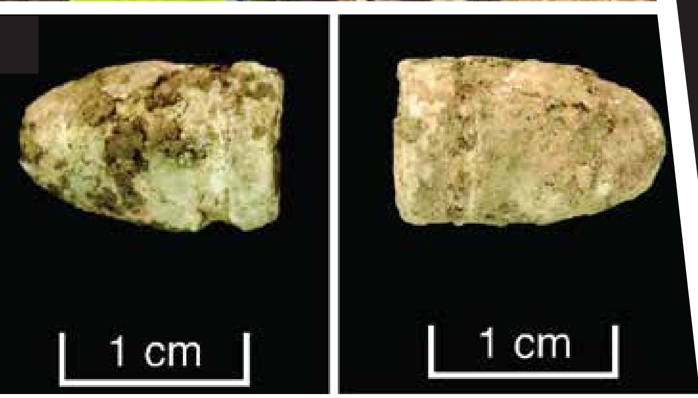

Archaeological and Forensic Research in Support of the 1921 Tulsa Race Massacre Graves Investigation:

The 2024 Field Season at Oaklawn Cemetery

compiled by

Kary L. Stackelbeck
Phoebe R. Stubblefield
Amanda L. Regnier

Volume I

Report submitted to the City of Tulsa

by the
Oklahoma Archeological Survey,
University of Oklahoma,
and the
C.A. Pound Human Identification Laboratory,
University of Florida

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Volume I

compiled by:

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with contributions by:

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Report submitted to the City of Tulsa by
the Oklahoma Archeological Survey and the
C. A. Pound Human Identification Laboratory

Oklahoma Archeological Survey Research Series 23
ISBN 1-881346-93-5
2024

A Moment of Caution

Dear Reader,

In the pages to follow, you will encounter images of the artifacts and lives of past people, who lived and died in the late 1800s to early 1900s Indian Territory/Tulsa. These images are of skeletal remains, personal effects, and artifacts exposed while searching for individuals buried in connection with the 1921 Tulsa Race Massacre. If viewing such evidence of past lives will be emotionally or spiritually contaminating, or violates a cultural rule, please do not proceed.

In a forensic context, and often an archaeological one, is typical for images of the human remains to be included in the analytical report of those remans, so images are included here. We as a research team have gone to great lengths to be respectful to these individuals by shielding them from view in the field and the lab, prior to this report. Many of the images here are distant views, close-ups, or views of partial anatomy, in order to limit the comprehensive exposure of these decedent contributors. As is required for a report of this kind, these images are released to the relevant family—the City of Tulsa. Please view these images with the respect you would want shown to yourself as a decedent contributor to this investigation. These individuals may acquire identities and histories as we go forward, and respect shown to these decedents will hopefully become respect shown to their families.

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CHAPTER 1

INTRODUCTION

by Kary L. Stackelbeck and Phoebe R. Stubblefield

This report presents the results of the archaeological and forensic research conducted in support of the 1921 Tulsa Race Massacre Investigation during the 2024 field season in Oaklawn Cemetery. This research was conducted by an interdisciplinary team of specialists from the Oklahoma Archeological Survey (OAS) at the University of Oklahoma (OU), C. A. Pound Human Identification Laboratory (University of Florida), Stantec Consulting Services, Inc., and Oklahoma Office of the Chief Medical Examiner, with assistance from colleagues at several other institutions, including OU, University of Tulsa, San Diego State University, University of Arizona, and Barnard College. The fieldwork and laboratory work were conducted with support from—and on behalf of—the City of Tulsa and community members, including citizen volunteers and representatives from the Greenwood Cultural Center, John Hope Franklin Center for Reconciliation, and the Church of the Restoration. This work is an extension of previous phases of the investigation as coordinated with the Public Oversight Committee in various public meetings between July 27, 2019 and June 21, 2022. A fuller discussion of that process is found in Stackelbeck, Stubblefield, and Ellsworth (2022:1-2) and on the City's website dedicated to the investigation: https://www.cityoftulsa.org/1921graves.

From the outset of the re-opened investigation to locate Massacre victims in 2019, several locations were identified as potential targets within Oaklawn Cemetery based on the limited available historic records and oral historic accounts, including the: Sexton Area; Original 18 Area; and Clyde Eddy Area (Ellsworth 2022). Over the course of several previous mobilizations in 2019-2023, the investigative team utilized remote sensing, the extraction of soil core and auger samples, test excavations, and block excavations to systematically examine subsurface deposits at each of these locations (Figure 1.1). The results of these prior efforts are presented in two comprehensive technical reports (Stackelbeck and Stubblefield [compilers] 2022; Stackelbeck, Stubblefield, and Regnier [compilers] 2024a) and at various meetings, presentations, and press conferences that are archived on the City's 1921 Graves website (https://www.cityoftulsa.org/mayor/1921-graves-investigation/investigation-team-updates/) and the Facebook page dedicated to this investigation (https://www.facebook.com/1921Graves).

In July 2024, the genetic genealogical team announced the successful identification of the individual in Burial 3 as C. L. Daniel. Mr. Daniel's remains were exhumed, examined, and reinterred in 2021. The archaeological description of Burial 3 and findings of the osteological examination are presented in the report of the 2020-2021 field seasons (Stackelbeck and Stubblefield [compilers] 2022). Samples obtained during the forensic analysis yielded DNA that was sequenced and used to establish comparisons with his living descendants. Newly discovered records from the National Archives indicate that Mr. Daniel was a victim of the 1921 Tulsa Race Massacre. Interestingly, Mr. Daniel's remains did not display physical evidence of the trauma that was his cause of death. It is possible he was killed by a bullet(s) that only struck soft tissue before exiting the body, thus leaving no trace on his skeletal remains. Knowing the location of his grave in relation to other individuals who have been exhumed supports the assessment that we are looking in the right overall area, although some portions of that space remained underexamined during previous phases of fieldwork. One goal of the 2024 fieldwork was to fill this "gap" and others to ensure thorough coverage and recovery of Massacre victims buried in Oaklawn Cemetery.

Other key findings from previous phases of the investigations further informed the 2024 fieldwork. First, two gunshot victims had been successfully located and documented: Burials 27 and 42. The identities of these individuals have not yet been confirmed, though DNA and genetic genealogical analyses for both are on-going.

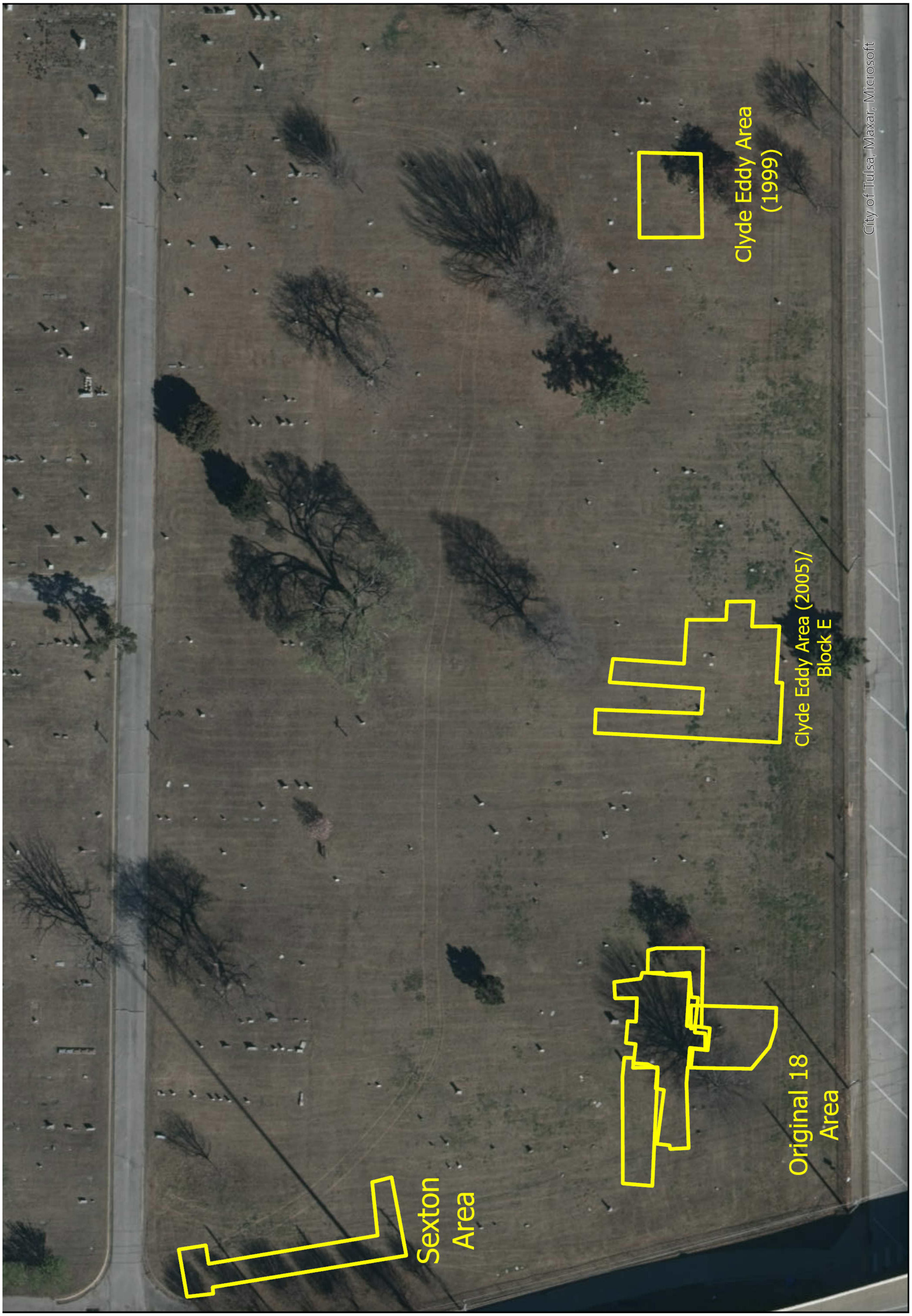


Figure 1.1. *Aerial image of Oaklawn Cemetery showing the outlines of excavations areas from the 2020-2023 field seasons in Section 20, including the Sexton Area, Original 18 Area, and the Clyde Eddy Area as indicated to researchers in 2005 (Block E). Also shown is the location in Section 19 pointed out by Clyde Eddy in 1999 where geophysical survey was conducted (Brooks and Whitten 2001; Hammerstedt 2022; Hammerstedt and Regnier 2019) and soil core samples were extracted (Green et al. 2022).*

Characteristics of Burial 42 resemble those expected for Eddie Lockard (Stubblefield 2024). However, this burial is two rows to the west and two plots north of the position of his headstone. Section 20 of Oaklawn Cemetery has undergone much artificial landscape alteration (Green et al. 2022), a circumstance that facilitates erroneous replacement of headstones—as is suspected for Burial 42. This calls into question who is interred in the grave shaft that is adjacent to Mr. Lockard's headstone.

Second, two geophysical anomalies thought to be associated with Clyde Eddy's eyewitness account of a trench (Brooks and Witten 2001; Snow 2001; Witten et al. 2001) have now been archaeologically examined. Neither location yielded obvious evidence of a trench-style mass grave feature. However, individual graves of four adult males buried in simple wooden caskets—including one possible gunshot victim (Burial 101)—were exhumed from the westernmost Clyde Eddy Area. These four individuals have not yet been excluded as possible victims. It is possible that the location Mr. Eddy described in these accounts is not accurate and the trench feature he observed is in an area that has not yet been exposed. Noteworthy is the fact that Mr. Eddy's account also referenced his observations of decedents in crates (Ellsworth 2022:13; Brooks and Witten 2001:130; Snow 2001:121).

Third, beyond Pvt. Daniel, the two gunshot victims (Burials 27 and 42), and the one possible gunshot victim (Burial 101), we recovered the remains of 15 other individuals who have not yet been excluded as possible Massacre victims in Section 20 (Figure 1.2). The recovery of these individuals demonstrates the efficacy of our process and protocols. However, we have not yet recovered the number of adult male trauma victims who are expected to be buried in Oaklawn based on death certificates and other limited records.

2024 Field Season

The 2024 archaeological excavations were conducted under the direction of Kary Stackelbeck (OAS) and Ryan Peterson (Stantec). Eleven sets of recovered remains were examined in the on-site forensic laboratory under the direction of Phoebe Stubblefield (C. A. Pound Human Identification Laboratory, University of Florida). The DNA analysis is under the direction of Daniel Hellwig (IMF) and Alison Wilde (IMF) is directing the genetic genealogical research.

Using the results of the earlier efforts we proposed and completed expansions of the excavation area to increase the likelihood of encountering other individuals who fit our target profile—adult male trauma victims buried in unadorned wooden caskets (Stackelbeck and Stubblefield 2024: Figure 6.2). Burial 42 was interred in a repurposed shipping crate, which supports expansion of the search parameters to include other forms of simple wooden containers that can expediently function as burial vessels.

