51" N  
Longitude: 77°03'00" W

**Location of Site 44AX0215**  
**USGS Quad Map - Alexandria, VA-DC-MD 1994**  
**800 North Henry Street (Madison)**  
**Archeological Investigations**  
**WSSI #21509.02**  
**Original Scale: 1" = 2000'**



periodic monitoring of contaminated soil abatement from the site. Most of the features were only documented with photographs and notes, as it was not considered safe for the archeologists to work in contaminated areas. All fieldwork was conducted in consultation with Alexandria Archaeology.

The Belle Pre Bottle Company, Alexandria's third glassworks, was founded in 1902 and was in operation until 1921. At least twenty architectural features from the Belle Pre Bottle Company were documented during the current investigation and were recorded with the Virginia Department of Historic Resources as site 44AX0215 (Exhibit 21 on preceding page). The site spans the entire city block between Madison, North Henry, Montgomery, and North Fayette Streets, which is based on the historic extent of the glass factory and the structural features located therein.

According to Pfanstiehl (et. al 1999:5-32), the Virginia Glass Company set the standard for the three subsequent glass factories in Alexandria; the Alexandria Glass Company, Old Dominion Glass Company and the Belle Pre Glass Company were managed by some of the same executives that had originally founded the Virginia Glass Company.

Although the number of furnaces, Lehr ovens and gas producers varied between the four factories, the spatial layout of the Belle Pre, Old Dominion and Virginia Glass Companies were very similar, with the gas producers located in "front" of the centrally located furnace(s) and the Lehr ovens and packing departments to the "rear." In contrast, the Alexandria Glass Company had one large furnace flanked by two Lehr ovens; the two gas producers were located to the front and rear of the furnace. The Belle Pre Glass Company also had three iron chimney stacks in contrast to the brick chimneys found at the other three factories.

The architectural features located at Site 44AX0215 (the Belle Pre Glass Company) included foundation walls and floors in the vicinity of the main furnace and Lehr ovens, structural piers, remnants of the ventilation system and the foundation for a gas producer. In addition, several post holes, brick/concrete piers, soil features and the foundation for the company vault were found in the vicinity of the Belle Pre Company office, which was located along Madison Street. According to a Sanborn<sup>®</sup> map comparison of the four glass factories, only the Belle Pre Company office was constructed with a brick vault. The reasons for the added security are unknown, but intriguing.

A large circular brick foundation was exposed in the approximate location of one of the Belle Pre Company gas producers. Structurally, gas producers were iron tanks lined with refractory bricks, which were connected to the furnace ventilation system (Pfanstiehl et. al 1999:8-10). The remains of the ventilation system- two arched brick flues were also identified and mapped within the central portion of the site. One flue appeared to stretch between a gas producer and a chimney stack and may have served as an air intake or exhaust flue. The second flue also originated within the vicinity of the gas producer, but turned westward toward the Lehr ovens and furnace area. It is possible that this flue was carrying producer gas toward the furnace area.

Although the main furnace was not observed by archeological staff, one possible brick furnace was exposed in-situ north of the gas producer foundation. The feature measured 11 by 7.5 feet and extended nine feet into the underlying soils. The function of the brick furnace is unknown. Finally, the brick foundation of the company “vault” was located near Madison Street during the investigations. Machine stripping in the vicinity of the feature revealed a few post holes and brick piers, but they could not be attributed to any known structure that appeared on Sanborn<sup>®</sup> maps.

According to glass factory directories, the factory originally produced green beer bottles, soda bottles, and packers’ bottles but, by 1906, had switched to producing milk bottles. The Belle Pre Company held a patent that stylistically improved on the capseat finish for milk bottles: a grooved section in the mouth of the bottle and a paper cap with an innovative extension or tab that fit into this groove and would serve as a handle. This innovation allowed for the bottle to be easily resealed.

Very few milk bottles were recovered from the site during the archeological monitoring; however, the assemblage appeared to confirm the reported widespread distribution network for Belle Pre bottles. Bottles embossed with the names of dairies ranging from California to Wisconsin to the District of Columbia were recovered; however, only one was embossed with the Belle Pre company name. This bottle may have been a salesman’s sample, as no dairy name had been embossed on the bottle (Flahive and Sipe 2007: 57).

Most recovered milk bottles at site 44AX0215 were produced with an automatic bottle machine; seven machines were in operation by 1908 at the factory and were used to produce quarter, half pint, pint and quart sized milk bottles. Other recovered artifacts included cullet/wasters, glass bottle stoppers, cane and other decorative twisted glass, evidence that skilled glass workers were also employed at the company.

The Belle Pre Bottle Company declared bankruptcy on October 15, 1912. One year later, the company’s real estate and machinery was conveyed to the trustees of The Old Dominion Glass Corporation with the hopes of resuming production; however, this was never realized. Prohibition and a series of fires, including one “of suspicious origin” in 1921 which destroyed the main factory building, led to the demise of this factory; the decline of glass bottle manufacturing in the City of Alexandria can be attributed to costs associated with rebuilding after fires, the lack of readily available natural resources, and other economic pressures (Pfanstiehl et. al 1999:10-2).

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**APPENDIX I**  
**Scope of Work**





**Scope of Work  
for Archeological Investigations  
800 North Henry Street  
City of Alexandria, Virginia**

February 07, 2011

**Introduction**

The property at 800 North Henry Street was the former location of the Belle Pre Bottle Company, which was established in 1902. The company declared bankruptcy in 1912; however, the plant resumed production under new ownership from 1916 to 1919. After being used for storage, the building burned down in 1921. The production of milk bottles was one of the Belle Pre Bottle Company's specialties. The high temperatures required for the production of bottles necessitates the use of underground flues and exhaust tunnels, and it is likely that archeological evidence of these features, as well as the furnace, gas producers and lehrs, will still be present on this property.

Today, a brick commercial building and associated parking is located on the property, which was last in use as a rented commercial space.

In a August 24, 2006 Scope of Work, Alexandria Archaeology required a Documentary Study and Archeological Evaluation of the property in anticipation of the planned development of the property and the concern that significant archeological resources may be impacted by this construction.

Thunderbird Archeology, a division of Wetland Studies and Solutions, Inc. of Gainesville, Virginia completed a documentary study of the property in April of 2007 for Madison Venture, LLC of Washington, D.C. The documentary research identified the locations of known historic structures and features related to the Belle Pre Company, but also indicated the possibility of 19<sup>th</sup> and 20<sup>th</sup> century domestic sites within the project area; these domestic sites may be associated with the historic African American Uptown community.



