

## Cultural Resources Data Recovery and Monitoring Report



### Fort Edward Village Site

### Fort Edward Feeder Canal Bridge Site

### Hilfinger Pottery Site

Town and Village of Fort Edward  
Washington County, New York

*Prepared by:*

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**CULTURAL RESOURCES DATA RECOVERY AND  
MONITORING REPORT**

of the

*Fort Edward Village Site,  
Fort Edward Feeder Canal Bridge Site,  
and  
Hilfinger Pottery Site*

Town and Village of Fort Edward  
Washington County  
New York



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Cover: Background image *'A plan of Fort Edward and its environs on the Hudson River'* (Kitchen, 1772). Cover images: Hilfinger Pottery workers circa 1940 (courtesy of the Fort Edward Historical Association); projectile points (Fort Edward Village Site); bayonet scabbard clip (Fort Edward Village Site); Delft plate fragment (Fort Edward Village Site); and detail of the the fort, ravelin, and outworks at Fort Edward from *'Geometrical Plan of Fort Edward with its Environs'* (Wetterstrom, 1756 courtesy of the Huntington Library).

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# Management Summary

## Project Description

### *Project Identifier*

NYSDOT PIN 1089.57.121

### *Project Type*

Phase III archaeological data recovery and monitoring. Pavement reconstruction including curb and sidewalk replacement, installation of new water, sewer, natural gas lines, and closed drainage, using federal funding.

### *Location*

U.S. Route 4 (Broadway) in the village (Minor Civil Division #11542) and town (MCD #11506) of Fort Edward, Washington County, New York.

### *Project Limits*

The project extended from the bridge over the Champlain Barge Canal at the south end of the village to Gibson Avenue near the Hudson Falls city line, a distance of 3.7 km (2.3 mi). Centered along the street corridor, it had a width generally of 18 m (60 ft) encompassing the street and sidewalks along both sides, expanding to a width of 25 m (82 ft) along the viaduct at Bond Creek. It also involved short extensions along intersecting side streets as well as four closed drainage lines from the street to outlets in Bond Creek, the Hudson River, and the old feeder canal prism. The project area encompassed approximately 7 hectares (17 acres).

**USGS Quadrangle** 1966 7½-Minute Hudson Falls, New York.

**Area Tested** Over 122 m<sup>2</sup> (1,313 ft<sup>2</sup>) were excavated during the Data Recovery, and over 6,015 m<sup>2</sup> (64,745 ft<sup>2</sup>, 1.5 acres) in trenches monitored during construction activities.

## Archaeological Sensitivity

Prehistoric sensitivity is high. Historic sensitivity is high. It has been long known that the lower part of the village of Fort Edward, where U.S. Route 4 is located, is historically significant because of the location there of the

eighteenth century French and Indian War military fort and supply depot (OPRHP Site #A115-42-0003, Old Fort Edward). It is also known for its long-term prehistoric occupation as a stepping-off point for portaging around the falls in the Hudson, the major north-south inland water transportation route from the Atlantic Ocean to the St. Lawrence River and Canada. Many archaeological sites, both prehistoric and historic, have been recorded in and near the project route.

## Archaeological Investigation Method

Before construction, conventional manual excavation of seventy-three (73) units occurred within the parking lanes on both sides of Broadway between Moon and Notre Dame Streets, an area that corresponded with the entrenched campgrounds of the British and provincial armies from 1755 to 1760. Six designated data recovery trenches (DRTs) were mechanically cleared of pavement to facilitate manual archaeological unit excavation within. All other construction within the lower part of the village was monitored by archaeologists. The DRTs were monitored as well when construction proceeded within them.

Almost all construction from Bridge Street to McRae Street was monitored though there was less archaeological sensitivity in that section since it was north of the original core area of prehistoric and eighteenth-century settlement. The northern segment of the project located along upper Broadway from McRae Street north to Gibson Street was considered of low archaeological sensitivity because it is situated on the uplands away from the river and saw little development before the late-nineteenth and early-twentieth centuries. This segment was omitted from archaeological investigation during construction.

## Archaeological Investigations Results

Three archaeological sites were identified: two historical sites and one large multi-component site with three main occupation periods (prehistoric, eighteenth-century, and nineteenth-century) as follows:



## ***The Fort Edward Feeder Canal Bridge site (NYSM #12573)***

### ***Setting***

Broadway between Liberty Street and Terrace Place just south of McGrea Street.

### ***Type***

Fort Edward feeder canal (now filled in) and associated bridge crossing (intact buried stone and concrete bridge abutments, adjacent building foundation stones, and trolley ties.

### ***Age***

Mid-nineteenth century.

### ***Significance***

DOT's construction activities along Broadway, where the bridge crossed the former Fort Edward Feeder Canal, provided archaeologists several opportunities to identify cultural resources associated with the previously unexplored site. They observed intact features in almost every construction exposure that crossed through the site area. The Fort Edward Feeder Canal Bridge Site is significant for several reasons. First is its association with the Old Champlain Canal listed on the National Register of Historic Places. While this portion of the canal was privately owned for much of its use, the construction techniques uncovered during the monitored excavations were consistent with those used in the larger canal. Significance is also associated with the fact that this former feeder-turned private branch of the Champlain Canal played a significant role in the development of Fort Edward's economy. From the mid-nineteenth century to the early-twentieth century the feeder canal shipped many different products related to the surrounding mills including pottery, clothing, iron, furniture, lumber, and paper products.

The site also documents some of the changes through time in the landscape of the road and bridge that resulted from technological advances in modes of transportation in the late-nineteenth and early-twentieth centuries. Primarily, these involved the adoption of a trolley line through the village; first horse-drawn followed by electric-powered. The trolley line was eventually joined, then superseded by motorized vehicles (cars and trucks) that could travel at much higher speeds. After nearly 100 years of use of the canal for transporting goods by boat beneath the bridge, it was made obsolete in the early-twentieth century when railroads, and eventually trucks, became the preferred mode of moving products. Also, the increased reliance on automobiles, which at first shared the bridge with the trolley, proved unsafe

in combination with the steep bridge approaches, the bad sight distance, and sharp turn in the road at the bridge. All of these factors resulted in a series of gradual changes to accommodate the new faster mode of travel that all but obliterated any surface evidence of the canal or bridge. The site is considered to be eligible for listing on the National Register of Historic Places.

## ***The Hilfinger Pottery site (NYSM #12574)***

### ***Setting***

Southeast corner of the intersection of Broadway and Argyle Street in the lower part of Fort Edward village.

### ***Type***

Former location of a late-nineteenth to early-twentieth century stoneware and earthenware pottery that operated for almost seven decades in the village of Fort Edward, fifty of those years by the Hilfinger family.

### ***Age***

1874 to 1942.

### ***Significance***

This property is significant because it was the location of a well-known producer of pottery, first stoneware, then red earthenware, in the upper Hudson Valley region over a 70 year period. It was one of the few major nineteenth-century Fort Edward pottery buildings to survive well into the twentieth century, long after other Fort Edward potteries were gone. Only a relatively small portion of the site was impacted by the project construction and it is considered to be eligible for listing on the National Register of Historic Places.

## ***The Fort Edward Village site (NYSM #12575)***

### ***Setting***

Broadway from the Bond Creek Viaduct north to Bridge Street in the lower part of the village.

### ***Prehistoric Component***

Long before European contact, this area was known as the "Great Carry" a stepping-off point for a portage route north to Lake Champlain. Going back as far as the Middle Archaic period (8,000 to 6,000 BP), there was human settlement here as evidenced by the large number of known prehistoric sites nearby along the flats north and south of Bond Creek, and on Roger's Island in the

middle of the river. The prehistoric deposits and features found at this site include a lithic assemblage of over 1,200 artifacts, and two intact features with diagnostic projectile point types dating from the Late Archaic to the Early Woodland time periods. Charcoal from one feature was carbon dated to the Late Archaic. Based on comparisons to other nearby sites, it seems likely that the deposits within the APE are the product of seasonal reoccupation of the same general space over at least a couple thousand years.

### *Eighteenth-century Component*

Historical occupation began in the late seventeenth century, but the site was primarily the focus of intense military activity in the mid- and late-eighteenth century with the construction of an extensive British fort and military installation, from which the current village gets its name. This fort saw much activity during the French and Indian War from 1755 to 1760. Archaeological excavations and monitoring identified intact buried evidence of this military occupation including the remains of a blockhouse fireplace at the creek crossing depicted on period maps. It also identified the filled-in ditches of the outworks line crossed by construction in several places. Various features of the enclosed encampment were identified in the form of four fireplaces believed to be related to guard houses, soldiers' huts, or winterized tent sites. Two latrine pits and numerous small refuse pits associated with the five years of intensive campaign activity during the war were also identified in archaeological unit excavations and construction monitoring. Many artifacts related to the military activity were collected revealing information about soldier's diets and daily activities.

The period maps suggest that there were two episodes of entrenchment construction over the course of two years during the war; an early one built in 1756 that was then filled in, and a larger one constructed further out in 1757 enclosing more area. This was confirmed by archaeological evidence showing that refuse was buried in pits by soldiers camped over the earlier filled ditch, and by encountering the two parallel ditch lines east of the fort in construction trenching along Broadway.

### *Nineteenth-century Component*

During the Revolutionary War the site saw military activity again, especially during Burgoyne's campaign south from Canada, which ended with the Battle of Saratoga and Burgoyne's eventual surrender. This was soon followed by settlement of the village and surrounding town with the establishment of the Waterford and Whitehall Turnpike, still used today as Route 4 (Broadway). That was followed by the construction of the Champlain Canal and the subsequent growth of a water-powered industrial complex that attracted many people to the

village in the first half of the nineteenth century. This growth brought with it periodic utility and transportation improvements as houses and businesses became established along the street over the intervening 200 years. Along with the prehistoric occupation features and mid-eighteenth century fort-related features, many of the early utility and infrastructure features were sealed beneath the pavement of the street and were observed by archaeologists during the current reconstruction project.

### *Significance*

The site is considered to be eligible for listing on the National Register of Historic Places not only because of its already well known French and Indian War occupation, which extends well beyond the APE of this project, but also because of its prehistoric component and that of its nineteenth century period of village settlement and growth. It reflects the early and continued importance of the village's location along the Hudson River at its confluence with Bond Creek as a stopping point on the travel route between the St. Lawrence Valley and the Atlantic Ocean, an importance that was reinforced in the nineteenth century with the building of the Champlain Canal and a substantial industrial complex.

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## **Part I**

# **Data Recovery and Monitoring**

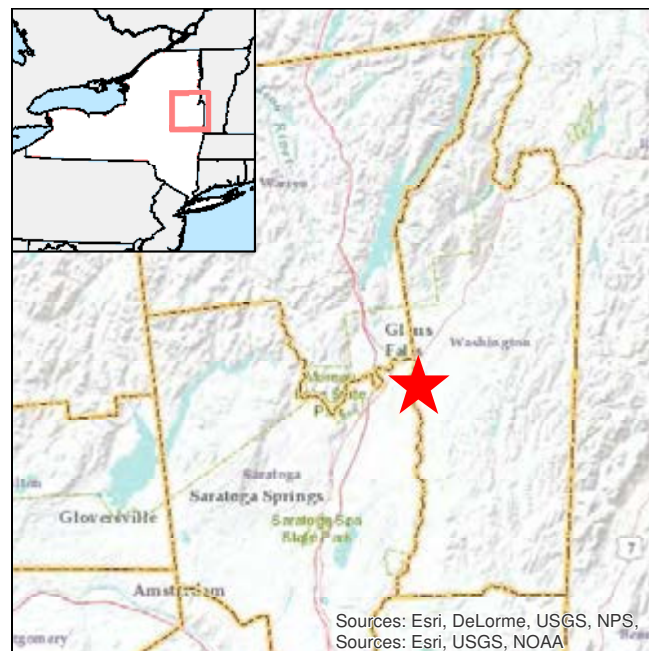
# 1. Project Overview

This report presents the results of an archaeological data recovery and monitoring project along US Route 4 (Broadway) in the village (MCD #11542) and town (MCD #11506) of Fort Edward, Washington County, New York (Figure 1.1). It was conducted for the New York State Department of Transportation (DOT) by staff of the New York State Museum Cultural Resource Survey Program (CRSP) as part of an inter-agency agreement between the DOT and the New York State Department of Education (NYSED). It was conducted according to the guidelines and specifications outlined in the New York State Education Department Cultural Resources Survey Program Work Scope Specifications for Cultural Resource Investigations on New York State Department of Transportation Projects (2004) and in accordance with the professional standards of the New York Archaeological Council.

## 1.1 Project Description

The DOT did a complete reconstruction of Broadway through the village of Fort Edward, which included installation of new water mains, a new sewer system, closed drainage, and natural gas lines followed by full depth pavement reconstruction from curb to curb along with sidewalk and curb replacement, and other amenities. The project started just north of the Route 4 bridge over the Champlain Barge Canal at the south end of the village and extended north to Gibson Avenue near the Hudson Falls city line (Figure 1.2 on the next page), a distance of 3.7 kilometers (2.3 mi).

Most of the construction and installation of new utilities on this project were confined to the existing street alignment but also in some places ran along the sidewalk. Utility service connections were also completed for all dwellings and businesses along the project route, which involved numerous lateral construction trenches leading from the new utilities buried in the street to the structures, for the most part stopping at the highway right-of-way line. Also in the village, closed drainage was installed in three locations outside the street to carry run-off into existing waterways, one involved two pipes outletting from Broadway into Bond Creek in the south part of the project, another involved a pipe buried in Underwood Park outletting from the street west into the Hudson River, and a third involved a buried pipe near the base of the hill just south of Fort Edward High school to carry runoff from the street in the north part of the vil-



**Figure 1.1:** Fort Edward within Washington County and New York State.

lage into the abandoned Fort Edward Feeder Canal ditch east of Broadway.

Because of the length and complexity of the project, the construction occurred over the course of three consecutive seasons from 2006 to 2008. It was divided into three segments with the goal being to have all utilities installed and full depth reconstruction complete on each segment by the end of that year's construction season, which was in November. The southernmost segment, from just south of Cortland Street to Notre Dame Street, was 640 m (.4 mi) long, and fell entirely within an area of high archaeological sensitivity.

Construction started in that segment during 2006 (July to November), which was the most intensive year of archaeological involvement for the project. That year saw ten weeks of data recovery excavations in a one block area from Moon Street to Notre Dame Street, while, concurrently, all other construction trenching was monitored by archaeologists. Also monitored in 2006 was one section of gas line trenching near the former Fort Edward Feeder Canal crossing by Mill and Liberty Streets, an archaeologically sensitive area for possible intact remains of the canal. Full depth reconstruction of the street was completed in only a portion of this seg-







ment that year and the rest was put off until the next year along with some also unfinished drainage structure installations.

During 2007 an additional segment was added at the south end of the project, from Cortland Street south almost to the Barge Canal crossing, in which new utilities, previously not planned, were installed. This also was in an area of high archaeological sensitivity. Otherwise construction focused mainly on installing new utilities north of Notre Dame Street, and full depth reconstruction from Bond Creek, where they left off in 2006, north to approximately Maple Avenue along upper Broadway north of the high school. Archaeologists monitored most of the deep trenching in this segment because it was considered only of moderate sensitivity. All of the full depth reconstruction in the southern segment from Bond Creek to Notre Dame Street, especially where it passed through the fort area, was monitored as well.

During 2008, the final season of construction, activities focused on the northern segment of the project from Maple Avenue to Gibson Avenue near the Hudson Falls city line. This segment had a lower archaeological sensitivity than the other two segments by virtue of its being on the uplands away from the river and the heart of prehistoric or early historical occupation in the area. Also, the majority of the second year monitoring north of Notre Dame Street (except for the area of the feeder canal crossing) revealed very limited results in the way of archaeological deposits. Therefore, none of the segment north of Maple Avenue was monitored in 2008.

This report will describe first a brief summary of the previous stages of work leading up to the construction, followed by a regional context divided up by a description of the natural environment, a prehistoric context, and a historical context. This is followed by a description of the archaeological methodology and the way it dovetailed with construction, beginning with the initial data recovery trenches, followed by a description of the construction monitoring. This is followed by a description of the laboratory methodology and any special analysis of the artifacts and various methods of data compilation.

Numerous significant cultural resources were identified and documented during this construction project ranging in age from thousands of years pre-contact to the early twentieth century. The heart of the report is the chapter on the results of the field investigations with a detailed analysis of the temporal and spatial distribution of artifacts, followed by three archaeological site descriptions. These include the multi-component Fort Edward Village site (prehistoric, mid-eighteenth century French and Indian War, and nineteenth to early twentieth century village settlement and occupation), the nineteenth century Fort Edward Feeder Canal Bridge site, and the late-nineteenth to early-twentieth century Hilfinger Pottery site.

## 1.2 Previous Work

In 1998, in anticipation of this work, DOT requested that CRSP conduct a Phase 1A survey (literature review) and architectural inventory for the project area because it was known to be highly sensitive for the presence of archaeological remains from both prehistoric and historical occupation. At that time, the proposed project was a 6.5 km (4 mi) stretch of Route 4 starting at the railroad underpass in the village of Fort Edward ending at the north village line of Hudson Falls in the town of Kingsbury (Davis and LoRusso 1998), all mostly north of the areas of highest archaeological sensitivity.

In 2000, DOT requested an addendum to the 1998 Phase 1A that extended the proposed reconstruction to the south beyond the original southern terminus at the railroad underpass another 1.1 km (.7 mi), ending approximately at the recently realigned bridge over the Champlain Barge Canal (Davis and LoRusso 2001). This added section runs directly through the location of the 1750s French and Indian war fort and supply base, a known archaeological site (OPRHP #A115-42-0003) that the village is named after. It also includes the crossing of the 1818 alignment of the National Register listed Champlain Canal (NRHP #09.01.1976), and the crossing of Bond Creek near its confluence with the Hudson River, a well-known location of thousands of years of prehistoric occupation.

At the time, no specific design plans were available for the utilities since it was early in the design process, though at least some deep utility upgrades were proposed. It was known that a data recovery excavation was conducted in 1986 down the center of the street between Moon and Notre Dame Streets by Collamer and Associates ahead of construction of a new sewer system. Though a final report was never completed for that project it was demonstrated that many intact fort-related and prehistoric features existed at various depths below the pavement (Jeanette Collamer, pers. comm. 2000).

Because of this newly added section, which was highly sensitive for finding intact archaeological remains, and since the construction was primarily planned to occur in paved areas, CRSP provided a revised sensitivity assessment with archaeological recommendations for the project as a whole. The background research showed that three areas of the project were highly sensitive for finding intact archaeological remains: a short section crossing the Glens Fall Feeder Canal in Hudson Falls, a short section crossing the Fort Edward Feeder Canal in the village of Fort Edward, and the entire southern-most 1.1 km (.7 mi) of South Broadway near the location of the eighteenth century fort and the known prehistoric site of Little Wood Creek. Outside these three areas the rest of the project was considered moderately sensitive except for a short recently reconstructed section of Broadway over the Delaware and Hudson Railroad near

Terrace Place and McCrea Street, which was considered of low sensitivity.

The recommendations included doing a combination of construction monitoring and some form of hand excavations in the high sensitivity area near the fort site depending on where deep trenching was to occur, ideally allowing for archaeologists to investigate areas stripped of pavement well in advance of construction. The high sensitivity section was a little over a kilometer in length where 100 percent was to be monitored. The 210 m (689 ft) stretch between Moon and Notre Dame Streets was to be the focus of the initial data recovery hand excavations. The rest of the project, approximately 6.5 km (4 mi), was deemed of moderate sensitivity where only 25 percent monitoring was recommended with specific locations to be determined after design plans were finalized (Davis and LoRusso 2001).

### ***Monitoring and Data Recovery Plan***

In May, 2001, there was a consultation meeting with staff from the DOT Environmental Analysis Bureau, DOT Region 1, the Office of Parks, Recreation, and Historic Preservation (OPRHP), and the CRSP, where specific design and construction issues were discussed, though the region still didn't know the full extent of the proposed utility reconstruction at that time. Up to that point they were only considering installation of new storm drains (pipe and manhole structures) involving a single trench down the street. DOT requested a revised monitoring and data recovery plan for the project, which was submitted in July of that year (Davis 2001).

This didn't change significantly from the earlier recommendations other than to include estimated time frames within which archaeological investigations might be completed; initial data recovery might take six to eight weeks, while all other trench monitoring might involve stopping construction when resources were found for up to one hour for every 6 m (20 ft) of construction trench. Initial data recovery excavations were to follow conventional archaeological procedures. The construction monitoring was to follow a monitoring protocol that triggered a data recovery protocol in the event that significant cultural resources were identified during monitoring (Davis 2001).

### ***Phase IB Testing***

In early 2005, DOT had advanced the design plans and requested subsurface testing of four locations in Fort Edward where storm drain outlet pipes were to be installed as part of the reconstruction project. The locations were outside of the paved street alignment in areas that could be archaeologically tested by hand. Two were proposed outlet pipes along the north and south banks of Bond Creek, another was an outlet pipe extending through Underwood Park from the street west to the Hudson

River in the heart of Fort Edward's business district, and the fourth location was near Broadway Hill on an abandoned side street just south of Fort Edward High school where a pipe was to carry runoff from the upper part of Broadway to an outlet in the old Fort Edward Feeder Canal.

The testing was conducted by CRSP in 2005 with the identification of one archaeological site near the fourth location at the former feeder canal (NYSM #11618). No further work was recommended at the first three locations. Monitoring during construction was recommended at the site of the canal (Dale 2005).

### ***Data Recovery Plan***

In November, 2005, as the construction contract proposal was being put together, Region 1 DOT provided CRSP final design plans for the project, by which time it had been shortened by half to include only the Fort Edward village and town section, separate from the Hudson Falls section that has since been progressed under a different PIN. It was revealed that DOT's designs included not just a single storm drain down the central part of the street, but also new water, sewer, and in some places, gas lines, increasing the overall deep trenching to more than triple what was originally thought.

This was true, not just for the data recovery block, but for the project as a whole; with the addition of new water and sewer lines running up and down the street there were to be lateral service connection trenches to all the buildings as well. In the one-block area of initial data recovery there were two deep utility trenches planned, one for each side of the street along the parking lanes flanking the 1986 sewer line construction trench. There were also many sewer manholes and drainage structures planned, requiring deep construction as well.

At the time of the November meeting, DOT identified several construction concerns that would affect placement of the initial Data Recovery Trenches (DRTs) including maintaining driveway access for residents, holding of utility poles, safety, and traffic flow. With those in mind they requested that CRSP map the specific areas where DRTs would be located leaving gaps for driveway access.

By this time, CRSP had obtained most of the original field notes and maps generated by Collamer and Associates, which provided some known feature locations within their 1986 excavations, many of which were eighteenth century fort-related. These were taken into consideration in placing the DRTs to potentially maximize the amount of archaeological information we would recover. Eight discrete DRTs were selected, measuring various lengths from 8.5 to 36.5 m (28 to 120 ft), four along the west side (proposed water line) and four along the east side (proposed sewer line). These were plotted on DOT's final general contract plans (GP sheet 5, dated 12/2005). DOT also requested that we isolate specific

locations to be monitored within the moderate sensitivity areas north of Bridge Street specific so they could include those as additional notes and highlighted in the construction plans with the contract proposal.

### 1.3 Archaeological Field Methods

Construction ground-breaking began in the southern segment on Lower Broadway with gas line boring pit excavation in the high sensitivity segment on July 18, 2006. Water line construction began the next week along with the opening of pavement for the first DRT excavations near Moon Street. A crew varying from six to ten archaeologists worked full time on the data recovery excavations from then until September 28, 2006 when the DRTs were complete. Concurrently, all construction in the southern segment of the project was monitored by two to four archaeologists. After the DRTs were complete in September, construction continued full time until November 16, 2006 in the southern, high-sensitivity portion of the project with archaeologists monitoring all of it. The construction season ended shortly after that.

Construction began again on April 2, 2007 with utility installation and full-depth resurfacing in both the southern segment (high-sensitivity lower Broadway) for those parts that were not completed in 2006, and in the middle part of the village (moderate-sensitivity) from the railroad underpass to Maple Avenue along upper Broadway, ending on November 8, 2007, with construction of a drainage line and pond in the old feeder canal channel below the high school. Two to three archaeologists monitored all construction activities in the high-sensitivity area and nearly all construction in the moderate-sensitivity areas that year.

CRSP staff who did field work on the Fort Edward Monitoring and Data Recovery project in 2006 were Anna Atwell, George Baily, Heather Brown, Randy Brown, Ryan Clark, Sara Connell, Barry Dale, Rachael DeCrescenzo, Josalyn Ferguson, John Ferrie, Dave Hanssen, Mike Lenardi, Amy Lynch, Crystal McDermott, Brian Moore, Jamie Moore, Lora Moore, Jason Paling, Jessie Pellerin, Marty Pickands, Kristy Primeau, Carolina Restrepo, Joel Ross, Jared Williams, and Lawrence Xinakes under the direction of Nancy Davis. People who did the construction monitoring in 2007 were primarily Jared Williams and Lawrence Xinakes under the direction of Nancy Davis. Heather Brown, Sean Higgins, and Steve Moragne also participated briefly. In 2006 Lisa Anderson and Vanessa Dale of the New York State Museum, came to the project area on short notice to inspect a suspiciously human-looking vertebral column discovered in a DRT unit while it was in situ. It turned out to be white-tailed deer vertebrae.

**Station Markers and Proveniencing** The project centerline was surveyed and painted on the road surface

along the project route at the beginning of construction with station markers labeled every ten meters to correspond with the project plan maps provided by DOT. This was important because the center line station markers were used by archaeologists for recording locations of all trenches, units, features, or anything needing to be mapped horizontally during the project.

#### *Initial Data Recovery*

Each Data Recovery Trench (DRT) fell along the curb within the parking lane on each side of Broadway between Moon and Notre Dame Streets except for the southern 12 m (40 ft) portion of DRT 1 near Moon Street. This segment ran along the public sidewalk west of the curb, and then transitioned eastward into the parking lane of the street following the original design of the proposed water main.

It should be noted that the use of the word “trench” here refers to the long, narrow strips of ground where pavement was removed to expose the underlying soil for controlled manual archaeological excavation within. Units of varying sizes were laid out in the DRTs leaving unexcavated space along the sides and usually between each unit. In other words, the excavated area of each trench was less than the overall area delineated by each DRT outline on the map. The width of the trenches was just over 2.5 m (8.2 ft) on the west side of the street, and 2 m (6.5 ft) on the east side, measured from the curb to the cut (inner) trench edge toward the centerline. Several of the planned DRTs were combined or shifted to form single longer trenches at the time of construction because two landowners on Broadway didn’t need driveway access and also because of issues of traffic flow. As a result, instead of eight DRTs there ended up being only six but the overall area of data recovery was unchanged.

**Pavement Removal** For traffic flow and safety reasons, pavement removal occurred in only one DRT at a time. The inner edges of the trenches were marked and a mechanical pavement saw was driven along the marked line while sawing an approximately 5-inch wide slot into the pavement (Photo 1.1 on the facing page). After that a track excavator broke up and removed the layers of pavement between the slot and the curb, scraping it down to the sub base material (Photo 1.2 on the next page).

On the west side of the street, the concrete curb was left in place while along the east side the curb was removed along with the pavement. Concrete barriers were set up along the inner edges of the trenches to insure the safety of the archaeologists working in them from traffic (Photo 1.3 on page 8).

**Excavation Surfaces** Also important to note is that excavation surfaces illustrated on unit profiles are the ex-



**Photo 1.1:** View north of unit excavations underway in sidewalk alignment of DRT 1 while pavement saw cutting is occurring in the street to the north in preparation for pavement removal in the remainder of DRT 1 as well as for DRTs 2 and 3.



**Photo 1.2:** Archaeologists shovel-scraping the soil surface beneath the pavement in DRT 2 as it was being removed and dumped into a truck. View is north.





**Photo 1.3:** Archaeologists beginning excavation in DRT 4 on the east side of Broadway while waterline construction is taking place on the west side in the vicinity of DRT 2. View is north.

posed soils where units were laid out after the various layers of pavement were removed. Each DRT had several datum points established along its length in the grass strip between the curb and sidewalk, if present, or on a temporary fence post just inside the curb line where the concrete sidewalk extended to the curb. In most places, the solid street pavement where the DRTs were laid out included multiple layers typically consisting of, from the surface down, various coatings of blacktop, a layer of brick pavers, a layer of concrete, and gravel sub base. The sum total of these layers typically measured about 40 to 45 cm (16 to 18 in) thick. In some places where past utility construction and repairs had occurred, the re-pavement usually consisted of blacktop over concrete.

During mechanical removal of the pavement layers, archaeologists “cleaned up” loose pavement debris by shovel scraping the exposed surfaces within each trench about 10 cm (4 in) down. The resulting surface was treated as the top of Level 1 even though it was typically 50 to 60 cm (20 to 24 in) below the street surface. The sidewalk area of DRT 1 required mechanical removal of the bluestone sidewalk slabs and manual removal of the first few inches of loosened soil before excavation units were laid out. The depth of the sidewalk and loose soil combined measured between 12 and 16 cm (5 and 7 in). The loose soil was screened for artifacts.

**Unit Placement** In the sidewalk part of DRT 1 the units were laid out to span the 1.5 m (5 ft) width of the side-

walk and were contiguous from Unit 1 to the end of Unit 7 where the trench angled out into the road. An unexcavated gap was left to accommodate a known water line between Units 7 and 8. From Unit 8 north, all other units were laid out in the trench after mechanical removal of the pavement as discussed above, with unexcavated bulks of at least 50 cm (20 in) between each. Some unexcavated gaps were left in the locations of known buried utility disturbances.

Once DRT 1 moved out into the street and the first couple unit excavations were well underway there, it was revealed that various old utilities (i.e. water mains, lateral service lines) existed within the trench. This informed lateral placement of subsequent units to avoid the disturbed areas when possible and to maximize efforts in undisturbed parts of the trench. This rationale was utilized in all the later DRTs as well resulting in a somewhat nonlinear and non-uniform pattern of unit placement.

**Manual Excavation** Standard manual archaeological excavation procedures were employed in each unit using shovels and trowels. Soils were screened and artifacts were collected by natural soil levels. Plan and profile maps were drawn on graph paper and on standardized unit forms as necessary. Photographs were taken of selected walls, floors, and features with digital and analog cameras using color 35 mm film. Photographs were recorded in photo logs. Identified features were num-



bered sequentially as they were discovered and recorded in a DR feature log. Units were occasionally expanded to salvage portions of features that fell beyond the original unit boundaries since the features would be destroyed by utility construction soon after anyway.

Crews moved north in each trench to the next available unit as the southern units were completed. When the next DRT was “set up” for excavation (pavement removed and barriers in place), archaeologists would proceed to that one and lay out the next unit starting at the southern end (Photo 1.4 on the next page). There would usually be excavation occurring in two DRTs at a time. Once hand excavations were complete within a given trench, utility construction was allowed to proceed through the area when construction sequencing allowed, all the while being monitored by two or more archaeologists. As construction was complete within a trench, it was immediately backfilled and quickly paved over for traffic safety reasons. If construction through a completed DRT was not immediately scheduled, the DRT units were backfilled and the trench was paved over (Photo 1.5 on the following page).

**Shovel Test Pits** In some units shovel test pits were excavated initially to identify suspected utility disturbances. In DRT 3 the first unit placed at the south end of the trench showed uncharacteristically massive disturbance of the natural soil layers as compared to the soils encountered in the DRTs to the south. By that point in the project we had learned that the railroad underpass to the north had been constructed ca. 1940, requiring mass removal of many feet of earth.

Units 2 through 4 in DRT 3 also proved to be equally disturbed, which prompted us to employ smaller test units to investigate the extent of the disturbances going north in the rest of the trench. This was considered expedient under the circumstances at the time given the waterline construction that was quickly gaining on this trench area. In the remainder of DRT 3 nine 50 cm<sup>2</sup> (20 in<sup>2</sup>) shovel test pits were excavated 50 cm (20 in) apart in a zigzag pattern to investigate the soil integrity north of Unit 4.

## Monitoring

The data recovery and monitoring plan outlined a Monitoring Protocol to be followed wherever construction monitoring by archaeologists was recommended (Davis 2001). For investigation purposes, the plan allowed that archaeologists may need to stop construction during monitoring for up to one hour for every 6 m (20 ft) of trench to assess if cultural resources found were significant and to complete data collection if possible.

A Data Recovery Protocol was also developed in the event a significant archaeological resource or site was identified during monitoring that might entail a construction stoppage of more than an hour. It stipulated

that archaeologists would give an estimate of how long the data recovery would take. Some resources would be recoverable within a day, and if possible, immediate data recovery would take place. If that was not practical due to construction schedules, design changes, traffic control logistics, or other factors, data recovery investigations of that resource would be done later.

In the event that larger features, or a series or cluster of features was found, more than a day would probably be required to recover the data. In such case after immediately stopping construction, the plan outlined a chain of communication from the on-site archaeologist through the DOT Engineer in Charge (EIC), to the DOT Regional Landscape Architecture/Environmental Services Manager (Richard Ambuske), and potentially to the State Historic Preservation Office’s staff archaeologist for consultation if necessary.

These parties would assess the resource, the construction schedule, and what steps would be necessary to recover the data, and come to a decision on whether to proceed immediately or develop a plan to secure the excavation until a schedule could be developed. As per the plan, a maximum of six calendar days would be allotted for data recovery at an important discovery site. The EIC would inform the contractor of the expected delays and how to proceed.

In the event a human burial was discovered, construction would be stopped and the EIC immediately notified. The site would be secured and remains left in place and protected from further damage.

Also as part of the plan, the contractor coordinated all excavation work with the EIC to ensure that archaeologists were present at 100 percent of the high sensitivity construction areas, and at the selected locations in areas of moderate sensitivity north of Bridge Street. As such, with this protocol, digging of deep utility trenches was supervised by an archaeologist who had full work access during machine excavation and was furnished with information, assistance, and equipment by the contractor to identify and recover any significant archaeological data.

**Trench Monitoring Routine** This monitoring work was done in compliance with the contractor’s Project Health and Safety Plan and with Federal Labor Standards (OSHA 29 CFR 1926 Sub-part P). Accordingly, archaeologists could enter the construction excavations for close examination only when deemed safe by the contractor’s competent excavation person. This meant that at depths below 1.5 m (5 ft), archaeologists would observe the mechanical excavation from the street level and request specific soil deposits to be temporarily piled beside the excavation for close examination.

This project involved long stretches of continuous deep utility trenching (e.g. water, sewer, drainage, and gas lines), often occurring in several places in the village concurrently. Depending on the location and the



**Photo 1.4:** View north of DRT 2 nearing completion of unit excavation. As units were completed, some were used as spoils containers for screening soil.



**Photo 1.5:** View south from the end of DRT 2 toward DRT 1 after archaeological data recovery and waterline construction were completed there and it was temporarily paved over.

utility, these trenches would reach between 1.9 and 4 m (6.2 to 13 ft) deep, unsafe for workers to enter without shielding from possible wall collapse by placement of a trench box. Designed to shield trench walls and still allow construction work to safely occur inside the box at the bottom of a deep trench, it temporarily impeded examination and recording of potential archaeological deposits or features by archaeologists.

In order to dovetail the archaeological investigations with the construction pacing, when trench sidewalls were temporarily hidden behind trench boxes, archaeologists would watch the new section of trench being excavated by a track hoe while examining the exposed trench side walls and floor for evidence of resources. These usually appeared as dark brown or blackish soils of various textures in contrast to the natural yellow-brown to light orange-brown silty sand (subsoil) native to the area. These anomalies would be noted for later closer observation when the trench box was removed and the trench partially backfilled and archaeologists could safely enter the trench (Photo 1.6 on the next page).

Sometimes, if an anomaly was noticed in the bottom of the trench after a machine excavator bucket of soil had been removed, archaeologists would stop excavation so they could examine it before it was all scooped out, as long as it was shallower than 1.5 m (5 ft). Meanwhile, backhoe excavation of the next section of trench would begin as archaeologists collected data from the observed resources (Photo 1.7 on the following page). Backfilling and tamping of soils in the trench would occur after archaeologists were finished. For some clusters of resources, the cleaning and documentation process required as many as six archaeologists (Photo 1.8 on page 13) in the high sensitivity areas, but usually three were sufficient.

When discovered, archaeologists would plot the resources on a 1:500-scale project plan map, shovel or trowel-scape the wall or floor area in question, take photographs, draw profiles or plans and record notes as necessary, and collect artifacts by digging into the trench wall or floor to gather soil for screening. Sometimes soil samples were collected.

While monitoring construction for utilities that were eventually installed where archaeologists had completed the DRTs, we were able to look for possible extensions of features and deposits discovered in earlier unit excavations.

**Incidents** A system of recording specific cultural resources during construction monitoring was devised to allow for expedience during monitoring under varying construction conditions. It also allowed for a simple way to enter artifact deposits collected from monitored proveniences into a relational database. The term “Incident” was chosen to refer to an individual occurrence or event location where a resource was recorded, whether it be an artifact, a feature, or a cluster of both.

Incidents were numbered consecutively as they happened over the course of the 2006 and 2007 construction seasons with numbers continuing from one year to the next, totaling 193 altogether. These incidents were recorded by centerline station marker (SM), type of utility being constructed or other construction type (e.g. road reconstruction, sidewalk), date, recorder’s names, and any other pertinent location information (e.g. distance and direction off of centerline, in front of 68 Broadway, just under the curb, etc.). As stated above, the Incident boundaries, most being long narrow segments of utility trenches, were penciled onto project plan maps as they were encountered.

Not all construction that was monitored got recorded on the map or given an Incident number, however. Early in the project, only individual occurrences that produced some type of archaeological resources were given Incident numbers and recorded on the project maps. Fairly quickly it was deemed prudent, at least in the southern segment of the project, to record each length of water pipe (and later other utility pipe segments as well) as it was being monitored because soil profiles and anomalies were identified in almost every new segment of trench.

Also, stratigraphic soil changes along the lengths of the utility trenches became noted and documented whether or not archaeological features or deposits were present (e.g. deeply buried A horizons). The stratigraphy along the trenches could then be tracked by Incident number later if necessary.

Features identified within an Incident were also numbered consecutively. Examples of features include pits, fireplaces, fort-related outwork ditches, various older utilities and their trenches, posts and post bases, charcoal lenses, burn areas, stone retaining walls, refuse dumps, buried road surfaces, and assorted undefined dark stains or other anomalies.

**Limitations** The track hoe buckets used for the main utility trenching (smaller hoes were used for the individual service connections) were enormous and destructive to typically delicate archaeological features as they scooped out pavement and the underlying soils. Unless directed by an archaeologist to place individual bucket-loads of soil along the side of a trench for inspection, in most cases it was immediately dumped directly into a nearby dump truck to be hauled off site and disposed of. Because of this, for the most part, archaeologists were only able to discover and inspect features and deposits of cultural material in the trench sidewalls, essentially in the vertical plane (in profile), with limited stratigraphic control of artifact sampling.

On occasion, the hoe bucket would break or puncture a water service line in the process of digging a trench, which would soon fill with water and obscure features needing examination by archaeologists (Photo 1.9 on page 14). Also, in certain areas, trench walls that revealed archaeological features and deposits collapsed





**Photo 1.6:** View north of partially backfilled section of trench (foreground) while new sewer pipe is being installed within trench box in background (Incident 100).



**Photo 1.7:** Archaeologists Ryan Clark and Crystal McDermott documenting an archaeological feature in the side wall of a sewer line trench after partial backfilling (Incident 57). The trench box is visible in left background.



**Photo 1.8:** Archaeologists documenting a French and Indian War blockhouse fireplace in a trench for a drainage pipe (Incident 82). In this case construction was stopped for several hours while archaeologists worked.

before archaeologists could safely get into the trenches. These situations hampered or prevented the recording of resources. Nonetheless, many significant archaeological features were identified and recorded during construction monitoring in this way.

**Shovel Test Pits** In some circumstances during construction monitoring, shovel test pits were used, not only by construction workers to find existing utilities to avoid being hit by a back hoe, but by archaeologists to explore soil anomalies at various depths within new utility trenches, after pavement and overburden were removed by mechanical excavators. They were also used under sidewalk stones that were removed for replacement with the new concrete sidewalks in front of the building at 73 Broadway, an area where previous data recovery excavations in the street and beneath the side walk to the south revealed intact French and Indian War era features.

**Units Excavated During Monitoring** Archaeologists manually excavated two larger rectangular units in two monitoring locations (Incidents 81 and 92). These were construction trenches for water service connections to dwellings on the west side of Broadway between Moon and Notre Dame Streets where French and Indian War fireplaces had been found in either DRT excavations or in adjacent utility trench monitoring. In the process of digging the construction trenches, one large section of stone sidewalk was removed next to each, allowing

archaeologists an unobstructed opportunity to do controlled excavation in search of remains (Photo 1.10 on the next page).

## 1.4 Laboratory Methods

Following fieldwork, all artifacts were processed and analyzed in the labs of the New York State Museum CRSP. Processing included washing artifacts or dry-brushing as appropriate, then sorting into major artifact categories: ceramics, curved glass, flat glass, bone, shell, metal/nails, other metal, brick, coal/cinders, prehistoric material, and other categories as needed. When possible, ceramic vessels and bottles were mended.

All artifacts were then cataloged by Tracey Thomas, co-laboratory director of the CRSP, according to a system first developed at the Museum's Anthropological Survey lab then later adapted by the CRSP. At an initial level of analysis each artifact was first classified by material (e.g. bone, metal, ceramic, glass, stone, etc.) then divided into specific subgroups based on general usage (e.g. architectural metal) or vessel composition or form type (e.g. creamware or pearlware for ceramics, or table or bottle glass for glass).

Finally, the artifacts were assigned to specific sub-categories based on decorative attributes (e.g. blue transfer-printed pearlware), manufacturing technique (e.g. machine-cut or hand-wrought nail), or color (e.g. aqua or clear bottle glass). The catalog was entered into





**Photo 1.9:** View north of water line construction trench segment filled with water from a broken service line to the Anvil Inn Restaurant. Archaeologists at left attempt to clean off and photograph a feature about to be inundated (Incident 28).



**Photo 1.10:** Unit excavated manually where a large slab of stone sidewalk was removed during trenching for water service connection to the structure (Incident 81).

a relational database that utilizes a system of over 900 unique codes for these specific attributes, which saves data entry and processing time as well as optimizes disc storage. Also, at this point, specimen numbers were assigned to each artifact record entered into the data base.

A catalog report was then generated that presents the artifacts within each provenience with a more lengthy text translation of the code describing what it is, along with any further descriptive “free form” notes about each artifact. Artifacts were then placed in plastic archival storage bags and accessioned into the collections at the NYSM along with field notes, maps and other documentation of the project. In total, nearly 30,000 artifacts were collected, processed and cataloged for this project.

**Soil Samples** Sampling of soils occurred in both DRT excavations and construction monitoring when select features or soil lenses were identified, mainly from fireplaces, refuse and latrine pits, possible hearths, outwork ditches, post molds, possible burn areas, and from some buried living surfaces. Approximately 137 samples were collected. In many cases during construction monitoring, soil anomalies were spotted in trench walls that warranted documentation, artifact collection, and soil sampling, only to turn out to be modern or recent utility disturbances. The soil samples from these areas were omitted from floatation processing. Selected soil samples were processed through the Dausman Flote-Tech machine-assisted flotation machine by staff of the CRSP subsequent to fieldwork.

**Carbon Dating** Some charcoal samples were collected from both historical and prehistoric features, some found in DRT excavations and others found during construction monitoring. Charcoal samples from two suspected prehistoric features were sent to Beta Analytic Radiocarbon Dating Laboratory in Miami, Florida for analysis. These results are discussed with the prehistoric component of the Fort Edward Village site description section of the report.

**Faunal Analysis** All of the faunal material from the project was cataloged initially at a cursory level, and then the animal bone from selected proveniences was further analyzed by Sean Higgins of the CRSP staff. The selected proveniences were primarily from features identified as mid-eighteenth century (French and Indian War period). Fish bone from one feature was analyzed by Dr. Robert Daniels, ichthyologist at the NYSM.

During the initial cataloging of artifacts, the shell was identified as either clam or oyster as appropriate. During the second level of analysis, the bone was identified by the most specific taxonomic level possible by class, order, family, genus, or species. The analysis also included the element (e.g. radius, scapula, mandible) or type of bone present (e.g. long bone, flat bone, cranial fragment), its

size (e.g. large, medium to large), what portion of the element was represented (e.g. proximal, medial), left or right side, and the age of the animal if possible, as well as whether or not the bone was burned and what types of cut marks were present.

**Lithic Analysis** Steve Moragne of the CRSP staff conducted a second level analysis of the lithic assemblage from the project as a whole with specific focus on identifying raw material type, debitage category (flakes and shatter), tool category (i.e. formal vs. expedient), flake size and other characteristics, and projectile point type. His analysis is discussed in the Fort Edward Village site description section. Dr. Ed Landing, Dr. Charles Ver Straeten, and Dr. Marion Lupulescu, all of the New York State Museum Department of Research and Collections, examined selected lithic and mineral samples.

## 1.5 Data Compilation

All field notes were transcribed into a Microsoft Access database utilizing a set of data entry forms designed for this purpose, one for construction monitoring notes (Incidents) and one for data recovery STP and excavation unit notes from excavation level and feature forms completed during the field work. This data entry occurred after the artifacts had already been washed, cataloged, and entered into the data base by provenience. It was completed by Nancy Davis, J. Scott Cardinal, and Jared Williams. At the same time, the field information (Incidents) recorded on the various versions of the original 1:500 (meter) scale field maps was transposed in pencil onto 1:100 scale maps for digitizing in AutoCAD. This consolidated all the construction monitoring locations from the two seasons onto one larger-scale set of plans. Jessie Pellerin of the CRSP staff completed all the final project plans as well as all of the final unit and feature plans and profiles using AutoCAD.

There are 193 Incident entries in the data base. While entering each Incident's notes, all its corresponding artifacts, photographs, plans, and profiles were examined together, with particular scrutiny of the recorded features and associated artifacts. Features, deposits, and stratigraphic levels were interpreted if possible within a prehistoric or historical context, by function or type. A list of the photographs taken of each Incident (digital and/or film) was typed into the notes field in the data base form as a finding aid to save having to search through the various photo logs to learn when and with what cameras the construction was recorded every time someone in the future wants to view photographs of that Incident. A similar process was followed with the DRT units; for each unit a separate sheet was filled out listing all the photos, digital and film, taken of it by date and exposure number or film roll and frame. The photo list was not entered into the data base but the paper list

is kept with the collected unit level and feature forms along with its corresponding plan and section drawings. These finding aid lists ensured that no photographs of potentially significant resources fell through the cracks while analyzing the data.

A Feature entry form was also devised in the Access database for composing brief summaries of each feature identified over the course of the project in both Incidents and in data recovery trench units. This listed the provenience (station marker for Incidents, unit number for data recovery trenches, feature number, and level), its type if known, and its time period if known, whether or not artifacts were recovered, plans or profiles drawn, photos taken, along with a free-form feature description. There are 219 unique features entered into the data base form, 165 from construction monitoring Incidents and 56 from within the DRTs. Several features were encountered by more than one construction trench or data recovery excavation unit. Significant features that relate to one or the other of the three archaeological sites designated for this project area are presented in detail within each site description.

In 2001 two archival boxes of records relating to the 1986 archaeological investigations for the Washington County Sewer District #2 (C-36-1305) project in Fort Edward were obtained by CRSP from Louise Basa, former DEC archaeologist. These records are mostly “raw” data from a terminated contract transferred to DEC by Collamer and Associates as part of the archaeological contract close-out. This material includes various field and laboratory records, versions of Clough, Harbor and Associates plan sheets of the trench along Broadway, with photographs and slides of some areas investigated along Broadway, Moon Street and Cortland Street. There are also radar and transit survey records, some artifact catalog coding sheets for the ARDVARC data base system used as well as some of the assigned numerical codes for that data base system. There is also a computer print-out of translated codes. These records are now housed at the NYSM. The artifacts are not included with this material but are housed at the Roger’s Island Visitor Center in Fort Edward.

## 1.6 Georeferencing of Period Maps

Several historical maps were georeferenced with modern aerial raster imagery and the modern DOT project plans by Jessie Pellarin of the CRSP using ArcGIS software. This is a multi-step process in which two or more images are matched together with the use of like visual markers obtained from each image (e.g. river edges, tributary outlets, fort and outwork outlines, building footprints, roads). This technique was especially useful for interpretation of the eighteenth century fort-related features but was useful for interpreting the features at the Fort Edward Feeder Canal Bridge site as well.

The historical maps used for the fort-related features were made by military engineers during the French and Indian War. These maps were used because they are very detailed and show the fort itself. More importantly, they show the line of outwork ditches constructed to the north and east of the fort. These were directly impacted by construction activities along the street, which passes east of the fort but solidly within the 1750s encampment area that was surrounded by the line of ditches. Comparison of several period maps of the fort show two different arrangements of ditches over time. This suggests an earlier one was filled in and an expanded line of ditches completed later. These georeferenced maps appear in the discussion of outwork ditches in the Fort Edward Village site description section.

The other place georeferenced mapping was useful was in the description and interpretation of the Fort Edward Feeder Canal Bridge site where the road was realigned in the 1940s. The 1938 highway construction plans for that work were georeferenced with the modern DOT construction plans to highlight the locations of former buildings and bridge abutment locations.

## 1.7 Summary of Project Findings

The village of Fort Edward has long been the focus of archaeologists and historians fascinated by its important role in French and Indian War military operations. By necessity excavations in the past have mostly been concentrated in open or wooded areas on private land, especially on Roger’s Island. Because of DOT’s construction project through this sensitive area and their compliance with Historic Preservation laws, we have been provided a rare opportunity for archaeological discovery and data collection along the route. The investigations were narrowly focused along a 3.7 km (2.3 mi) stretch of Broadway where DOT’s work involved new utility installation followed by full depth reconstruction of the road bed, curbs, and sidewalks. Under normal circumstances it is difficult or impossible to study subsurface archaeology in a street corridor like this one because it is sealed under hard pavement and heavily used by vehicular traffic. By working along with the construction process, where traffic was diverted and pavement was removed, these impediments were eliminated.

Archaeologists monitored over 6,015 m<sup>2</sup> (1.5 acres) of construction trenching and manually excavated over 73 units varying in size from .25 to 3 m<sup>2</sup> (2.6 to 32 ft<sup>2</sup>) during the course of two construction seasons in 2006 and 2007. The project as a whole produced almost 30,000 artifacts and identified approximately 220 archaeological features ranging in age from ~ 6,000 B.P. to the present. Three archaeological sites were designated during the analysis of this data and described in this report.

The core of the finds came from the stretch of Broadway between Bond Creek and Bridge Street, a distance



of 620 m (2,032 ft). This coincides with an area of known long-term prehistoric settlement along the Upper Hudson at its confluence with Bond Creek, the stepping-off point for the portage route to Lake Champlain. It also passes through the entrenched French and Indian War military encampment documented on British engineers' maps of the 1750s fort and supply base from which the village gets its name.

This fort and encampment was heavily occupied by tens of thousands of soldiers during the French and Indian War before the British and provincial armies took the French-held territories to the north. It was also later occupied by the Americans against the British during the Revolutionary War. Afterward, this stretch of road became the earliest part of the post-Revolutionary war settled village, a time when the fledgling United States was inventing itself as a nation. This was when the region developed its early transportation networks with the coming of turnpikes, canals, and railroads, while it also began to take advantage of the Hudson River as a source of water power for industrialization.

Because many artifacts and features were found that relate to all three periods mentioned, this core segment of the project is designated the Fort Edward Village site. Much of the report discusses the three components represented therein: prehistoric, mid-eighteenth-century military, and nineteenth-century village settlement and growth. It should be noted that the defined and described boundaries of this site are artificially restricted by the DOT project corridor, as the acknowledged reach of the mid-eighteenth-century site of Old Fort Edward extends well beyond. In fact this is true for the prehistoric and nineteenth century components as well.

Key among the prehistoric finds are two intact charcoal features, one being a small hearth dating to the Late Archaic period (carbon date nearly 4,000 years B.P.) accompanied by a group of what look like decayed wooden poles, and a lithic assemblage amounting to over 1,250 artifacts with diagnostic projectile point types ranging from the Late Archaic (6,000-3,500 B.P.) to the Early Woodland (3,000-2,000 B.P.). Given the large number of known prehistoric sites nearby, it seems likely that the deposits at this site are the product of seasonal reoccupation of the same general space over at least a couple thousand years.

Significant finds from the mid-eighteenth-century military component include the remains of the entrenched encampment surrounding the fort itself along with 16 small refuse pits and two latrine pits that exhibit the British military's attempt to maintain a modicum of hygiene and cleanliness within the camp. Construction trenching crossed the old ditch of the long entrenchment line at probably nine points enabling confirmation that there were two episodes of ditch construction during the 1750s, one superseding the other as the facility grew and enemy threat increased.

Also found were four brick fireplaces believed to be related to guard houses, soldiers' huts, or winterized tent sites, all within the encampment lines. One of the fireplaces may have functioned as a bake oven based on its shape. Excavations also identified the buried fireplace remains and refuse dump of Blockhouse Number 2 built ca. 1757 to guard the southern approach road into the fort. Of the eight blockhouses at Fort Edward, these remains represent only the second one to be discovered by archaeologists. Many of these military features and associated artifact deposits verify surviving accounts written by soldiers and officers at the fort during that time, but more than that, they enable us to flesh out the undocumented aspects of day-to-day military life of British and provincial soldiers.

The nineteenth-century component of the site reflects some of the buried enhancements and landscape changes that occurred during the early settlement and growth period of the new village. One group of features is associated with the work space in front of a long-operated blacksmith and carriage shop, while others are associated with various street amenities like utility pole bases, brick street paving, and a landscape retaining wall. Still others relate to rare early utilities (ca. 1800 wooden water line and a concrete lined and covered pipe). Finally, a significant feature of the nineteenth-century village infrastructure documented at this site is the viaduct built probably ca. 1830 to span the Bond Creek valley. New water main construction revealed a large section of the viaduct's cut stone retaining wall buried beneath fill on the north bank of Bond creek.

Two other locations along the project route, geographically separated from the Fort Edward Village site, were identified by the presence of significant nineteenth-century subsurface features and deposits. One is the Fort Edward Feeder Canal Bridge site where Broadway crosses the ca. 1820s canal feeder about half a kilometer (.3 mi) north of Bridge Street. The canal there is now completely filled in, but archaeological monitoring documented intact buried stone and concrete bridge abutments, adjacent building foundation stones, and trolley ties, allowing the delineation of the now all but obliterated course of the feeder canal. The site is significant for its association with the Old Champlain Canal and with its role in the development of Fort Edward's economy. It also documents a series of gradual changes in the landscape of the road and bridge that resulted from advances in modes of transportation through the last half of the nineteenth and first few decades of the twentieth century.

The other site is the Hilfinger Pottery site, located at the intersection of Broadway and Argyle Street near the south end of the project. It is the original location of a well-known producer of pottery in the region, first built in 1874 by Andrew K. Haxstun as a stoneware manufacturer, and later operated from 1892 to 1942 by the Hilfinger family known best for their red earthenware

flower pots, drain tiles, and sewer piping. The original building has been removed and replaced by a house but utility construction trenches along the edges of the property revealed dense deposits of stoneware and earthenware pottery wasters, a variety of stoneware kiln furniture, and fragments of kiln bricks. Some of this waster material was also found in construction trenching up the street along the viaduct and the banks of Bond Creek as filling material. Some red earthenware drain tiles, likely Hilfinger-produced, were seen used as under-curb drainage along Broadway near the approaches to the ca. 1940 railroad underpass. This site is significant because it was one of the few major nineteenth-century Fort Edward pottery buildings to survive well into the twentieth century, long after other Fort Edward potteries were gone.

Overall, the significant archaeological findings from this highway construction project demonstrate the early and continuing importance of this place to human travel and settlement.

## 1.8 Acknowledgments

R. Paul McCarty, town and village historian and director of the Old Fort House Museum, was on hand constantly during the first season of field work providing historical insight into many of the nineteenth century features we came across in our excavations. He provided access to the photographic collection of the Fort Edward Historical Association and donated books and maps documenting aspects of the nineteenth century village. Longtime resident Joanne Fuller provided copies of historic maps and documents from her own research of the eighteenth century fort and encampment. Some of these documents became crucial to making the interpretations related to that time period. Staff at the Fort Edward Village Clerk's office graciously let us paw through their map archives and use their photocopier for a day. Dr. David R. Starbuck, Associate Professor of Anthropology and Sociology at Plymouth State University, shared photographs of an eighteenth century outwork ditch excavated during one of his field schools on Lower Broadway. That helped make sense of one of the ditch features we found in our excavations. I'm very grateful to all of them.

The archaeological portion of this DOT project was initially assigned to me as a literature search back in 1997 by Chuck Fisher, then director of the program. His guidance early on brought resources to light regarding some of the archaeology that had been carried out for the 1980s Washington County Sewer District #2 projects on Broadway. It was his construction monitoring and data recovery plan for the Pearl Street reconstruction project in Albany that was used as a model for developing the Fort Edward Route 4 Reconstruction plan in 2001.

Six years later, when it finally came time to put archaeological "feet on the ground", it took a veritable army of people at the CRSP and the NYSM to tackle the work. Many have been mentioned by name in the methodology section of this report. Some have not. John Pasquini, co-laboratory director, helped design the system we put to use for recording finds (Incidents) during monitoring of miles of trenching. It was a bookkeeping system that served well. He later helped design data base forms for entering incident notes and describing features, which greatly aided in data compilation and analysis. Jared Williams helped enter construction monitoring notes into the data base and transposed information from the field maps onto larger scale master maps when all the field work was completed. Victoria Schmitt processed the collected flotation samples and kept them in fine order for later examination.

Many staff gathered background information to help flesh out the broad range of occupation periods at this location. Lawrence Xinakes gathered information on the history of the French and Indian War fort itself and eighteenth century military history in general. Joselyn Ferguson conducted background research on the nineteenth and twentieth century Hilfinger Pottery site and authored the historical context section of the site description. Joel Ross did extensive background research on the Fort Edward Feeder Canal Bridge site and authored the historical context section and some of the description of that site. He also contributed to the background research of various other parts of the nineteenth century history and development of the village. Marty Pickands researched and authored the context section for the Champlain Canal aqueduct and the Broadway viaduct. He also researched and authored the section on the Turner Blacksmith Shop. In addition, he provided much ongoing insight and advice on artifact identification and feature interpretation throughout the compilation and analysis process of this project.

Steve Moragne graciously jumped on board to do a second level analysis on the prehistoric lithic assemblage and authored the very thorough prehistoric context and assemblage analysis section of the Fort Edward Village site. Heather B. Brown's camera skills produced nice photographs of the prehistoric artifacts. J. Scott Cardinal, in addition to entering much of the unit excavation data into the data base, completed the daunting task of temporally and spatially analyzing the artifact assemblage and authoring the results of that analysis for the report. He then provided much advice and assistance in construction of early drafts of the report, and is much appreciated for his editing efforts along the way, and completing the layout of the final volume for publication. My humble thanks go to all who contributed.

## 2. Regional Contexts

To develop a detailed background of the project setting with regard to its natural environment and both its prehistoric and historical contexts, a large variety of resources were studied. Among these were historical maps, canal documents, and local history books housed in the New York State Library's Manuscripts and Special Collections and in the New York State Archives located in the Cultural Education Center in Albany. Also utilized were the photograph archives of the Fort Edward Historical Association, the village map collection of the Fort Edward Village Clerk's Office, and copies of several eighteenth and nineteenth century maps purchased at the Roger's Island Visitor Center in the village of Fort Edward.

Many on-line electronic resources are now available for this kind of research; notable among them are old newspaper archives that detail relevant historical events in small communities. These help flesh out events particular to the archaeological resources we found in Fort Edward. Also used were web sites dealing with the natural soils in the project area (USDA Natural Resources Conservation Service Web Soil Survey [NRCS 2013]) and a mapping website showing modern aerial raster imagery (NYS GIS Clearinghouse), as well as nineteenth and early twentieth century Sanborn Fire Insurance maps of streets and buildings within the village (Sanborn-Perris Map Company 1942).

Archaeological site files of the New York State Museum and the Office of Parks, Recreation, and Historic Preservation (OPRHP) were also consulted along with previous cultural resource surveys, site exams, and data recovery reports for projects in and near the vicinity of this one. Published regional and local prehistoric studies were referenced for development of the prehistoric context.

### 2.1 Natural Environment

The project area is located 72 km (45 mi) north of Albany on the eastern bank of the Hudson River. This is in the physiographic area known as the Hudson-Champlain Lowland, a broad depression eroded in soft shale and limestone by glacial ice and by the preglacial and interglacial Hudson River. The Adirondack Mountains lie to the north and west, the Green Mountains and the Taconic Range lie to the east. Lake George and Lake Champlain lie to the north. Most of the Hudson-Champlain Lowland was occupied by glacial Lakes Albany and Vermont, but also an estuary of the Champlain

Sea occupied part of the area at the end of the last ice age. Consequently, many of the soils in the project area formed in glacial melt water deposits that are deep and fine or coarse textured (Winkley 1975).

Washington County has two primary drainage basins, the Hudson River in the south half, which flows south into the Atlantic Ocean, and the Champlain Basin in the north half, which flows north into Lake Champlain. From there it flows into the St. Lawrence River and then to the Atlantic Ocean. Significant for humans is that these two drainage basins create a natural north-south transportation and communication corridor that connects large distances across the Northeast. Two miles to the north of Fort Edward, the Hudson River turns sharply to the west leading to its headwaters that rise in the Adirondack Mountains. Near the river's turning point in Hudson Falls there is a drop of 85 feet creating a large waterfall now known as Baker's Falls. This was the northernmost point of navigation along the Hudson, and to get to Lake Champlain required a portage around the falls and an overland carry of quite a distance. Because of this the name the "Great Carrying Place" was given to the area by the Native Americans. The distance from this turning point in the river to the southern end of Lake Champlain is about 29 km (18.5 mi), and to the southern end of Lake George is about 12.8 km (8 mi).

The southern part of the project area in Fort Edward lies on a low terrace of the Hudson River at an elevation of 3 to 4.5 m (10 to 15 ft) above the water level. The natural soils there, south of Broadway Hill or Liberty Street, consist of fairly level deeply deposited coarse textured loamy sand of the Claverack series (Claverack loamy fine sand), which forms on lake plains (NRCS 2013). It is made of sandy glacial lake deposits, derived primarily from non-calcareous sandstone or granite, which overlies clayey glacial lake deposits. A typical soil profile has 50 to 100 cm (20 to 40 in) of sandy material with some lenses of sandy gravel over silty sands to at least 2 m (6.5 ft) deep.

South Broadway crosses what is now called Bond Creek, a small stream that flows into the Hudson from the east through a narrow low valley extending northeastward in the direction of southern Lake Champlain. This creek has also been known as Fort Edward Creek and Little Wood Creek in the past. In the nineteenth century an earthen viaduct with a culvert was constructed across the valley to carry the road over Bond Creek. This viaduct is adjacent to the nineteenth century Champlain Canal, which was constructed with an aqueduct over the

creek around 1830. In the Hudson, opposite the mouth of Bond Creek, is a long narrow island, now known as Rogers Island. This creek valley-Hudson River intersection was the stepping off point for travelers who had to portage the Great Carry for thousands of years before Europeans arrived. In fact, there are numerous known prehistoric archaeological sites located on the island and along the terrace north and south of Bond Creek close to, or within the Route 4 corridor. The prehistory of the area is detailed below.

In the north part of the lower village, at Broadway Hill, the road abruptly climbs 36 m (120 ft) to a large flat plateau where it continues north through the town of Fort Edward and into Hudson Falls. The natural soils on Broadway Hill and the plateau above consist of Oakville loamy fine sand, deep glaciofluvial deposits of sand along a former beach ridge (NRCS 2013).

During prehistoric times, the project area was covered in mixed hard wood forests, which contained species of oak and hickory (Agelarakis 1990). Now, in the village along the project route, the area is occupied by a dense combination of older commercial and residential development interspersed with modern commercial and industrial complexes. The route crosses three railroads, one at an underpass, one at grade, and one at an over pass. Sidewalks exist throughout virtually all of the project area along Route 4. In the older commercial parts of the village, the sidewalks extend from the curbs to the fronts of the buildings. Elsewhere, there is a grass or pavement strip between the curbs and the sidewalks where utility poles, fire hydrants, some gas lines, and road signs are located. In the modern commercial strip between the villages of Fort Edward and Hudson Falls, there are large paved lots for parking that extend to the edge of the road. In most areas where the buildings are set back from the road, there is open lawn between the sidewalks and the buildings.

## 2.2 Prehistoric Context

New York State prehistory is typically divided into four periods: Paleoindian, Archaic, Transitional, and Woodland. These terms and the host of culture, tradition, and stage names that are included within them form the Parker-Ritchie-Funk taxonomy of New York State prehistory which has historically served as a common theoretical underpinning to most regional research (Ritchie and Hart 2011). However, perhaps the most dominant theme in New York State archaeology over the last decade or more has been the reevaluation of these concepts in the face of new techniques, revised dates, and new theoretical perspectives. There is a growing appreciation for the variability within and between these phases, cultures, and stages that has led some to suggest abandoning the taxonomy completely. At the very least, it must be acknowledged that any and all concepts asso-

ciated with the Parker-Ritchie-Funk taxonomy are likely to mask variation at similar or smaller scales. Their use in this report is confined to describing the generalized prehistory of New York State but this does not necessitate an interpretive reliance on them in the future.

The Hudson Valley is one of the most prehistorically sensitive areas in New York State owing to its rich and diverse floral, faunal, and lithic resources. The site file search for this project produced a list of 42 sites within 8 km (5 mi) of the project area that included a prehistoric component and valley-wide there are hundreds, if not thousands of prehistoric sites running the gamut from isolated flakes and other stray finds to the semi-sedentary villages and pallisaded “castles” of the Contact Era Mahican (Bender and Curtin 1990). The site file search for this project includes all sites shown within five miles of the project area in the New York State Museum’s database and all sites within two miles of the project area from the State Historic Preservation Office’s database. Museum site files were gathered in person while the SHPO site files were adapted from previous project reports (Davis and LoRusso 1998; 2006). The Hudson Valley has been the site of several important regional projects including William Ritchie’s (1958) “An Introduction to Hudson Valley Prehistory” and Robert Funk’s (1976) “Recent Contributions to Hudson Valley Prehistory”, and figures prominently in the two major statewide syntheses Ritchie (1967) and Ritchie and Funk (1973).

Relevant to the immediate project vicinity, Susan Bender and Ed Curtin have conducted a smaller regional analysis and include the current project area within the boundaries of their prehistoric context study of the upper Hudson Valley, an area of great environmental diversity and a locus of human habitation for as long as there have been people in New York State (Bender and Curtin 1990). In terms of time periods, the entire prehistory of New York State is represented not only in the region but within the immediate vicinity of the project area as the site files search returned a list that includes sites dating from at least the Early Archaic (beginning in 10,000 B.P.) to the present.

The upper Hudson Valley is a transitional zone where the estuary meets the floodplain and a main transportation route between southern coastal New York and interior parts of the state. Resources included, “first roots and greens; then shad and other herring; sturgeon, striped bass and passenger pigeons; suckers, strawberries, raspberries, turtles, frogs, snakes, bullheads and sunfishes, chenopods, amaranths, and smartweed; hickory nuts, walnuts, chestnuts, acorns, turkeys, and deer” (Bender and Curtin 1990). Prehistoric people living near the project area would have had regional access to both Onondaga and Normanskill cherts with some bands of Finch Dolostone, Warner Hill Limestone, and Fort Edward Dolostone within a few miles of the project area. Outcrops of the higher quality Mount Merino Formation

of the Normanskill Group were also available to the east of the project area, particularly near the town of Hartford, New York (Fisher 1985; Charles Ver Straeten, Personal Communication).

The Paleoindian period in New York State dates between 12,900-10,000 B.P. (Lothrop and Bradley 2012) and is characterized by small, highly mobile populations living in groups probably no larger than 25 people and in very low densities across the landscape (Ritchie and Funk 1973). Paleoindian sites can be distinguished by diagnostic fluted point types like the Clovis Point and its variants as well as possibly narrow endscrapers and hafted perforators (Lothrop and Bradley 2012; Ritchie 1971). In the greater Northeast there are no true Clovis points and the earliest found regionally are close variants known as Kings Road/Whipple. The points evolve over time, transitioning into flute-less lanceolate forms toward the end of the period (Lothrop and Bradley 2012). The environment would have been dominated by park-tundra and spruce and jack forests, open territory with a high carrying capacity for game animals. Contrary to popular conception, few megafaunal remains have been found in association with Paleoindian artifacts in the northeast and herd animals like caribou appear to have been the focus of a more broad-based diet (Ritchie and Funk 1973).

The earliest people in New York State would have moved into an area that was rapidly changing as massive glacial lakes formed and drained creating the topography of the Hudson Valley and as boreal and temperate forest species began to establish themselves. The earliest period of human occupation of the state also corresponds with an environmental reversal to dramatically colder and drier conditions known as the Younger Dryas, which lasted from approximately 10,900-9,600 B.C., and added another layer of uncertainty to the new environment (Lothrop and Bradley 2012). Despite environmental fluctuations, the valley would have been an attractive location for early settlement.

As the ice sheets retreated, the Hudson Valley would have served as a broad transportation route into the greater northeast for both humans and animals seeking to avoid the higher ground of the Appalachian, Adirondack, and Taconic Mountains (Lothrop and Bradley 2012). Numerous high quality Normanskill and Helderberg cherts were available as raw material for stone tools and the paleontological record demonstrates that early people shared the area with mastodon, caribou, migrating birds, freshwater river and lake resources, and even marine species like whales and seals which lived in what is known as the Champlain Sea, a large inland sea that reached into the northern Hudson valley at the time (Lothrop and Bradley 2012).

Increasing the chance that a Paleoindian site is within the project area is that attractive chert sources exist in the vicinity with lower-grade raw material available in the immediate area and higher quality raw material lo-

cations a short distance away. Topographically it is not as ideal, as Paleoindian camps tended to be positioned at higher elevations that afforded them wider views of the surrounding area, appearing more commonly higher on the valley terrace walls south of the upper Hudson Valley (Selby 2007). Recent coring by staff from the New York State Museum has been used to look at the stratigraphic sequences and timing of the occupation of groups in lower lying glacial dunes to the south of the project area, indicating that Paleoindians did occupy lower areas, though (Andrew Kozlowski, Personal Communication).

Some problems with identifying Paleoindian camps are that they are generally rare, usually transitory with a small overall artifact assemblage, and except for a few diagnostic point types are often made up of just non-diagnostic debitage and cannot be dated to this period. Many Paleoindian sites are probably often relegated to the ubiquitous class of site known as a "small lithic scatter" (Rieth 2008). No sites identified during the site file search dated to this period but a Paleoindian presence in the area is documented by at least six Paleoindian projectile points from the Town of Whitehall in Washington County in the collections of the National Museum of the American Indian (NMAI 2013).

The Archaic period is roughly divided into three periods, Early (10,000–8,000 B.P.), Middle (8,000-6,000 B.P.) and Late (6,000-3,500 B.P.). The Early Archaic is characterized as being a time of rapidly shifting environments, though the Hudson River was flowing in roughly its current channel by this time. Warmer and drier than the preceding Paleoindian period, this time period provided a more diverse landscape with a greater variety of resources (Kirk and Markessinis 2003). Population levels were still very low in the Early Archaic period in New York State and the greatest density of sites dating to this time are to the south and east, notably on Staten Island, though scattered sites can be found across the state. Sites of this time period are particularly rare in the Hudson Valley and more generally in eastern New York (Rieth 2006).

The lifestyle of Early Archaic peoples was not considerably different from earlier Paleoindian peoples with the exception of increasingly smaller home ranges. The Early Archaic occupation is most commonly associated with Dalton, Hardaway, and Palmer points and characteristic bifurcate base points (Ritchie and Funk 1973). One site identified in the site file search has a documented Early Archaic component but they are also likely to be rare in the project area given the generally similar lifeway practiced by Early Archaic and Paleoindian peoples. The most likely type of Early Archaic site to be found in the project area is the stray find or low density scatter, similar to the Paleoindian period, with a slightly increased chance of a higher density seasonal camp (Kirk and Markessinis 2003).

Populations began to rise during the Middle Archaic period and Middle Archaic sites are characterized by broad, side-notched points. Most sites dating to this time period are small camps or spot finds similar to earlier periods but there is evidence for longer or repeated occupations at sites like Russ, Gardepe, and Johnsen No. 3 in the Susquehanna Valley (Kirk and Markessinis 2003). Environmentally, this time period was wetter than the Early Archaic and there was an expansion of deciduous trees. It was still drier than modern conditions though, which increases the chance that Middle Archaic sites are associated with permanent water sources, like the Hudson or Mohawk Rivers (Kirk and Markessinis 2003). Two of the sites identified during the site files search include a known Middle Archaic component. Given the relatively limited change in lifestyle from earlier time periods, sites from this time period are certainly possible within the general vicinity of the project area, though perhaps not very likely.

By the Late Archaic, the environment had stabilized to modern conditions and Late Archaic people had adjusted to them, settling into more well-defined territories and seasonal rounds and perhaps changing their overall settlement patterns, shifting from a pattern characterized by high residential mobility to one with more logistical mobility (Curtin et al. 2008). Late Archaic point types like Lamoka and some Brewerton variants provide the most characteristic artifacts of this time period (Ritchie and Funk 1973), though these types are rarer in the Hudson Valley than in areas further west. Viewed as a whole, three trends dominate the Late Archaic period in New York State: 1) increasing efficiency in exploitation of the environment, 2) increasing numbers of sites, and different classes of sites, reflecting a larger overall population, and probably larger individual group size, and 3) increasing relative sedentism and territoriality. Two notable developments of the Late Archaic regionally include the beginning of plant domestication and the origin of pottery.

By the second millennium B.C., native populations had already begun domesticating several native crops including squash, marsh elder, sunflower, and chenopod (Smith 1992). This was happening primarily in the interior Eastern Woodlands, west of New York State, but use of these plants is also known for locations further northeast of this domestication center, though the case for manipulation en route to domestication at this time is less certain (George and Dewar 1999). Also, while Ritchie defined the Archaic period partly by the absence of pottery (Ritchie 1932; 1967), more recent research has shown that the earliest experiments with pottery date to the Late Archaic. The earliest dates for Vinette I pottery region-wide are from Maine and date to the mid-second century B.C. (Hoffman 1998). The earliest date for ceramics in New York, ca. 3750 B.P., comes from the Piping Rock-5 shelter described by Brennan (1977, cited in Hoffman 1998). Interestingly, Brennan dismissed the

date as too early but given the growing assemblage of other Late Archaic-dated sherds it appears appropriate to reconsider this (Hoffman 1998).

The Parker-Ritchie-Funk taxonomy of this time period for the Hudson Valley divides it into successive Vosburg, River, and Snook Kill phases. Vosburg sites are characterized by the presence of corner-notched Vosburg points and sites can be in a variety of locations but larger sites do tend to be associated with major waterways like the Hudson River. Much of the data that constitutes the River phase in upstate New York was gathered by Ritchie from the Bent Site, along the Mohawk River southwest of the project area. The Bent site may have been occupied near-continuously with movement from it related to flooding rather than a more defined seasonal round (Rieth 2006). This phase is characterized by side-notched Normanskill points and is interpreted as having summer central base-camps near waterways (Kirk and Markessinis 2003). Snook Kill sites are characterized by Snook Kill projectile points and were named from their type site which is only a few miles west of the project area in the Town of Moreau (Ritchie 1958). Ritchie's description notes specifically that they are found most frequently in this area (Ritchie 1971).

An alternative interpretation of Late Archaic projectile point diversity looks at the point types not as the result of successive occupations but as temporally and spatially overlapping styles. In an analysis of Lamoka and Vestal points dating to the Late Archaic in the Southern Tier of New York, Miroff et al. (2008) suggest that increasing population size and increasing interaction between groups during the Late Archaic may have driven the development of stylistic ways of expressing group identity, including different projectile point styles. It is also possible that this phenomenon is responsible for some of the variation seen in Vosburg, River, and Snook Kill phase sites in the Hudson Valley. Larger sites of this phase, when found, tend to be on high, sandy, river terraces (Kirk and Markessinis 2003) so the project area may be too close to the Hudson for the largest types of Late Archaic sites but smaller camps or resource extraction sites are likely to be in the area. At least six sites with Late Archaic components (tied for the time period density with the Late Woodland period) were identified within the vicinity of the project area, likely reflecting relatively intensive use of the area during this time.

The Transitional period dates between 3,500 and 3,000 B.P. and is perhaps best seen as a liminal space between the Archaic and Woodland periods. Distinguishing Transitional sites are soapstone cooking vessels, Susquehanna Broad points, Orient Fishtail points, and some Vinette I pottery, all of which have some temporal overlap with earlier and later periods, leaving the Transitional period as it is conceived in the Parker-Ritchie-Funk taxonomy wanting for any true horizon markers. Steatite vessels are traditionally considered the hallmark of Transitional sites but recent dates have also shown

that steatite vessels are being used regionally both before and after the period, indicating that what initially appeared to be a cultural or temporal marker is more likely the florescence of a behavior that has a longer developmental history. Rather than a developmental track where steatite is replaced by early pottery, both appear to have been in use at the same time (Hoffman 1998; Truncer 2004). Explanations for the age, distribution, and differential use of early pottery and steatite include hypotheses that place steatite in ritual contexts and pottery in domestic contexts (Hoffman 1998), an essentially functional hypothesis that associates steatite with mast resources (Truncer 2004; 2006), and a political economy approach that associates trade of steatite with alliance formation (Sassaman 1999; 2006).

Ritchie and Funk (1973:344-346) divide this period into two phases based on location within the state, with Orient phase sites being located largely on Long Island and the Hudson Valley and Frost Island phase sites in central and western New York. The project area is firmly within the Orient phase by area but its position along a major transportation route makes it unlikely that they are the only kind of Transitional sites in the area. In fact, the closest Transitional period site to the project area, discussed below, is considered a Frost Island phase site (Agelarakis 1990). The lifestyle of the Late Archaic appears to be little changed during this later period except for an increased reliance on fish and shellfish (Rieth 2006), with large and small base camps, hunting camps, single and multi-task extraction areas, and stray finds with concentrations around important riverine and lacustrine resources.

Given the project area's proximity to the Hudson River, many kinds of Transitional sites could potentially be there including larger spring-summer base camps. At least three sites identified in the site files search contain a Transitional component, which is a very high density relative to the limited time frame covered by the period. At the southern end of the Village of Fort Edward is the Little Wood Creek Site, excavated in 1986. It has a deeply buried Transitional period component, identified at approximately nine feet below the modern ground surface. Researchers identified an intact living surface and cataloged more than 58,000 artifacts from this site. Patterning of the artifacts and features indicated that the overall assemblage was the result of repeated occupations of the site over time, at least five separate components, rather than one continuous occupation (Agelarakis 1990).

The Woodland period is also divided into three periods, Early (3,000–2,000 B.P.), Middle (2,000–1,000 B.P.) and Late (1,000 B.P.–Contact). The Early Woodland, predominantly Ritchie and Funk's Meadowood phase, is characterized by Meadowood and Adena points and Vinette I pottery along with an increase in the number of artifacts used for processing plant resources like mullers, manos, and metates (Ritchie and Funk

1973:347-9). Ritchie and Funk have described the settlement system of this period as central-based wandering but more work (Snow 1980, cited in Rieth 2008:163) has considered the possibility that Early Woodland peoples were moving toward semi-permanent sedentary settlement. The subsistence base for Early Woodland peoples seems to have been strongly focused on riverine and lacustrine resources with an increase in the use of native wild plants like *Chenopodium* (goose-foot) and *Polygonum erectum* (erect knotweed) (Ritchie and Funk 1973:347-9). Preservation of plant remains from this time is rare and an analysis of the full range of Early Woodland subsistence is difficult but numerous other resources can be expected including many faunal species both formally hunted and opportunistically gathered or trapped, fish, and additional plant remains including seeds, nuts, leaves, and fruit. Flotation samples from features at the Schoharie Creek II site southwest of the project area produced carbonized chenopodium, raspberry/blackberry/dewberry, and hazelnut, which may have been for augmenting subsistence or for medicinal purposes (Rieth 2008).

An additional complex, known as Middlesex, is also known from this time and its significant components include the exchange of exotic materials like cherts, marine shell, red ochre, mica, and copper through a network that extended across eastern North America. These items are often found in burial contexts including in burial mounds, though mound burial is more common in western New York than the Hudson Valley. It is unclear if the Middlesex complex is directly related to the Adena florescence occurring around this time in the Ohio Valley or if this is an *in situ* development from Late Archaic traditions happening alongside Adena (Kirk and Markessinis 2003). This exchange can be seen in materials traditionally described as utilitarian, too, as sites in the nearby Schoharie Valley often exhibit a range of lithic raw materials from the Mohawk, Hudson, Schoharie, and Susquehanna drainages (Rafferty et al. 2007; Rieth 2008). Three sites with components dating to the Early Woodland were identified in the site file search.

The Middle Woodland period in eastern New York is characterized by Jack's Reef, Point Peninsula, and Wickham ceramics, platform smoking pipes, and Jack's Reef corner notched, Jack's Reef pentagonal, Fox Creek Stemmed, and Fox Creek Lanceolate points (Kirk and Markessinis 2003; Ritchie and Funk 1973). With the exception of Hopewellian influences on groups in western New York, all of Ritchie and Funk's Middle Woodland phases are grouped under the Point Peninsula Tradition (Ritchie and Funk 1973). Recent work has shown that the first maize may date to this period as well (Hart et al. 2003). The ceramic assemblage, usually from large, globular or conical cooking pots, indicates that groups were increasing their investment in cultivated plants (Kirk and Markessinis 2003). Inter-regional trade remained important and there is occasional evidence of

material culture from Ohio Valley Hopewellian groups in northeastern sites including platform pipes, gorgets, and beads (Kostiwi 1995). Ritchie and Funk (1973:335) also suggest that corporate groups like lineages or clans developed at this time, replacing the earlier pattern of leadership by exceptional individuals.

The Hunter's Home and Fox Creek phases are the most common expressions of the Point Peninsula Tradition in the Hudson Valley and sites from this phase indicate that the average ceramic assemblage is growing and that family groups were becoming larger and staying in one place for longer periods of time. These people are thought to have been at least semi-sedentary, though maybe in residence all year round near high productivity resource zones like the Kipp Island site in Montezuma Swamp (Ritchie and Funk 1973).

During the early Middle Woodland there appears to be a preference for site location in close proximity to fish resources with a gradual shift toward the end of the period to the places chosen for large habitation sites moving to alluvial flats and terraces associated with both fertile soils for cultivation and other rich resource extraction areas for either augmenting horticulture or insuring the group against it in poorer years (Kirk and Markessinis 2003; Miroff 2011). Additional sites include back-country hunting stations and numerous small lithic scatters that are the only evidence left for short trips into upland areas to collect resources unavailable around the base camp (Rieth 2012).

For the early Mahican living in the Hudson Valley, fish resources remained a vital part of the diet much longer than other areas of the state, continuing to persist into the Late Woodland period. Some of the fishes used by the Mahican included short-nosed and Atlantic sturgeon, grayback and blueback herring, shad, striped bass and American eel, all of which would come in abundance and at predictable times during seasonal spawning runs. Most of these species spawned in the spring and early summer but some fish would have been available the entire year and eel are at their greatest abundance in the late summer and early fall, meaning a riverine-focused subsistence strategy could allow for long term, spring through fall, seasonal encampments (Brumbach and Bender 2002).

Four sites dating to this time period were identified during the site file search. To the south of the project area the Dennis Site in Menands, New York, which contained numerous pit features, shows evidence for long-season habitation sites in the area (Rieth 2006). Closer, Winney's Rift, a site on Fish Creek approximately 10 miles south of the project area, was occupied from the Late Archaic through contact. During the Middle Woodland through Contact periods it shows evidence of repeated use as a spring-summer encampment for intensive harvesting of riverine resources (Brumbach and Bender 2002). The Goldkrest Site, near Albany, has a small Middle Woodland component that includes deb-

itage, a carbon-dated hearth, and charred seeds tentatively identified as either *Chenopodium* or *Amaranth* (Lavin et al. 1996).

The Late Woodland stage is characterized by integrated maize-beans-squash horticulture, the first large settlements, and accelerated population growth. Artifacts like Levanna and later Madison points, and Owasco, Chance, Cayadutta, and Otstungo ceramics are the most common diagnostics to the period (Ritchie and Funk 1973:165-78). This is also the period where the Mahican and Five Nations Haudenosaunee become archaeologically visible. The environment was very similar to what it was historically except for the period known as the Little Ice Age, when temperatures were lower than normal. During this period, wetland environments were less commonly occupied in favor of high terraces near flood plains and wetland resources were a smaller part of the overall diet. Flood plains were used for growing crops and may have been home to horticultural hamlets whereas the largest populations in semi-permanent to permanent villages, often palisaded, lived on the higher terraces to protect themselves from both flood waters and their enemies (Kirk and Markessinis 2003).

Prior to contact the region around the project area is considered to be Mahican territory and the general Late Woodland patterns noted above also occur here but there is variation in the timing and means of their adoption. The precontact Mahican are certainly living a more sedentary lifestyle during this time but probably only in small multi-family hamlets instead of the large, formal villages of the Haudenosaunee. Additionally, palisades around Mahican villages as noted by ethnographers may have only occurred at or around contact rather than earlier as in the case of the Haudenosaunee (Bender and Curtin 1990).

There is also ceramic evidence for a slower adoption of maize-beans-squash horticulture with a shift from Mahican style ceramics toward more characteristically Haudenosaunee-style ceramics occurring at Mahican sites around A.D. 1300-1400. This is interpreted as representing a fuller integration of horticulture into the diet but it may have never been adopted to the same degree as other areas in New York State in the upper Hudson Valley with riverine resources still constituting a significant portion of the diet (Brumbach 1995 cited in Miroff 2011; Brumbach and Bender 2002) and other plants including bramble berries, elderberries, grapes, goosefoot, millet, buckwheat/sedge, knotweed, butter-nuts, and hickory nuts still making up part of the diet (Lavin 2004).

At the Goldkrest site near Albany, researchers also identified a large number of buttercup seeds which may have been used as a medicinal to treat a variety of physical and spiritual ailments (Largy et al. 1999). Up until contact Mahican sites in the vicinity of the project area appear to have remained relatively small and seasonal, although that season may have lengthened, with warm



weather sites in lower elevations and fall-spring sites at higher elevations (Miroff 2011). Researchers at the Goldkrest site identified at least two structural outlines and two more possible structures, with one of the outlines representing an 11 x 4 meter community building. They interpret this is likely representing either an outlying farmstead or more likely, a multi-season fishing and foraging camp where horticulture was also practiced, though not intensely (Lavin et al. 1996). Additional site types for this time period include backcountry stations that could be either satellite camps for larger semi-sedentary villages or seasonal residential camps (Curtin 2011). Population size for the entire Mahican group at contact is estimated to be between 4,000 and 8,000 people (Brumbach and Bender 2002:229).

Larger, palisaded sites were built after contact and during increased hostilities with the Mohawk. After the establishment of a trading post at Fort Orange (Albany, New York) in 1609 hostilities increased even further and the Mahican moved out of the vicinity of the project area to the east of the Hudson (Vernay and Luhman 2004). The Little Wood Creek site mentioned above in the Transitional Period discussion also has a substantial Late Woodland component dating to approximately 1000-1300 A.D. Researchers there identified almost 1,000 prehistoric features related to this component along with over 22 kg (50 lb) of faunal remains over 227 kg (500 lb) of shell, and thousands of carbonized seed and nutshell fragments (Agelarakis 1990). Given the size of this site and its proximity to the APE, it is highly likely that human activities from this site occurred within the project boundaries.

Overall, research in the vicinity and the site files search document sporadic use of the project area through the Middle Archaic period followed by a rapid increase in site density in the Late Archaic period. This higher density of sites persists at a relatively stable level through the Late Woodland period. Combining the Transitional and Early Woodland periods into one gives identified site totals of six for the Late Archaic, six for the Early Woodland/Transitional, four for the Middle Woodland, and six again for the Late Woodland. This trend clearly marks the project area and its environs as an area of intensive prehistoric occupation for the entirety of New York State prehistory and especially the last 6,000 years.

## 2.3 Historical Contexts

As discussed in the Natural Environment section, Fort Edward is the point on the Hudson River at which further travel to the north by way of boat was not possible because of the falls and rapids. Previous to European settlers, the natives named the area The Great Carrying Place, or the Great Carry because there was only about a mile separating Bond Creek and the Wood Creek

tributary during the spring floods. From Wood Creek, water was navigable for canoes and light bark boats to Lake Champlain (Hill 1929). Hence, this area became a strategic junction between the Hudson and Champlain valleys both prehistorically and historically. Early European traders took advantage of this route while vying for the lucrative trade with the Natives and to gain territory for their respective crowns, eventually leading to several violent conflicts between England and France through the late-seventeenth and first half of the eighteenth centuries.

### *Eighteenth-Century (pre-1755)*

The wars between the Canadian French and the English-occupied colonies raged for most of the eighteenth century in New York State. Though there was military activity in the project area in the late-seventeenth century, it was during Queen Anne's War in 1709 that Peter Schuyler was sent to The Great Carrying Place to erect a stockade and build a road to Fort Ann. During this period the first substantial road to connect this village with the outside world was constructed. The fortification at The Great Carrying Place became known as Fort Nicholson, which was garrisoned by as many as 700 men by 1711 only to be abandoned shortly thereafter.

Following 30 years of relative peace, in 1731 John Henry Lydius, a Dutchman from Albany, erected a fur trading post known then as Fort Lydius. This was Fort Edward's first map documented structure and it was said to be constructed on the site of the earlier fort (Hill 1929). Lydius and several Dutch families enjoyed a lucrative trade with the French and Indians there until 1745 when the French again began mounting raids against the English settlements in the Hudson Valley, eventually resulting in the capture of some of Lydius' family and employees and the destruction of his house. This was soon followed down river by the massacre of the inhabitants of Old Saratoga, now Schuylerville (Hill 1929; Steele 1990). This period, until 1748, was known as King George's War.

The French had established a fort known as Fort St. Frederic at the narrows of Lake Champlain as early as 1734. This fort gave the French control of the frontier between New France and the British colonies to the south. Over the years, many French raids, including the raids of 1745, originated there. Dozens of other raiding parties had terrorized the frontiers of New Hampshire, Massachusetts, Connecticut, and New York from this French fort while enlisting the aid of a variety of Native allies (Steele 1990). With France's continued expansion to the west and south into the Ohio Valley, and their persistent courtship of Native groups for exclusive trade relationships, the British colonies were finally forced to retaliate. In 1754 violence broke out with the Battle of Jumonville Glen in present day Uniontown, Pennsylvania and the conflict escalated from there into what is

known in America as the French and Indian War. In Great Britain and Europe it is known as the Seven Years War (Anderson 2000).

### ***French and Indian War (1755 to 1763)***

In New York, as a counterclaim on the Lake Champlain territory, the British planned and provisioned for successive campaigns against Fort St. Frederic by establishing a string of forts north of Albany along the Hudson River corridor. In 1755 William Johnson, who was Britain's agent of Indian affairs, was commissioned as a major general and instructed to lead an expedition to Crown Point. Toward this end he ordered the construction of a large fort at the Lydius Place for the storage of ammunition and supplies.

This fort, originally called Fort Layman, later Fort Edward, was initially built as the supply depot to Johnson's military encampment that had been established at the south end of Lake George, fourteen miles north of Fort Edward. The French commander at Fort St. Frederic, Baron de Dieskau, being informed of the British emplacements, decided to launch a preemptive attack on the supply base at Fort Edward on September 8, 1755 resulting in the Battle of Lake George, which the French lost. This attack prompted Johnson to order the construction that year of Fort William Henry at the head of Lake George near his encampment and to have it garrisoned year round (Anderson 2000; Steele 1990).

At the same time the French ordered the construction of a fort at Ticonderoga called Fort Carillon that was situated between the two lakes. In 1756, there was again a plan for a British offensive north, then to attack Fort Carillon as well as Fort St. Frederic. This plan involved a proposed build-up of 10,000 British and provincial soldiers as well as Natives. However, for various reasons including several changes in military command, delays in movement of forces, and problems with provincial and British political ministrations, there was little action on the lakes that year.

At Fort Edward, this period marked the continuation of intense construction of a giant military complex centered around the log fort situated on the east bank of the Hudson just north of the mouth of Bond Creek. Eventually the complex expanded to the island in the river (Rogers Island) and even to the west bank of the river with the construction of the Royal Blockhouse high on the bluff overlooking the island. The island is especially recognized as the encampment of the special military unit known as "Rogers Rangers" under the command of Major Robert Rogers. From 1756 to 1759 Rogers encamped on the island with his troops and used it as a training base. The Rangers distinguished themselves in many scouting and military actions while following Rogers' "Ranging Rules" first written down by Rogers in 1757. These were formalized principles of forest (i.e. guerrilla) warfare devised for fighting in the rugged for-

est terrain of northern New York, New England, and southern Canada.

Eventually, by 1759, the fort complex included barracks, blockhouses, storehouses, hospitals, huts, burial grounds, gardens, a sutler's house, tent villages, and various defensive outworks. This all went up to service the needs of the armies that passed through on their way from Albany and points south to attack French forts in the north. Over the course of the war, during the summer campaign seasons, occupants at Fort Edward numbered in the tens of thousands of soldiers, camp followers, and livestock, along with hundreds of wheeled artillery and wagons carrying baggage provisions. It is interesting to note that the current population of Fort Edward Village is under 5,000 people, less than a third of the number of soldiers who occupied this place in 1758 during the largest campaign buildup.

Though there were no real battles at Fort Edward, it was a strategic stronghold during the seven years of the French and Indian War when for a while it became the northernmost defensive British fort after the French siege and eventual fall of Fort William Henry in 1757. This was the event that involved the famous "massacre" of surrendered British and provincial soldiers by the French-allied Natives, eventually dramatized in James Fenimore Cooper's 1826 novel *The Last of the Mohicans*. That event forestalled any northern assault on French forts that year. In June of 1758 over 16,000 soldiers assembled at Fort Edward for what became the disastrous campaign against Fort Carillon in Ticonderoga. The British and Provincial troops were under the command of Maj. General James Abercromby.

The French fort, under the command of General Louis-Joseph de Montcalm, was garrisoned by only 3,526 men, a number by comparison that should have been no match for the British forces. However, for various reasons, Abercromby bungled his assault on July 8, resulting in the loss of 2,000 dead and wounded soldiers. To make matters worse, even though he still had 14,000 ready troops at his disposal, with much artillery and provisions to lay siege to Fort Carillon, he ordered a retreat back to the ruins of Fort William Henry at the head of Lake George. The whole event brought him shame and he was relieved of his command on September 18 of that year (Anderson 2000).

After that battle, many of the wounded and sick were brought back to the hospitals at Fort Edward. By late fall of 1758, eight blockhouses, including the Royal Blockhouse, each surrounded by a dry ditch and piquets, had been constructed around the perimeter of Fort Edward and an extensive two-story barracks complex, a large bake house with brick ovens, and a very large storehouse were built on Rogers Island (Fuller 1995). Abercromby's successor as commander in chief of the American forces was Jeffery Amherst, who had distinguished himself in June and July of 1758 with the successful siege of Louis-

bourg, a formidable French fortress on the eastern end of Cape Breton Island, Nova Scotia (Anderson 2000).

In 1759, with a new command and new orders from England to again invade Canada by way of Lakes George and Champlain, Amherst gathered troops at Fort Edward. In the summer of 1759 over 10,000 soldiers were assembled there in preparation for another campaign against Fort Carillon, which this time was successful, mainly because by the time Amherst's army got there, the French, who were far outnumbered with no hopes of reinforcements, had blown up the powder magazine and retreated north to Crown Point. When Amherst followed, they found that the French had also blown up Fort St. Frederic and had withdrawn north to Ile-aux-Noix, a fortified island at the foot of Lake Champlain (Anderson 2000). With his objective won, Amherst soon after set his men to refortifying the south end of Lake George by starting the construction of a new fort (Fort George), while at the same time repairing the fort at Ticonderoga, and constructing a new large stone fort at Crown Point to better secure and retain his conquests. This finally ended the French dominance in the region.

With the northern frontier now under British protection, few soldiers were required to occupy Fort Edward as a defensive post. Therefore, for the next several years, there was only a small amount of activity there. Small detachments were deployed to build and repair the military roads between the forts, but there was little in the way of building construction or upkeep of the fort itself. In 1760, with Crown Point as the northernmost British fortification, Fort Edward became only a depot for the forwarding of supplies passing through on the road from Albany, and there was only a small year-round garrison. Earlier that year the French made a vain attempt to recapture Quebec, which had been lost to the British Army and Navy in September 1759. However, the surrender of Montreal was the northern focus of British military efforts in 1760, which when finally accomplished, brought to an end the war in America (Hill 1929). In other parts of the world though, the war continued until the signing of the Treaty of Paris in 1763 (Anderson 2000; Calloway 2006; Hill 1929).

Even after the end of the war there was a lingering fear of reprisal by "the enemy Indians" such that on December 13, 1763 the New York Assembly provided for a few hundred men and officers to garrison "several forts on the frontiers of this colony" (New York Assembly 1894:690). With this fear in mind Fort Edward was garrisoned through the winter of 1766. Finally, in March that year, it was ordered to be evacuated (Hill 1929).

### ***Post-French and Indian War Settlement***

With the fall of the French forts at Ticonderoga and Crown Point, former and prospective settlers began to return to the area. As early as September of 1759, James DeLancey, lieutenant governor of New York, is-

sued a proclamation stating that there were several spots of cleared land at three previously developed British military posts between Fort Edward and Lake George that were open for settlement by many families, "on which shall be left for their convenience the wooden huts and coverings of the troops that have been posted there since the beginning of the campaign" (O'Callaghan 1849:556). As further inducement, upon immediate settlement, there was promise from the King of a grant in the form of a township to former or new residents who applied.

These areas were all north of Fort Edward along the road to Lake George, but being former military sites "they were attractive for development to colonial settlers for four reasons: the military road gave protected travel access, the forestland had already been cleared at those places, they were close to reliable water sources, and in most cases, buildings had already been constructed" (Derby 2008:213). These same reasons played a significant role toward inducing settlement at Fort Edward as well; it was located on the principal inland route to Montreal, much of the forest around the fort and on the island had been cleared, it was situated directly on a major water source, and there were already many substantial buildings (barracks, storehouses, blockhouses, and huts) present in and around the fort itself.

Expansion of the mainland colonies after the French and Indian War began first with a few family and community groups searching for new locations to make their homes. It quickly grew to a flood of people coming from the coastal areas of New England up the Connecticut and Hudson River valleys founding many new towns in the years between 1760 and 1776 (Calloway 2006). In the 1760s, various land grants were established in the region surrounding Fort Edward as people moved to the area (then part of a larger Albany County, now encompassed by the much smaller Washington County). Skenesborough (Whitehall) and Cambridge Patents were granted by 1761, Kingsbury, Fort Miller, and Queensbury Patents by 1762, Argyle Patent (of which Fort Edward was part) by 1763, and the Turner Patent (Salem) by 1764. Many of the settlers were former soldiers of both the British and provincial armies who after being discharged, were offered land under a royal proclamation (Johnson 1878). The Argyle Patent was mostly settled by Scottish immigrants pushed by a need to escape wrenching economic change at home and attracted by the prospect of betterment in America (Calloway 2006).

Patrick and George Smyth, brothers who were British soldiers in the French and Indian War (Patrick an officer and George a surgeon) were two of the earliest and most influential inhabitants of Fort Edward during the years of British rule before the Revolution. They were also staunch British loyalists as were many of the early settlers of the Argyle patent. Patrick is thought to have been the custodian of the fort and other property nearby about the time the fort was abandoned (Hill 1929). He

became a local justice of the peace and built a house that is still standing south of the fort on the south side of Bond Creek (now the Old Fort House Museum in the southern end of the project area). This house was thought to have been built in 1772 partially with pieces of the best buildings at the old fort (Hill 1929). When Charlotte County was established in 1772, Smyth was made one of thirteen road commissioners as well, with the power to layout, regulate, and repair the roads. It is possible he was responsible for the current track of the Route 4 through the village. He also served as county clerk and postmaster in the mid-1770s. His house was used as the first court in Charlotte County, making Fort Edward the county seat at the time.

Other prominent residents were the Sherwood family, Seth, the father also having been a soldier during the French and Indian War. He and his offspring were among the most prominent patriots who lived within the village limits before and during the American rebellion against British rule. In the early 1770s, Seth had filed a petition to New York's governor, Lord Dunmore, over some contested land in Fort Edward on which Sherwood had already resided for five or six years and had built several dwellings. By that time the fort itself had been abandoned for nearly a decade and the buildings had been razed to the ground. Hill (1929:287) stated that it was probable that the removal of the buildings was done by the early settlers who had used the material to construct their homes.

### ***Revolutionary War (1776-1780)***

During the Revolutionary War, Fort Edward again saw military troops both passing through and in garrison. In 1777, three years into the war, the British planned to break the American stronghold in New York by means of a three part campaign, which would eventually lead to taking all the American Colonies. One of the forces was to come from Canada down through the Hudson-Champlain passage, and meet the two other British forces in Albany. The northern army was under the command of Lieutenant-General John Burgoyne. This campaign eventually led to the famous battle of Saratoga considered to have been decisive in turning the outcome of the Revolution in favor of the American Colonies.

During this campaign, Burgoyne led his army of over 7,000 British, German, Canadian, Native, and Loyalist soldiers down from Canada to Fort Ticonderoga, which was held by the Americans at the time. His army was much larger and better equipped than the Americans there so they easily won the fort and the Americans retreated. At the time, Major-General Philip Schuyler was in command of the American forces in Albany. He had worked diligently to build an army of about 700 Continental troops, and possibly 400 militia, along with supplies, to prepare for and ward off Burgoyne's advance.

They moved up the Hudson to Fort Edward, arriving on July 8.

At that time many of the settlers in the area who were loyal to the British crown left their houses after the Declaration of Independence in 1776, residing elsewhere, mainly Albany, until they could know the outcome of the war. It is known that there was a "good large inn" in Fort Edward in 1776 because Charles Carroll commented on it in his journal while traveling north to Canada at the time (Mayer 1876:60). This inn was where the regiment of Colonel Sinclair was quartered because the fort itself was in ruins. It is thought that this inn was Patrick Smyth's house since it was the only large building in Fort Edward at the time. In 1777, when Schuyler and his army came north it was likely that he used the same inn as his headquarters.

While Burgoyne's army progressed south toward Fort Edward there were several small raids and skirmishes with American posts, which mostly caused panic and retreat among the American soldiers. While at Fort Edward Schuyler wrote to General Washington about the state of the fort itself being nothing but ruins and that it was indefensible against Burgoyne's army with the troops at hand (Hill 1929:324). As Burgoyne approached late in July, Schuyler and his army retreated about four miles south to the Moses Kill and eventually all the way back south of Saratoga to the Mohawk. By that time his army consisted of less than 3,000 Continental troops along with about 1,500 militia. After Schuyler evacuated Fort Edward, Burgoyne moved in and set up headquarters there, likely in the same house as Schuyler, with various army corps encamped on the heights north and south of the fort. They stayed in Fort Edward for seven days before also moving downriver. In the wake of Schuyler's retreat, on August 10 he was relieved of his command and replaced by General Horatio Gates, who later was successful against Burgoyne's army at the Battle of Saratoga in September and October.

During this campaign, much of the settled countryside around Fort Edward was burned, with buildings and crops destroyed and livestock confiscated to prevent them from falling into the hands of the enemy, both by order of Schuyler against the British, and then by Burgoyne's invading army as they swept through. By the next year some of the local inhabitants who had come back to their residences petitioned the Legislature asking for relief from the poverty and hardships resulting from the previous year's campaign. The Tories, like the Smyths, were so disliked by their neighbor patriots that they soon gave up their property in Fort Edward and left for Canada (Hill 1929:330).

Only a very small number of American soldiers were garrisoned at the fort up until 1780. There was a brief raid on the northern frontier that year, but after that the fort was again abandoned. Smyth's house and property was transferred to John Cochran sometime between 1778 and 1780, then in 1786 purchased by Adiel Sher-

wood (Horn 1989:38), an American patriot and soldier whose father Seth, had earlier legal run-ins over land he'd purchased in the village when Smyth was a justice of the peace. According to Hill (1929:282), Seth Sherwood operated a tavern in the house and when his son Adiel was discharged from military duty during the Revolutionary War, he operated a tavern and inn there as well. For about a decade, some sessions of the county court were regularly held in this house until the county seat was moved to Kingsbury.

In 1784, the county name changed from Charlotte, the name of England's queen, to Washington in honor of the American war hero. There is relatively little other specific information about the development of the village around the fort, and thus the project area, in the years just after the Revolution. In the mid-1790s Isaac Weld, an English traveler passed through Fort Edward on his way to Canada. He noted that the fort itself stood near the river while the "town" of the same name contained about twenty houses situated about one or two hundred yards from it (Weld Jr. 1799:160). This may refer to the area along Broadway north of the bridge to Rogers Island where the house at 109-111 Broadway is located. This house was built around 1780 in or near the location of an earlier log house associated with the death of Jane McRae in 1777. It could also refer to the area east of State Street where a block house was known to have been located during the French and Indian War. The four streets that extend from Broadway through the fort area itself (Montgomery, Old Fort, Edward, and Moon Streets) were not laid out until the mid-nineteenth century.

### *The Village After 1800*

After the Revolutionary War, the new influx of settlers to the area prompted a need for transportation routes for moving people and commodities. The construction of the Waterford and Whitehall turnpike, in 1806, partly on the course of the military road, was the initial thread for Fort Edward's expansion in the nineteenth century (Johnson 1878). The turnpike, which followed the present course of Broadway through Fort Edward, provided an improved overland route to Lake Champlain, paralleling the original route on Wood Creek. Near the fort, this road passed somewhat west of the earlier approach road into the fort from the north, which took it through the encampment area that was enclosed by the defensive outworks barrier. This barrier consisted of a large continuous ditch with the soil piled along the inner edge as a defensive rampart, long since backfilled by 1800. The turnpike provided for the creation of a regular packed earth or gravel surface that would have leveled any remaining depressions from outwork ditches that were encountered by that time.

The town of Fort Edward within its present limits was detached from the town of Argyle by an act of Legisla-

ture in 1818. Officials of the town included two justices of the peace, a supervisor, a town clerk, two assessors, three highway commissioners, an overseer of the poor, three constables, and an overseer of highways (Johnson 1878:317). A few years before this, a new toll bridge was built to carry the turnpike over Bond Creek by the newly formed Fort Edward Bridge Company, under the ownership of William Finn, Ebenezer Kimball, and others (State of New York 1815).

Shortly after that, the completion of the Champlain Canal, in 1822, vastly improved travel between the Hudson River and Lake Champlain and opened Fort Edward and the northern Hudson region for development. It connected to the Hudson River through the mouth of Bond Creek and paralleled the east side of Broadway for approximately one-half mile in Fort Edward before turning northeastward toward Sandy Hill (now Hudson Falls). At that time there was no canal south to Fort Miller, so boats passed between Fort Edward and Fort Miller on the slack water of the Hudson, entering and leaving the canal at Fort Edward by the passage of three locks (Johnson 1878:318).

In 1828, this arrangement was abandoned and a prism was dug along the east bank of the river to Fort Miller. The new prism passed over Bond Creek on a wooden aqueduct just to the east of Broadway joining the earlier canal just north of current Notre Dame Street. The old section entering at Bond Creek was abandoned, but remained open north of Broadway for many years. This was eventually filled and became State Street, which is now lined with houses. The construction of the canal aqueduct at Bond Creek involved the formation of a stone culvert that carried through to the road next to it essentially forming the highway viaduct across the creek that we see today. This area was investigated during the 2006 highway construction by archaeologists, and is discussed in detail elsewhere in this report.

The original Fort Edward Feeder Canal, which diverted water from the Hudson at the northern end of the lower village, joined the canal at the base of Fort Edward Hill where it heads northeast. This one-half mile long feeder was a source of water power and a direct transportation link to the main canal, which fostered significant industrial growth in the village. For various reasons, this feeder proved inadequate in supplying water to the main canal almost from its first opening. This prompted the state to construct an improved feeder from the Hudson a few miles north at Glens Falls, in 1828. The subsequent sale of the Fort Edward feeder and its adjacent property rights in 1845 to members of the Fort Edward community was instrumental in stimulating industrial growth.

Over the next two decades approximately 15 mills, manufactories, and other industries were established, primarily in the northern part of Fort Edward, utilizing water power from the feeder and an adjacent sluice-way off the feeder dam. These industries included two saw

mills and a paper mill, a sash and blind factory, two grist mills, a foundry and a blast furnace that made pig iron, three potteries, a brick kiln, a brewery with a malt house, and a boatyard (Figure 2.1 on the facing page). The crossing of the feeder at Broadway was investigated during construction activities with this project and the location was designated the Fort Edward Feeder Canal Bridge archaeological site discussed at length elsewhere in this report.

Another transportation boon to the community was the Saratoga and Whitehall Railroad, completed in 1848. This railroad was constructed across the island and was carried on wooden bridges over the east and west branches of the Hudson. It crossed Broadway at grade just north of Notre Dame Street and paralleled the canal along the valley north to Whitehall. Soon spur lines were built from the east part of the village north to Hudson Falls and from that line west to the mill yard along the feeder, adding further impetus to the manufacturing concerns there.

In the mid-nineteenth century the booming industries at the “mill yard” attracted many workers to Fort Edward creating a need for housing. Remnants of the old fort were apparently still visible around that time according to Benson Lossing (1850), a historian and writer of popular books on the Revolutionary War. Of his visit to Fort Edward in 1848 he wrote that “There are still very prominent traces of the banks of the fosse of the fort, but the growing village will soon spread over and obliterate them forever. Already a garden was within the lines...” and the old parade ground “was desecrated by beds of beets, parsley, radishes and onions”. Lossing’s quote alludes to a dynamically expanding village, and in fact, because of that growth, in 1849 the village of Fort Edward became incorporated as its own municipality encompassing one thousand acres of the western part of the larger town. It also embraced Roger’s Island in the river, then known as Freeman’s Island.

The major east and west roads (East Street, running east from Broadway in the center part of the village, and Bridge Street running west across the island to Saratoga County) were laid out in 1830. As the village expanded, many of the side streets were officially laid out by the commissioners of highways to accommodate the population influx. In 1851, State Street was laid out in the lower part of the village where the old canal used to run. In 1852, McCrea Street was laid out through lands of the Fort Edward Manufacturing Company above the feeder canal and mill yard in the north part of the village. Mechanic, Mill, Church, and Eddy Streets were created in 1853 also near the mill yard. These are visible on the village inset of the 1853 Map of Washington County, New York (Figure 2.1 on the next page). For some reason that map doesn’t show Bridge Street across the island, then known as Monroe’s Island.

As was predicted by Lossing (1850), Moon Street was laid out in the lower part of the village across the fort

grounds, followed soon after by Edward, Old Fort, and Montgomery Streets (Bascom 1903). These streets were soon lined with houses, garages and sheds as seen on the 1866 village inset of the New Topographical Atlas of Washington County, New York (Figure 2.2 on page 32). Yards were created by leveling the ground, utilities were buried along the streets, and eventually practically all surface evidence of the fort was obliterated.

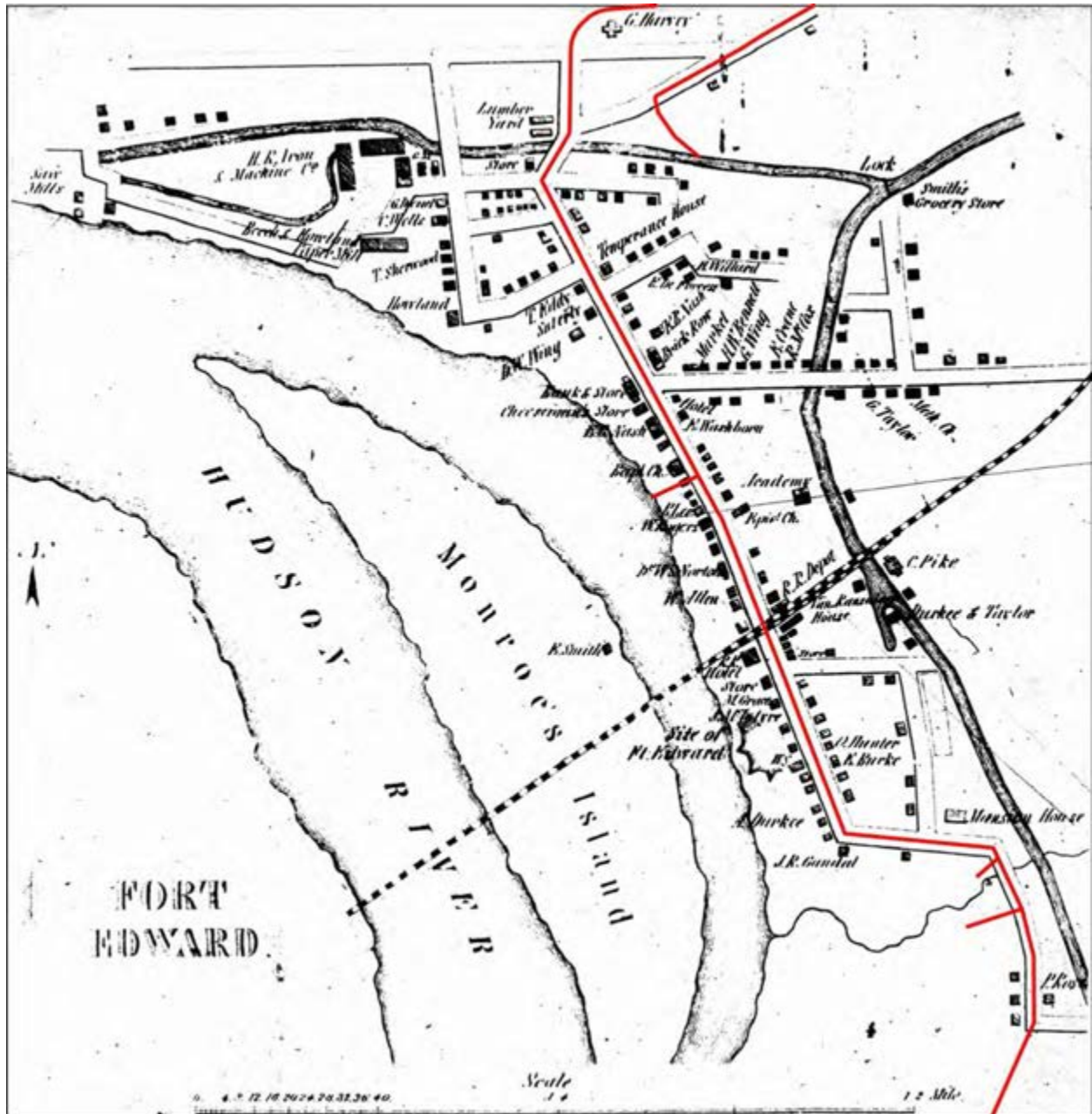
In the south part of the village two other mills were erected along Broadway in the second half of the nineteenth century. One was the woodworking and grist mill of N. B. Milliman situated just north of the Bond Creek viaduct between the Champlain Canal and Broadway. The first mill on this site was built in 1861 as a steam saw mill that also did planning as well as manufacturing of sashes, blinds, and doors. It was destroyed by fire in 1877 but immediately rebuilt with the addition of a grist mill (Johnson 1878). It had docking facilities on its east side along the canal. This building, converted to residential apartments in 1955, still stands at 50 Broadway.

Further south at the corner of Broadway and Argyle Street, A. K. Haxstun and Company built a stoneware pottery in 1875. This factory, also adjacent to the Champlain Canal, was restricted to steam or horse power unlike other Fort Edward potteries located in the mill yard where the old feeder provided power. It produced stoneware products under various names until 1892 when it was sold to the Hilfinger Brothers, whose backyard earthenware pottery on East Street burned down that year. The Hilfingers produced red earthenware goods at the Argyle Street location until 1942, after which the building deteriorated and was demolished in 1954. Remnants of this pottery were investigated by archaeologists during construction activities in 2006. It was designated the Hilfinger Pottery archaeological site and is discussed at length elsewhere in this report.

### *Utilities and Infrastructure*

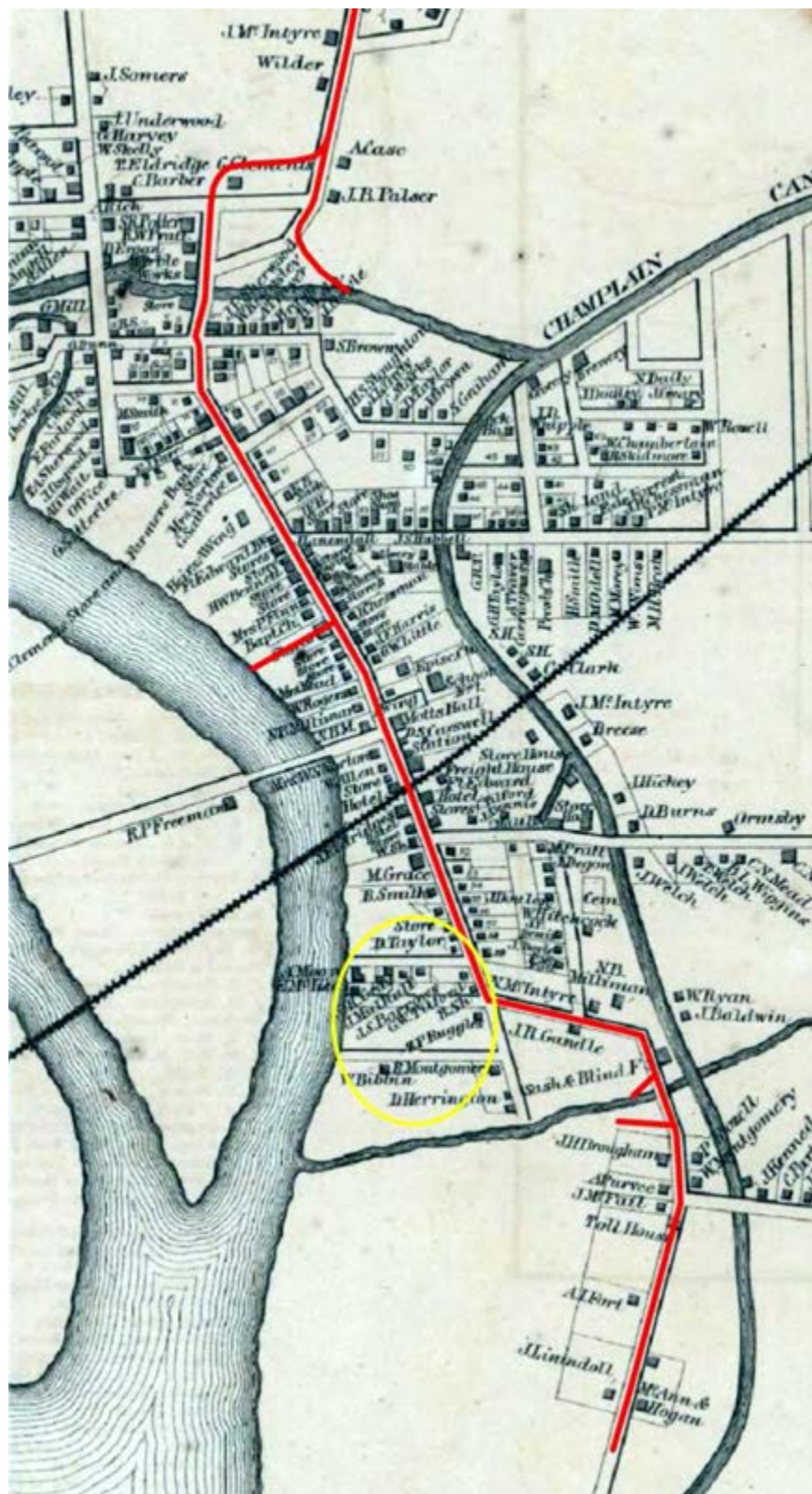
Some of the archaeological features recorded during this project relate to the early development of the village utility infrastructure. Though this facet of Fort Edward may not have the romance and nostalgia of the prehistoric or eighteenth century military time periods for which this place is famous, it does mark the beginnings of people’s need to improve their living conditions in parallel with the village’s period of greatest economic growth in the early to mid-nineteenth century. Therefore, a brief history of the development of some of the village’s utilities and infrastructure is summarized in order to form a context within which these features can be interpreted.

The utility infrastructure in the village began with a water system as early as 1803 according to a law of enactment indexed in New York State Legislative Document No. 127 (New York State Legislature 1919:525) and according to Johnson’s History of Washington County (1878:320). Wooden water lines were buried



**Figure 2.1:** Detail of the 1853 Map of Washington County, New York (Levey 1853). The Broadway project area is highlighted in red.





**Figure 2.2:** Detail of the 1866 New Topographical Atlas of Washington County, New York Beers. The yellow circle marks the former fort location.



in the street at first, followed by iron water mains later in the century. A proposed water system distribution map from 1893 is archived in the village clerk's office. This represents the water mains used in the village to the current day, except for the new one installed along Broadway for this project. A buried sewer system, with drainage grates, was installed in the 1890s and upgraded to a new system around 1907. A ceramic sewer line was installed down Broadway at this time according to another map archived at the village clerk's office.

The Fort Edward Electric Light and Power Company was incorporated in 1887. This company merged with the Sandy Hill Electric Light and Power Company in 1899 to become the United Gas, Electric Light, and Fuel Company of Sandy Hill, and Fort Edward. It purchased electricity and coal gas from the Glens Falls Gas and Electric Light Company to serve the villages of Hudson Falls and Fort Edward according to a 1912 report of the Public Service Commission (New York State Legislature 1919:32). However they must have decided to expand production of coal gas because in 1899 a small coal gas generating plant was erected by the United Gas and Electric Light Company in the south part of Fort Edward Village. It was located two blocks to the east of the project area along the east side of the Champlain Canal, a convenient location for the transportation of the coal used to produce the gas. It fell out of operation by 1924 according to the label on the Sanborn Fire Insurance map from that year. Various portions of the abandoned early water, sewer, and gas lines were encountered during the construction of new utilities in 2006 and 2007.

The village of Fort Edward was connected to Glens Falls and Sandy Hill by the aptly named Glens Falls, Sandy Hill, and Fort Edward Street Rail Road, established in 1885. This trolley was built within the main street connecting these communities using horse-drawn cars until it converted to electric cars in 1891. Around that time the line only reached south in the village to about Bridge Street, but by 1896 it had tracks extending along lower Broadway south beyond the intersection with Argyle Street. In 1901, the trolley became part of the Hudson Valley Railroad, a merger of several regional trolley companies that created a network stretching from Troy to Warrensburg. With the advent of automobiles after World War I, this mode of transportation became obsolete and was eventually shut down in 1928.

The street surface of Broadway was packed earth until 1915 when it was paved with brick on a base of concrete. The unpaved surface, which was regularly churned up in wet weather by wheeled traffic, horses, and people over the previous 150 years, accumulated various kinds of litter, not only from passersby, but by repeated dumping of refuse from the houses that lined the street during the early settlement period. The practice of throwing kitchen refuse on the ground around a dwelling (including the front yard and street areas) was common in the late-eighteenth and early-nineteenth centuries. This oc-

curred until the mid-nineteenth century notions of sanitation, and the distinction between success/cleanliness and failure/slovenliness developed, partly out of the rise of the middle-class ideology and the Cult of Domesticity, which contributed to the eventual notion of the "yard" as an extension of the domestic world.

Historic photographs of Broadway taken in the late nineteenth century show what the street surface looked like prior to paving (Figures 2.1 to 2.2 on the next page). Once it was paved with brick it was all but sealed from further disturbance except by the installation or repair of new utilities (Figure 2.3 on page 35). A 1955 plan map for widening Broadway found in the village clerk's office shows that the brick pavement still hadn't been covered with blacktop at that time, at least on Lower Broadway. This map shows that areas to be widened beyond the existing brick pavement were to be paved with concrete, which probably explains some of the places where we saw pavement layers consisting of blacktop directly on top of concrete.

The bridge over Bond Creek, and later the viaduct and culvert there, are discussed at length in the Fort Edward Village site description section below.

From the time of its construction in 1849 until 1940, the railroad crossing of Broadway was essentially at road grade save for a slight berm on which the tracks rested. This is visible in Figures 2.2 to 2.3 on pages 34–35, late-nineteenth and early twentieth century photographs of the street. The road was lowered in 1940 so that vehicles could pass without waiting for passing trains according to construction plans developed in 1939 by DOT (Figure 2.4 on page 36). This construction extended as far south as Notre Dame Street and north to Bridge Street requiring the removal of a number of structures along Broadway.

In the mid-twentieth century, Broadway from Bridge Street north became part of a major transportation artery between Route 9 in Saratoga County and Vermont to the east when Interstate 87 (the Northway) was completed in the 1960s. Trucks have become the main mode of land-based cargo transport through the area since then and it bears an enormous amount of truck thru-traffic.

In 1986, the Washington County Sewer District No. 2 installed a new 27-inch sanitary sewer interceptor eight feet deep down the center of Lower Broadway with lateral collection lines along the side streets. This line carries sewage to a newly constructed treatment facility on Cortland Street off Lower Broadway. By 1986, the Federal and State Historic Preservation laws required that cultural resource investigations be conducted in advance of construction along the impact routes of the sewer line. Several phases of archaeological investigation were completed, including in 1986, a lengthy archaeological excavation of the proposed construction trench down the center of Broadway between Moon and Notre Dame Streets (Photo 2.3 on page 35).



**Photo 2.1:** View ca. 1900 of Lower Broadway near the intersection of Bridge Street. Note the unpaved street and the trolley in the background. Courtesy of the Fort Edward Historical Association.



**Photo 2.2:** View north ca. 1895 of Lower Broadway near its intersection with Edward and Montgomery Streets. Moon Street is between the two buildings on the left. The street level railroad crossing is visible in the distance. Courtesy of the Fort Edward Historical Association.

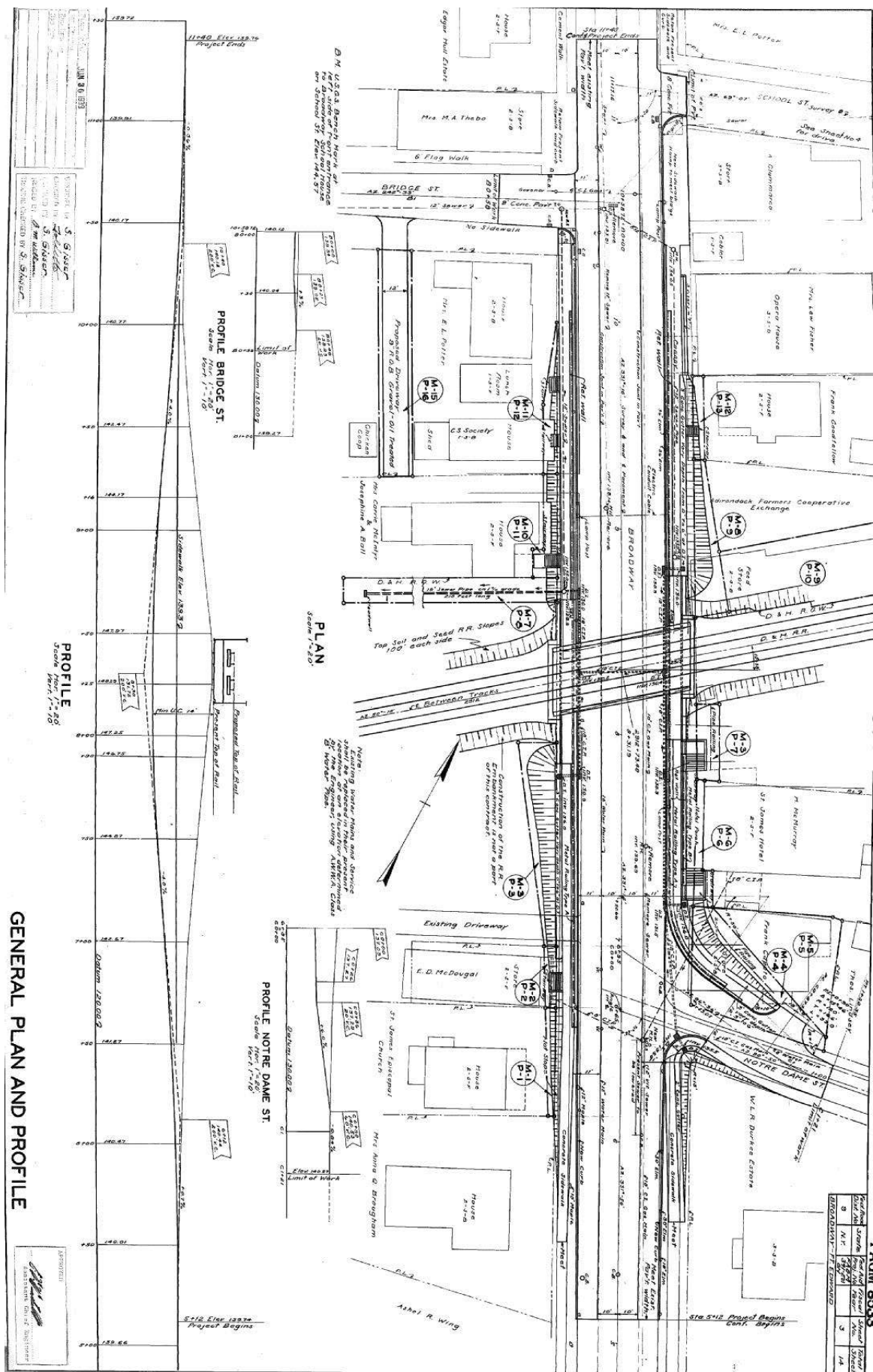




**Figure 2.3:** Postcard of Lower Broadway taken between 1915 and 1940 after the street was paved with brick but before the railroad underpass was constructed to the north. Courtesy of the Fort Edward Historical Association.



**Photo 2.3:** 1986 photograph of the proposed alignment of the Washington County Sewer Interceptor trench (view south) along Broadway between Notre Dame and Moon Streets while it was being cleared for archaeological data recovery excavations by Collamer and Associates. Courtesy of the Washington County Sewer District No. 2.



While there were many intact prehistoric and mid-eighteenth century fort-related features identified during that excavation, a comprehensive report describing those finds was never completed. A partial report draft (Collamer 1987) and much of the original documentation (mapping, some photographs, and field notes) from that work were submitted to the NYS Department of Environmental Conservation in 1991. These are in the possession of the CRSP Unit of the NYSM. The artifacts are housed at the Roger's Island Visitor Center in the Village of Fort Edward. Until the current DOT reconstruction project impacts began in 2006, the construction of the 1986 sewer interceptor had been the most substantial impact to the South Broadway street corridor since the railroad overpass construction in 1940.

Despite the disturbances from historical utility and infrastructure developments in the village, there were many remaining intact features and deposits encountered during archaeological data recovery and monitoring for the current project. These can enrich our knowledge of the history of Fort Edward for many years to come.

### 3. Analysis of Data Recovery Assemblages

J. SCOTT CARDINAL

The project as a whole produced almost 30,000 artifacts and identified approximately 220 archaeological features ranging in age from pre-contact (~4,000 B.P.) to the present. The core of the finds within the project limits is from Bond Creek in the south to Bridge Street in the north, a distance along the project route of 620 m (2,034 ft). This core area is designated as the Fort Edward Village site (NYSM #12575). Two other locations, geographically separated from the Fort Edward Village site, were identified by the presence of significant nineteenth century subsurface features and deposits. One is the Hilfinger Pottery site (NYSM #12574), the original location of the 1874 stoneware pottery works at the intersection of Broadway and Argyle Street near the south end of the project area, and the other is the Fort Edward Feeder Canal Bridge site (NYSM #12573), where Broadway crosses the ca. 1820's Fort Edward Feeder Canal about half a kilometer (0.3 mi) north of Bridge Street. These three sites are described in detail below.

The majority of the artifacts were collected from 73 units hand excavated within the six DR trenches between Moon and Notre Dame Streets. As part of the archaeological research design, these were purposely situated along the part of Broadway nearest the mid-eighteenth century fort and encampment where deposits and features related to the fort were known to exist. Many features from this time period were identified though many artifacts and features resulting from occupations before and after the mid-eighteenth century were identified in the DR trenches as well. A major analytic component of the Fort Edward Village site is the temporal and spatial distribution analysis of the artifact assemblage done by J. Scott Cardinal of the CRSP. This is presented before the Site Description section below and mainly focuses on the assemblage recovered from units within the DR trenches. It also discusses the artifacts recovered and features identified during construction monitoring on a summary basis.

