8-12-2016

The MARTA Collection: An Investigation of an Archaeological Legacy and Cache of History

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THE MARTA COLLECTION: AN INVESTIGATION OF AN ARCHAEOLOGICAL LEGACY AND CACHE OF HISTORY

by

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Under the Direction of Jeffrey B. Glover, PhD

ABSTRACT

The initial rail lines for the Metropolitan Atlanta Rapid Transit Authority (MARTA), radiate from a center point where the town of Terminus gave rise to Atlanta. This massive public undertaking created an opportunity for Georgia State University (GSU) personnel, under the direction of Dr. Roy Dickens, to implement urban archaeological excavations, which were part of the burgeoning field of Cultural Resource Management (CRM). The material recovered from this project revealed a wealth of information about the people, culture, and growth of Atlanta.

Since the conclusion of this project in 1980, little attention has been given to the physical collection. This invaluable resource has succumbed to the effects of decomposition and loss due to inattentiveness over time. This thesis focuses on the physical condition of this collection, its

organization, and challenges of reassessing, stabilizing, and increasing the accessibility of the material to allow future researchers the ability to utilize this resource.

INDEX WORDS: Curation, Archives, Urban archaeology, Historical archaeology, Atlanta, MARTA, Legacy Collection.

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A Thesis Submitted in Partial Fulfillment of the Requirements for the Degree of

Masters of Arts

in the College of Arts and Sciences

Georgia State University

2016

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August 2016

DEDICATION

I would like to dedicate this thesis to my family. First, to my parents, Bill and Glenda Thompson, I would like to thank you for all the support you have given me over my lifetime. Art and Connie Pappas, my in-laws, thank you for always being there. To my son, Theo, I hope that the time I have spent on this endeavor and away from you will be remembered as a time when I followed my dreams and encourage you over your lifetime to do the same. And finally, to my husband, Van Pappas, you have always been my biggest supporter. I could never have been brave enough to jump without knowing you were always there. You are my best friend and partner for life.

ACKNOWLEDGEMENTS

The following people have supported me in my career and education and I would like to acknowledge that I would never have completed a graduate program without their continued support: Dr. Jeffrey B. Glover, Dr. Nicola Sharratt, Susie Fishman-Armstrong, and Dr. C. Thomas Lewis. I would also like to acknowledge Dr. Roy S. Dickens, Jr., Linda R. Carnes, Linda H. Worthy, Robin S. Futch, William R. Bowen, Gary D. Barber, and all the original participants of the MARTA project.

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1 INTRODUCTION

> *6-28-77 (Tuesday) - 8am - Went to 9FU91 to continue monitoring of MARTA's excavations. They are definitely into a lower fill beneath the clay. On the northern side of the cut, just to the East of the Techwood Viaduct an old concrete foundation has been uncovered.*
> *1-4:30 pm - Return to 9FU91 to monitor excavations between Techwood Viaduct. An abundance of cultural debris has been unearthed between the 25'-30' depth level here. Numerous Hutchinsen style "Capital City Bottling" bottles were recovered, plus a cache of "Noca Kola bottles approximately mid-way between Techwood and RR spur. Numerous metal, wood, and leather items (particularly shoe soles) were noted plus an albany slip 1 gal. jug with W.T. Co. impressed. We are having to be very selective about what we bring in since it would be impossible to recover even a small portion of this material. Therefore, we are making a representative sample, by 5' levels (where possible), from this area. (Drawer 4 Folder:MARTAProject:FieldNotes:June28-August5,1977:Original).*

These voices from the past unveil a small window into the wealth of history that has been locked away in banker's boxes and shelved since the early 1980s. The history enclosed not only reveals new insight into the City of Atlanta, but into a transitional stage in archaeological research methods. These boxes contain the compilation of material artifacts recovered, records, and documents produced as the result of archaeological excavations conducted as part of the construction process of the rail lines for the Metropolitan Atlanta Rapid Transit Authority (MARTA) due to National Historic Preservation Act (NHPA) mandates. This collection was created through the work of the students and faculty at Georgia State University (GSU). Since its creation, it has traveled to Chapel Hill, North Carolina, to Athens, Georgia, and back to Atlanta. Many aspects of the project involved innovative techniques, methods, and legislation. The return of the MARTA Collection begins another integral and pioneering aspect of the project, the "excavation" and re-analysis of a Legacy Collection. This new phase is the Phoenix Project, so named by Dr. Jeffrey Glover to highlight how the MARTA Collection can be given a second "life" through renewed analysis.

The planning stages for the MARTA project began when the 1965 Metropolitan Atlanta Rapid Transit Authority Act was passed by the state legislature (MARTA 2009). The archaeological excavations were conducted between 1976 and 1979 (Bowen and Carnes 1977; Carnes and Dickens 1978, 1979; Dickens and Barber 1976; Futch et al. 1980). The construction of the MARTA rail lines created the opportunity to protect cultural resources in Georgia as part of new federal mandates (Archaeological and Historic Preservation Act [AHPA] 1974; Archaeological Resources Protection Act [ARPA] 1979; National Environmental Policy Act [NEPA] 1969; NHPA 1966), as well as being one of the earliest urban archaeological excavations in the United States. Through this series of laws and unique conditions for excavations, the MARTA Collection was created.

The excavations conducted along the project area uncovered a large volume of material culture and provide insight into the development of the City of Atlanta. The project area includes historic areas that have been completely destroyed or inaccessible due to the construction of parking and other structures as part of the MARTA rail lines, such as late nineteenth century city dump sites, wells, taverns, and sites that contain evidence of activity during the Battle of Atlanta, a critical turning point during the Civil War. There are over 450 boxes of material recovered from these excavations that are now housed on the shelves located in four storage and archaeological laboratory spaces in Kell Hall at GSU.

The documents of this collection give a unique insight into the project. The original contracts between MARTA and GSU and the subsequent reports show how the new federal laws were interpreted and include employment guidelines for affirmative action hiring practices. The budget breakdowns show the salaries for personnel and how it changes, or stays the same, as job titles for individuals change throughout the project. The hand-written notes on field and lab

procedures show the development of these methods in a project specific manner. Shopping lists and receipts give insight into materials used for preservation of materials, many of which are no longer used today. The research that was conducted on medicine bottles and ceramics can be found in handwritten notes from interviews with people with first-hand knowledge of these items. With its inception and, hopefully, its final destination at GSU, the responsibility and stewardship of this collection now falls on this institution. Since the return of the MARTA Collection to GSU, and the renewed focus through the Phoenix Project, the hope and desire to see this collection 'rise from the ashes' and become a great resource of both historical and archaeological research is obtainable.

A Legacy Collection, which is typically defined as the collection of material from past archaeological excavations, also contains valuable information in the material specimens discovered and it can represent the introduction of new archaeological methods and theories (Sustainable Archaeology 2014). Most Legacy Collections, as is the case of the MARTA Collection, have been unattended or simply stored since the original analysis and have fallen into a state of decomposition. William Bowen and Linda Carnes were the field archaeologist and field supervisor, respectively, on the 1976-1977 investigations of the east and west lines. They wrote in their report on the MARTA project, "if carried out properly [archaeology] can result in the compilation of a record of the past and an archive for the future" (1977:1). They had the foresight to understand the significance of the MARTA excavations from the material that it was revealing and the historical significance of the innovative archaeological techniques employed to the educational value it would be to future researchers. Now that this collection has returned to its place of origin, it is time to satisfy the intention of those who left us this legacy. The focus of this thesis is the MARTA Collection and the challenges that are faced in moving the vast amount

of archaeological and historical material out of boxes and into the shared digital world of the twenty-first century.

Chapter 2 discusses the curation crisis that has occurred in the United States as a result of the massive amounts of archaeological collections created since the early nineteenth century, especially as a result of the federal projects conducted under the Works Progress (Projects) Administration (WPA) from the 1930s. As the field of Cultural Resource Management (CRM) began to grow beginning in the 1970s, it created a new wave of cultural material that also required stewardship. This chapter looks at the literature that addresses this issue and relates the MARTA Collection to other Legacy Collections that are the focus of the crisis that has occurred due to the lack of attention and care of older collections and the current need to resurrect them into a stable and accessible source for research and education.

Chapter 3 contains information about the history of the MARTA Project from the Georgia legislation that created the funding source that allowed for the construction of the rail lines through the 2000s, when the collection returned to GSU. This chapter includes information that shows how this project was integral in the development and progress of the City of Atlanta and how other historic figures were connected with the project. It also includes the documentary information about the contracts between GSU and MARTA, the description of the archaeological excavations, the creation of the collection of cultural material, and the publications and reports that were a result of this project. It also follows the steps and controversy that surrounded the transference of the collection from GSU to the University of North Carolina (UNC) to the University of Georgia (UGA) and back to GSU.

Chapter 4 discusses each component of the MARTA Collection and a methodological approach to address how it should be processed to transform it from a large amount of cultural

material stored in boxes to a usable resource for researchers hoping to gain insight into this past archaeological excavation and what it can teach us about the evolution of the City of Atlanta into the major urban center it is today. This chapter includes the history of the collection since it has returned to GSU in 2011, including descriptions of the work that has been performed by students, not only through reassessment and inventory projects, but also through research projects that are the result of class assignments, thesis research, and posters submitted to GSU and professional conferences. The Veterans Curation Program (VCP) is used as a case study in this section as one organization's solution for their curation problems. The United States Army Corp of Engineers (USACE) is responsible for multiple archaeological excavations related to their projects that created much of the infrastructure in this country since the early twentieth century, including massive dams and interstates. The key to solving their curation problems was to partner with a Veterans work project that has created a sustainable solution for working with Legacy Collections.

Chapter 5 includes a more detailed assessment of the state of the collection as it currently stands. The findings of Katherine Singley, a conservator who was brought in to assess the state of preservation of the collection, in particular the metal specimens, begin this chapter. The next section describes the data collected through my research for this thesis project. It looks at all the work that has been done to stabilize and digitize this project in efforts to make the physical collection sustainable for future use. A detailed investigation into one site, 9FU47, is used as a case study to highlight the challenges that are faced and additional problems that can be created by work conducted by students.

Chapter 6 is a discussion of a plan of action that would implement procedures to create a consistent assessment and inventory of the MARTA Collection under the auspice of the Phoenix

Project that will lead to the transformation of this material into a usable and accessible resource for future researchers and an asset to GSU. This chapter elaborates on the need for tracking the progress, as well as a focus on what type of digital information and metadata should be included in this plan. Additionally, the MARTA Collection will only find the resources it needs through partnerships with other interests and organizations associated with GSU and the City of Atlanta. This chapter investigates how the introduction of a praxis approach to this project will create a system of stakeholders and partnerships, as well as an avenue for civic engagement, which will give this collection back to the public. This theme was the focus of the thesis research conducted by Robert Bryant (2015), as well as a systematic approach to create an on-line component for the public accessibility of the MARTA Collection. This thesis concludes with a summary of how the unique history of the project, the types of material recovered, and the legacy of the collection itself shows the importance of ensuring that this project develops into the invaluable resource it has the potential of becoming, not only for researchers, but for the university and the city.

2 THE CURATION CRISIS

An archaeological excavation is the act of discovering cultural material, removing that material from the ground, analyzing the material, and then placing the material in bags and boxes. Documents are created, information is analyzed, reports are written, and the project is complete. For an archaeological collection, this is just the beginning. The verb 'to curate' is used to denote the organization of material, usually in reference to museums or exhibits. Curation, as used in the field of archaeology, is defined as "managing and preserving a collection according to professional museum and archival practices" (36 CFR 79.4[b]). It is this aspect of the archeological project that has consistently been ignored and, since the days of the WPA in the 1930s and 1940s, this apathy has become an unfortunate trend. This chapter discusses how lack of curation policies and funding has led to what has become a "curation crisis" and how this relates to the current situation of the MARTA Collection.

2.1 Curation in the Twentieth Century

The WPA programs were responsible for some of the largest archaeological excavations in the United States. These programs, which were created to put Americans to work, did just that for both men, primarily employed for fieldwork, and women, who were primarily employed for laboratory work. This program had money available for the employment of people, but funding for the curation and preservation of this material was not included (Benden 2014). Another wave of large archaeological excavations occurred in the 1950s and 1960s in advance of dam construction for hydroelectric energy production. These projects were also under the WPA, but also worked in conjunction with other organizations, such as the Tennessee Valley Authority (TVA). The collections from these projects, and others like them, are today referred to as

'Legacy Collections,' which are defined as collections that already exist due to past archaeological excavations (Sustainable Archaeology 2014).

At the time these excavations were being conducted, there were some concerns about where the material would be stored. During the late 1930s and early 1940s, Madeline Kneberg is credited, along with Tom Lewis, with designing an archaeology laboratory at the University of Tennessee and producing the first known lab procedures manual. This manual addressed not only cataloging procedures but collection management (Chapman 1996). The work under WPA archaeology developed relationships with universities, and lead to the creation of museums and more focused archaeological studies within Anthropology Departments. The William S. Webb Museum of Anthropology at the University of Kentucky was established in 1931, the Frank H. McClung Museum was created at the University of Tennessee in the 1960s specifically to curate collections from the TVA/WPA projects, and the Louisiana Museum of Natural History at Louisiana State University also has a major portion of the WPA collections (Sullivan et al. 2011).

Despite the fact that museums and laboratories were intended to manage the cultural material recovered from the WPA excavations, most of these Legacy Collections are not actually in stable environments today. "A problem faced…is the ongoing lack of adequate funding in accredited repositories for care of the New Deal-era collections….Although most New Deal-era collections are federally-owned or administered, and thus fall under federal curation regulations (36 CFR Part 79), federal agencies are reluctant to provide funds for their care, and many granting agencies will not award grants for 'preservation, organization, or description of material that are the responsibility of an agency of the federal government' (NEH Preservation and Access: Humanities Collections and Resources Grants Guidelines)" (Sullivan et al. 2011:97-98).

These collections can be found in situations where they are still housed in their original field bags and unwashed, those which have been reassessed and updated, and those at every stage in between.

The new circumstances for conducting archaeological excavations began with the passing of federal preservation laws, such as NHPA (1966), NEPA (1969), AHPA (1974), and ARPA (1979). With the enactment of these mandates, a new push for the preservation of archaeological resources began. These regulations, however, had more to do with protecting sites by conducting surveys prior to construction rather than preserving the cultural material that was recovered from these projects. The lack of planning and funding for the curation and preservation of these new projects increased the problems of the lack of storage space, as well as insufficient management of the collections.

Beginning in the 1970s, the archaeological profession began to bring awareness to the collection crisis. In 1977, Richard Ford conducted a survey of various archaeological collections in different facilities and "illuminated the problems of lack of access to, and deterioration of, collections" (Ford 1977; Marquardt et al. 1982:409-410). The American Anthropological Association conducted another study in 1979 (Lindsay et al. 1979). This study included 20 institutions and reported: "The problems included inadequate facilities; poor storage practices leading to collection deterioration; loss of whole collections, specimens, and records; inaccessibility of collections due to insufficient catalogs or inventories; and lack of security" (Lindsey et al. 1979:87-96). These same repositories would also be those that would receive the collections generated through the recently established CRM industry.

In 1982, William Marquardt, Anta Monet-White, and Sandra Scholtz wrote an article, *Resolving the Crisis in Archaeological Collections Curation*. These three archaeologists were

from the University of South Carolina, University of Kansas, and the University of Arkansas, respectively. They discuss the complications in collection management and offer possible solutions for establishing funding, such as contract budgets and investing funds to keep repositories adequately staffed and maintained. They sum up the importance of this issue at this time in the conclusion of their report:

> ….We need the kind of curation that encourages and facilitates, rather than impeded, research. It is inconsistent to lecture to archaeology students about their responsibilities for planning, research design, laboratory work, and publication, while continuing to consign the resulting documents and specimens to closets, basements, and attics where they benefit only those creatures taking up residence within the containers (Marquardt et al. 1982:417).

Almost a decade later, these issues had not been resolved. However, a small step was made to update the federal guidelines. In 1990, 36 CFR Part 79 was passed that addressed the curation of archaeological collections associated with federal projects. The key points of this legislation include:

- Provides guidelines for long-term care and management of federal archaeological collections: both existing and newly created collections
- Identifies methods for obtaining and funding curatorial services as well as terms/conditions for use in federal contracts and agreements
- Standards for determining a repository's ability to provide long-term care
- Emphasizes importance of collections access and use
- Provides procedures for conducting inventories
- First time in which Federal regulations provided clear guidelines for curation of archaeological collections [Benden 2014:18].

This launched publications for standards by professional archaeologists and organizations associated with the preservation of archaeological collections. In the 1990s, the U.S. National Park Service sponsored articles on managing archaeological collections and the curation crisis (Childs 1995; Sullivan 1992). In 1996, the Society for American Archaeology (SAA) adopted the *Principles of Archaeological Ethics*. The eight principles address Stewardship, Accountability, Commercialism, Public Education and Outreach, Intellectual Property, Public

Reporting and Publication, Records and Preservation, and Training and Resources (SAA 1996). In 1999, the SAA Board of Directors formed the Advisory Committee on Curation, which acknowledged the importance of collections management in the field of archaeology in North America, Mesoamerica, and South America (Childs 2002). In this same year, the U.S. Army at Fort Benning took the initiative to reassess and properly store the archaeological material from excavations conducted on their base. It took 18 months to properly curate the "400 cubic feet of artifacts and 45 boxes of documentation in order to restore research potential to collections that had, in some cases, remained untouched for decades" (Marino 2002:43).

In 2002, a compilation of articles was published under the title of *Our Collective Responsibility: The Ethics and Practice of Archaeological Collections Stewardship* which has become the 'go-to' reference for solutions to collections management (Childs 2002). The basis for this text are seven guidelines on how to implement the SAA ethic towards records and preservation. These guidelines are summarized below:

- The same stewardship applied to archaeological sites should also be applied to collections and associated records (Childs and Sullivan 2002).
- A collections integrity should be preserved and all field notes associated with a project are the property of the collection, not the individual archaeologist (Barker 2002; Marino 2002).
- All data and records, including photos, notes, maps, and digital data, require the same level of management and long-term care as artifacts collected from excavations (Drew 2002; Eiteljorg 2002).
- Existing collections and data should be utilized whenever possible due to the destructive nature of archaeological excavations in order to preserve remaining site integrity (Johnson and Denton 2002; Wiant 2002).
- The consideration and resources for the permanent curation of all artifacts and associated records should be included in the planning and budgeting of any archaeological project (Sonderman 2002).
- Archaeological collections should be accessible to researchers (Neller 2002; Phillips 2002).
- The principles of long-term preservation and management should be an integral part of the formal education of professional archaeologists (Longford 2002).

However, this text does not solve the problem of the lack of funding that exists in most institutions. Standards have been created in dealing with CRM projects that have come from the

modern era of federally funded projects; however, the blight of our Legacy Collections and the resources that are needed to solve this aspect of the crisis has still not been satisfactorily addressed.

2.2 The MARTA Collection as a Legacy Collection

Although most Legacy Collections are thought to have been from projects prior to the 1966 passing of NHPA, there are many that have their origins in the 1960s through the 1980s. It was during this time that the federal regulations were new, the CRM industry was in its infancy, and large repositories had not been created to manage the volume of material that was being collected. A Legacy Collection should not only be defined as the collection of material from past archaeological excavations: A Legacy Collection also contains valuable information in the material specimens discovered, and it can represent the introduction of new archaeological methods and theories. Most of these collections have been unattended or simply stored since the original analysis and have fallen into a state of decomposition.

The MARTA Collection is a Legacy Collection as defined by all the above criteria. The MARTA Collection is the result of an archaeological project conducted from 1975 to 1980. It contains material that gives a unique insight into the early development of the city which is now known as Atlanta, Georgia. The project area cut through areas where no longer extant structures and features, such as residences, taverns, wells, dumps, and battle sites, that were part of the history and development of the now urban area. This project represents one of the first to be conducted under the new federal mandates. It was also one of the first to conduct an excavation of this size, or any size, using methods and techniques which are now referred to as ‘urban archaeology.’ This collection has been moved from one institution to another; however, boxes were simply stored and no further care or attention was given to the artifacts or the records and

documents. With its inception and, hopefully, its final destination at GSU, the responsibility and stewardship of this collection now falls on this institution. By taking possession of the MARTA Collection, GSU now has an ethical and fiduciary obligation to implement proper management of all the artifacts and documents to ensure their preservation and accessibility for future research, and I hope that my thesis research helps provide a roadmap to how that can be accomplished.

3 THE COMPONENTS AND CHRONOLOGY OF THE MARTA PROJECT AND MARTA COLLECTION

The planning stages for this project began when the 1965 Metropolitan Atlanta Rapid Transit Authority Act was passed by the state legislature. It took until 1972 for referendums to be passed that would release funding that enabled MARTA to purchase the Atlanta Transit System, which at that time consisted of bus lines, and begin the process of creating a system of rail lines. By 1979, the first MARTA train was in operation (MARTA 2009).

The MARTA project was intertwined not only with innovative technologies in transportation but with civil rights issues, including affirmative action hiring practices. Maynard H. Jackson, Jr., the first African-American mayor of a major southern city, was elected in 1973 and was a dominant force in bringing this type of mass transit to Atlanta. MARTA was the first system of this type in the southern states. The Atlanta University Center Archives holds the administrative papers for Mayor Jackson. Included in these papers are documents that describe the political aspects associated with this project, including legal filings for hiring discrimination and fee hikes (Box 67, Folders 6-21). Breach of contract accusations were filed by Atlanta, as well as the metro county of Dekalb, against MARTA for not providing the rail line to low income areas, specifically to the Proctor Creek Projects, before those running to the more affluent Fulton County areas. The correspondence from Julian Bond, a prominent civil rights leader, which addressed these topics urged the mayor to intervene in order to avoid potential riots, equating what could happen to the Watts Riots that had occurred a decade earlier.

Prior to and during the excavations, there were federal mandates implemented. In 1966, the NHPA was passed, which was legislation that intended to preserve historical and archaeological sites in the United States. It created the National Register of Historic Places

(NRHP), the list of National Historic Landmarks, and the State Historic Preservation Office (SHPO), as well as created the Section 106 process used in CRM today (NHPA 1966). In 1974, the AHPA was passed which further protected resources by "specifically providing for the preservation of historical and archaeological data (including relics and specimens) which might otherwise be irreparable lost or destroyed" (AHPA 1974:Section 1). The ARPA was passed in 1979 which was enacted to "secure, for the present and future benefit of the American people, the protection of archaeological resources and sites which are on public lands and Indian lands, and to foster increased cooperation and exchange of information between governmental authorities, the professional archaeological community, and private individuals" (ARPA 1979:Section 1). The importance of this timeline is to show how the value of archaeological resources was enough of a priority in the nation's ideals that multiple pieces of legislation were being enacted for their protection at the same time as the excavations that were occurring in Atlanta.

The construction of the MARTA rail lines created the opportunity for the extensive archaeological excavations that occurred under these federal guidelines (AHPA 1974; ARPA 1979; NEPA 1969; NHPA 1966). The construction of the MARTA rail lines began from a center point in the city, which was also the location of the earliest railroad junctions that created the original town of Terminus from which the City of Atlanta was born. The rail lines were placed in cardinal directions from this point, known as Five Points, and ran west to Hightower, east to Avondale, north to what is today the Arts Center Station, and to the south to the Lakewood Station (Figures 3.1-3.3). The MARTA Collection is the end result of these archaeological investigations. The following sections will describe each stage of this project that was associated

with the archaeological investigations, beginning with the contracts between GSU and MARTA and concluding with a timeline of the movement of the collection after the project was final.

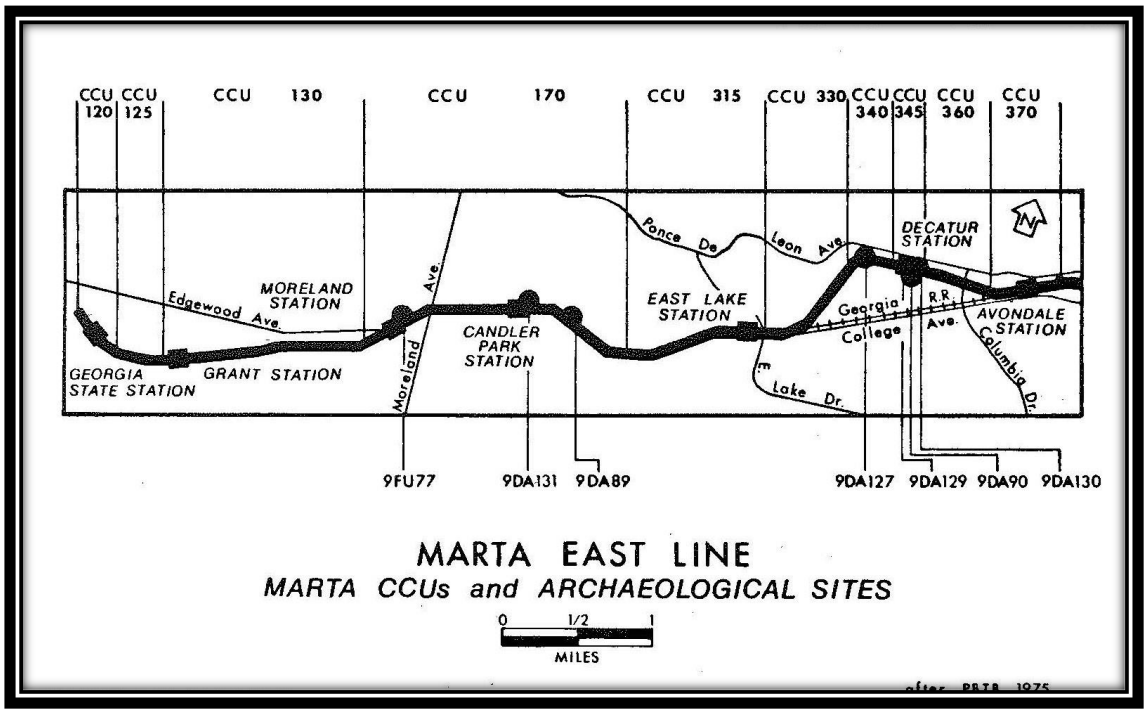


Figure 3.1 Map of MARTA East line with locations of CCUs and archaeological sites (Bowen and Carnes 1977:47, Figure 19).