## **Revised Scope of Work**

This revised Scope of Work is for an **Archeological Evaluation** of the property located at 800 N. Henry Street, Alexandria, Virginia. The Documentary Study research has been completed and was submitted to Alexandria Archaeology on April 18, 2007 and November 19, 2007. The goal of this revised Scope of Work is to determine if significant archeological resources are present on the property. The goal will be achieved by monitoring the demolition of the foundations of the existing building and parking surface and identifying and exposing the remains of any features through exploratory backhoe trenches.

If a significant site or sites are discovered as a result of the fieldwork, the sites must be registered with the Virginia Department of Historic Resources and copies of the site form registration sent to Alexandria Archaeology. Additionally, a Resource Management Plan will be prepared as part of this scope. However, any additional archeological investigations beyond the backhoe trenching and scraping, if required, will be conducted under a separate scope of work.

All personnel must be approved in advance by Alexandria Archaeology. Alexandria Archaeology staff will conduct site inspections throughout the course of the fieldwork. An industrial archaeologist will be hired for identification and interpretation of glass factory features in the field and for analysis and writing up the findings related to the factory in the report.

All aspects of this investigation will adhere to OSHA regulations and will comply with the *City of Alexandria Archaeological Standards* dated January 1996 and the *Secretary of the Interior's Standards and Guidelines for Archaeology and Historic Preservation*. Miss Utility must be informed before excavations are made. All open excavation units will be fenced when no personnel are present.

## **Archeological Evaluation**

The archeological evaluation will consist of two steps:

### **1. *Monitoring***

The current building on the property slated for demolition rests on a 6" thick concrete slab over 6" gravel and earth fill, secured by piers and concrete footings sunk 1'6" below the fill. An archeologist will monitor all the ground-disturbing activities, including the removal of the concrete slab foundation, bedding material foundations, piers and footing, surrounding asphalt or concrete, utilities, fill, etc. until natural soil is observed.

The goal of the archeological monitoring will be to identify significant archeological resources that could provide insight into the operation of the glass company and any other significant human activities identified by the documentary research.

If features are found, work must stop in the area of these finds until the archaeologist evaluates their significance, in consultation with Alexandria Archaeology. No further

disturbance of features deemed to be significant, such as driving vehicles over them, will be permitted. All features will be recorded, mapped and photographed.

## 2. *Backhoe Trenching and Scraping*

The goals of the archeological evaluation will be to:

- expose features identified during monitoring;
- determine the nature of the stratigraphy across the property;
- and potentially locate and expose features that are depicted on historic maps

All work will be conducted in consultation with Alexandria Archaeology

The initial step in this investigation will be the excavation of exploratory backhoe trenches of varying length across the property to record the nature of the soils and to look for the remains of features/buildings identified on historic maps. Locations of the trenches were established in consultation with Steven Shephard (Alexandria Archaeology) taking into account information gathered from the documentary study (Exhibit 1). This trench excavation will also be used to determine the depth of any overburden fill soil overlying any features.

At least one soil strata column profile will be drawn for every trench. Photographs will be taken. Trenches will be back filled after recordation of the soil profiles if features/buried surfaces are not located. The excavations will be expanded if necessary to allow for safe hand excavation and evaluation.

If the event that features or buried ground surfaces are encountered, additional work will be needed to assess the significance of the findings. No features will be fully excavated at this time, unless necessary to determine the nature or significance of the feature. Decisions regarding the significance of features and the need for additional testing will be made in consultation with Alexandria Archaeology. The horizontal extent of the features discovered during this process will be drawn and photographed in preparation for further investigation in the next phase of archaeological work.

If significant archeological features are discovered during the archeological monitoring or backhoe scraping, a Resource Management Plan will be written, This Plan will consist of an executive summary of the results of the fieldwork, to-scale maps showing the location of all scraped areas and all features, and recommendations for further work. A separate scope of work will be written for the next phase of fieldwork.

The Resource Management Plan and Scope of Work for additional archeological services beyond the monitoring and backhoe trench exploration will be presented at a meeting to Alexandria Archaeology. A full report will not be written until the completion of all fieldwork. If no significant features are discovered by the fieldwork, a full report will be written as detailed below.

## **Laboratory Work and Curation**

Archaeological artifacts recovered from significant soil layers within the project area will be retained, cleaned, stabilized (if necessary), cataloged, labeled and packaged in accordance with the guidelines set forth in the *City of Alexandria Archaeological Standards*. Organic materials that may require conservation may be recovered; however, the cost proposal will not include conservation services. Conservation may be added as an additional service.

Archeological collections recovered as a result of the Alexandria Archaeology Resource Protection Code must be curated at a facility which meets Federal standards for archeological curation and collections management as described by 36CFR Part 79. The Alexandria Archaeology Storage Facility meets these standards, and the property owner is encouraged to donate the artifact collection to the City for curation. The archeological consultant is responsible for arranging for the donation of the artifacts with the owner and will deliver the artifacts and signed forms to the appropriate storage facility.

At the conclusion of the project, all images, field notes and forms and other field records will be submitted in digital format on a CD. In addition, the artifacts, if they are to be donated to the City, will be delivered to Alexandria Archaeology.

## **Archeological Evaluation Report and Resource Management Plan**

The Archeological Evaluation Report will include the following: a public summary; the results of the Documentary Study, a map of the project area; a map with unit locations and significant features; a summary of the procedures; results of the field investigation and artifact analysis, including a distribution map or other graphics which indicate potentially significant archeological areas; an integration of the field and analysis data with the historical record; and recommendations for additional work, if needed. The Resource Management Plan will present any further preservation measures which may be necessary on the site.

When the fieldwork is completed, two draft copies of the full Archeological Evaluation Report will be submitted to Alexandria Archaeology **at the same time as they are submitted to the client**, as is required by Alexandria Archaeology. Once the report is approved by the City Archaeologist, revisions will be made, and four copies of it, one unbound with original graphics, will be submitted to Alexandria Archaeology. The report will also be submitted on a CD. All site maps and drawings will be inked or computer-generated so as to produce sharp and clear images that will result in clear photocopies or microfilms.

## **Public Interpretation**

The *City of Alexandria Archaeological Standards* require that a public summary be prepared as part of an Archeological Evaluation Report. The public summary will be approximately 4 to 8 pages long with a few color illustrations. This should be prepared in a style and format that is reproducible for public distribution and use on the City's web site. Examples of these can be seen on the Alexandria Archaeology Museum website.

A draft of the summary should be submitted to Alexandria Archaeology for review along with the draft of the Archeological Evaluation Report\*. Upon approval, a master copy (hard copy as well as on CD or computer disk) will be submitted to Alexandria Archaeology. The summary and graphics should also be e-mailed to Alexandria Archaeology for publication on our web site.