#### 3.1 Methods of Analysis

The total artifact assemblage collected from monitoring and excavations for PIN 1089.57.321 consists of 29,429 objects found in 195 of the 279 locations examined within the project area. The majority of these objects (65%) were collected from the 73 units excavated in six

data recovery trenches (DRTs), 32% came from 100 of the 183 monitoring incident locations (INCs), and 3% from 23 shovel test pits (STPs). The data recovery units encompass just over 122 square meters (1,313 ft<sup>2</sup>), and were systematically excavated and screened by stratigraphic components.

The monitoring incidents cover 6,015 square meters (64,745 ft<sup>2</sup>, 1.5 acres) within the project area, but collections were less thorough or systematic and dependent on artifact visibility during construction monitoring. Most of the objects collected (78%,  $n = 23,004$ ) are not temporally diagnostic, although nearly all of these are primarily related to the historical occupations (e.g. household or demolition debris, faunal refuse, or other common materials). However, 22% ( $n = 6,425$ ) can be positively associated with a specific occupation date-range. Historical artifacts comprise 77% ( $n = 4,962$ ) of the diagnostic artifacts, and prehistoric artifacts 23% ( $n = 1,463$ ).

#### 3.2 Occupation Periods

Nearly all of the systemically excavated units within the project area showed various degrees of admixture and/or disturbance (e.g. utilities, later occupations, etc.) within each level or soil layer, so an assessment of the vertical stratification of occupation components required more refined analyses of the diagnostic assemblages, provenience, and vertical distribution. The prehistoric data have too few specifically diagnostic materials to differentiate specific periods of prehistoric Native occupation, so are generalized simply as 'Native' and given a 'dummy' date range of 1500-1600 A.D. (i.e. prior to European contact) in order to include them in the temporal analyses. The dates for historical artifacts are based on known manufacturing date ranges of artifacts within the total assemblage.

Eighty-nine percent ( $n = 4,320$ ) of the diagnostic historical assemblage is ceramic sherds. These provide discrete manufacturing date ranges on which to base occupation estimates, and were the primary basis for assessment of historical occupations within the Fort Edward project area. Another 11% of the historical diagnostics is architectural hardware, but these have relatively broad ranges of use too vague for discerning close occupation episodes. Other similarly broad diagnostics (e.g. clay pipe stems) were excluded from the occupation period analysis, as these tend to be imprecise indicators and only give relative ages within that class of artifacts.



These may be used in association with more concrete diagnostics at a later stage of analysis, but are not themselves temporally diagnostic.

Plots of the overall distribution of artifact dates for the total diagnostic assemblage (Figure 3.1 on page 41) show five discrete modal peaks, suggesting one Native prehistoric occupation (1500-1600 A.D.) and four distinct post-contact historical periods of occupation for the site areas beginning in the mid-eighteenth century and continuing up through the twentieth century. Hierarchical clustering methods were used to define statistically significant and discrete occupation periods within the collection of temporally diagnostic artifacts (Tables 3.1 to 3.2 on the following page). In general, the estimated occupations derived from these statistical analyses, as well as the relative proportions of their associated assemblages, fit well with the known historical occupation periods described by the historical context of the project area.

Weighted mean diagnostic dates were also calculated for each provenience containing diagnostic artifacts. Comparisons between these provenience component dates and the dates for diagnostic artifact types in the assemblage (i.e. frequency of presence rather than object counts) confirmed the five diagnostic periods for Native and historical occupations. The weighted mean dates were calculated using frequency of artifact occurrence within excavated components rather than artifact counts in order to avoid any inflation of influence from the effects of fragmentation (e.g. glass and ceramic sherds that fragment easily) and high-representation artifact classes (e.g. nails, which occur in high numbers).

The initial clustering analysis was run on the weighted mean component dates in order to find possible occupation clusters within the soil deposition. This method identified between four and six potential clusters of weighted mean dates for stratigraphic components due to stratigraphic admixture from historical disturbances. On further examination, however, two of these clusters contained date ranges that grossly overlapped the other (more discrete) clusters, and reflected the areas of stratigraphic admixture present in the project area due to disturbances. A second clustering analysis was run on un-weighted frequency of occurrences for beginning and ending diagnostic dates in the assemblage ( $n = 1,284$ ). This method identified four distinct clusters of dates within the 100 historically diagnostic artifact types in the assemblage.

Comparison of the two sets of date clusters showed that both methods were identifying the same four clusters of occupation dates, but that the stratigraphic component date clustering was identifying additional grouping of mixed or disturbed contexts. Results of the hierarchical clustering were further compared to the results of k-means clustering ( $k = 5$ ) to see if similar groupings were assigned. The descriptive statistics (i.e.

mean, inter-quartile ranges, etc.) were nearly identical between the methods.

Five occupation periods were estimated based on the analysis (see Table 3.2 on the next page) that roughly coincide with the known historical context for the project area (see Regional Context section). The mid-eighteenth and late nineteenth century occupation categories show significant skew in their mean date distributions. For the mid-eighteenth century occupation, the negative skew of the date distribution shows a prevalence of material from the mid- to late-eighteenth century, during and following the period of the fort's occupation up to the American Revolution but prior to the permanent European settlement and establishment of the village. The late-nineteenth century occupation is also negatively skewed towards the later nineteenth century. This skew, however, may be a residual of the semi-arbitrary terminal dates established for some twentieth century artifacts that are still in common contemporary use. All but the early nineteenth century occupation show substantial kurtosis as well, which may suggest more episodic rather than gradual deposition of materials during these periods.

The estimated occupation periods derived from this analysis are based on the ranges of their mean diagnostic dates (Table 3.1 on the following page) that represent discrete groupings when assigned. The weighted mean beginning and ending dates for each occupation show some overlap among the diagnostic dates of the associated artifact types, particularly for the middle- and late-nineteenth century occupations. In part, though, this reflects the more extended use-life of the more durable later ceramic styles, many of which were in use for most of the nineteenth century into the twentieth century and later. The four historical occupation periods defined by these methods do cleanly coincide along the general patterns in the area's history, and will be used throughout the following assessments.

The counts of occupation-specific objects for each data recovery trench (DRT) collection are shown in Table 3.2 on the next page. More than a third of the occupation-diagnostic artifacts (38%,  $n = 2,427$ ) are associated with the late eighteenth to early nineteenth century occupation (c.1780-1825), the majority of which (by proportion) were recovered from DRT 2. The prehistoric materials account for another 23% ( $n = 1,463$ ) of the occupation-specific assemblage. Most of these were found in DRT 2 and DRT 6. The mid- and late-nineteenth century accounts for 17% ( $n = 1,090$ ) and 16% ( $n = 1,005$ ), respectively. The mid-eighteenth century assemblage has the smallest proportional representation at 7% ( $n = 440$ ).

## Diagnostic Artifacts

The diagnostic prehistoric assemblage consists of ground or chipped stone objects (86%,  $n = 1,255$ ) and fire-

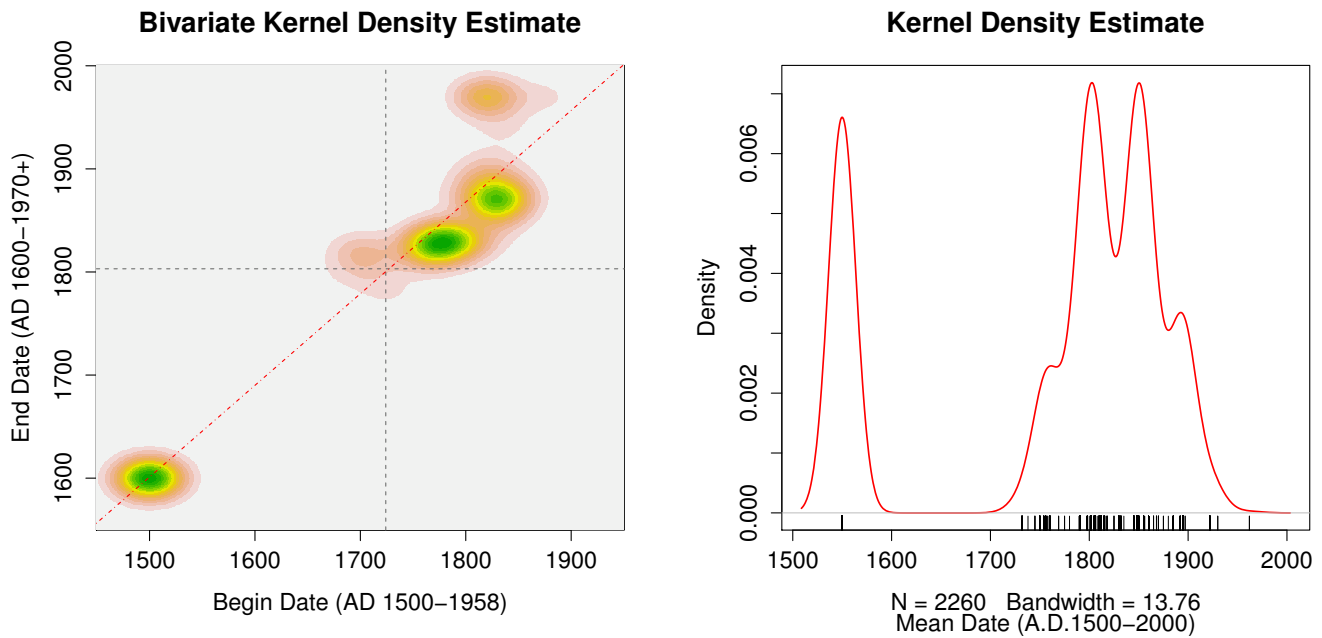
**Table 3.1:** Occupation-diagnostic artifact types.

Occupation	Artifact Type	#	Begin	End
19th -20th century	Plastic	45	1916	1970
	Cap/Lid	3	1890	1970
	Wire Nail	66	1875	1970
	Whiteware	846	1836	1944
	Yellowware	40	1830	1940
	Buff Earthenware	5	1830	1940
	Bottle Glass	2	1880	1914
Mid-19th century	Yellowware	6	1840	1900
	Porcelain	1	1840	1895
	Ironstone	78	1832	1893
	Stoneware	89	1822	1900
	Whiteware	611	1829	1870
18th -19th century	Cut Nail	303	1813	1875
	Cut Nail (machined head)	5	1815	1835
	Transitional Whiteware	2	1820	1850
	Whiteware	47	1825	1835
	Pearlware	1,544	1789	1829
	Creamware	812	1767	1821
Mid-18th century	Slip-Decorated Redware	17	1757	1830
	Wrought Nail	210	1700	1820
	Porcelain	8	1660	1890
	Red Stoneware	16	1752	1778
	Agateware	3	1740	1775
	Tin-Glazed Ware	134	1709	1801
Native	Stoneware	41	1724	1783
	Buff Earthenware	28	1670	1795
	Debitage	1,207	1500	1600
	Other Tool	37	1500	1600
	Projectile Point	9	1500	1600
	Other Chipped Stone	2	1500	1600
	Fire-Cracked Rock	203	1500	1600
	Rough Tool	5	1500	1600
Total/Mean		6,425	1741	1816

**Table 3.2:** Mean dates and counts of diagnostic artifacts by occupation period and Data Recovery trench (DRT).

Occupation	95% C.I.	$\mu_w$	$\sigma_w$	DRT 1	DRT 2	DRT 3	DRT 4	DRT 5	DRT 6	INC	Total
19th-20th c.	1882-1911	1896	7.3	262	281	45	65	131	23	198	1,005
Mid-19th c.	1839-1862	1851	5.96	274	191	84	41	144	55	301	1,090
18th-19th c.	1784-1817	1801	8.29	365	1,150	48	78	250	247	289	2,427
Mid-18th c.	1739-1771	1756	8.28	138	40	11	1	49	52	149	440
Native*	1500-1600	1550	n/a	175	665	32	17	110	379	85	1,463
Overall	1742-1910	1826	42.97	1,214	2,327	220	202	684	756	1,022	6,425

\* Native occupation given 'dummy' date values of 1500-1600A.D. for analyses.



**Figure 3.1:** Bivariate kernel density estimate (left) and mean (right) of artifact diagnostic dates.

cracked rock (14%,  $n = 203$ ). No Native pottery was found within the project area. Lithic debitage accounted for 92% ( $n = 1,207$ ) of the chipped stone objects and 83% of the total prehistoric material, while tools and tool fragments comprised 4% ( $n = 46$ ) of the modified stone objects and 3% of the overall assemblage. Only three of the projectile point types could be positively identified: one Brewerton Side-Notched (Archaic), one Meadowwood (Early Woodland), and one Meadowwood pre-form. An additional six projectile point fragments were found, but lacked sufficient morphological markers to be typed. The remaining tools are either too fragmentary, too broad in temporal range, or are non-diagnostic forms (e.g. scrapers, general bifacial forms, etc.).

From these limited data, it is not possible to discriminate individual occupation episodes within the prehistoric assemblage more specific than Late Archaic to Early Woodland occupation. For a more thorough assessment of the prehistoric assemblage, refer to the prehistoric component discussion in the Fort Edward Village site description. For the purposes of the spatial and quantitative analyses, these will be considered a general unspecified prehistoric component and given a ‘dummy’ date range of 1500-1600 A.D. to allow their inclusion and differentiation as a distinct occupation.

The mid-eighteenth century occupation (c.1732-1769) covers the period of initial European settlement and use of Fort Edward through the French and Indian War, and leading up to the American Revolution. Diagnostic artifacts for this period consist primarily of typical eighteenth century ceramic types such as delftware, yellow lead-glazed earthenware, and certain types of

stoneware (particularly white salt-glazed) as well as wrought nails. The late eighteenth or early nineteenth century occupation (c.1780-1825) primarily covers the period post-Revolution during widespread European expansion. Diagnostic artifacts for this occupation period are almost entirely ceramic types such as creamware, pearlware, refined redware, and early whiteware in addition to an early type of cut nail.

The mid-nineteenth century occupation (c.1830-1870) spans much of the town’s growth and economic expansions. Mid-nineteenth century diagnostic artifacts consist of certain ironstone wares, buff salt-glazed stoneware, early decorated whiteware styles, amethyst glassware, and cut nails. Finally, the late nineteenth century occupation (c.1875-1922) covers the fully established commercial district of the town into the contemporary period. Late nineteenth and twentieth century diagnostic artifacts consist of later decorated and undecorated whiteware styles, later yellowware, and common wire nails.

As mentioned previously, architectural hardware has overly broad use-date ranges to be used in determining specific periods of occupation. However, the particular nail types (e.g. wrought nails [1700-1820], machine cut nails [1835-1875], etc.) do fall cleanly within the occupation clusters as defined. These artifact types are used in the subsequent quantitative analyses as occupation period indicators. All of the diagnostic artifacts are used in the evaluation of component weighted mean dates that are used to assess stratigraphic integrity.

### 3.3 Spatial Organization

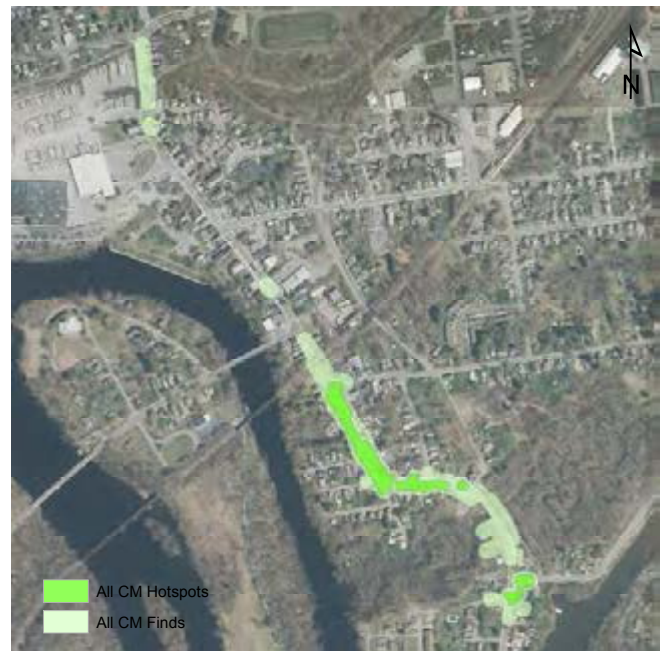
A thorough quantitative spatial analysis of the assemblage for the project is somewhat constrained by the limitations of provenience recording and artifact collection methods during construction monitoring. Only the small number of shovel test pits associated with the monitoring incidents have vertical provenience and screened collections of artifacts. The majority of the available vertical provenience data is from the 73 units excavated during the data recovery (DR) in six trenches (DRT 1-6). Each trench utilized its own vertical datum, so the depths described in the following should be read as relative vertical positions within each trench rather than absolute depths unless otherwise specified. Horizontal locations for all observations (incidents, units, and test pits) were mapped in the field. It was not possible, however, to record specific find-spot locations within the large monitoring incidents due to the nature of the machine excavations.

#### *Horizontal Distributions*

Due to the largely linear nature of the DR excavation layout and the large coverage of the monitoring incidents, there is a limited amount of quantitative spatial analysis viable for discerning bounded activity areas or fine-resolution assemblage patterning (see Figure 3.2). Certain gross patterns, however, are somewhat apparent in the horizontal distribution of artifacts associated with the various occupation periods (see Figures 3.3 to 3.7 on pages 42–43). The prehistoric materials are relatively clustered (Figure 3.3, suggesting one or two possible sites intersected by the excavations. The middle and late eighteenth century occupation materials Figure 3.4 to 3.5 on the facing page) correspond well to the known areas of both the original and the expanded fortifications, respectively.

One monitoring incident to the southeast of the primary DR excavations also showed a significant density of mid-eighteenth century material, near the expected location of a map-indicated blockhouse associated with the early fortifications. Early and mid-nineteenth century materials (Figure 3.6 on the next page) are distributed in sparse locations throughout the excavations, suggestive of the early village settlement period. Materials from the latter half of the nineteenth century and the twentieth centuries (Figure 3.7 on the facing page) are a nearly continuous scatter throughout the project area and as expected from the most densely occupied period.

Unfortunately, the resolution of the excavation sample is not adequate to provide a more detailed identification of specific areas of activity or discrete locations of household deposits. Broad identification of the areas of deposition that are related to specific occupation loci within the overall site is possible for the earlier occupations due to the more sparse distributions. Identification



**Figure 3.2:** Horizontal distributions of overall artifact finds.



**Figure 3.3:** Horizontal distributions of prehistoric Native artifact finds.

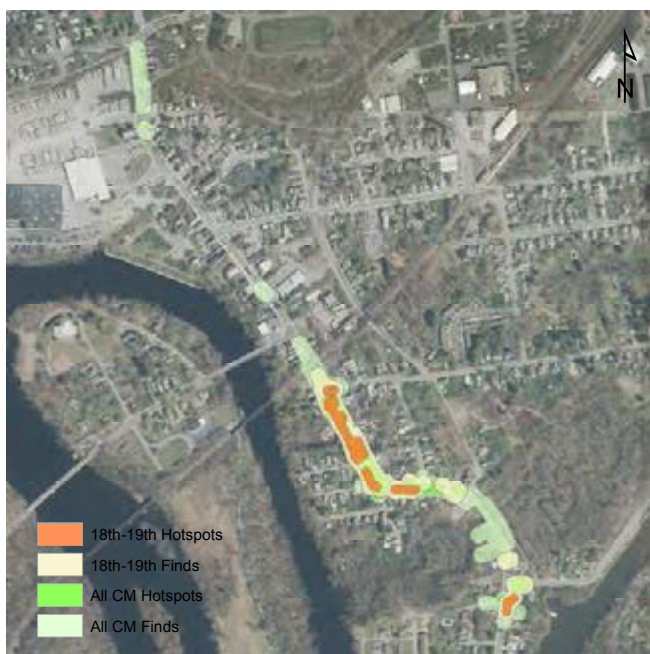




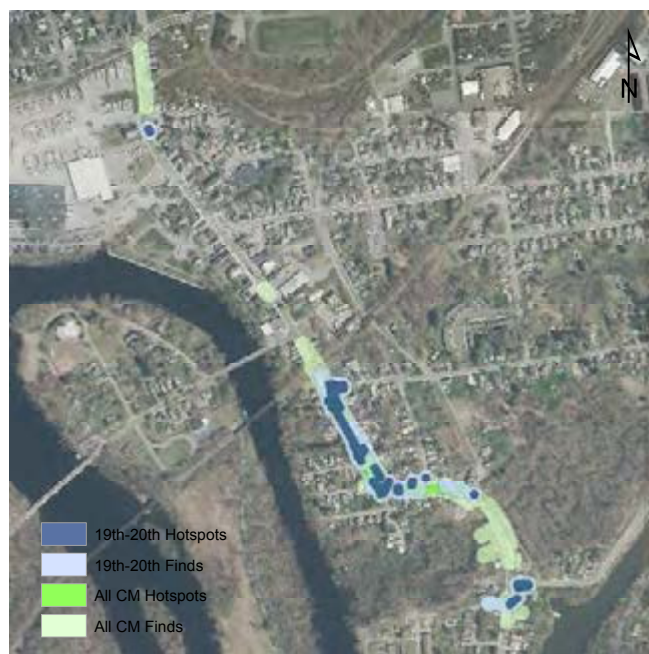
**Figure 3.4:** Horizontal distributions of Mid-18th century artifact finds.



**Figure 3.6:** Horizontal distributions of Mid-19th century artifact finds.



**Figure 3.5:** Horizontal distributions of 18th to 19th century artifact finds.



**Figure 3.7:** Horizontal distributions of 19th to 20th century artifact finds.

of specific activities such as middens or production areas, however, is not significantly reliable with the available data except in the presence of clearly interpretable features (e.g. chimney/fireplace, refuse pits, or fort outwork ditches).

### ***Vertical Distributions***

The vertical distributions of the diagnostic artifacts in the assemblage show substantial stratigraphic mixing throughout most of the excavated areas. Very few vertical stratigraphic changes appear to be intact boundaries for discrete occupation deposits within the project area. Despite the seeming lack of stratigraphic component integrity, the overall correlation between depth and age of occupation-related artifacts remains statistically significant for nearly all of the excavation areas. The strong implication of such data is that, although few stratigraphic components discretely represent vertically intact occupation deposits, each vertical layer represents a temporally stratified sequence of component admixtures.

Only the prehistoric occupation appears to have retained substantial vertical differentiation below the historical layers, but even that is not a consistently clean demarcation. Some prehistoric occupation material was clearly disturbed from its original context and then incorporated into later depositional episodes through historical landscape modifications. Historical material is also frequently intrusive into predominately older deposits, indicating that original occupation surfaces were affected by later landscape modifications even when not completely removed.

Stratigraphic integrity of the site areas has been substantially compromised by modern-era utility construction as well as the historical sequence of landscape modifications and variable land use. Curiously, there is a significant gross correlation of artifact mean date and/or occupation period to depth across the site and within many of the individual DR Trench excavations as a whole. The stratigraphic components themselves, however, rarely show significant correlation between weighted mean date and depth. This is due to substantial stratigraphic mixing of the original deposition contexts within each unit, rendering the “natural” stratigraphic levels that were excavated during the DR to have mixed composition of various original occupation contexts. Relatively few individual stratigraphic components are cleanly associated with any given occupation period. This does not necessarily mean, however, that the site areas lack overall integrity.

In several of the excavation units in each of the trenches there are clearly significant correlations between diagnostic occupation artifacts and the depth at which they are found. In others, the stratigraphic inversions of deep intrusions are equally apparent. In most strata, however, it is a matter of the overall proportion

of occupation admixture. While some of the outliers are related to deeper historical features, others are attributable to utility trench disturbances. This presents a challenging question as to how to evaluate the site’s integrity, since the components are in fact sequentially stratified albeit apparently not in their original depositional contexts. What would typically appear to be “disturbed” components are instead stratified secondary depositions comprised of more than one occupation. Each component “clipped” some portion of the previous deposition, which had in turn intruded on some portion of the prior occupation and so on.

### **3.4 Summary of Data Recovery (DR) Findings**

The total area of systematic excavations for the data recovery was roughly 129 square meters (1,388.5 ft<sup>2</sup>) in six data recovery trenches (DRTs) comprised of 70 excavation units (EU) of various sizes and 27 shovel test pits (STP). These excavations were recorded by natural soil levels with depth measurements and soil stratum descriptions. In addition, archaeological monitoring was maintained during construction, covering roughly 6,728.4 square meters (72,423.9 ft<sup>2</sup>, 1.7 acres) for which archaeologists visually examined the exposed trench soils and back dirt for artifacts and noted general soil characteristics and profiles. Since the monitoring collections were sporadic and the provenience recording limited, most of the collected assemblage and stratigraphic data is from the systematic excavations despite the much smaller area covered.

The six data recovery trenches (DRT 1-6) were placed on either side of Broadway between Notre Dame and Moon Streets. This was based on prior map research and reconnaissance data, and chosen for locations where artifact concentrations related to the historical occupations were likely the densest. This area transects the expected location of a substantial portion of the historical fortification and the center of the later village settlement. While this provided a substantial sample of the expected core of the archaeological site, it is not an optimal representative sample for statistical or geospatial analysis. The monitoring incidents, by contrast, were based primarily on the locations of construction activity. The more restrictive level of detail in collection and provenience of this form of monitoring, however, provide inadequate stratigraphic data and spatial resolution to allow much in the way of quantitative analysis for these collections.

Artifact densities (Table 3.3 on page 46) were relatively high in trenches DRT 1, 2, and 5 in which the number of artifacts per square meter excavated ranged from 167 to 228 for these trenches. By comparison, trenches DRT 3, 4, and 6 each had less than 90 artifacts per square meter. The differences in artifact density



may be partly related to the different excavation sample of each trench location, but there appears to be some spatial patterning related to the different proportional representations within each trench of the various occupation periods as well. Artifact density in the monitoring incident locations was predictably low considering the sampling and collection methods, but still yielded a significant portion of the overall data recovery assemblage (33%,  $n = 9,690$ ).

### ***DR Trench 1 (DRT1)***

Data Recovery Trench 1 (DRT1) covers an area of roughly 78 square meters (840 ft<sup>2</sup>) running 26 meters (~ 85 ft) along the southwest side of Broadway northwest of the intersection with Moon Street. Twelve excavation units (EU) and one shovel test pit (STP) were excavated in this area, totaling 31.7 square meters (341 ft<sup>2</sup>) from which 6,663 artifacts were collected. The main diagnostic characteristics of DRT 1 are its high overall artifact density, and its higher proportional representation of mid-eighteenth century and mid-nineteenth century material.

While all five estimated occupations are represented in the assemblage of the trench, the relative proportions of the other occupation periods are lower than the total assemblage mean proportion. In DRT 1, the mid-eighteenth century occupation accounts for 12% of the assemblage compared to 5% for the total assemblage. The mid-nineteenth century occupation accounts for 23% of the assemblage for the trench compared to 15% for the total assemblage. It is worth noting however that this trench has the lowest proportion of occupation diagnostic artifacts, which account for only 18% of the trench's assemblage.

Analyses of the artifact assemblage for each excavated component within the trench show that there are two patterns of artifact composition that associate groups of components that have a predictable mixture of dominant occupation period diagnostics. One component assemblage pattern (Group 1) consists of primarily early nineteenth through twentieth century artifacts, and the other (Group 2) consists primarily of mid-eighteenth century and prehistoric native artifacts (see Figure 3.8 on the following page and Table 3.4 on the next page). In most units within the trench, the later (19th-20th century) pattern appears at discernibly shallower depths and the highest density of prehistoric material is noticeably deeper than the core of the historical deposits.

Again looking at artifact density and depth, there is significant overlap to the core deposition of nineteenth century artifacts from both the early and mid-nineteenth century occupations. For each of the primary stratigraphic components this overlap in diagnostic dates from the nineteenth century is very apparent in the density distributions of the clustered stratigraphic components (Figure 3.8 on the following page) when

compared to the distribution of each occupation phase (Table 3.4 on the next page). This is in part due to the particular diagnostic artifacts for each occupation that are found in the units of DRT 1, some of which have extended ranges of manufacture and use that overlap more than one of the occupation period clusters.

### ***Stratigraphy and Features***

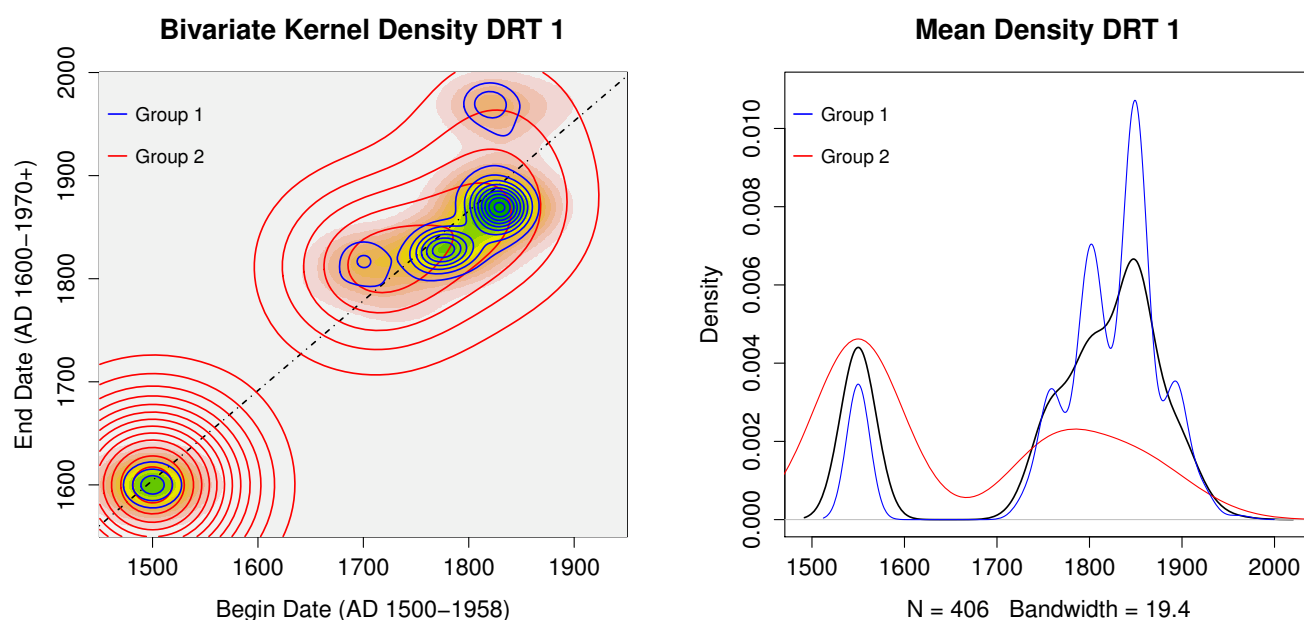
Units in DRT1 were excavated by natural strata into sterile secondary soil horizons. The artifact bearing layers in the units had an average maximum depth of approximately 112 centimeters (~ 46 in) below datum, with the deepest cultural layer found extending to 160 centimeters (~ 63 in) in DRT 1-04, level 4. Typically, four or five artifact-bearing layers were found in the units (ranging between one and seven). The average soil profile of the units consisted of an upper 20-centimeter (~ 8 in) layer of very dark grayish brown silty sand above 40 centimeters (~ 16 in) of mottled dark yellowish brown or strong brown silt sand. Both of these layers were somewhat varied in soil color and texture, with numerous small intrusive soil features. Below this mottled soil horizon were multiple layers of brown or yellowish brown sandy soils that were coarser in texture with depth. Artifacts were found primarily in the upper layers, but the trench contained a number of deep intrusive features that complicate any generalization of the natural stratigraphy.

DRT 1 contained 16 labeled features of which three are related to late nineteenth or twentieth century utilities (lead and copper water service pipe trenches), four are related to the nineteenth century occupations, three are clearly associated with the mid-eighteenth century French and Indian War occupations, two contain a mixture of prehistoric and historic artifacts, and two are of unknown association. Most of these features were first identified in the second natural stratum (~ 30 – 40 cm/12 – 16 in below datum) and intruded through multiple levels.

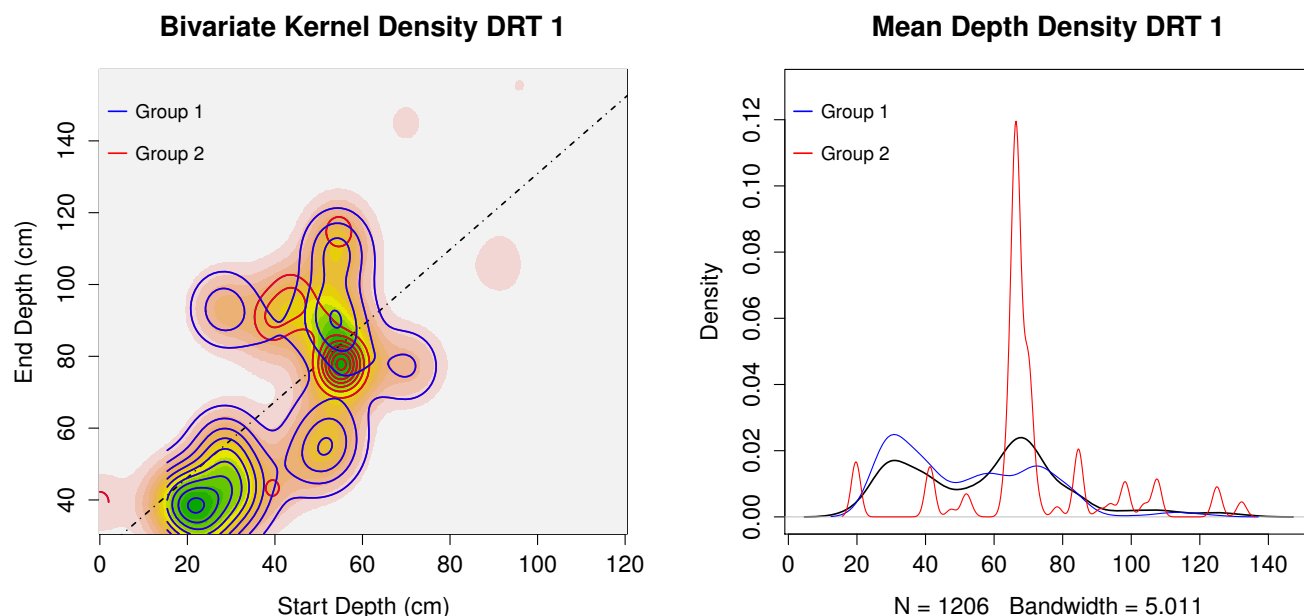
The most substantial features were a brick fireplace or oven (Feature 6) dating to the French and Indian war period found in unit DRT 1-03/04 and a wooden waterline (Features 10 and 11) dating to the earlier part of the nineteenth century that was found in units DRT 1-08 through DRT 1-11. Post molds were found in units DRT 1-01 (Feature 5 through 5.3), DRT 1-06 (Feature 8), and DRT 1-07 (Feature 7C) of which the latter two were ascribed to the nineteenth century occupations. Features 5 through 5.3 may be prehistoric post molds due to the presence of lithic debitage and fire-cracked rock in surrounding soils, but this is inconclusive. A mid-eighteenth century latrine pit (Feature 12) was found in unit DRT 1-12 and a suspected refuse pit (Feature 4) in unit DRT 1-03 that are associated with the mid-eighteenth century French and Indian war occupation.

**Table 3.3:** Excavation summary by DR location.

Trench	# STPs	# Units	Area (m <sup>2</sup> )	Native	Mid-18th	18th-19th	Mid-19th	19th-20th	No Date	Total
DRT 1	1	13	31.7	175	138	365	274	262	5,449	6,663
DRT 2	-	16	29.0	665	40	1,150	191	281	4,282	6,609
DRT 3	9	4	10.3	32	11	48	84	45	697	917
DRT 4	-	11	18.0	17	1	78	41	65	722	924
DRT 5	-	14	17.7	110	49	250	144	131	2,260	2,944
DRT 6	-	14	19.1	379	52	247	55	23	926	1,682
INC	17	214	6,731.6	85	149	289	301	198	8,668	9,690
Total	27	286	6,857.4	1,463	440	2,427	1,090	1,005	23,004	29,429

**Figure 3.8:** Bivariate kernel density estimate (left) and mean density (right) of artifact diagnostic dates between component groups for DR Trench 1.**Table 3.4:** Summary of component assemblage groups by occupation for DRT 1.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 1	33	4,036	1821	# Artifacts	21	95	332	240	236	924
				% Group	4%	14%	28%	36%	18%	–
				% Occ.	13%	70%	91%	85%	89%	69%
				Depth	49.1	49.2	53.2	46.1	43.3	48.2
Group 2	26	2,627	1655	# Artifacts	154	43	33	34	26	290
				% Group	61%	14%	6%	14%	5%	–
				% Occ.	87%	30%	9%	15%	11%	31%
				Depth	68.6	66.9	59.7	60.1	62.9	65.6
Overall	59	6,663	1738	# Artifacts	175	138	365	274	262	1,214
				% Diag.	22%	14%	21%	29%	14%	–
				Depth	64.6	54.8	54	48.7	47.1	53.8



**Figure 3.9:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 1.

### Assemblage

The total artifact assemblage collected from DRT 1 consists of 6,663 objects, of which 18% ( $n = 1,213$ ) can be diagnostically associated with one of the five estimated occupation periods for the site. The remaining 82% ( $n = 5,450$ ) are non-diagnostic to any particular historical period, but are primarily associated with the historical occupations in the broad sense. The diagnostic assemblages are, with few exceptions, vertically stratified within the units when taken by their frequency weighted mean depths. Units DRT 1-09 and DRT 1-10 show an almost complete stratigraphic inversion, with twentieth century material found at the greatest depth and Native material found at the shallowest mean depths. Similarly, in DRT 1-12, there is significant admixture and inversion in the diagnostic materials. In DRT 1-12, the early-nineteenth century material is found at the shallowest depth ( $\sim 53$  cm/21 in below datum), and mid-nineteenth century artifacts are found below with the older Native and mid-eighteenth century materials ( $\sim 66$  cm/26 in below datum). No twentieth century diagnostics were present in the unit.

The prehistoric Native assemblage for DRT 1 is comprised of 175 artifacts, and consists primarily of lithic debitage (91 flakes and 58 pieces of chert shatter) and fire-cracked rock ( $n = 20$ ) with the remaining six objects being formal and expedient tools (two rough bifaces, one possible drill, and two scrapers). No specific temporal diagnostic types were found. For the trench as a whole, prehistoric artifacts were found at a weighted mean depth of roughly 65 centimeters ( $\sim 26$  in) below

datum and consistently at lower depths than historic artifacts (with the two previously noted exceptions). Prehistoric artifacts were found in the greatest concentration in units DRT 1-02 ( $n = 36$ ), DRT 1-01 ( $n = 24$ ), and DRT 1-04 ( $n = 21$ ). Substantial counts of prehistoric artifacts were also present in nearly all of the units except DRT 1-03/04. In DRT 1-02, they were all found in the second stratum (28 – 98 cm/11 – 36 in below datum). The majority of the prehistoric objects found in DRT 1-01 came from Level 2 (42 – 102 cm/17 – 40 in below datum).

The mid-eighteenth century or French and Indian war occupation period assemblage for DRT 1 consists of 138 artifacts (with an additional six gunflints potentially associated as well) that were present in just eight of the twelve units. Mean diagnostic manufacture dates for these artifacts range between 1702 and 1808 (min/max range 1670-1820) with an average weighted mean date of 1755. Most of these ( $n = 81$ ) are hand-wrought nails that are mainly of the ‘rose-head’ type with a small number of ‘L’- and ‘T’-head types typical of the middle and late eighteenth century (c.1700-1820). The remaining 57 diagnostic artifacts are ceramic wares typical of the eighteenth century with diagnostic dates that span much of the century. Of these, yellow lead-glazed buff earthenware were the most numerous ( $n = 19$ ) followed by monochrome and undecorated delft tin-glazed wares ( $n = 15$ ). The most narrowly diagnostic dates for this occupation come from the stoneware including Jackfield ( $n = 11$ , c.1740-1780) and engine-turned fine red stoneware ( $n = 1$ , c.1763-1775), and ‘scratch blue’

( $n = 1$ , c.1744-1775) and undecorated ( $n = 6$ , c.1720-1780) white salt-glazed stoneware.

Mid-eighteenth century occupation artifacts were found at an average weighted mean depth of 53 centimeters ( $\sim 21$  in) below datum, generally above the prehistoric material and below the core of the nineteenth century occupation depths. Found only in two thirds of the units these diagnostics had the greatest variance in unit depths compared to the other occupation periods, and ranged in weighted mean depth by unit between 39 and 77 centimeters ( $\sim 15 - 30$  in) below datum. The highest concentrations of this occupation were found in units DRT 1-06 ( $n = 30$ ), DRT 1-03 ( $n = 26$ ), DRT 1-12 ( $n = 23$ ), and DRT 1-04 ( $n = 22$ ). This occupation falls in the expected vertical sequence, however, only in units DRT 1-03 and 04. In the other units, it is typically inverted with the early and/or mid-nineteenth century occupation diagnostics. Within the overall weighted means for the trench, the expected sequential trend does hold. The disparity between the overall average and the unit means is likely due to the presence of deeply intrusive nineteenth century features.

The early nineteenth century occupation assemblage is made up of 365 artifacts with mean diagnostic manufacture dates ranging between 1777 and 1827 (min/max range 1750-1850) with an average weighted mean date of 1801. All but two of these artifacts are diagnostic ceramic wares, with the highest proportion being creamware ( $n = 115$ , c.1762-1825) and pearlware ( $n = 228$ , c.1775-1830) sherds. The remaining collection consists of early whiteware types ( $n = 18$ ), slip-decorated redware ( $n = 2$ ), and two early machined-head cut nails (c.1815-1835). Concentrations of these early nineteenth century artifacts were most dense in units DRT 1-09 ( $n = 98$ ), DRT 1-03 ( $n = 74$ ), and DRT 1-04 ( $n = 73$ ) with lower but significant amounts (range 8-27) in all other units except DRT 1-12 ( $n = 1$ ), DRT 1-01STP ( $n = 1$ ), and none found in DRT 1-03/04. Except in the cases of unit inversions discussed previously, the early nineteenth century material was found in expected vertical sequence at an average weighted mean depth of roughly 47 centimeters ( $\sim 19$  in) below datum. In addition to the thorough unit inversions, localized inversions in this occupation were found in units DRT 1-06 and 07. The depths are nearly indistinguishable from those of the mid-nineteenth century assemblage, as discussed below.

The mid-nineteenth century assemblage consists of 278 artifacts with mean diagnostic dates between 1829 and 1871 (min/max range 1790-1920) with an average weighted mean date of 1850, of which the majority (81%,  $n = 224$ ) are ceramic sherds and the remaining 19% ( $n = 54$ ) are cut nails. Of the diagnostic ceramic sherds, 89% ( $n = 200$ ) are whiteware with manufacture dates ranging from 1825 to 1920. The majority of these are of blue transfer print ( $n = 71$ , c.1830-1865),

under-glaze hand-painted polychrome ( $n = 44$ , c.1830-186), 'annular' ( $n = 23$ , c.1830-1870), and red transfer print ( $n = 22$ , c.1825-1875) styles. Smaller amounts of ironstone ( $n = 15$ , c.1813-1885) and salt-glazed stoneware ( $n = 8$ , c.1820-1900) are also represented, and one sherd of Rockingham/Bennington yellowware (c.1840-1900). The remaining 54 diagnostic artifacts are machine-cut nails (c.1835-1875). Mid-nineteenth century artifacts were found in nearly all of the units (except DRT 1-03/04), with the densest concentrations in units DRT 1-06 ( $n = 54$ ), DRT 1-03 ( $n = 43$ ), DRT 1-04 ( $n = 37$ ), DRT 1-09 ( $n = 34$ ), and DRT 1-02 ( $n = 26$ ).

The average weighted mean depth for the mid-nineteenth century artifacts is approximately 48 centimeters ( $\sim 19$  in) below datum, which is nearly identical to the depth for the early nineteenth century occupation assemblage. In most of the units, in fact, the weighted mean depths for the two occupations is within a fraction of a standard deviation and/or inverted temporally. In all cases there is little significant difference in the means, although in some units some distinctions are possible within the depth variances (i.e. one occupation clusters more tightly around the mean whereas the other is more dispersed through the components). There are a number of possible explanations for this.

Firstly, the demarcation of the occupation periods between the early and mid-nineteenth century artifacts depends in part on the individual diagnostic ranges of the artifact types. This can lead to a certain ambiguity in overlapping dates assigned occupation artifact types. The estimated occupation date clusters, however, show very little overlap in this case. It is more likely that the intensified land use patterns of the village's establishment involved less intensive landscape modifications than the prior occupation periods. In this case then, the continuity of occupation would generate little significant vertical stratification as a matter of site formation. The previous occupations would have more likely been sparse and punctuated by comparison, generating more vertical differentiation.

The late-nineteenth and twentieth century occupation assemblage is comprised of 261 artifacts with mean diagnostics dates between 1826 and 1968 (min max range 1820-1970+) with an average weighted mean date of 1895, which reflects the prolonged use-life of some of these artifact types into the modern era. The majority of these are ceramic sherds, primarily undecorated whiteware ( $n = 193$ , c.1820+), that are still in use and a small number of 'flow-blue' ( $n = 4$ , c.1845-1940) and 'flow-black' ( $n = 2$ , c.1845-1940). Four sherds of undecorated yellowware (c.1830-1940) and two sherds of undecorated buff earthenware (c.1830-1940) complete the diagnostic ceramics assemblage.

The remaining diagnostics are common wire nails in use since the 1870s and various plastics in use after 1908, both of which continue use into the present. These artifacts were found in nearly all of the units of DRT 1

with the exception of DRT 1-12 and DRT 1-03/04. The average weighted mean depth for the late nineteenth and twentieth century assemblage is approximately 47 centimeters (~ 19 in) below datum. Again, this is nearly indistinguishable from the other nineteenth century occupations and likely reflects the high variance in the weighted mean depths by unit for the occupation. Similar interpretations for this apply, in that these represent continuous and intensified land-use of the site location throughout the nineteenth and into the twentieth century.

The remaining 5,450 artifacts collected from DRT 1 are not specifically diagnostic to any particular occupation. The majority of these objects (55%,  $n = 2,990$ ) is miscellaneous samples of material such as charcoal, botanical, soil, faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context. Architectural materials such as brick fragments, window glass, architectural stone and ceramics, and hardware account for another 27% ( $n = 1,491$ ) of the non-diagnostic assemblage. Most of the remaining 18% of the non-diagnostic assemblage can be broadly described as historical but without specific diagnostic manufacture ranges (e.g. coal and slag, kitchen bone, personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these objects (e.g. certain types of glass vessel shards) can be specified somewhat as nineteenth or twentieth century historical objects, but these do not substantially contribute refinement to the analyses.

### *Evaluation of Trench Integrity*

As discussed previously, assessing the stratigraphic and site integrity in multiply intrusive occupation sequences such as DRT 1 is difficult. While there is reasonably discernible segregation between the earlier prehistoric Native and eighteenth century components and the later occupations in several of the units, all occupations are mixed to some degree within the majority of the excavated components (see Table 3.5 on the following page). The nineteenth century components are substantially intermingled, and the twentieth century occupation intrudes significantly in several areas. There does appear to be some discernible differentiation between components that contain higher proportions of Native artifacts within the mixture and those that contain a relatively higher proportion of mid-nineteenth century objects even within these mixed components.

In rough overview, the stratigraphic sequence and vertical integrity of the trench is discernible (Figure 3.9 on page 47) but not quantitatively significant. Each occupation period is vertically ordered overall when viewed in summary over the entire trench, but there are few cleanly intact stratigraphic components apparent. Since precise vertical demarcations between occupations are ambiguous, it is more pertinent to evaluate the admix-

ture of occupations and their vertical cores of deposition and component assemblage consociation independently of their mixed soil matrices.

In terms of the component assemblage compositions, there are essentially two patterns of assemblage present that each incorporates all five estimated occupation periods in differentiable proportions. The first pattern consists of an admixture of the occupation periods with a somewhat higher proportion of Native artifacts, while the second contains a higher proportion of mid-nineteenth century artifacts. In some, but not all, of the units these two patterns are stratified in temporal order despite the admixture. As shown in Figure 3.8 to 3.9 on pages 46–47 and Table 3.4 on page 46, the component group weighted toward Native occupation artifacts is consistently found toward the lower depths of the units whereas the historical occupations are found in a bimodal distribution with the higher densities above this prehistoric core. The lower density node of the historical occupations, however, coincides with the core density of the Native occupation as well. The unit, occupation, and assemblage type do act as significant predictors of depths for the trench as a whole, but there also appears to be a spatial component to the organization of assemblage groups.

In only about a third of the excavated components, however, are there unambiguous associations with any particular occupation period or date range. In the cases where such occupation associations are distinct, even where there are some proportions of intermixing, then depth is a strong indicator of component dates. Conversely, in the majority of units diagnostic date is a strong indicator of depth suggesting relative vertical coherence of the mixed deposits despite their admixture. When associated by interaction within component assemblage types, the strength of the date-depth association is increased significantly. Only the mid-eighteenth century occupation seems to be “stretched” throughout the vertical layers without any clean trench-wide depth association.

Although the stratigraphic components in the trench do not individually retain integrity in the traditional sense, the excavations do provide sufficient data to reconstruct both the history of occupation in this location and to reconstruct the sequences of deposition, disruption, and redeposit. Even in those contexts where occupation materials are significantly intermingled, it is feasible to reconstruct their associations with components that do retain substantial integrity of provenience by deconstructing their composition of constituent assemblages. In this sense, DRT 1 retains substantively significant site integrity and can contribute to the overall interpretation of both the temporal and spatial history and development of the project location.

**Table 3.5:** Sample and depth of occupation artifacts by unit for DR Trench 1.

	DRT 1-01	DRT 1-01 (STP)	DRT 1-02	DRT 1-03	DRT 1-03/04	DRT 1-04	DRT 1-05	DRT 1-06	DRT 1-07	DRT 1-08	DRT 1-09	DRT 1-10	DRT 1-11	DRT 1-12	Total
<b>19th-20th</b>															
# Artifacts	5	3	26	44	-	45	18	53	13	4	32	8	11	-	262
% Occ.	3%	1%	13%	13%	-	16%	5%	31%	4%	1%	9%	2%	2%	-	-
% Unit	5%	7%	16%	13%	-	16%	16%	30%	13%	3%	9%	6%	10%	-	14%
Depth (cm)	38	31	50	41	-	30	41	36	41	60	77	77	66	-	47
<b>Mid-19th</b>															
# Artifacts	13	10	26	39	-	37	18	54	14	14	34	8	6	1	274
% Occ.	6%	3%	10%	15%	-	13%	7%	16%	5%	4%	15%	4%	2%	1%	-
% Unit	25%	75%	28%	33%	-	26%	42%	34%	32%	31%	31%	27%	18%	4%	29%
Depth (cm)	31	31	51	41	-	30	38	42	45	56	74	66	64	67	49
<b>18th-19th</b>															
# Artifacts	19	1	13	74	-	73	13	27	12	15	98	8	11	1	365
% Occ.	4%	0%	4%	17%	-	19%	3%	5%	3%	5%	32%	3%	3%	-	-
% Unit	12%	3%	7%	28%	-	28%	15%	8%	13%	25%	48%	15%	19%	1%	21%
Depth (cm)	45	31	45	41	-	30	33	46	36	58	76	62	67	53	54
<b>Mid-18th</b>															
# Artifacts	8	-	11	26	-	22	-	30	8	-	5	-	5	23	138
% Occ.	5%	-	9%	19%	-	13%	-	24%	5%	-	4%	-	4%	17%	-
% Unit	9%	-	12%	21%	-	13%	-	24%	16%	-	4%	-	17%	50%	14%
Depth (cm)	34	-	39	68	-	46	-	42	45	-	79	-	70	67	55
<b>Native</b>															
# Artifacts	24	2	36	5	-	19	9	4	10	12	7	18	12	17	175
% Occ.	15%	1%	18%	3%	-	11%	6%	3%	5%	8%	5%	11%	5%	10%	-
% Unit	49%	14%	37%	5%	-	17%	27%	4%	26%	41%	8%	52%	36%	45%	22%
Depth (cm)	61	66	61	74	-	71	55	51	64	62	72	63	74	66	65
<b>Occ. Artifacts</b>															
	69	16	112	188	-	196	58	168	57	45	176	42	45	42	1,214
	7%	1%	11%	13%	-	14%	5%	14%	4%	4%	14%	5%	3%	5%	-

**Table 3.6:** Sample and depth of component Group artifacts by unit for DR Trench 1.

	DRT 1-01	DRT 1-01 (STP)	DRT 1-02	DRT 1-03	DRT 1-03/04	DRT 1-04	DRT 1-05	DRT 1-06	DRT 1-07	DRT 1-08	DRT 1-09	DRT 1-10	DRT 1-11	DRT 1-12	Total
<b>Group 1</b>															
# Artifacts	128	39	114	388	20	1,457	86	580	108	101	654	141	218	2	4,036
% Group	3%	1%	4%	12%	-	18%	3%	19%	3%	3%	19%	6%	8%	-	-
% Unit	42%	91%	40%	76%	100%	86%	66%	98%	76%	68%	88%	85%	93%	-	74%
Depth (cm)	20	31	29	50	105	55	27	43	36	52	77	68	65	53	54
<b>Group 2</b>															
# Artifacts	280	3	150	413	-	165	30	29	40	32	97	26	11	1,351	2,627
% Group	11%	-	18%	10%	-	8%	5%	1%	3%	4%	7%	3%	2%	27%	-
% Unit	58%	9%	60%	24%	-	14%	34%	2%	24%	32%	12%	15%	7%	100%	26%
Depth (cm)	54	66	61	85	-	92	66	70	64	70	74	56	83	66	68
<b>Group Artifacts</b>															
	408	42	264	801	20	1,622	116	609	148	133	751	167	229	1,353	6,663
	5%	1%	8%	11%	-	15%	4%	14%	3%	4%	16%	5%	6%	7%	-



## ***DR Trench 2 (DRT2)***

DRT 2 covers an area of roughly 110 square meters (1,184 ft<sup>2</sup>) running 41 meters (135 ft) along the southwest side of Broadway 33 meters (108 ft) northwest of DRT 1. Sixteen units (EU) were excavated within this area, totaling 29 square meters (312 ft<sup>2</sup>) from which 6,609 artifacts were collected. DRT 2 is characterized by the highest artifact density of the data recovery excavations (228 per m<sup>2</sup>) with a relatively high representation for early to mid-nineteenth century occupation material and a high density of prehistoric Native material. DRT 2 has a higher than typical proportional representation for prehistoric Native material (29% of occupation diagnostic material,  $n = 665$ ), with particularly higher concentrations in units DRT 2-05 and DRT 2-06. More importantly, the prehistoric occupation material in this trench retains significant vertical differentiation and stratigraphic integrity in most of the units.

DRT 2 contained 49% of the total prehistoric material ( $n = 1,463$ ) for the overall data recovery assemblage. Mid-eighteenth century diagnostic artifacts are scarce in this trench, comprising only 2% ( $n = 40$ ) of the trench's diagnostic assemblage. Diagnostic materials for the late-eighteenth and early nineteenth centuries are heavily represented in this trench ( $n = 1,150$ ), being both the highest proportion within the trench (49%) and the densest concentration for the site overall (47% of the total early nineteenth century assemblage). Diagnostic materials for the mid- to late-nineteenth century occupations account for only 8% of the diagnostic trench assemblage ( $n = 191$ ), and the late nineteenth through twentieth century materials account for 12% ( $n = 281$ ). Occupation diagnostic materials accounted for 35% of the artifact collections for DRT 2.

Analysis of each component's assemblage for DRT 2 shows a similar pattern to that found in DRT 1 in that the components tend to be distinguishable by the relative proportions of artifacts from each estimated occupation. Analysis of the correlations of artifacts within each stratigraphic component again shows the assemblages clustering into two distinct groups. In DRT 2, however, the main distinction seems to be the proportion of prehistoric materials against historical diagnostics rather than the presence of eighteenth century material (Figure 3.10 on the next page and Table 3.7 on page 53). The trench contains few traces of the mid-eighteenth century occupation of the area, and those tend to be stratigraphically associated with the early and mid-nineteenth century components.

The prehistoric material is very distinct stratigraphically, and the Native occupation layers appear to retain strong vertical integrity below the historical deposits overall. Analysis of component assemblages shows two distinct patterns that reflect this stratification of prehistoric and nineteenth century deposition. Although each set of components contain some mixed proportions of

multiple estimated occupations, the dominant characteristics (i.e. Native or nineteenth century) are significantly distinct. Each of these component groupings can be strongly associated with vertically distinct core depth ranges, despite some overlap due to intrusions by the subsequent occupation.

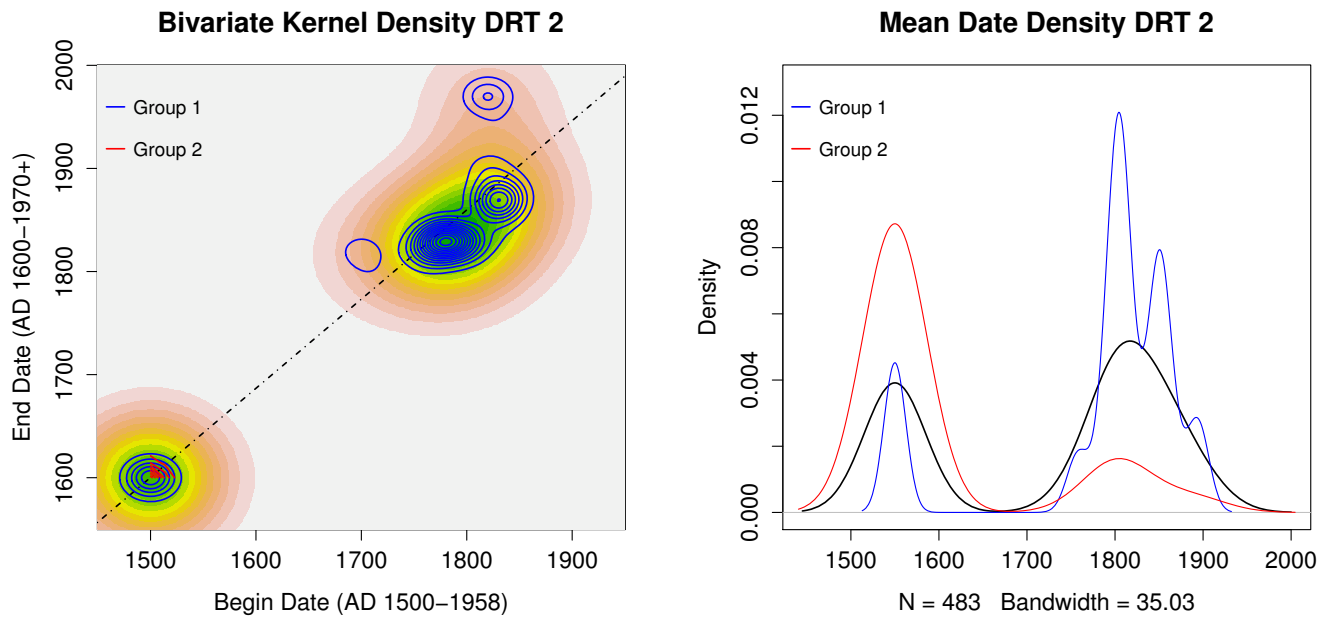
## ***Stratigraphy and Features***

Units in DRT 2 were excavated by natural strata into sterile secondary soil horizons. The artifact-bearing layers in the units had an average maximum depth of approximately 144 centimeters (~ 57 in) below datum, with the deepest cultural layer found extending to 222 centimeters (~ 87 in) in DRT 2-06 S Ext., Level 5. Typically, three or four artifact-bearing soil layers were found in the units (ranging between two and six strata). The typical soil profile of the units excavated within the trench consisted of an upper 20-centimeter (~ 8 in) layer of dark grayish brown or dark brown sandy loam above a dark yellowish brown or strong brown sandy layer 30-40 centimeters (~ 12 – 16 in) thick. These upper two layers contained the majority of the cultural material. Below these primarily cultural layers, artifact density dropped significantly and most units were excavated through two or three more layers to extend into sterile soils. The lower layers were typically a brown or yellowish brown sand layer roughly 20 centimeters (~ 8 in) deep above another 20-centimeter thick dark yellowish or strong brown sand and gravel layer, followed by dark grayish brown coarse sand.

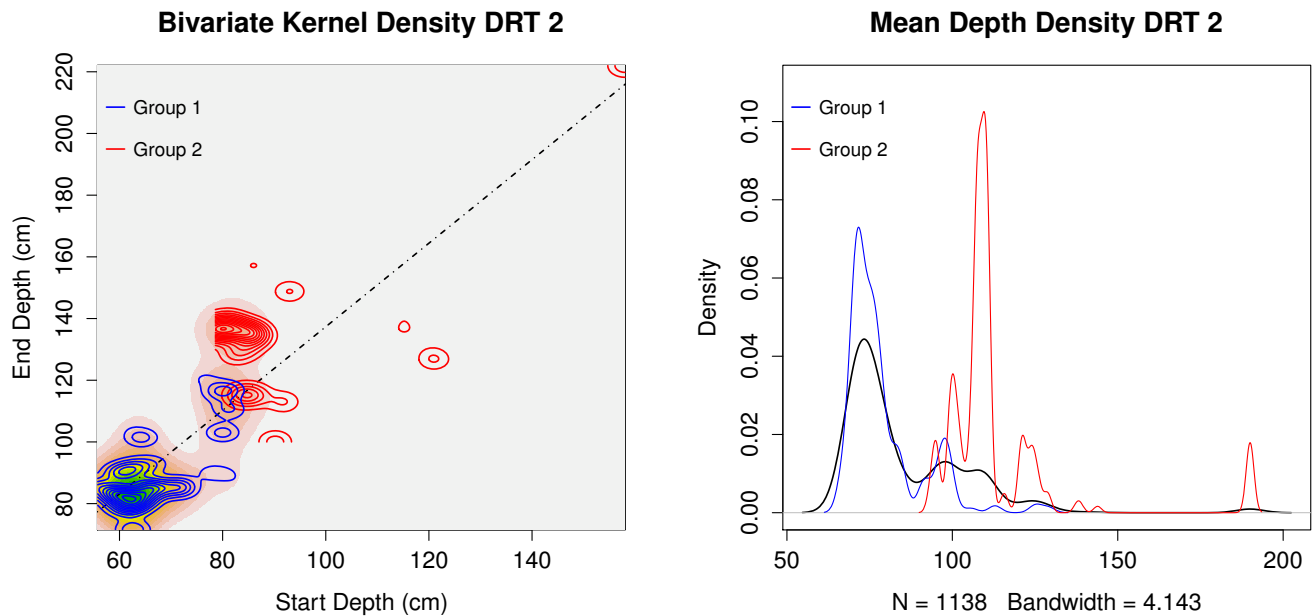
Thirteen labeled features were found in DRT 2 of which two may be related to the prehistoric Native occupation, three (possibly four) date to the mid-eighteenth century French and Indian War occupations, two are unknown historical period, three cannot be directly associated with an occupation, and two labeled features turned out to be natural bioturbation. All but one of these (Feature 13, a natural root disturbance in DRT 2-14 Level 4) were contained within the second soil stratum and were not deeply intrusive. The most notable features in the trench are the four refuse pits (Features 1, 2, 4, and 5) that appear to date to the mid-eighteenth century during the French and Indian War period of occupation. Features 1 and 2 were found in unit DRT 2-01 Level 2, Feature 4 in DRT 2-04, and Feature 5 in both DRT 2-05 and in the balk between unit 05 and DRT 2-06. All four refuse pits were roughly circular or oval shaped, are relatively shallow (~ 20 – 30 cm or 8 – 12 in deep), and contain artifacts typically dating to the period of the eighteenth century fort's occupation with an admixture of prehistoric Native artifacts.

## ***Assemblage***

The total artifact assemblage collected for DRT 2 consists of 6,609 objects, of which 35% ( $n = 2,325$ ) can



**Figure 3.10:** Bivariate kernel density estimate (left) and mean density (right) of artifact diagnostic dates between component groups for DR Trench 2.



**Figure 3.11:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 2.

**Table 3.7:** Summary of component assemblage groups by occupation for DRT 2.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 2	26	4,605	1818	# Artifacts	25	32	1,111	186	266	1,620
				% Group	2.90%	6.30%	47.20%	34.10%	9.40%	–
				% Occ.	5.30%	74.90%	95.10%	97.30%	95.30%	63.10%
				Depth	75.9	77.5	75.2	73.7	77.3	75.1
Group 1	35	2,004	1578	# Artifacts	640	8	39	5	15	707
				% Group	89.80%	3.60%	4.20%	1.60%	0.80%	–
				% Occ.	94.70%	25.10%	4.90%	2.70%	4.70%	36.90%
				Depth	112.3	93.5	105.2	103	113.4	110.7
Overall	61	6,609	1743	# Artifacts	665	40	1,150	191	281	2,327
				% Diag.	35.00%	5.30%	31.30%	22.10%	6.20%	–
				Depth	94.1	85.5	90.2	88.35	95.35	92.9

be diagnostically associated with one of the five estimated occupation periods for the site. The remaining 65% ( $n = 4,284$ ) are non-diagnostic to any specific historical period, but most can be broadly associated with one or more of the historical occupations. There is a notable stratigraphic distinction between the prehistoric Native and the historical occupations within nearly all units of the trench, but the individual historical occupations show significant localized stratigraphic inversions of two or more periods in nearly every unit. Taken as a whole, the average frequency-weighted mean depths of the historical occupations show almost complete inversions of the nineteenth century materials in nearly every unit. Only units DRT 2-08 and DRT 2-12 show an arguably intact vertical sequence for historical occupations. There seems to be some slight stratification of the few eighteenth century artifacts found in this trench, but no consistent or significant vertical differentiation of historical occupations.

The prehistoric Native assemblage for DRT 2 is comprised of 665 artifacts, and consists primarily of lithic debitage (397 flakes, 159 pieces of chert shatter, and three chert cores) and fire-cracked rock ( $n = 76$ ). The remaining 30 objects are formal and expedient tools. One intact Meadowwood projectile point was recovered from the south extension of unit DRT 2-06 at a depth of between 158 and 222 centimeters ( $\sim 62 - 87$  in) below datum. The point measures 21.3 by 38.7 millimeters (0.84x1.5 in) by 3.1 millimeters (0.12 in) thick made from Normanskill chert, and dates to the Early Woodland culture, circa B.C. 2563-2448 (Ritchie 1971:35). Three other projectile point fragments (two of chert, one of quartz) were recovered, but could not be identified by type. Two possible hammer stones were found in units DRT 2-02 Level 1 and DRT 2-06 Level 2. The remaining 24 prehistoric tools consisted of 13 biface fragments, 7 utilized flake expedient tools, 2 scrapers, and 2 end-scrapers.

For the trench as a whole, prehistoric artifacts were found at a weighted mean depth of roughly 108 cen-

timeters (43 in) below datum, which is consistently deeper than the depth for historical artifacts. Prehistoric artifacts were found in significantly greater concentration in units DRT 2-05 ( $n = 175$ ), DRT 2-06 ( $n = 151$ ), and DRT 2-06 South Extension ( $n = 85$ ) compared to the trench-wide mean of 40 objects per unit. Prehistoric artifacts were present in all of the units.

The mid-eighteenth century occupation of the area is only minimally represented in DRT 2, consisting of 40 artifacts and representing only 2% of the diagnostic assemblage for the trench. The great majority of these (78%,  $n = 31$ ) are hand-wrought nails (mostly 'rose'-head, in use until c.1820) and fragments. The remaining nine objects are undecorated or monochrome delft ceramic sherds ( $n = 6$ ), two sherds of white salt-glazed stoneware (one of 'debased scratch blue' type, c.1765-1795), and one sherd of Jackfield red stoneware (c.1740-1780). Most of the units in the trench contained one or more artifacts of this occupation period, but nearly half of the mid-eighteenth century assemblage was found in two units (DRT 2-01 and DRT 2-03).

The mid-eighteenth century artifacts were found at a weighted mean depth of 79 centimeters ( $\sim 31$  in) below datum, which is below the depths of the majority of the nineteenth century and later artifacts but not quantitatively significant at less than one standard deviation difference. These artifacts were most commonly found in association with prehistoric Native artifacts in the second or third cultural stratum of most units, suggesting that the eighteenth century occupation did intrude into the previous Native occupation in some locations.

The late eighteenth to early nineteenth century occupation assemblage is the largest proportion of the artifacts collected from DRT 2 at 49% ( $n = 1,150$ ) of the trench's diagnostic assemblage. Compared to the relative density for this occupation period in the other data recovery trench locations, the early nineteenth century occupation in DRT 2 is significantly more prominent in the assemblage than any other period. The entire assemblage consists of ceramic sherds with diag-

nostic dates of manufacture ranging between the 1760s and 1830s. The most numerous of these are pearlware (78%,  $n = 781$ ), which dates to between 1775 and 1830. Undecorated sherds ( $n = 407$ ) and blue transfer-printed sherds ( $n = 163$ ) make up half of the pearlware collected. The earlier creamware (c.1762-1825) account for 31% ( $n = 358$ ) of this occupation's assemblage, some portion of which may reasonably be attributed to the earlier mid-eighteenth century occupation as well. The remaining 11 ceramic sherds (1%) are of an early (c.1825-1835) style of underglaze blue hand-painted whiteware.

The weighted mean depth for this assemblage is 76 centimeters ( $\sim 30$  in) below datum, and has been substantially affected by the later nineteenth to early twentieth century occupations in many cases. As with the mid-eighteenth century occupation assemblage there is no significant vertical differentiation overall within the trench.

The mid-nineteenth century occupation assemblage for DRT 2 is much less prominent than the earlier nineteenth century materials, and consists of only 191 artifacts representing 8% of the trench's diagnostic assemblage. This is well below the mean proportion for the data recovery locations of 15%. These artifacts have weighted mean diagnostic dates between 1829 and 1872 ( $\mu_w = 5.33$ ), and were found at an average weighted mean depth of 74 centimeters ( $\sim 29$  in) below datum. The majority of the artifacts for this occupation are ceramic sherds (85%,  $n = 162$ ), and the remaining 15% ( $n = 29$ ) are machine cut nails (c.1835-1870). Of the ceramic sherds, 85% ( $n = 137$ ) are styles of whiteware with diagnostic dates ranging from 1825 to 1885. The most numerous style of white ware was of the blue transfer-printed type ( $n = 74$ , c.1830-1865) with fewer but significant amounts of annular ( $n = 17$ , c.1830-1870), polychrome hand-painted ( $n = 16$ , c.1830-1860), and blue edge-decorated ( $n = 12$ , c.1830-1860) styles.

Mid-nineteenth century artifacts were present in all but one of the units in the trench (absent from DRT 2-06 S Ext.), and there is no clear concentration in any set of units. Vertically, there is little distinction in any of the units between the mid-nineteenth century occupation depths. Artifacts diagnostic to this estimated occupation period co-occur with both the earlier nineteenth century materials and the later nineteenth to twentieth century materials within nearly all of the units.

The late nineteenth through twentieth century occupation period is represented in DRT 2 by 281 ceramic sherds, primarily of whiteware ( $n = 271$ , 96%), that has diagnostic dates ranging from 1820 to 1970, with a weighted mean date of 1895 ( $\mu_w = 1.94$ ). These more recent occupation materials were found at a weighted mean depth of approximately 77 centimeters ( $\sim 30$  in) for the trench overall and an average of unit weighted means of 86 centimeters ( $\sim 34$  in) below datum. In ev-

ery unit of the trench, this occupation intruded through the earlier nineteenth century occupations at least in part. In three units (DRT 2-07, DRT 2-09, and DRT 2-10), the late occupation intrudes through to the deepest cultural layer representing complete stratigraphic inversion. In only a few cases is this occupation found in a predictably stratified vertical sequence, with intrusion restricted only to the mid-nineteenth century occupation mean depths. In most units, this occupation is found at nearly identical depths to all nineteenth century materials.

The remaining 4,110 artifacts collected from DRT 2 are not specifically diagnostic to any occupation period. Almost half of this material (42%,  $n = 1,799$ ) consists of miscellaneous samples of material such as charcoal, botanical, soil, unmodified faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context. Historical architectural materials without specifically identifiable manufacture dates such as brick fragments, window glass, architectural stone and ceramics, and hardware account for another 21% ( $n = 904$ ) of the non-diagnostic assemblage.

Most of the remaining 37% ( $n = 1,591$ ) of the non-diagnostic assemblage can be broadly described as 'historical' artifacts but without specific diagnostic manufacture ranges (e.g. coal and slag, kitchen bone, personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these objects (e.g. certain types of glass vessel shards) can be specified somewhat as generally being either nineteenth or twentieth century artifacts, but do not substantially contribute refinement to the analyses. A significant number ( $n = 461$ , 29% of sub-class) of this non-diagnostic historical assemblage is non-diagnostic ceramic sherds that either have very broad ranges of manufacture and use (e.g. porcelain, stoneware, redware) or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware). Since the typical use-life of many of these ceramic types span the eighteenth through twentieth centuries, they are not specifically diagnostic to a particular historical period without an identifiable decorative style.

### *Evaluation of Trench Integrity*

The stratigraphy in DRT 2 is primarily comprised of multiple and intrusive episodes of admixture between the various occupation periods that are represented in the assemblage (see Table 3.8 on page 56), but can be segregated into two distinct patterns of deposition (Figures 3.10 to 3.11 on page 52). Unlike DRT 1, the vertical distinction of the prehistoric Native occupation in DRT 2 is significantly both consistent and substantial. Although the stratigraphic admixture of the nineteenth century occupations in DRT 2 is quite thorough, the overall vertical segregation of the prehistoric versus historical periods is cleanly demarcated (see Figure 3.10 on page 52).

In addition, the preponderance of the early-nineteenth century occupation artifacts over the other nineteenth century (and twentieth century) occupations means that the nineteenth century admixture, while thorough, represents a stratigraphically intact set of occupation deposits with a compound composition of subsequent occupation period indicating continuous occupation. In this sense, DRT 2 is clearly stratified even in the traditional sense despite the appearance of intrusion and disturbance. Essentially, there are two primary occupation periods being represented in this trench that are vertically distinct in the majority of the units: a prehistoric Native occupation and an early nineteenth century occupation that continues into the twentieth century.

This pattern is made very clear when the individual component assemblages are grouped and compared. Two correlated patterns of artifact assemblage distinguish the excavated components of DRT 2 into distinct groups. The first group consists primarily of prehistoric Native diagnostic artifacts (72%) and a small proportion of intrusive eighteenth and early nineteenth century materials (17%)<sup>1</sup>. The second group inverts these proportions, with only 10% of the Native occupation diagnostics and 64% from the eighteenth to nineteenth century. In addition, the second group introduces a significant proportion (15%) of late-nineteenth through twentieth century materials. The diagnostic date and discrete vertical stratification for these two groups are shown in their probability distributions (Figure 3.10 on page 52). The overlapping secondary peaks show those few cases of intrusion (at lower depths) or admixture (in upper strata) of the two component groups.

Looking at the within-unit stratigraphic sequencing of the estimated occupations (and temporal distribution overall), the trench-wide stratification becomes somewhat more convoluted. This is due to a spatial component to the distribution and deposition of various subsets of the occupation periods, in which there is a distinct horizontal concentration to the prehistoric materials whereas historical materials are more diffused throughout the trench. Assessing the correlations of diagnostic date and depth, however, shows significant negative correlations within most of the units and is strongly correlated for the trench overall. Only three units (DRT 2-05, DRT 2-10, and DRT 2-11) do not have significant correlations with  $|P_r| < 0.05$ , and DRT 2-09 is borderline with  $|P_r| = 0.056$ . In each of these cases, the grouped stratigraphic components show an unusually high admixture of occupation periods and account for much of the overlap in the component associations. Polyserial correlation of the trench for depth and estimated occupation period returns a highly significant cor-

relation value ( $|P_r| \ll 0.0001$ ), as does a polychoric correlation between component and occupation.

Based on these analyses, DRT 2 retains strong integrity of vertical provenience for the two primary occupations represented by the assemblage (i.e. Native and early nineteenth century) with some localized intrusions and inversions. Approximately 70% of the vertical disposition of diagnostic artifacts within the trench can be predicted by linear combinations of unit, component group, and estimated occupation period. Diagnostic dates and assigned occupation periods correlate strongly with stratigraphic sequence in all but the noted exceptions. While there is some notable intermingling of the historical occupation periods, the trench overall represents intact stratification of a prehistoric component and multiple continuous historical occupations. Even within the mixed historical components, there is a trend of increasing depth with diagnostic age. This suggests that these mixed components only reflect partial intrusions and localized inversions within the historical occupations.

### ***DR Trench 3 (DRT3)***

DRT 3 covers an area of roughly 69 square meters (743 ft<sup>2</sup>) running 32 meters (105 ft) southeast from the intersection with Notre Dame Street along the southwest side of Broadway. Four units and nine shovel test pits were excavated in this area, totaling 10.25 square meters (110 ft<sup>2</sup>) from which 917 artifacts were collected. Relatively few excavations were conducted in this data recovery location, with the subsurface testing accounting for only a 13% sampling of the trench area and the artifact density low ( $\sim 90$  per m<sup>2</sup>). Consequently, the assemblage from DRT 3 is the smallest of the six trenches and the occupation diagnostic assemblage consists of 218 artifacts. All five of the estimated occupation periods are present in the assemblage, with a somewhat higher than average representation for the mid- to late-nineteenth and early 20 century materials. Given the small sample size and that diagnostic materials only account for 24% of the trench assemblage, DRT 3 does not have an obviously interpretable characteristic in terms of the overall context of the site.

The small assemblage sample and reduced vertical precision of STP levels is similarly problematic for assessment of individual component assemblages and trench stratigraphy. Each unit or STP of the trench contains a small portion of the occupation diagnostics and few stratigraphic components per subsurface test. For most of this trench's testing, one or two stratigraphic components contained the majority of the material making any reliable stratigraphic discrimination tenuous. Most artifact-bearing components appear to be various proportional admixtures of the estimated occupations, with a somewhat higher proportion of the later nineteenth to twentieth century material overall.

<sup>1</sup>In both groups, a small portion of the other estimated occupations is also present but far overshadowed by the dominant group characteristics. These reflect localized intrusions and disturbances, but do not significantly influence the quantitative significance.

**Table 3.8:** Sample and depth of occupation artifacts by unit for DR Trench 2.

	DRT 2-01	DRT 2-02	DRT 2-03	DRT 2-04	DRT 2-05	DRT 2-05/06 Balk	DRT 2-05/06 W Ext.	DRT 2-06	DRT 2-06 S Ext.	DRT 2-07	DRT 2-08	DRT 2-09	DRT 2-10	DRT 2-11	DRT 2-12	DRT 2-13	DRT 2-14	Grand Total
<b>Native</b>																		
# Artifacts	22	34	35	6	175	4	30	151	85	27	7	14	3	4	18	17	33	665
% Unit	4%	5%	5%	1%	24%	-	3%	20%	13%	4%	1%	3%	1%	1%	4%	4%	6%	-
% Occ.	12%	33%	20%	24%	81%	10%	40%	66%	100%	23%	9%	19%	12%	32%	22%	16%	27%	35%
Depth (cm)	91	109	103	110	103	96	112	108	140	101	111	105	114	113	93	110	113	108
<b>Mid-18th</b>																		
# Artifacts	12	2	6	2	-	-	1	-	-	1	1	6	1	-	3	2	3	40
% Unit	31%	5%	8%	5%	-	-	4%	-	-	3%	5%	9%	6%	-	7%	10%	8%	-
% Occ.	16%	5%	5%	14%	-	-	8%	-	-	2%	5%	9%	10%	-	5%	6%	5%	5%
Depth (cm)	86	67	72	99	-	-	80	-	-	71	95	75	83	-	87	76	78	82
<b>18th-19th</b>																		
# Artifacts	128	52	127	7	24	1	33	59	-	44	47	25	53	19	132	184	215	1,150
% Unit	15%	4%	9%	1%	4%	-	4%	7%	-	4%	7%	4%	5%	1%	8%	15%	14%	-
% Occ.	45%	24%	30%	12%	11%	1%	43%	20%	-	21%	44%	22%	50%	53%	35%	55%	56%	31%
Depth (cm)	76	76	72	72	97	74	80	75	-	79	85	75	86	73	81	76	78	79
<b>Mid-19th</b>																		
# Artifacts	14	14	28	6	12	9	1	12	-	26	11	14	7	1	18	13	5	191
% Unit	11%	8%	15%	4%	4%	5%	1%	6%	-	11%	6%	8%	3%	-	8%	6%	3%	-
% Occ.	24%	36%	37%	45%	8%	76%	8%	12%	-	39%	29%	33%	21%	9%	26%	16%	9%	22%
Depth (cm)	75	75	72	85	69	74	80	71	-	76	74	75	83	73	79	76	78	75
<b>19th-20th</b>																		
# Artifacts	13	5	39	5	2	10	2	15	-	47	16	49	10	2	40	19	7	281
% Unit	4%	2%	13%	2%	1%	3%	1%	5%	-	15%	10%	15%	3%	1%	13%	9%	5%	-
% Occ.	2%	2%	9%	5%	-	14%	1%	3%	-	14%	12%	18%	7%	6%	12%	6%	4%	6%
Depth (cm)	71	73	81	78	108	74	80	89	-	90	82	100	106	93	81	76	78	85
<b>Occ.Total</b>																		
	189	107	235	26	213	24	67	237	85	145	82	108	74	26	211	235	263	2,327
	10%	5%	9%	2%	11%	1%	3%	11%	4%	6%	5%	5%	3%	1%	7%	9%	8%	-

**Table 3.9:** Sample and depth of component group artifacts by unit for DR Trench 2.

	DRT 2-01	DRT 2-02	DRT 2-03	DRT 2-04	DRT 2-05	DRT 2-05/06 Balk	DRT 2-05/06 W Ext.	DRT 2-06	DRT 2-06 S Ext.	DRT 2-07	DRT 2-08	DRT 2-09	DRT 2-10	DRT 2-11	DRT 2-12	DRT 2-13	DRT 2-14	Grand Total
<b>Group 1</b>																		
# Artifacts	224	86	42	225	260	12	30	163	675	113	13	69	6	14	15	17	40	2,004
% Unit	13%	5%	4%	7%	20%	-	2%	13%	14%	6%	1%	2%	1%	2%	2%	2%	4%	-
% Group	30%	17%	8%	53%	85%	7%	19%	34%	100%	19%	6%	11%	7%	31%	5%	7%	15%	24%
Depth (cm)	93	109	106	104	105	96	121	109	160	109	111	123	129	113	107	114	112	111
<b>Group 2</b>																		
# Artifacts	417	358	578	63	28	81	159	378	-	337	173	279	220	64	491	524	455	4,605
% Unit	10%	8%	13%	2%	1%	2%	3%	8%	-	8%	4%	7%	5%	1%	10%	10%	8%	-
% Group	70%	83%	92%	47%	15%	93%	81%	66%	-	81%	94%	89%	93%	69%	95%	93%	85%	76%
Depth (cm)	71	72	72	75	69	74	80	73	-	71	79	75	83	73	79	76	78	75
<b>Group Total</b>																		
	641	444	620	288	288	93	189	541	675	450	186	348	226	78	506	541	495	6,609
	11%	7%	11%	3%	6%	2%	2%	10%	3%	7%	4%	6%	4%	1%	8%	8%	7%	-



Clustering analysis of the component assemblages indicates one set of excavated components (Group 1) representing mixed-occupation deposits with strongly inverted temporal stratification, and a second set of components (Group 0) containing disparate and distinct low-density assemblages (Table 3.10 on page 59). Group 0 consists of excavated components with assemblage content that is substantially dissimilar to the assemblages of Group 1 components, but is internally inconsistent. These components tend to retain more internally intact temporal sequence stratigraphically, and may represent intact remnant deposits. The admixture of multi-occupation artifacts and inversions of vertical sequencing of Group 1 supports this expectation, but the overall disposition of the trench's components renders the data inconclusive.

The depth distributions of the occupation diagnostic assemblage (see Figure 3.12 on the following page) do show a subtle stratification that can be separated into two groups: a mixed nineteenth to twentieth century stratum (Group 1) in which the majority of the eighteenth to nineteenth century historical materials and prehistoric native materials are found, and a low-density lower stratum (Group 0) of primarily prehistoric Native finds. The mixed-occupation Group 0 stratum contains the highest densities of all of the occupation-diagnostic artifacts. Vertical stratification of the historical occupations is rare, however, within any one unit in DRT 3 and mixing and/or inversions are common.

### *Stratigraphy and Features*

Units in DRT 3 were excavated by natural strata into sterile secondary soil horizons. The artifact bearing layers in the units had an average maximum depth of approximately 134 centimeters (~ 53 in) below datum, with the deepest cultural layer found extending to 216 centimeters (~ 85 in) in DRT 3-02, Level 4. Typically, three artifact-bearing soil layers were found in the units (ranging between two and seven strata). The typical soil profile of the units excavated within the trench consisted of an upper 20-40 centimeter (~ 8 – 16 in) layer of dark grayish brown, dark brown, or grayish brown sand above a mottled grayish brown, yellowish brown, or dark yellowish brown sand layer 30 to 60 centimeters (~ 12 – 24 in) thick on average. These upper two layers contained the majority of the cultural material. Below these primarily cultural layers, artifact density dropped significantly and most units were excavated through two or three more layers to extend into sterile soils. The lower layers were typically a grayish brown or yellowish brown coarse sand layer roughly 30-40 centimeters (~ 12 – 16 in) deep above another 20-40 centimeter thick dark yellowish brown sand layer, followed by another layer of yellowish brown sand.

Only one labeled feature was found in DRT 3, Feature 14, which was a large concentration of charcoal

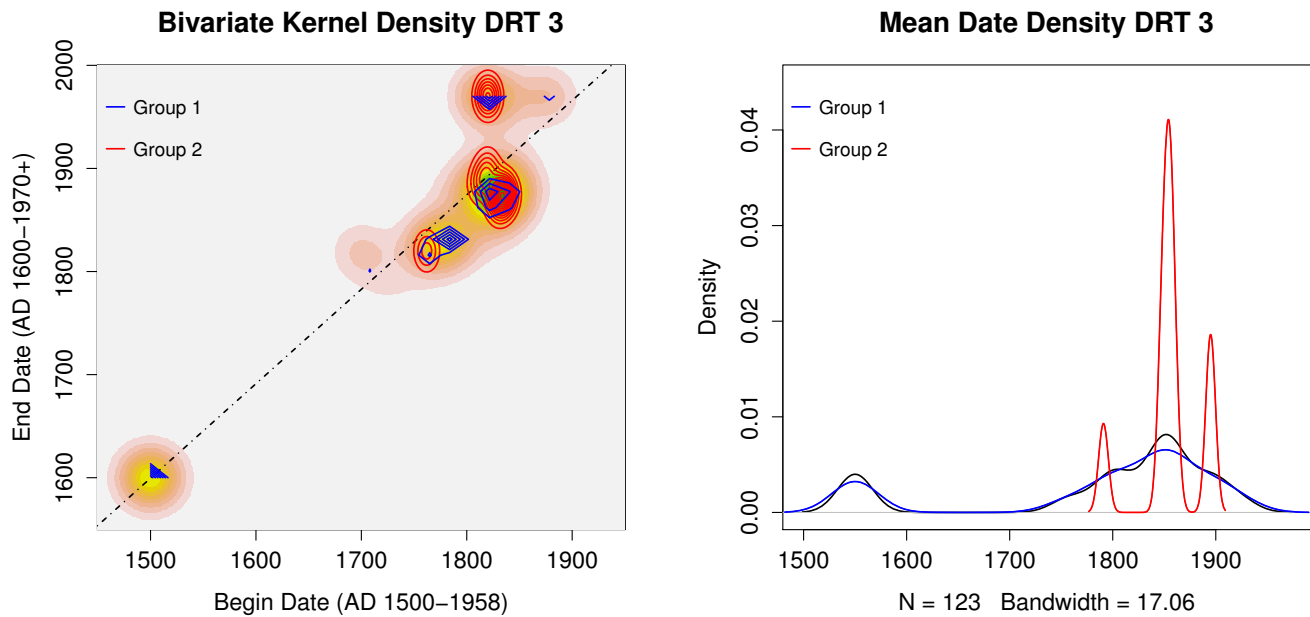
staining found in the third soil level of unit DRT 3-02. The feature measured approximately 90 centimeters (~ 35 in) north to south, extending north beyond the excavated unit, and 45 centimeters (~ 18 in) wide east to west and extended west beyond the excavated unit. The cross-section of the feature was of a shallow sloped-wall trench that reached 12 centimeters (~ 5 in) at its deepest point, tapered out toward its edges. The soil matrix was dark yellowish brown sand with pockets of compact charcoal stains, which rested above yellow brown soil. The only artifacts found in the feature were a very small piece of FCR and a piece of red slate. The feature is tentatively considered prehistoric, but its full dimensions and nature are undetermined.

### *Assemblage*

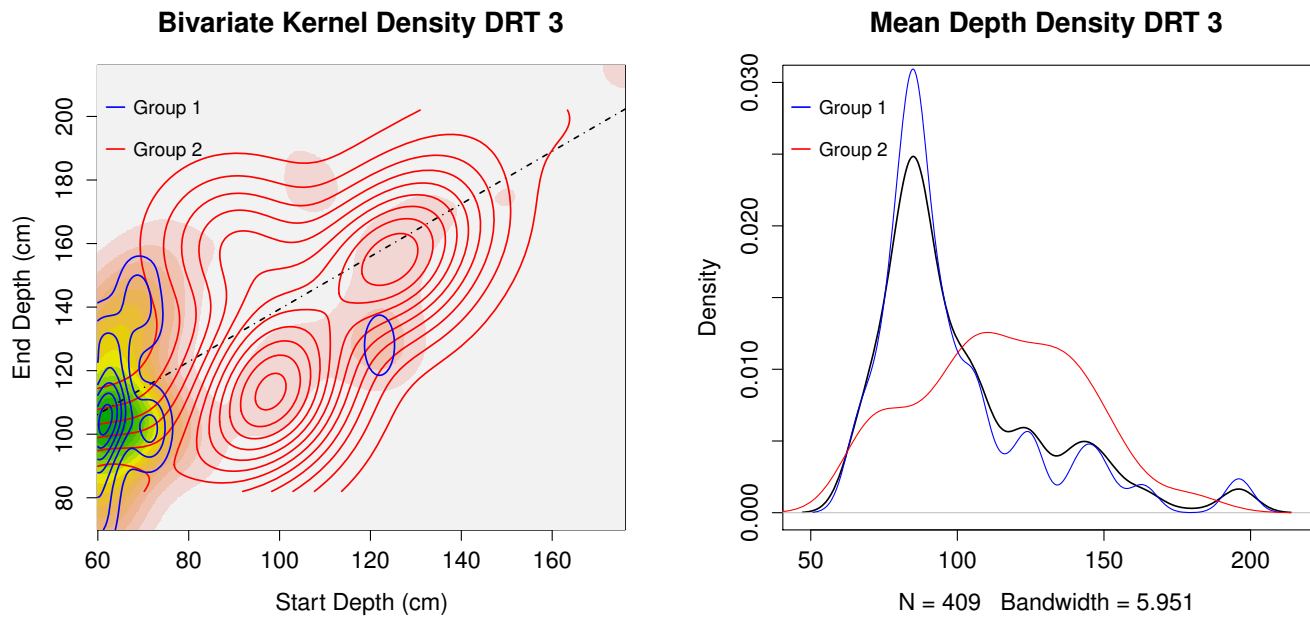
The total artifact assemblage collected for DRT 3 consists of 917 objects, of which 24% ( $n = 220$ ) can be diagnostically associated with one of the five estimated occupation periods for the site. The remaining 76% ( $n = 697$ ) are non-diagnostic to any specific historical period, but most can be broadly associated with one or more of the historical occupations.

The prehistoric Native assemblage for DRT 3 is a low-density scatter comprised of 32 objects, which was generally found in a reasonably intact stratified layer below the various historical occupation diagnostics. The assemblage consists primarily of debitage (47%,  $n = 15$ ) and fire-cracked rock (47%,  $n = 15$ ) with only two utilized flakes. No formal tools or diagnostic types were found. The Native occupation materials were found at an average depth of 100 to 120 centimeters (~ 39 – 47 in) below datum, and the debitage was typically found above the fire-cracked rock by 10 centimeters (~ 4 in) or more. This may represent some minor stratification of the Native deposits, but is neither sufficient nor consistent enough to ascribe it any interpretive substantial significance. The Native occupation materials were found in just over half of the units excavated, forming something of a low-density cluster, and had the highest concentration in unit DRT 3-02 ( $n = 14$ , 44% of the occupation assemblage) at a depth of 123 centimeters (~ 48 in) below datum.

A small number of mid-eighteenth century artifacts ( $n = 11$ ) were found in DRT 3 and represents only 5% of the collected diagnostic assemblage. These artifacts were all found in mixed contexts with later nineteenth century materials, and no stratification to discriminate this occupation is apparent. The assemblage consists largely of hand-wrought nails ( $n = 8$ , c.1700-1820), with both 'rose-head' ( $n = 4$ ) and 'T-head' ( $n = 1$ ) present. The remaining three wrought nails were unidentifiable to type. Three ceramic sherds from the mid-eighteenth century were found: one monochrome delftware sherd (c.1709-1802), one Jackfield sherd (c.1740-1780), and one white salt-glazed stoneware



**Figure 3.12:** Bivariate kernel density estimate (left) and mean density (right) of artifact diagnostic date between component groups for DR Trench 3.



**Figure 3.13:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 3.

**Table 3.10:** Summary of component assemblage groups by occupation for DRT 3.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 1	32	843	1793	# Artifacts	31	11	42	79	40	203
				% Group	17.60%	7.90%	18.10%	36.60%	19.80%	–
				% Occ.	94.20%	100.00%	86.60%	91.70%	88.10%	91.00%
				Depth	112.5	89.1	102	94	102.1	100.1
Group 2	8	74	1830	# Artifacts	1	–	6	5	5	17
				% Group	10.90%	–	28.40%	33.40%	27.30%	–
				% Occ.	5.80%	–	13.40%	8.30%	11.90%	9.00%
				Depth	139	–	113	87.8	97.1	102.3
Overall	40	917	1798	# Artifacts	32	11	48	84	45	220
				% Diag.	17.00%	7.20%	19.00%	36.30%	20.50%	–
				Depth	125.75	89.1	107.5	90.9	99.6	101.2

sherd (c.1720-1780). Eight of the eleven mid-eighteenth century artifacts were found in unit DRT 3-02 at an average depth of 86 centimeters ( $\sim 34$  in) below datum, which was above most of the later nineteenth century material suggesting significant disturbance of the eighteenth century occupation deposits. The only unit in which eighteenth century material was vertically below later artifacts was in unit DRT 3-04 where the eighteenth century material appears to have intruded through the earlier Native occupation.

The late eighteenth and early nineteenth century occupation assemblage is comprised of 48 artifacts representing 22% of the diagnostics for the trench, and is comprised entirely of ceramic sherds. The majority of these sherds are pearlware (65%,  $n = 31$ , c.1775-1830) and creamware (31%,  $n = 15$ , c.1762-1820), with a small number of blue underglaze hand-painted white-ware ( $n = 2$ , c.1825-1835). Most of the pearlware sherds were undecorated ( $n = 21$ ), as were all of the creamware sherds. Of the decorated pearlware, blue transfer-printed was the most common ( $n = 6$ , c.1783-1830) with small amounts of blue edge-decorated ( $n = 3$ , c.1780-1830) and green edge-decorated ( $n = 1$ , c.1800-1830). These artifacts were found in highest concentration in units DRT 3-02 ( $n = 17$ ) and DRT 3-03 ( $n = 8$ ), but were also found in small numbers in all other units and most of the STPs. The average of weighted mean unit depths for this occupation is more than 91 centimeters ( $\sim 36$  in) below datum, and it does not appear in a vertically stratified sequence in any unit excavated except STP DRT 3-06 where it is found significantly below any later occupation. In all other cases, the late eighteenth and early nineteenth century occupation diagnostics are found in mixed association with much later materials.

The mid-nineteenth century occupation in DRT 3 represents the largest proportional diagnostics occupation at 84 artifacts accounting for 39% of the trench's diagnostics assemblage. Over half of these (52%,  $n = 44$ ) are architectural hardware and the remaining 48% ( $n = 40$ )

are ceramic sherds. Nearly all of the architectural hardware consists of machine cut nails ( $n = 38$ , c.1835-1875). Of the ceramic sherds, 70% ( $n = 28$ ) are various styles of whiteware with manufacture dates between 1825 and 1875. The most common of these are blue ( $n = 11$ , c.1830-1865), black ( $n = 6$ , c.1825-1875), and brown ( $n = 5$ , 1825-1875) transfer-printed sherds. Sherds of ironstone ( $n = 6$ , c.1813-1900), buff salt-glazed stoneware ( $n = 4$ , c.1820-1900), and Rockingham/Bennington yellowware ( $n = 2$ , c.1840-1900) account for the remaining 30% of the ceramic sherds.

The mid-nineteenth century occupation materials appear in every unit and STP in the trench, but have the highest concentration in unit DRT 3-02 and in STPs DRT 3-05 and DRT 3-10. In almost every case, however, the mean weighted depth for this occupation ( $\sim 91\text{cm}/36$  in below datum) is equivalent or above later diagnostic materials in the vertical sequence. This occupation also had the lowest mean weighted standard deviation for depth by unit of the occupations ( $\mu = 9.985$ ) as well as a low overall weighted standard deviation for depth ( $\mu_w = 16.97$ ). This indicates that the mid-nineteenth century materials are occupying a relatively narrow vertical stratum across the trench, and that this estimated occupation stratum is primarily found in disturbed context. In some instances, the occupation has also intruded into and/or below older occupation strata (e.g. DRT 3-02 and DRT 3-03). This gives an overall impression of substantial disturbance throughout the trench.

The late nineteenth and twentieth century occupation materials account for 20% ( $n = 45$ ) of the trench's diagnostic assemblage. The dates of materials associated with this estimated occupation period range from 1820 to present due to the prevalence of undecorated white-ware sherds in the assemblage, with a mean occupation date of 1902 ( $\pm 27\text{yrs}$ ). The undecorated white-ware sherds comprise 76% ( $n = 34$ ) of this occupation's assemblage. Given the broad dates of manufacture for this type of sherd (beginning c.1820), these

are more indicative of this later period than diagnostic of the type's earlier use. Other diagnostics for this period are wire nails ( $n = 8$ , c.1875-present) and plastics ( $n = 2$ , c.1908-present). One sherd of undecorated yellowware (c.1830-1940) was also found. These artifacts were found in low density throughout the trench with the exception of STP DRT 3-05 in which they were absent.

The remaining 697 artifacts collected from DRT 3 are not specifically diagnostic to any occupation period. The most common of these non-diagnostic artifacts are faunal refuse ( $n = 138$ ), coal ( $n = 134$ ), brick fragments ( $n = 121$ ), and miscellaneous architectural hardware (12%,  $n = 83$ ). More generally, the historical architectural artifacts account for 36% ( $n = 252$ ) of the non-diagnostic assemblage. These include artifacts such as brick fragments, window glass, architectural stone and ceramics, and hardware that lack specifically identifiable manufacture dates. Most of the architectural hardware is comprised of unidentified square nails or fragments ( $n = 78$ ), which would likely be associated with the nineteenth century occupations prior to the 1870s when wire nails became more common. Another 22% of the non-diagnostic assemblage ( $n = 151$ ) consists of miscellaneous samples of material such as charcoal, botanical, soil, unmodified faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context. Most of the remaining 42% ( $n = 294$ ) of the non-diagnostic assemblage can be broadly described as 'historical' artifacts but without specific diagnostic manufacture ranges (e.g. coal and slag, kitchen bone, personal objects, glass objects and vessels, unidentified metal objects, etc.).

Some of these objects (e.g. certain types of glass vessel shards) can be specified somewhat as generally being either nineteenth or twentieth century artifacts, but do not substantially contribute refinement to the occupation analyses. A number ( $n = 37$ , 13% of sub-class) of this non-diagnostic historical assemblage is non-diagnostic ceramic sherds that either have very broad ranges of manufacture and use (e.g. porcelain, common utilitarian stoneware, redware) or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware). Since the typical use-life of many of these ceramic types span the eighteenth through twentieth centuries, they are not specifically diagnostic to a particular historical period without an identifiable decorative style. The non-diagnostic materials do not appear to cluster spatially within the trench, but the architectural material does seem to have been found in somewhat higher concentrations in unit DRT 3-02 and test pits DRT 3-05 and DRT 3-10.

### *Evaluation of Trench Integrity*

Overall, analysis of the assemblage and stratigraphy of DRT 3 shows signs of substantial disturbances and strati-

graphic mixture or inversions. This may be due in part to the use of STPs rather than units for much of the trench excavation, which would present a more refined stratigraphic picture. While there does appear to be a slight stratification between the historical and Native occupation materials, this distinction is not consistently apparent within all of the test units nor does there seem to be a clearly defined stratigraphic occupation layer visible in the soil profiles (Table 3.11 on the next page). As discussed previously, two patterns of component assemblages are discernible (Figures 3.12 to 3.13 on page 58), but only in that one set of components appear to be less thoroughly mixed in their composition. From the analysis of the mixed assemblage components, it appears that a distinction can be seen in the peaks for the relative depth densities of the components (see Figure 3.12 on page 58). This shifting in the depth of peak density indicates a low-density early occupation component between 150 and 200 centimeters ( $\sim 59 - 79$  in) below datum. There also appears to be some degree of spatial patterning to the disposition of the two component assemblage types, based on correlations of artifact types within the occupation assemblages. Similarly, distinctions between units in terms of occupation diagnostics show signs of horizontal spatial patterning despite the general lack of vertical segregation.

Only one of the excavations in the trench show cleanly ordered chronological structure or integrity in terms of vertical distribution (DRT 3-10). Only a portion of the Native occupation artifacts appears to have some vertical integrity of provenience, and that is only in three of the thirteen units excavated (DRT 3-02, DRT 3-10, and DRT 3-12). The only unit in which the small eighteenth century assemblage is in an arguably intact vertical context is DRT 3-04, where the eighteenth century intruded through the earlier Native occupation. The early nineteenth century assemblage is only in chronological sequence vertically for DRT 3-08. In most units the mid-nineteenth through twentieth century diagnostics are either found to be at equivalent depths or inverted. In most of the units, however, the diagnostic assemblage is dominated by only one or two of the five estimated occupation periods rather than a proportionally representative sample.

This horizontal segregation of occupation diagnostics results in the vertical distributions within units showing disparate occupation periods occurring at similar depths. In most cases, units only have one or two significant culturally productive layers. In this sense, the trench is not significantly stratified and the integrity of vertical depositional contexts is dubious. The horizontal patterning, however, shows a certain consistency that may indicate intact integrity of location. Component assemblages bear out this conclusion in that the mixed components cluster out into two distinct groups of occupation assemblages, but only when cross-correlated by assemblage type. When viewed as a whole, these dis-

**Table 3.11:** Sample and depth of occupation artifacts by unit for DR Trench 3.

	DRT 3-01	DRT 3-02	DRT 3-03	DRT 3-04	DRT 3-05	DRT 3-06	DRT 3-07	DRT 3-08	DRT 3-09	DRT 3-10	DRT 3-11	DRT 3-12	DRT 3-13	Grand Total
<b>Native</b>														
# Artifacts	3	14	-	9	-	-	2	-	-	2	1	1	-	32
% Unit	7%	41%	-	28%	-	-	9%	-	-	9%	2%	2%	-	-
% Occ.	18%	24%	-	41%	-	-	20%	-	-	18%	18%	9%	-	17%
Depth (cm)	106	128	-	112	-	-	84	-	-	109	68	149	-	114
<b>Mid-18th</b>														
# Artifacts	-	8	1	1	-	-	-	-	1	-	-	-	-	11
% Unit	-	71%	8%	14%	-	-	-	-	8%	-	-	-	-	-
% Occ.	-	17%	5%	8%	-	-	-	-	12%	-	-	-	-	7%
Depth (cm)	-	86	87	125	-	-	-	-	73	-	-	-	-	89
<b>18th-19th</b>														
# Artifacts	4	17	8	4	1	4	4	4	-	-	1	1	-	48
% Unit	10%	38%	15%	6%	2%	8%	7%	8%	-	-	1%	4%	0%	-
% Occ.	28%	25%	28%	10%	7%	54%	17%	27%	-	-	12%	16%	0%	19%
Depth (cm)	106	104	87	110	65	120	84	123	-	-	118	79	-	104
<b>Mid-19th</b>														
# Artifacts	8	16	11	4	15	1	7	4	2	13	1	1	1	84
% Unit	8%	18%	14%	8%	12%	3%	10%	6%	3%	14%	2%	2%	1%	-
% Occ.	44%	22%	49%	25%	93%	34%	46%	36%	25%	56%	39%	19%	39%	36%
Depth (cm)	106	104	92	114	86	66	99	95	73	83	68	79	71	93
<b>19th-20th</b>														
# Artifacts	1	9	5	5	-	1	2	4	5	3	2	7	1	45
% Unit	3%	17%	9%	9%	-	2%	7%	10%	15%	12%	3%	12%	2%	-
% Occ.	10%	12%	17%	15%	-	12%	17%	37%	63%	27%	31%	56%	61%	21%
Depth (cm)	106	122	117	110	-	104	114	95	76	79	68	114	140	101
<b>Occ. Total</b>														
	16	64	25	23	16	6	15	12	8	18	5	10	2	220
	7%	29%	10%	12%	5%	3%	8%	6%	5%	9%	2%	4%	1%	-

**Table 3.12:** Sample and depth of component group artifacts by unit for DR Trench 3.

	DRT 3-01	DRT 3-02	DRT 3-03	DRT 3-04	DRT 3-05	DRT 3-06	DRT 3-07	DRT 3-08	DRT 3-09	DRT 3-10	DRT 3-11	DRT 3-12	DRT 3-13	Grand Total
<b>Group 1</b>														
# Artifacts	51	201	110	95	49	13	67	-	29	114	66	30	18	843
% Unit	6%	24%	12%	13%	5%	2%	8%	0%	5%	14%	6%	4%	2%	-
% Group	98%	100%	91%	100%	100%	28%	100%	0%	100%	97%	100%	100%	100%	89%
Depth (cm)	106	112	99	112	84	123	102	-	88	84	89	109	90	101
<b>Group 0</b>														
# Artifacts	1	-	7	-	-	27	-	37	-	2	-	-	-	74
% Unit	1%	-	10%	-	-	34%	-	52%	-	4%	-	-	-	-
% Group	2%	-	9%	-	-	72%	-	100%	-	3%	-	-	-	11%
Depth (cm)	156	-	119	-	-	91	-	102	-	139	-	-	-	102
<b>Group Total</b>														
	52	201	117	95	49	40	67	37	29	116	66	30	18	917
	6%	22%	11%	12%	4%	5%	8%	5%	4%	13%	5%	4%	2%	-



inctions vanish. Lacking significant and consistent vertical integrity to establish differentiation of occupation layers, however, the overall integrity of artifact contexts remains unclear. It is equally plausible that the apparent spatial sorting of occupations could be the result of post-depositional disturbance as well.

Based on the analysis of the assemblages, occupations, and stratigraphic components the site integrity of DRT 3 remains ambiguous. Vertical distinctions are insufficiently identifiable to evaluate, and are largely contingent on a presumption of horizontal integrity. Although horizontal patterning of occupations could indicate intact land-use differences, they may also just as reasonably reflect post-deposition disturbances. Given the relatively low artifact and diagnostics density, DRT 3 contributes a relatively minor dataset to the interpretation of the project area overall. Since the stratigraphy in DRT 3 is anomalous when compared to the more clear stratification apparent in other data recovery trenches, it is reasonable to conclude that the general integrity of this portion of the project area is generally compromised.

#### ***DR Trench 4 (DRT4)***

DRT 4 is located along the northeastern side of Broadway, running approximately 27 meters (89 ft) northwest from the intersection of Moon Street and covering an area of roughly 54 square meters (581 ft<sup>2</sup>). Eleven units of varying sizes were excavated within this trench area during the data recovery totaling 18 square meters (194 ft<sup>2</sup>), from which 924 artifacts were collected. The occupation diagnostic materials recovered from this trench were predominately from the nineteenth century onward, with only one eighteenth century artifact and proportionally few Native occupation materials (15% of trench diagnostics,  $n = 32$ ). Artifact density in this area was the lowest of the six trenches at 51 objects collected per square meter of excavation, and stratification of occupation components is minimal. Component assemblage analysis shows no significant vertical segregation of occupation diagnostic material, but distinct spatial patterning within assemblage types between units in all but one unit (DRT 4-03 N. Ext.).

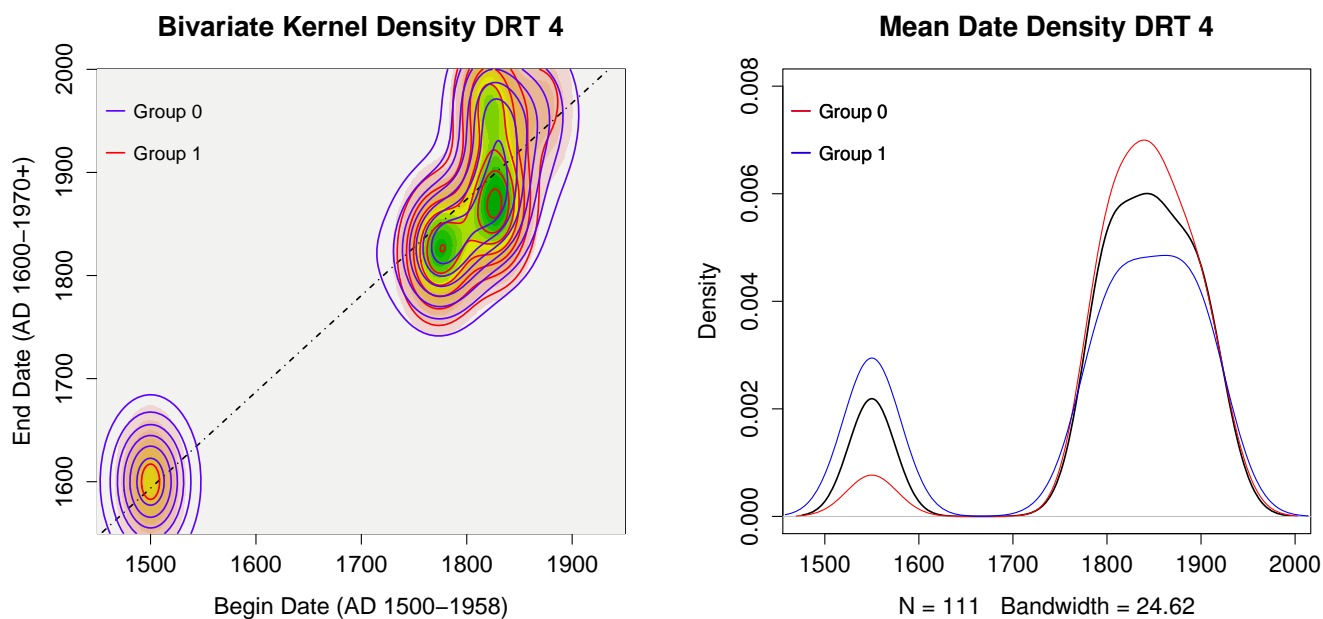
Component assemblage analysis (Figure 3.14 on the facing page), however, shows two patterns of clustered occupation deposits consisting of a primarily Native occupation assemblage and a separate historical occupation with some inclusions of Native materials (Table 3.13 on page 64). These are not significantly stratified by depth in most units, but the separate assemblage type clusters do appear to be segregated spatially. This suggests that rather than overlapping occupations of a single multi-component site, multiple low-density site loci from different periods were intersected by the trench excavations.

#### ***Stratigraphy and Features***

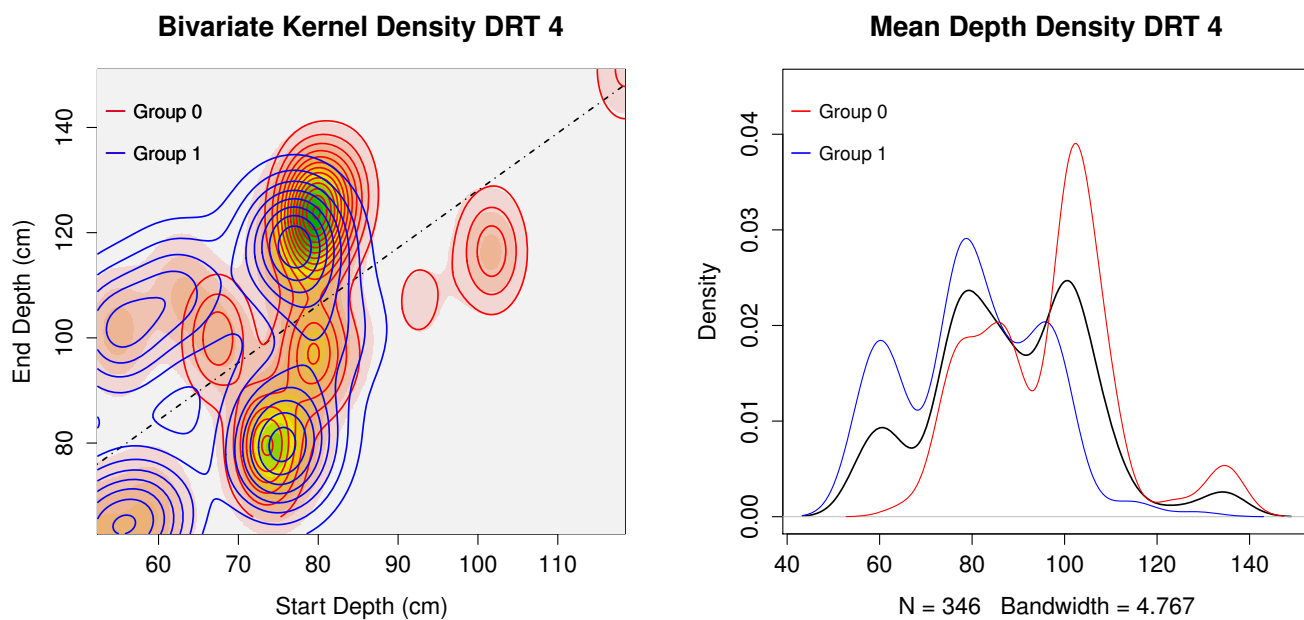
Units in DRT 4 were excavated by natural strata into sterile secondary soil horizons. The artifact bearing layers in the units had an average maximum depth of approximately 117 centimeters (~ 46 in) below datum, with the deepest cultural layer found extending to 151 centimeters (~ 59 in) in DRT 4-01, Level 2-Feat.16. Typically, three artifact-bearing soil layers were found in the units. Soil profiles of the units excavated in DRT 4 generally consist of four to five natural strata, with cultural material found exclusively in the upper two soil layers (excluding intrusive features).

The upper cultural soil layer was typically 10 to 15 centimeters (~ 4 – 6 in) of very dark grayish brown, very dark brown, or heavily mottled dark grayish and dark yellowish brown sand or sandy loam mixed with gravel and/or asphalt fragments to an average depth of 80-85 centimeters (~ 31 – 33 in) below datum. The second cultural layer consisted of 15 to 20 centimeters (~ 6 – 8 in) of dark yellowish brown, dark brown, or strong brown sand with occasionally dense pockets of gravels ending at a depth of roughly 100-105 centimeters (~ 39 – 41 in) below datum. Past this depth, the majority of artifacts found are associated with features rather than the natural soil strata. These lower, generally sterile, soils consist of a 20-centimeter (~ 8 in) layer of yellowish brown or dark yellowish brown sand above another 20-centimeter layer of light olive brown or grayish brown coarse sand with small amounts of natural gravel. In some units, there was an intermediary subsoil layer of brown sand.

Five labeled features were identified in DRT 4 (Features 15 through 19) of which two date to the nineteenth century (Features 16 and 18), one to the late nineteenth or early twentieth century (Feature 15), one of unknown date but possibly prehistoric (Feature 17), and one later determined as non-cultural (Feature 19). All features were first found in the second soil stratum of their respective units at a depth of roughly 70-80 centimeters (~ 28 – 31 in) below datum. Features 15 and 16 (soil stain and a utility pipe/trench) are relatively shallow, extending 20-30 centimeters (~ 8 – 12 in) into the lower soil layers. Feature 16 is a late nineteenth or early twentieth century pipe trench that runs the entire length of DRT 4. The feature is roughly 20 centimeters (~ 8 in) in depth and runs perfectly north to south parallel along Broadway. The trench contains an iron pipe that is encased in concrete, and likely dates prior to 1915 due to it being below the brick street paving layer that the town historian says was installed in 1915. Feature 18 is a rectangular brick and stone feature, the top of which was just below the pavement. The west side of the feature was disturbed by Feature 15, but the east side is located in soils perceived to be undisturbed original matrix (DRT 4-04, Level 2A).



**Figure 3.14:** Bivariate kernel density estimate (left) and mean density (right) of artifact diagnostic date between component groups for DR Trench 4.



**Figure 3.15:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 4.

**Table 3.13:** Summary of component assemblage groups by occupation for DRT 4.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 0	16	625	1835	# Artifacts	5		37	33	49	124
				% Group	7.20%	0.00%	28.00%	36.50%	28.30%	–
				% Occ.	31.70%	0.00%	59.70%	80.20%	67.80%	63.00%
				Depth	86.1		98.3	90.1	88.6	92
Group 1	18	299	1784	# Artifacts	12	1	41	8	16	78
				% Group	26.30%	3.10%	32.20%	15.40%	22.90%	–
				% Occ.	68.30%	100.00%	40.30%	19.80%	32.20%	37.00%
				Depth	90.9	97.5	86.6	75.2	73.5	82.6
Overall	34	924	1815	# Artifacts	17	1	78	41	65	202
				% Diag.	14.20%	1.10%	29.50%	28.70%	26.30%	–
				Depth (cm)	89.7	97.5	93.8	86.2	83.2	88.3

### Assemblage

The total artifact assemblage collected for DRT 4 consists of 924 objects, of which 22% ( $n = 202$ ) can be diagnostically associated with one of the five estimated occupation periods for the site. The mid-eighteenth century occupation, however, is represented by only one artifact (a single hand-wrought nail found in unit DRT 4-03 N Ext.), and is generally excluded from the following analysis. The remaining 78% ( $n = 722$ ) are non-diagnostic to any specific historical period, but most can be broadly associated with one or more of the historical occupations. The depth distributions of the four estimated occupation periods (see Table 3.13) show a roughly uniform cultural deposition layer with little significant stratigraphic separation.

The prehistoric Native assemblage for DRT 4 is a very low-density scatter comprised of 17 objects. The assemblage consists primarily of debitage (65%,  $n = 11$ ). Three pieces of fire-cracked rock were found, of which two were found in the first soil layer in mixed contexts with modern debris, and one was found in Feature 18. One projectile point fragment was found in Feature 17, but could not be identified to type due to the point missing its basal portion (possibly Normanskill, Lamoka, Meadowwood, or Brewerton Side-notched) that might have provided a more specific diagnostic date. In addition, one utilized flake and one general biface were found. The Native occupation materials were found at an average of unit weighted mean depths of 87 centimeters ( $\sim 34$  in) below datum, and the debitage was typically found below the fire-cracked rock by 10 centimeters ( $\sim 4$  in) or more. There is little evidence, however, of vertical stratification between the Native occupation and the later historical occupations. The Native occupation material was found in seven of the eleven units within the trench. In units DRT 4-06 and DRT 4-07, it is the only occupation diagnostic material.

The late eighteenth and early nineteenth century occupation assemblage is comprised of 78 artifacts representing 39% of the diagnostics for the trench, and is

comprised entirely of ceramic sherds. The majority of these sherds are pearlware (53%,  $n = 41$ , c.1775-1830) and creamware (46%,  $n = 36$ , c.1762-1820), with one sherd of blue underglaze hand-painted whiteware (c.1825-1835). Most of the pearlware sherds were undecorated ( $n = 27$ ), as were nearly all of the creamware sherds ( $n = 30$ ). Of the decorated pearlware, blue transfer-printed was the most common ( $n = 5$ , c.1783-1830) with small amounts of polychrome hand-painted ( $n = 4$ , c.1795-1830) and green edge-decorated ( $n = 3$ , c.1800-1830). These artifacts were found in highest concentration in units DRT 4-04 ( $n = 28$ ), DRT 4-03 North Ext. ( $n = 18$ ), and DRT 4-05 ( $n = 15$ ). Smaller amounts were also found in four other units (DRT 4-01 through DRT 4-03, DRT 4-04 North Ext.). The average of weighted mean unit depths for this occupation is 92 centimeters ( $\sim 36$  in) below datum, and appears to be in a relatively stratified chronological sequence in most of these units. In three of the units, however, it is found at an equal depth (DRT 4-03, DRT 4-04 North Ext.) or above (DRT 4-04) later occupations.

The mid-nineteenth century occupation in DRT 4 is comprised of 41 artifacts accounting for 20% of the trench's diagnostics assemblage. The majority of these (78%,  $n = 32$ ) are ceramic sherds and architectural hardware (20%,  $n = 40$ ) with one piece of amethyst bottle glass (c.1880-1914). Of the ceramic sherds, 78% ( $n = 25$ ) are various styles of whiteware with manufacture dates between 1825 and 1875. The most common of these sherds are blue transfer-printed ( $n = 11$ , c.1830-1865). Undecorated ironstone ( $n = 7$ , c.1813-1900) accounts for the remaining 22% of the ceramic sherds. All of the architectural hardware are machine cut nails ( $n = 8$ , c.1835-1875). More than half of the nineteenth century diagnostic material was found in DRT 4-04 (54%,  $n = 22$ ) at a weighted mean depth of 92 centimeters ( $\sim 36$  in) below datum, and this occupation was found in only six of the eleven units excavated in the trench. For the trench overall this material was found at an average of per unit weighted

mean depths of 85 centimeters ( $\sim 33$  in) below datum, and a trench weighted mean of 90 centimeters ( $\mu_w = 18.45$ ). The nineteenth century occupation's core deposition only appeared below the later twentieth century occupation in unit DRT 4-01. In all other cases, the later material intruded through and below the stratigraphic contexts of the mid-nineteenth century deposits. The mid-nineteenth century deposits did not substantially intrude, on average, into the earlier nineteenth century in any unit.

The late nineteenth and twentieth century occupation materials account for 32% ( $n = 64$ ) of the trench's diagnostic assemblage. The dates of materials associated with this estimated occupation period range from 1820 to the present due to the prevalence of undecorated whiteware sherds in the assemblage, but more realistically represents a period beginning circa 1875 onward ( $\mu = 1899 \pm 23$  yrs) when considered in the context of the other diagnostics in the assemblage that skew significantly into the later nineteenth century. The undecorated whiteware sherds comprise 82% ( $n = 53$ ) of this occupation's assemblage, which gives them substantial influence in the calculation of mean dates. Given the broad dates of manufacture for this type of sherd (beginning c.1820-present), these are equally indicative of this later period than diagnostic of the type's earlier use. Other diagnostics for this period are wire nails ( $n = 10$ , c.1875-present), one piece of unidentified plastic (c.1908-present), and one sherd of undecorated yellowware (c.1830-1940). These artifacts were found in low density in most units except DRT 4-03 SE Ext., DRT 4-06, and DRT 4-07, in which they were absent.

The remaining 722 artifacts collected from DRT 4 are not specifically diagnostic to any occupation period. The most common of these non-diagnostic artifacts are faunal refuse ( $n = 235$ ), brick and mortar fragments ( $n = 120$ ), and unidentified iron fragments ( $n = 59$ ). More generally, 35% of the non-diagnostic assemblage ( $n = 253$ ) consists of miscellaneous samples of material such as charcoal, botanical, soil, unmodified faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context. Historical architectural artifacts account for another 29% ( $n = 212$ ) of the non-diagnostic assemblage. These include artifacts such as brick and mortar fragments, window glass, architectural stone and ceramics, and hardware that lack specifically identifiable manufacture dates.

Most of the remaining 36% ( $n = 257$ ) of the non-diagnostic assemblage can be broadly described as 'historical' artifacts but without specific diagnostic manufacture ranges (e.g. coal and slag, kitchen bone, personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these objects (e.g. certain types of glass vessel shards) can be specified somewhat as generally being either nineteenth or twentieth century artifacts, but do not substantially contribute refinement to

the occupation analyses. A number ( $n = 49$ , 7%) of the non-diagnostic historical assemblage are ceramic sherds that either have very broad ranges of manufacture and use (e.g. porcelain, common utilitarian stoneware, redware) or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware). Since the typical use-life of many of these ceramic types span the eighteenth through twentieth centuries, they are not specifically diagnostic to a particular historical period without an identifiable decorative style. The non-diagnostic materials do not appear to cluster spatially within the trench.

### *Evaluation of Trench Integrity*

DRT 4 contains little vertical stratification of deposits in any part of the trench, and commonly exhibits total inversion and/or admixture of the estimated occupation materials. Throughout much of the trench, the low density of diagnostic material for any single occupation period in addition to the relatively narrow vertical zone of culturally productive soil layers renders what little subjective stratification that exists between individual occupations moot (Table 3.14 on the next page). There does appear, however, to be a discernible spatial pattern to the disposition of two identifiable patterned assemblage groupings within the units. In only two of the units (DRT4-03 and DRT4-05) do the two groups appear together, and only in the northern extension of DRT4-03 does there appear to be even modestly substantial mixture.

The first assemblage pattern consists of a higher density but intermingled assemblage of nineteenth century materials. The second pattern is of a low density but discrete assemblage of either prehistoric Native components or late nineteenth to twentieth century materials. Although there seems to be a temporal component to these patterns, they are not vertically stratified to a great degree. They are almost entirely segregated horizontally within the trench, however, with only one unit (DRT 4-03 N. Ext.) containing nearly equal proportions of the two types of stratigraphic components. The soil components of nine of the eleven units are primarily ( $> 90\%$ ) comprised of one or the other assemblage pattern.

The second pattern is found in the central portion of the trench (DRT 4-03 and its north, east, and southeast extensions along with DRT 4-06, and DRT 4-07), while the diffused first pattern occurs on either end of the trench. This spatial pattern also corresponds to the presence of Native diagnostic materials in the units, suggesting that the later nineteenth to twentieth century material associated with the second pattern of lower density may simply overlay the nominally intact Native deposition. Native occupation materials do occur in units that are primarily comprised of the high-density nineteenth century assemblage pattern, but at a much lower frequency. Although vertical stratification does not appear

**Table 3.14:** Sample and depth of occupation artifacts by unit for DR Trench 4.

	DRT 4-01	DRT 4-02	DRT 4-03	DRT 4-03 E Ext.	DRT 4-03 N Ext.	DRT 4-03 SE Ext.	DRT 4-04	DRT 4-04 N Ext.	DRT 4-05	DRT 4-06	DRT 4-07	Grand Total
<b>Native</b>												
# Artifacts	–	2	3	–	–	2	2	–	2	3	3	17
% Unit	–	11%	17%	–	–	13%	15%	–	15%	15%	15%	–
% Occ.	–	17%	28%	–	–	100%	5%	–	17%	100%	100%	14%
Depth (cm)	–	78	97	–	–	80	97	–	79	95	89	90
<b>Mid-18th</b>												
# Artifacts	–	–	–	–	1	–	–	–	–	–	–	1
% Unit	–	–	–	–	100%	–	–	–	–	–	–	–
% Occ.	–	–	–	–	8%	–	–	–	–	–	–	1%
Depth (cm)	–	–	–	–	98	–	–	–	–	–	–	98
<b>18th-19th</b>												
# Artifacts	2	5	8	–	18	–	28	2	15	–	–	78
% Unit	2%	12%	8%	–	20%	–	41%	2%	15%	–	–	–
% Occ.	7%	40%	28%	–	39%	–	30%	49%	37%	–	–	30%
Depth (cm)	109	103	72	–	102	–	95	75	79	–	–	94
<b>Mid-19th</b>												
# Artifacts	7	2	2	–	4	–	22	–	4	–	–	41
% Unit	18%	4%	4%	–	12%	–	52%	0%	10%	–	–	–
% Occ.	79%	14%	14%	–	23%	–	36%	0%	23%	–	–	29%
Depth (cm)	97	78	63	–	87	–	91	–	72	–	–	86
<b>19th-20th</b>												
# Artifacts	3	7	4	1	11	–	31	1	7	–	–	65
% Unit	3%	9%	10%	1%	18%	–	46%	2%	11%	–	–	–
% Occ.	13%	29%	31%	100%	31%	–	29%	51%	23%	–	–	26%
Depth (cm)	84	88	70	66	93	–	91	75	65	–	–	83
<b>Occ. Total</b>												
	12 6%	16 9%	17 9%	1 0%	34 15%	2 2%	83 41%	3 1%	28 12%	3 2%	3 2%	202 –

**Table 3.15:** Sample and depth of component group artifacts by unit for DR Trench 4.

	DRT 4-01	DRT 4-02	DRT 4-03	DRT 4-03 E Ext.	DRT 4-03 N Ext.	DRT 4-03 SE Ext.	DRT 4-04	DRT 4-04 N Ext.	DRT 4-05	DRT 4-06	DRT 4-07	Grand Total
<b>Group 0</b>												
# Artifacts	-	-	44	-	112	5	-	22	80	25	11	299
% Group	-	-	16%	-	35%	3%	-	9%	25%	5%	6%	-
% Unit	-	-	94%	-	76%	100%	-	100%	97%	100%	100%	37%
Depth (cm)	-	-	70	-	97	80	-	75	70	91	80	81
<b>Group 1</b>												
# Artifacts	79	81	2	9	38	-	415	-	1	-	-	625
% Group	10%	15%	1%	1%	6%	-	66%	-	1%	-	-	-
% Unit	100%	100%	7%	100%	24%	-	100%	-	3%	-	-	63%
Depth (cm)	102.8	95	91	71	87	-	94	-	73	-	-	94
<b>Group Total</b>												
	79	81	46	9	150	5	415	22	81	25	11	924
	7%	10%	6%	1%	17%	1%	42%	3%	10%	2%	2%	-

to occur significantly within either assemblage pattern, the clean horizontal differentiation does suggest a degree of spatial integrity of deposits. The vertical distribution of these two component assemblage groups, however, does not appear to have any significant shift in depth and they appear at roughly equivalent depths within their respective horizontal units.

The degree to which these patterns are a result of their primary depositional locations or secondary land-use disturbances is unclear. The relative segregation within the trench overall suggests the strong possibility that the locations, if not the stratigraphic components, are original. The intermixing of estimated occupation diagnostics within stratigraphic layers and the presence of significant localized disturbances (i.e. the pipe trench of Feature 15/16) clearly indicates a low integrity of the trench's stratigraphic components vertically. If, however, the spatial associations horizontally were byproducts of such disturbances then one would expect a more evenly distributed admixture or a horizontal distinction correlating to the disturbed versus undisturbed locations. This is not the case here. The spatial distinction intersects the linear run of the main disturbance and utilities. This suggests more that the disturbance instead likely cut through the spatially patterned locations of the initial primary deposits.

### DR Trench 5 (DRT5)

DRT 5 is located along the northeastern side of Broadway, running roughly 30 meters (98 ft) southeast from the intersection with Notre Dame Street and covering an area of approximately 63 square meters (678 ft<sup>2</sup>). Fourteen units of various sizes were excavated in this area totaling 18 square meters (194 ft<sup>2</sup>), from which 2,944 arti-

facts were collected. Excavations in this area were concentrated in the southern half of the delineated trench area with no subsurface testing conducted in the northern half during the data recovery. Artifact density for this trench (167 per m<sup>2</sup>) is slightly lower than that found in DRTs 1 and 2, but with similar stratigraphic complexity. Mid- to late-nineteenth century material is proportionally somewhat high in this trench but not prominently so, with material from the other estimated occupation periods present in proportion to the overall site mean representation. Excavations in this trench, however, were significantly deeper with deeper and more substantial feature disturbances than in the other trenches. Although the proportion of Native occupation materials is relatively low for the trench as a whole, there were significant concentrations found in units DRT5-02 and DRT5-04.