New Excavation Blocks F-J were completed between July 22-August 16, 2024 (Figure 1.3). Seventy-two graves were recorded in these new excavation blocks, most of which were unmarked. Eleven individuals were exhumed because they partially or fully matched our search criteria: 1) male; 2) trauma victim; and/or 3) buried in an unadorned wooden casket or similarly simple container.

This report presents the results of the combined fieldwork and laboratory analyses from this phase of the investigation in Oaklawn Cemetery. The document is organized to present a summary of additional archaeological excavations (Chapters 2 and 4 and Appendices A and E), specialized analyses of recovered artifacts (Chapter 3 and Appendices A-D), and the osteological report of exhumed remains (Chapter 5). The results of the 2024 field season—together with data from the 2020-2023 phases of the investigation—form the basis for the overall findings and support recommendations for expanded excavations to locate additional Massacre victims (Chapter 6). This report is a more exhaustive treatment of the results presented in the *Executive Summary* (Stackelbeck, Stubblefield, and Regnier [compilers] 2024b).

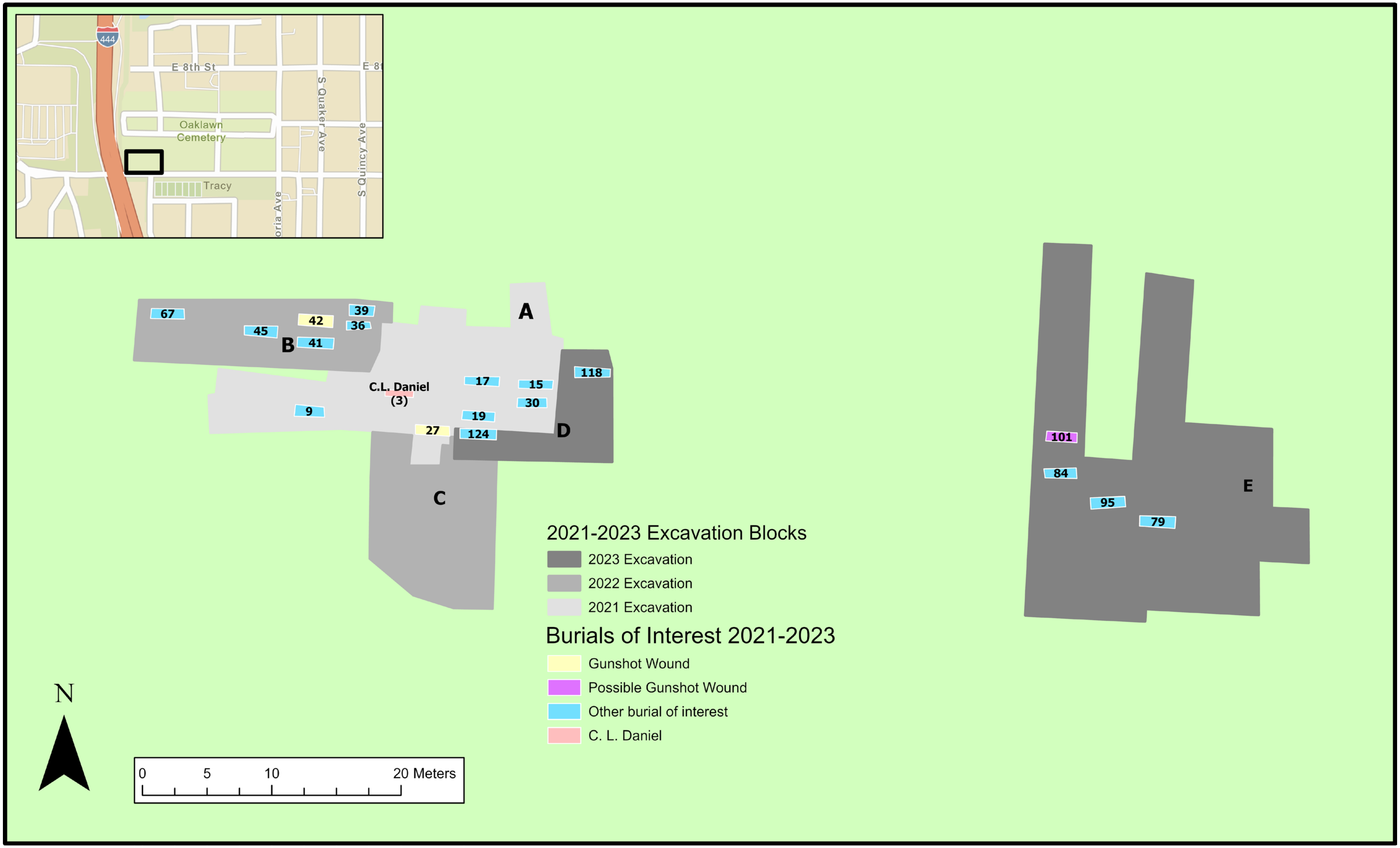


Figure 1.2. *Map of Excavation Blocks A-E; also shown are the graves of C. L. Daniel (Burial 3), two gunshot victims (Burials 27 and 42), and other individuals of interest who have not yet been excluded as Massacre victims.*

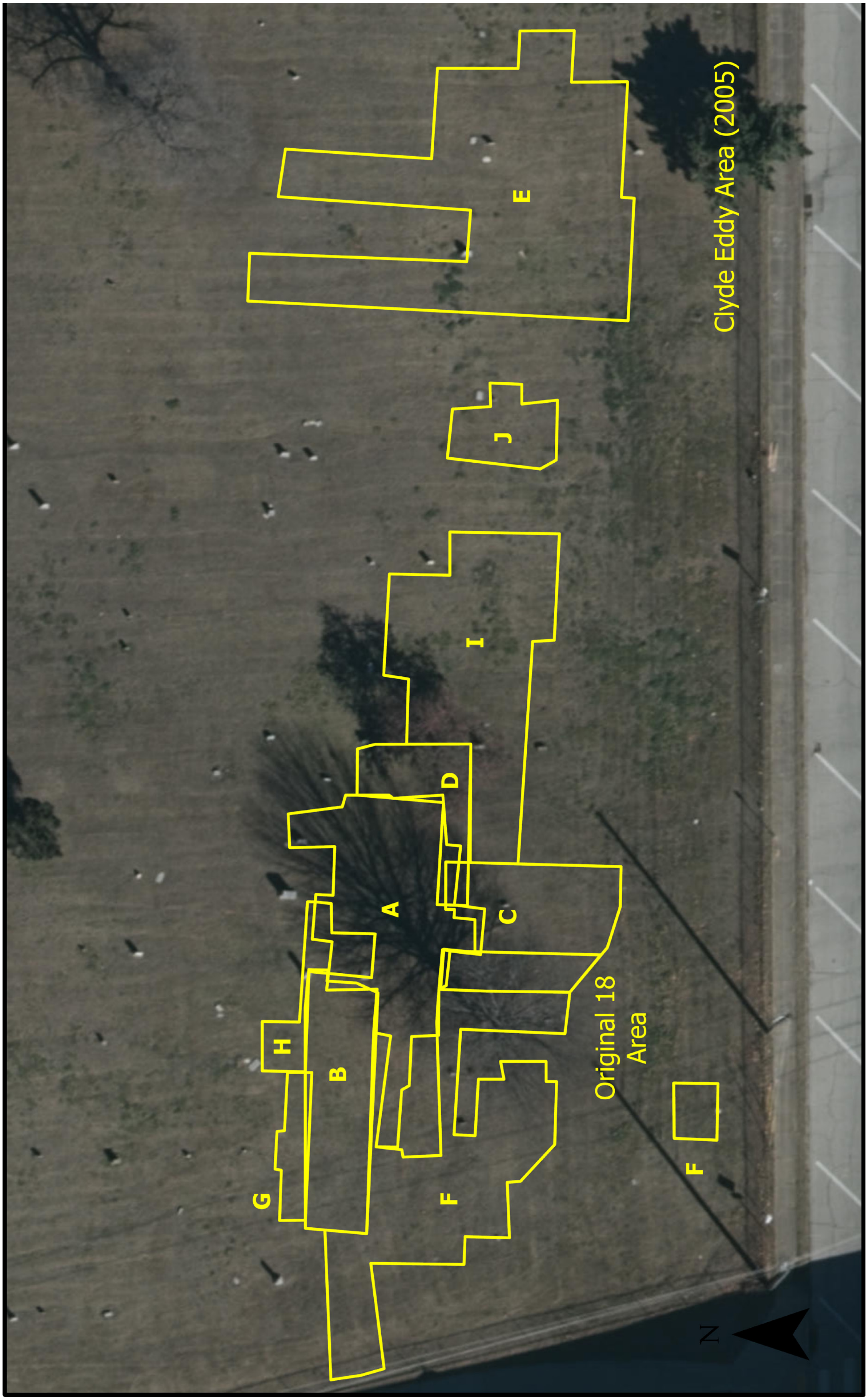


Figure 1.3. *Aerial image displaying the 2024 excavations blocks (F-J), together with those that were excavated during previous field seasons in 2021-2023 (Blocks A-E).*

CHAPTER 2

2024 ARCHAEOLOGICAL EXCAVATIONS

by Kary L. Stackelbeck, Ryan Peterson, and Debra Green

As with earlier field seasons, the 2024 phase of the investigation at Oaklawn Cemetery built upon previous results to guide the placement and execution of the excavations in Section 20 to maximize the detection and recovery of victims of the 1921 Tulsa Race Massacre. Blocks A-D were excavated in the "Original 18 Area" in 2020-2023 (see Figure 1.1). In 2023, we also excavated Block E in the westernmost Clyde Eddy Area (see Figure 1.1). One confirmed Massacre victim (C. L. Daniel in Burial 3), two gunshot victims (Burials 27 and 42), one possible gunshot victim (Burial 101) and several other burials of interest were recovered among these previous excavation blocks (see Figure 1.2).

We continue to be guided by the expectation that the victims were likely interred in proximity to one another. To date, all burials of interest have been recovered within the relict stream channel that runs along the southern boundary of the cemetery. Among those graves, Burials 3 (C. L. Daniel), 27, and 42 are close—though not adjacent—to one another (see Figure 1.2).

Additionally, although the mass grave described by eyewitness Clyde Eddy (Ellsworth 2022:13; Brooks and Witten 2001:130; Snow 2001:121) has remained elusive, aspects of his account comport with some of the data recovered during earlier field seasons—particularly the burial container for Burial 42, which was a repurposed shipping crate. We continue to be open to the possibility that the "trench" he described may yet be discovered in an area of Section 20 that we have not yet explored.

Excavations conducted in 2024 in Oaklawn Cemetery connected the previous easternmost (Block E) and westernmost excavation areas (Blocks A-D) and further explored the Original 18 Area (see Figure 1.3). This chapter presents details of the excavation process, interpretations of the observed stratigraphy, and initial documentation of the newly uncovered graves. Fuller description of the burials and the resulting osteological and other specialized analyses are provided in the subsequent chapters and appendices of the report.

Excavation Methods

As with previous field seasons, the excavation process began with the mechanical removal of overburden while archaeologists monitored for artifacts, skeletal remains, and changes in soil color (Figure 2.1). Each backhoe row was labeled to provide an approximate grid location for the recovery of artifacts from the overburden and surrounding matrix. Identification and analysis of the non-mortuary artifacts recovered during this monitoring phase are presented in Chapter 3 of this volume.

Photographs and drawings of representative profiles of the walls of the excavation blocks were recorded as the mechanical excavation progressed. Geoarchaeological assessments of these profiles provide an understanding of the depositional context of the cemetery, including the characteristics of the soils that underlie the grave shafts, those that surround the burials, and those that were placed over the graves in successive fill episodes after interment (Green et al. 2022; Appendix E, this volume).

Upon reaching a depth at which the graves were apparent, the corners of each shaft feature were mapped in with a total station (Figure 2.2) and the excavation process shifted to teams of Stantec archaeologists using hand-held tools to conduct more detailed exposure of the containers and the hardware (if present) (Figure 2.3). Among the graves that were considered to potentially fit our profile of Massacre victims, the hand excavation process further entailed: 1) exposure of the human remains; 2) detailed documentation, including 3-D photogrammetry

Figure 2.1. *OAS and Stantec archaeologists monitor mechanical removal of overburden overlying graves in Section 20 of Oaklawn Cemetery. Shown here is excavation of the area beneath an oak tree that was removed.*

Figure 2.2. *Amanda Regnier (OAS) captures locational data on the total station while mapping in features exposed during the 2024 excavations (Image courtesy of the City of Tulsa).*

Figure 2.3. *Stantec archaeologists conduct hand excavations of Burial 133 during the 2024 field season (Image courtesy of the City of Tulsa).*

(Figure 2.4); 3) recovery of samples of wood from the container and lid (if present); and 4) documentation of projectiles, personal effects, and/or grave goods (if present and observable) (Figure 2.5). Hand-excavated soil was screened to increase recovery of smaller artifacts and fragments of human remains (Figure 2.6). Detailed descriptions of this finer-grained excavation process and the documentation of each grave are presented in Appendix A of this volume. The documentation and mapping processes are consistent with those described in Appendix C of the technical report of the 2020-2021 fieldwork (Peterson et al. 2022:2-15). Results of the wood analysis are presented in Appendix C, this volume.