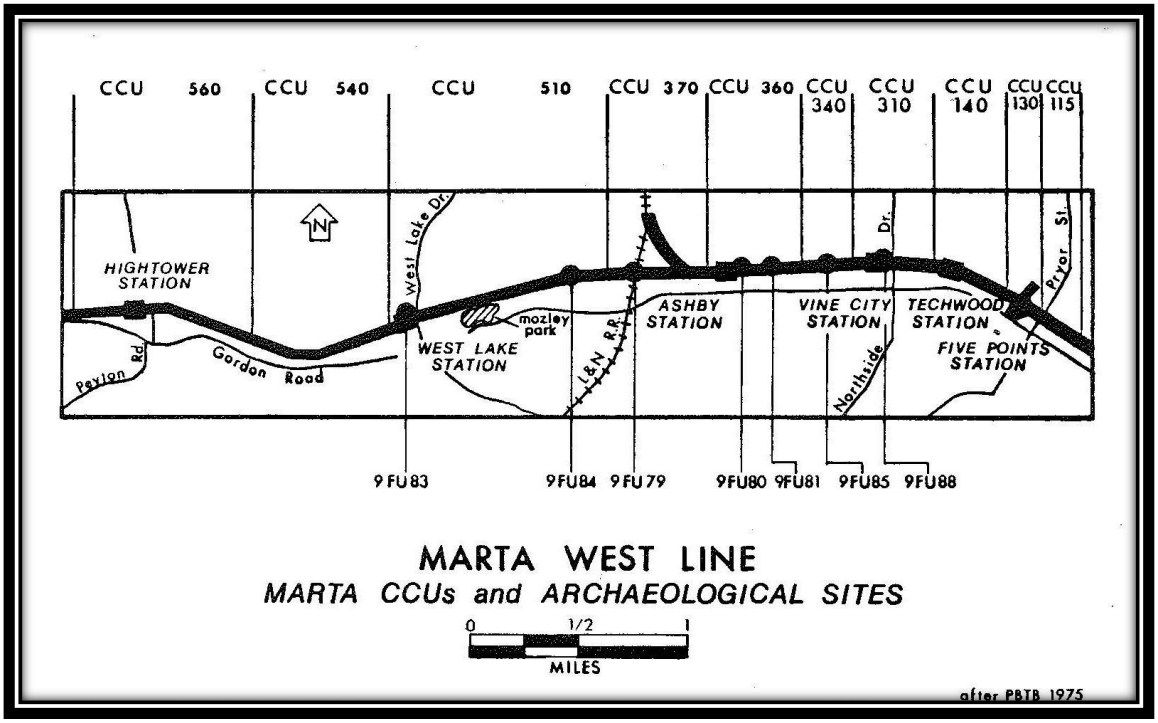


Figure 3.2 Map of MARTA West line with locations of CCUs and archaeological sites (Bowen and Carnes 1977:84, Figure 43).

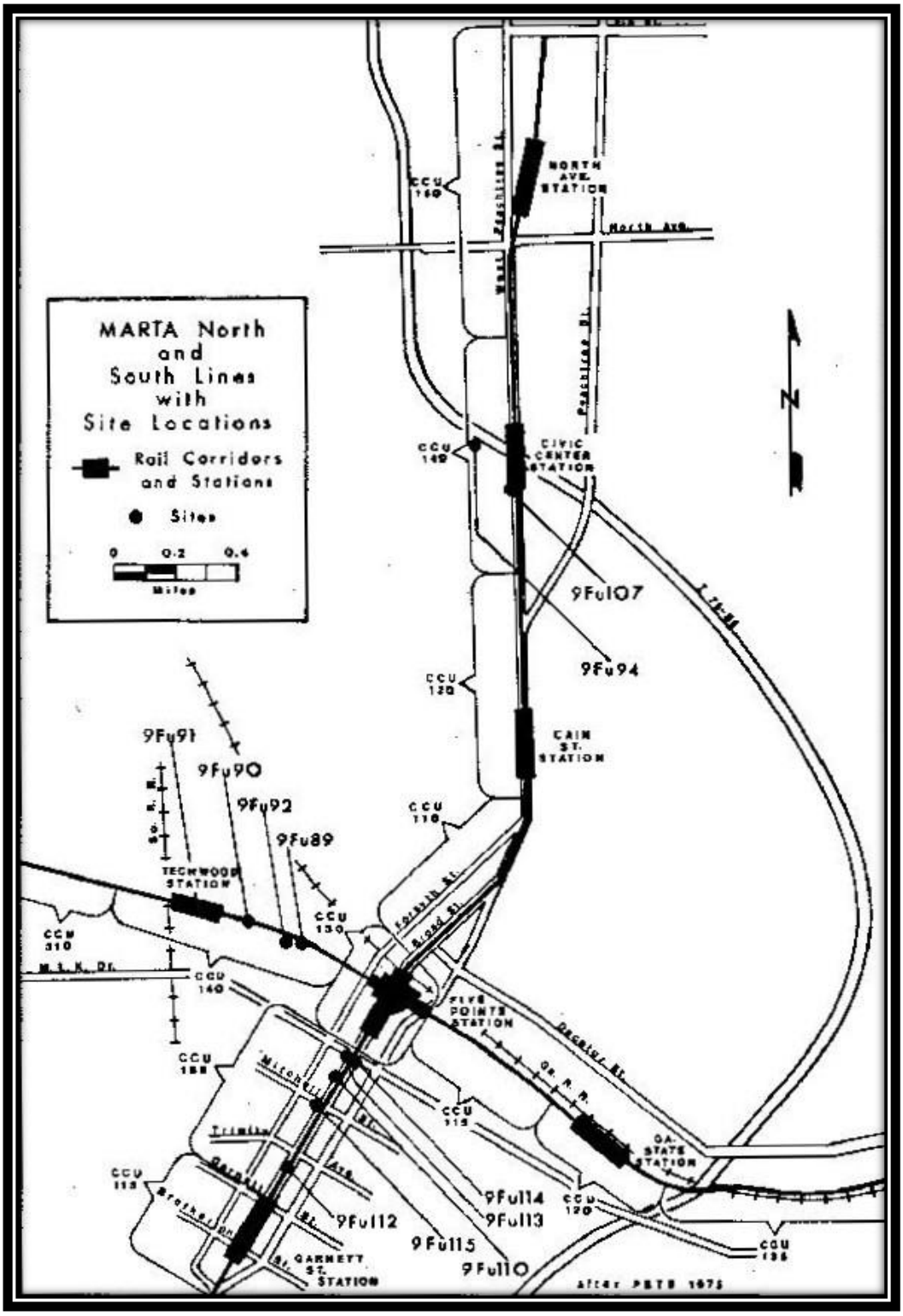


Figure 3.3 Systems map of MARTA North and South lines (Carnes and Dickens 1979:27, Figure 11).

3.1 The Contractual Chronology

The archaeological component of MARTA rail line construction began with an Environmental Impact Study conducted by Eric Hill Associates, Inc. (1973). There are two volumes of this report and a supplement that includes the East and West lines, which was written in 1974. There were two groups of professionals that participated in this assessment. The first was the Historic Impact Analysis Team: Mr. Franklin M. Garrett, Dr. Clarence A. Bacote, Dr. Dana F. White, Ms. Gloria Blackwell, and Mr. Ojeda Penn. The second was the Archaeological Impact Analysis Team: Dr. Arthur R. Kelly, Mr. Lawrence W. Meier, Dr. Kent Schneider, Dr. Joseph R. Caldwell, Mr. Ray Lovelace, Dr. Willard Grant, Dr. Frank Manley, Mr. and Mrs. Francis C. Smith, Mr. John Lampp, Mr. Grover Thomas, Mr. Marion Hemperly, and Miss Carolyn Richbourg (Eric Hill Associates, Inc 1973). This report appears to have been conducted through archival research rather than actual field surveys. In 1975, official contracts were brokered between GSU and MARTA for archaeological work (Drawer 1:Folder:MARTA Project:Reports/Contracts: MARTA Project 557, MARTA Project 638, and MARTA 1979 Contract).

The Laboratory of Archaeology at GSU developed a system for the research methods employed for this project (Futch et al. 1980:18-20). The initial stages involved documentary research and informant interviews. This was followed by field excavations, which included surface inspection, auger and shovel testing, and metal detection. The results of the field excavations and data acquired were assessed and would determine whether monitoring or mitigation would occur.

Between the years 1975 and 1980 there were a total of five contracts between GSU and MARTA. Roy S. Dickens, Jr. appears to represent GSU and a Mr. Richard Stranger, Manager of

Urban Planning, appears to represent MARTA. The following information concerning these contracts is located in the MARTA Collection files, Kell 481 GSU Campus Atlanta (Drawer 1:Folder:MARTA Project:Reports/Contracts: MARTA Project 557, MARTA Project 638, and MARTA 1979 Contract). The same information is not available for each contract: some actual contracts were found; other information was obtained through investigating documents with associated contract numbers (i.e., correspondence).

1) TZ600-M93-00
    a. GSU Project No. - unknown
    b. Environmental Impact Study
    c. Roy Dickens
    d. November 15, 1975 to September 15, 1976
    e. Budget: 4,968.00
2) TZ600-M93-01
    a. GSU Project No. 532
    b. To address three areas of concern: Contract Construction Unit (CCU) East (E)-191, CCU West (W)-560, and CCH E-150 (possible Troup House)
    c. Roy Dickens
    d. Dates unknown
    e. Budget: 3,218.70
3) TZ600-M93-02
    a. GSU Project No. 557
    b. Archaeological impact studies of the MARTA East and West Lines: Included mitigation of Court House grounds and original well, and the basement of the historic Swanton House
    c. Roy S. Dickens, Jr. (Director), William R. Bowen (Field Archaeologist), Linda Carnes (Assistant Archaeologist),
    d. February 15, 1976 – February 14, 1977
    e. Budget - unknown

4) TZ600-M93-03
    a. GSU Project No. 638
    b. Archaeological impact studies on the MARTA North and South Lines
    c. Roy S. Dickens, Jr. (Director), Williams R. Bowen (Field Archaeologist until December 31, 1977) and Linda Carnes (Field Archaeologist), Joe E. Evans (Assistant Archaeologist)
    d. February 15, 1977 - February 14, 1979
    e. Budget - unknown
5) TZ600-M93-04
    a. GSU Project No. - unknown
    b. Archaeological impact studies on the MARTA North and South Lines
    c. Roy S. Dickens, Jr. (Director), Linda Carnes (Field Archaeologist), Joe E. Evans (Assistant Archaeologist)
    d. March 2, 1979 - February 14, 1980
    e. Budget - unknown

There were monthly reports written as part of two of the above contracts, which were are included with the documents of this collection. Contract No. TZ600-M93-02 has eight monthly reports, the first written to cover April 19-May 31, 1976 and last covering December 1-31, 1976. These reports were not penned by the same combination of authors; however, Roy S. Dickens, Jr. was the primary author on all. Co-authors include William Bowen, Gary D. Barber, and Linda Carnes. Contract No. TZ600-M93-03 has 10 monthly reports with the first covering February 15-28, 1977 and the last from December 1-31, 1977. Roy S. Dickens, Jr. was also the primary author of these reports with co-authors William Bowen and Linda Carnes. This contract has an additional report titled *Historical Search and Recommendations* dated May 31, 1977. The other contracts could have provisions for monthly reports; however, no record of them is found in the MARTA Collection documents.

Final and annual reports are also associated with the above mentioned contracts with the exception of Contract No. TZ600-M93-00. Roy S. Dickens, Jr. and Gary D. Barber co-authored the report for Contract No. TZ600-M93-01 (Dickens and Barber 1976). The report for Contract No. TZ600-M93-02 is co-authored by William R. Bowen and Linda R. Carnes (1977). Three reports were written during the course of Contract No. TZ600-M93-03 (Carnes and Dickens 1978, 1979; Dickens et al. 1977). Finally, there is one report written under Contract No. TZ600-M93-04, co-authored by Robin S. Futch, Linda H. Worthy, and Roy S. Dickens, Jr. (1980).

3.2 The Archaeological Project

The archaeological project that was conducted offered a unique opportunity within an urban setting. The Town of Terminus had as its center point a railroad junction with rail lines which ran in cardinal directions. The project area for the MARTA rail lines began from this same junction and radiated in the same manner. This provided the opportunity to excavate through the same areas which were integral in all stages of development of this now urban area. The interpretation of the results of the investigations used by Dickens and his associates was based on an evolutionary-processual model (Futch et al. 1980:14). This approach evaluated the process that transformed Atlanta from an agrarian community to an urban-manufacturing center through the analysis of the data acquired during these excavations.

The documentary research, according to Carnes and Dickens (1979), was disappointing. They were only able to identify two sites in the project area. The search of property records, insurance maps, and photographs was focused on features such as ‘wells, cisterns, storm drains, sewers, privies, dumps, cellars, and foundations’ which might have survived as Atlanta developed into an urban environment (Carnes and Dickens 1979:15). It was concluded that the

low resulting information was due to the project area's subjection to multiple stages of development and the resulting disturbances from demolition and new construction.

Information about the field and laboratory techniques can be found in the final reports written for each contract, as well as from the records and documents of the collection (Bowen and Carnes 1977; Carnes and Dickens 1978, 1979; Dickens and Barber 1976; Futch et al. 1980). The next sections look further into the processes used by Dickens and his associates for the project.

3.3 Fieldwork

The fieldwork began on April 19, 1976, according to the field notes, and concluded on December 5, 1979 (Drawer 4 Folders:MARTAProject:FieldNotes). The job titles of the personnel in the field notes differ from those associated with the contract documents. Roy S. Dickens, Jr. is listed as Project Director or Principal Investigator for the entire project. In 1976, Gary D. Barber is listed as the Field Supervisor. The Field Archaeologists were William R. Bowen (1977), Linda F. Carnes (1978), and Robin S. Futch (1979). The Assistant Archaeologists were Linda R. Carnes (1977), Joe E. Evans (1978), and Linda H. Worthy (1979). Also mentioned as Assistant Archaeologist is Gary D. Barber (Bowen and Carnes 1977). There were also student assistants mentioned in the reports: Student field assistants Jane Bacon and Elton Gannaway (Bowen and Carnes 1977), and students who volunteered time James H. Chapman, Caroline Quillian, Alan Sims, Linda Worthy, Charles Traylor, Paula Edmiston, Fontaine Draper, Gerald Gandy, Sarah Hill, Thomas Barker, and Patricia Rogers (Carnes and Dickens 1979).

The field notes included in the documents of the MARTA Collection were written on lined legal pads, some of them had yellow backgrounds and others white. Each legal pad would be used to completion and then a new one was initiated. There were no initials associated with

the entries, only dates. There were occasionally names mentioned in the notes, usually pertaining to crew members who were picked up on the way to the site.

Found within the records and documents are two lists that give an idea of how the fieldwork was conducted (Drawer 4:Folder: MARTA Project:Misc. Notes:Field Procedures). There are no names or initials located on the papers or the folders and the information is handwritten in pencil on 4x6 inch lined paper. Both lists consist of seven points. The first list appears to be steps to take for survey, and it is replicated below using the same abbreviations and vernacular.

1) Secure acquisition maps
2) Head Eng. Phase B. N. Line - Bill Medley S. Line - Earl Nelson. Subcontractors tell what property can get onto and when…scheduling…utility relocation, etc.
3) Demolition or removal of a structure. Try to photograph bldgs. before removal.
4) After clearance: subsurface collect, surface collect, probe for wells, etc. according to hist. data.
5) Suspect military activity - metal detect. (form of subsurface testing)
6) Survey forms compiled
7) Monitor all earth-moving activity - depending on significance of area.

The second list appears to be steps to take with a site: at top of page "site discovered in field - first hand info. [we do site forms.]

1) What county?
2) Go to county index (archival) (beginning point for recording) area, or name, or description
3) Must be recorded
    a. Fulton cty. Hwy map - archival - specific to county
    b. USGS topography maps (quad map) (archival - names of regions field)
4) Collections: when have this
    a. Photographs
    b. Surface collection (artifacts)
5) Fill out pencil copy of form: include sketch map on back, more recent collections can be added to original forms.
    a. Map for official site form, filed in notebook by cty. Includes map of county hwy. map & sketch map.
6) For MARTA, have survey forms, used in same way as site form. Unique to MARTA to have survey forms for 'CCU' area.

Although urban archaeological projects had been conducted prior to the MARTA excavations (Dickens and Crimmons 1982:105-113), the procedures and methodology were in their infancy, so there were not any standard procedures to guide the project. The archaeology team worked with the engineer and construction teams. The project area consisted of the right-of-way designated by the engineers. These areas were divided into CCUs, each of which might have a different contractor overseeing the work (Bowen and Carnes 1977:25). As mentioned above, the survey techniques included surface inspection, auger and shovel testing, metal detection, as well as 'salvage' archaeology. According to the reports, surface inspection was conducted over the entire project area with at least two people walking 5-foot intervals (Bowen and Carnes 1977:26; Carnes and Dickens 1979:17; Futch et al. 1980:16); however, according to the field notes and photographs, surface inspection often involved walking behind heavy machinery and collecting the materials as they were disturbed through the earthmoving activities (Figure 3.4). If extant structures were located in the project area, surface inspection was

Figure 3.4 Surface collecting in soil disturbed by grader (Carnes and Dickens 1979:18, Figure 2).

conducted after demolition. The subsurface investigations were also conducted in all areas and included auger testing at uniform intervals and occasionally the use of backhoe excavations for deeper testing (Bowen and Carnes 1997:28; Carnes and Dickens 1979:17; Futch et al. 1980:16) (Figure 3.5). Metal detection was not used systematically but in a sampling manner due to its time-consuming process (Bowen and Carnes 1997:30; Carnes and Dickens 1979:21; Futch et al. 1980:18) (Figure 3.6). The monitoring process is closely associated with 'salvage' archaeology and involves the continued inspection of an area throughout the demolition and construction phases of a project, during which sites can be discovered that were not found in the initial investigations (Bowen and Carnes 1997:32-33; Carnes and Dickens 1979:21-22; Futch et al. 1980:18) (Figure 3.7). 'Extraordinary mitigation' would occur when it became necessary to perform 'salvage excavations' on sites that were discovered during construction and in immediate threat of destruction (Carnes and Dickens 1979:24; Futch et al. 1980:18).

Figure 3.5 Examining dirt extracted by soil auger (Carnes and Dickens 1979:20, Figure 5).

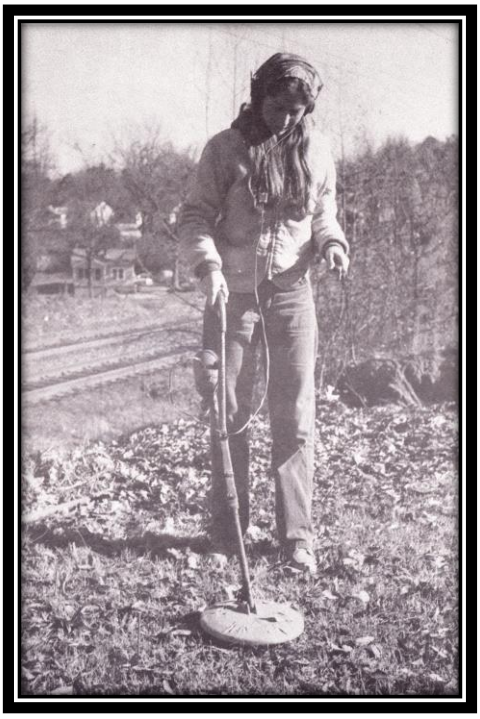


Figure 3.6 Using metal detector to locate subsurface metal objects (Carnes and Dickens 1979:20, Figure 6).

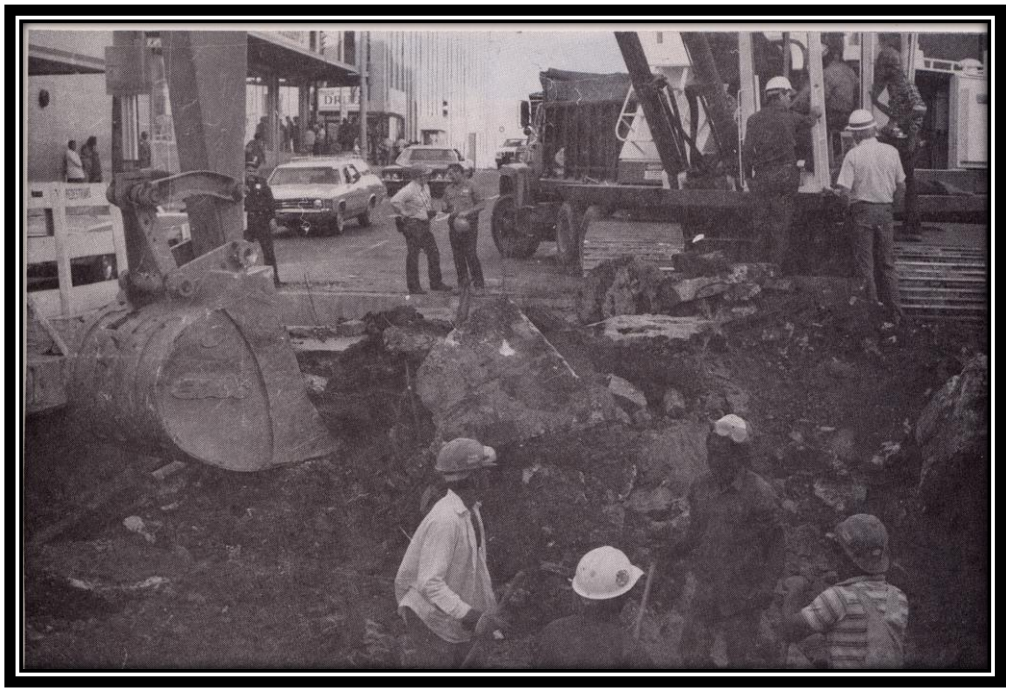


Figure 3.7 Monitoring MARTA excavations at a congested urban intersection (Carnes and Dickens 1979:23, Figure 8).

The conditions under which these excavations and surveys were conducted created challenges and difficulties to the archaeological teams. The following excerpt from the 1977 field notes illustrates how the archaeologist was monitoring multiple locations concurrently, as well as how the earthmoving activities were constantly changing the landscape.

> *7-1-77 - Rowe on vacation/cruised in on East Line - several areas to be checked. Picked up Polly and went back out to East line - In CCU 315 they have rerouted traffic away from the newly opened Dekalb Ave. - At the NW Corner of East Lake and Dekalb they are smoothing out fill that has recently been dumped. At the East Lake underpass they are hauling out dirt and excavating under RR bridge. Still in 315 and near the S.C.L. R.R. spur - they were excavating for a new water main - checked profile - nothing unusual noted. Just east of R.R. spur - checked Ga. Power Co. excavation - again nothing.*
> *CCU170 - surface examined freshly graded area S. of Da. Ave, between Connecticut and Ariz Ave. Underpass (old street surface of Da. Ave.) - nothing collected or unusual features noted.*
> *CCU170 - between Clifton west to LaFrance - surface collected in freshly cleared area - S. of Da. Ave. and N. of R.R. track - collected only a few recent ceramic frags.*
> *11:00 - cruised the North Line - only new area opened was at the intersection of Linden and W. Pchtree. Profile reflected recent asphalting over old concrete surface. (Drawer 4 Folder:MARTAProject:FieldNotes:June28-August5,1977:Original).*

The formal reports written for the MARTA Project present a picture of a systematic and consistent methodology of survey and excavation; however, it is the field notes that illuminate the realities and challenges that were faced by the archaeologists on this job. The hoping back and forth from one location to another, excavating sites that were discovered after large earth-moving equipment had altered the landscape, and dealing with different engineers and contractors at each location were daily events that affected the process of these excavations. The continuity and completeness of the final projects are a testament to the professionalism and dedication of the archaeologists on this endeavor.

3.4 Laboratory Work

The artifacts were processed at GSU in Kell Hall Room 100, an area which is still the primary washing and cataloging laboratory space used to process artifacts recovered from current GSU archaeological excavations (Figure 3.8). The laboratory techniques are described in the reports written by Bowen and Carnes (1977:38, 41, 44) and Carnes and Dickens (1979:24-25). Each group of artifacts recovered from the field was labeled with site, CCU, and parcel number, as well as the date collected and provenience information. Accession numbers were given to each investigative unit when the material was inventoried in the laboratory process. The investigative unit was either the state site number or the CCU number. The CCU number was used in instances where the material collected was recovered yet the provenience or other circumstances did not meet the requirements of the unit to be considered an official archaeological site. As the material was processed, specimen catalogs were completed, which were hand written forms that include information such as Accession Number, Site or Survey Number, Specimen Number, Location, Number, and Description (Figure 3.9).

Figure 3.8 Checking field recovered artifacts into the laboratory (Bowens and Carnes 1977:40, Figure 12).

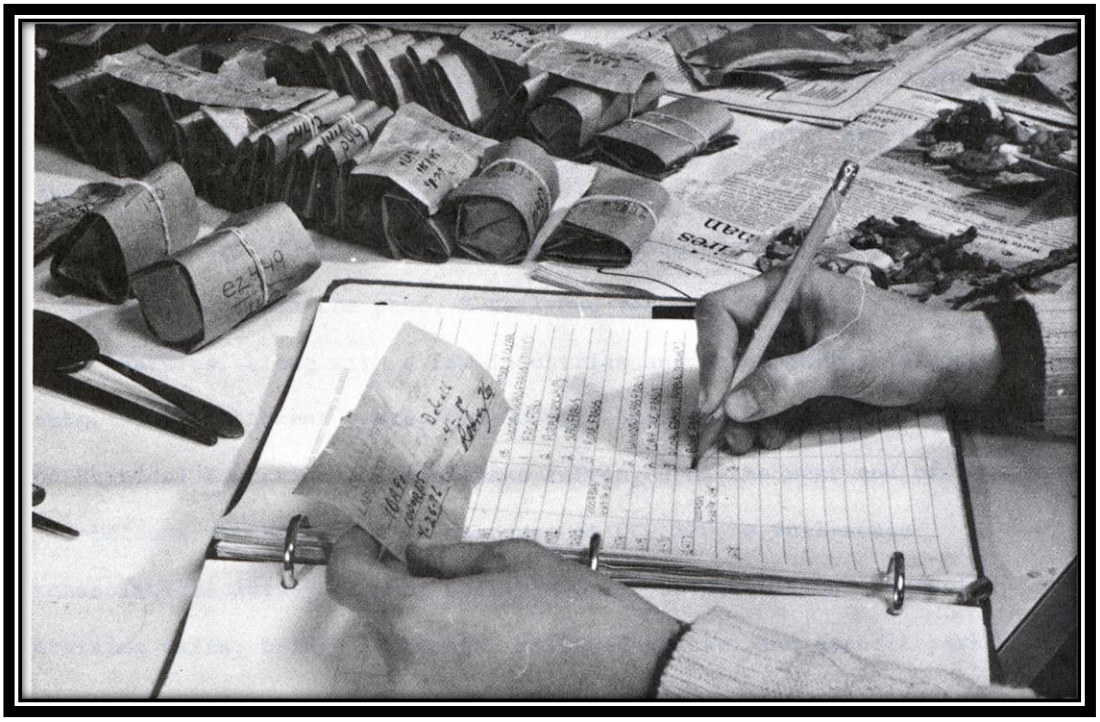


Figure 3.9 Cataloging artifacts in the laboratory (Bowens and Carnes 1977:45, Figure 18).

When cataloging and accessing the material, the items were washed, sorted, counted, and labeled with the Specimen Number over the Accession Number (i.e., a1/140). The components that compose the Specimen Number are a letter designation associated with a material type and a number (catalog number) that is sequential for the artifacts with each site or survey area. This same cataloging system used by the Georgia Department of Transportation (GDOT) in the 1970s and 1980s (Pam Baughman, personal communication 2016). The key to the letter designations is in the records and is replicated below from hand written notes discovered in the documents (Drawer 4:Folder:MARTA Collection:Misc. Notes:Cataloging Procedures):

- p - Pottery (ceramics and glass): any type container (e.g., jars, bottles, dishes) including appendages such as handles, spouts, lids. Does not include wooden, plastic or metal containers.
    - Categories for Ceramics
        - Porcelain
        - Porcelain-Stoneware (inconclusive determination)
        - Stoneware
        - Folk
        - Industrial
        - Earthenware
        - Glazed
        - Unglazed
    - Categories for Glass
        - Whole bottles, etc.
        - Diagnostic glass: bottle pieces (rims, bases, necks, embossed, painted, etc.)
        - Burned glass
        - Pieces divided by color
- a - Artifacts: Items fashioned to stand alone (all recognizable items, including lamp globes, window glass, tile, bricks, decorative concrete, nails, molding, etc.)
    - Categories for artifacts
        - Porcelain
        - Glass
        - Shell and bone
        - Wood
        - Plastic
        - Leather
        - Hard rubber
        - Metal
        - Concrete
- m - Miscellaneous: Items handled in bulk, which serve as an adhesive or are by-products (e.g., plaster, cement, roofing paper, sheetrock, rocks, coal, slag).
- eb - Ethnobotanical: Food remains, wood (non-artifact), seeds, nutshells, etc.