In addition, if determined to be warranted by the City Archaeologist, the developer will be required to erect a historical marker on the property. The archeological consultant will supply the written text and graphics for the marker\*. The text should be up to 200 words in length with a paragraph on the historical significance of the site and a paragraph on findings from the archeological investigation. The graphics (minimally four, with captions) need to be high-quality copies (scanned at a minimum of 600 dpi and saved separately as jpeg or tiff files) of line drawings (e.g., site maps, feature drawings), historic photographs and maps, or other illustrations (e.g., site or artifact photos) in black and white or color. All copyright releases need to have been obtained and credit provided for each graphic. The text and graphics must be submitted to Alexandria Archaeology on a CD.

The consultant will coordinate with the City Archaeologist before writing the text and selecting images.

## **Tasks**

The following is a summary of the tasks to be completed:

1. Meet with Alexandria Archaeology staff to finalize the field strategy based on the results of the Documentary Study.
2. Notify Alexandria Archaeology of the demolition monitoring start date. Conduct the field monitoring, excavate trenches and scrape areas to identify and expose features. Note that an **Archeological Certification** will be required prior to beginning the fieldwork.
3. If significant finds are made, produce a Resource Management Plan that will include an executive summary of fieldwork, to-scale maps showing features and excavated areas and a scope of work for the next phase of fieldwork. Meet with Alexandria Archaeology to present the results.
4. Register all sites with VDHR and submit copy of the registration forms to Alexandria Archaeology.

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\* If additional archeological work is required, production of these public documents can be delayed until the completion of all archeological investigations. As a result, these tasks should be budgeted separately and not included in the overall budget for this phase of work.

If no significant finds are made complete the following tasks:

1. Process all significant artifacts and complete the analysis.
2. Produce and submit two draft copies of the Archeological Evaluation Report to Alexandria Archaeology at the same time as the report is submitted to the client, including the public summary document and the text and graphics for the historic marker.
3. Deliver to Alexandria Archaeology four copies (including one unbound copy) and CD of the final report, final versions and CDs of the public summary and historic marker text and graphics, plus all field notes, copies of historic documents, photographs, slides, digital images, cassette tapes, transcriptions, forms and associated records. In addition, arrange for the donation and delivery of the artifacts to an appropriate storage facility. Alexandria Archaeology is the preferred repository and requires a City of Alexandria Deed of Gift form.

**Formats for Digital Deliverables:**

- |                                |  |
|--------------------------------|--|
| 1. Photographs:                | .jpg.  |
| 2. Line Drawings:              | .gif or .jpg as appropriate.                         |
| 3. Final Report/Public Summary | Word, PageMaker and/or PDF                           |
| 4. Oral History                | Word   |
| 5. Catalogue:                  | Word, Access or Excel                                |
| 6. Other Written material:     | Word, Access, Excel, PageMaker or PDF as appropriate |





**APPENDIX II**  
**Artifact Inventory**



## ARTIFACT INVENTORY

### MONITORING

#### General Surface Collection

##### Glass

- 1 clear cylindrical milk bottle, whole, capseat lip finish, tooled, front embossed blank plate mold circle, back embossed "THIS BOTTLE TO BE WASHED AND RETURNED," base embossed "BELLE-PR.../PATENTED NOV...," automatic bottle machine, heavily stained, patinated (1910-1921)
- 1 clear cylindrical milk bottle, whole, capseat lip finish, tooled, valve mark on base embossed with "W," front embossed "WILLS/1206/MONTGOMERY AVE.," back embossed "W.../REGISTERED," automatic bottle machine, heavily stained (1910-1950s)
- 1 clear cylindrical milk bottle, whole, capseat lip finish, tooled, valve mark on base, front plate mold embossed "LOCUST FARMS CO./812-6TH AVE/REGISTERED," back embossed "WASH AND RETURN," automatic bottle machine (1910-1950s)
- 1 clear cylindrical milk bottle, whole, capseat lip finish, valve mark on base, front embossed "4 PT.," plate mold embossed "SAN CARLOS/N.S.N./DAIRY," automatic bottle machine, stained (1910-1950s)
- 1 clear cylindrical milk bottle, whole, missing portions of lip finish, capseat lip finish, front plate mold embossed "E.W. WOOLMAN'S/DAIRIES /4709/LANCASTER AVE," heavily stained, patinated (1889-1950s)
- 1 light aqua cylindrical bottle, whole, partial lip finish broken, blob lip finish, wire Hutchinson spring stopper closure inside bottle, post mold base, front plate mold embossed "JA S MC CUEN/ALEXANDRIA, VA," back heel embossed "REGISTERED NOT TO BE SOLD" (1879-early 1890s)

#### General Collection, Near Feature 1

##### Glass

- 1 amber cylindrical bottle, almost whole (missing portion of lip finish), collared lip finish fragment with external threading, plate mold embossed with cross "GALLAGHER&BURTON INC./TRADE/G&B/MARK/4/5 QUART/FEDERAL LAW FORBIDS SALE OR RE-USE OF THIS BOTTLE," base embossed "D-126/12 A (in circle) 54/S," textured pattern on base, automatic bottle machine (1907-1918)
- 1 clear cane fragment, twisted, stained
- 1 clear cullet/waste fragment, rounded, plate mold embossed base, side embossed "...REMIL.../RINCETON...," probable test or mistake bottle, stained, patinated
- 1 clear cylindrical bottle stopper, stained, patinated - 2.4 cm diameter, 2.9 cm high

- 2 clear cylindrical bottle stoppers, stained, patinated - 2.5 cm diameter, 2.7 cm high
- 2 clear cylindrical bottle stoppers, stained, patinated - 2.5 cm diameter, 2.9 cm high
- 1 clear cylindrical bottle/jar sherd, applied color label, stained, patinated (post-1934)
- 1 clear cylindrical bottle/jar sherd, base fragment, embossed "4" on base (large), stained, patinated
- 1 clear cylindrical bottle/jar sherd, embossed "'..NG C.../...MBRIDGE STS.../...PHILA...," stained, patinated
- 1 clear manganese cylindrical bottle stopper, stained, patinated - 2.5 cm diameter, 2.9 cm high (1880-1915)
- 1 green cylindrical bottle sherd, textured pattern, patinated

**General Collection, Near Feature 7 (Flue)**

Glass

- 1 amber cylindrical bottle sherd, base fragment, embossed "...I...TON,..." unidentified embossing on base, automatic bottle machine (1907-present)
- 1 clear cane fragment, twisted, stained
- 1 clear cullet/waste fragment, blocky, heavily stained
- 10 clear cullet/waste fragments (mend), curved back edge
- 1 clear cylindrical bottle sherd, base fragment, embossed "...AND..." valve mark on base, stained, patinated
- 1 clear manganese cane fragment, patinated (1880-1915)
- 1 clear manganese cullet/waste fragment, blocky (1880-1915)
- 1 green cullet/waste fragment, blocky, stained
- 1 light green cullet/waste fragment, blocky, stained
- 1 unidentified clear spall