Upon determination by the forensic team that a given burial was an appropriate candidate for exhumation (typically an adult male in a simple wooden container), excavators stabilized the remains and prepared them for removal to a specialty cardboard container, most commonly used as a cremation tray. Each container with exhumed remains was labeled and carefully and respectfully transported to the on-site forensic laboratory (Figures 2.7-2.8). Detailed results of the forensic assessments are presented in Chapter 5 of this volume. Results of specialized analyses of bullets recovered from Burials 27, 42, 135, 157, 194, and 195 appear in Appendices B and D.

Excavation Blocks F-J

Blocks F-H were generally positioned to fill in gaps from previous excavations and expand investigation of areas around burials of interest to ensure thorough coverage of the southwestern corner of Section 20 (see Figure 1.3). Some of the blocks—or portions thereof—targeted more specific areas of interest.

A large oak tree was removed to facilitate investigation of the area west of Burial 27 and south/southwest of C. L. Daniel's grave (Burial 3) (Figures 2.1 and 2.9). This tree's location approximates the position of an earlier elm tree represented on a 1917 map of Oaklawn Cemetery (Figure 2.10). We observed evidence of dead roots

Figure 2.4. *Stantec crew member conducts photogrammetry of an excavated burial during the 2024 field season (Image courtesy of the City of Tulsa).*

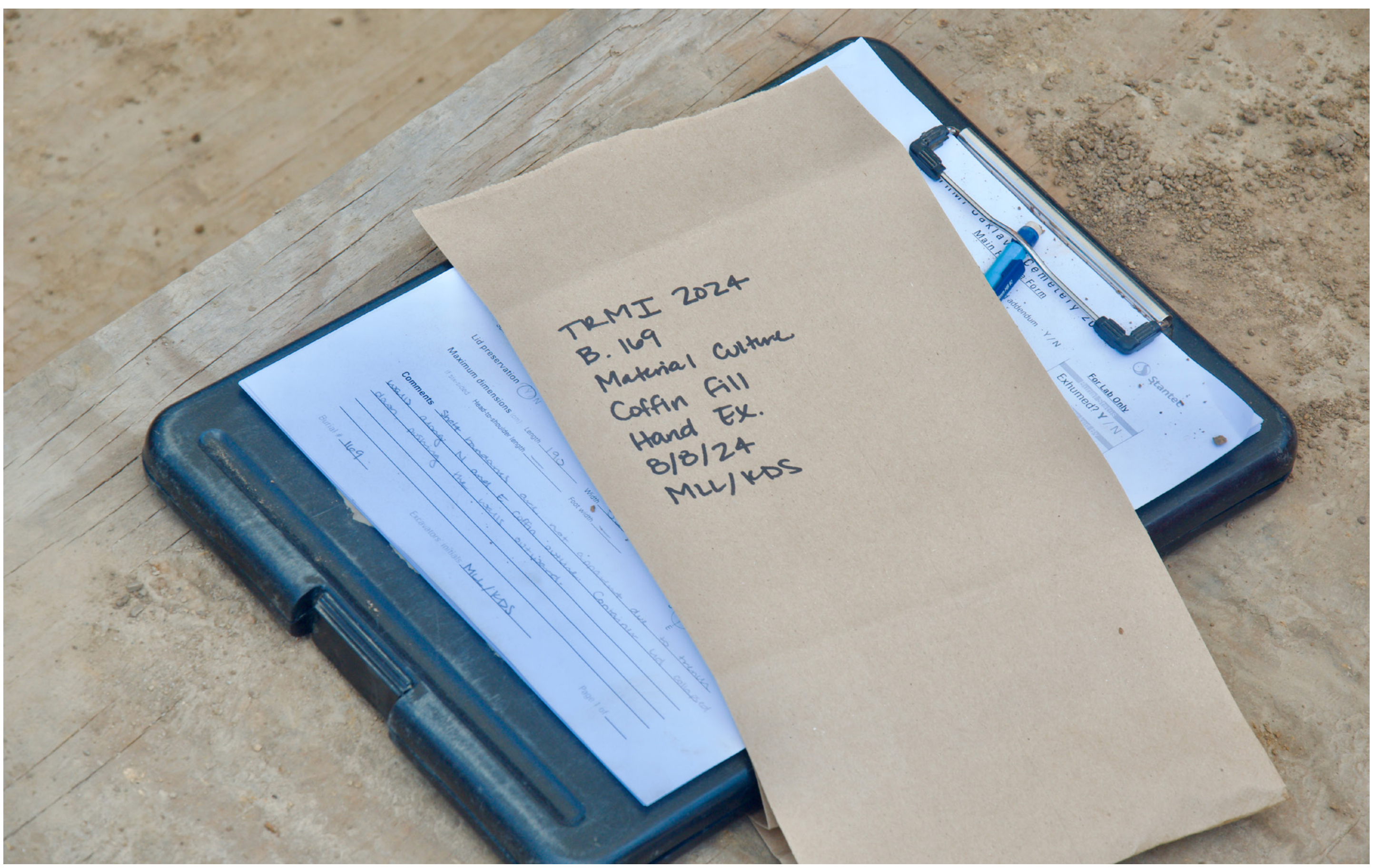


Figure 2.5. *Notes and bagged artifacts from Burial 169 (Image Courtesy of the City of Tulsa).*

Figure 2.6. *Stantec crew members screen hand-excavated soil from burials during the 2024 field season (Image courtesy of the City of Tulsa).*

Figure 2.7. *Respectful transfer of remains from the excavation area to the on-site forensic laboratory during the 2024 field season (Image courtesy of the City of Tulsa).*

Figure 2.8. *A set of exhumed remains are carried into the on-site forensic laboratory during the 2024 field season (Image courtesy of the City of Tulsa).*

Figure 2.9. *(upper left) Aerial view of oak tree in relation to the 2022 excavations; (upper right) aerial view of oak tree stump after the upper portion had been removed prior to the start of 2024 excavations; (lower center) aerial view after completion of 2024 excavations.*

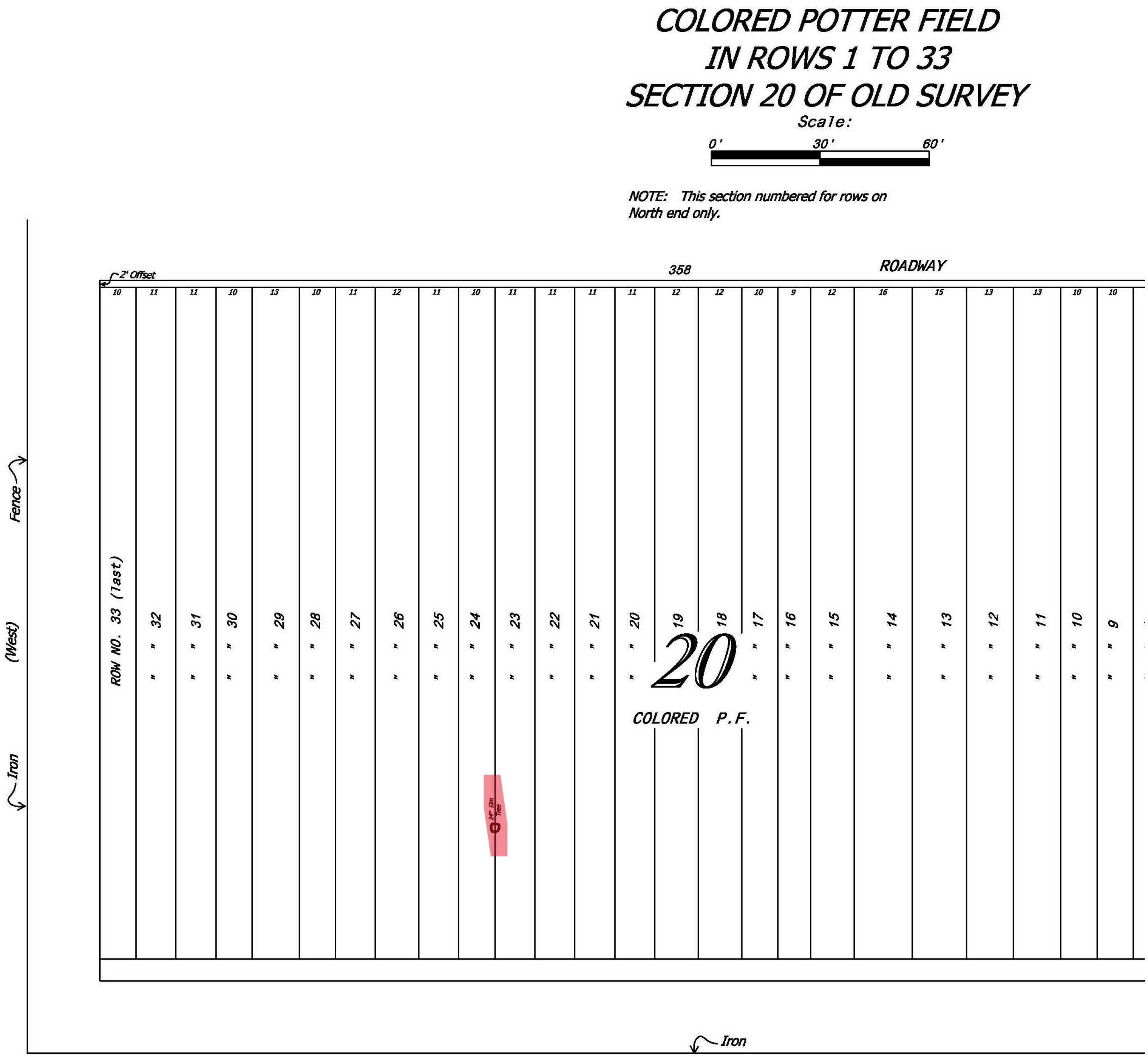


Figure 2.10. *Portion of a replica of 1917 map of Oaklawn Cemetery; highlighted in red is the mapped location of an elm tree (image courtesy of the City of Tulsa).*

during the excavation of Trench A in 2020, though it is uncertain whether they were from the original tree or others that may have occupied this space in the intervening time. The oak tree removed in 2024 was planted sometime between 1995 and 2003 and grew relatively quickly—likely due in part to the ample subsurface water supply that continues to flow in the relict stream channel in that part of the cemetery. A portion of Block F reopened a section of Block C and expanded it to the west to specifically examine the area beneath the oak tree (Figures 2.1 and 2.11). A portion of Block F also re-exposed the western end of Block A.

With the excavation of Blocks G and H, we reopened a portion of Blocks A and B and expanded them somewhat to the north (see Figure 2.11). This location was targeted in part to allow the team to more closely examine the area north of Burial 42 and the graves associated with the headstones of Reuben Everett and Eddie Lockard. Given the documented alterations to the landscape in Section 20 (Green et al. 2022), apparent movement of headstones, and suspicions that Burial 42 is that of Eddie Lockard, (Stackelbeck and Peterson 2024: 100-101;