- ez - Ethnozoological: Bone (non-human)
- hs - Human: skeletal remains.

Once the material was cataloged and labeled, some of it was also treated to prevent damage due to oxidation or other environmental factors. The processing and preservation techniques described by Bowens and Carnes in 1977 and by Carnes and Dickens in 1979 are varied.

- Bowens and Carnes (1977:24-25)
    - Bone and shell – soaked in a solution of gelva and acetone
    - Wood and cork – treated in polyethelene glycol or carbowax
    - Iron, steel, and tin – cleaned with manganese phospholene and treated with clear acrylic or Krylon
    - Brass and copper – cleaned with ammonia and treated with clear acrylic or Krylon
    - Leather – treated with an oil-based preservative, pinned to a board to air-dry
    - Paper – dry brushed, soaked in magnesium bicarbonate solution, air dried on screen and treated with fungicide or Micro-sep
- Carnes and Dickens (1979:41, 44)
    - Metal – cleaned with dry brush, dental pick, or manganese phospholene if needed
    - If not composed of brass, copper, or lead was treated with a clear Krylon matte finish
    - Paper – treated with silicone spray

All the artifacts were then placed into small, brown paper bags, which were fastened with rubber bands. Each bag was labeled in ink with the same labeled identification number as the artifacts it contained and the provenience. On some of the bags, stamps were used to indicate the information needed.

In the same folder as the key for material designations, there are approximately 29 pages of handwritten and dated notes describing which sites were processed and which were still in process. On the outside cover of what would have been the spiral bound notebook in which these notes were taken, is ‘Worthy’ and a phone number. The assumption can be made that this is Linda Worthy; however, the handwriting of the name and that of the notes inside do not look similar, so I am not comfortable stating that these are Linda’s notes without further confirmation.

The field notes also include notes that discuss the work done in the laboratory. An example of this is found in the July 1, 1977 notes:

> *1:00 - Polly left - will work in lab after copying monthly report - also found some paper advertisement for "swamp root remedy" - submerged it in acetone for preservation. (Drawer 4 Folder:MARTAProject:FieldNotes:June28-August5,1977:Original).*

There are mentions in the reports that give credit to the laboratory personnel: Processing by Peggy Crawford, Madeline Foley, Kathy Brown, and Elton Gannaway and curation supervised by Joan C. Rupp and Elizabeth Sheldon (Bowen and Carnes 1977); Laboratory staff Madeline Foley, Linda H. Worthy, Patricia Gannaway, Jena E. Powell, and Linda Stoutenburg and curation supervised by Elizabeth Sheldon and Anne Rogers (Carnes and Dickens 1979); Laboratory work supervised by Jena Powell and assisted by Linda Stoutenburg and Nancy Yardley (Futch et al. 1980). Ken Terrell was eventually designated as the Curator of the Department of Anthropology at GSU after the completion of the project (Drawer 4: Folder: MARTA Project: Collections History: GSU to UNC).

3.5 The Transfer and Return of the MARTA Collection

Although this collection was processed at GSU and is currently located in the Archaeology Laboratory of GSU, it has been relocated twice before it returned to its place of origin. The documents and artifacts did not originally move together and there is no clear accessioning that occurred when either arrived at the University of North Carolina at Chapel Hill (UNC). The transition of the collection from UNC to the University of Georgia (UGA) was recorded by a general inventory of the boxes. The UGA box inventory was the initial accession tool used by GSU when the collection was returned. I have attempted to piece together the facts and dates in the chronology of events that involved MARTA Collection after the contractual project between GSU and MARTA concluded.

In 1982, Roy S. Dickens, Jr. left the Department of Anthropology at GSU to join the faculty of UNC. At the time of his departure, he apparently took the documents and records of the collection, but not the artifacts. Beginning on November 11, 1983 there are a series of letters between Dickens and William Partridge, who was the Chair of the Department of Anthropology at GSU at that time (Drawer 4: Folder: MARTA Project: Collections History: GSU to UNC). The letter from November 11 is not found in the documents; however, the letter from Partridge to Dickens, dated November 14, is in response to that letter. Below are some excerpts from this letter:

> *Since you took all the documentation for the artifacts with you when you left there is no possibility that anyone here can utilize the materials for research or instructional purposes…I have indicated to Mr. Kenneth Terrell [Curator, Department of Anthropology GSU] that we will not continue to sacrifice urgently needed lab space…You certainly cannot really believe that I would pay to gain access to space I already control. Nor is it possible that you could really believe that I have responsibility for changing contractual obligations you signed with MARTA some years ago so you can now "own" the artifacts…By copy of this letter I am instructing Mr. Kenneth Terrell to begin investigating other museums or historical societies that might be interested in the artifacts, although frankly I do not expect anyone to want artifacts lacking documentation of provenience, etc. If this effort is unsuccessful I would anticipate returning the artifacts to MARTA by early Spring 1984.*

In response, on November 28, Dickens wrote to Partridge of his surprise at the hostile tone and continues to discuss issues of ownership. Dickens stated that the contract was between GSU and MARTA and therefore it would be GSU, the institution not Partridge, who would renegotiate ownership. His worry was the collection would be placed in a situation where it would not be cared for. He was also concerned with the stability of the Anthropology Department at GSU at the time of his leaving, and stated this as the reason for taking the documents. He also stated that he had on numerous occasions offered to copy the records and send them to GSU (this might be the answer to why there are so many copies of the site forms and specimen catalogs). He summarizes with:

> *I still believe that Georgia State University has an obligation to the MARTA collection, and that it is not unreasonable for me to expect the University (if it is no longer interested in housing the MARTA collection) to share in the expense of moving the collection and in clearing up the problem of permanent storage and curation.*

The next letter is dated December 20, 1983, and is a response from Partridge to Dickens. The main focus of this response was how unprofessional, according to Partridge, it was for Dickens to separate the records from the artifacts. He does not consider the matter closed until Dickens makes the collection complete. He also states that there is no reason for the ownership of the collection to change and that GSU will in no way be responsible for any costs incurred in transferring any portion of this collection. He concludes with:

> *When the records are restored, perhaps we can once again seek a mutually satisfactory accord regarding the loan of the material artifacts to the University of North Carolina at Chapel Hill.*

Later correspondence indicates that this issue was resolved. However, for some reason after this thread of communication, GSU realized the need to gain ownership. A letter from Kenneth Terrell to Kenneth Gregor, General Manager of MARTA, dated March 16, 1984, is a request for transfer of ownership of the collection.

> *We would like to permanently house the collection here at Georgia State…Before we can make the commitment to long-term curation of the collection we need to define our relationship with it in a more permanent manner. We propose that MARTA transfer ownership of the collection to the Department of Anthropology at Georgia State University.*

The response came on April 3, 1984:

> *It is with pleasure that we place with the Georgia State University Department of Anthropology, on indefinite loan, all of the artifacts uncovered from excavation along MARTA's East and West Lines which are now in your possession. This is a welcomed opportunity to contribute to the preservation of Atlanta's cultural heritage. We would, of course, appreciate recognition if the artifacts are publicly displayed.*

The next documents in this timeline indicate the collection, or at least a portion of it, was physically moved to a different location. On June 5, 1984, the Assistant Director of the Physical Plant Administration at GSU sent a memo to Kenneth Terrell stating:

> *On May 18, 1984 at 8:00 am, four of your personnel (service request 78599) assisted us in moving 150 boxes from room 100 Kell to the loading dock and onto a truck for transfer.*

On June 11, 1984, a letter from Kenneth Terrell to Dickens states:

> *Enclosed is the agreement placing the Georgia State University MARTA East and West Line Archaeological Collection on loan with you there at the University of North Carolina.*

The loan agreement, dated June 7, 1984, and signed by Dickens and Terrell, states that the portion of the collection mentioned above would be on loan to Dickens for use of completion of his research. The loan dates are May 18, 1984 to May 18, 1989. Roy S. Dickens, Jr. passed away on May 25, 1986 (Ward and Davis 1988).

The next letter in this file is dated January 15, 1988, and is from Kenneth Terrell, who now has the title of Research Coordinator, to Carole E. Hill, Chair of the Department of Anthropology at GSU. In this letter he explains the ownership relationship and that a portion had been loaned to Dickens. He also states that portions of the material had been loaned out: six items to the DeKalb County Historical Society Museum for display purposes and a stoneware drainpipe to the Atlanta Historical Society per request of Dr. John Burrison of the GSU English department. He also states that he will send a copy of all pertinent documents to her for her records.

After contacting the UNC at Chapel Hill Research Laboratories of Archaeology, I received copies of two documents they have pertaining to this collection. The first is a Notice of Transfer dated August 8, 2000. It was signed by Stephen Davis, Jr. (Research Laboratories of

Archaeology) and Mark Williams (UGA Museum of Natural History) and it was received by James Page (UGA Museum of Natural History). This document states:

> *Four-hundred-fifty-six boxes (approximately) of artifacts and approximately 20 boxes and rolls of field and laboratory records pertaining to archaeological investigations associated with construction by the Metropolitan Atlanta Rapid Transit Authority (MARTA) and investigations of other Georgia archaeological sites by Roy S. Dickens, Jr. are hereby transferred to the University of Georgia Museum of Natural History, Athens, Georgia.*

The second document received from the UNC Research Laboratories of Archaeology is a Records of Transfer dated November 7, 2013, stating:

> *The following is an inventory of records transferred from the Research Laboratories of Archaeology, The University of North Carolina at Chapel Hill, to Mark Williams, Laboratory of Archaeology, University of Georgia, Athens, Georgia. They were hand-delivered in two boxes to Mark at the Southeastern Archaeological Conference in Tampa, Florida, on November 7, 2013. These records are from the late Roy Dickens' files.*

I contacted the UGA Laboratory of Archaeology and received a response indicating the physical transfer of the MARTA Collection to GSU occurred in 2011 and 2012 (Amanda Roberts Thompson, personal communication 2015). Dr. Jeffrey Glover was the GSU personnel responsible for accepting delivery of the collection from the UGA. He recalls that on August of 2011, the material associated with Sites 9FU91 and 9FU89 were delivered and the next year, on August 21, 2012, the remainder of the collection was delivered (Jeffrey Glover, personal communication 2015). During the summer of 2015, an additional box was delivered to GSU which contained documents and reports of the student projects completed in 1978 for Site 9DA89 as part of a class assignment for Dr. Dickens.

There are many gaps in the documentation concerning this collection. It is unclear how 150 boxes of material were sent to North Carolina, yet 456 returned to Georgia. An explanation given by Ken Terrell is that the original boxes used were not the same size as the bankers boxes

used to house the collection today (Jeffrey Glover, personal communication 2016). It has also been discovered while researching the history of this collection that material was loaned to the Atlanta Historical Society in 1992. I was granted permission to make copies of the documents on file from what is now the Atlanta History Center (AHC). It includes a loan agreement for approximately 42 items signed by Ken Gregor from MARTA. The loan agreement is for April 8, 1992 to July 26, 1993. There is also documentation that shows multiple attempts to gain new loan agreements from MARTA, with no response. The material remains at the AHC (Figure 3.10-3.13). Attempts are being made to gain permission from MARTA personnel to return the material to GSU, but to date these attempts have been unsuccessful (Erica Hague, personal communication 2016). There is also material located at the Antonio J. Waring, Jr. Archaeological Laboratory at the University of West Georgia (UWG). I have not been able to visit the facility to take inventory of what is there, but it is listed as Accessions GSU-222 (MARTA North Line CCU-415) and GSU-133 (MARTA SURVEY, River Road Site, 9DA89 [CCU 191 PARCEL E18]). There is more research to be done in hopes of filling in the missing pieces of the records for the MARTA Collection. With the knowledge that has been gained to this point, there are leads that might lead to more complete information, such as the archives of the UNC at Chapel Hill as well as those at GSU.

Figure 3.10 Photograph 1 of 4 showing MARTA artifacts in storage at the AHC.

Figure 3.11 Photograph 2 of 4 showing MARTA artifacts in storage at the AHC.

Figure 3.121 Photograph 3 of 4 showing MARTA artifacts in storage at the AHC.

Figure 3.13 Photograph 4 of 4 showing MARTA artifacts in storage at the AHC.

3.6 Associated Documentation, Publications and Reports

Although Dickens education and career in archaeology was largely concentrated on southeastern prehistoric archaeology, his position at GSU thrust him into the world of urban and historical archaeology. He began at GSU an Assistant Professor of Anthropology and director of the Laboratory of Archaeology in 1971, eventually being promoted to Associate Professor and serving a term as acting chair of the department (Ward and Davis Jr. 1988). As a professor, he not only used his students as participants in the field and lab work, but also used the collection as a teaching tool. During the years he spent at GSU (1971-1982), he not only published the contractual reports for the MARTA excavations, but also contributed to professional journals and other publications (Dickens 1982; Dickens and Bowen 1980; Dickens and Crimmins 1982).

There were a series of reports written by students that were included in the documentation of this collection. The focus of the papers was on the Edgewood site (9DA89); however, there were two papers that also included information and comparisons with the Fairlie Street site (9FU89). Both of these sites were located on the East-West Lines and are mentioned in the 1977 report but the site analysis was not published until the 1979 report (Bowen and Carnes 1977; Carnes and Dickens 1979). Although there are not dates on the student reports, it can be assumed that they were written between the years of 1977 and 1979. These reports are listed below.

- Hardware and Industrial Aspects from the Edgewood Site by Thomas L. Barker
- The Edgewood Site Faunal Remains by Paula Edminston
- Historical Research of Edgewood Site by Gerald W. Gandy and Fontaine Y. Draper
- Analysis of Bottle Glass from the Edgewood Site by Sarah H. Hill
- Personal Items [from the Edgewood Site] by Jena E. Powell
- A Historical Archaeological Study: Microremains and Plant Analysis by Patricia D. Rogers
- A comparative analysis between the Fairlie Street site (9FU89) and the Edgewood site (9DA89)
- An Artifact Pattern from a Late Nineteenth Century Tavern by Joe Evans

In 1980, Dickens and Bowen co-authored an article for the Society for Historical Archaeology (SHA). This publication used the MARTA Project to describe field procedures used and to consider the potential of urban archaeology as a resource. It was motivated by what was considered to be a quickly increasing trend of archaeology projects conducted in urban areas in response to the new mandates in the preservation and documentation of cultural resources.

By 1982, an edited text was published titled *Archaeology of Urban America: The Search for Pattern and Process.* Dickens was the editor of this book. He also co-authored a chapter with Timothy Crimmons (Dickens and Crimmons 1982). This volume also included the work of his former students Sarah H. Hill and Linda H. Worthy (Hill 1982; Worthy 1982). Hill expanded on her student paper and wrote a detailed analysis of lag in the deposition of glass bottles in historic sites (Hill 1982:291-327). Worthy's chapter focuses on historic ceramics and their classification and interpretation of the data they can produce (Worthy 1982:329-360).

The MARTA Project encompasses a unique history and recordation of the contracts, newly adapted mandates, field and laboratory techniques, as well as the vast amount of material culture salvaged during a massive urban construction endeavor. Although there were sections of each contract detailed above dedicated to the long-term curation of the collection produced during this project, the reality is that a plan for continuous care was not implemented. The transfer of the material to other institutions and Dickens untimely death soon after could have obstructed a curatorial plan, it is not uncommon for collections from archaeological excavations from our past to fall into the abyss of things long forgotten. The next stage of history of this project and collection begins when the documents and artifacts returned to GSU in 2011, which is discussed in the next chapter.

4 PHYSICAL DISTRIBUTION OF THE MARTA COLLECTION AT GSU

The two largest sites, 9FU91 and 9FU89, were delivered in August of 2011 and the remaining material in August of 2012 (Amanda Thompson, personal communication 2015). There are four laboratory spaces on the GSU campus that contain portions of this collection. Kell 100 houses 9FU89 and 9FU91, Kell 483 and 485 are rooms that serve the sole purpose of storage for this collection and stores the majority of the remaining collection (negatives and photos are also stored in Kell 485), Kell 333 houses the items that arrived as fragile and "type collections" and are stored in drawers and cabinets, and Kell 481 houses a few boxes of the collection along with the documents and maps.

4.1 Components of the Marta Collection and Recommendations for Processing

This collection is comprised of physical components, which include documents, maps and photos, and artifacts, as well as digital data. This chapter describes each of the features of the collection and their current condition. In each section, a plan of action is presented that would lead to a comprehensive accession and inventory and successful preservation of the MARTA Collection. The methodology relies on the use of information from various archival and archaeological resources (Advisory Council on Historic Preservation 2004; Antonio J. Waring Jr., Archaeological Laboratory 2007; Brown 2007; Drummond 2013; Marino 2002; Meehan 2009; Shellenberg 1961; U.S. Department of the Interior National Park Service 2015). The chapter concludes with an inventory of the student projects which have been conducted using the MARTA Collection as a research tool. A systematic approach to processing the MARTA Collection is complicated and intricate. The use of the Heurist online data management system will be integral to the accessibility of this collection and will organize the digital data created through the accession of the MARTA Collection with other research databases for future use

(Bryant 2015). There are many aspects of this collection that do not fit neatly into the recommendations and standards of modern curatorial methods. In a perfect world, however, it could be accomplished using a multifaceted approach.

4.1.1 General Collection Conditions

There are many challenges for this collection. The first is the size. There are approximately 486 boxes of artifacts, as well as documents, oversized maps, negatives, and photographs. To completely rehabilitate this collection will be expensive and time-consuming. Another challenge is that over time and distance, material and documents have been shifted or lost. There is no known inventory for the contents of each box of artifacts. The UGA inventory that was received at the time of transfer of the collection includes a box number and the site it is related to. A Specimen Catalog from the original laboratory analysis is part of the documents of the MARTA Collection; however, there has been no overall check, or inventory, comparing the existing catalog with the cultural material contained in boxes. There are also other sites in this collection that, even though they are comprised of similar material from the same general historic time period, are not included in any of the MARTA reports or contracts that can be identified.

4.1.2 Documents

The documentation includes a variety of paper types. There were legal pads used, some with yellow dyed background and some with white, very thin typing paper, thick card stock, carbon copy paper, newspaper clippings, brochures and booklets; including originals and copies. Items are in pristine condition and in various stages of decomposition. The documents that arrived in 2012 as part of this collection were removed from their boxes and placed into a filing cabinet. The documents were transferred from the original boxes into the filing cabinet and kept

in their same files; no processing was done. Binders containing the original specimen catalogs and CCU/Site forms are located in the GSU office of Dr. Glover. The remaining paper records and documents are located in Kell Hall 481, with the oversized maps stored in long/wide drawers where they are able to be stored flat and the remaining paperwork in a filing cabinet.

In August of 2015, I processed these documents for sorting and archival purposes. The folders were removed from their drawers and placed into sorted groups (Drummond 2013; Shellenberg 1961). These groups will eventually be used when a numbering system is implemented and include Reports/Contracts, Field Notes, Maps, Sites/CCUs, Media, Correspondence, Research, and Miscellaneous. The Miscellaneous category will be renamed when the files are accessioned and given folder numbers in order to give the future researcher more clarity of the contents. The original folders were replaced with new ones, which were unfortunately not archival. The new folders were labeled with the same information as the old, with a few exceptions. The old folders were originally sorted and grouped according to the associated rail lines (i.e., east-west and north-south), which was how the original project was organized in order to fulfill contractual reports and to remain consistent with the manner in which the MARTA construction units were processed by the engineers. In the new organization process, the focus was access to information and how it would be used in the future. The reality is that future researchers will be looking for information about particular sites and not their relation to the rail line. Therefore, the information is more user-friendly if all information for each individual site is together and ordered chronologically by the State Site Number. The addition of a letter designating the rail line from the initial organizational scheme will allow researchers to continue to identify the original information within the new system. This decision was made using Schellenberg as a resource: "An exception to the rule of preserving records in

their original order should be made when records are preserved solely for their informational content - without reference to their value as evidence of organization and function…Such records should be arranged solely with a view to facilitating their exploitation by scholars, scientists, and others without regard to how they were arranged in the agency that created them" (Schellenberg 1961:22).

The removal of all metal from the documents was a tedious task; metal clips and staples were replaced with archival plastic fasteners. The field notes were still in the bound legal pads, which contain metal fasteners, so each page was carefully removed at the perforation. Once the material was stable and organized, the folders were returned to the filing cabinet. The exception is the stack of multiple copies of Specimen Catalogs. At this time there are originals, in binders in Dr. Glover's office, and copies (in binders in Kell Hall 481). There were at least two other copies found in the filing cabinets. At this point, all copies are included in the documents yet stored in a separate storage unit in Kell Hall 481; however, once the processing of the documents is complete the duplicates will be culled from the collection

There have also been efforts to digitize the records for this collection. The CCU Parcel forms and Specimen Catalogs scans appear to have been completed (D:PhoenixProject:CCU_Parcel_Scans; D:PhoenixProject:SpecimenCatalog_Scans). Portions of field notes, maps, and images are scanned: most of this work was completed through student projects and presentations. As part of a Fall 2015 Directed Study, the scanning of the field notes was the primary task. One student spent approximately 9 hours over the course of 2 months and scanned the notes dated April 19, 1976 through June 27, 1977, which incorporated eight notepads (These notepads are now labeled folders). The digital data is located on the laboratory computer in Kell Hall 481 at GSU (D:PhoenixProject:FieldNotes) and are labeled in the

following manner: FieldNotes_April19_May25_1976. The scan of the field notes from April 19 to May 25, 1976 has been bookmarked at each entry by date. Additional bookmarks need to be added which will correlate the entry dates to state site numbers and CCU numbers.

In order to inventory each document, the Heurist database will be essential. Each group would constitute a series (i.e., Contracts/Reports). Each folder within that series would be given an identifying marker and each document within that folder would be given further designation. For instance, the first document in the first folder under Contracts/Reports would be given a designation of Contracts/Reports: 1-A. In the database, the series would have a brief description. The folder would be identified and include a brief description of its contents and a count of the number of documents included. The document information would include its designation and a brief description. There would also be key words, or finding aids, associated with each folder and document to allow for user friendly access for research. This will be a very time-consuming process. The identification of the folders alone will not be adequate. The documents within each folder were put there during the initial project, and, although they made sense to the creators, do not seem to create a logical pattern for a researcher today. For instance, the folder that is labeled Project 557 contains not only material for this project and other projects, but correspondence and notes that seem completely unrelated to that project number. Therefore, if this material is to be useful, it must be inventoried at the document level.

The digitization and inventory of the documents could be tasks completed concurrently. Each document should be scanned and given the same identifying marker as the document folders, which would allow for continuity when referencing the material for research purposes. For complete digitization, this would only be the first stage. Items, such as the field notes, are continuous documents with sections associated with different sites and CCUs. The notes

themselves should be bookmarked according to sections that apply to specific dates as well as the corresponding sites and CCUs. The scan of a document does not always create a readable, and therefore usable, recreation. This can be due to different writing tools used on the same page or impurities on the page caused by elements applied to the paper during the initial project (i.e., muddy field notes) or to discoloration of the paper over time: To change the scan settings can create clarity on one section but not the other. There are two solutions, both of which are tedious. The first is to use Photoshop, or other programs, to alter each page in sections so the written information is clear. The second is to produce typed transcripts. One, or both, of these solutions should be employed: If you scan a document for digital access but the information is unreadable, then what purpose does it actually serve? Once the inventory and digitization have been completed, storage of the original documents should be considered. Typically, in archaeological repositories, multiple copies of primary documents are submitted and the originals are kept in a separate location from the copies for safeguarding. This should be the case with the MARTA Collection (and also a standard for 36CFR79 compliance). However, many of the documents associated with the original paperwork are actually copies, so a decision would need to be made if these should be stored in the same manner as the originals. If the decision is made to just keep the originals, a detailed description of what was culled should be included.

The final step for the documents would be to ensure they are stored in archival quality material (Drummond 2013; Shellenberg 1961). The metal material has been removed, but there are still many acidic papers in the collection. Newspaper should never be kept with archival materials. Any newspaper articles should be scanned, documented in the database, and destroyed or shredded. Most newspaper articles are available on-line as well, further supporting the removal of these items from the collection. All folders should be acid free. All paper should be

tested and if it is not acid free, it should be separated from the other pages within the folder using interleaving paper to protect the other material in the folder. All original documents should be stored in archival quality boxes. The smaller, flip-top document storage cases would be preferable to the standard banker boxes.

4.1.3 Maps and Photos

The maps and photos of this collection present unique challenges. The maps are oversized and the photos include more negatives than actual photos. The maps (or group) should be given identification numbers following the same format as the documents and entered into the database in the same manner. Oversized scanners are available, but are expensive. The task of scanning the maps can be accomplished through the use of equipment housed outside of the Anthropology Department on the GSU campus. Once the maps are digital, they should be integrated into a Geographic Information System (GIS) mapping format to enable accessibility, links in the database, and integration into other digital mapping for comparison in research. The current storage situation is a stable situation for these maps.

The photos and negatives are currently stored in small photo boxes in Kell 485 on the GSU campus. There is a photo log in a binder stored with them. An inventory should be taken, comparing the photo log to the negatives to ensure that they are in the correct order and are complete. This inventory should also be included in the database and each photo should be given an identifying number. The negatives should then be digitized, which is a process that also might need to be outsourced. Any actual photos should be scanned and identified. Any existing photos that relate to a negative the same or corresponding identifying markers. Once the digitization and inventory of all photos and negatives are complete, they should be stored in the proper archival materials and in the proper environment (Antonio J. Waring, Jr. Archaeological Laboratory

2007; Benden 2014; Sustainable Archaeology 2014; U.S. Department of the Interior National Park Service 2015). Negatives should be stored in polypropylene negative sleeves which can be stored in an archival binder. Photos can be stored in polypropylene photo sleeves and stored in archival binders. Acid free, lignin free copies of the photo log should be stored with the negatives and photos. The originals should be stored in archival folders with the all other original documentation in this collection.

4.1.4 Artifacts

The cultural material that composes the MARTA Collection is stored in banker boxes located, as stated above, at GSU in Kell Hall Rooms 100, 482, 481, 483, and 485, and in curatorial cabinets located in Room 333. Beginning in 2011, there were initial efforts to inventory the collection. Volunteers from the Greater Atlanta Archaeological Society (GAAS) rehoused the artifacts and student assistants entered data into spreadsheets with current counts and weights. The majority of Sites 9DA90, 9DA131, and 9FU91 seem to have been processed in this manner. No documentation specifically pertaining to this work has been located to date, but this material has been rebagged and there are excel spreadsheets for this section of the collection which can be located on the laboratory computer in Kell 481 (D:PhoenixProject:MARTAExcelData:PreDropDown) and have last saved dates included in the metadata which indicate that the work was conducted in 2011. The work done during this time did not include a spreadsheet template with standardized descriptions (i.e., drop down menus or data entry rules) that allowed for consistency in descriptions, nor was the PhoenixID identification numbering system implemented at this time. There has been no systematic check of the data against the material to ensure the accuracy of the work completed. According to Jeffrey Glover (Personal communication 2016), the task was to transcribe the specimen catalog

for 9FU91 into a Microsoft Access database to begin to get a sense of the diversity of materials from that one site, and this transcription was conducted by two student assistants with no archaeological experience.