**General Collection, Around Features 10 and 11**

Ceramics

- 1 pearlware sherd, underglaze polychrome hand painted floral decoration (1795-1815, South 1977; 1780-1835, Miller 1992)
- 1 whiteware sherd, undecorated, base fragment, stained (1820-1900+, South 1977; Miller 1992)

Glass

- 2 ball blue cullet/waste fragments, blocky (1909-1938)
- 1 clear cullet/waste fragment, blocky, heavily stained, patinated
- 2 clear cullet/waste fragments, rounded, patinated

- 1 clear cylindrical bottle sherd, base fragment, embossed "...PAT... DES NO 70281..." base embossed "I./CRASS/ 9 (container base code) 2," Owen's scar, product of Crass Delicious Beverages, probably made by Washington Coca-Cola Bottling Co. Inc. / Alexandria, VA., stained, patinated (1929-1954)
- 1 clear cylindrical bottle sherd, neck fragment, stained, patinated
- 1 clear cylindrical bottle sherd, neck fragment, stained, patinated
- 1 clear cylindrical bottle stopper, stained, patinated - 2.5 cm diameter, 3.0 cm high (1902-1915)
- 1 clear cylindrical bottle, whole, external thread lip finish, base embossed "KNOWLTON PATENT," valve mark on base, heavily stained, patinated
- 1 clear cylindrical bottle/jar sherd, base fragment, heavily stained
- 1 clear cylindrical cane fragment with blue twist in center, twisted
- 1 clear cylindrical cane fragment with red twist in center, half twisted
- 1 clear cylindrical cane fragment with white swirl in center, twisted, decorative, curved, possibly shaped into handle, patinated
- 2 clear cylindrical cane fragments, twisted, patinated
- 1 clear cylindrical milk bottle sherd, capseat lip finish fragment, heavily stained, patinated (1889-1950s)
- 1 clear cylindrical milk bottle sherd, capseat lip finish, automatic bottle machine, patinated (1910-1950s)
- 1 clear cylindrical rod fragment, flat sides, bent, heat melted, stained, patinated
- 1 clear cylindrical tableware sherd, pressed geometric decoration, scalloped rim (1827-present)
- 1 clear cylindrical tube fragment, hollow, bent, stained, patinated
- 1 clear cylindrical tube fragment, hollow, flat sides, stained
- 1 clear manganese cylindrical bottle/jar sherd, base fragment, cup mold, heavily stained, patinated (1880-1910s)
- 1 clear square/rectangular cane fragment with teal line in center, slightly twisted, patinated
- 1 green cullet/waste fragment, blocky, stained
- 2 light green cullet/waste fragments, blocky, stained, patinated
- 1 light green cylindrical bottle sherd, collared lip finish, embossed "...WDER..." probable baking powder bottle, automatic bottle machine (1907-present)

### **North End of Property, Fill horizon**

#### Ceramics

- 1 hard paste porcelain sherd, blue hand painted floral decoration, rim fragment
- 1 whiteware sherd, molded rim decoration, rim fragment, stained (1820-1900+, South 1977; Miller 1992)

#### Glass

- 1 clear cylindrical bottle, almost whole (missing neck/lip finish), front plate mold embossed "EMBASSY/EMBASSY/EMBASSY DAIRY INC./WASHINGTON D.C./REGISTERED ONE QUART LIQUID," base embossed "E" (large) and "34," valve mark on base, automatic bottle machine, stained (1910-present)

### **Northeastern End of Property, Fill horizon**

#### Glass

- 1 clear cylindrical milk bottle, whole, front plate mold embossed "HALF PINT/CHESTNUT FARMS DAIRY/CEO.M.OYSTER JR./REGISTERED," capseat lip finish, valve mark on base, automatic bottle machine, stained (1910-1950s)
- 1 clear cylindrical milk bottle, whole, plate mold embossed "HALF PINT/C.E.COLMAN/24-791-865/COLUMBUS AVE./REGISTERED," capseat lip finish, valve mark on base, automatic bottle machine, stained (1910-1950s)

### **Feature 10, North Profile, Apb Horizon**

#### Ceramics

- 1 whiteware sherd, violet transfer printed exterior, green rim band interior, rim fragment (1820-1900+, South 1977; 1825-1875+, Miller 1992)

## **STRIPPING**

### **Block 1, General Collection, Fill 2 horizon**

#### Glass

- 1 clear cylindrical bottle sherd, applied color label "...C.../...REG. U.S.../EVERA.../...ONTENTS 12 FLU..." (post-1934)
- 1 light aqua cylindrical bottle sherd, collared extract lip finish, tooled, patinated (post 1850)

### **Block 1, Test Unit 1, Fill 2 horizon**

#### Ceramics

- 1 refined white earthenware sherd, unidentified blue decoration

#### Glass

- 1 unidentified clear sherd, flat, scratched, patinated

#### Miscellaneous

- 1 brick fragment, 0.4 grams
- 7 slag fragments, 3.4 grams

### **Block 1, Test Unit 2, Fill 2 horizon**

#### Ceramics

- 2 whiteware sherds, blue transfer printed decoration (1820-1900+, South 1977; 1830-1865+, Miller 1992)

Glass

- 1 unidentified light green sherd, flat, patinated

Miscellaneous

- 1 brick fragment, 0.6 grams
- 4 charcoal fragments

**Block 1, Feature 4b, South Bisection, Feature Fill horizon**

Glass

- 1 clear cylindrical bottle/jar sherd, scratched

Miscellaneous

- 1 brick fragment, 0.4 grams
- 1 slag fragment, 1.2 grams

**Block 2, Test Unit 3, Fill 2 horizon**

Ceramics

- 1 whiteware sherd, undecorated (1820-1900+, South 1977; Miller 1992)

Metal

- 1 unidentified ferrous metal fragment
- 2 unidentified nail fragments

Miscellaneous

- 3 brick fragments, 5.2 grams
- 5 charcoal fragments
- 1 chert pebble, broken, cortex, possible ballast

**Block 2, Feature 4c, North Half, Feature Fill horizon**

Ceramics

- 1 yellowware sherd, undecorated, base fragment (1830-1940, Miller)

**Block 2, Feature 4c, South Half, Feature Fill horizon**

Glass

- 1 olive green cylindrical bottle sherd, scratched, patinated
- 2 unidentified very pale aqua sherds (mend), curved, thin

**Block 2, Feature 4d, Feature Fill horizon**

Glass

- 1 amber cylindrical bottle sherd, unidentified collared lip finish fragment, automatic bottle machine (1907-present)
- 1 unidentified amber spall

Miscellaneous

- 1 brick fragment, 6.0 grams



**APPENDIX III**  
**List of Qualifications**



**John P. Mullen, M.A., R.P.A.**  
**Principal Archeologist**



John Mullen has 19 years of experience in cultural resource management in the Middle Atlantic Region. He has conducted all phases of archaeological research for Sections 106 and 110 compliance projects in the region and has participated in and conducted research on diverse prehistoric and historic period archeological sites including lithic quarries and reduction stations, Late Woodland palisaded villages, early 19th century military forts, Civil War campsites, a 19th century iron works, a 19th century prison, historic cemeteries and numerous 19th and 20th century domestic sites.