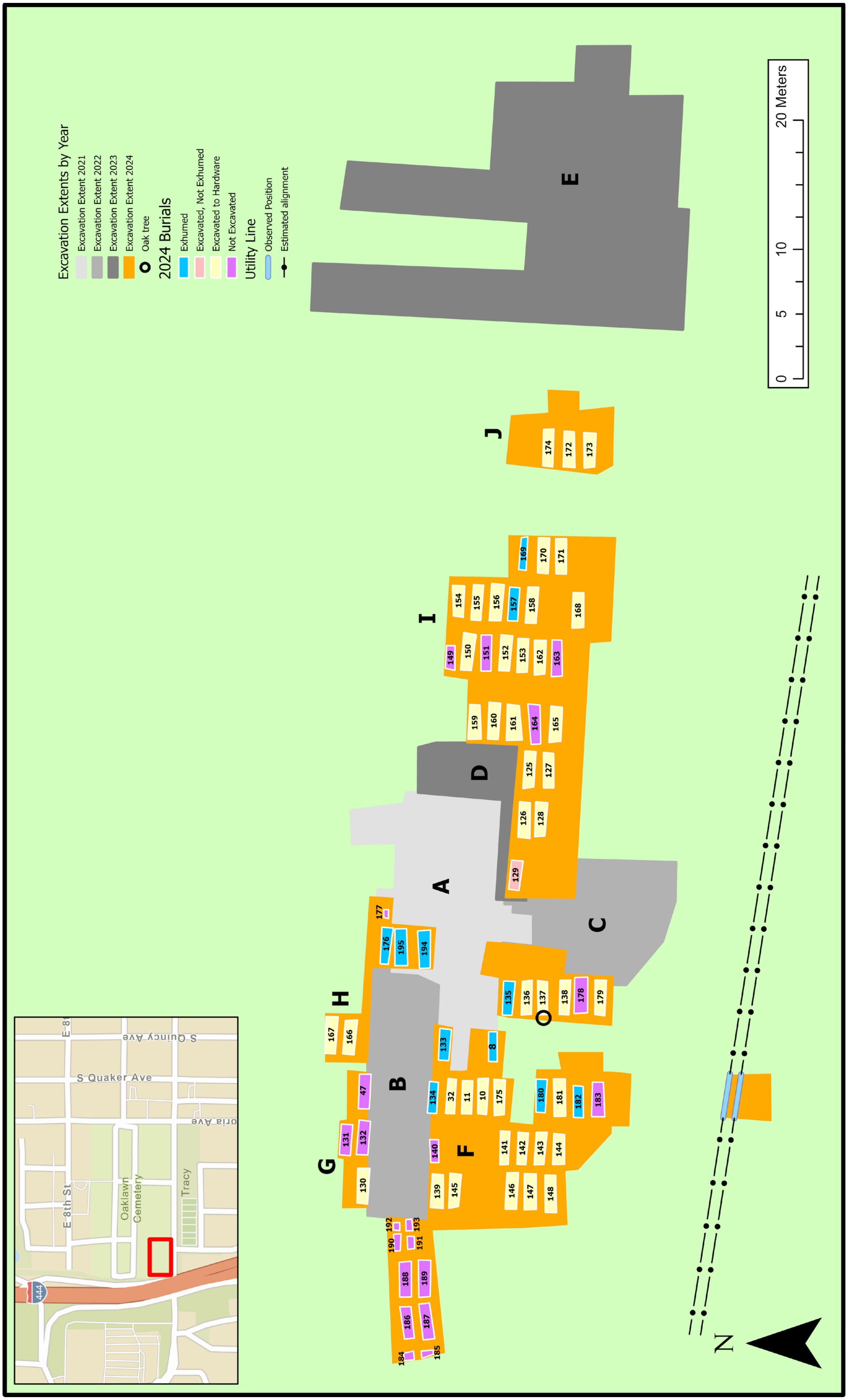


Figure 2.11. *Map of Excavation Blocks A-J displaying the distribution of newly mapped burials from the 2024 field seasons.*

Stubblefield 2024:155) it was important to document these burials and evaluate whether they matched the limited information from death certificates for these individuals and the funeral home records for Eddie Lockard.

Blocks I and J were positioned within the relict stream channel and spanning the distance between Blocks C and D to the west and Block E to the East, which had been excavated during previous field seasons in 2022 and 2023 (see Figure 2.11). This area was targeted in part to further evaluate the potential presence of a trench-style mass grave feature as described by Clyde Eddy, on the possibility that his recollection of the precise position was somewhat off. Encompassed within the western part of Block I were also several graves of interest (Burials 125-126) that were partially exposed in 2023 and warranted further investigation (see Figure 2.11).

In total, seventy-two graves were recorded and assigned numbers in Blocks F-J (see Figure 2.11). All of the graves documented in these excavation blocks are within fill that was artificially introduced to intentionally create useable space for burials in otherwise swampy, low-lying areas. Markers were present on the surface near the west end of only three of these mapped graves. It is unclear if these headstones are accurately associated with the graves of individuals named on them. Minimally, they have been moved vertically after successive fill episodes that capped the adjacent graves. Unknown is whether they were also moved horizontally such that they are no longer in line with their respective named individuals.

Six individuals from graves in Block F, three individuals from Block H, and two individuals from Block I were exhumed and analyzed in the on-site forensic laboratory. None of the burials in Blocks G or J fit our profile for exhumation. Several graves in the westernmost extension of Block F (Burials 184-193) were only preliminarily documented and warrant further investigation to more appropriately evaluate them in relation to our search criteria.

Landscape History Evident in 2024 Excavation Blocks

Geoarchaeologist Debra Green led previous efforts to evaluate the stratigraphy in Oaklawn Cemetery and understand how it correlated with the history of landform development over time. Evidence was observed indicating the presence of two intermittent, relict stream channels: one along the western side of the cemetery and the other along the southern edge. The presence of these relict stream channels “resulted in a continuous, poorly drained wetland across the entire southern and western edge of Oaklawn cemetery” (Green et al. 2022:79). In order to expand the serviceable space within Section 20 for burial placement, “clayey fill was brought in to fill in these two streams and raise the land surface above the high-water table” (ibid). Presumably, this activity correlates with the establishment of the New Potters Field, as depicted in a 1917 map of the cemetery (Figure 2.12).

Further modification of the landscape occurred with multiple episodes of additional fill placement over the burials, which “was deposited homogenously across the entire southwestern portion of the cemetery (Green et al. 2022:80)—ultimately resulting in the landform being raised to its modern level. The 2024 investigations in Blocks F-J affirm those interpretations and provide additional information on the landform that is along the western end of Section 20 (Appendix E, this volume).

The westernmost extension of Block F exposed a series of unmarked grave shafts up to and beneath the fence that marks Oaklawn Cemetery’s western boundary (see Figure 2.11). The profile beneath the fence in our excavation trench revealed the presence of two grave shafts, which we labeled Burials 184 and 185 (see Figure 2.11). We observed only the eastern end of these grave shafts; presumably the western end of each grave extends beyond the fence and under the adjacent sidewalk. Further investigation is needed to fully expose and evaluate these graves and determine if others lie to the north, south, and west.

Summary of Excavations and Known Burial Population

Upon completion of the 2024 phase of fieldwork, an additional 72 graves were documented in Section 20 (see Figure 2.11). Descriptions of these graves are presented in Appendix A. Nineteen of these graves were mapped but not excavated as they were: 1) of a subadult size; 2) interred in burial containers that did not match

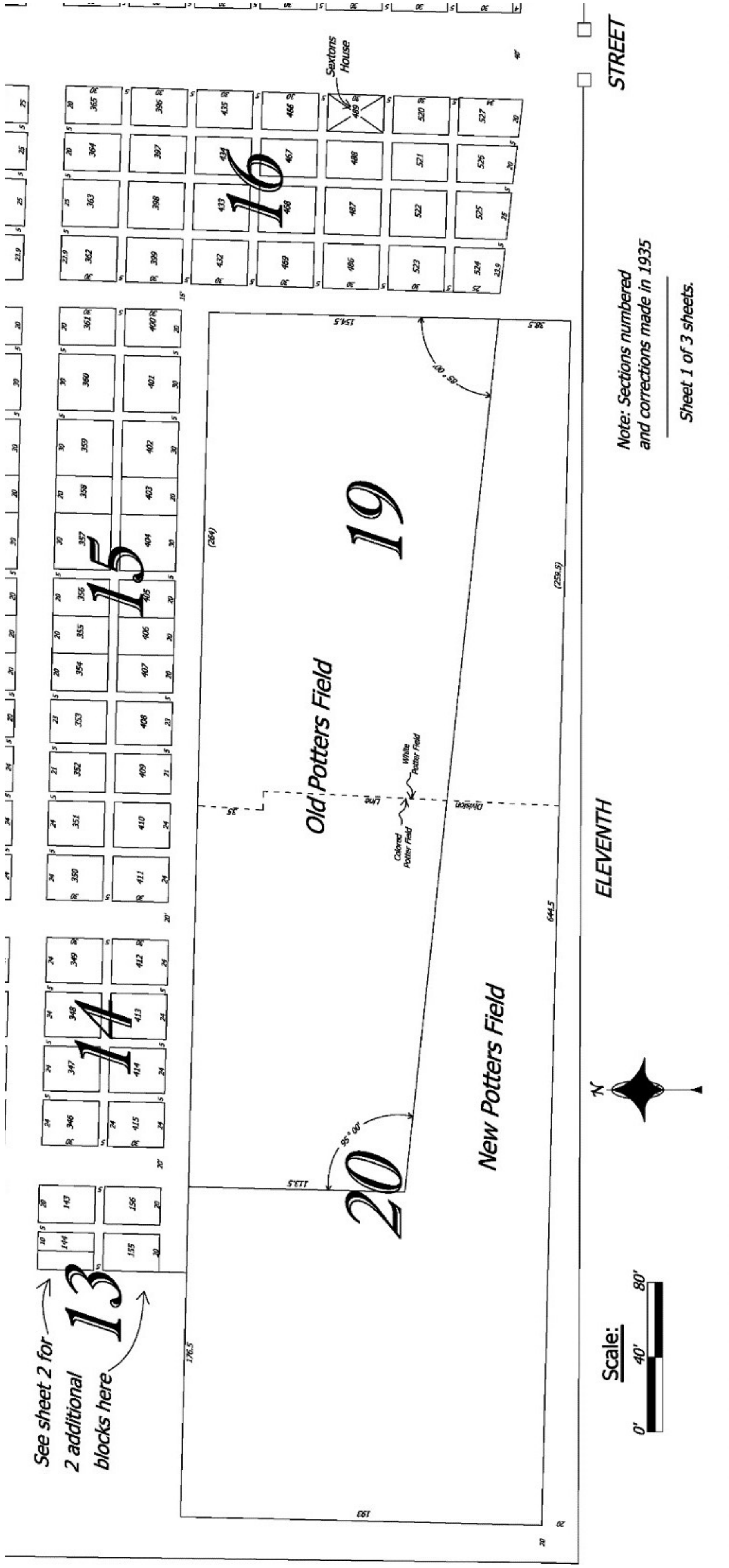


Figure 2.12. *Portion of a replica of 1917 map of Oaklawn Cemetery; relict stream channels documented during current and prior phases of fieldwork appear to roughly correspond to the New Potters Field displayed in this map (image courtesy of the City of Tulsa).*

the expected criteria (i.e., simple wooden caskets or crates); or 3) only partially exposed and require further effort to more fully document.

Hand excavations were initiated on 40 of these graves but terminated upon observation of decorative casket hardware, which was an indication that the container was not of the simple wooden form that otherwise fit our search parameters. Little if any human remains were exposed in the 59 burials that were documented and left in place and they remain almost entirely undisturbed.

The remains of two individuals in Block I (Burials 129 and 165) were partially exposed by hand excavations but left *in situ* upon the observation of personal effects and/or coffin hardware that did not fit our search parameters. Further, both of these individuals were buried in caskets within crates that served as makeshift vaults, conveying a sense of planning and respect that is not expected for the Massacre victims.

The remaining 11 individuals were exhumed and sent to the on-site forensic laboratory for further analysis (see Figures 2.7, 2.8, and 2.11). Detailed descriptions of the excavation process, shaft dimensions, casket dimensions, and associated artifacts are presented in Appendix A, along with an initial description of the condition of the remains and detailed photo-documentation. The documentation process allows for 3-D rendering of the burials after excavation but prior to exhumation. Archaeological interpretations of these 11 burials are summarized in Chapter 4. The results of the osteological analysis of these individuals are presented in Chapter 5.

Abundant artifacts recovered from the fill layers below, among, and above the graves in Section 20 provide substantial information regarding the context and approximate timeframe of the burials. Analysis of these non-grave goods is presented in the following chapter.

CHAPTER 3

NON-MORTUARY ARTIFACTS RECOVERED DURING THE 2024 EXCAVATIONS

by Amanda L. Regnier
with a contribution by Brandi Bethke

Previous field seasons have demonstrated that the southwest corner of Oaklawn Cemetery served as a location for disposal of refuse for several decades before it became the New Potters Field in 1917 (Regnier 2022 a,b; Regnier 2024). This chapter presents the results of the analysis of the 3,904 artifacts not associated with graves recovered during the 2024 excavations in Oaklawn Cemetery. This chapter also synthesizes artifact data from the mostly contiguous blocks excavated over five seasons to create a much better picture of the history of the southwest corner of the cemetery. The non-mortuary artifacts have broader importance beyond just reconstructing the history of the area that became Section 20; these artifacts, which are largely made up of household trash, provide a valuable snapshot of life for residents of the surrounding area. For the most part, these artifacts span the period between Tulsa's founding in the late 19th century and population boom in the first decades of the 20th century after the 1905 discovery of vast oil reserves. The artifacts recovered during the search for burials of race massacre victims were deposited in the southwest corner via: (a) occupation of the area as a Muscogee allotment; (b) use of the area as a refuse dump by residents of the surrounding neighborhoods before Oaklawn became a cemetery, and (c) visitors to Oaklawn Cemetery during the early to mid-20th century. In this chapter, I first describe the 3,904 artifacts recovered during the 2024 excavations. Then, I consider the overall assemblage from the Oaklawn Cemetery excavations, describing what we can learn from the 14,240 total artifacts from five material categories, including ceramic, glass, metal, other materials, and faunal remains. This analysis focuses on (a) the spatial distribution of artifacts across the excavation trenches, including the 2020 Sexton area excavations, (b) the time periods represented by the recovered artifacts, and (c) and what the recovered artifacts indicate about the use of this area of Oaklawn Cemetery through time. Forthcoming publications will discuss what the recovered artifacts can tell us about the lives of the residents of Tulsa during a period of population boom.