Examination of the component assemblages (Figure 3.16 on page 69) show a similar bi-modal pattern of artifact content as that found in DR Trenches 1 and 2, but with far less distinction among occupation period representation. This suggests more of a difference in depositional disturbance event rather than the type of stratified occupation disturbance discussed previously. In the case of DRT 5, there is a slight difference of earlier and later occupation period proportions but not nearly in such a pronounced pattern as seen in the other trenches (Table 3.16 on page 70). This may also be due to the effects of more deeply intrusive feature trenches. In DRT 5, this bi-modal pattern correlates to depth only in a few units. Conversely, there is a relatively strong pattern of stratigraphic depth correlations to estimated occupation period in most units. In this case, the differences in the two component assemblage patterns appears to be segregating greater and lesser



occupation period admixture instead of the chronologically proportional mixing itself as apparent in the other locations. In addition, the eighteenth century materials show a distinct and separate deeper concentration in DRT5-04 (Group 0) that is likely indicative of an intact deep intrusive feature related to the eighteenth century occupation.

### *Stratigraphy and Features*

Units in DRT 5 were excavated by natural strata into sterile secondary soil horizons. The artifact bearing layers in the units had an average maximum depth of approximately 162 centimeters (~ 64 in) below datum, with the deepest cultural layer found extending to 226 centimeters (~ 89 in) in DRT 5-04, Feature 26. Typically, four or five artifact-bearing soil layers were found in the units (ranging between one and twelve strata). The typical soil characteristics of the natural strata, setting aside the cultural deposition, consists of a roughly 30 to 40 centimeter (~ 12 – 16 in) layer of dark grayish brown loam or silty sand above a 30 to 50 centimeter (~ 12 – 20 in) deep layer of dark yellowish brown (often compact) sand or silty sand. Both of these soil layers are culturally productive, and are frequently subdivided by cultural deposition strata incorporating gravel or intrusively protruding through lower soil strata. These cultural layers are above a deep layer of yellowish brown or olive brown sand or silty sand that represents the natural subsoil. In several units, however, the darker upper soils and their cultural material have intruded deeply into the subsoil up to depths of two meters or more below datum.

Twelve labeled features (Features 20 through 31) were found in DRT 5 of which three are positively identified with the mid-eighteenth century (Features 21, 23, and 26), two with the nineteenth century village occupation (Features 28 and 30), two that are identified as unknown historical period (Features 27 and 29), and six that cannot be associated by any temporal diagnostics (Features 20, 22, 24-25, and 31). No prehistoric Native features were identified. Most features were found to begin in the second or third soils layer between roughly 80 and 100 centimeters (~ 31 – 39 in) below datum. The mid-eighteenth century features, a latrine pit (21), an outwork ditch (26), and a refuse pit (23) are clearly associated with the French and Indian War period fortifications and occupation.

Several of the nineteenth century features were identified as soil stains or charcoal stains, two being possible utility trenches (Features 27 and 29). Feature 30 was a water shutoff valve buried at 170 centimeters (~ 67 in) below the ground surface at the base of a wooden box standpipe. Feature 28 was a large, basin-shaped pit approximately 2 meters (~ 79 in) across (along its north-south axis) and 66 centimeters (~ 26 in) deep. The upper portion of this feature was likely affected by early roadway surfacing, and it is truncated on both its east

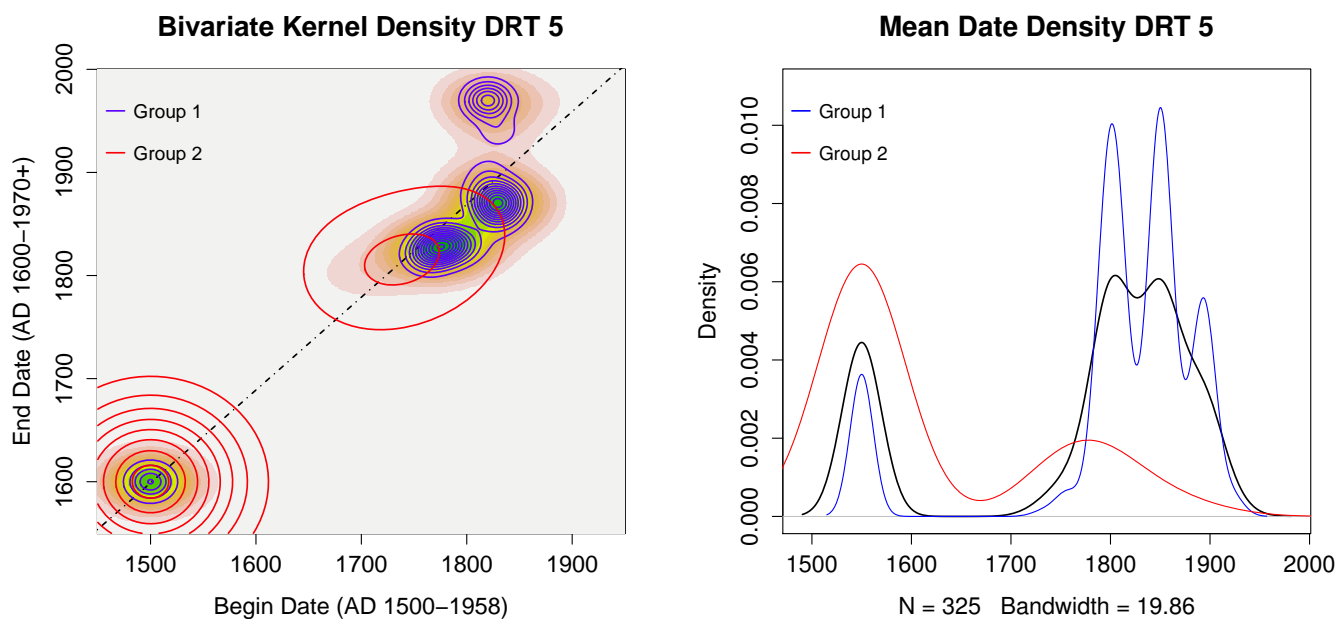
and west sides by utility trenches. Alternatively, Feature 28 may also be related to repair or installation of those utilities sometime in the nineteenth century.

### *Assemblage*

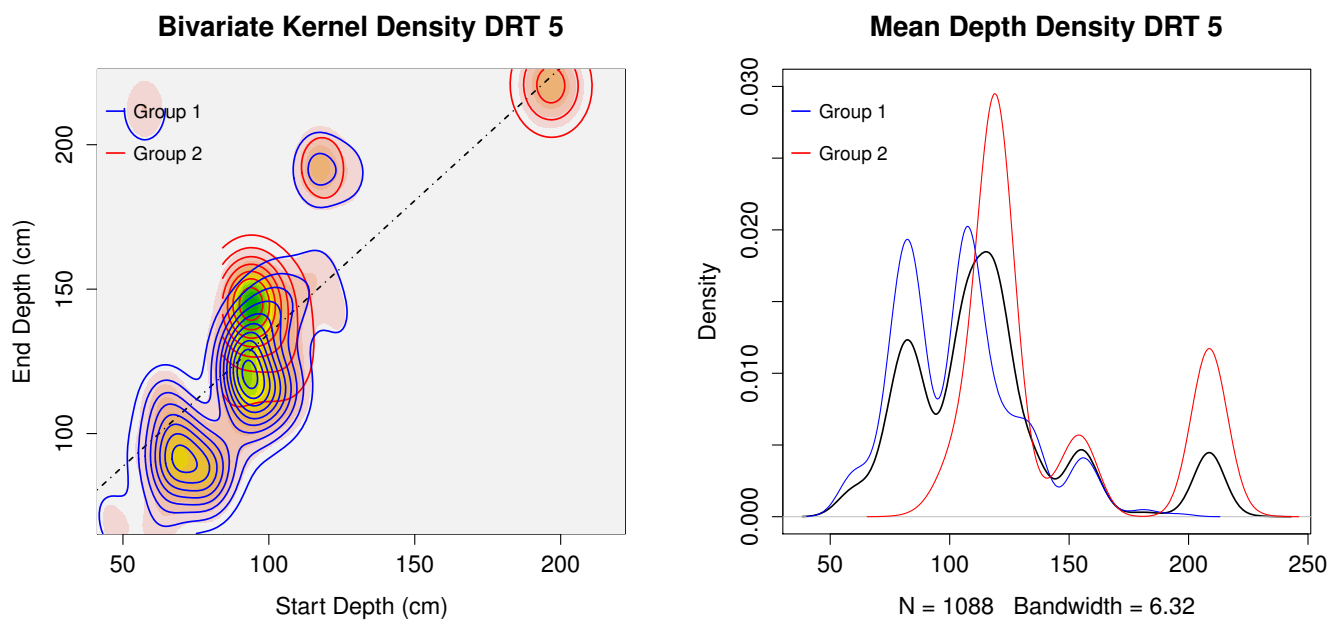
The total artifact assemblage collected for DRT 5 consists of 2,944 objects, of which 23% ( $n = 684$ ) can be diagnostically associated with one of the five estimated occupation periods for the site. The remaining 77% ( $n = 2,260$ ) are non-diagnostic to any specific historical period, but most can be broadly associated with one or more of the later historical occupations. DRT 5 proportionally contains a somewhat higher concentration of mid-nineteenth to twentieth century diagnostics than the average for the project area, and there is little clearly discernible spatial patterning to the horizontal deposition in terms of overall assemblage type densities such as found in DRT 4. The prehistoric Native diagnostics do cluster with somewhat higher densities into the central and southern portions of the trench, and the mid-eighteenth century occupation is primarily concentrated in unit DRT 5-04 within the outwork trench labeled Feature 26. Vertical stratification of occupation deposits is typically minimal, and is compressed into the upper soil layers except for the deeper trench features.

The stratigraphy of this trench is complicated by the presence of multiple deeply intrusive features that render simple descriptive summaries of the trench impractical. Although there is some vertical stratification of the various occupation period diagnostics overall, the temporal sequencing of occupations within units is dependent on the presence or absence of multiply intrusive features or other partially inverted deposits. In general, the later materials from the mid-nineteenth to twentieth century are largely intermixed above the early nineteenth century materials. The early nineteenth century occupation artifacts are found in an occasionally intact sequence above eighteenth century and Native occupation layers, and the eighteenth century materials are generally found above the Native diagnostics excluding the deep eighteenth century features.

The prehistoric Native assemblage of DRT 5 consists of a moderate density scatter of 110 artifacts, primarily of lithic debitage (62%,  $n = 68$ ) and fire-cracked rock (30%,  $n = 33$ ). The remaining 8% of the assemblage is comprised of four biface fragments, two unidentified projectile point fragments, two utilized flakes, and a single hammer stone. No temporally diagnostic prehistoric artifact types were found. The majority of the lithic debitage collected ( $n = 47$ ) are un-typed fragmentary chert flakes and shatter, but the remaining 21 flakes represent primary through tertiary reduction and bi-facial thinning. The Native occupation diagnostic materials were found at an average of weighted mean unit depth of 122 centimeters (~ 48 in) below datum with an overall weighted mean trench depth of 131 centimeters



**Figure 3.16:** Bivariate kernel density estimate (left) and mean density (right) of diagnostic artifact date between component groups for DR Trench 5.



**Figure 3.17:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 5.

**Table 3.16:** Summary of component assemblage groups by occupation for DRT 5.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 1	44	1,781	1825	# Artifacts	15	9	229	138	123	514
				% Group	4.60%	1.70%	38.00%	37.00%	18.70%	–
				% Occ.	15.10%	33.40%	90.10%	96.40%	93.20%	73.50%
				Depth	111	111.6	106.8	100	101.1	103.7
Group 2	23	1,130	1619	# Artifacts	95	7	21	6	8	137
				% Group	73.40%	6.80%	11.90%	4.00%	3.90%	–
				% Occ.	84.90%	46.10%	9.90%	3.60%	6.80%	25.70%
				Depth	130.1	142.3	134	117.9	126.7	130.7
Group 3	1	33	1756	# Artifacts	–	33	–	–	–	33
				% Group	–	100.00%	–	–	–	–
				% Occ.	–	20.50%	–	–	–	0.80%
				Depth	–	223	–	–	–	223
Overall	68	2,944	1733	# Artifacts	110	49	250	144	131	684
				% Diag.	22.30%	3.80%	31.00%	28.20%	14.70%	–
				Depth	126.4	134.9	110.9	101	104.7	111.8

(~ 52 in) below datum. In units with no deeply intrusive historical features, the Native diagnostics were found below historical deposits. Such clean vertical stratification is only evident, however, in less than a third of the units. Native artifacts were found in all but two of the units (DRT 5-02 S Ext. and DRT 5-05), with somewhat higher than average concentrations found in DRT 5-04 and its extensions, DRT 5-01, and DRT 5-02 SW Ext.

The mid-eighteenth century or French and Indian war occupation period assemblage for DRT 5 consists of 49 artifacts with a weighted mean date range of 1739 to 1771. The majority of these (71%,  $n = 35$ ) came from the bottom layers of Feature 26 (outwork trench) in unit DRT 5-04 at a depth of between 192 and 226 centimeters (~ 89 in) below datum. The other 14 mid-eighteenth century artifacts were found in low-density deposits in seven other units. Excluding the material from Feature 26, these were found at an average of weighted mean unit depths of 114 centimeters (~ 45 in) below datum and an overall frequency-weighted mean depth of 116 centimeters (~ 46 in) below datum. All but four of the artifacts for this occupation are ceramic sherds, of which 89% of those ( $n = 40$ ) are of monochrome delftware (c.1709-1802) and all but six of those sherds were found in the assemblage of Feature 26. In addition to the delftware, three sherds of yellow lead-glazed buff earthenware (c.1670-1795) and two of white salt-glazed stoneware (c.1720-1780) were found. The remaining four non-ceramic artifacts are all hand-wrought nails (c.1700-1820) of which one is of the 'rose'-head type.

The late eighteenth and early nineteenth century occupation assemblage is comprised of 250 artifacts representing 37% of the diagnostics for the trench. This assemblage is comprised entirely of ceramic sherds. The majority of these sherds are pearlware (59%,  $n = 147$ ,

c.1775-1830) and creamware (40%,  $n = 100$ , c.1762-1820), with three sherds of blue underglaze hand-painted whiteware (c.1825-1835). Most of the pearlware sherds were undecorated ( $n = 84$ ), as were nearly all of the creamware sherds ( $n = 98$ ). Of the decorated pearlware, polychrome hand-painted was the most common ( $n = 31$ , c.1795-1830) followed by blue transfer-printed ( $n = 17$ , c.1783-1830). Small numbers of blue edge-decorated ( $n = 5$ , c.1780-1830), blue hand-painted ( $n = 4$ , c.1775-1830), molded ( $n = 3$ , c.1800-1820), black transfer-printed ( $n = 2$ , c.1783-1830), and green edge-decorated sherds ( $n = 1$ , c.1800-1830) were also found. Artifacts from this occupation were found in all of the trench's units, but were found in highest concentration in units DRT 5-04 ( $n = 52$ ), DRT 5-07 ( $n = 46$ ), DRT 5-06 ( $n = 32$ ), and DRT 5-03 ( $n = 26$ ). The average of weighted mean unit depths for this occupation is 111 centimeters (~ 44 in) below datum. Interestingly, the higher concentration units listed above show the least intact vertical sequencing of this occupation. In most of these units, the later nineteenth and twentieth century materials intrude through and below the earlier nineteenth century deposits. The lower density units are more likely to have the earlier nineteenth century materials at the greater depth.

The mid-nineteenth century occupation in DRT 5 is represented by 144 diagnostic artifacts with an average weighted mean date of 1851 ( $\pm 9$  yrs). This assemblage consists of ceramic sherds (70%,  $n = 101$ ) and architectural hardware (30%,  $n = 43$ ), which is similar to the composition for this occupation's assemblage in most of the trenches (the mean distribution overall being 72% and 28%, respectively). Diagnostic artifacts for this occupation were found at an average of weighted mean depths of 103 centimeters (~ 41 in) below datum (overall weighted mean 99.8cm,  $\mu_w = 22.5$ ). Artifacts

for this occupation were found in all but three of the units excavated (DRT 5-02 SW Ext., DRT 5-02 S Ext., and DRT 5-02B) with significant concentrations found in units DRT 5-06 ( $n = 26$ ), DRT 5-02 West Ext. ( $n = 20$ ), DRT 5-04 ( $n = 20$ ), and DRT 5-03 ( $n = 18$ ). The ceramic types represented in this assemblage are primarily whiteware (85%,  $n = 86$ , c.1825-1885), with the remaining 15% roughly divided between buff and brown salt-glazed stoneware (8%,  $n = 8$ , c.1820-1900) and undecorated ironstone (7%,  $n = 7$ , c.1813-1885). The architectural hardware consisted of machine-cut nails ( $n = 42$ , c.1835-1875) and one unidentified cut nail fragment. These were found in relatively even distribution across the whole trench.

The late nineteenth and twentieth century occupation materials account for 19% ( $n = 131$ ) of the diagnostic assemblage of DRT 5. The dates of materials associated with this estimated occupation period range from 1820 to present due to the prevalence of undecorated whiteware sherds in the assemblage, with a mean occupation date of 1896 ( $\pm 16$  yrs). Undecorated whiteware sherds account for 82% of this occupation's assemblage ( $n = 108$ ). Given the broad dates of manufacture for this type of sherd (beginning c.1820), these are more indicative of this later period than diagnostic of the type's earlier use. Other diagnostics for this period are undecorated yellowware ( $n = 14$ , c.1830-1940) and wire nails ( $n = 9$ , c.1875-present). Diagnostic materials for this occupation were found in all but one of the units excavated (DRT 5-02B), with relative concentrations found in units DRT 5-06 ( $n = 26$ ), DRT 5-04 ( $n = 23$ ), DRT 5-03 ( $n = 17$ ), and DRT 5-01 ( $n = 17$ ). Artifacts from this occupation were found at an average of weighted mean unit depths of 104 centimeters ( $\sim 41$  in) below datum (102.8 overall,  $\mu_w = 21.76$ ), which is below the averages for the earlier nineteenth century deposits. This pattern holds throughout most of the trench, with even nominal stratification occurring in only two units (DRT 5-02A and DRT 5-02 SW Ext.).

The remaining 2,260 artifacts collected from DRT 5 are not specifically diagnostic to any occupation period. The most common of these non-diagnostic artifacts by far is faunal refuse ( $n = 1,226$ ), which represents 54% of the non-diagnostic assemblage. Although faunal materials are consistently the most common non-diagnostic artifact, this proportion of faunal material is significantly higher than found at any other location of the data recovery (overall average 29%). Historical architectural artifacts account for another 22% ( $n = 502$ ) of the non-diagnostic assemblage. These include objects such as brick and mortar fragments, window glass, architectural stone and ceramics, and hardware that lack specifically identifiable manufacture dates. Non-diagnostic ceramic sherds comprise 6% ( $n = 132$ ) of the assemblage. These either have very broad ranges of manufacture and use (e.g. porcelain, common utilitarian stoneware, redware)

or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware).

Miscellaneous samples of material such as charcoal, botanical, soil, unmodified faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context account for another 4% ( $n = 101$ ). Most of the remaining 13% of the non-diagnostic assemblage ( $n = 302$ ) can be broadly described as 'historical' artifacts but without specific diagnostic manufacture ranges (e.g. coal and slag, kitchen bone, personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these objects (e.g. certain types of glass vessel shards) can be specified somewhat as generally being either nineteenth or twentieth century artifacts, but do not substantially contribute refinement to the occupation analyses.

### *Evaluation of Trench Integrity*

The stratigraphic components in DRT 5 fall into three distinct groups of mixed occupation assemblages, which essentially represent three vertically stratified deposits of multiple occupation layers (see Table 3.16 on the facing page). The first assemblage grouping consists primarily of Native and early eighteenth century occupation materials found at a weighted mean depth of 152 centimeters ( $\sim 60$  in) below datum. The second group is largely composed of early nineteenth century occupation materials with the inclusion of a substantial number of Native artifacts and a higher proportion of intrusive later nineteenth and twentieth century materials. This group is found at a weighted mean depth of 123 centimeters ( $\sim 48$  in) below datum, and it appears to represent a transitional stratum of mixed occupation assemblages. The third group of components is composed of later nineteenth and twentieth century artifacts with few materials from the earlier occupations. This last group is found at a weighted mean depth of 102 centimeters ( $\sim 40$  in) below datum.

The gross stratification of these assemblage groups is obvious, but the vertical sequence of diagnostic artifacts and occupation layers is less clear within individual excavation units (Table 3.17 on page 73). Chronologically intact vertical stratification of the estimated occupation periods occur in roughly half of the units in the trench. The stratification of the three assemblage groups, however, is consistent with the dominant temporal aspect of the assemblages in all but three of the units. Assessment is also somewhat complicated by relative spatial clustering of the earlier occupation periods within a few units, whereas the nineteenth through twentieth century occupations are more evenly dispersed across the trench area. The ambiguous and seemingly inconsistent stratification apparent in the occupation assemblages of DRT 5 demonstrates significant disturbances of the expected sequences in most of the units excavated. Some of this disturbance is due to construction during the

nineteenth century occupations, but some is related to the earlier eighteenth century occupation features (e.g. the outwork ditch and latrine pits) that appear to be relatively intact. Another factor affecting the vertical position of the mid-eighteenth century material is its concentration in Feature 26 of unit DRT 5-04 that accounts for 70% of the occupation's assemblage.

In evaluating the integrity of DRT 5, it is pertinent to note that the trench is not 'intact' in the sense of discretely stratified occupation deposits. In most of the stratigraphic components, there is substantial intermixing of occupation period diagnostic materials and few component assemblages are entirely associated with a single occupation period. In addition, the presence of deeply intrusive landscape modification features renders direct association of depth and diagnostic age inappropriate. The trench does retain, however, a relative integrity of overall stratification in the vertical disposition of occupation period materials in that the components comprised admixtures of occupation periods are vertically distinct and sequential.

The core densities of the diagnostic assemblages for the estimated occupation periods are vertically stratified throughout much of the trench (excepting feature intrusions). These diagnostic assemblages tend to occur in three discrete admixtures (see Table 3.16 on page 70). Admixtures of Native and eighteenth century assemblages are distinct and typically below admixtures of early and mid-nineteenth century assemblages, which are in turn below admixtures that are predominately of later nineteenth and twentieth centuries. This average vertical distribution is inverted only in three of the units, and the inversion in two of those units is between admixtures of the later occupation periods that are only marginally distinct in component ages. Only in one unit (DRT 5-04 S Ext.) is there a full stratigraphic inversion involving temporally significant distinct occupations (i.e. Native and late nineteenth century materials).

Although DRT 5 is not stratigraphically intact in terms of its diagnostic occupation layers, it does retain significant integrity of its relative vertical distribution for occupation diagnostic artifacts and discrete clustering of the earliest occupation materials. The intrusion of the eighteenth century occupation into the earlier Native occupation is primarily localized in unit DRT 5-04, and the later nineteenth and twentieth century occupations intrude superficially into the vertical zone of the early nineteenth and earlier occupation periods. The other Native occupation period materials are in a diffuse distribution throughout the trench and are only interrupted by the deep mid-eighteenth century features, which is consistently below the nineteenth century and later occupation materials. The mid-eighteenth century material is locally clustered into these features, and is otherwise consistently below later occupation period materials. The early nineteenth century occupation materi-

als are consistently below the later occupation periods. The mid-nineteenth and twentieth century materials are more intermixed throughout the trench, and are typically found at inverted or equal depths.

### ***DR Trench 6 (DRT6)***

DRT 6 is an area of roughly 53 square meters (570 ft<sup>2</sup>) running 23 meters (75 ft) centered between DRT 4 and 5 along the northeast side of Broadway. Fourteen units of varying size totaling 19 square meters (205 ft<sup>2</sup>) were excavated in this area, from which 1,682 artifacts were collected. Artifacts related to the prehistoric Native occupation period dominate the diagnostics assemblage for this trench, representing fully half ( $n = 379$ ) of the diagnostics collected, 23% of the total collected artifacts for the trench, and 27% of the prehistoric materials collected from all six of the DR trenches. In particular, DRT 6 contained the highest concentrations of lithic debitage of the data recovery locations. Only DRT 2, which is right across the street, contained a higher number and density of prehistoric material and it is probable that the prehistoric deposits are associated. The other diagnostic characteristic of this trench location is a prevalence of eighteenth and early-nineteenth century material, which together account for another 40% ( $n = 300$ ) of the diagnostics assemblage of the trench. The remaining 10% of the diagnostics ( $n = 72$ ) are related to the late-nineteenth and twentieth century occupations.

Component assemblages in DRT 6 fall cleanly into two patterns of deposition, with one group comprised mainly of prehistoric Native materials and the other group primarily containing materials related to the nineteenth century and later occupations. The differential diagnostic composition of these assemblage groups is somewhat more distinct than that found in some of the other trenches, but in DRT 6 this is paired with a more complicated stratigraphic matrix (Figure 3.18 on page 74) of occupation-specific components. There are significant correlations between depth and occupation period or diagnostic date in a number of the excavated units, but the aggregate effect of localized features and/or disturbances renders the trench-wide stratigraphic sequencing ambiguous.

Like most of the other trench excavations, the depth distributions of all but the Native occupation period artifacts are multimodal. In this trench, however, the vertical nodes of material concentrations show similar densities for all historical occupation periods (Table 3.19 on page 76). This suggests stratigraphic components that have been subject to more thorough inversions and admixture, but also suggests that these components may have different horizontal distributions masking overall integrity of vertical stratification within local depositional events. The Native artifacts, however, are very distinctly a standard normal distribution that is (unlike most other trenches) seemingly independent of the dis-

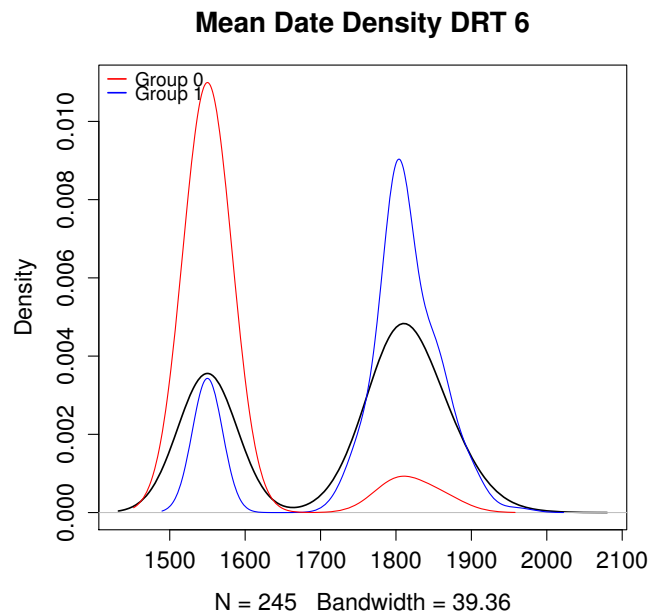
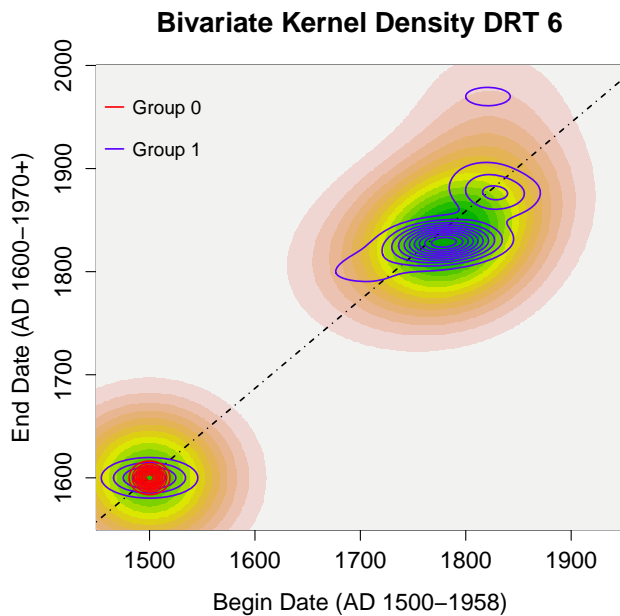
**Table 3.17:** Sample and depth of occupation artifacts by unit for DR Trench 5.

	DRT 5-01	DRT 5-02	DRT 5-02 S/W Ext	DRT 5-02 S Ext.	DRT 5-02 W Ext.	DRT 5-02A	DRT 5-02B	DRT 5-03	DRT 5-04	DRT 5-04 N Ext.	DRT 5-04 S Ext.	DRT 5-05	DRT 5-06	DRT 5-07	Total
<b>Native</b>															
# Artifacts	17	3	15	–	2	7	6	11	30	6	5	–	5	3	110
% Unit	17%	3%	12%	–	2%	7%	7%	9%	27%	6%	4%	–	5%	3%	–
% Occ.	29%	9%	77%	–	5%	40%	67%	19%	31%	38%	35%	–	8%	8%	22%
Depth (cm)	112	108	132	–	116	111	108	128	156	125	111	–	132	125	126
<b>Mid-18th</b>															
# Artifacts	4	1	–	–	–	1	1	–	35	2	–	4	–	1	49
% Unit	33%	7%	–	–	–	1%	8%	–	31%	8%	–	3%	–	8%	–
% Occ.	10%	4%	–	–	–	1%	14%	–	6%	9%	–	3%	–	4%	4%
Depth (cm)	112	109	–	–	–	111	108	–	213	117	–	126	–	116	135
<b>18th-19th</b>															
# Artifacts	14	21	3	1	17	11	5	26	52	12	2	8	32	46	250
% Unit	7%	8%	2%	1%	7%	5%	1%	11%	19%	4%	1%	4%	13%	17%	–
% Occ.	16%	33%	17%	63%	30%	42%	18%	32%	31%	38%	10%	33%	27%	61%	31%
Depth (cm)	95	100	120	93	83	82	108	120	133	101	159	113	113	117	111
<b>Mid-19th</b>															
# Artifacts	18	19	–	–	20	2	–	18	20	2	8	5	26	6	144
% Unit	13%	13%	–	–	13%	2%	–	11%	13%	1%	4%	5%	21%	5%	–
% Occ.	28%	46%	–	–	51%	13%	–	30%	19%	10%	46%	37%	41%	17%	28%
Depth (cm)	84	103	–	–	89	84	–	112	96	101	143	106	99	132	101
<b>19th-20th</b>															
# Artifacts	17	7	2	2	11	2	–	17	23	2	2	10	26	10	131
% Unit	15%	4%	1%	1%	7%	1%	–	14%	17%	1%	2%	6%	23%	6%	–
% Occ.	17%	8%	5%	37%	15%	5%	–	19%	13%	6%	9%	27%	24%	11%	15%
Depth (cm)	95	98	114	76	95	67	–	109	109	101	159	108	108	108	105
<b>Occ. Total</b>															
	70	51	20	3	50	23	12	72	160	24	17	27	89	66	684
	13%	8%	3%	1%	7%	4%	2%	11%	19%	3%	3%	4%	15%	9%	–

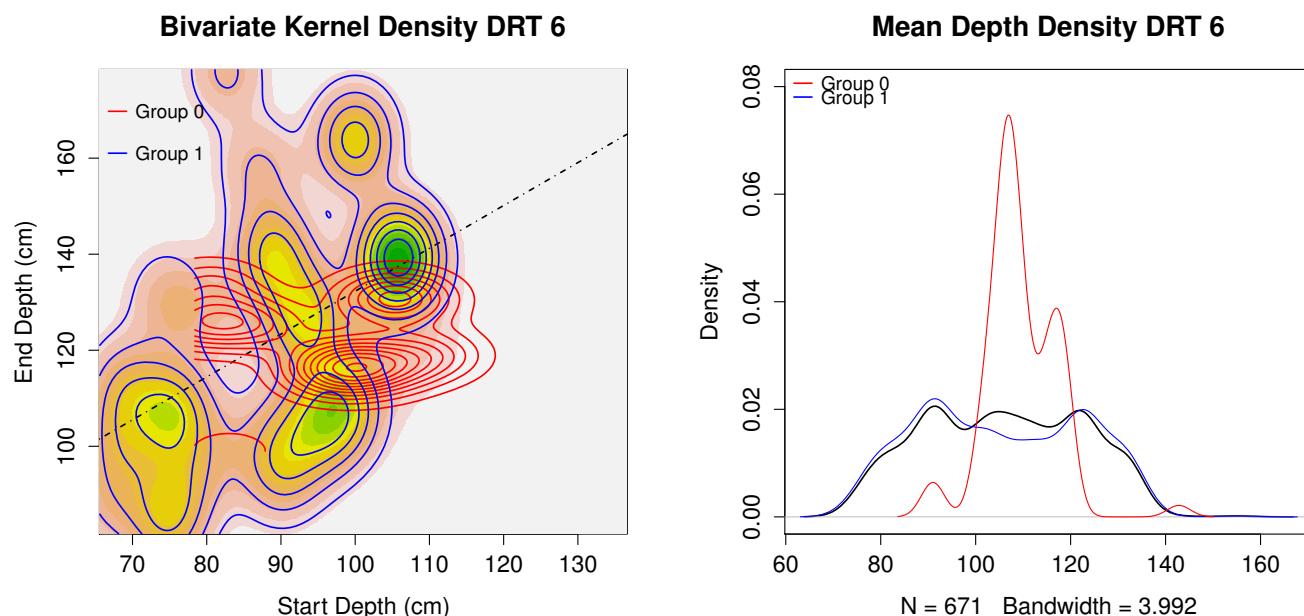


**Table 3.18:** Sample and depth of component group artifacts by unit for DR Trench 5.

	DRT 5-01	DRT 5-02	DRT 5-02 S/W Ext.	DRT 5-02 S Ext.	DRT 5-02 W Ext.	DRT 5-02A	DRT 5-02B	DRT 5-03	DRT 5-04	DRT 5-04 N Ext.	DRT 5-04 S Ext.	DRT 5-05	DRT 5-06	DRT 5-07	Total
<b>Group 1</b>															
# Artifacts	308	206	16	16	93	48	–	175	274	76	52	85	278	154	1,781
% Group	16%	11%	1%	1%	7%	3%	–	10%	15%	4%	3%	4%	16%	9%	–
% Occ.	58%	100%	31%	100%	94%	62%	–	84%	57%	92%	72%	100%	95%	100%	74%
Depth (cm)	83	101	94	82	88	66	–	109	108	108	159	111	106	119	102
<b>Group 2</b>															
# Artifacts	600	–	29	–	5	40	76	27	324	5	12	–	12	–	1,130
% Group	34%	–	7%	–	1%	5%	8%	5%	32%	1%	3%	–	3%	–	–
% Occ.	42%	–	70%	–	7%	38%	100%	16%	41%	8%	28%	–	5%	–	26%
Depth (cm)	120	–	130	–	151	111	108	122	184	145	111	–	132	–	139
<b>Group 3</b>															
# Artifacts	–	–	–	–	–	–	–	–	33	–	–	–	–	–	33
% Group	–	–	–	–	–	–	–	–	100%	–	–	–	–	–	–
% Occ.	–	–	–	–	–	–	–	–	1%	–	–	–	–	–	–
Depth (cm)	–	–	–	–	–	–	–	–	223	–	–	–	–	–	223
<b>Group Total</b>															
	908	206	45	16	98	88	76	202	631	81	64	85	290	154	2,944
	21%	8%	3%	1%	5%	4%	2%	9%	20%	3%	3%	3%	13%	7%	–



**Figure 3.18:** Bivariate kernel density estimate (left) and mean density (right) of diagnostic artifact date between component groups for DR Trench 6.



**Figure 3.19:** Bivariate kernel density estimate (left) and mean density (right) of artifact depth between component groups for DR Trench 6.

tributions of the other occupation periods. The deepest node of historical deposition is clearly below the Native occupation's core depths, and contains a relatively even admixture of all historical periods. This strongly indicates an otherwise intact stratigraphic zone of Native occupation deposition that is perforated by later historical and modern intrusions below that layer's depth.

### *Stratigraphy and Features*

Units in DRT 6 were excavated by natural strata into sterile secondary soil horizons. The artifact bearing layers in the units had an average maximum depth of approximately 138 centimeters (~ 54 in) below datum, with the deepest cultural layer found extending to 179 centimeters (~ 70 in) in DRT 6-06 NE Ext., Level 2/3/4. Typically, three or four artifact-bearing soil layers were found in the units (ranging between one and nine strata). Integrity of natural soil strata in DRT 6 is difficult to determine due to the high degree of variation in the number of identified levels between units. The upper layers of the trench have a large diversity in soil characteristics due to the upper level disturbances and historical landscape modifications in this part of the project area. The idiosyncratic upper soil layers do give way, however, to more consistent secondary layers and subsoil.

The 'typical' upper layer of the units was a 10-30 centimeter (~ 4 – 12 in) layer of dark brown, dark yellowish brown or dark grayish brown mottled sand or sandy loam with gravel, clay, and/or asphalt inclusion. The secondary layer is generally 30-40 centimeters

(~ 12 – 16 in) thick, and comprised of a mixture of very dark grayish brown sandy clay or dark yellowish brown silty or coarse sand. In some units, these typical profiles were subdivided as three or four unit levels depending on local variations in soil characteristics or presence of additional intermediary or transitional soil lenses. In most cases, however, only the upper 70 centimeters (~ 28 in) of excavation (~ 140 cm/55 in below datum) were culturally productive regardless of the number of level subdivisions. Below these depths, artifact density dropped significantly with the exception of deeply intrusive historical features. The secondary soil layers below the main cultural deposition typically consisted of a 30-centimeter (~ 12 in) thick layer of yellowish brown silty or fine sand followed by another 30 centimeters of dark yellowish brown coarse sand. The deepest excavations encountered the subsoil of grayish brown or brownish yellow coarse sand continuing through depths of 200 centimeters (~ 79 in) or more below datum.

Nine labeled features (Features 32 through 40) were identified in DRT 6, of which five (Features 32, 34, 37, 39, and 40) were later determined to either be insubstantial or inconclusive soil lenses. All four of the remaining significant features (Features 33, 35, 36, and 38) were found in unit DRT 6-07. Feature 33 consists of dark linear stains found running north-south through the center of unit DRT 6-07 at the interface between the first and second soil layer (~ 83 cm/33 in below datum) that appear to be remnants of wheel ruts dating to the nineteenth century village occupation. Feature 35 was found in the southeastern corner of unit DRT 6-07 within the second soil level (~ 89 cm/35 in below datum) that

**Table 3.19:** Summary of component assemblage groups by occupation for DRT 6.

	# Comp.	Artifact	Date ( $\mu$ )		Native	Mid-18th	19th	Mid-19th	20th	Total
Group 1	16	417	1562	# Diag.	39	52	239	52	22	404
				% Group	9.70%	8.70%	52.50%	21.30%	7.80%	–
				% Occ.	23.10%	100.00%	95.80%	95.20%	96.00%	73.60%
				Depth	103.2	106.2	100	101.4	102.3	101.5
Group 0	38	1,265	1786	# Diag.	340	–	8	3	1	352
				% Group	89.70%	–	6.40%	3.00%	0.90%	–
				% Occ.	76.90%	–	4.20%	4.80%	4.00%	26.40%
				Depth	110.1	–	110.6	114	107.3	110.2
Overall	54	1,682	1674	# Diag.	379	52	247	55	23	756
				% Diag.	30.80%	6.40%	40.30%	16.50%	6.00%	–
				Depth	107.8	106.2	100.6	102.1	102.7	103.8

is described as a ‘basin-shaped’ pit feature of mottled yellowish brown and dark grayish brown sandy soil and continued to a depth of 140 centimeters ( $\sim 55$  in) below datum.

The feature assemblage contains a high concentration of mid-eighteenth century artifacts, and the feature appears to be a refuse pit from the French and Indian War occupation period. Feature 36 is a shallow ( $\sim 15$  cm/6 in) circular post mold with a tapered cross-section found in the northern end of unit DRT 6-07 at a depth of 97 centimeters ( $\sim 38$  in) below datum. It is unclear whether the post mold is associated with the prehistoric Native occupation (based on type and depth) or the late eighteenth to early nineteenth century occupations (based on artifact content). Feature 38 consists of a set of seven or eight thin, shallow linear stains and a small hearth found at 115 centimeters ( $\sim 45$  in) below datum in unit DRT 6-07. Charcoal samples from the hearth date to 3,190 ( $\pm 50$ ) years BP (2,560-2,530 BC) during the Late Archaic period.

### Assemblage

The total assemblage for DRT 6 consists of 1,682 objects, of which 756 (45%) can be associated with one of the five estimated occupation periods. The remaining 926 (55%) are non-diagnostic to any specific period, but most can be broadly associated with one or more of the later historical occupations. Just over half of the occupation-diagnostic artifacts ( $n = 379$ , 50.1%) are associated with the Native occupation period, which is well above the average for the other trenches (cf. 26% for project diagnostic assemblage). The eighteenth to nineteenth century occupation period assemblage accounts for another 32.7% ( $n = 247$ ), which is typical for the project overall. The late nineteenth and early twentieth century occupations are relatively underrepresented in DRT 6, accounting for only 7.3% ( $n = 55$ ) and 3% ( $n = 23$ ) respectively. Unlike the other data recovery trenches in the project area, which show a nearly con-

tinuous distribution of the later historical artifacts across their area, the assemblage of DRT 6 has a relatively continuous distribution of at least some Native period materials across the trench with more sporadic deposition of historical period artifacts. Nearly two-thirds of these Native artifacts (62%,  $n = 235$ ) were found, however, in one unit (DRT 6-07) that contained an apparently intact Native period occupation surface.

The prehistoric Native assemblage for DRT 6 is comprised of 379 artifacts, and consists primarily of lithic debitage (i.e. 206 flakes, 145 pieces of chert shatter, one chert core, and three pieces of miscellaneous debitage) and fire-cracked rock ( $n = 16$ ). The remaining eight objects are formal and expedient tools. One partial Brewerton side-notched projectile point was recovered from Level 4 of unit DRT 6-05 at a depth of between 137 and 173 centimeters ( $\sim 54 - 68$  in) below datum. The point measures 22.2 millimeters wide by 5.6 millimeters thick, is made from Normanskill chert, and dates to the Late Archaic period circa 3,500 BP. One hammer stone was found in unit DRT 6-08 Level 1B ( $\sim 76 - 107$  cm/30 – 42 in below datum). The remaining six prehistoric tools consisted of two biface fragments, one uniface, two scrapers, and one possible biface fragment.

For the trench as a whole, prehistoric artifacts were found at a weighted mean depth of roughly 110 centimeters ( $\sim 43$  in) below datum ( $\mu_w = 7.90$ ), which is consistently below the depth of all historical artifacts. The exception to this vertical sequence is the mid-eighteenth century occupation (mean depth 112 cm/44 in below datum,  $\mu_w = 13.50$  cm), with which there is partial overlap due to the mid-eighteenth century pit feature (Feature 35). The majority of the trench’s prehistoric artifacts were found in unit DRT 6-07 ( $n = 235$ ), but other significant concentrations were found in units DRT 6-02 ( $n = 41$ ), DRT 6-08 ( $n = 37$ ), and DRT 6-06 ( $n = 21$ ). Native occupation artifacts were present in all but one of the units of DRT 6 (DRT 6-05 South Extension). The concentration of Native arti-

facts in unit DRT 6-07 is stratigraphically associated with a prehistoric feature (Feature 38) of similar date to the projectile point fragment found in unit DRT 6-08.

The mid-eighteenth century assemblage for DRT 6 consists of 52 artifacts representing 7% of the diagnostic assemblage of the trench. The large majority of these artifacts were found in unit DRT 6-07 and its east and south extensions (79%,  $n = 41$ ), and over half of these ( $n = 21$ ) were collected from Feature 35. Another 19% of the eighteenth century assemblage ( $n = 10$ ) was found in the two adjacent units (DRT 6-08 and DRT 6-06). This occupation's assemblage consists of ceramic sherds ( $n = 49$ ) and three wrought nails (two 'rose' head and one 'T' head, c.1700-1820). Most of the ceramic sherds (86%,  $n = 42$ ) were of monochrome delftware (c.1709-1802) but small numbers of fine agateware ( $n = 3$ , c.1740-1775), yellow lead-glazed buff earthenware ( $n = 3$ , c.1670-1795), and one sherd of white salt-glazed stoneware (c.1720-1780) were also found. The mid-eighteenth century occupation materials were found at a weighted mean depth of 112 centimeters ( $\sim 44$  in) below datum ( $\mu_w = 13.50$ ), which is below the average depth of the Native occupation materials but strongly influenced by the proportion of artifacts found in the refuse pit feature (Feature 35). Excluding Feature 35, the average weighted mean depth of eighteenth century materials is 106 centimeters ( $\sim 42$  in) below datum and stratified as a low-density occupation scatter above the typical depth of Native materials.

The late eighteenth to early nineteenth century occupation assemblage is the largest of the historical diagnostic assemblages of DRT 6 at 247 artifacts, representing 33% of the trench's overall occupation-diagnostic artifacts. The assemblage is comprised entirely of ceramic sherds. The majority of these sherds are pearlware (51%,  $n = 126$ , c.1775-1830) and creamware (46%,  $n = 114$ , c.1762-1820), with four sherds of blue underglaze hand-painted whiteware (c.1825-1835) and three of slip-decorated redware (c.1775-1830). Nearly half of the pearlware sherds were undecorated ( $n = 58$ , 46%), as were nearly all of the creamware sherds ( $n = 113$ , 99%). Of the decorated pearlware, polychrome hand-painted was the most common ( $n = 25$ , c.1795-1830) followed by blue transfer-printed ( $n = 20$ , c.1783-1830). Small numbers of blue hand-painted ( $n = 9$ , c.1775-1830), green edge-decorated ( $n = 6$ , c.1800-1830), blue edge-decorated ( $n = 4$ , c.1780-1830), annular ( $n = 3$ , c.1790-1830), and one flow-blue sherd (c.1795-1840) were also found. Artifacts from this estimated occupation period were found in ten of the fourteen units in the trench at an average weighted mean depth of 101 centimeters ( $\sim 40$  in) below datum, with the highest density concentration found in unit DRT 6-08 ( $n = 92$ ) and its surrounding units in the northwestern half of the trench. Artifacts from this assemblage are only found in an intact stratigraphic sequence, however,

in unit DRT 6-07 and its extensions. In most of the other units, the average vertical locations of artifacts from this occupation are heavily intruded by later occupation materials.

DRT 6 has a relatively small representative mid-nineteenth century assemblage compared to the overall project area at 55 occupation-diagnostic artifacts (7% of the trench's diagnostics assemblage). The mid-nineteenth century assemblage consists primarily of ceramic sherds (82%,  $n = 45$ ), with the remaining minority consisting of machine-cut nails ( $n = 10$ , c.1835-1875). The ceramic types represented in this assemblage are primarily whiteware (42%,  $n = 19$ , c.1825-1885) and ironstone (38%,  $n = 17$ , c.1813-1900), with the remaining 20% consisting of buff and brown salt-glazed stoneware ( $n = 9$ , c.1820-1900). These artifacts were found in a distinctly bimodal depth distribution (see Figure 3.18 on page 74) with an overall weighted mean depth of 103 centimeters ( $\sim 41$  in) below datum ( $\mu_w = 19.6$ ), but with notably separate distribution peaks at 89 ( $\mu = 8.5$ ) and 127 ( $\mu = 4.9$ ) centimeters ( $\sim 50$  in). The majority of these artifacts were found concentrated in units in the northwestern end of DRT 6, and entirely absent in unit DRT 6-01 through DRT 6-03.

The late nineteenth and early twentieth century estimated occupation period is minimally represented in DRT 6, with only 23 objects representing 3% of the diagnostics assemblage for the trench. This is well below the average overall 14% representation for this occupation across the project's diagnostic assemblage. Considering that DRT 6 contains the highest proportion of diagnostic materials in its collection (45%), this relative scarcity of later-occupation artifacts is notable. Furthermore, what little turn of the century material is present was found primarily in three units: DRT 6-08 ( $n = 9$ ), DRT 6-09 ( $n = 7$ ), and DRT 6-06 ( $n = 4$ ). The majority of these diagnostic artifacts are undecorated whiteware sherds ( $n = 16$ , c.1820-1970). Artifacts related to this occupation were found at an overall weighted mean depth of 101 centimeters ( $\sim 40$  in) below datum ( $\mu_w = 20.9$ ), but this appears to be inordinately influenced by a few deeply intrusive late-historical trenches in units DRT 6-06 and DRT 6-08. Excluding these two contexts, the mean depth of the late occupation material decreases significantly to approximately 86 centimeters ( $\sim 34$  in) below datum (i.e. stratigraphically above the earlier occupation materials).

The remaining 926 artifacts collected from DRT 6 are not specifically diagnostic to any occupation period. The most common of these non-diagnostic artifacts is faunal refuse ( $n = 362$ ), which represents 39% of the non-diagnostic assemblage. Historical architectural artifacts account for another 22% of the non-diagnostic assemblage ( $n = 206$ ). These include objects such as brick and mortar fragments, window glass, architectural stone and ceramics, and hardware that lack specifically identifi-

able manufacture dates. Non-diagnostic ceramic sherds comprise 11% of the assemblage ( $n = 102$ ). These either have very broad ranges of manufacture and use (e.g. porcelain, common utilitarian stoneware, redware) or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware). Another 11% ( $n = 100$ ) consists of various historical debris, of which the vast majority is pieces of coal or coal slag and cinder ( $n = 93$ ) with small amounts of construction debris such as concrete and asphalt.

Miscellaneous samples of material such as charcoal, botanical, soil, unmodified faunal remains, or mineral samples taken from the units that can be associated with an occupation only by component context account for another 5% ( $n = 50$ ). Most of the remaining 11% of the non-diagnostic assemblage ( $n = 106$ ) can be broadly described as 'historical' artifacts, but do not have specifically diagnostic manufacture ranges (e.g. personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these, such as certain types of glass vessel shards, can be specified somewhat as generally being either nineteenth or twentieth century artifacts but do not substantially contribute refinement to the occupation analyses.

### *Evaluation of Trench Integrity*

As with the other DR trenches, the stratigraphic sequences of DRT 6 are comprised of various degrees of admixture between the various occupation assemblages. Assessments of vertical stratification and component integrity are based on relative proportions of representative assemblages within and between excavated components to ascertain vertical and horizontal patterns. Since there are very few 'clean' components in terms of discrete correlations between component depths and individual diagnostic occupations, the overall associations between relative positions and relative occupation assemblage proportions necessitates examining the vertical disposition of diagnostic artifacts irrespective of excavated vertical components. In DRT 6, the five estimated occupation periods are represented stratigraphically through three discernible types of combined assemblages each of which represents a proportional combination of diagnostic artifacts related to one or more of the estimated occupations. The core densities of these assemblage types are vertically distributed in normal distributions within the trench, demonstrating integrity in a relative vertical stratification consistent with a temporally ordered sequence of deposition or redeposit.

In DRT 6, the analyses show two clear patterns of component assemblages that represent three different combinations of the occupation diagnostic materials. Each component's assemblage pattern has its own distinct stratigraphic sequence as well as spatial differentiation across the trench area (see Table 3.19 on page 76). Due to the relative prevalence of the Native and early nine-

teenth century diagnostics assemblages, these two occupation assemblages significantly influence the date distributions and resulting analyses despite the representative presence of all estimated occupations within the trench. In addition, the presence of a deeply intrusive late occupation utility trench feature results in an anomalous additional modal peak of mixed early and late occupation diagnostic material below the otherwise sequentially stratified occupation assemblages. This effect is further complicated by the lower density of historical occupation materials in the southern portion of the trench, necessitating the introduction of a spatial component to the quantitative inferences (see Table 3.20 on the next page).

After controlling for these influences and disruptions to the overall stratigraphic sequence of DRT 6, the vertical integrity of the trench becomes very clearly defined (see Figure 3.19 on page 75). Essentially, two primary vertical components throughout the trench distinguish the Native occupation from the four historical period occupations (Figure 3.18 on page 74). The historical upper primary stratum also contains a secondary vertical component in some of the units related to the distinctions within the patterned admixture of historical occupations that mark the core of the early nineteenth century occupation. The vertical distributions of the two primary strata can be seen in Figure 3.18. Each primary stratum is composed of a differentiable proportion of occupation-diagnostic artifacts. The lower stratum is composed of roughly 70% Native diagnostics with 30% admixture with historical period materials, with a normal-estimated mean depth of 126 centimeters ( $\sim 50$  in) below datum ( $\mu = 5.2$  cm). The upper stratum is composed of roughly 88% historical diagnostics and 12% Native, and a normal-estimated mean depth of 98 centimeters ( $\sim 39$  in) below datum ( $\mu = 12.9$  cm). This vertical stratification is made more distinct by incorporation of the late-occupation utility trench data, which largely isolates the intrusive twentieth century materials into an additional lower-depth ( $\sim 132$  cm/52 in below datum) stratum.

Artifact densities in the southern half of the trench are very low, and have poor diagnostic representation of the estimated occupation periods. Only one of these (DRT 6-05) shows any sign of significant stratification between the historical and Native occupations, whereas the adjacent unit (DRT 6-06) shows almost complete stratigraphic inversion. The northern half of the trench, however, retains stratigraphic integrity between the Native and historical periods (with the exception of DRT 6-08) and some reasonable stratification within historical periods. Individual components within the trench related to historical occupation periods are predominately comprised of mixed occupation diagnostic assemblages, whereas the Native occupation components tend to be discrete and contain relatively minor inclusions of later material. Assessments by component assemblages and

**Table 3.20:** Sample and depth of occupation artifacts by unit for DR Trench 6.

	DRT 6-01	DRT 6-02	DRT 6-03	DRT 6-04	DRT 6-05	DRT 6-05 S Ext.	DRT 6-06	DRT 6-06 NE Ext.	DRT 6-07	DRT 6-07 E Ext.	DRT 6-07 S Ext.	DRT 6-07 SE Ext.	DRT 6-08	DRT 6-09	Total
<b>Native</b>															
# Artifacts	8	41	9	7	9	–	21	4	235	5	1	1	37	1	379
% Unit	3%	19%	4%	4%	7%	–	9%	2%	32%	4%	1%	1%	14%	0%	–
% Occ.	100%	96%	77%	71%	77%	–	20%	14%	54%	21%	5%	28%	17%	0%	31%
Depth (cm)	109	107	102	118	117	–	112	78	109	122	122	87	104	115	108
<b>Mid-18th</b>															
# Artifacts	–	–	–	–	–	–	3	–	23	9	9	–	7	1	52
% Unit	–	–	–	–	–	–	23%	–	27%	9%	14%	–	20%	8%	–
% Occ.	–	–	–	–	–	–	10%	–	9%	10%	20%	–	5%	4%	6%
Depth (cm)	–	–	–	–	–	–	124	–	112	113	102	–	96	84	106
<b>18th-19th</b>															
# Artifacts	–	–	2	–	–	2	21	19	31	20	17	7	92	36	247
% Unit	–	–	1%	–	–	1%	13%	8%	12%	9%	6%	2%	35%	15%	–
% Occ.	–	–	23%	–	–	100%	36%	59%	26%	63%	57%	38%	56%	48%	40%
Depth (cm)	–	–	102	–	–	79	114	119	99	104	92	96	96	88	101
<b>Mid-19th</b>															
# Artifacts	–	–	–	2	2	–	11	4	8	1	2	1	12	12	55
% Unit	–	–	–	3%	4%	0%	19%	7%	12%	2%	3%	3%	21%	26%	–
% Occ.	–	–	–	29%	23%	0%	23%	23%	11%	6%	12%	34%	13%	34%	17%
Depth (cm)	–	–	–	118	95	–	114	131	95	91	83	100	102	87	102
<b>19th-20th</b>															
# Artifacts	–	1	–	–	–	–	4	1	–	–	1	–	9	7	23
% Unit	–	4%	–	–	–	–	26%	4%	–	–	4%	–	34%	28%	–
% Occ.	–	4%	–	–	–	–	11%	5%	–	–	6%	–	8%	14%	6%
Depth (cm)	–	107	–	–	–	–	118	78	–	–	83	–	105	87	103
<b>Occ. Total</b>	8	42	11	9	11	2	60	28	297	35	30	9	157	57	756
	1%	6%	1%	2%	3%	1%	14%	5%	18%	6%	4%	2%	25%	13%	–

**Table 3.21:** Sample and depth of component group artifacts by unit for DR Trench 6.

	DRT 6-01	DRT 6-02	DRT 6-03	DRT 6-04	DRT 6-05	DRT 6-05 S Ext.	DRT 6-06	DRT 6-06 NE Ext.	DRT 6-07	DRT 6-07 E Ext.	DRT 6-07 S Ext.	DRT 6-07 SE Ext.	DRT 6-08	DRT 6-09	Total
<b>Group 1</b>															
# Artifacts	–	–	3	9	20	18	196	74	231	148	163	25	263	115	1,265
% Unit	–	–	–	1%	2%	1%	19%	7%	15%	9%	8%	3%	25%	12%	–
% Group	–	–	22%	35%	54%	100%	94%	100%	69%	79%	100%	100%	98%	100%	85%
Depth (cm)	–	–	99	121	111	79	116	113	103	108	99	95	97	88	103
<b>Group 0</b>															
# Artifacts	8	44	13	15	13	–	19	–	265	20	–	–	19	1	417
% Unit	3%	17%	4%	8%	8%	–	7%	–	37%	12%	–	–	3%	–	–
% Group	100%	100%	78%	65%	46%	–	6%	–	31%	21%	–	–	2%	–	15%
Depth (cm)	109	107	102	118	114	–	106	–	111	122	–	–	118	115	112
<b>Group Total</b>	8	44	16	24	33	18	215	74	496	168	163	25	282	116	1,682
	–	3%	1%	2%	3%	1%	17%	6%	18%	9%	7%	2%	22%	10%	–



concurrence of artifact types irrespective of excavated component do reveal a general trend of diagnostics stratification with predictable deviance, and the occupation admixtures are generally patterned along predictable proportions. Since the artifact densities differ so greatly between the northern and southern half of the trench, spatial assessments of patterned clustering within and between occupations are tentative. Overall, the trench taken as a whole does appear to retain significant and interpretable data despite these admixtures and stratigraphic ambiguities.

### ***Construction Monitoring Incidents (INC)***

The construction monitoring incidents cover an area of 6,728.4 square meters (72,423.9 ft<sup>2</sup>, 1.7 acres) within the Village of Fort Edward. Monitoring incident reports were recorded for 193 locations with artifacts found and collected in 112 locations, from which 9,960 artifacts were collected including 1,020 artifacts (10.5%) with occupation-diagnostic dates. The monitoring of construction incidents (INC) lack both the spatial and vertical resolution of the data recovery trenches, and collection of artifacts during such monitoring depends partly on expedience and visibility. The assemblages from these collections therefore lack the systematic sampling and spatial resolution to conduct a thorough analysis as was the case for the trench assemblages. Moreover, in most of the cases the nature and recording of construction monitoring incidents precludes the viability of vertical proveniences or stratigraphic descriptions except in the most general terms across the large areas of the incidents. Due to the lack of consistent and detailed vertical data, analysis of the assemblages from construction monitoring incidents is limited to assessment of the horizontal spatial relationships of artifact classes and general assessment of occupation-diagnostic materials recovered.

Diagnostic materials from all five of the estimated occupation periods are represented in these collections. Compared to the significance of assemblages from the data recovery trenches, the lack of systematic excavation and artifact sampling during monitoring lessens the potential analytical significance of the recovered INC assemblages. In addition, the variability in the particulars of each construction incident affected the feasibility of consistent scrutiny and availability of samples differently at each location. The relative proportionality of occupation-diagnostic materials found during the monitoring and their overall effect on the interpretive and inferential utility of these assemblages is therefore largely supplementary to the more systematic data recovery excavations.

In general, the later nineteenth and twentieth century occupation periods show stronger (49%,  $n = 497$ ) representation and the Native occupation significantly lower (8%,  $n = 85$ ) in the INC assemblage than was typ-

ically found in the DR trenches. These deviations from the overall proportions of occupation-diagnostic materials may be the result of the different artifact visibility during visual inspection of construction trench profiles or backfill (e.g. seeing lithic debitage in back dirt would reasonably have very low visibility compared to screen sampling). Interestingly, however, the proportion of mid-eighteenth century materials found during monitoring (15%,  $n = 149$ ) is consistent with the proportions found in the DR trenches. This may instead suggest that the proportionality of finds in the monitored incidents is otherwise consistent with the more representative samples acquired by systematic excavation, but that the spatial dispositions of occupation materials is indicative of significant spatial patterning across the project's total survey area.

### ***Spatial Patterns and Features***

Statistical tests for spatial auto-correlation and clustering do not show significant spatial patterning to the overall distribution of cultural material, but do show significant patterning for each of the occupation-diagnostic assemblages except the mid-eighteenth century assemblage. The mid-eighteenth century materials are found in 27 separate and non-contiguous incidents spread throughout the southern half of the project area, with the majority found in incidents between Moon and Notre Dame Streets. Although the mid-eighteenth century incident locations are not found in statistically significant groupings, isolated peak artifact count locations are found in five separate areas between Notre Dame Street and Argyle Street. These locations do not form spatially bounded clusters of find spots, but they do constitute sufficient density of occupation period finds to suggest the presence of significant but localized deposition.

The other estimated occupation periods do show quantitatively significant clustering of find locations in that there are contiguous and bounded groups of incidents that show higher diagnostic artifact peaks. For the Native and early nineteenth century occupation materials, these are found in one primary cluster between Moon and Notre Dame Streets. For the mid-nineteenth century and later materials, the significant clusters occur along that same stretch of Broadway. These later occupations also have significant non-clustered peaks distributed along the southern half of the project area, which roughly coincide with the mid-eighteenth century isolated finds as well.

Monitoring incident locations in the northern half of the project area, starting from the intersection of Broadway and Notre Dame Street, contained neither artifact clusters nor notable isolated peaks for any occupation period. This northern portion of the project area also, however, had a significantly lower density of artifact finds overall. While this does suggest that the primary occupation deposits and archaeological resources are

concentrated in the southern half of the project's survey area, the northern half of the project monitoring area also had previously been determined as having lower archaeological sensitivity. This determination was based on prior background reconnaissance for the project, and as such was scheduled as a 25% monitoring sample area under the Data Recovery and Monitoring Plan. This difference in monitoring strategies makes spatial inferences tenuous for find locations in the northern portion of the project area, but does not affect the comparability of the southern locations.

There are approximately 165 features associated with the construction incidents that were identified during monitoring. Since identification of features did not generally involve systematic excavation and detailed provenience recording, the feasibility of quantitative analysis is limited. Many of the features are associated with more than one estimated occupation period. Seven of the features are associated with prehistoric Native finds, but all but two of these are mixed components with later occupation materials. Forty-four features are associated with the eighteenth century occupations, of which seven are clearly related to the latter part of the eighteenth and into the early nineteenth century. Seventy-two features are associated with one or more nineteenth century occupations. Eleven features can only be identified as being historical in origin, and thirty-six features are unidentified and/or cannot be associated with any specific occupation period.

Spatial analysis of feature locations is complicated to the point of impracticability due to the field recording of locations and provenience during construction monitoring, since feature records were incorporated into the general notes for construction incident monitoring reports rather than recorded as systematic feature proveniences. Only a subset of the INC features has distinct and detailed map locations, so spatial association analyses are not feasible. However, many features related to the mid-eighteenth century military fortification and occupation were identified (i.e. various outwork ditches, numerous refuse pits from troop encampments, and several fireplaces, one associated with a blockhouse and one likely a guard house) as well as features related to the nineteenth century village settlement and industrial growth (i.e. the Fort Edward Feeder Canal Bridge, the Broadway viaduct, and deposits related to the Hilfinger Pottery). These features are components of archaeological sites discussed at length in this report.

## Assemblage

The total artifact collections from the construction incident monitoring locations consist of 9,690 objects, of which 11% ( $n = 1,020$ ) can be diagnostically associated with one of the five estimated occupation periods for the site. The remaining 89% ( $n = 8,670$ ) are non-diagnostic to any specific period, but most can be

broadly associated with one or more of the later historical occupations. The highest proportions of the diagnostics assemblage recovered from monitoring are of mid-nineteenth century artifacts (30%,  $n = 301$ ) and late eighteenth to early nineteenth century artifacts (28%,  $n = 289$ ). Compared to the average proportions recovered from the DR trenches, this is a substantially higher proportion for mid-nineteenth century materials (cf. ~15%) and a lower proportion of the turn of the nineteenth century (cf. ~40%). Late nineteenth to early twentieth century artifacts account for 19% of the diagnostics ( $n = 196$ ). Mid-eighteenth century artifacts represent 15% ( $n = 149$ ) of the diagnostics assemblage, and prehistoric Native materials the remaining 8% ( $n = 85$ ). As discussed previously, some of this variation may be due to the alternate sampling methods used during monitoring affecting visibility and recovery of artifacts. Stratigraphic analysis of occupation diagnostic assemblages is not possible due to the lack of detailed vertical provenience information for incident monitoring. Some assessment of spatial patterning of diagnostic assemblages is feasible, however.

Native occupation artifacts were found in low density within 33 of the incidents, and only 13 of these produced 3 or more objects. Nearly all of these (excluding INC 82) were found along Broadway between the Notre Dame and State Street intersections. Only one temporally diagnostic artifact (a Meadowwood pre-form) was found. The majority of the Native artifacts consisted of fire-cracked rock ( $n = 40$ ) and lithic debitage ( $n = 36$ ) along with a small number of formal tools (one hammer stone and three bifaces), two miscellaneous chipped stone objects, and one utilized flake. Lithic debitage was comprised primarily of broken flake fragments. Of the identifiable debitage, secondary and tertiary flakes were the most common. Native artifacts were found sporadically in the incidents, with the highest concentrations found in non-contiguous areas along a continuous low-density scatter along the noted section of Broadway. An additional concentration was found in INC 82 located 56 meters east of the State Street intersection away from the core distribution. Artifact densities are highest near the intersection of Broadway and Notre Dame Street, and gradually drop moving along Broadway to the southeast. No Native artifacts were found in incidents north of Notre Dame Street.

Mid-eighteenth century diagnostic artifacts were found in higher concentrations than for the Native occupation, but occur in peak densities at much the same locations. The 149 diagnostic artifacts from this occupation period are found in 36 of the incident monitoring locations, with significant concentrations (i.e.  $> +1.5\sigma$  or 8 objects) found in only seven. Mid-eighteenth century diagnostics consisted of architectural hardware (55%,  $n = 82$ ) and ceramic sherds (45%,  $n = 67$ ). The architectural hardware was predominately 'rose'-head wrought nails ( $n = 65$ , c.1700-1820),

with small amounts of 'T'- and 'L'-head wrought nails and wrought nail fragments. Diagnostic ceramic sherds consisted of monochrome and undecorated delftware ( $n = 30$ , c.1709-1802) and undecorated white salt-glazed stoneware ( $n = 14$ , c.1720-1780) as well as slip-dipped ( $n = 5$ , c.1715-1775) and scratch-blue ( $n = 4$ , c.1744-1775) types, with small amounts of gray salt-glazed Westerwald stoneware ( $n = 1$ , c.1700-1775), gilt-decorated porcelain ( $n = 8$ , c.1661-1890), yellow lead-glazed buff earthenware ( $n = 1$ , c.1670-1795), and red stoneware of both engine-turned ( $n = 1$ , c.1763-1775) and Jackfield ( $n = 1$ , c.1740-1780) types.

Spatial autocorrelation analysis shows that there is no predictable patterning to the overall spatial disposition of the mid-eighteenth century materials, but high-low clustering analysis indicates that peak values tend to occur in localized clusters. In other words, the mid-eighteenth century material in the survey area is found in isolated but discretely bounded locations, and those locations show no discernable organized patterning of grouping or dispersion. Peak deposits of these artifacts are found in four distinct locations along Broadway: a large area to the south of the Notre Dame Street intersection, a small area on the north side of the Moon Street intersection, an isolated peak roughly 30 meters west of the State Street intersection, and an isolated peak 60 meters east of the State Street intersection. Another low-density peak location was found off the southwest corner of the Broadway and Argyle Street intersection in INC 93.

The late eighteenth to early nineteenth century occupation period is represented in the incident collections by 289 diagnostic artifacts found in 52 of the incident locations. Significant concentrations ( $> +1.5\sigma$ , 9+ objects) were found in twelve of those incidents, representing 70% ( $n = 201$ ) of this assemblage. Nearly all of the diagnostic artifacts (99%,  $n = 286$ ) consisted of ceramic sherds. Only three early machined-head cut nails were found. The most common diagnostic sherds were of undecorated pearlware ( $n = 88$ , c.1775-1830) and creamware ( $n = 61$ , c.1762-1820), which together account for over half of the ceramics. Blue transfer-printed pearlware ( $n = 29$ , c.1783-1830), underglaze blue ( $n = 19$ , c.1775-1830) and polychrome ( $n = 16$ , c.1795-1830) hand-painted pearlware, and blue edge-decorated pearlware ( $n = 17$ , c.1780-1830) were also common. The diagnostic ceramics also contain smaller amounts of molded ( $n = 7$ , c.1762-1820) and undecorated lighter yellow ( $n = 6$ , c.1775-1820) creamware, yellow ( $n = 11$ , c.1750-1830) and brown ( $n = 1$ , c.1770-1830) slip-trail decorated redware, and annular pearlware ( $n = 10$ , c.1790-1830).

The remaining, minimally represented, diagnostic ceramics included flow-blue ( $n = 4$ , c.1795-1840), green edge-decorated ( $n = 4$ , c.1800-1830), and finger painted ( $n = 1$ , c.1811-1820) pearlware. Artifacts from the mid-eighteenth to early nineteenth century es-

timated occupation period occurred in a strongly clustered area along Broadway between Notre Dame and State Streets, with the peak densities found to the west and south of Broadway. Although there were nearly continuous deposits of late-eighteenth and early nineteenth century materials along this length, four peak-density clusters were found: a large area to the south of the Notre Dame Street intersection, a small area on the north side of the Moon Street intersection, an isolated peak at the Edward and Montgomery Street intersection, and an isolated peak between the Montgomery and State Street intersections.

The mid-nineteenth century occupation for the incident collections consists of 301 objects found in 56 of the locations. Significant concentrations ( $> +1.5\sigma$ , 8+ objects) were found in nine of those incidents, representing 52% ( $n = 158$ ) of this assemblage. A majority of the diagnostic artifacts for this occupation (61%,  $n = 185$ ) is ceramic sherds, with the remainder consisting primarily of architectural hardware (38%,  $n = 115$ ) and one piece of amethyst bottle glass (c.1880-1914). The largest portion of the ceramic sherds is of white-ware (65%,  $n = 120$ , c.1820-1875) and stoneware (22%,  $n = 41$ , c.1820-1900), with smaller amounts of ironstone (12%,  $n = 22$ , c.1813-1900) and two sherds of Rockingham/Bennington yellowware (c.1840-1900). The most common styles of whiteware were blue ( $n = 49$ , c.1830-1865) and brown ( $n = 29$ , c.1825-1875) transfer-printed whiteware and underglaze polychrome hand-painted whiteware ( $n = 18$ , c.1830-1860). Common stoneware were buff ( $n = 16$ ) and brown ( $n = 12$ ) salt-glazed stoneware with brown slip (c.1820-1900) and brown salt-glazed stoneware with Albany slip ( $n = 7$ ). All but two of the ironstone sherds were undecorated. Machine cut nails (c.1835-1875) accounted for over 90% ( $n = 106$ ) of the architectural hardware. Deposits of mid-nineteenth century material that were found in the monitoring incidents are broadly clustered along Broadway between Notre Dame and Montgomery Streets. A secondary cluster of mid-nineteenth century material find spots is loosely organized around the Broadway and Argyle Street intersection. As with the other occupations, there is little material in the northern incident locations.

The late nineteenth and twentieth century occupation for the incident collections consists of 196 objects found in 52 of the locations. Significant concentrations ( $> +1.5\sigma$ , 5+ objects) were found in 16 of those incidents, representing 63% ( $n = 124$ ) of this assemblage. A large majority of the diagnostic artifacts for this occupation (88%,  $n = 173$ ) is ceramic sherds, with the remainder consisting primarily of architectural hardware (8%,  $n = 16$ ) and seven plastic objects (c.1908-present). The diagnostic architectural hardware consists of common wire nails (c.1875-present). Diagnostic ceramics for this period were primarily undecorated sherds of common whiteware (89%,  $n = 154$ , c.1820-

present) along with small numbers of undecorated yellowware ( $n = 10$ , c.1830-1940) and buff earthenware ( $n = 2$ , c.1830-1940). Incident locations containing the late nineteenth and twentieth century diagnostic materials are, like most of the incident collections, primarily concentrated along the stretch of Broadway between State and Notre Dame Streets. Two smaller secondary concentrations were also found near the intersections at Cortland Street in the southern portion of the project area and at Church Street in the northern portion. The peak find locations for later nineteenth and twentieth century material are sporadic within these concentrated areas, rather than large continuous distributions.

The remaining 8,670 artifacts collected from the incident locations are not specifically diagnostic to any occupation period. Non-diagnostic artifacts were found in 107 of the incident locations. The most common of these artifacts are charcoal and other botanical samples (27%,  $n = 2,327$ ) and faunal refuse (21%,  $n = 1,848$ ). Historical architectural artifacts account for another 16% of the non-diagnostic assemblage ( $n = 1,427$ ). These include objects such as brick and mortar fragments, window glass, architectural stone and ceramics, and hardware that lack specifically identifiable manufacture dates. Another 17% ( $n = 1,487$ ) of the collections consist of other unmodified stone, soil samples, and miscellaneous materials that were found either in cultural contexts such as features or were otherwise deemed pertinent in the field. Non-diagnostic ceramic sherds comprise 5% of the assemblage ( $n = 403$ ). These either have very broad ranges of manufacture and use (e.g. porcelain, common utilitarian stoneware, redware) or cannot be sufficiently identified to a more diagnostic type (e.g. unidentified white earthenware).

Most of the remaining 14% of the non-diagnostic assemblage ( $n = 1,178$ ) can be broadly described as 'historical' artifacts, but do not have specifically diagnostic manufacture ranges (e.g. personal objects, glass objects and vessels, unidentified metal objects, etc.). Some of these, such as certain types of glass vessel shards, can be specified somewhat as generally being either nineteenth or twentieth century artifacts but do not substantially contribute refinement to the occupation analyses. The majority of the material was found dispersed throughout the southern half of the project area. Significantly high densities of material ( $n \geq 291$ ) were found in only five of the incidents (INC #20, 24, 40, 53, and 82), of which all but INC #40 were centered on the Broadway and State Street intersection.

### *Evaluation of Incident (INC) Finds*

There are few quantitatively viable data available from the incident monitoring records due to variability in the procedures used over the course of construction monitoring for the recording of proveniences and collections. Although the majority of all incident collec-

tions are from the southern locations, collections for the northern incidents were largely informed by prior work in the southern areas. Some patterns to the distributions of occupation-diagnostic materials are apparent, as well as a general correlation of occupation assemblages with the assemblage data from systematic excavations. It is likely, however, that at least some of the spatial patterns are more a product of differential scrutiny and collection sampling practices during the different phases of the construction monitoring project. Collections were recorded for 112 of the 193 recorded incidents (58%), of which 103 are from the 179 locations south of Notre Dame Street. Only 22 construction incidents were recorded that contained noteworthy features and/or assemblages of the 55 monitored locations north of Notre Dame Street, with collections made from 9 incident locations. Two-thirds (66%,  $n = 6,421$ ) of the incident collections are from only 16 incidents (8% of records), all of which are in the area between Notre Dame and State Streets.

Within that southern area of collections density, however, there are some suggestions of patterned deposition for occupation diagnostic artifacts as noted in the previous section. Based on limited spatial analyses, all but the mid-eighteenth century occupation diagnostics are found in strongly clustered large-area groups along the central stretch of Broadway between Notre Dame and State Streets. This area corresponds to the general spatial distribution of peak densities for all finds. The mid-eighteenth century diagnostics, however, are only loosely clustered overall within that same area and are also found in localized hotspot clusters dispersed through the southern part of the project area. Assemblage type analysis of the incident collections, including mixed diagnostics, shows some patterning to the find-density locations for faunal refuse, architectural debris, and to a lesser degree ceramic sherds. There is, however, little consistency within incident locations for diagnostic assemblages. That is, within each incident location there is no clear and discrete association of location and diagnostic assemblage that indicates spatial separation of occupations. Each occupation period largely overlaps the others.

While the highest diagnostic artifact densities found in the monitoring incidents were also targeted by the data recovery trenches, the data recovery excluded two additional areas of diagnostic deposits. High diagnostic densities were also found along Broadway between Edward and State Streets and on the southeast quadrant of the Broadway and Argyle Street intersection. No significant densities of diagnostics or non-diagnostics were found north of Notre Dame Street. Based on these distributions in the construction monitoring observations, it is likely that there are additional archaeological resources adjacent to or in the vicinity of the current survey area.

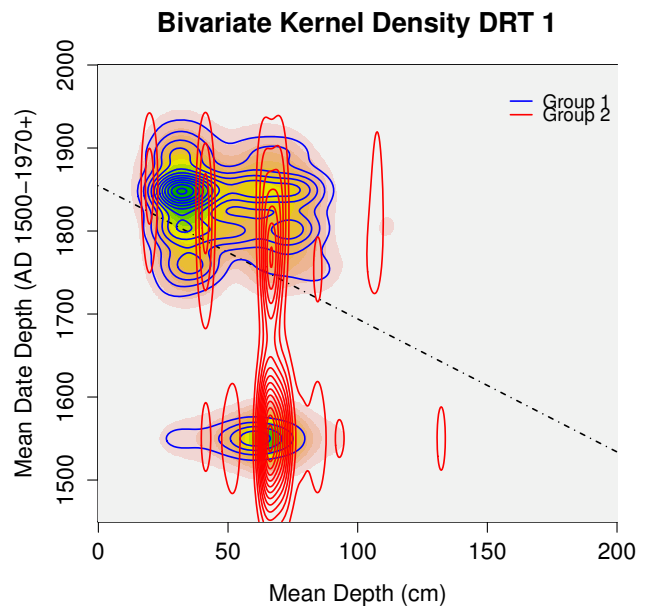
### 3.5 Assemblage and Site Integrity

Although the stratigraphic components of the site contain significant admixture of occupation assemblages, the assemblages themselves retain certain integrity in that they are consistent and discrete collections of contemporaneous materials. These occupation assemblages are very consistent with the documented historical backgrounds of activity in the project areas. In addition, the composition of the admixture of these occupations can be readily identified and differentiated in a majority of the DR units and in the DR trenches overall. Across most of the site areas, the Native and mid-eighteenth century occupation assemblages comprise one cluster of mixed assemblage within any excavation unit's stratigraphic components. The nineteenth century and later assemblages similarly cluster, and the two temporally distinct mixed assemblages are largely stratified throughout the site. In terms of the assessment of overall site integrity, this differential stratification is sufficiently significant throughout the site areas to warrant being called vertically stratified occupation surfaces.

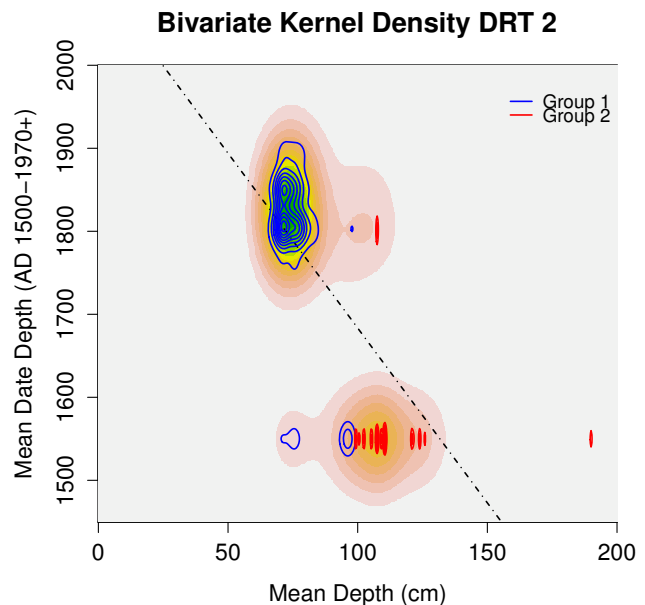
For most of the DR trenches<sup>2</sup> the components that are primarily comprised of the mid-nineteenth through twentieth century materials are significantly more shallow than those with the earlier eighteenth century and Native diagnostic composition. Following the general assumptions of archaeological stratigraphy, the site is then comprised of two broad occupation phases: one nineteenth through twentieth century phase that disturbed the earlier nineteenth century component of the site, and one eighteenth century component that disturbed the Native occupation. In each case, however, it is a matter of the relative proportions of admixture. Few stratigraphic components are cleanly associated with any single occupation. The later components contain some materials related to the earlier occupations, while the earlier and deeper components also show some intrusions of later material.

There is a noticeable spatial component to the assemblage clustering as well, particularly for the earlier component, which is generally found in sparse spatial clusters scattered throughout the site areas. In addition, there is some overlap in the occupation ranges of each component's assemblage such that each of these two primary site phase associations is not cleanly segregated by depth. Instead, the *likelihood* of an older diagnostic increases with depth. This is further complicated by a minority of stratigraphic components that appear to represent pockets of original or primary deposition, and complicated again by the presence of deep utility trenches that skew the overall depth data for each occupation phase.

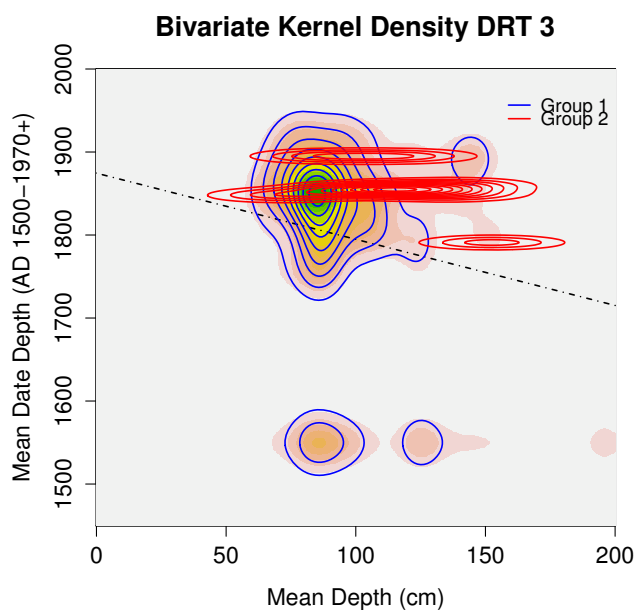
<sup>2</sup>With some notable exceptions, see detailed discussions for each DR location below.



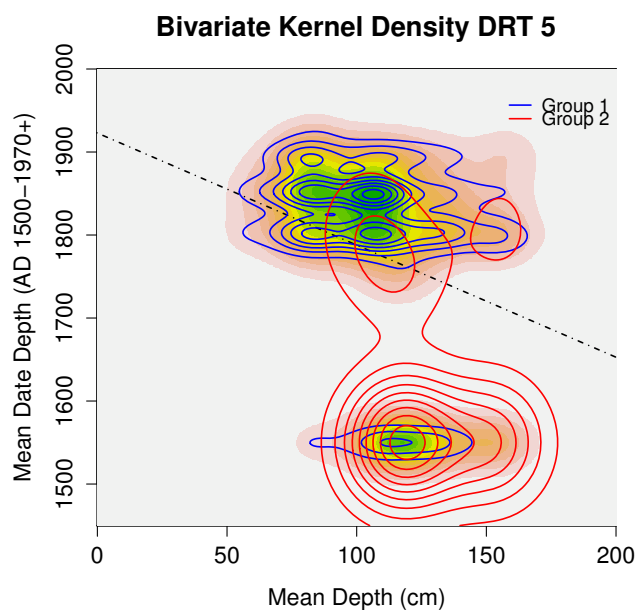
**Figure 3.20:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 1.



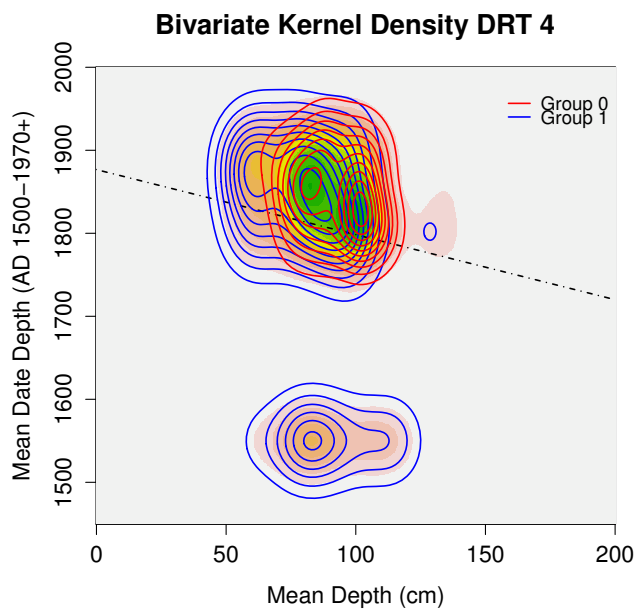
**Figure 3.21:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 2.



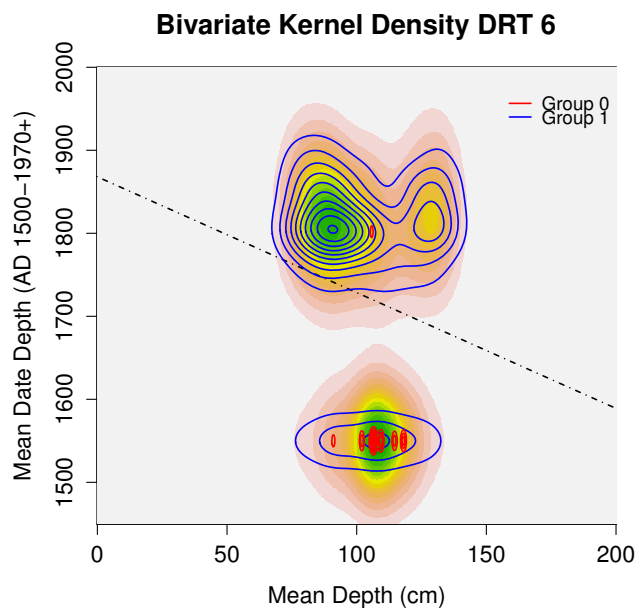
**Figure 3.22:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 3.



**Figure 3.24:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 5.



**Figure 3.23:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 4.



**Figure 3.25:** Bivariate comparison of mean diagnostic date and mean stratigraphic depth for DRT 6.



### 3.6 Summary and Conclusions

Clustering analysis of the mean dates for diagnostic artifacts recovered from Fort Edward suggests five semi-discrete occupation periods for the location that roughly correspond with the known historical background of the area (i.e. one undifferentiated Native occupation and four periods of post-contact historical occupations from the mid-eighteenth century to present). In most of the systematic excavations, however, there is little if any discrete vertical stratification of individual occupation periods. Most of the stratigraphic components contain mixed assemblages of various proportions of occupation-diagnostic materials, and only localized within-unit stratifications of occupation-specific materials were occasionally apparent. Traditional approaches to the assessments of vertical integrity and site stratification yields ambiguous results on these mixed-assemblage data. In order to discern and/or evaluate vertical stratification of mixed assemblages, a different approach using analysis of the maximum likelihood of within-component artifact consociation was employed to assign component assemblage groups within each DR Trench.

The assignments were made by comparing the total strength of associations between the scaled frequencies of all artifacts within an excavated component's constituent mixed assemblages to the assemblage for each other component in a DR Trench. Components that had the strongest correlations in assemblage composition were grouped. Distinctions between component assemblage groups indicate spatial and/or temporal differentiation for the depositional contexts of excavated stratigraphic components. Where differentiation is apparent between assemblage type groups and corresponds along both temporal and vertical axes, the overall stratification is considered largely intact. Assemblage differentiation without vertical separation typically indicates horizontally deposited materials that can relate to different areas of activity (i.e. assemblage with no temporal distinction) or spatial patterning of occupation materials (i.e. temporally but not vertically distinct).

Secondarily, the concurrence of particular artifacts within excavated components was used to define patterns of artifact type associations. Comparing these clustering results to the concurrences of soil component assemblages yields an indication of the intermixing of occupation diagnostics within excavated components and a proxy of the degree of stratigraphic admixture within components. This was done to segregate the overall admixture of the estimated occupation periods within soil components and the local admixture of stratigraphic disturbances. Normal mixed model estimation typically reparsed these type assemblages back into combination of the estimated occupations of the project area as a whole. In all cases, divergences from the occupation

periods could be identified as specific stratigraphic inversions or disturbances.

As seen in Figures 3.20 to 3.25 on pages 84–85, these component assemblage groupings demonstrate at least partial vertical stratification in all DR trenches except DRT 3. The vertical distribution in DRT 4 is also somewhat ambiguous due to the bimodality expressed by the one group on either side of the primary distribution peak of the other. In those trenches, subsequent spatial analysis showed that the groups also represented differential horizontal deposition. DRT 1, 5, and 6 show multiple and overlapping nodes of vertical artifact distribution that show different peak means (i.e. stratified) but insufficiently so for the difference in means to be quantitatively significant. These trenches also include substantial stratigraphic inversions in some units. In DRT 1 and DRT 5, the discernible shifts in modal peaks are somewhat mitigated by the amount of overlap in density distributions between groups. In DRT 6, the smaller secondary node in the distribution appears to be related to a deep feature intrusion. Only DRT 2, however, indicates relatively clear and unambiguous vertical stratification.

Figure ?? on page ?? shows the distribution of diagnostic artifact dates within each component assemblage group for the DR trenches, which illustrates that the component assemblage groups are temporally distinct for four of the six trenches. In the two trenches that do not show any temporal differences in the component assemblage groups (i.e. DRT 3 and 4), subsequent analysis of the assemblage compositions shows that the distinction is one of their relative concentration in architectural debris that suggests associations with demolished structures in the vicinity. In three of the six trenches, the component assemblage groups clearly segregate the temporal distinctions between prehistoric Native, mid-eighteenth century materials, and later historical occupations. These distinctions in the component assemblage compositions strongly correspond to stratigraphic differentiation of occupation materials, but there is frequent admixture within Native and mid-eighteenth century stratigraphic components.

The linear nature of the DR trenches and monitoring incidents precludes any substantive spatial analysis of artifact distributions. Although very general “hotspot” locations can be identified throughout the survey areas, in most part these are equally products of the targeted sampling strategy of the data recovery as they are of depositional material distributions. As such, none of the standard analyses by density surface interpolations or spatial regression models are feasible. Although there are some indications of spatial arrangements to the various occupation period materials that do seem to follow the known historical documentation of the area's land use, quantitative analyses are not productive in this case.

## **Part II**

# **The Fort Edward Village Site**

**NYSM #12575**

**OPRHP #A115-42-0003**

## 4. Fort Edward Village Site Overview

This is a long-occupied site with both prehistoric and historical human occupation components present. The prehistoric occupation extends back as far as 4,000 B.P. based on carbon dating of one of the features found in the project area and on diagnostic artifacts from the assemblage. Historical occupation began in the late-seventeenth century, but the site was primarily the focus of intense military activity in the mid-and late-eighteenth century with the construction of an extensive British fort and military installation, from which the current village gets its name. This fort saw much activity during the French and Indian War from 1755 to 1760.

During the Revolutionary War, the site saw military activity again, most notably during Burgoyne's campaign south from Canada, which ended with the Battle of Saratoga and Burgoyne's eventual surrender. This was soon followed by settlement of the village and surrounding town with the establishment of the Waterford and Whitehall Turnpike, still used today as Route 4 (Broadway). That was followed by the construction of the Champlain Canal and the subsequent growth of a water-powered industrial complex that attracted many people to the village in the first half of the nineteenth century. This growth brought with it periodic utility and transportation improvements as houses and businesses became established along the street over the intervening 200 years. Along with the prehistoric occupation features and mid-eighteenth century fort-related features, many of the early utility and infrastructure features were sealed beneath the pavement of the street and were observed by archaeologists during the current reconstruction project.

As previously mentioned in the artifact assemblage analysis, there are three peak periods of occupation associated with the post French and Indian War village settlement and growth: the late-eighteenth to early-nineteenth century period, the mid-nineteenth century period, and the late-nineteenth to early-twentieth century period. For this site description overall, three main components are discussed, primarily by feature type within the broader temporal ranges of prehistoric, mid-eighteenth century military occupation, and nineteenth century village settlement and growth. The latter subsumes the three post-French and Indian War peak periods of occupation.

### 4.1 Site Size and Location

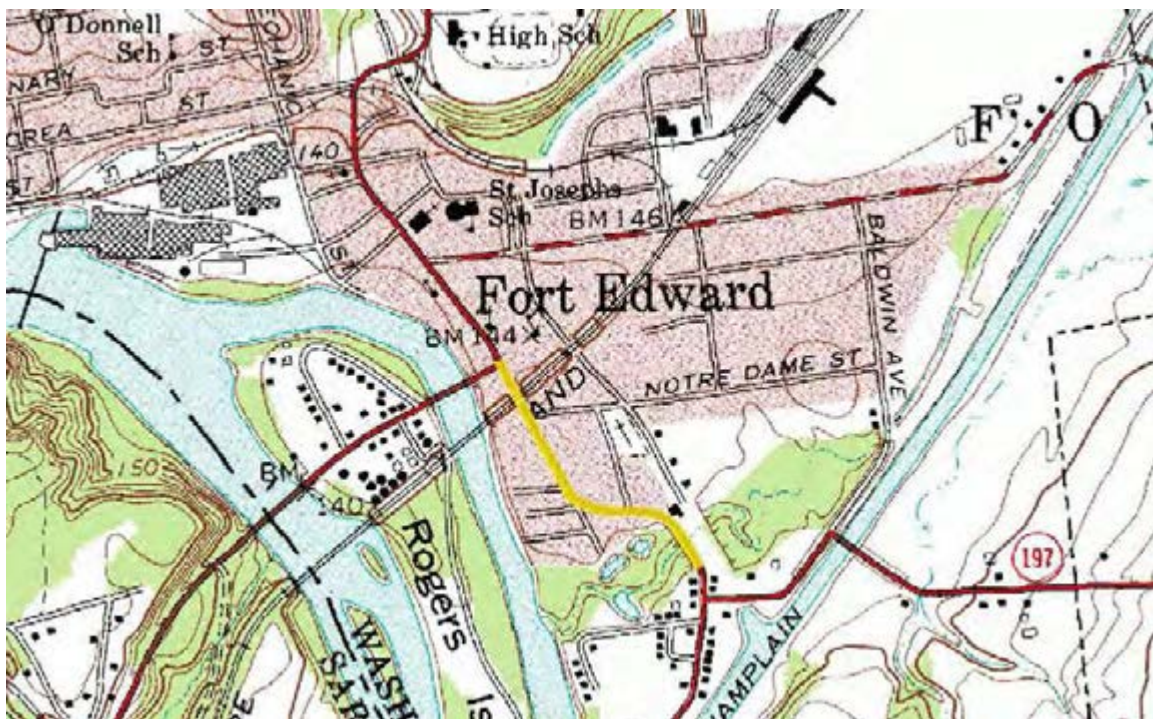
It should be mentioned that Fort Edward is well known for its dense archaeological presence both prehistorically and historically, and that this archaeological footprint encompasses most of the southern part of the village (including Roger's Island), well beyond the APE of this project. The site boundaries described here are, for reporting purposes, confined to the APE.

Following the course of the Broadway corridor, the site extends from the south end of the Bond Creek viaduct north to Bridge Street (NY Route 197), a distance of 620 m (2,034 ft). It encompasses the street itself, plus curbs and sidewalks on both sides, a width generally of 18 m (60 ft) though expanding to 25 m (82 ft) along the viaduct. It also includes short extensions along the six side streets from State Street north to Bridge Street. The site encompasses 11,160 m<sup>2</sup> (120,125 ft<sup>2</sup>) or 2.75 acres (Figures 4.1 to 4.2 on pages 90–91).

### 4.2 Environmental Context

The site is located 72 km (45 mi) north of Albany on the eastern bank of the Hudson River on mostly level terrain generally 42 m (139 ft) above mean sea level. The soil is formed of glacial melt water deposits consisting mainly of deep, fine-textured silt and sand. The site extends along the course of Broadway where it traverses the Bond Creek valley over a man-made earthen viaduct and culvert at the south end of the site adjacent to the old Champlain Canal aqueduct. Bond Creek flows from the east through the culvert beneath the street into the Hudson River approximately 304 m (1,000 ft) away.

The street curves to the west for two blocks past the intersection with State Street, then curves to the north past the clustered entrances of Montgomery, Edward, and Moon Streets, all originally laid out on the former grounds of the old fort and encampment area. From there Broadway proceeds north at a constant elevation past the mouth of Notre Dame Street, then immediately descends in elevation to pass under the Delaware and Hudson Rail Road tracks, ascending north of the railroad to the intersection of Bridge Street (Route 197), which marks the northern end of the site. The northern and southern boundaries of the site, as defined here, are marked by the clustering of documented intact artifact concentrations and features within the early settled part of the village. From the northern end of the site Broadway continues north through the commercial part of the



**Figure 4.1:** Detail of the 1966 7.5-minute Hudson Falls quadrangle (USGS) showing the location of the Fort Edward Village Site highlighted in yellow.

village to Hudson Falls, but that part is excluded from this site.

The site passes through a mostly residential part of the village, the street lined with nineteenth century homes except where it passes over the viaduct (Photos 4.1 to 4.6 on pages 92–94). There is also a former residence converted to a funeral home (M. B. Kilmer Funeral Home at 82 Broadway) along the street within the site, and two restaurants. One is the Anvil Inn at the corner of Broadway and Edward Street, converted from the former Turner Blacksmith Shop. The other is the Broadway Family Diner and Bakery across the street.

### 4.3 Archaeological Methods

Archaeologists explored the site by a combination of manually excavated units and monitoring of all new utility construction trenches within the project area (Figure 4.3 on page 95). The manually excavated units (73) were distributed within six predetermined Data Recovery Trenches (DRTs) concentrated in a section of Broadway known to be sensitive for the existence of intact eighteenth century fort-related features. The DRTs were placed between Moon and Notre Dame Streets along the alignments of planned utility installations within the east and west parking lanes of the street. Standard archaeological excavation and recording methods were used during this part of the investigation. As discussed in the artifact assemblage analysis section of this report

(see Assemblage Analysis, Chapter 3 on page 38), 65% of the overall assemblage came from these excavations. The data recovery units encompass just over 122 square meters (1,313 ft<sup>2</sup>), and were systematically excavated and screened by stratigraphic components.

All construction trenching that passed through the site area was monitored by archaeologists. Of that, intact deposits or features were identified in many areas resulting in the recording of 114 unique monitoring Incidents of varying sizes. Most of these consisted of 20-foot long segments of continuous deep trenching for utility lines and service hook-ups to buildings, but one (Incident 185) involved the removal of old sidewalk slabs in front of 73 Broadway where a series of 11 shovel test pits were excavated. In addition, archaeologists had the opportunity to excavate two larger units under sidewalk slabs removed during trenching for water service connections, one at Incident 81 and another at Incident 92, both in especially sensitive locations. In all, monitored Incidents within the site amounted to 3,013 square meters (32,432 ft<sup>2</sup>), some of it overlapping with the DRTs after unit excavations were complete.

### 4.4 Stratigraphy and Features

The stratigraphy of the site with regard to the temporal and spatial analysis of data recovery units is discussed in the previous section by J. Scott Cardinal (Chapter 3 on page 38), which details the various measures of strati-





**Figure 4.2:** Fort Edward Village site map showing site boundaries with archaeologically monitored construction trenches in orange.



**Photo 4.1:** View of the south end of the site from near the Bond Creek viaduct during the fall of 2006.



**Photo 4.2:** View northwest of the site area where it passes the mouth of State Street, the original Champlain Canal alignment during the fall of 2006.





**Photo 4.3:** View northwest of the curve in the road by Montgomery, Edward and Moon Streets during fall 2006. This is near the heart of the eighteenth century military activities around the fort. The Anvil Inn Restaurant is at left.



**Photo 4.4:** View south of the curve near Montgomery and Edward Streets during fall of 2007. The new utilities were complete, the old road surface and curbs had been removed, and new base layers and curbing installed. The Anvil Inn Restaurant is at right just out of the photo.

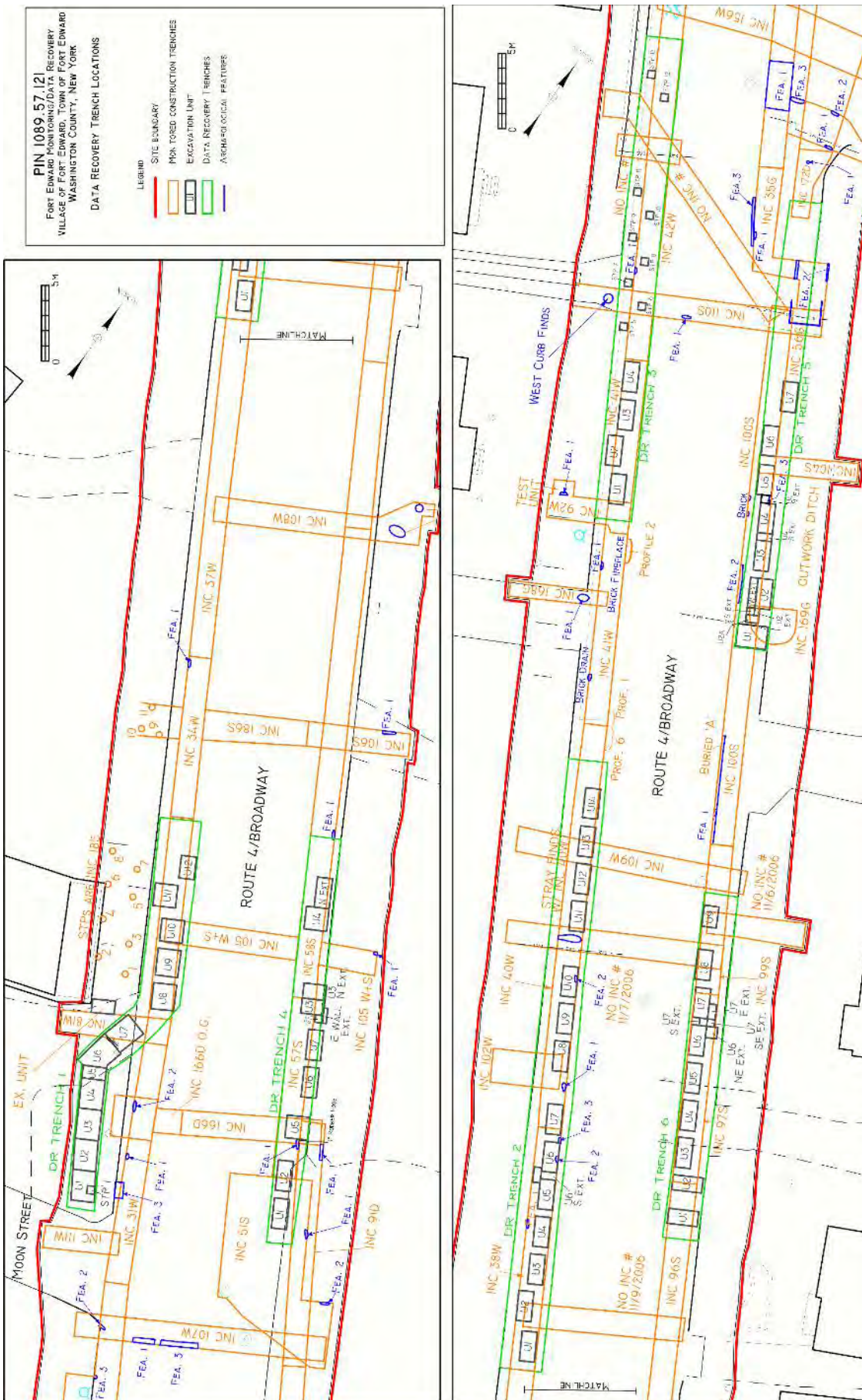


**Photo 4.5:** View north of the site area between Moon and Notre Dame Streets in summer 2006 during data recovery excavations in Data Recovery Trench 5. The railroad bridge is in the distance.



**Photo 4.6:** View north from the mouth of Notre Dame Street toward the north end of the site beyond the railroad bridge during fall 2006.





**Figure 4.3:** Site map between Moon and Notre Dame Streets showing Incidences and DRTs (units) within the Fort Edward Village site.

graphic integrity within the six DRTs. This was applicable to the DRT units because they were excavated in the traditional systematic fashion in advance of the construction activities that occurred in that part of the site. Since with construction monitoring there is a reduced ability to spot (and then to collect) artifacts by soil level, stratigraphy was mostly dependent on the identification and close inspection of larger features, most of which were only able to be documented in profile. Many were identifiable by time period or function by the presence of temporally diagnostic artifacts within them, or by shape, construction material, historical map association, or a combination thereof. These features are discussed in detail by temporal component below.

## 4.5 Summary of the Archaeology at the Fort Edward Village Site

The multicomponent Fort Edward Village site as described here overlaps with the recorded eighteenth-century archaeological site of Old Fort Edward (A115-42-0003) though its boundaries are confined to the project APE, and it also includes a prehistoric and a nineteenth century component. The site boundaries were defined by the occurrence of a concentration of identified features associated with the intense eighteenth-century military activities and the surrounding post-eighteenth century village settlement and development features and deposits on Lower Broadway.

Long before European contact, this area was known as the “Great Carry” a stepping-off point for a portage route north to Lake Champlain. Going back as far as the Middle Archaic period (8,000 to 6,000 B.P.), there was human settlement here as evidenced by the large number of known prehistoric sites nearby along the flats north and south of Bond Creek, and on Roger’s Island in the middle of the river. The prehistoric deposits and features found within the project APE are part of that repeated use of the area. The lithic assemblage of over 1,200 artifacts, and the identification of two prehistoric features provides material for analysis and interpretation of the site within the local area as well as within the more regional context of prehistoric settlement of the Upper Hudson valley.

The lithic artifacts themselves indicate that the raw material used here was predominantly Onondaga and Mt. Merino chert and the less-ideal Fort Edward Dolostone chert. Minor lithic types were also found including quartzite, jasper, and chalcedony, all of which come from relatively long distances. Based on flake sizes, later-stage production behaviors were taking place with Onondaga chert, which had to be carried to the location from at least 50 miles away along the Mohawk Valley. This indicates that the assemblage was largely produced by people who were moving into the area, perhaps seasonally, from the south or southwest. Generally, the

larger flakes are from the more local Mt. Merino and Fort Edward Dolostone cherts, which may have come in as larger blanks or cobbles since it was able to be transported a shorter distance. The presence of some quartzite, as well, could be evidence for a general south to north movement of people through the area during prehistory.

Based on comparisons to other nearby sites, it seems likely that the deposits within the APE are the product of seasonal reoccupation of the same general space over at least a couple thousand years from the Late Archaic through the Early Woodland (8,000-2,000 B.P.). This would have occurred when the environment stabilized to modern conditions and native populations adapted to this by switching from an opportunistic foraging strategy to one that is characterized as more logistical, with movements more constricted and programmatic, favoring some areas season after season (Curtin et al. 2008). It is probably a small spring-summer resource extraction camp used to take advantage of seasonal fish runs while at the same time the presence of numerous fragments of fire-cracked rock and intact features document a more significant investment in the place. Also, the presence of bifacial tools like scrapers and drills document behavior beyond riverine resource extraction.

The location just on the north side of the river and creek confluence became the focus of European settlement in the early eighteenth century with the establishment of a trading post, which was subsumed by the British in 1755 when they began a period of intense construction of a fortified military supply depot. This complex had a state-of-the-art earth and log fort, store houses, barracks, guard houses, a sutler’s house, and a long line of entrenched earthworks surrounding the fort and regimental encampments. There were bridges to the island where numerous buildings were constructed including a large barracks complex, storehouses, a hospital, burial grounds, gardens, ranger’s huts, and tent villages. A network of blockhouses was also constructed as an added line of defense surrounding the whole complex.

The project route follows the military road that crossed the creek and entered the fort. It runs past one of the blockhouse locations depicted on period maps at the north bank of the creek, and passes through the entrenchment footprint east and north of the fort, also depicted on period maps. Archaeological excavations and monitoring identified intact buried evidence of this military occupation in the form of the remains of the blockhouse fireplace at the creek crossing depicted on the map. It also identified the filled-in ditches of the outworks line crossed by construction in several places. Various features of the enclosed encampment were identified including four fireplaces believed to be related to guard houses, soldiers’ huts, or winterized tent sites. Two latrine pits and numerous small refuse pits associated with the five years of intensive campaign activ-

ity during the war were also identified in archaeological unit excavations and construction monitoring. Many artifacts related to the military activity were collected revealing information about soldier's diets and daily activities.

The period maps suggest that there were two episodes of entrenchment construction over the course of two years during the war; an early one built in 1756 that was then filled in and a larger one constructed further out in 1757 enclosing more area. This was confirmed by archaeological evidence showing that refuse was buried in pits by soldiers camped over the earlier filled ditch, and by encountering the two parallel ditch lines east of the fort in construction trenching along Broadway.

The post French and Indian War settlement didn't begin in earnest until after the Revolutionary War when settlers came to Fort Edward and began to improve the infrastructure of the area, attracted by the water power and other resources. Houses and a few taverns became established along the road near the fort location. The old military road was turned into the Waterford and Whitehall Turnpike in 1806 and a bridge was built along this road over Bond Creek circa 1815. Features of some of the utilities and infrastructure of the growing village were encountered during this project. Archaeological evidence of a wooden water line, probably built ca. 1805, was found in excavations along the street in the block between Moon and Notre Dame. A lead water service line and curb stop from a later water line to a house on the corner of Broadway and Notre Dame was found, and a concrete-covered and lined iron pipe, whose function and date are unknown at this time, was found running along the east side of the street from Moon to Notre Dame.

A blacksmith and carriage shop operated at the corner of Broadway and Edward Streets for many decades under various owners, up until the early twentieth century. Evidence of blacksmithing activities associated with this shop was found in construction monitoring in the doorway of the building, now a restaurant. The archaeological evidence was in the form of several possible fence or hitching posts, thick charcoal deposits just under the early-twentieth century brick pavement, and a possible horse-watering trough. Also on nearby Montgomery Street, part of a buried stone retaining wall was found beneath the blue stone sidewalk lining the edge of the street. This related to the late-nineteenth century landscaping of the large Victorian house there but was covered when the public sidewalk was put in.

The largest archaeological feature found during this project was the nineteenth century stone retaining wall along the west side of the Bond Creek Viaduct built ca. 1830 in connection with the Champlain Canal aqueduct and culvert. The viaduct carries Route 4 into the village from the south on the original alignment of the military road over the creek. It replaced the ca. 1815 bridge by filling the creek valley to the level of the bor-

dering flats while channeling the creek through a culvert connected to the canal aqueduct. Much of this wall had been further filled along the north end in the twentieth century and was identified and recorded in the deep water main construction trench.

## 5. Prehistoric Component

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Though we looked at only a narrow corridor through the region, archaeological features and artifacts identified during data recovery excavations and construction monitoring reveal the intact presence of prehistoric occupation at the site. This prehistoric component in turn is comprised of at least three subcomponents based on the recovery of diagnostic projectile points and a radiocarbon date from a hearth feature found in DRT 6, Unit 7 (Feature 38). The prehistoric subcomponents include the Late Archaic (6,000-3,500 B.P.), the Early Woodland (3,000-2,000 B.P.), and the Transitional period, which is a relatively short period of time between, and probably overlapping with, the previous two. Refer to Figures 4.2 to 4.3 on pages 91–95 for DRT and Unit locations.

### 5.1 Horizontal and vertical distribution

The prehistoric artifacts were found at a range of depths (weighted mean) among the six DRTs along the block from Moon to Notre Dame Streets, the shallowest weighted mean depth at 65 cm (25 in) below the surface in DRT 1 near Moon Street, and the deepest at 126.4 cm (50 in) below surface in DRT 5 near Notre Dame. As is apparent from the overall analysis of the diagnostic artifacts in the site assemblage, primarily from the manually excavated DRT units, the depth of the prehistoric occupation appears to have retained substantial vertical differentiation below the historical layers, but it is not a consistently clean demarcation.

In most cases, prehistoric material was clearly disturbed from its original context and then incorporated into later deposits through historical landscape modification (i.e. eighteenth century military occupation and subsequent village development and continuous occupation). For instance, DRT 5 straddled a segment of the French and Indian War outwork line constructed by the British in the 1750s as a defensive barrier to enclose a large encampment area outside the fort itself. This involved digging a continuous protective ditch over 1.8 m (6 ft) deep, 1.8 m (6 ft) wide at the bottom, and 4.5 to 5.5 m (15 to 18 ft) wide at the ground surface, while piling the soil from the ditch to form an earthen barrier up to 2 m (7 ft) high along the ditch edge. During archaeological excavations in DRT 5 this ditch was identified and sectioned in Unit 4, the base of which reached

a depth of 2.3 m (7.5 ft) below the street surface. The artifact assemblage from the ditch fill included both re-deposited Native material and primary refuse deposits from the 1750s fort occupation, some prehistoric lithic debitage found as deep as 1.8 to 2 m (6 to 7 ft) below the surface.

Despite this there were two core areas amongst the Data Recovery units where prehistoric features and artifact concentrations were found. One was in DRT 2 where a feature was identified in Unit 2. Also in DRT 2 the highest concentration of lithic debitage at the site was found in adjacent Units 5 and 6 where over 400 lithics were recovered. The other core area was across the street in DRT 6 where 235 lithics were recovered in Unit 7 surrounding a hearth feature.

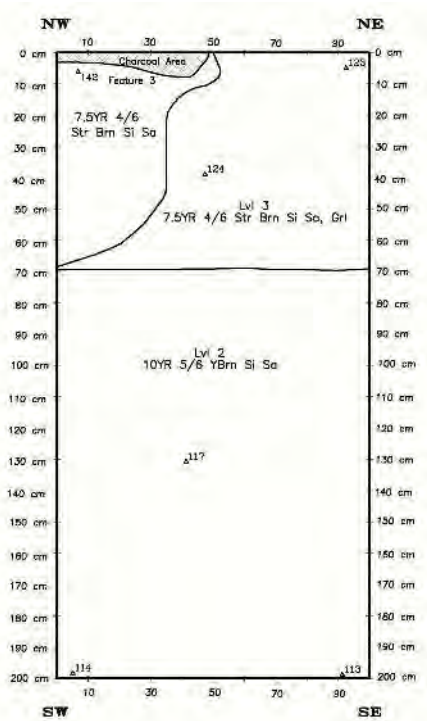
### 5.2 Feature Descriptions

#### *DRT 2 Unit 2, Feature 3: Charcoal Stain*

A dark charcoal stain appeared in the northwest corner of Unit 2 at the top of Level 3 soils at 75 cm (30 in) below the ground surface. The feature extended north and west beyond the unit limits so we don't know its complete shape. The part exposed in plan by excavation was irregular in shape and measured about 70 cm (27 in) long by 50 cm (20 in) wide (Figure 5.1 on the facing page). Most of the charcoal was concentrated at the northernmost 10 cm (4 in). In the northern wall profile of the unit (Figure 5.2 on page 100), the feature appeared like a mushroom in shape with a thick columnar stem beneath a spreading top reaching another 74 cm (29 in) deep, or 149 cm (58 in) below ground at the sidewalk level. The bottom of the feature reached 40 cm (16 in) into Level 4 soils, which were strong brown silty sand with gravel. In appearance it looked somewhat like a post mold though flat on the bottom.

Artifacts found in the feature included small pieces of charcoal, two chert flakes and five chert shatter. When excavated the dark soil became concentrated in the northwest corner of the unit. The surrounding Level 3 soils produced nine chert shatter, one showing evidence of being utilized, and two unidentified bone fragments. At the depth of Levels 3 and 4, the feature became very compact. The function of this feature is unknown.





**Figure 5.1:** Plan of DRT 2, Unit 2 showing Feature 3, the charcoal stain at the top of Level 3.

### ***DRT 6 Unit 7, Feature 38: Hearth and Linear Stains***

Located across the street and 23 m (75 ft) to the north, Feature 38 consisted of a charcoal stain surrounded by a dense chert flake scatter and by a series of linear soil stains that looked like decayed wooden poles. The plan drawing of this feature (Figure 5.3 on page 101) shows seven or eight linear soil stains, mostly gray brown silty sand, with reddened soil within the gray, randomly crisscrossing the unit at varying depths. These stains appeared only as thin discolorations that disappeared within only a few trowel scrapes, the shallowest at 109 cm (43 in), and the deepest at 120 cm (47 in) below datum. Because they varied in depth they were not all visible at once (Photo 5.1 on page 102). After the first one was observed and documented, as the unit level was excavated, each additional linear stain was added to the level plan rendering a plan view of their orientation and relationship to each other. Most of them disappeared beyond the unit walls, but two of the lines were at least a meter long within the unit.

The stains were suggestive of straight “poles” no more than a few centimeters wide that fell flat and decayed in place. About 10 cm (4 in) to the east of one of the “poles” was a hearth consisting of a charcoal concentration surrounded by dark soil measuring overall about 20 cm (8 in) across and 12 cm (5 in) deep (Figure 5.4 on page 102). There was a chert flake concentration

within 15 cm (6 in) of the hearth, and flakes scattered throughout Level 2B of the larger unit. Overall there were more than 200 lithic flakes or shatter, primarily of what has been called Fort Edward chert, and one fire-cracked rock. The Fort Edward chert, available in outcrops not far away, is a distinctive very dark gray to black and generally has a quite dull, almost shale-like luster.

Some of the wood charcoal from the hearth was carbon dated to  $3910 \pm 50$  years B.P. (Beta-225512; 2560 to 2530 cal B.C.;  $\delta^{13}\text{C} = -26.3\text{‰}$ ), which is considered the Late Archaic period. The soils associated with the hearth feature consisted of dark gray sandy loam with chunks of black charcoal. Flotation of soil samples from the hearth produced only charcoal, no seeds, bone, or other cultural material. The surrounding natural matrix (Level 2) is dark yellow brown sand between 40 and 50 cm (16 and 20 in) thick. It is situated from 70 to 110 cm (27 to 43 in) below the current ground surface at the street curb.

## **Lithic Technology**

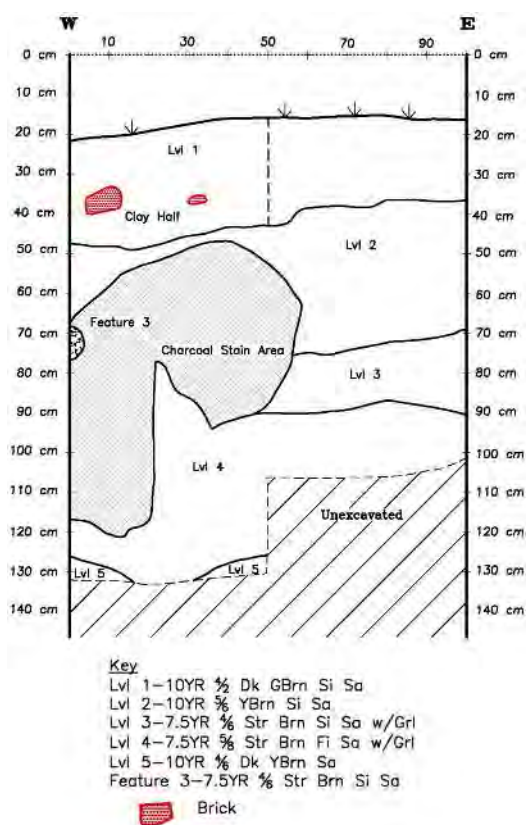
The prehistoric assemblage of the project area includes 1,459 artifacts, of which 1,256 are chipped stone and 203 are fire-cracked rocks or rock fragments.

### ***Chipped Stone Debitage and Material***

The majority of the chipped stone assemblage is made up of flakes (66%) and shatter (31%), with the other categories (cores, bifaces, scrapers, and projectile points) only representing about 3% of the total (see Table 5.1 on the next page). The ratio of manufacture debris to completed tools and cores could be indicative of a high degree of early stage reduction at this site. Also, the presence of cortex can reflect the size of the original raw material and is indicative of processes at the earliest stages of bifacial reduction (Miroff 2011:67). About 7% of the assemblage was cortical or primary flakes.

Given lithic tool production’s reductive nature and the fact that it produces smaller, non-cortical, flakes in a much greater abundance than larger, cortical flakes, an interpretation of this number is that early stage lithic production was an important aspect of the behavior that created this assemblage. That is, the assemblage is at least partly created by the initial reduction of raw material. Another possibility is that raw material was being reduced with the purpose of creating expedient flake tools rather than formal bifaces. Given the size and density of the assemblage, especially in Data Recovery Trenches 2 and 6, it is probable that all aspects of lithic tool kit creation and maintenance contributed to the assemblage, including expedient flake production, early stage manufacture, bifacial thinning, and retouch.

Table 5.2 on page 103 shows the size breakdown of flakes, shatter, and the six cores from the Fort Edward

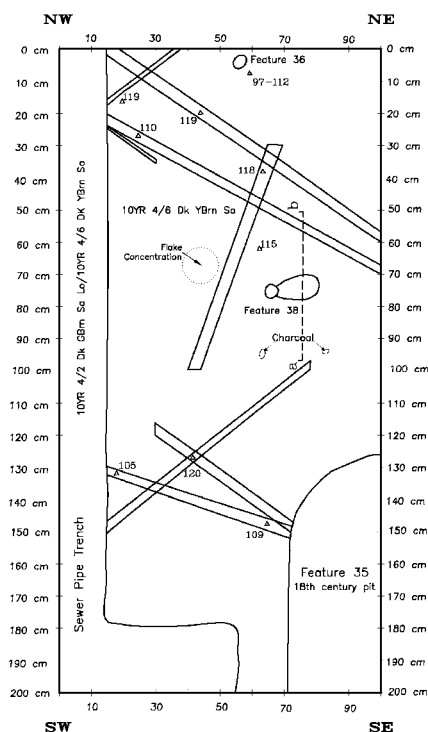


**Figure 5.2:** North wall profile and photo of DRT 2, Unit 2 showing Feature 3.

**Table 5.1:** General Lithic Assemblage from the Fort Edward Village Site.

	Flake*	Shatter	Core	Biface	Scraper	Projectile Point	Total
DRT 1	106	43	1	2	3	-	155
DRT 2	403	163	5	7	2	5	585
DRT 3	17	-	-	-	-	-	17
DRT 4	10	2	-	1	-	1	14
DRT 5	48	22	-	3	-	3	76
DRT 6	214	144	-	3	2	1	364
Incidents (all)	29	13	-	2	-	1	45
Total	827	387	6	18	7	11	1,256

\* Flake category includes: primary, secondary, tertiary, pressure, bifacial thinning, and broken flakes.



**Figure 5.3:** Plan of DRT 6, Unit 7 showing Feature 38, a prehistoric hearth, and associated linear stains from 109 to 120 cm (43 to 47 in) below datum.

Prehistoric Site assemblage. It documents that overall the assemblage is characterized by higher frequencies of smaller flakes with nearly 74% of the assemblage measured at smaller than one inch. The average size for the entire assemblage was about  $\frac{2}{3}$  inch (16.52 mm). Large flakes, measured at  $1\frac{1}{4}$  inches or greater, make up only about 5% of the overall assemblage but this still documents that early stage reduction for tools or for large expedient flakes was taking place at the site. Since flintknapping, regardless of end goals or technique, is a reductive process that starts with larger pieces of raw material and fractures them into smaller ones, it is to be expected that smaller pieces of debitage will greatly outnumber larger ones. This is the case with the Fort Edward assemblage. However, rather than showing a linear or exponential relationship between size and frequency, this assemblage plateaus at  $\frac{3}{4}$  inches with there actually being more flakes in the  $\frac{1}{2}$ - $\frac{3}{4}$  in size class than in the smaller  $\frac{1}{4}$ - $\frac{1}{2}$  in size class. This means that average debitage size is disproportionately high relative to what would be expected if all waste materials from tool production and maintenance were included in the sample.

While some of this can be explained by the minimum dimension of some debitage causing them to fall through the  $\frac{1}{4}$  in mesh screen, it is more likely that some sort of size-sorting effect has influenced the assemblage. Effects that may have produced this assemblage include both cultural means (caching, cleaning, raw material se-

lection, expedient vs. curated tool production, etc.) and natural means (physical characteristics of the raw material or percussion instrument, wind and water action, soil disturbances, etc.) and given the multicomponent nature of the site it is likely that more than one effect is at work in this case.

Raw material was qualitatively assessed based on its physical characteristics and is summarized by location in Table 5.3 on page 103. Some, like the two pieces of jasper found in Data Recovery Trench 2, are very easy to identify and to group with each other and apart from all of the other chipped stone material. However, in the three largest categories (Onondaga, Mt. Merino, and Fort Edward), there were a number of pieces that were not as obvious. In all cases these were assigned to one of the three categories to avoid creating a fourth category purely for borderline artifacts. The number of artifacts that could not be confidently assigned to one category immediately is very small, though, and even if further quantitative analyses were to move these to a different category it would not affect the basic statistics given the overall sample size.

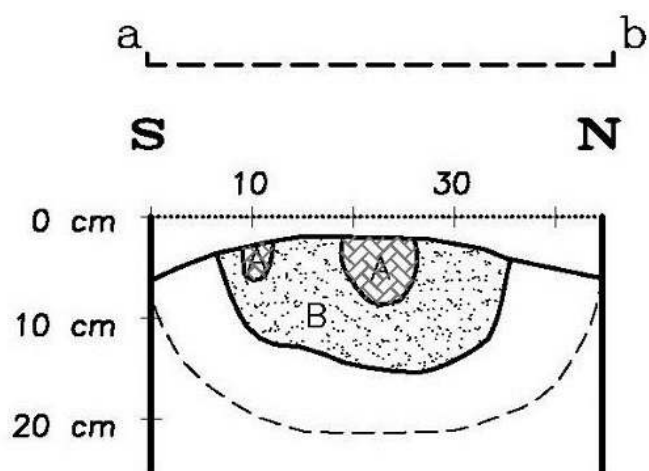
Because chert raw material type terminology in archaeological literature can often be confusing, with individual researchers often using the same terms for different cherts, characteristics of the three main groups will be described. During the lithic analyses it was observed that the majority could be fit into three broad categories. The terms used here are useful shorthand for describing this assemblage and are not meant to reflect on broader raw material variability in the region nor is it expected that the use of any of these terms here will necessarily parallel their use in other reports. Artifacts typed as Onondaga chert all were gray in color though some could trend toward brown and were relatively fine grained. Mt. Merino cherts were grouped together by their blue-gray to green color and often had wide-grained, oxidized inclusions. Fort Edward cherts were very dark gray to black and generally had a quite dull, almost shale-like luster. The Mt. Merino and Fort Edward descriptions fit well with descriptions of cherts found in Fisher (1985) *Bedrock Geology of the Glens Falls-Whitehall Region, New York*.

Overall, the assemblage is dominated by these three different kinds of chert, taking up a total of 95% of the whole (Onondaga: 38%, Mt. Merino: 28%, Fort Edward: 29%). The remaining 5% of the assemblage is mostly quartzite with nine pieces of chalcedony, two of jasper, one of an untyped cobble, and one greenish chert that could be related to Mt. Merino but was too visually distinct from the rest of the assemblage to be typed with that category. Within the cherts, Onondaga chert from the Mohawk Valley was the single largest type followed by roughly equal proportions of the more local Mt. Merino and Fort Edward varieties.

Most of this material comes from origins relatively close, with the Onondaga chert traveling the furthest



**Photo 5.1:** View of one of the linear stains and the Feature 38 charcoal concentration near it in DRT 6, Unit 7.



Key

A-10YR  $\frac{2}{4}$  Blk Charcoal  
 B-10YR  $\frac{4}{4}$  Dk Gry Sa Lo



**Figure 5.4:** North-south bisect through Feature 38, a probable hearth.



**Table 5.2:** Summary of flake size by range.

	¼-½"	½-¾"	¾-1"	1-1¼"	>1¼"	Average Size
DRT 1	29	49	37	21	14	20.2
DRT 2	242	209	75	29	16	15.4
DRT 3	2	4	3	4	4	23.0
DRT 4	6	4	2	0	0	13.6
DRT 5	25	30	11	2	2	15.5
DRT 6	132	141	55	17	13	16.0
Incidences (all)	7	18	5	4	8	20.0
Total	443	455	188	77	57	16.5

**Table 5.3:** Lithic assemblage by raw material type.

	Onondaga	Mt. Merino	Ft. Edward	Quartzite	Chalcedony	Other	Total
DRT 1	138	3	1	8	-	-	150
DRT 2	203	280	54	25	6	3	571
DRT 3	15	1	-	1	-	-	17
DRT 4	10	1	-	-	1	-	12
DRT 5	45	23	-	-	2	-	70
DRT 6	32	25	297	3	-	1	358
Incidents	23	11	5	3	-	-	42
Total	466	344	357	40	9	4	1,220

of the main types, minimally about 50 miles but the Onondaga escarpment runs the length of the state and gray cherts like the ones identified in this assemblage are found throughout it. The Mt. Merino type is found in outcrops as close as about ten miles away to the east of the project area. The Fort Edward type is found in multiple geologic formations around the area including the Warner Hill Limestone, Finch Dolostone, and Fort Edward Dolostone. Geologic maps show numerous locations in the area where these can be found including within a few kilometers (Fisher 1985). It is also possible that this last type could have been found regularly along the banks of the Hudson immediately adjacent to the site. There is some evidence of raw material coming from further, with the chalcedony likely from New England and the jasper likely from Pennsylvania, but they make up a very small proportion of the overall assemblage.

In addition to size, flakes and shatter were analyzed for the presence of heat treatment and utilization, summarized in Table 5.4. Cortex was discussed previously in the opening of this section. Heat treatment is fairly common if not ubiquitous behavior in lithic tool production across the northeast and can be noted in debitage through characteristic reddening and 'pot-lidding', a characteristic pattern of round shallow scars on the surface of flakes from inclusions or impurities popping off during the heating process. It was not an important behavior in creating this assemblage, with only one flake

**Table 5.4:** Number and type of debitage characteristics.

	Cortex	Heat Treatment	Utilization
DRT 1	3	0	5
DRT 2	50	0	6
DRT 3	3	0	2
DRT 4	0	0	1
DRT 5	9	0	2
DRT 6	11	0	1
Incidents (all)	9	1	3
Total	85	1	20

showing any signs of heat treatment. Utilization was noted by the presence of retouch or damage, sometimes bifacial but usually unifacial, on flakes that bore no other elements of bifacial reduction. They were present in small numbers, only about 1.5% of the assemblage, across the site. This percentage is likely low given that limited use may not leave any visual traces at all on the expedient tool. In cases where it does, it may be difficult to identify or to distinguish it from damage done through time and excavation.

### Stone Tools

In total, 35 bifacial tools or tool fragments were found as well as one cobble tool. Figures 5.5 on page 105 through 5.10 on page 109 show the bifaces recovered,

with tables documenting relevant characteristics. Within these, 11 were identified as projectile points or projectile point fragments, seven were identified as scrapers, and 18 were identified generically as bifaces, a category that includes drills, knives, other tools, and bifacially worked stone that was not identifiable to another category. The majority of these, 22 or 63%, are made out of Onondaga chert, with eight (23%) made from Mt. Merino chert, three (8.5%) from Fort Edward chert, and two (5.5%) from quartzite.

The material types are interesting in that they show an aversion to creating formal tools out of the closest possible source, the Fort Edward chert, favoring instead the still relatively close and higher quality Mt. Merino chert, and even more so, preferring Onondaga chert from the Mohawk Valley. While it is highly likely that large cores or cobbles of Mt. Merino chert could have been brought back to the project area, it is very unlikely that this is the case for the Onondaga chert. These chert tools were most likely being brought into the area whole or nearly so, or as easily transportable tool blanks. This suggests that the people who created the Onondaga chert assemblage at this site were engaged primarily in the maintenance and repurposing of a relatively limited amount of raw material and also that these people probably had traveled through the Mohawk Valley before arriving at Fort Edward. The two quartzite tools also suggest travel but of a greater distance. Quartzite as a material is generally considered lower quality than any of the cherts in the region and could possibly be indicative of travel to an area where chert resources were limited or non-existent such as Long Island and parts of New England.

Within the Projectile Point category (Figure 5.11 on page 110) there are five potentially diagnostic points with two points associated with the Late Archaic Period (6,000-3,500 B.P.), one with the Transitional (3,500-3,000 B.P.), and two with the Early Woodland (3,000-2,000 B.P.). While this is a relatively small number, it is indicative of the repeated use of this area by Native American groups for at least 4,000 years and given the relatively similar lifeways common to those time periods, it is likely they were all using it in similar ways.