Mr. Mullen was afforded the opportunity to experience and learn a multi-disciplinary environmental approach to archeological research by working with William M. Gardner in the classroom and in the field. Mr. Mullen's Master's thesis research, an examination of the *Distribution of Prehistoric Settlements Along the Piscataway River Drainage*, was guided by William Gardner at Catholic University, and John's education continued into the field, where he served as a field director with Thunderbird Archeological Associates prior to its acquisition by Wetland Studies and Solutions, Inc.

His current responsibilities at Wetland Studies and Solutions, Inc. include both project and technical management. Mr. Mullen manages archeologists assigned to field projects, prepares technical proposals, and writes and edits technical reports.

***Professional Affiliations and Memberships:***

Council of Virginia Archaeologists, Member  
Society of American Archaeology, Member  
Middle Atlantic Archaeological Association, Member  
Washington Association of Professional Anthropologists, Member, Past President

***Education:***

Master of Arts, 2004, Anthropology, The Catholic University of America, Washington, D.C.  
Bachelor of Arts, 1989, Anthropology, University of Massachusetts, Amherst, Massachusetts

***Certifications:***

Registered Professional Archeologist, 2011  
American Safety and Health Institute, CPR and AED; First Aid, 2011 (Exp. 2013)  
8-Hour HAZWOPER Hazardous Materials Technician Review, (November 2011)  
40-Hour HAZWOPER Hazardous Materials Technician, 2009

## ***Continuing Education:***

Battlefield Grants Workshop for Contractors (American Battlefield Protection Program, NPS), June 2010  
NHI 142049: Beyond Compliance – Historic Preservation in Transportation Project Development, (National Highway Institute), December 2009  
Basic Wetland Delineation Training (Wetland Studies and Solutions, Inc.), July 2009  
A/E Marketing Effectiveness (ZweigWhite) May 2008  
Winning Federal Contracts: SF330 Intensive (ZweigWhite), May 2008  
The Basics of Marketing to the Federal Government for A/E Firms. Marketing to the Federal Government (Virtual Seminar Series, ZweigWhite), July 2007  
Preparing Winning Proposals (Virtual Seminar Series, ZweigWhite), May 2007  
Project Management Essentials for A/E Professionals (Virtual Seminar Series, ZweigWhite), March 2007  
Section 106: An Introduction (National Preservation Institute), April 2005  
AutoCad 2004: Level 1 Essentials (KEI Pearson), July 2004  
ATV Safety Institute, 2006

## ***Publications (selected):***

- 2010 Mullen, John P. M.A., Boyd Sipe, M.A., and Edward Johnson. *Phase I Archeological Investigations of the ± 1.7 Mile Rappahannock Heritage Trail Project City Of Fredericksburg, Virginia. DHR File Number 2010-0071.* Report prepared for William H. Gordon Associates, Inc. of Chantilly, Virginia.
- 2010 Mullen, John P. M.A., RPA. *A Documentary Study of the ± 129-acre JBG Mark Center Properties, City of Alexandria, Virginia.* Report prepared for the JBG Companies, Chevy Chase, Maryland.
- 2009 Bryant, Tammy, David Carroll and John Mullen. *Phase I Archeological Investigations of the 1.73 Acre Williams Ordinary Property, Prince William County, Virginia.* Report prepared for the Historic Preservation Division of the Prince William County Government, Dumfries, Virginia.
- 2009 Mullen, John P. *Documentary Study for the North Parkway LLC Property (532 N. Washington Street), City of Alexandria, Virginia* Report prepared for Falston Properties, Arlington, Virginia.
- 2009 Mullen John P., M.A., RPA, Boyd Sipe, Christine Jirikowic, Ph.D., Johnna Flahive, M.A., and Edward Johnson. *Archeological Evaluation Of The King Street Properties In Alexandria, Virginia: Phase I/II Archeological Investigations And Phase III Data Recovery Of Site 44AX0202.* November 2007 (Final Revision January 2009). Report prepared for DSF Long King I, LLC of Waltham, Massachusetts.
- 2008 Mullen, John P., Edward Johnson and Annie McQuillan. *A Documentary Study and Archeological Investigations of the Lynbrook at Mark Property, City Of Alexandria, Virginia.* Report prepared for Meadowbrook/Lynbrook Residential, L.L.C., of Chevy Chase, Maryland.
- 2007 Mullen, John P., David Carroll, Curt Breckenridge, Johnna Flahive, M.A., and Annie McQuillan. *Phase I and II Archeological Investigations of Site 44FX3247, within a Portion*

- of the Lorton Workhouse Property, Fairfax County, Virginia.* Report prepared for the Lorton Arts Foundation, Lorton, Virginia.
- 2006 Mullen, John P. *Phase IA Archeological Investigations of the Circa 38-Acre 12260 Elvan Road Property, Loudoun County, Virginia.* Report prepared for Mr. Tim Keena.
- 2005 Jirikowic, Christine, Joseph Blondino, John Mullen, Tammy Bryant and Gwen Hurst. *Phase III Data Recovery Excavations of 44SP90, The Landram House, City of Fredericksburg, Virginia.* Report prepared for the Ryland Group, Inc., Fairfax, Virginia.
- 2004 Mullen, John, Joan Walker and Gwen Hurst. *Phase III Data Recovery Excavations at Site 44SP382, A Civil War Campsite, Spotsylvania County, Virginia.* Report prepared for the Ryland Group, Inc., Fairfax, Virginia.
- 2003 Gardner, William, John Mullen, Gwen Hurst, and Joan Walker. *Phase II Archeological Investigations at Loci 1, 15, 18 and 20 and Phase III Data Recovery at Locus 16, 44HT27, Fort Monroe, Hampton, Virginia.* Report prepared for Virginia Engineering and Environment, Inc. Virginia Beach, VA.
- 2002 Gardner, William, John Mullen, Gwen Hurst. *Phase I-III Archeological Investigations of 4840 Eisenhower Avenue, Alexandria, Virginia.* February 2002. Report prepared for Eisenhower, L.L.C. of Vienna, Virginia.
- 2000 Gardner, William, Gwen Hurst, and John Mullen. *Phase II Archeological Evaluations of Loci 6, 8, 16, and 19, 44HA27, Fort Monroe, Hampton, Virginia.* Report prepared for Virginia Engineering and Environment, Inc. Virginia Beach, VA.
- 1999 Gardner, William and John Mullen. *A Phase I Archeological Resources Reconnaissance of Portions of the 500 Acre Big Bethel Reservoir Facility, Newport News, Hampton and York County.* Prepared for Engineering and Environment Inc., Virginia Beach, Virginia.