Recovery and Analysis Methods

As with the previous field seasons, the 2024 field season artifacts were recovered in several ways. Most were collected as they were exposed when they were spotted by archaeologists monitoring the backhoe while the trenches were dug to expose graves. The excavated areas were divided into numbered north-south rows that correspond to rows of graves. A typical context covered a single grave in the east-west direction and two-three graves in a north-south directions. Some of the excavated areas yielded no artifacts, while others had very high densities of domestic refuse. The sketch maps showing the catalog number locations for all field seasons were digitized to allow for analysis of the density of non-mortuary artifacts across the trench. The 2024 excavation areas were divided into five lettered trenches designated F – J (Figure 3.1). In this chapter, artifact counts are compared across three separate contexts: Trenches F-H, Trench I, and Trench J. The catalog numbers assigned during the 2024 excavations are shown in Figure 3.2.

Artifacts also were recovered either in screened soil or by hand during the excavation of graves. Screened soils and hand-excavated artifacts were assigned separate catalog numbers by grave; those catalog numbers are also included on Figure 3.2 in their respective trenches. Finally, significant artifacts were collected from the backhoe back dirt piles, particularly when they were exposed by heavy rain. Those artifacts are not included in the density distribution maps discussed later in this chapter and are left out of the trench counts because it was difficult to associate them with specific trenches.

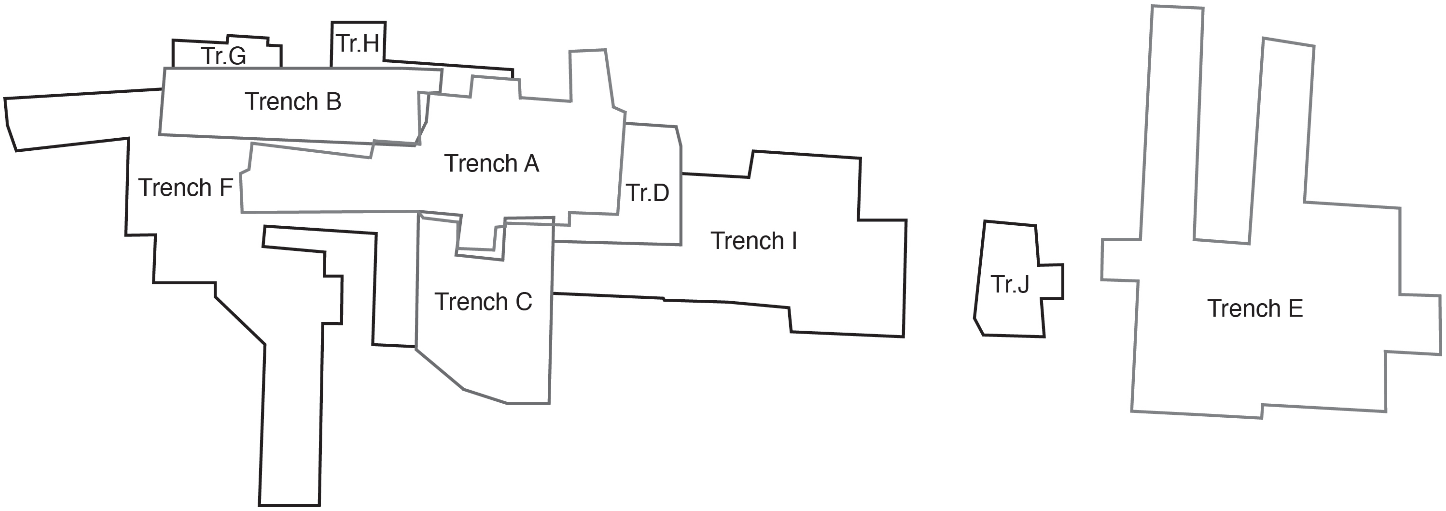


Figure 3.1. *Lettered trench designations for the 2021-2024 excavation areas at Oaklawn Cemetery.*

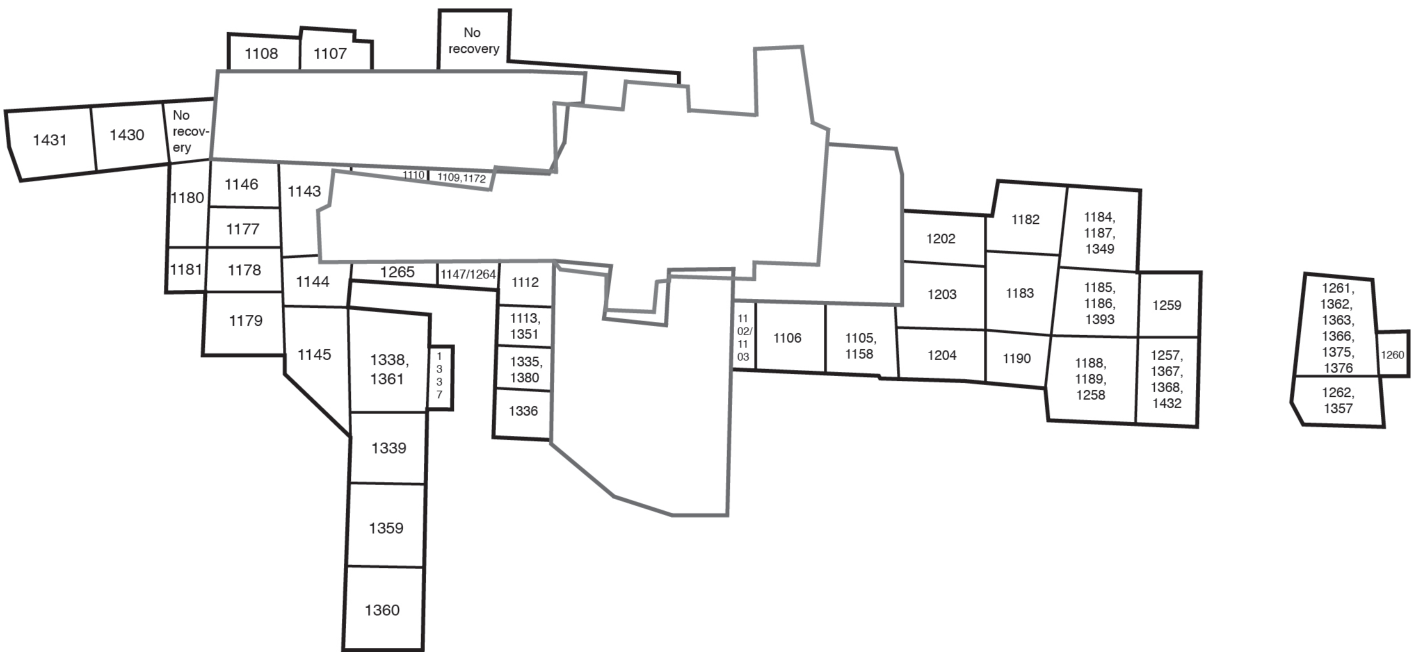


Figure 3.2. *Catalog numbers assigned to contexts in Trenches F – H, I, and J during the 2024 excavations.*

Every non-mortuary artifact context was assigned a catalog number in the field, and artifacts were placed in bags by this number. All artifacts from the 2024 season were returned to the laboratory at the Oklahoma Archeological Survey in Norman where they were washed and analyzed by myself and graduate research assistant Elizabeth Crisp. All artifacts were photographed, labeled, and repackaged for curation. During analysis, the artifacts were sorted into four categories: ceramics, glass, metal, and other materials, including architectural materials and faunal remains. Dr. Brandi Bethke assisted by analyzing the faunal material from the 2022-2024 field seasons, identifying animal species and cuts of meat represented among the Oaklawn Cemetery animal bones. Artifact data was entered into a Microsoft Access database that includes all analysis data from non-mortuary artifacts recovered during the 2021-2024 seasons.

Table 3.1 provides a breakdown of the recovered non-mortuary artifacts by the four major analytical categories from the 2021-2024 field seasons. These artifacts from previous seasons, including the 2020 Sexton Area testing, the 2021 Original 18 area excavations and the 2022-2023 excavations were described in the two previous reports (Regnier 2022a,b, 2024). Glass made up the largest portion (48 percent) of the recovered artifacts

Table 3.1. Non-mortuary Artifacts Recovered from Oaklawn by Material Type and Field Season.

Excavation Season	2021 Excavations				2022 Excavations				2023 Excavations				2024 Excavations				Total			
	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%
Ceramics	347	18.7	8247	16.5	117	10.5	1305	9.6	913	12.4	3149	24.9	1052	29.1	24262	33.8	2429	17.4	36963	25.0
Glass	534	28.7	13626	27.3	688	61.7	4666	34.3	3280	44.5	6987	55.3	2122	58.8	42498	59.3	6624	47.5	67776	45.8
Metal	972	52.3	27854	55.8	290	26.0	6261	46.0	2915	39.6	1224	9.7	213	5.9	1715	2.4	4390	31.5	37054	25.1
Other Materials	5	0.3	161	0.3	20	1.8	1384	10.2	255	3.5	1276	10.1	224	6.2	3224	4.5	504	3.6	6044	4.1
Total	**1858**	**13.3**	**49888**	**33.7**	**1115**	**8.0**	**13615**	**9.2**	**7363**	**52.8**	**12636**	**8.5**	**3611**	**25.9**	**71699**	**48.5**	**13947**	**100.0**	**147838**	**100.0**

from all four seasons.[1] Metal was the largest category in the 2021 field season, making up over 56 percent of recovered artifacts. Metal dropped to 26 percent of the 2022 artifacts, to 40 percent of the 2023 artifacts, and to only 6 percent of the 2024 artifacts. This was due to a change in recovery strategy; as the field seasons continued fewer and fewer unidentifiable pieces of ferrous metal were collected since they provide little valuable information.

As with previous excavations at Oaklawn, only a small portion of the recovered and analyzed artifacts were retained for curation. Artifacts not retained and repackaged for curation have been reburied at Oaklawn Cemetery. The reburied artifacts consist of undecorated and molded ceramics, glass without identifying features, fragments of glass containers already retained as whole containers, flat glass, unidentifiable metal, including heavily corroded ferrous metal and cuprous metal, and unmarked architectural debris. Table 3.2 shows the reburial rates by artifact category and field season. The cumulative reburial rate of artifacts from all four field seasons was 86 percent. The artifacts from the 2023 field season had the highest reburial rate at 90 percent. That number went down to 83 percent for the 2024 field season. This certainly has to do with the contexts encountered during the 2024 backhoe excavations, which will be discussed in detail below. Metal had the highest reburial percentage, with 98 percent of artifacts being reburied. The “Other Materials” category had the lowest because faunal fragments were retained for the analysis presented later in this chapter.

All artifacts retained for curation were individually photographed, packaged in 4 millimeter thick polyethlene bags with acid-free paper identification tags, and individually labeled with small 100% cotton bond paper tags adhered with curation stable B72 resin. All retained artifacts are ready for curation and will be sent to a yet-to-be-determined facility in Tulsa for long-term storage along with printed copies of the reports and artifact catalogs and digital versions of the photographs and analysis databases.

Table 3.2. Reburial Rates for Artifacts Recovered from Oaklawn by Material Type and Field Season.

Material Type	2021 Field Season				2022 Field Season				2023 Field Season				2024 Field Season				Total			
	Total	Kept	Reburied	%	Total	Kept	Reburied	%	Total	Kept	Reburied	%	Total	Kept	Reburied	%	Total	Kept	Reburied	%
Ceramics	347	160	187	53.9	117	63	54	46.2	913	255	658	72.1	1052	354	698	66.3	2429	832	1597	65.7
Glass	534	150	384	71.9	688	166	522	75.9	3280	338	2942	89.7	2415	203	2212	91.6	6917	857	6060	87.6
Metal	972	6	966	99.4	290	7	283	97.6	2915	41	2874	98.6	213	10	203	95.3	4390	64	4326	98.5
Other Materials	5	1	4	80.0	20	8	12	60.0	255	134	121	47.5	224	47	177	79.0	504	190	314	62.3
Total	**1858**	**317**	**1541**	**82.9**	**1115**	**244**	**871**	**78.1**	**7363**	**768**	**6595**	**89.6**	**3904**	**614**	**3290**	**84.3**	**14240**	**1943**	**12297**	**86.4**

The Non-Mortuary Artifacts from Trenches F – J

Table 3.3 shows the quantity of artifacts by analytical category from the 2024 field seaons. Trench J, the smallest of the areas, had the greatest artifact recovery. These totals do not incorporate the many artifacts recovered from the Trench J backdirt. As will be discussed below, this area appears to have served as a discrete dump site for large quantities of domestic trash during the first decade of the 20th century. By count, glass made up the greatest portion (62 percent) of artifacts in Trenches F – J. That portion is consistent across all three trench divisions.