### ***Fire-Cracked Rock***

Of the 203 fragments of fire-cracked rock in the assemblage, there is a chance that some was formed by eighteenth-century soldiers during the seven years of the encampment at the fort but it is more likely they are artifacts of Native occupation. DRT 2 units produced the most fire-cracked rock at 76 fragments for the trench overall or nearly 40% of the total for the site. Units 5 and 6 contained the most, which considering the feature in Unit 2 and the high density of debitage in Units 5 and 6, is not surprising. A representative sample of fire-cracked rock fragments (one nearly whole but frac-

tured cobble represented) is featured in Figure 5.12 on page 111.

## **5.4 Interpretation**

### ***Tool Manufacture***

The prehistoric lithic assemblage at the Fort Edward Village site is characterized predominantly by smaller flakes – which most assemblages are – but the large proportion seems to be indicative of later-stage lithic production behaviors creating the majority of the artifacts. There are some very large flakes, however, showing that early-stage reduction took place here. It is probable that flake size is related to the form the raw material took at this site with generally smaller flakes coming from Onondaga chert, which had to travel farther and probably came in either as completed bifaces, blanks, or smaller cores – and generally larger flakes coming from the more local Mt. Merino and Fort Edward Dolostone cherts, which had to be transported a shorter distance and may have come in as larger blanks or cobbles. Behaviorally, there is less need to conserve the local materials as more is just a short walk away, so they might have been used for more expedient purposes, creating larger flakes. This hypothesis is worth further research.

### ***Travel/Trade***

Raw material usage from the assemblage includes three main types, qualitatively superior Onondaga and Mt. Merino cherts, and the less-ideal Fort Edward Dolostone variety. Minor types include quartzite, jasper, and chalcedony, all of which come from relatively long distances. Given that the single largest raw material type, Onondaga chert, comes from (at least) 50 miles away, it seems that the assemblage was largely produced by people who were moving into the area—perhaps seasonally – from the south or southwest. It is unlikely that trade is an adequate explanation for the sheer quantity of Onondaga chert at the site.

Given the small quantities of the exotic raw materials, it isn't possible to determine if trade or long-distance seasonal travel are the result of their deposition. However, the average size of quartzite flakes and shatter is 22 mm, approximately 33% larger than the overall average (16.5 mm), while chalcedony is 12.3 mm, approximately 25% smaller than the overall average. The size of the two Jasper artifacts averages 17.9 mm but the sample is not really enough from which to draw any conclusions. This may be indicative that chalcedony was coming in by trade or seasonal travel and the quartzite may be of local origin. It is unlikely that large chunks of quartzite were being traded or carried into the area with qualitatively better sources of raw material in the immediate vicinity of the site, so this may represent ex-





**Clockwise from top left:** End Scraper (Unit 12 Level 2), End Scraper (Unit 1 South Level 2), Side Scraper/Broken Drill (Unit 1 Feature 1), Rough Biface (Unit 2 Level 2), Rough Biface (Unit 10 Feature 11).

Type	Material	Length	Width	Thickness	Context (Notes)
Biface	Chert	25.6	27.7	9.4	Unit 2, Lvl 2 (Poss. Scraper or Knife)
Biface	Chert	26.7	23.2	8.0	Unit 10, Feat. 11
Scraper	Chert	27.3	17.7	5.5	Unit 1, Feat. 1 (Poss. Broken Drill)
Scraper	Chert	32.5	24.4	7.7	Unit 1, Lvl 2 South, Feat. 1-3
Scraper	Chert	25.0	15.4	5.3	Unit 12, Lvl 2

**Figure 5.5:** Bifaces from Data Recovery Trench 1.



**Clockwise from top left:** Knife (Unit 6, Level 2), Rough Biface (Unit 6, Level 2), Rough Biface – Blue/Gray Mt. Merino Chert (Unit 6 South, Level 3), Broken Point Tip (Unit 3, Level 2), End Scraper (Unit 5, Level 2), Rough Biface – Blue/Gray Mt. Merino Chert (Unit 5, Level 2), Biface Blank (Unit 5, Level 2), Rough Biface (Unit 5, Level 2), Other Stone Tool (Unit 14, Level 2).

Type	Material	Length	Width	Thickness	Context (Notes)
Scraper	Chert	14.6	21.6	7.1	Unit 5 Lvl 2
Scraper	Chert	30.6	13.7	7.8	Unit 6, Feat. 5
Biface	Chert	13.5	8.9	3.3	Unit 3, Lvl 2 (Broken drill tip?)
Biface	Chert	63.0	40.1	11.3	Unit 5, Lvl 2
Biface	Mt. Merino	38.8	25.6	8.8	Unit 5, Lvl 2
Biface	Mt. Merino	37.5	17.0	7.2	Unit 6, Feat. 5
Biface	Mt. Merino	27.5	12.7	5.3	Unit 6S, Feat. 5
Biface	Mt. Merino	31.1	39.9	14.7	Unit 6S, Feat. 5
Other Tool	Cobble	60.0	45.0	9.0	Unit 14, Lvl 2 (Utilized cobble flake, worn on one end)

**Figure 5.6:** Bifaces from Data Recovery Trench 2.



Broken Point Tip – Blue/Gray Mt. Merino Chert (Unit 4, Level 2, Feature 14).

Type	Material	Length	Width	Thickness	Context (Notes)
Biface	Mt. Merino	14.6	15.6	5.2	Unit 4 Lvl 2, Feat. 14

**Figure 5.7:** Biface from Data Recovery Trench 3.



**Left to Right:** Point Tip (Unit 2A, Feature 28), Rough Biface (Unit 1, Level 2 Nat/4 Arb, Feature 21), Rough Biface (Unit 7, Level 2).

Type	Material	Length	Width	Thickness	Context (Notes)
Biface	Chert	46.2	30.1	8.8	Unit 2A, Feat. 28
Biface	Chert	14.3	12.7	5.3	Unit 1, Feat. 21 (Possible broken tip to projectile point or drill)
Biface	Chert	28.8	30.6	9.8	Unit 7, Lvl 2

**Figure 5.8:** Bifaces from Data Recovery Trench 5.



**Clockwise from upper left:** End Scraper (Unit 8, Level 3), Rough Biface – Black Normanskill Chert (Unit 2, Level 2C), Other Stone Tool/Ovoid Knife? – Quartzite (Unit 7, Level 2C), Expedient Retouched Flake Tool (Unit 6, Level 2C), Rough Biface – Black Normanskill Chert (Unit 6, Level 2B).

Type	Material	Length	Width	Thickness	Context (Notes)
Scraper	Chert	51.3	31.6	10.8	Unit 1, Lvl 2C
Scraper	Chert	24	18.2	3	Unit 8, Lvl 3
Biface	Quartzite	113.3	47.8	14.8	Unit 7, Lvl 2
Biface	Normanskill	73.4	42.6	12.2	Unit 2, Lvl 2C
Biface	Normanskill	62.6	42.6	11.8	Unit 6, Lvl 2B

**Figure 5.9:** Bifaces from Data Recovery Trench 6.



**Left:** Rough Biface – Quartzite (Inc 107W Feature 1), **Right:** Rough Biface/Perforator(?) (Inc 81W, Level 1NW).

Type	Material	Length	Width	Thickness	Context (Notes)
Biface	Mt. Merino	45.7	37.6	8.7	Inc 81W, Lvl 1 NW (perforator?)
Biface	Quartzite	46.9	33.1	9.6	Inc 107W Feat. 1

**Figure 5.10:** Bifaces from Incidents.

pedient tool creation by people familiar with quartzite as a raw material. Perhaps it was brought by people from the southern Hudson Valley (i.e. New York, Long Island, or the New England Coast) who utilized it during other parts of their seasonal round. Combined with the large amounts of Onondaga chert at the site, this could be evidence for a general south to north movement of people before they reached the site.

An alternate explanation for the use of these different and distinctly colored raw materials could be the symbolic importance of the colors, particularly the black (Fort Edward), white (chalcedony and quartz), and red (jasper, some heat-treated cherts). As Hamell (1992:455-7) has shown for the Haudenosaunee, these colors structure the ritual cycle and the world with white representing social, alive, bright and positive aspects, red representing antisocial and powerful aspects, and black representing asocial, death, and negative aspects. The meaning of red could change depending on what other color it was paired with. The combination of red and white can represent power for good, while red and black can represent power for evil. Red and white are both alive (social) in comparison to black as lack of life (asocial). Black and red are both considered destructive (antisocial) compared to white as productive (social). While this example is ethnographic, there is compelling evidence suggesting that these colors may have held symbolic importance deeper in the past as some of the aspects that mediate any individual's interpreta-

tion of the colors are universal, such as the biological structure of the eye (Kay 2000) as well as our own personal interaction with other aspects of our biology, like the redness of our blood (Turner 1967). While it seems likely that utilitarian concerns were probably more important than symbolic ones when selecting raw material, symbolic concerns could provide a better explanation as to why raw materials like jasper and chalcedony were carried or traded over long distances despite abundant adequate raw materials in the immediate vicinity of sites like the Fort Edward Village site.

### Seasonality

The interpretive reality of treating this assemblage as a whole doesn't compare with the contextual reality of this assemblage having been created by an unknowable number of people and behaviors over multiple known components (Late Archaic, Transitional, and Early Woodland), but this doesn't prevent us from making some tentative conclusions about the role this site played in the lives of the people that created it. Based on comparisons to other nearby sites, it seems likely that the Fort Edward Village site prehistoric component is the product of seasonal reoccupation of the same general space over at least a couple thousand years from the Late Archaic through the Early Woodland. During the Late Archaic period the environment stabilized to modern conditions and native populations adapted to this by



**Clockwise, from upper left:** 1) Brewerton Side-Notched or Normanskill Point – Late Archaic (DRT 6, Unit 5, Level 4), 2) Non-Diagnostic Projectile Point Fragment (DRT 2, Unit 5, Feature 5), 3) Projectile Point, part of base broken but possibly Lamoka, Blue/Gray Mt. Merino Chert – Late Archaic (DRT 2, Unit 13, Level 1), 4) Projectile Point, part of base broken but possibly Orient Fishtail – Transitional Period (DRT 5, Unit 2, Level 2A), 5) Projectile Point, probably Meadowood Blank, Blue/Gray Mt. Merino Chert – Early Woodland (Inc 34, Feature 1), 6) Non-Diagnostic Projectile Point Fragment (DRT 2, Unit 12, Level 1), 7) Non-Diagnostic Projectile Point Fragment (DRT 2, Unit 6, Feature 5), 8) Non-Diagnostic Projectile Point Fragment (DRT 4, Unit 3SE, Feature 17), 9) Probably Normanskill Point (DRT 2, Unit 6S, Feature 5), 10) Non-Diagnostic Projectile Point Fragment, Blue/Gray Mt. Merino Chert (DRT 5, Unit 2A, Feature 28), 11) Non-Diagnostic Projectile Point Fragment (DRT 5, Unit 2A, Feature 28).

Component	Context	Material	Length	Width	Thickness	Notes
Early Woodland	Inc 34, Feature 1	Mt.Merino	30.8	27.8	3.9	Meadowood, poss. cache blade
Late Archaic	DRT 6 Unit 5, Lvl 4	Normanskill	30.7	22.2	5.6	Brewerton Side Notched or Normanskill, tip missing
Non-Diagnostic	DRT 5 Unit 2A, Feat. 28	Chert	38.9	20.5	6.7	Unidentifiable, base missing
Non-Diagnostic	DRT 5 Unit 2A, Feat. 28	Chert	27.9	27.1	7.9	Unidentifiable, base missing
Transitional	DRT 5 Unit 2, Lvl 2A	Chert	34.4	18.7	8	Orient Fishtail, base & tip missing but ID probable
Non-Diagnostic	DRT 4 Unit 3SE, Feat. 17	Chert	40.6	22.6	6.8	Unidentifiable, base missing
Non-Diagnostic	DRT 2 Unit 5, Lvl 2	Mt.Merino	39.9	27.4	8	Unidentifiable, base missing
Non-Diagnostic	DRT 2 Unit 6, Feat. 5	Chert	28.7	16.2	6.2	Unidentifiable, base missing, poss. drill point
Early Woodland	DRT 2 Unit 6S, Feat. 5	Chert	38.7	21.3	3.1	Meadowood (poss. Lamoka, Late Archaic)
Non-Diagnostic	DRT 2 Unit 12, Lvl 1	Chert	28.8	18.5	5.2	Unidentifiable, base missing
Late Archaic(?)	DRT 2 Unit 13, Lvl 1	Chert	28.8	19.5	8.4	Prob. Lamoka or Normanskill, tip missing and base damaged, ID tentative

**Figure 5.11:** Projectile Points and Point Fragments from all Contexts.





**Figure 5.12:** Representative sample of fire-cracked rock fragments from the Fort Edward Village Site. These are from DRT 2, Unit 5, Level 2

switching from an opportunistic foraging strategy to one that is characterized as more logistical, with movements more constricted and programmatic, favoring the same areas season after season (Curtin et al. 2008). This can be seen in the assemblage here in the repeated use of this spot over at least three archaeological components, based on the recovery of Normanskill/Lamoka, Orient Fishtail, and Meadowood, projectile points.

artifacts are associated with which components but are unlikely to alter this basic interpretation.

It was probably a small spring-summer resource extraction camp used to take advantage of seasonal fish runs as summer base camps from this time period are generally found higher up away from water (Kirk and Markessinis 2003). While not a full summer base camp, this spot wasn't used for brief stop offs either, as numerous fragments of fire-cracked rock and intact features document a more significant investment in the place and bifacial tools like scrapers and drills document behavior beyond riverine resource extraction. This interpretation corresponds well with the one from the closest prehistoric site to this, the Little Wood Creek site, which documented at least five separate Transitional period occupations overlapping in the same space (Agelarakis 1990). The site's location along not just the banks of the Upper Hudson, but at its confluence with the Bond Creek tributary and portage route to Lake Champlain may have had a significant influence on the pattern of prehistoric settlement here. Given the relatively minor changes in overall lifestyle occurring between the Late Archaic and Early Woodland, it seems likely that this pattern continues throughout the known occupations of this site. Further analysis may refine our understanding of which

## 6. Mid-Eighteenth Century Component

The fort itself, which was situated just west of Broadway, was not affected by the road construction activities. However, during the French and Indian War the fort was surrounded by an extensive line of defensive outworks that enclosed five to ten acres of land immediately surrounding the fort on the north and east sides. This land served primarily as a campground or, in other words, day-to-day living area, for the thousands of troops that gathered there over the five years the British targeted French forts on Lake Champlain. Tent villages, temporary huts, guard houses, camp kitchens, and necessary houses (latrines) were among the structures that would have been present within this encampment area at the time.

Broadway (and the DOT project route) now passes directly through this former military encampment area, therefore, the mid-eighteenth century archaeological component of the Fort Edward Village Site is dominated by the surviving features and artifacts associated with these outworks and the military activities that were carried on within them. Archaeologists were able to identify many eighteenth-century features in both construction trenches and data recovery units including two fireplaces and two possible fireplace remnants, two latrine pits, more than a dozen small refuse pits, and the outworks line itself through which the 2006 construction trenching crossed in several places. Further east beyond the outwork line, the location of a blockhouse that guarded the southern approach road into the fort was identified by the remains of a brick fireplace and probable moat at the north bank of the Bond Creek valley. These eighteenth-century features occurred from just north of Bond Creek (the approximate location of the blockhouse) in the south, to the intersection of Broadway and Notre Dame Street (the approximate location of an outwork ditch) in the north. They are discussed by feature type with associated detailed historical background information as appropriate for interpretation purposes.

The multiple types of primary sources available for information regarding Fort Edward include maps and plans made by engineers accompanying the armies, surviving orderly books that recorded the orders governing daily life among the various levels of the military organization, surviving journals kept by soldiers, and letters and reports that flowed from commanders at the posts to their superiors in Albany, Boston, or London describing the progress of construction or conditions at the forts.

Most of these were studied in the process of interpreting the features identified during this project.

It should be pointed out that there exist a large number of French and Indian War map representations of Fort Edward beginning in 1755 when the fort was first built. These maps, drawn by various military engineers, represent natural and built features with differing levels of detail. The largest single compilation is in the Crown Collection of Photographs of American Maps (Hulbert 1907) including colonial-period maps in British archives, of which there are at least 16 of Fort Edward. Outside of this collection, other maps of the fort have been preserved various journals, museums, or library collections. They all depict the “military road” where it passes by the fort, which is roughly the same alignment as today’s Broadway. The ones relevant to this project area and the archaeological findings are shown and discussed here in detail.

As introductions to the feature discussions that follow, several quotes were used from the *General Orders of 1757 issued by the Earl of Loudoun and Phineas Lyman in the Campaign Against the French* (Lyman Esq. 1899). Lyman was Major General and Colonel of the Connecticut Regiment of the provincial troops at Fort Edward that year. A quotation is also used from the personal diary of Jabez Fitch, Jr., a soldier from Norwich, Connecticut who served in Fort Edward during the campaigns of 1756, 1757, and 1758.

### 6.1 The Outworks (also known as Lines of Entrenchment, Circumvallations, or Barriers)

*“The sentrys are not to suffer any person to go out at ye barriers in ye front of ye camp after dark.”*

*General Orders of Major General Phineas Lyman  
Fort Edward, Sept. 7<sup>th</sup>, 1757*

*(Lyman Esq. 1899:83)*

As depicted on Figure 6.1 on page 114, the fort itself was the first thing to be constructed at the site of the former trading post of John Henry Lydius in the summer of 1755. This was during the first expedition against the French fort, St. Frederic, at Crown Point under the command of Major Generals William Johnson and Phineas Lyman. Captain William Eyre, a British engineer who was detailed to the expedition, designed and began to

supervise construction of the fort by mid-August utilizing the labor of the provincial troops raised for the expedition (Steele 1990). The provincials at that time, along with some Mohawk warriors recruited by Johnson, numbered about 3,000 men consisting of regiments from Massachusetts, New York, Rhode Island, Connecticut, and New Hampshire (Hill 1929).

According to Johnson's orders to Lyman, who led the troops north from Albany to the Carrying Place as it was known,

"...you are to erect log magazines covered with bark... [for ammunition and provisions] and to situate them as may best secure them from any attempts of the enemy. This you will also be very attentive to, in the encampment of your troops, which must be so laid out as to cover the magazines"

(Sullivan 1921:203-6)

This suggests that the thousands of troops gathered there were spread across the flats north of the mouth of Bond Creek immediately north and east of the fort itself while it was under construction. By virtue of the prevailing military customs of the era the troops would have been in well laid-out tent camps grouped by regiment.

Meanwhile Johnson had taken some troops north to set up an encampment at the south end of Lake George to make preparations for the advance on Crown Point. In September, with an aim toward thwarting the British encroachment, the French attempted an attack on Fort Edward to destroy Johnson's boats, supplies and artillery but were intercepted on their way by some of Johnson's troops dispatched from the encampment at Lake George. This resulted in the Battle of Lake George, in which both Johnson and the French commander, Baron Dieskau, were wounded. The battle was considered indecisive even though the French and their Native allies retreated back north. Johnson then ordered the construction of Fort William Henry there at the south end of the lake, which overall was considered a significant strategic gain for the British (Anderson 2000:117-8).

Early in 1756, two large works were constructed at Fort Edward: a ravelin was added to the north curtain wall of the fort to protect the north gate, and a partial line of outworks, also known as a line of entrenchment or circumvallations, was added to enclose the area north of the fort as seen on a plan of the environs of Fort Edward made that year (Figure 6.2 on page 115). The ravelin was a V-shaped work designed to protect the fort's main gate from assault. In the eighteenth century the line of entrenchment was depended on to provide the greatest amount of security to large numbers of troops at a military encampment (de La Mamie 1773:55). Fort Edward was never intended to house more than four or five hundred men. It was designed as year-round garrison to protect the stores and magazines kept there as a

forward base of supply. The armies, camped under the protection of the fort each campaign season, would have done so inside this line of entrenchment.

Figure 6.2 on page 115 was drawn during the early summer of 1756 showing a set of works surrounding an area about 350 feet square immediately north of the fort. The incomplete appearance of the ravelin on this plan is a clue to its date. The entrance road into the fort extended northwest from its crossing of Bond Creek directly toward the junction of the western end of the outwork with the east face of the ravelin. This would have funneled all traffic along the road into the fort at a narrow and well-guarded point. One should take note that the eastern line of the outworks did not extend south along the east side of the fort at that time.

In October that same year, a more detailed map was drawn by G. Wetterstrom showing the outworks line of the earlier map, but in comparison to the earlier map, continuing its line on the eastern side south to the creek (Figure 6.3 on page 115). Wetterstrom was a recently recruited Swiss engineer serving as a captain in the newly formed Royal American Regiment. The British Commander-in-Chief in North America that year was Major-General Lord Loudoun. Wetterstrom's map shows a profile detail (Figure 6.4 on page 116) indicating that the line consisted of a parapet approximately eight feet high with a banquette or firing step within. Beyond the parapet (away from the fort) was a ditch about 15 feet wide across at the top, narrowing to about three feet at the bottom, and eight feet deep.

The prevailing military engineers of the time recommended the inclusion of works that projected out from such lines to provide defending gunners better positions from which to fire upon attackers (de La Mamie 1773:100-01). The outwork line at Fort Edward incorporated a variety of these projections in the form of arrow-shaped bastions and V-shaped redans as seen on Wetterstrom's map. Also, there were two areas where the ditch continued through the line into the camp. One was due east of the ravelin and the other was due east of the midpoint at the fort's east curtain wall. The first coincides with the terminus of the line as shown on the earlier 1756 map (Figure 6.2 on page 115) suggesting the line was completed in sections. In his analysis of the period maps of the fort, Richard Patterson (Collamer 1987) suggested that the re-entry angle of the ditch at each terminus was then kept and used as either a sally port through the line or as a covered way into the ditch.

During the 1757 campaign season, General Daniel Webb was assigned command of troops in the Hudson Valley with headquarters at Fort Edward. Colonel James Montessor, Engineer-in-Chief, was responsible for much of the construction that occurred at the fort and on Roger's Island during that year. His journal entries from his time there describe much of the construction activities in some detail (Scull 1881). Related to the outworks, in June he was involved in surveying and laying

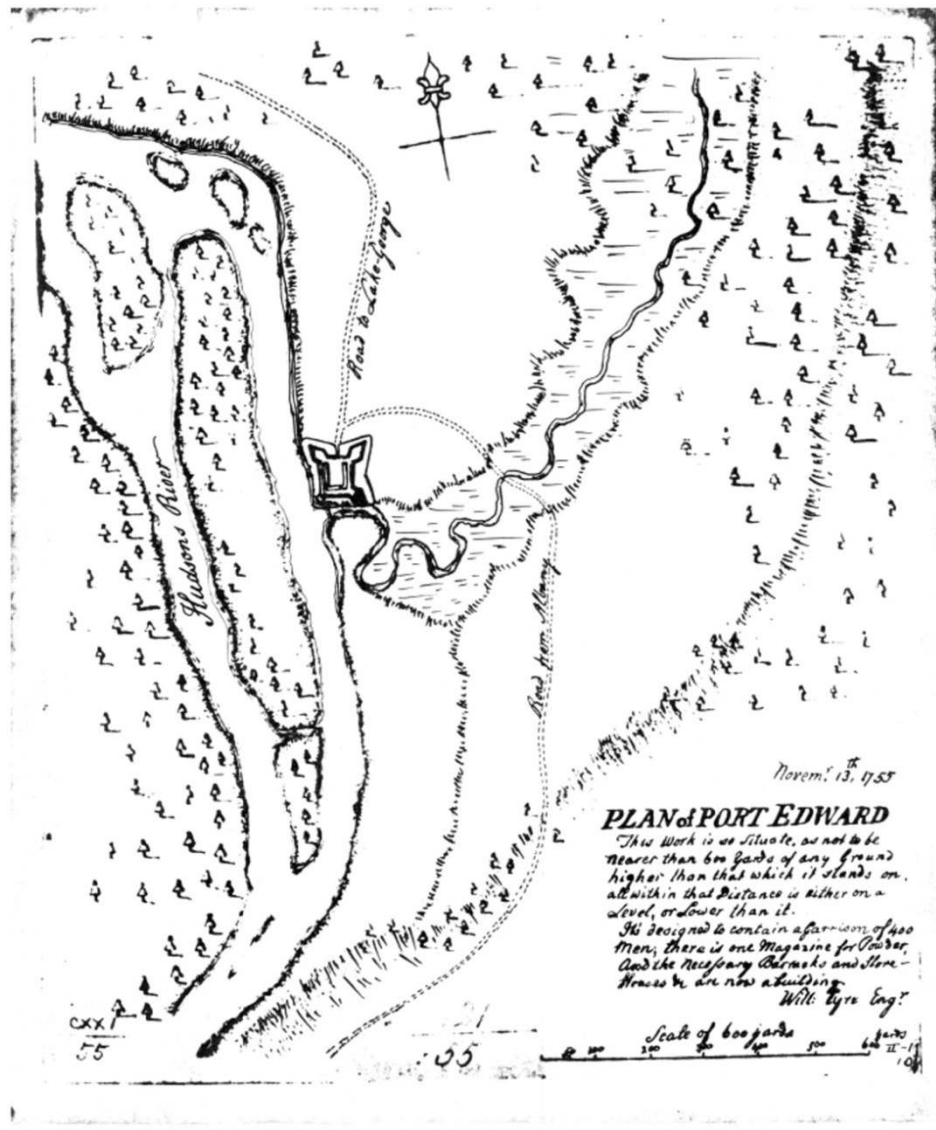


Figure 6.1: 1755 Plan of Fort Edward drawn by William Eyre, Engineer (Crown Collection Series II, Vol. 1, No. 10).



**Figure 6.2:** Detail of Plan of the Environs of Fort Edward, drawn about 1756 showing the addition of an outworks barrier and the ravelin at the north curtain wall of the fort (Crown Collection Series II, Vol. 1, No. 11). Red line is approximate alignment of project area.



**Figure 6.3:** Detail of 1756 Geometrical Plan of Fort Edward with its Environs (Wetterstrom). Red line is approximate alignment of project area.

out a line, and a few days later began construction, noting:

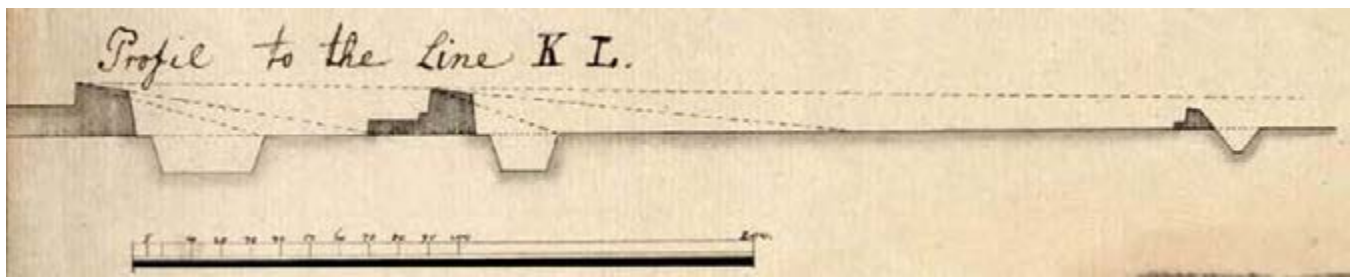
“June 28th Began the line with 100 men, and fascined up to the height of the Banquettes at the East Curtine. Sent 100 men in the woods to cut Fascines. Wednesday 29th continued the work and almost finished the Ditch of the East Curtine. Thursday 30th Brought up part of the SE Flank with 2 Embrasures and continued the Ditch.”  
(Scull 1881:18)

Fascines were bundles of sticks and saplings from 6 to 10 feet long and 8 to 12 inches in diameter that could be piled like logs to shore up earth from the ditch to create the parapets of the line (Smith, Cpt. 1779). Figure 6.5 on the next page shows Montessor's own drawing of a profile through the line that he included with his memorandum on the state of the works at Fort Edward, July 1, 1757 (Scull 1881). According to this, the banquette was 3½ feet wide rising 3 feet above the mean ground level. The parapet rose another 4 feet 4 inches above the ground level. It was 4 feet wide at the top, sloping downward 4 inches to the top of its outer face, and it appears to have been faced with fascines (if not some other material) according to the drawing. The ditch was then 18 feet across, 6 feet 6 inches deep, and 6 feet wide at the bottom, this being a much larger ditch and earthwork than the one on Wetterstrom's map from the previous fall. Interestingly, the profile indicates Montessor had a second smaller ditch excavated outward of the line approximately 15 feet. This outer ditch was picketed at the floor, the pickets, or pointed stakes, standing straight up.

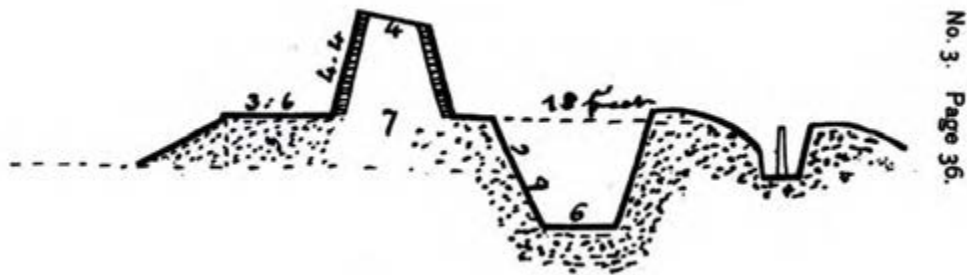
Montessor's description of construction activities that year raise questions about Wetterstrom's map from the year before. Did it infer that the outworks from the previous year weren't finished? Was Montessor's work in 1757 a completion of that line? Or was it perhaps an enlargement on the same alignment of the works already there, or perhaps a completely new, larger outwork and ditch (two ditches) on an entirely new alignment?

Yet another plan of the fort drawn in July of 1757 (presumably by Montessor himself or under his direction) shows the alignment of the line at that time (Figure 6.6 on the following page). It appears very similar to the one done by Wetterstrom but has a somewhat different shape and placement with regard to the bastions and redans. It lacks the ditches that continue through the line into the camp, which suggests they were filled in and leveled for placement of the provincial camps labeled on the 1757 map. It also has a different configuration along the southern extent toward Bond Creek. The most noticeable difference is that it is further away from the fort itself enclosing a much larger area than the 1756 map. This is best seen in Figure 6.7 on page 117, a geo-referenced overlay of the two period maps onto aerial raster imagery of that part of the modern village. This





**Figure 6.4:** Detail from the 1756 Wetterstrom map of Fort Edward showing the fort and ravelin moats at left, and the outwork barrier with V-shaped ditch at far right.

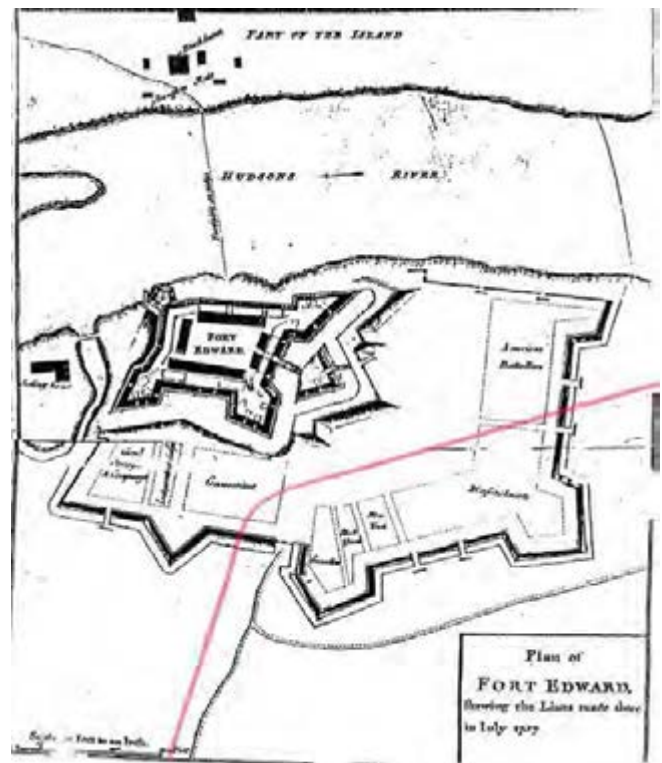


**Figure 6.5:** Profile through the line at Fort Edward, drawn by Engineer-in-Chief Colonel James Montrossor in July, 1757 (Scull 1881).

overlay shows that while the fort on both maps has virtually the same footprint, the outworks line is completely different in scale and location.

We should not assume that the great discrepancy in the lines on these maps represents inaccuracies in the original mapping because as observed by military historian Richard Patterson, the surveying implements that these eighteenth century military engineers used were nearly as accurate as those in common use today (Collamer 1987). Also, maps done by these same engineers elsewhere have proven extremely accurate when tested by archaeological excavation. Therefore, the construction of a larger outwork enclosing more area in 1757 would suggest there was a need for protection of a larger number of troops though there was not a big troop buildup at Fort Edward that year.

The plans of Lord Loudoun for the 1757 campaign season didn't call for the usual expedition to Crown Point and Ticonderoga. Rather, he concentrated his forces on a campaign against Fort Louisburg on Cape Breton Island in Nova Scotia. However, there had been a raid on Fort William Henry early that year by French, Canadian, and Indian forces about 1,500 strong. While they didn't capture the fort, they managed to burn all its outbuildings (a palisaded barracks, a sawmill, several storehouses, and a hospital), it's exposed bateaux, and a half-built sloop planned for the eventual British attack on



**Figure 6.6:** 1757 Plan of Fort Edward (Anon. in Cuneo 1959). Red line is approximate alignment of project area.





**Figure 6.7:** Georeferenced overlay of the 1756 Wetterstrom map and the 1757 plan of Fort Edward onto the modern aerial photograph of the village. Note the 1756 outwork line encloses a smaller area.

Fort Carillon (Anderson 2000:186). Since Fort Edward was Fort William Henry's backup position, this attack by the French no doubt prompted the need to enlarge and reinforce the defensive works at Fort Edward later that year.

At some point, probably beginning in 1757 (Hill 1929), a network of eight blockhouses was constructed in a wide perimeter around Fort Edward. Four were built on the flats north, east, and south of the fort. Another one was built on the top of the hill a little over half a mile north along the military road. There were two built along the road south of the fort guarding each end of the bridge crossing over the Hudson near the south end of Roger's Island, and there was a large one, known as the Royal Blockhouse, constructed on a high promontory overlooking Roger's Island on the west side of the river. These are shown on one of the Crown Collection maps (Series I, Vol. 3, No. 23) drawn about 1758 (Figure 6.8 on the facing page). This map does not depict the outwork line seen on the earlier maps at all. Apparently, as the size of the armies that came to Fort Edward outgrew the outwork lines, they relied more and more on the blockhouses for perimeter security. In fact August of 1757 was when the French and their allies under Montcalm laid siege at Fort William Henry forcing the undermanned garrison there to surrender. This led to the legendary massacre of sick, wounded, and unarmed British troops and followers by uncontrolled Native allies of the French, an event made famous by James Fenimore Cooper's *Last of the Mohicans*.

The campaign of 1758, under the command of General James Abercrombie, did bring somewhere around 16,000 troops through Fort Edward on the way to what turned out to be the failed attack that year on Fort Carillon. This was considered the most formidable army yet seen in America up to that time (Anderson 2000), but the loss to the French, who defended the fort with only 3,526 men, was considered a shameful debacle on Abercrombie's part and the worst British defeat of the war. It wasn't until 1759 that Fort Carillon was finally taken by an army of some 12,000 men, commanded by General Jeffery Amherst, who unopposed, pushed north from Ticonderoga to finally capture Fort St. Frederic at Crown Point. The British then began construction of a large stone fortress at Crown Point to protect their conquests. This rendered Fort Edward essentially unnecessary as a defensive position and therefore the garrison was much reduced. From then on the outworks barrier at Fort Edward would not only be unnecessary for the protection of troops, but such an array of ditches would be a liability to a garrison too small to man them and provide cover for an enemy according to Patterson (Collamer 1987). For these reasons he states that the entrenchment was filled in during 1760, or shortly thereafter.

## ***Features Related to the 1756 Outworks Line***

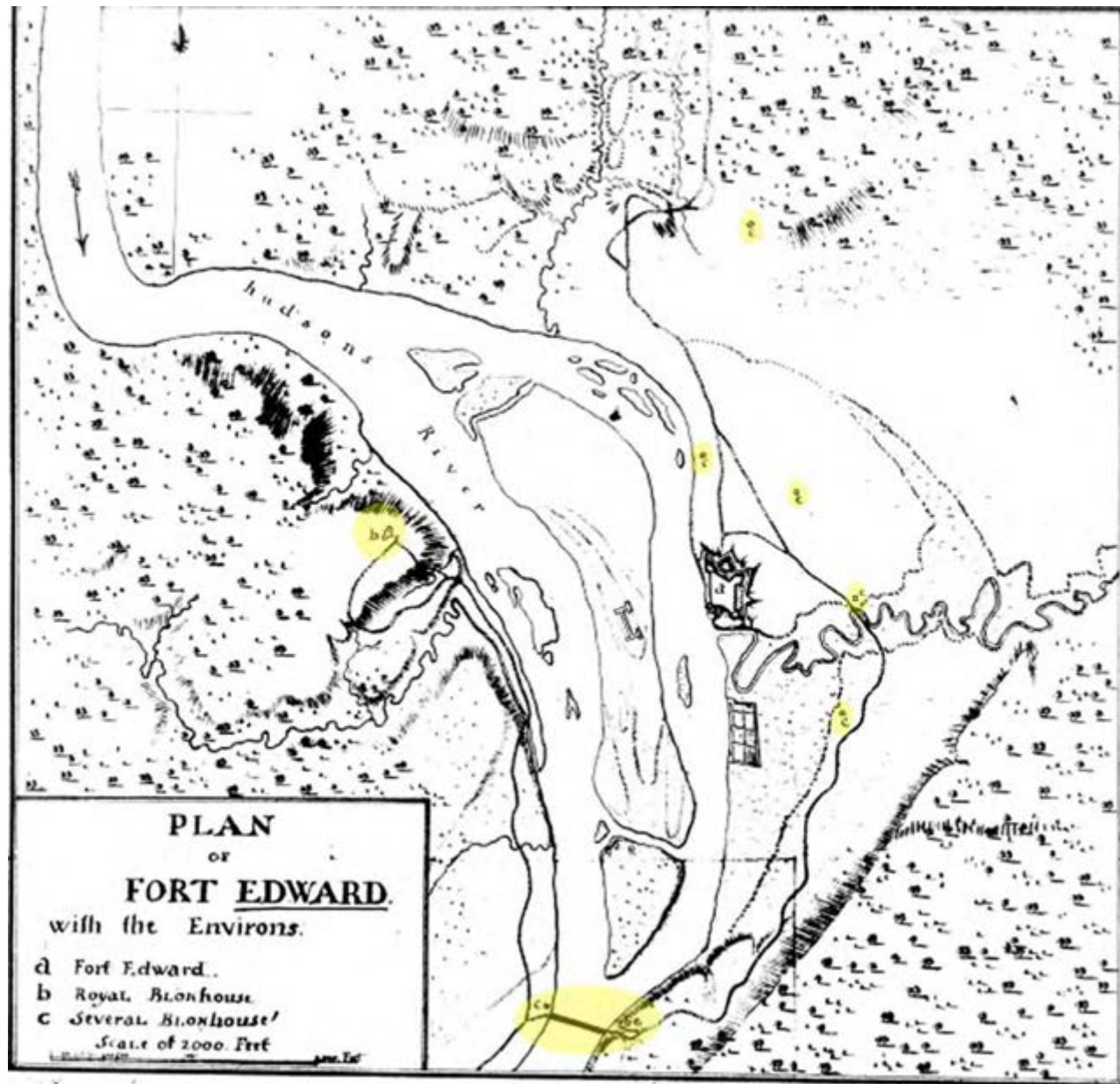
The street crosses through the 1756 line in three places, one near the northeast corner, or bastion, one through the earlier southern terminus section, which later became the ditch through the line, and one place to the south of that along an inner corner of a projection by the outwork gate. These features are described below and are labeled on Figure 6.9 on page 120, a plan of the Fort Edward Village site with the georeferenced overlay of the 1756 and 1757 maps of the fortifications.

### ***DRT 5, Unit 4, Feature 26 Outwork Ditch***

The Feature 26 outwork ditch, running basically east-west, was revealed in DRT 5 Unit 4 and its north and south bulks. In section, this wide, U-shaped ditch was more than 320 cm (10 ft) across at its top, which started at 1 m (3.2 ft) below the pavement surface. From there it tapered down to its bottom almost 2.4 m (7.5 ft) below pavement (Figure 6.10 on page 121). The ditch itself was about 1.4 m (4.5 ft) deep. The units in this DRT were essentially squeezed in between nineteenth or early-twentieth century utility pipe trenches that ran parallel to the curb. These intruded into the feature. On the east a cement-covered iron pipe occupied the bottom of a construction trench to about 2 m (6.5 ft) below pavement, and on the west was an abandoned ceramic sewer line to about 120 cm (47 in) below pavement. In avoiding excavation of the utility trench soils we were confined to only a 60 cm (35 in) wide trench through which to study the ditch until we reached the base of the cement-covered pipe trench. It is probable that the original top of the ditch was impacted by early street construction when the Waterford and Whitehall Turnpike was first built in 1806. Subsequent resurfacing efforts added about 40 cm (16 in) of various pavement layers on top of the feature.

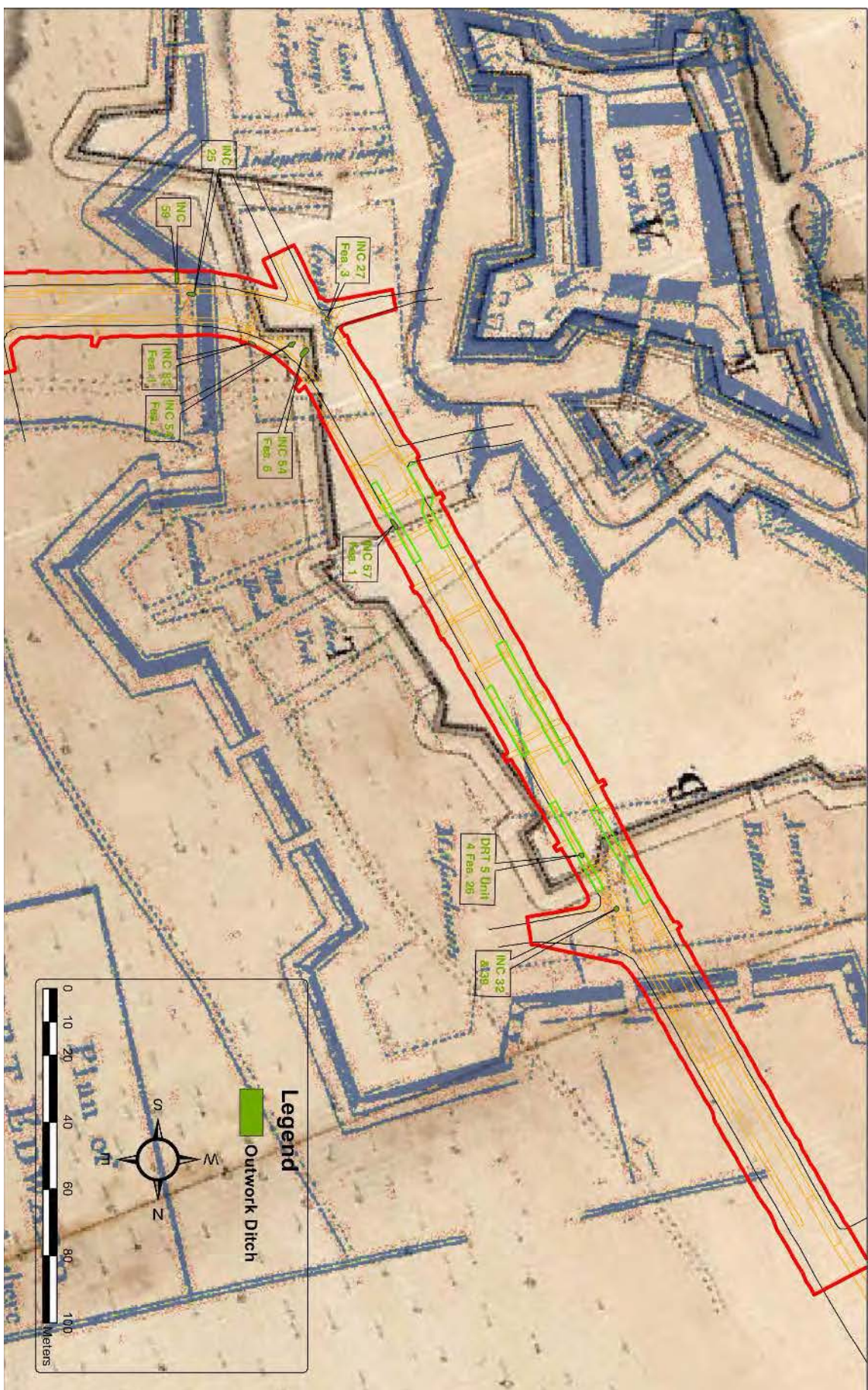
The majority of the soils filling the ditch, all but the bottom 20 or so centimeters (8 in), was dark yellow brown loamy fine sand mixed with a small amount of gravel, some pockets of darker sand with charcoal flecks throughout. This was distinct from the natural subsoil, which was a slightly lighter yellow color with the absence of charcoal. Artifacts in the bulk of this fill were a combination of small and fragmented bits of metal, nails, brick, bottle glass, animal bone, oyster shell, a few ceramics, a clay smoking pipe fragment, a small shard of window glass, and some prehistoric chert debitage and fire-cracked rock. The artifact density was relatively low in this fill. Several of the ceramics found in the ditch fill were white earthenwares that date to the later eighteenth and early nineteenth centuries but these few small sherds could have been mixed into the ditch fill assemblage by accident during excavation.

The bottom 20 cm (8 in) of the ditch had very dark yellow brown fine sand with charcoal containing a con-

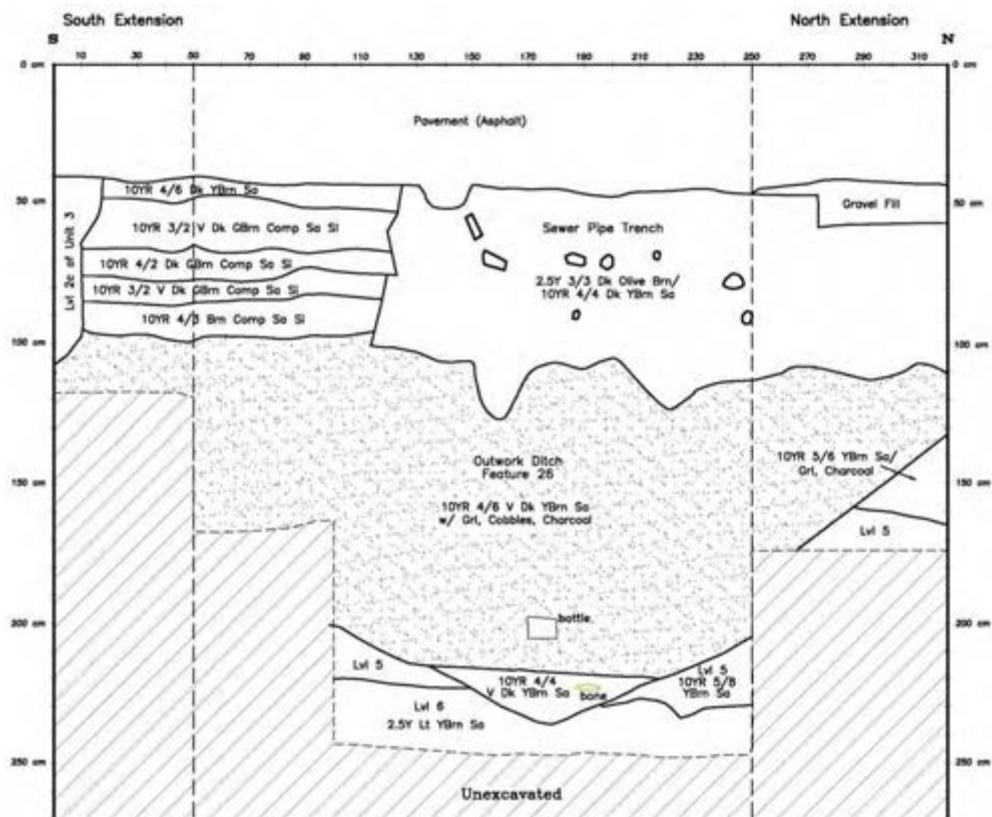


**Figure 6.8:** Plan of Fort Edward, with the environs, drawn about 1758 (Crown Collection Series I, Vol. 3, No. 23). The blockhouse locations are shaded in yellow.





**Figure 6.9:** A plan of the Fort Edward Village site with the georeferenced overlay of the Wetterstrom (1756) and Anon. (1757) maps of the fortifications showing the locations of outwork features discussed in the report.



**Figure 6.10:** A profile of the west walls of DRT 5 Unit 4 and its north and south extensions showing the outline of Feature 26, the outwork ditch.

centration of French and Indian War-related artifacts. Many of the artifacts were relatively whole or in large pieces compared to most of the other recovered material from that time period found elsewhere in features related to the fort occupation.

During later sewer line construction monitoring in this location, more of the lower portion of the outwork ditch was observed (Incident 100, Feature 3). Only the lower portion of the ditch remained intact below existing utilities running parallel to, but located east and west of the new sewer line. The new sewer line trench was wider than our DRT unit excavations, therefore we were able to collect more intact material from the bottom of the outwork ditch in that Incident and include it with the DRT material for analysis and interpretation.

Many of the artifacts were large animal bones in articulated segments, around which was some charcoal and soil with what seemed to be a distinctly moist or greasy texture. The bone artifacts were analyzed by Sean Higgins and identified by the most specific taxonomic level possible by class, order, family, genus, or species. Approximately 260 faunal specimens were collected, almost all from medium to large mammals though 26 were fragments of turtle shell. The mammal bones recognizable by species include most of a pig's right leg and part of the vertebral column of a white-tailed deer along with some antler fragments (Figure 6.11 on the next page, Photos 6.1 to 6.3 on pages 124–125). Cow bones were represented, and one horse bone, a phalange, was found. The presence of deer indicates that soldiers were supplementing their rations by hunting. This may be true of the turtle as well, but a turtle could have fallen into the trench by accident and died there.

Along with the bones were many large pieces of olive green wine bottle glass, large sherds of delftware from two blue-decorated vessels, one being part of a 9-inch plate and the other part of a large mug or tankard, and some table glass including a hand blown clear glass stopper to some kind of decanter (Photo 6.4 on page 127). There was also a small sherd of yellow lead-glazed buff earthenware, a nail, two pieces of sheet metal, white clay pipe stem fragments, a brass cufflink, an iron buckle, a few pieces of clam and oyster shell, brick fragments, some chert flakes and fire-cracked rock. Table 6.1 on page 126 summarizes the artifacts from the outwork ditch as a whole.

The most unusual of the artifacts found at the bottom of this ditch, among the broken wine bottles and animal bone, were two round, grapefruit-sized cobbles (see Photos 6.2 to 6.3 on page 125). These are unusual because the soils in this area of the river valley are naturally devoid of rocks or cobbles of this size. Soils in this part of the village of Fort Edward are defined as Claverack loamy fine sand, which is formed in glacial lake deposits from the last glacial period. The USDA NRCS describes the soil as loamy fine sand typically to 33 inches

deep over silty clay loam. The cobbles in this ditch were clearly cultural in origin but their function is unknown.

When considering the footprint of the outworks on the 1756 maps, this Feature 26 ditch falls somewhere along the north part of the east line or perhaps along the stem of the north-east bastion-shaped projection. The 1757 line is a considerable distance away. Also, we excavated a smaller 1750s refuse pit (Feature 23, described later) intruding into the top of the Feature 26 ditch, suggesting the ditch had been filled in and leveled, and subsequently used as part of the provincial encampment area where small refuse pits were commonly dug. This is archaeological evidence supporting the theory that the 1756 outworks were buried and new ones constructed the next year when the number of troops encamped at the fort increased.

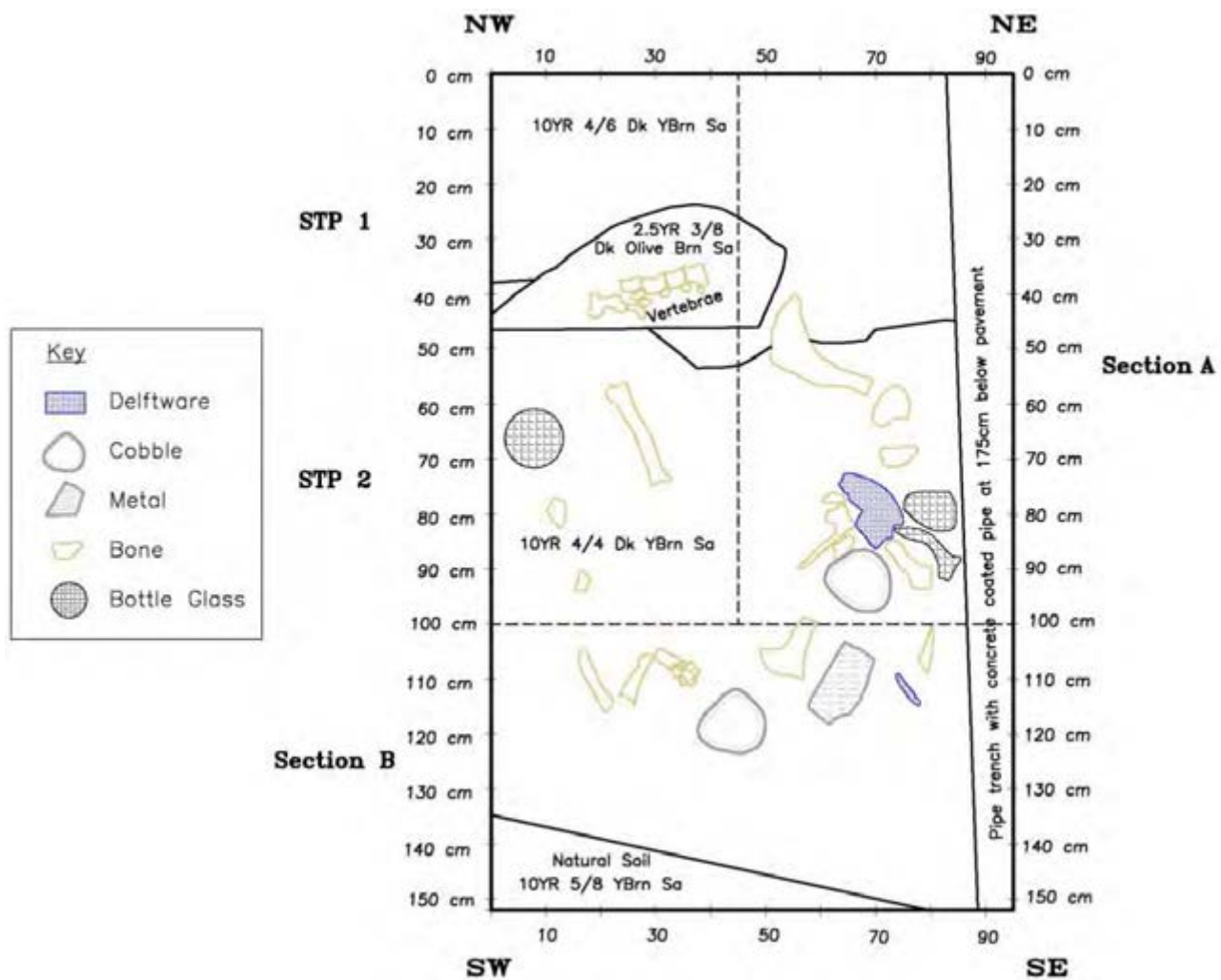
A cluster of deep ditch features identified further down the street in trenching are also interpreted as part of the 1756 line. This is the section south of the ditch through the line shown on Wetterstrom's map. These are described below.

### *Incident 27, Feature 3*

Feature 3, seen in the west wall of the main water line construction trench at the at the Edward Street intersection, was only partially exposed in profile leaving its origin and function somewhat a mystery. The part seen consists of what looks like a section of a possible outwork ditch or possibly a deep basin-shaped pit. It was 2 m (6.5 ft) wide at the top with sloping sides similar to other French and Indian War ditches observed. Its deepest extent was never reached so it is only an assumption that it was basin or U-shaped. From looking at photographs and the profile drawn of it, the top started about 80 cm (31 in) below the pavement. It was exposed in the trench wall to at least 150 cm (59 in) below the pavement where the new trench backfill had partially covered the feature (Figure 6.12 on page 128).

The feature was overlain by three soil layers: first, at the surface, by a 40 cm (16 in) thick layer of pavement and gravel fill, then beneath that by a 20-40 cm (8-16 in) thick layer of dark gray brown sand that contained artifacts from the late eighteenth to the mid-nineteenth century. Below that, what looked like a very dense layer of charcoal almost 20 cm (8 in) thick had been deposited in a depression in the middle of the feature as if to fill it to grade. That charcoal layer extended horizontally another 1 m (39 in) beyond the north lip of the feature at the top of the yellow brown sandy subsoil. This charcoal layer is related to the nineteenth and early twentieth century operation of the blacksmith and carriage shop on that corner. This shop and its archaeological remains are discussed at length in the nineteenth century component of the site later on. A 2-inch iron pipe ran across the construction trench at a depth of 1 m (39 in) into the lower southern side of the feature and poten-





**Figure 6.11:** Composite plan of the bottom of Feature 26, the outwork ditch.



**Photo 6.1:** Articulated deer vertebra.



**Photo 6.2:** Artifacts in situ in a section of the bottom of Feature 26, the outwork ditch. Visible are wine bottle fragments, animal bones, part of a delft plate, and a cobble.



**Photo 6.3:** Animal bone fragments and a cobble at the base of Feature 26.

**Table 6.1:** Summary of artifacts found in Feature 26, an outwork ditch.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>			
	Brick	Handmade fragments	11
	Window glass	Green and aqua	2
	Nails	Unidentified square	4
<i>Food/Drink</i>			
	Ceramic sherds	Buff earthenware	1
		White earthenware (creamware, pearlware, whiteware)	5
		Redware	2
		stoneware	2
		Tin-glazed earthenware (fragments of delft cup and plate)	34
	Vessel glass	Wine bottle (olive green) fragments	29
		Case bottle fragments	5
		Green bottle glass	1
		Clear table glass decanter stopper	1
		Fauna	Bone/ Antler
		Shell (6 oyster, 1 clam)	7
<i>Personal</i>			
		Clay smoking pipe fragments	3
		Large iron buckle	1
		Cufflink (2 brass buttons with connecting link)	1
<i>Miscellaneous</i>			
		Unidentified iron/steel fragments	7
		Charcoal fragments (from float)	24
<i>Prehistoric</i>			
		Chert flakes/shatter	22
		Fire-Cracked Rock	10
Total			432



(a) wine bottle neck; (b) wine bottle base; (c) delft plate fragments; (d) delft mug or tankard; (e) clear glass decanter stopper; (f) sheet metal.

**Photo 6.4:** Some of the artifacts found in the bottom of Feature 26 outwork ditch.

tially down Edward Street, though it does not show on the DOT construction plans as an existing utility.

The soil filling the feature below the charcoal appeared to consist of overlapping layers of brown silty sand with yellow brown subsoil, also with inclusions of charcoal. None of this part of the feature was sampled for artifacts so we have no conclusive date of its formation or backfilling. Apparently only the dark gray brown sandy soil layer, just under the pavement sub-base, was sampled for artifacts as far as what could be pieced together from the notes. It stretched well beyond the limits of the feature itself. Artifacts from this layer include ceramic sherds ( $n = 31$ ) dating from the late-eighteenth to the mid-nineteenth century. Also found were two clam shell fragments, four square nails, one machine-cut nail, 33 brick fragments, one olive-green bottle glass fragment, three pieces of slag, one 7 mm diameter bird shot, and a charcoal sample of 22 fragments. The presence of the nineteenth century ceramics along with the charcoal deposit and the slag indicates this layer is related to the nineteenth and early twentieth century operation of the blacksmith shop there on the corner of Edward Street, now operated as a restaurant called the Anvil Inn.

In the case of the feature soils below the nineteenth century early village settlement layer, its horizontal location with regard to the footprint of the 1756 outworks ditches, coupled with its size, shape, fill soils, and similarity to other features nearby, leads us to believe that

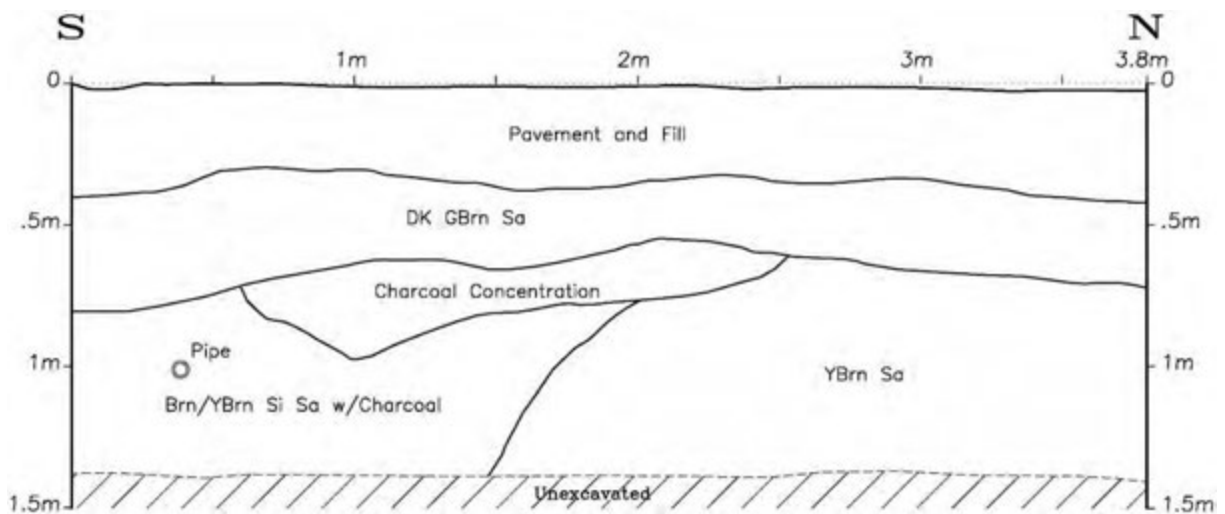
this feature could be part of the later 1756 east line near where it turns a sharp right-angle just south of the gate into the encampment.

### *Incident 54, Feature 6*

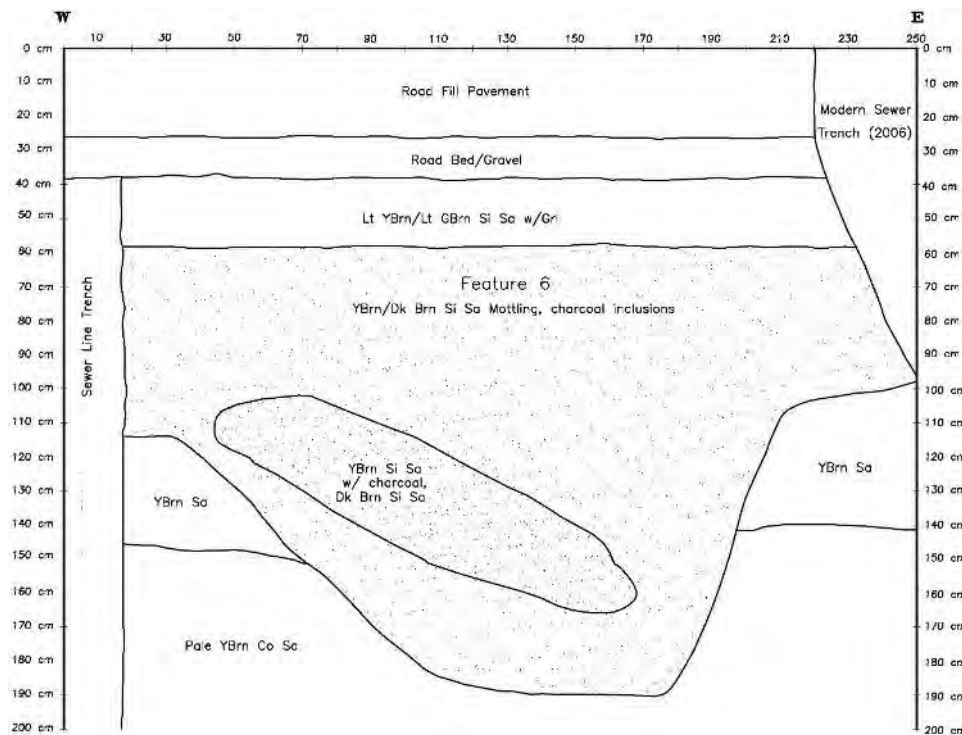
Feature 6 was situated at the north corner of the large square extension off the main sewer line trench excavated by a back hoe to install a cylindrical concrete manhole structure opposite the Edward Street intersection. A large deep soil disturbance was recognized in the wall of the pit as it was being excavated by the back hoe. Archaeologists were not able to get into the trench and examine it until the manhole structure had been put in place and the trench partially backfilled to a safe depth. Only the north wall of the extension was cleaned and documented. Some soil was shoveled out of this feature and screened for artifacts.

The feature appeared as a deep, wide, U-shaped trench measuring at least 2 m (6.5 ft) across at its top just under the gravel road base 60 cm (24 in) below the surface. It had been backfilled with yellow brown silty sand mixed with dark brown soil and charcoal mottles to a depth of almost 2 m (6.5 ft) below the surface. The dark brown soil and charcoal inclusions became concentrated near the bottom foot or so, outlining the shape of the trench (Figure 6.13 on page 129).





**Figure 6.12:** Photo and west profile of Incident 27, Feature 3. Possible outwork ditch, the dark layer is a nineteenth century charcoal concentration probably associated with the blacksmith shop there on the corner.



**Figure 6.13:** Photo and west profile of the outwork ditch (Feature 6) in Incident 54. Note the dark inclusions of organic soil near the bottom of the profile and the black charcoal flecks throughout.

The type of soils in this ditch look very much like the fill soil in Feature 26 identified in DRT 5, Unit 4, part of the outwork ditch to the north, and also like soils in the V-shaped ditch (Feature 1) in Incident 57 also to the north. Both contained quite a bit of charcoal. Like those ditches, this one produced a variety of artifacts dating to the French and Indian War period including two olive green wine bottle fragments and a buff earthenware cup base sherd, common items among soldiers living at the fort in the 1750s. The predominant artifact type recovered from the ditch was animal bone with almost 150 fragments (Table 6.2 on page 132). There was a square nail fragment, a clay smoking pipe fragment, and several unidentified iron or steel fragments present as well though these are not exclusively datable to the 1750s. However, the absence of material from later time periods in the ditch fill suggests that the artifacts in it are also from the French and Indian War occupation or shortly after.

Most of the bones, nearly 98 percent, were from medium to large mammals, of which at least one cow was represented. A few showed evidence of being sawed and burned. There were also two bird bones, one identifiable as turkey. The odd find among the bones from this feature was one human rib, which suggests that perhaps there was a burial somewhere in the vicinity that was disturbed and scattered, though no other human remains were encountered in archaeological investigations along the street during this project. In modern times, prehistoric human skeletons have been found in excavations near Fort Edward (Agelarakis 1990; Starbuck 2004) and skeletons of French and Indian War soldiers and followers have been found in various places on the periphery of the encampment. In particular there is a cemetery related to the fort occupation on Roger's Island, part of which was excavated by the NYSM in 2006, and a historical period burial was found just east of Canal Street during archaeological monitoring of test trenches for remediation of a former manufactured gas plant along that street (Hartgen Archeological Associates, Inc. 2011).

Also, the "old burying ground" traditionally thought to date back to the 1750s military occupation of the fort is located only a block to the east of this feature and is where Major Duncan Campbell of the famous Black Watch regiment is thought to have first been buried after he was mortally wounded in the 1758 attack on Ticonderoga (Hill 1929). Thousands of soldiers were killed and wounded in that battle and brought back to Fort Edward to the hospital and for burial. Therefore, though it is possible the bone found in this feature could relate to a prehistoric burial, it is more likely it was from the 1750s when thousands of troops passed through this place. Only a sample of the feature soil was screened but considering the fact that this single human bone appeared in redeposited fill soil suggests that the original

burial it came from was disturbed and perhaps scattered throughout the ditch.

### *Incident 54, Feature 2*

This feature appeared just below the road base in the south wall of the same sewer line trench as Feature 6 discussed above. This feature was about 4 m (13 ft) further southeast. It was 130 cm (4.2 ft) wide and approximately 50 cm (20 in) deep in profile consisting of mottled gray brown and yellow brown silty sand (Figure 6.14 on the facing page). The soils at the depth of 80 to 100 cm (31 to 39 in) below surface were screened for artifacts, producing a piece of wood a couple inches thick and six to eight inches long that may be remnants of a sawed timber. It also produced a piece of dark green bottle glass and a piece of probable fire-cracked rock. This material is not very indicative of the function or context of this feature but because of the glass, is historic, likely eighteenth century.

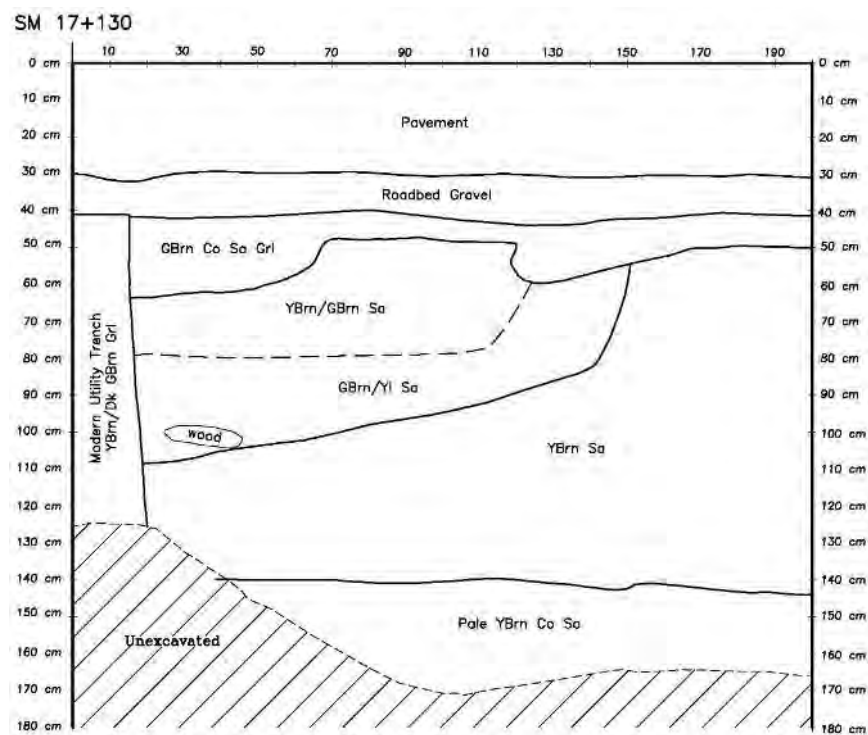
During the 2007 road resurfacing in this location (Incident 182, Feature 1) an undefined dark soil stain was observed when the bulldozer graded the ground surface after the pavement had been removed. The soil stain was likely the top part of Incident 54, Feature 2 seen in profile the year before. It consisted of an amorphous dark stain 1 by 2 m (3 by 6.5 ft) in dimension at a depth of 74 cm (2.4 ft) below the ground surface at the side of the road. No artifacts were seen or collected from it at that time so its date is based only on the artifacts seen in Incident 54. It did not have the typical quantity of animal bone and other refuse seen in the 1750s fort-related features so it may be a disturbance from sometime later though based on its proximity to Feature 2 and Feature 6 from Incident 54, and Feature 1 in Incident 83, it is likely part of the 1756 outwork ditch.

### *Incident 83, Feature 1*

Another section of probable outwork ditch was crosscut while digging the drainage line trench that ran along the north/east side of Broadway straddling the curb and sidewalk area across from the mouth of Edward Street. The feature was only observable in the south wall of the trench, the north side having been disturbed by the gas line that runs beneath the sidewalk on this side of the street. The feature appeared as several dark soil layers filling a broad U-shaped depression measuring almost 4 m (13 ft) across from end to end. It started just below the road base at 52 cm (20 in) below surface at the shallower ends and reached 1.6 m (5.2 ft) deep at its deepest point in the center. It was truncated on the west end by a recent gas line trench.

It was lined along the bottom with a 4 cm (1.5 in) thick layer of very dark brown silt (Level 5). Above that it was filled with a couple of layers of mottled yellow brown and dark brown silty sand separated by Level 3, a





**Figure 6.14:** Photo and south profile of possible outwork ditch (Feature 2) found in Incident 54.

**Table 6.2:** Summary of Artifacts found in Incident 54 Feature 6, an outwork ditch.

Class	Type	Subtype	Total
<i>Architectural</i>			
	Nails	Unidentified square	2
<i>Food/Drink</i>			
	Ceramic sherds	Buff earthenware cup base sherd	1
	Vessel glass	Wine bottle (olive green) fragments	2
	Fauna	Bone	147
<i>Personal</i>			
		Clay smoking pipe fragments	1
<i>Miscellaneous</i>			
		Unidentified iron/steel fragments	3
		Human rib bone	1
Total			157

12 cm (5 in) thick band of very dark brown silt (Figure 6.15 on the next page). The silt layer produced eighteenth century artifacts typical of the kinds of material found elsewhere within the project area in fort-related features. These consist of 15 cow bone fragments, two oyster shell fragments, a button from an octagonal-shaped brass cufflink, a white clay smoking pipe fragment, a body shard and the entire base of an olive-green wine bottle, and three ceramic sherds – one from a white salt-glazed stoneware dish, one from a delftware dish, and one from a slip-decorated redware dish.

The feature looked like an outwork ditch because of its shape and depth though it was very wide in this cross section. In this approximate location on the 1756 Wetterstrom map, the outwork ditch is depicted with a zigzag trajectory, a configuration for the purpose of creating an angle in the line to provide defending gunners coverage of the entrance into the encampment. Because of the wideness of the feature in this incident it is probable that the construction trench cut through the outwork ditch at this angle. Perhaps this is also the case with the other three construction incidents in this cluster of features discussed.

### *Incident 57 and 91, Feature 1, Ditch through the Line*

This ditch was identified in a sewer line trench that was excavated along the east travel lane of Broadway in front of the Broadway Family Diner. This location corresponds with the northernmost ditch through the line depicted on Wetterstrom's 1756 map, the east-west terminus of the first outwork to be depicted. It was only present in the east wall of the construction trench, the west wall coinciding with previously disturbed soils. This may be a continuation of the same feature identified in 1986 by Collamer and Associates during data recovery excavations prior to a new sewer line installation. Their trench

was only a few feet to the west of this one and probably accounts for the disturbance in the west wall of our trench. In the 1986 excavations they also identified what they referred to as an outwork (Collamer 1987).

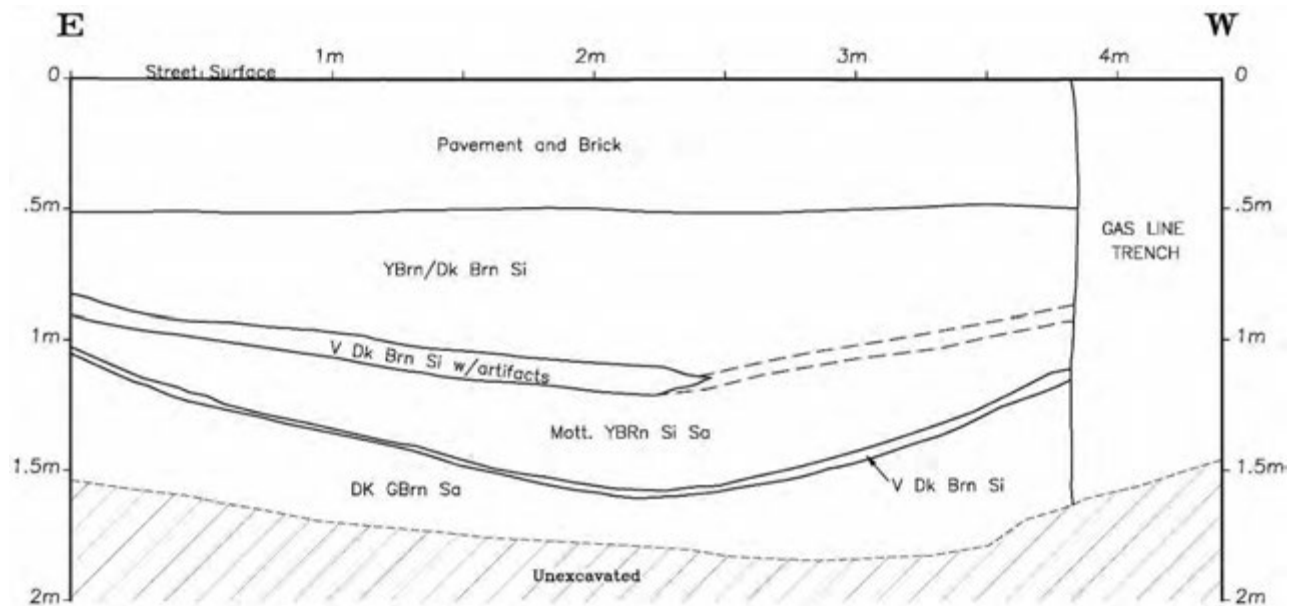
It was also encountered in the east wall of Incident 91 of this project, a drainage line trench excavated almost two months after the sewer line construction. A gas line to its east left only a small intact strip of the feature in this location. We were able to dig into the lower part of the feature below the gas line to collect artifacts.

In the Incident 57 profile, this east-west oriented feature measured about 2 m (6.5 ft) wide at the top, which started about 72 cm (28 in) below the surface. The pointed bottom of the ditch reached 182 cm (6 ft) below the surface (Figure 6.16 on page 134). The soils filling the ditch were much like the other ditches we encountered though the concentration of dark organic soil and charcoal mixed into the yellow brown silty sand was thicker and more pronounced at the bottom of the feature, and had a noticeable concentration of bone.

Part of the feature was dug out by hand and the soil screened to collect artifacts. A summary of the 382 artifacts from the combined incidences is presented in Table 6.3 on the next page. The sample is dominated by animal bone at 89 percent, but there was also a few brick fragments, two square nails, a few sherds of white salt-glazed stoneware, broken wine bottle fragments (including one neck), a lead musket ball, a metal button with a copper shank, some unidentified metal fragments, charcoal, and three pieces of fire-cracked rock.

All but eight of the 343 bone fragments were identifiable as mammal. Of the fragments that were whole or well-preserved enough to identify ( $n = 124$ ), four species were represented: cow ( $n = 116$ ), white-tail deer ( $n = 4$ ), goat ( $n = 1$ ), and domestic pig ( $n = 3$ ). The other mammal fragments were either too small or too deteriorated to identify by species. The non-mammal faunal material included six bones from a snapping turtle. Many of the mammal bones showed evi-





**Figure 6.15:** South profile of Incident 83, Feature 1.

**Table 6.3:** Summary of Artifacts Found in the V-shaped ditch encountered in Incidents 57 and 91.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>			
	Brick	Handmade fragments	5
	Nails	Unidentified square	2
<i>Food/Drink</i>			
	Ceramic sherds	White salt-glazed stoneware	3
	Vessel glass	Wine bottle (olive green) fragments	14
	Fauna	Bone	343
<i>Personal</i>			
		Copper shank button	1
<i>Arms/Military</i>			
		Lead musket ball (.68" diameter)	1
<i>Miscellaneous</i>			
		Unidentified iron/steel fragments	8
		Unidentified cuprous metal fragments	2
		Fire-Cracked Rock	3
Total			382

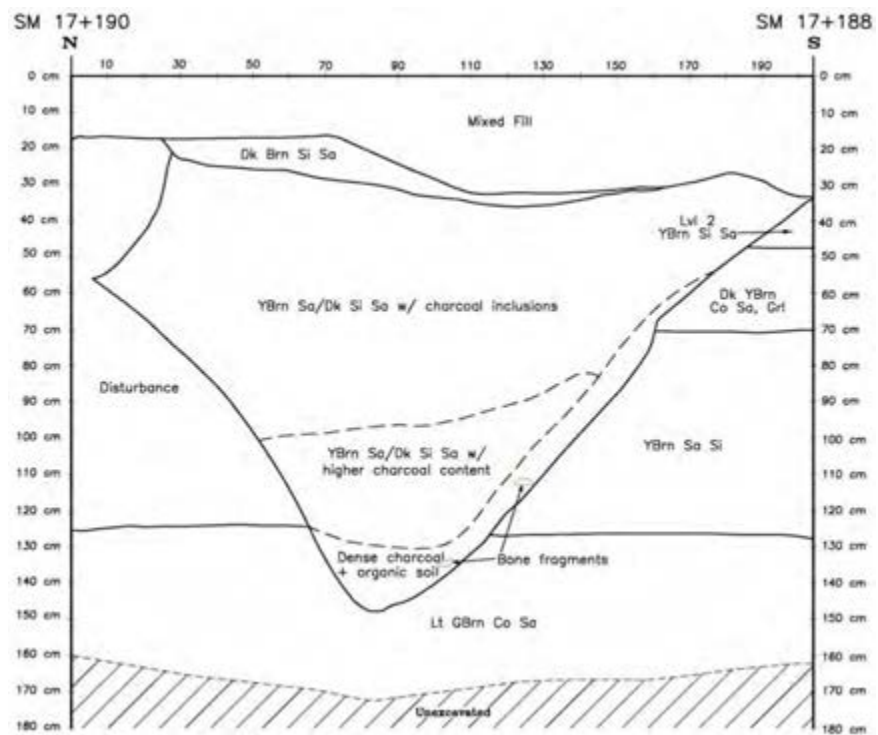


Figure 6.16: East photo and profile of Incident 57, Feature 1, the V-shaped outwork ditch.

dence of sawing, cutting, and breaking, and included various cuts of meat from animals of various ages from juvenile to old. Parts of skulls and mandibles were present indicating that butchering of live animals was taking place on site. The presence of deer indicates that some soldiers were supplementing their diet by hunting as well. The turtle bones may represent food consumed by soldiers, but more likely the animal wandered into the ditch and died there.

This ditch was at first a protective barrier behind which the soldiers could stand guard over the entrance into the encampment, and more importantly, it funneled all traffic in and out of the fort through a narrow entrance between the end of the outwork line and the east ravelin of the fort itself. Anyone gaining entrance had to pass immediately below the walls of the fort and make their way around to the west side of the ravelin and over a sequence of bridges to reach the main gate in the north curtain wall. Presumably, this ditch was filled in and leveled in 1757 to make way for the larger entrenchment line surrounding the camp. After that, according to the 1757 map (Figure 6.6 on page 116), this area was open space behind the New England and New York provincial camps at least part of the time that year.

### ***Features related to the 1757 Outwork Line***

The street crosses through the east wall of the 1757 version of the outwork ditch just east of Montgomery Street where utility trenching encountered it in two places: Incident 25 and Incident 59 as described below. It also likely crossed the northernmost section of the line near the mouth of Notre Dame Street where only the deepest part of the trench survived below modern street disturbances in Incidents 32 and 39.

#### ***Incident 25, Feature 1***

Feature 1 of this incident was identified in the north wall of the waterline construction trench about halfway between the curb and the centerline in the southbound lane in front of the house at 63 Broadway. It appeared as a 4 to 5 m (13 to 16 ft) long and over 2.3 m (7.5 ft) deep soil anomaly that cut through the natural soil stratigraphy. The anomalous soil was dark yellow brown sand evenly mixed with flecks of charcoal throughout. A sketch profile was made of the feature, not to scale (Figure 6.17 on the next page). There was one chert flake found in the trench wall within the feature. An unidentified animal bone was also collected from this incident that could have come from this feature though its precise location was not documented. Unlike other places where outwork ditch features were identified in the project area, this feature did not exhibit the dark organic soils nor contain the eighteenth century refuse artifacts usually deposited near the bottom edges of the ditch. The construction trench exposure didn't seem to

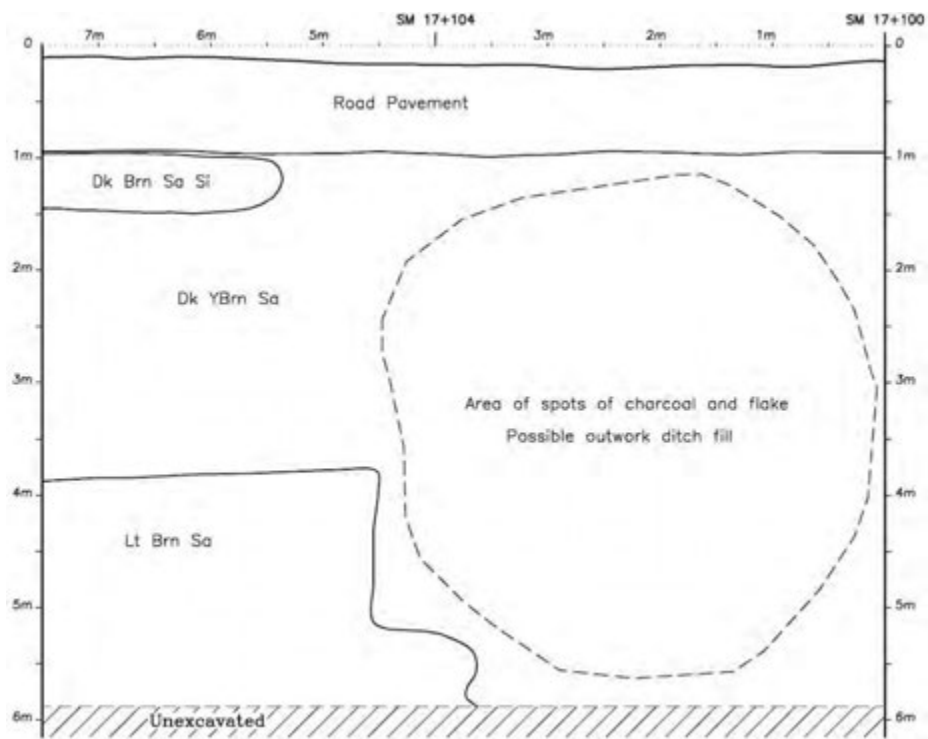
reach the bottom depth of the feature so it is possible there was a refuse deposit that simply wasn't uncovered. No photos of the feature were taken. It's also possible that if this was an eighteenth century ditch, it was excavated and then backfilled soon afterward, before a refuse layer could accumulate.

#### ***Incident 59, Feature 1***

A large L-shaped trench was excavated in front of the house at 63 Broadway to install service connections to the new water and sewer mains constructed in the street earlier in the year. The trench was about 1.5 m (5 ft) wide extending from just behind the side walk at the right-of-way line north to the center of the road, a length of 10 m (32 ft). It extended east along the previously installed new water main for an additional distance of 1.5 m (5 ft) overlapping with the previously seen Incident 25, Feature 1. This provided a broad surface area of trench walls for examination though much of the area had already been disturbed by deep utility installation including the old water and sewer lines from the street to the house.

The trench had intact ground enough to reveal the filled remnants of what looked like more of the outwork ditch from the French and Indian War. It was visible in the trench walls in three places as well as the trench floor indicating its horizontal trajectory, which was slightly west of north (Photos 6.5 on the following page, Figure 6.18 on page 137). The ditch had a sloping south wall, the north wall having been disturbed in this trench. The bottom of the construction trench only reached a depth of 126 cm (50 in) below the sidewalk surface so the bottom of the feature was not reached. A small section of it was also seen in the opposite west wall of the construction trench showing it had been previously truncated to the north by a utility, and it was partially visible again in the westward extension of the trench on the north wall. Its complete shape was not fully exposed. This section of the trench roughly corresponds with the north wall of the water main construction trench monitored earlier in the year (Incident 25), which then revealed part of this ditch in profile and is discussed above in this section.

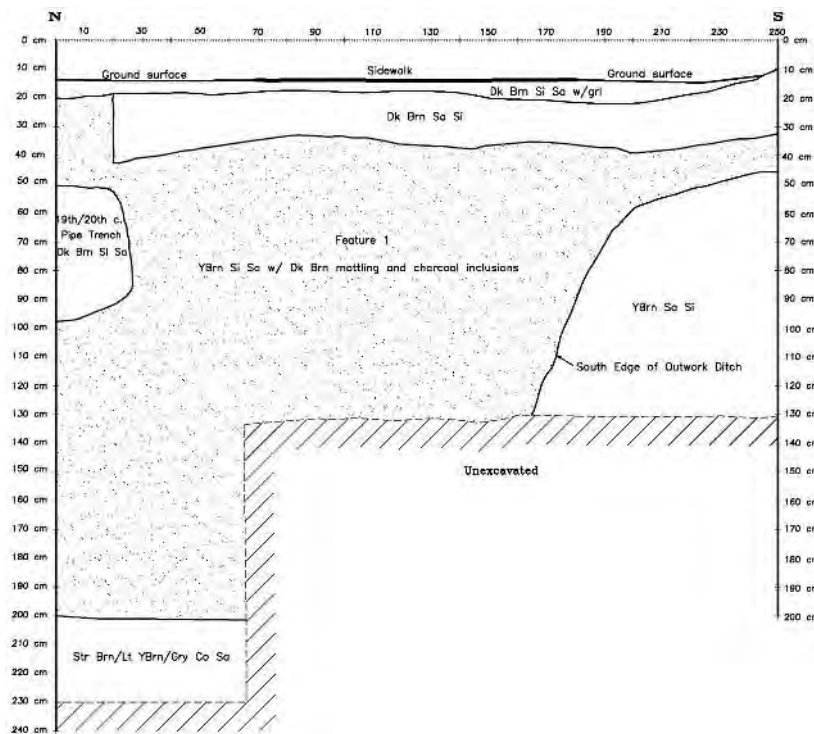
The soils filling this ditch were dark yellow brown sand evenly mixed with flecks of charcoal throughout as in Incident 25, Feature 1, and similarly did not exhibit the dark organic soils nor contain the dense concentration of eighteenth century refuse artifacts, primarily bone fragments, seen in other ditch features along the project route. Again here, this may be because the construction trench didn't reach the bottom of the ditch where refuse may have accumulated. Only a few artifacts were collected from the ditch fill including one animal bone, a pearlware sherd, a white clay smoking pipe stem fragment, an olive-green bottle glass fragment, a fragment of fire-cracked rock, and a piece of slag. Some



**Figure 6.17:** North profile of Feature 1 in Incident 25.



**Photo 6.5:** View of the floor of the Incident 59 construction trench showing the outline of the outwork ditch running north next to the black and white north arrow marker.



**Figure 6.18:** Profile of the east wall of Incident 59 showing the outline of the outwork ditch (Feature 1).

“stray finds” from this incident produced a few large animal bones, and the bottom of a dark green wine bottle, likely French and Indian War era refuse. The later pearlware and slag were probably items mixed in by construction intrusions.

The relative lack of artifacts may indicate that this ditch was excavated and then backfilled relatively soon afterward, not allowing for refuse to accumulate like it did in other places we saw (the 1756 outwork ditch). Or it may have been a simple matter of expedience in that other locations along the outworks ditch were close to locations of animal butchering and cooking while this area was not. Montessoro’s profile indicated that his outwork ditch was six feet six inches deep and six feet wide at the bottom where these construction trenches only reached a little over four feet deep, thus, again, we don’t really know if there was more refuse at the bottom or not. When looking at the maps that show outworks, this location more or less corresponds with the line on the 1757 map where the eastward-pointed redan turns north toward the main entrance into the encampment.

### *Incident 32, Feature 1 and Incident 39, Feature 3*

Near the mouth of Notre Dame Street a deep amorphous feature was observed as it was intersected by two different gas line trenches, first in Incident 32, and then eight days later in Incident 39. Based on its location, depth, and the types of artifacts recovered, it is thought to be

the base of the 1757 outworks ditch. In horizontal dimension, the size of the feature is not known because it was obliterated in the west of the Incident 32 trench by earlier construction of a sewer line. The feature was only observable in the east wall profile of that north-south oriented trench, which was dug by a backhoe approximately three feet wide and five feet deep. A quick profile of the feature was drawn while selected portions of the feature were screened for artifacts.

Incident 39’s trench was excavated from west to east beginning at the east side of the Incident 32 trench, which had by that time been backfilled and the surface repaved. In an attempt to locate existing pipes to make connections, the construction crew widened Incident 39, initially about 1.2 m (4 ft) wide, to the north by about 1.8 m (6 ft) where it intersected and exposed the feature in the north wall. It was immediately recognized as an extension of the earlier feature, but before archaeologists could safely enter the trench, part of the wall containing the feature collapsed leaving about two feet of intact pavement overhanging a large cavity below it. A quick profile was drawn of what remained of the feature, and selected soils were screened for artifacts.

Under the circumstances, it was difficult to discern the feature’s original shape and size. Several previous utility lines ran north-south on the west and east sides of it (12-inch sewer, 18-inch drainage, and 10-inch gas mains) as well as east-west (8-inch water and 10-inch gas mains), likely destroying much of it. We were lucky to find anything intact. The combined observations of



the two exposures showed that the feature extended at least 1.5 m (5 ft) east-west by almost 4 m (13 ft) north-south, though it is likely it continued beyond our exposure. The stratigraphy consisted of 30 cm (12 in) of pavement and concrete over about 10 cm (4 in) of compact dark yellow-brown sandy gravel. The north-south profile of Incident 32 (Figure 6.19 on the facing page) showed it reached at least 160 cm (5.2 ft) below the surface while the east-west profile of Incident 39 (Figure 6.20 on the next page) showed it reached about 140 cm (4.5 ft).

Where seen in Incident 32, the feature appeared to be running at a general northwest-southeast angle though there was considerable disturbance evident from 40 to 80 cm (16 to 31 in) below surface. There were large chunks of broken ceramic sewer pipe in the soil within this level, which was evidence of the 12-inch sewer that was removed during the ca. 1940 railroad underpass construction just to the north. This was not apparent in the eastern exposure of the feature in Incident 39. The feature was identifiable mostly by about 60 to 100 cm (24 to 39 in) of mottled gray brown and yellow brown silty sand with striated inclusions of pale yellow sand. There were also brick fragments, two large cobbles and a concentrated pocket of what looked like decaying stakes at the 120 cm (4 ft) depth in Incident 32 (Photo 6.6 on page 140). A continuation of this was seen in Incident 39 as well where there was also a distinct amorphous pocket of dark organic soil about 20 cm (8 in) long at 90 to 110 cm (35 to 43 in) below surface, and below that, a horizontal 6 cm (2.3 in) band of gray brown silty sand with brick in it at 130 cm (4.2 ft) below surface (Photo 6.7 on page 140).

A summary of the artifacts found in this feature from the combined incidences is listed in Table 6.4 on page 141. The material includes two olive green wine bottle necks and a complete bottle bottom with a kick-up base, wrought nails, a few ceramic sherds, and the occasional clay pipe fragment. It also includes material that is non-temporally diagnostic such as animal bone, whole and fragmented hand-made bricks, charcoal, and wood, but these items are certainly associated with the mid-eighteenth century occupation because they are typical of the refuse seen in other French and Indian War features encountered in the project area. Some of this material is displayed in Photo 6.8 on page 141. All of the animal bone fragments were mammal, cow being the only animal identifiable to the species level. Several of the bones had saw and chop marks on them, and some were calcined, indicating they were food bones. The wine bottle necks and the bottle base are similar to those found in Feature 26, the outwork ditch excavated in DRT5, Unit 4, a deposit dating to the mid-eighteenth century (see artifact Photo 6.4 on page 127).

The seven possible wooden stakes (Photo 6.9 on page 142) came from the dark organic pockets seen in the lower part of the feature in both incidences. They

range in diameter from 3 to 6 cm (1.1 to 2.3 in) and in length from 9 to 22 cm (3 to 9 in). Most of them appear to be hollowed out on the inside and carved or shaved to a point on the outside. Wooden artifacts looking very much like these were also recovered archaeologically in excavations of fort-related features on Rogers Island where they were interpreted as tent pegs (Starbuck 2004:87) though the exact context in which they were found is not explained.

The context of the ones found on Broadway suggests that they were utilized in the outwork ditch. One hypothesis is that they are the buried ends of abatis stakes that may have been placed in the outwork ditch or embankment. Abatis were common anti-personnel obstacles made of sharpened poles or logs, sometimes of whole tree branches, placed in rows, or with ends buried in the ground, sometimes with outer points angled toward the approach of the enemy during war or around fortifications. Their use at Fort Edward as vertically placed pickets is depicted in Figure 6.5 on page 116, the Montessor profile of the line constructed in 1757. In that case they were placed in the bottom of the secondary smaller ditch situated along the outer side of the larger barrier ditch. Abatis or pickets like this were used extensively around frontier fortifications during eighteenth century wars in America as seen on many of the period maps in the Crown Collection. They continued to be used extensively even as late as the American Civil War (Lewis 1891:24). One example of a ditch with abatis placed in the bottom as a defensive obstacle was at Fort McAllister, Georgia in 1864 (Photo 6.10 on page 142).

Based on the presence of the sharpened wooden stakes buried with the animal bone, the wine bottle necks, the brick, and the cobbles at almost 1.2 m (4 ft) below the current ground surface, it is likely that this feature is the lower part of an outwork ditch, lined with protective abatis, that soldiers threw their trash into. This feature is the only place during this project where these wooden stakes were found.

## ***Outworks Discussion***

The question of whether there were separate episodes of outworks around the encampment during the use-life of the fort arises from a close comparison of the maps. Given the consistent depiction of the footprint of the fort itself, the inconsistent alignment of the outworks line between maps would suggest that they did in fact construct one lengthy and elaborate outwork one year, then fill it in and construct an even bigger and more elaborate one the next year.

Given the many hundreds and even thousands of able-bodied men in the armies that were deployed there both years, labor would not have been a problem. For all the expense incurred to raise, feed, and equip an army for a campaign season on the frontier, it would not only

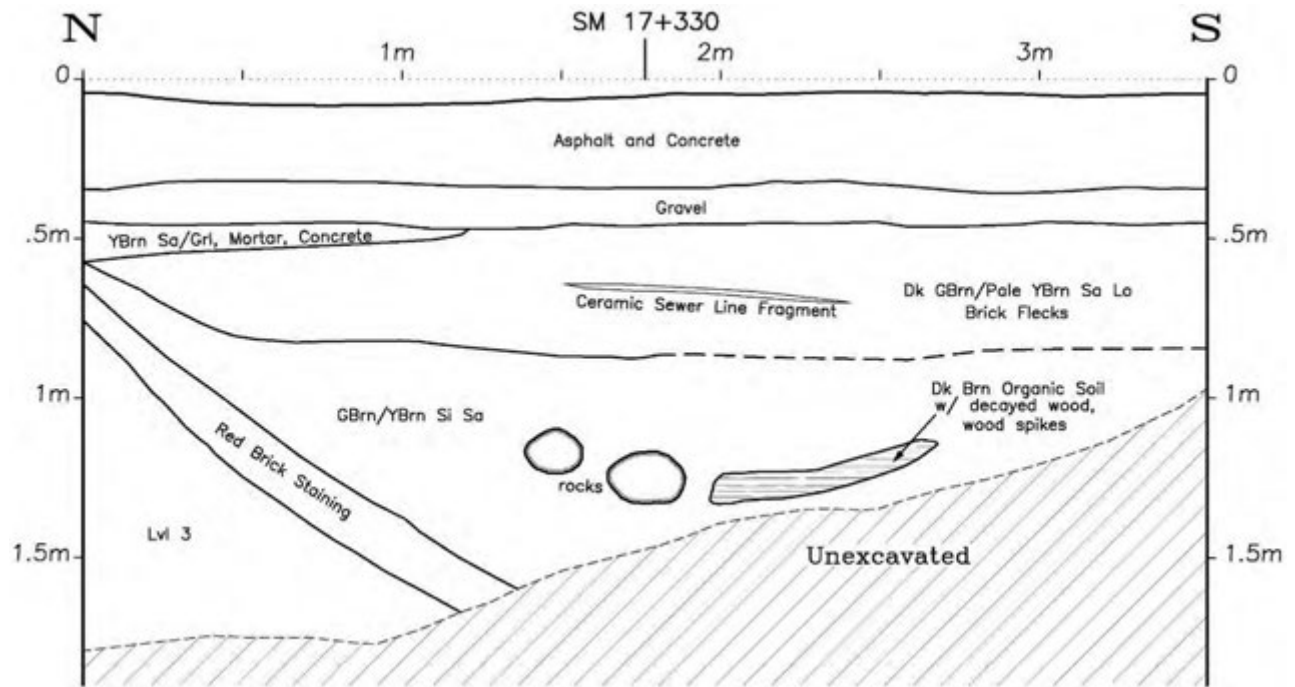


Figure 6.19: East profile of Incident 32, Feature 1.

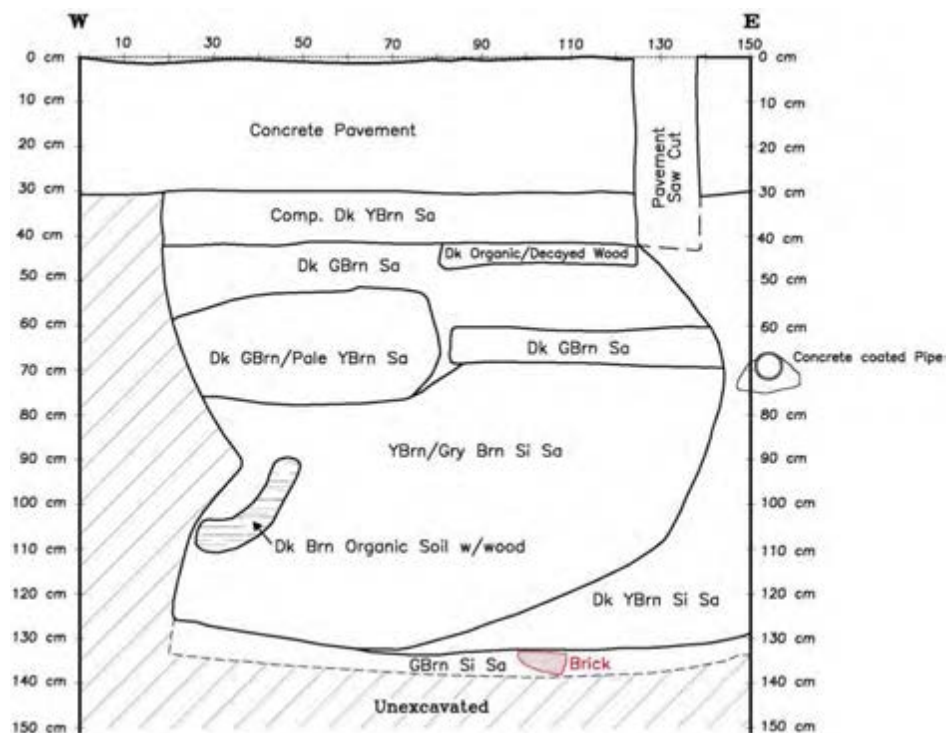


Figure 6.20: North profile of Incident 39, Feature 3.



**Photo 6.6:** View of the wooden “stakes” found near the bottom of Feature 1 in Incident 32. Note the large cobble on the left side of the photo.



**Photo 6.7:** View north of Feature 3 in Incident 39 after part of the trench wall face collapsed leaving a pavement overhang. A pocket of dark organic soil (where a wooden stake end was found) is visible at lower left.

**Table 6.4:** Summary of Artifacts found in Incident 32, Feature 1 and in Incident 39, Feature 3, parts of an outwork ditch.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>	Brick	Handmade fragments	26
		Whole handmade brick	1
	Nails	Wrought nails	2
		Unidentified square	2
<i>Food/Drink</i>	Ceramic sherds	Brown salt-glazed stoneware	1
		White earthenware	2
	Vessel glass	Wine bottle (olive green) fragments	7
	Fauna	Bone	26
<i>Personal</i>		Clay smoking pipe fragments	4
<i>Miscellaneous</i>		Sharpened wooden stakes	7
		Charcoal fragments	2
		Unidentified iron/steel fragments	10
		Ceramic sewer pipe fragments	2
<i>Prehistoric</i>		Chert flakes/shatter	2
		Fire-Cracked Rock	4
Total			98



**Photo 6.8:** Some of the artifacts found in the feature in Incident 32 including animal bone, clay smoking pipe fragments, nails, and wine bottle glass.





**Photo 6.9:** Sharpened stakes or pegs found near the base of the feature in Incidents 32 and 39.



**Photo 6.10:** An example of ditches with abatis in front of Fort McAllister, Georgia in 1864 (Library of Congress).

make sense to employ them as laborers, but it would keep them occupied during the days, weeks, and months that they often waited in camp until they were deployed for military action. As has been documented in some of the notes and general orders from 1757, working parties were engaged in cutting facines, gathering bark, making bricks, vegetable gardening, building boats, digging graves, and cutting timber for huts, barracks, storehouses, palisades, guardhouses, and hospitals. Carpenters, ship carpenters, sawyers, brick layers, and joiners amongst other artisans were called on to engage in “the King’s work” throughout the summer of 1757 (Lyman Esq. 1899).

If we accept a possible scaling or mapping discrepancy of  $\pm 20$  feet between the modern maps and the historical ones, it is intriguing to see that the maps are relatively accurate with respect to the archaeological ditch features described above: five along the 1756 line (Incident 27 Feature 3, Incident 54 Features 2 and 6, Incident 57 Feature 1, Incident 83 Feature 1, and DRT 5 Unit 4 Feature 26) and four along the 1757 line (Incident 25 Feature 1, Incident 59 Feature 1, Incident 32 Feature 1 and Incident 39 Feature 3). The 1756 outworks were filled in and leveled within a short time after construction, based on the mid-eighteenth century ceramics and glass found within the ditch fill. Then, this area was apparently used right afterward as part of the larger encampment. This would explain the presence of Feature 23, the relatively shallow refuse pit on top of the leveled



ditch fill of Feature 26. This was one of many refuse pits found during the project within the encampment lines.

Feature 26 corresponds with the north line of the 1756 outwork ditch (or an east-west part of the northeast bastion of that line). Two other probable parts of this outwork section were encountered by other archaeological excavations in the past. One was a cross section of this ditch excavated by the Adirondack Community College Archaeological Field School in 2003 and 2004 under the direction of Dr. David Starbuck. They investigated a large section of the ditch behind (west of) the Fort Edward Historical Association and Arts Center at 83 Broadway. Excavations there yielded similar artifacts and a completely backfilled ditch of the same shape and depth as ours (David Starbuck, pers.comm. 2012).

Collamer and Associates (1987) also encountered part of the ditch in data recovery excavations for the 1986 sewer trunk construction in the middle of the street a few feet west of our excavations, although the documentation of this work is incomplete and unpublished. In Collamer's case, they recovered no artifacts from the feature with which to date it, leaving it somewhat in question, but in either case, if a line is drawn on the modern project map between these three points, it forms a line roughly parallel with the north wall of the outworks, if off set to the south by about 10 meters. Again, this could be a scaling error.

The ditch features found to the south near the intersection of Broadway, Edward and Montgomery Streets seem to represent both alignments; the inner 1756 line and the outer 1757 line. And finally, the east-west-oriented V-shaped ditch found a short distance to the north fairly accurately corresponds with the 1756 ditch through the line that when filled and leveled, became part of the encampment parade ground. Based on the absence of later eighteenth century or nineteenth century material in the ditch fill, it is likely that these outworks barriers were leveled and the soil from the above-ground parapets used to fill the ditches ca. 1760.

## 6.2 Fireplaces and Hearths

*"I Built a Chimny to our Tent."*

*Diary of Jabez Fitch, Jr.*

*Fort Edward, October 14, 1757*

*(Fitch Jr. 1968)*

Several fireplaces or fireplace remnants were identified during the project, four within the entrenchment line and one related to a blockhouse situated outside the entrenchment at the north side of the creek along the military road. The fireplace features identified within the outworks line are visible on Figure 6.21 on the following page followed by detailed descriptions of each feature. One of these fireplaces may have been used as an oven.

The blockhouse fireplace discussed later is the only one associated with a map documented structure. None of the fireplaces within the lines appear on period maps, probably because they represent more ephemeral structures like guard rooms, guard houses, tent sites, huts, or camp kitchens.

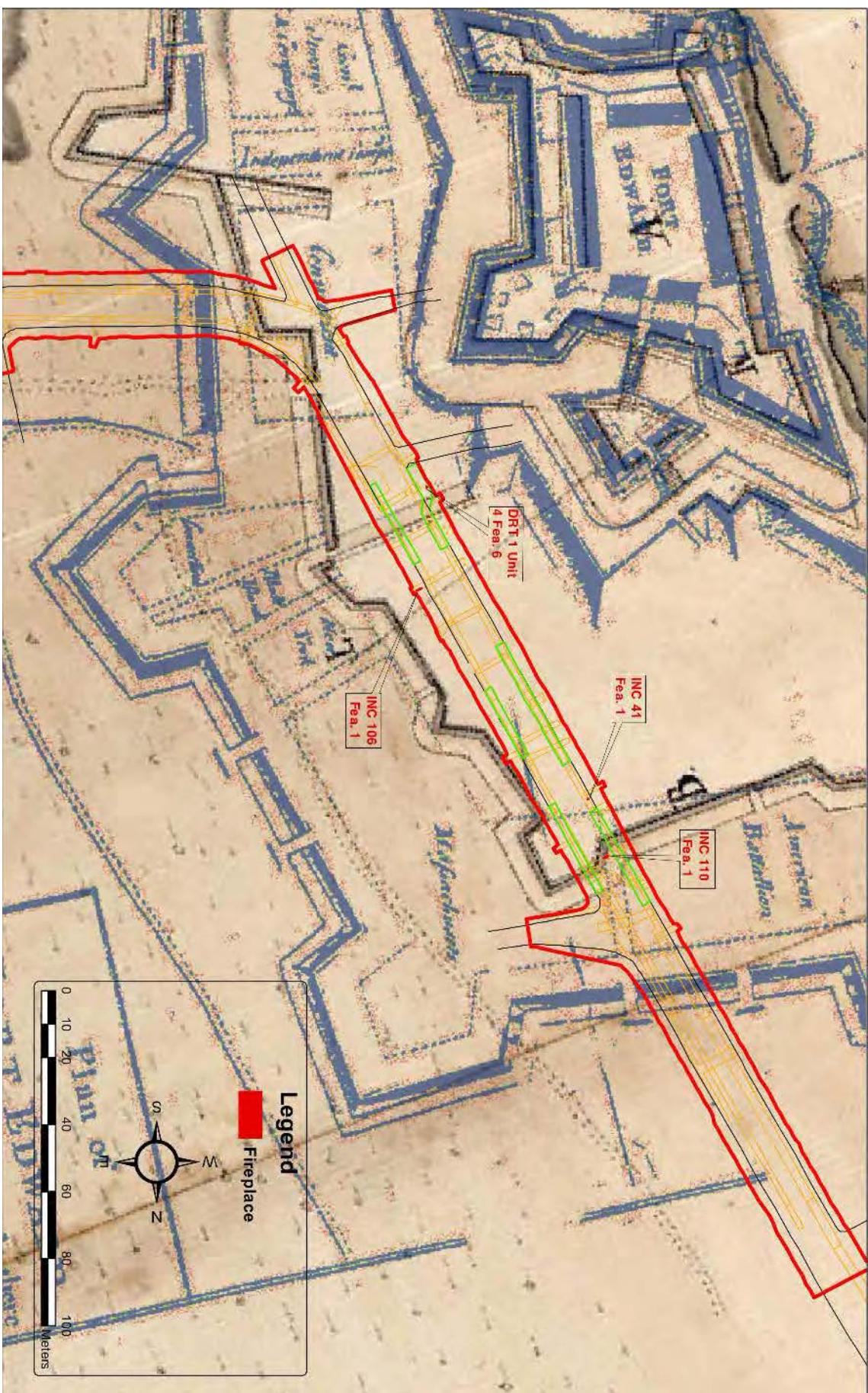
### ***DRT 1 Units 3 and 4, Feature 6, Fireplace-Oven***

The remains of a brick fireplace or oven were encountered 6 m (20 ft) north of Moon Street under the western sidewalk of Broadway. It was discovered while excavating DRT 1, Units 3 and 4, which were laid out after the stone sidewalk slabs were removed. This part of the DRT was initially slated for water line construction. From the topmost bricks of the fireplace to the level of the floor inside the firebox, it measured 97 cm (38 in) high. Vertically, it was situated from 53 to 150 cm (21 to 59 in) below the current ground surface.

It was a three-sided structure having a back wall, two sides extending out from the back forming the firebox, and a brick floor inside the firebox. It was oriented with its back facing northeast, which was diagonal to the street. The front opening faced southwest. It was peculiarly shaped in that the two sides of the firebox angled in toward the front opening. The sides were single thickness laid in stretcher rows. The bricks in this fireplace were very roughly hand made in molds with many inclusions in the clay. Similar bricks were found in a fireplace at the nearby Fort Edward Sutler's House site excavated by the Adirondack Community College archaeology field school. The Sutler's House fireplace bricks were held together by lime mortar (Starbuck 2010), while this one was held together with unfired clay.

During excavation, the feature was exposed in two stages by soil level, starting in Level 2. The bricks along the back, being the highest point of the feature, were exposed first at about 53 cm (21 in) below the ground surface. This is not the top of the original structure since it is clear that the upper portions of the chimney and firebox have long since been knocked down. Some brick rubble occurred in Level 2 soils surrounding the feature and inside the firebox, presumably from the upper parts of the fireplace and chimney. Level 2 soils were removed to a depth of about 103 cm (40 in) below surface to expose the upper 50 cm (20 in) of the structure around all three sides (Photos 6.11 to 6.14 on pages 145–146). At this depth below surface approximately seven rows of bricks were exposed while the side walls stepped down from the back to the front of the hearth opening. It was observed that the bricks were stacked in horizontal rows, one on top of the next, creating a smooth surface on the inside of the firebox, but leaving the exterior sides very uneven.

At that depth below surface, the southern side of the fireplace measured about 1 m (3 ft) long from the back



**Figure 6.21:** A plan of the Fort Edward Village site with the georeferenced overlay of the 1756 (Wetterstrom) and 1757 (Anonymous in Cuneo 1959) maps of the fortifications showing the locations of fireplace features located within the encampment area discussed in the report.





**Photo 6.11:** View of the upper half of the fireplace before surrounding Level 3 soils were removed.



**Photo 6.12:** View of the inside of the firebox before the upper rows of bricks were removed and soils excavated out of the inside.





**Photo 6.13:** Uneven outside rear of fireplace before upper rows of bricks removed.



**Photo 6.14:** Close-up of bricks and gray, unfired clay mortar in rear of fireplace.

to the front opening, while the back measured 1 m across in the outside dimension, and the exposed length of the northern side wall was about 75 cm (30 in) from back to front, the end disappearing into the west wall of Unit 4. The northern back corner was thicker with some bricks laid perpendicularly to the north side wall, which suggests the structure may have originally had thicker walls. It was observed that remnants of gray clay between the rows of bricks acted as a mortar in the complete absence of typical lime mortar.

When archaeologists reached this point of excavation they thought they were at the bottom of the feature. Also, water line construction was slated to go through this location, so it was decided, after documenting what was found, to remove the feature brick by brick. This was also done because we feared the bricks would topple off during subsequent excavation within the unit. These upper seven rows of bricks were removed from the back, and two to four rows removed from each side down to the existing excavated level. Many of the hand-made bricks were broken and crumbled so only whole and half bricks were saved.

The feature was then excavated to the floor on the inside of the firebox, and on the outside only to about six brick rows from the bottom. This revealed that the inside back of the firebox, starting at the floor, had five or six stretcher rows stacked vertically, and above that, had four header bricks laid at a 45 degree angle toward the rear, two each flanking a two-brick-wide gap creating what was probably a flue for smoke. This gap was a foot or two above the floor (Photo 6.15 on the next page). Above the gap section, the bricks were laid across the back as stretchers in four rows, each stepped back an inch or so, followed above by six or seven stretcher rows stacked horizontally. The brick faces inside the firebox and flue were charred black from use, especially on the floor, which was paved with bricks. There appeared to be a curved apron that extended a few inches beyond the firebox, the outer front edge of which was faced with bricks laid on edge (Photos 6.16 to 6.17 on pages 148–149).

Remnants of a wood timber approximately 43 cm (17 in) in length, with a nail attached, was oriented vertically along the outside of the southern wall of the fireplace at its opening. It looked like it may have been the remnants of part of a surrounding wood structure, a frame or molding board perhaps. The nail was found resting near the uppermost end brick on the southern wall adjacent to the wood (Photo 6.18 on page 149). The board was basically held in place with the surrounding soil and when the soil was removed the wood fragments were unsupported and collapsed. Charcoal was noted in the soil around the wood.

## *Fireplace Reburied*

Since it was decided the fireplace could ultimately be avoided during construction, it was left in place and carefully covered with landscape cloth by archaeologists, then backfilled with sand and tamped so that the entire structure was evenly covered with soil (Photo 6.19 on page 150). It remains in situ under a newly constructed concrete sidewalk. The bricks that were not returned to the Museum from the disassembled upper part of the fireplace were placed along the east wall of Units 3 and 4 at about the 100 cm (39 in) depth below surface and also covered with sand and tamped.

Artifacts collected from soils removed from the inside of the fireplace were screened and bagged separately from those found on the exterior. However, based on the eighteenth century dates of the artifacts found in both places, the soils were deposited at the same time, probably during or just after the French and Indian War occupation. Monitoring of Incident 166, a deep drainage structure installation only a few feet away from Feature 6, produced eighteenth century artifacts as well between 75 and 100 cm (30 to 40 in) below surface. The material from this Incident could be related to the occupation of the structure associated with the fireplace.

Table 6.5 on page 151 lists the combined artifacts ( $n = 1,033$ ) found surrounding and inside Feature 6, and from Incident 166 between 75 and 100 cm below the surface. There was an ash layer about 10 cm (4 in) thick at the floor of the firebox from which a soil sample was floated. The artifact counts in Table 6.5 reflect the high numbers of some artifact types that came from the flotation material (e.g. very small brick fragments, charcoal fragments, and animal bone fragments).

The artifacts related to food and drink include mostly small fragments of burned or calcined animal bone and olive-green wine bottle glass. This seems to be fairly typical of the artifacts from the occupation of the fort during the French and Indian War. Ceramics tend to be low in number everywhere within the eighteenth century fort contexts; though Incident 166 yielded a nearly whole scratch blue decorated white salt-glazed stoneware saucer (Photo 6.20 on page 150) and two sherds of brown English stoneware, probably from a mug or pitcher. Both are ware types manufactured in England in the eighteenth century up until 1775. Two undecorated pearlware sherds, post-dating the French and Indian War, were collected during construction monitoring of Incident 166. Since there was less stratigraphic control with that backhoe excavation, these sherds may have been mixed in from overlying occupation layers.

Aside from the 35 glass wine or liquor bottle fragments, there are also ten clear leaded table glass fragments, possibly from a decanter or a drinking vessel, and fragments from two very small bottles. One is a hand blown medicine vial, and the other is a decorative





**Photo 6.15:** Brick floor inside hearth with ash remnants. Note slanted bricks with gap at top of firebox.



**Photo 6.16:** From ground surface the curved brick hearth front and floor is visible as well as the narrowed opening at front of firebox.





**Photo 6.17:** View from above showing the wood timber, the nail, and the bricks facing the curved hearth front.



**Photo 6.18:** View west of exposed end of wood timber circled in yellow at left, and the wrought nail circled in yellow at right.



**Photo 6.19:** Archaeologist (Lawrence Xinakes) reburying the fireplace with sand over landscape cloth.



a. white salt-glazed stoneware saucer; b. mold-blown glass bottle bottom; c. bayonet scabbard clip; d. clear table glass; e. medicine bottle fragment; f. wine bottle fragments.

**Photo 6.20:** Some artifacts from Feature 6, the fireplace/oven and Incident 166.

**Table 6.5:** Summary of Artifacts found in the vicinity of the brick fireplace-oven.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>	Brick	Handmade fragments (not including 400+ fragments from flotation)	236
	Window glass	Aqua	3
	Nails	Wrought with rose head	15
		Unidentified	6
		Unidentified square	2
	Hardware	Screws	2
<i>Food/Drink</i>	Ceramic sherds	Pearlware	2
		Staffordshire Brown English stoneware	2
		White salt-glazed stoneware, scratch blue	3
	Vessel glass	Wine bottle (olive green) fragments	35
		Medicine bottle (green) base	1
		Green bottle frags. (mold-blown decorative, one bottle)	9
		Clear table glass leaded	10
		Aqua bottle fragment	1
		Other green bottle glass	1
	Fauna	Bone/teeth (includes 15 teeth/tusk, 134 from flotation)	376
		Clam shell	1
		Oyster shell	5
	Seed	Charred bean or pea	4
<i>Arms/Military</i>		English gun flint	1
		Bayonet scabbard clip	1
<i>Personal</i>			
<i>Miscellaneous</i>		Clay smoking pipe fragments	6
		Lead strip (melted)	1
		Unidentified iron or copper fragments	8
		Charcoal fragments	173
<i>Prehistoric</i>		Unidentified seed	1
		Wood fragments	107
		Chert flakes/shatter	20
		Utilized chert flake	1
Total			1,033



molded bottle of unknown function, possibly a decanter (Photo 6.20 on page 150, e and b). Evidence of food rations cooked in the fireplace includes four charred bean or pea cotyledons (half of a legume seed) and several types of animal bone. Of the nearly 400 bone fragments found in and around the fireplace, all but seven are from mammals, the majority of which are unidentifiable to species level because of fragmentation and deterioration. Many show butchering marks and are burned or calcined from cooking. Of those identifiable to species, one is from a white tailed deer, ten are from cow, and twelve are from domestic pig, mostly teeth.

Bones from other classes of animals include three bird bones (rib fragments) and one fish bone (vertebra). The deer, fish, and possibly the bird bones are evidence of hunting and fishing. According to some soldiers accounts of the time, British military rations, when they could be had, included salted beef and pork, dried peas, rice, flour, and butter (Doughty 1914; Pargellis 1933). At various times, even these were scarce during the long winter garrisons at the frontier forts. Fresh meat and vegetables were vital to the soldiers' health because scurvy was a persistent problem among the British and provincial troops during the war (Brumwell 2000:151). The food evidence in this fireplace, including the charred peas, indicates these soldiers ate the typical diet of the time probably supplemented with locally obtained fresh meat and fish.

Some arms-related artifacts include a British gun flint and a bayonet scabbard clip made probably of brass (Photo 6.20 on page 150c). This would have held the bayonet scabbard onto a "frog" attached to a soldier's belt. The small strip of lead (not pictured) is probably the remains of soldiers making musket balls at the fire, a common practice. There was also six clay smoking pipe fragments, indicating soldier's tobacco use.

Aside from the bricks of the chimney, other architectural artifacts include at least 15 hand wrought nails and some possible screws. Three very small fragments of aqua flat glass suggest that there were one or more windows.

Based on the location of this fireplace it may have been associated with a guard room or hut built near the narrow opening between the fort itself and the western end of the southern boundary of the early 1756 outworks (Figure 6.2 on page 115). This was the point where traffic coming from the south or north along the military road was funneled through a narrow opening and where guards would need to be a constant presence. The guard in the eighteenth century military parlance was not a single soldier who was protecting a place. This was usually referred to as a sentinel. The guard itself could consist of just a few men or well over 100, depending upon the situation and the place to be guarded (Smith, Cpt. 1779:118-9,229). The men while on guard duty were fully uniformed, accoutered, and armed, ready to respond to any threat, but not all

were serving as sentinels at the same time. The guard room was where the remainder of the guards could relax though still under arms and on duty. According to Patterson, sentry boxes or guard houses usually refer to a phone-booth sized structure erected at a sentry post to protect a sentinel from severe weather (Collamer 1987).

It is likely that the fireplace discussed above was part of a more substantial structure than a sentry box. In fact, its depth below surface suggests that it was a rather large building with a window and either had a cellar or was semi-subterranean. The domestic material found in and around the fireplace may also suggest that the structure was living quarters, perhaps for officers and perhaps for winter garrison the first two years of the fort's occupation. It is also likely that the building was removed and the area filled in during 1757 when the larger outworks line was constructed. Its odd shape with the constricted opening suggests its possible use as an oven, and if it was, it may have been used for baking bread. This function is inconclusive though.

### *Incident 41, Feature 1*

Another eighteenth century brick fireplace was located in the west wall of the waterline construction trench along the west side of Broadway in front of the Fort Edward Art Center (83 Broadway). It was very deep; the top of it was 1.5 m (5 ft), and the bottom 2 m (6.5 ft) below the current surface. Only one flat external face of the structure was exposed in the trench wall after fill soil was scraped back a few centimeters by archaeologists. They did take a few bricks out of the bottom row in order to see if it was more than one brick thick and to look for evidence of burning on the inside to confirm its function as a fireplace. These bricks were saved and a large amount of charcoal and ash was uncovered inside. The upper chimney parts of this fireplace were not apparent in the trench wall having probably been removed during or shortly after the French and Indian War. Since it was not going to be further impacted by construction, the remaining parts of the structure beyond the trench were unexplored and left undisturbed by construction activities.

The exposed face of the intact brick structure measured 90 cm (35 in) wide, 45 cm (18 in) high, and was made of six staggered courses of bricks, approximately five per row. The bricks were handmade, some very crudely, most measuring 6 by 15 cm (2.3 by 6 in). However, being handmade, they varied quite a bit (Photo 6.21 on the next page). One was so misshaped and badly fired that it looks like it got squashed or dropped while it was still soft. The inside faces of the bricks that were pulled out were blackened and charred on the inside. Between the bricks was pure unfired clay used as a mortar to hold them in place similar to the fireplace-oven (Feature 6) discussed previously, and to the fireplace base seen in Incident 82 at the former



blockhouse location discussed below. It was also seen in the ash and brick layer of the possible hearth remnant, Feature 1 of Incident 110 located about 15 m (50 ft) to the north.

The bottom of the feature rested on light-colored coarse sand, the same that was considered Level 5 sub-soil in our excavation units along that side of the street. On either side, and for 30 cm (12 in) above the feature, was yellow brown sand and two thick lenses of dark gray brown sand with coal ash slanting down toward the north (Figure 6.22) indicating various fill layers from the nineteenth century. Above that was approximately 1 to 1.5 m (3 to 5 ft) of mottled dark yellow brown and gray brown sand fill. The feature was situated several feet south of a fire hydrant connector pipe running east-west 1.5 m (5 ft) below the street surface. The coal ash lenses slanting down to the north above this fireplace probably relate to the late nineteenth century installation of that utility. Some soil from within the exposed cavity between the bricks was sampled and floated. It revealed ash and charcoal along with some very small bone fragments, and not surprisingly, brick fragments. A sample of the clay and some of the larger bricks was collected but no other artifacts were observed from the fireplace.

Other nearby construction trenches revealed evidence of eighteenth century habitation that may be associated with this fireplace. Incident 92 was a water service connector trench that ran from the recently constructed water main in the street to the Art Center building at 83 Broadway about 4 m (13 ft) north of the fireplace. During construction, a section of the sidewalk parallel to the street was removed next to the construction trench allowing archaeologists to manually excavate a meter-square test pit there (Photo 6.22 on the next page).

A possible wooden post was found along with some other construction material buried beneath 74 cm (29 in) of mostly nineteenth century fill. It was vertically oriented, was close to a meter long, and was narrower at the top than the bottom; only about 6 cm (2.5 in) across at the top. A plan was not drawn but it looks in the photo (Photo 6.23 on the facing page) like a square post set in a circular hole that was backfilled with mottled yellow and gray brown sandy soil. It was in association with hand wrought nails (14), a musket ball, a fragment of delft glaze, two shards of olive-green wine bottle glass, two calcined bone fragments, six brick fragments, and a small amount of charcoal, all either diagnostic of, or typical of, the French and Indian War era. However, the soils just above and around the top of the wood were also mixed with early and mid-nineteenth century material (i.e. pearlware (4), whiteware (12), aqua window glass). There were also some prehistoric fragments of fire-cracked rock, and two pieces of chert shatter.

This location (of the wood post) was about 5.5 m (18 ft) northwest of the fireplace from Incident 41, so

could be related to the French and Indian War occupation, perhaps part of a hut or guard room constructed just inside the defensive outworks ditch.

During the 2007 construction season, a gas line connection trench was mechanically excavated a few feet to the south of the fireplace location in the driveway of the Art Center. This was Incident 168, an east-west-oriented trench measuring about .8 m (2.6 ft) wide and 6.5 m (21 ft) long. In this trench the upper meter of soil was mixed fill consisting of yellow brown sand with coal ash as well as brown sand and gravel similar to what we saw in the upper soils above the brick fireplace nearby. At the one-meter (39 in) depth the soil became dark yellow brown silty sand where, just below the street curb, a concentration of broken brick was seen in a pocket of dark gray sandy soil mixed with a small amount of light gray sand. This appeared as an amorphous smear measuring 70 cm (2.2 ft) wide. No intact bricks were noted (Photo 6.24 on the next page).

Some of the soil from this brick deposit was screened, producing bone, unidentified metal, brick fragments, a clam shell, and a sherd of mid and late-eighteenth century delftware. It also contained soft clay globs like the clay used between the bricks in the intact fireplace found nearby. Since the construction trench did not need to go deeper or wider, no further investigation of the deposit occurred though it is probable that it is associated with the deeper intact bricks 2 m (6 ft) away.

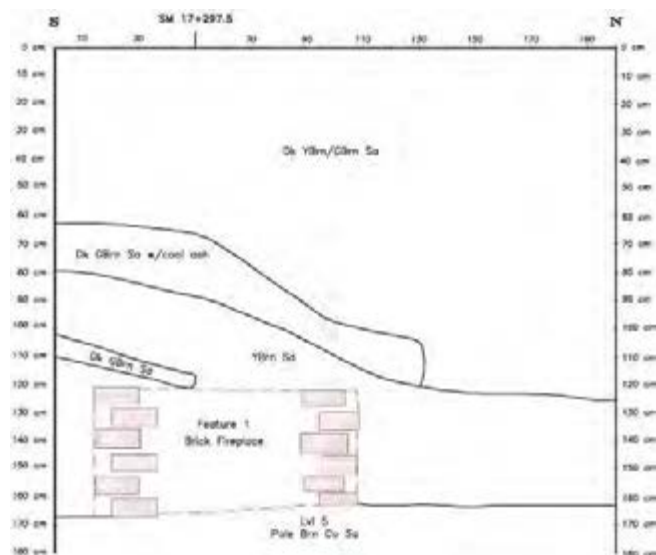
The combined evidence from these two Incidents suggests this was possibly the location of a seasonal hut or guard room, or even a tent occupied as part of the provincial camps during the campaign season. Its depth below the current surface may be explained by phases of construction during the war, those pertaining to the two phases of outwork constructed to surround the encampment area just outside the fort. This location falls within the encampment area depicted on the 1756 map, the ditch having an earthen parapet or mound above the natural surface along its inner face. It is probable that this ditch (1756) was filled and a new one constructed further to the north a year later, which would have required filling in of the old ditch and at some point, removal of the building and fireplace to make the ground flat and ready for subsequent troops to camp on.

### ***Incident 106, Feature 1, Possible Fireplace***

This feature was a concentration of large cobbles seen in the north wall of a sewer and water service connection to the house at 74 Broadway where the construction trench ran beneath the public sidewalk in front of the house. It occurred from 60 to 170 cm (24 to 67 in) below the surface and was disturbed by the construction trench as it was excavated (Photo 6.25 on the facing page). The feature was approximately 80 cm (31 in) wide where it was exposed in the trench wall but appeared to extend some unknown distance underground to the north be-



**Photo 6.21:** Face of the brick fireplace within the construction trench wall after the new water pipe and some of the clean sand fill had been placed in the bottom of the trench. The top row of bricks was at 1.5 m (5 ft) below ground surface.



**Figure 6.22:** Profile of Feature 1, the brick fireplace in Incident 41.

yond the trench wall. The exposed part of the feature was a jumble of cobbles with one or two bricks along with evidence of charcoal and ash. The bottom of the feature extended well below the natural subsoil (Level 3 yellow brown sand) into Level 4 (yellow brown silty sand with gravel). There was an ash concentration that also contained clay.

A few artifacts were collected from a depth of 1 m (39 in) below the ground surface while digging into the face of the cobble feature. These included 12 animal bone fragments, a hand wrought “rose” head nail, three handmade brick fragments, a probable piece of fire-cracked rock, two olive-green wine bottle glass fragments, and a piece of nineteenth century whiteware. Most of this material is typical of mid eighteenth-century French and Indian War occupation. The whiteware may indicate some later mixing. A mid eighteenth-century blue decorated delftware bowl rim sherd was found in the construction trench a few feet to the west mixed in with nineteenth century material but is probably related to this feature.