### ***Presentations and Speaking Engagements (selected):***

- 2009 Site Prediction Models in Cultural Resource Management: An Analysis of Archeological Sites in Northern Virginia. Co-authored with Andrew Welti (Wetland Studies and Solutions, Inc.). Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, Maryland.
- 2008 Land Planning and Archeology: Federal, State and Local Legislation. Lecture at George Mason University with Kimberly Snyder, Wetland Studies and Solutions, Inc.
- 2008 CRM Archeology: An Overview of Federal, State and Local Legislation – American University Lecture,
- 2008 Using Gardner's Predictive Models in Cultural Resource Management: An Analysis of Archeological Sites in Northern Virginia. Paper presented at the Symposium to Honor the Work of William M. Gardner, Shepherdstown, West Virginia.
- 2002 Recent Excavations at Freedom's Fortress. Paper presented at the Middle Atlantic Archaeological Conference, Virginia Beach, Virginia.
- 2001 On the Pleistocene Terrace Back of Seldon Island. Paper presented at the Middle Atlantic Archaeological Conference, Ocean City, Maryland.

- 2000 On the Pleistocene Terrace Back of Seldon Island. Paper presented at the Eastern States Archaeological Federation Solomon's Island, Maryland.
- 1998 Recent Excavations at 44PW972, an early 19th century site in Bristow, Virginia. Paper presented at the Archeological Society of Virginia Annual Meetings, Winchester, Virginia.

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**Jeremy Smith, MSc.**  
**Associate Archeologist**



Jeremy Smith has over seven years of professional experience in archeological research and fieldwork in the Middle Atlantic Region with a specialization in cultural resource management. As a more experienced Field Technician, Mr. Smith often served in a Crew Chief or supervisory capacity on a variety of projects; amassing over one year of experience in the supervision of archeological field investigations and archeological crews.

Prior to joining Thunderbird Archeology, a division of Wetland Studies and Solutions Inc., Mr. Smith was employed at The Louis Berger Group as an Archeology Field Technician where he participated in a number of Phase I, Phase II, and Phase III archeological investigations of both historic and prehistoric time periods. He has participated in archeological research on diverse prehistoric and historic period archeological sites, including lithic quarries and reduction stations, Archaic camps, Woodland Period villages, Civil War battlefields and campsites, historic cemeteries, and numerous late 18th through 20th century domestic sites. He has gained proficiency in field and laboratory techniques, technical report writing, and AutoCAD.

***Education:***

Master of Science, 2011, European Archaeology, The University of Edinburgh, Edinburgh,  
United Kingdom  
Bachelor of Arts, 2001, Anthropology (History Minor), George Mason University, Fairfax, Virginia

***Continuing Education:***

Introduction to Transit and Total Station Survey (Fort A.P. Hill), 2008  
Faunal Analysis Wetland Studies, May 2006  
Summer Plant Identification, Wetland Studies, May 2006  
Physical Geology of Northern Virginia, Wetland Studies, March 2006  
Winter Plant Identification, Wetland Studies, February 2006  
Soils and Geomorphology of Northern Virginia, Wetland Studies, October 2005  
Section 106: An introduction (National Preservation Institute), July 2005  
AutoCAD 2005: Level 1 Essentials, KEI Pearson, July 2005

***Certifications:***

American Red Cross Standard First Aid, 2011  
American Red Cross Adult CPR/AED, 2011  
ATV Safety Institute, 2006

## ***Select Publications:***

- 2011 *Phase I Archeological Investigation of the Dawkins Ridge – Land Bay D Site, Prince William County Virginia.* John P. Mullen, M.A., RPA and Jeremy Smith. Prepared for Ryland Homes, Washington Division, Chantilly, Virginia.
- 2010 *Phase II Archeological Evaluation of Site 44LD1324, Loudoun County, Virginia.* Boyd Sipe, M.A., RPA, John P. Mullen, M.A., R.P.A., and Jeremy Smith. Prepared for Luck Stone Corporation, 751 Miller Drive, Suite 200. Leesburg, Virginia.
- 2010 *Phase II Archeological Evaluation of Site 44LD1003, Loudoun County, Virginia.* Boyd Sipe, M.A., RPA and Jeremy Smith. Prepared for Rockpoint Land Acquisitions III, LLC, Boston, Massachusetts.
- 2009 *Phase I Archeological Investigation of Portions of the Nahidian Property, Loudoun County, Virginia.* Kimberly Snyder, Jeremy Smith, and Kristin Deily. Prepared for Mr. A. Bahram Nahidian of Chantilly, Virginia.
- 2008 *Phase III Archeological Data Recovery at 44PW1662, The Thomas Brawner Gaines Farmstead, Prince William County, Virginia.* Boyd Sipe, Kimberly Snyder, Kristin Deily, and Jeremy Smith. Prepared for: Lerner Enterprises, North Bethesda, Maryland.

## ***Crew Chief or Supervisory Experience:***

- 2011 *Phase I Archeological Investigation of the Dawkins Ridge – Land Bay D Site, Prince William County Virginia.* John P. Mullen, M.A., RPA and Jeremy Smith. Prepared for Ryland Homes, Washington Division, Chantilly, Virginia.
- 2010 *Phase II Archeological Evaluation of Site 44LD1389, The Sidney L. Hodgson House Site, Loudoun County, Virginia.* Boyd Sipe, M.A. and Annie McQuillan. Prepared for Rockpoint Land Acquisitions III, LLC, Boston, Massachusetts.
- 2010 *Phase I Archeological Investigations of the Greenfields Assemblage (North Section), Loudoun County, Virginia.* Boyd Sipe, M.A., RPA and David Carroll. Prepared for: Rockpoint Land Acquisitions III, LLC, Boston, Massachusetts.
- 2010 *Phase I Archeological Investigations of the Willowsford Greens, South Section, Loudoun County Virginia.* John Mullen, M.A., RPA and David Carroll. Prepared for Willowsford Greens, LLC, Ashburn, Virginia.
- 2010 *Additional Archeological Investigations of the Broad Run Village Assemblage, Loudoun County, Virginia.* Edward W. Johnson and Kimberly A. Snyder, M.A., RPA. Prepared for Rockpoint Land Acquisitions III, LLC, Boston, Massachusetts.
- 2010 *Phase I Archeological Investigation Including Military Sites Survey of the + 40.7 acre Youth for Tomorrow Property, Prince William County, Virginia.* Boyd Sipe, M.A., RPA. Prepared for The Rappaport Companies, Mclean, Virginia.
- 2010 *Additional Archeological Investigations of the Lenah Assemblage, Loudoun County, Virginia.* Boyd Sipe, M.A., RPA. Prepared for Rockpoint Land Acquisitions III, LLC. Boston, Massachusetts.