1 Because the recovery methods for the Sexton Area excavations and the archaeological contexts for much of that area were so different, the counts of artifacts by material type for the Sexton Area will not be incorporated in this comparison. The Sexton Area results will be used later in the discussion of the artifact chronology

Table 3.3. Artifacts Recovered from Trenches F - J by Material Type.

Excavation Season	Trenches F - H				Trench I				Trench J				Total			
	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%
Ceramics	183	26.0	2718	23.4	101	19.8	1192	7.8	744	28.2	20260	32.3	1028	26.7	24170	27.0
Glass	454	64.6	6862	59.1	333	65.2	7943	52.3	1598	60.6	32349	51.6	2385	62.0	47154	52.7
Metal	30	4.3	1592	13.7	67	13.1	4571	30.1	116	4.4	7551	12.0	213	5.5	13714	15.3
Other Materials	36	5.1	430	3.7	10	2.0	1483	9.8	177	6.7	2592	4.1	223	5.8	4505	5.0
Total	**703**	**18.3**	**11602**	**13.0**	**511**	**13.3**	**15189**	**17.0**	**2635**	**68.5**	**62752**	**70.1**	**3849**	**100.0**	**89543**	**100.0**

Ceramics made up a fifth to a third of the trench assemblages. Trench J had the highest portion of ceramics, while Trench I had the lowest. Metal was the smallest category of recovered artifacts. The share of metal artifacts in the recovered assemblages has dropped through the four field seasons as we increasingly avoided collecting pieces of unidentifiable rusted ferrous and other types of metal, which take up valuable analysis time and artifact storage space but hold little research value relevant to the goals of this project.

Ceramics

The 1,052 ceramics from the 2024 excavation season made up 29 percent of the recovered artifact assemblage. Two-thirds of those ceramics were reburied, which is the lowest reburial rate for any material category from 2024. Trench J had the highest recovery, with 744 ceramics, followed by Trenches F-H at 183, and Trench I at 101.

The ceramic analysis captured data consisting of ceramic ware type, vessel form and portion, decorative type, color, motif, and field, and approximate date range. Archaeologists use these traits of ceramic artifacts to determine the date, use, and even cost of the recovered ceramics. The preference of styles of ceramic wares and decoration changed over time in response to customer preference and technological innovations. Records from 19th and 20th century pottery producers provide information about when certain types of ceramics were produced. This allows archaeologists to assign relatively narrow ranges of dates of manufacture to certain ceramic types.

<u>Ware Type</u>. Ceramic wares fall into four broad types – refined earthenwares, coarse earthenwares, porcellaneous wares, and stoneware. Table 3.4 provides an inventory of the ceramic assemblage from Trenches A – D by ware type. Ware types are distinguished by characteristics of the clay body and the firing temperature.

Refined earthenwares are light-colored and high-fired, with a hard, white to off-white ceramic paste. In the late 18th and 19th century, ceramic makers in the United Kingdom experimented with a variety of glazes in their attempts to reproduce the porcelains produced in China and Japan (Samford 2002). Refined earthenwares were imported to America from the UK in massive quantities between the late 18th and 20th centuries. American manufacturers began to produce refined earthenwares in large quantities after the Civil War. Refined earthenwares were used for a wide variety of tablewares and teawares, including plates, platters, cups, bowls, teapots, teacups, saucers, tureens, and pitchers. The refined earthenwares in the assemblage were separated into thin-bodied whitewares, thick-bodied ironstone/white granite, yellow ware and other refined earthenwares. Ironstone/White Granite was a thicker, more durable clay body first introduced to the market around 1840 (Samford and Miller 2012). White Granite was used for tablewares, including plates, platters, bowls, cups, and tureens, in the 19th century. By the 20th century, White Granite was largely used for restaurant china and toilet wares for use in bathroom fixtures and accessories (Samford 2022). Yellow ware, which was originally imported from the UK, has a softer, yellowish-tinted clay body. Yellow ware production shifted to American after the Civil War. Yellowwares frequently have molded decorations and may have colored glazes or be decorated with bands of colored clay slips.

Porcellaneous wares are high-fired, thin-bodied bright white ceramics. Porcellaneous wares are made from refined clays with high kaolin contents. These clays are fired to temperature high enough for vitrification to

Table 3.4. Ware Types for Ceramics from Trenches F - J.

Trench	Trench F-H		Trench I		Trench J		Total	
Ware Type	**Count**	**%**	**Count**	**%**	**Count**	**%**	**Count**	**%**
Whiteware	72	39.3	47	46.5	231	31.0	350	34.0
Ironstone/White Granite	51	27.9	23	22.8	242	32.5	316	30.7
Yellow ware	3	1.6	0	0.0	2	0.3	5	0.2
Bisque	2	1.1	1	1.0	2	0.3	5	0.5
Porcellaneous Ware	29	15.8	24	23.8	75	10.1	128	12.5
Stoneware	23	12.6	5	5.0	180	24.2	208	20.2
Coarse Earthenware	2	1.1	1	1.0	6	0.8	9	0.9
Redware	1	0.5	0	0.0	2	0.3	3	0.3
Toilet wares	0	0.0	0	0.0	4	0.5	4	0.4
Total	**183**	**17.8**	**101**	**9.8**	**744**	**72.4**	**1028**	**100.0**

occur, causing the clay to take on a glass-like texture. The porcellaneous ware designation is used for ceramics made in the UK and continental Europe beginning in the 18th century and imported to the United States. American producers began making porcellaneous wares for the market in the late 19th century. Porcellaneous wares, which became increasingly common in the early 20th century into the mid-20th century, were used for tablewares, teawares, and decorated objects like vases. Many of these vessels were produced via a slip casting process in which thin kaolin clay was poured into molds.

The Trench F – J ceramics are largely comprised of vessels and other artifacts used in the day-to-day functioning of a household. There is some notable variation among the refined earthenware types among the three trenches. Whitewares made up just over a third of the 2024 trench assemblages. Whiteware made up almost half of the Trench I assemblage and less than a third of the Trench J assemblage. Thick-bodied ironstone was the second most common ceramic type, making up about 30 percent of the recovered ceramics (Figure 3.3). Unlike Trenches F – H and I, Trench J had more ironstone sherds than whiteware. Many of these sherds were part of oval-shaped small and large platters with maker's marks that indicate they were sold as china for hotels (Figure 3.4). One of these platters (1262.064 and 1263.050) had a maker's mark used by the Arthur J. Wilkinson pottery of Staffordshire, U.K. between 1891-1896. Porcellaneous wares made up an eighth of the 2024 ceramic assemblage. They comprised nearly a quarter of the Trench I assemblage and only ten percent of the Trench J assemblage.

The variation in refined earthenware percentages is one of many indicators of a temporal difference between the artifacts from Trench J and the rest of the 2024 contexts. Trench J has a much higher representation

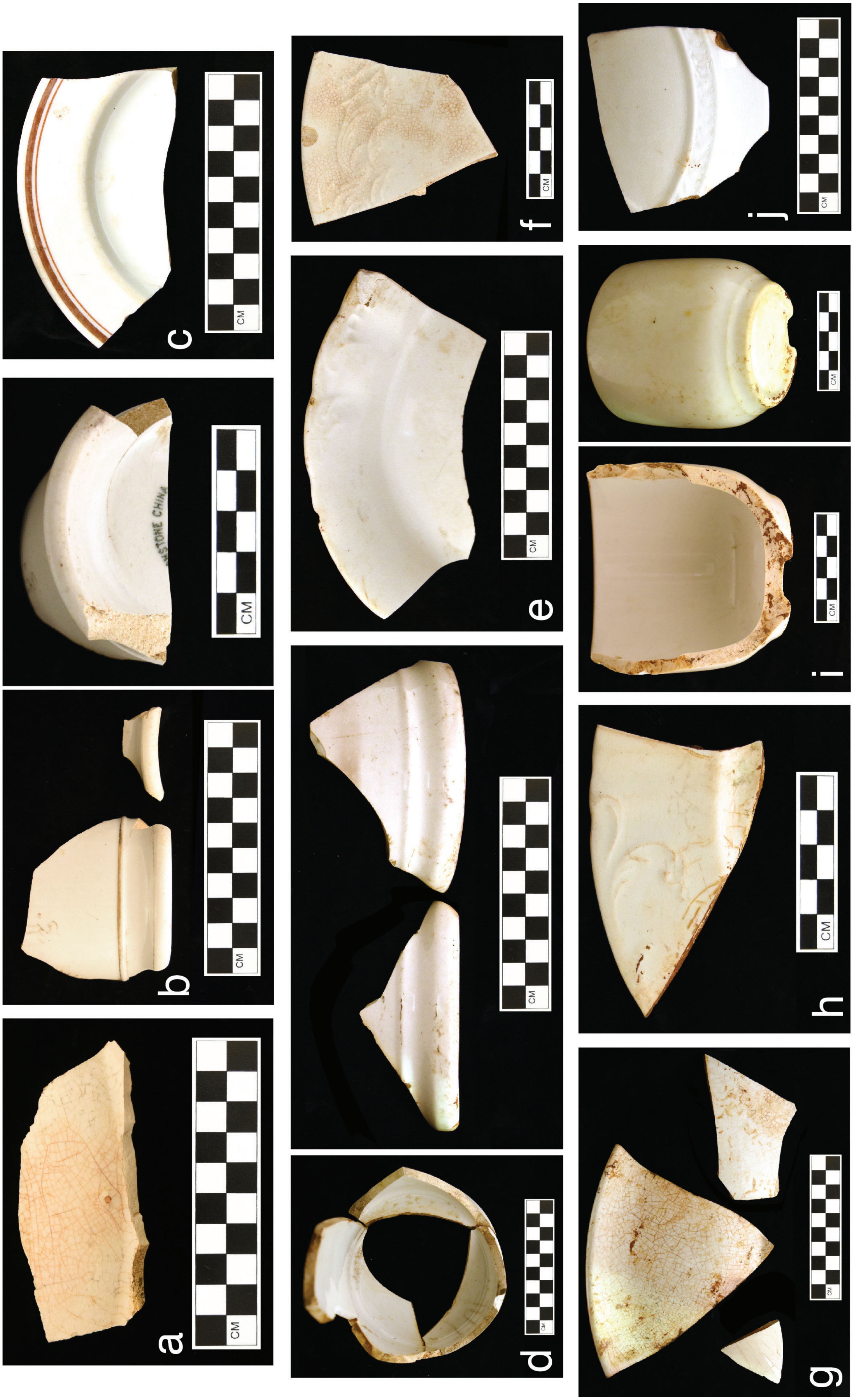


***Figure 3.3**. Selected ironstone recovered during the 2024 excavations: (a) lid (1104.003); (b) base of gilded tankard (1112.002); (c) plate with red annular lines around rim (1430.001); (d) base of pitcher (1261.002, 1262.007, 1362.007); (e,f) molded plate rims with scrollwork (1261.007,1261.035); (g) rim of large vessel (1261.014); (h) rim of plate with molded scrollwork (1261.035); (i) handleless mug (1261.038); (j) molded lid (1262.023).*

***Figure 3.4**. Oval ironstone/hotelware platters from the 2024 excavations: (a) Impressed "HOTEL" mark (1261.001); (b) small platter with Wheeling Pottery Company mark on base (1261.003); (c) large oval platter with portion of "EXTRA QUALITY" mark (1261.004); (d) small oval platter with impressed "HOTEL" mark (1261.026); (e) large platter (1261.008); (f) large platter with scalloped rim, faded green floral decal motif, and A. J. Wilkinson maker's mark (1262.064 and 1263.050).*

of ironstones, which were most popular in the last half of the 19th century. Trench J also has a lower representation of porcellaneous wares, which grew in popularity and supplanted ironstone during the early decades of the 20th century. These ware percentages suggest that the Trench J artifacts are earlier in time by at least a couple of decades than the artifacts from Trenches F – H and I.

Utilitarian ceramics in the Trench F – H, I, and J assemblages consist of stonewares, yellowwares, redwares, and unidentified coarse earthenwares. Utilitarian wares made up about a quarter of the ceramics. The percentages of utilitarian wares by trench varied widely. The Trench J ceramics are 26 percent utilitarian wares and the Trench F – H ceramics are 16 percent utilitarian wares. Only 6 percent of the Trench I ceramics are utilitarian wares.