Beginning in 2012, the laboratory requirement for the Archaeological Methods course required that students work with a designated, small portion of the collection. The student projects required that the cultural material was rebagged and reanalyzed, which included entering data into MS Excel spreadsheets, such as counts, weights, vessel descriptions, vessel forms, original accession numbers, dates, and specimen numbers. It does not seem, according to the spreadsheets included in the digital data for this collection, that a spreadsheet template which included drop down menus to ensure consistency in artifact descriptions was used until 2013. It also seems that the PhoenixID was not utilized consistently in many of the spreadsheets from 2012 and 2013. The portions of the collection that were updated in this manner are listed in the section below that highlights the student projects.

A final piece of the events which have affected the artifacts in the MARTA Collection involves a flooding event in 2014 and a mold infestation. The area of Kell Hall where three of the storage rooms are located (Kell 481, 483, and 485) was subjected to water that leaked from the Lobster tanks located on the floor above. Kell Hall was converted from a parking garage in 1945 (Georgia State Archives 2016). The three storage rooms mentioned above are located at a corner, which is also at the bottom of a 'ramp' that connects it to the floor above. This allows any water which leaks from this area to flow down the ramp and pool in these storage areas. In 2014, lobster tanks leaked, water inundated these storage areas and many of the banker boxes with UGA box numbers were replaced with storage boxes of the same size, some of which were archival and some were not. A separate mold contamination occurred during the summer of 2014

that was the result of an old HVAC system, which also required the removal of effected boxes and their replacement with new banker boxes, some of which were archival and some which were not. There was no documentation of which boxes were replaced. Since these events, steps have been taken to ensure that there would be no reoccurrence. The storage areas were sealed to prevent the intrusion of water, the HVAC system has been cleaned and repaired, dehumidifiers were placed in each storage area, and temperature control measures were implemented. The temperature and humidity in these areas are monitored. Although water still occasionally makes its way down the ramp from the floor above, the storage areas and the artifacts have remained moisture free.

The artifacts compose the bulk of the MARTA Collection with approximately 468 banker boxes and other material in storage cabinets (Kell 333). Although work has been done on portions of this collection, there has never been a complete inventory of the collection. In a brief assessment of the work that has been completed, there are four major issues that stand out as problems. The first is that the descriptions on the original Specimen Catalog are very broad; the material that has been given one catalog number might actually contain a wide range of material forms and types needing to be separated and subdivided (i.e., material identified as Porcelain-Stoneware in the original catalog might actually include whiteware, pearlware, ironstone, porcelain, and stoneware). The second is that the items listed on the Specimen Catalog might not be the items in the assigned bags and/or boxes, even though the artifacts have been labeled with the numbers that match those in the catalog. The third is provenience numbers not associated with the bags or catalog numbers, which today is considered a primary sorting and identifying marker. The fourth is that the items are not always grouped in a sequential order, causing confusion when retrieving items.

The solution would be to start at the beginning, taking the material as a whole and then organizing accordingly. In the same manner that the documents were regrouped from rail line to site or CCU number, the artifacts should also be organized chronologically (Antonio J. Waring Jr., Archaeological Laboratory 2007; Shellenberg 1961). A numbering system was created to be used with the Heurist database, a Phoenix ID, which includes the original accession number and the original specimen number minus the letter (e.g., 193.1). So beginning with 9DA89, which would be the first chronological site number in the MARTA Collection, each bag and its contents would be checked against the Specimen Catalog. At this stage of the process, especially due to the instability of the paper bags, the material should be place in 4-mil virgin polyethylene plastic bags (Antonio J. Waring Jr., Archaeological Laboratory 2007). Any information written on the original paper bags should be removed (cutting off the sections of the paper bag with the information) and also be inserted in the unlabeled plastic bags in such a manner that the paper does not come into direct contact with the artifacts. Once this initial inventory is complete, a reassessment of the material should occur. A provenience numbering system should be implemented; a bag numbering system beginning with 1 is sufficient. The material associated with each catalog number (designated by a chronological number associated with the letter designations described in section 3.2.2) should be examined, separated and regrouped if there are different material forms or types, counted and weighed, and then re-bagged with the new catalog numbers in conjunction with the Phoenix ID, which would be simple extensions of the original accession numbers (e.g., 193.1.1, where 193 is the original accession number, 1 is the original catalog number, and 1 is the new catalog number). The artifacts would retain their original labeling since the labels are still legible and intact and can still be identified and correlated with the new Phoenix ID and catalog numbers. The 4 mil plastic bags would be labeled with

provenience information, the Phoenix ID number with the new catalog numbers, and a brief description of the material. At this stage, all material would be stabilized with acid free, unbuffered tissue paper or other stabilizing material if necessary, and metal artifacts would be placed in a microenvironment to minimize further corrosion. The database entries would include the original information, such as the identification and analysis from the specimen catalog, as well as the new identifications. The bags would then be placed in boxes labeled with the site number and the provenience numbers of the bags contained in that box. Once this site has been completely processed, digital photographs should be taken of any diagnostic items, items that are unique, or cannot be identified. These photos will also be recorded in the database with identifying markers that will correspond to the site/provenience/catalog number of the artifact. Each step of this process should be documented in either a digital journal or spreadsheet. This process would continue with each site until the entire project has been assessed in this manner. The size of this project would require an enormous allotment of time and personnel assigned to oversee this project; however, it will be the only way to ensure a complete dataset of the entire physical collection.

Table 4.1 includes an estimated breakdown of man-hours to process the material. The estimates are based on my work with Site 9FU107 and 9FU47, as well as the work done by a student in the Directed Study mentioned in Section 4.1.2. A total of six man-hours are estimated for each box of artifacts.

Table 4.1 Estimated Man-hours for Processing MARTA Collection.

Site/CCU	Estimated # of Boxes	Estimated Man-hours for Artifacts	Estimated Man-hours for Documents	Estimated Man-hours for Photos/ Negatives	Estimated Man-hours for Artifact Photos	Total Estimated Man-hours
	1	4	3	2	2	11
9DA89	78	312	234	156	156	858
9DA90	25	100	75	50	50	275
9DA91	1	4	3	2	2	11
9DA127	2	8	6	4	4	22
9DA129	1 (Estimate)	4	3	2	2	11
9DA130	1 (Estimate)	4	3	2	2	11
9DA131	1	4	3	2	2	11
9FU47	5	20	15	10	10	55
9FU73	1	4	3	2	2	11
9FU74	1 (Estimate)	4	3	2	2	11
9FU75	1 (Estimate)	4	3	2	2	11
9FU76	0.3	1	0.9	0.6	0.6	3.3
9FU77	0.5	2	1.5	1	1	5.5
9FU79	1	4	3	2	2	11
9FU80	2	8	6	4	4	22
9FU81	1	4	3	2	2	11
9FU83	3	12	9	6	6	33
9FU84	1	4	3	2	2	11
9FU85	1	4	3	2	2	11
9FU88	1	4	3	2	2	11
9FU89	14	56	42	28	28	154
9FU90	14	56	42	28	28	154
9FU91	94	376	282	188	188	1034
9FU92	2	8	6	4	4	22
9FU93	4	16	12	8	8	44
9FU94	3.5	14	10.5	7	7	38.5
9FU95	0.5	2	1.5	1	1	5.5
9FU96	1	4	3	2	2	11
9FU97	1	4	3	2	2	11
9FU102	1	4	3	2	2	11
9FU107	4.3	17	12.9	8.6	8.6	47.3
9FU108	6	24	18	12	12	66
9FU110	1	4	3	2	2	11
9FU113	1 (Estimate)	4	3	2	2	11
9FU114	21	84	63	42	42	231
9FU117	1	4	3	2	2	11
9FU118	4	16	12	8	8	44

Site/CCU	Estimated # of Boxes	Estimated Man-hours for Artifacts	Estimated Man-hours for Documents	Estimated Man-hours for Photos/ Negatives	Estimated Man-hours for Artifact Photos	Total Estimated Man-hours
9FU120	8	32	24	16	16	88
9FU123	2	8	6	4	4	22
9WH39	1 (Estimate)	4	3	2	2	11
McDaniel-Glenn	3	12	9	6	6	33
CCU110S	2.5	10	7.5	5	5	27.5
CCU115S CCU115W	19.5	78	58.5	39	39	214.5
CCU116E	1.5	6	4.5	3	3	16.5
CCU120E CCU120N	6	24	18	12	12	66
CCU125E	0.5	2	1.5	1	1	5.5
CCU130E	6.5	26	19.5	13	13	71.5
CCU140N CCU140W	17	68	51	34	34	187
CCU160N	1	4	3	2	2	11
CCU165S	10	40	30	20	20	110
CCU170E	11	44	33	22	22	121
CCU185N	1	4	3	2	2	11
CCU310S CCU310W	14	56	42	28	28	154
CCU315E	9	36	27	18	18	99
CCU330E	1 (Estimate)	4	3	2	2	11
CCU340W	1	4	3	2	2	11
CCU345E	1 (Estimate)	4	3	2	2	11
CCU360E CCU360W	2	8	6	4	4	22
CCU370W	3	12	9	6	6	33
CCU380E	1 (Estimate)	4	3	2	2	11
CCU415N	2	8	6	4	4	22
CCU510W	2	8	6	4	4	22
CCU560E CCU560W	1	4	3	2	2	11
Totals		**1714**	**1286**	**857**	**857**	**4715**

4.1.5 Data Capture

Accessibility to future researchers must be taken into account when creating the database of the cultural material. The current Excel spreadsheets have two areas where artifact descriptions are entered. One is labeled as Material Type and the other is Descriptor. These broad categories should be further divided. They should follow a descending order from general to specific (Table 4.2). The first should be Classification, which would divide the material by Prehistoric (lithic and ceramic), Historic Ceramic, Glass, Metal, Floral, Faunal, and Other. The second division would be Material. This would be the description of the material composition of the artifact, such as ceramic type (whiteware, ironstone), glass type (bottle, container, window), metal element (iron, steel), bone (animal, human), organic material (seed, reed), and for the Other classification, a more detailed identification of the material (plastic, rubber). The third division, Description, would give the more detailed information. For example, ceramic design, glass color, metal object name, if the bone has butchery marks, seed type, or identifier of the object in the Other classification. The fourth division, Detail, would allow for a more detail and would likely not be used for most entries. Examples would be colors associated with the ceramic design, makers marks, or manufacturing techniques. A fifth division could be added which would allow for the entry of temporal information, which could be general or specific (i.e.,

Table 4.2 Organizational Table for Cataloging Material.

Classification	Material	Description	Detail	Temporal Setting
Lithic	CP Chert	Archaic stemmed PP/K	N/A	Archaic period
Prehistoric Ceramic	Sand-temper	Etowah Complicated Stamped	2-bar diamond	Mississippi period
Historic Ceramic	Whiteware	Transfer print	blue	Nineteenth century
Glass	Bottle	Cobalt blue	mold-made	Twentieth century
Metal	Iron	Square nail	N/A	Nineteenth century
Floral	Seed	Walnut	Burned	N/A
Faunal	Bone	Aviary	Burned	N/A
Other	Plastic	Bottle cap	N/A	Twentieth century

century or year). By separating out the descriptive qualities of the cultural material, it would create the ability to query information based on specific fields of study and research.

4.1.6 Digital Data

The digital data of the MARTA Collection has all been created since its arrival to GSU in 2011. The files are located on the laboratory computer located in Kell 481 on the D drive in a folder named PhonexProject. Currently the subfolders include headings that represent a very preliminary organization attempt working with existing headings and groupings. Within these subfolders are a variety of information with a variety of file name formats. These files need to be updated with a consistent file formatting system and inventoried. The data that exists should be referenced and bookmarked for easy searching for key words, dates, or site information. With all the digital data that does exist, there is still a great deal of the documents, photos, and maps that have not been scanned.

The key will be to create digital spreadsheets that will track the progress of the cataloging and inventory of each piece of physical and digital data. The tracking process should remain current and updated daily as the project is ongoing and should include, but not be limited to, file names, directory location, creators and editors, date of data entry, file sensitivity, archival status, and other cultural metadata. Another component of any dataset should include detailed descriptions and definitions of each column heading so that there is no confusion in the interpretation.

The MARTA Collection, as a Legacy Collection, will involve the creation of a large amount of new digital data. The scanning, bookmarking, and ensuring that files are stored with appropriate metadata is an extremely time-consuming endeavor that can also require an enormous amount of server support, which might not be feasible all at once. This will require a

plan for prioritizing the materials to be digitized, preferably a decision made at the onset of the project. Metadata description standards should be set prior to scanning documents and photos. The information included should contain, at minimum, the creator, date, methodology, project, and an abstract.

The use of a sustainable database will be critical for the management of the digital data. The Phoenix Project will incorporate the use of the Heurist database to provide an adaptable and accessible model for the MARTA Collection to be used in a variety of applications. Robert Bryant (2015) addresses the details of this system and how it can be used not only for the management of the data but for future applications that would include web-based information that would be publically accessible.

4.1.7 Student Projects

Since the Fall of 2011, an assignment for the Archaeology Methods course offered at GSU, under the direction of Dr. Jeffrey Glover, has been to work with a portion of the MARTA Collection. The requirements involve the re-bagging of the material, creating a digital catalog of the material, digitizing related documents, and completion of a report describing the material and the site or area it was associated with. The list below includes the sites and areas that have been covered through the work of these student projects. The information includes only the information that is located as part of the digital data on the archaeology laboratory computer in Kell Hall 481 at GSU.

- 2012: Reanalysis of Data from an Archaeological Survey Conducted at Site 9DA90, The Old Dekalb County Courthouse, Dekalb County, GA.
    - Jennifer Bedell, Heather Beals, and Adam Burns
- 2013: Report on 9DA90 Well Site.
    - Robert Bryant, Jessica Glass, Sarah Goss, Lain Graham, Kevin Mooney, and Jessica Moss
- 2013: Archaeological Site and Artifact Analysis of the MARTA West Line.
    - Joseph Horne, Lesley Mackie, Lee Smith
- 2014: The MARTA Project: Test Square Site 9FU91 of CCU 140.

    - Susan Caola, Charlotte Godwin, Zachary Russell, and Jenny Schabell
- 2014: Caissons A and B from 9FU91.
    - Katie Coleman, Jessica Engel, Hunter Moore and Katherine Sherrill
- 2014: Group Four Report on MARTA Project Site 9FU91 Caissons C and D.
    - Christianna Huber, Jordan Klaus, Ian McLeod, and Megan Register
- 2014: 9FU107: A Look Into the Collection from a 1975 MARTA Excavation.
    - Lori C. Thompson, Emma C. Mason, Margaret Sinclair, and Amber A. McDaniel
- 2014: MARTA Group 5 Report 9FU114 The Maddox Park Dump.
    - Adam Cable, Emily Duke, Amelia Harp, Mary McCoy, and Felipe Seiber
- 2015: 9FU47 (Three groups)
    - Declan Konouck, Verna Gentil, and Hilarie Zombek
    - Danielle Carmody, Sean Seiler, and Shannon Lowman
    - Josh Wackett, Joel Willis, Noelle Hagenfoualt, and Adi Komac
- 9FU111/114 - Maddox Park
    - Caitlyn Mayer, Colette Gable, and Richard Petterson
- 9FU79 and 9FU81
    - Hannah Spodafa, Kelsey Daenen, and Ben Schaefer

There have also been a number of posters, which have been presented as part of the Georgia State Undergraduate Research Conference (GSURC) as well as the SAA Conference. The known projects are listed below:

- 2011: Investigating the MARTA Collection from Site 9FU89: The Material Remains of a 19th Century Tavern in the Midst of Atlanta's Progress – resulted in GSURC poster
    - Meagan Moran, Carrie Tucker, Patty Vig, Manuel Salvatierra, and JohnisSue Thurman - No documentation found in digital data (Jeffrey Glover, personal communication 2016)
- 2011: 9FU91 project - resulted in GSURC poster
    - Connor Donahue and Janie Hostetter - No documentation found in digital data (Jeffrey Glover, personal communication 2016)
- 2013: The Phoenix Project: Resurrecting the MARTA Archaeology Collection and Atlanta's Past SAA Poster
    - David Cook, Jeffrey B. Glover, and Ian Johnson
- 2014: The Phoenix Project: Archaeological Evidence from Decatur's Courthouse Well (9DA90). A GSURC Poster
    - Jessica Moss and Kevin Mooney

The use of this collection as a resource for student projects, especially as it relates to Archaeological Methods, is important. Creating an accessible research tool of the MARTA Collection is the primary goal of the Phoenix Project. The process that is currently in place has created reports and data that show new and interesting aspects of the collection and the history of

Atlanta; however, in the future, a more controlled environment and quality control would ensure more consistent and accurate data.

4.2 A Case Study: Veterans Curation Program

As a model for a systematic process of the curation of a Legacy Collection, as well as the resourcefulness of utilizing stakeholders, the VCP will be used as a case study. The USACE has conducted numerous archaeological excavations that date back to the WPA initiatives. The collections that have been produced through these past projects fell into the same state of disintegration that is typical for Legacy Collections over time due to inattentiveness. In following the criteria for curation of the archaeological collections under the mandates of the NHPA, the USACE has taken measures to fulfill these requirements. Under the American Recovery and Reinvestment Act of 2009 (USACE 2009), the VCP was created to address the curatorial needs of the vast collections created in the almost 100 years of archaeological investigations conducted by this branch of the United States government (VCP 2009). According to their website:

The VCP provides employment, vocational training, and technology skills to veterans seeking to improve their access to the mainstream job market. The labs also provide volunteer opportunities to Active Duty Service members. Archaeological collections that were excavated using public funds during construction of the country's many reservoirs and associated water control systems are required to be stored in a manner that ensures their long-term preservation and facilitates access by the public for scientific research and education. Many of these collections need rehabilitation (cleaning and repackaging) to meet federal standards. Veterans are employed as laboratory technicians to perform this work (VCP 2009: program-description/4556981866).

At the onset of the VCP, an audit was conducted for the USACE collections that found that 99 percent were not up to compliance standards. This acceptance of the need for stewardship of the cultural material and the national need for transitional employment of veterans created a perfect partnership under the Recovery Act.

Currently, the VCP is managed by the Environmental Research Group, LLC (ERG) and by New South Associates, Inc. (NSA). The ERG has a primary focus of conservation, compliance, and restoration, and NSA is a CRM firm, located in the Atlanta, Georgia metropolitan area. There are currently three laboratory locations: Alexandria, Virginia, Augusta, Georgia, and St. Louis, Missouri. Dan Jones, a GSU Department of Anthropology Masters graduate, is currently employed as a Laboratory Manager for the Augusta, Georgia location (Dan Jones, personal communication 2016). The following information about the VCP was obtained through this communication.

The organization of the VCP includes two managers, one for the artifacts and one for the archives. These positions are not held by veterans, but by trained professionals with higher degrees of education than a Bachelor's degree or extensive experience. There are two assistant managers who are graduates of the VCP. The number of technicians vary due to the projects and number of applicants. The projects are conducted over two, five month sessions each year. Each session has its own application process and those accepted into the program go through two weeks of intensive training: one week focuses on artifact curation and one week focuses on archival processes. The month in between each session is used by the managers to conduct quality control checks and prepare for the next project to begin.

The analysis that is conducted is at a minimal level. The main goals, outside of transitioning veterans, is data entry, digitizing reports, and stabilizing the materials. The lab

procedures are based on those from the Cobb Institute of Archaeology of the University of Mississippi. The artifacts are given new identifications numbers based on their original information. All are identified with the VCP letter designation, then an ID number that is based on the original box number (information gained from the original documentation), and then finally with an artifact identification number. If the artifacts are further separated from their original grouping, a further artifact identification number is added. A dash, or hyphen, is used to separate each of these identifiers. All the material is counted, weighed, and stabilized. Artifact photography is conducted; however, each individual artifact is not photographed. The archives are processed to ensure the digitization of all reports, documents, and photographs associated with each collection. The original documents are also stabilized through the removal of all metal implements and other non-archival fasteners, and place in archival folders and boxes.

The VCP is a successful example of how creating stakeholders from two branches of the same governmental institution can establish a sustainable format for the curation of the Legacy Collections of the USACE projects dating back to the early twentieth century. By integrating the needs of a specific group of people who need employment, the labor intensive process of the reanalysis, stabilization, and digitization of this archaeological material and documents will be available for the use by future researchers, as well as accessible to the general public. The system which has been implemented by the USACE through the VCP is a great example a work flow and data entry system as well as how to utilize outside stakeholder relationships as resources. However, before beginning a program that would initiate involvement of stakeholders for the MARTA Collection, the history of the project and the composition of the collection must be understood.

This chapter has discussed generally the condition of the collection and method that should be implemented to create a usable data set of every aspect of the physical and digital components. Until a complete assessment is conducted, an accurate understanding of the condition of the MARTA Collection will not exist. However, for the purposes of this study, I conducted an assessment that provides some quantitative data to allow for a better understanding. The findings of this research are discussed in the chapter below.

5 ASSESSMENT OF COLLECTION

A complete accession of the collection has not been conducted since 1980. When the collection was transferred to UGA, there was an inventory conducted and box numbers were assigned. There was not an inventory conducted of the contents of each box, but the associated site number or CCU number was documented. Since the collection has arrived at GSU, beginning in 2011, there have been efforts made to stabilize the material by transferring the artifacts to plastic 4-mil or 6-mil bags and to create a digital record of the material by entering data in excel spreadsheets. However, the work was done over the course of over 5 years by a variety of people, from enthusiast and members of local archaeological groups who volunteered their time, to undergraduate and graduate students fulfilling part of a class assignment, or Graduate Research Assistants. Additionally, the findings of the professional conservator, Kate Singley, and her assessment of a selection of metal specimens is also included as a section in this chapter. The purpose of gathering this information is to obtain a clearer picture of the state of this collection.

As part of this thesis project, I performed an assessment of what has been completed in this collection and my findings are detailed in the following section. The background I bring to this project comes from over 15 years of experience as an archaeologist working in CRM. The last 7 years were in the lab: 1 year as a technician, 1 year as a supervisor, and the final 5 years as the lab director. I worked closely with GDOT and the Antonio J. Waring, Jr. Archaeological Laboratory at UWG and their curation policies, as well as other archaeological repositories, such as the South Carolina Institute of Archaeology and Anthropology (SCIAA). I have also worked with the curation of material recovered and submitted to the Mueso de Contisuyo in Moquegua, Peru. The projects I have processed, analyzed, and curated have ranged from data recovery

excavations to large-scale, multiple site survey and testing projects and included material from the Archaic period to the Historic period. Although there were many differences in the scope, scale, and temporal period of these projects, the basics were the same: there must be consistency, accuracy, and accessibility. The main objective with a Legacy Collection is to retain as much of the originality of the collection while updating the physical condition of the material and creating a new, more detailed analysis and incorporate it all into a more accessible digitized format.

During March of 2016, I conducted an assessment of what portions of the collection have been rebagged and created a spreadsheet. I began with the data received from UGA from their accession process (Amanda Thompson, personal communication 2016). A physical inspection was then conducted of the contents of each box and whether or not the material was rebagged was noted in a spreadsheet stored on the computer in Kell 481 (D:PhoenixProject:MARTA_Boxes_MASTER.excel). There are five locations in Kell Hall at GSU which contain boxes of material from the MARTA Collection: Kell 100, Kell 481, Kell 482, Kell 483, and Kell 485. Loose material, including items that had at one time been pulled for display or artifacts deemed 'special' due to storage concerns or exceptional quality, are located in the storage cabinets of Kell 333: This material was not included in the exploratory investigation. The digital records located on the same computer mentioned above were used to identify the accession numbers and specimen catalog numbers associated with each site (D:PhoenixProject:SpecimenCatalog_Scans). The same digital records were searched for excel spreadsheets associated with each site (D:PhoenixProject:ArtifactCatalogs; D:PhoenixProject:MartaExcelData; D:PhoenixProject:StudentProjects; D:PhoenixProject:Sites). Table 5.1 contains the data of these exploratory investigations.

Table 5.1 Status of Data of the MARTA Collection as of March 2016.

Site/CCU	Box Count According to UGA Inventory	Rebagged (%)	Accession Number	Original Specimen Catalog Numbers	Spreadsheet
9DA89	78	28%	170	Not Found in Scanned Catalogs	Yes
9DA90	25	36%	140	1-1103, 1973-2287	Yes
9DA91	1	50%		Not Found in Scanned Catalogs	Yes
9DA127	2	100%	152	1-274	
9DA129	Not Found on UGA Inventory		140	2288-2343	
9DA130	Not Found on UGA Inventory		140	1109-1972	
9DA131	1	100%	153	54-276	Yes
9FU47	5	100%	103	1-532	Yes
9FU73	1	0%		Not Found in Scanned Catalogs	
9FU74	Not Found on UGA Inventory		142	1-14, 1-5	
9FU75			151	27-28	
9FU76	0.3			Not Found in Scanned Catalogs	
9FU77	0.5	100%	153	1-53	
9FU79	1	100%	174	1-71	Yes
9FU80	2	0%	173	1-158	
9FU81	1	100%	173	159-275	Yes
9FU83	3	0%	175	1-255, 529-537, 572-617	
9FU84	1	100%	175	256-335, 552-571	Yes
9FU85	1	100%	172	1-72	Yes
9FU88	1	100%	171	1-58	Yes
9FU89	14	36%	170	1-269, 4013-4028	Partial
9FU90	14	0%	170	270-465, 4029-4329	
9FU91	94	98%	170	466-2099, 3000-3737, 5154-5261, 5315-5316, 5360	Yes
9FU92	2	0%	170	3738-3771, 5317	
9FU93	4	0%	170	3772-3889, 5318-5338	

Site/CCU	Box Count According to UGA Inventory	Rebagged (%)	Accession Number	Original Specimen Catalog Numbers	Spreadsheet
9FU94	3.5	0%	170	3890-3946, 3956-3998, 5262-5314, 5361-5396	
9FU95	0.5	0%	170	3947-3955	
9FU96	1	100%	175	336-406	Yes
9FU97	1	100%	175	407-447, 538-551	Yes
9FU102	1	0%	170	3999-4012	
9FU107	4.3	100%	193	1-94	Yes
9FU108	6	0%	210	1-40, 515-532	
9FU110	1	0%	190	888-902	
9FU113	Not Found on UGA Inventory		190	1-22	
9FU114	21	33%	212	1-122	Partial
9FU117	1	100%	189	33-57	Yes
9FU118	4	100%	189	835-1194	Partial
9FU120	8	100%	189	2084-2269	Yes
9FU123	2	50%	237	1-92	
9WH39	Not Found on UGA Inventory		236	1-39	
McDaniel-Glenn	3	100%	214	1-202	Yes
CCU110S	2.5	80%	169	1-67	
CCU115S	19.5	23%	189	1-32, 58-834, 1195-2083, 2270-2297, 2318	
CCU115W			168	1-82	
CCU116E	1.5	0%	163	73-157	
CCU120E	6	0%	163	1-72, 158-372	
CCU120N			192	1-45	
CCU125E	0.5	0%	164	1-3	
CCU130E	6.5	0%	165	1-425	
CCU140N	17	3%	193	95-450	
CCU140W			170	4330-5359	
CCU160N	1	0%	194	1-42, 61-105	
CCU165S	10	10%	190	25-405, 426-655, 657-887, 903-1213	
CCU170E	11	100%	141	1-26, 227-1206	Partial
CCU185N	1	0%	221	1-127	
CCU310S	14	14%	220	1-488	
CCU310W			171	56-630	
CCU315E	9	0%	166	1-719	

Site/CCU	Box Count According to UGA Inventory	Rebagged (%)	Accession Number	Original Specimen Catalog Numbers	Spreadsheet
CCU330E	Not Found on UGA Inventory		139	1-125	
CCU340W	1	0%	172	73-149	
CCU345E	Not Found on UGA Inventory		140	1104-1108	
CCU360E	2	0%	167	1-133	
CCU360W			173	276-432	
CCU370W	3	0%	174	72-283	
CCU380E	Not Found on UGA Inventory		187	1-16	
CCU415N	2	0%	222	1-280	
CCU510W	2	50%	175	448-528	
CCU560E	1	0%	134	1-158	
CCU560W			151	1-26	

The results of this assessment highlight the efforts that have been made to update the collection; however, it also sheds light on inconsistencies on how the collection has been curated. There are sites and CCU designations that have recorded material included in the scanned original specimen catalogs, which are not included on the UGA box inventory. There are also boxes of material recorded on the UGA inventory, which do not have associated specimen catalogs located in the scanned original material. There are boxes in the UGA inventory whose numbers were not located during my investigation. This can be attributed to the loss of the UGA box number when some material required new boxes in 2014. The actual box count as it stands at the time of this report is higher than that indicated by the UGA inventory: As material is archivally rehoused and stabilized additional box space is often needed due to expansion of the collection and with the reboxing some of the UGA labels did not get transcribed.