- 2009 *A Phase I Cultural Resources Survey of the + 1.7 Mile Rappahannock Heritage Trail Project, City of Fredericksburg, Virginia.* John P. Mullen, M.A., RPA, Boyd Sipe, M.A., RPA and Edward Johnson. Prepared for William H. Gordon Associates, Inc., Chantilly, Virginia.
- 2009 *Cemetery Delineation and Phase I Archeological Investigations of the + 11.3 acre Dumfries Elementary School Property, Prince William County, Virginia.* Boyd Sipe, M.A. Prepared for Prince William County Schools, Manassas, Virginia.
- 2009 *Phase II Archeological Evaluation of Site 44LD1359, Loudoun County, Virginia.* Boyd Sipe, M.A. Prepared for INOVA c/o Sittler Development Associates, LLC, Reston, Virginia.
- 2009 *Phase I Archeological Investigations of the + 131 Acre White's Ford Park Property, Loudoun County, Virginia.* Kimberly A. Snyder, M.A., RPA, Tammy L. Bryant, M.A. RPA, and David Carroll. Prepared for Northern Virginia Regional Park Authority, Fairfax Station, Virginia.
- 2009 *Phase I Archeological Investigation of the ± 145 Acre Haymarket Crossing Property, Prince William County, Virginia.* Boyd Sipe M.A., and John P. Mullen, M.A. Prepared for Metropolitan Partnership Limited of Reston, Virginia.
- 2009 *Stripping and Monitoring of a + 1.4 Acre Portion of the Ridgewood Property, Addendum to Phase I Archeological Investigations of the 17.65 Acre Ridgewood Property, Fairfax County, Virginia.* Tammy Bryant M.A., RPA and David Carroll. Prepared for WPPI Fairfax I, LLC, Merrillville, Indiana.
- 2008 *Phase III Archeological Data Recovery at 44PW1662, The Thomas Brawner Gaines Farmstead, Prince William County, Virginia.* Boyd Sipe, Kimberly Snyder, Kristin Deily, and Jeremy Smith. Prepared for: Lerner Enterprises, North Bethesda, Maryland.

### ***Field Technician Experience:***

- 2010 *Phase I Archeological Investigations of a + 5 Acre portion of the + 41 Acre Belmont Town Center Property, Prince William County, Virginia.* John P. Mullen, M.A., Edward Johnson and Annie McQuillan. Prepared for Belmont Bay, L.C., Woodbridge, Virginia.
- 2010 *Phase I Archeological Investigations of the + 6.5 Acre Amanda Place Property, Fairfax County, Virginia.* John P. Mullen and Edward Johnson. Prepared for Elm Street Development, McLean, Virginia.
- 2010 *Additional Archeological Investigations of the Arcola Assemblage, Loudoun County, Virginia.* Kimberly A. Snyder, M.A., RPA and David Carroll. Prepared for Rockpoint Land Acquisitions III, LLC, Boston, Massachusetts.
- 2010 *Archeological Investigations of the Meadow Creek Temporary Stream Bank Restoration at Mark Center Property, City of Alexandria, Virginia.* John P. Mullen, M.A., RPA and Edward Johnson. Prepared for The JBG Companies, Chevy Chase, Maryland.

- 2009 *Archeological Evaluation Report (Phase I Archeological Investigation) and Research Management Plan for the James Bland Development Property, City of Alexandria, Virginia.* Boyd Sipe, M.A. Prepared for EYA, Bethesda, Maryland.
- 2009 *Phase I Archeological Investigations of a + 1100 Linear Foot Portion of the Martinsburg City Center Storm Water Project, City of Martinsburg, Berkeley County, West Virginia.* John P. Mullen, M.A., RPA and David Carroll. Prepared for Chester Engineers, Moon Township, Pennsylvania.
- 2009 *Phase I Archeological Investigation of the + 50 Acre Route 15 Haymarket Crossing Property, Prince William County, Virginia.* Boyd Sipe, M.A., RPA. Prepared for Hunter Trust, Clifton Virginia.
- 2009 *Phase I Archeological Investigations of the + 2.03 Acre 7420 Beulah Street Property, Fairfax County, Virginia.* Tammy Bryant, M.A., RPA, Ed Johnson and Boyd Sipe. Prepared for Tenex Redevelopment Corp., Bethesda, Maryland.
- 2008 *Phase I Archeological Investigations of the ± 10.26 Acre Fairbank Pier Property, Fairfax County, Virginia.* Tammy Bryant, M.A. and David Carroll. Prepared for Mr. Richard Fairbank, c/o Mr. Frank LaPrade, Capital One Financial Corporation, McLean, Virginia.
- 2008 *Phase I Archeological Investigation of the ± 99 Acre Lenah School Property, Loudoun County, Virginia.* John Mullen, M.A. and David Carroll. Prepared for Bowman Consulting, Leesburg, Virginia.
- 2008 *Phase I Archeological Investigation of a ± 135 Acre Portion of the Bealeton Gateway Property, Fauquier County, Virginia.* Jarod Hutson, M.S. Prepared for Bealeton Gateway, L.L.C., Warrenton, Virginia
- 2008 *Phase II Archeological Investigation of 44LD0719, Loudoun County, Virginia.* John Mullen, David Carroll, Johnna Flahive and Stephanie Sharpes. Prepared for NA Dulles Real Estate Investor LLC, E. Setauket, NY.
- 2007 *Cultural Resources Review of the ± 193.95 Acre Latsios Property, Prince William County, Virginia.* Kimberly A. Snyder and Boyd Sipe. Prepared for Clark Realty Capital, L.L.C., Arlington, Virginia.
- 2007 *Phase III Archeological Data Recovery of Site 44LD0825, Loudoun County, Virginia.* Kimberly Snyder, Curt Breckenridge, Johnna Flahive, and Boyd Sipe. Prepared for E.G. Partners III, Chantilly, Virginia.
- 2007 *Phase I Archeological Investigations of the I-95/395 HOV/Bus/Hot Lanes Project, Arlington, Fairfax, Prince William and Stafford Counties and the City of Alexandria, Virginia.* John P. Mullen, M.A. and David Carroll. Prepared for Fluor Enterprises, Inc., Alexandria, Virginia.
- 2006 *Phase I Archeological Investigations of the 45.71 Acre Sterling Auto Park Property, Loudoun County, Virginia.* Christine Jirikowic and Curt Breckenridge. Prepared for Cypress Equities, Addison, Texas.
- 2006 *Archeological Evaluation of the King Street Properties, Alexandria, Virginia, Phase I/II Archeological Investigations and Phase III Data Recovery of Site 44AX0202.* Christine Jirikowic, Ph.D., Boyd Sipe, John P. Mullen, M.A., Johnna Flahive, M.A., and Edward Johnson. Prepared for DSF Long King I, LLC, Waltham, Massachusetts.