Our feeling at the time this was exposed was that it was part of some kind of fireplace since it had some bricks, some ash and charcoal in association with eighteenth century artifacts. Plus, it is in a location that corresponds with the enclosed encampment area where provincial troops were garrisoned over several campaign seasons. In comparison to the other definite fireplaces





**Photo 6.22:** View southeast of Incident 92 construction trench and the early stages of excavation of the adjacent square test pit.



**Photo 6.23:** View of the top of the possible wood post at the bottom of the Incident 92 test pit.





**Photo 6.24:** Feature 1, a deposit of brick fragments seen in the bottom of Incident 168 trench excavated near the location of the fireplace in Incident 41 a year earlier.



**Photo 6.25:** Possible fireplace remains found in Incident 106, a sewer service connection to a residence.

found in that area, this one was unusual because of the large cobbles encountered rather than it being entirely of handmade red bricks. Presumably there's more of the feature intact under the sidewalk to the north just beyond this trench disturbance. It is not entirely clear though that it is not some kind of nineteenth century cobble feature that intruded into an eighteenth century deposit.

### ***Incident 110, Feature 1, Possible Hearth***

A small charcoal and ash feature was seen about 80 cm (31 in) below the road surface in a sewer service connector trench in front of 85 Broadway. The trench itself extended completely across both lanes of the street and was 1.4 m (4.5 ft) wide at the surface. At about 30 cm (12 in) deep the trench stepped down to approximately 60 cm (2 ft) wide leaving an 80 cm-wide shelf along the south side of the trench. The hearth feature was seen between 60 and 100 cm (24 and 39 in) below the surface in the south profile of the deeper trench 1.8 m (6 ft) west of the centerline of the street (Photo 6.26 on the next page).

The 80 cm wide shelf provided a horizontal surface through which to explore the feature in plan. It was cleared off to the southern trench wall revealing an intact strip of ground about 50 cm (20 in) wide sandwiched between two utility trenches. The feature itself was a basin-shaped depression measuring 30 by 50 cm (12 by 20 in) in plan. It consisted of a layer of crumbled brick fragments and charcoal over whitish ash, on top of the natural sub soil that was reddened by heat (Photo 6.27 on page 158 and Figure 6.23 on page 158). To the west, the feature was truncated by the old abandoned water line. On the east it was missed by mere inches by the 1986 sewer interceptor trench.

About 40 cm (16 in) to the south of the feature was a small, 15 by 20 cm (6 by 8 in) concentration of bone that was excavated and bagged separately but is probably related (Photo 6.28 on page 159); in addition to 36 animal bone fragments it contained a 8.9 mm (.35 in) diameter lead ball and a fragment of olive-green bottle glass, typical of many other French and Indian War features identified nearby. The base of the bone concentration was 87 cm (34 in) below the surface of the pavement.

The brick, ash, and charcoal portion of the feature was excavated and screened separately from the bone scatter portion but since they seem to be related by stratigraphic level and proximity, the artifact assemblage is presented combined. In total, 118 fragmented or small prehistoric and historical items were found including animal bone (84), brick (15), mortar (1), sherds of whiteware (3), olive-green bottle glass (4), a white clay smoking pipe, the above-mentioned lead ball, unidentifiable iron or steel fragments (2), a strip of lead, two chert flakes, a piece of chert shatter, two pieces of fire-cracked rock,

and a piece of coal slag. A small amount of charcoal and fire-reddened soil was also collected. It is interesting to note also that in the center of the hearth feature there were clumps of soft clay much like the soft, unfired clay used as mortar, or glue, in the other brick fireplaces observed on this project.

Some of the artifacts, like the whiteware sherds, are temporally diagnostic of the nineteenth century based on manufacture date ranges. These likely were mixed into the feature during excavation of the fill soils above and next to the feature. Of the 84 animal bone fragments, all were identifiable as mammalian, medium to large in size, and much of it burned. Six were identified as cow bones, two showing signs of being sawed.

This feature was likely the base of a brick fireplace or possibly small, crude fire hearth enclosure that was made of brick, held together with unfired clay. Its location, relative to the locations of identified outwork ditch features and map-documented ditches, places it on top of the 1756 line but well within the 1757 line according to Figure 6.21 on page 144. In fact it is situated near the rear of the Massachusetts regiment's camping area on the 1757 map and could be the remnants of a mess kitchen. It was probably abandoned shortly after the war and buried when the street was first formally established, then truncated in the nineteenth century when the water line was installed. It is possible that there is more of the feature extending to the south beyond the trench wall.

### ***Incident 82, Features 2 and 3, Blockhouse Fireplace***

A trench 1.5 m (5 ft) wide was dug in the center of the northbound lane of the street in front of 50 Broadway to connect a new drain pipe to a new concrete drainage structure already in place (Photo 6.29 on page 162). This location is at the northern edge of the Bond Creek Valley, a spot that roughly coincides with one of the blockhouse symbols depicted on the ca. 1758 map of Fort Edward (Figure 6.24 on the next page). When this map is georeferenced with the modern project map (Figure 6.25 on page 161), the more distant landmarks east of the fort itself, namely the road crossing the creek and the blockhouse symbol, appear to be shifted off to the east beyond where the road crossing is today. This may be a factor of the period map copy having been somewhat distorted by various reproduction methods over the years. It is also possible that the vantage point of the original engineer who drew the map was from the fort itself and that the more distant blockhouses and the creek crossing were less accurately plotted. Nonetheless, the finding of this feature at the north edge of the creek valley in the general vicinity of where a blockhouse was documented on a period map seems convincing.

The valley, which is about 10 to 15 feet deep, is now filled in along the Route 4 corridor with what is locally





**Photo 6.26:** View south of Feature 1 in Incident 110 trench before the shelf above it was cleared off. Note the truncation of the feature by the water line trench along the right. The recent 1986 sewer line trench just missed the feature on the left.



**Photo 6.27:** Close-up view of the feature showing the layering of the brick, ash, and fire-reddened soil in profile.

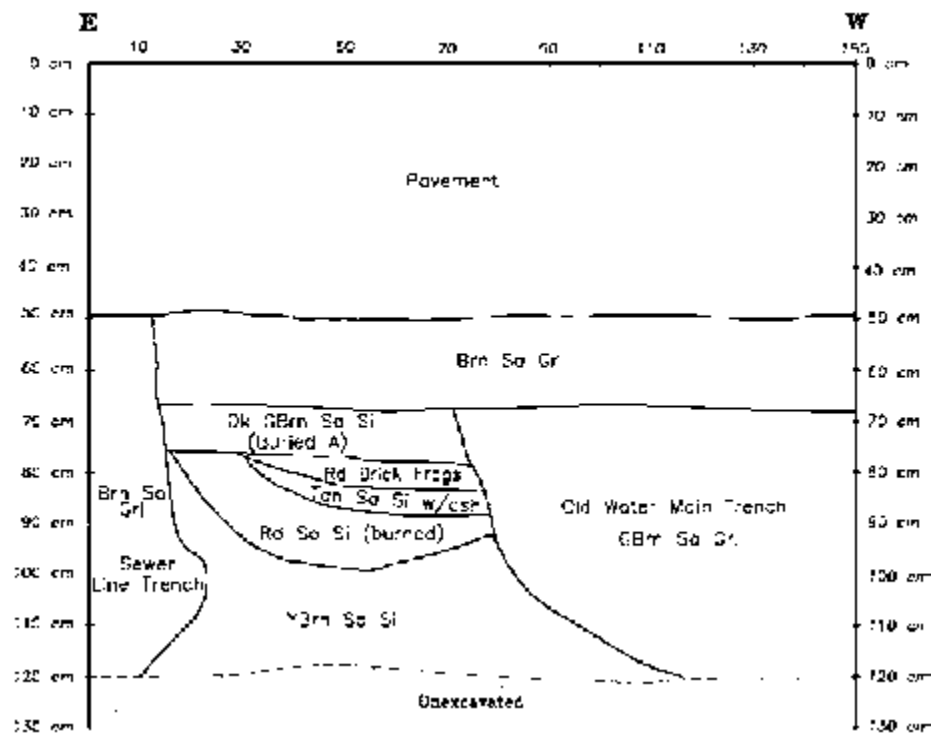


Figure 6.23: Incident 110, Feature 1 south profile.



Photo 6.28: Plan view of the hearth feature and associated bone scatter in Incident 110 after fill soil was removed from the top.



**Figure 6.24:** Detail of a Plan of Fort Edward and environs (Hulbert 1907) drawn ca. 1758, showing the road crossing Bond Creek, then guarded on the north bank by a blockhouse (marked “C”).

known as “the Viaduct.” The remnants of a brick fireplace were encountered at 110 cm (3.6 ft) below the pavement surface in the construction trench. The bricks appeared to be in two disconnected parts, the eastern part (Feature 2) being fully within the open trench, and the western part (Feature 3) only partially exposed in the trench (Photo 6.30 on page 162). It is not clear if the two parts constitute a single fireplace structure (Figures 6.26 to 6.27 on page 163) but they probably do, in which case it was at least 240 cm (7.8 ft) across. For documentation purposes in the field the two parts were given separate feature numbers.

Feature 2 consisted of what must have been the bottom seven or eight courses of bricks of a chimney or perhaps the side of a fireplace or oven. It measured approximately 140 by 130 cm (55 by 51 in) in plan and it was roughly square in shape. Except for one piece of field stone, it was entirely of handmade bricks, both whole and broken, held together with clay rather than traditional lime mortar (Photo 6.31 on page 164). The bottom of it was 133 cm (4.3 ft) below the pavement surface. Feature 3 was 120 cm (4 ft) away to the west along the trench wall. It amounted to a line of four bricks laid flat, end-to-end, bordered on the west side by bricks laid on edge. It protruded 70 cm (2.2 ft) into the trench from the north wall (Photo 6.30 to 6.31 on pages 162–164). Archaeologists cleared the features of loose soil and excavated the surrounding floor area to define the intact bricks. Immediately against the north side of Feature 3 was an ash and charcoal layer about 10 cm (4 in) thick over a layer of fire-reddened soil and some charcoal. This extended eastward toward the larger brick structure, indicating it was probably the location of the hearth itself (Photo 6.32 on page 165).

There were a few scattered bricks lying in the space between Feature 2 and Feature 3 to the west. Feature 3 may have been the remnants of the front edge of the

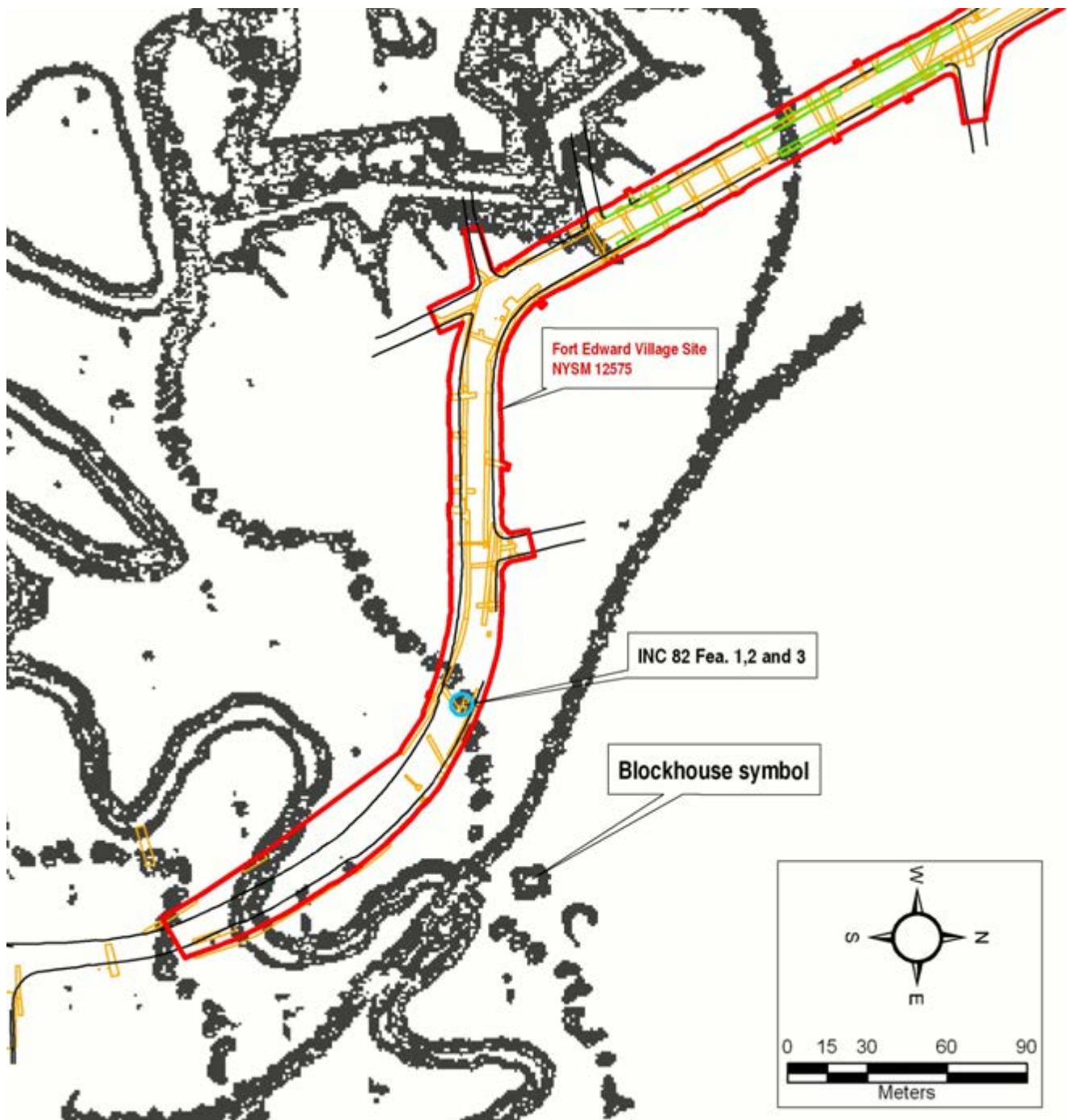
floor of the hearth, the bricks between this and the more massive Feature 2 having long since been removed. This area had not been impacted by the backhoe though it is likely that the east side of Feature 2 was disturbed by the bucket while excavating the trench.

When the utility trench was slightly expanded in width during later backhoe excavation, more of the feature was exposed revealing that the narrow line of bricks had attached to what might have been another side wall of the fireplace, only six courses of bricks still intact, six to seven bricks wide, as seen in the wall profile (Photo 6.33 on page 165). It was not explored beyond the profile. The next day some possible structural evidence was detected about 7 m (23 ft) further west along the drainage line trenching in Incident 87 in the form of a square-shaped soil anomaly about 85 cm (33 in) long and starting at 110 cm (43 in) below the surface. Seen in the north wall of the construction trench, it had dark yellow sandy silt mottled with dark gray brown spots, as well as a small concentration of small charcoal and reddened sand flecks. It contained only a few artifacts including three handmade brick fragments, five flat metal fragments, two square nails, two kitchen bones (one calcined) a clam shell, two fire-cracked rocks, and a chert flake. This deposit may have been an isolated refuse dump related to the blockhouse occupation.

A profile drawing of the north wall of the Incident 82 trench recorded the soil layers above the brick features (Figure 6.27 on page 163), which included about 50 cm (1.6 ft) of yellow brown silty sand mottled with brown sand and charcoal and some thin layers of red brown sand to the south. This was overlain by a 20 to 40 cm (8 to 16 in) thick layer of dark brown sandy silt, which was overlain with 40 cm (16 in) of concrete and blacktop.

Artifacts collected around and in the fireplace included, besides brick and charcoal, 25 nails, 11 of them hand wrought, 10 with rose heads. These were likely from the blockhouse building itself. Also found were three lead balls, one measuring .35 inches in diameter while the other two are fused together, one measuring .87 inches and the other .50 inches in diameter. This may represent manufacture of lead shot on the premises using the fireplace to melt the lead. Fifty seven animal bones, many in very small calcined fragments, were also found in the fireplace. Cow and domestic pig are represented among the bones. Recovered smoking pipe fragments numbered 15, indicating that soldiers were smoking at the blockhouse, a common occupation at the time along with the consumption of alcohol as evidenced by the dark green wine bottle glass fragments also recovered. Four ceramic dishware fragments were found, one a slip-decorated buff earthenware sherd decorated with brown dots, a common type of slipware widely exported to the Americas up until the 1770s. The other sherds recovered were early to mid-nineteenth century ware types that were probably mixed into the soils above the features and are not from the 1750s occupation of





**Figure 6.25:** Plan of the Fort Edward Village site showing the location of the blockhouse fireplace in Incident 82 relative to the georeferenced inset of the 1758 Plan of Fort Edward (Crown Collection Series I, Vol. 3, No. 23).



**Photo 6.29:** View northwest of Incident 82 after discovery of the probably blockhouse fireplace.



**Photo 6.30:** View of the intact brick structural remains of Features 2 and 3 in Incident 82 before Feature 3 (to left) was completely cleared out.



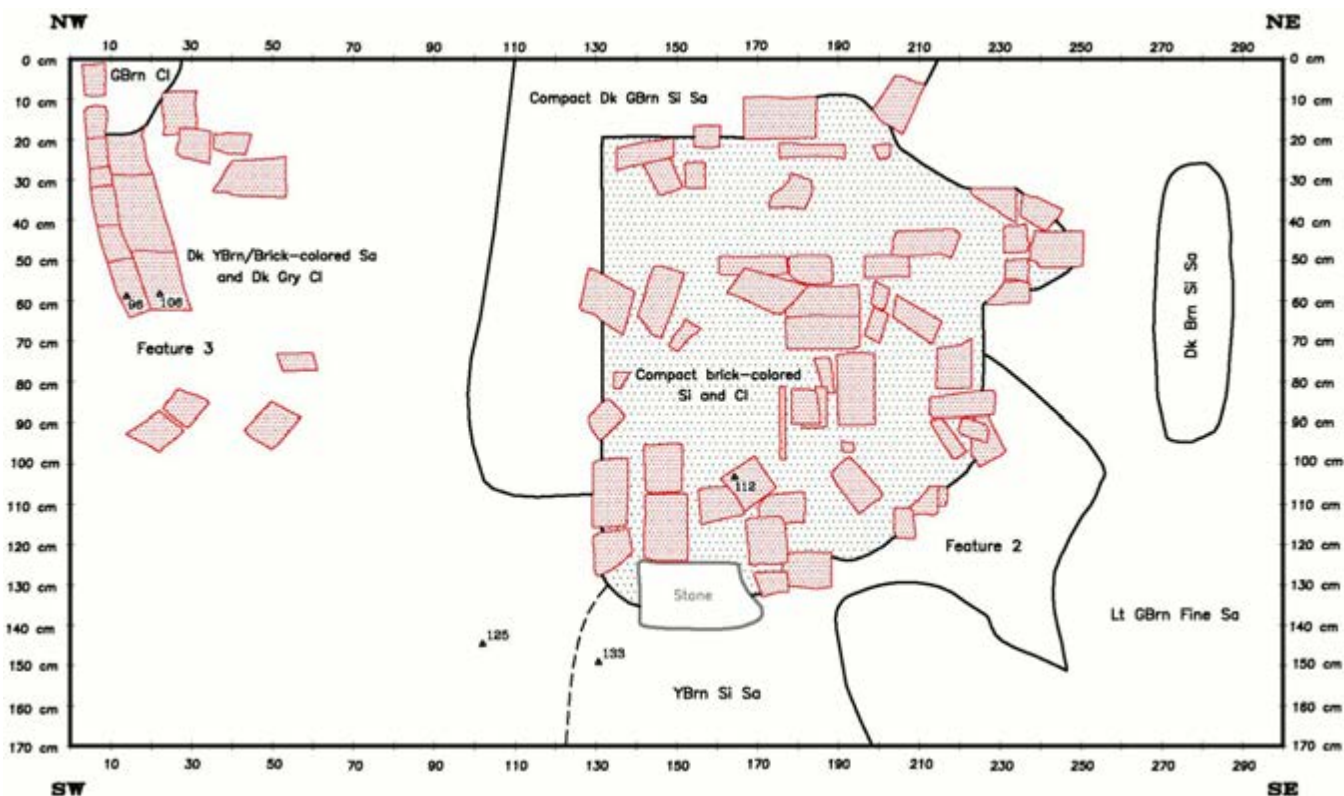


Figure 6.26: Plan of Features 2 and 3, parts of a brick fireplace, in Incident 82.

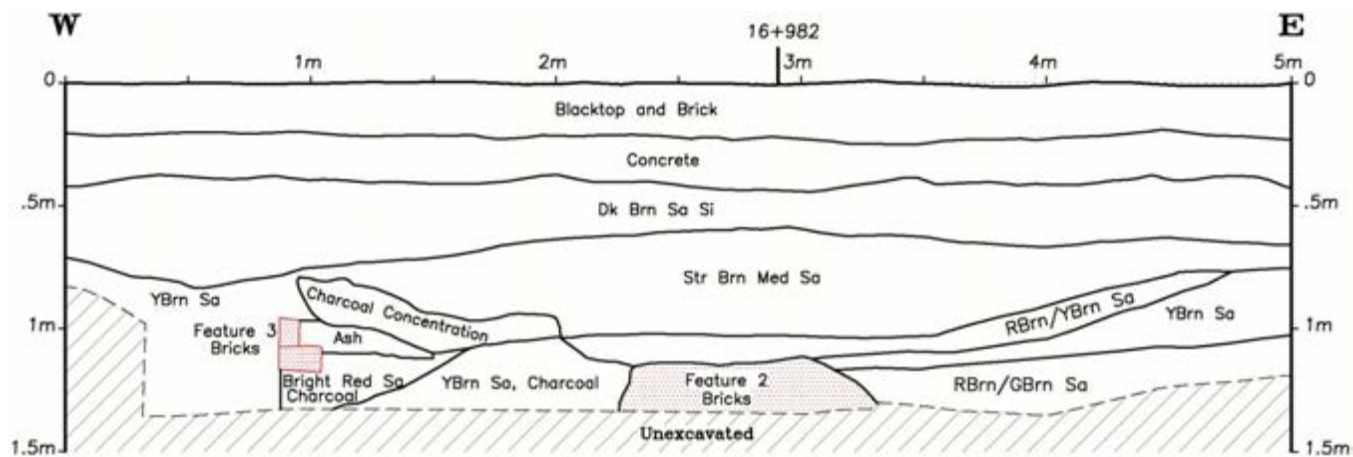


Figure 6.27: Profile of the north trench wall of Incident 82, Features 2 and 3.



**Photo 6.31:** Close-up of Feature 2, the remnants of a brick fireplace found at 110 cm below the pavement in Incident 82.



**Photo 6.32:** Fire-reddened soil and wood ash along the inside of the northern part of the feature after it was excavated out.



**Photo 6.33:** Part of Feature 3 after it was further exposed during backhoe excavation of the utility trench.



the blockhouse. Other debris found included 19 unidentified iron or steel fragments, two prehistoric flakes, a piece of fire-cracked rock, and a piece of what looked like building stone.

Related to the block house fireplace was a deposit of eighteenth century material (Feature 1) located approximately 1.6 m (5 ft) to the southwest along the west wall of the trench. It was found at a depth of 120 to 160 cm (47 to 63 in) below the street pavement surface. This concentrated deposit was below a metal gas pipe trench disturbance that probably truncated the feature from above and introduced some nineteenth century artifacts into the eighteenth century deposit (Photo 6.34 on the next page). The feature was also intruded upon from the east by the excavation of the deep pit for the new drainage structure.

This Feature 1 location may have been part of either a defensive ditch constructed around the block house or possibly part of the original slope to the creek valley – the base of it is well below the level of the base of the fireplace. In William Hill's *Old Fort Edward Before 1800* (1929:229-31), he talks about the blockhouses built ca. 1757 with fairly detailed descriptions by Pouchot stating "...they were of wood, one square within another. It is very likely the inner square consisted of a log house loop-holed for musketry fire, around which an entrenchment of earth and logs was erected." This suggests that there was a ditch around the blockhouse structure.

The artifacts from this deposit included a chert flake, many fragments of a large bucket or pail along with the wire bail handle, and 16 kitchen bone fragments, most of them identifiable as domestic pig. It also included nine nails, four of them hand wrought, brick fragments, charcoal, other unidentified iron fragments, four ceramic fragments including one buff earthenware sherd similar to the one near the fireplace, and most notable, a whole mallet-style wine bottle. This was accompanied by many other broken wine bottle fragments, and fragments of a square case gin bottle (Photo 6.35 on the preceding page).

The Royal blockhouse on the hill on the west side of the river was much larger and more complex than the other seven according to historical documentation (Hartgen Archeological Associates, Inc. 2003). Historical information about the smaller blockhouses on the flats around the fort seems to be limited. Aside from the above mentioned vague description by Pouchot in Hill's book indicating they were built of wood, one square within another, Hill felt that "strictly speaking, these were not blockhouses, but rather were probably only one-story log houses with a platform inside, loopholed for musket fire, with earthworks to protect them." Apparently all the blockhouses were numbered, this one being Number 2, as speculated by Hill (1929:231).

Hill gleaned some information from various orderly books and journals originally recorded during Amherst's

1759 campaign on Crown Point. One order, on June 12 that year, from Major John Hawks, states:

"The sergeants will be strictly observant of the orders that they receive from those they relieve and such as are wrote up (posted) in each blockhouse. They must take care to keep their blockhouse swept clean and they are to be answerable for the tools they have received, which are an axe, pick axe, spade, shovel and water bucket." (Hill 1929:176)

What these tools were used for is not known but the pail or bucket remnants found in the Feature 1 deposit may be a remnant of one of the buckets issued to the blockhouses as in this order.

The change of guard for all the blockhouses was ordered that same day by Commissary Wilson who stipulated the number and rank of soldiers who were to be posted at each blockhouse on the flats "...by one sergeant, one corporal and ten men of that regiment" depending on which regiment was camped nearest (Hill 1929:177). The regiments he lists are the Royal Highlanders, Montgomery's, the Jersey regiment, and the Massachusetts regiment. This garrison for the blockhouses changed a few days later by the reduction of the sergeant and four men (Hill 1929:181). A few days after Amherst's 12,000 troops captured Fort Carillon at Ticonderoga on July 26, the guard in each blockhouse was further reduced to four men and a corporal. One sentry was to be posted during the day and two during the night. On August 3rd after the news of the reduction of Crown Point, the blockhouse guards were reduced to a corporal and three men (Hill 1929:184).

### *Fireplace Discussion*

The eighteenth century maps of the fort only show some of the many buildings that were constructed there over the course of its military occupation. The maps and some of the engineer's notes usually depict only the larger "permanent" features of the fort designed by military engineers according to the standards of the time, for instance the fort itself and large barracks, magazines, and hospitals. Not historically documented are the smaller, more temporary structures, sometimes hastily-constructed by ordinary soldiers. These are only known in documentation by specific entries in orderly books that briefly mention regimental camp placement (or exchange of location with other regiments), cleanliness, or specific work orders for carpenters and bricklayers. They are sometimes also mentioned in journals kept by soldiers garrisoned at the fort. These structures could include dwellings as ephemeral as standard five-man linen tents that were winterized by the addition of wooden floors, or wood planking alongside walls, and even brick chimneys (Starbuck 2004:47-62).



**Photo 6.34:** View west of Incident 82 showing Feature 1, an eighteenth century deposit (near north arrow) below an abandoned gas pipe.



**Photo 6.35:** Example of 1750s whole and broken wine and case bottles from Incident 82, Feature 1.



They could also include more substantial wooden and bark structures with roofs supported by poles or posts in the ground, also with chimneys and sometimes with floors. These were referred to as huts and were often occupied throughout the winters. Several dwelling sites like these were excavated on Roger's Island by Adirondack Community College field schools (Starbuck 2004:47-62). The ones they excavated were of varying sizes and shapes, though rectangular, with varying styles and sizes of chimneys, some with packed dirt floors and others with wooden floors. In a study of military tents and tent barracks before the nineteenth century, Thomas Evans stated that one may utilize whatever suitable materials are at hand and in abundance to build temporary shelters. He lists things such as grass, the bark and branches of trees, and even earth used to create temporary shelters "...and in such a way as generally to result in the erection of non-portable constructions, which are to be considered huts rather than tents" (Evans 1873:345).

The fireplace and hearth remnants found within the entrenchment boundary on this project probably relate to several different types of these less permanent, though non-portable structures ranging from camp kitchens, to "winterized" tent sites, to wood and bark huts, or even to log guard rooms where soldiers on guard duty could get out of the cold or bad weather. Since there were thousands of troops at this fort location over the course of the war, and there was an ever-changing layout of regimental camping areas throughout each campaign season, there would likely be a wide variety of these shelter sites clustered around the fort within the line, and on Roger's Island. Cooking fires would also be abundant. A typical meal for the enlisted men, who were issued a small iron camp kettle in which to boil their standard rations of salt pork or beef and dried peas, required a fireplace of some kind, be it a hastily thrown-together fire pit made with a few rocks or a proper hearth with a chimney.

One would think that a tent site wouldn't leave much of an impact on the landscape, especially after 250 years, or that the remnants of a brick fireplace could only be associated with a hut or other wooden structure. In fact, brick chimneys were sometimes used to heat cloth tents at British military encampments in the eighteenth century according to a history of the English Army (Grose 1801:37). This book illustrates a number of "modern" tents of different sizes and styles used by various ranks of soldiers, and shows one marquee tent equipped with a large brick fireplace and chimney (Figure 6.28 on the next page).

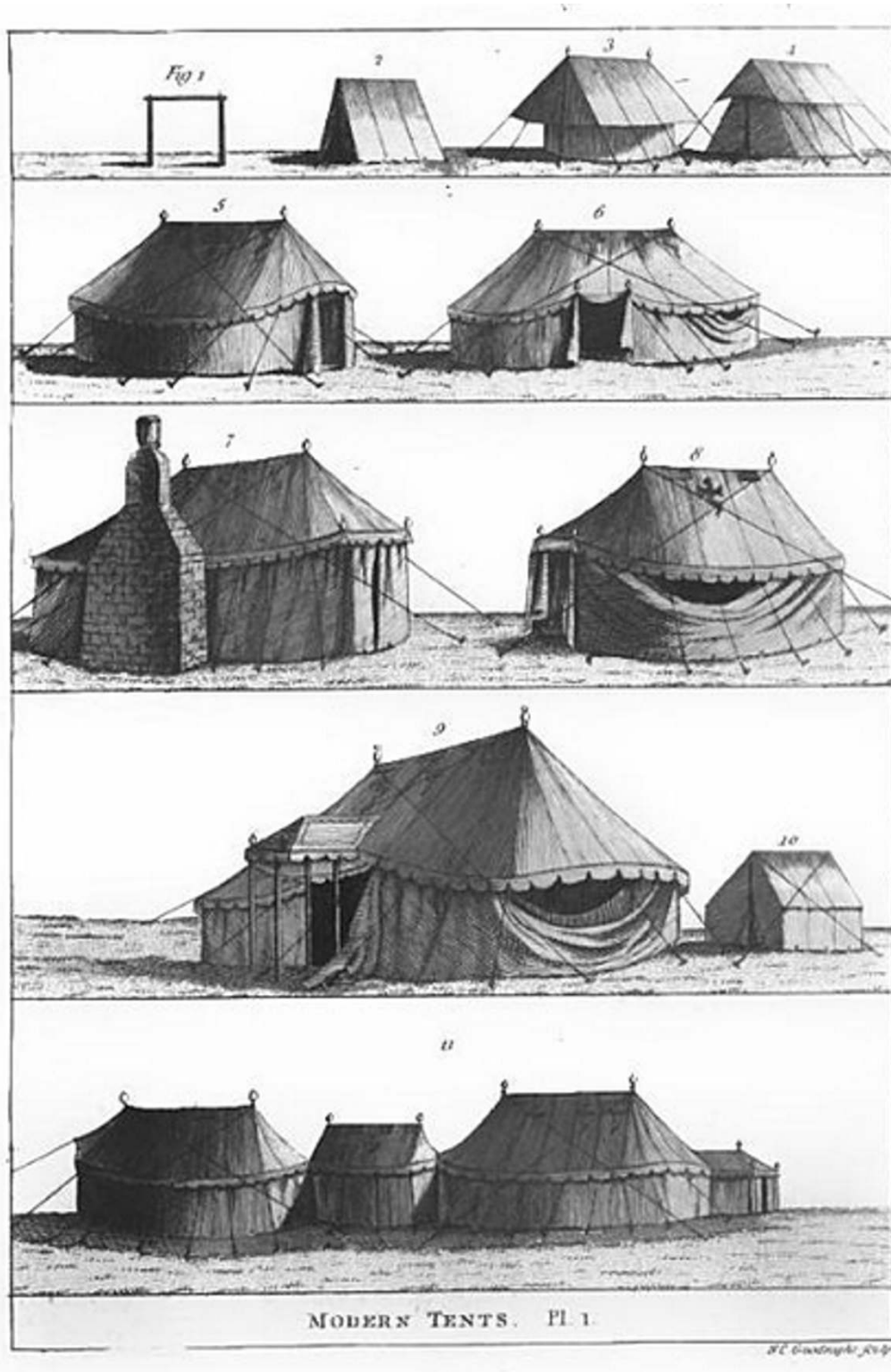
The idea of having an open fire, let alone a chimney, inside one of these eighteenth century tents, seems dangerous and impractical in the extreme to our modern sensibilities. However, in 1758 there were orders issued at Fort Edward stating "... [n]o fires to be made in the men's tents between the hours of 8 in the morning and

sun setting, unless it be rainy weather." (Moneyppenny 1970a:106). From this order one can infer that there were soldiers making fires within their tents. In fact, Jabez Fitch, a Connecticut soldier staying at the fort in 1757, attests to the use of chimneys at tents when he wrote in his diary on October, 14 that he "Built a Chimny to our Tent." (Fitch Jr. 1968). Also referring to his tent the day before (October, 13) he writes "This Day we went to work to Settle our tent in to ye Ground" which may infer that they dug the floor of the tent down into the ground to help keep in warmth. This could explain why the chimneys we saw during the project seemed to be deeply buried relative to the modern ground surface. The sandy soil in Fort Edward was easy to dig and well drained, so the thought of "sinking" ones tent or hut below grade and adding a fireplace with a chimney in preparation for cold-weather encampment is certainly conceivable.

For the most part these fireplaces were all made of handmade bricks held together with unfired clay instead of lime mortar. This was likely because the soil in the local vicinity of the fort was devoid of rock suitable for quarrying and building. Clearly, there was a clay source nearby though, since the men themselves were employed to make bricks at "the brick kill", and there was a call for various regiments to report names of brick layers among their artisans according to some of the general orders of 1757 (Lyman Esq. 1899:57,88). This was during the most active period of construction at the fort and on Roger's Island. Probably because of the availability of clay, it was also used for mortar in the absence of lime mortar.

The blockhouse fireplace found on this project is the only one besides the Royal Blockhouse that has ever been positively identified archaeologically. It was situated on the period maps outside the entrenchment boundary strategically at the north bank of the creek along the road leading to the fort. Artifact deposits found in association with this structure reveal that soldiers on duty there were cooking and eating, as well as smoking and drinking, while disposing of their refuse in what may have been an outwork ditch outside the building.

It is assumed to be blockhouse Number 2 according to Hill (1929:232). Based on the map, he thought it would have been located north of the "grist mill", now the apartment building at 50 Broadway. However, the location where we found it is somewhat west and south toward the valley edge. This is very likely due to the fact that the 1758 map (Figure 6.24 on page 160) available to modern researchers has been reproduced multiple times over the years by various methods and may have been somewhat distorted or "stretched". It is also possible that the vantage point of the original engineer who drew the map was from the fort itself and that the more distant blockhouses and the creek crossing were



**Figure 6.28:** Illustration of various examples of English military tents from the eighteenth century (Grose 1801). Note the one with the fireplace and chimney.

less accurately plotted. At any rate, it is close enough to the current road alignment to be probable.

Based on the size of the fireplace remnants we found, this was a substantial structure. It was probably made of logs and surrounded by a defensive earth and log entrenchment. One wonders what eventually happened to it. Hill does speculate that the four blockhouses on the east side of the fort were appropriated, or the material from them was used to build the homes or inns of the early settlers who arrived within ten years after the close of the war.

## 6.3 Refuse Pit Features

*“... the Men’s Kitchens are to Be Built in ye Front Without ye Lines – the Commanding offrs of Each Regt. Are Likewise to Be Answerable to ye Genl. that ye Streets are Kept Clean as Possible and ye Dust Assign’d By Clearing the Camp is Not to be Buried But Carried & thrown into ye River, for which Porpos Genll Webb will Order a Proper Number of Wheel Barrows or Basketts”*

*General Orders of Major General Phineas Lyman  
Fort Edward, June 28th, 1757*

*(Lyman Esq. 1899:33)*

Along the DOT project corridor, data recovery unit excavations and Incident monitoring revealed at least 16 small refuse pits containing various small artifacts related to soldier’s day-to-day food and drink consumption along with bits of clothing, armaments, smoking pipes, and small fragments of building material. All but two of these pits were located within the line of entrenchment (Figure 6.29 on the next page). Two fell outside the line, perhaps deposited in the first years of the fort’s occupation before the outworks were constructed, or perhaps during the two years when 12,000 to 15,000 troops passed through the area on campaign and probably overflowed the entrenched part of the camp. These features are presented below first in numerical order by DRT, then by Incident number.

### DRT 1 Unit 3, Feature 4

A refuse pit was identified in DRT 1, Unit 3 at the interface between Levels 1 and 2, a depth of about 46 cm (18 in) below the surface. It appeared as an oval about 45 cm (17 in) across that had been truncated to the south by the east-west-trending utility trench (Photo 6.36 on page 172). The trench intruded into the southern part of Unit 3 and the northern part of Unit 2. A plan was drawn of Feature 4 at the start of Level 2 (Figure 6.30 on page 172). The pit was bisected east-west with the northern portion of the feature removed and the soil screened for artifacts. It was basically bowl-shaped, 45 cm (18 in) across at the top and 13 cm (5 in) deep at its deepest point (Figure 6.31 on page 173). It

contained two levels of soil: very dark gray brown sand 7 cm (3 in) deep over 6 cm (2.3 in) of brown silt loam as if it was dumped into a hole in separate episodes.

The collected soil contained 17 artifacts, all small fragments including unidentified bone (4), a square nail, two sherds of brown English stoneware, one of white salt-glazed stoneware, one white clay smoking pipe bowl fragment, two brick fragments, and six case bottle shards. The ceramics and the case bottle shards are temporally diagnostic of the mid-eighteenth century.

### DRT 2 Unit 1, Features 1 and 2

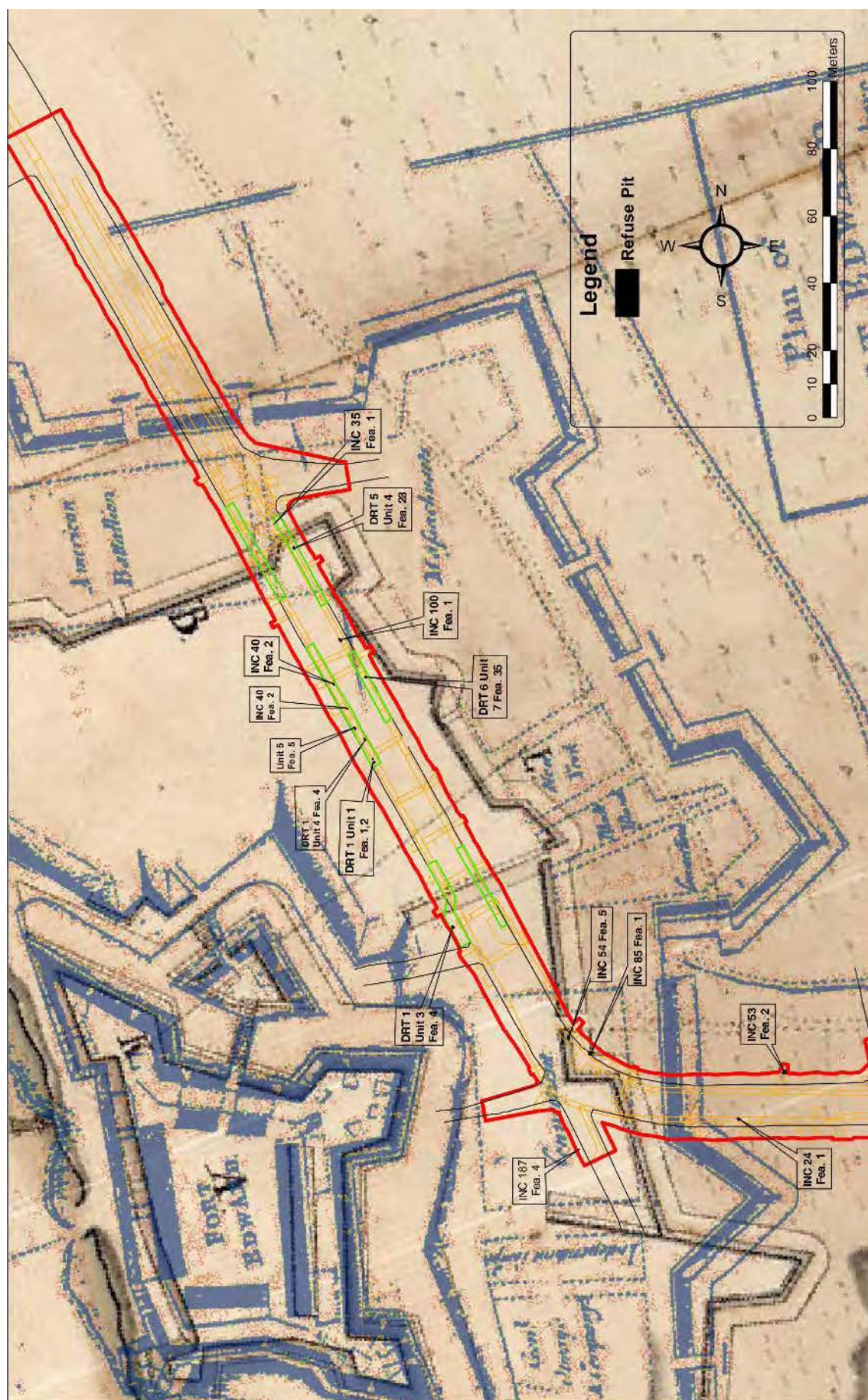
Two refuse pits were found about 50 cm (20 in) apart in Unit 1 of DRT 2, both first observed at approximately 67 cm (25 in) below the ground surface at the top of the natural yellow brown sandy subsoil (Photo 6.37 on page 173, Figure 6.32 on page 174). Feature 1 was an oval pit about 46 cm (18 in) across north-south, about 60 cm (24 in) across east-west, and 23 cm (9 in) deep (Figure 6.33 on page 174). Feature 1 had relatively vertical sides. Feature 2 was a mostly oval pit about 50 cm (20 in) across north-south, 30 cm (12 in) across east-west, and 12 cm (5 in) deep at its deepest. As seen in the north-south profile (Figure 6.34 on page 175), it was broadly boat shaped. Both features were probably truncated from the top by later road grading and paving so their original depths are uncertain.

Both pits contained dark yellow brown to brown sand intermixed with yellow brown sandy subsoil and charcoal. Feature 1 produced 120 artifacts consisting of prehistoric and eighteenth century material, which consisted of small fragments dominated by faunal remains including 100 animal bones and teeth. Also collected were two wrought nails, one white salt-glazed stoneware sherd, one white clay smoking pipe fragment, nine brick fragments, one green pressed table glass fragment, and two olive-green wine bottle glass fragments. Of the animal bones and teeth, all are from medium to large mammals, only about half of which could be identifiable to species. Fifty-two are from domestic pig, including cranial fragments with teeth as well as other parts of the animal. Many of the bone fragments exhibit cutting or sawing marks from butchering. Two other bones, both ribs, are from cow. The prehistoric artifacts include one chalcedony flake and six chert shatter.

Feature 2’s assemblage is similar to that from Feature 1 though fewer in number. It produced 61 artifacts, 53 of which are mammal bone. Domestic pig is represented by 12 specimens including a fragment of maxilla with three teeth attached. The rest of the animal bone was unidentifiable to the level of species. Like the bones in Feature 1, many of the bones in Feature 2 were cut or sawed.

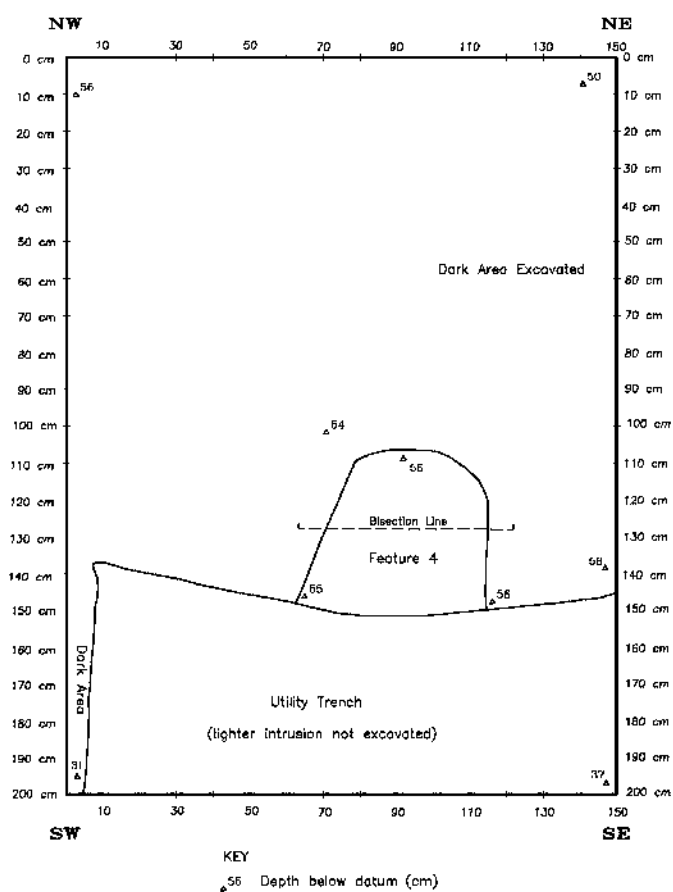
The other artifacts from Feature 2 include one sherd of redware, one of white salt-glazed stoneware, two clay smoking pipe fragments, a fragment of olive-green bot-





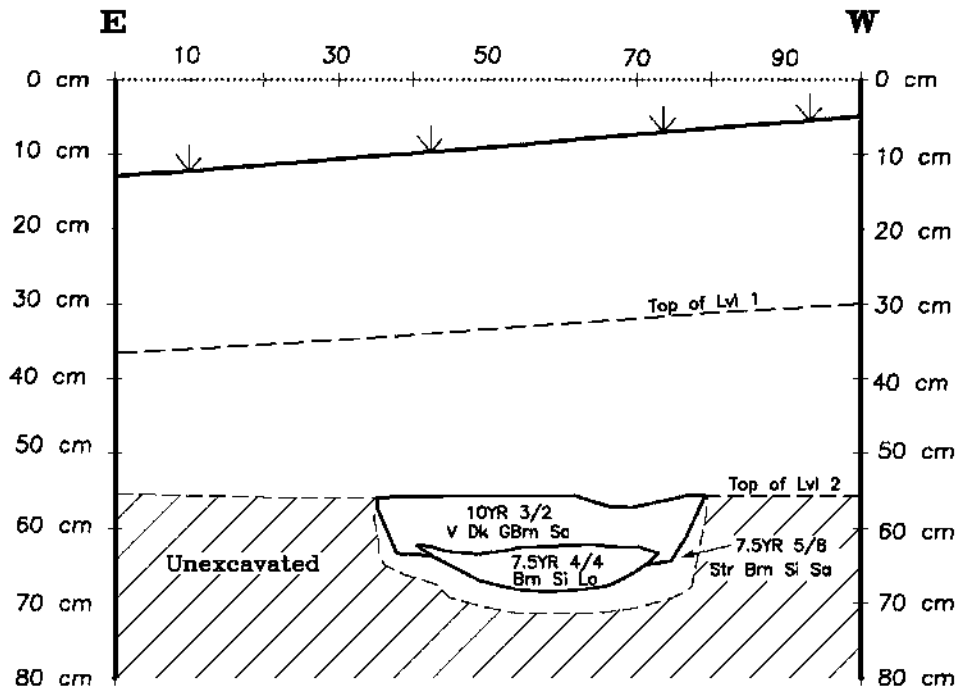


**Photo 6.36:** View of Feature 4, the refuse pit in Unit 3 after bisection.



**Figure 6.30:** Plan of DRT 1, Unit 3, Feature 4 French and Indian War refuse pit.





**Figure 6.31:** Profile of DRT 1, Unit 3, Feature 4.



**Photo 6.37:** Plan view of Features 1 and 2, refuse pits, in DRT 2, Unit 1. North is to the left.

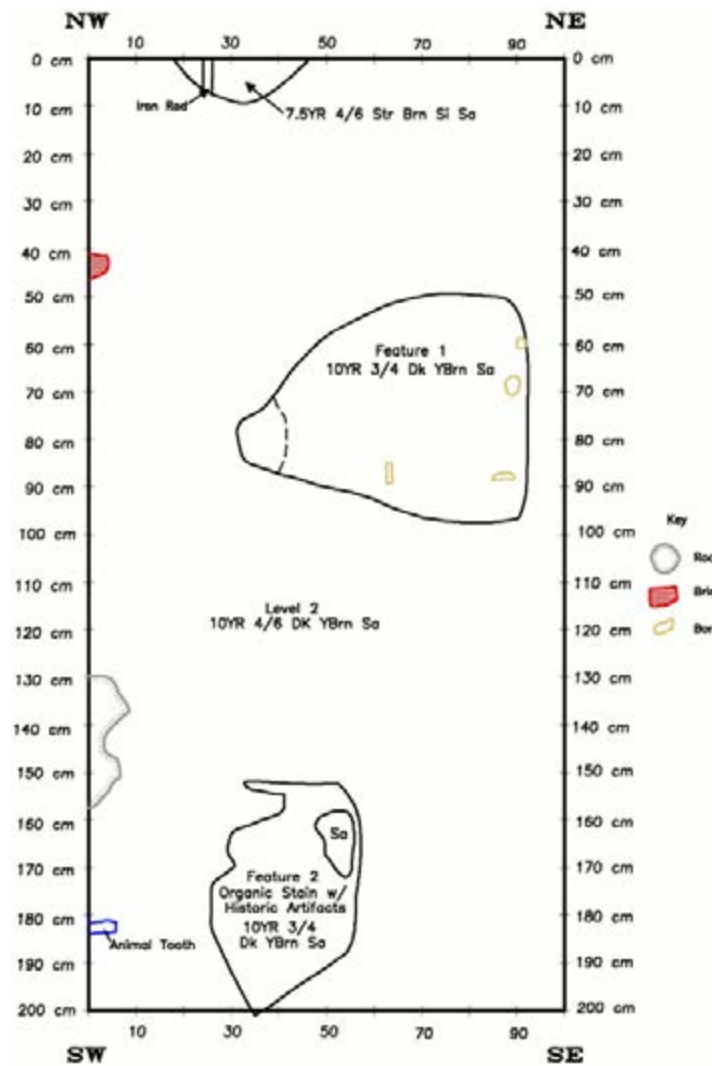


Figure 6.32: Plan of Features 1 and 2, refuse pits in DRT 2 Unit 1.

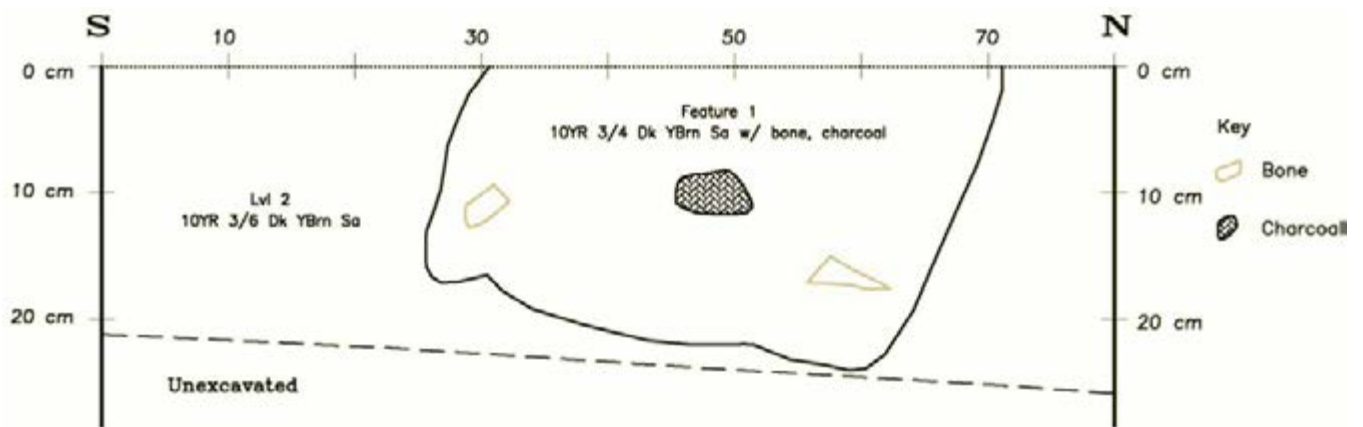
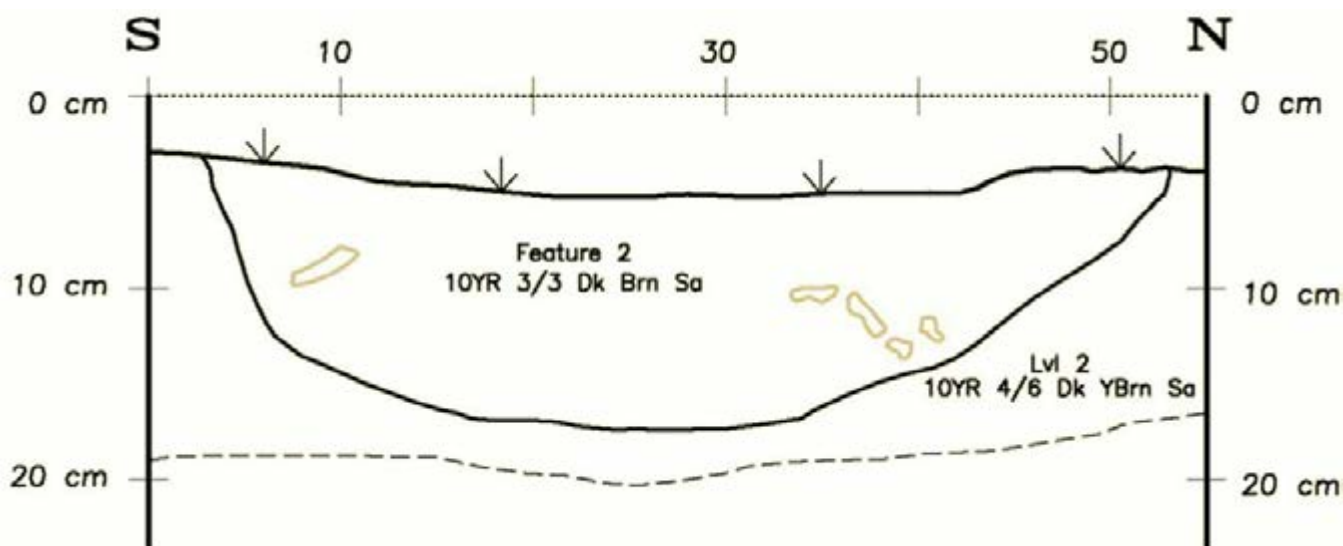


Figure 6.33: West profile of the refuse pit, Feature 1, in DRT 2, Unit 1.



**Figure 6.34:** West profile of the refuse pit, Feature 2, in DRT 2, Unit 1.

tle glass, one of aqua flat glass, some charcoal, and a prehistoric flake of chalcedony.

#### ***DRT 2 Unit 4, Feature 4***

Feature 4 was first observed in plan as a semi-circle of light yellow brown and black mottled soil at the interface between Level 1 and Level 2 soils (Photo 6.38 on the next page). It extended into the east wall of the 1 m x 2 m (3 x 6.5 ft) unit allowing only the west half of the feature to be visible. To expose more of it the unit was expanded to the east 30 cm (12 in) as far as the road cut allowed. The feature first appeared at about 69 cm (27 in) below the ground surface at the street curb. The fully exposed feature was mostly circular. It had a deep basin shape measuring 64 cm (25 in) east-west by 52 cm (20 in) north-south, and was 34 cm (13 in) deep into Level 2 soils. There was a 12 cm (5 in) wide and 11 cm (4.3 in) deep “off-shoot” toward the south east, the part exposed by the excavation being a V-shape in cross section (Figure 6.35 on the following page). Though this feature appears to be a refuse pit from the eighteenth century military encampment, the offshoot is not fully understood.

The soils in the feature were somewhat stratified. The upper part consisted of mottled or alternating layers of light yellow brown and very dark brown or black sand while the lower part, where the bones clustered, was a more concentrated dark brown to black sand (Figure 6.36 on page 177). This indicates that there were different soils redeposited into the pit after the refuse material, mostly food waste, was put in. There were also two flat chunks of gray granular rock about 2 to 3 cm (.7 to 1 in) thick, one about 15 cm (6 in) across, the other about 11 cm (4.3 in) across, lying horizontally over the bones about halfway down into the feature. The func-

tion of these rocks is inconclusive. A utility trench ran perpendicularly through the unit’s south end. This is visible in plan and as an unexcavated step in the east unit profile (see Figure 6.37 on page 178).

The 212 artifacts recovered from the feature are mostly small or fragmented items consisting primarily of animal bone with 196 individual pieces. All are identifiable as to either mammal or fish but beyond that only 11 are identifiable to the species level. Those that are include seven from cow and four from domestic pig. The remaining 73 mammal bones were unidentifiable beyond the general size of the animal ranging from small to large. Most bone fragments fell into the medium size range ( $n = 44$ ).

The 112 fish bones, all from a single fish, consist of vertebrae and ribs that were still partially articulated at the time of excavation. Dr. Robert Daniels, ichthyologist from the NYSM, examined the fish vertebrae and said that, based on size, the bones could possibly be from pickerel, suckers, bullhead-catfish, or yellow perch, all species present in the Hudson River that far north during the 1750s French and Indian War period. Without head or side fin bones, or scales, it was not possible to discern the species (pers. comm. 2009).

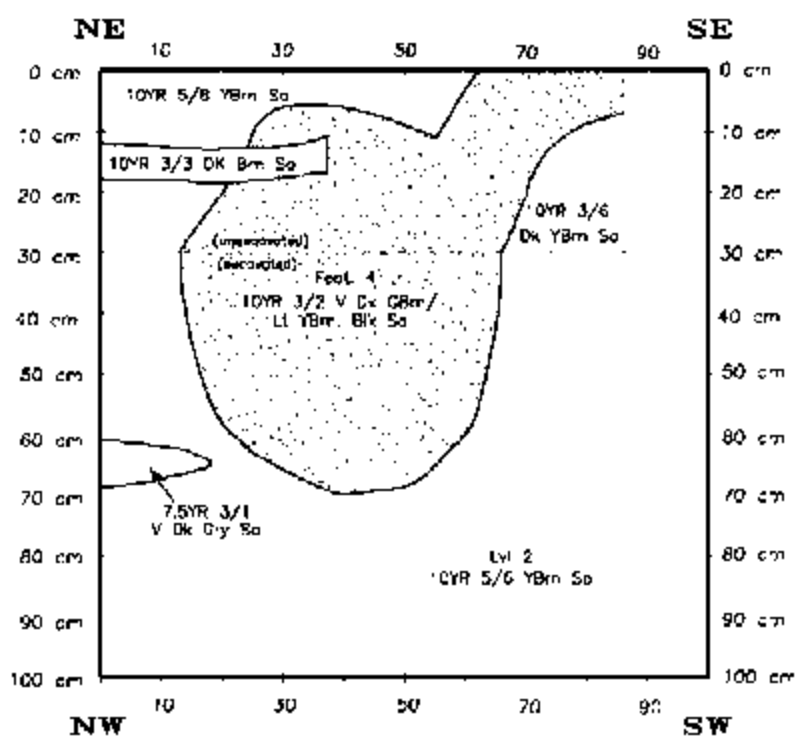
Other artifacts include a honey-colored gun flint spall, two wrought nails, a lead shot 8.4 mm (.33 in) in diameter, two white clay pipe fragments, three brick fragments, and some charcoal. Some of the artifacts from this pit are presented in Photo 6.39 on page 179.

#### ***DRT 2 Unit 5, Feature 5***

This pit was a roughly circular feature, in plan, first encountered running into the north wall of Unit 5 (Photo 6.40 on the following page). It extended into the 50 cm (20 in)-wide balk between Unit 5 and Unit

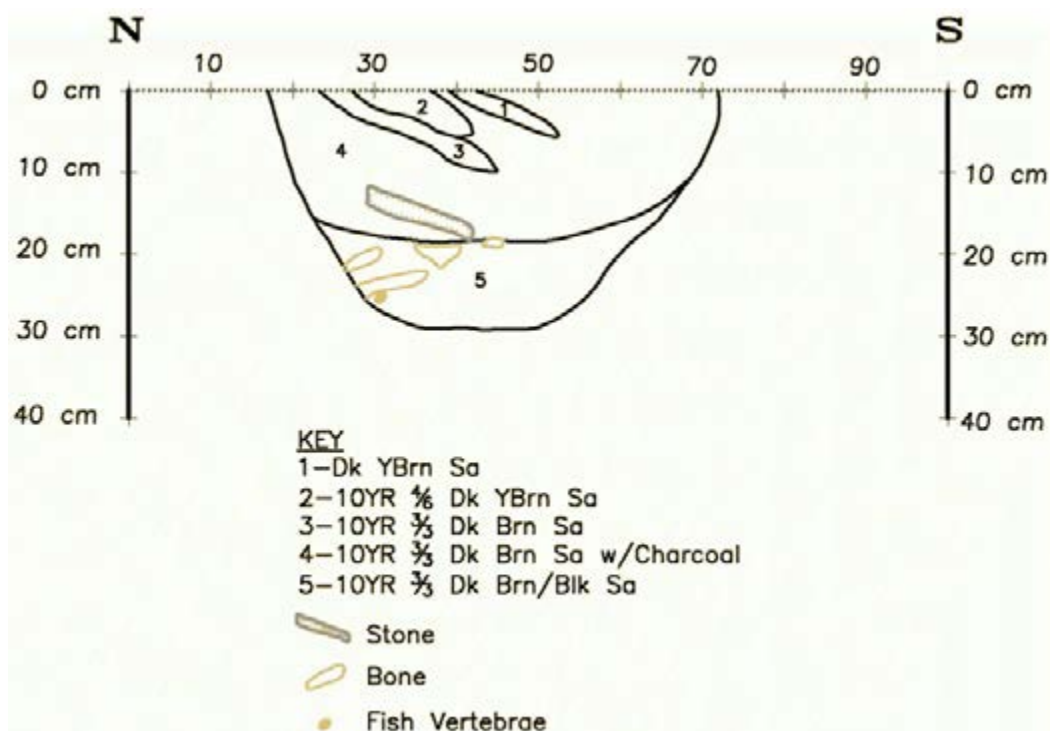


**Photo 6.38:** View of Feature 4, the refuse pit feature in DRT 2, Unit 4 at the interface between Level 1 and Level 2 soils.



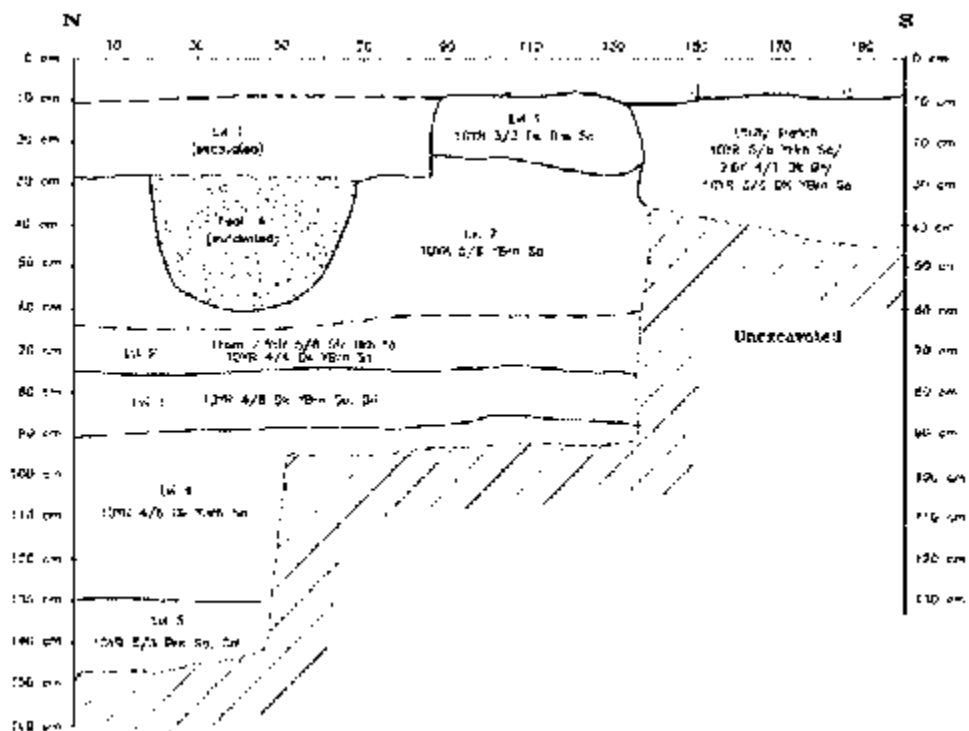
**Figure 6.35:** Plan view of Feature 4, the refuse pit in DRT 2, Unit 4 and extension.





**Figure 6.36:** Photo and profile of Feature 4 after being sectioned. Note the ends of animal bone fragments in the base of the pit.





**Figure 6.37:** East photo and profile of DRT 2, Unit 4 showing the basin shape of Feature 4, the refuse pit after being excavated.



**Clockwise from upper left:** brick fragments, lead shot, fish vertebrae and ribs, smoking pipe stems, and gun flint spall.

**Photo 6.39:** Some of the artifacts recovered from Feature 4, the refuse pit in DRT 2, Unit 4.

6. It did not continue north into Unit 6. This feature was originally thought to be remnants of a prehistoric hearth at the beginning of the excavation because of the presence of lots of chert debitage and fire-cracked rock in and near it in surrounding soils, but at the bottom of the feature historical artifacts were present, marking it as an historical intrusion into a prehistoric lithic scatter. The surrounding Level 2 soils in Units 5, 6, and in the balk between, produced an enormous number of lithics (about 300) with many thinning flakes, bifaces, some broken tools, and a broken projectile point. There were also 21 pieces of fire-cracked rock in Level 2 soils. Therefore, it appears that Feature 5 was dug as a refuse pit during the 1750s military encampment, intruding into a prehistoric lithic workshop and possibly a hearth, which resulted in mixing of prehistoric artifacts into the contents of the pit.

Based on the composite plan drawings (Units 5, 6, and balk between) the feature measured 65 cm (25 in) east-west and about 58 cm (23 in) north-south (Figure 6.38 on page 181). It appeared at the interface between Levels 1 and 2 and clearly had been intruded upon at its surface, probably by early street traffic (Figure 6.39 on page 182). It was 34 cm (13 in) deep and had a basin shape with rather straight sides as if dug with a flat spade shovel. It was 55 cm (22 in) across at the bottom. Pits and trenches dug with flat spades were observed by archaeologists elsewhere in Fort Edward and on Rogers Island (Starbuck 2004, also see Latrine Pits 6.4 on page 199).

The soils in the feature consisted of redeposited yellow brown Level 2 sand mixed with dark brown Level 1 sand and some charcoal. The bottom 5 to 10 cm (~2-4 in) of the feature contained more organic darker brown soils than the rest of the pit though charcoal stains were observed throughout.

The historical artifacts from the feature include kitchen bone (26), one very small brick fragment, white clay pipe fragments (2), one olive green bottle glass shard probably from a wine bottle, two unidentified square nails, and 17 thin curved fragments of a hollow iron object (some found in a floated soil sample). Prehistoric material from the feature includes 11 pieces of fire-cracked rock, 31 flakes, four shatter, two scrapers, three bifaces (two broken), two projectile point fragments, and one whole Early Woodland Meadowood projectile point made from Normanskill chert (Table 6.6 on the following page).

The animal bone fragments, all identifiable at least as mammalian, include three cow and four domestic pig bones. Some exhibit cut marks. Though some of these could be prehistoric in origin, the presence of domesticated animals like cow and domestic pig strongly indicate historical associations because beef and pork were meats commonly issued to the soldiers as rations during the French and Indian War.

### ***DRT 5 Unit 4, Feature 23***

A circular pit feature appeared in Unit 4 and its northern extension in the upper levels of the soils filling the Feature 26 outwork ditch (1756 ditch) at somewhere between 84 and 90 cm (33 and 35 in) below the surface (Figure 6.40 on page 183). It was a shallow basin-shape and, as measured from the two profile drawings (north wall of Unit 4 and the east wall of Unit 4 Extension), was 16 to 17 cm (6 to 7 in) deep and about 40 to 50 cm (16 to 20 in) in diameter (Figures 6.41 on page 184). The soil in the pit was mostly homogeneous dark brown sand, not in layers like some of the other features from the same period.

The artifacts recovered from the pit include kitchen bone fragments (42), chert flakes (2), square nails (2), pre-1820 grey salt-glazed stoneware sherds (2), a white salt-glazed stoneware sherd, a blue and white-decorated delft sherd, clay pipe fragments (4), brick fragments (5), a possible case bottle glass fragment, and an aqua bottle glass fragment (Table 6.7). This material is similar to some of the other French and Indian War refuse pits identified in this part of the village. The fact that the soils are homogeneous suggests that it was a one-time clean-up and dumping episode.

All the faunal material from this unit was from medium, or medium to large-size mammals. Those bone fragments identifiable to the species level consisted of cow (one rib) and domestic pig (two ribs and two vertebrae). Other mammal skeletal elements present were medium mammal cranial fragments (26).

The fact that this pit was located in the upper fill soils of the 1756 outwork ditch indicates that the ditch was filled and leveled only a short time after it was constructed. It appears that troops were using the newly leveled surface as part of their encampment and is evi-



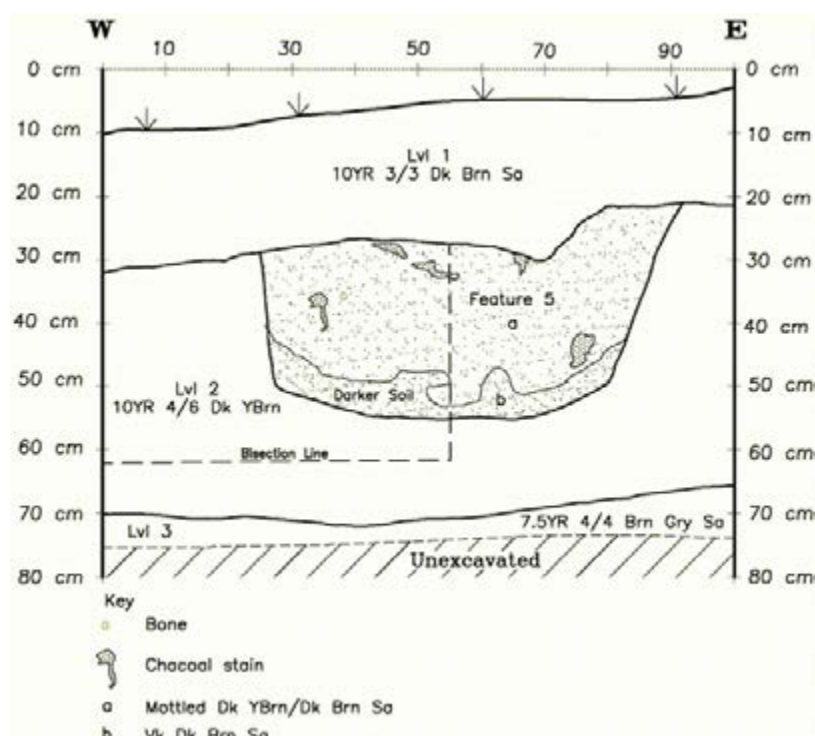
**Photo 6.40:** Plan view of Feature 5, a refuse pit at the north end of DRT 2, Unit 5.

**Table 6.6:** Summary of Artifacts found in DRT 2 Feature 5, a refuse pit.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>			
	Brick	Handmade fragment	1
	Nails	Unidentified square	2
<i>Food/Drink</i>			
	Vessel glass	Olive-green bottle fragment	1
	Fauna	Bone	26
<i>Personal</i>			
		Clay smoking pipe fragments	2
<i>Miscellaneous</i>			
		Unidentified iron/steel fragments	17
<i>Prehistoric</i>			
		Chert flakes/shatter	35
		Bifaces/ scrapers	5
		Meadowood (Early Woodland) Projectile point	1
		Projectile point fragments	2
		Fire-Cracked Rock	11
Total			103







**Figure 6.39:** North photo and profile of Unit 5 showing Feature 5, an eighteenth century refuse pit. Note the straight, nearly vertical walls, probably made with a straight metal spade.



**Table 6.7:** Summary of Artifacts found in DRT 5, Unit 4, Feature 23, a refuse pit.

Class	Artifact Type	Artifact Subtype	Total
<i>Architectural</i>			
	Brick	Handmade fragments	5
	Nails	Unidentified square	2
<i>Food/Drink</i>			
	Ceramic sherds	Gray salt-glazed stoneware (pre-1820)	2
		White salt-glazed stoneware	1
		Tin-glazed earthenware (delft)	1
	Vessel glass	Possible case bottle fragments	1
		Possible aqua bottle glass fragment	1
	Fauna	Bone	42
<i>Personal</i>			
		Clay smoking pipe fragments	4
<i>Prehistoric</i>			
		Chert flakes	2
Total			61

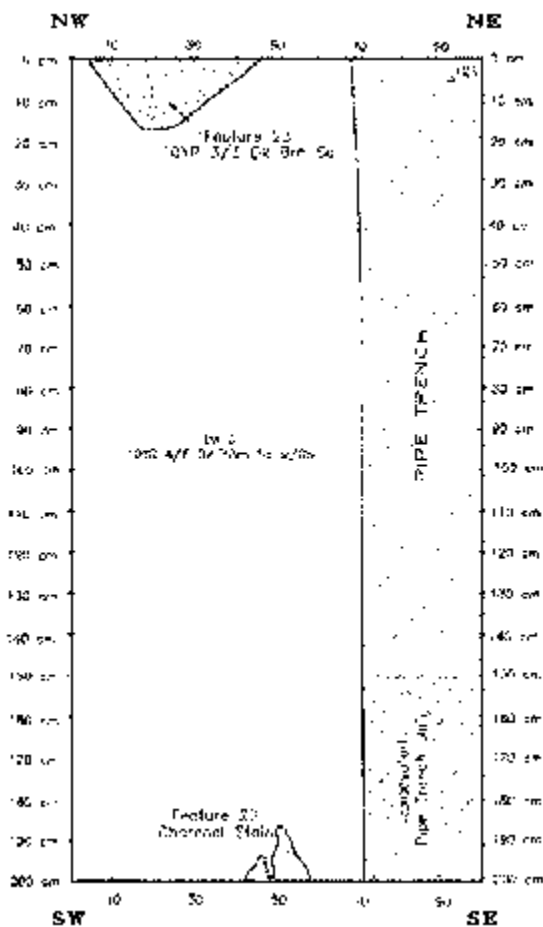
dence to suggest that there was another outwork ditch, constructed further away from the fort (the 1757 line) as previously discussed.

### ***DRT 6 Unit 7, Feature 35***

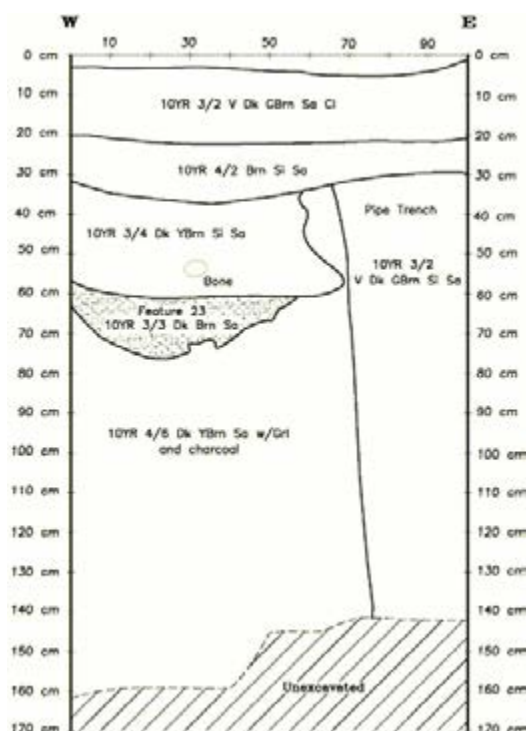
Another pit feature was identified in DRT 6, Unit 7 approximately 78 cm (30 in) below the current ground surface. It was truncated on the east by a cement-covered utility pipe construction trench. Probably fully one-half of the pit was impacted. After the feature was excavated within the walls of Unit 7, the unit was expanded to the east, south, and southeast, to reveal as much of the feature as possible. The pit extended 5 to 10 cm (2 to 4 in) east of the unit wall where the utility trench disturbance was encountered. It also extended south and southeast about another 10 to 20 cm (4 to 8 in) beyond Unit 7 proper (Photo 6.41 on page 187, Figure 6.42 on page 185). Overall, the pit was almost a meter (3 ft) across from north to south at the widest measure. About 32 cm (12.5 in) of it remained intact west of the trench disturbance, and it was 30 to 40 cm (11 to 15 in) deep (Figure 6.43 on page 188).

The bulk of the pit contained mottled yellow brown and dark gray brown sandy soils with a concentration of dark brown soil in the central part of the pit. It also had a concentration of hand-made brick fragments and small stones scattered in the bottom. These didn't appear to have any intact form.

Over 400 fragmented artifacts were obtained from excavation, (Table 6.8 on page 186) though there was some mixing of soils from the upper and eastern parts of the pit by disturbances. The soil mixing from the Level 1 road base and the nineteenth century pipe trench likely accounts for the presence of small fragments of post-1750s creamware, pearlware, whiteware, and brown-



**Figure 6.40:** Plan of DRT 5, Unit 4, Level 3, showing Feature 23.



**Figure 6.41:** North profile of DRT 5, Unit 4 showing the basin-shaped pit of Feature 23.

slipped stoneware among other materials. These temporally diagnostic ceramics were ubiquitous along the street excavations below the pavement sub-base and likewise in the nineteenth century utility trenches having been deposited by village residents during the late-eighteenth and early-nineteenth centuries. Despite this, several temporally diagnostic mid-eighteenth century materials were retrieved from those mixed soils as well as from the intact parts of the pit itself. These include fragments of a probable German stoneware tankard or jug, fragments of a blue and white hand-painted delft bowl, a small sherd of possible Staffordshire earthenware, and a sherd of trailed slip-decorated redware.

The stoneware tankard or jug was an unusual find amongst the contemporaneous material found throughout the archaeological investigations on this project. It was made of a buff-colored clay and, as seen on some sherds, had a cobalt blue decoration painted inside thin brown lines on the exterior (Photo 6.42 on page 189). The sherds are too small though to completely make out the design. The vessel is salt glazed but has a light brown rather than a gray hue on the outside. The inside surface is clear glazed with very distinct turn lines visible. In cross section most sherds exhibit a thin gray layer of clay on the interior surface. On some there is also a thinner gray layer under the brown glaze on the exterior as well (Photo 6.43 on page 189).

The largest sherd recovered is from the base of the vessel indicating the bottom was at least five inches in diameter and that it flared out from the base to a round

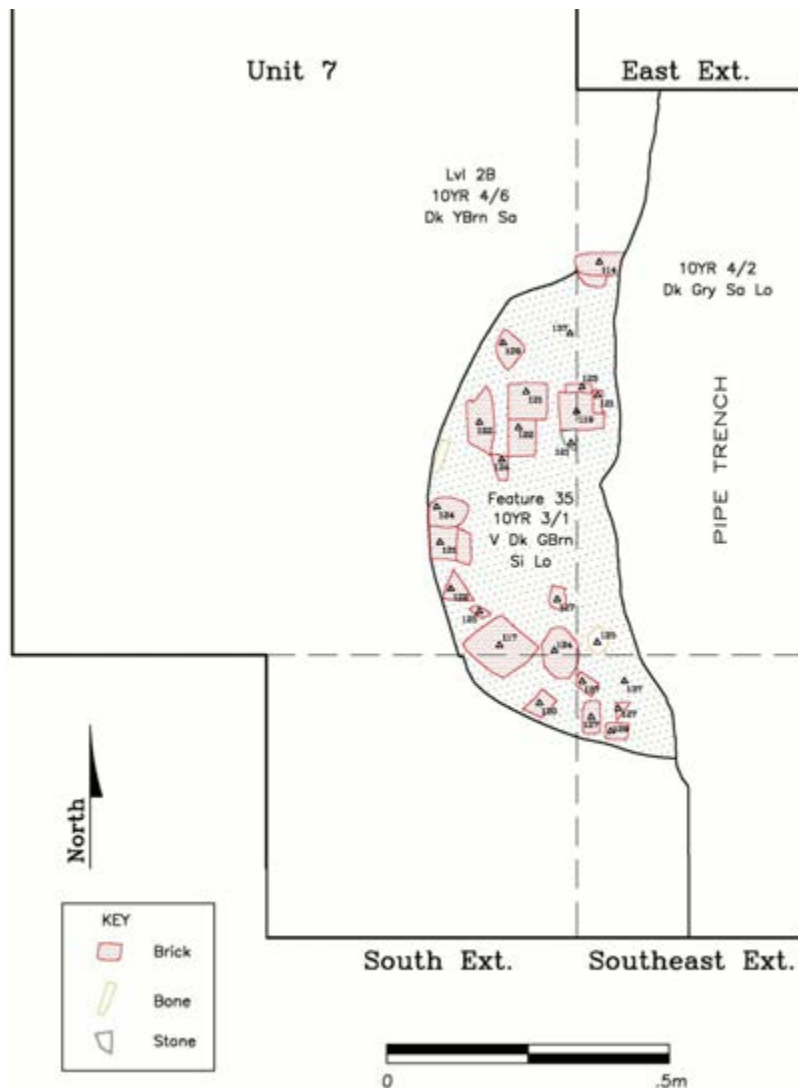
or bulbous shape, suggestive of the Rhenish globular jars or bottles made in the seventeenth century. It was flat on the bottom and had a foot ring .4 inches thick with an incised line painted cobalt blue above.

Typical of the other French and Indian War refuse pits identified in this area of the village, there were fragments of broken wine bottles and lots of animal bone present, as well as numerous bricks and brick fragments, some rocks and mortar. This suggests the remains of a fireplace or cooking pit. Artifacts include shards of a greenish-blue window glass, which along with the brick and nails present, suggests that this feature may have been related to a structure, perhaps a hut or winterized tent that was built with a fireplace and a window for winter garrison.

The faunal material found in this pit is also suggestive of an officer's hut because the bones identifiable to species include a larger variety of animals than most of the other pits; cow, pig, sheep, possible goat, and chicken, all domesticated animals.

### ***Incident 24, Feature 1***

This pit was found in cross section in the north wall of the waterline construction trench in the southbound lane of the street in front of the house at 61 Broadway. This location would have been just east of the outworks line from 1757. The top of the feature started just below the bottom layer of street pavement about 50 cm (20 in) below the surface and it reached a maximum



**Figure 6.42:** Plan of Feature 35 showing the brick fragments and rocks present at the bottom.

**Table 6.8:** Summary of Artifacts found in Feature 35, a refuse pit.

Class	Artifact Type	Artifact Subtype	Total
Architectural	Brick	Handmade fragments	50
		Unidentified square	12
	Nails	Mortar	11
		Window glass	11
Food/Drink	Ceramic sherds	German stoneware (Rhenish)	18
		Other stoneware	2
		Tin-glazed earthenware (delft)	38
		Lead-glazed buff earthenware	1
		Trailed slip-decorated redware	1
		Various glazed redwares	13
		Creamware	26
		Pearlware	16
		Porcelain	1
		Whiteware	1
	Vessel glass	Olive-green wine bottle fragments	14
		Clear leaded bottle or drinking glass fragment	1
	Fauna	Bone/teeth	189
		Clam/oyster shell	8
Arms/Military		Gun flint (broken)	1
Personal		Clay smoking pipe fragments	5
Miscellaneous		Unidentified iron/steel fragments	10
Prehistoric		Chert flakes	3
		Fire-Cracked Rock	2
Total			434



**Photo 6.41:** Feature 35 refuse pit seen in plan with part of it sectioned. Note the utility pipe trench intrusion through the feature (upper part of photo). The pipe is visible at far right near the base of the adjacent unit.

depth of 80 cm (31 in) below the surface. It was roughly basin-shaped with two soil layers present; the bottom 20 cm (8 in) were dark brown sand overlain by about 8 to 10 cm (3 to 4 in) of yellow brown sand. It was 68 cm (26 in) across at the top (Figure 6.44 on page 190).

Much of this feature was removed during construction by the backhoe but what soil remained was excavated by archaeologists and screened for artifacts. Also, a soil sample was collected for flotation. Screening produced 45 artifacts, 38 of which consisted of kitchen bone. The remaining artifacts included some charcoal, two unidentified iron or steel fragments, a handmade brick fragment, an olive-green glass wine bottle fragment, and a piece of slag. All of the kitchen bone is from medium to large mammals though most of it is too decayed or fragmented to clearly identify species. Of those that are identifiable, three species are represented: cow, white-tailed deer, and domestic pig. Of these, cow predominates.

Flotation samples produced very small fragments of bone, glass, iron, charcoal, wood, brick, lead, and an unidentifiable seed. Though most of the assemblage from this feature is either temporally non-diagnostic or has a wide date range of manufacture, the olive-green bottle glass in particular is frequently found in association with the mid-eighteenth century military occupation here in Fort Edward. Also, the other items in this pit, except for the slag, are comparable to assemblages from other French and Indian War era refuse pits found

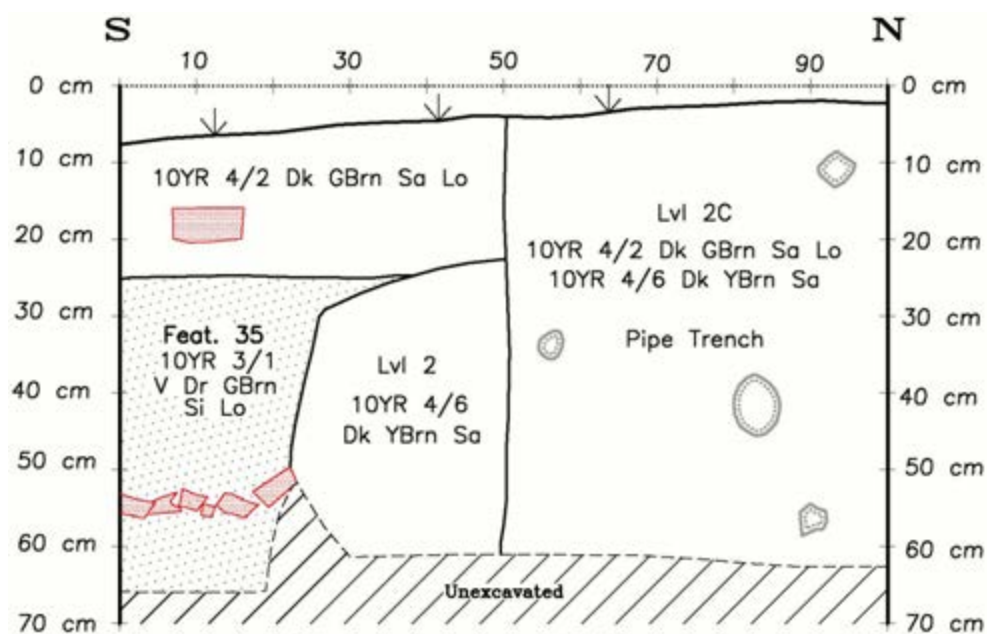
in the vicinity of the fort. The slag, being nineteenth century industrial waste, may have been accidentally mixed into the feature soil during excavation since it was used as road fill in various places throughout the village.

### ***Incident 35, Feature 1, Possible Refuse Pit or Hearth***

This feature was observed in profile in a gas line trench excavation in the northbound travel lane near Broadway's intersection with Notre Dame Street. It was from 70 to 90 cm (~27-35 in) below the pavement surface, located just below the Level 1 soils in the west wall of the trench about 3.5 m (11.4 ft) away from the east curb of the street. This section of trench revealed an intact nineteenth century former surface, now buried, composed of dark gray brown silty sand that extended 2 to 3 m (6.5 to 10 ft) on either side of the feature. The feature was 40 cm (16 in) across at its widest at the top and it tapered down to a narrow, rounded, almost tear drop-shaped point at 90 cm (35 in) below the surface (Figure 6.45 on the previous page).

The outer edges (sides and bottom) were bordered with dark brown to black charred wood and the soil inside was a dark gray brown sand mottled with yellow brown sand. The charred wood may suggest that it was a cooking hearth. The soil inside contained charcoal and decayed wood and it also produced clam shell, oyster shell, two lead bird shot, five brick fragments, and





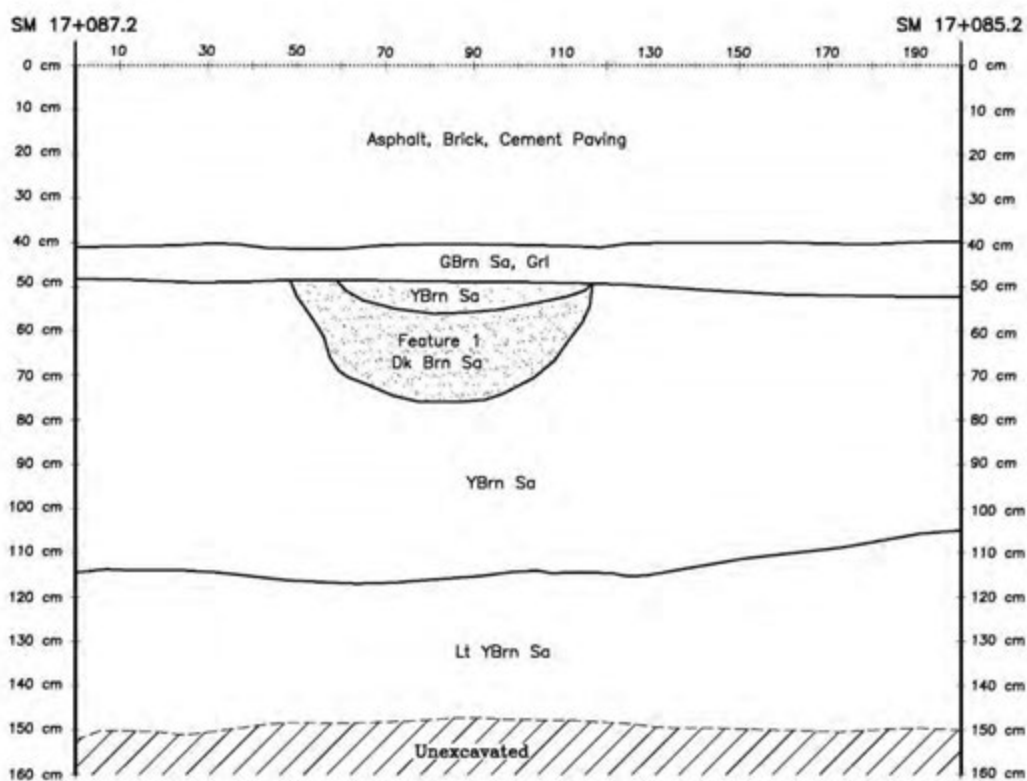
**Figure 6.43:** DRT 6, Unit 7 south wall profile (above) and photo (below) showing Feature 35 on the left and the sewer pipe trench fill line on the right side of the unit.



**Photo 6.42:** Sherd of a probable Rhenish stoneware tankard or jar found in Feature 35.

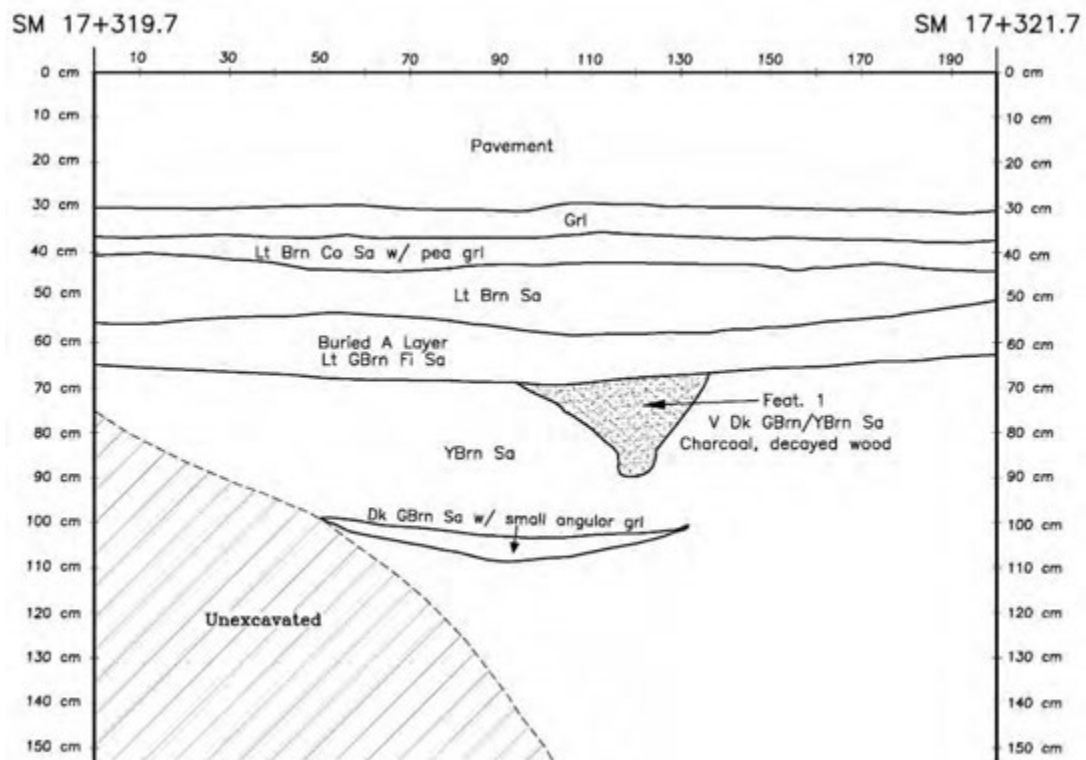


**Photo 6.43:** Interior surface of two of the Rhenish stoneware sherds.



**Figure 6.44:** Pit feature photo and profile seen in the north wall of a water line construction trench (Incident 24, Feature 1).





**Figure 6.45:** Photo and profile of a possible pit feature seen in the west wall of a gas line construction trench (Incident 35, Feature 1).

a piece of coal. Some of these items may have worked their way down into the feature from the nineteenth century occupation layer above, like the coal and clam shell fragments, which were not seen in eighteenth century contexts here. Also, nearly all of the French and Indian War refuse pits contain food bone fragments, but this feature does not. It is thought to be a refuse pit though because of its depth below the buried occupation layer and because it is spatially within or near the outworks line of the encampment.

### ***Incident 40, Feature 1***

This feature was observed in the east wall of a mechanically excavated deep water line trench that ran along the west street curb in front of 79 Broadway. The feature started at a depth of about 60 cm (24 in) below the street surface and extended to 124 cm (49 in) below the surface. It appeared just below the compact dark gray brown silty sand Level 1 soils that were beneath 36 to 40 cm (14 to 16 in) of various pavement levels including, from the surface down, black top, paving brick, concrete, and a gravel base (Figure 6.46 on the facing page). The Level 1 soil is believed to be the nineteenth century road surface because it was full of early to mid-nineteenth century midden material. The feature was about 80 cm (31 in) across and was basin-shaped. The bottom 30 or so cm (12 in) of the pit were filled with a dark brown sandy loam soil and the upper part consisted of mottled and striated layers of yellow brown and dark brown sand.

Archaeologists screened a large backhoe bucket-scoop that contained a lot of the feature in it but it also had Level 1 soils mixed in with it. It produced about 80 artifacts representing both prehistoric occupation and historical occupation. Most of the diagnostics were early and mid-nineteenth century architectural and domestic sheet midden deposits. When archaeologists were able to get into the construction trench to document the feature, they excavated the remainder of the pit itself and screened the soil to obtain artifacts. The pit produced 47 artifacts including 14 kitchen bone, 10 wrought nails of which seven were rose-headed, nine olive-green bottle glass fragments, all from one bottle, two clear curved leaded glass fragments, three brick fragments, two grey salt-glazed stoneware sherds that are probably Rhenish in manufacture, a piece of unidentified metal, and a piece of window glass. There was also charcoal present in the soil.

### ***Incident 40, Feature 2***

This feature was only 7 m (23 ft) north of the Feature 1 pit in the same section of water line trench. It was located at a similar depth below the surface, about 65 to 70 cm (25 to 27 in), at just below the layers of street

pavement and substrate and the old compact road surface. It also was basin-shaped, extending to a depth of 140 cm (55 in) below pavement, 70 cm (27 in) into the yellow brown sandy subsoil. It was composed of a mixture of yellow and brown sandy soil with distinct bands of charcoal concentrated near the bottom and sides, and especially with a layer of heat-reddened and charcoal rich soil at its top just below the old road layer. It was 110 cm (43 in) across at the top (Figure 6.47 on page 194).

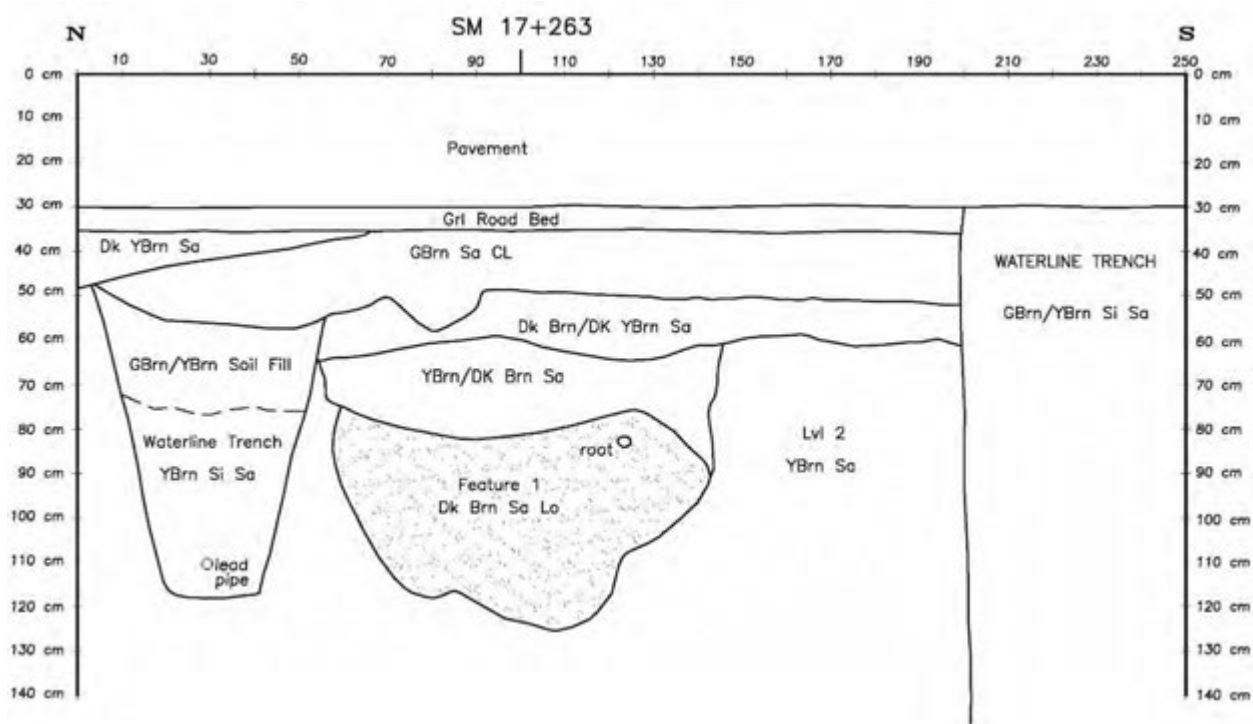
Excavation of it produced only 1 kitchen bone, 1 iron fragment, a brick fragment, a tiny creamware sherd, some charcoal, and a piece of fire-cracked rock. There was also a piece of paving brick collected but that was likely from soils above the feature. This was atypical for the refuse pits found, as a whole, since it had relatively few artifacts in it and looked almost like a hearth or burn pit of some kind. It was included with the eighteenth century refuse pit feature category though because of its proximity with, and stratigraphic similarity with, the other pits nearby that fall well within the protective encampment area shown on the period maps.

### ***Incident 53, Feature 2***

A pit was found in cross section on the eastern side of Incident 53, a wide construction trench used for a sewer line service connection to #58 Broadway. This pit, like the one in Incident 24, was east of the 1757 outwork footprint. A portion of the feature had been removed with backhoe excavation of the utility trench (Figure 6.48 on page 195). What remained was a half circle-shaped pit 60 cm (24 in) long by 28 cm (11 in) wide in plan at its surface. It was roughly basin-shaped in profile located 60 cm (24 in) below the ground surface just behind the sidewalk that paralleled the street. The top of it started just below a topsoil layer of light brown silty sand and it intruded 20 cm (8 in) into the yellow-brown sandy subsoil. The soils in the feature were stratified, the bottom 10 cm (4 in) consisting of very dark brown silty sand mixed with charcoal along with yellow brown sand mottles, all overlain with a thin layer of yellow brown sand (Photo 6.44). This is reverse stratigraphy, which indicates that when the hole was dug out, the same soil was used to backfill it; topsoil first then the lighter subsoil in last.

Archaeologists excavated the remainder of the feature by hand and screened the soil to collect artifacts. The lower 15 cm (6 in) of the feature, that being the very dark brown silty sand, produced most of the artifacts. The assemblage recovered consisted mostly of food bone fragments ( $n = 41$ ) but there was also a gun flint, two wrought rose head nails, a brick fragment, ten sherds from one monochrome blue and white delftware vessel, two fragments from a white clay smoking pipe, and some charcoal.





**Figure 6.46:** Photo and east profile of the Feature 1 pit in Incident 40. Note the lead water line trench to left of the pit feature (pipe end bent over), and the mixed trench fill soils to the right.

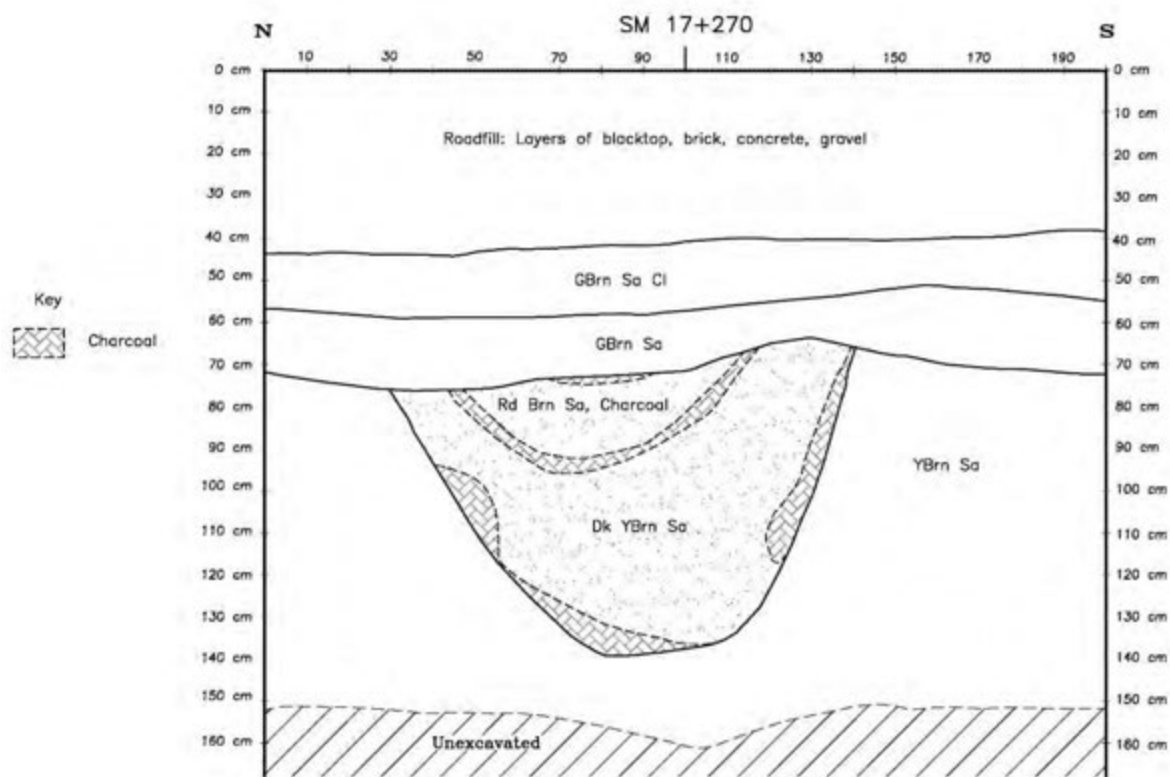
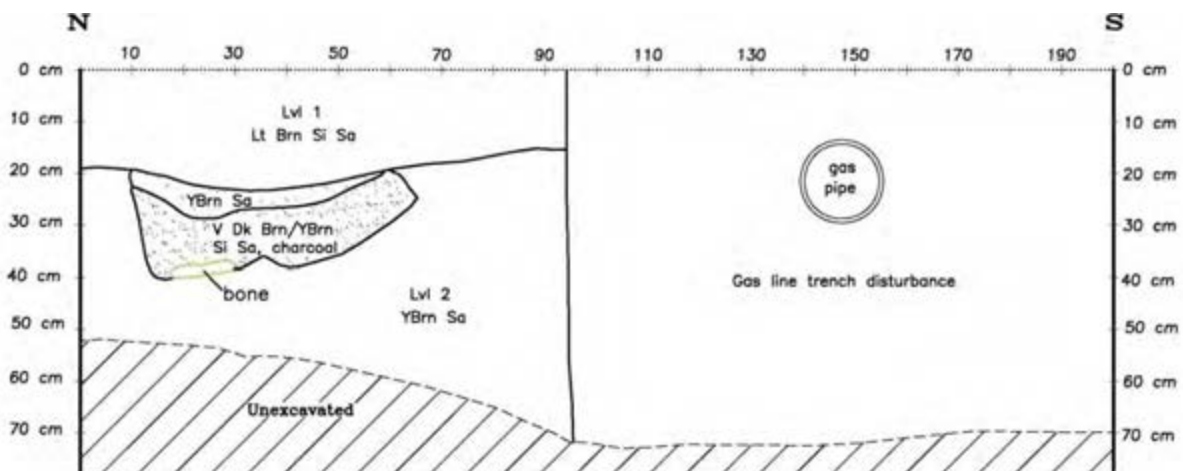


Figure 6.47: Photo and profile of Feature 2 in Incident 40 facing east.





**Figure 6.48:** Photo and profile of Incident 53, Feature 2 refuse pit as first identified in the construction pit by archaeologists Ryan Clark and Joel Ross. The feature profile is visible in the trench wall between the men.



**Photo 6.44:** Close-up of the refuse pit feature in the construction trench wall after some of the topsoil had been removed by backhoe.

The soils from the feature that were removed by the backhoe were piled beside the construction trench for later backfilling rather than being dumped into a truck for off-site disposal as in the main utility construction trenching. This allowed for archaeological sifting of the soil to retrieve artifacts that may be associated with the feature even though the pile was mixed with upper level soils that contained front yard sheet scatter. This produced a range of typical small fragments of domestic and architectural artifacts from the nineteenth and twentieth century occupation of the house such as nails and other hardware, brick, can fragments, ceramic sherds, bottle glass, animal bone, clay smoking pipe fragments, a glass marble, coal and coal cinders, and a 1989 U.S. penny. Among these though were several items that are diagnostic to the mid-eighteenth century such as a hand wrought rose-head nail, a sherd of monochrome blue and white delftware that probably is part of the vessel found in the rest of the feature, and a piece of olive-green bottle glass.

### ***Incident 54, Feature 5***

This pit was located in the north or east wall of the sewer line trench, opposite the Anvil Inn, just below the existing curb 50 cm (20 in) below the surface of the sidewalk. It was about 30 cm (11 in) deep from the feature top to the bottom, and probably 40 cm (15 in) wide, filled with mottled dark gray brown silty sand and char-

coal with yellow brown silty sand (Photo 6.45 on the facing page). No profile drawing was done for this feature. Its nearly straight walls suggest it was dug with a spade. The soil in it was screened for artifacts producing a piece of slag, a piece of fire-cracked rock, some wood fragments and three animal bone fragments, one being cow and the other two only identifiable as mammal. The field notes report finding a piece of white salt-glazed stoneware as well, dating the feature to the mid to late-eighteenth century. It was likely a 1750s refuse pit.

### ***Incident 85, Feature 1, Possible Refuse Pit***

Starting at 52 cm (20 in) below the surface, this small pit-like feature was located adjacent to the concrete drainage structure in the north or east wall of the drainage line construction trench opposite the mouth of Edward Street. It was vertical sided, 30 cm (12 in) wide at the top, 24 cm (9 in) wide near bottom, and was about 17 cm (7 in) high from top to bottom. The top of the feature started at the interface between Level 1 and Level 2 soils. Level 1 was light gray brown silty sand while Level 2 soil was the typical yellow brown fine sand seen in the surrounding area. The feature soils were a combination of dark brown silty sand layered into the feature with yellow brown sand (Photo 6.46 on the next page). Artifacts include a small glob of metal and a very small white clay pipe fragment, items that are not them-





**Photo 6.45:** Incident 54, Feature 5 refuse pit profile facing east toward curb.

selves especially temporally diagnostic but could easily be French and Indian War period. In many ways this fits the description of a refuse pit from the French and Indian War though what was observed didn't have the artifact numbers of many of the others found. If it was a refuse pit, this could be because the majority of it was removed with the excavator bucket while digging the drainage trench, leaving only a small portion of the pit in profile.

### ***Incident 100, Feature 1***

This pit was found while monitoring a deep sewer line trench excavation and was seen only in cross section in the west wall. It was found near the driveway entrance to #82 Broadway, 3 m (10 ft) west of the curb. The feature was roughly basin-shaped in profile and was situated at 80 to 125 cm (31 to 49 in) below the pavement (Photo 6.47 on the following page, Figure 6.49 on page 199). It was 74 cm (29 in) wide at the top and appeared to consist of three layers of soil, the bottom 18 cm (7 in) of which contained compact black sandy silt with dense charcoal and yellow brown mottles. Above that was 13 cm (5 in) of dark grayish brown sandy silt and above that was 16 cm (6 in) of yellow brown sandy silt mottled with charcoal flecks. Probably half of the feature was removed by the backhoe during utility trenching but what did remain was manually dug out and screened by archaeologists.

From those soils 29 artifacts were retrieved, among which were 17 kitchen bone fragments, mostly mammal, with several cow and one goat bone identified. Two turtle bones were also found. The pit also produced a piece of wrought iron that was hammered into a hollow cone-shape 14 cm (5.5 in) long. This was identified as a ground iron or foot to some kind of military pole arm (Photos 6.48 to 6.49 on page 200) such as a pike or halberd. Popular in Colonial America, the pike and the halberd were traditionally combat weapons but by the eighteenth century were carried more as a badge of rank amongst officers (Patterson 1956:96 and 253). Other artifacts found were a sherd of Westerwald stoneware, part of a vessel handle, four small sherds of delftware, two with a blue hand-painted decoration, a white clay pipe stem fragment, and five hand-made brick fragments (Photo 6.50 on page 201).

### ***Incident 187, Feature 4 at Montgomery Street***

This pit was found in a shovel test excavated in the sidewalk alignment on the west side of Montgomery Street after the old sidewalk had been removed. The location was just outside the fort walls and inside the enclosed area of earthworks where provincial troops camped. Typical of most of the pits described, the top of it was approximately 40 cm (16 in) below the ground surface. It was 35 cm (14 in) across and 14 cm (5.5 in) deep at its deepest point along the west side. Like many of the other pits, it had nearly vertical walls (Photo 6.51 on page 201, Figure 6.50). The soil in the pit was a mixture of dark brown silty sand and yellow brown silty sand with a low density of artifacts including a prehistoric chert flake, some charcoal, a glazed redware sherd, two wood fragments, and a brick fragment. It differs from many of the pits in that it did not also produce animal bone fragments and wine bottle glass.

### ***Refuse Pit Discussion***

In the summer of 1756, Lord Loudoun, a professional British soldier, was Commander-in Chief of the colonial forces in America. That year, Fort Edward and Fort William Henry to the north were occupied by provincial troops. Loudoun and his high-ranking British subordinates observed these troops with disdain; their health and preparedness made him question their ability to be successful in a campaign on Crown Point. In August, months before smallpox hit the New York Frontier, there were already 843 sick men at Fort Edward, and 600 at Fort William Henry - a huge increase in the number from the 253 "invalids" only two months earlier (Pargellis 1933:94).

Out of the 5,346 men in the army at that time, 27 percent were useless for active service. This rate of sickness



**Photo 6.46:** View north of Feature 1, a probable refuse pit in Incident 85, a drainage line trench.



**Photo 6.47:** Pit feature seen in side wall of construction trench. The grayish soils above it are part of the nineteenth century road surface. The grayish soil below the feature is new clean fill deposited during utility construction.

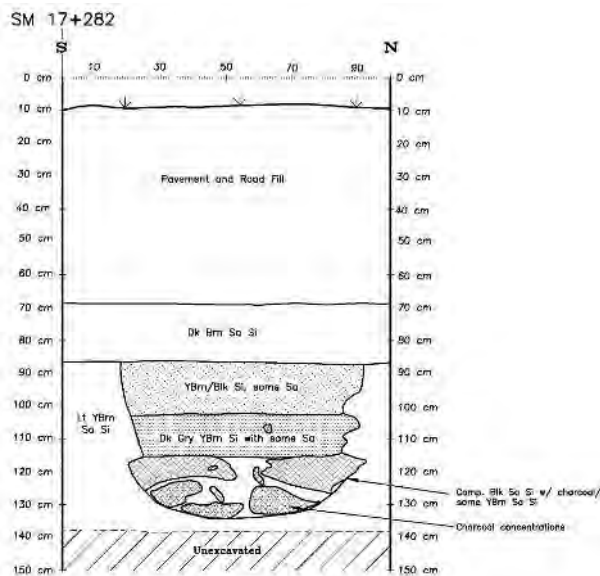


Figure 6.49: West profile of Incident 100, Feature 1.

was attributed to an appalling lack of any camp sanitation among the provincials. Lieutenant Colonel Ralph Burton, a British officer stationed at Fort William Henry, reported to Loudoun, that "... the fort stinks enough to cause an infection, and that "... they have all their sick in it. The camp nastier than anything [he] could conceive, their necessary houses, kitchens, graves, and places for slaughtering cattle, all mixed through their encampment (Lieutenant Colonel Ralph Burton to Loudoun, August 5, 1756, Loudoun Papers 1424, as quoted in Pargellis 1933:95).

Given these conditions, Loudoun suggested to the provincial officers to open their tents to dry the ground within, to bury all refuse, and to construct a proper slaughter house (Pargellis 1933:95). This may account for the number of eighteenth century refuse pits identified during the project. The use of small pits to bury refuse by soldiers was not unique to Fort Edward during the French and Indian War. Thirty seven similar refuse pits were identified archaeologically at Fort Gage, a provincial camp occupied for a short time in 1758 a mile south of Fort William Henry on Lake George (Feister and Huey 1985:40-59). These pits were also generally bowl-shaped, an average of 10 inches deep, and contained a mixture of artifacts from the mid-eighteenth century similar to the material found here at Fort Edward. Abercrombie, commander of the forces that year, also issued orders that all garbage in the camp be buried (Moneypenny 1970a:444).

Lyman's orders of 1757, quoted at the beginning of this section, were to throw refuse into the river instead of burying it, which was probably an even better method of keeping things clean. Since the river formed the western boundary of the camp, soldiers would not have to

leave the safety of the protective outworks to carry out these orders. This northern frontier was a dangerous place throughout this time due to the constant threat of raids and scouting parties of the enemy. At Fort Gage, where they did not have the convenience of the river, the next best thing was to dig holes within the camp to bury refuse.

Whether or not this practice was also followed by the British regular troops under the same conditions of geography would be an interesting question for further research. It would seem any large gathering of frontier soldiers, British professionals or not, living in a relatively small area for an extended period of time (sometimes months at a time) would generate an enormous amount of waste, even in the eighteenth century. Keeping these crowded encampments organized and clean, along with disposing of food refuse and human waste, would be a constant challenge and would take considerable discipline. As Lyman's orders attest, there were frequent efforts to clean up and organize the camp (Lyman Esq. 1899:62,83), a perfect example being those on June 20th from Major Fletcher that:

"ye Commanding Offr of the Diferent Corps Se that ye Streets of their Respective Encampments Be Swept Clean Every Day & that an Offr Of a Company Visit ye Mens Tents in Order to Se that they Are Kept as Clean as Possible & if any of ye Tents are Found after this Day with any Filth or Durt in them the Visiting offr is Emmediately to Order Sd Tent to be Struct & Cleaned - & the Men Who He Judges to Be Guilty of this Neglect are Emmediately to Be Confined for Disobedience of Orders."

(Lyman Esq. 1899:25)

The grounds surrounding Fort Edward were heavily occupied by military troops for five consecutive years, with a different commander each year. Based on the orders given, we assume there was an arrangement of "streets" within the camping areas but this was not discernible with the limited area seen during this construction project. However, we can answer some questions about refuse behavior within the camp. This effort at cleanliness and sanitation also extended to the necessary houses of the regiments encamped there as discussed below. During data recovery unit excavations two features interpreted as small latrine pits, or necessary houses, were encountered.

## 6.4 Latrine Pits (Necessary Houses)

"The necessary houses belonging to ye several regiments to be immediately filled up and new ones dug six feet deep and about 100 yards in ye front of ye respective encampments. Each regiment every





**Photo 6.48:** Pole arm ground iron (rusty) or foot, seen from the side.



**Photo 6.49:** Pole arm ground iron, or foot, seen from the top end.



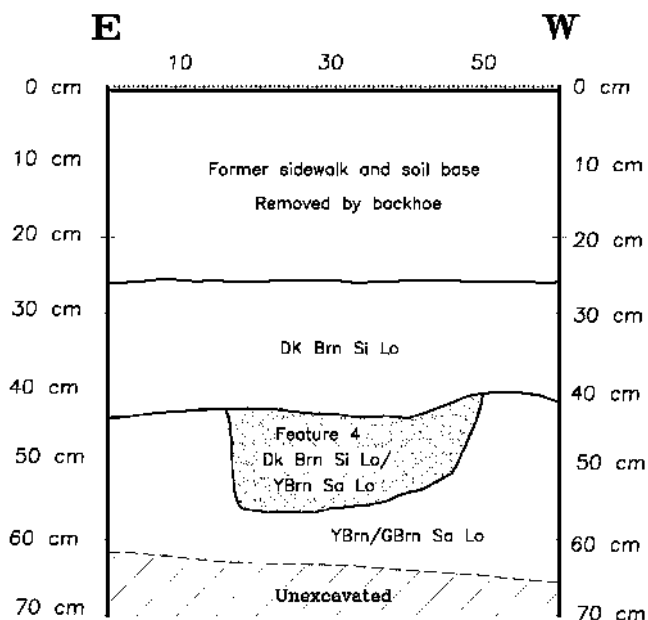


Westerwald stoneware (right), four sherds of a delftware vessel (upper left), and a white clay smoking pipe stem fragment (lower middle)

**Photo 6.50:** Ceramics found in Feature 1 of Incident 100.



**Photo 6.51:** Pit (Feature 4) seen in Incident 187 after removal of the sidewalk along Montgomery Street. Note the vertical side walls.



**Figure 6.50:** Pit (Feature 4) in Incident 187 along the sidewalk of Montgomery Street.

*evening to cover ye bottom of them over with fresh earth and new ones to be dug every week and ye old ones to be filled up. The commanding officer of each regiment to be answerable to ye General that this order is strictly obeyed."*

*General Orders of Major General Phineas Lyman  
Fort Edward, July 1st, 1757*

*(Lyman Esq. 1899:34)*

Two latrine pits were identified during unit excavations in two different DRTs, both located within the 1750s protective outwork as described below (see Figure 6.51 on the facing page).

### **DRT 1 Unit 12, Feature 12**

Found in DRT 1, Unit 12, at 41 cm (16 in) below the street surface (just below the road base), this feature was interpreted as a latrine pit from the eighteenth century encampment. It was made up of a round-bottomed, somewhat boat-shaped ditch measuring 48-64 cm (1.5-2 ft) wide by at least 2.05 m (6.5 ft) long (Photo 6.52 on page 204). It was truncated some unknown amount from the top by late-nineteenth and early-twentieth century road surfacing and paving, but what remained measured from 22 cm (9 in) deep where seen at the west wall of Unit 12 (Figure 6.52 on page 205), to 41 cm (16 in) deep at the east extent of the unit, which was the deepest part of the pit (Figure 6.53 on page 206). It had nearly vertical side walls and was probably dug with a metal spade shovel. It was also truncated at the west end by the later intrusion of a wooden water line trench. Because of the later road and water line intru-

sions the original full length and depth of the feature is not known.

It was filled with what looked like three primary soil types in three separate filling episodes (Figure 6.54 on page 207). The thickest layer at the bottom of the feature (Level A) was composed of a dark organic soil averaging 16 cm (6 in) thick containing both relatively dense concentrations of charcoal and thin lens-like inclusions of lighter yellow-orange sand. This layer of soil contained about 200 small and fragmented artifacts comprised of domestic, personal, and architectural material from the French and Indian War era. There were over 100 animal bone fragments and some animal teeth found in this layer along with a few French and Indian War-era ceramic fragments, one of white salt-glazed stoneware, two of tin-glazed earthenware, and one of redware, all very small sherds as if redeposited from a sheet midden context. There were two olive-green bottle glass fragments, probably from a broken wine bottle, and one very small sherd of clear curved glass, which could be from a tumbler or goblet.

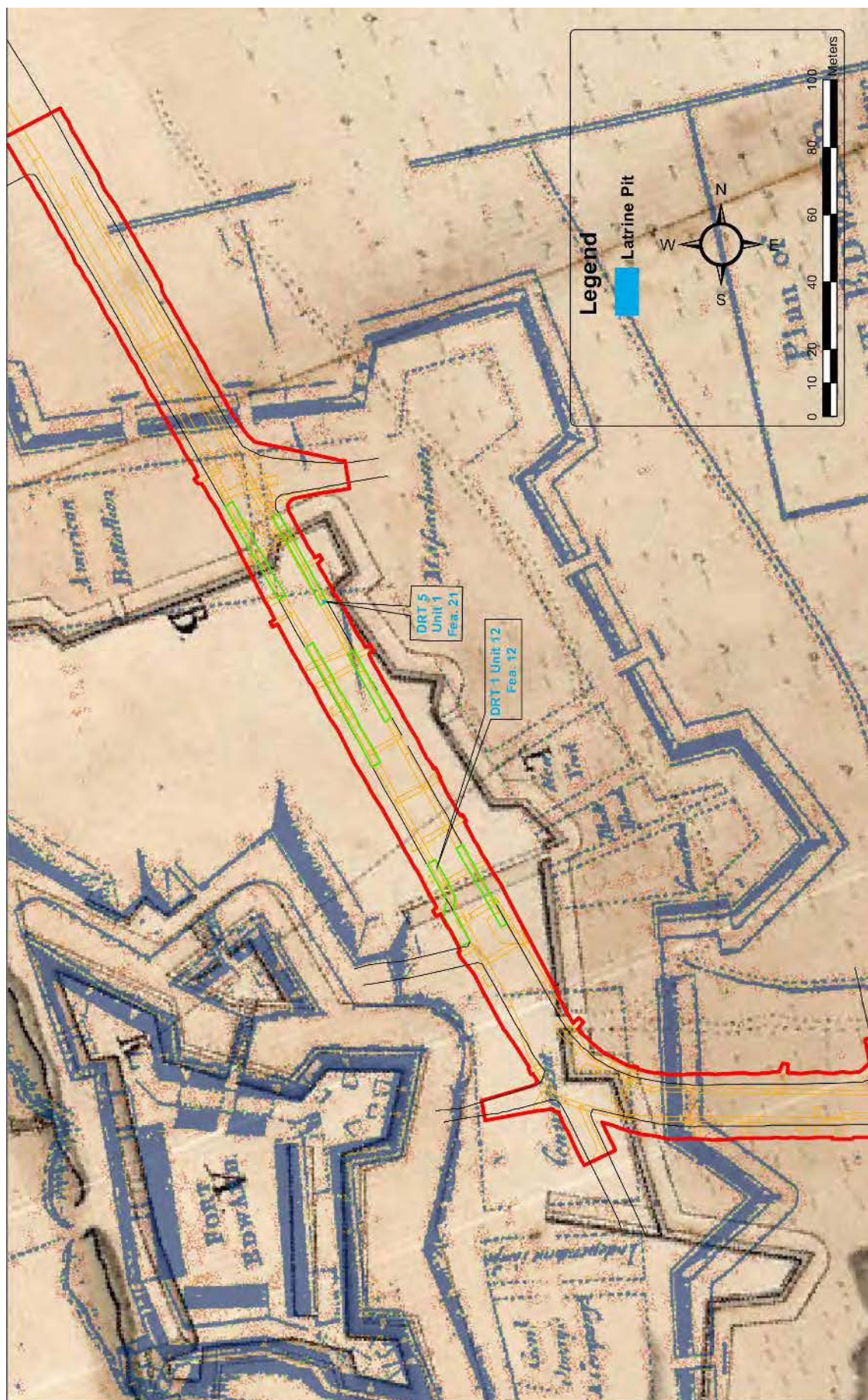
There were a number of personal items from Level A including a fairly large iron buckle (Photo 6.53 on page 207) that may have been related to a soldier's personal military arms or equipment, perhaps the buckle to a leather belt or strap to a cartridge box. Also there was a fragment of what could be a strip of decorative brass edging from the throat of a sword scabbard (Photo 6.53 on page 207), though the small size of the fragment makes it inconclusive as to function. Bayonets were carried by both British and provincial soldiers as part of their arms. There was a decorative brass bayonet scabbard tip (Photo 6.54 on page 208) found in the pit as well. Smoking, also practiced commonly by the soldiers, is evidenced by the presence of fragments of a white clay smoking pipe.

The charcoal concentration in this layer suggests it contained remnants of a cooking fire that was gathered up and thrown into the latrine pit along with food scraps and broken dishware. The architectural material consisted of at least 16 hand wrought nails and some handmade brick fragments along with a piece of what looks like lime mortar. There were also 14 small blocky fragments of a chalky white substance that could be plaster. This would suggest the presence of a relatively permanent wood-frame structure with finished inside walls, perhaps an officer's hut.

Five prehistoric artifacts, two chert debitage and three fragments of fire-cracked rock, were mixed in with the eighteenth century materials in this layer. This was not unusual for most contexts at the depth of this feature, since prehistoric material seemed ubiquitous in the project area.

The second fill deposit in the pit (Level C) was distinctly different from the soil below it, consisting instead of homogeneous gray brown silty sand without charcoal as if it had come from a different location and had been





**Figure 6.51:** A plan of the Fort Edward Village site with the georeferenced overlay of the Wetterstrom (1756) and Anon. (1757) maps of the fortifications showing the locations of two latrine pit features discussed in the report.





**Photo 6.52:** Bird's eye view facing east of Feature 12 after it was exposed below Level 1 soil. Layers of road pavement and base are visible in profile in the background.

dumped on top of Level A. It varied from a minimum of a few centimeters to a maximum of 10 cm (4 in) thick but seemed to completely cover Level A below it. Artifacts from this level were similar to those in the lower Level A, with animal bone and teeth fragments, a few small ceramic fragments, one of white salt-glazed stoneware and three of blue decorated Chinese export porcelain, and a piece of olive-green wine bottle glass. The above mentioned brass sword or bayonet scabbard tip came from this deposit, along with a broken gun flint and two pipe stem fragments. A couple brick fragments were found along with a small aqua window glass fragment and a nail.

The third fill deposit (Level B) was the uppermost soil in the pit, but it only extended part way across the pit as if it was only a few buckets or shovels-full. Again, it was different from Level C in that it contained some charcoal and organic material along with a few artifacts including a .69 caliber lead musket ball (Photo 6.54 on page 208), a wrought nail, animal bones and teeth, brick fragments, and fire-cracked rock.

Before it was destroyed by construction trenching, the part of the feature that extended eastward below the pavement was dug out as one soil and the artifacts collected as such. Along with more animal bone, charcoal, brick fragments, and smoking pipe bowl fragments, there was a spall off a honey-colored gun flint, and one badly-corroded molded brass cuff link found (Photo 6.54 on page 208). Table 6.9 on page 209 summarizes the artifacts found in Feature 12.

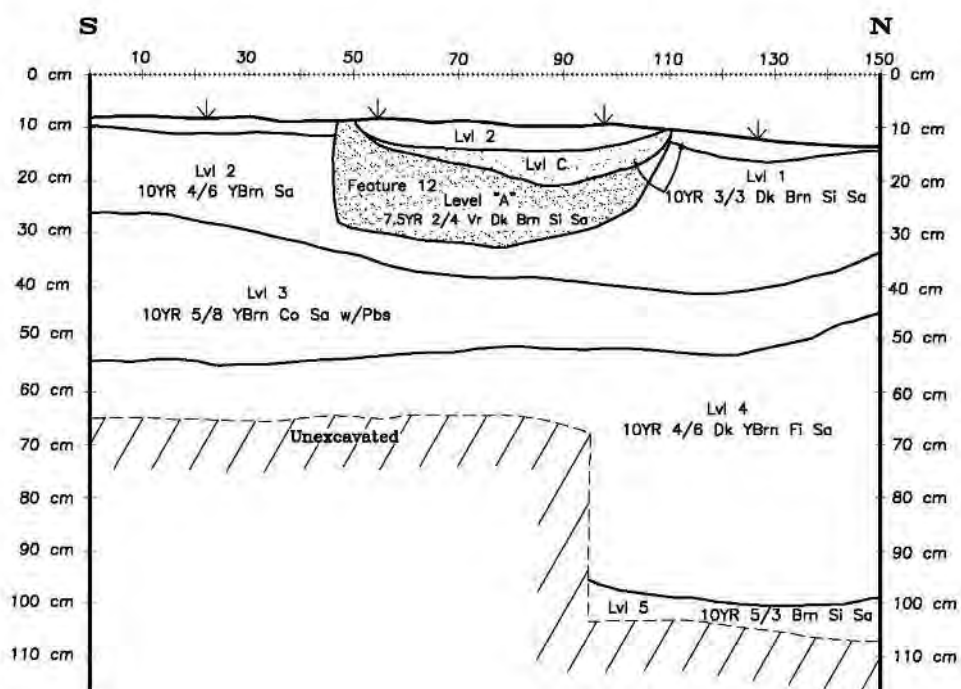
Analysis of the faunal material collected from the feature as a whole indicates that all but one of the 161 specimens are from medium to large mammals. Only 36 specimens could be identified to the species level: 27 from cow, including one extremely worn premolar, and nine from domestic pig, including two premolars, a tooth fragment, and one mandible fragment with two molars still in it. Twelve of the 161 bone fragments showed evidence of cutting or sawing, and three were calcined.

### ***DRT 5 Unit 1, Feature 21***

A second likely latrine pit (Feature 21) was revealed in DRT 5, Unit 1, about 85 m (280 ft) north of the Feature 12 latrine pit. Its having been a latrine is suggested by its overall shape, which is long and narrow, and by the multiple thin alternating layers of dark and light soil filling it. The feature was first exposed at the southern end of the trench at the very edge of the pavement cut. DRT 5, like the other archaeological data recovery trenches, was about 2 m (6.5 ft) wide, this one under the pavement along the east parking lane of Broadway next to the curb. The south end of the trench started at the mouth of a private driveway left open and paved for the owner's access, which prevented archaeologists from exposing the entire top of the feature.