The spreadsheets that have been created through the initial stabilization processes and student projects highlight an additional aspect of the state of the collection that is the result of inconsistencies in data entry. Although there is now a spreadsheet which uses drop-down entries that is used by students for their projects, the first spreadsheets were not formatted in this

manner. In reviewing the spreadsheets that were created using the drop-down menus, there are still many different interpretations in some of the data entries. In many instances, the new identifying number, the PhoenixID number, has not been assigned. There is also not a clear indication of whether the descriptive information came from the original specimen catalogs or if it was the observation of the person entering the data into the spreadsheet. In addition to these differences, there has not been a systematic review to ensure that all the information entered is accurate or complete. The notes that were taken during my investigation are included in Appendix A. The information noted the different methods in which data was entered, especially in the columns labeled as Date, Specimen_No, GSU_No, PhoenixID, Weight, Material_Type, Function, Descriptor, Form, and Notes.

The information gathered for Table 5.1 includes the addition of a directional identifier with the CCU number (i.e. CCU115S and CCU115W). The original data was organized by directional rail lines, as this was how the original project contracts, excavations, and reports were organized. As mentioned above in Section 4.1, the accessibility to future researchers should include a change in the original manner of organization. However, by ungrouping the sites and CCUs from directional headings, some CCU designations were located along more than one rail line. Therefore, a capital letter indicating the rail line the CCU is associated with has been added as a final identifier.

During the course of my investigations, it has been discovered that there are materials from this collection that are located at the Atlanta History Center (AHC) and the Antonio J. Waring, Jr. Archaeological Laboratory at UWG. The material housed at the AHC was apparently the result of a loan from the early 1990s The AHC is currently attempting to gain approval from MARTA, the legal owner of the collection, to return the artifacts to GSU (Erica Hague, personal

communication 2016). The material located at UWG was also the result of a loan, the details of which are not clear at this time (Andy Carter, personal communication 2016). There are no records included in the documents for this collection that indicate that this material was loaned to these institutions. It was through word of mouth of individuals from AHC and UWG who knew of my work with this collection that I was informed about these loans. The documents on record at the AHC pertaining to the accession of loaned material have been copied and filed with the MARTA Collection records. Appendix B is the inventory list from the AHC. The summary table of the accessioned material located at UWG is included as Appendix C.

5.1 Katherine Singley

In February 2015, Kate Singley, Conservation Anthropologica AIC, AIC-CERT, PA, IIC Conservator, a professional conservator, assessed the stability of a sample of unstable materials, which was funded by a Research Initiation Grant awarded by GSU to Jeffrey Glover. Her investigation consisted of examination of 400 specimens from the MARTA Collection, including those stored in Kell 333 and material from 9FU91 and 9DA89. There were two reports and an executive summary, as well as multiple images included with a CD as part of her study.

The first report, entitled GSU MARTA Report 1, includes detailed information about metal production technologies, the corrosion processes that can occur, and how the treatment of MP7, manganesed phospolene 7, can affect these processes. The second report, GSU MARTA Report 2, includes an analysis of the storage techniques currently in use at GSU, as well as recommendations for additional methods to implement. A third report, the Executive Summary, discusses the overview of her study. These documents are located digitally on the lab computer, D:PhoenixProject:Conservation_Rpt_Singley2015 and are also included as Appendix D of this thesis.

There were 161 specimens noted as unstable of the 400 examined. Of these, 152 were metal and 9 were asbestos. Table 5.2 includes the data from this assessment. There were 59 specimens that were possibly treated with MP7, an anti-corrosive acid that was often used to clean and protect ferrous materials for curation purposes in the past (Appendix B: Executive Summary, GSU MARTA Report 1). Over time, however, this process has been determined to be ineffectual and the corrosion still occurs.

Table 5.2 Summary Table of Conservators Findings.

Material Type	Quantity	Condition	Recommendation
Copper/Brass/White Metal	64	Basic cuprous chloride "Bronze Disease" - active corrosion, whitish green	Should be treated with benzotriazole (BTA), a corrosion inhibitor specific for copper and then lacquered
Iron and Steel	29	Exhibiting active corrosive and attack by ferrous chloride, sweat, or pustules	Should be kept as dry as possible, ideally >15% RH, and may need microclimates
Enamelware	6	Exhibiting active corrosive and attach by ferrous chloride, sweat, or pustules. May have been treated with MP7 in the past.	
Enameled, Painted, Galvanized, Plated Iron	12	Exhibiting active corrosive and attack by ferrous chloride, sweat, or pustules: May have been treated with MP7 in the past	
Iron	41	Treated with MP7, now failing: Exhibiting active corrosion and attack by ferrous chloride, sweat, and pustules: Also exfoliating and spalling	
Asbestos	9		Should be labeled and isolated: even better would be to record and remove them

Using the data from this study, it would appear that an assumption could be made that since 152 of the 391 metal specimens are in an active state of corrosion then it could be estimated that approximately 40 percent of the entire collection of metal specimens is also in the same unstable condition. Although the selection did include material from Sites 9FU91 and 9DA89 located in the boxes stored in Kell Hall 100 and Kell 485, the specimens chosen for this

study were not a representative sample of the collection as a whole. The selection included pieces that were already separated from the material in the boxes and stored in the archival shelving units located in Kell 333 or other identified pieces. It did not include selections of large quantities of nails or other massive groups of material that was originally identified as being corroded metal fragments. In order to get a complete picture of the amount of corrosive material included in this collection would be to conduct an analysis of every metal specimen.

5.2 Case Study: 9FU47

During the Fall of 2015, I was the Graduate Research Assistant for the Archaeological Methods class taught by Dr. Jeffrey Glover. At the onset of the semester and the introduction to this project, two class sessions were designated as instructional laboratory sessions, with half of the class in attendance for each session. The class was ultimately divided into five groups. During these sessions, the laboratory processes were verbally discussed, written instructions were handed out (Appendix E). At this time, any questions were answered and hours which I would be available for assistance during the semester were established.

There were three groups which were assigned various portions of Site 9FU47 as their student project for this class. This site is included in the MARTA Collection, however, it is not included in any of the reports and is not part of the MARTA excavations. The amount of cultural material associated with this site prohibited the entire site from being analyzed, stabilized, and digitized. As part of my research for this thesis, I assessed how this project was conducted and noted the variability found in comparing the work done by each group

Group 1 was composed of three students and encompassed the material recovered from Square 1, the Center Balk, and from the collapsed wall of the dirt facing parking lot not from an excavated square. The digital records from this project can be found on the lab computer in Kell

481 (D:PhoenixProject:StudentProjects:Fall2015_Methods_Projects:9FU47_Group1_2015). The information submitted for this group includes an artifact catalog spreadsheet, a report, a PowerPoint presentation, artifact photos, and photos for 3-D images. The spreadsheet did not include artifact photo information in the designated column nor was there any data from the original specimen catalogs. The information given in the columns designated for vessel form was very sparse and when it was included it was entered in as a 'y' to indicate that form was present within that catalog number. The artifact photos were labeled in the suggested format (9FU47_103.1_AlkalineGlazedStoneware); however, the 3-D images were only labeled with the identifier that was assigned by the camera used (DSC_0083).

Group 4 was also composed of three students and included the material recovered from All Squares and general surface collection. The digital records from this project can be found on the lab computer in Kell 481 (D:PhoenixProject:StudentProjects:Fall2015_Methods_Projects:9FU47_Group4_2015). The information submitted from this group includes an artifact catalog spreadsheet, a report, a PowerPoint presentation, artifact photos, photos for 3-D images, current site photos, photo log for photos taken for the current project, research documents (historic images and copies of the original reports), and scans of Sanborn Insurance Maps, the original site form and specimen catalog. The spreadsheet did include information about the artifact photos; however, no information from the original specimen catalogs was included. The columns designated for vessel form data was sparse and was entered in as descriptions, such as deep plate, neck fragments, or basal fragments. The artifact photos and 3-D images were labeled in the suggested manner (9FU47_103.445.1_Pearlware and 9FU47_103.527_Pipebowl_InferiorRaisedAngledView_Graph).

Group 5 was composed of four students and included the material located in Square 2. The digital records from this project can be found on the lab computer in Kell 481 (D:PhoenixProject:StudentProjects:Fall2015_Methods_Projects:9FU47_Group5_2015). The information submitted from this group includes an artifact catalog spreadsheet, a report, a PowerPoint presentation, artifact photos, and scans of the Sanborn Insurance Maps, the original field notes (which are actually only copies of the site form), and the original specimen catalog. The spreadsheet did include artifact photo information; however, it did not contain any reference to the original descriptions noted on the hand written specimen catalogs created during the initial laboratory processing. The data entered into the columns designated for vessel forms were in two formats: some cells contained an 'x' which I assume indicates that form was present and other cells contained quantitative data. The artifact photos were labeled in the recommended format (9FU47_103.21_VioletGlassNeck).

Through further investigation of the data entered into the spreadsheets showed errors within the data entered into the artifact catalog spreadsheet, as well as some specimen numbers that were completely omitted. There were also errors in the manner in which the bags were labeled, even though there was a visual aid on the wall of Kell 481 for reference (Figure 5.1).

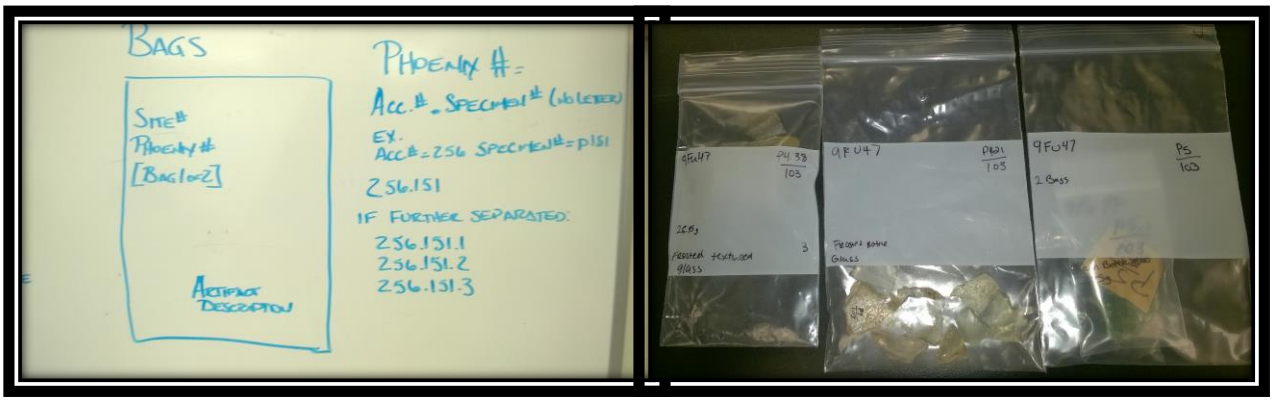


Figure 5.1 Images of white board example and bags labeled by students.

Outside of the errors in the work conducted by the students for this project, there were also many other problems that arose while attempting to identify the material included for each group. There appears to be two groups of material associated with the MARTA Collection that have the same accession number (103) which is assigned to Site 9FU47 with duplicate specimen numbers. There is, however, only one specimen catalog that relates to this accession number. Causing even more confusion, the specimen catalogs, as well as the labeled information on the original paper bags, are labeled with a date of 1974, which is at least one year before the official excavations began. There are no associated field notes or any other information about this site outside of the one specimen catalog and site form. The investigation of 9FU47 is an example of the worst case scenario and has not occurred with any other project involving this collection; however, it does illustrate the need to perform a complete inventory and assessment of the MARTA Collection.

Through the investigation of the material from Site 9FU47 and the subsequent data submitted from the students' assignments, without strict supervision throughout the entire process, there will be variations in the interpretation of instructions. Not only will there be variation in the data included in spreadsheet format, but the types of data submitted and how it is identified in the digital record. This investigation also brought to light the discrepancies in what is thought to be in the collection and what really is in the collection.

6 DISCUSSION

The MARTA Collection will only have value if it is accessible for future researchers and to the public. This can only be accomplished if all aspects of the collection are digitized and organized in such a manner that is conducive to investigative studies. In this section I will discuss the process I propose to accomplish this goal, which will include physical data and digital data, and how we can introduce praxis to this collection, which has also been proposed by Robert Bryant (2015).

Physical data includes all paper notes, documents, photos, slides, negatives, maps, drawings, and artifacts. Digital data includes documents (i.e., .docx or .pdf), maps, images, data sets, geospatial data, and scanned data files. All of these items must be inventoried in a detailed manner, assigned unique identifiers, and physically and digitally organized to allow for easy access. Once the material is organized separately and entered into a unifying database, researchers will be able to retrieve information through a variety of queries, such as by site number, CCU, site type, artifact type, or any other possible grouping for a focus of study. The process should begin with the site that falls first chronologically, 9DA89. A suggested work flow for a 4-year plan is illustrated in Figure 6.1.

In order to implement this plan for any collection, including the MARTA Collection, one must maintain continuity in methodology and procedures. This can only be accomplished with a constant supervisory staff. As was illustrated through the variability in the student project surrounding 9FU47, although there was supervision, it was not constant. It was also made clear that any written instructions should be incredibly detailed with a step by step guide to every procedure involved with a curatorial project. There is not a Laboratory Procedures Manual of any form for the Archaeological Laboratory at GSU. The creation of this document should be

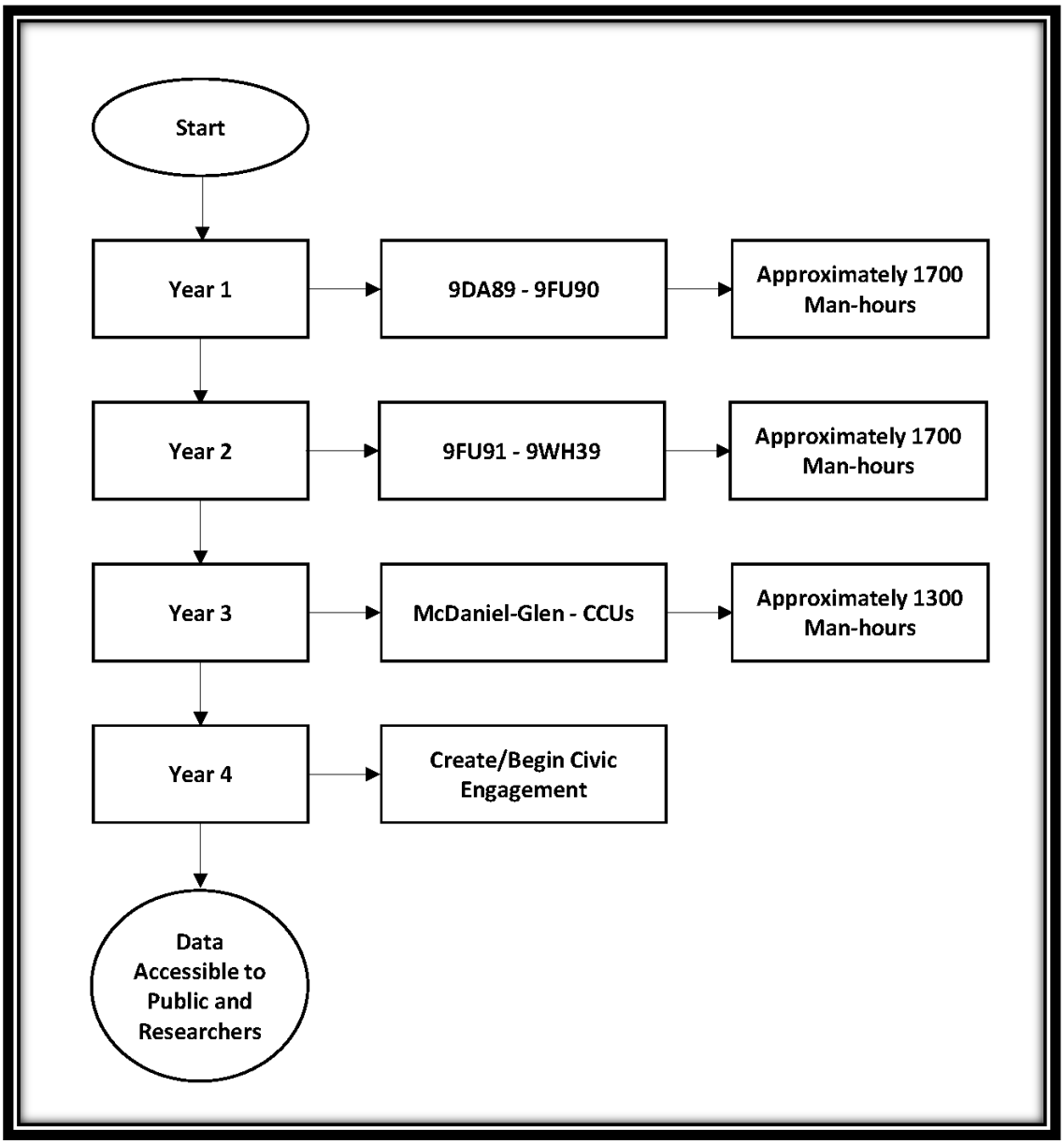


Figure 6.1 Image showing suggested work flow to process the MARTA Collection.

also be a priority in the implementation of a comprehensive curatorial plan for the MARTA Collection.

As this discussion has described the multiple stages that are needed to create a physically and digitally accessible dataset for the MARTA Collection, none of this will be accomplished without a sustainable funding source. Grants, such as those through the National Endowment for

the Humanities, while specifically targeted to projects such as this one, are not guaranteed and new proposals must be submitted as each contract expires. While this can become a source of sustainability, other avenues must be investigated. It will require creating a social value for this project that not only targets GSU as a research tool, but the public as well. Typically, information disseminated to the public involving archaeological investigations are heavily redacted to avoid site looting. However, the MARTA Collection and associated project data is unique in that all the archaeological sites included have already been completely destroyed or made inaccessible through the construction process of the rail lines. This allows for an interesting opportunity to implement a praxis component to this project, which is detailed in the next section.

6.1 Outreach - The MARTA Collection and Praxis

The key to creating a social value for the MARTA Collection will come from relationships within the City of Atlanta, such as the city itself, as well as the Atlanta Convention and Visitors Bureau, MARTA, and GSU. By showcasing the information that can be discovered about Atlanta's history and the public interest it can create, it can also lead to creating stakeholders from the businesses associated with either the material identified or the history of the site itself. This aspect of civic engagement is also a focus of Robert Bryant's thesis (2015). Using two sites, 9FU107 and 9FU91, I present a plan to present new information obtained through further research and how it can be beneficial to informing the public of new aspects and perspectives into Atlanta history.

6.1.1 Site 9FU107

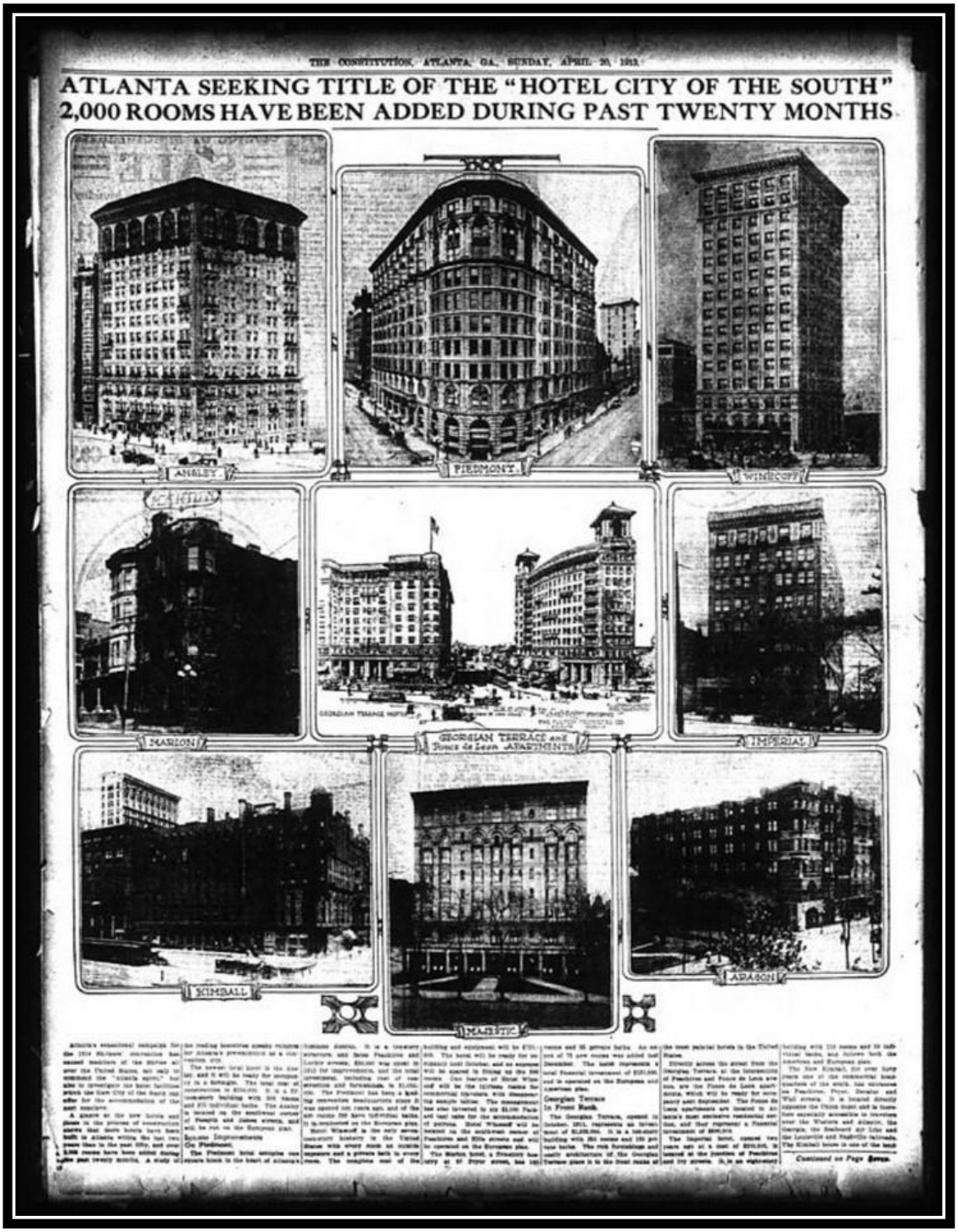
This site was identified in the original investigations as a small, linear dump site that was found while conducting dirt ramp operations in the area which is now the Civic Center MARTA

Station. The report states: Identified as a hotel dump, the site was closely monitored, photographed, mapped, and surface collected during construction activities (Carnes and Dickens 1978). The field notes contained information that the ceramics recovered were predominately hotelware and stoneware. These notes also included mention of preliminary investigations into some of the markings identified on some of the ceramic sherds. However, there is no detail in the report of what hotels this material is associated with. Through the research conducted for the student project for the Archaeological Methods class in Fall 2014, not only were three prominent hotels from the early 1900s in Atlanta identified but also that the makers marks gave insight into the manufacture and distribution networks of the United States at this time.

According to the Atlanta Constitution (Atlanta Constitution, 20 April 1913), in 1913 Atlanta was at the height of a hotel boom (Figure 6.2). The three hotels identified through the material recovered at 9FU107 were the Hotel Ansley, the Winecoff Hotel, and the Piedmont Hotel. Hotel Ansley was established in 1913 and was located on the same lot as the parking lot across from the Atlanta/Fulton County Public Library. The Winecoff Hotel was also established in 1913 and was the site of the nation's most deadly hotel fire in 1946. It is has been rebuilt and is now the Ellis Hotel. The Piedmont Hotel was established in 1903 and was located where the Equitable building is today.

Displays could be established at the Civic Center MARTA Station, in the Equitable building, the Ellis Hotel, and the Atlanta Public Library. The most cost effective display would be an informational plaque which would highlight the historic hotel and the associated ceramics (Figure 6.3). These displays should also highlight the unique archaeological excavation that occurred for the MARTA Project and detail the GSU archaeological program with links to the website as well as to a public database. A further association could be tied into a mobile app that

would allow a ‘walking tour’ of downtown that would include the information from the MARTA Collection.


THE CONSTITUTION, ATLANTA, GA., SUNDAY, APRIL 20, 1913.

ATLANTA SEEKING TITLE OF THE "HOTEL CITY OF THE SOUTH"
2,000 ROOMS HAVE BEEN ADDED DURING PAST TWENTY MONTHS

ANSLEY

PIEDMONT

WINECOFF

MARION

GEORGIAN TERRACE and Ponce de Leon APARTMENTS

IMPERIAL

KIMBALL

MAJESTIC

ARAGON

Figure 6.2 Newspaper article showcasing the hotel industry in Atlanta (Atlanta Constitution, 20 April 1913).

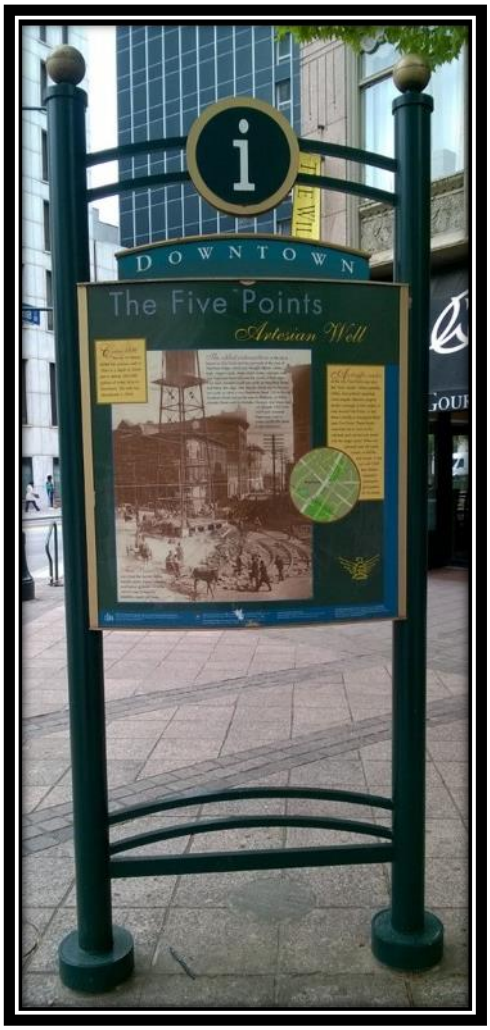


Figure 6.3 Example of informational plaque near the Five Points station.