- 2006 *Phase I Archeological Investigations of the Circa 253 Acre Arrington Knolls Property, Fauquier County, Virginia.* Boyd Sipe, Prepared under the supervision of Christine Jirikowic, Principal Investigator. Prepared for Centex Homes, Chantilly, Virginia.
- 2006 *Phase I Archeological Investigations of the ± 50 Acre Assad Property, Loudoun County, Virginia.* David Carroll and Jennifer Rakos-Simonson, Prepared under the supervision of Christine Jirikowic, Principal Investigator. Prepared for Loudoun County Public Schools, Ashburn, Virginia.
- 2005 *Phase I Archeological Investigations of the 225.8 Acre Commonwealth Center Property, Loudoun County, Virginia.* John Mullen, David Carroll, Paw Jorgensen, and Christopher Shephard, Prepared under the supervision of Christine Jirikowic, Principal Investigator. Prepared for The Peterson Companies, Fairfax, Virginia.
- 2005 *Phase II Archeological Evaluation of Site 44LD854 on the Smith Property, Loudoun County, Virginia.* Stephanie Taleff Sperling and Johnna Flahive, Prepared under the supervision of Christine Jirikowic, Principal Investigator. Prepared for Greenvest, L.C., Vienna, Virginia.
- 2005 *Phase I Archeological Investigation of the Circa 89 Acre Jefferson Farm Property and Phase II Investigation of 44PW1642, Prince William County, Virginia.* Boyd Sipe, Johnna Flahive and Jarod Hutson, Prepared under the supervision of Christine Jirikowic, Principal Investigator. Prepared for Cedar Run/Jefferson, L.C., Chantilly, Virginia.
- 2005 *Phase I Archeological Investigations of the Circa 652 Acre Creekside Areas 4 and 5 Property, Loudoun County, Virginia.* Kimberly Snyder and David Carroll. Prepared for Lansdowne Town Center, LLC, Lansdowne, Virginia.



**APPENDIX IV**  
**Cultural Resource Form**





**City/County:** Alexandria

**Site Condition:** 75-99% of Site Destroyed

**Threats to Resource:** Demolition  
Development

**Survey Description:**

[2012 Mullen] The work consisted of the a combination of hand and machine excavation of soils across the property, archeological monitoring of all subsurface excavation, including the demolition and removal of ca. 1950s office building footers. Two 2 by 2 foot and one 3 by 3 foot test units were hand excavated to investigate potentially significant archeological features and/or buried ground surfaces that were identified during the archeological monitoring. All features were photographed and documented; where possible, features were bisected and the feature soils screened.

**CURRENT LAND USE**

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**Land Use:** Landscape      **Example:** Other

**Dates of Use:** 2012/01/99

**Comments/Remarks:**

At the time of srurvey, site was vacant lot underer redevelopment

**SPECIMENS, FIELDNOTES, DEPOSITORIES**

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**Specimens Obtained?** Yes      **Specimens Depository:** Thunderbird Archeology/WSSI, Gainesville VA

**Assemblage Description:**

City/County: Alexandria

[2012 Mullen]

Ceramics

- 1 hard paste porcelain
- 1 pearlware (1780-1830)
- 6 whiteware (1820-1900+)
- 1 refined white earthenware
- 1 yellowware (1830-1940)

Glass

- 14 bottle, bottle/jar
- 8 cane
- 22 cullet/waste
- 1 rod
- 6 stopper
- 2 tube
- 1 tableware, pressed (1827-present)
- 2 bottle, bottle/jar, applied color label (post-1934)
- 7 bottle, automatic bottle machine (ABM) (1907-present)
- 1 bottle/jar, clear manganese (1880-1915)
- 1 cane, clear manganese (1880-1915)
- 1 cullet/waste, clear manganese (1880-1915)
- 1 stopper, clear manganese (1880-1915)
- 6 unidentified glass

Metal

- 2 nail, unidentified
- 1 unidentified ferrous metal

Miscellaneous

- 7 brick
- 9 charcoal
- 8 slag

Specimens Reported? No

Assemblage Description--Reported:

Field Notes Reported? Yes                      Depository: Thunderbird Archeology/WSSI, Gainesville VA

**REPORTS, DEPOSITORY AND REFERENCES**

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Report (s) ? Yes                      Depository: Thunderbird Archeology/WSSI, Gainesville VA

**DHR Library Reference Number:**

**Reference for reports and publications:**

2012  
Archeological Investigations of the 800 Block of North Henry Street, City of Alexandria, Virginia

**PHOTOGRAPHIC DOCUMENTATION AND DEPOSITORY**

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Photographic Documentation?	Depository	Type of Photos	Photo Date
Yes	Thunderbird Archeology/WSSI, Gainesville VA	Digital	2012/01/99

**CULTURAL RESOURCE MANAGEMENT EVENTS**

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City/County: Alexandria

<b>Cultural Resource Management Event:</b> Survey:Phase I/Reconnaissance	<b>Date:</b> 2012/01/99
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**Organization and Person:**

**Organization:** Thunderbird Arch      **First:** John      **Last:** Mullen

**Sponsor Organization:**

**DHR Project Review File No:**

**CRM Event Notes or Comments:**

The archeological investigation of the 800 block of N. Henry Street was required under the Archeology Protection Code, located in Section 11-411 of the Zoning Ordinance of the City of Alexandria, Virginia. The archeological investigation followed an approved Scope of Work and was conducted between October 2011 and February 2012. Brick foundations and other features associated with the Belle Pre Bottle Company were located on the city block during the investigation. All fieldwork was conducted in consultation with Alexandria Archaeology.

**INDIVIDUAL/ORGANIZATION/AGENCY INFORMATION**

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**Individual Category Codes:**

Owner of property

**Honorif:**      **First:** Unknown      **Last:** Unknown

**Suffix:**

**Title:**

**Company/** Equity Residential - Development

**Agency:**

**Address:** 1953 Gallows Road, Suite 340

**City:** Vienna      **State:** Virginia      **Zip:** 22182

**Phone/Ext:** - -

- -

**Notes:**

**Ownership Type:** Private

**Government Agency:**