Coarse earthenwares are produced with less-refined clays and consist of thicker wares fired to lower temperatures. Clays may have inclusions of sand, grit, or other particles, and they may or may not be glazed. Unglazed coarse earthenwares are porous and will absorb water into the clay body. The clay bodies are softer and less compact than refined earthenware and may occur in a variety of colors, including red wares, terracotta, yellowwares, buff-colored pastes, and gray wares. Coarse earthenwares are thicker and were used primarily for utilitarian vessels in the 19th and 20th centuries. These thicker, more durable ceramics were used for vessels such as storage jars, mixing bowls, crocks, flower pots, pitchers, spittoons, and jugs.

Stonewares made up 20 percent of the ceramics from Trench F – H, I, and J. Stonewares are made from compact clays fired to a very high temperature to product a very hard and compact clay body. These clay bodies are typically buff to grayish in color. Stoneware vessels typically occur in utilitarian forms like jugs, crocks, churns, and mixing bowls. They are typically fired a second time with a chemical glaze that produces a glassy exterior to prevent the fired piece from absorbing water. The type of glaze can be used to determine a production date for stonewares. Table 3.5 provides the counts of each type of stoneware glaze by trench.

Table 3.5. Stoneware Glazes from Trenches F - J.

Stoneware Glazes	Date	Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%
Salt-glazed	mid to late 19th c.	0	0.0	0	0.0	2	1.4	2	1.1
Salt glazed int/Albany slip ext	mid to late 19th c.	0	0.0	0	0.0	4	2.7	4	2.3
Albany Slip	mid to late 19th c.	3	13.0	1	20.0	33	22.3	37	21.0
Bristol slip ext/Albany slip int	late 19th to early 20th c.	9	39.1	1	20.0	0	0.0	10	5.7
Bristol slip ext/Salt glazed int	late 19th to early 20th c.	0	0.0	0	0.0	5	3.4	5	2.8
Bristol slip	20th c.	9	39.1	1	20.0	88	59.5	98	55.7
Bristol slip with maker's mark/decoration	20th c.	1	4.3	0	0.0	0	0.0	1	0.6
Light blue glaze	early - mid-20th c.	1	4.3	1	20.0	2	1.4	4	2.3
Brown glazed ext/Albany slip int (gray clay body)	unknown	0	0.0	0	0.0	9	6.1	9	5.1
Matte Reddish-brown Glaze	unknown	0	0.0	1	20.0	5	3.4	6	3.4
Totals		**23**	**13.1**	**5**	**2.8**	**148**	**84.1**	**176**	**96.6**

Stonewares were primarily imported to America from the UK and Europe until the 19th century. In the early 19th century, stonewares were produced and distributed regionally in the United States primarily via small potteries. The earliest American stonewares had salt added to the kiln during firing, which led to a textured glaze surface that resembles an orange peel (Figure 3.5). These earlier salt-glazed stonewares are only documented in Trench J, further adding to the body of evidence that Trench J is an earlier context.

By the mid-19th century, localized stoneware production continued while large potteries with widespread distribution capabilities were established in Ohio, Pennsylvania, New York, and New Jersey. These potteries took advantage of locally available glacial clays, which they used to produce high-quality stonewares and coarse earthenwares. American potters primarily used two types of slips, Albany slip, originally made from clays in New York, and Bristol slip, originally developed in England but later made from American glacial clays. Albany slip can range in color from dark, almost black, browns to a tobacco color (Figure 3.6). Bristol slips are primarily gray but can range from creamy to a bluish white (Figure 3.7).

The use of these slips changed over time. Albany slips on the interior and exterior of vessels date to the mid- to late-19th century. Full Albany slips make up 22 percent of the Trench J assemblage. They also make up 20

***Figure 3.5**. Rim and base sherds from a massive salt-glazed exterior/Albany slip interior crock recovered from Trench J with a portion of the cobalt laurel wreath decoration (1263.109).*

percent of the Trench I assemblage, but only five stoneware sherds were recovered from that trench. They make up 12 percent of the Trench F – H assemblage. This adds to the evidence that Trench J represents earlier deposits of trash than Trenches F – I. Bristol exteriors with Albany interiors date to from the late 19th to the first two decades of the 20th century. These vessels are only present in Trench F – H. Solely Bristol slip dates exclusively to the 20th century, mostly after 1920 (Greer 1981). Slips in varying shades of blue and pure white became popular in the early 20th century and occurred with Bristol slips on one surface or on the interiors of vessels with unglazed exteriors (see Figure 3.7a,b,d). Sixty percent of the Trench J stoneware are from Bristol slip vessels. This is higher than either Trench F – H or Trench I, but the samples from those two trenches are much smaller.

Coarse earthenwares, redwares, and yellow wares were all uncommon, making up only 1.5 percent of the total assemblage (Figure 3.8). Yellow wares from Trenches F – H and Trench J include brown-glazed Rockingham pottery, which was produced in the U.S. from the 1840s through the 1930s (Claney 2004). Several of the Rockingham sherds (1104.005) are part of the same vessel or set of vessels documented in the Trench A – D analysis (Regnier 2022a). Additional shards from one of redware sherds (Figure 3.8c), a molded bowl with a white glazed interior from a mixing bowl, were documented in the Trench E analysis (Regnier 2024). Coarse earthenwares were uncommon and consisted primarily of terra cotta and buff-colored ceramics and pieces of thick clay drain pipe.

Decorated refined earthenwares and porcellaneous wares. Table 3.6 shows the types of decoration on refined earthenwares and porcellaneous wares in the Trench F – H, I, and J ceramic assemblages. The most common decorative type from all four field seasons are molded ceramics (Figure 3.9). Trench I has the highest percentage of molded sherds from the 2024 excavations, at roughly half of the decorated sherds. Roughly 40 percent of the decorated ceramics from Trenches F – H and J were molded.

Figure 3.6. *Selected Albany slip stoneware recovered during the 2024 excavations: (a) Crock with an Albany slip interior and rim and Bristol slip exterior (1104.010, 1113.002); (b) crock with brown glazed exterior and Albany slip interior (1261.082, 1262.002, 1263.114); (c) mixing bowl with brown-glazed rim (1261.085, 1262.006, 1263.020); (d) Molded flower pot tray with unglazed exterior and Albany slip interior (1260.001); (e) crock rim (1263.031); (f) Albany slip crock base with brown glaze streaked over base and rim (1261.045, 1263.058, 1362.077, 1366.010).*

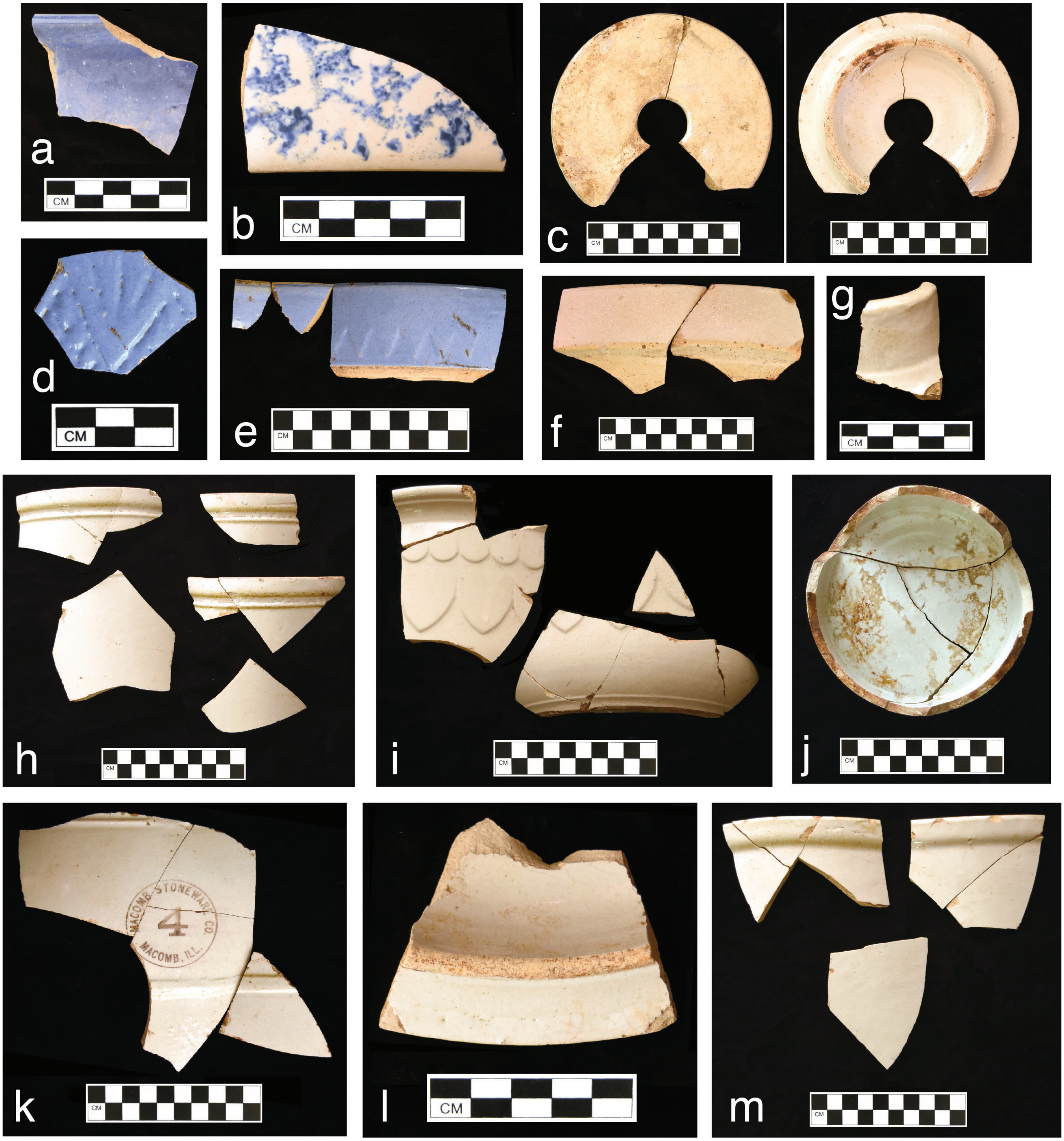


Figure 3.7. *Selected Bristol slip stoneware recovered during the 2024 excavations: (a) light blue exterior mixing bowl rim (1104.001); (b) base of sponge-decorated crock (1261.040); (c) churn lid (1362.008); (d) molded light blue glazed exterior mixing bowl (1263.057); (e) light blue glazed molded mixing bowl rim (1261.042, 1263.113); (f) mixing bowl rim (1262.005); (g) jug spout (1335.002); (h) small crock rim and body (1261.084, 1263.117, 1366.009); (i) molded mixing bowl rim and base (1261.048, 1262.004, 1263.056); (j) crock base (11261.083, 1263.115); (k) McComb Stoneware mark on jug body (1263.054); (l) lid (1304.006); (m) small crock body and rim (1261.084; 1263.117; 1366.009).*