The feature was first encountered at 84 cm (2.7 ft) below the surface of the curb and sidewalk. It is not known if this was the original top of the pit because it may have been impacted by street resurfacing in the nineteenth





**Figure 6.52:** West profile of DRT 1, Unit 12 showing Feature 12, the latrine pit in cross section.

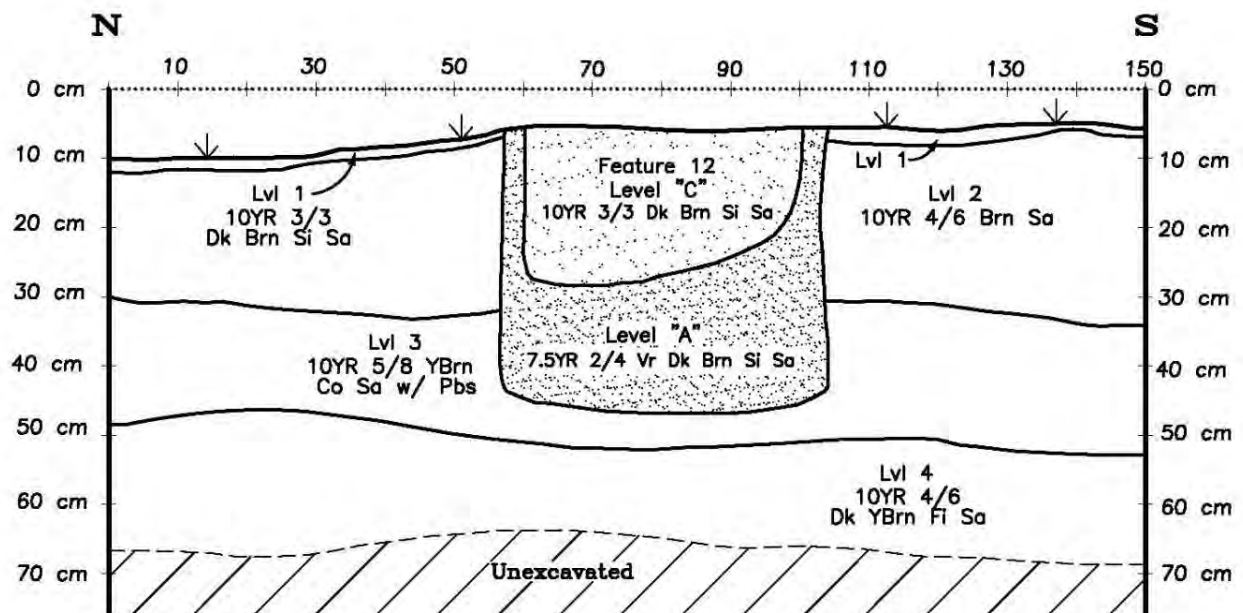
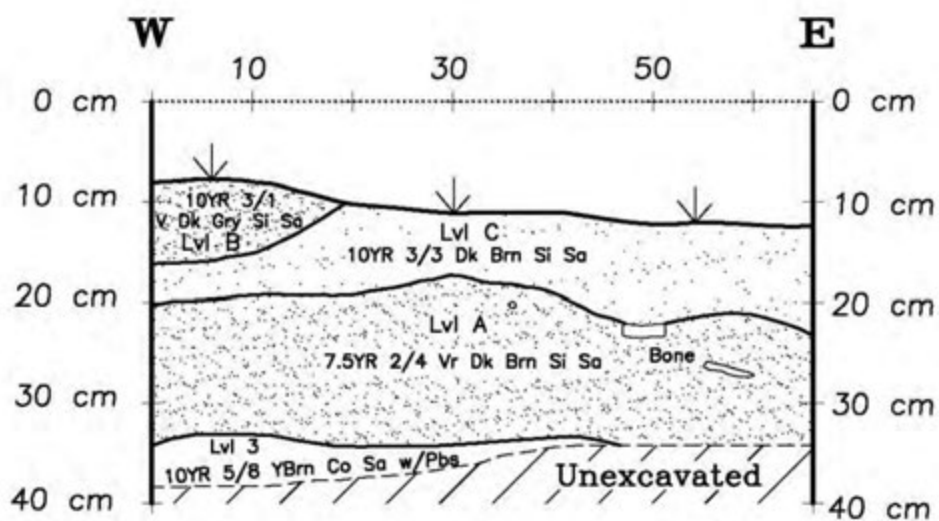


Figure 6.53: East profile of DRT 1, Unit 12 showing Feature 12. Note the straight sided walls.





**Figure 6.54:** South wall of the east-west bisection of the latrine pit in Unit 12 of DRT 1. Soil Levels A, B, and C refer to separate filling episodes within the latrine while Level 3 refers to the natural soil below it.



**Photo 6.53:** Buckle (left) and possible sword scabbard throat edging fragment (right).

**Table 6.9:** Summary of Artifacts found in Feature 12, a latrine pit.

Class	Artifact Type	Artifact Subtype	Total
Architectural	Brick	Handmade fragments	18
	Window glass	green	1
	Nails	Wrought	19
		Unidentified square	4
	Mortar/plaster		15
Food/Drink	Ceramic sherds	Blue hand-painted porcelain	3
		Redware	1
		White salt-glazed stoneware	2
		Tin-glazed earthenware (delft)	2
		Wine bottle (olive green) fragments	3
	Vessel glass	Possible clear table glass fragment	1
	Fauna	Bone/teeth	161
Arms/Military		Gun flint fragments	2
		Lead musket ball (.69 caliber)	1
		Bayonet scabbard tip (brass)	1
		Possible sword scabbard throat edging fragment	1
Personal		Clay smoking pipe fragments	9
		Large iron buckle	1
		Cufflink (2 brass buttons with connecting link)	1
Miscellaneous		Unidentified iron/steel fragments	27
		Charcoal fragments	5
Prehistoric		Chert flakes/shatter	3
		Fire-Cracked Rock	9
Total			290





a. brass cufflink; b. brass bayonet scabbard tip; c. lead musket ball.

**Photo 6.54:** Personal artifacts found in Feature 12 latrine pit.

and twentieth centuries. Its depth was generally 50 cm (1.6 ft) with a deeper section at the north end that went to 68 cm (2.2 ft) deep. An abandoned nineteenth century sewer line passed to the west, missing it by just less than two feet. It was truncated somewhat along its east side by another utility pipe trench but its surviving width was 50 to 60 cm (1.6 to 1.9 ft) across at the top (Photo 6.55 on page 208, Figure 6.55 on the facing page). The overall length of the feature, after tunneling into it under the pavement beyond the south unit wall, measured 196 cm (6.4 ft).

Like the previously discussed latrine pit (Feature 12), this one had nearly vertical side walls and was probably dug with a metal spade shovel as evidenced by the distinct flat spade outline at the north end of the feature. The cleanly-troweled surface of the feature showed roughly concentric circles of light and dark soils. After bisection, it was clear the pit had at least nine filling episodes of various materials and soils, each only a few inches thick or less (Photos 6.56 to 6.57 on the next page, Figures 6.56 to 6.57 on page 214). The bottom few layers were alternating dark organic brown sand with yellow brown sand containing a considerable amount of animal bone: a little over 500 pieces, in large and small chunks, some with teeth (Photo 6.57 on the next page). Further up in the pit there were layers of sandy soil mixed with charcoal, wood ash, and a few

artifacts, though one layer was completely sterile redeposited subsoil.

Faunal material from this feature includes both animal bone ( $n = 509$ ) and oyster shell ( $n = 10$ ). Of the animal bone recovered, 502 fragments were from mammals ranging in size from small to large. The remainder included five turtle bones, one bird bone, and one unidentifiable bone. Of the 502 mammal bone fragments, only 95 could be identified more specifically. Sixty-six are from domestic pig, 18 are from cow, five are from domestic sheep, and six are identified only to the caprine sub-family, which includes both sheep and goat. Twenty-one specimens of the bone assemblage showed evidence of being cut or sawed, 12 were burned, and seven were calcined. Compared to the two identifiable species from the Feature 12 latrine pit, this one yielded a wider variety of animal remains with not just cow and pig, but also sheep/goat, turtle, bird, and oyster. The turtle and bird may not have been consumed as food but the other faunal remains were probably all consumed for food by the soldiers.

Aside from animal bone, artifacts from these layers also include a small handle fragment of eighteenth century combed yellow lead-glazed buff earthenware, probably from a mug or tea pot (Photo 6.58 on page 215), the bottom of a small olive green glass bottle, probably a medicine or apothecary bottle based on its size, and fragments of several olive green wine bottles (Photo 6.59 on



**Photo 6.55:** View of the top of the latrine pit facing west. The holes near the left edge of the unit are shovel test pits. Utility trench fill soil is visible at bottom of the photo. Note broken ceramic sewer pipe in wall at upper background.

page 215). The bones, along with some oyster shells and some wood charcoal, show that this pit was not just a receptacle for human waste, but also a dumping place for cooking and meal refuse.

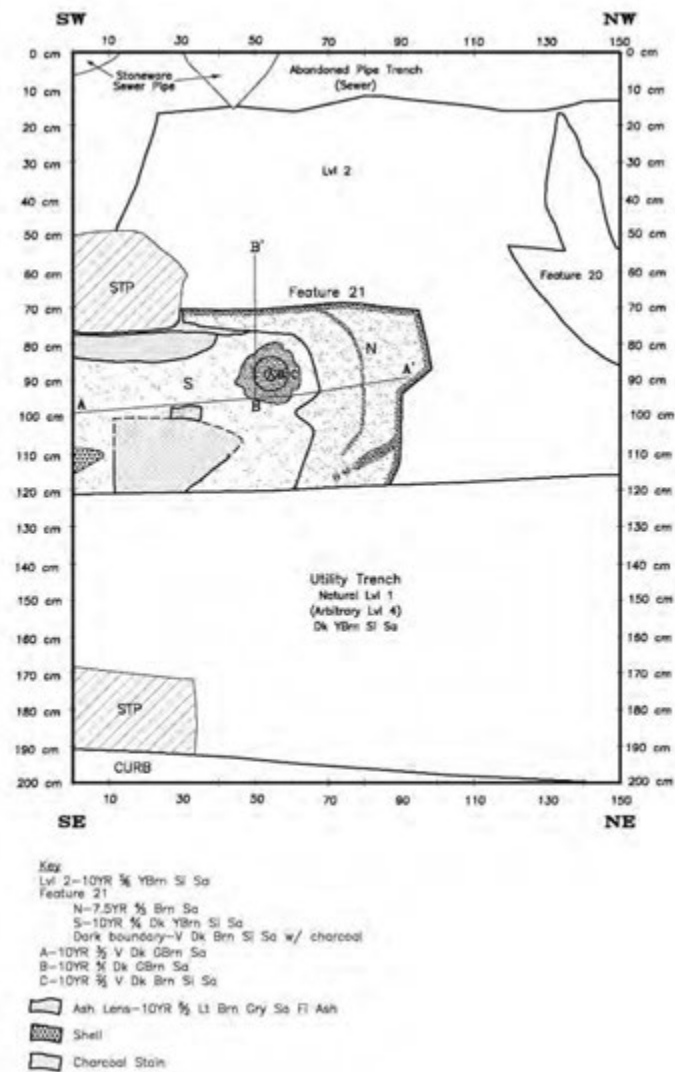
Architectural artifacts include a few nails, a few brick fragments, and a small piece of window glass – not as many as found in Feature 12 – but these suggest the nearby presence of a structure. Other fragmented items found include a thin strip of lead about two inches long (Photo 6.58 on page 215d) that could have been material from making musket balls in the camp, a common practice among soldiers. There were ten fragments of white clay smoking pipe(s), and a honey-colored gun flint fragment in these layers. Also present throughout the layers were ten non-diagnostic prehistoric artifacts including a chert biface, eight flakes, and a piece of fire-cracked rock. These types of materials were found frequently in the surrounding natural soils so were probably redeposited with the soils in the pit. Table 6.10 on page 213 summarizes the artifacts found in Feature 21.

### ***Latrine Pit Discussion***

The general orders were for the latrines (or “necessary houses”) to be dug six feet deep. The bottom of Feature 12 reached only 83 cm, or just less than three feet deep below the current ground surface at the curb along the street. Feature 21 reached 134 cm, or just over four feet deep below the current ground surface. These fea-

ture locations coincide with the encampment area outside the fort walls but within the outworks shown on some of the historical maps. We cannot be certain where the ground surface was in the 1750s when the fort was actively occupied but it is assumed these areas were relatively level. This is because it was a campsite and parade ground for the various British and provincial army troops set up there during the five main years of activity at the fort. Based on the depth of these pits it doesn’t seem that the six foot rule was necessarily followed. It does seem though that they were regularly or periodically filled with either “clean” soil, in the case of the yellow-orange sand layers, or with other soils, some from camp fires or cooking fires containing ashes and charcoal that would act as odor sweeteners.

Another type of soil was possibly from campground sweepings, since as discussed above, there was an attempt in later years by the commanders to keep the frontier encampments clean. The sweeping up of human detritus that accumulated in the campground “streets”, along pathways and alleys between rows of tents, could account for many small artifacts that were undoubtedly dropped by soldiers. This is suggested by the presence of various small clothing artifacts, broken pipe fragments, broken dish or bottle fragments, broken gun flints, and the odd musket ball. With orders during various years either to bury refuse or to dump the “dust” in the river, it would seem that a nearby latrine pit would be a perfectly suitable and perhaps more convenient place to dump



**Figure 6.55:** Plan view of Feature 21, the latrine pit, in DRT 1, Unit 1.





**Photo 6.56:** Soil layers filling the pit seen in cross section lengthwise. Note the bone fragments in the lower dark organic levels and the whitish wood ash and charcoal in the topmost layer.

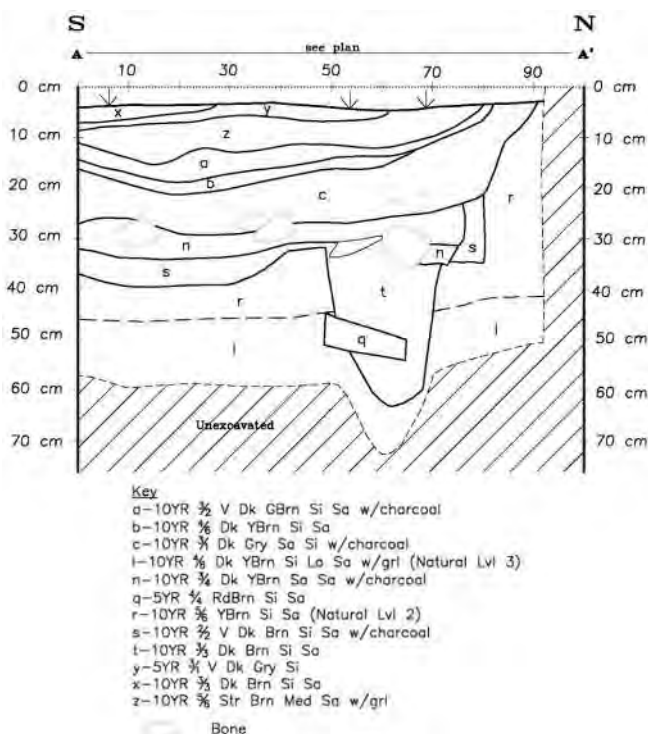


**Photo 6.57:** Feature 21 after north-south and east-west sectioning looking southwest. Large animal bone fragments are visible sticking out of the lower layers of the feature.



**Table 6.10:** Summary of artifacts found in latrine pit (Feature 21).

Class	Artifact Type	Artifact Subtype	Total
Architectural			
	Brick	Handmade fragments	6
	Window glass	Aqua	1
	Nails	Wrought	1
		Unidentified	1
Food/Drink			
	Ceramic sherds	Buff Earthenware	1
	Bottle glass	Medicine bottle (olive green) fragment	1
		Wine bottle fragments	5
		Aqua bottle fragment	1
	Fauna	Bone/teeth	509
		Oyster shell	10
Arms/Military			
		Honey-colored gun flint fragment	1
Personal			
		Smoking pipe fragments	10
Miscellaneous			
		Lead strip	1
		Charcoal fragments	17
		Unidentified iron/steel fragments	2
Prehistoric			
	Debitage	Chert flakes/shatter	8
	Tool	Chert biface tip	1
	Fire-Cracked Rock		1
Total			577



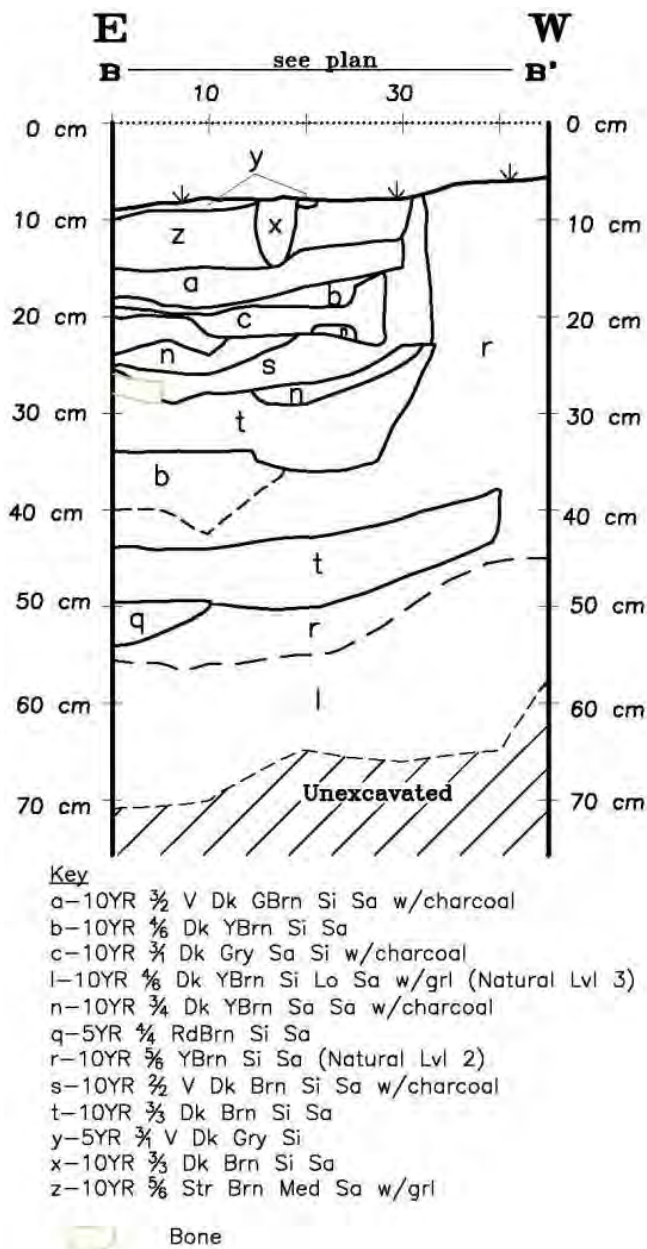
**Figure 6.56:** North-south section through DRT 5, Unit 1, Feature 21.

food waste and other debris accumulated on a daily basis in a crowded military camp.

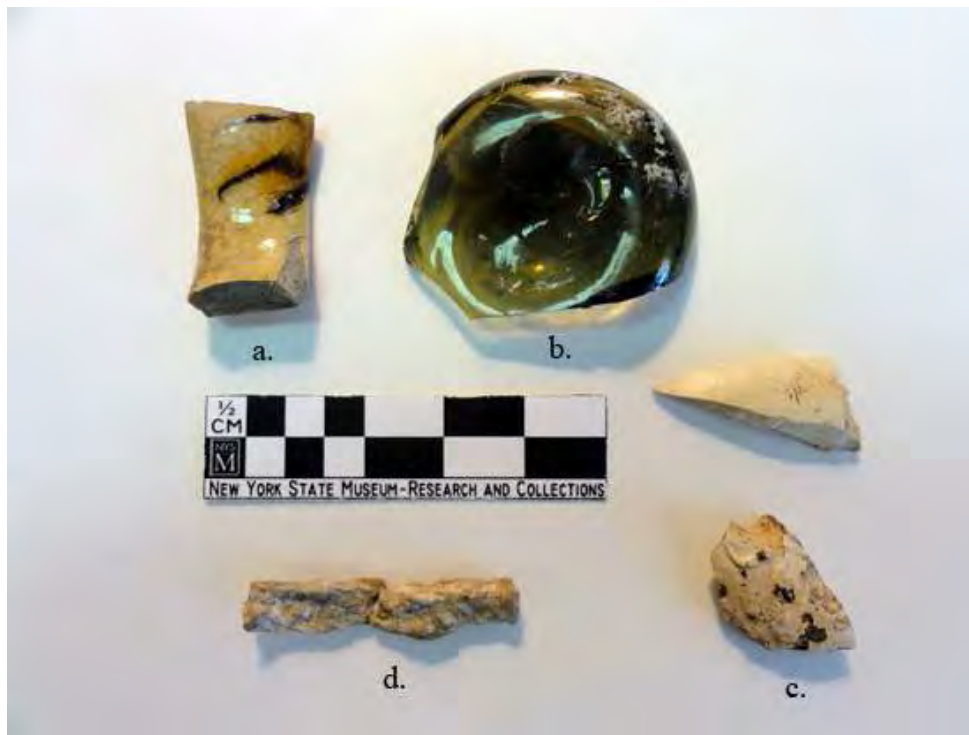
The term necessary “houses” in the orders suggests that there was a structure of some kind over the latrine pit offering some privacy and a means of keeping odors confined, though the long narrow shape suggests a multi-hole latrine. They must have been extremely make-shift or small though, if they were relocated every week. Perhaps they were similar to the telephone booth-size huts constructed for sentries on guard duty, which may have been portable. These structures could account for the nails found in the pits.

## 6.5 Summary and Significance of the Eighteenth Century Component

The site’s importance in the French and Indian War has intrigued many historians and archaeologists over the years, both avocational and professional. Many years of archaeological field schools, from 1991 to 1998, have been conducted on Rogers Island with exploration of the large barracks complex, a storehouse, several huts, tent sites, a latrine, refuse middens, and a hospital (Starbuck 2004). Some parts of the fort itself have been studied as well, along with complete excavation over a decade, of the French and Indian War sutler’s house just south of



**Figure 6.57:** East-west section through DRT 5, Unit 1, Feature 21.



(a) Combed yellow lead-glazed buff earthenware handle fragment; (b) medicine bottle bottom; (c) smoking pipe fragments; d. lead strip.

**Photo 6.58:** Artifacts from Feature 21 latrine pit.



**Photo 6.59:** Wine bottle glass from Feature 21.

the fort (Starbuck 2010). Archaeological investigations have been completed at the southernmost outworks on the south side of Bond Creek during 1986 salvage excavations for the village water treatment plant (Agelarakis 1990), and that same year Collamer and Associates did extensive excavation down the center of Broadway for the planned sewer interceptor line (Collamer 1987). In 2002, Hartgen Archeological Associates, Inc. (2003) investigated the remains of the Royal Blockhouse site on the hill above Roger's Island on the west side of the river. All of this work, along with the development of the Roger's Island Visitors Center, a museum and research center dedicated to the history and archaeology of the fort and the island, reflects the historical and archaeological importance of the place.

The excavations and construction monitoring of this relatively narrow DOT project through the 1750s encampment area have produced a wealth of information pertaining to this site as well. By itself it has possibly answered some questions about the nature of the sequence of construction of the outworks and the military encampment surrounding the fort on the east side of the river. It is believed that archaeologists identified the 1756 outworks line depicted by Wetterstrom in three places: one near the northeast corner, one through the earlier southern terminus section that later became the ditch through the line, and one to the south along the east line near the entrance opening into the camp. These ditches, originally six to seven feet deep, were filled in to form part of the larger campgrounds when the new barrier was built the next year by Montessor. His version of the outworks were apparently crossed by construction trenching in two places, one along the east line and one along the north line containing what we believe are the pointed ends of picket posts or abatis that were placed in the bottom of the ditch as an extra obstacle against attack by the enemy.

It has also encountered the remains of at least five fireplaces or hearths from the period. These are similar in that they primarily used handmade bricks for construction but the shapes, depths below surface, and level of integrity varied considerably from feature to feature. One may have been constructed as an oven based on the shape of its firebox. In evidence was the use of unfired clay as a binding material instead of mortar in almost all of the fireplaces, which attests to their temporary nature. One of the fireplaces relates to Blockhouse Number 2, one of several constructed ca. 1757 as a protective network surrounding the larger fortifications at Fort Edward. Of the eight blockhouses documented on period maps of the fort, this fireplace represents evidence of only the second one to be discovered by archaeologists.

Perhaps less grand but no less important were the 16 small refuse pits and the two latrine pits found in the encampment around the fort. These produced deposits that can answer questions about the diet and daily ac-

tivities of the soldiers encamped there over the years of the campaigns.

Along with the fort-related features identified during this project, it produced a large quantity and variety of artifacts related to the French and Indian War period of occupation. This collection can be used as a comparative assemblage for future studies of this fort and other contemporary military sites.



## 7. Nineteenth Century Component

MARTIN PICKANDS AND NANCY DAVIS

Selected archaeological features related to the nineteenth century development and occupation of the Fort Edward Village site are depicted on a general site plan (Figure 7.1 on the following page) followed by descriptions of each feature with photographs, plans, and section drawings where appropriate.

### 7.1 Blacksmith and Carriage Shop at the corner of Broadway and Edward Streets

The building at the northwest corner of Broadway and Edward Streets, now a restaurant and tavern named the Anvil Inn, was formerly a blacksmith shop (Photo 7.1 on page 219). It appears in some detail on the Sanborn-Perris Map Company fire insurance maps from 1884 to 1942, and also on earlier maps as early as 1853. A structure that may be the same building appears at that location and orientation on Hutchinson's Champlain Canal survey map in 1830 (Figure 7.2 on page 219), but it is unlabeled on that map and may simply be a residence or store. The 1842 map of the village (Figure 7.3 on page 220) does not show this structure, but shows a "Wheelwright Shop" approximately three structures to the north of that spot on property belonging to S.M. Bleecker (Parcel 6 of Lot No. V).

There are considerable discrepancies between these two maps with regard to the location of the former fort and the bend in Broadway, and none of the three side streets now running west from Broadway along that stretch are shown to enable comparison (Old Fort Street, Edward Street, and Moon Street were not laid out until 1853-1854). Despite the uncertainty introduced by these factors, the wheelwright's shop on the 1842 map appears to be in the same spot as a structure labeled "W.S." on the 1853 map (Figure 7.4 on page 220). Not surprisingly, a house directly across Broadway from that shop is labeled "E. Burke", presumably referring to Elvira Burke, wife of Alexander Burke, the first known operator of the shop at the location of the Anvil Inn.

As the village population grew in the mid-nineteenth century, three residential streets (Moon, Edward, and Old Fort Streets) were laid out across the old fort grounds west of Lower Broadway. A detail from the Beers 1866 atlas of the village (Figure 7.5 on page 221)

shows a blacksmith shop at the present location of the Anvil Inn at the north corner of Edward Street (then McKie Street) and Broadway. The earlier location of the wheelwright shop is shown as a store. A business labeled "W.S." for "Wheelwright Shop" stands in a different location from that shown in the previous maps, opposite the end of Notre Dame Street adjacent to the hotel. It is not known whether these represented separate businesses at the time or separate locations of a single business. However, it seems likely that the two combined shortly thereafter into a single business at the location of the Anvil Inn.

According to the Beers 1875 rendering of the village (Figure 7.6 on page 221), the building at the present site was then owned by Alexander Burke. In the same year, the business was depicted in considerable detail from the southwest on the bird's eye view of Fort Edward by H.H. Bailey (Figure 7.7 on page 222). It was a large rambling structure with side and rear additions, and interestingly, a ramp on the south side leading up to a long, elevated platform that ran across the front of the building. This allowed access for vehicles to enter and exit the second floor through the double doors still present there at the front of the building today (Photo 7.1 on page 219). The second floor housed a paint shop indicated on the 1884 Sanborn map (Figure 7.8 on page 222), a common arrangement for nineteenth century wheelwright shops. The same map depicts the property in detail, indicating that E. Burke owned the multi-purpose smithy with a wood shop, carriage shop, and paint shop. However, we assume the business was operated by Alexander, her husband. Similar details of the business layout are shown on the 1909 Sanborn map (Figure 7.9 on page 223), though by then it was owned by S.D. Turner.

Alexander Burke first appears on the 1850 United States Census as a 27 year old blacksmith living with his 26 year old wife Alaine and their two-year-old daughter, Ester E. An 18 year old woman named Clarisa Montgomery was boarding with them, probably the daughter of a neighbor helping with the housework. Nearby lived William Miller, a 26 year old Canadian wagon maker, and next door to him Oliver E. Hamilton, a 35 year old blacksmith, George Booth, a 60 year old carpenter, and Joseph Miller, 32 (apparently William's brother), a wagon maker, with his family. Also in the neighborhood were Cornelius Pike, a 39 year old wagon maker with his family and one boarder, 18 year old Patrick Kelley, who was listed as a wagon maker but may have been only





**Photo 7.1:** View of the Anvil Inn looking north along Lower Broadway, with Edward Street in the foreground. Note that there is a wide area between the building and the street where horses once could be tethered and vehicles parked.

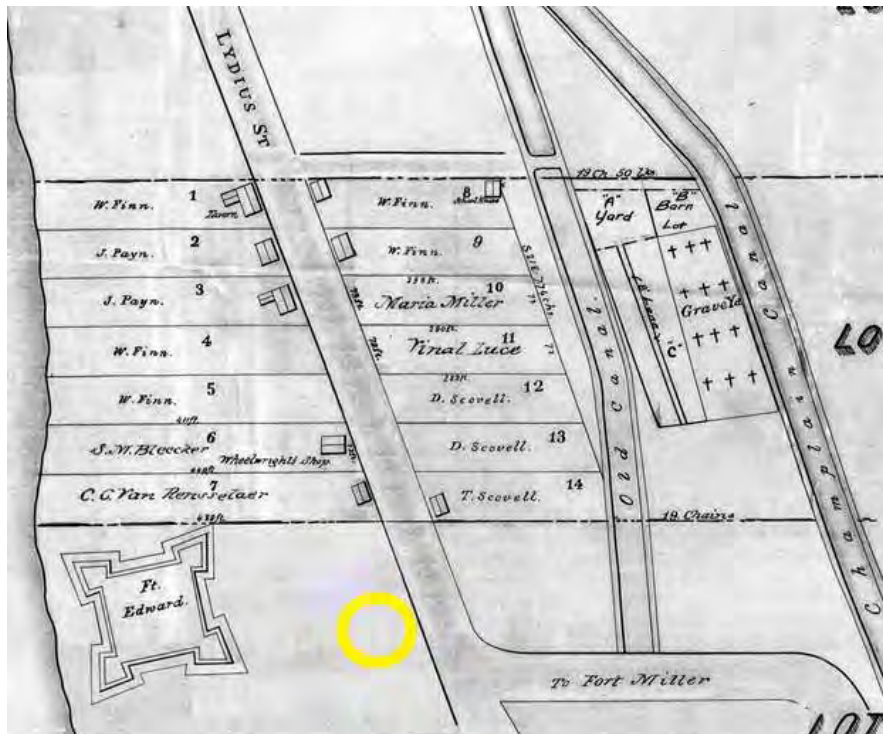


**Figure 7.2:** Detail from the 1830 Champlain Canal Survey Map (Hutchinson) with the location of the blacksmith shop circled in yellow.

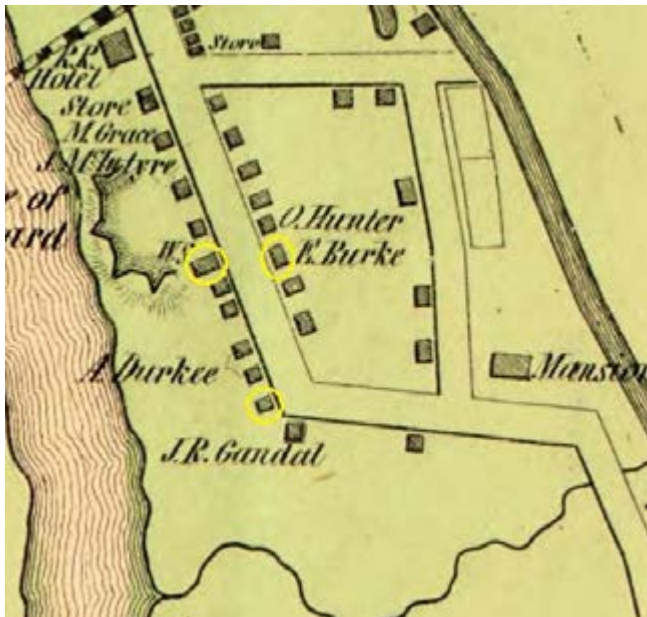
an apprentice. The 11-household gap between Burke's household and the rest of the crew may mean nothing beyond the fact that he lived apart from the others, as it is about the distance between his home as seen on the 1853 map and the wheelwright shop and hotel shown on the 1866 map. Burke could have run both this shop and a smithy at the Anvil Inn site, or perhaps he ran just the smithy while the Millers ran the wheelwright business. By the time of the 1860 census, all of the others besides Burke were gone. This suggests that the Millers may have run a separate business and either sold out to Burke or simply moved away.

By 1860, Alaine and her daughter appear to have died, and Burke was married to Elvira. His properties, as suggested by her initial on maps, may have been in her name, a common arrangement at the time. Edward P. Morgan, 39, and James Marshall, 60, both painters, were present as were Marshall's two sons, 20 and 29 years old, also painters, living nearby. Daniel D. Whitford, 25, a blacksmith, boarded with John Selfridge, 30, and Matthew Redfern, 24, carriage makers. John W. Mott, a 28 year old smith, also lived nearby and several other carpenters and cabinet makers lived in the area, though they may or may not have worked for Burke. It appears that the business was prosperous, employing seven to nine skilled workers. The 1884 Sanborn map (Figure 7.8 on page 222) indicates two separate smithies, a paint shop and wood shop with attendant storage in three separate buildings.





**Figure 7.3:** Detail of the 1842 Map of the Village of Fort Edward (Ellison and Ellison) with the approximate location of the blacksmith shop circled in yellow (courtesy of the Fort Edward Town Clerk's Office).



**Figure 7.4:** Detail of the 1853 Map of Washington County, New York (Levey), Fort Edward inset, highlighting in yellow the home of E. Burke, the wheelwright shop (WS), and the unnamed blacksmith shop. (NYS Library Special Collections).

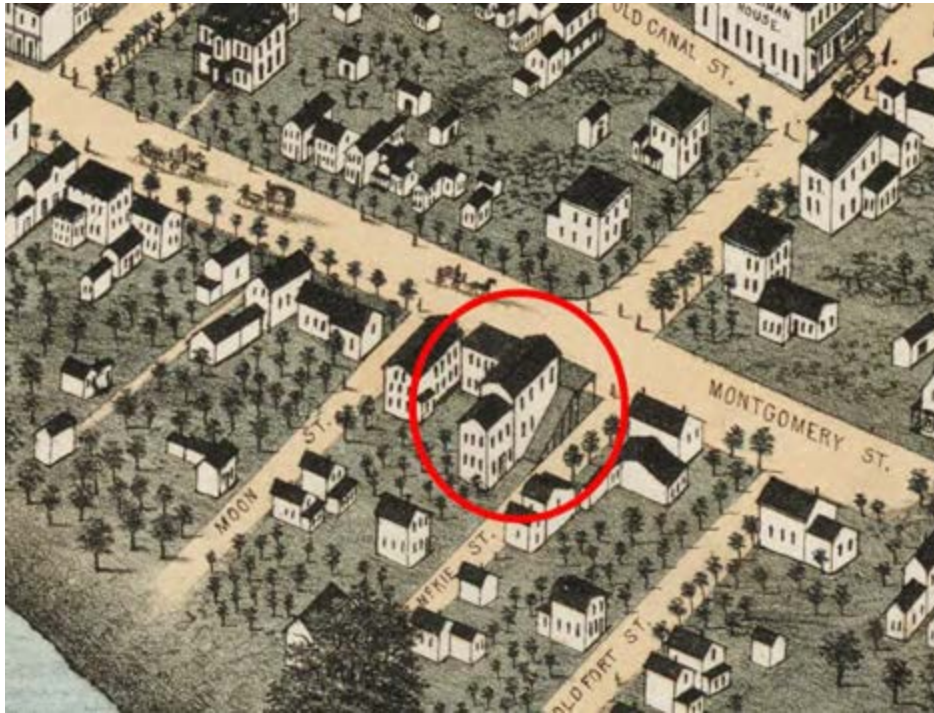
In 1870, no one is described in the census as a blacksmith. Burke, who described himself in the census as a carriage maker, is listed along with seven carpenters and two painters living nearby. Some of the carpenters may not have worked for Burke, but the census nonetheless suggests that the emphasis of the business had become less focused on ironwork and more on coachwork, not surprising in light of the rapidly growing availability of factory-made malleable iron carriage and wagon hardware. The trend continued into the late-nineteenth century with the increasing availability of complete factory-made conveyances.

Sears, Roebuck & Co. advertised 17 pages of wagons and buggies in their 1897 Catalog and seven pages of blacksmith supplies and wagon accessories (Isreal 1968; Pickands 2009). By 1880, the business appeared to be winding down. Only Burke, calling himself a blacksmith, and three others, a smith named Edward King, a Canadian carriage maker named Hanory Belanger, and Theodore Baudet, a Canadian painter, appear to have been working for him according to the census. The 1884 Sanborn map states that the shop was not a “carriage shop” but a “carriage repair shop”, reflecting the rapid shift from custom-made conveyances to factory produced vehicles.

By 1890 Burke would have been 66 years old, operating mostly alone and with competition from a Frank Morgan, a blacksmith who was operating the smaller smithy on the south side of Moon Street behind Burke’s







**Figure 7.7:** Detail from the H. H. Bailey & Co. 1875 Bird's Eye View of Fort Edward, New York with the blacksmith shop building circled in red. Edward Street was then called McKie Street (Boston Public Library Norman B. Leventhal Collection).

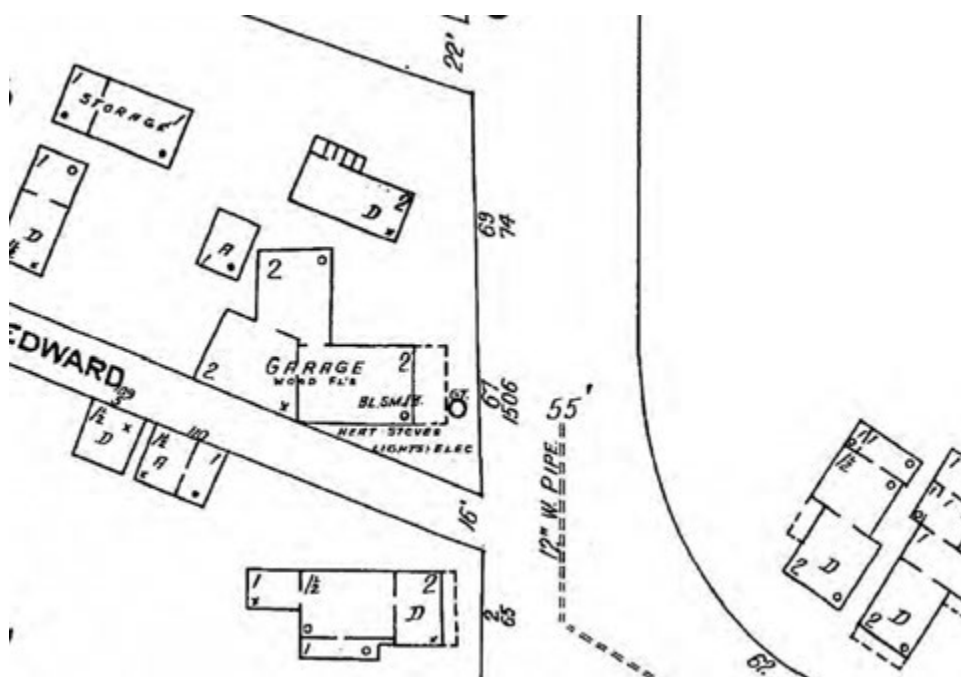


**Figure 7.8:** Detail of the 1884 Sanborn-Perris Map Company Fire Insurance Map showing the Burke wood shop, carriage shop, blacksmith shop, and paint shop with second floor platform. At this time there was also a harness shop across the street to the northeast.





**Figure 7.9:** Detail of the 1909 Sanborn-Perris Map Company Fire Insurance Map (Sanborn-Perris Map Company) of Broadway near Edward Street. The harness shop is no longer shown.



**Figure 7.10:** Detail of the 1924 Sanborn-Perris Map Company Fire Insurance Map of Broadway near Edward Street showing the blacksmith shop and garage with the gas tank symbol at the street.

main shop (Figure 7.8 on page 222; Hill 1929). By 1900 Burke had sold his business to Samuel D. Turner (Figure 7.9 on the previous page), a 28-year-old English blacksmith employing a single wheelwright named Fred Orville. By 1910, no one clearly identifiable as working there except Turner appears on the census. By this time his work would have consisted largely of shoeing and auto and carriage repairs. The business continued to shift increasingly towards auto repair, and by 1924 the Sanborn map (Figure 7.10 on the preceding page) shows the building as a garage and blacksmith shop with a gas pump, while the second smithy in the rear had been converted to storage. Turner operated the business for approximately 60 years until his retirement.

In 1974, the property was purchased by Mr. and Mrs. David McDougall, who converted it into the restaurant and tavern now known as the Anvil Inn. When they purchased the building, they found four forges where smiths had worked, and 10 horse-hitching stations along the north wall where shoeing repair work was done. The McDougalls heavily renovated the structures by “jacking up the back of the building two feet and pulling the back building into the front portion of the establishment 18 inches” according to a local newspaper piece (Lacque 1976). At some point in the mid-twentieth century the house just to the north disappeared and that property was converted into a parking lot for the Anvil Inn. At the time of DOT’s construction in 2006 and 2007, there was blacktop pavement up to the front and sides of the structure.

### ***Construction Activities at the Carriage Shop***

Archaeologists monitored of various construction trenches and road resurfacing around the intersection of Edward Street with Broadway. This revealed several features that appear to relate to the former blacksmith shop (Figure 7.11 on the previous page). In 2006, the monitored construction trenching included the new water line that skirted the south side of Broadway where it rounds the corner by Montgomery and Edward Streets, to run along the west edge of Lower Broadway in front of the Anvil Inn. This trench was 1.2 m (4 ft) wide and approximately 1.8 m (6 ft) deep. The parts of the trench that relate to the blacksmith shop were designated Incidents 27 and 28. Also monitored were two water line trenches that ran perpendicularly to the water main, one to connect water service to the Anvil Inn (Incident 103) and one to connect the new main to the lateral main on Edward Street (Incident 113). The first was 3 m (10 ft) long and the second was 8 m (26 ft) long, both about 1.6 m (5.5 ft) deep.

The following year, at the time of the full depth street surface reconstruction, archaeologists observed the removal of pavement and bull dozer scraping of the surface below the pavement at this corner and along the first 15 to 20 m (50 to 65 ft) of Montgomery and Edward

Streets (Incidents 183, 184, 187 and 188). The scraped surface exposed was approximately 110 to 120 cm (43 to 47 in) below the pavement and about 4 m (13 ft) wide, the width of the travel lane.

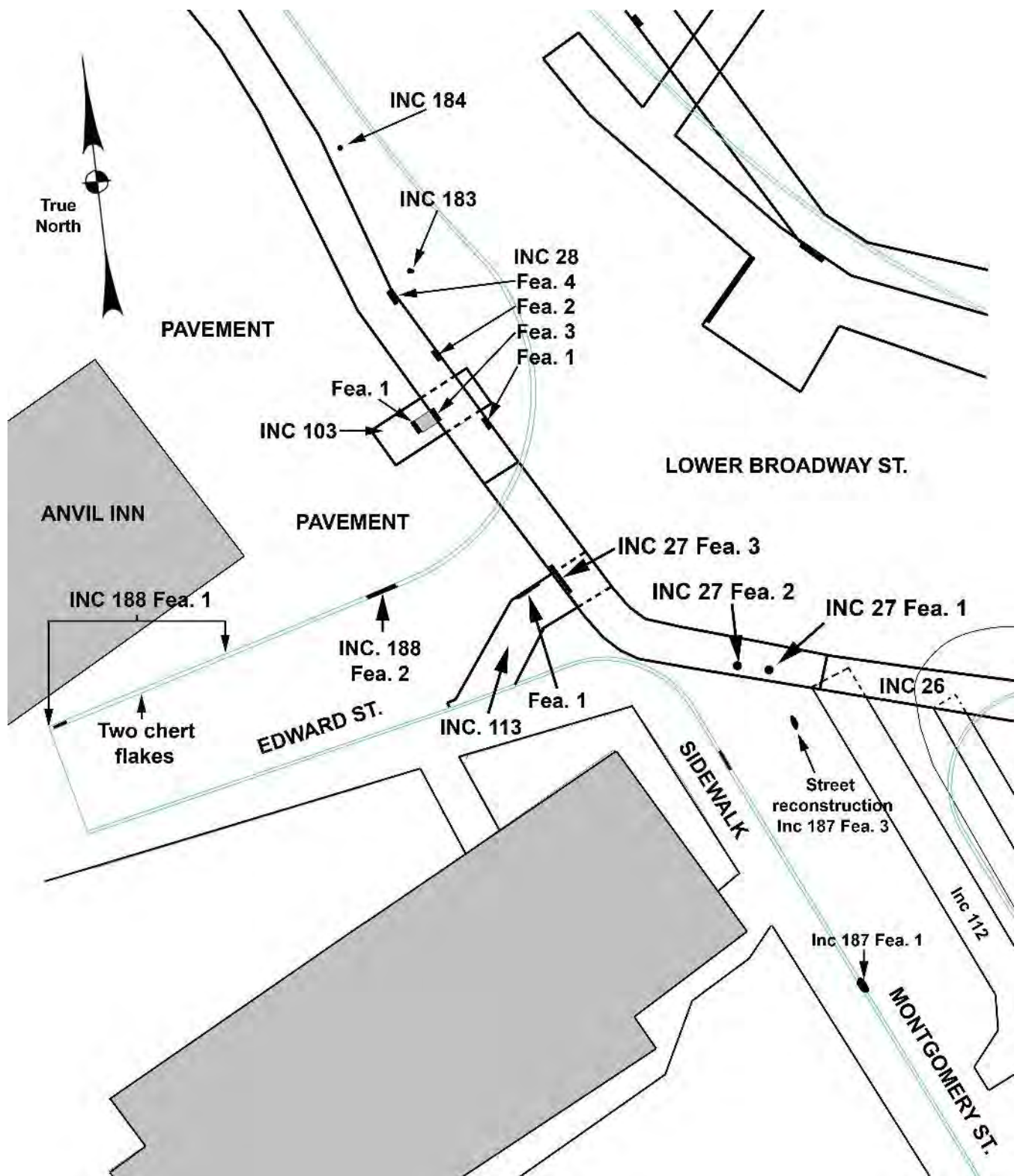
Deposits of charcoal mixed with domestic sheet refuse, bits of iron, nails, bolts, and broken tools seemed to occur in the soil level just below the pavement base in nearly all the construction exposures mentioned. This charcoal was in various thicknesses and sometimes in concentrated pockets or pits. The street was paved with brick in the early twentieth century (ca. 1915), which effectively sealed the layer of charcoal just under the surface.

The charcoal itself was in rather large chunks, some as big as grapefruit-size. The appearance of the charcoal out in the street raises certain questions. If it was used as fuel for the blacksmith forges, why would there be so much of it in large chunks out in the street in front of the building? One would expect there to be some accumulation of it along with the other debris from the shop, probably from regular floor cleanings. But one wouldn’t expect them to be throwing out usable fuel in any quantity while the shop was actively running a forge, and why in the street? If they did dispose of a quantity of it in the street, intentionally or by accident, since it is fairly soft (fragile) we would expect that over time it would have been pulverized and spread around by traffic (horses and wheeled carriages, carts, and wagons, etc.) going in and out of the shop and along the busy main street.

Although coal was the primary fuel used by blacksmiths whenever it became cheaply available, as it would have been in Fort Edward after the opening of the Champlain Canal, charcoal remained a preferred fuel for some applications until the early twentieth century because of its lack of contaminants such as sulfur and phosphorus that sometimes made iron brittle. If charcoal was kept in the shop, it probably was used for the making of vehicle hardware in order to ensure ruggedness. However, the census data show clearly that this business had been following the national trend away from local manufacture towards the use of manufactured parts, and eventually, complete vehicles.

It seems likely that after 1870, charcoal would have been little used in such a shop, and may have simply lain in a fuel bunker out of the way because with declining business there was no real need to get rid of it. However, when it became increasingly necessary to have a large floor space for working on automobiles and trucks, it would have become necessary to get rid of it. When the road was paved with brick, in 1915, it would have provided an opportunity to dispose of the obsolete fuel in the street right outside the shop where it would immediately be covered by the new pavement. The fact that much of it remains whole and has not been crushed by vehicle and horse traffic suggests that it was covered immediately after disposal in the street.





**Figure 7.11:** Map of the features near the Anvil Inn, showing Incidents 27, 28, 103, 113 and 188.

### *Incident 27, Features 1, 2, and 3*

Incident 27 was a section of the water main trench that was constructed passed the mouth of Montgomery and Edward Streets where Lower Broadway bends eastward (Figure 7.11 on the preceding page). Three features were identified in this section of trench.

**Features 1 and 2** Features 1 and 2 were encountered beneath pavement in the middle of Montgomery Street at its intersection with Broadway. They were approximately 165 cm (5.4 ft) apart along the south wall of the trench (Figure 7.12 on the next page). Feature 1 was found to be atop the backfill in an old 12-inch water line trench excavated in the 1890s running down Montgomery Street. The water pipe appears as a light-colored mound at the base of the construction trench in Figure 7.12.

Feature 2 began at the base of the grey-brown layer of old road surface beneath the brick pavement. It appeared to have been a postmold, and actually contained wood remnants, along with a small number of cut nails and some nineteenth century domestic refuse. Because of its location within the Montgomery Street alignment, along with the compact nature of its fill and the presence of the remnants of a decayed post, it is probable that it predates the 1850s when Montgomery Street was first laid out (Bascom 1903:166). It may possibly be part of a fence associated with the J.R. Gandal house shown on the 1853 Levey map (Figure 7.4 on page 220). Alternatively, it could be the remains of a street sign similar to the one in Incident 113, Feature 1 discussed later.

**Feature 3** Feature 3, which actually consisted of two historically different deposits, was discovered in the new water line construction trench midway across the mouth of Edward Street. It appeared as a large U-shaped ditch or pit with various fill soils starting just below the pre-pavement road surface about 60 or 70 cm (24 or 28 in) below the asphalt surface of the street (Figure 7.13 on page 228). The lower portion of this U-shaped ditch extended below the base of the construction trench so that the bottom could not be seen. Because it appeared to be a backfilled eighteenth century ditch related to the outworks of the fort, this lower portion is discussed in the section of this report dealing with eighteenth century features.

The upper portion of the feature looked like a deposit of sweepings and discarded charcoal related to the nineteenth century carriage and blacksmith shop. It consisted primarily of charcoal, some in large pieces, mixed with bone, shell, square-bodied nails and early nineteenth century ceramics. These included later creamware, pearlware, and whitewares. A small diameter pipe, possibly an old gas lateral, ran west to east, cutting through the old road surface under the brick pave-

ment, the underlying charcoal layer, and into the fill of the eighteenth century ditch.

As may be seen in the profile (Figure 7.13), part of the black, charcoal-filled deposit was shoveled out of the pipe trench at the time of its construction and piled to the side on top of the undisturbed portion of that deposit. This made the uppermost part of the charcoal layer appear to be isolated and thicker, as if it was a pit feature, obscuring its original configuration as a flat deposit of relatively uniform thickness. The feature was in turn covered by a dark grayish brown layer of soil immediately under the brick paving representing the pre-pavement nineteenth century road surface. This appears to be the same layer noted elsewhere within the project area.

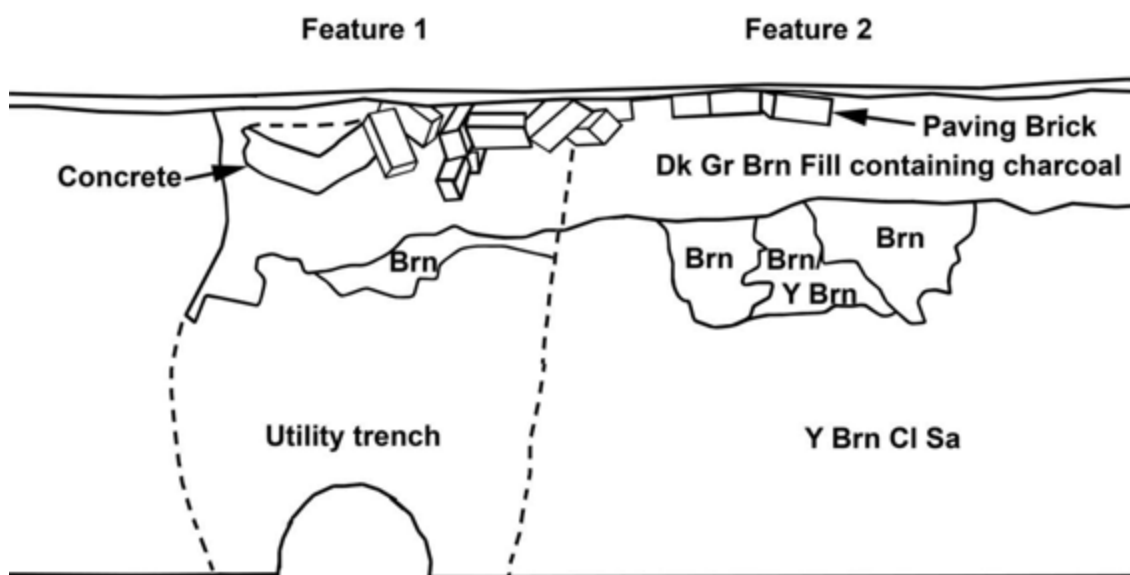
### *Incident 28, Features 1, 2, 3, and 4*

Incident 28 was a continuation of the water main trench to the north of Incident 27. The recording of the four features encountered there was hindered by a water line break that quickly filled the trench (Photo 7.2 on page 229), inundating the features before recording could be completed. The layer of grayish brown soil representing the old road surface, found in other areas nearby, did not appear here, possibly because it was a slightly higher area graded flat before paving.

**Features 1 and 2** Features 1 and 2 (Figure 7.14 on page 230) appeared to be shallow postmolds about 3 m (10 ft) apart, each less than 50 cm (20 in) wide, possibly remnants of a hitching rail or posts in front of the smithy. As seen in the section drawing, the “backfill” in the lower part of this construction trench was placed to cover the new water pipe just before archaeologists recorded the features.

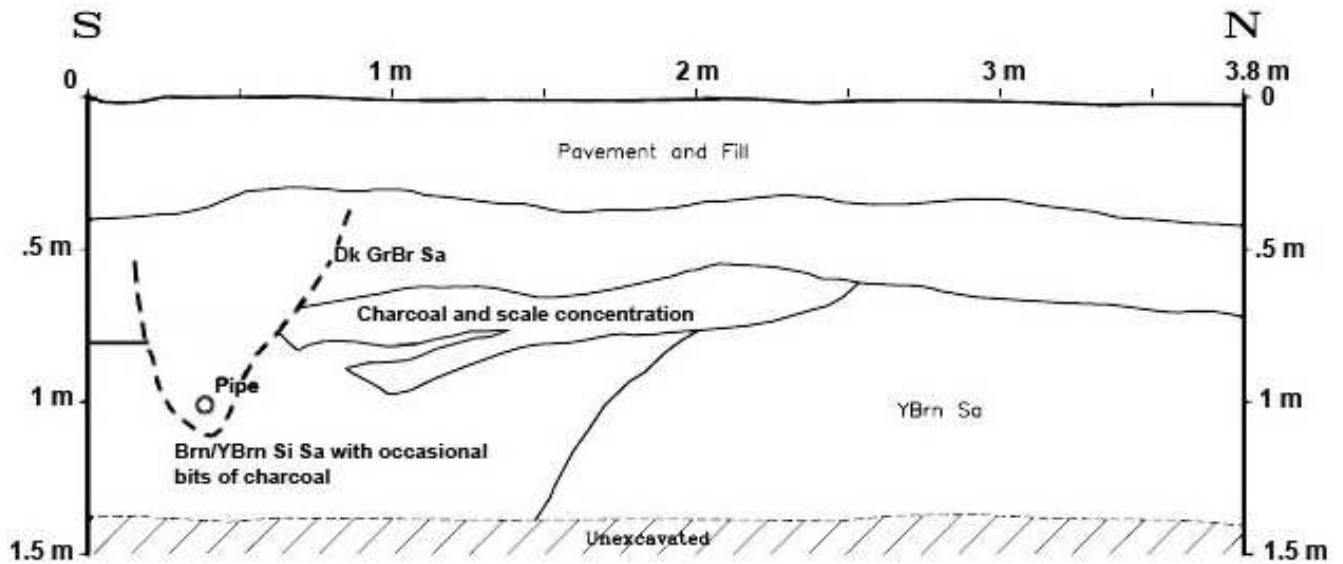
These postmolds contained fragments of decayed wood but did not contain any significant artifacts. Their shallowness, with bases less than 1 m (30 in) below pavement, suggests that the posts were not very tall. Their fill was quite compact compared to the fill of the nearby ca. 1915 postmold in Incident 113 Feature 1 discussed later on. Only a thin layer of dark brown soil was observed overlying these features beneath the brick pavement layer. These facts suggest that they may have represented posts that had been gone for some time by 1915.

**Feature 3 and Incident 103, Feature 1** These two features, exposed by backhoe in separate trenches excavated months apart, appeared to be part of a single deposit (Photos 7.3 to 7.4 on page 231). It was a backfilled and shallow V-shaped trench running at right angles to the street with no pipe or other evidence in the bottom to indicate its purpose. Artifacts recovered from inside Feature 3 before it was completely flooded included abun-



**Figure 7.12:** Photo and profile of Incident 27, Features 1 and 2 looking south. Note that the dark greyish brown soil representing the old road surface is present at right, but not to the left of the utility trench.





**Figure 7.13:** Photo and profile of Incident 27, Feature 3 looking west towards Edward Street. The lower part of the feature appears to have been a deep trench running approximately east to west, probably a backfilled ditch from the eighteenth century outworks of the fort.





**Photo 7.2:** Incident 28 flooded by a water main break, looking north along Lower Broadway Street. The Anvil Inn is at left just out of the picture.

dant charcoal, iron or steel scraps, a hand-wrought bolt, a horseshoe nail, ten square-bodied nails and two pieces of coal slag, all representing sweepings from the blacksmith shop. They also included early nineteenth century domestic refuse in the form of 42 pieces of kitchen bone, five pieces of creamware, two pieces of redware, a piece of stoneware, a white clay smoking pipe stem fragment and one brick fragment.

Incident 103, Feature 1 contained very similar deposits including a great deal of charcoal. Artifacts at that location were recovered from a mixture of soil including part of the feature and some of the overlying charcoal deposit. They included kitchen bone, shell, pearlware, whiteware, redware, brick, mortar, and window glass, as well as blacksmith-related items such as iron scraps, worn out tool bits (steel on iron), four bolts, a hand wrought and one other square-bodied nail, and a horseshoe nail in a matrix of charcoal, some of it in large chunks. This feature was filled in during the early to mid-nineteenth century, primarily with debris from the smithy. In fact, the ceramics in these deposits are suggestive of an early nineteenth century date, a time when no smithy is shown on the maps. While it is certainly possible that a smithy existed there that early, the small sample size of artifacts makes it impossible to be sure.

It was customary for blacksmiths to keep hitching posts or rails, with a watering trough within reach of the horses to one side of their shop door in a broad open area at the front for customers to tether their horses while waiting for shoeing or vehicle repairs (Pickands 2009). It seems likely that this is what the posts and V-shaped trench represent. The trench may have been a watering trough formed by setting planks into a ditch dug in the ground. Its primitive design, together with the early nineteenth century ceramics, suggests it may have been an early feature eventually backfilled and superseded by something more formal. By the decade pre-

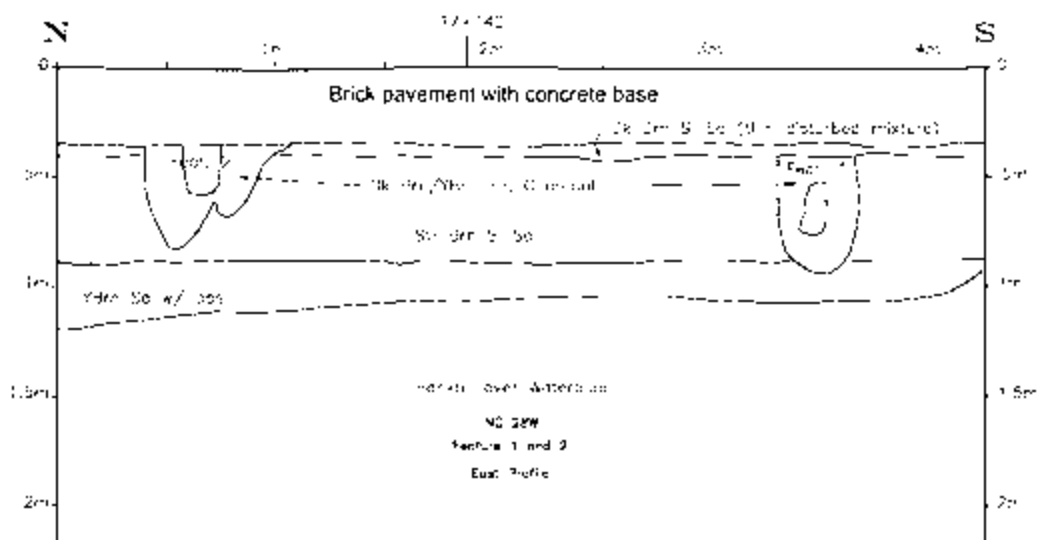
ceding the paving of the road, the business had shifted towards auto repair, and such features would probably have been removed as an impediment to vehicle traffic near the gasoline pump (Figure 7.10 on page 223).

**Feature 4:** This feature (Figure 7.15 on page 232) was an anomalous pit under Lower Broadway in front of the blacksmith shop. In profile, it was nearly 2 meters (6 ft) across at the top just below the old brick pavement and sloped in to a rounded point at its bottom one meter (3 ft) below. The upper 25 cm (10 in) thick layer of the feature was very similar to the charcoal layer in the upper part of Incident 27, Feature 3. No provenience within the feature was recorded for the artifact sample taken under threat of imminent flooding. The artifacts collected consisted of abundant charcoal and a small amount of blacksmithing debris and a couple of brick fragments. Although no notes were taken due to the urgency of drawing a profile before the feature was inundated, the soil appears from photographs to have been somewhat porous. This suggests that, like the postmold in Incident 113 Feature 1, it was filled shortly before the brick and concrete pavement was laid in 1915. Its purpose is unknown. Why the old road surface layer was absent in that location is also unknown though speculation is that it was graded away when the street was first paved with brick.

Possibly related to this pit is a large charcoal stain that was seen in plan the following year (2007) labeled Feature 1 in Incident 183 (Photo 7.5 on page 232). This was just to the east of where the pit was identified and was observed during full depth reconstruction of the Broadway travel lanes during bulldozer grading, which reached a depth of about 75 cm (30 in) below the existing pavement surface. A charcoal concentration was identified as a large amorphous smear though the exact size and shape of the stain was not obtainable under those construction conditions; the bulldozer tended to spread soil along its path of movement rather than making clean cuts, resulting in obfuscated boundaries of soil anomalies as in this case. The smeared area, probably part of the same deposit noted here in Feature 4, measured 180 cm north-south by 80 cm east-west, perhaps extending even further to the east beneath the adjacent street overburden. If this was part of the same thick charcoal deposit, it appears to have been quite large. Again, its purpose is unknown.

### *Incident 113, Feature 1*

This feature (Figure 7.16) appears to be a U-shaped pit intersected by a square postmold. It was overlain by two thick layers of dark charcoal-bearing material beginning just below the gravel pavement bed. The upper layer was soil mixed with charcoal while the lower layer contained a higher proportion of soil. These charcoal-bearing soils were probably the same as the material in



**Figure 7.14:** Photo (top) and section (below) of Incident 28, Features 1 and 2, looking east. Note the thin layer of soil just below the pavement suggesting that Feature 1 was removed before Feature 2. The “backfill” in the lower part of this construction trench was placed to cover the new water pipe just before archaeologists recorded the features.

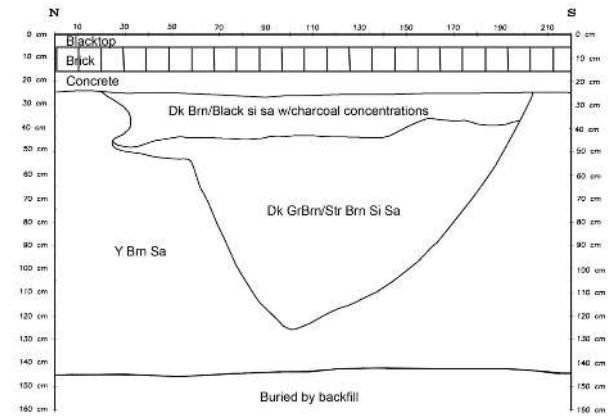




**Photo 7.3:** Incident 28, Feature 3 looking west towards the Anvil Inn. Note the linear shape of the feature and the disturbed soil to either side that may represent the effect of horses' hooves.



**Photo 7.4:** View looking down on Incident 103, Feature 1, apparently an extension of Incident 28, Feature 3. Note the possible postmolds in the north wall.



**Figure 7.15:** Photo (left) and section (right) of Incident 28, Feature 4 looking east towards Lower Broadway. Note the absence of the greyish brown layer representing the old road surface and the apparently porous nature of the feature fill.



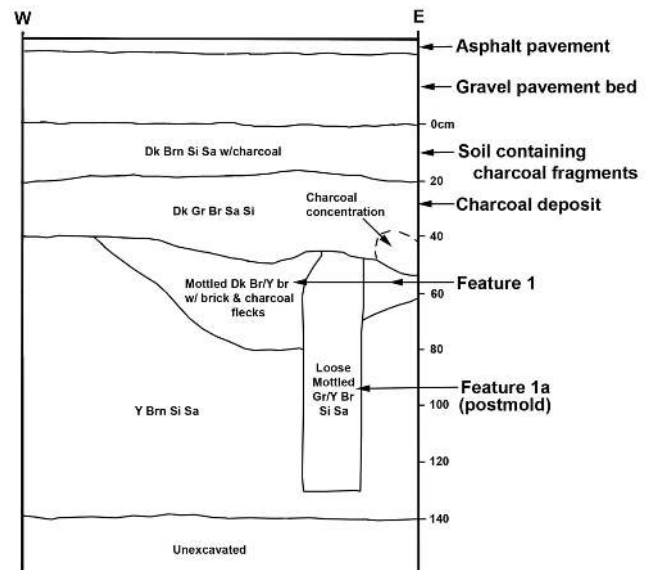
**Photo 7.5:** Incident 183, Feature 1 looking north as it was being exposed by a bulldozer.

Incident 27 Feature 3, only about 1 m (3 ft) away. Unfortunately, this feature was recorded during construction work and it was not possible to thoroughly sample its contents. Nonetheless, the lower charcoal-bearing layer yielded four artifacts: a rivet (undoubtedly from the blacksmith shop), a piece of creamware, a piece of pearlware and a piece of black glazed redware.

Though this number of artifacts is too small to allow for any degree of certainty, it suggests that this deposit dates to not much later than the nineteenth century. The pit feature itself yielded only charcoal flecks and some unidentified brick. The postmold, which begins at the base of the charcoal layer and cuts through the pit feature, was filled with loose soil containing fragments of compacted charcoal dust and some kind of slag, a tiny iron fragment, a piece of coal, and bits of what appears to be limestone and cement. This material is likely related to the operation of the blacksmith shop. The post mold reached about 1.55 m (5 ft) below the street surface while the U-shaped pit reached only about 1 m (3.4 ft) below.

The location of this feature in the middle of Edward Street, which was laid out ca. 1854, suggests that at least the U-shaped pit must predate the street. It is not unlike other small pit features associated with the eighteenth century occupation of Fort Edward, but it is not possible to say for certain whether or not it was part of that occupation. The postmold appears not to be a part of the pit feature, but dug through it. This postmold was stratigraphically overlain by the charcoal-filled layers, so must predate their deposition. Its contents were not solid like the contents of the pit feature, but loose as if they were covered and sealed immediately after filling by the overlying compacted charcoal deposit. If the charcoal was deposited immediately before the 1915 paving of Broadway, that would mean that a post stood there in the middle of what is now Edward Street until ca. 1915.





**Figure 7.16:** North profile photo (left) and section (right) of Incident 113 Feature 1. The bowl shaped feature is cut by a square postmold with overlying layers related to road construction.

It is very difficult to imagine why a post would be in the middle of a street, but if the street had a Y-shaped intersection with Lower Broadway until Broadway was paved, it could possibly represent a sign post in the triangular space between traffic lanes.

### *Incident 188, Feature 1 and 2*

Incident 188 (Figure 7.11 on page 225) was the striping and reconstruction of pavement on Edward Street, which borders the south side of the Anvil Inn. At the time of construction, the asphalt of the street extended up to the side wall of the structure. The removal of pavement and subbase uncovered Feature 1, an undulating lens of brown, mottled soil 5-7 cm thick approximately 34-40 cm below the surface. The lens was visible in the north wall of the construction trench (Photos 7.6 to 7.7 on the facing page), which was situated only a few feet away from the side of the Anvil Inn building. It extended for about 7 m (23 ft) along the trench wall and was punctuated by a shallow, charcoal-filled pit near the southeast corner of the building. This pit was labeled Feature 2 but was only minimally explored. The lens was somewhat darker than the subsoil and contained charcoal related to the blacksmith shop. However, the density of charcoal was much less than in areas out in front of the building along Broadway.

The lens rested on orange-brown sandy subsoil. It was apparently covered by a layer of landscaping fill of the same orange-brown sandy soil before being sealed by blacktop. At what point this was done is not known but it may have occurred in the 1970s when the building was renovated to become a restaurant and the surrounding area was paved.

The only artifacts collected came from the extreme west end of the reconstruction trench at a depth of 75 cm below surface in soils apparently disturbed from a water line construction trench. The artifacts consisted of a kitchen bone fragment, some brick fragments, 35 sherds of a grey salt-glazed stoneware crock and two ironstone sherds, all dating to the nineteenth century occupation of the building. Two prehistoric chert flakes were also found at 42 cm below surface. The Feature 1 lens seems to be a thin remnant of an occupation layer surrounding the blacksmith and carriage shop that was scraped off by grading around the building and subsequently covered by a layer of fill and blacktop. The function of Feature 2 is unknown.

### *Interpretation*

The primary cultural deposit related to the Burke blacksmith shop is the layer of charcoal and smithy sweepings that appears in multiple locations in the street around the building, but not in the dooryard of the shop itself, which seems to have been kept clean. Where the grayish brown soil layer representing the old road surface is present below the brick pavement, this deposit underlies it, suggesting that it was deposited before the road had seen much resurfacing. Its artifact content suggests that it was deposited in the early to mid-nineteenth century, over the ground surface containing features from the eighteenth century and prehistoric occupations. Where it is present, it contains many large pieces of charcoal, a fact that suggests mass disposal whenever the shop no longer had a use for charcoal fuel.

Although coal would have been readily available after the Champlain Canal opened in the early 1820s, char-



**Photo 7.6:** View north of the western half of Incident 188, Feature 1, a thin lens of charcoal visible in the trench wall to the left of the archaeologist.



**Photo 7.7:** View north of the eastern half of Incident 188 showing Feature 1, the thin lens of charcoal, and Feature 2, the shallow pit with soil mixed with charcoal.

coal was often considered superior throughout much of the nineteenth century for making items like wagon fittings that required toughness. Impurities in coal, not yet well understood at the time, often made wrought iron more brittle than if it was forged with charcoal. However, the advantages of coal were that, while it was more expensive, it burned longer and hotter than charcoal and could be stored outdoors, so it came to be preferred by most smiths by the end of the century. It is, in fact, quite surprising that so little coal or coal slag was found in association with this shop. It appears likely that by the time it was in extensive use, the business was disposing of its refuse at a remote location, perhaps because the neighborhood was becoming more conscious of appearances during the latter half of the century.

The dooryard of a smithy was a working part of the business, where customers' horses and conveyances waited for work and, in good weather, horses were often shod. Because of this, hitching posts or rails were normally available there and a watering trough provided, all out of the way of the main entrance. The features observed in this area appear to represent this custom, including several shallow postmolds and what may be a watering trough set into the ground to the left of the entrance.

The adjacent intersection of Lower Broadway with Edward Street, formerly McKie Street, appears to have been, as was often the case with unpaved streets, Y-shaped with a small "island" between the lanes of traffic turning south and north from Edward Street, because there appears to have been a sign post mounted there up until just before the street was paved in 1915.

## 7.2 Utilities

Spurred by the efforts of the major landowners and growing population in the village, a utility infrastructure began to be constructed just after 1800. Many of the later nineteenth century water, sewer, and drainage systems are depicted on original maps archived in the village clerk's office. These had been documented on the DOT project plans before construction began where possible. Much evidence of these utilities was encountered during the archaeological investigations because they were generally crowded within the street and sidewalk alignments where new construction, and by default, archaeological investigation took place.

It should be kept in mind that not all utility disturbances (i.e. old and not so old service connections, sewer and water lines, utility repair trenches, fill layers, etc.) were documented by archaeologists because they were not necessarily conducive to answering research questions about the early settlement of the village. However, several early or somewhat unusual utility features were encountered that did warrant documentation. These included a wooden water pipe, a wooden curb stop water

valve box, and a concrete-covered pipe; all observed in manually excavated DRT units as described below.

In Crisfield Johnson's (1878:320) *History of Washington County*, he briefly describes the village water supply, which involved the construction of an "aqueduct" for supplying water to the inhabitants as early as 1800. This system, under the proprietorship of William Finn, Dr. John Lawrence, David Scovill, and others, drew water from springs north of the village. An 1820 tax roll shows that William Finn was the largest landowner in the town at that time (Bascom 1903:133). There is no description of what this aqueduct was made of or where it was located, but an 1842 map of the lower part of the village (Figure 7.3 on page 220) shows that two of the proprietors, Finn and Scovill (spelled Scovell on the map), each owned several pieces of property along the block of Broadway (then called Lydius Street) between Moon and Notre Dame Streets.

The ownership of these "old aqueduct shares" eventually passed through various hands to become the Fort Edward Water-works Company incorporated in 1855 (Johnson 1878:320). They drew water from two reservoirs fed by perennial springs located about a mile north-east of the village. By the time of Johnson's 1878 history, they had laid about five miles of pipe in a large part of the village. An 1892 map of a proposed water distribution system in the village shows the water mains and hydrants that were installed around that time (Figure 7.17 on the following page). The water for the new system came from springs on land purchased across the Hudson in the town of Moreau in 1893. This was the system primarily in use along Broadway up until new mains were installed for this DOT project. Remnants of the earlier water system were found in 2006 in excavations along the street in the form of a wooden water pipe described below.

### *Feature 11, Wooden Water Pipe*

Archaeological investigations along the block of Lower Broadway between Moon and Notre Dame Streets involved initial data recovery excavations of two proposed utility corridors. These corridors ran along the parking lanes on either side of the street where pavement was removed ahead of time in strips of what were called Data Recovery Trenches (DRTs), six in number. After pavement was removed along these DRTs, archaeologists excavated a series of units within each, from 7 to 14 in number depending on the lengths of each DRT.

DRT 1 was located along the west parking lane adjacent to the curb in front of 73 Broadway where the ghost of a decomposed wooden water pipe (Feature 11) was observed. The location of this feature is depicted on Figure 7.1 on page 218, the plan of the nineteenth century features associated with the Fort Edward Village Site. With Units 8 through 11 transecting the pipe trench, we could clearly see the outline of the original construction





**Figure 7.17:** Detail of the 1892 Map of the (Water) Distribution System, by Steven E. Babcock for the Board of Water Commissioners of the Village of Fort Edward (map courtesy of the Fort Edward Village Clerk's Office).

trench in plan and in the north and south wall profiles of the units (Figures 7.18 to 7.21 on pages 237–238). This wooden water pipe represents part of the village's earliest utility infrastructure and may be part of the early water system put in by Finn, Scovill, and others. The pipe trench was parallel to the curb about 1.4 m (4.5 ft) away, buried at a depth of about 90 cm (3 ft) below the modern pavement surface. We exposed about 8.5 m (28 ft) of the former pipe in the four units, though none of the actual wooden logs remained.

Each unit revealed a rusted strap metal (iron) ring that once held the pipe sections together. They each had remnants of wood grain incorporated into the rust on the inside surfaces of the metal. These rings varied in size from 12 to 15 cm (4.5 to 6 in) in diameter and were found spaced at various distances along the remnant pipe trench adjacent to, or surrounded by, round clumps of grayish clay soil. It is likely this clay soil, in proximity to the iron rings, marked joints between lengths of hollowed-out logs forming the continuous water supply line. The metal straps or clamps were reinforcing collars that would have held the female ends of the hollowed out wooden pipes where they joined the male ends. The clay soil may have been used as a joint sealer.

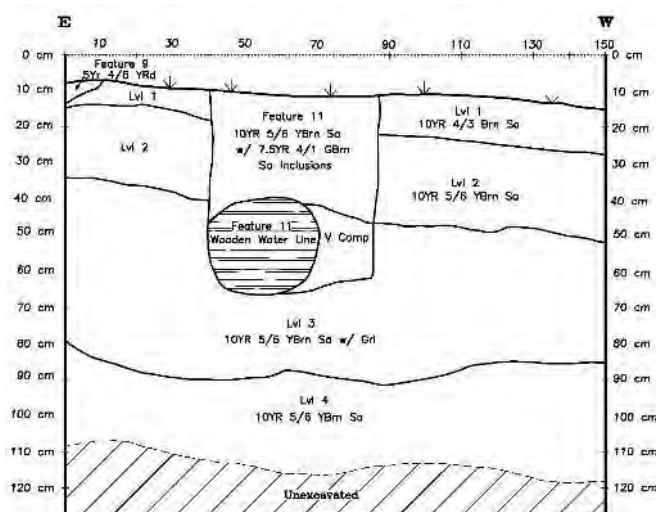
Aside from the clay pockets, the soils along the pipe trench bottom appeared as one or two parallel lines of compact fine grayish sand flanking a strip of lighter yellow brown sand of a much looser consistency or with gray clay inclusions. In Unit 10 especially, this was in-

terpreted as either the remnants of minerals that built up inside the pipe and were left in the soil as a shell after the wood decomposed, or perhaps there was a non-natural bedding material such as clean sand put in the bottom of the pipe trench before the pipe was put in during its construction (Photo 7.8 on page 239, Figure 7.22 on page 239).

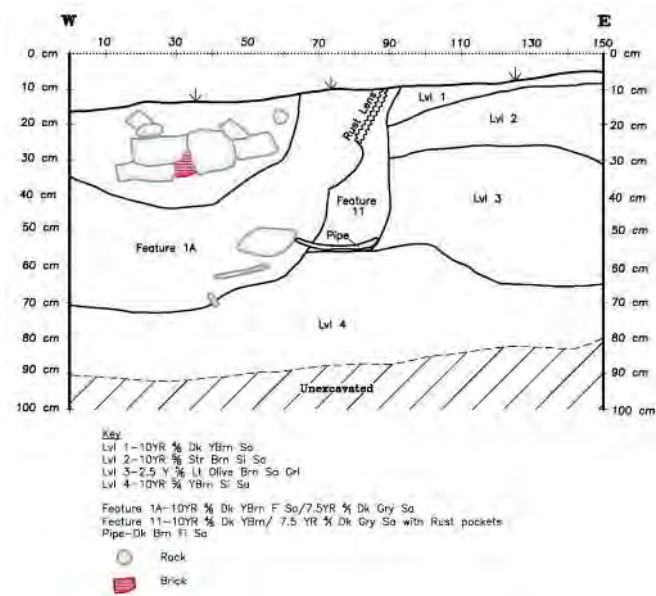
There was a distance of 2.9 m (9.5 ft) between the southernmost and middle rings, and a distance of 1.7 m (5.5 ft) between the middle and the northernmost rings, suggesting varying pipe lengths. There were 50 cm (20 in) unexcavated balks between each unit so there is a chance other unexposed rings marking pipe joints existed in those locations. If so it would mean there were shorter lengths of pipe than what we uncovered (Photo 7.9 on page 240).

While observing our excavations, Paul McCarty, the Fort Edward town historian, gave us information about a wooden waterline in the village that he guessed was constructed in the 1830s or 1840s, and was used until 1895 when a new water system was put in. As town historian, he had curated a short preserved section of a wooden reducer or pipe coupling from the wooden water line found somewhere else in the village (Photo 7.10 on the next page). It had a riveted strap-iron reinforcing ring or collar around the wide end and the other end was hand hewn and tapered to a smaller diameter to be inserted into a wider opening in another section of pipe. This section was about a foot long, was 4.5 inches

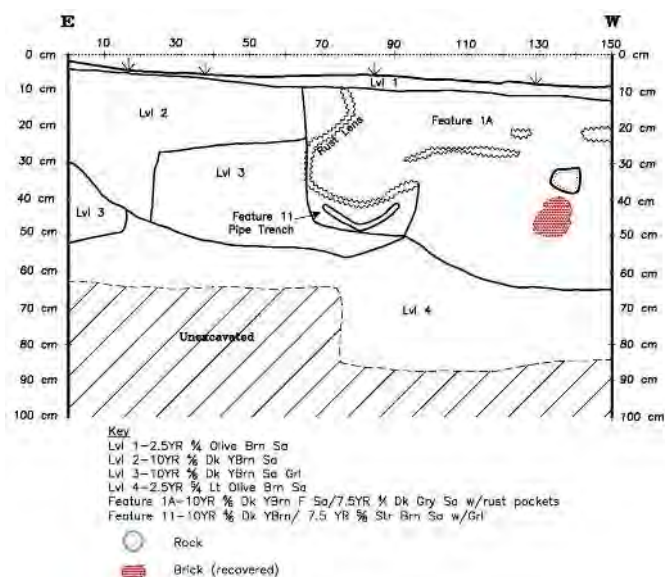




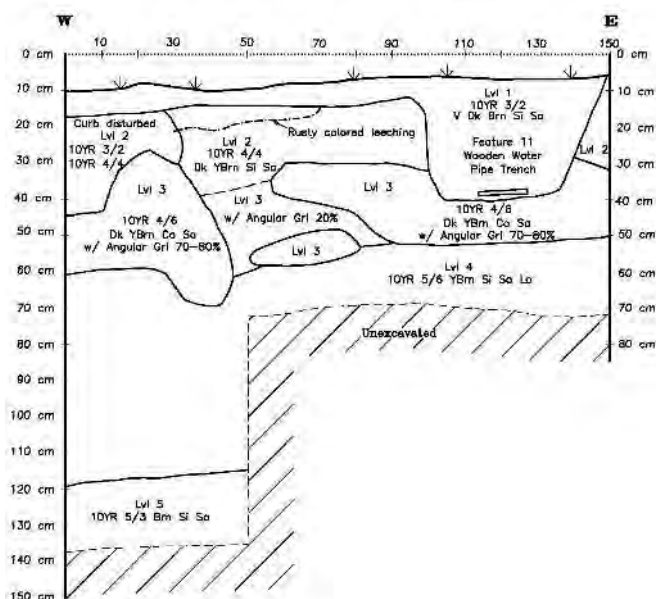
**Figure 7.18:** South profile photo (left) and section (right) of DRT 1, Unit 8 showing Feature 11.



**Figure 7.19:** North profile photo (left) and section (right) of DRT 1, Unit 9 showing Feature 1A intruding into the wooden pipe trench.



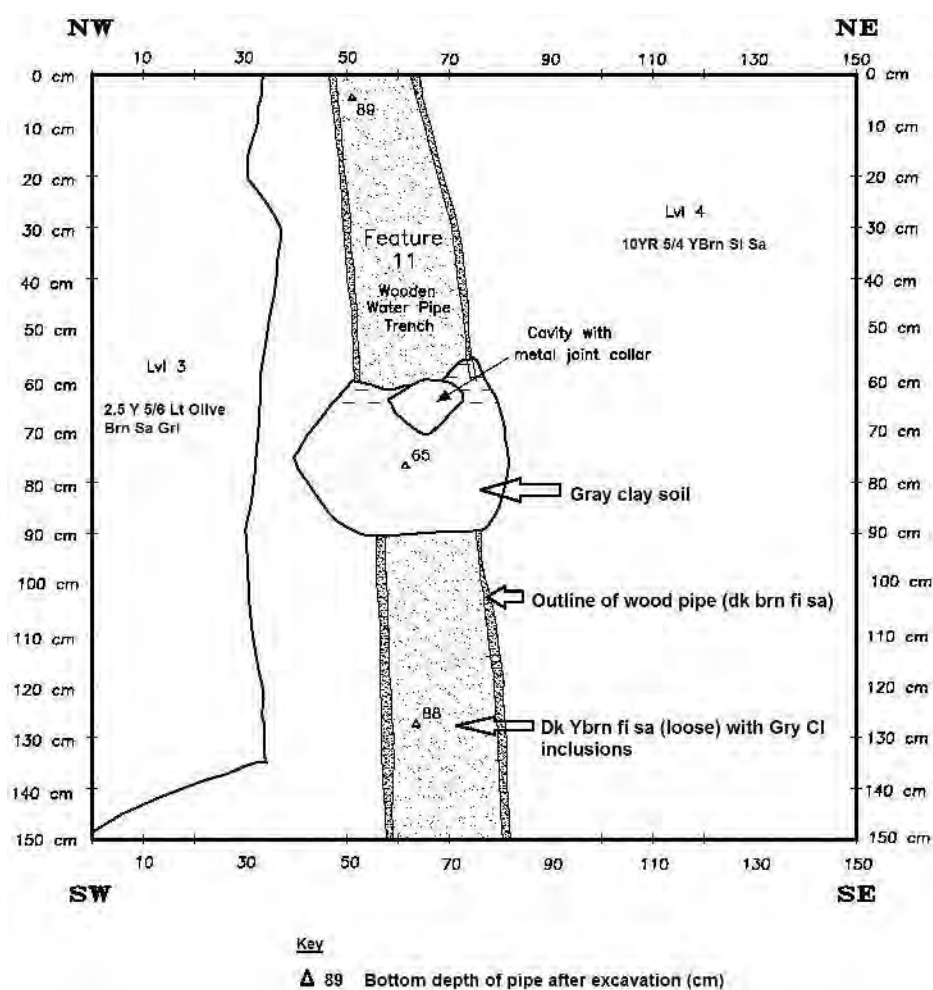
**Figure 7.20:** South profile photo (left) and section (right) of DRT 1, Unit 10 showing Feature 1A intruding into the wooden water pipe trench.



**Figure 7.21:** North profile photo (left) and section (right) of DRT 1, Unit 11 showing Feature 11, the wooden water pipe trench.



**Photo 7.8:** View of the pipe cast of Feature 11 in DRT 1, Unit 10 with the clay soil in the middle that surrounded the metal pipe strap (left) and view of the bottom of the cleaned-out pipe cast (right) showing the gray silt bottom.



**Figure 7.22:** Plan of wooden water pipe cast after excavation in DRT 1, Unit 10.





**Photo 7.9:** Iron straps found at the joints in the wooden water pipe in DRT 1 units.

in outside diameter measured at the iron collar, was debarked along the outside, and had flattened outside surfaces making the pipe somewhat octagonal. The diameter was comparable to the iron rings we found archaeologically leading to the hypothesis that the pipe trench and rings we found were part of a larger system in the village.

Wooden water pipes were frequently used by municipalities in Europe and the United States for firefighting and as domestic household water in the eighteenth and nineteenth centuries according to Jon Schladweiler's sewer history web site (2004). Remnants of these pipes are occasionally encountered, like here with Feature 11, during new utility construction.

In Unit 9, a round-bottomed pit (Feature 1A) was encountered intruding from just below the modern road base. It was somewhat oblong in shape horizontally, measuring approximately 130 cm (51 in) across at its widest exposure (Figure 7.23 on page 242). Most of the feature was exposed in Unit 9 but it extended into Unit 10 by about 15 cm (6 in). This pit, just to the west side of the water pipe trench, intruded through Levels 2 and 3 into Level 4 by 10 or 15 cm (6 in), which put the deepest part of the feature at about 58 cm (22 in) below the base of the current road pavement. The soils in this pit were mottled light and dark gray brown sands and gravels containing some stone building rubble and brick fragments. There were also noticeable thin lenses of a rusty colored soil throughout the upper half of the feature. In the north wall of Unit 10, there was a noticeable concentration or cluster of fairly large fragments of what look like building stone (Figure 7.19 on page 237).

Based on historically known wooden waterlines, with the inception of the use of hollowed-out wood log pipes for water transmission, it became apparent in some areas that they could be a source of water to fight fires, especially in densely populated areas.

"When a fire occurred, the firefighters (volunteers) dug down, found the log pipe, and augured a hole through it. Water would fill the excavation, forming a wet well to either get buckets of water from, or serve as a reservoir for pumps to pull water from. When the fire was out, the hole in the pipe would be sealed by driving a wood plug into it. The plug's location was often noted and marked before the pipe was covered over, so the plug could possibly be used as a source the next time instead of creating a new hole. . ."

(Schladweiler 2004)

This is the origin of the term "fire plug." The Feature 1A pit is suggestive of a function like this since it intrudes into the wooden pipe trench, though it could also possibly be the result of some kind of waterline repair. The stone rubble concentration could have been put in the hole as a form of fill to bring the ground surface back to level.

No other signs of the actual wooden water pipe itself were seen in DRTs 2 and 3 north along the west side of the street, but archaeologists saw two other locations during construction monitoring that produced iron pipe collars like these. Incident 54 along the eastern side of the street opposite the Anvil Inn produced a circular metal strap in situ at approximately 110 cm (3.6 ft) below the curb top (Photo 7.11 on page 243). Only a small grayish stain, a remnant of the wooden water pipe, remained along the vertical side of the construction trench. This indicates that the water pipe must have existed along the eastern side of the street as well as along the west, either as two water mains or perhaps the pipe crossed Broadway as a single main to run along the east side near the corner.

A similar-looking strap metal ring was found about 25 m (82 ft) north of Feature 11 along the west side of the street near the driveway of the Fort Edward Art Center (83 Broadway) during monitoring of Incident 168, a gas line hook up. It was found in the upper meter (3 ft) of soils in the trench near the curb. It isn't conclusively a portion of the wooden water pipe but if it was it indicates that it extended north of DRT 1.

### ***Feature 30, Wooden Curb Stop Water Valve Box***

A roughly 60 to 70 cm (24 to 27 in) wide water service trench ran east to west across the north end of Unit 3 and into the balk between Units 3 and 4 in DRT 5 (Figure 7.1 on page 218). This was along the east side of the street in front of the Kilmer Funeral Home at 82 Broadway. A 1-inch diameter section of lead water pipe lay at the bottom of the trench at 170 cm (5.5 ft) below the sidewalk level. It probably originally tapped into the old water main across the street but the lead pipe was cut





**Photo 7.10:** View of short section of wooden water pipe (left) and its iron strap end (right) saved by Paul McCarty, the town historian.

and only about 34 cm (13 in) remained in the ground exposed by our excavations. It was attached horizontally to a shut-off valve at the 170 cm depth at the base of a long, vertical box shaft made of four pieces of 1 inch by 6 inch wood nailed with machine cut nails 4 inches long.

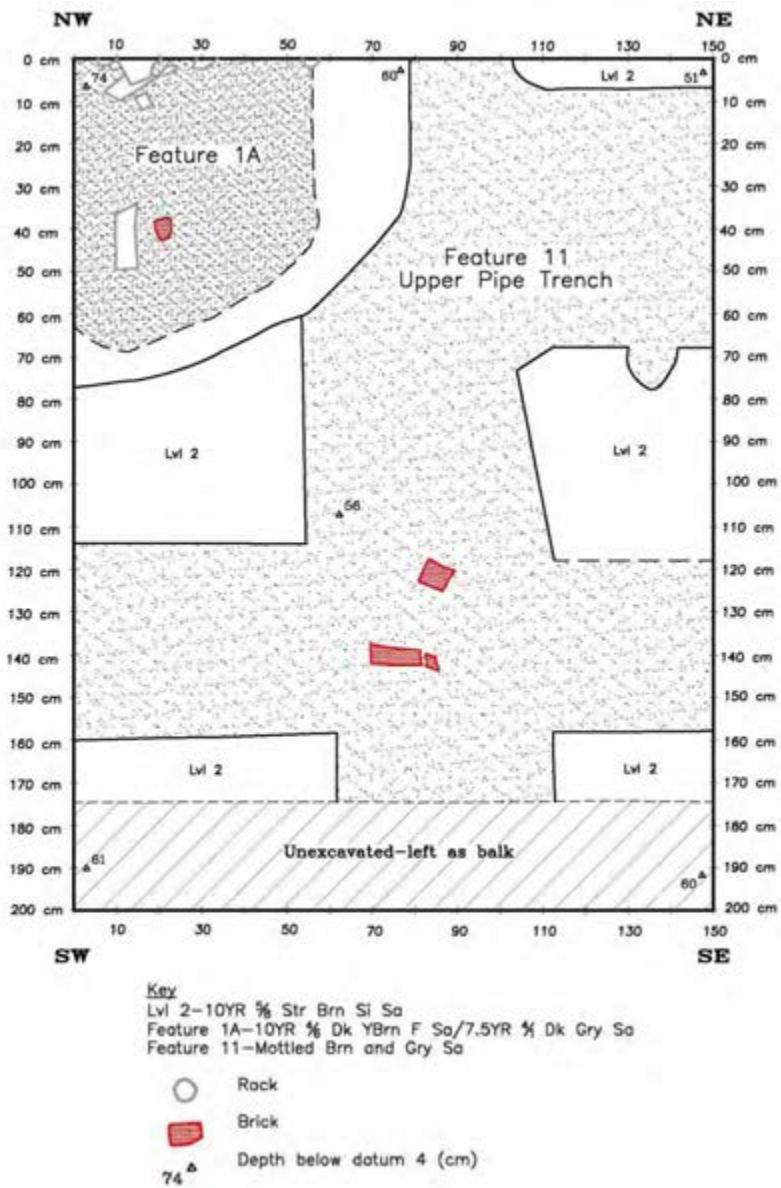
This box would have provided ground-surface access to the valve as a curb stop shut-off to the water service leading to the house on that property (Photo 7.12 on page 243, Figure 7.24 on page 244). The vertical wooden shaft, with an internal dimension of approximately 6 inches by 6 inches, rested at its bottom end, on either side of the valve, on a rock and a brick, to raise it up above the valve slightly (Photo 7.13 on page 244, Figure 7.25 on page 245). This was just above the level of a concrete-covered utility pipe (see Feature 16 below) that ran north-south parallel to the curb along the street, the water service having been installed sometime after the cement-covered pipe was installed. The water valve did not connect to the concrete-covered pipe. Presumably the box originally reached up to the ground surface at its time of construction but only the lower 60 to 75 cm (23 to 30 in) of the box remained.

Artifacts include six machine cut nails with wood still attached and one very thin wire nail. Thirteen fragments of the wood were saved, some that have a whitish substance, possibly paint or whitewash, on some surfaces. Also found were one oyster shell fragment, seven early to mid-nineteenth century ceramics, one small clear glass fragment, four coal, and 12 glassy slag fragments. This is typical nineteenth century sheet midden material from the street along with the fragments of the curb stop box material and footings. The footings, which appeared to be simple stabilizers placed at the base of the box, consisted of one incomplete handmade brick with mortar on it, and a rock.

The large Second Empire-style brick house now on this property (Kilmer Funeral Home at 82 Broadway), was constructed ca. 1875 by S. R. Durkee to replace an earlier structure owned by him on that corner. On the 1842 Ellison map (Figure 7.3 on page 220) a house on that corner was owned by William Finn, mentioned earlier in connection with the early water company. This house was probably the same house shown on the 1830 Holmes Hutchinson map of the canal, which does not list owner's names. This lead pipe and curb stop could have provided water to that earlier house. The water service to the current house apparently connects to the 1892 water main along Notre Dame Street since it was not connected to the new water line installed on the west side of Broadway in 2006 as were all the other houses to the south along Broadway. This abandoned water pipe and curb stop valve box was probably a connection to the earlier house on the lot from whatever water line existed in Broadway prior to the 1892 construction.

### ***Feature 16, Concrete-covered Pipe***

Another abandoned utility that was found during data recovery unit excavations and in utility trench monitoring was an iron pipe covered on the outside in concrete and lined with concrete on the inside. It was only found along the east side of the street in the stretch between Moon and Notre Dame Streets (Figure 7.1 on page 218), a length of 140 m (460 ft). Observed in DRTs 4, 5, and 6, and also in Incident 56, it was best documented in DRT 4 Units 1 and 2 where it was completely uncovered and a sample of the pipe sawed out and collected. It was approximately 85 cm (2.7 ft) below the surface in DRT 4 (Photo 7.14 on page 246; Figure 7.26 on page 246). Where it was encountered in Incident 56 near Notre Dame Street, it was 1.5 m (5 ft) deep.



**Figure 7.23:** Plan of DRT 1, Unit 9 showing the outline of the pipe trench running north-south and the intruding Feature 1A. The east-west trenches are other utility lines.

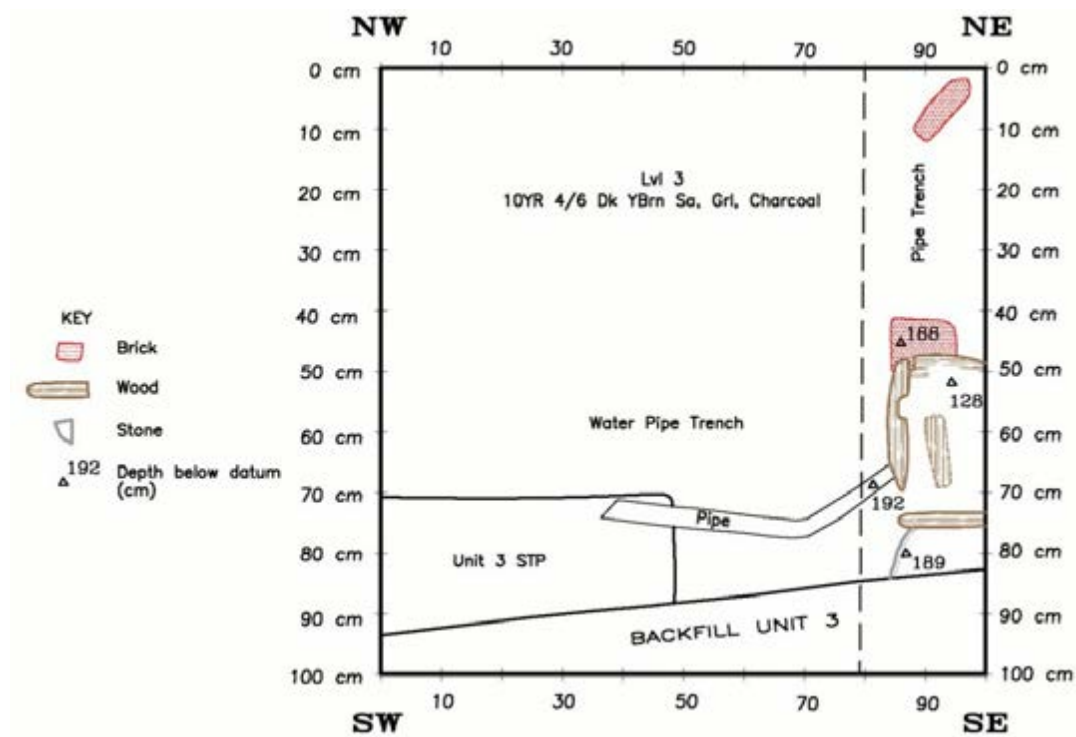


**Photo 7.11:** Joel Ross holding part of the metal strap from the decomposed wooden water line along the east side of the street in Incident 54.



**Photo 7.12:** Plan view of the lead water pipe extending out of the bottom of the vertical wooden box of the curb stop valve in Unit 4, South Extension.



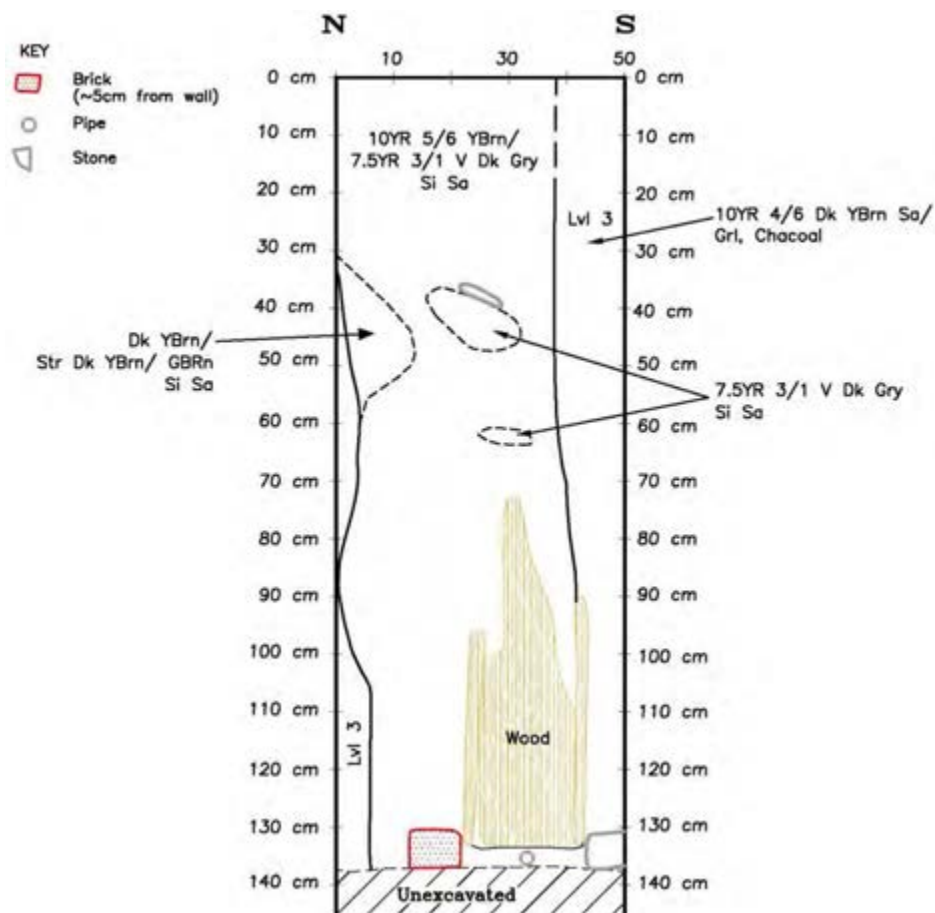


**Figure 7.24:** Plan of Feature 30, the lead water pipe and wood remnants of the valve box.



**Photo 7.13:** View of the base of the wooden valve box where it rested on a brick and a rock just above the shut-off valve to the lead pipe.

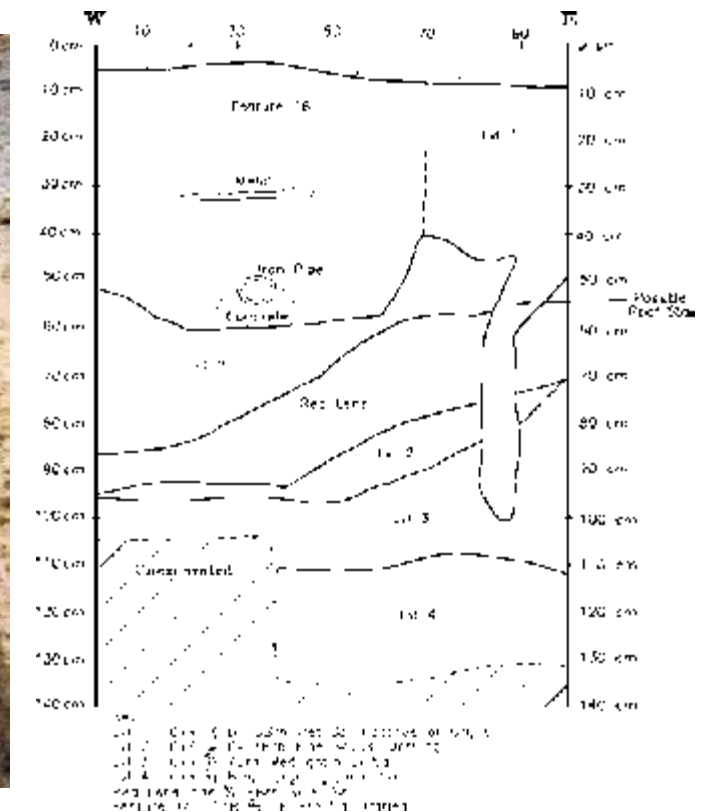




**Figure 7.25:** East profile of Feature 30, the remains of the wooden water valve box above the lead water pipe.



**Photo 7.14:** View west of the concrete-covered pipe in DRT 4, Units 1 (left) and 2 (right).



**Figure 7.26:** North profile photo (left) and section (right) of DRT 4, Unit 1 showing the concrete-covered pipe at the bottom of the Feature 16 trench.



**Photo 7.15:** Segment of the pipe that broke at a narrow corroded spot. The sawed part shows the concrete lining the inside surface of the pipe as well as the thicker outer coating.

The pipe itself was rolled wrought iron, fairly thin, 7.5 cm (3 in) in diameter, and lined on the inside with concrete roughly 1 cm (.39 in) thick (Photo 7.15). The coating on the inside forms a smooth bore that measures 6 cm (2.3 in). From the way the concrete coats the outside of the pipe, it appears that the uncoated pipe was laid in a 60 cm (24 in) wide construction trench in a bed of concrete at the bottom, after which a coating of concrete was applied on top and roughly smoothed with a trowel. It was thicker at the pipe joint as seen in Photo 7.14 on the preceding page. On the pipe segment removed from Unit 1, some of the thickest part of the concrete was removed in a strip along the length of the pipe with a gas-powered circular saw to reveal the pipe joint. The pipe joint was a cylindrical sleeve of iron about 13 cm (5 in) long (Photo 7.16 on the preceding page), presumably sealed with concrete within. There was a distance of approximately 5 feet between the two joint sections revealed in Units 1 and 2.

The function of this utility pipe is unknown at this time. The small size of the pipe would rule out its use as either sanitary sewer or storm runoff pipe. The concrete lining would suggest it carried a substance corrosive to iron. It was first speculated it was an abandoned coal gas transmission line for street lighting or house hold lighting, perhaps from the coal gas generating plant two blocks to the east of this location. This plant was operated by the United Gas, Electric Light and Fuel Company of Sandy Hill and Fort Edward from 1899 until sometime in the second decade of the twentieth century. However, the lining of the pipe was not stained with residue and it is not apparent that there would have been a need to line the inside of the pipe against corrosion if it was used



**Photo 7.16:** This meter-long pipe segment, removed from DRT 4, Unit 1 contained a pipe joint revealed after a strip of the thick part of the concrete was sawed away.

for gas. With gas transmission pipes there was a need to seal the joints against leakage though. According to Hole (1921:60) on the distribution of gas, some gas pipes that were dug up in Cambridge, England from as far back as the 1840s used cement in the making of the joints. Our pipe was lined throughout.

The technology for lining pipes with cement or concrete material underwent various improvements over time as per an 1873 patent for such by Melvin Stevens (US Patent No. 13790), and another one from 1908 by H. B. Hodge (US Patent No. 922480A). These focused on improving the pipe-joint coupling techniques. In the case of the later patent description details, the improvement was for joining specifically water pipes that were, up till then, pre-lined with cement except at the joint ends, where fresh cement had to be applied inside the joint at the time of laying, and then allowed to set for three to four weeks before putting pressurized water in the line. The new patent was for a type of lead joint sealer and flange system that allowed immediate use of the cement lined pipe.

If Feature 16 was a water pipe it was likely installed sometime in the mid-nineteenth century before the new water distribution system was put in in the 1890s, perhaps as a replacement for the earlier wooden water line. What was notable about this particular utility pipe is that it was not observed by the archaeologists in any of the other utility trenching that was monitored in the village, nor was that type of pipe familiar to the very experienced construction foreman who used his saw to remove the segment uncovered in Unit 1.

## 7.3 Infrastructure

### *Bond Creek Viaduct*

The creek that once served as the southern end of the “Great Carrying Place” from the Hudson River at Fort Edward to Lake Champlain has had several names since the first European settlement at Fort Edward in the eighteenth century. Beauchamp (1907:240-1) gives Algonquian names for the carry between it and Wood Creek and for the site of Fort Edward itself, but gives no name specifically for Bond Creek. During the years up to 1830 maps and documents refer to this stream as “Fort Edward Creek,” a name that continued in sporadic use throughout the nineteenth century, while maps from 1830 to 1896 also call it “Little Wood Creek.” The 1898 plans for the repair and reinforcement of the Champlain Canal aqueduct over the creek (Figure 7.33 on page 256) also call it “East Creek.” It is likely that at any given time, it was locally referred to by more than one name. During the twentieth century it acquired the name “Bond Creek,” the name used in this report.

On the earliest maps of the military road that became the Waterford and Whitehall Turnpike, the road is shown crossing Bond Creek approximately at the same location as the present viaduct. This fact has been verified archaeologically by the discovery, in October 2006 (Incident 82), of the remains of a mid-eighteenth century fireplace, almost certainly the fireplace associated with the blockhouse labeled “C” on the 1758 plan of Fort Edward (Hulbert 1907, Figure 7.27 on the facing page). This fireplace feature is located in much the same relationship to the modern viaduct culvert as was the blockhouse to the earliest wooden bridge. This fireplace is discussed in detail in Chapter 6, the section on French and Indian War features of this report.

Although it is unlikely that the wooden bridge at the crossing shown in Figure 7.27 on the next page survived intact until the War of Independence, it was undoubtedly replaced by another or repaired at that time, if not more than once, before the construction of a toll bridge was authorized by the legislature in 1813. During the first years of the nineteenth century, plans were made to bypass this bridge site by continuing Broadway directly along Montgomery Street and across the creek. From there it was to run behind the Old Fort House Museum (originally the Patrick Smyth house), rejoining the old road to the south of the creek (Paul McCarty, pers. comm. 2006). The fact that the Fort house has a “front” entrance on what is now the back side is evidence of these plans. The plans were never brought to fruition, however, and when the Waterford and Whitehall Turnpike was constructed in 1808 it crossed the creek at the original location.

In 1813, the State legislature incorporated the Fort Edward Bridge Company to build a toll bridge over “a stream of water called the Fort Edward Creek... at the

place where the present bridge stands” (State of New York 1815). This was after being petitioned by William Finn, Ebenezer Kimball, and other early residents of the village, with an initial stock offering of a total of one hundred shares at three dollars per share. It was to be no less than sixteen feet wide and built in a “substantial and workmanlike manner” with permission to construct a toll-house and gates. As with the turnpike, tolls were specified with exclusions for local residents on their own household business, those passing to or from church, and military traffic. The act of incorporation also specified that when the tolls collected had paid for the construction costs plus twelve percent interest and costs of maintenance, the bridge would become the property of the state.

Shortly afterward, in 1818, the Champlain Canal opened at Fort Edward. Its early course ran where State Street runs today (Figure 7.28 on page 250). From there it crossed Lower Broadway and entered the Hudson through a lock in the mouth of Bond Creek, which had been straightened for this purpose. From there it continued via slack water navigation to Fort Miller. This method was soon determined to be impractical at low river levels and the canal was realigned, the new section opening in 1827, running overland to Fort Miller and Northumberland and bypassing the old alignment in Fort Edward. This old alignment was filled in over time, beginning with the section between Broadway and the Hudson River. An 1842 map of the village (Figure 7.3 on page 220) shows it as still open to Broadway. The section above Notre Dame Street remained open into the twentieth century because the repair shops for the canal were located there (Craig Williams, pers. comm. 2013). The section below Notre Dame Street was filled in and became “Old Canal Street,” today known as State Street.

The new section of the canal crossed the creek via an aqueduct adjacent to the east side of the turnpike bridge (Johnson 1878; Whitford 1906:418-9). This is visible on Figure 7.29 on the preceding page, the Fort Edward Sheet of the 1830 Champlain Canal Survey Map Hutchinson. At the time, the aqueduct was wooden with stone abutments, and the Fort Edward Bridge Company bridge and much of the road was not yet raised upon a viaduct. Under the original form of the 1827 creek crossing, the highway and bridge were at a lower level than the canal. The early wooden aqueduct, and with it the bridge, were very vulnerable to damage when Bond Creek flooded, and in 1838 the wooden aqueduct was replaced by a “culvert” of “substantial hydraulic masonry” (Whitford 1906:422).

At an unknown date, perhaps along with the construction of the new culvert in 1838, the turnpike and its bridge were raised on a viaduct to a level approximating that of the canal, supported by a stone retaining wall on the west side. Later newspaper accounts attest to the presence of such a viaduct, as an article relating to repairs to be made consequent to an 1868 flood refer to





**Figure 7.27:** Detail of a plan of Fort Edward ca. 1758 (Hulbert 1907) showing the road crossing Bond Creek near the present location of the viaduct (Crown Collection Series I, vol. 3, no. 23)

the appropriation of funds for "...rebuilding protection wall on highway at Fort Edward, Washington County, carried away by a break in the canal..." (Auburn Weekly News 1873). This clearly implies that the wall was in place prior to that time.

The stone culvert built in 1838 and the retaining wall of the viaduct adjacent to it were apparently not yet substantial enough, because during the flood which occurred in September of 1868, "The large stone culvert at Fort Edward was almost entirely swept away and both banks [of the canal] which are some fifteen to twenty feet high at that place were carried away to a depth of some ten feet below the canal bottom," i.e. to the bottom of the creek (Buffalo Daily Courier 1868). Plans were made for the reconstruction and reinforcement of 1,300 feet of the canal and for the construction of a new aqueduct. It was enacted by the legislature (Chap. 877 Laws of New York State, 1869), and reported in several newspapers, that an appropriation was to be made for the construction of a new stone aqueduct over Little Wood Creek:

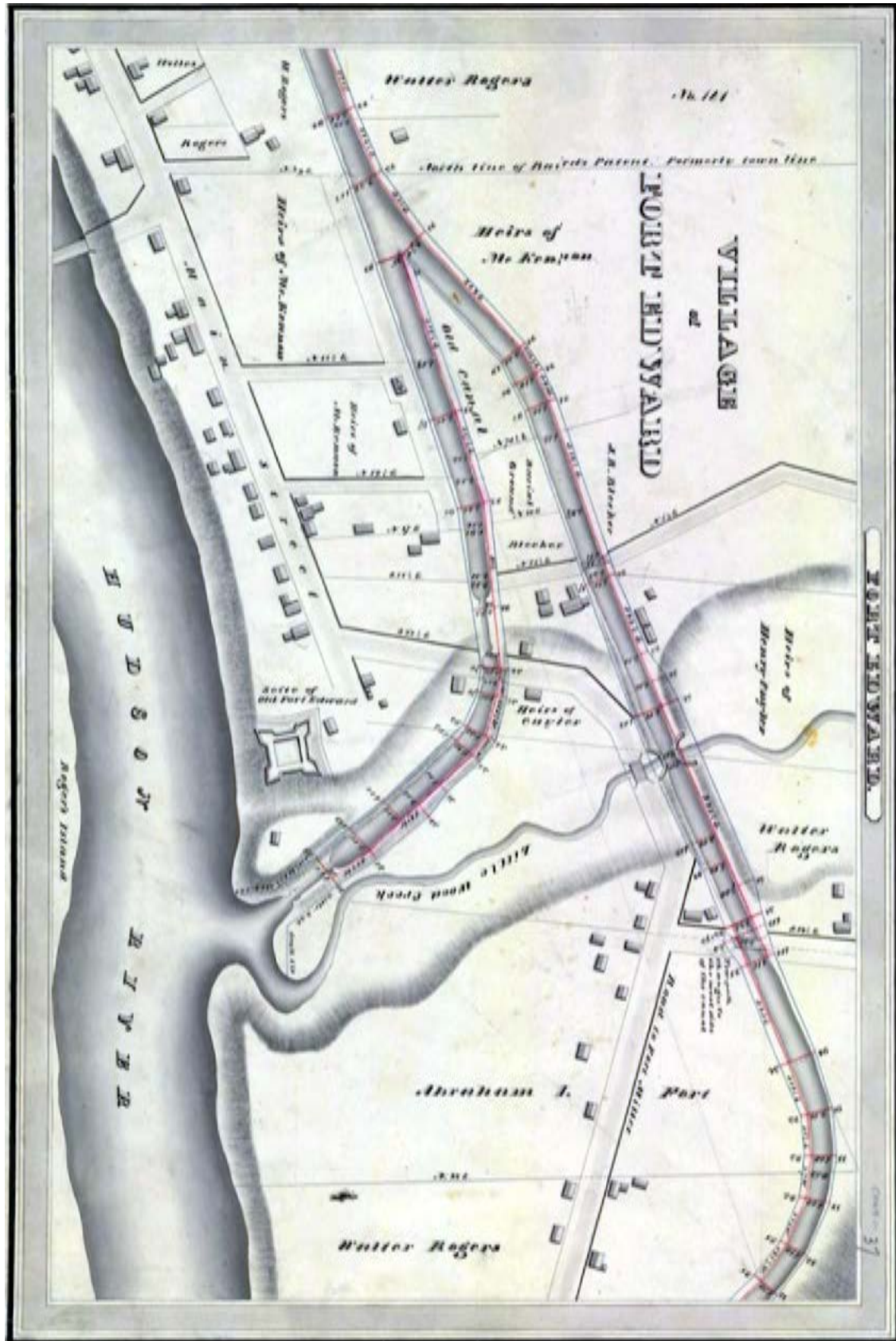
"...in lieu of the stone culvert destroyed by the break on the thirteenth of September last, the sum of three thousand dollars, or so much there of as may be necessary; this appropriation shall be applied to pay the difference between the cost of an aqueduct on the enlarged plan; appropriated to ordinary repairs

of canals"

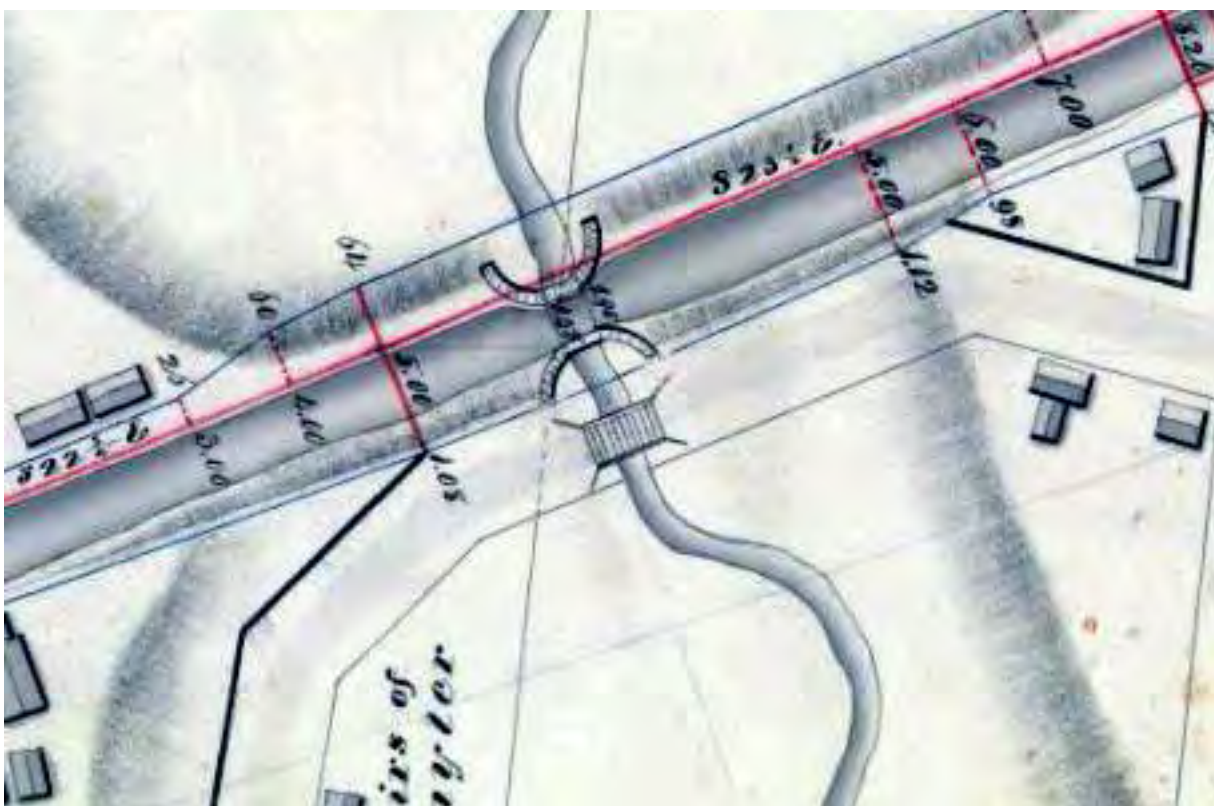
(Brooklyn Daily Eagle July 29, 1869)

The new aqueduct, constructed to the dimensions of the enlarged canal, was to be 50 feet wide with a ten foot towpath. Figure 7.30 shows the plans for this and for a new wooden bridge carrying Lower Broadway over Bond Creek.

The aqueduct and culvert were reconstructed accordingly. Reconstruction of the viaduct for the road, however, apparently had to await further appropriations. As reported in several newspapers in 1873, the state allocated money for the completion of the bridge over the Fort Edward feeder (see the section of this report on that bridge) and for "rebuilding protection wall on highway at Fort Edward, Washington County, carried away by a break in the canal..." erroneously reporting the date of the break as April 1869 (Auburn Weekly News 1873). The new bridge, and the road itself, raised on the viaduct, were supported by a rebuilt stone retaining wall along the west side. This appears to have been the same wall, now buried, that was still visible at the beginning of this construction project (Photos 7.17 to 7.18 on pages 251–252). The 1869–1873 bridge and aqueduct abutments were integral with the retaining wall and channelized the creek between two stone masonry walls with a wooden "apron" lining the bed of the creek. They were, as may be seen in Figures 7.30 to 7.31 on pages 253–254, built upon a substantial bed of wooden pilings driven into the mud beneath.



**Figure 7.28.** Fort Edward sheet of the Champlain Canal Survey Map (Hutchinson 1830) showing the "Old Canal" alignment from 1818 and later alignment ca. 1830.



**Figure 7.29:** Detail of the Fort Edward sheet of the 1830 Champlain Canal Survey Map (Hutchinson 1830) showing the bridge over the creek.



**Photo 7.17:** The viaduct in 2007, looking south. This view shows the walls built in 1869 with today's new concrete reinforcement lined with corrugated steel enclosing the box culvert inserted in 1968.





**Photo 7.18:** The viaduct in 2006 as seen from the south, with the old sash-and-blind factory in the background. The remains of the Old Champlain Canal berm are at the right.

After 1873, the bridge consisted of two 13 foot traffic lanes bounded and separated by triangular wooden trusses braced with iron rods and had two exterior 4 foot sidewalks with cross-batten railings, all supported by the stone abutments that served to channelize the creek. The abutments and culvert walls, if not the retaining wall along the west side of the viaduct as well, were vertical at this time. This viaduct is depicted on the Burleigh Lithograph Company 1892 bird's eye view of Fort Edward (Figure 7.32 on page 255). On this map and in Figure 7.19 a small house is depicted standing against the retaining wall near the north end of the viaduct, apparently a toll house. This may indicate that the bridge was still a toll bridge as late as that time.

In the decades following 1873, wear and tear and the destructiveness of the periodic freshets on Bond Creek continued to cause general deterioration and even major damage. On May 3, 1893 the *Glen's Falls Morning Star* reported that "The collapse of the canal aqueduct wall in Fort Edward, reported in yesterday's *Star* will not interfere with navigation. The wall was built twenty years ago." This report appears to confuse the viaduct wall with the aqueduct, because in 1894 the assembly passed a bill (Chap. 561) appropriating \$1500.00 "for the construction and repair of a stone wall in the village of Fort Edward, located on South Broadway, near the aqueduct of the Champlain Canal" (*Glens Falls Morning Star*, April 13, 1894; *Auburn Weekly Bulletin*, July 19, 1894).

The wall described appears to have been the one constructed twenty years before, in 1873. A subsequent report assured the public that:

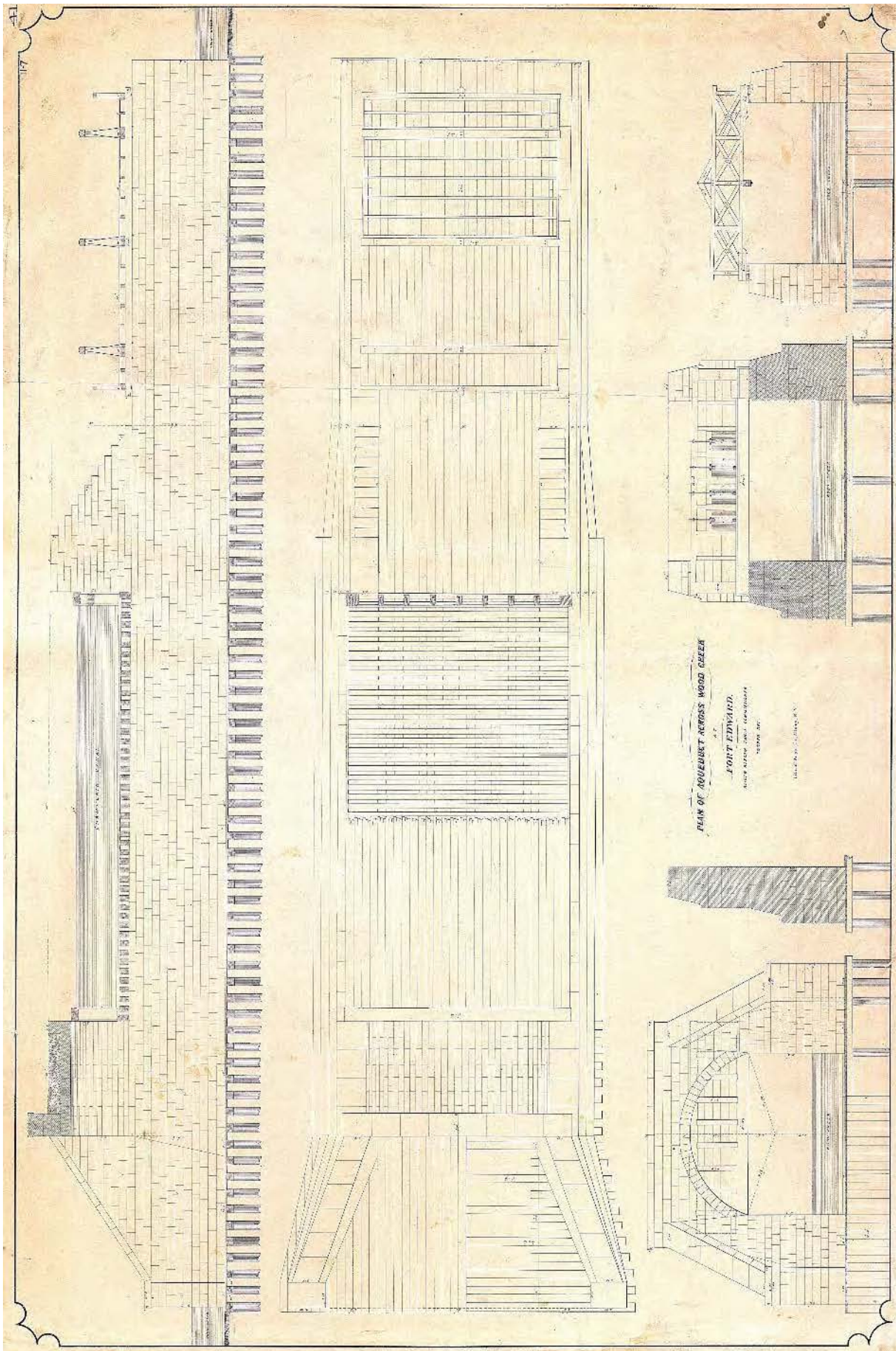
"Work will be commenced on the new stone wall at the aqueduct on Lower Broadway just as soon as the repairs are made on the road between Fort Miller and the new bridge. Superintendent Ganley informs us that the wall is to be a good cement wall, much better than the present worthless one, which is laid in cement"  
(*Glens Falls Morning Star*, June 5, 1894)

This does not appear to have been the case, however, as the stone wall was still in place in 2006.

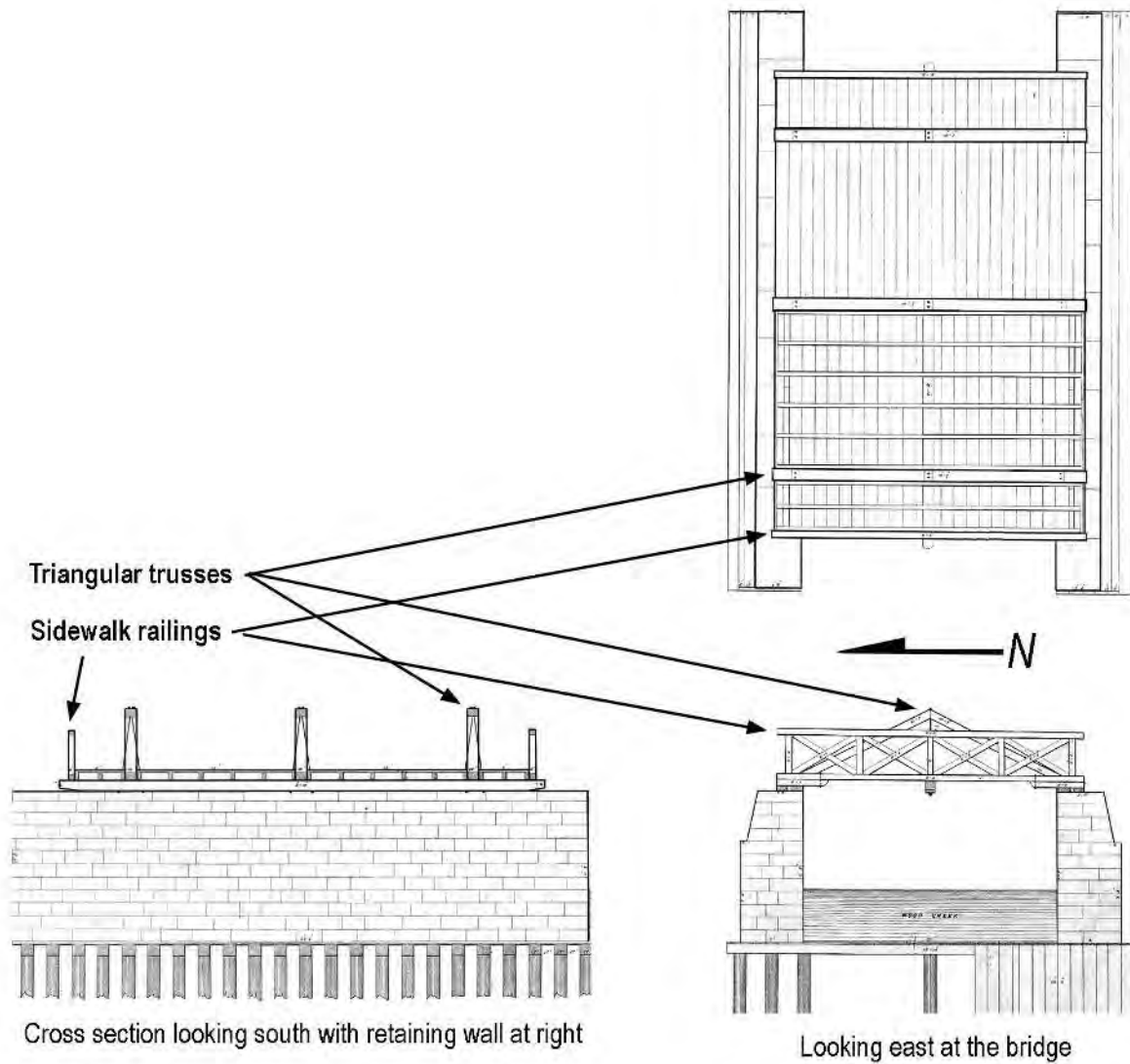
By 1896, the Hudson River Railroad trolley line had been built along South Broadway across the bridge at Bond Creek (Figure 7.33 on page 256). It is probable that the wooden bridge had been replaced with a concrete deck in order to support the trolley traffic, but we do not have that information. By 1896 the aqueduct was twenty-seven years old and its wooden parts had suffered considerable deterioration. Plans to rebuild it were delayed due to difficulties in obtaining the necessary timber and temporary repairs had to be made. The newspaper reported: "... the old structure will be re-planked and strengthened in a few days" (*Glens Falls Morning Star*, April 22, 1896). These repairs must have been minimal and were probably considered temporary, as the following day's edition reported that, "re-planking and strengthening of the Fort Edward aqueduct" was nearly completed (*Glens Falls Morning Star*, April 23, 1896).