6.1.2 Site 9FU91

This site was the location of the Atlanta City Dump and Municipal Crematorium, which was excavated for the Techwood station, which is now the stop for the Phillips Arena, the CNN Center, the Georgia Dome, and the Georgia World Convention Center. This site also incorporates areas that are near the Five Points station. This dump was officially in operation from 1890 to 1920; however, there are records that show that dumping occurred approximately 20 years before and after these dates (Carnes and Dickens 1979). The site was officially capped with clay and graded with gravel in 1940, which created a 'time capsule' effect (Figure 6.4). There was so much material located at this site the excavators were forced into a selective sampling process (Drawer 4 Folder:MARTAProject:FieldNotes:June28-August5,1977:Original). Due to this selective sampling process, the items that were chosen were often whole bottles, jugs, or other artifacts. This created an amazing collection which paints a picture of Atlanta as it came out of the Reconstruction era through the industrialization that came with the turn of the century. The medicinal bottles from this site were the focus of David Cook's (2014) thesis study and it includes images and details of the bottle manufacturers as well as the unique contents that were often ascribed to those which were medicinal in nature. The bottles

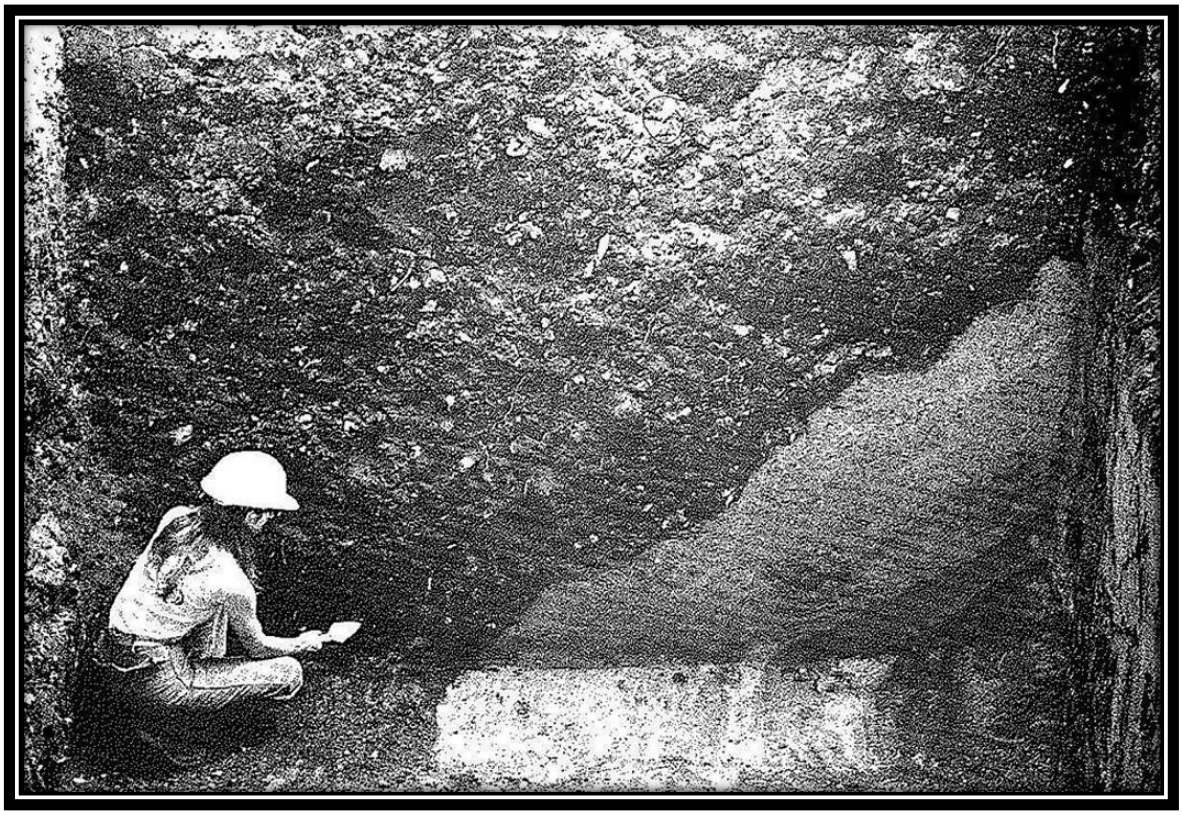


Figure 6.4 South profile of a 10-foot test square, 9FU91 (Carnes and Dickens 1979:64, Figure 22).

also give insight into the 'cola wars' that were part of the industry that was occurring in Atlanta during this time.

The opportunities to disseminate information about this site and the cache of materials located here are unlimited. This site is located in the center of the most popular, public arenas in the city. Displays could be set up in each of these facilities or even randomly outside in the many greenspaces and walking areas that flow between the convention center, public arenas, and the CNN Center, which is a tourist destination itself. Images of the massive pit that was excavated at this site and details pulled from the field notes would educate and intrigue the public about the unique archaeological project that was associated with the construction of the MARTA rail lines. The same information can also be shared that will associated the collection with GSU as a research institution by including web addresses.

By using information, such as that obtained from the further investigations of sites such as 9FU107 and 9FU91, and making it available to the public in public spaces will create an interest that will lead to relationships with stakeholders from many different businesses and associations in the City of Atlanta. Outside of the organizations mentioned in the discussion above, groups such as the Atlanta Business League (which was established in 1913 at the height of the hotel boom), Invest Atlanta, the Atlanta Business Alliance, and the Atlanta History Center would be just a few possibilities of partnerships that would ensure the sustainability of the social value of the collection and its connection to GSU as a research institution.

The partnerships that could be created around the MARTA Collection could also include groups that would be beneficial outside of the archaeological and historic perspective. Using the VCP as an example of using outside resources, an organization that works with a population who is in need of temporary employment that would teach job skills could be a resource of labor that could be utilized to perform the time consuming and labor intensive tasks that are involved in curating a collection. Governmental work programs might possibly be willing to work with the university to establish such a partnership which would benefit the collection as a resource as well as the Atlanta community.

7 CONCLUSION

The MARTA Collection, under the umbrella of the Phoenix Project, has the potential to be an incredible resource for future research, not only in the field of archaeology and anthropology, but focuses of study in history, African-American studies, gender studies, and city planning and development. GSU has in its possession what could become one of its greatest assets. However, until the time and funding required to properly curate and accession the documents and artifacts now stored in boxes and filing cabinets into usable and accessible digital data, this resource will continue to languish.

As archaeologists, we have an ethical obligation to the collections we create. The SAA created the Principles of Archaeological Ethics, of which there are eight. Of these, six are incredibly applicable to the obligations GSU has for the MARTA Collection: Stewardship, Accountability, Public Education and Outreach, Intellectual Property, Public Reporting and Publication, and Records and Preservation (SAA 1996). As a university that promotes itself as a research facility, there should be an emphasis of following ethical guidelines for each field of study. This is especially true if the institution has accepted possession of material in recent history.

The MARTA Collection presents a classic catch-22 situation, the value of its research potential cannot be perceived until it is accessioned and made accessible; however, the resources needed to accomplish this will not be made available until the value of the research potential is understood. Advocating for the care of this collection will require continued dedication.

This paper has focused on the history of the project and the condition of the collection. The research conducted can be used as guide to create a plan of action to accomplish the goals set by the establishment of the Phoenix Project, which will allow this amazing archaeological

legacy and cache of history to escape its current confines and rise to its potential as an invaluable resource.

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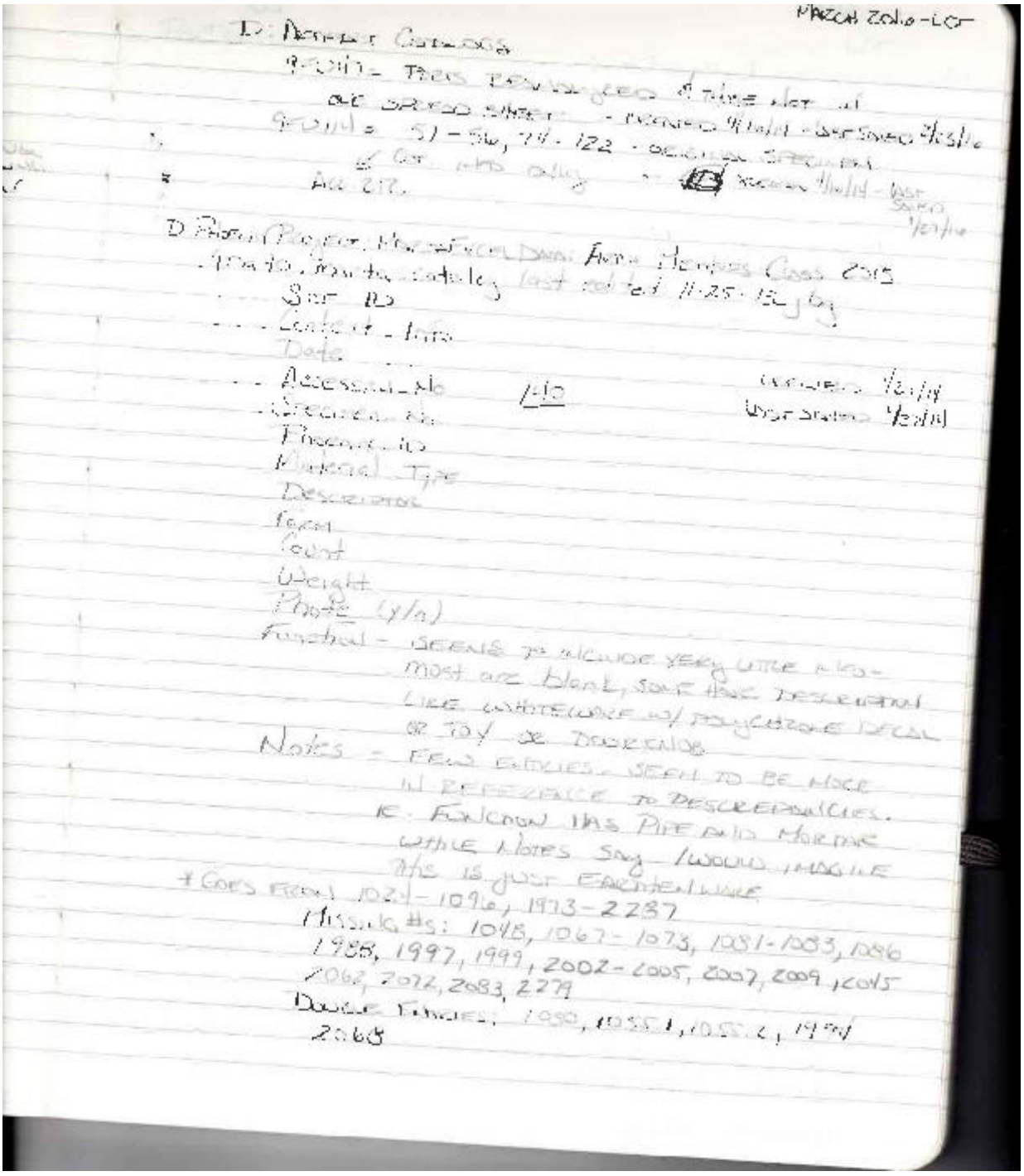
APPENDICES

Appendix A: Research Notes.



MARCH 2016
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- DUPLICATES 332, 341, 373

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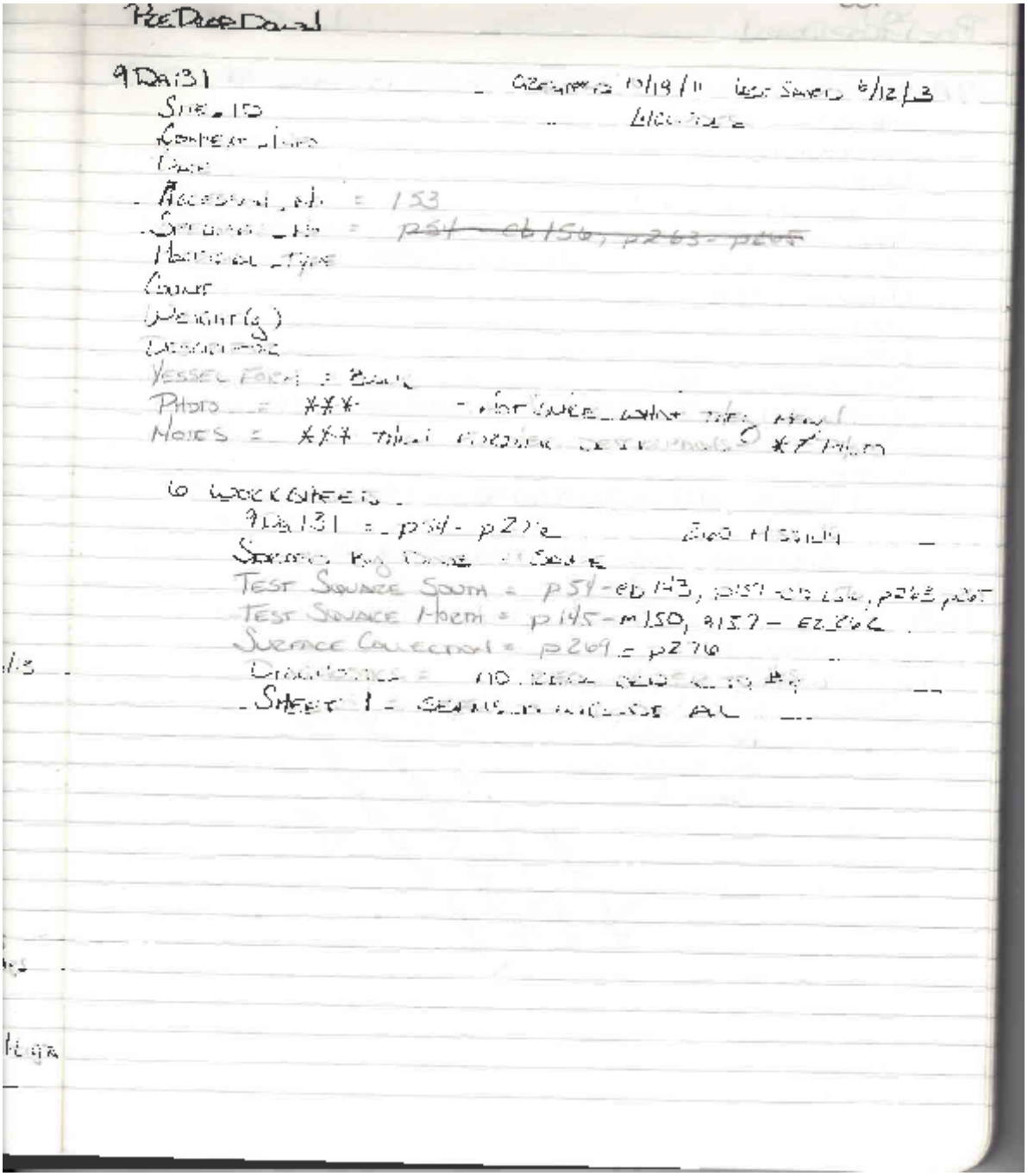

MARCH 2016
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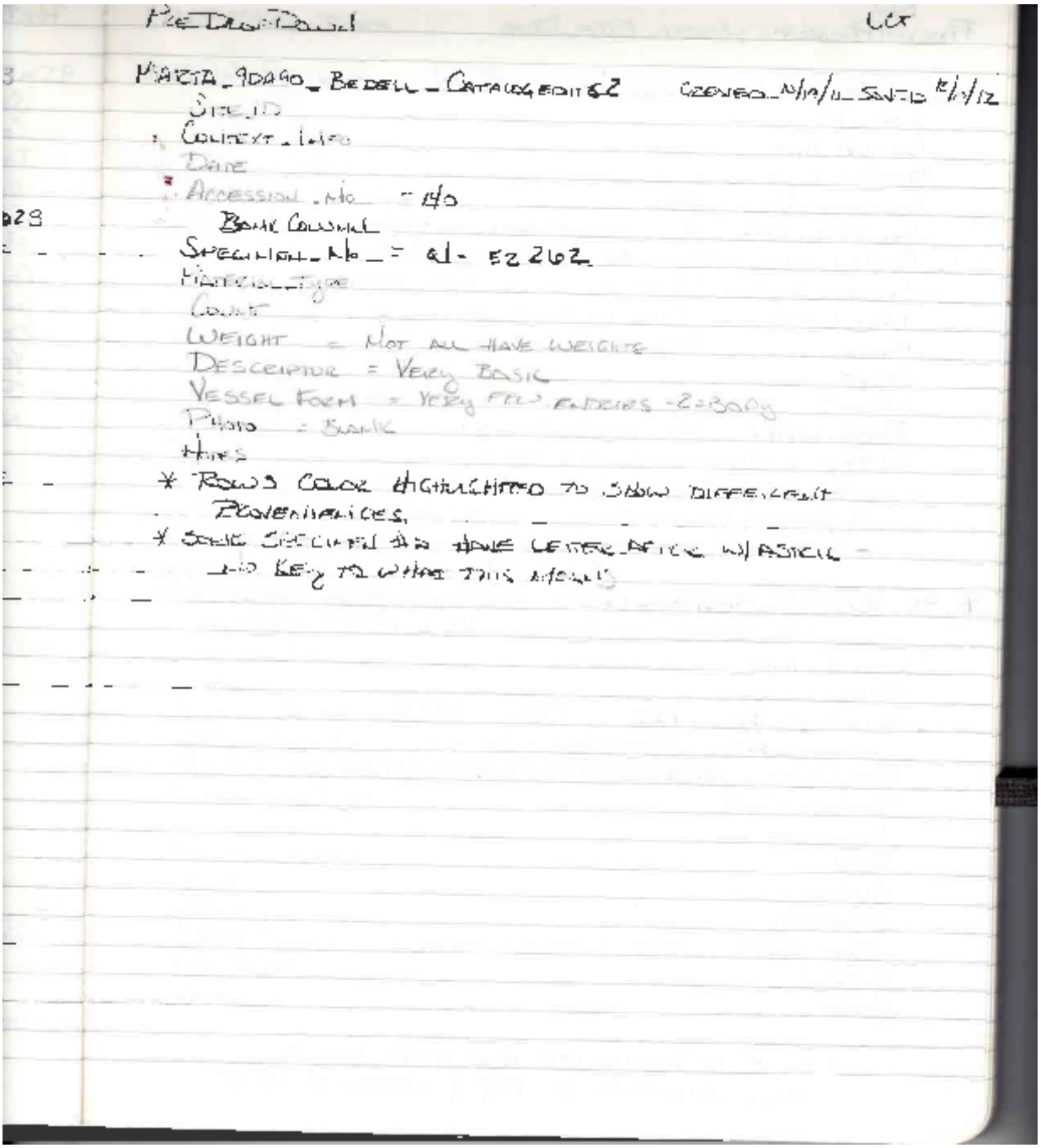
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Context_Info

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Count

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Vessel Form = Very few entries -2=Body

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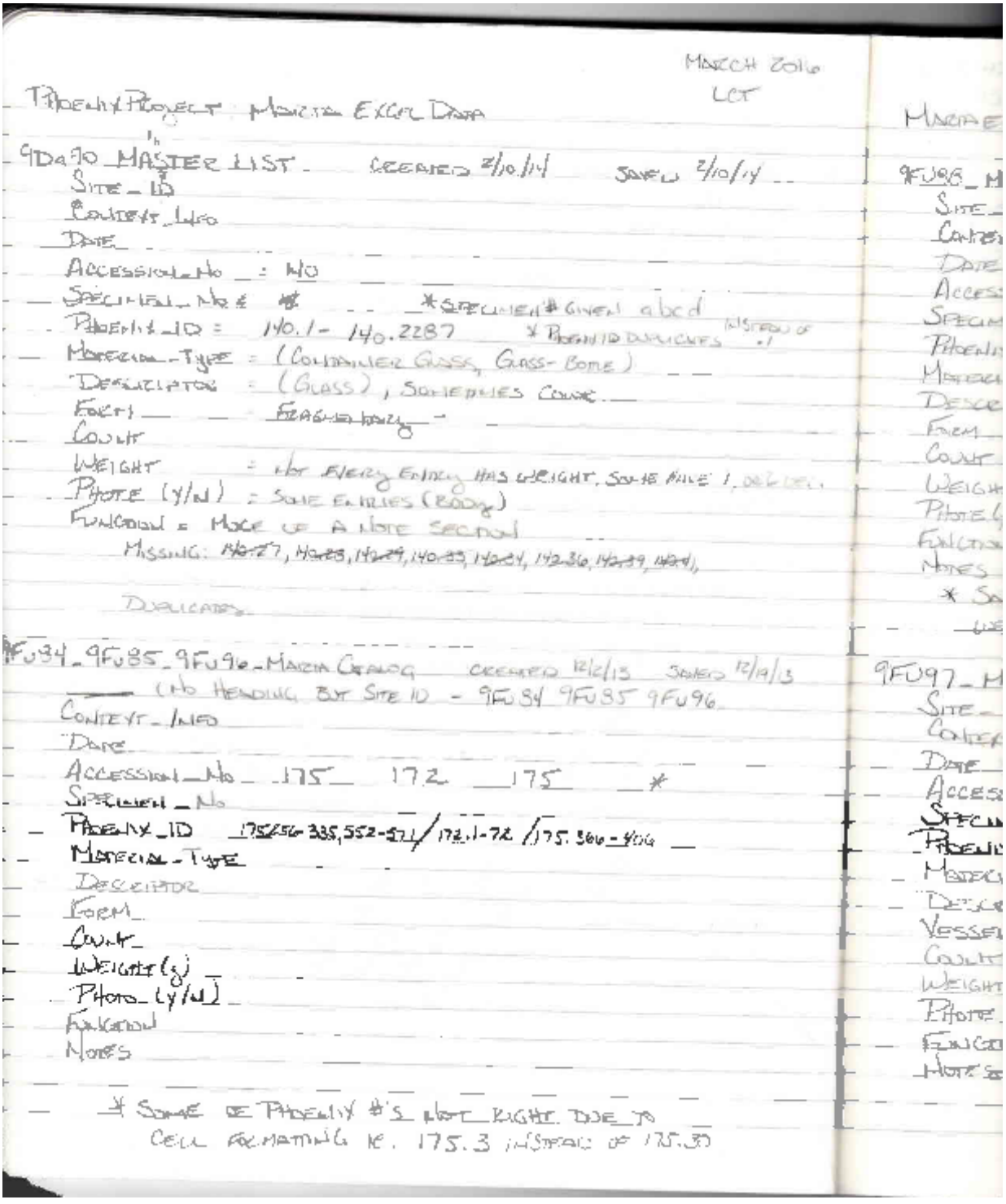
* Some specimen #s have letter prefix w/ basic key to what this means



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DESCRIPTION = (GLASS), SOMETIMES COLOR
FORM FRAGMENTARY
COUNT
WEIGHT : NOT EVERY ENTRY HAS WEIGHT, SOME HAVE 1 DECIMAL
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FUNCTION = MODE OF A NOTE SECTION

MISSING: ~~140.27~~, 140.28, 140.29, 140.33, 140.34, 142.36, 142.39, 140.41,

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- COUNT
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- PHOTO (y/n)
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- NOTES

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- NOTES

MARCH 2016
LCT

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NOTES
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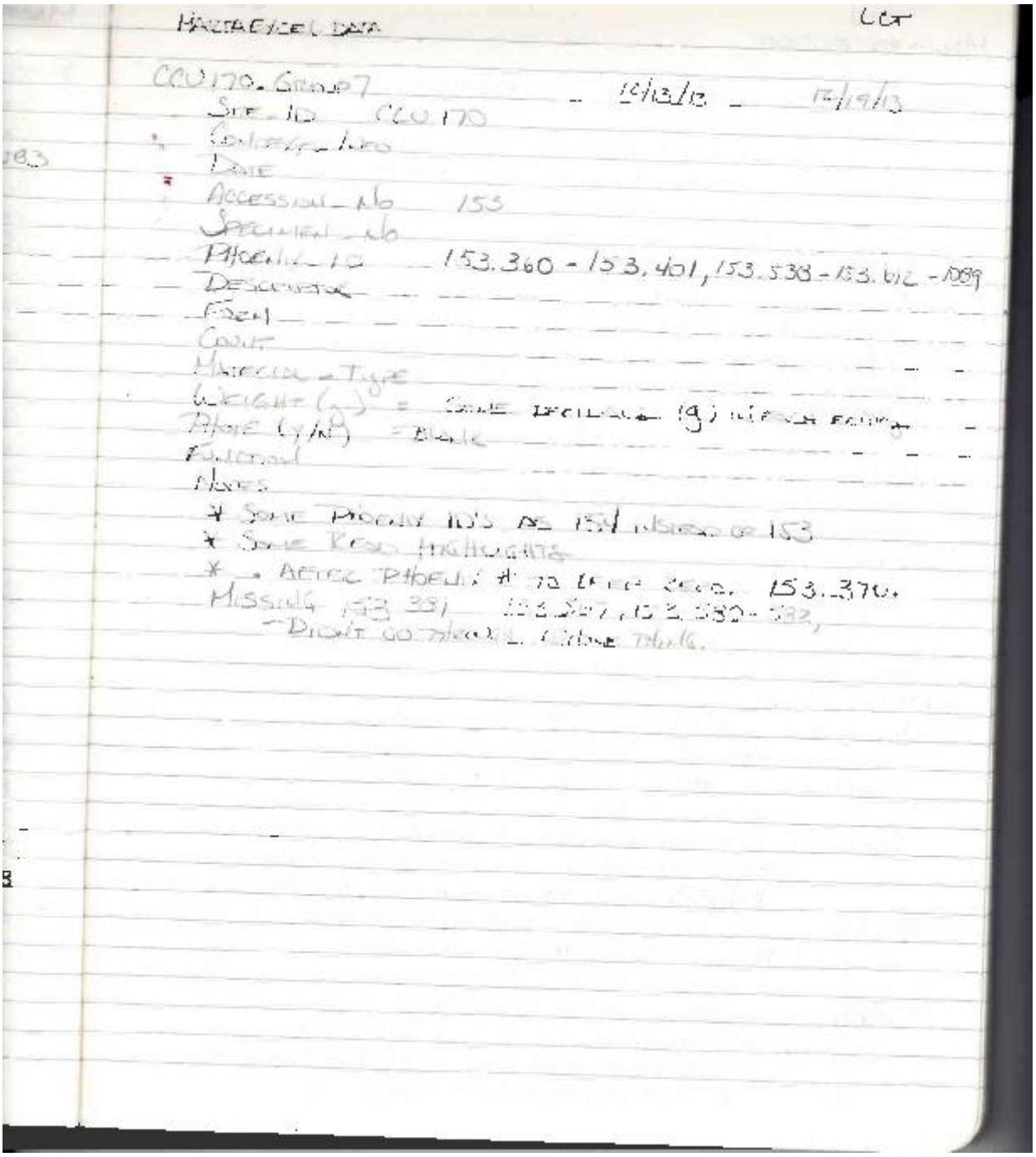
COUNT
WEIGHT (g) IN GRAMS
PHOTO - WORDS