That same fall another bad flood occurred and caused considerable damage to the viaduct. On October 16, 1896, the *Morning Star* reported that "The wall which caved in a few days ago at the Fort Edward aqueduct



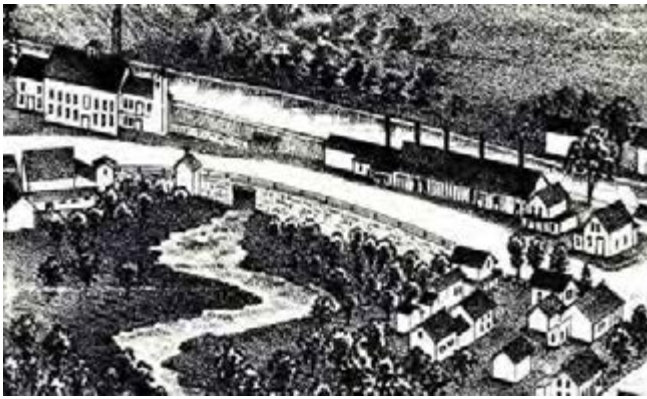


**Figure 7.30:** Plans for the 1869 reconstruction of the Fort Edward aqueduct and the Lower Broadway bridge as a single structure, channelizing the creek (Boscom).



**Figure 7.31:** Structure of the viaduct bridge over Bond Creek as extracted from the 1869 plans.





**Figure 7.32:** 1892 bird's eye view of Fort Edward, close-up showing the viaduct (Burleigh Lithograph Company). A small structure may be seen standing against the retaining wall at left, possibly a toll house.

was not part of the canal wall. It was a continuation of the highway culvert and about thirty feet away from the canal." A photograph (Photo 7.19 on the next page) taken during this flood shows the water backed up over the viaduct along Broadway. Visible in the photo are the old sash and blind factory, today converted to apartments, and a small building on the left of the road that may be an old toll house, also depicted in Figure 7.32, in the approximate location of the current (2006) parking lot to 51 Broadway, the Fruitful Vine Church. The former Milliman House Hotel is also visible in the background of this photo.

Plans were drawn up in 1898 (Figure 7.34 on page 257) for reconstruction and modification of the whole structure including modification of the culvert so that it flared at the downstream end with internal wingwalls. On that plan, the bridge deck is shown in concrete, but whether this was a planned modification or was already in existence is unknown. As often was the case in the years leading up to the construction of the Barge Canal, the plans were more ambitious than the actual modifications turned out to be, calling for replacement of the upstream aqueduct arch and the entire culvert with concrete. This was not done, probably because it was thought unnecessary to pursue expensive repairs on the old canal with the probability that the Barge Canal would replace it in a few more years. The stone masonry construction was retained, though the shape of the culvert mouth was, in fact, modified according to the plans. The abutments were also stepped back slightly from foot to top so as to make them more stable.

When the State decided, in the first decade of the twentieth century, to enlarge the canal system into what's known as the Barge Canal, engineers planned for the Champlain branch of the new canal to divert south of the village and bypass access to the Glens Falls Feeder Canal. In order to allow the continued use of the

feeder, important for transportation of industrial goods, the Fort Edward aqueduct location was chosen for the construction of a junction lock. This lock was built in the style of the new Barge Canal system to connect the old canal channel in the village with the new Barge Canal located at a lower elevation just south of the aqueduct on the other side of Argyle Street. The lock itself was built just south of the aqueduct culvert. An engineering photograph taken of the aqueduct just before construction shows the future location of the junction lock in 1905 (Photo 7.20 on page 258). Another photograph (Photo 7.21 on page 258) shows the junction lock under construction in 1908. This view faces north and shows the proximity of the lock to the Broadway viaduct, unpaved at the time, situated to the west. The viaduct was all but unaffected by the lock construction.

This section of the old Champlain Canal, together with the Glens Falls Feeder Canal, remained in use until 1941 (Craig Williams, pers. comm. 2013). The wooden aqueduct has decayed and the stone arch that once supported the towpath has suffered some damage but remains standing today (Photo 7.22 on page 259). The closure of the Old Champlain Canal to traffic in 1941 was followed by the construction of a 19 inch storm sewer along its bed, terminating in the culvert wall (Photo 7.23 on page 259).

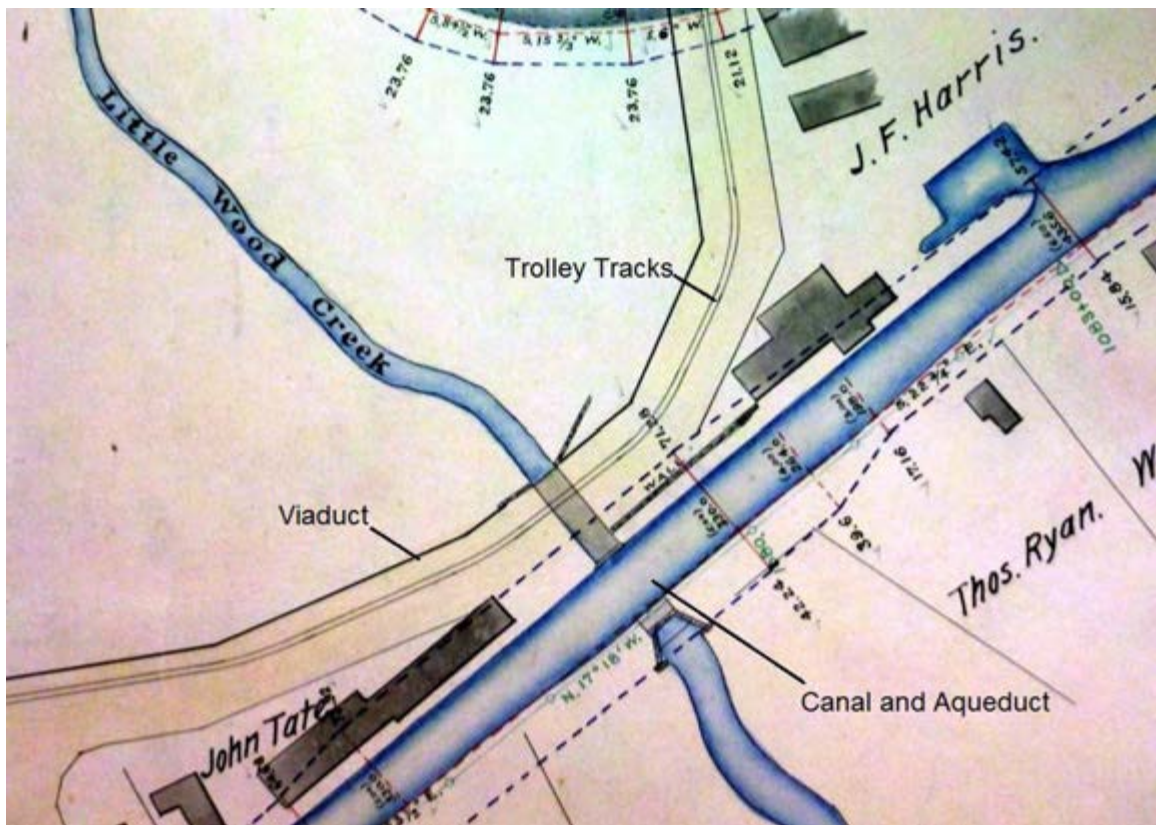
In the section of the culvert that goes through the highway viaduct, the 1898 reconstruction remained unchanged until the late 1960s. Department of Transportation plans from 1968 state:

"The wingwall section of the existing stone box culvert has settled and started to collapse. A closed concrete box culvert will be built between the wingwalls. This will necessitate the removal of the deck slab over the wingwalls and the temporary diversion of the stream."

A detailed depiction of the bridge and culvert as they were rebuilt after the 1896 flood is shown in the 1968 plans, together with the manner in which the new culvert was inserted within the existing wingwalls (Figure 7.35 on page 260). The post-1898 modifications included flaring of the culvert opening and stepping back the stone of the abutments to improve stability, as well as replacement of the bridge with a concrete deck. Interestingly, the original wooden culvert apron from 1898 was retained in the 1968 plans.

### *Current Project Construction Activities at the Viaduct (2006)*

As part of the reconstruction of Broadway, activities at the viaduct included replacement of three of the existing utilities that ran under the road there. First was installation of a new water main along the base of the viaduct's stone retaining wall. The trenching for this passed below the creek bottom near the outlet of the culvert and

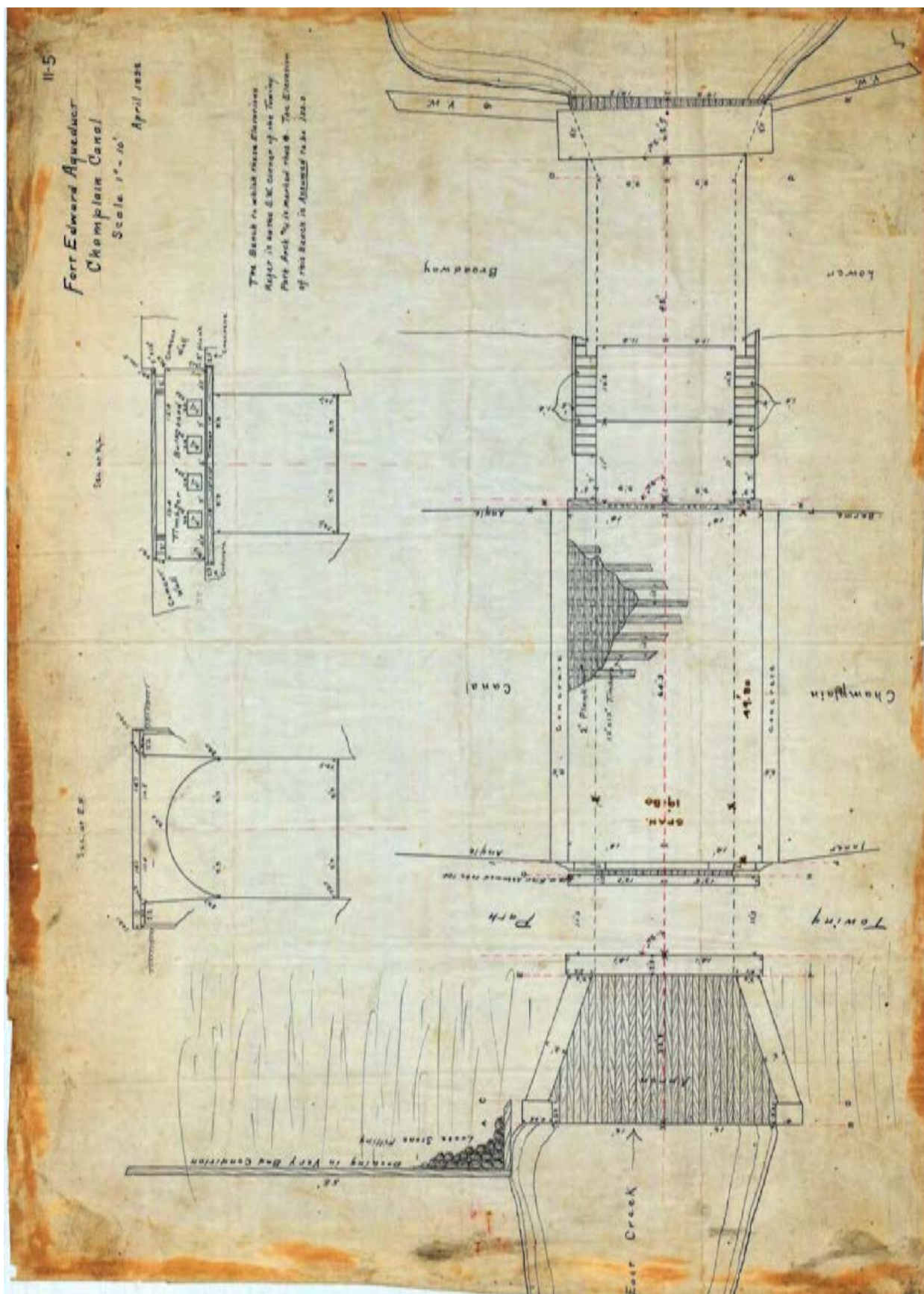


**Figure 7.33:** Detail from the 1896 Schillner map (Champlain Canal series) showing the viaduct, the aquaduct, and trolley tracks prior to the flood in that year with labels added.



**Photo 7.19:** Looking north along the viaduct during the flood of 1896. A narrow, windowless house on the left behind the railing may be an old toll house (photo courtesy of the Fort Edward Historical Association).







**Photo 7.20:** The aqueduct in 1905 with the water drained, looking south towards the Argyle Street bridge showing the future site of the Junction Lock. The capstones of the aqueduct arch are visible at far left (NYSACD).



**Photo 7.21:** Junction lock under construction in 1908. The old sash and blind factory, by this time a grist mill, is visible at left center and the north end of the Broadway viaduct may be seen to its left (NYSACD).



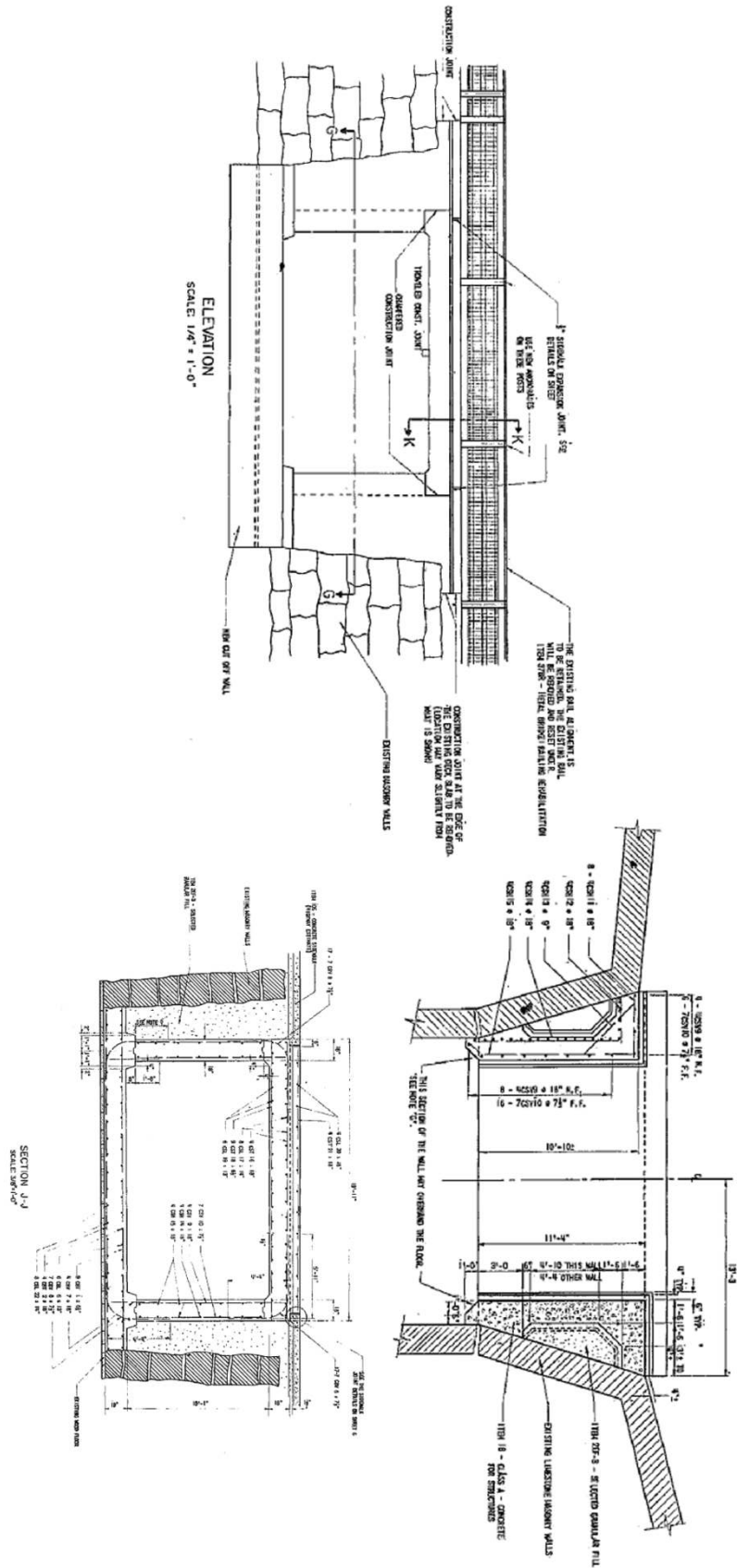


**Photo 7.22:** Arch of the aqueduct towpath as it appears today, as seen from the east (photo courtesy of Tug44.org).



**Photo 7.23:** Interior of the culvert in 2013 showing the 19 inch storm sewer emptying into the creek from the bed of the Old Champlain Canal below the former aqueduct.

Figure 7.35: 1968 construction plans for improvement of the culvert (New York State Department of Transportation).







**Photo 7.24:** View north of the brush clearing along the west side of the viaduct approaching the creek.

involved extensive clearing of trees and brush along the face of the stone wall (Photos 7.24 to 7.25 on the current page). The water main was designed to completely bypass the masonry and concrete culvert under the road.

Another utility involved deep direct drilling of a new gas pipe aligned along the eastern edge of the street. This avoided the culvert by drilling horizontally beneath it and the bed of the creek to continue the pipe north and south of the culvert. The third utility involved installation of new storm drains to collect surface runoff along the street north and south of the culvert to funnel it into lateral pipes that outlet west of the viaduct into the creek.

The culvert construction itself involved relining the existing box culvert with a plate arch lining. This included removal of portions of the existing outlet headwall and box roof, casting in place of new concrete knee-walls and culvert floor, construction of new inlet and outlet headwalls, addition of a new heavy stone apron at the outlet, and filling along the western stone face of the viaduct. The final road surface treatment included full depth road reconstruction with the addition of new curbs and sidewalks, and new railings. Figure 7.36 is a plan of the southern end of the Fort Edward Village site showing the layout of the Bond Creek Viaduct in relation to the aqueduct and junction lock. It also shows the monitored construction trenches and Incidences discussed here.

### *Features Encountered During the 2006 Road Work*

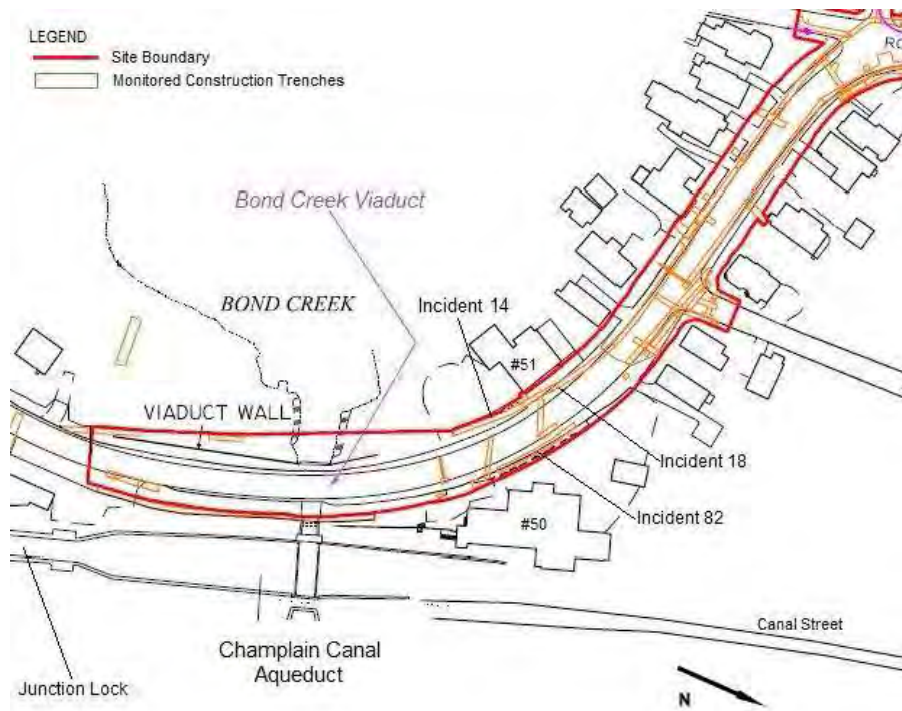
**Evidence of the Valley Edge** During monitoring of the construction trenching through this area in 2006, evidence of the north side of the original valley edge was observed and recorded. This occurred in the northbound lane in front of #50 Broadway during drainage line con-



**Photo 7.25:** View north of waterline construction trenching along the base of the viaduct wall.

struction (Incident 82) and in the southbound lane in front of #51 Broadway during water line construction (Incident 18). Thirty two meters to the southeast, soil indicating the valley bottom was observed at a depth of almost 3 m (10 ft) beneath the current road surface in a large pit for a drainage structure excavated along the eastern curb edge. South of these locations, all the trenching encountered vast amounts of various kinds of fill material that was used to build up the road bed across the valley (Incidents 8, 10, 13, 14, 15, 17, and 18), which is marked by the southern site boundary. In fact, it was apparent that all of the parking lot south of 51 Broadway, and likely the land under the structure itself, was constructed on fill extending 30 to 40 m (100 to 131 ft) south into the creek valley. This fill was put in during the twentieth century, probably fairly recently, and it was discovered that it buried 15 m (50 ft) of the north end of the stone retaining wall of the viaduct.

**Incident 14, Feature 1, Stone Viaduct Wall** During construction, the new water line crossed Bond Creek from south to north along the base of the stone viaduct wall. The north wing of the wall, which was 2 to 3 m (6.5 to 10 ft) tall, extended about 35 m (115 ft) north from the mouth of the culvert before it disappeared behind soil fill creating the parking lot of 51 Broadway. The alignment of the water pipe necessitated the removal of the buried wall, which amounted to a length of about 15 m (50 ft). To locate and remove the wall, construc-



**Figure 7.36:** Detail of the Fort Edward Village site map showing the Bond Creek Viaduct, the adjacent canal features, and the relevant areas of construction trenches.

tion moved from north to south (Incident 14) in that location by first utilizing a track excavator to expose the north end of the wall, then to removal of the stones as far south as was necessary to install the water pipe (Photo 7.26).

At least five layers of fill material were noted along the face of the wall, including stone and concrete rubble, and coal ash. It was noted when the bottom stones were removed, that they rested on intact wood planking at a depth of approximately 3 m (10 ft) below the surface (Figure 7.37). This planking was used as a solid, level surface for constructing the masonry wall, and may have had wooden pilings below as illustrated in the 1868 plans for construction of the aqueduct, culvert, and bridge (Figures 7.30 to 7.31 on pages 253–254). This was not confirmed though because the lower portion of the wall was left in place.

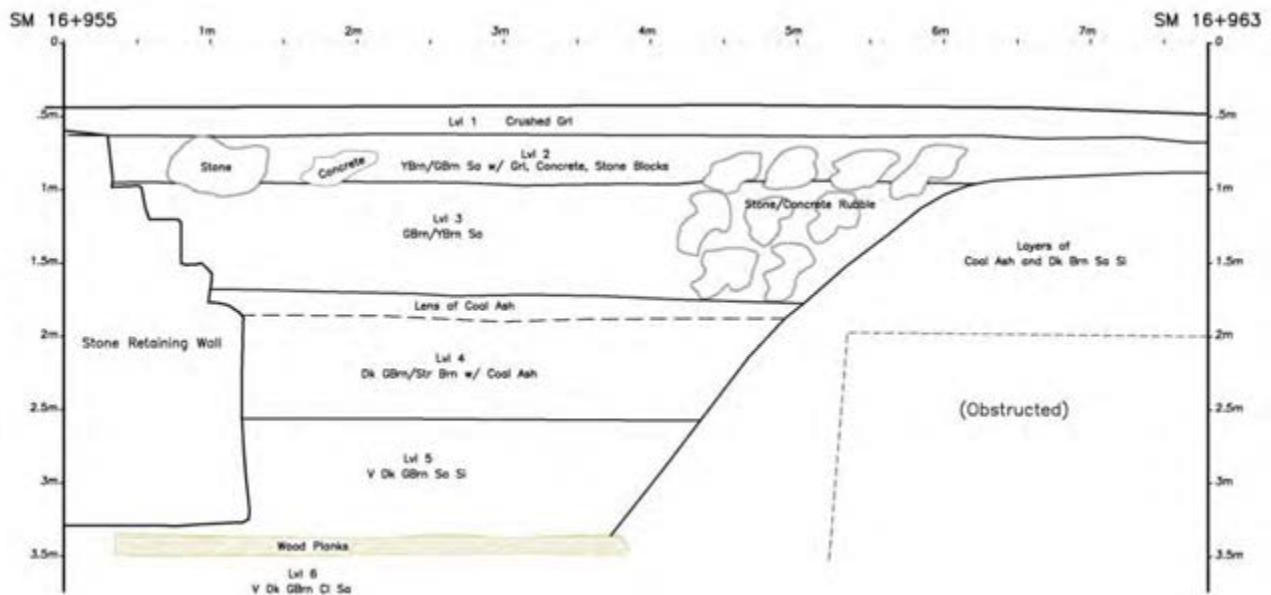
Since 2007, the railings along the top of the viaduct wall have been replaced with modern guide rails and the exposed parts of the wall have been further filled with soil along the western faces north and south of the new culvert headwall, obscuring all evidence of the old stone wall. Also, during relining of the culvert, the original flat concrete decking that covered the channel between the aqueduct and the viaduct was removed and the vertical channel walls were encased in concrete as well (Photo 7.27).

The new culvert arch is a corrugated metal conduit set in concrete. The concrete lining of the open section in



**Photo 7.26:** View southwest of the north end of the stone viaduct wall in Incident 14. The wood planking is obscured by dark soil at the bottom of the trench.





**Figure 7.37:** West profile of the Incident 14 trench at the end of the stone viaduct wall. Note the wood plank at the bottom of the wall.

the foreground was apparently installed over (or possibly in place of) the cut stone masonry at the time the junction lock was built in 1908. The darker band above it is a later repair overlapping the original concrete, possibly done in 1968 when the concrete box culvert, now covered by the present metal conduit and concrete, was installed.



**Photo 7.27:** Interior of the channelized and lined stream and the inlet headwall of the culvert as it appears today, looking west toward the viaduct from the west side of the aqueduct ruins.

### *Significance of the Bond Creek Viaduct*

The significance of the Fort Edward Viaduct lies in its uniqueness with regard to its connection historically and physically with the Champlain Canal aqueduct as well as its having been the route for human travel continuously going back to prehistory. The viaduct was built where the original eighteenth century military road from Albany crossed the creek. After the Revolutionary War, the same alignment became the Waterford and Whitehall Turnpike, which helped foster the early growth of the village. When the second alignment of the canal was built through the village in the 1820s, it crossed the creek adjacent to the road and bridge, and when the aqueduct that carried the canal over Bond Creek was rebuilt in the 1830s, it was structurally linked with the roadway culvert built in conjunction with the creation of the viaduct elevating the road across the creek valley, whose stone retaining wall archaeologists encountered during the 2006 construction.

### ***Incident 51, Feature 1, Wooden Pole Base***

In the east wall of a large trench excavated in front of #64 Broadway to install a new sewer manhole structure, a wooden pole base feature was identified about a meter (~3 ft) below the pavement (Figure 7.38 on the facing page). Two components were observed: a vertical-sided pit surrounding the remnants of a round wooden pole with a saw-cut base, and adjacent to the north was a light gray brown pit that appeared to have been excavated alongside the post pit.

Both parts of the feature appear to have been truncated from the top by later disturbances related to drainage construction along the edge of the road. A sample of the wood was collected and the soil from the surrounding pit was screened producing a coal cinder, a clam shell, a common wire nail, several asphalt fragments, mortar, and a piece of pearlware dating the feature to the late nineteenth century at the earliest. The bottom of the wooden pole reached a depth of 190 cm (6 ft) below the surface. The wood itself was round in shape, about 20 cm (8 in) in diameter, and appeared to be sawed flat at the bottom. Based on its depth and proximity to edge of the street, it was probably a remnant of a power or telephone pole and the adjacent pit may have been a widening of the hole to tilt the pole into place when it was originally installed.

### ***Incident 190, Stone Retaining Wall at Montgomery Street***

A low, cut stone wall was encountered at the eastern corner of Broadway and Montgomery Street when new curbing and sidewalk was being installed in 2007. A bluestone sidewalk lined the edge of Montgomery Street from its southern end to the apex of the corner. The old corner extended beyond the new corner footprint by 3 m (10 ft) requiring the removal of about 17 m (55 ft) of the sidewalk slabs. This exposed the buried cut stone retaining wall beneath, which had a thin layer of soil on top of it to create a base for the sidewalk slabs.

A shovel test pit was excavated along the street edge of the wall after it was exposed revealing it was 65 cm (2 ft) deep with only two courses of dry-laid stones and about 55 cm (1.8 ft) wide (Photo 7.28 on page 265). The uppermost layer of stones was removed in order to bring the level down to the grade of the new curb pieces. The first 30 m of this wall were hidden by sidewalk but it was visible south of that where it continued exposed and intact along the side of Montgomery Street past the house at 65 Broadway. This stone wall was probably constructed as part of the landscaping of the ca. 1900 house on the property and later buried when the slate sidewalk was put in.

## **7.4 Summary and Significance of the Nineteenth Century Component**

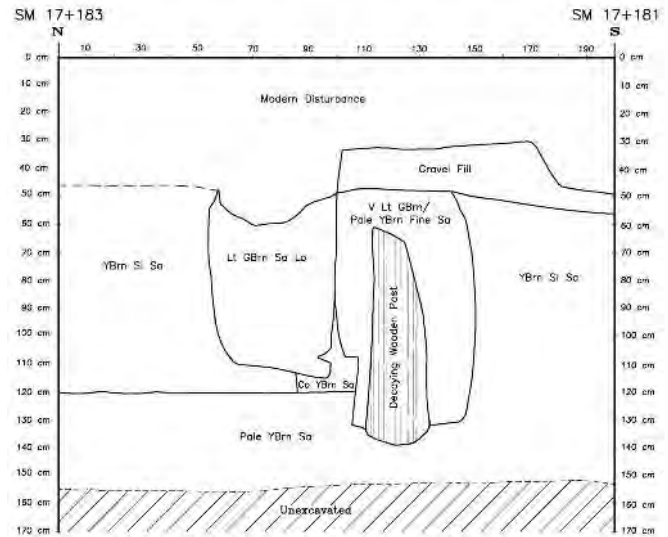
While we usually think of above-ground buildings and structures when we think of the built environment, we shouldn't forget the vast underground network of unseen "structures" that has been built over time to sustain and enhance people's lives and to aid in their work. This network (utilities, fences, retaining walls, culverts, curbs, sidewalks, and pavement, etc.) is a historically significant part of the built environment of the village. Though much of it is below ground where we don't typically see it, it is often completed and maintained at huge expense and with tremendous physical effort, frequently based on state and federal governmental laws and regulations, or spurred by private individuals, businesses, or local municipalities.

These village enhancements reflect the historical trends of the time and place. Many utilities were encountered during this project that were not recorded as archaeological features including iron water mains and smaller lead service lines to structures, ceramic sewer mains, old iron gas lines, red earthenware drainage tiles, and brick storm drains, all part of the subsurface network of pipes, collection boxes, and manholes crowded under the street over two centuries of village settlement and growth. Many of these were removed and replaced with the new utilities installed as part of this project. Those that were recorded were either sections of the earliest utilities (wooden water line) or were unique or unusual in some way (concrete-covered pipe, early curb stop valve) and may be associated with efforts of some of the early landowners and entrepreneurs of the lower part of the village.

In the case of the wooden water pipe, this embodies distinctive characteristics of construction methods and materials that go back to the establishment of the old military road past the fort as a formal highway just after 1800. This was a time when several early residents of the post-Revolutionary War village saw opportunity for growth and a better life, and as large landowners and entrepreneurs, made the effort to build a water system through the village. In the case of the concrete-covered pipe on the east side of the street, its function isn't clear at this time, nor is its date of construction, but it is distinctive among all the other utilities uncovered along Lower Broadway because of its overall size and the materials used in its construction. These were not seen elsewhere in archaeological activities in the village.

Also now unseen on the surface is evidence of the long-active blacksmith and carriage shop at the corner of Broadway and Edward Streets. The S.D. Turner blacksmith shop and its predecessor, Alexander Burke's blacksmith and carriage shop, represents a key business enterprise founded in the early days of the village, possi-





**Figure 7.38:** Photo (left) and section (right) of the east profile of the post base, Feature 1 in Incident 51. Partially decomposed wooden post and the adjacent pit, both subsequently truncated from the top by later disturbances.



**Photo 7.28:** View north of the stone retaining wall at the corner of Montgomery Street and Broadway after the removal of the sidewalk slabs that concealed it.

bly as early as the 1830s. It grew with the traffic on the Waterford and Whitehall Turnpike and the nearby Champlain Canal to become one of the most important businesses of the local community, thriving as local industry grew. While its growth paralleled the development of these other industries its orientation was not to commerce on the state or national level as theirs was, but to the needs of the local community.

The life of this business was comparable to that of many other blacksmith and carriage shops of the time, growing from what was probably a simple blacksmith shop into a thriving multifaceted business building. They repaired horse-drawn conveyances and served the metal-working needs of the community by making and repairing architectural hardware and household items, as well as shoeing livestock, including the large number of mules that towed canal boats on the nearby canal. Features encountered in the dooryard of the structure during this highway project seem to reflect rather primitive facilities that probably date to the early years of the business. These appear to have been hitching posts or rails centered on a crude watering trough created by simply lining a trench in the earth with two broad planks. This appears to have been filled in during the middle of the century, probably to make way for a more permanent replacement.

As factory-made iron products became more common, the smithwork of the business would have shifted away from the production of many items including carriage hardware. Evidence of this is the discard and disposal, sometime during the mid-nineteenth century, of a large

quantity of unused charcoal fuel on the surrounding ground surface. Charcoal would have been retained as a fuel long after the availability of mineral coal supplied by the Champlain Canal because it was believed that iron worked with charcoal as fuel was of higher quality and toughness, characteristics that were desirable in wagon and carriage hardware. Eventually, however, all such parts, as well as architectural hardware, became available mass-produced, often of malleable iron (a form of cast iron that had been annealed for toughness). When the business inevitably made the shift to manufactured parts, charcoal fuel would have become unnecessary. It would have been discarded to save space, especially because it had to be kept indoors and was a considerable fire hazard.

In two more decades this same trend of mass production had overtaken the carriage and wagon business. By the 1880s blacksmiths were increasingly limited to repair work and shoeing. The censuses and insurance maps reflect this change in Alexander Burke's business. By the early-twentieth century the shop, then owned by S.D. Turner, was making the shift to auto repair and gasoline sales, but by the time Turner retired, much of that business had undoubtedly gone to newer establishments, and the business stood empty until it was converted into a restaurant, reflecting the trend of the South Broadway neighborhood away from business and towards residential use after the Second World War.

Aside from the buildings and bridges along Broadway the visible parts of the infrastructure included the curbs and sidewalks all of which were replaced during the construction project. One low stone retaining wall that was not visible was hidden under the east sidewalk along Montgomery Street bordering the property of 65 Broadway, a large Victorian house. The wall was probably built as part of the landscaping of that house but was buried sometime in the twentieth century when the bluestone sidewalk was put in. The largest feature related to nineteenth century village infrastructure encountered with this project was the stone viaduct and culvert constructed over Bond Creek. This transportation structure is significant for several reasons: it is structurally connected to the extant Champlain Canal aqueduct built in the nineteenth century and it embodies construction characteristics of that time. Its strength was tested during several floods over the years and was repaired each time so as to maintain traffic along this long-traveled route across Bond Creek.

## 8. Features of Uncertain Date and Function

As part of the Fort Edward Village site there were ten distinct features, whose origins and purposes are indefinite. They were encountered both in data recovery excavations and in construction monitoring. They include dark charcoal stains of various sizes and shapes, pits or trenches of various sizes and shapes, a large rectangular box-like structure made of brick buried beneath the road surface, and a smaller rectangular deposit of brick and stone rubble buried just below the pavement. The locations of these ten features are depicted on the general site plan (Figure 8.1 on the following page) and are described in detail below with photographs, plans, and section drawings where appropriate.

### 8.1 Incident 20, Feature 1

A very dark organic stain was observed in the water line construction trench in the middle of the southbound travel lane in front of #53 Broadway. The top of the feature started at a depth of 139 cm (4.5 ft) below the street surface below several feet of mixed fill soils. The dark stain occurred in the sterile yellow brown silt sand subsoil. It was first seen in the west wall of the construction trench while it was being excavated by the back hoe. Archaeologists had the back hoe remove most of the soil above the feature to the west and the rest was removed by shovel cleaning a horizontal surface at the 139 cm depth and along the south wall of the trench.

About 67 cm (26 in) of it was exposed in the south wall closest to the sidewalk (Figure 8.2 on page 269). A bone, roughly the size of a golf ball, was removed directly from the feature. South and west wall profiles were drawn and pictures were taken. A soil sample was taken and the dark soil of the feature was shoveled out and screened but no other material was found.

The exposed feature measured about 80 x 70 cm (31 x 27 in) in the horizontal dimension. It was roughly flat on the top but very undulating and amorphous at the base of the exposed feature. It varied in depth from 8 to 32 cm (3 to 12 in). It was first thought to be a fire hearth, but there was little or no charcoal observed, no evidence of ash or burning such as fire-cracked rock or fire-reddened soil, and no artifacts beyond the one unidentifiable bone fragment. This part of the street fell within the low valley of Bond Creek on early maps before the road was built so the feature may represent an organic stain such as a decomposed tree root from when this area was the exposed ground surface.

### 8.2 Incident 29, Feature 3

In the west wall of the main water line construction trench near Moon Street, a long rectangular stain was observed as an intrusion into the Level 2 subsoil (Figure 8.3 on page 270). It was 1.5 m (5 ft) long horizontally within the wall profile, and started about 40 cm (16 in) below the interface between Level 1 and Level 2 soil. It was 35 to 40 cm (14 to 16 in) thick from south to north along the wall, and ended in the north at what appears to be a later intrusion, possibly a post hole of some kind. Soils within the feature were a mixture of dark brown A horizon soil with yellow brown subsoil.

The only artifacts observed were a small piece of fire-cracked rock and a white clay pipe fragment. No concentration of artifacts was associated. The flat bottom and vertical end wall of the feature is suggestive of some sort of structure. The clay smoking pipe fragment marks it as historical but finer temporal association is not possible without more artifacts. During the mid-eighteenth century this location would have been just outside the fort walls but inside the protective outwork ditch. The feature could be related to the military encampment. In the nineteenth century, a structure was located on the corner lot behind this trench (to the west) so the feature could be related to that.

### 8.3 Incident 38, Features 2 and 3

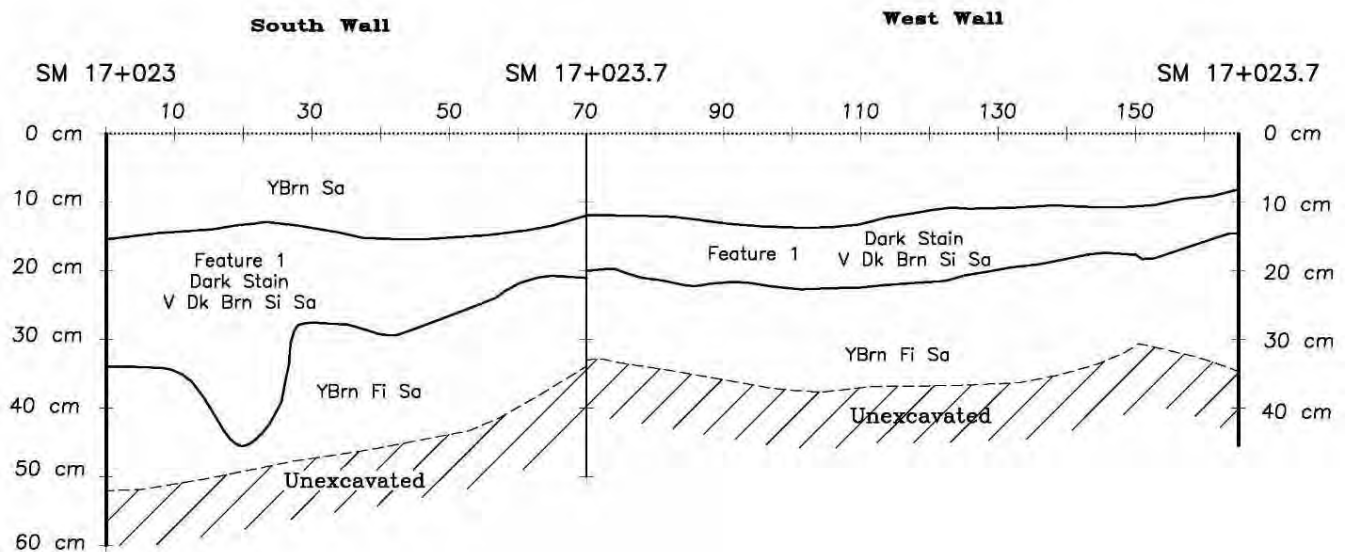
In front of #79 Broadway, in the east wall of the waterline construction trench, two possible hearth features were identified below the buried surface level soils (Figure 8.4 on the previous page). Feature 2 was at Station Marker 17+258, and Feature 3 was about a meter to the north along the trench wall. Both features began at 65 cm (26 in) in depth below the pavement surface. Feature 2 appeared as a mottled soil stain measuring 28 cm (11 in) in width and 16 cm (6 in) in depth overall, with black concentrations of charcoal within a matrix of yellow brown sand with darker brown mottling. Feature 3, of comparable width, was only 10 cm (4 in) deep into the natural yellow brown sand level and consisted of a more homogenous mixture of yellow brown sand and charcoal. Both features were dug out from the face of the trench wall and screened for artifacts, but none were recovered.

These features were located in the vicinity of the previously excavated Units 5 and 6 (DRT 2), which revealed a dense prehistoric lithic debitage deposit intruded upon

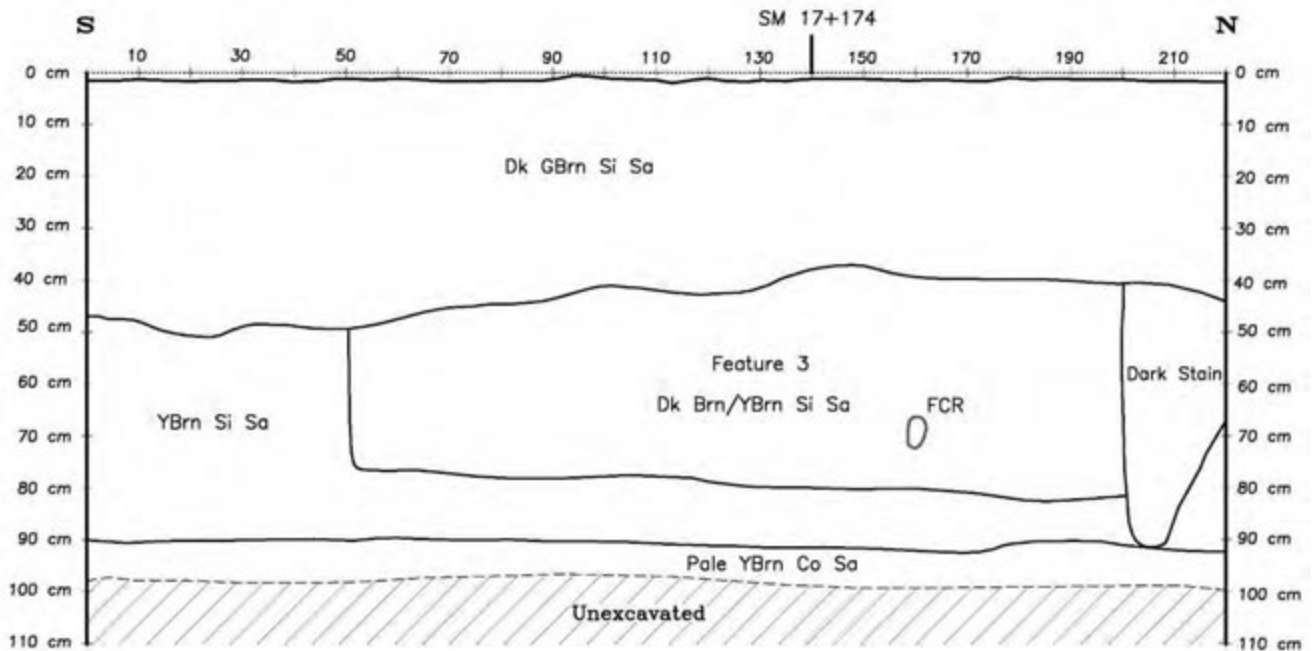






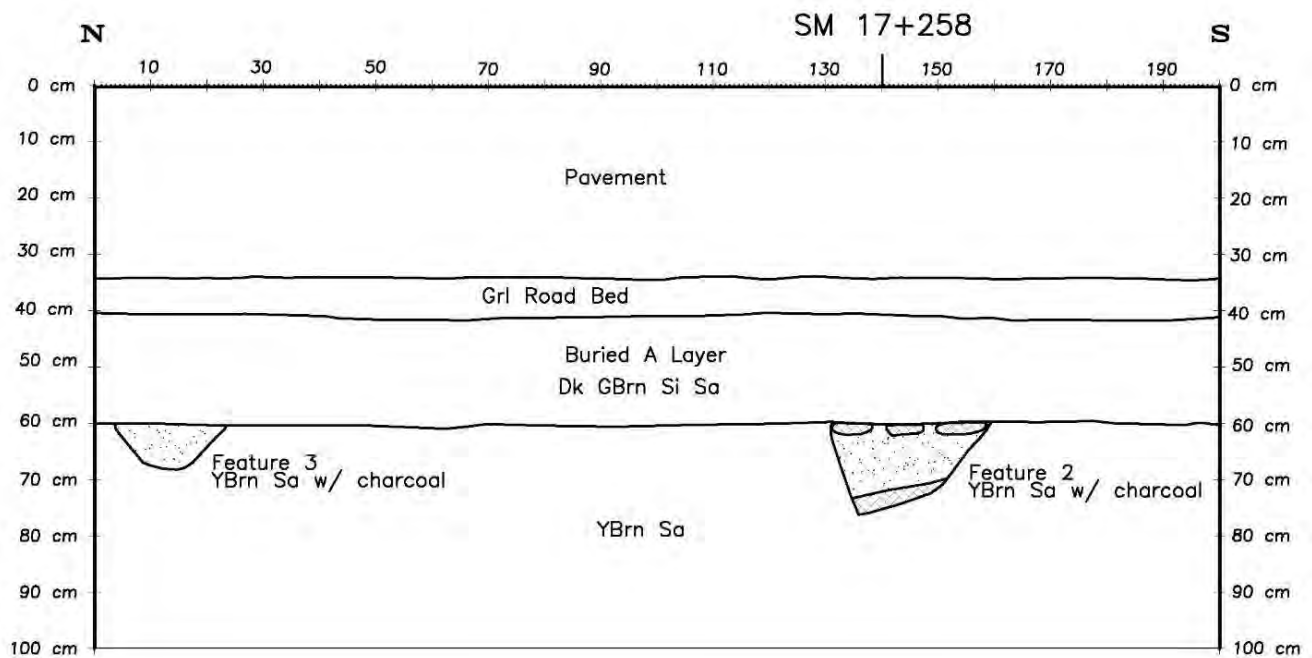


**Figure 8.2:** South and West wall profiles of Incident 20, Feature 1. The top of the feature is 139 cm (4.5 ft) below the surface.



**Figure 8.3:** West profile of Incident 29, Feature 3. Erosion of the construction trench wall from a broken water service line is visible to the right of the feature.





**Figure 8.4:** East profile of Incident 38, Features 3 (above left) and 2 (above right), possible hearths.

by a probable French and Indian War refuse pit. Lithic debitage was scattered throughout the Level 2 soils in DRT 2, Unit 6, which makes it seem odd that there were none found in either of these two features. It doesn't seem likely that they are French and Indian War-related because the pits of this size from that time period all exhibit certain characteristics: 1) they seem to have clearly demarcated boundaries having been dug with shovels or spades for disposal of campsite refuse, 2) they all have historical artifacts in them, primarily butchered and cooked animal bone, with a much lesser presence of olive-green wine bottle glass, small ceramic sherds, brick fragments, musket balls, gun flints (usually broken), odd bits of melted lead and iron fragments, white clay smoking pipe fragments, or the occasional cuff-link or button. These two features yielded none of these things leaving their function and original causation in question.

It is possible that these are hearths associated with the prehistoric occupation and lithic deposit seen in Units 5 and 6. Since during construction monitoring only the soil within the bounds of the features was screened for artifacts, it's possible that lithic artifacts from the surrounding soil were missed.

## 8.4 Incident 48, Features 2 and 3

Feature 2 was a trough-shaped feature seen in the north wall of the main sewer line trench in the northbound lane of the street in front of 56 Broadway, at a depth of 65 cm (26 in) below the pavement surface (Figure 8.5 on the facing page). It was 30 cm (11 in) thick tapering up at the western end to a band about 3 cm (1 in) thick that continued westward for another meter. The eastern end of the feature had been truncated by a later deep utility trench cut (Feature 1). The soils in Feature 2 were primarily dark brown silty loam with some yellow brown sand pockets mixed in. It did not extend across the sewer trench to the south wall. Soils from the feature were screened producing only two animal bone fragments. Its date and function are unknown.

Feature 3 was a dark brown to black compact silty sand layer extending 2 to 3 m (6 to 9 ft) east-west at 140 cm (4.5 ft) below the pavement, another 30 cm (12 in) below Feature 2. These two features were separated by a sterile layer of yellow brown to pale yellow sandy subsoil. The dark layer of Feature 3 was vertically intersected by the 50 cm (20 in)-wide Feature 1 utility trench in the north wall of the sewer construction trench. Feature 3 also continued across the sewer trench to appear in the south wall. Soils from Feature 3 were screened but no artifacts were found. This is apparently a naturally formed soil layer and not cultural at all.

## 8.5 Incident 51, Feature 2

In an east extension toward the sidewalk of the trench excavated for the sewer manhole in front of #64 Broadway, an amorphous charcoal stain was observed at 40 cm (1.3 ft) below the surface. This was located below the sidewalk. It had an irregular shape in both plan and profile (Figure 8.6 on the next page) and reached a depth of approximately 80 cm (31 in) below the surface. It had been interrupted along the east by a recent utility. Soils from the feature were screened producing only a clam and an oyster shell fragment, charcoal and a piece of fire-cracked rock. A sample of soil was floated producing minute rusty metal fragments, two miniscule historical ceramic fragments, two small brick fragments, and a possible prehistoric chert flake. The metal, brick, and ceramic indicate a historical context for this feature. Its function is unknown.

## 8.6 Incident 52, Feature 1

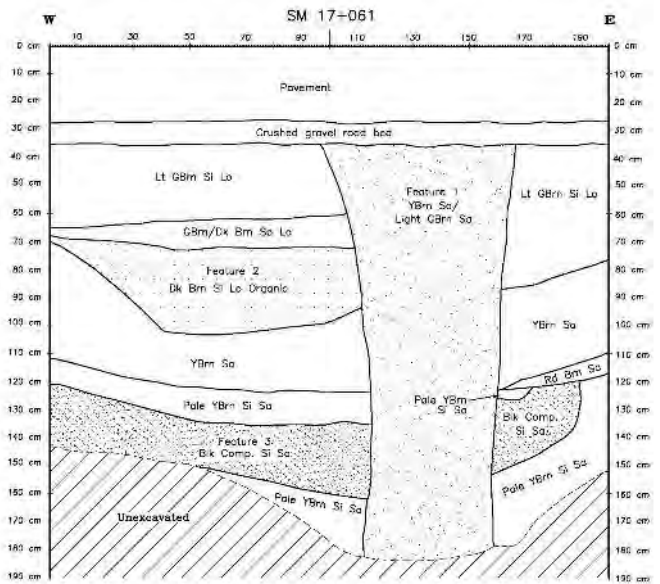
This feature was seen in the north wall of the main sewer line trench excavated by backhoe in the northbound lane of the street in front of 62 Broadway (Figure 8.7 on page 274). It appeared in profile as a horizontal dark soil layer about a meter (three feet) wide and 10 cm (4 in) deep with a basin-shaped protrusion below it approximately 25 cm (10 in) wide and 10 cm (4 in) deep. It was overlain by 10 to 15 cm (4 to 6 in) of light gray brown sandy loam and above that, 50 cm (20 in) of disturbed road fill and pavement at the curb edge. There was charcoal in the soil just above the basin-shaped part of the feature that also tapered to the east. There was a lighter gray brown silty sand pocket surrounded by darker soil forming the basin that intruded into the dark yellow brown sandy subsoil.

Soils from above the feature produced nineteenth century sheet refuse while the basin part produced only one unidentifiable iron or steel fragment. This was probably a nineteenth century feature but its function is unknown.

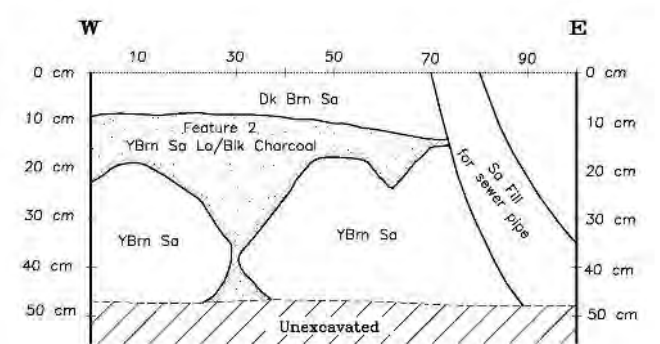
## 8.7 DRT 5, Unit 2, Feature 28

This feature appeared about 90 cm (35 in) below the sidewalk, underneath about 40 cm of pavement layers followed by about 40 to 45 cm (15 to 17 in) of dark gray brown to brown compact sandy silt from the early- to mid-nineteenth century (probably former road surface before pavement). In cross section north-south the feature consisted of a U-shaped pit or trench with widely angled sides approximately 2 m (6.5 ft) across at the top (Figure 8.8 on the next page). The walls tapered down to a fairly flat wide bottom approximately 70 cm





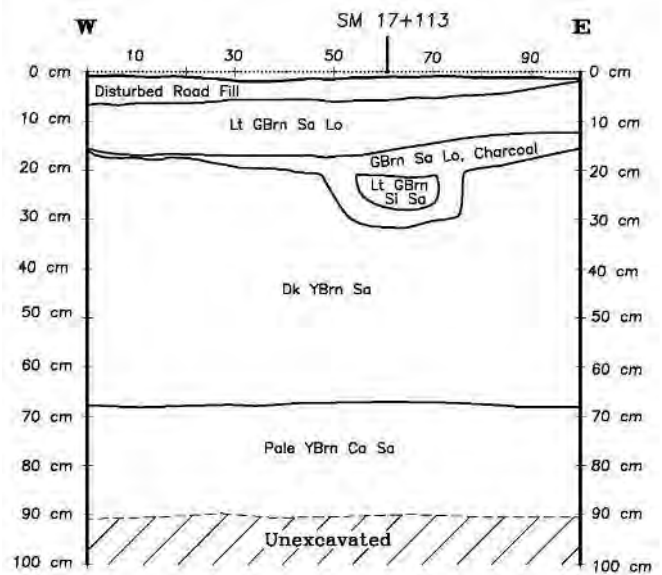
**Figure 8.5:** North profile of Features 1, 2, and 3 of Incident 48.



**Figure 8.6:** North profile of Feature 2 in Incident 51, an irregularly-shaped burn area with charcoal in sterile yellow brown sandy subsoil.



**Figure 8.7:** North wall profile of Incident 52, Feature 1, a buried A layer with a basin-shaped pit below.



(27.5 in) across. It was 66 cm (26 in) deep in the middle.

It may have been truncated from the top by road grading as early as 1806 when the Watertown and Whitehall Turnpike was built. Its east-west dimensions and shape are not known because it was impacted on the east and west by now-abandoned pipe trenches, which were only about 80 cm (31 in) apart. Two different profiles east-west across this feature, located 50 cm (20 in) apart, showed that perhaps what we encountered was the eastern edge of a large basin-shaped pit since the edge sloped up toward the east within our units (Figures 8.9 to 8.10 on page 276).

The soils in the feature were a dark yellow brown silty sand mottled with dark brown to black stains throughout that were thought to be charcoal, some as large as 5 to 8 cm (2 to 3 in) in diameter. It contained 123 artifacts that were temporally mixed prehistoric, eighteenth century, and nineteenth century materials. It appears as a large pit or possibly trench that was not open very long and was backfilled with subsoil mixed with charcoal and other dark organics, possibly the former topsoil. Its function is not known.

The artifacts include animal bone fragments (67), some with teeth, fifteen ceramic sherds including creamware (7), pearlware (1), redware (2), stoneware (1), whiteware (3), delftware (1), clay pipe fragments (3), 10 olive green bottle glass fragments, green flat glass (1), one clam shell and one oyster shell fragment, a wrought nail fragment, a piece of flattened lead, a piece of mortar, five charcoal fragments, 15 prehistoric chert artifacts (two projectile point fragments, a biface, eight flakes, and four shatter, plus 14 rocks discarded in the lab that may have been chert flakes), and one

fire-cracked rock. Based on the temporally diagnostic artifacts found in the feature fill, it was backfilled sometime in the nineteenth century with soils that contain earlier prehistoric and eighteenth century material.

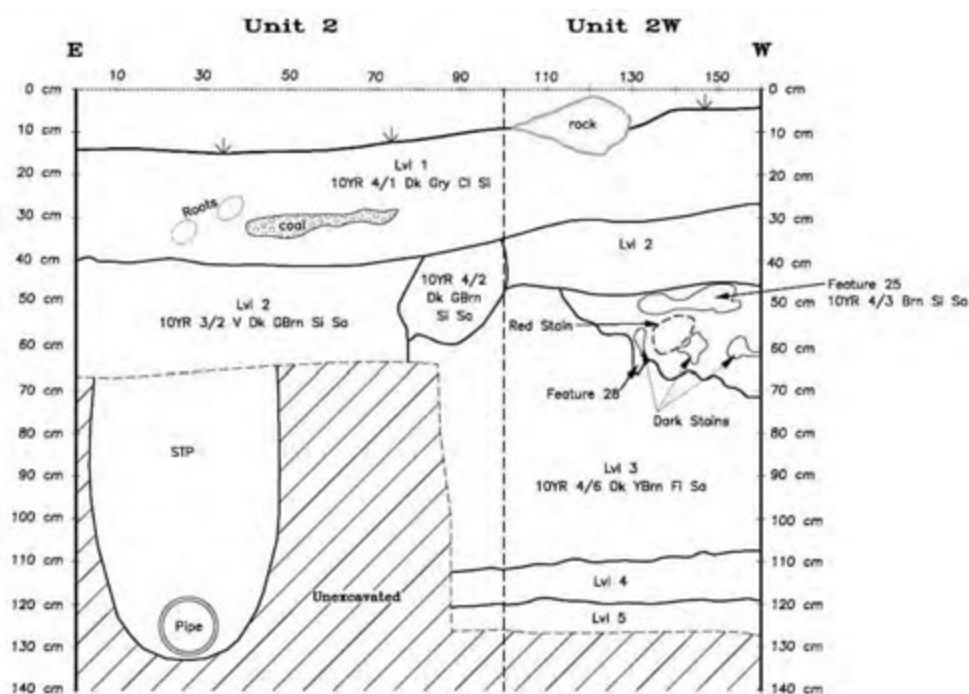
## 8.8 Incident 100, Feature 2

A new sewer main was constructed along the curb in front of #82 Broadway a few weeks after Feature 28 was excavated in DRT 5. The construction trench was slightly wider than DRT 5 with the west wall further toward the middle of the street. It reached beyond the abandoned sewer that bordered our data recovery units exposing what would have been a narrow strip of intact ground below the road base. This section of sewer construction was labeled Incident 100. During Incident 100 monitoring a dark stain (Feature 2) was identified in the west wall that was compellingly near where Feature 28 was found. Feature 2 was so near as to possibly have been a continuation of Feature 28 though not as large or deep.

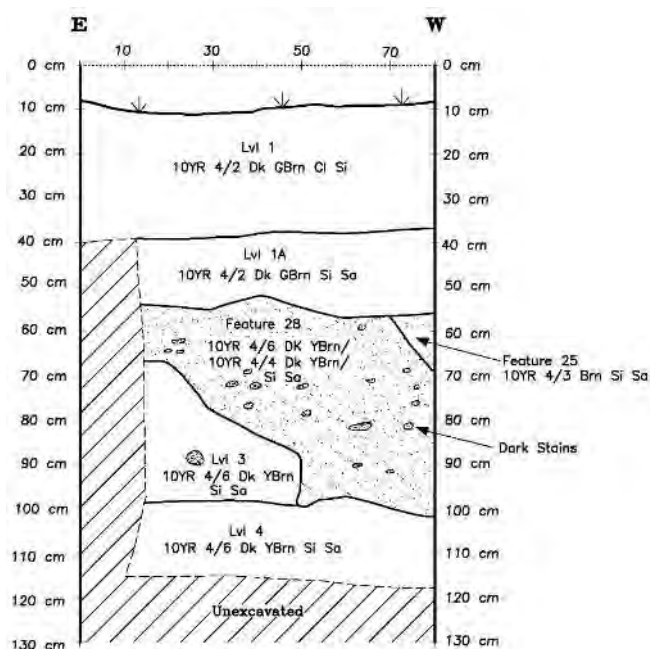
Feature 2 was observed only in profile. The top of it started about 90 cm (35 in) below the pavement; the same as Feature 28, about 70 cm (27.5 in) to the west (see Figure 8.11 on the previous page). Its southern extent started just below the same plastic gas service line that was exposed going east-west across DRT 5, Unit 2B near the south end of Feature 28. It extended north about 1.5 to 2 meters (5 to 6.5 ft) from the gas service pipe but was only about 30 cm (12 in) deep as compared to Feature 28, which was 66 cm (26 in) deep. Similar to Feature 28 it appears to be truncated by road surfacing on the top. It consists of a 60 cm (25 in) wide U-shaped depression lined with charcoal along the bottom. The







**Figure 8.9:** South profile of DRT 5, Units 2 and 2 West showing Feature 28 with a small part of Feature 25 that appeared as shallow dark stains within the top part of Level 3.



**Figure 8.10:** Second cross section through Feature 28 (south profile of Units 2 and 2 west south extensions).

charcoal layer was a few centimeters thick and extended about 50 cm (20 in) to the south where it sloped down in elevation, and 70 cm (27.5 in) to the north just under the gray brown compact silty sand of the old road surface. Under the charcoal layer was sterile reddish yellow subsoil as if fire reddened.

We excavated soils out of the U-shaped part of the feature 63 cm (25 in) deep into the trench wall face and screened it. Some gray ash and bone were found within the feature along with some hollow voids with charred wood suggesting a possible fire of some kind.

Artifacts consisted of 5 kitchen bone 4 calcined), 1 small oyster shell fragment, single sherds each of blue transfer-printed pearlware, blue transfer-printed white-ware, and glazed redware, a clay pipe bowl fragment, a piece of glassy slag, and some charcoal. Unlike Feature 28, it had no prehistoric lithic material in it and it was not filled with yellow brown soils uniformly mottled with black charcoal stains as if filled with redeposited soil.

Incident 100, Feature 2 appears to be nineteenth century based on the artifacts found within it though only three are diagnostic of that period, the transfer-printed earthenwares and the glassy slag. It's possible they could have been worked into the feature from the old road surface soils just above it. It has the appearance of some kind of burning, possibly of a tree with deep roots. It may not be related to Feature 28 at all. It doesn't have any clearly diagnostic eighteenth century materials in it but that doesn't mean it isn't from that time period.



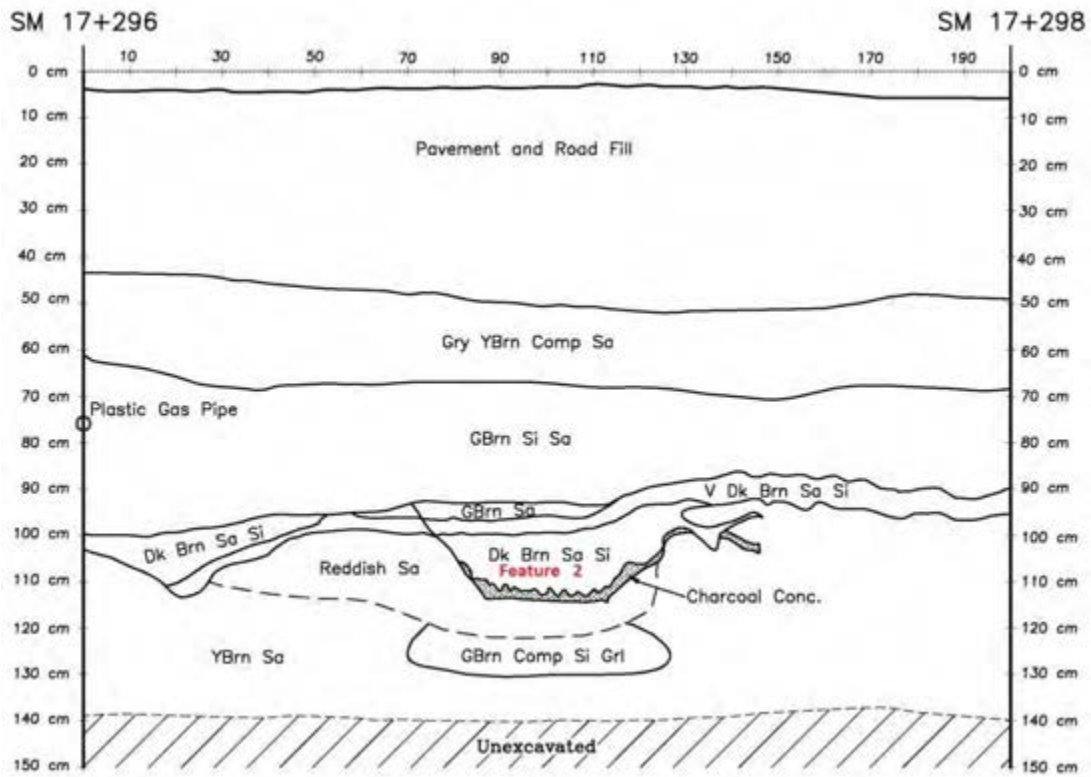


Figure 8.11: West profile of Incident 100, Feature 2.

## 8.9 Incidents 35 and 56, Possible Catch Basin Made of Mortared Brick

This large, rectangular, mortared brick structure was encountered in two separate construction monitoring incidents involving the connection of buried gas lines, one existing beneath the eastern sidewalk of Broadway, and the other buried in the north-bound lane of the street. There was a ninety-degree east extension of the gas line construction trench from the center of the northbound lane toward the east curb and sidewalk. The brick feature was encountered there along the eastern side of the street from approximately SM17+315 to 17+ 319 where it was exposed in the east extension and then again in a south extension of the trench (Incident 35). This location is near the south corner of Notre Dame Street where it intersects with Broadway just in front of the Kilmer Funeral Home (82 Broadway), a large mid-nineteenth century brick house.

The feature itself, was a mortared brick box-shaped structure with vertical walls laid one brick thick, with a solid, (presumably flat) bottom, and faced with a mortar or plaster substance on the inside surfaces. Its northern end was not exposed so we don't know its full length. It was not found in trenching for Incident 172, which started at 17+322 and went north. A long section of the east wall of the brick feature was uncovered in Incident 35, East and South Extensions, construction trenches that were backfilled right away. Then three weeks later, just the south end of the structure was uncovered (and reburied) during further gas line exploration in Incident 56. The resulting exposures added up to a structure that measured at least 6.5 or 7 m (21 or 23 ft) long, by 2.8 m (6.5 ft) wide, the long side parallel to the sidewalk. The topmost brick course was 105 cm (3.4 ft) below the ground and the structure itself was 160 cm (5.2 ft) deep. It was open at the top and completely filled with mixed soils.

Its function is unknown as is its date of construction. Since the bricks were faced with mortar or plaster on the inside surfaces, it would seem the structure was designed to hold a liquid. Its location below the street is suggestive of its having something to do with a drainage function or with storage of water like a cistern, though excavations did not reveal any evidence of openings in the walls as for passage of pipes or drains. In the northern exposure of the feature several utility pipes appeared to have disturbed the western wall (Photo 8.1 on the facing page) but the eastern wall was intact for at least a length of 3.5 m (11 ft) (Photo 8.2 on page 280) toward the south. Part of the south end wall had a large U-shaped gap and was missing several rows of brick as if it had been disturbed at some previous time (Photo 8.3 on page 280). The concrete covered pipe, the same as the

one first noted in DRT 4, ran north-south just outside the west wall of the brick feature.

A small sample of the sandy soil filling the feature near the northern end was examined for artifacts. It produced some wood fragments, two machine cut nails, several nineteenth century stoneware and porcelain sherds, a clear curved glass fragment, a piece of redware drain pipe, and some coal. The redware drain pipe is a fragment of the terracotta curb drain first identified during excavations of DRT 5 in front of #82 Broadway (Kilmer Funeral Home). The drain was also spotted in one trench exposure under the curb across the street in front of #85 Broadway, a ca. 1900 house. This pipe had a 3-inch inside diameter and ran horizontally along the base of the concrete curbing for most of the frontage of #82 Broadway, though its beginning and ending points were not exposed.

Laid in one foot-long sections the drain tile was probably for draining the curb similar to the modern plastic ones installed under the new curbs with this highway reconstruction. It is probable that the drain tiles were manufactured by the Hilfinger Pottery located south on Broadway at its intersection with Argyle Street. They started as a stoneware manufacturer in the nineteenth century but switched to flower pots and drain pipes in the early twentieth century (see discussion of Hilfinger Pottery site, Part IV on page 321).

Interestingly, this curb drain pipe was not observed anywhere else in the archaeological investigations along Broadway. No other large subterranean brick structures like this one were observed anywhere else either, though several other much smaller round brick storm drains were found along the street in various locations. It is possible that the curb drain flowed into this brick structure but there is no way of knowing for sure. It is worth noting that this property at #82 Broadway, and the expansive brick house across the street at #83 Broadway, not to mention the nearby properties at #79 and #85 Broadway, all ranging in age from the mid- to late-nineteenth century, were built and owned by prominent village industrialists and entrepreneurs who may have initiated road and drainage improvements exclusively along their property frontage.

## 8.10 DRT 4, Unit 4, Feature 18

Unit 4 in DRT 4 was excavated along the east (north-bound) parking lane in front of the mid-nineteenth century house at 72 Broadway. A small test pit was first excavated to locate Feature 16, the north-south oriented cement-covered utility pipe and its builder's trench. What appeared were the partial remains of a roughly rectangular brick and stone feature (Feature 18) situated between 65 and 101 cm (26 and 39 in) below the ground surface. The unit was expanded to 1.5 m<sup>2</sup> (59 in<sup>2</sup>), and excavated down to reveal that the



**Photo 8.1:** View east of Incident 35 East Extension showing the brick wall of Feature 2 at the far end of the trench. The utility pipes in the foreground have intruded through part of the west wall of the brick box feature.





**Photo 8.2:** View west of Incident 35 South Extension showing the modern black gas pipe that runs below the eastern sidewalk of Broadway and the outer, unparged face of the eastern wall of Feature 2.



**Photo 8.3:** View north of the south end of the brick box structure in Incident 56. Note the U-shaped breach in the end wall, and the cement-covered pipe beneath the archaeologist's feet (at left).



bricks continued north. The top of the feature was just below the pavement base. The west side of the feature was disturbed by what appeared to be a later intrusion (Feature 15), but the east side was located in soils perceived to be undisturbed original matrix consisting of dark yellow brown silty sand (Figure 8.12 on the following page). The feature was bisected east-west within the unit, and since it extended beyond the north wall, the unit was then expanded another 50 cm (20 in) to the north.

After it was fully exposed, we could see that the bricks in the east side of Feature 18 were roughly in a straight line, as were the ones at the north end, though they appeared jumbled together at different angles rather than laid in straight even courses. Some of the bricks were disturbed along the south end by the initial shovel test pit. The cement-covered utility pipe and trench were revealed to be approximately 20 to 80 cm (8 to 31 in) west of the brick feature. The Feature 15 disturbance, which had dark gray brown silty sand, may be related to the pipe trench (Figure 8.13 on page 283, Photos 8.4 to 8.6 on page 284).

Feature 18 measured 86 cm (34 in) long north-south by 40 cm (16 in) wide east-west and was 36 cm (14 in) in height from the lowermost bricks to the top. Only one whole brick was found in the feature; all the rest were fragmentary. The one complete brick was misshapen, over fired, and found with lime mortar on one face. The bricks ranged in size, color, and density and were hand made with lots of inclusions, much like the bricks used in the French and Indian War era fireplaces found in other parts of the project. Some of the bricks were decomposing badly, particularly those at the lower levels. The rocks are made of a hard limestone or bluestone material and look like spalls or trimmings off of larger rocks, similar to the debris left after stones have been dressed by a mason. Most of the rock pieces were found mixed with brick within the upper 10 cm (4 in) of the feature, but the base was made entirely of partial bricks, some with white lime mortar adhering (Photo 8.7 on page 285).

In dismantling the stone and bricks, archaeologists came upon a relatively even break or level separation roughly half way down in the structure, below which there were clumps of thick, crumbly, unfired clay, possibly an additional form of mortar. With depth, the clay seemed to become more prominently used as a mortar, with the typical white lime mortar decreasing in appearance. In some areas, the clay was in large chunks that filled pockets between bricks. Below this level break in the feature was where the most decomposed crumbly bricks were located.

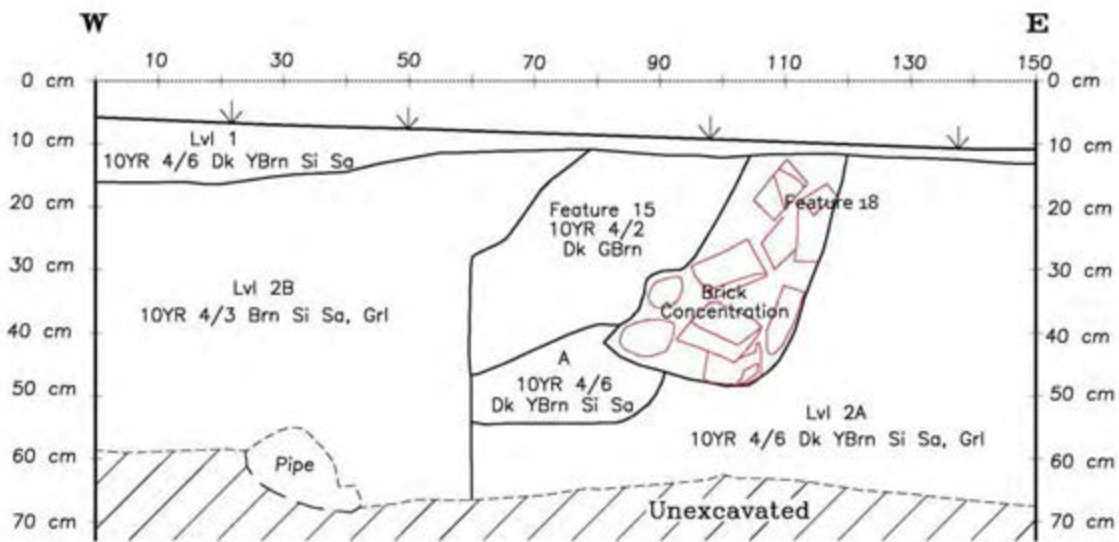
Artifacts recovered from the soils surrounding the feature within Unit 4 and its north extension total 392 items, composed mostly of common nineteenth century sheet refuse including ceramic sherds ( $n = 90$ ), clam shell ( $n = 94$ ), window glass ( $n = 23$ ), lamp shade glass ( $n = 53$ ), cut and wire nails ( $n = 29$ ), clay smoking pipe

( $n = 4$ ), bottle glass ( $n = 12$ ), metal fragments, coal, slag, and a few animal bone fragments. In the lower half of the brick feature itself, at 100 cm (39 in) below datum, a small piece of eighteenth century bottle glass neck was found along with a cow bone, an unidentified rusty metal fragment, a small clam shell fragment, a very small plain white earthenware rim fragment, a small piece of coal, a large piece of slag, and a piece of fire-cracked rock. A sample was taken of some of the handmade bricks and rock pieces as well as some of the mortar.

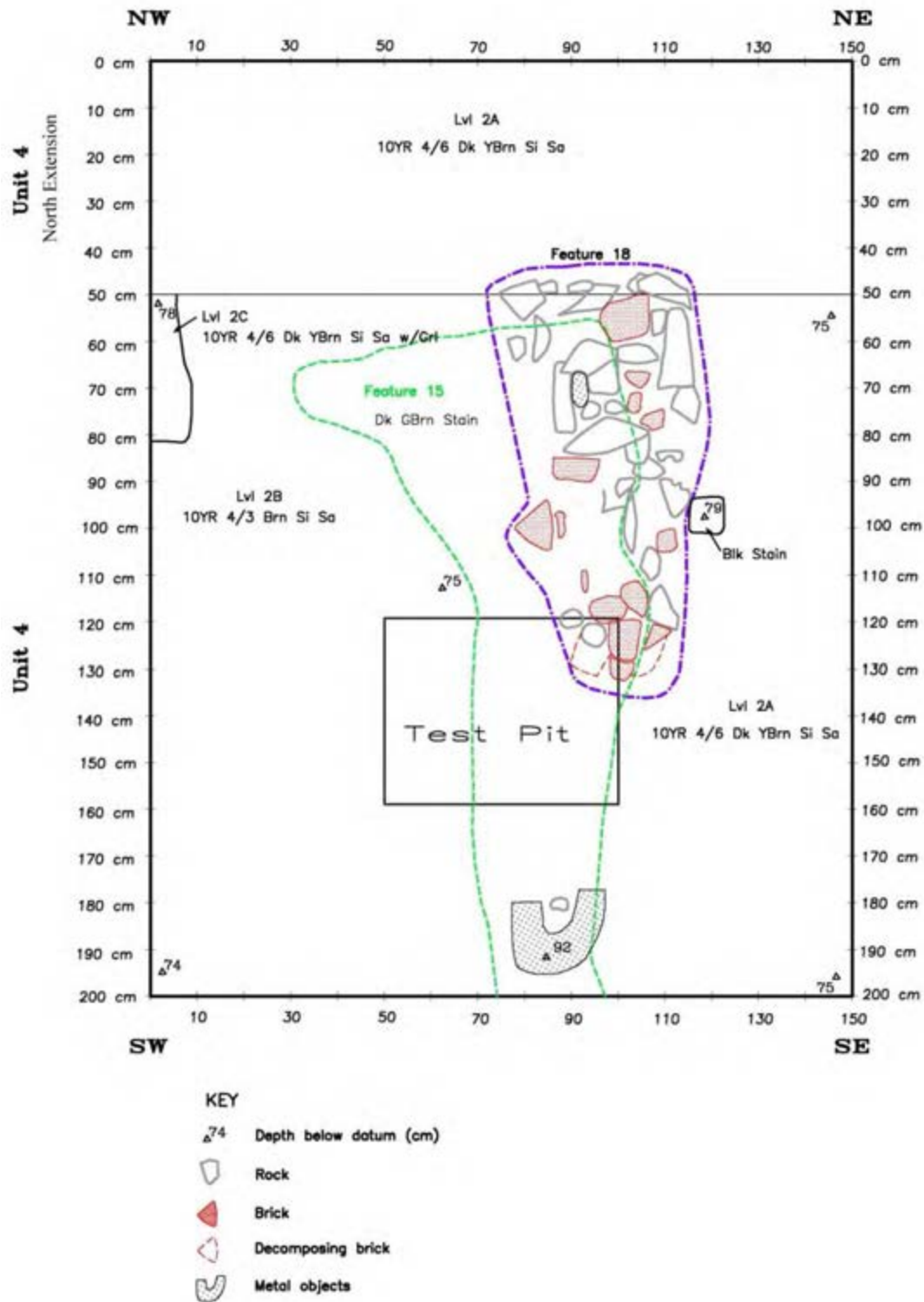
This brick structure is suggestive of components of some of the French and Indian War brick fireplaces encountered during the project based on the type of brick found, the clay used between bricks, and its basic size and shape. It was dissimilar in that all but one of the bricks were partial rather than whole, and there was a noticeable absence of charcoal and ash in the soils in and surrounding the feature.

The only artifacts that are strongly (though not conclusively) diagnostic of the mid-eighteenth century are the olive-green wine bottle glass fragments, the one found in the lower part of the feature, and four others found in the surrounding soils. However, the presence of a few of these mixed into a nineteenth century feature or deposit is not unusual for this part of the street (within the eighteenth century encampment footprint) since there have been many nineteenth and twentieth century utility and street paving disturbances that resulted in the intermixing of earlier with later deposits.

It is hypothesized that this feature could have been a footing for a stone carriage block in the nineteenth century. This hypothesis is based on its proximity to the street edge, its location directly in front of a nineteenth century house, and its relatively shallow depth just below the twentieth century pavement base. The street was first paved ca. 1915 with brick, which would have necessitated the removal of the block. There are historical photos of Broadway in Fort Edward showing carriage blocks along the street edge or curb (Photo 8.8 on page 285), so this idea is plausible. The question is whether or not carriage blocks had or required sub-surface footings or did they simply rest on the ground surface.



**Figure 8.12:** North wall photo (above) and section (below) of profile through DRT 4, Unit 4. Features 15 (grayish soil) and 18 (bricks) appear near the center of the profile. The western part of the unit shows the mixed fill soils in the trench over the concrete-covered pipe.



**Figure 8.13:** Plan of DRT 4, Unit 4 and its north extension showing the location of the test pit and the outlines of Features 15 and 18.





**Photo 8.4:** Feature 18, the stone and bricks revealed after the grayish soil of Feature 15 had been removed.



**Photo 8.5:** Feature 18 after excavation, facing north.



**Photo 8.6:** Feature 18 after excavation, facing west. The cement-covered pipe is visible beyond the brick and stone feature.





**Photo 8.7:** Two of the brick fragments with lime mortar still attached to one face.



**Photo 8.8:** Historical photo of Broadway near the intersection with Bridge Street showing two carriage blocks at the edge of the street (courtesy of Fort Edward Historical Association).

## **Part III**

# **The Fort Edward Feeder Canal Bridge Site**

**NYSM #12573**

# 9. Feeder Canal Bridge Site Overview

JOEL ROSS AND NANCY DAVIS

## 9.1 Site Identification

The Route 4 Reconstruction required the disturbance of the soils just south of the intersection of Broadway, Upper Broadway, and Terrace Place. The Archaeological monitoring here exposed large masonry, cement, and wooden features in the vicinity of a bridge that once crossed the former Fort Edward Feeder Canal along Route 4 (Broadway). This is the location of the Fort Edward Feeder Canal Bridge archaeological site, which is significant for its association with the Old Champlain Canal that is listed on the National Register of Historic Places (09.01.1976) and for its influence on the development of Fort Edward's thriving nineteenth century industry.

## 9.2 Site Size and Location

The site is located on Broadway in the north part of the village of Fort Edward just north of Liberty and Mill Streets. It is near the base of Fort Edward Hill. The site extends from the street curb on the west to the concrete retaining wall along the east side of Broadway, and where that ends it crosses to the north through the mouth of Terrace Place. It spans Station Markers (SM) 17+975 to 18+020 of the DOT's construction plans for an overall length of about 45 m (147 ft). The site area equals 810 m<sup>2</sup> (8,718 ft<sup>2</sup>) (Photo 9.1 to 9.3 on pages 289–290, Figures 9.1 on the next page and 9.2 on page 291).

The site boundaries were based on those areas identified during the 2006 and 2007 construction monitoring, with features made of concrete, structural stone masonry, and wood in the vicinity of the Broadway bridge over the former feeder canal. The archaeological deposits and features associated with the site were only partially exposed in the machine excavated utility trenches, which were of varying widths and depths. The features appear to extend laterally east of, west of, and below the monitored trenches. Due to the varied location and chronology of these excavations the features could only be partially traced from trench to trench.

## 9.3 Environmental Context

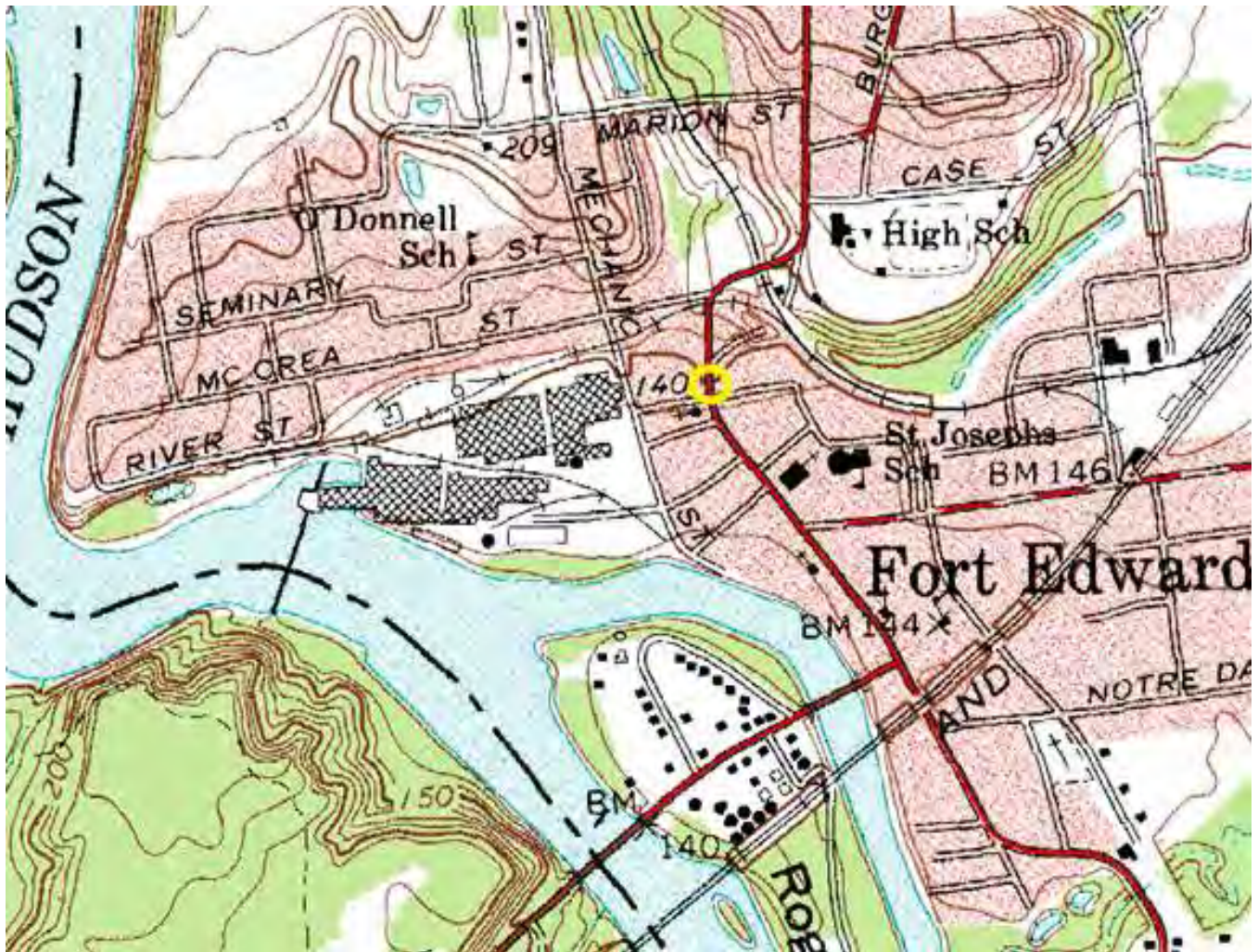
Lying on a raised road berm sloping up to the north, the landform west of the site consists of a lower level grass lawn, paved parking lot, and storage area associated with the paper mill property. Southeast of the site is a single story cement block structure (#1-7 Broadway) that occupies the northeastern corner of the intersection of Liberty Street and Broadway. Between that structure and Terrace Place is a 1.8 m (6 ft) high poured concrete retaining wall along the east edge of the road that supports the fill berm elevating the street above the natural ground level. At its north end, the retaining wall joins an east-west running man-made terrace used for parking trailers that extends about 25 m (82 ft) east along the south side of Terrace Place (Figure 9.2 on page 291; Photo 9.4 on page 292). The low area formed at the base of these walls was presumed to be part of the canal alignment that has been filled in, but further study shows the alignment falls beneath the terrace itself.

The southern side of the depression is marked by the foundation and north wall of the cement block structure. The cobblestone wall along the northern edge of this depression runs approximately 70 feet before it makes a right angle bend to the south and appears to represent a relatively modern landscape retaining wall, not an intact portion of the northern side of the prism.

It is important to note that the natural landscape around this former bridge crossing has been repeatedly altered through the years, first with the early nineteenth century initial excavation of the Fort Edward Feeder, followed by construction and repeated replacements of the bridge, multiple trolley lines, and road realignments. Additional alterations to the project area include the removal of the historical structures that once surrounded the bridge; the two-story Germain Block Store (Marble Shop) immediately to the northwest, a market to the southwest, and the Carpenter Block building on the southeast. Few surface features associated with these nineteenth century landmarks are visible today.

According to the Washington County soil survey this area lies at the interface of two sandy soil types; Oakville loamy fine sand, 5 to 15 percent slopes (OaC) and Claverack loamy fine sand, 0 to 2 percent slopes (CIA) (Winkley 1975). The northern and primary soil type found here was the Oakville Series consisting of deep excessively drained sandy soils, deposited by water or wind, and associated with deltas and terraces. Among other places, the OaC soils are located on terrace escarp-





**Figure 9.1:** 1966 7½-Minute Hudson Falls, New York quadrangle (USGS) showing the location of the Fort Edward Feeder Canal Bridge Site (yellow circle).





**Photo 9.1:** The Fort Edward Feeder Canal Site from the southeast, facing north.



**Photo 9.2:** Fort Edward Feeder Canal Site facing east toward Terrace Place.



**Photo 9.3:** Fort Edward Feeder Canal Site from the northwest, facing south.

ments, which correspond to the landform of Fort Edward Hill where the site is located.

Occupying the southern portion of the site the Claverack Series also consists of deep, moderately well drained coarse-textured soils, with a seasonally high water table. This soil is also made up primarily of sand or loamy fine sand to depths of about 84 to 160 cm (33 to 63 in) where it is underlain by brown to reddish brown silty clay loam with gray and strong brown mottling, and below that by clay or silty clay. An earlier soil survey also identified the natural soils of the entire village and site area as a type of sand. This sand was classified as Hoosic coarse sand (Hc) consisting of 10 to 15 cm (4 to 6 in) of light-brown coarse to medium sand resting on a subsoil of light-brown to yellow sand of the same texture for several feet. Clay generally underlies the subsoil (Carr 1909).

While the soils observed in these excavations were generally described as sand, they were also generally mottled and associated with bands of gravel, cinders, and coal ash which are commonly found in road fill. Other evidence of filling consisted of large construction stone rubble. It is unclear if natural soils were encountered in any of these trench excavations.

## 9.4 Site Specific Historical Context

Fort Edward, known in early historical times as The Great Carrying Place, has long been a central location for the north-south transportation between the Hudson

River and Lake George and Champlain Valleys. As part of this transportation history, this site is associated with the intersection of a road, feeder canal, bridge, and trolley line.

### *The Road*

Like many early American roads, Broadway probably originated as an Indian trail. The documented history of this north-south road alignment as it runs through Fort Edward spans approximately 250 years. While historical occupation of the Fort Edward area began in the late seventeenth century, the first map depicting this road dates from 1755 (Figure 9.3 on page 293). Originally known as the “Military Road” during the French and Indian and Revolutionary Wars, it was the main land route to Lake George. According to local histories Broadway may have originally run to the east of the project area connecting with what is now Burgoyne Avenue on top of the hill to the north (Bascom 1903; Hill 1929).

Multiple loops similar to the one created by Upper Broadway and Terrace Place are seen ascending the hill in what is now the northern end of the village as early as 1758 (Figure 9.4 on page 294). These loops may have been due to the need to cut a road onto higher ground when the direct route was too muddy in wetter seasons (Hill 1929). Following the Revolutionary War the road through the village changed names several times from Main Street, to Lydius Street after one of its first settlers, and finally to Broadway. On the 1830 Homes Hutchi-



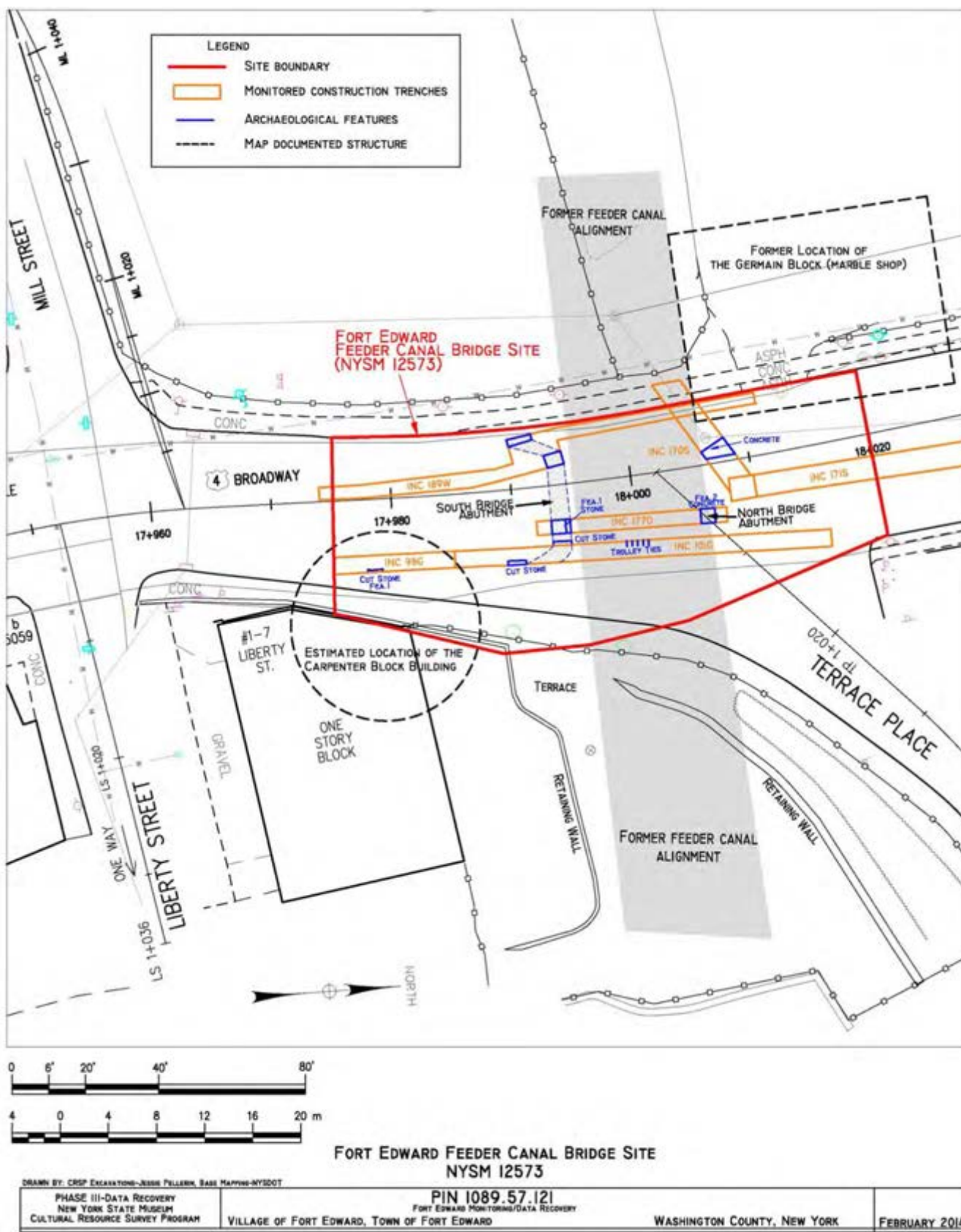


Figure 9.2: Map of Fort Edward Feeder Canal Bridge Site (NYSM# 12573).



**Photo 9.4:** View west of the cobblestone retaining wall along the man-made terrace south of Terrace Place. A trailer is parked at right. Broadway is in the background.

son canal survey map it was labeled Main Street (Figure 9.5 on page 295). In 1806 the road became part of the Waterford and Whitehall Turnpike (Johnson 1878) and was the initial thread for Fort Edward's expansion in the nineteenth century.

It is unclear if the portion of the road that runs through the village was ever planked. However, the village was adjacent to at least three plank road companies from the mid nineteenth to early twentieth century: the Glens Falls and Lake George Plank Road, the Argyle and Fort Edward Plank Road, and the Fort Edward and Fort Miller Plank Road. The Glens Falls and Lake George Plank Road (located north of the village along what is now Broadway) was used by stage coaches that ferried large numbers of people between the Fort Edward train station and Lake George (presumably over this bridge and feeder) from 1848 to 1882 (Randall 1986).

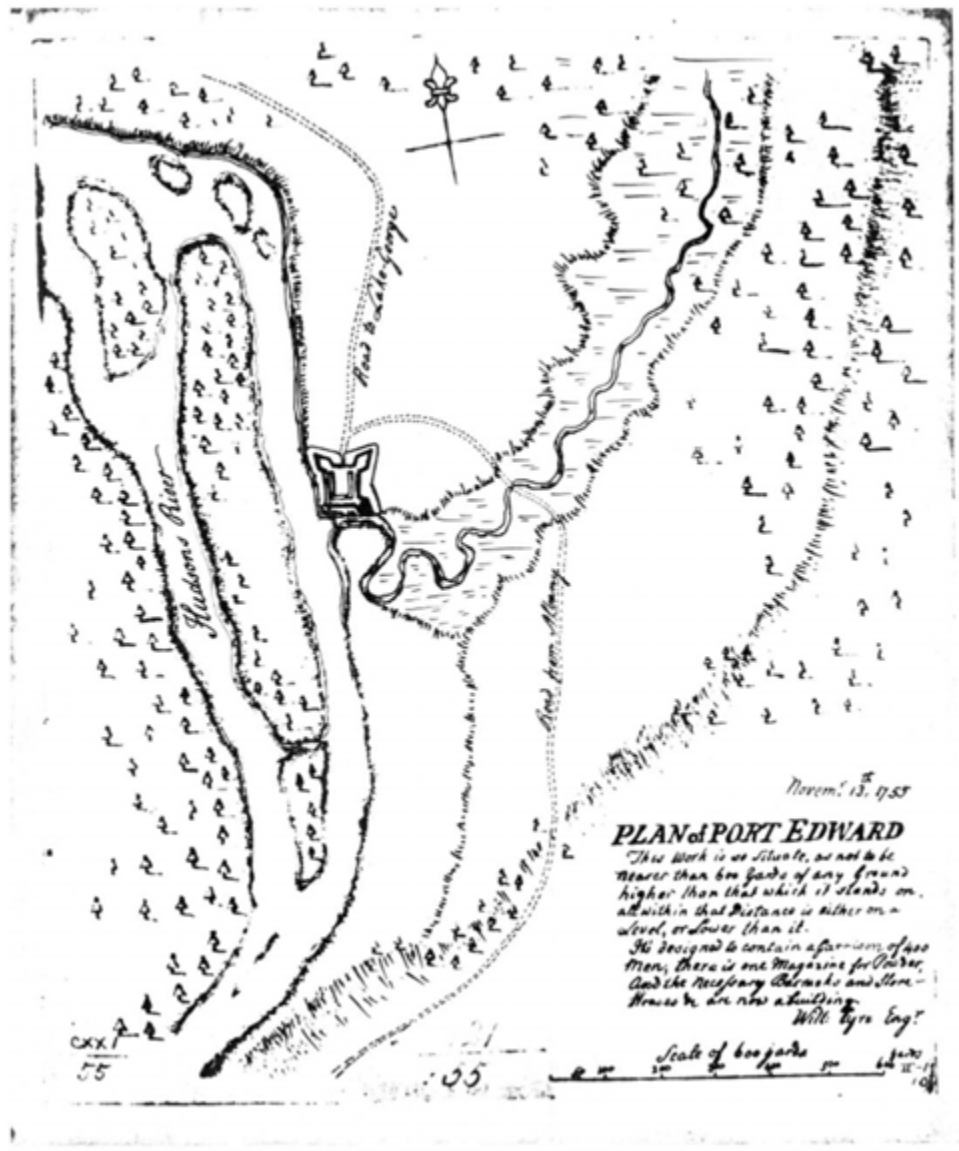
Interestingly, there are two maps from the early twentieth century that refer to the short section of road known otherwise as West Broadway as "Plank Street." One is the 1910 Plan & Location of Proposed Macadam Road from Marble Shop Bridge to N. Y. State Road (Figure 9.6 on page 295), which was found in the Fort Edward Village Clerk's office. It begins at the bridge and goes north along Broadway showing the straight section of road between the bridge and McCrea Street clearly labeled "Plank Road." The other one is from 1911 titled simply Village of Fort Edward stating it was made from "old maps and surveys by F. G. Tilton of Fort Edward" (Figure 9.7 on page 296). Since this map was made

from existing earlier maps, it probably took the Plank Street name from the 1910 map. Given the name on these maps, it is presumed that at some point this section of road was paved with wood planks.

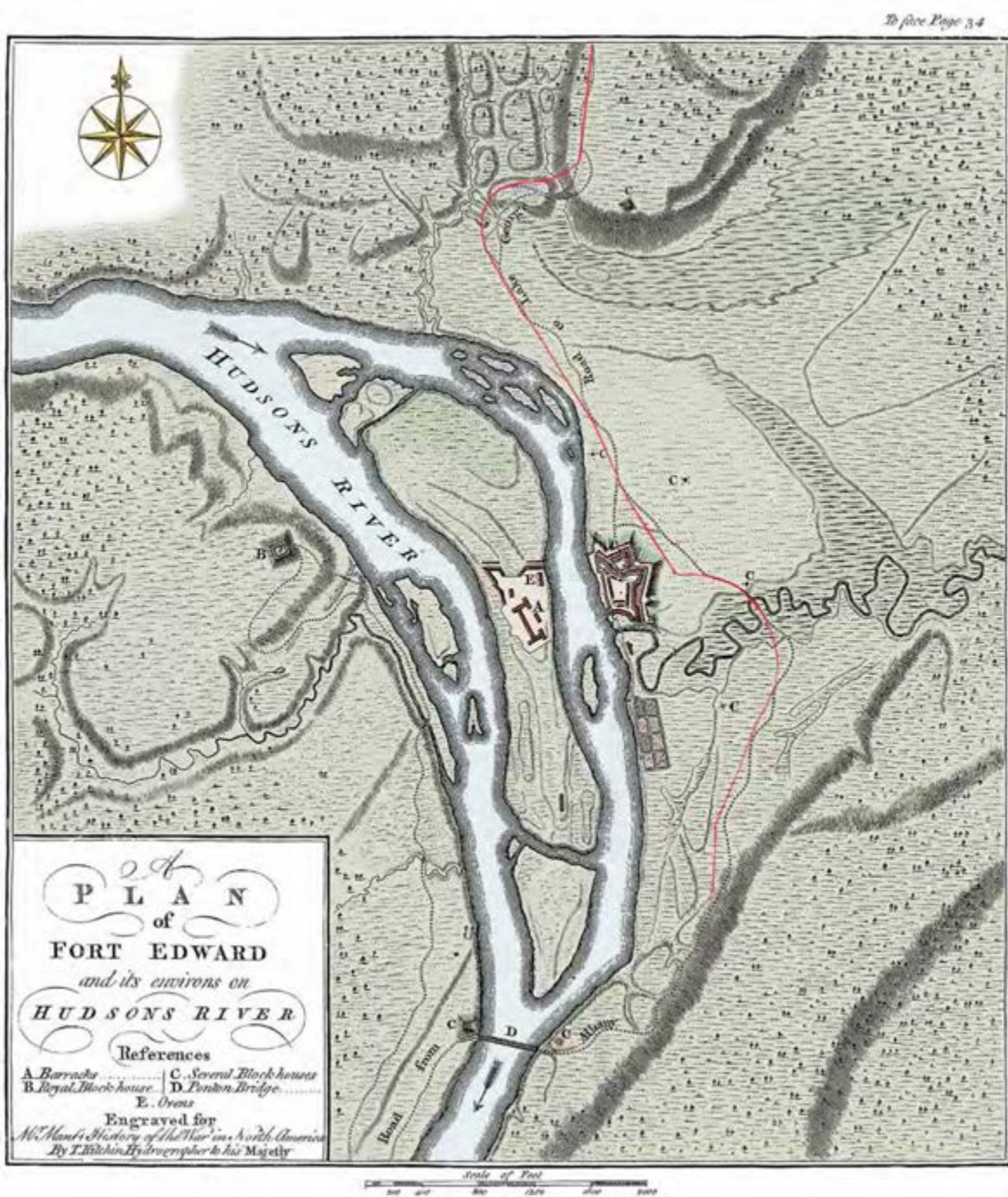
Oddly, this section of the road between the feeder bridge and McCrea Street was not paved with macadam at that time. In fact highway construction plans from 1913 (Figure 9.8 on page 296) indicate it was to be paved with a four inch layer of brick over one and a half inches of sand, over five inches of concrete. At that time West Broadway was approximately 26 feet wide corresponding mostly with the eastern half of the current road. A structure labeled "Stores," otherwise known as the Germain Block, or Marble Shop, occupied much of what is now the western half of the roadway in and adjacent to the northwestern site area (Figure 9.8 on page 296). This more narrow earlier road is described in a newspaper article post-dating the bridge, stating that the road "just north of the old Marble shop" may be widened for among other reasons that south bound strangers to the village are creating traffic congestion with north bound trucks when they disregard the "one way beacon at the intersection of McCrea street and Broadway" (The Post Star, 8 August, 1929:6).

The roadway to the south, including what was the location of the feeder and bridge (see below), became part of the state road in 1944. The 1938 NYSDOT record plans (Figure 9.9 on the preceding page) for widening and straightening the road depict the site area, but no discernible markers of the canal or bridge are depicted.



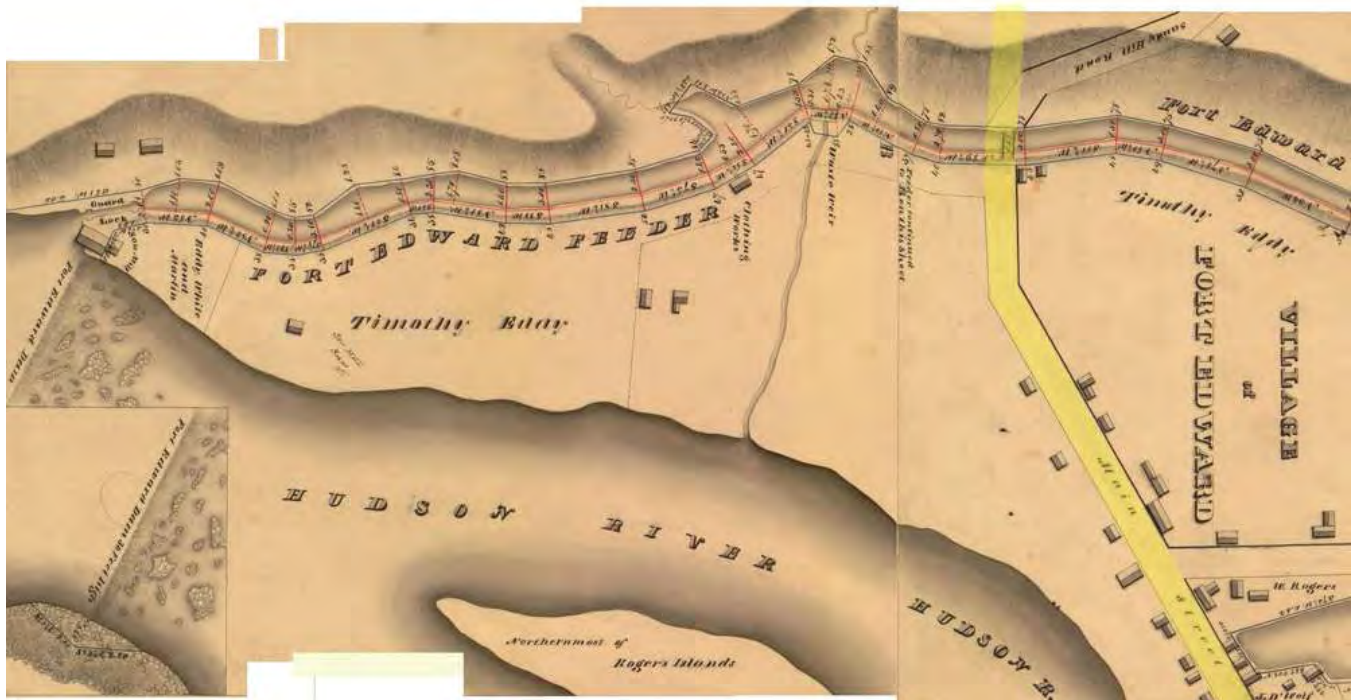


**Figure 9.3:** 1755 Plan of Fort Edward drawn by William Eyre, Engineer (Crown Collection Series II, Vol. 1, No. 10).

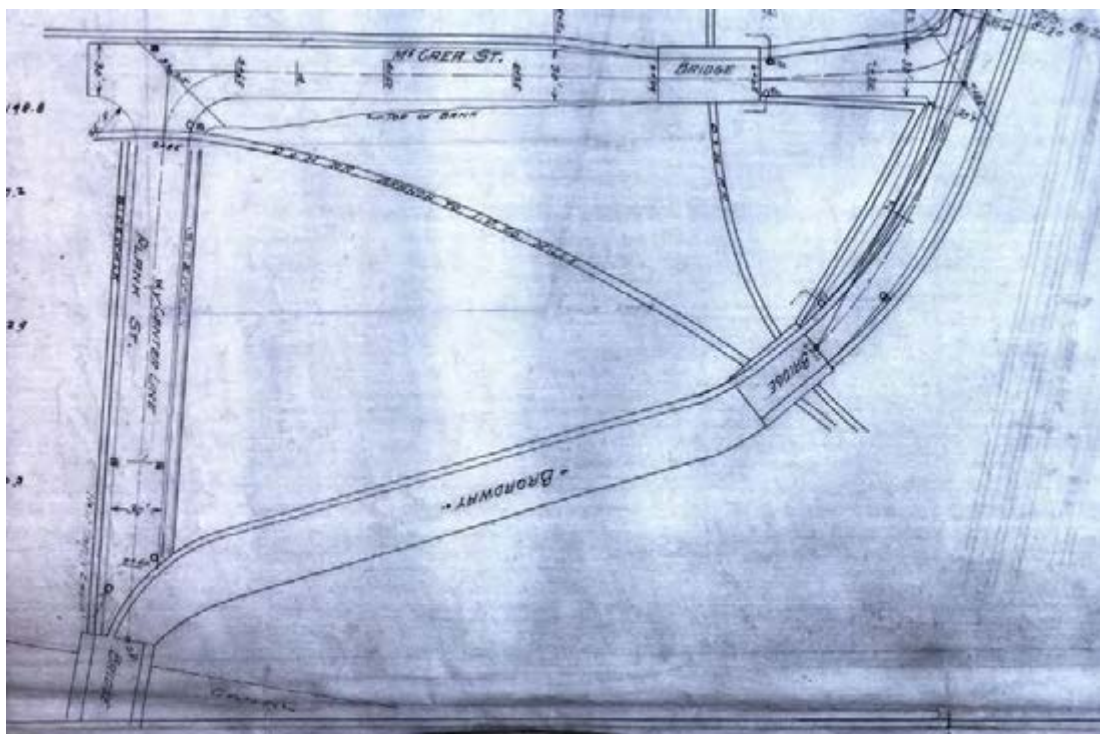


**Figure 9.4:** A Plan of Fort Edward and its environs on Hudsons River (Kitchin). This is believed to depict Fort Edward around 1758. Red line is approximate alignment of project area.

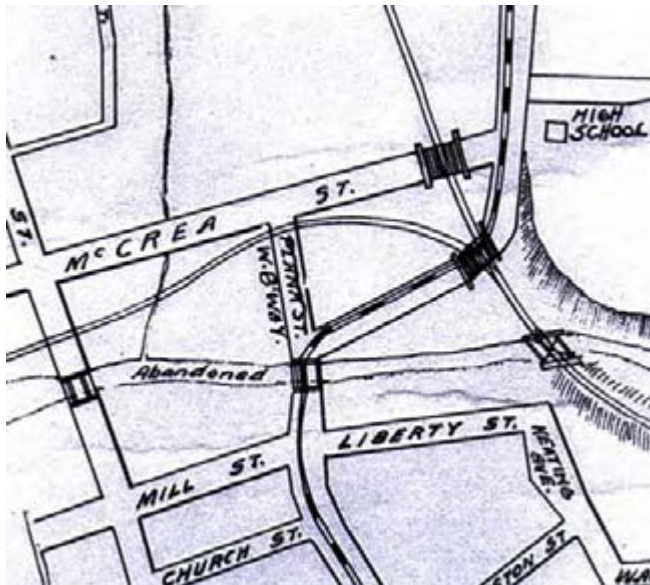




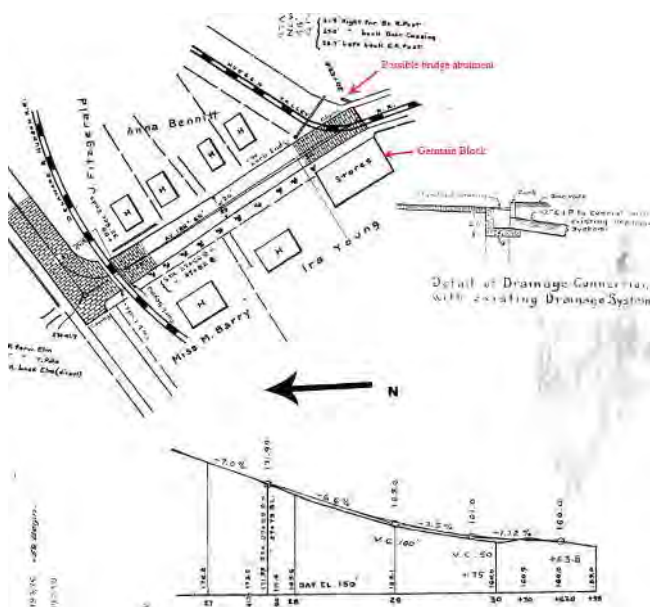
**Figure 9.5:** Detail of the 1830 Champlain Canal Survey Map of the Fort Edward Feeder Canal (Hutchinson). The project area is highlighted in yellow.



**Figure 9.6:** Section of the 1910 Plan and Location of Proposed Macadam Road from the Marble Shop Bridge to the N.Y. State Road (courtesy of the Fort Edward Village Clerk's Office).



**Figure 9.7:** Detail of a 1911 map of the Village of Fort Edward (Tilton) showing West Broadway, also referred to as Plank Street (courtesy of the Fort Edward Village Clerk's Office).



**Figure 9.8:** Detail of the 1913 State of New York Department of Highways Plans for Improving the Fort Edward Village County Highway 1083, Sheet 2 (New York State Department of Transportation).

While “Mrs. Anna J. Germain Stores” labels the property of the Germain Block, the foot print of the structure is not depicted, suggesting it had been or was to be removed at this time. The straightening and widening of the roadway up to 20 feet between the Liberty/Mill Street and McCrea Street intersections would have necessitated the removal of the Germain Block and the sidewalk in front of it since the street expanded in that direction.

As will be further discussed in the sections below, in the late-nineteenth and early-twentieth centuries, the portion of the road that currently occupies the site area at the confluence of the feeder canal, bridge, and trolley line, became an increasingly dangerous intersection for both drivers and pedestrians. With the abandonment of the feeder, bridge, and trolley line, the alignment, grade, and width of the road were altered here in an effort to reduce the number of accidents and to better adapt the road for automobile use in the early-twentieth century.

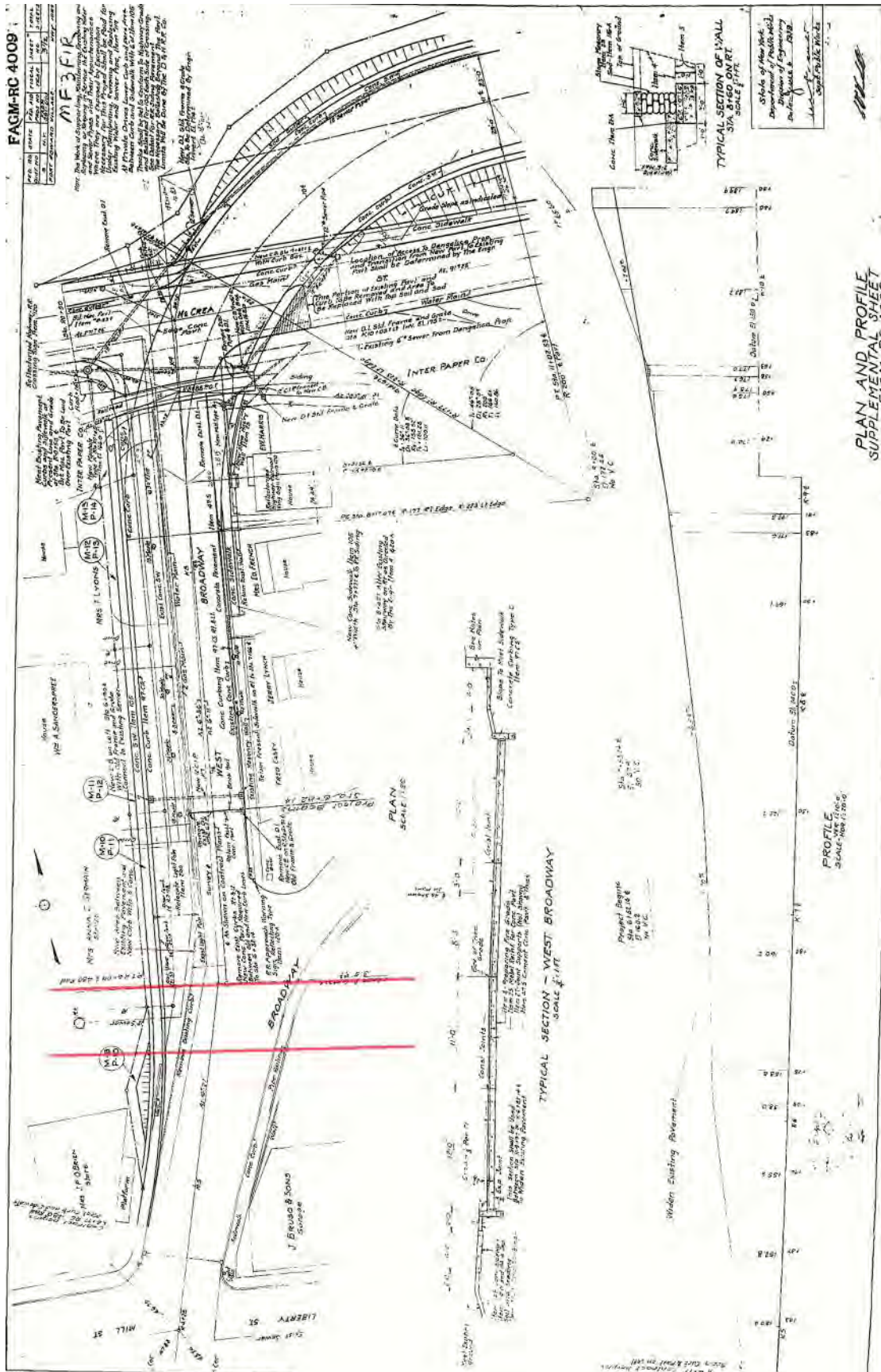
### Feeder Canal

While the canal officially opened in 1822, the portion within the village of Fort Edward connected to the navigable waters of the Hudson River in 1819 (Whitford 1906). Very little documented history remains for the Fort Edward Feeder or the bridge located within the project limits. What detailed information could be found was generally anecdotal consisting of a few maps, some state and federal canal bulletins, and newspaper articles. One reason for the lack of historical documentation is that this channel functioned as a state-run feeder for only a relatively short time and was a privately owned branch of the canal for most of its functioning history.

From the very beginning of the Champlain Canal this feeder, along with the main route through the village, suffered from an insufficient water supply. The original route of the canal went down what is now State Street connecting directly into the Hudson River where canal boats were expected to float on slack water down to Fort Miller and re-enter a channelized system there. A dam 900 feet long and 28 feet high was built in the Hudson River at Fort Edward to raise the water to the proper elevation through the feeder and into the Champlain in the village. It was damaged in a spring freshet in 1822 (Whitford 1906). While the dam was repaired, the route through the village and down the Hudson to Fort Miller continued to suffer from a lack of proper water elevation (Sentinel 1883:26 October).

In 1828, the main canal's direct connection into the Hudson was abandoned and a new route was cut down the east bank of the river (Johnson 1878). In 1829, the feeder also received a great deal of attention; a wooden guard-lock was constructed where it left the river, and the feeder itself was enlarged and its banks were secured by piling (Whitford 1906). While no specifications were given for either the feeder's original or enlarged di-





**Figure 9.9:** 1938 highway record plan for State Highway No. 1083, RC 4009, sheet 31/2 (New York State Department of Transportation). The red lines represent the approximate location of the feeder canal.

mensions, the earliest detailed map depicting the feeder, the Champlain Canal Survey map Hutchinson, was produced around this time (Figure 9.5 on page 295). This may be the only detailed map produced of this feeder.

The 1896 Barge Canal Sectional Map (Figure 9.10 on the facing page) of the feeder is identical in dimensions and shape indicating it is likely just a copy of the 1830 map since that portion of the canal was privately owned and operated at that time. These scaled maps depict the feeder in the vicinity of Broadway to be approximately 43.75 feet wide with the bridge abutments approximately 62.5 feet apart.

An 1835 report on this feeder describes not only the role it was meant to play in the function of the canal, but also the continued water elevation issues associated with it:

“The Dam for the Fort Edward Feeder experienced a failure in 1833 and a partial failure in 1834 below the Champlain Canal summit. A wooden guard lock defends the feeder from the river floods; and the feeder is a navigable canal conducted along the foot of a hill, of sliding clay, and supported on the opposite side by a high towing-path embankment, to the Champlain summit of which it is part.”

(van Rensselaer et al. 1835)

It goes on further to say:

“The feeder was designed to supply the Champlain Canal northerly 12 miles, to Fort-Ann, and the three locks and short levels which conduct the navigation into Halfway Brook. Any deficit of the water in the feeder will be experienced at the north end of the 12 mile level, and this inconvenience is often felt in that direction. . .”

(van Rensselaer et al. 1835)

The feeder was also meant to supply water eight to eleven miles south to Fort-Miller as well. Additionally, the water supply issues were blamed on a number of mills drawing water out of the feeder through a series of illegal cuts. The state intended to forcibly close off the water supply to these businesses and make it a felony to reopen them. While some businesses complied, a few showed up with 100 to 150 men who forcibly stopped the filling in of the embankment cuts to their mills (van Rensselaer et al. 1835).

Beginning in 1824, and expanded to make it navigable in 1832, the Glens Falls Feeder quickly proved to be a more reliable source of water. In 1843, the Fort Edward Feeder was officially abandoned by the State, and the dam was lowered and shortened (Whitford 1906). In 1845, a group of local businessmen purchased the feeder and dam from the State in addition to some of the surrounding land and an old mill with its water rights. These men later incorporated as the Fort Edward Manufacturing Company (Johnson 1878). Essentially forming

an industrial park around the feeder, the area became one of the community’s economic corner stones, a position it continues to hold today.

On the 1830 map (Figure 9.5 on page 295) the feeder is connected to the Hudson River by a lock at the west end, possibly the guard lock constructed in 1829 (Whitford 1906). However, every other map showing the feeder from 1853 to 1924 clearly depicts the west end cut off from the Hudson River as best seen on the 1875 bird’s eye view (Figure 9.11 on the facing page). In fact the water from the dam was diverted through a series of raceways powering several mill complexes.

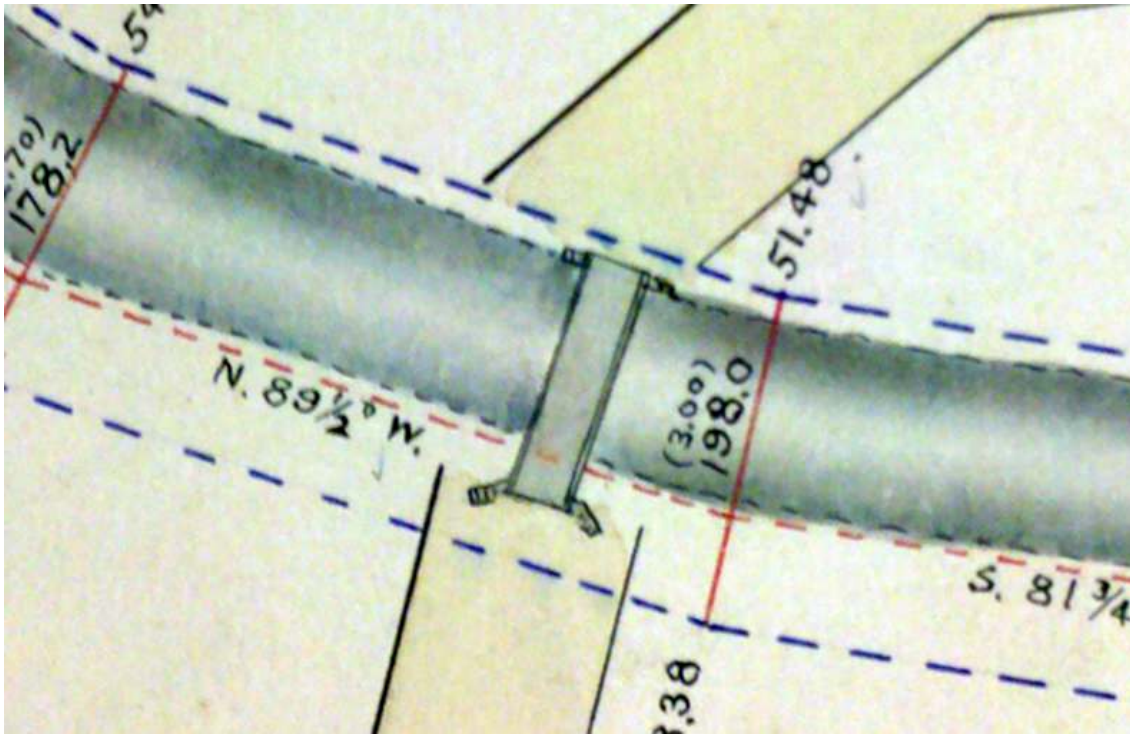
While most of the village maps label this body of water as the “Feeder Canal” or “Fort Edward Feeder” other historical documents refer to it as the “Old Fort Edward Feeder” or “old feeder,” “hydraulic canal,” “branch of the canal,” “The International cut” and “the Old International Canal” referring to the International Paper Mill that occupied the property in later years. It appears that after the purchase from the state, the feeder was converted into a short branch of the main Champlain Canal either by the state or the Fort Edward Manufacturing Company.

It is not clear who administered this feeder or branch from 1845 onward. Although privately owned, the state appears to have had an interest in its operation. Beginning in the 1860s the state initiated an update of the Champlain Canal system. Part of this proposed work included improvements to the Fort Edward feeder, with a bulkhead guard at the door, replacing the original prism with substantial rubble masonry walls, and adapting it to an anticipated supply of about 14,250,000 cubic feet of water per day, this being the quota estimated for the river improvement supply.

Again the lack of a sufficient supply of water was blamed on the mills in the vicinity (van Richmond 1868). This proposal was also mentioned in a newspaper article that referred to the “re-establishment of the old Fort Edward Feeder” (Albany Journal, 15 February 1867). The federal government made a similar proposal in 1875 when they wanted to improve the canals connection with the St. Lawrence River (Wilson 1875). No plans or references could be found suggesting any of this mid- to late-nineteenth century work was done to the feeder. Other references of government involvement in the maintenance of the feeder included waste weir work near where Mechanic Street crossed west of Broadway.

The 1875 Bird’s Eye View of the village (Figure 9.11 on the previous page) not only depicts the feeder closed off, but clearly shows canal boats docked and loaded. As early as 1833 the canal had been expanded into a navigable waterway (van Rensselaer et al. 1835). While there are references to work being done on the feeder, no specific historical records or detailed maps could be found describing its dimensions. As previously stated, the 1830 map depicts the feeder approximately 43.75 feet wide in the vicinity of Broadway.





**Figure 9.10:** Detail of the 1896 Barge Canal Section Map Schillner showing the Broadway bridge over the Fort Edward Feeder Canal.



**Figure 9.11:** Detail of the 1875 Bird's Eye View of Fort Edward (H. H. Bailey & Co.) showing the feeder canal as it ran along the north side of the mill yard. The Broadway bridge over the feeder is to the right.

A newspaper article from 1883, reporting on a train that collapsed the railway bridge east of Broadway, stated that it “spans the canal feeder which is fifty feet wide” (Sentinel 1883:26 October). This approximate 50 foot span is corroborated by an 1854 plan for “Bridges for Feeders” which depicts the typical bridge spanning 52 feet over the feeder canal including what appears to be a 6 foot wide towpath (Figure 9.12 on the facing page).

It is interesting to note for comparison that at that time many of the factories along the navigable Glens Falls Feeder appeared to have direct business relationships with the factories along the Fort Edward Feeder, so it is reasonable to assume that they would have similar dimensions. While its dimensions varied by the end of the nineteenth century, the Glens Falls Feeder averaged from approximately 45 to 50 feet in width and approximately five feet deep (Dean 2008).

As stated above, this former feeder then private branch of the Champlain Canal, played a significant role in the development of the Fort Edward economy. From the mid-nineteenth century to the early-twentieth century the feeder would have shipped many different products related to the surrounding mills including pottery, clothing, iron, furniture, lumber, and paper products. By the late-nineteenth century the International Paper Company had largely consolidated the mill works surrounding the feeder. It was this mill that may have taken over the operation and maintenance of the feeder, possibly explaining the lack of public records.

There are historical references to the International Paper Mill having crews cleaning and dredging the feeder in the late-nineteenth and early-twentieth centuries (Glens Falls Morning Star, 30 April 1898:5; Morning Star, 10 April 1903:4). Another reference in 1908 mentioned more extensive repairs by the mill, including the “placement of 500 feet of docking and the “prism of the canal being overhauled” (Morning Star, 1 April 1908:6). Another reference to “maintenance” of the feeder in 1896 was non-specific (Morning Star, 22 April 1896).

After the construction of the Barge Canal system in 1915 the old feeder and the portion of the Champlain Canal through the village remained open to service the local industries. The feeder appears to have been slowly filled in from west to east. By 1909, it was filled up to just west of the Mechanic Street bridge (Figure 9.13 on the next page). The International Paper Mill abandoned their branch of the canal in 1924 (Post Star, 4 August 1924:8). This newspaper article described how the feeder was used by International Paper to “tow their boats of material from the Glens Falls Feeder to their mill on McCrea Street for unloading.” The reason for the abandonment was due to the Delaware and Hudson River Railroad Bridge being raised over the east branch of the river, which offered a more direct route up the new Barge Canal branch to the terminal just below the

mill. The feeder canal had not been in use that summer and the water was at times low and stagnant.

The article went on to state that the closure of the feeder would allow the village to remove the “Marble Shop Bridge” and “greatly lessen the danger to traffic at this point as well as reduce the grade by a gradual slope in the highway.” The demolition of the bridge and filling of the canal bed didn’t occur until 1926 (Post Star, 18 October, 1929:14) and by 1932 the feeder had completely disappeared from the Sanborn Fire Insurance mapping of the village.

## *The Bridge*

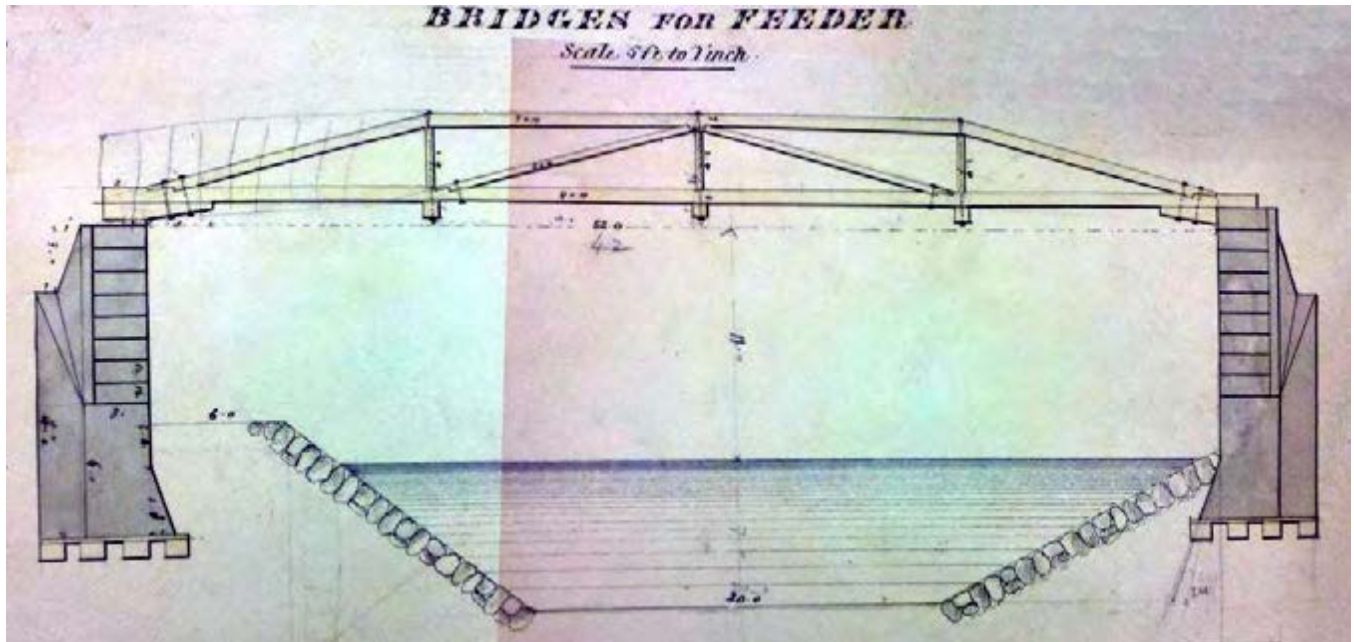
The “Marble Shop Bridge” was the local name used to describe the Broadway Feeder Canal Bridge. This name comes from the Marble Shop located in the Germain Block adjacent to the northwestern bridge abutment. This is shown in the 1913 highway plan of this area (Figure 9.8 on page 296), but presumably it began to be known as the “Marble Shop Bridge sometime between 1853 and 1866 after the “Marble Works” that were first depicted in this location in 1866 (Figure 9.14 on page 302).

The 1853 map shows a “Lumber Yard” in this vicinity. A photo from the 1920s shows the Germain Block and the railing along the adjacent bridge (Figure 9.5 on page 303). Historically, other buildings adjacent to the bridge included a store with a small warehouse (still there in 1964) to the southwest, and the Carpenter Block, a small commercial duplex to the southeast (demolished with the bridge in 1926). The cement block garage currently located to the southeast of this vicinity appears to have been constructed sometime in the 1930s.

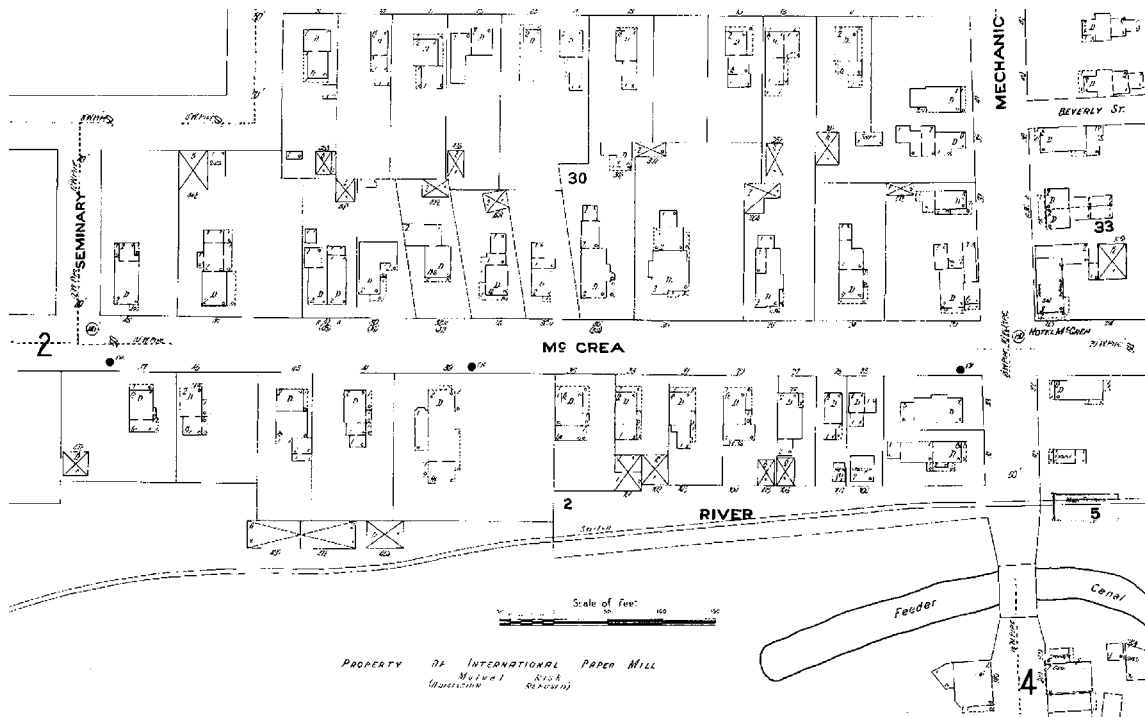
Unlike the canal itself, the bridge along Broadway appears to have been largely built and maintained by local and state governments. As previously mentioned, beyond anecdotal information, no specific plans depicting the bridge, and few references describing it, could be found. What is known is that it is labeled as a wooden bridge on the 1924 Sanborn Fire Insurance Map (Figure 9.15 on page 304) and it appears as a wooden truss bridge in a historic photograph taken ca. the 1880s (Photo 9.6 on the facing page). Two roads crossed the feeder in the village, one along Mechanic Street, and the one within the project area along Broadway.

Often the references to bridge construction over the Fort Edward Feeder were not specific to which road they referred. What is known about Mechanic Street is that it was first laid out in 1853 (Bascom 1868) and had been considered for an extension toward Sandy Hill to avoid the “Fort Edward Hill” just north of where the Marble Shop bridge was located (Post Star, 22 March 1932:3). The bridge crossing the feeder along Mechanic Street was constructed of iron (Post Star, 4 August 1924:8).





**Figure 9.12:** Detail of an 1854 Engineer and Surveyor section drawing for typical feeder bridges in the Eastern Division of the canal system (New York State Archives and Manuscripts).



**Figure 9.13:** Detail of the 1909 Sanborn Fire Insurance Map of Fort Edward (Sanborn-Perris Map Company, sheet 3) showing the open part of the feeder extending only as far west as just beyond Mechanic Street by that time.



**Figure 9.14:** Detail of the 1866 New Topographical Atlas of Washington County, New York (Beers) showing the Marble Works for which the bridge was named.

The first bridge in the vicinity of this site would likely date from the opening of the Champlain Canal and associated Fort Edward Feeder around 1820. This early bridge is depicted on the detailed 1830 Holmes Hutchinson Survey Map of the feeder (Figure 9.5 on page 295), its span at Broadway being 43.75 feet. For the next 100 years apparently several successive bridges spanned the canal in this location. The first published reference to bridge construction here was in 1859 when a new one was to be built and maintained by the state on the site of the old bridge and was to cost no more than \$400.00 (Tucker 1859). Again, no design specifics were given.

As seen in Figure 9.12 on the preceding page, the general plans for “Bridges for Feeders” in 1854 depict a wooden truss spanning 52 feet, resting on top of stone abutments 14 feet tall. Each abutment was in turn constructed on a wooden platform of stringers and planks approximately 1 foot thick. It is important to note, as mentioned above, that this feeder or branch was privately owned by 1845 suggesting its dimensions may not have entirely conformed to those in of typical feeder bridges.

While not specific as to which street crossing it applies, it appears that yet another bridge over the feeder was built in 1865 according to an act authorizing the canal board to pay the builder, Michael Morey (Barlow 1866:18). And still more references were found relating to bridge construction over the feeder in 1875. However, it is unclear whether it was the one along Mechanic Street or the one along Broadway. Notably a Federal bul-

letin produced for the proposed 1875 canal expansion gives specifications for canal bridge construction:

“It will be laid, except where the bottom is rock, on timber and concrete foundation, with suitable piling, and carried up with coursed masonry, laid with hydraulic-cement mortar; top properly coped with ashlar not less than 15 inches in thickness. Highway bridges will have a roadway of 20 feet, and towpath and roadway bridge the same width with a span of 75 feet the superstructure, in all cases to be iron.”  
(Wilson 1875:590)

Given the fact that the above description specifies an iron superstructure, it may refer to the one along Mechanic Street rather than the one on Broadway. However as will be discussed below the abutment specifications aptly described those found in the excavations along Broadway.

Figure 9.15 on page 304, an undated photo of this location shows the “Marble Shop Bridge.” The presence of rubber-tired bicycles along with the absence of a trolley track over the bridge indicates that the photo dates to between 1883 and 1888 and may be its earliest photographic depiction. The wooden truss design appears to fit with the 1859 “Bridge for Feeders” plans (Figure 9.12 on the preceding page). Additionally, the 1875 bird’s eye map of the village (Figure 9.11 on page 299) depicted the bridge with a similar truss design. This bridge may be the one referred to in an 1896 newspaper article reporting on a man who lost control of a team of horses pulling a wagon down “Upper Broadway hill” who was “thrown against the supports of the feeder bridge” (Albany Evening Journal 1896, 3 August:7). The article went on to state that a man had died two weeks earlier in the same manner. Notably, later photos of the bridge have no truss supports.

In 1892 the bridge was strengthened by the Electric Railroad Company to render it safe for the passage of electric cars (Bogart 1892). Several newspaper articles in 1897 refer to a new wider wooden bridge to be constructed in this location; the improvements to the approaches were “appreciated by the public” due to it being a “dangerous locality” (Morning Star, 2 July 1897:5). Unfortunately this bridge appears to have been poorly constructed because, according to a New York State Comptroller’s Report, the “south end of the towpath abutment of the bridge over Fort Edward Feeder at Broadway Street” was to be rebuilt in 1899 (Roberts 1898).

This work was also mentioned in a newspaper article reporting on a woman who sustained injuries in a “fall through the bridge” in the summer of 1899 during repairs (Morning Star, 28 August 1899). Two years later another article stated the bridge “began to show signs of weakness” requiring even more repairs (Glens Falls Morning Star, 18 July 1901:4). The final mention of

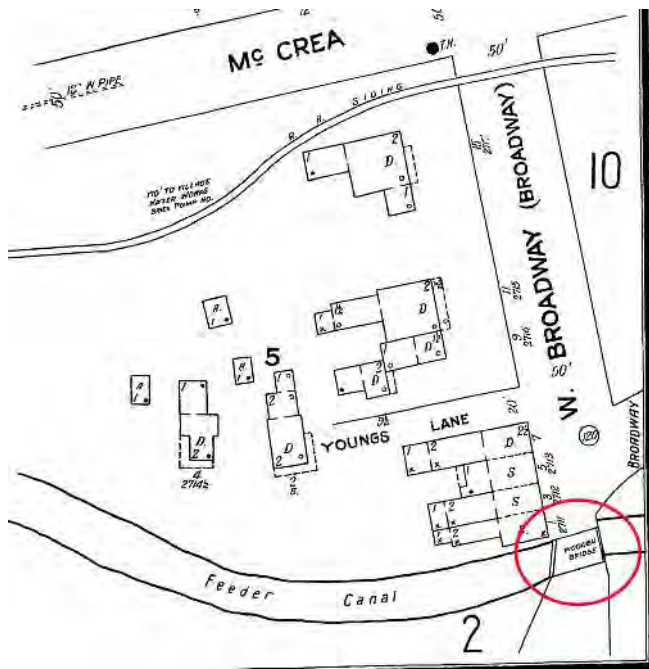




**Photo 9.5:** Photo ca. 1926 depicting the "Germain Block" (containing the Marble Shop), facing northwest (photo courtesy of the Fort Edward Historical Association).



**Photo 9.6:** Undated photo (ca. 1880s) depicting the north end of the Marble Shop Bridge, facing southeast (photo courtesy of the Fort Edward Historical Association). The Carpenter Block building is at left on the south side of the bridge.



**Figure 9.15:** Detail of the 1924 Sanborn Fire Insurance Map of Fort Edward (sheet 10) showing the wooden bridge over the Feeder Canal on Broadway.

bridge work over the feeder involved a “new floor put in the Broadway bridge over the mill feeder” in 1915 (Post Star, 1 December 1915:3).

The 1913 highway construction plans (Figure 9.8 on page 296) show what looks like the probable eastern wing wall of the northern bridge abutment exactly opposite the southern wall of the Germain Block building, which closely bordered the north wall of the feeder. The southern abutment is not depicted.

The abandonment of the “International branch of the canal” in 1924 allowed the village to remove the “Marble Shop Bridge” and “greatly lessen the danger to traffic at this point as well as reduce the grade by a gradual slope in the highway” (Post Star, 4 August 1924:8). The demolition of the bridge and the filling of the feeder canal occurred in 1926. No detailed records of this demolition could be found. What is known is that wagon loads of sand were used to fill in the canal bed (Troy Times, 2 March 1926:14) and the “old Carpenter block” located at the “south end of the bridge” was removed as well to provide a better “view of the highway to north bound motorists” (Post Star, 18 October 1929:14). The Carpenter Block is the local name for the structure once located near the southeast corner of the bridge.

Two photos likely taken in the winter of 1925/1926 just prior to the bridge demolition (Figures 9.7 to 9.8 on the next page) show the bridge from the south approach along with the Carpenter Block at the southeast abutment, and the Germain Block at the northwest abutment. The wooden trusses seen in Figure 9.6 on the

preceding page were long since removed with only low wooden railings remaining.

In the previous discussion of the road, the 1938 NYS-DOT construction plans for the realignment of West Broadway (Figure 9.9 on page 297) encompass the approximate former location of the bridge. At that point the state was beginning the process of better adapting the road for automobile traffic. The removal of the Germain Block and its associated sidewalk allowed for the straightening and expansion of the roadway up to 20 feet to the west to incorporate West Broadway as the primary route up the hill to avoid the abrupt turn onto what is now Terrace Place. This 1938 map post-dates the bridge’s removal in 1926 with few discernible physical features of the bridge and feeder depicted.

It does show the Marble Shop property with the label “Mrs. Anna J. Germain, Stores.” The exact location of the front and side walls of the building are inferred by the labeled south front “corner stone” along with two “door jams” indicating the precise location where the front edge of the building’s stone foundation would have been (Figure 9.16 on page 306). They also show the Germain south property line, which likely marks the north wall of the feeder canal property, and possibly the north wall of the canal itself. It also shows two “walls” bordering the existing outer sidewalk edges at the time (the western one slated for removal or burial by fill during the proposed work) near where the southern bridge approach would have been. These were probably installed during one of the aforesaid bridge repairs to retain fill along the southern bridge approach. In fact, the eastern retaining wall is extant as seen in Photo 9.4 on page 292.

The combined challenges of the steep grade, the narrowness of the roadway, and an increasing number of automobiles attempting to share it with the trolley (see trolley discussion below) resulted in the bridge being the scene of a number of additional accidents. The grade is blamed in several newspaper articles for obstructing the line of sight. In at least one case it hampered a vehicle’s ability to make it to the top of the bridge from the southern approach and, slipping backwards, ripped “a thirty foot section of pipe fence from the east side” of the bridge and left it hanging “six feet from the ground” (Post Star, 11 June 1923:8).

A similar accident occurred less than a week earlier when a vehicle slipped backwards on the hill “just north of the Marble Shop Bridge” passing “over the curbing, across the sidewalk and through a wire fence” where it was left “suspended at the brink of a twenty-foot incline leading into the International Mill branch of the Champlain canal” (Post Star, 4 June, 1923:8). It may be important to note that, when the bridge that crossed the Glens Falls Feeder along Route 4 in the Village of Hudson Falls was demolished, it required the removal of two to nine feet of soil to bring it down to street grade (Sopko and LoRusso 2006). Thus it would seem likely a

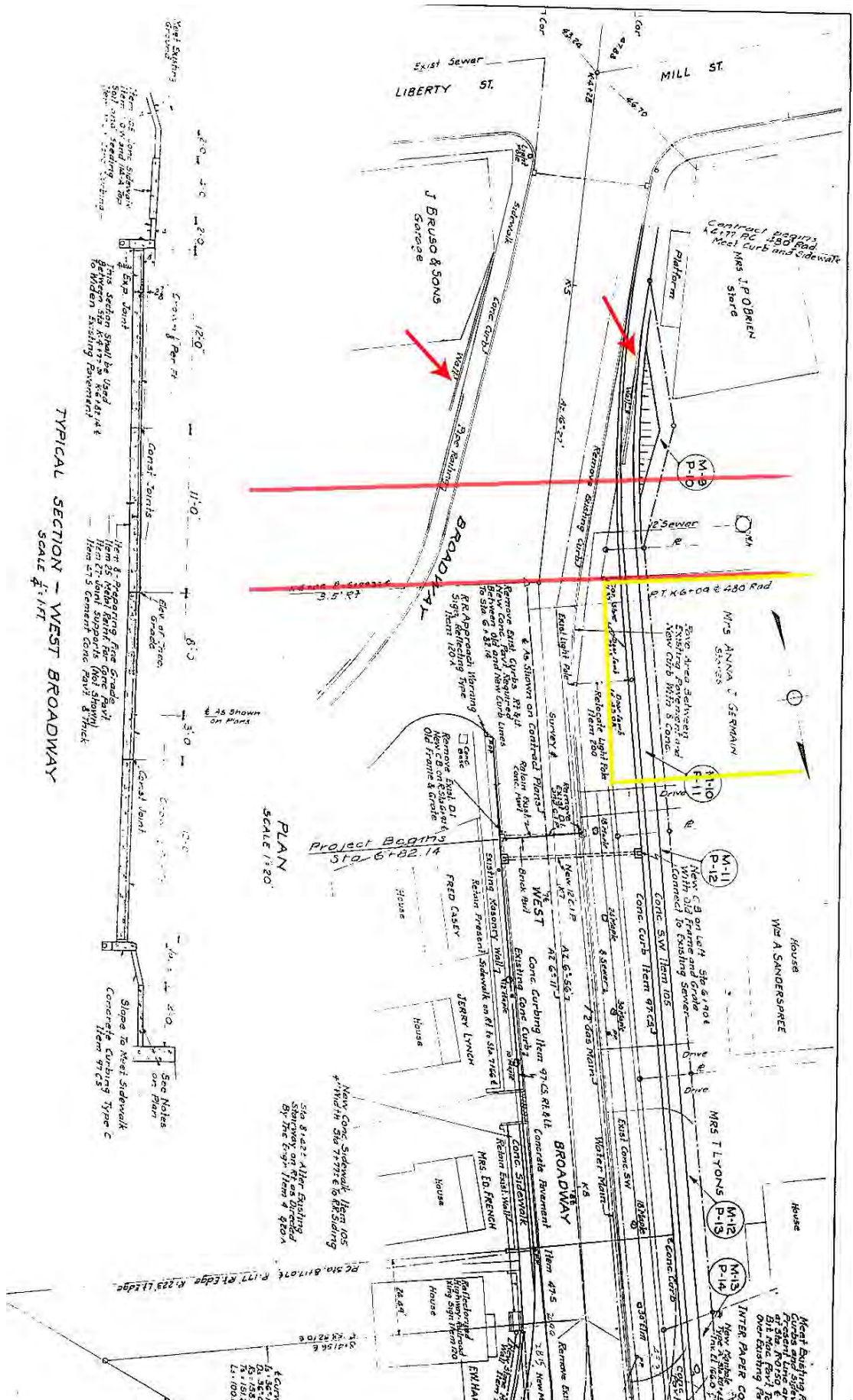




**Photo 9.7:** View ca. 1925/1926 of the south end of the Marble Shop Bridge, facing northeast (photo courtesy of the Fort Edward Historical Association). The Carpenter Block is at right and the trolley tracks are visible down the center of the road.



**Photo 9.8:** View ca. 1925/1926 of the Germain Block and the Marble Shop Bridge shortly before the bridge was removed, facing northwest (photo courtesy of the Fort Edward Historical Association).



**Figure 9.16.** Detail of the 1938 highway record plan for State Highway No. 1083, RC 4009, sheet 31/2 (NVSOD). Red arrows point to the "walls" flanking the former south bridge approach, the canal boundary, and the yellow lines mark the front and side walls of the Germann Block building (Marble Shop).

similar lowering of the bridge approaches occurred here as well.

### ***The Trolley***

Beginning in 1885 the road and bridge leading north out of the village became part of the Glens Falls, Sandy Hill, and Fort Edward Street Railroad Company. The trolley followed a northerly route from Broadway across the bridge and feeder making an abrupt right onto what's now Terrace Place. The trolley played a major part in the history of the bridge and is mentioned in numerous newspaper articles for how it impacted traffic. Originally a horse drawn line, it was converted to electricity in 1891 (Brislin 1999:11).

As previously mentioned, in 1892 the bridge required work to strengthen it to support the extra load of the electric cars. In 1895, an application to "change the street railway tracks from Broadway to McCrea Street" requiring the "legal consent of property owners [to] be obtained with a release to the village from any and all damage resulting or caused by such change" was made by the village Board of Trustees (Morning Star, 16 May 1895).

In 1901 the trolley became part of the Hudson Valley Railroad, which extended the line further south of the village. More work related to the trolley in the area of the Broadway bridge was reported in 1902 when "rails on the electric road from the marble shop bridge to the foot of the hill" were replaced with heavier ones (Morning Star, 14 May 1902:4).

Beginning in 1906 a series of editorials condemning the height of the trolley tracks between Broadway and McCrea Street, which hampered vehicle traffic, were being written in local newspapers. One newspaper editorial described the curbing used for the raised tracks and the hindrances they caused:

"The embankment with stone wall or curbing at its base prevents access to the dwelling house premises adjacent on the north: it occupies more than one third of the street to such a narrow limit as to render its travel with teams dangerous when cars are passing and so as to be inconvenient for public travel at all times and it effects injuriously the property owner located on Broadway north of the feeder. The height of the embankment has been recently raised not only north of the feeder but south of the feeder bridge."

(Morning Star, 5 February 1906:5)

An early twentieth century photo of the bridge (Photo 9.7 on page 305) shows the curbing along the west side of the street adjacent to the sidewalk. In 1906 the Village Board of Trustees informed the Hudson Valley Railroad that they had to place the company's track over the "Marble Shop Bridge Hill" to the original

grade (Warrensburg News, 15 February 1906:Whole No. 1,465).

The railroad company appears to have ignored the requests to do this by the village and local business men, largely driven by Ira Young, the owner of the Marble Shop at the time. He claimed his business was losing large amounts of money because access to his building was blocked. Local residents claimed they couldn't drive up to their houses (Morning Star, 12 November 1907:4). Finally, in 1908 the village informed the railway company that if the tracks were not lowered the village would do it at the company's expense (Morning Star, 7 January 1908:2). Even after the requested adjustments were made, the curving intersection at Broadway and West Broadway (Broadway Hill), combined with its steep approaches over the feeder bridge, continued to be the scene of numerous, sometimes fatal, accidents (Figure 9.9 on the next page).

The final reference to trolley track work in or adjacent to the project area occurred in 1913 when the state took over the road just north of the Marble Shop Bridge. At that time the Hudson Valley Railroad agreed to move the tracks from the west side to the center of the road, which was newly paved with brick (Post Star, 7 August 1913:8, 22 July 1913:3). Ultimately, with the rise of the automobile after WWI, the trolley line only lasted a few years longer than the feeder and bridge, closing down in 1928 (Davis and LoRusso 1998). While not specifically mentioning the area associated with the Marble Shop Bridge, one article states that when the tracks were removed in Sandy Hill the space was filled with cement (Post Star, 25 October 1929:16). This was probably the case in Fort Edward as well.

Even with the trolley line gone, accidents continued until the bridge was removed, the feeder was filled, the approaches lowered and the curve in Broadway eliminated. This was finally realized after 1938 when the roadway was realigned by the state to bypass the turn onto what is now Terrace Place, instead to climb the hill along West Broadway in a sweeping curve north of McCrae Street (Figure 9.9 on page 297 and 9.16 on page 306). This also created a new railroad overpass to the north on Broadway over the Delaware and Hudson Railroad spur, an alignment that is still used today.

## **9.5 Feeder Canal Bridge Site Assessment**

### ***Site Structure and Interpretation***

As previously stated the land form here has been extensively and repeatedly altered since the early nineteenth century by the original construction of the Fort Edward Feeder and construction of the bridge crossing. Historical documentation has referenced multiple renovations and replacements of these structures in addition to





**Photo 9.9:** Auto accident ca. 1930 in front of Smiths Bakery, just south of the Marble Shop Bridge (photo courtesy of the Fort Edward Historical Association).

the road realignments, grade alterations, and the eventual filling of the feeder and removal of the bridge in the early twentieth century. As such, interpretation of the archaeological evidence at the site was hampered by the necessities of monitoring fast-paced construction activities in a high-traffic area using heavy equipment where safety concerns limited access to deep trenches by archaeologists. Nevertheless, intact remnants of the feeder canal bridge and some of the historical landscape changes surrounding it were revealed. The archaeological monitoring is described in detail in Chapter 10 on page 311

The most prominent feature found at the site is the cut stone masonry southern bridge abutment. The portion observed in trenching included a straight section that measured approximately 7.5 m (25 ft) wide with two angled wing walls at least 3 m (10 ft) long each. This would have supported a bridge no more than 25 feet wide indicating the original street was much narrower than the current one.

The abutment's construction method, with its wood timber base or foundation, corresponds to Figure 9.12 on page 301, the 1854 bridge abutment plan, and the description in 1875 of proposed canal bridge construction discussed in the Historical Context section above. This wood timber foundation construction technique was apparently common for various canal structures such as lock walls, some prism walls, retaining walls, culverts, and bridge abutments. A similar wood timber

foundation was seen at the Bond Creek Viaduct in the south part of the village (see Viaduct discussion in the Fort Edward Village site section, Part II on page 89).

An obvious difference between this abutment and the one depicted in the 1854 bridge plan is that this one appears to have wing walls slanting to the south instead of being straight across like the 1854 plan. Rather, this abutment conforms to the depiction on the 1896 Schiller map, which shows distinct wing walls on both the east and west sides. The first depiction of the bridge, which is on the 1830 Holmes Hutchison canal survey map, also shows wing walls (though not in as much detail), so it is possible the wood and stone abutment seen at this site may have been the original 1820s structure.

Bridges over navigable canals had to be tall enough to let boats go underneath. They have been described with "abutments fifteen to twenty feet tall in order to hold the bridge deck ten to eleven feet above the canal surface" by one recommendation (Whitford 1906:110). The 1854 plan shows an abutment buried about five feet in the ground on the towpath side of the feeder with the above-ground portion another nine feet above that. Since the abutment at the site was only six to seven feet high above the wood timber base, it is assumed that a substantial upper (above-ground) portion of it was removed during one or more of the various improvements made to the road grade at this bridge.

Assuming the original north abutment was also made of cut stone, the massive poured concrete one we saw



must be a late-nineteenth or early-twentieth century repair or rebuild. This possibly occurred in 1892 when there was a need for reinforcement under the trolley line because of the switch from horse-drawn trolley cars to the newer electric cars. However, it could be from one of the other episodes of bridge repair documented in the Historical Context section around the turn of the twentieth century or later. As we saw, the sharp curve at the intersection above the bridge, combined with its elevated approach and limited sight distance, proved very dangerous after the advent of motorized vehicles moving at higher rates of speed.

What's puzzling is that we did not see the concrete abutment in the easternmost gas line trench, but this may be a factor of its only occurring just below the trolley line itself. It wasn't found to the west in Incident 170 either because that construction trench was located mostly outside the pre-1938 street alignment, well beyond the alignment of the bridge or trolley line. Also, that construction trench had been previously disturbed by earlier sewer line and manhole construction. The concrete abutment we observed in Incident 177 was situated near where the west street curb was located before the road was widened in the approximate alignment of the original trolley.

The historical documentation about the removal of the bridge mentions wagon loads of sand used to fill the canal bed. At least some of the material used to fill the space between the abutments consisted of massive quantities of cinders, or coal ash, a byproduct probably from burning of coal for heat, likely from somewhere nearby. This was topped by a layer of sandy gravel before paving. The construction trenching didn't reach deep enough to hit the canal prism itself.

These north and south abutments are the only markers of the actual canal alignment that remain in this location along Broadway. Any evidence of the canal, or the buildings that lined its north and south sides, have been obliterated on the west side of Broadway by modern industrial development related to the paper mill that now owns the land. This includes the former location of the Germain Block that contained the Marble Shop, now a paved parking lot.

On the east side of Broadway, the long narrow low area between #1-7 Liberty Street and the man-made terrace to the north is visually deceiving because it is suggestive of a drained canal prism. However, now that we know where the bridge abutments were located we can verify that the prism footprint aligns with the terrace itself. This means that the towpath and the canal were buried beneath the seven to eight feet of earthen fill that created the terrace sometime after 1926.

The former front wall of the Carpenter Block building may be partially intact in what's now the east parking lane and east sidewalk of Broadway. The current building at #1-7 Liberty and its rear yard correspond to the main part of the Carpenter Block footprint. After the

building was demolished in 1926 a concrete wall was constructed along the east side of Broadway to retain the earthen slope of the old bridge approach. On the west side of the street, the wall was later covered with more fill or removed during the 1938 widening by the state. On the east it remains undisturbed to this day.

As stated in the Historical Context (Section 9.4 on page 290, there were several alterations to the trolley line that ran down Terrace Place and over the bridge. Aside from the reinforcement needed for heavier electric cars ca. 1892, the tracks were apparently lowered around 1908 due to complaints by the residents and businesses near the trolley. The last reference to trolley track construction before it was shut down in 1928 was the movement of the tracks from the western side of Broadway to a more central alignment in 1913 around the time the street was paved with brick.

The probable trolley ties that were observed just beneath the pavement and concrete during archaeological monitoring may represent this modification since they seem to be more centered in the bridge area than would be expected if they were the earlier alignment. Curiously, they do not line up with the poured concrete northern bridge abutment at all, which is some 5 m (16 ft) to the north. Therefore, it is possible that either they aren't trolley ties at all, or the northern abutment wasn't constructed as reinforcement of the bigger electric trolley cars.

### ***Significance Assessment of the Site***

DOT's construction activities along Broadway, where the bridge crossed the former Fort Edward Feeder Canal, provided archaeologists several opportunities to look for cultural resources associated with the previously unexplored site. They observed intact features in almost every construction exposure that crossed through the site area. The Fort Edward Feeder Canal Bridge Site is significant for several reasons. First is its association with the Old Champlain Canal listed in the National Register of Historic Places.

While this portion of the canal was privately owned for much of its use, the construction techniques uncovered during the monitored excavations were consistent with those used in the larger canal. Significance is also associated with the fact that this former feeder-turned private branch of the Champlain Canal played a significant role in the development of Fort Edward's economy. From the mid-nineteenth century to the early-twentieth century the feeder shipped many different products related to the surrounding mills including pottery, clothing, iron, furniture, lumber, and paper products.

The site also documents some of the changes through time in the landscape of the road and bridge that resulted from technological advances in modes of transportation in the late-nineteenth and early-twentieth centuries. Primarily, these involved the adoption of a trolley

line through the village; first horse-drawn then electric-powered. The trolley line was eventually joined, then superseded by motorized vehicles (cars and trucks) that could travel at much higher speeds.

After nearly 100 years of use of the canal for transporting goods by boat beneath the bridge, it was made obsolete in the early-twentieth century when railroads, and eventually trucks, became the preferred mode of moving products. Also, the increased reliance on automobiles, which at first shared the bridge with the trolley, proved unsafe in combination with the steep bridge approaches, the bad sight distance, and sharp turn in the road at the bridge. All of these factors resulted in a series of gradual changes to accommodate the new faster mode of travel that all but obliterated any surface evidence of the canal or bridge.

## 10. Archaeology of the Feeder Canal Bridge Site

The site was identified during the monitoring of five excavation trenches recorded in six Incidents: 98, 101, 177, 171, 170, and 189 (Figure 9.2 on page 291). These trenches were excavated during the installation of new gas, sewer, drainage, and water lines along Broadway. Some overlaps, omissions in monitoring, and other vagaries were the result of irregularities of monitoring a constantly changing construction site during a sporadic schedule over two years. The use of heavy equipment, which usually produced deep and ragged excavations, didn't always allow for the systematic collection of artifacts or thorough recording of stratigraphy.

A few artifacts were collected sporadically from the excavated soils on the surface or from trench walls when safe to enter the trenches. In most cases, soils were removed by the track excavator and dumped directly into a truck. Also, recording of features usually involved taking of photographs only from the street surface without archaeologists being able to enter the trenches. Given these limitations, however, several large features related to the feeder bridge and surrounding area were observed and documented.

Incident 98, begun on October 31, 2006 for the installation of a new gas line (Photo 10.1 on the next page), was the first of the excavations within the site. This trench was located along the east side of the road approximately 6 m (20 ft) east of the project centerline between SM 17+975 and 17+985. Approximately 1 m (3.2 ft) deep, .5 m (1.6 ft) wide, and 11 m (36 ft) long, the trench was in the vicinity of the former feeder canal and bridge. This trench exposed a very narrow view of a cut stone wall beginning at SM 17+978 (Photos 10.1 on the following page) and loose cobble stone debris adjacent to the north (See Feature Section). This stone wall may have extended across the trench but its function is inconclusive. It is possible the stones there are the remains of the former Carpenter Block foundation.

Incident 101 extended from and overlapped much of Incident 98 on November 1, running between approximately SM 17+980 and SM 18+015. The trench fell between 6 and 8 m (20 and 26 ft) east of the project center line. Initially this new excavation averaged 1.2 m (4 ft) wide and 1.2 m (4 ft) deep. More cut stones were observed in the east wall of the trench at approximately SM 17+989. While these cut stones were in line with the cobble stone retaining wall to the east of the roadway they don't appear to be a continuation of it. Other aspects of the trench noted between SM 17+990 and 17+992.5 included decaying wood, loose cinders and

mottled soils, suggesting a substantial filling event. Near the end of the day at approximately SM 18+000 just north of the fill soils, evenly spaced timbers were exposed just below the road surface, possibly representing trolley tracks.

On November 6, 2006, Incident 101 was reopened and deepened to approximately 2.1 m (7 ft), and continued to the north from approximately SM 17+994 to 18+015. Safety concerns related to the depth of the trench prevented archaeologists from entering the excavation from this point on and detailed measurements were not possible. This expansion exposed an intact mortared cut stone wall along the west side of the trench between SM 17+992.32 and 17+994. In comparison to this substantial stone structure, the cut stones previously observed 6 m (20 ft) to the south at SM 17+989 clearly don't represent an intact feature.

Incident 170, a trench excavated for the replacement of a large concrete manhole structure and sewer line, began the following field season on April 30, 2007. Unlike all the other trenches in this vicinity it bisected the roadway rather than running parallel with it. It was located opposite Terrace Place, beginning approximately 1 m (3.2 ft) east of the project center line at SM 18+009 running at a 70 degree angle to a point 8.5 m (28 ft) west of the project center line at SM 18+004 (Photo 10.2 on the preceding page). Unfortunately, due to the repeated expansions of the trench, safety concerns and other necessities of working with heavy equipment, few specific measurements of this trench exist. Based on the photos and mapping notes, this would have been one of the largest excavations in this area, approximately 12 m (40 ft) long, 2.5 m (8 ft) wide, and 2.5 m (8 ft) deep.

This location was slightly north and west of where the north bridge abutment would likely have been. The trench followed an existing sewer line and manhole structure, which transected the south front corner of the former Germain Block footprint based on historical maps and other overlays. While a large concrete object was recorded within this trench, it is not believed to be associated with the bridge, the feeder features, or the building foundation and is more likely associated with the previous sewer or some other municipal utility. This trench did contain some poorly documented wooden timbers near the southeastern corner at a depth of almost four feet. They appeared to be associated with fill soil but could have been associated with the former trolley line. Notably while not included in the site area, Incident 171 (located just to the north) also contained



**Photo 10.1:** View of Incident 98, the gas line trench facing northeast. The intact cut stone structure is just visible in the north end of the trench.



**Photo 10.2:** View east of Incident 170, a sewer manhole excavation. Terrace Place is visible in the background.





**Photo 10.3:** View south of Incident 177, the drainage line trench between Feature 1 (in the distance in the west wall) and Feature 2, the concrete wall in the foreground before removal.

timbers 2 m (6.5 ft) below the surface and may be related to the wood in Incident 170.

A trench for the installation of a drainage line, Incident 177, was begun on June 13, 2007 (Photo 10.3). It was excavated between 4 and 5 m (13 and 16 ft) east of the project center line between SM 17+990 and 18+010 and 1 m (3.2 ft) west of the Incident 98 and 101 excavations. The trench averaged 1.5 m (5 ft) wide and 1.8 m (6 ft) deep. Between SM 17+993 and 17+994, a large intact cement- or mortar-faced wall, underlain by wooden timbers (Feature 1), was encountered, a continuation of the stone wall noted the year before in Incident 101.

The feature required the use of a hoe ram to dismantle it for installation of the drain pipe. Incident 177 Feature 2, consisting of a 1.1 m (3.6 ft) wide poured concrete wall, also spanning the construction trench, was encountered approximately at SM 18+007. It ran east west parallel to the Feature 1 stone wall and is believed to represent a reinforced or rebuilt portion of the northern bridge abutment. This massive obstruction also required the hoe ram to remove. Safety concerns restricted access to the excavation at times and limited the documentation of these features. Archaeologists were able to somewhat clear these features of soil and loose rocks near the surface but were only able to obtain pho-



**Photo 10.4:** View north of part of the stone structure observed in the waterline trench (Incident 189).

tographs of them from the street while they were being excavated. A profile sketch of Feature 1 was drawn.

Incident 189, trenching between SM 17+975 and 18+007 for installation of a water line, occurred on July 23, 2007. This was the final excavation related to the site. Running parallel to Broadway, this trench was excavated west of the center line in the southbound lane of the road, where another stone wall underlain by wooden timbers was encountered near SM 17+990. An earlier waterline was present where this trench was excavated, apparently having already breached the stone wall (or abutment, or whatever the structure was) by removing some of the stones at that time. As with other deep trenches, most of the documentation was limited to what could be observed from the surface (Photo 10.4 on the previous page).

## 10.1 Features Encountered During the 2006 and 2007 Road Work

It should be stated that all the soils observed within the site consisted of fill material (i.e. sandy gravel with loose cobbles and random cut stones of various sizes, a thick layer of black cinders). Natural soils near the feeder or bridge abutments would have been below the modern construction trench depths.

## ***Probable Carpenter Block Foundation Remains***

Incident 98, Feature 1 at 17+978 was an intact cut stone wall, or part of a structure, observed in the gas line trench that was only about 1 m (3 ft) deep and very narrow, about .5 cm (20 in). The top of the stone feature appeared just below the pavement and extended to an unknown depth below the bottom of the trench. What was seen in the trench consisted of three to four roughly rectangular stones measuring approximately 40 to 60 cm (16 to 24 in) long and 30 cm (12 in) thick stacked end to end north to south, only two courses exposed within the east wall of the trench (Photo 10.5 on the facing page).

The width of the feature is estimated to have been 1.5 m (5 ft) though some of the stones may have been removed by the backhoe before it was observed by archaeologists. Loose cobbles and other loose stones were present in the light brown gravelly sand to the north and south of the feature, which could have been additional displaced foundation stones. The only artifact collected was a rusty piece of iron or steel, unidentifiable as to function. It is not known if stones extended across the trench to the west.

Initially, it was thought that this structure could have been a remnant of the south bridge abutment but it did not extend west across the street into the southbound lane. Also, this feature's proximity to the east side of the street combined with its distance south of the former location of the Germain Block, which marks the location of the north abutment, all but precludes it from being the south bridge abutment. It is more likely that the stones are partial remains of the Carpenter Block building foundation front wall.

This late-nineteenth century building was situated right next to the edge of the road south of the bridge (Figure 10.1 on the next page). With the increase in the use of automobiles and trucks, the building was causing a traffic hazard by blocking the view of the highway to northbound motorists. For this reason, the building was demolished in 1929. By 1932, the one-story concrete block building now on the corner of Broadway and Liberty Street had been built. Even that structure's west side was built at an angle to accommodate the wider post-bridge roadway.

## ***Bridge Abutments***

### ***South Abutment***

In Incident 101, a substantial cut stone wall was observed at SM 17+993. It started just below the pavement and extended to at least 1.83 m (6 ft) deep, the maximum depth of the gas line trench there. The wall was composed of large mortared rectangular blocks as seen in the west wall of the trench (Photo 10.6 on the

facing page). It measured at least 1.6 m (5.5 ft) wide from north to south and appeared to have a straight north and east face as if the trenching exposed a finished east end of the abutment.

It is not clear whether there were in fact intact stones extending across the trench to the east wall though some large cut stones were observed in the east wall of the trench a few feet to the south. These may represent part of an eastern wing wall of the abutment. Soil to its south was mixed sandy gravel with cobbles and some cut stones mixed in. To its north, for a distance of approximately 8 m (26 ft), the soil consisted of a layer of dark gray sandy loam about 5 cm (20 in) thick over a thick layer of black cinders to the base of the trench. These cinders are industrial waste that was used as a filling material. This was also seen in Incident 177.

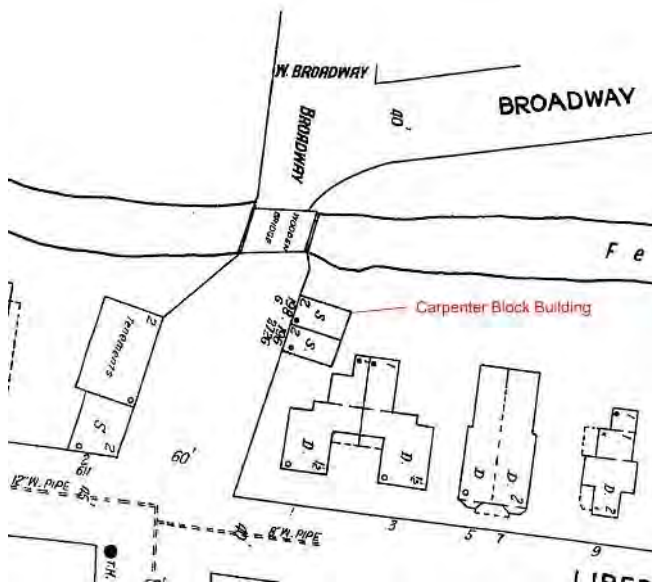
The following year, about a meter (three feet) to the west, a continuation of this mortared cut stone abutment was observed running completely across a drainage line trench in Incident 177. It was more thoroughly exposed and documented at that time because that trench was wider and deeper. Again, the top of it appeared just below the pavement layers as the track excavator removed the pavement to dig the drainage trench. The massive wall appeared to be faced with mortar or concrete, and some of the upper stones had been dislodged and removed exposing a mortar layer below. Fill soil was cleared from the south side of it within the trench to about 2.3 m (7.5 ft) below the surface revealing that it had been constructed on a platform of wood timbers running parallel with the east-west orientation of the abutment (Photo 10.7 on page 316).

Since the excavator bucket was unable to dislodge the large stones from the structure in order to continue the trench, a hydraulic hoe ram was brought in to break it apart (Photo 10.8 on page 316). From this process, it appeared that the wall was made from large cut stones inter-laid with small angular pieces of stone. The large stones were pulled out as they were loosened from the feature and set on the street surface for later collection. Most were angular blocks ranging in size from three feet long, two feet wide, and two feet thick to one almost six feet long, three feet wide, and two feet thick. One large oblong boulder was also pulled out that measured three feet across and two feet thick (Photo 10.9 on page 316).

As the backhoe removed the large stones and the loose rubble to the base of the feature, it encountered an extremely well preserved wooden timber base. It consisted of wide planks laid across thick squared oak timbers that were long enough to extend beyond the walls of the trench, making it difficult to remove them in single pieces. Therefore, they were broken by the backhoe and removed in fragments (Photo 10.10 to 10.11 on page 317). A sketch was made of the west wall of the trench showing the wood timber base with the stone structure on top of it (Figure 10.2 on page 318).



**Photo 10.5:** View northeast of the stone feature in the east wall of Incident 98, the gas line trench.



**Figure 10.1:** Detail of the 1924 Sanborn-Perris Map Company Fire Insurance Map of Fort Edward (Sheet 2) showing the location of the Carpenter Block Building.



**Photo 10.6:** View west of the mortared cut stone structure (probable canal bridge abutment) in Incident 101 at SM 17+993. The black plastic gas line lies at the bottom of the trench.





**Photo 10.7:** View northwest of the stone feature completely exposed within the drainage trench. A wood timber is just visible under the face of the wall behind the shovel blade.



**Photo 10.8:** View northwest of the hoe ram battering apart the feature to progress the drainage line trench northward.



**Photo 10.9:** Some of the large cut stones removed from the abutment in the drainage trench in Incident 177.

About a month later, a continuation of this abutment was encountered in a water line trench in the western lane of the street in Incident 189. It had already been disturbed by an old water line that completely broke through the abutment by removing stones to create a gap of 1 to 1.5 m (3 to 5 ft). The intact section of the abutment that remained in the eastern part of the trench basically lined up with the other parts of the feature encountered in Incidents 101 and 177 described above. The intact part of the stone feature in the west wall of the trench appeared to be offset to the south, and in plan, is suggestive of a wing wall. This is probably the western wing wall of the south abutment depicted in detail on the Schillner 1896 Map (Figure 9.10 on page 299), and is probably the explanation for some of the detached stones seen in the east wall of Incident 101 as well.

During construction of the new water line, when they discovered the barrier created by the straight section of the abutment (it was directly in the way of the new water line), they decided to angle the pipe dog-leg fashion to the west through the existing gap by going under the old water pipe. This entailed excavating deeper in the trench, which exposed the same wood timbers at the bottom of the wall seen in Incident 177 to the east (Photo 10.12 on the next page).

### *North Abutment*

Feature 2 in Incident 177 is thought to be part of the north bridge abutment encountered at SM 18+007. This feature was a 1.1 m (3.6 ft) thick poured concrete wall, flat on top, starting 50 cm (20 in) beneath the pavement in the drainage line trench. It extended fully east-west across the trench and was parallel to the cut stone abutment located 11.3 m (37 ft) to the south. Its southern face was cleared during construction revealing that it had been poured into a form when it was built. Its depth at the base was not recorded.

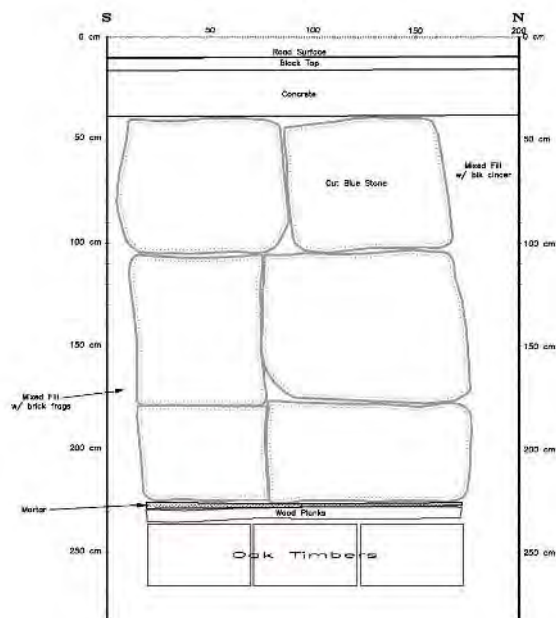




**Photo 10.10:** Wood timber at the bottom of the trench during removal by the backhoe bucket.



**Photo 10.11:** Wood timber and flat planks removed from beneath the dismantled stone feature.



**Figure 10.2:** Profile, roughly to scale, of the cut stone abutment (Feature 1) in Incident 177. Note the wood timbers and planks used as a base.

The construction trench showed that the space between the two abutment features was filled first by black cinders to within 75 cm (29 in) of the surface, and then topped by dark grey sandy loam with gravel (Photo 10.14 on the facing page). The construction trench did not reach the depth of the canal itself. A hydraulic hoe ram was again used to batter apart the concrete obstruction in order to continue the drain pipe installation to the north. This process, which took several days, was not recorded.

### **Possible Trolley Ties**

In the gas line trench (Incident 101) five wood timbers were seen evenly spaced lying just under the pavement at approximately SM 18+000. They were round, about 15 cm (6 in) in diameter, and spaced about 45 to 50 cm (18 to 20 in) apart. Around and beneath the timbers was gray brown sand with small to medium stone gravel from which came a few artifacts including two fragments of grey salt-glazed stoneware, two brick fragments, and a railroad spike. The size, location, and spacing of these timbers is suggestive of trolley rail that would have supported trolley rails.

In Incident 177, the drainage trench just to the west, a 20-foot long section of iron trolley tie was found buried vertically in fill soils near the poured concrete abutment. This rail could be a remnant of the early tracks that were originally aligned to the west side of the road while the wood timbers in Incident 101 could represent the track

that was relocated to the center of the road ca. 1913. The “railroad” spike is probably related to that relocation or one of the other track repairs in the early-twentieth century.

### **Concrete Retaining Wall**

A feature not seen during construction excavations, but visible from the surface, is the poured concrete retaining wall along the east side of the street between the concrete block structure (#1-7 Liberty Street) and Terrace Place. This wall runs along the east side of Broadway sandwiched between the building and the sidewalk. North of the building, the east face of the wall is exposed for a distance of 8.5 m (28 ft), ending where it abuts a cobblestone retaining wall projecting east along a man-made terrace below Terrace Place (Photo 9.4 on page 292). The exposed section of the concrete wall is 1.8 m (6 ft) high topped by a chain link fence and is approximately 38 cm (15 in) wide. The wall is depicted on the 1938 construction plans for realigning the west side of the road here (Figure 9.16 on page 306) as a preexisting feature at that time, probably having been put in when the bridge itself, and the Carpenter Block building were demolished in 1926.





**Photo 10.12:** View west of the abutment in Incident 189 before the wood timbers were exposed at the bottom of the wall.



**Photo 10.13:** View northwest of the poured concrete abutment in Incident 177. Note the impressions of the wood forms on the south face of the wall.



**Photo 10.14:** View northwest of the drain line construction trench between Feature 1 and Feature 2, the south and north bridge abutments in Incident 177. The new pipe was buried and covered with clean sand, but the cinder fill is still visible along the west trench wall.

## **Part IV**

# **The Hilfinger Pottery Site**

**NYSM #12574**



# 11. Hilfinger Pottery Site Overview

JOSELYN FERGUSON AND NANCY DAVIS

## 11.1 Site Identification

This site is the location of a late-nineteenth to early-twentieth century stoneware and earthenware pottery that operated for almost seven decades in the village of Fort Edward, fifty of those years by the Hilfinger family. It is significant for its contribution to the industrial economy of the area and because it was one of the few major nineteenth-century Fort Edward pottery buildings that survived well into the twentieth century.

## 11.2 Site Size and Location

The site is a .86-acre rectangular parcel of land measuring roughly 50 by 70 m (164 by 230 ft) at the southeast corner of the intersection of Broadway (NY Route 4) and Argyle Street (NY Route 197) in the southern part of the village of Fort Edward, town of Fort Edward, Washington County, New York. The site is bounded on the north and east by the road edges, in the south by the property line and fence bordering 36 Broadway, and on the east by the former Champlain Canal inlet, now partially filled in (Figure 11.1 on the next page, Photos 11.1 to 11.2 on the preceding page).

## 11.3 Environmental Context

The site is located in the southern part of the village of Fort Edward, which is situated along the eastern shore of the upper Hudson River at its confluence with Bond Creek (formerly called Fort Edward Creek and Little Wood Creek). This was the point where in prehistoric and colonial times, travelers heading north left the river and portaged northeast up the Little Wood Creek valley to the south end of Lake Champlain. The lake was the long water route that connected to the St. Lawrence River. Just north of Fort Edward, the Hudson descends a series of falls and rapids flowing south out of the Adirondack Mountains to the northwest.

When settlement began in earnest in this region of New York State in the early nineteenth century, the portage route up the Little Wood Creek valley from Fort Edward to Whitehall became the route of the Champlain Canal. This navigable system connected New York City at the mouth of the Hudson to Lake Champlain and

eventually the St. Lawrence Valley and Canada in the north. The site itself is located on the south side of the Bond Creek valley on the Hudson River flood plain where the natural soil consists of silty alluvium and is generally flat. The specific natural soil type here on the flood plain south of Bond Creek is Teel silt loam to a depth of more than 2 m (80 in) according to the USDA Natural Resources Conservation Service Web Soil Survey (2013).

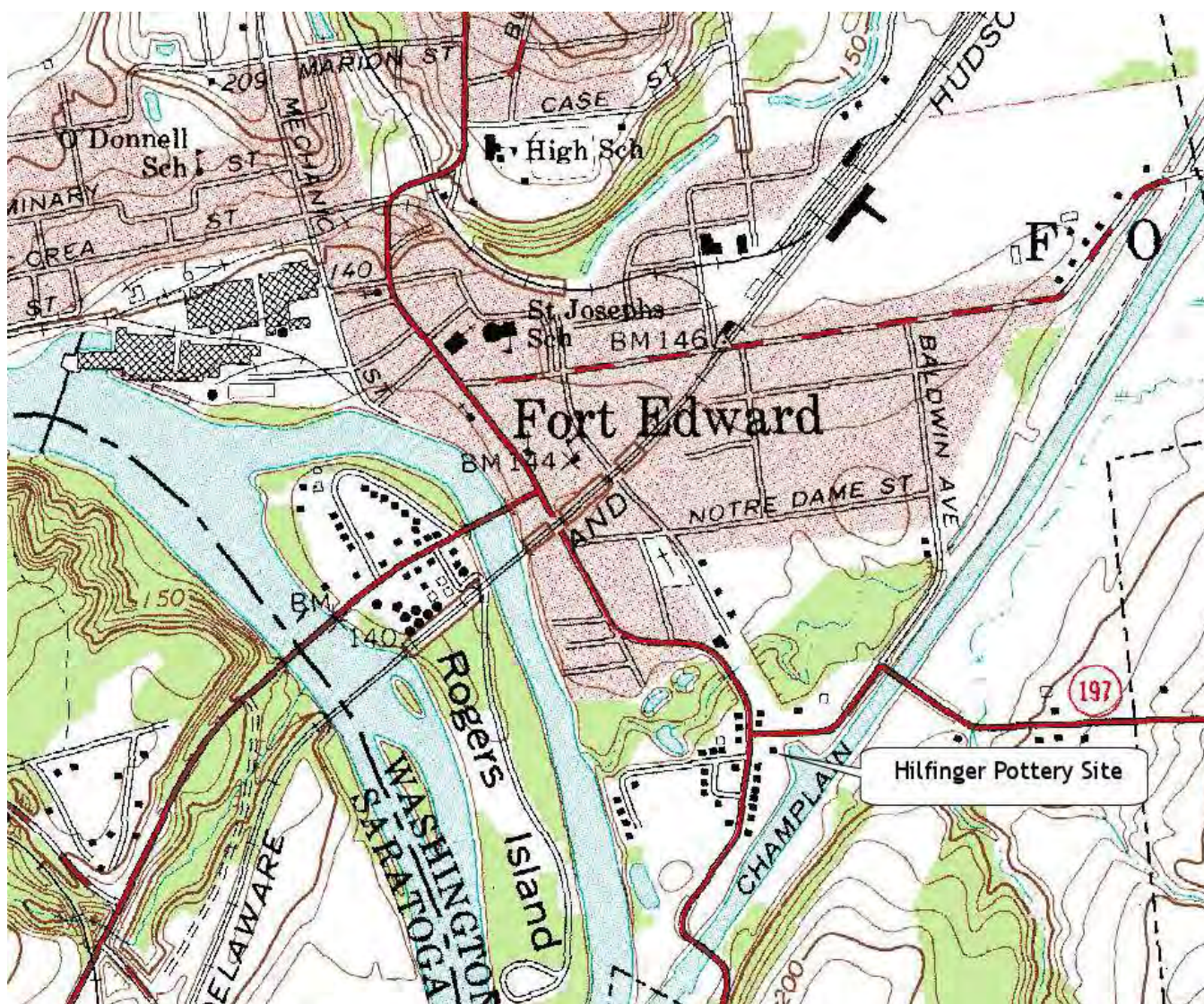
## 11.4 Site Specific Historical Context

### *Pottery Industry in Fort Edward*

Fort Edward's geographical location may arguably have been one of the village's most significant features in its nineteenth century commercial and industrial growth and prosperity. The Village's proximity to the Adirondack Mountains and position on the eastern shore of the Hudson River permitted easy access to such resources as clay, wood, and water power, as well as transportation for resources and finished products via the Champlain Canal, railroads and highways (Broderick 1991:121). All of these factors contributed to the village of Fort Edward's pottery industry.

Early in its history Fort Edward was considered one of the leading stoneware manufacturing centers within the United States. While other towns and villages within the Hudson Valley drainage had established successful potteries earlier, the late nineteenth century Fort Edward potteries were considered prominent producers and suppliers of stoneware and earthenwares in the northeast (Broderick and Bouck 1995; Broderick 1991). The production industry that developed there came only to be surpassed by the prolific Brooklyn potteries (Ketchum 1987).

Fort Edward's first pottery was located on Mill Street and established by Otto V. Lewis in 1857 or 1858, a transplanted potter from a pottery in Galesville, Eastern Township, Washington County (Ketchum 1987; Broderick and Bouck 1995; Broderick 1991). George Satterlee became a partner in 1859, and in 1860 Satterlee and new partner Andrew J. Russell, took over the Otto Lewis Pottery, renaming it "Satterlee & Russell" or "Fort Edward Pottery Co." The Satterlee & Russell partnership continued until 1862, when local businessman Michael Mory replaced Russell, and thereby



**Figure 11.1:** 1966 7.5-minute Hudson Falls quadrangle (USGS) showing the location of the Hilfinger Pottery Site.





**Photo 11.1:** View east of the Hilfinger Potter Site at the corner of Broadway and Argyle Streets.



**Photo 11.2:** View southeast of the Hilfinger Pottery Site from the corner of Broadway and Argyle Street.

formed “Satterlee & Mory” also recognized as “New York Stoneware Co./Fort Edward, NY” (Ketchum 1987; Broderick and Bouck 1995; Broderick 1991).

In 1866, the pottery was destroyed by a fire, but it was quickly rebuilt and began production in less than two months (Bulkeley 1877:38-9; Sandy Hill Herald May 11, 1866 in Broderick and Bouck 1995:213; Broderick 1991:125). Despite Mory’s passing in 1885, Satterlee continued the business under the same name until 1891 (Ketchum 1987). The business evidently took a turn for the worse in the 1880s, perhaps as a result of Mory’s death, as the business experienced financial difficulties, and eventually suffered bankruptcy. In 1891, some of the Satterlee & Mory’s Pottery inventory and equipment was sold by the sheriff to the Hilfinger brothers, owners of another pottery in town at that time (Judgment Rolls, Supreme Court, Washington County Clerk; Broderick and Bouck 1995:217; Broderick 1991:128).

A second pottery was established by J.A. and C.W. Underwood on Mill Street in 1865, using the name “Hudson River Pottery” (Deed Book nd:L112:671; Ketchum 1987:248; Broderick 1991:128; Broderick and Bouck 1995:217). The Hudson River Pottery was sold in 1867 to Andrew K. Haxstun (sometimes spelled ‘Haxtun’ in the literature, see Broderick 1991; Broderick and Bouck 1995) and William R. Ottman. Haxstun and Ottman, with additional financial backing from Asahel Wing, and in 1879 by George S. Guy, ran the business together under the same business name, as well as the “Haxstun, Ottman And Company” until 1872 (Deed Book nd:L66:5; Broderick 1991; Broderick and Bouck 1995). In 1872, Haxstun opted out of the business and then in 1883 George Guy also left. William Ottman’s brother Gilbert joined the business, forming the new pottery firm of the “Ottman Bro’s & Co.” or “Ottman Bros” (Ketchum 1987; Broderick and Bouck 1995; Broderick 1991).

The brothers were joined by Frank B. Hall in 1886 (Broderick 1991). Despite the business being prosperous, and having employed between 19 and 20 people, the pottery was closed permanently in the late nineteenth century (Ketchum 1987; Broderick and Bouck 1995). Unfortunately, there is a discrepancy in when they closed. Ketchum (1987:248) indicates the Ottman Pottery closed in 1892, while Broderick and Bouck (1995:219) suggest it closed in 1888 or 1889.

### ***Pottery Established Broadway and Argyle Street in 1874***

After having left the “Hudson River Pottery” in 1872, Andrew K. Haxstun purchased land at the corner of Broadway and Argyle Streets, in the southern end of town along the Champlain Canal in 1874. Unlike the other potters in town who had established their potteries in existing buildings or converted factories, Haxstun along with his partner George S. Guy built their stoneware pottery from the ground up within a year of the lands’ pur-



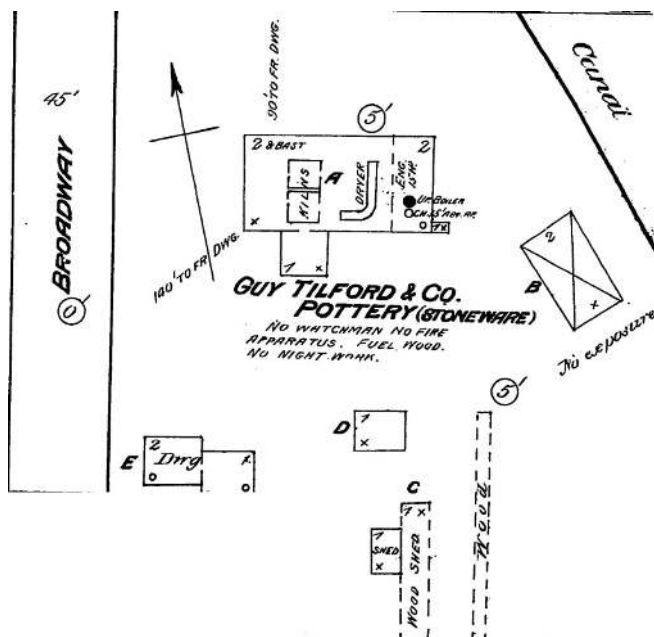
**Figure 11.2:** Detail from 1875 Birds Eye View of Fort Edward, New York. H.H. Bailey & Co., indicating “Fort Edward Stoneware Company”, also known as “Haxstun & Co.”.

chase, and opened their firm under the business name “Fort Edward Stoneware Co.”, or “Haxstun & Co.” (Deed Book nd:L76:304; Broderick 1991; Broderick and Bouck 1995; Ketchum 1987). Haxstun and Guy had previously partnered together in the pottery industry when they had both been active in Haxstun, Ottman and Company (Ketchum 1987).

The Fort Edward Stoneware Co. pottery was comprised of a large wooden structure, measuring approximately 100 feet by 50 feet wide, and rising three stories. Additional storage sheds were located along the pottery’s side (Figure 11.2 on the preceding page; Broderick 1991; Broderick and Bouck 1995). In 1875, the pottery had two kilns, but unlike other potteries, its location prevented it from harnessing water power early on, and so it was restricted to steam and horse power. The pottery employed fifteen people, including three boys (Broderick 1991; Broderick and Bouck 1995; Ketchum 1987).

Joseph E. King joined the Haxstun and Guy partnership in 1879, however by 1882 Haxstun removed himself from the business, although he remained the owner of the land until 1888 (Broderick 1991; Broderick and Bouck 1995; Ketchum 1987). With Haxstun’s departure, Guy became the primary partner of the pottery and he and King were joined by William H. Tilford, evidently changing the business name to “G.S. Guy & Co.” (Deed Book nd:L92:304), as is seen on a blue-decorated stoneware jug with a man photographed in Broderick and Bouck (1995) and Ketchum (1987). Evidently, the firm ultimately changed its name to “Guy Tillford & Co.”,





**Figure 11.3:** Detail from 1884 Sanborn Fire Insurance Map, indicating Guy Tilford & Co. Pottery (Stoneware).

as on the 1884 Sanborn Fire Insurance Map of southern Fort Edward the business is listed as such (Figure 11.3). In her Checklist of Potters of Albany and the Upper Hudson, Wheeler (1944) similarly indicates that Haxstun & Co. became Guy Tilford & Co. in 1885. The 1884 Sanborn Fire Insurance Map also indicates that the pottery was run by wood fire, and two kilns and a dryer are illustrated on it.

Typical stoneware items produced by the Fort Edward Stoneware Co. (Haxstun & Co./G.S. Guy & Co./Guy Tillford & Co.) included various types of jugs for such products as syrup, molasses, cream and butter, and containers for other goods, as well as such items as mixing bowls, beer bottles, chamber pots, spittoons, and flowerpots among other stoneware items. While these items may have been decorated with a salt glaze, Albany slip, or blue glaze, most firms also noted their production of “Rockingham” pottery. However, the Fort Edward style was a brown glazed stoneware, and not a true “Rockingham” (Ketchum 1987:250). The Guy Tilford & Co. firm and associated land and property ceased production and was sold in 1892 to the Hilfinger brothers (Deed Book nd:L112; Ketchum 1987; Broderick and Bouck 1995; Broderick 1991).

### Hilfinger Brothers Pottery

As the stoneware industry began to subside in the late nineteenth century, earthenware began to be produced in unison with the stoneware, with some potteries turning their focus entirely towards earthenware products, such as flowerpots and both glazed and unglazed ob-

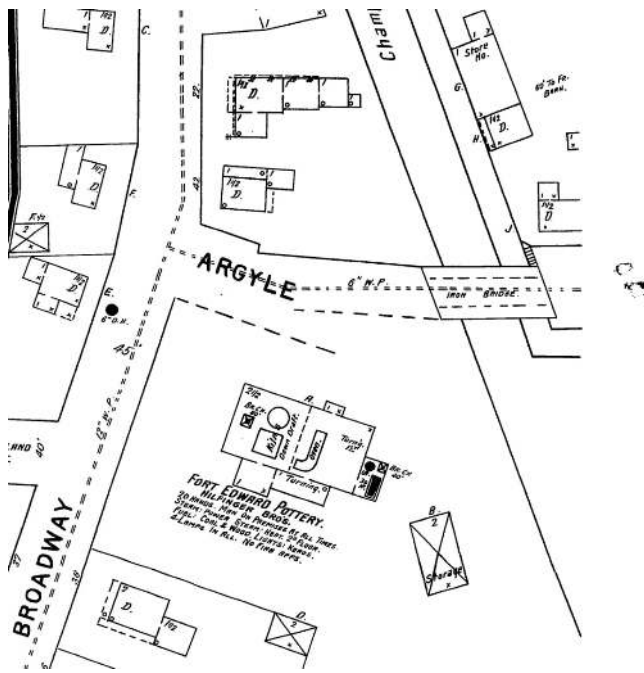
jects, ranging from jardinières and vases, to umbrella stands and birdbaths. One such pottery was that established by the members of the Hilfinger family (Broderick 1992).

The Hilfingers were involved in the pottery industry for close to 100 years, beginning with John Hilfinger whose second marriage was to a potter's daughter. John Hilfinger is understood to have been a "painter," "decorator," and "stone ware painter," himself having worked at F.B. Norton & Co. in Massachusetts, a stoneware pottery in Keene, New Hampshire, and later in Fort Edward (Broderick and Bouck 1995; Broderick 1991). By 1883, however, John was unable to work in the pottery industry due to injuries incurred in the Civil War. John is credited with perhaps having been responsible for the blue bird and flower motifs found on stoneware objects from these different potteries. While these motifs are remarkably similar to some associated with White's Pottery in Utica, there is no record of his having worked there (Broderick and Bouck 1995; Broderick 1991).

The Hilfingers first established an earthenware pottery in Fort Edward in 1884, under the direction of John and his second eldest son Rupert. The pottery was initially more of a cottage family business, their pottery being located by their house at 99 East Street (today 121 East Street). The family initially focused on the production of “ornamental flowerpots, vases, and urns” using clay retrieved from the swampy flats behind their house and business (Ketchum 1987; Broderick and Bouck 1995; Broderick 1991). This ware was the classic “terra cotta” red in color. Objects manufactured in the backyard pottery were produced under the name “Rupert Hilfinger, Manufacturer of Green House Earthenware” (Broderick and Bouck 1995:228) or “A. Hilfinger,” referring to Alexander who apprenticed at a pottery in Portland, Maine and who had a major role throughout the pottery’s history (Ketchum 1987:253).

In 1892 the backyard pottery burned down, leaving the house still standing to this day. The fire resulted in all four Hilfinger brothers (Theodore, Rupert, Alexander and Frederick) purchasing the property and business previously known as the Haxtun and Company Pottery and later the Guy Tilford & Co. Pottery, located at the intersection of Broadway and Argyle Streets from Joseph King, that same year (see Figure 11.4, also Deed Book nd:L112:265; Ketchum 1987; Broderick and Bouck 1995; Broderick 1991).

Having previously bought out Satterlee & Mory's Pottery inventory and equipment in 1891 after that firm had gone bankrupt (Broderick and Bouck 1995; Broderick 1991), the brothers continued to manufacture earthenware objects and evidently also advertised the production of stoneware objects, although it appears that the stoneware was produced in markedly low numbers, as both Ketchum (1987:253) and Broderick (1991:134) have evidently never seen any stamped stoneware from the Hilfinger Pottery. Other earthenware objects pro-



**Figure 11.4:** Detail from 1895 Sanborn Fire Insurance Map, indicating Fort Edward Pottery/Hilfinger Bros.

duced included churns, drain tiles, sewer piping, jugs, fancy flowerpots, and lawn vases, among other items (Broderick and Bouck 1995; Broderick 1991; Ketchum 1987). The drain tile piping varied from two to twelve inches in diameter. Some of this drain tile was seen in use along the sides of Broadway during archaeological construction monitoring and excavation and is discussed below.

When labeled by the pottery, earthenware objects were marked “HAND MADE BY A. HILFINGER FORT EDWARD NY” in black ink, or impressed “FORT EDWARD, NY” (Ketchum 1987:253), although most objects were not marked (Broderick and Bouck 1995). The pottery is recorded on the 1895 Sanborn Fire Insurance Map as “Fort Edward Pottery, Hilfinger Bros.” With the aid of Satterlee & Mory’s purchased equipment, the brother’s renovated the pottery, including the refurbishing of its two kilns and the pottery’s oven (Broderick and Bouck 1995; Broderick 1992; 1991). Evidently their renovations also involved a change in fuel from just wood to coal and wood, and they used steam power and steam heat with kerosene lighting (Figure 11.4).

The earthenware continued to be manufactured from local clays procured via wagon from Marion Street, and was hand molded on a potter’s wheel (Broderick and Bouck 1995; Broderick 1991; Ketchum 1987), while the stoneware objects were produced from New Jersey clay, and marketed as having been “stronger and better made than any other stoneware that comes from the western states” (Broderick and Bouck 1995:233; Broderick 1991:134). After the earthenware objects were molded

on the wheel and dried, the vessels were stacked together in preparation of kiln firing. Depending on the size of the vessel, as many as 150,000 flowerpots could be fired at one time (Broderick and Bouck 1995; Broderick 1991).

The kiln floor was fashioned from bricks, with a number of openings in it to allow for a circular upward draft. “Before the fires were lighted, the doorway was sealed with eighteen-inch-long firebrick and cemented tight so no heat could escape” (Broderick and Bouck 1995:232). The kilns had 10 fire boxes and coal was used to fuel the kilns (Broderick and Bouck 1995; Broderick 1991). After firing, objects were stored on the south side of the structure and crated in an adjacent packing room, from which the merchandise would be shipped (Broderick and Bouck 1995; also see Photos 11.3 to 11.5 on pages 327–328). As early as 1884 (Figure 11.3 on the previous page), there was also a large two-story storage building or barn to the south east between the pottery and the canal.

In 1895 the pottery is noted on the Sanborn map as having employed 20 people (Figure 11.4), but by 1900 only 10 people are indicated on the map. They ceased producing stoneware altogether in 1905, although merchandise remained on hand for several years afterwards. It is hypothesized that at this time the stoneware kiln was removed to accommodate the growing earthenware production (Broderick and Bouck 1995; Broderick 1991). A decision was made to concentrate on the production of mass produced flowerpots after World War I, although orders for handmade objects were honored on personal request. Fred Hilfinger is attributed with having invented the machine through which they were able to produce up to 5,000 flowerpots a day (Broderick and Bouck 1995; Broderick 1991).

According to the 1924 Sanborn Fire Map (Figure 11.5), some additions were made to the buildings on the property. Along with a new location for the old two-story barn, there was a second one-and-a-half-story storage barn built next to it. Floor space of the main pottery structure was increased by the construction of a one-story wraparound addition along the back, possibly open-sided. Also by then, the building had electric power and lights, and the addition of a heater is indicated. On the 1932 Sanborn map the pottery was labeled as a “Tile Pipe Factory” apparently indicating an emphasis on the redware pipe they made. When the pottery was first built, the 1830s alignment of the Champlain Canal ran directly along the east side of the property, which is probably one of the reasons the pottery was located there in the first place. It provided a convenient mode of shipping finished goods produced there.

Around the turn of the twentieth century the New York State Barge Canal system was proposed, which resulted in the construction of a new, wider canal prism. The prism skirted the southeast side of the Hilfinger



**Photo 11.3:** Hilfinger Pottery ca. 1891 at corner of Broadway and Argyle Streets facing east. The name of the former firm, "G. S. Guy & Co." is still partly visible on the side of the building (Courtesy of the Fort Edward Historical Association).



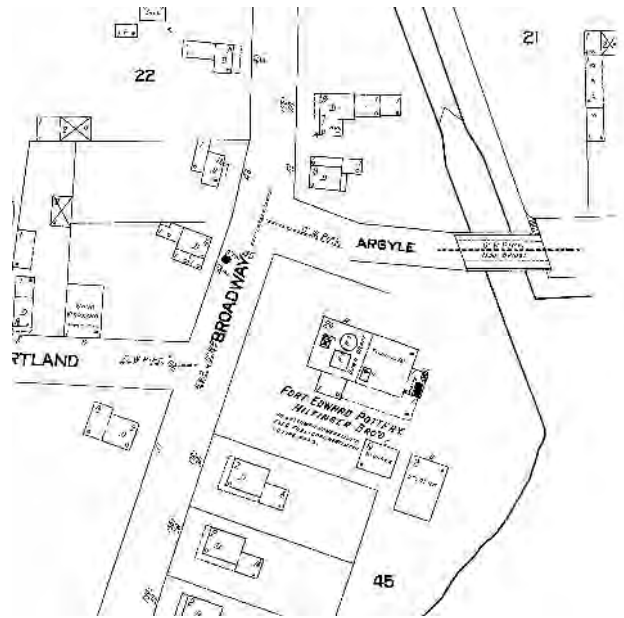
**Photo 11.4:** Hilfinger Pottery workers holding small flowerpots ready for shipping, date unknown (Courtesy of the Fort Edward Historical Association).



**Photo 11.5:** Earthenware goods produced by the Hilfinger Pottery. Note the drainage tiles standing on end on the floor (Courtesy of the Fort Edward Historical Association).

property and ran northeast to Whitehall from just south of the village of Fort Edward, essentially bypassing the heart of the village north of the site. In 1908 a new lock known as the “Junction Lock” was constructed in the old canal just north of Argyle Street to allow boat traffic on the Barge Canal continued access up into the village (Williams 1915). Within decades though, railroad and truck traffic became cheaper and faster so the junction lock and old canal in the village became obsolete. Eventually the bridge on Argyle Street near the pottery was removed and the canal filled in along the east side of the pottery property.

The Hilfinger Pottery remained in operation until 1942 even after the departure of Theodore Hilfinger (Ketchum 1987). Eventually, upkeep of the property became too expensive and the remaining family members decided to close the business. The structure remained standing until 1954. After its destruction, broken vessels, molds, and clay were found on the lot. (Broderick and Bouck 1995; Broderick 1991). The property remained vacant until sometime in the late-twentieth century when a small ranch-style house (40 Argyle Street) was constructed on the eastern central part of the lot with an address on Argyle Street. It is now surrounded by a landscaped, grassy lawn.



**Figure 11.5:** Detail from 1924 Sanborn Fire Insurance Map showing Fort Edward Pottery (Hilfinger Brothers).

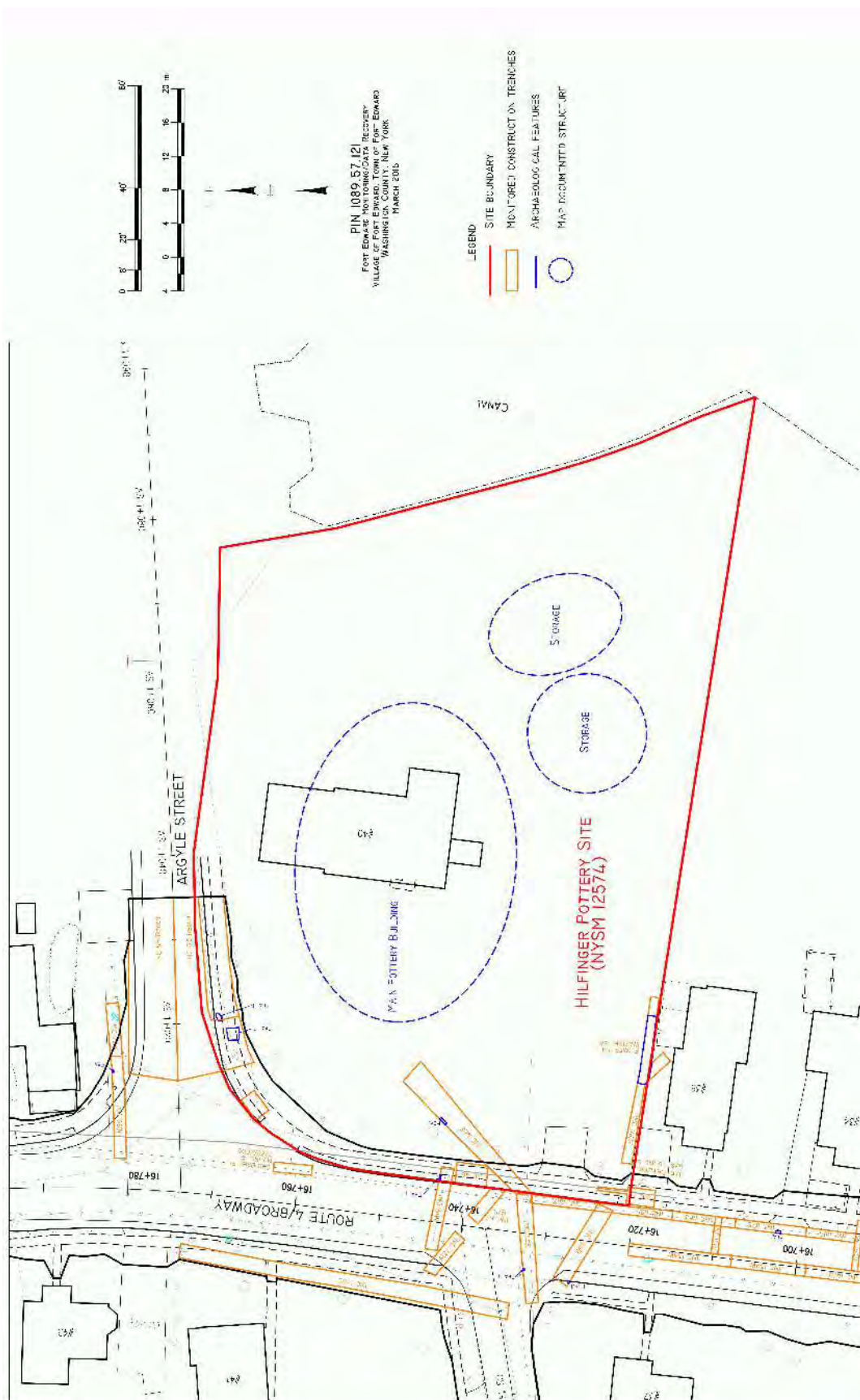
## 11.5 Hilfinger Pottery Site Assessment

### *Site Structure and Interpretation*

The archaeological findings of the Hilfinger Pottery site, including features and artifacts, are described in detail by construction trench (Incident) in Chapter 12 on page 331. Because of the nature of the road and utility construction conducted for this project, the main pottery building, kilns, and associated outbuildings were themselves outside of the impact area and thus not encountered (Figure 11.6 on page 329). The archaeological observations of the site itself were confined to the edges of the property and to dumping locations off site that were impacted and thus revealed during construction. Because of the limited impact zones, archaeologists only observed some of the areas where industrial (pottery kiln) waste was disposed of over the changing history of the pottery's operation.

With 70 years of pottery production at the site, there must have been a tremendous amount of kiln byproducts needing disposal. The lot on which the pottery was located was not that big and thus necessitated the use of off-site locations for disposal. Evidently wasters and refuse were used as land fill along the back property edge, especially during the Hilfinger's operation as seen in the large flowerpot waster dump exposed there during archaeological monitoring. However, it was also noted that in the early stoneware production days, wasters were dumped in the side yard, the road out front, and along the nearby creek edge and viaduct to the north. In some places, such as the flowerpot waster





**Figure 11.6:** Hilfinger Pottery Site map with monitored trenches labeled.

dump along the back of the property, deposits were extensive; 1.5 to 2 m (5 to 6 ft) deep and 6 m (20 ft) long filled with broken and melted flowerpots and ash. On the west edge of the property along and just behind the sidewalk, deposits varied from .3 to 1.5 m (1 to 5 ft) deep with alternating deposits of coal ash, soil, kiln bricks, stoneware, red earthenware, and mixed sheet midden material. Several north-south-running utilities had impacted the site below the concrete sidewalk along Broadway.

As far as the deposits off-site near Bond Creek, according to the historians, the Hilfingers obtained clay from the Marion Street clay beds further north in the village, requiring repeated trips back and forth by wagon to the factory on Argyle Street. It was probably convenient for them to off load waste in locations along the main route into the village as they went back and forth, especially in low areas out of the way, or where clean fill might be desired, such as along the viaduct over Bond Creek.

Today, the pottery building footprint itself is completely obscured by grading and filling of the property. Sally Cologen, the landowner of the house on the lot (40 Argyle Street) at the time of construction, said that the west and south walls of her house are the east and south walls of the kiln (personal communication 2006). It is likely that parts of the kiln(s) and building foundation are still intact to the east and west of the house, and perhaps remnants of the bases of the other chimneys, boiler, and dryer are remaining as well buried beneath fill. The current house is only a fraction of the original building's size. There may also be buried evidence of the storage buildings that once stood to the rear of the property.

### ***Significance of the Hilfinger Pottery Site***

DOT's construction activities along the outer edges of the former Hilfinger Pottery property provided archaeologists several opportunities to look for cultural resources associated with the previously unexplored site. They observed intact soil stratigraphy, features, and artifact deposits in almost every construction exposure, which produced a sample of 372 artifacts including many marked stoneware wasters and kiln furniture objects from the early Haxstun & Co. operation, and a large waster deposit of red clay flowerpots from the later Hilfinger brothers operation.

This property is significant because it was the location of a well-known producer of pottery in the upper Hudson Valley region, first of stoneware, and later of red earthenware flowerpots. Of the several potteries established in the village of Fort Edward, this one stands out because it was newly constructed in the southern part of the village well away from the heart of the mill district where other established potteries were powered by water from the Hudson River. This one was initially powered by steam. As a local industry, it sus-

tained changes in ownership, ceramic type produced, fuel type, and modes of transportation over the course of nearly 70 years of operation. It was one of the few major nineteenth-century Fort Edward pottery buildings to survive well into the twentieth century, long after the other Fort Edward potteries were gone. The Hilfinger brothers' pottery supplied not only flowerpots but ceramic drainage tiles that were utilized locally. These drainage tiles were observed by archaeologists further north in the village where they were used in the 1940s reconstruction of the curbs and sidewalks along Broadway at the railroad under pass.

Given the historical significance and the relative subsurface integrity observed, the site is considered eligible for listing on the National Register of Historic Places. Since only a small portion of the site was impacted by this project, it is likely that there are more intact features and deposits surviving below the filled and leveled lawn areas in the core of the site. No other impacts are expected from this project.

## 12. Archaeology of the Hilfinger Pottery Site

The site was explored by archaeologists while monitoring construction trenches for new utility service hookups to the west, and for removal of the street and sidewalk pavement along Argyle Street to the north (Figure 11.6 on page 329). The utility hookups connected new water, sewer, and gas lines in Broadway to the house now on the pottery site (40 Argyle Street), and to the house just south of the site (36 Broadway).

Two trenches extended east from the new sewer line in the northbound lane of Broadway (Incidents 46 and 140). Incident 46 was from 2 to 3 m (6 to 10 ft) wide, 20 m (65 ft) long, and approximately 1.8 m (6 ft) deep, while Incident 140 was 1 m (3 ft) wide, 25 m (82 ft) long, and 2 m (7 ft) deep with an off-shoot about 2.5 m (6.5 ft) long. There was also a gas line receiving pit (Incident 4) approximately 4 x 2.5 m (13 x 6.5 ft) square and at least a meter deep excavated in the sidewalk just north of the location of Incident 46, and a water service connector (Incident 61) involving a 1.5 m (5 ft) wide trench from across the street extending 1.5 m (5 ft) into the sidewalk from the east curb of the street just north of the gas line pit. That trench was 1.4 m (4.6 ft) deep.

During the final surface reconstruction of Argyle Street along the north side of the property, the street and sidewalk pavement was removed one lane at a time. Archaeologists monitored the scraped surface and identified deposits below the pavement that likely relate to the occupation of the pottery. Part of the eastbound lane and sidewalk, Incident 93, measured 7 x 20 m (23 x 65 ft), and was 110 to 120 cm (43 to 47 in) deep below the original pavement surface within the road itself. Along the concrete sidewalk alignment Incident 93 was about 33 cm (12 in) deep below the surface of the lawn. Table 12.1 is a summary of the horizontal dimensions of areas exposed during construction at the Hilfinger Pottery site, all monitored by archaeologists.

While construction machinery was at work on the site, archaeologists watched from the sides to spot cultural deposits or features, if possible. When machinery was out of the way, archaeologists would enter the pits or trenches to clean off trench walls and investigate potential resources. Soils were documented, profiles were drawn, and, when necessary, photographs were taken. Where appropriate, artifact samples were taken.

**Table 12.1:** Area of construction exposures at the Hilfinger Pottery site by Incident.

Incident	Dimensions	Area (m <sup>2</sup> )
4	2.5 x 4 m	10
46	2.5 x 20 m	50
61	1.5 x 1.5 m	2.25
140	1 x 30 m	30
93	7 x 20 m	140
Total		232.25

### 12.1 Soil Stratigraphy and Features

The few trenches that extended below the ground surface to any substantial depth showed that the soils were varied, at least along the western side of the site. In general, it was apparent that there had been various episodes of filling over the years using pottery waste, at least where soils were not intruded upon by modern utility trenches.

#### *Incident 46*

Incident 46 construction involved the removal of a section of sidewalk and the earth below to approximately 1.8 m (6 ft) deep to locate existing utilities. From there the trench angled northeast onto the lawn to find the existing water and sewer service pipes, resulting in a huge meandering trench (Photo 12.1 on the following page). A broad soil profile with varied stratigraphy along the trench was revealed. Just behind the sidewalk there were at least seven different soil layers of alternating dark and yellow brown colors of sand and sandy loam with gravel and slag ranging from 20 to 80 cm (8 to 31 in) thick.

The deepest cultural layer was approximately 1.5 m (5 ft) below the surface and consisted of dark brown silty sand with gravel, brick fragments, and coal ash. These alternating layers indicate periodic fill episodes (Photo 12.2 on the preceding page). In other places along the trench only the two upper layers were cultural. Level 1 consisted of 20 cm of dark yellow brown sandy loam, and Level 2 was a 40 cm-thick layer of brown sandy loam containing many fragmented artifacts.

The artifacts sampled include kitchen bone, fragments of iron, brick, clear bottle glass, slag, white clay smoking





**Photo 12.1:** View east of Incident 46 sewer service trench, on the site of the former Hilfinger Pottery. The house in the background is #40 Argyle Street.



**Photo 12.2:** View east of the eastern soil profile of Incident 46 sewer service trench just behind the sidewalk along Broadway. Note the alternating soil layers that incorporate fill.



pipes, and various ceramic sherds. Some of the ceramics date to the late-eighteenth and early- to mid-nineteenth centuries and are in very small fragments, typical of sheet midden deposits from that time. These include pearlware, whiteware, ironstone, and glazed redwares. However, many of the ceramics were from the operation of the pottery after 1874, both from its early stoneware days and later, from its earthenware flowerpot and tile pipe days. One stoneware waster fragment, showing evidence of over-firing, was found among the artifacts from this level along with red earthenware flowerpot and redware sewer pipe fragments. Wasters are sherds of ceramic goods, or sometimes whole but cracked, deformed, or burned vessels that result from a failure during kiln firing.

One feature was found along the north wall of Incident 46 approximately 5 m (16 ft) east of the sidewalk. It was an isolated pocket of artifacts in the dark brown sandy loam matrix, 15 to 40 cm (6 to 16 in) below the surface (Figure 12.1 on the following page). It had been truncated to the west by a recent utility trench. What remained was about 30 cm (12 in) wide. Several whitish firebricks several inches thick, and laid at least two across, rested at the interface with the sterile subsoil.

Above the firebrick was a thin layer of charcoal and some coal, and above that was a layer of crushed red earthenware ceramic fragments, possibly wasters. This deposit dates from the period of earthenware flowerpot production at the pottery and could be a typical kiln firing waste deposit of broken, over-fired pots along with the charcoal from the wood used to fuel the kiln, and some of the firebricks used to block up the opening. A historical photograph of the pottery (Figure 11.3 on page 327), shows a long narrow mound of debris in the foreground, just behind the sidewalk in a location approximately corresponding with the location of this feature. This could be the kiln debris seen in Incident 46 Feature 1.

### ***Incident 140***

Incident 140, a trench excavated along the southern property line of the pottery next to the house at 36 Broadway, encountered a large concentrated deposit of red clay flowerpot waster refuse mixed with coal ash from the pottery (Photo 12.3 on the following page). The deposit was approximately 6 m (20 ft) long and 1.5 to 2 m (5 to 6 ft) deep, and extended beyond the sides of the trench. The western extent of the deposit started 14 m (46 ft) from the curb on Broadway.

Most of the deposit was broken pot sherds but some of the flowerpots had melted together during kiln firing creating large nested, misshaped, and darkened masses of over fired pots (Photo 12.4 on page 335). The waster refuse, attributed to the Hilfinger's ownership of the pottery after 1892, was apparently used as land fill across

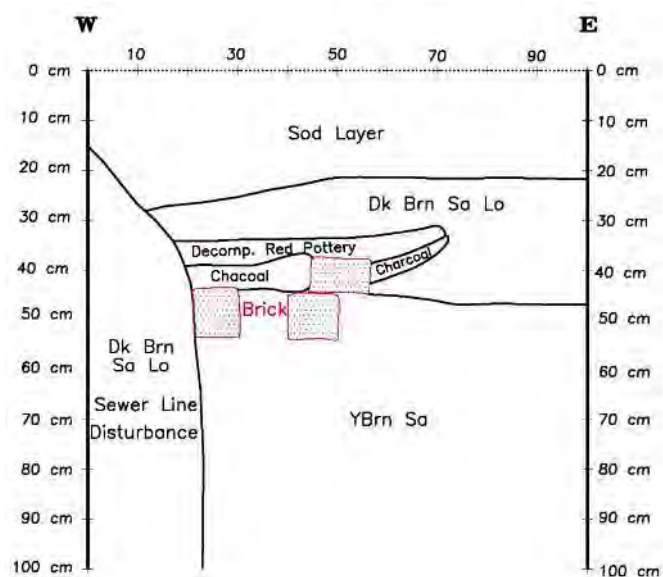
the rear of the pottery property next to this house. Archaeologists collected a sample of the material including several fused conglomerates of over-fired flowerpots, several whole but misshaped pots, a sherd of stoneware, and a foot-long section of redware drainage pipe with a three-inch inside diameter (Photo 12.5 on page 335). These ceramic pipes are also visible as finished goods in one of the historical photos (Photo 11.5 on page 328) of the Hilfinger's products.

The drainage pipes produced here at the Fort Edward Pottery were seen in use in other parts of the Fort Edward project area, .35 miles to the north along Broadway. They were used as under-curb drainage in front of 82 and 85 Broadway, houses on opposite sides of the street near the intersection with Notre Dame Street. They were observed in situ below the curbing during data recovery excavations along the east side of the street in Data Recovery Trench 5-Unit 1 and in new gas line trenches nearby (Incidents 35 and 169). These locations were in front of the Kilmer Funeral Home at 82 Broadway. They were also seen in situ in water line construction along the west side of the street (Incident 42) in front of 85 Broadway, a private home.

Interestingly, this piping was not seen anywhere else we monitored construction during this project. The purpose of under-curb drainage is to draw surface water away that runs to the sides of the crowned street where it would otherwise pond at the low point along the curb line. The red earthenware drainage pipes were three inches in diameter, in foot-long sections laid end-to-end directly below the base of the curb. The Hilfinger brothers "made drain tile piping varying from two to twelve inches in diameter" (Broderick and Bouck 1995:233).

The location where this drain piping was seen, just south of the railroad underpass, was subject to major construction ca. 1940 when the underpass was first built. Before that the street crossing of the railroad was at street grade requiring traffic to wait when trains passed through. When the underpass was built, it lowered the street grade and raised the railroad tracks so there was 14 feet of clearance at its deepest point. To reach that maximum depth beneath the track, the street was graded and reconstructed from just south of the houses at 82 and 83 Broadway north to the intersection with Bridge Street (Route 197). This grading entailed lowering subsurface utilities, installing all new curbs and sidewalks, and repaving.

Apparently, they also installed under-curb drains made of red earthenware. Interestingly, this is around the time that the pottery was referred to as a "Tile Pipe Factory" on the 1932 Sanborn Fire Insurance map of the village. We don't have absolute proof, but most likely the pipe seen in this location was produced at the Hilfinger brother's Fort Edward Pottery, which was open until 1942. Several construction shots (Photo 12.6 to 12.7 on pages 335–336) show some of the locations along



**Figure 12.1:** Photo (left) and profile drawing (right) of the kiln brick and waster dump (Feature 1) in Incident 46 on the Hilfinger Pottery Site.



**Photo 12.3:** View southeast of the flowerpot waster dump mixed with ashes in Incident 140.



**Photo 12.4:** Flowerpots of various sizes melted together during firing and dumped in a waster pile behind the Hilfinger Pottery on Broadway. This is only a very small sample of the material exposed in the trench.

this section of Broadway where the drainage pipes were observed *in situ* under the curbs.

### ***Incident 61***

Incident 61, a trench excavated for connecting the new water service to 40 Argyle Street, the house on the site, reached only about a meter beyond the street curb along the west edge of the site. The trench encountered pockets of pottery refuse in a feature approximately a meter wide below the sidewalk. At about 30 cm below the sidewalk at the base of the sidewalk bedding, a 2 to 10 cm (1 to 4 in) thick charcoal layer was observed lying over amorphous pockets of various fill soils reaching a depth of 1.2 m (4 ft) below the sidewalk surface (Photo 12.8 on page 337).

Some of the pockets contained large amounts of crushed salt glazed stoneware sherds and stoneware kiln furniture pieces (stacking tiles and handle props). These were clay chunks used in supporting vessels stacked in the kiln for firing. Stackers are globs of clay flattened into curved shapes to place between the top of one crock or jug, and the bottom of the one stacked on top of it. Handle props are globs of clay that were squashed by hand into spaces between stacks of stoneware vessels when placed in the kiln to help keep the vessels from shifting during the firing process. This deposit dates to the first decade of the pottery's operation under the partnership of Haxstun and Guy based on the presence of two stoneware crock sherds with partial Haxstun & Co. maker's marks (Photo 12.9 to 12.11 on pages 337–338).

Below this was a 40 cm (15 in) thick layer of dark brown silty sand with pockets of mortar, red earthenware flowerpot sherds, kitchen bone fragments, a nail, a brick fragment, and some clam shell fragments. This soil layer slanted downward from east to west and dates to



**Photo 12.5:** Section of redware drainage pipe found in Incident 140, the earthenware waster dump on the Hilfinger Pottery site.

the later Hilfinger ownership of the pottery, from sometime between 1892 and 1942. The fact that the earlier stoneware deposit is superimposed above the soil with the earthenware flowerpot sherds indicates the redeposition of soils from various parts of the property, possibly from bulldozing the lot after the building was demolished in the mid-twentieth century. Incident 4, the gas line pit just to the south of this trench, revealed similar soils and artifacts. There was a north-south oriented utility trench disturbance intruding along the west side of the site in this location.

### ***Incident 93***

Incident 93, located along the north boundary of the site, represents a combination of waste dumping from the pottery and early to mid-nineteenth century domestic sheet midden accumulation. The 1895 Sanborn map indicates that there was a watchman present at the pottery at all times suggesting that there were possibly living quarters in the building. The domestic waste could be related to the consumption of meals while at the pottery. It could also be from the residence across the road on the north side of Argyle Street.

Road and sidewalk reconstruction here involved mechanical removal of the concrete sidewalk, the curb (both relatively recently constructed), and deep removal of the road pavement and road base to a depth of 110 to 120 cm (43-47 in) below the current pavement surface. After it was scraped smooth, archaeologists walked over the surface and identified various kinds of ceramic sherds and sheet midden material in the exposed soils extending from the back of the sidewalk north to about half way across the travel lane. A sample of this material was collected.





**Photo 12.6:** View west of the redware drainage pipe *in situ*, beneath the west curb in front of the house at #85 Broadway during new waterline construction.



**Photo 12.7:** View southeast of the redware drainage pipe under the east curb in front of #82 Broadway (Unit 1 in DRT 5) prior to new sewer line construction.





**Photo 12.8:** North profile of Incident 61, Feature 1 just under the sidewalk. A pocket of stoneware debris is visible under the charcoal layer at sidewalk base, while a red earthenware flowerpot sherd is visible in the middle of picture.



**Photo 12.9:** Salt-glazed stoneware crock sherds with the Haxstun & Co./Fort Edward Stoneware Co. mark. After 1884 Haxtun was no longer partner in the firm. The sherd on the right is from a two-gallon crock.



**Photo 12.10:** Stoneware kiln furniture (stackers and handle props) found in Incident 61, Feature 1. These are associated with the first decade of the pottery's operation (1874-1892). Note the gray salt glazing on some surfaces.



**Photo 12.11:** Blue-decorated stoneware sherds found in the waster deposit in Incident 61, Feature 1. These are associated with the Fort Edward Stoneware Co. operated by Haxstun and Guy from 1874 to 1892 prior to the Hilfinger's ownership of the pottery.



The soils were a mixed matrix of sandy clay and coal ash. Within the alignment of the sidewalk there were two high artifact concentrations, one near the curb (Feature 1), and one just under the sidewalk a few feet away (Feature 2). The material in these locations was basically the same as the overall deposit with the exception of having some metal and plastic wrapper fragments, the plastic likely mixed in during the relatively recent sidewalk construction.

The materials collected in this Incident, 139 artifacts in total, include mostly ceramic sherds (67%) of which 70 are stoneware crock and jug fragments from the Haxstun & Co. operation of the pottery (some have the Haxstun mark). Fourteen pieces of stoneware kiln furniture (stacking tiles) were also recovered. There are also 15 red earthenware flowerpot sherds from the later Hilfinger operation. Other ceramics found include six whiteware sherds, all but one decorated; two Rockingham yellowware sherds, and a flow blue pearlware sherd. There were also fragments of aqua and green bottle glass, clam shell (2), brick (4) wood (1), unidentified metal (2), and kitchen bone (3) representing domestic refuse.

### ***Incidents 8 and 15***

Two construction locations, approximately 80 m (262 ft) to the north of the site on Broadway (Figure 12.2 on page 339), encountered deposits of pottery-related material that was used as land fill. Incident 8 was a 15 m (50 ft) long area located along the south bank of Bond Creek between 28 and 43 m (91 and 141 ft) west of the highway centerline. It was situated on a strip of overgrown land that was mechanically cleared of trees and brush to make way for the construction of a buried storm drain pipe that releases into the creek.

Clearing exposed a thick deposit of red brick rubble mixed with stoneware wasters and redware kiln furniture and kiln bricks, along with metal objects, redware pots, glass bottles, ironstone dishware, leather shoe fragments, rubber doll parts, buckets, and other debris. This 60 cm (23 in) thick fill deposit was spread along the surface. Because of the presence of the bricks, combined with other refuse, it is possible this deposit is associated with the 1950s demolition of the pottery building. Alternatively, it is a mixture of regular kiln firing waste combined with household refuse from the nearby residences along that side of the creek.

Incident 15 was a shallow trench excavated along the east side of the Broadway viaduct south of the culvert. The trench was a meter-wide strip scraped no more than 20 cm (8 in) deep in preparation for a temporary sidewalk parallel to the road edge, about 7 m (22 ft) away from the highway center line. During mechanical scraping, archaeologists collected a sample of ceramic material that was mixed with the fill soil. This sample included salt-glazed stoneware crock and jug sherds and



**Figure 12.2:** Aerial photograph of Bond Creek relative to the Hilfinger Pottery site. The red areas highlighted indicate Incidents 8 and 15 where pottery debris and wasters were found during construction activities (after NYSGIS Clearinghouse 2007 Ortho-image).

stoneware kiln furniture in the form of separators much like the stoneware material found at the pottery site itself.

In both these locations, industrial waste from the nearby pottery was disposed of as fill. This may have been merely a convenient means of getting rid of the constant byproduct of kiln firings, or a sought-after material for filling the creek valley over time. It is clear though that both the early stoneware product of the Haxstun and Company Pottery, and the later waste from the Hilfinger brothers operation was deposited this far from the property.

# References Cited

- Agelarakis, A.  
1990. The excavation, analysis, and reconstruction of Transitional Period, Late Woodland Period, and Colonial Occupation at the Little Wood Creek Site, Fort Edward, Washington County, New York. Report on file at the New York State Office of Parks, Recreation, and Historic Preservation U.S. EPA PROJECT #: C-36-1305-01, Washington County Sewer Authority, Sewer District No.2, New York.
- Albany Evening Journal  
1896. News of the Neighborhood: Fort Edward. *The Albany Evening Journal*, August 3:7.
- Albany Journal  
1867. Champlain canal improvement from Whitehall to Fort Edward. *Albany Journal*, February 15.
- Anderson, F.  
2000. *Crucible of War, The Seven Years' War and the Fate of Empire in British North America, 1754-1766*. New York: Vintage Books.
- Anon.  
1756. Plan of the environs of Fort Edward [map]. In *Crown Collection of Photographs of American Maps*, A. B. Hulbert, ed., volume I of *Series II*. Cleveland: Arthur H. Clark Co.
- Anon.  
1757. Plan of Fort Edward [map]. In *Robert Rogers of the Rangers*, J. R. Cuneo, ed. New York: Oxford University Press.
- Auburn Weekly Bulletin  
1894. Historical item about the Fort Edward aqueduct repairs. *Auburn Weekly Bulletin*, 19 July.
- Auburn Weekly News  
1873. Historical item about the repairs of the Fort Edward aqueduct and roadway. *Auburn Weekly News*, August 14.
- Barbour, O. L.  
1879. *Reports of Cases in Law and Equity in the Supreme Court of the State of New York*, volume IX. New York: Banks & Brothers.
- Barlow, F. C.  
1866. *Laws of the State of New York Passed at the Eighty Ninth Session of the Legislature*. Albany: Printed by E. Croswell, Printer to the State for Wm. Gould & Co.
- Bascom, O.  
1868. Plan of aqueduct across Wood Creek at Fort Edward [map]. In *Canal Collections*, NY State Archives, ed. Albany: Argus Lithographers.
- Bascom, R. O.  
1903. *The Fort Edward Book Containing Some Historical Sketches with Illustrations, and Family Records*. Fort Edward, New York: James D. Keating.
- Beauchamp, W. M.  
1907. *Aboriginal Place Names of New York*, volume 108 of *New York State Museum Bulletin*. Albany, NY: New York State Education Department.
- Beers, F. W.  
1866. *New Topographical Atlas of Washington County, New York*. Philadelphia: Stone and Stewart.
- Beers, F. W.  
1875. *Map of Sandy Hill and Fort Edward with the Towns of Kingsbury and Fort Edward [map]*. New York: F.W. Beers and Company.
- Bender, S. and E. V. Curtin  
1990. A prehistoric context for the Upper Hudson Valley: Report of the survey and planning project. Report for the New York State Office of Parks, Recreation, and Historic Preservation with Partial Support Provided by a Survey and Planning Grant from the National Historic Preservation Act, Department of Sociology, Anthropology, and Social Work at Skidmore College, Saratoga Springs, New York.
- Bogart, J.  
1892. Annual report of the state engineer and surveyor. Fiscal year ending september 30th 1891, New York State Engineer and Surveyor, New York.
- Brislin, A. E.  
1999. Fort Edward grows up. In *The Fort Edward Sesquicentennial, 1849-1999*, R. P. McCarty, ed. Fort Edward NY: Fort Edward Sesquicentennial Committee.
- Broderick, W. and W. Bouck  
1995. *Pottery Works, Potteries of New York State's Capital District and Upper Hudson Region*. Cranbury, NJ: Associated University Press.
- Broderick, W. F.  
1991. A survey of the pottery industry of Fort Edward and Sandy Hill. *The Hudson Valley Regional Review*, 8(1):121-150.
- Broderick, W. F.  
1992. On archaeology and earthenware potteries. *The Hudson Valley Regional Review*, 10(1):105-112.
- Brumbach, H. J.  
1995. Algonquian and Iroquoian ceramics in the upper Hudson River drainage. *Northeast Anthropology*, 49:55-66.
- Brumbach, H. J. and S. Bender  
2002. Woodland Period settlement and subsistence change in the Upper Hudson River Valley. In *Northeast Subsistence-Settlement Change: A.D. 700-1300*, J. P. Hart and C. B. Rieth, eds., number 496 in *New York State Museum Bulletin*. Albany: New York State Education Department.



- Brumwell, S.  
2000. *Redcoats, The British Soldier and War in the Americas, 1755-1763*. New York: Cambridge University Press.
- Buffalo Daily Courier  
1868. Historical item about damage to stone culvert at Fort Edward, New York. *Buffalo Daily Courier*, September 13.
- Bulkeley, J. S.  
1877. *The leading Industrial Pursuits of Glens Falls, Sandy Hill and Fort Edward*. Ballston Spa, NY: Waterbury & Inman, Steam Printers.
- Burleigh Lithograph Company  
1892. Bird's eye map of Fort Edward, N.Y. Reprinted by Excelsior Printing Company, North Adams, MA. Distributed by the Fort Edward Historical Association with the assistance of the Town of Fort Edward.
- Calloway, C. G.  
2006. *The Scratch of a Pen: 1763 and the Transformation of North America*. New York: Oxford University Press.
- Carr, M. E.  
1909. Soil survey of Washington County, New York. Technical report, U.S. Bureau of Soils Field Operations.
- Collamer, J.  
1987. Archaeological investigations for the Washington County Sewer District #2, Village of Fort Edward, Washington County, New York. DRAFT Submitted to Clough, Harbor and Associates. On file at the Washington County Sewer District office C-36-1305, Collamer and Associates, Inc.
- Cuneo, J. R.  
1959. *Robert Rogers of the Rangers*, Fort Ticonderoga Museum, 1988 reprint edition. New York: Oxford University Press.
- Curtin, E. V.  
2011. A small site in Coxsackie, circa A.D. 1200: Some ecological issues concerning its age and location. In *Current Research in New York Archaeology A.D. 700-1300*, C. B. Rieth and J. P. Hart, eds., number 2 in New York State Museum Record. Albany: New York State Education Department.
- Curtin, E. V., K. L. Nelson, and J. E. Schreyer  
2008. Strategies for investigating and interpreting small prehistoric sites and low density artifact distributions: Examples from the Hudson River Drainage. In *Current Approaches to the Analysis and Interpretation of Small Lithic Sites in the Northeast*, C. B. Rieth, ed., number 508 in New York State Museum Bulletin Series. Albany: New York State Education Department.
- Dale, B. R.  
2005. Cultural resources reconnaissance survey report for PIN 1089.57.121, Route 4 (Broadway), Village of Fort Edward, Washington County, New York, Addendum. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Education Department, Cultural Resources Survey Program, Albany, NY.
- Davis, N.  
2001. Archaeological monitoring and data recovery plan for PIN 1089.57.122, US 4 from Argyle Street in Fort Edward to the Hudson Falls North Village Line, Village and Town of Fort Edward and Village of Hudson Falls, Washington County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Museum Cultural Resource Survey.
- Davis, N. and M. LoRusso  
1998. Pre-reconnaissance report of PIN 1089.57.10, US 4 from NY 197 to Hudson Falls North Village Line, Village and Town of Fort Edward, Village of Hudson Falls, Washington County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Education Department, Cultural Resources Survey Program, Albany NY.
- Davis, N. and M. LoRusso  
2001. Addendum of PIN 1089.57.122, US 4/Broadway, Village of Fort Edward, Washington County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Museum Cultural Resource Survey.
- Davis, N. and M. LoRusso  
2006. PIN 1025.10.121, NY Route 197/Hudson River East Branch, Village of Fort Edward, Washington County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Museum Cultural Resource Survey, Albany, NY.
- de La Mamie, C. L. A.  
1773. *The field engineer of M. Louis-André de La Mamie, le Chevalier de Clairac*. London: Printed for John Millan. Translated from the French by John Muller, with observations and remarks on each chapter, together with the addition of several new figures, on a large copper-plate, to explain the author's constructions.
- Dean, R.  
2008. A cultural resource survey report archaeological pre-reconnaissance for Program Year 2008 of PIN 1089.09.101, Old Champlain Canal Along US 4 from American's Creek north to the Kroma Kill, Town of Stillwater Saratoga County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, New York State Museum Cultural Resource Survey, Albany, NY.
- Deed Book  
n.d. New York, Washington County, Fort Edward. Washington County Clerk's Office.
- Derby, P. E.  
2008. *Indian Trails, Military Roads, and Waterwheels: Cultural and Ecological Transformations at Glen Lake, New York*. PhD thesis, Syracuse University.
- Doughty, A. G., ed.  
1914. *An Historical Journal of the Campaigns in North America for the Years 1757, 1758, 1759, and 1760, by Captain John Knox*, volume 1. Toronto: The Champlain Society.

- Ellison, W. S. and A. Ellison  
1842. Map of the Village of Fort Edward showing the joint property of Barent and John R. Bleecker [map]. On file at the Fort Edward Village Clerk's Office.
- Evans, T. W.  
1873. *History of the American Ambulance Established in Paris during the Siege of 1870-71, Together with the Details of its Methods and its Work*. London: Sampson Low, Marston, Low, and Searle.
- Eyre, W.  
1755. A plan of Fort Edward. In *Crown Collection of Photographs of American Maps*, A. B. Hulbert, ed., volume I of *Series II*. London: Arthur H. Clark Co.
- Feister, L. M. and P. R. Huey  
1985. Archaeological testing at Fort Gage, a provincial redoubt of 1758 at Lake George, New York. *Bulletin and Journal of Archaeology for New York State*, 90(Spring):40-59.
- Fisher, D. W.  
1985. *Bedrock Geology of the Glens Falls-Whitehall Region, New York [map]*, number 35 in Map and Chart. Albany: Geological Survey of the New York State Museum.
- Fitch Jr., J.  
1968. *The Diary of Jabez Fitch, Jr., in the French and Indian War, 1757*, volume Publication No. 1, 2nd edition. Fort Edward, New York: Rogers Island Historical Association.
- Fuller, J.  
1995. A brief history of the 18th century military construction at Fort Edward. In *Archaeology in Fort Edward*, D. R. Starbuck, ed., Pp. 7-19. Concord, NH: The Printed Word, Inc.
- Funk, R. E.  
1976. *Recent Contributions to Hudson Valley Prehistory*, volume 22 of *New York State Museum Memoir*. Albany: The University of the State of New York.
- George, D. R. and R. E. Dewar  
1999. *Chenopodium* in Connecticut prehistory: Wild, weedy, cultivated, or domesticated? In *Current Northeast Paleoethnobotany*, J. Hart, ed., number 494 in *New York State Museum Bulletin*, Pp. 121-132. Albany: New York State.
- Glens Falls Morning Star  
Var. Historical items about the collapse of the canal aqueduct wall in fort edward. *Glens Falls Morning Star*, Various.
- Grose, F.  
1801. *Military Antiquities Respecting a History of the English Army from the Conquest to the Present Time*. London: Printed for T. Egerton, Whitehall & G. Kearsley.
- H. H. Bailey & Co.  
1875. Bird's eye view of Fort Edward, New York. Map Reproduction Courtesy of the Norman B. Leventhal Map Center at the Boston Public Library. Online: [http://maps.bpl.org/details\\_10203/?dl\\_pp=9&srch\\_order=location&mhid=9](http://maps.bpl.org/details_10203/?dl_pp=9&srch_order=location&mhid=9).
- Hamell, G. R.  
1992. The Iroquois and the world's rim: Speculations on color, culture, and contact. *American Indian Quarterly*, 16(4):451-469.
- Hart, J. P., R. G. Thompson, and H. J. Brumbach  
2003. Phytolith evidence for early maize (*Zea mays*) in the Northern Finger Lakes Region of New York. *American Antiquity*, 60:619-640.
- Hartgen Archeological Associates, Inc.  
2003. Archeological investigation of the Royal Blockhouse Site, Town of Moreau, Saratoga County, New York. Prepared for Frank Nastasi, Nastasi and Associates, 147 Hericks Road, Garden City Park, New York, Hartgen Archeological Associates, Inc.
- Hartgen Archeological Associates, Inc.  
2011. Phase I monitoring investigation, Fort Edward (Canal Street) non-owned former MGP Site, Canal Street Village of Fort Edward, Washington County, New York. Submitted to MHW Americas, Inc., 60 Altadena Drive, Pittsburgh, Pennsylvania., Hartgen Archeological Associates, Inc.
- Hill, W. H.  
1929. Old Fort Edward before 1800, an account of the historic ground now occupied by the Village of Fort Edward, New York. Privately Printed.
- Hoffman, C.  
1998. Pottery and steatite in the Northeast: A reconsideration of origins. *Northeast Anthropology*, 56:46-68.
- Hole, W.  
1921. *The Distribution of Gas*. London: Benn Brothers Limited.
- Horn, F.  
1989. Historic structure report on the Patrick Smyth House. Technical report, Fort Edward Historical Association.
- Hulbert, A. B., ed.  
1907. *The Crown Collection of Photographs of American Maps*, volume 1 of *Series II*. Cleveland: Arthur H. Clark Co.
- Hume, I. N.  
1970. *A Guide to the Artifacts of North America*. New York: Knopf.
- Hutchinson, H.  
1830. Champlain canal survey maps. New York State Archives <http://iarchives.nysed.gov/dmsBlue/listCollections.jsp?id=68324>.
- Isreal, F. L., ed.  
1968. *1897 Sears Roebuck Catalogue*. New York: Chelsea House Publishers.
- Johnson, C.  
1878. *History of Washington County, New York, With Illustrations and Bibliographical Sketches*. Philadelphia: Everts and Ensign.

- Kalm, P.  
1937. *Peter Kalm's Travels in North America, The English Version of 1770*, 1964 reprint edition. New York: Dover Publications. Revised from the original Swedish of 1748-1750.
- Kay, P.  
2000. Color. *Journal of Linguistic Anthropology*, 9(1-2):32-35.
- Ketchum, Jr., W. C.  
1987. *Potters and Potteries of New York State, 1650-1900*, 2nd edition. Syracuse NY: Syracuse University Press.
- Kirk, M. and A. Markessinis  
2003. Cultural resource reconnaissance survey report of PIN 2029.52.101, Routes 5S, 10, and 920T, Village of Canajoharie, Montgomery County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration, Hartgen Archaeological Associates, Inc.
- Kitchin, T.  
1772. A plan of Fort Edward and its environs on Hudsons River engraved by T. Kitchin, Hydrographer to his Majesty [map]. In *The History of the Late War in North America, and the Islands of the West-Indies, including the campaigns of MD-CCLXIII and MDCCLXIV against His Majesty's Indian enemies*, T. Mante, ed. New York: Research Reprints Inc. Believed to represent Fort Edward c. 1758.
- Kostiwi, S. F.  
1995. A fresh look at the middle woodland period in north-eastern north america. *The Bulletin*, 110:28-45.
- Lacque, D.  
1976. Blacksmith shop becomes inn. *Post Star*, January(3):8.
- Largy, T. B., L. Lavin, M. E. Mozzi, and K. Furgerson  
1999. Corncocks and buttercups: Plant remains from the Goldkrest Site. In *Current Northeast Paleoethnobotany*, J. P. Hart, ed., number 494 in New York State Museum Bulletin. Albany: New York State Education Department.
- Lavin, L.  
2004. Mohican/Algonquian settlement patterns. In *The Continuance – An Algonquian Peoples Seminar: Selected Research Papers*, S. W. Dunn, ed., volume 501 of *New York State Museum Bulletin*, Albany. New York State Education Department.
- Lavin, L., M. E. Mozzi, J. W. Bouchard, and K. Hartgen  
1996. The Goldkrest Site: An undisturbed, multi-component Woodland Site in the heart of Mahikan territory. *Journal of Middle Atlantic Archaeology*, 12.
- Levey, M.  
1853. *Map of Washington County, New York [map]*. Philadelphia: J.D. Scott and R.P. Smith.
- Lewis, J. F.  
1891. *Textbook of Fortification and Military Engineering, Part 1: Field Fortification and Military Bridges*. Great Britain: Royal Military Academy.
- Lossing, J. B.  
1850. *Pictorial Field Book of the Revolution; or Illustrations by Pen and Pencil of the History, Scenery, Biography, Relics, and Traditions of the War for Independence*, volume 2. New York: Harper & Brothers.
- Lothrop, J. C. and J. W. Bradley  
2012. Paleoindian occupations in the Hudson Valley, New York. In *Late Pleistocene Archaeology and Ecology in the Far Northeast*, C. Chapdelaine, ed. College Station: Texas A&M University Press.
- Lyman Esq., P.  
1899. *General Orders of 1757 Issued by the Earl of Loudoun and Phineas Lyman in the Campaign Against the French*, reprint 1970 edition. Freeport NY: Books for Libraries Press.
- Mayer, B.  
1876. *Journal of Charles Carroll of Carrollton During His Visit to Canada in 1776 as One of the Commissioners from Congress; with a Memoir and Notes*. Baltimore: Maryland Historical Society.
- Miroff, L. E.  
2011. Data recovery investigation of the Colonie Shaker Creek II/III Site, Volume I: Narrative. Submitted to the New York State Office of General Services, Public Archaeology Facility, Binghamton, New York.
- Miroff, L. E., J. J. Wilson, and N. M. Versaggi  
2008. Reconsidering culture-historic taxa in the Late Archaic. *North American Archaeologist*, 29(2):157-177.
- Money Penny, A.  
1970a. *Money Penny Orderly Book*, volume 12 of *Bulletin of the Fort Ticonderoga Museum*. Ticonderoga NY: Fort Ticonderoga Museum.
- Money Penny, A.  
1970b. *Money Penny Orderly Book*, volume 13 of *Bulletin of the Fort Ticonderoga Museum*. Ticonderoga NY: Fort Ticonderoga Museum.
- Morning Star  
Var. Historical items about the Fort Edward aqueduct and the Fort Edward Feeder Canal and bridge. *The Morning Star*, various.
- New York Assembly  
1894. *The Colonial Laws of New York from the year 1664 to the Revolution: including the charters to the Duke of York, the commissions and instructions to colonial governors, the Duke's laws, the laws of the Dongan and Leisler Assemblies, the charters of Albany and New York and the acts of the colonial legislatures from 1691 to 1775 inclusive*, volume 4. Albany: James B. Lyon State Printer.
- New York State Department of Transportation  
1913. State of New York, Department of Highways Plans for Improving the Fort Edward Village County Highway, S.H. 1083, Fort Edward Village. On file, New York State Department of Transportation, Design Quality Assurance Bureau, Wolf Road, Albany, New York.

- New York State Department of Transportation  
1938. Plans for Reconstructing, with Federal Aid, Portions of the Fort Edward Village, State Highway No. 1083, RC 4009. On file, New York State Department of Transportation, Design Quality Assurance Bureau, Wolf Road, Albany, New York.
- New York State Department of Transportation  
1939. Highway Construction Plans for, S.H. 8533, Broadway, Fort Edward. On file, New York State Department of Transportation, Design Quality Assurance Bureau, Wolf Road, Albany, New York.
- New York State Department of Transportation  
1944. Highway Construction Plans for S.H. 9307, Fort Edward Village – Broadway, Pt. 2. On file, New York State Department of Transportation, Design Quality Assurance Bureau, Wolf Road, Albany, New York.
- New York State Department of Transportation  
1968. Highway Resurfacing Contract for R.C. 68-88, Fort Edward Village, Sheet 4. On file, New York State Department of Transportation, Design Quality Assurance Bureau, Wolf Road, Albany, New York.
- New York State Education Department  
2004. Work Scope Specifications for Cultural Resource Investigations on New York State Department of Transportation Projects.
- New York State Engineer and Surveyor  
1854. New York State Archives. Maps, plans, details, and drawings of structures and locations for work on the Erie, Genesee Valley, Chemung, and Oswego canals, [ca.1830-1900], Plans for Middle Division Erie Canal Enlargement. Technical Report B0379-85, Volume 23, no. 590, New York State Archives, Albany, New York.
- New York State Legislature  
1919. *Official Index to the Unconsolidated Laws Being the Special, Private, and Local Statutes of the State of New York from February 1, 1778, to December 31, 1919*, volume 46 of *Legislative Documents*. Albany: J.B. Lyon Company.
- NMAI  
2013. Collections search. National Museum of the American Indian, <http://nmai.si.edu/searchcollections/item.aspx?irn=389426&catid=0&areaid=19&src=1-1&page=24>. Accessed: 2013-Mar-25.
- NRCS  
2013. Web soil survey. Natural Resource Conservation Service <http://websoilsurvey.nrcs.usda.gov>. Accessed: 2013-Apr-19.
- O'Callaghan, E. B.  
1849. *The Documentary History of the State of New York: Arranged Under Direction of the Hon. Christopher Morgan, Secretary of State*, volume IV. Albany: Weed, Parsons & Co.
- Office of the State Engineer  
1906. Supplement to the annual report of the State Engineer and Surveyor of the State of New York. Fiscal year ending on September 5, 1905, Albany.
- Pargellis, S. M., ed.  
1933. *Lord Loudoun in North America*. New Haven: Yale University Press.
- Pargellis, S. M., ed.  
1936. *Military Affairs in North America, 1748-1765, Selected Documents From the Cumberland Papers in Windsor Castle*. New York: American Historical Association.
- Patterson, H. L.  
1956. *Arms and Armor in colonial America, 1526-1783*, 2000 reprint, 2nd edition. Mineola, New York: Dover Publications.
- Pickands, M.  
2009. A cultural resources data recovery report for the Parishville Center Blacksmith Shop Site, NYSM# 10653, and the Parishville Center Wagon Shop Site, NYSM #11425, PIN 7780.04.101. Submitted to the New York State Department of Transportation and the Federal Highway Administration 98PR1826, New York State Museum Cultural Resource Survey.
- Post Star  
Var. Historical items about street paving, trolley tracks, automobile accidents, street extensions at the Fort Edward Feeder Canal Bridge, and renovations at the Anvil Inn. *Post Star*, various.
- Rafferty, S. M., C. Wood, and C. B. Rieth  
2007. A trace element analysis of New York cherts. *North American Archaeologist*, 28(2):167–187.
- Randall, T.  
1986. Arriving in Lake George... from plank road to super-highway. *The Adirondack Summer Times*, 26(June). Ausable, New York.
- Richards, O. C. and A. J. Spencer  
1910. Improvement of streets, Fort Edward, New York, plan and location of proposed macadam road from Marble Shop Bridge to N. Y. State Road. Fort Edward Village Clerk's Office Archives 121, Engineering Office.
- Rieth, C. B.  
2006. Cultural Resources Documentation Report of OGS Project S2155, Study for Site Assessments, Troop G. Headquarters, 504 Loudon Road, Loudonville, New York. Submitted to the New York State Office of General Services, New York State Museum Cultural Resources Survey, Albany, NY.
- Rieth, C. B.  
2008. Early Woodland settlement and land use in eastern New York. *Journal of Middle Atlantic Archaeology*, 24:153–166.
- Rieth, C. B.  
2012. Settlement and subsistence at a Middle Woodland camp in eastern New York. *North American Archaeologist*, 33(1).
- Rieth, C. B. and J. P. Hart  
2011. Introduction. In *Current Research in New York State Archaeology: A.D. 700-1300*, C. B. Rieth and J. P. Hart, eds., number 2 in New York State Museum Record, chapter 1. Albany: University of the State of New York, State Education Department.



- Ritchie, W. A.  
1932. The Lamoka Lake Site. *New York State Archaeological Association Research Transaction*, 7(4).
- Ritchie, W. A.  
1958. *An Introduction to Hudson Valley Prehistory*, number 358 in New York State Museum and Science Service Bulletin. Albany: The University of the State of New York.
- Ritchie, W. A.  
1967. *The Archaeology of New York State*, revised edition. Garden City, New York: Natural History Press.
- Ritchie, W. A.  
1971. *A Typology and Nomenclature for New York Projectile Points*, number 384 in New York State Museum and Science Service Bulletin, revised edition. Albany, New York: The University of the State of New York.
- Ritchie, W. A. and R. E. Funk  
1973. *Aboriginal Settlement Patterns in the Northeast*, number 20 in New York State Museum and Science Service, Memoir. Albany, NY: The University of the State of New York.
- Roberts, J.  
1898. *Annual report of the Comptroller of Canals, By the New York State Comptroller's Office for the Year of 1897*. Albany and New York: Wynekoop Hallenbeck Crawford Company State Printers.
- Sanborn-Perris Map Company  
1884-1942. Fort Edward, New York [map]. Digital Sanborn Maps 1867-1970 <http://sanborn.umi.com>.
- Sassaman, K. E.  
1999. A Southeastern perspective on soapstone vessel technology in the Northeast. In *The Archaeological Northeast*, M. A. Levine, K. E. Sassaman, and M. S. Nassaney, eds., Pp. 75-95. Westport, CT: Bergin & Garvey.
- Sassaman, K. E.  
2006. Dating and explaining soapstone vessels: A comment on Truncer. *American Antiquity*, 71(1):141-156.
- Schillner, G. L.  
1896. Barge Canal sectional maps. "Schillner Maps" Series B0253-83, Champlain Canal, Maps 6 and 7, New York State Archives, Albany, New York.
- Schladweiler, J. C.  
2004. Tracking down the roots of our sanitary sewers. Sewerhistory.org <http://www.sewerhistory.org/chronos/roots.htm>. Accessed: 2011-Nov-01.
- Scull, G. D., ed.  
1881. *The Montrossor Journals*. New York: New York Historical Society.
- Selby, S. C.  
2007. Geology of the upper Susquehanna River: Anthropological approaches to the Archaic and Woodland Period landscapes and settlement systems in New York State. Master's thesis, University of Michigan.
- Sentinel  
1883. Report of a train accident in Fort Edward, New York. *The Sentinel*, October 26.
- Smith, B. E.  
1992. *Rivers of Change: Essays on Early Agriculture in Eastern North America*. Washington DC: Smithsonian Institution Press.
- Smith, Cpt., G.  
1779. *An Universal Military Dictionary, or A Copious Explanation of the Technical Terms etc. used in the Equipment, Machines, Movements, and Military Operations of an Army*, 1969 facsimile edition. Ottawa, Ontario: Museum Restoration Services.
- Snow, D. R.  
1980. *Archaeology of New England*. New York: Academic Press.
- Sopko, J. and M. LoRusso  
2006. Cultural resource survey report of PIN 1089.61.101, Route 4 (Main Street) over the Glens Falls Feeder Canal, Village of Hudson Falls, Town of Kingsbury, Washington County, New York. Submitted to the New York State Department of Transportation and the Federal Highway Administration., New York State Museum Cultural Resource Survey.
- Starbuck, D. R.  
2004. *Rangers and Redcoats on the Hudson, Exploring the Past on Rogers Island, the Birthplace of the U.S. Army Rangers*. Lebanon, New Hampshire: University Press of New England.
- Starbuck, D. R.  
2010. *Excavating the Suttlers' House, Artifacts of the British Armies in Fort Edward and Lake George*. Lebanon, NH: University Press of New England.
- State of New York  
1815. An act to incorporate the Fort Edward Bridge Company. In *Laws of the State of New York Passed at the Thirty Sixth, Thirty Seventh, and Thirty Eight Sessions of the Legislature, commencing November 1812 and ending April 1815*, volume III. Albany: Websters and Skinners.
- Steele, I. K.  
1990. *Betrayals, Fort William Henry & the "Massacr"*. New York: Oxford University Press.
- Sullivan, J., ed.  
1921. *The Papers of Sir William Johnson*. Albany: The University of the State of New York.
- Tilton, F. G.  
1911. Map of the Village of Fort Edward, made from old Maps and Surveys. Map # 87, Fort Edward Village Clerk's Office Archives.
- Troy Times  
1926. News item about the Hudson Falls area. *The Troy Times*, March 2.
- Truncer, J.  
2004. Steatite vessel age and occurrence in temperate eastern North America. *American Antiquity*, 69(3):487.

- Truncer, J.  
2006. Taking variation seriously: The case of steatite vessel manufacture. *American Antiquity*, 71(1):157.
- Tucker, G. J.  
1859. *Laws of the State of New York, Passed at the Eighty Second Session of the Legislator*. Albany, New York: W.C. Little Company Law Book Sellers.
- Turner, V.  
1967. *Forest of Symbols: Aspects of Ndembu Ritual*. Ithaca NY: Cornell University Press.
- United States Census Bureau  
1850-1910. United States Census for the Town of Fort Edward, Washington County, New York.
- USGS  
1966. *Hudson Falls, 7.5-Minute Series*. Washington D.C.: United States Geological Survey.
- van Rensselaer, S., M. Hoffman, and W. C. Bouck  
1835. Report of the Canal Board, on the memorial of John McIntyre, David W. Wing, Joseph Hunter, and Morrel Baker. In *Documents of the Senate of the State of New York, Fifty-Eighth Session*, volume II. Albany, New York: E. Croswell.
- van Richmond, R.  
1868. *Annual report of the State Engineer and Surveyor on the canals of the State of New York*, volume 1867. New York: Van Benthuysen & Sons Steam Printing House.
- Vernay, R. and H. E. Luhman  
2004. Phase IA/IB Archaeological Survey for the New York Army National Guard Latham Armory, Town of Colonie, Albany County, New York. Submitted to the Division of Military and Naval Affairs., The Louis Berger Group, Inc.
- Warrensburg News  
1906. Hudson Valley must lower track. *The Warrensburg News*, 15 February: XXIX(9, Whole No. 1,465).
- Weld Jr., I.  
1799. *Travels Through the States of America and the Provinces of Upper and Lower Canada During the Years 1795, 1796, and 1797*. London: Printed for John Stockdale, Piccadilly.
- Wetterstrom, G.  
1756. Geometrical plan of Fort Edward with its environs [map]. By courtesy of the Huntington Library (HM 15443).
- Wheeler, R. G.  
1944. A checklist of potters of Albany and the Upper Hudson area. *New York History*, 25(4):540-543.
- Whitford, N. E.  
1906. History of the Canal System of the State of New York together with Brief Histories of the Canals of the United States and Canada. Annual Report, September 30, 1905 Supplement, State Engineer and Surveyor of the State of New York.
- Williams, F. M.  
1915. *The Barge Canal System Being Constructed by the State of New York*. Albany: L. B. Lyon Co., Printers.
- Wilson, J. M.  
1875. Report to the Chief Engineers, Part II. Technical report, United State Army Corps of Engineers.
- Winkley, H. E.  
1975. Soil Survey of Washington County, New York. Technical report, United States Department of Agriculture Soil Conservation Service, Washington, D.C.