MACRAE EXCEL DATA
CCU
CCU170 - GRID 7 - 12/13/13 - 12/19/13
SITE_ID CCU170
CONTEXT_INFO
DATE
ACCESSION_NO 153
SPECIMEN_NO
PHOTO_ID 153.360 - 153.401, 153.538 - 153.612 - 1089
DESCRIPTOR
ITEM
COUNT
MATERIAL_TYPE
WEIGHT (g) = SAME
PHOTO (Y/N) = BLANK
FUNCTIONAL
NOTES
* SOME PHOTO ID'S ARE 154 INSTEAD OF 153
* SOME READ HIGHLIGHTS
* - AFTER PHOTO # 72 THERE SEEMS 153.370-
MISSING 153 251 153.527, 153.580-582,
- DIDN'T GO THROUGH ALL ROWS THANK

MARTA EXCEL DATA

6/13/13 1/22/14

MARTA_MASTER_ .jpg

SITE_ID

CONTEXT_INFO = SOME BLANK

DATE = SOME mm/dd/yyyy & SOME NOV 23, 1973

ACCESSION_No

SPECIMEN_No = SOME CAPS

PHOENIX_ID = NOT COMPLETE

FUNCTION = BLANK

CLASS = HISTORIC CERAMIC, ETC

MATERIAL_TYPE

MATERIAL_TYPE (LOOKS LIKE COPY OF CLASS)

COUNT

WEIGHT (g)

DESCRIPTION

DESCRIPTION (ONLY ONE ENTRY)

VESSEL FORM

PHOTO = ALL KINDS OF DIFFERENT ENTRIES

NOTES

WORKSHEETS -

MARTA_MASTER

MCDANIEL = NO PHOENIX #, (g) IN ENTRY,
214, PI-A202

9FU117 = NO PHOENIX #, g IN ENTRY
189, 933 - 957

9FU120 = SAME AS 9DU120, NO PHOENIX #, g IN ENTRY
189, 2084 - 22109 — DUPLICATES NOT GIVEN DESIGNATION!
2162, 2163 (MISSING) => THERE IS A 2163 BUT COLOR ..., NO CONTEXT INFO

9FU118a = NO PHOENIX #, g IN ENTRY,
189, P835 - 1019 — DUPLICATES NOT GIVEN DESIGNATION!
851, 853, 859 MISSING

9FU118b = NO PHOENIX #, g IN ENTRY
189, P1020 -
1023 - 1026, 1032, 1034, 1037-38, 1046, 1064, 1096-97,
1107, 1109-111, 1114, 1133, 1156, 1170,

LOT

9DA131 NO PHOENIX ID, & IN ENTRY, SPECIMEN # HAVE.!
153, 54-276
9FU89 * NO PHOENIX ID, & IN ENTRY
170, 190-269 4013-4028 G
9DA90 * SAME
140 636-669
9FU91 NO WEIGHTS, NO ~~SITE~~ # PHOENIX #
170, 466-1646

* PENCIL = INFO FROM ORIGINAL SPECIMEN CATALOGS SCANNED AND SEPARATED BY SITE/CCU. THE PEN IS THE ADDITIONAL DATA FOUND

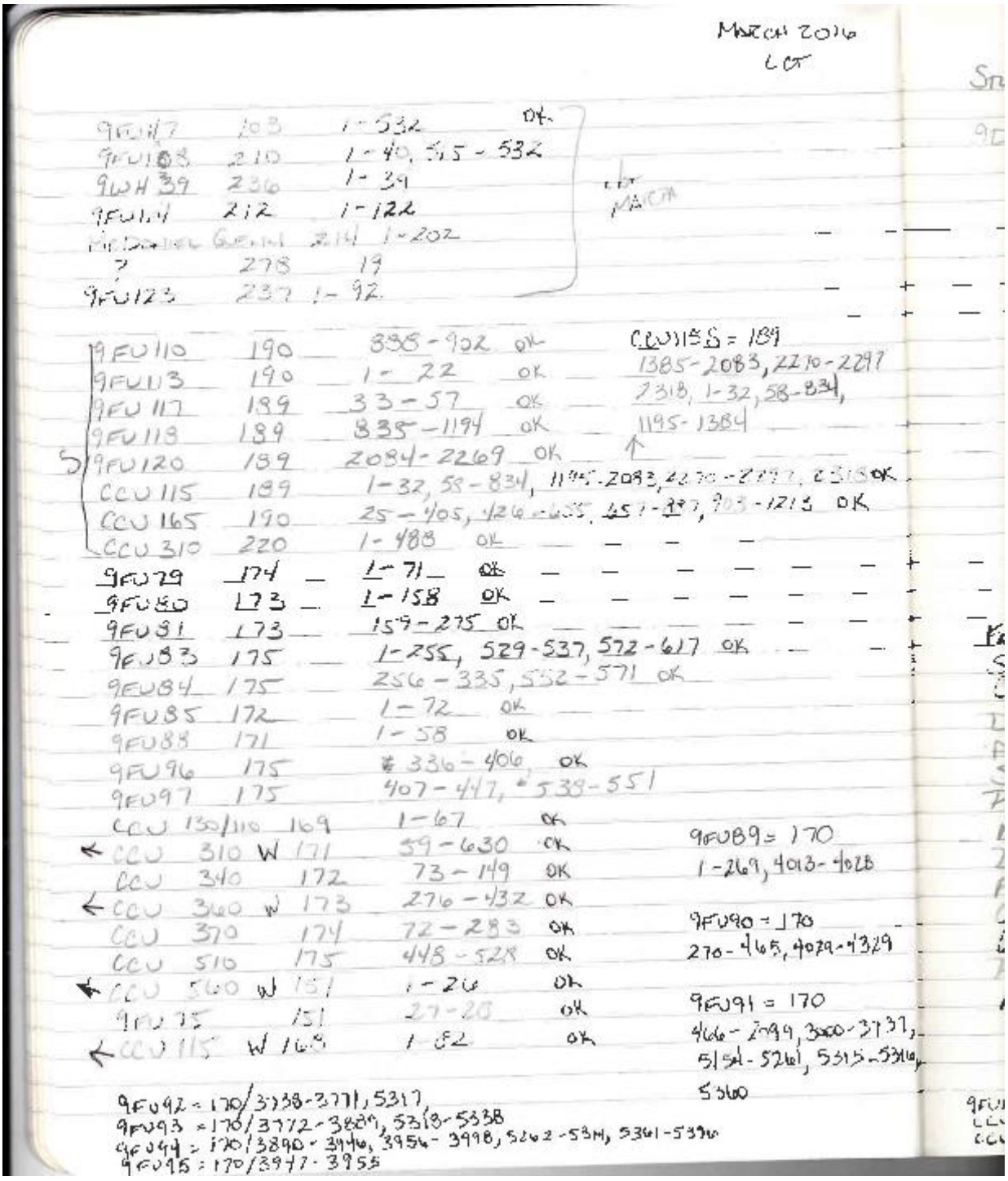
✓ 9DA90	140	1-~~2287~~ 1103, 1973-2287		1-709
✓ 9DA129	140	2288-2343		
✓ 9DA130	140	1109-1972		
✓ 9FU74	142	1-14, 1-5		
✓ CCU 170	141	1-26		
✓ CCU 330	139	1-125		
✓ CCU 345	140	1104-1108		
✓ CCU 560	134	1-155		
9DA127	152	1-274	OK	
✓ 9DA131	153	54-276	OK	
✓ 9FU77	153	1-53	OK	
✓ CCU 116	163	73-157	OK	
← CCU 120	163	1-72	OK	E LINE ADD 158-372
CCU 125	164	1-3	OK	
CCU 130	165	1-425	OK	
← CCU 170	153	217-1206	OK	E LINE
CCU 315	166	1-719	OK	
CCU 360	167	1-133	OK	
CCU 380	187	1-16	OK	
9FU107	193	1-94	OK	
← CCU 120	192	1-45	OK	N LINE
CCU 140	193	95-450	OK	[illegible]
CCU 160	194	1-105		1-42, 61-105
CCU 185	221	1-127	OK	
CCU 415	222	1-280	OK	

9DA127 = 152
1-274
9DA131 = 153
54-276
DUPLICATE
9DA131, N

E-LINE-SPECIMEN
CATALOGS

FILE [illegible] IS [illegible]

N



March 2016
LCT

9FU117	203	1-532	OK
9FU103	210	1-40, 515-532	
9WH39	236	1-39	
9FU114	212	1-122	
[illegible]	GEM	214	1-202
?	278	19	
9FU123	237	1-92	

9FU110	190	898-902	OK	CCU155 = 189
9FU113	190	1-22	OK	1385-2083, 2210-2297
9FU117	189	33-57	OK	2318, 1-32, 58-834,
9FU118	189	835-1194	OK	1195-1384
9FU120	189	2084-2269	OK	
CCU115	189	1-32, 58-834, 1195-2093, 2270-2297, 2318	OK	
CCU165	190	25-405, 426-[illegible], 457-897, 903-1215	OK	
CCU310	220	1-488	OK	
9FU79	174	1-71	OK	
9FU80	173	1-158	OK	
9FU81	173	159-275	OK	
9FU83	175	1-255, 529-537, 572-617	OK	
9FU84	175	256-335, 552-571	OK	
9FU85	172	1-72	OK	
9FU88	171	1-58	OK	
9FU96	175	# 336-406	OK	
9FU97	175	407-447, * 539-551		
CCU 130/110	169	1-67	OK	
CCU 310 W	171	59-630	OK	9FU89 = 170
CCU 340	172	73-149	OK	1-269, 4013-4028
CCU 360 W	173	276-432	OK	
CCU 370	174	72-283	OK	9FU90 = 170
CCU 510	175	448-528	OK	270-465, 4029-4329
CCU 560 W	151	1-26	OK	
9FU75	151	27-28	OK	9FU91 = 170
CCU115 W	169	1-82	OK	466-2099, 3300-3737, 5154-5261, 5315-5316, 5360

9FU92 = 170/3738-3771, 5317,
9FU93 = 170/3772-3829, 5318-5338
9FU94 = 170/3830-3946, 3956-3998, 5262-5314, 5361-5390
9FU95 = 170/3947-3955

MARCH 2016
LCT

STUDENT PROJECTS: FALL 2013_METHODS_PROJECTS: 9DA90

9DA90_ARTIFACT ANALYSIS 2/23/14 2/28/14

SITE_ID
CONTENT_INFO
DATE YY
ACCESSION_NO NO
SPECIMEN_NO
PHOENIX_ID - YES
MATERIAL_TYPE
DESCRIPTION
FIELD
FUNCTIONAL
NOTES

* MOST HIGHLIGHTED GREY
SOME YELLOW HIGHLIGHTS
* LOOKS TO BE COPY OF UST. PROCESS

FALL 2015 H
SITE_ID
CONTEXT_INFO
DATE
ACCESSION NO 193
SPECIMEN NO 1-94
PHOENIX_ID
MATERIAL_TYPE
DESCRIPTION
FIELD
COUNT
WEIGHT
PHOTO (Y/N)
FUNCTIONAL
NOTES

57
4/3 30
5/3
36
1634
7378
108
1

9FU102 = 170/3999-4012
CCU 140 W = 170/4330-4680, 4695-5359
CCU 170 W = 170/4681-4694 → COULD BE MISLABELED

Appendix B: Atlanta History Center.

AHS
Atlanta Historical Society
3101 Andrews Drive, NW Atlanta Georgia 30305

Collection Management No.: ML1992.18
Initials & Date: JB; 9/18/92

RECEIPT OF DELIVERY

Received from/Delivered to:
Dr. Rowe Bowen
Department of Transportation, State of Georgia
Office of Environment/ Location
3993 Aviation Circle
ATlanta, Georgia 30336-1593
Phone 404-699-4455

Objects	Description	Insurance Value
11 Boxes	Maddox Park Archaeological Material; including two (2) items selected for loan: ML.1992.18.M02 - tableware and ML.1992.18.M03 - mule shoe.	

Please sign and date this form and ~~fax~~ retain the PINK copy for your records and return the rest to AHS. Thank you.

Return of objects not selected for loan.

For Museum courier

Via

Department Museum Department

Received by [signature] Date 9-21-92

Released by [signature] Assist. Registrar Date 9-21-92

Remarks:

RETURN RECEIPT

Received by _____ Date _____

Released by _____ Date _____

Remarks:

History of Atlanta
SEE: disk LB/REG3.2,
file LOAN81.

Lender:

MARTA
2424 Piedmont Avenue, NE
Atlanta, Georgia 30324-1024
ATTN.: Ken Cregor, General Manager
404/848-5000

Lent to: Atlanta Historical Society, Inc.

AHS Use: History of Atlanta exhibit

Loan Period: April 8, 1992 to July 26, 1993

A Selection of Maddox Park Archaeological Material: .M01 - .M56

.M01 (1.) token; marked: MONARCH SALOON 276 1/2 WHEAT STREET
LOCATION: K-O; E-12O; level 21-22

.M02 (2.) tableware
LOCATION: 60x, 120y, 16, 15

.M03 (3.) mule shoe
LOCATION: 60X, 120Y, 17

.M04 (8.) Bennington-type churn fragment (base)
LOCATION: Trench I (General)

.M05 (9.) teacup fragment; marked: AIU 26935
LOCATION: Trench I (General)

.M06 (10.) porcelain fragment; marked: RTK Germany; marked with sticker "69"
LOCATION: Trench I (General)

.M07 (11.) porcelain lid; described on archaeological report: "Canonese, blue design, lid fragment"; marked with sticker "68"
LOCATION: Trench I (General)

.M08 (12.) porcelain fragment
LOCATION: Trench I (General)

.M09 (13.) soap dish fragment; marked: T & Co.
LOCATION: Trench I (General)

.M10 (14.) handle
LOCATION: Trench 1 (General)

.M11 (15.) chamber pot fragment (base); marked: SPMC—IRONSTONE
LOCATION: Trench 1 (General)

.M12 (16.) porcelain doll head
LOCATION: Trench 1 (General)

.M13.A-B (17.) LOCATION: #3; 2'-3' E
.M13.A bottle fragment, green-glass; marked: PATENTED NOV 30, 1858
.M13.B bag of assorted shards; bag marked "#3; 2'-3' E"

.M14 (18.) chamber pot fragment
LOCATION: #3S; 1'-2'

.M15.A-B (19.) LOCATION: 3E; 1'-3'
.M15.A bottle, cobalt glass; complete; marked with sticker with "18"
.M15.B small box of assorted shards; box marked "#3E; 1'-2'

.M16 (20.) bottle, green-glass, water with rounded base
LOCATION: Trench 1 (General)

.M17 (21.) bottle; marked: HOOD'S SARSA PARILLA/ APOTHECARIES/ LOWELL MASS; complete
LOCATION: Trench 1 (General)

.M18 (22.) bottle, brown-glass, round body; complete
LOCATION: Trench 1 (General)

.M19 (23.) bottle, green-glass; marked: A.B.G. M. CO. LL; complete except for chip on lip
LOCATION: Trench 1 (General)

.M20 (24.) bottle, clear-glass; marked on base: 170; complete
LOCATION: Trench 1 (General)

.M21 Entry VOID

.M22 (25.) flowerpot, earthenware
LOCATION: Trench 2 (General); lower 1/2, bottom

.M23 (26.) oval platter fragment; marked: KT & K China
LOCATION: Trench 4 (General)

.M24 (27.) oyster shell (1 of 2)
LOCATION: Trench 4 (General)

.M25 (27.) oyster shell (2 of 2)
LOCATION: Trench 4 (General)

.M26 (28.) porcelain handle, white glaze; described on archaeological report as: "large embossed handle"; marked with sticker "7"
LOCATION: Trench 4 (General)

.M27 (29.) footed serving bowl fragment
LOCATION: Trench 4 (General)

.M28.A-B (30.) LOCATION: Trench 4 (General)
.M28.A bottle, green-glass; marked: D DE LES DERNIERS, ATLANTA
.M28.B small glass fragment

.M29 (31.) bottle, cobalt-blue-glass; marked: BROMO-SELZER/ BALTIMORE
LOCATION: Trench 4 (General)

.M30 (32.) bottle, Hutcheson-type, green-glass; marked: Atlanta Consolidated Bottling Co./ AGW
LOCATION: Trench 4 (General)

.M31 (33.) bottle, Hutcheson-type, green-glass; marked: Ga. Bottling Co., AGW; lip intact but shipped
LOCATION: Trench 4 (General)

.M32 (34.) bottle, Hutcheson-type, green-glass; marked: Ga. Bottling Co., Atlanta; neck broken off
LOCATION: Trench 4 (General)

.M33 (35.) bottle, green-glass, small; label on collecting bag reads "probably/ Drug/ Phar/ applied lip"
LOCATION: Trench 4 (General)

.M34 (36.) bottle, white/green-glass, small; label on collecting bag reads "med/ Pharm/ applied lip/ note tool mark/ on lip"
LOCATION: Trench 4 (General)

.M35 (37.) pot, cooking
LOCATION: Trench 4 (General)

.M36 (38.) glass doorknob and shaft
LOCATION: Trench 4 (General)

Appendix C: Antonino J. Waring Archaeological Laboratory at UWG.

ACC #	PROJECT NAME	SECONDARY NAME	DATE	P.I.	P.I. COMPANY	CONTENTS	SITE #	CATALOG #	OWNER
GSU-	MARTA SURVEY					DOCUMENTS			
GSU - 222	MARTA NORTH LINE CCU 415 INCLUDES ART CENTER STATION					ARTIFACTS			
UWG-2090.029	TOTALLY NEGATIVE FINDINGS REPORT FOR 2004: ARCHEOLOGICAL SURVEY FOR THE PROPOSED MARTA STATION PLAZA IMPROVEMENTS, DEKALB				SOUTHEASTERN ARCHEOLOGICAL SERVICES, INC.	DOCUMENTS			GEORGIA DEPARTMENT OF TRANSPORTATION
UWG-2090.036	TOTALLY NEGATIVE FINDINGS REPORT FOR 2004: PHASE I ARCHAEOLOGICAL SURVEY OF COLUMBIA PARK, AVONDALE MARTA STATION				EDWARDS-PITMAN ENVIRONMENTAL, INC.	DOCUMENTS			GEORGIA DEPARTMENT OF TRANSPORTATION
GSU-	MARTA SURVEY					DOCUMENTS			
GSU-133	MARTA SURVEY, River Road Site; 9DA89 (CCU 191; PARCEL E118)		NOVEMBER 1975 - JUNE 1977	BARBER; LOHMAN		ARTIFACTS		MARTA TOY TRAIN	
UWG-3026.040	2006 NEGATIVE REPORTS: PHASE I ARCHAEOLOGICAL SURVEY OF THE CHAMBLEE MARTA STATION PEDESTRIAN IMPROVEMENTS PROJECT	GDOT-NEG-2006.040; GDOT [STP-0004-				DOCUMENTS			GEORGIA DEPARTMENT OF TRANSPORTATION

Appendix D: Complete Reports Submitted by Katherine Singley.

KATHERINE SINGLEY

Conservation Anthropologica
1538 September Chase
Decatur, Georgia 30033

email: singley@mindspring.com
Tel: 404-373-0995

EXECUTIVE SUMMARY

Condition Assessment of Phoenix Artifacts, February 2015

Over a period of four days, 400 accessions in the MARTA archaeological collection were examined. The 400 accessions—largely metal-- were pulled from MARTA type collections stored in Room 333, as well as from two specific MARTA sites, 9DA89 and 9FU91. The purpose of this examination was to assess the conditions of the metal artifacts, especially those that were treated in the GSU processing laboratory right after excavation in the 1970's.

This limited study complements other efforts recently made at Georgia State to upgrade the curation of the MARTA artifacts. New heavier bankers boxes (469) have been purchased, as well as shelving, more stable zip lock bags, acid-free tissue, and Ethafoam. Dehumidifiers, set at 30%, have been installed to control environments in the storage ranges. Information is being systematically entered into the Heurist database used for this collection.

Details of treatments performed forty years ago are slim. While brass and lead artifacts were not treated, ferrous artifacts were put through manganesed phospholene 7 (MP7), an inhibitive phosphoric acid originally developed for the military. Artifacts were then sprayed with Krylon. The length of time soaking in MP7, any application of low heat, the method of drying, and the number of spray coats are unknown. Cast iron, wrought iron, mild steel, white metals, plated artifacts, and enamelwares were all treated with MP7. Bulk soaking and mixing of artifacts were likely.

About half the ferrous artifacts were now found to be actively corroding, forty years after treatment. Surfaces are spalling. There are pustules of active chloride corrosion. Additionally, half the copper and brass, which were untreated, are now also actively corroding.

Hard copies of the examination forms, with quick notations of conditions, were left with the Department of Anthropology, as well as a disc of 150 images to illustrate artifacts with problematic corrosion. Both the notations and images were to be entered into the MARTA Heurist database. A visual atlas for students also was created.

While metals are problematic, faunal and bone treated with Gelva (ethyl acetate emulsion) appear stable, as are wood, cork and nuts treated with PEG. Paper, apparently sprayed with silicone, appears in good condition. Leather, treated with linseed or mineral oil, is probably now turning acidic and should be isolated. Nine artifacts of suspected asbestos were also identified.

Continued low relative humidity (<30%) for these artifacts is recommended in order to slow corrosion. Replacing the dehumidifiers every three years should be anticipated. Using wireless data loggers is recommended to monitor the consistencies in the multiple locations. The use of silica gel still is a possibility to create microclimates, perhaps retrofitting 1 or 2 Lane cabinets to make even drier environments. Paper labels should be isolated in smaller zip locks, especially around lead alloys. Taped paper labels should be removed from surfaces of glass bottles. Copper and brass alloys could easily be treated with the inhibitor benzotriazole and protectively coated.

The Technological Significance of the MARTA Metals

Two dumps excavated in 1977 as part of the MARTA archaeological mitigation provide many metal artifacts that underscore the technological changes in metallurgy after the Civil War. Dump 9DA89, near the Edgewood station, dates to 1910-11. Dump Fu91, under the Five Points Station, dates to 1892-95. Each produced at array of mass-produced domestic and industrial artifacts: cast iron, wrought iron, galvanized or plated mild steel, tooled steel, enamelware, and brass.

Cast iron is an alloy of iron and carbon (3-5%). A liquid mix of iron and carbon known as *pig iron* is made in a blast furnace and then poured into loan or sand molds. Known since the 1600's, cast iron by 1900 was often an auxiliary activity of furnace operations.

Common artifacts of cast iron include stove parts, kettles, and skillets. The even carbon distribution can make these artifacts brittle. The carbon also acts like a cathode in a galvanic cell within the alloy: graphite is left behind as the iron is selectively attacked.

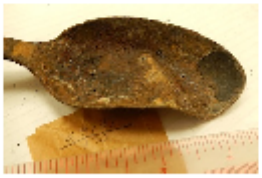
Steels also are fabricated from liquid mixes of iron and carbon, but with carbon at a lower concentration (<3%). High carbon steel is about 1.5% carbon, while low carbon steel is about .5% carbon, the same concentration as *wrought iron* crafted by hand in a traditional forge. Low carbon steel is also known as "mild" steel.

After the Civil War steel production grew rapidly in the United States with the inventions of the Bessemer (1856) and open hearth (1868) furnaces. Both processes oxidized and purified pig iron, and then added carbon back at the end. By 1886, 88% of American steel was made using the Bessemer method. A steel mill's integrated operation moved from blasting to rolling the product bar and sheet stock.

Since the 1870's other metals such as nickel, cobalt, and manganese have been added in small amounts to create steels with specific properties. A high carbon steel with 2-14% chromium was used after 1900 for tools like files or wrenches.

Mild steel sheet was protectively coated to prevent corrosion. Galvanizing sheet with molten zinc had been developed in the 1830's, essentially replacing the older tinning method.

Everyday objects with substrates of mild steel needed protection as well. Enamelware appeared in 1865, and agateware in 1876: both of these used a molten glaze of colored silica to protect the substrate. Plating, using more noble "white" metals such as German silver, was another way of protecting mild steel, particularly tableware. Alkyd paints, enameled paints, and bituminous (coal tar) coatings also were applied.


Fragments of *copper* wire, so critical in the early age of electricity, are found in abundance in the MARTA dumps. To increase it strength and working properties, copper traditionally has been alloyed with a variety of metals to make brasses and bronzes. While a *bronze* is an alloy with tin (up to 30%) and lead (up to 4%), a brass is an alloy of copper with zinc.

Most of the cuprous artifacts from MARTA contexts are actually brasses. Depending on the alloy compositions, brasses can be rolled, stamped, drawn, or turned on a lathe. A brass with less than 36% zinc is called an *alpha brass*, because there is only one homogeneous phase (alpha) phase in the alloy, essentially a solid solution of zinc dissolved in the copper. Alpha brasses are valued for their ductility in cold working. Both drawn cartridge cases and cold-worked screws and rivets of yellow brass fall into this class.

At higher zinc concentrations (36-45%) these properties change, as the copper is saturated and less zinc is absorbed. Definite zinc-rich phases are evident. A *beta brass* has a lower melting point and is better suited for casting and hot working. Cast yellow brass (38% zinc) and Muntz metal (40% zinc) are both beta brasses.

A variety of other alloys are made from copper combined with zinc, tin, nickel, and/or arsenic. Copper coins usually contain small amounts of tin and zinc. *Gunmetal* is copper with 9% tin. If arsenic and tin are added to Muntz metal to stabilize the excess zinc, especially for maritime or corrosive industrial applications, a *naval brass* is created. *Nickel or German silver* contains no silver, but is an alloy of copper with nickel and tin (both 18%) to make a "white" brass. The surface is then electroplated with silver.

Corrosion Processes for Brass and Iron

Corrosion in all metals is a release of energy, essentially a return of that artifact to the minerals from which it was fabricated. All metal artifacts should be considered as galvanic cells. Dissimilar metals may be adjacent in a deposit, becoming cathodes and anodes. An artifact, particularly an alloy with dissimilar internal phases, becomes its own galvanic cell. In crushed or distorted metal surfaces, the underlying crystal structures are deformed and weakened, thus ripe for corrosion.

In brasses, excess zinc (one of the least noble metals) may be preferentially leached out. The brass substrate becomes porous weak with this de-zincification. More aggressive corrosion is from chloride ions, which results in "bronze disease," the insoluble corrosion product paratachamite (basic cupric chloride) with its characteristic light green color.

Other corrosion associated with brasses is less harmful. Anaerobic burial environments may cause black supplied films. Alkaline groundwater may produce dark green malachite or blue azurite, both carbonates. All these corrosion products are stable, although sometimes disfiguring.

Dickens believed that, because copper generated its own protective patina, no treatment was needed. Artifacts were simply sprayed with Krylon. Sine the 1970's conservation science has proven that bronze disease may be triggered, well after excavation, by high relative humidity in storage and contamination from handling. Contaminating chlorides are now easily treated with the corrosion inhibitor benzotriazole (BTA), which essentially "ties up" the reactive sites at a molecular level to suppress electrochemical activity. Benzotriazole is used routinely on all artifacts of copper and its alloys. BTA can be applied successfully under vacuum, even without first removing corrosion products.

Iron corrodes with more complicated, competing reactions, depending on oxygen concentration, available moisture, and pH of soil. Within iron's galvanic cell, Fe2+ ions, released at anodic sites, are rapidly hydrolyzed to iron (II) hydroxide, Fe(OH)2. With further oxidation, the formation of beta ferrous oxyhydroxide (akaganite) is next, particularly critical because available chlorides are freely attracted to it. The formula for akaganite is B-FeO(OH).

At all galvanic cells deep within an artifact, concentrated and acidic ferrous chloride (FeCl 2) is trapped at the anodes.

The corrosion on the surface of iron is rust, a hydrated iron oxide.

Iron artifacts initially may seem stable after excavation and drying. However, greater atmospheric moisture and oxygen can stimulate more rust. Additionally, ferrous oxyhydroxides have more expansive crystal structures, three times as big as iron. Stresses result in cracking and exfoliating. Trapped pockets of ferrous chloride concentrate, becoming pustules or spheres. Because ferrous chloride is hygroscopic, surfaces may be shiny and "weep." All these indicate aggressive chloride corrosion.

While the chlorides are soluble, removing them using aqueous solutions is difficult and incomplete. Past treatments have included boiling in changes of distilled or deionized water. Electrolysis and electrophoresis have also been used. Present treatments involve a prolonged, passive soak in dilute sodium hydroxide (lye). Chlorides are released into the soaking solution, while lye's high alkalinity suppresses corrosion. Lye is also thought to neutralize any remaining acidic ferrous chloride.

While copper alloys have their wonder cure in benzotriazole, there is no magic treatment for iron. Even after extensive processing in a laboratory, dry storage (at less than 20% RH) is needed long-term to prevent the continued attack by hygroscopic chlorides. Ways of creating dry storage for iron recovered in bulk are presented below.

Past Treatment with MP7

Many of the ferrous artifacts excavated by Dickens were treated with MP7, or manganesed phosphate 7. Developed by Western Reserve Chemicals in Ohio, MP7 was used by the military and industry to treat rusting on new metals in service and in storage. The proprietary formulation of MP7 has as its base phosphoric acid, and the stock solution is diluted with water. By exposing metals to the aqueous solution, rust is removed and an insoluble and protective layer of passivating phosphate is deposited on surfaces.

In the 1970's MP7 was used to process ferrous artifacts from many archaeological sites. The National Park Service used it at Jamestown; North Carolina used MP7 on the iron recovered on their state sites. It was inexpensive and fast and relatively safe to use in a field laboratory.

Surfaces may be slightly grey from the phosphate deposition. On some artifacts, a distinct layer can be seen in cross section. Alloyed artifacts may appear stringy or pitted after treatment with MP7.



Details of how MP7 was used in treating the MARTA artifacts are slim. No treatment documentation was kept. There is no indication of strength of solution, dilution, and immersion time in MP7. The solution could have been heated, increasing the release of contaminating chlorides from the iron pores into the treatment "stew" of MP7.

Artifacts from the same provenience could have been treated in batches: wrought iron mixed in with plated and galvanized artifacts. It is not known if the treatment solution was changed after each soak. Spent MP7 likely would have been loaded with dissolved ions from alloying metals, which could have been re-plated back onto surfaces.

Drying method after soaking, as well as time elapsed before final lacquering, are both unknown. While it is known that artifacts were sprayed with Krylon (an acrylate methacrylate co-polymer), trapping moisture under this surface would have guaranteed failure of the coating. Indeed, many surfaces are now coated with a white haze, likely deteriorated Krylon.

Some MARTA iron could have been partially treated in bulk just to get diagnostic information. Also, it appears that some brass artifacts were treated with MP7, and this may have been due to mistaken identification.

Long-term, MP7 is failing because there are still active and mobile chlorides deep within the pore structure. A passivating phosphate layer is hard to achieve on irregular surfaces of archaeological iron. As in plating, an incomplete coating compromises protection. The iron continues to corrode from the inside out.

ACTIVE CHLORIDE ATTACK ON COPPER ALLOYS: POWDERY LIGHT GREEN BRONZE DISEASE MAY BE LODGED IN PITS





ACTIVE CHLORIDE ATTACK ON IRON ALLOYS:
PUSTULES OR DRY MICROSPHERES OF CHLORIDES, SHINY SURFACES





TREATED WITH MP7 BUT NOT COATED (?)
CONTINUING TO CORRODE



TREATED WITH MP7, THEN COATED IN THE 1970's
KRYLON HAS NOW DETERIORATED
ARTIFACT IS CONTINUING TO CORRODE AS MOISTURE GETS IN

PLATED, ENAMELLED, AND PAINTED STEEL THAT HAS BEEN TREATED (?),
NOW UNSTABLE, WITH LOSS OF ORGINAL SURFACE AS IT IS PUSHED OFF
BY EXPANDING CORROSION PRODUCT

GALVANIZED SHEET METAL TREATED (?),
NOW UNSTABLE, WITH LOSS OF ORGINAL SURFACE AS PUSHED OFF
CRUSHED SURFACES UNDER STRESS EASILY CORRODE

STORAGE TECHNIQUES FOR THE PHOENIX ARTIFACTS

Substantial efforts have been made recently at Georgia State to upgrade the curation of the MARTA artifacts. New heavier bankers boxes (469) have been purchased, as well as shelving, more stable zip lock bags, acid-free tissue, and Ethafoam™. Dehumidifiers, set at 30%, have been installed to control environments in the storage ranges. Information is being systematically entered into the Heurist database used for this collection.

Packing techniques for boxed collections appear standard for archaeological repositories of this type. They are appropriate. The artifacts are enclosed in zip-lock bags. Ethafoam ™ sheeting and acid-free tissue are used to cushion zip- locks. The primary enclosures are banker's boxes. The boxes are loaded to about 30 pounds and do not appear to be overly packed.

Boxes are placed on industrial shelving. They generally are not stacked.

Continued low relative humidity (<30%) for these artifacts is recommended in order to slow corrosion. Replacing the dehumidifiers every three years should be anticipated.



RECOMMENDATIONS FOR THE PHOENIX ARTIFACTS

"Bean bag" supports and snakes are needed for reconstructed ceramics and glass stored in cabinetry. The fabric should be washed, unbleached muslin. Ethafoam™ rods are another option.

Paper labels cut from original kraft paper bags should be isolated in smaller zip locks. Taped paper labels should be removed from surfaces of glass bottles. Acid-free hangtags are more appropriate for identifying information.

Old film canisters used to store coins, buttons, and faunal materials should be replaced with clear glass vials.

Location maps for shelving should be posted in each range.

The use of silica gel still is a possibility to create microclimates below 20%. Options in selecting a desiccant are discussed below. Perhaps 1 or 2 existing cabinets could be retrofitted with better gaskets to make even drier environments. Retrofitting old cabinets is described by Cumberland (1994).

Using wireless data loggers is recommended to monitor the consistencies in the multiple locations. Most popular are Hobos (www.onset.com) and PEM2 (www.ipi.org). Factors to consider are cost, ease of downloading data, and compatibility with GSU's wireless network and the Heurist program.

Using bar codes to track artifacts is also a possibility. Each storage box would have a bar code, and the contents of each box would be retrieved at the artifact level. At the bag level, tags could be printed in-house using acid-free paper.

As a preventive measure, copper and brass alloys could easily be treated in bulk with the inhibitor benzotriazole and protectively coated.

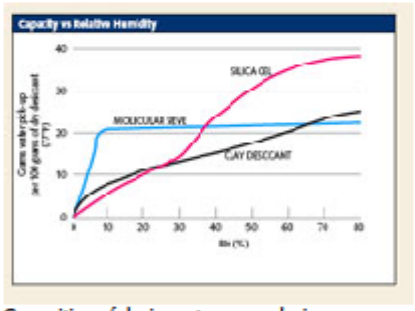
For extra protection against seismic motion, bungee cords should be placed across the front of the shelving units, which should be anchored into walls.

MICROCLIMATES USING DESICCANTS

Microclimates are used commonly in archaeological repositories for storing metals. Iron, copper, brass, silver, zinc, and lead artifacts for long-term storage would have to be separated out from the parent collections. A computer can be used to track storage locations of artifacts. Publications concerning dry storage of iron include those by Spriggs (1978), Knight (1990), Keene (1994), Watkinson and Lewis (2005) cited in the bibliography.

There are two principal desiccants used in repositories and museums: silica gel and molecular sieves. Either agent must not only maintain a low RH (<20%) within the container, but also continue to serve as a moisture absorber in case outside temperatures drop suddenly, resulting in condensation within the storage container.

The volume of desiccant and its ease of handling, including regeneration, are other factors to consider. Three major distributors of pre-packaged silica gel and molecular sieves are Desiccare (www.desiccare.com) and Drypak (www.drypak.com). Besides the desiccants, both companies carry oxygen scavengers, RH indicator cards, and disposable data loggers.



Capacities of desiccants, www.desiccare.com

MOLECULAR SIEVES are manmade zeolites, synthesized alumina silicates. The porous crystalline has a strong affinity to capture and retain moisture. Type 3A is the most efficient grade because its pore size is similar to that of water. At room temperature, a molecular sieve can absorb more than 5 times the moisture of silica gel. Its uptake is also faster. Unlike conditioned silica gel, however, molecular sieves do not release moisture back again. There is no buffering quality. Also, reconditioning sieves is more difficult, since greater heat must be applied to drive the moisture off, which in turn destroys the packet material (usually Tyvek™ or Kraft paper). Molecular sieves are now available with dyes to indicate exhaustion.

SILICA GEL has been more widely used in the museum field (Lafontaine, 1984). Silica gel, an amorphous form of silica, has a large capillary structure that can hold condensed water vapor. Its pore diameter is much larger, at 22 A. It will absorb and desorb moisture to maintain a pre-set, conditioned level (here, <20%) provided that enough silica gel is provided to match the volume of the cabinet or drum. . *As a rule, five pounds of silica gel RD are needed per cubic foot of container.*

Monitoring the drums and buckets, by reading the indicator cards, will need to be conscientiously performed. Ready-made Tyvek packets and cardboard cartons are suggested for ease of handling and retrieving from the drums. Silica gel can be regenerated and then reused by heating the packets gently in a microwave or toaster oven. Because Tyvek™ can melt if heating is too aggressive, paper cartons are recommended, although the cost is much greater.

A better choice for silica gel desiccant may be a treated 1/8-inch polyester felt that has an even more efficient type of silica gel embedded in it. Each 20"x20" panel of the felt contains .375 pounds of silica gel, enough to condition one cubic foot. This sheet form of silica gel could be easily slipped down the interior wall of a drum or bucket, taking up much less space than a pound of conventional silica gel. While the felt cannot be regenerated by direct heating, the felt can be exposed to 20% silica gel and equilibrate itself over a few days. One sheet (20 inches x 20 inches) would be needed for a bucket, 5 or 6 for the drum. RHapid gel felt is available in pre-cut squares or by the bolt from Art Preservation Services in New York (www.apsnyc.com). RHapid Gel should last about two years in a tightly closed container.

Microclimates for storing the MARTA metals would likely combine these desiccants, balancing volumes, efficiencies, and degrees of access needed.

Preliminary Cost Comparisons

	5-gallon bucket (.7 cu.ft.)	30-gallon drum (4.2 cu. ft.)
Silica gel, loose, w/indic	5 lb @ $ 33	30 lbs. @ $ 198
Silica gel cartons, .5 lb	10 cartons @ 9.50 ea, $ 95	60 cartons @ 9.50 ea, $ 570
Tyvek silica gel	1- 16 unit bag @ $2.50	6- 16 unit bags, $15.00
RHapid gel	1 sheet @ $30	6 sheets, $ 180.00
Tyvek molec sieve	30-10 gr bag@ .15 ea, $ 4.50	180- 10 gr bags, $27.00

A third desiccant to be considered is a "cargo pack" used to prevent sweating in shipping containers. Cargo packs contain a mixture of high capacity adsorbents. However, they do NOT buffer and cannot be regenerated. A 1500-gram sachet costs about $7.80. Vendors include Superdry (www.superdry.us), Delta Adsorbents (www.deltaadsorbents.com), and DryPak (www.drypak.com). Cargo packs could be considered for trunks and cabinets that are seldom accessed.

OTHER STORAGE WRAPS

Wrapping artifacts in films containing a vapor phase corrosion inhibitor (**VpCI**) is also a possibility (Keene, 1985; Rebiere et. al., 1998). VpCIs can be used in conjunction with a desiccant, or even without a desiccant for storing bulk metals that are not diagnostic. As an economy move, unidentifiable or undiagnostic metal artifacts could be stored in bulk with a VpCI at ambient conditions, ideally housed in Coroplast cartons. Diverse metals, including galvanized iron and specialty steels, would be protected, although lead and zinc appear to react with the vaporized inhibitor. Collections still would have to be regularly inspected.

The main manufacturer of these films is Cortec. Among its liquid and wrap products is Cor-Pak™, a blue VpCI-126 HDPE film. Its translucency enables a visual inspection of contents. VpCI -126 is available in sheets and bags. Zip-locks come up to an 18" width, and 12 x 18" zip-locks cost about 45 cents each. The bags and film are reusable, although they may need to be replaced every two years. Additionally, Cortec manufactures EcoShield™, a paperboard impregnated with inhibitor.

DryPak Industries (www.drypak.com) carries the Cortec films and bags, as well as stick-on canisters of vapor phase corrosion inhibitors that could be mounted inside containers. A small canister costs about $8.00.

A newer technology uses oxygen scavengers (Mitsubishi RP-A), packed in sachets (Daniel, 1995; Costain, 2000; Mathias et.al., 2004; Thickett and Luxford, 2007; Beduhn, 2010). Each artifact is individually housed in an Escal pouch. Escal is a clear ceramic film that must be heat welded for a tight seal. Upon activation of the RP, the oxygen in the pouch is removed. The longevity of the oxygen- and moisture-free environment is directly tied to the quality of the heat seal. This particular technology is usually applied to extremely rare antiquities. The sachets, Escal membranes, and heat sealer are expensive. Also, the artifacts are no longer easily accessible for study. More information is on the Mitsubishi website,
http://www.mgc.co.jp/eng/products/rstuxy/rpsystem/unearthed.html.

MICROCLIMATES USING DELTA CABINETS

Delta Cabinets (www.deltadesignsltd.com) have improved their DDLX museum cabinets and now make their cases more suitable for creating microclimates. Gaskets are now silicone, air vents are removed, and seams are tight. Special steel trays for placing silica gel can be designed into the cases, making removal of the desiccant and its regeneration easier. With these improvements, the cases can commonly hold lower humidity for six months. A stock DDLX cabinet 36" (W) x 20" (D) x 84" (H), with a single door, is about $1,500. Each could hold between 16-24 bankers boxes, depending on their orientation. When placing the cabinets, enough space is needed to open the cabinet doors and access the trays of silica gel. Outfitting the cabinets with drawers would be more expensive.

Delta museum cabinets could later be placed on carriages of the Spacesaver compact storage.

With 16-24 boxes in each cabinet, about 80 to 120 pounds of silica gel would be needed to condition each cabinet. Again, ArtSorb sheets or one Cargo Pack sachet would be more cost effective than loose silica gel.

To create microclimates older geological cabinets also can be retrofitted with better gaskets (Cumberland, 1994).

MICROCLIMATES USING OTHER CONTAINERS

Thirty-gallon plastic drums with gasketed lids are appropriate for creating microclimates, as are weatherproof footlockers. Casters could be attached to both drums and footlockers for mobility and give maximum flexibility in placement.

The 48-gallon Rubbermaid "Actionpacker " footlockers are 42 inches long and are available from Wal-Mart or Target. Military containers ("Storm Cases") manufactured by Hardigg, (www.militarycases.com) while costly, provide a gasketed, watertight seal.. The larger case # iM 2975 (31x20x12) costs about $400.

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NATIONAL CURATORIAL STANDARDS

Compliance with Federal code 36 CFR 79 varies in repositories, both Federal and state, across the nation. The National Park Service and the Army Corps of Engineers, St. Louis office, have established the most thorough American standards for curation. These are available as downloads:
http://www.mvs.usace.army.mil/engr/curation/CMAC%20Brochures2.html
http://www.nps.gov/archeology/collections/credits.htm
www.nps.gov/history/museum/publications/.../mushbkl.html

Curatorial standards for Federal archaeological collections cover registration, processing, marking and labeling, packing techniques, enclosures, data entry, and title/transfer of collections. Repositories should be climate controlled, alarmed, pest-free, and well lighted. Fire detection and suppression should be provided. The climate should be monitored. Collections should be accessible, with minimal threat to the physical safety of personnel.

State standards follow the Federal lead. Guidelines from Virginia, Pennsylvania, North Carolina, Maryland and Texas are available on-line and can be compared and reviewed.

General environmental conditions are to range from 30-50% RH and 68-72°F. While some specify that metals should be stored at below 20% humidity, exactly how to achieve this level is not explained. On its website, the Society for Historical Archaeology now has information on creating microclimates for storing small volumes of metals:
http://www.sha.org/index.php/view/page/storage_curation#H

Information on actually creating systems for dry storage for bulk metals is also found in conservation literature, including more obscure conference proceedings. Much of the research comes from Europe. Publications by Keene, Spriggs, Rebiere et. al., Kuhn and Eggert, Watkinson, Mathias, Costain, and Cumberland (all cited in the bibliography) are seminal contributions.

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Appendix E: Lab Procedures.

Archaeology Methods – Lab Project

TA – Lori Thompson: lthompson48@student.gsu.edu
Lab hours: Monday and Wednesday – 10am-11:45am
Thursday – 10am – 4pm

Phase I – Check, Count, Weigh, and Data Entry

A. Take inventory of the assigned boxes
   a. Printout a copy of the specimen catalog that corresponds to the assigned material.
   b. Layout the bags of material in the order of the specimen catalog.
   c. Check the bags against the specimen catalog
      i. Are there any specimen numbers listed on the catalog that are not located in the box(es)?
      ii. Are there any bags with material that is incorrectly cataloged on the specimen catalog (i.e., does the specimen catalog indicate the material should be ceramics and it is actually glass?)
      iii. If so, make notes on the printed copy of the specimen catalog, separate those bags from the collection, and bring them to the attention of the TA.

B. Create an excel spreadsheet. A template is located on D2L Brightspace. Copy the template and save it with a file name in the following format: site number, file type, and group number (i.e., 9DA89_ArtifactCatalog_Group1).

C. Begin with the first bag on the specimen catalog.
   a. Carefully remove the contents.
   b. Reanalyze the material. Can the material be further separated?

i. Ceramics:

1. Make sure material is all the same. In most instances the specimen catalog will list everything as refined earthenware, whiteware, or stoneware. Identify and separate out, if possible, by creamware, whiteware, ironstone, porcelain, and separate stoneware by glaze type (i.e., alkaline, Albany, Bristol, salt, etc.). Please refer to type collection and ask Lori or Dr. Glover if you have questions.

ii. Glass:

1. Separate by color and vessel type.

iii. Metal:

1. If there are any distinctions that can be made (i.e., square nail vs. modern nail, ferrous v. non-ferrous, etc…) separate material out by these distinctions.

D. When the separations are complete, create new catalog numbers (Phoenix Number) and record the information in the spreadsheet.

a. Each catalog group will be given a separate number, which will be in the following format: Accession number, Original specimen number (without the letter designation), and, if applicable, a new/additional catalog number. The new catalog number is the Phoenix Number.

i. For example: In accession number 170, p1 is 2 earthenware bottles that have not, nor need to be, separated and p23 is 476 Amber glass fragments that have been further separated into 4 new groups: necks (n=5), bases (n=5), embossed shards (n=2), and partially whole bottles (n=464). The Phoenix number for p1 is 170.2 and the Phoenix numbers for p23 are 170.23.1, 170.23.2, 170.3.3, and 170.23.4.

ii. If there is other information you would like to include, enter it in the notes column. (i.e., if further information should be recorded, such as the color or condition of the earthenware bottles or maker's marks in 170.2, this would be entered as a note).

b. Each distinct group will be counted, weighed, and bagged separately.

c. Use the MARTA artifact descriptor file on D2L Brightspace for consistency. There are multiple tabs on the excel template and the cell with the drop down menu to other cells might have to be cut and pasted. MAKE SURE YOUR DROP DOWN MENU IS WORKING CORRECTLY. IF you have questions please talk to Dr. Glover or Lori.

d. Include in the spreadsheet all contextual information, date of excavation, and any other information or notes found on the original specimen catalogs.

e. Please make sure items are weighed. There are different scales that have different levels of precision (i.e., some only measure to the nearest gram while other measure to the hundredth of a gram). Please keep that in mind and use the appropriate scale.

f. Make sure that if there are different forms (cup, bowl, plate, neck, base, etc.) within each group they are counted and recorded in the appropriate column on the spreadsheet.

E. Bagging procedures

a. If the artifacts are still in paper bags, find the appropriate size archival bag (4mil plastic bag). Cut out the section of the paper bag that contains the original written information and insert it into the plastic bag. The remainder of the paper bag and rubber band(s) should be discarded.

b. If the artifacts are in archival plastic bags, check the outside label and make sure it is correct. If it needs to be changed, sharpie can be removed by using a pencil eraser or a q-tip and acetone.

c. If the material is fragile or unstable then use the archival packing material and wrap the item(s) before placing in the bags.

d. All whole or partially whole glass or ceramic items should be wrapped.

e. Label each bag with the following information using a **thin-tipped** sharpie. The bags should be labeled before the material is inserted so that the written information will be legible. (BTW, please write neatly!!!).

   i. The bags should be labeled on the top left with the Site Number or CCU number followed by the Phoenix Number. This information should be on the bag in a single column. An example is posted in the lab.

   ii. If there is more than one bag associated with a Phoenix Number, then under this number should be written "Bag 1 of 2" etc.

   iii. In the center of the bag towards the bottom include the artifact description as it appears in spreadsheet.

F. Once material has been analyzed, cataloged, bagged, and labeled, re-box the material. In pencil, label the outside of the box with the Site number/CCU number and the Phoenix numbers within that box if the contents are different from the original label.

Archaeology Methods – Lab Project

Phase II – Analysis

This is where substantive information will be collected about what these artifacts can tell us about past behaviors and, through the use of the project documents and other documentary research, how the project area relates to the history of Atlanta. All technology and tools (digital cameras, scanners, etc…) that will be needed for this stage of the project are available through the department. Contact the TA or Dr. Glover for access to these resources.

Documentation

The field notes and other assorted paperwork are located in Kell 481. Make hard copies and scans of all documents relating to the assigned project. Some of the material has already been scanned and is located on lab computer (D: PhoenixProject). Scans should also be made of any drawings, maps, or photos that are of interest. All scans should be made at a **MINIMUM OF 300 DPI.** The maps are in the map drawer (Kell 485) and there is an inventory of what is in the drawer posted on D2L. The photos are located in Kell 481. If a larger scanner is needed, please notify Dr. Glover or Lori. For any field drawings, profile or plan maps of sites or excavations, take the scan and create a new version of the map in Adobe illustrator.

Site Visit

Visit the location of your project area and record the area using a GPS unit (or your phone). Make sure to collect GPS data from any landmarks or streets that still exist and are noted on the original site maps. This can also be done in Google Earth. Photographs should also be taken of the site area and should include the same existing landmarks and streets. When taking photographs, note which direction you are facing while taking the photo: the use of a compass is recommended.

Historical Research

The past history of the project area should be researched. This would include any information pertaining to land use covering a time span as far back as possible to modern times. There are historical map resources and GSU and Emory; however, the Sanborn Insurance Maps are very helpful and informative from the late nineteenth to early twentieth centuries. The new resource ATLMaps (www.ATLMaps.com) might be very useful.

Artifact Analysis

The Society for Historical Archaeology (www.sha.org) is an excellent resource for information. There are also books in the library and Kell 481 (which should NOT leave the lab!) that have information concerning the manufacturing dates, companies, and location of historical materials. There are also resources posted on D2L Brightspace.

Photography

Photographs should be taken of as much of the collection as possible. Diagnostic pieces, exceptional or unusual specimens should definitely be photographed. It is also a good idea to photograph any artifact(s) that will be mentioned/highlighted in the report. Digital cameras and photographing tools are available. ALL ARTIFACTS MUST BE PHOTOGRAPHED WITH A SCALE! There must be AT LEAST ONE 3D model created using AgiSoft Photoscan. This program can be found at CURVE in Library South. Please talk with Dr. Glover before beginning this process.

Original project photographs are also available, but are most likely in the format of slides or negatives. There is a device in the lab that will scan slides and convert them to digital images.

Hand-drawn illustrations can also be scanned and included in the raw data for the project or as part of the report.

Phase III – The Report

The format of the report is flexible; however, you should discuss the organization with Lori or Dr. Glover to ensure that nothing is overlooked or omitted. All reports should include a title page, secondary titles for each section and sub-section, the names of the group members, the date of the report, and page numbers. The group will also present a short (12 minute) presentation of the report to the class at the end of the semester.

Introduction and Background

Provide a brief introduction to your project and a background on the type of archaeological work conducted at your site. Include a discussion on the background of the site/area, and what has

happened at the site/area between the time of the deposit of the archaeological materials and the archaeological work conducted. This should be based on a combination of historical documentation and maps. This should also give insight into understanding the possible transformation processes (natural and/or cultural) that may have impacted the archaeological deposits.

Artifact Write-up

This section should provide a breakdown between and within artifact categories. Excel spreadsheets and graphs are KEY resources to use in this section. Identify and discuss any patterns that emerge. Discuss if there are differences between production processes or other chronologically sensitive attributes. You may also have a small section on each "special" artifact. (Refer to materials on D2L Brightspace as examples of the information that can be gained from a single artifact.)

Some other questions to consider addressing are:

- What do the artifacts indicate about the chronology of the deposit(s)?
- Does the site/area have a single or multiple occupational components?
- Do any of the artifacts have Makers Marks or other special attributes? Discuss these and make sure there are photos.

Interpretation

In this section link the artifacts to past human behaviors. What do the artifacts say about what was happening at the site/area in the past? How does this match up with what the historical documentation indicates? Are the two data sources complementary or contradictory, such as: was there a church located in the same area where a large number of beer bottles were found?

Public Dissemination

Please give some thought as to how the information you collected in the report could be shared with the public? In this section provide some ideas about what you might do. Base this section on critical evaluations of at least one website associated with historical archaeological resources.

Conclusions

Provide an overview of what was learned about the history of this area of Atlanta.

Phase IV – Digital Data

All the material that is gathered, scanned, or created during the course of this project will also need to be digitally archived. These data will be due on or before the date of the final report. All material should be labeled in a consistent manner. The file you create will be added to the lab computer after being reviewed by Lori or Dr. Glover. It will be helpful if the group keeps an informal log and checklist to ensure all material is accounted for prior to submission.

File Formatting

The primary file folder should be labeled with the site number/CCU number followed the group number and finally with year association: for example: 9DA89_Group1_StudentProject_Fall2015.

There should not be any empty spaces in any file names. Capitalize words to designate different words. An underscore symbol (_) should be used to separate information. Every file name should begin with the site number or CCU number. The state initials in the site number should BOTH be capitalized (i.e., FU or DA) even though it occurs in many different formats throughout paperwork and past reports. (In the past these were the standards, but in all modern reports and site forms, it is standard to capitalize both.)

Within the main file, create files for:

- Field notes
  - 9DA89_FieldNotes_Aug21_25_1977
- Photographs
  - Each photograph will have two versions - .jpg and .raw
  - You will label each with the Phoenix number
  - 9DA89_170.23.1_AmberGlassBottleNeck
  - If you are taking a picture of a number of artifacts from various specimen catalog numbers, then just write the site number and a description (i.e., 9DA89_StonewareVessels).

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- Maps
  - 9DA89_SanbornInsuranceMap_StreetNameOrMapIDNumber_1898
- Site forms
  - 9DA89_SiteForm.pdf
- Research Docs
  - If you downloaded PDFs that might be of use to future students or researchers, please share them and label the files as described below.
  - 9DA89_DescriptionOfDocument_Date (either use date of publication or date retrieved from internet)
- Final Report
  - 9DA89_FinalReport.docx
  - 9DA89_FinalReport.pdf
  - Include a copy of your PowerPoint presentation in this folder
- Artifact Analysis
  - 9DA89_ArtifactCatalog_Fall2015.xlsx