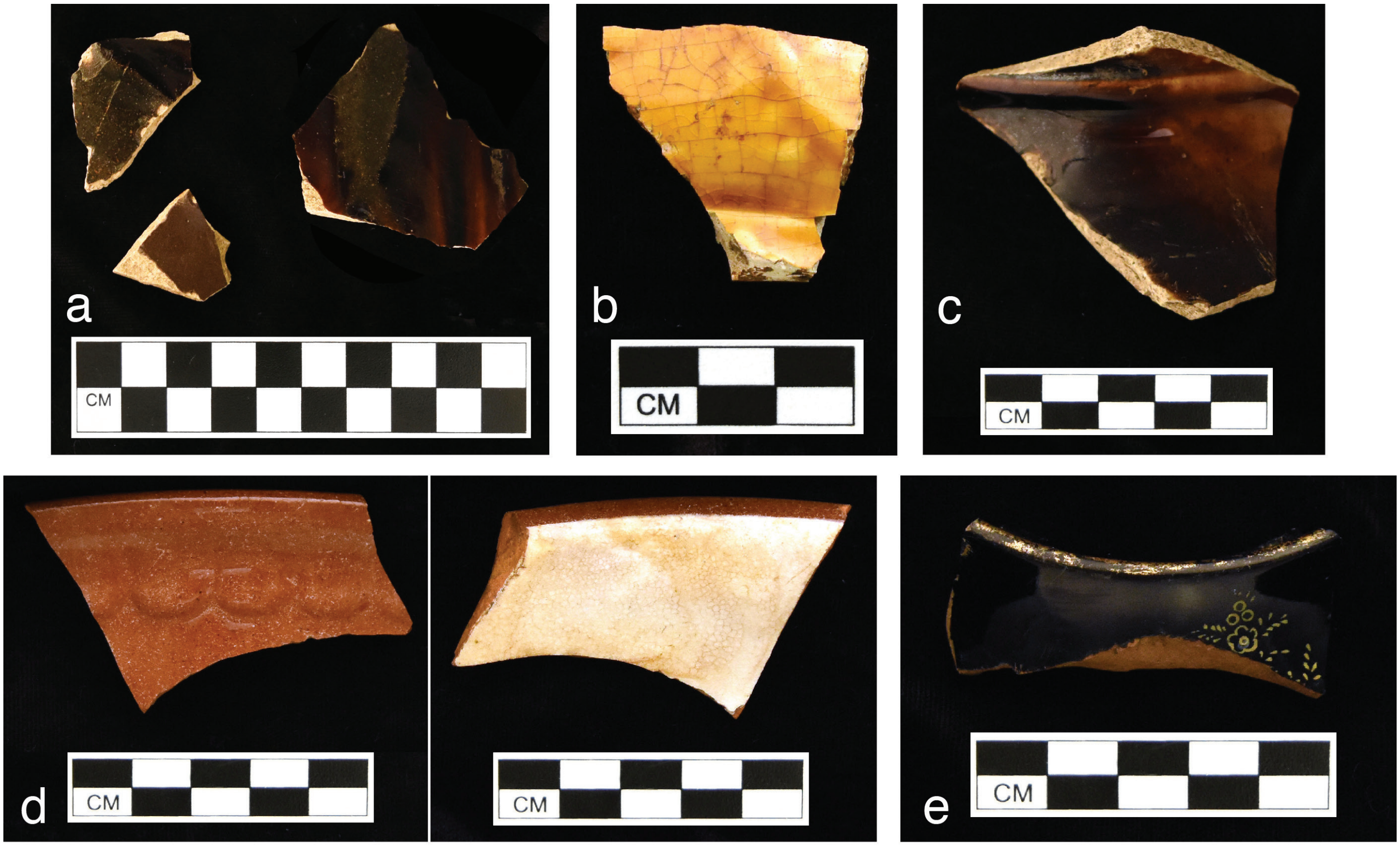


Figure 3.8. *Selected coarse yellow ware and redware sherds recovered during the 2024 excavations: (a) molded Rockingham sherds that crossmends with sherds from Trenches A – D (1104.005); (b) molded Rockingham body sherd (1361.009); (c) Rockingham body sherd (1263.060); (d) molded redware bowl rim with white-glazed interior (1263.005); (e) black-glazed redware with hand-painted design (1430.002).*

Table 3.6. Decoration on Refined Earthenwares from Trenches F - J.

Decorative Type	Start Date	Peak Popularity	Trench F-H		Trench I		Trench J		Total	
			Count	%	Count	%	Count	%	Count	%
Molded	1660+	1870-1950	26	39.4	21	51.2	121	50.6	168	48.6
Flow blue transfer-printed	1841+	1890-1904	2	3.0	1	2.4	11	4.6	14	4.0
Transfer-printed	1783+	1820-1870	3	4.5	4	9.8	60	25.1	67	19.4
Spongeware/Spatteware	1820+	1840-1880	0	0.0	3	7.3	3	1.3	6	1.7
Hand-Painted Copper luster (Tea Leaf)	1850+	1850-1900	1	1.5	0	0.0	4	1.7	5	1.4
Hand-painted Japanese Geisha Girl ware	1875+	1875-1960	1	1.5	0	0.0	1	0.4	2	0.6
Hand-painted (Polychrome and Blue)	1775+	1820-1920	12	18.2	0	0.0	3	1.3	15	4.3
Gilded	1760+	1900-1950	2	3.0	0	0.0	4	1.7	6	1.7
Multi-color overglaze decal	1875+	1900-1950	18	27.3	12	29.3	31	13.0	61	17.6
Colored, Fiesta Style Glaze	1926+	1936-1970	1	1.5	0	0.0	1	0.4	2	0.6
Totals			**66**	**19.1**	**41**	**11.8**	**239**	**69.1**	**346**	**100.00**

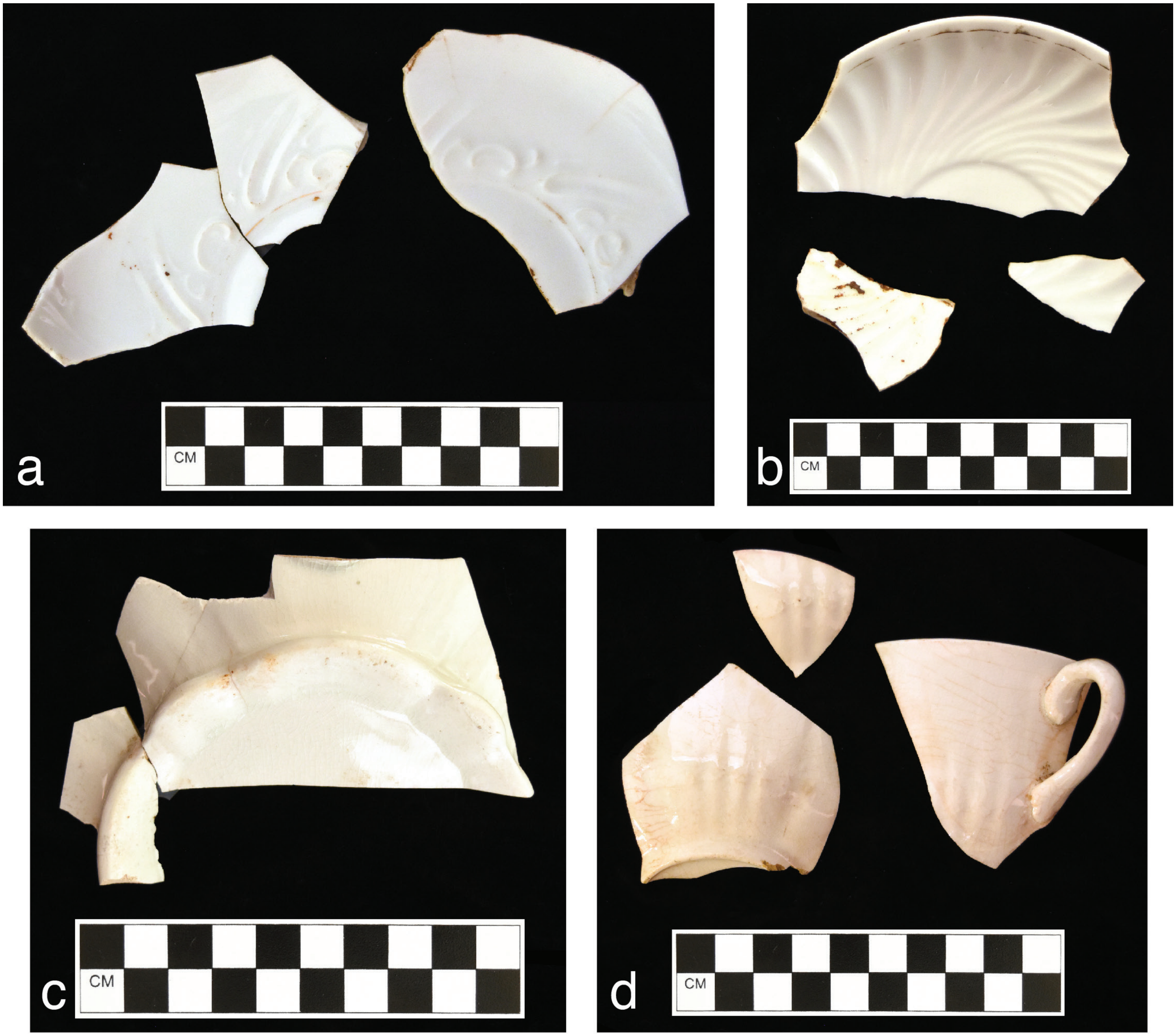


Figure 3.9. *Selected molded whiteware, ironstone, and porcellaneous ware ceramics recovered during the 2024 excavations: (a) Porcellaneous ware plate with scrollwork motif (1262.022, 1362.009); (b) gilded porcellaneous ware plate with swirled scallop motif (1263.111, 1362.004); (c) base of whiteware vase that mends with vessel from 2023 excavations (1184.002); (d) Fluted whiteware teacup with cream colored glaze (1262.016, 1263.004).*

Otherwise undecorated molded ceramics typically fall into two categories: (a) ironstones from the late 19th century or (b) thin-bodied porcellaneous wares and whitewares from the early to mid-20th century. Molded ironstones were introduced in 1840 and made until the close of the 19th century. These molded wares can be roughly dated by the molding motif. Molded whiteware plates with decorations around the rims became popular in the early 20th century. Frequently these plates had multi-colored overglaze floral decals around the rims and in the center of the plate. Because they were placed over the glaze, many of these decals have sustained damage and the designs have faded. American import of molded porcellaneous wares made in continental Europe exploded in the late 19th century. Many of these vessels were made in Germany. The blank vessels were produced and then purchased by tradesmen who decorated the vessels, typically via hand-painting and gilding, and sold the finished pieces. They include a wide variety of tablewares and decorative forms.

Transfer-printed sherds in a variety of colors were the next most common decorative type (Figure 3.10). Transfer-printed sherds made up 20 percent of the Trench J assemblage and far less of the Trench I and F – H assemblages, at 10 and 5 percent respectively. Transfer-printed ceramics were made by transferring an inked image from an engraved copper plate to the vessel surface. Transfer-printed sherds were first made in the late 18th century in Staffordshire, England, which has been the center of ceramic production in the UK since that time. The earliest transfer-printed designs were inspired by Chinese ceramics and depicted scenes from Chinese legends (Samford and Miller 2012). Transfer wares reached their greatest popularity in the mid-19th century, when decorative motifs depicted events in British and American history, pastoral scenes, gothic castles, classical motifs with ancient ruins, and floral designs.

Transferware sherds can be dated by color, motif, and style. Transfer-printed sherds were produced in a variety of colors, including red, brown, purple, green, brown, and, most commonly, blue. The 2024 artifact assemblage includes transferware ceramics in three colors: browns, greens/teals, and shades of blue. Different colors were introduced to the market and reached their peak popularities at different documented times. Two blue transfer-printed sherds (1261.022,1261.023) from Trench J (see Figure 3.10d,e) appear to date between 1820 and 1840, based on the amount of blue ink in the design field and the motif. These are likely pieces of broken heirloom dishes. Flow blue is a variety of transfer printing executed by intentionally adding excess ink during the transfer process, causing the ink to bleed and create a blurred image. Flow blue sherds were introduced to America as early as 1844 and remained popular into the early 20th century. Based on the vessel forms, which are largely molded plates and teacups, the flow blue sherds in the Trench F – H, I , and J assemblages (Figure 3.10a,b,c,f,g,h,l) date between roughly 1890 and 1910.

Transfer-printing motifs went in and out of fashion quickly, and many well-known patterns were made for only a short time, allowing archaeologists to very precisely refine the dates of production for a given ceramic vessel. Many of the transfer-printed sherds recovered in 2024 have motifs associated with the Victorian Aesthetic Movement of the 1870s and 1880s, which incorporated asymmetrical motifs from Japan and the Middle East (Figure 3.11). These sherds date to the last decades of the 19th century and the first decade of the 20th century (Samford and Miller 2012). All but one of the aesthetic transferware vessels were recovered from Trench J. They represent several different patterns, but only three are identified. The molded saucer in Figure 3.11g has a mark from the J & G Meakin Pottery of Hanley, Staffordshire that identifies the pattern as “Chicago.” This is the same pattern as the saucer in Figure 3.11d. The mark on the base was used between 1859 and 1900 (Kowalsky and Kowalsky 1999). The ironstone plate rim with dark blue floral decoration in Figure 3.11e has a mark that identifies the pattern as “Dovedale,” but the maker is unknown. The molded brown transfer-printed bowl (Figure 3.11f) recovered from Trench J is in the Oban pattern made by Alfred Meakin of Staffordshire between 1875 and 1897.

Green and teal transfer-print sherds, many of which were from the same pattern, were common in the assemblage (Figure 3.12). These sherds include fragments of saucers and teacups (Figure 3.12c-g). A maker’s mark on one of the sherds has a portion of the logo of the Pitcairn’s Limited pottery in Tunstall, England, in the pottery production hub of Stoke-On-Trent in Staffordshire. This pattern was sold under the name “Myrtle.” The company used the mark seen in Figure 3.12g between 1894-1901, when the pottery closed. These sherds, from a teacup, saucers, and a dinner plate, cross-mend across multiple contexts, but are concentrated in Trench J. The bright green transfer-printed rim in Figure 3.12h likely dates earlier, to the mid-19th century based on the pattern.

Ceramics decorated with multi-colored overglaze decals made up 20% of the decorated refined earthenwares. The use of multi-colored decal decoration began in the 19th century and reached its height of popularity in the early 20th century (Samford and Miller 2012). The decals typically have brightly-colored floral motifs, with pink, red, orange, and yellow flowers and green leaves. Because the decals were applied over the glaze, they were often damaged by use, repeated washing, or by being buried in the ground as part of the archaeological record. Selected decal decorated sherds from the excavations are shown in Figure 3.13. Many of these sherds are from ornately molded porcellaneous ware vessels. The Homer Laughlin mostly complete teapot with an Art Deco motif (Figure

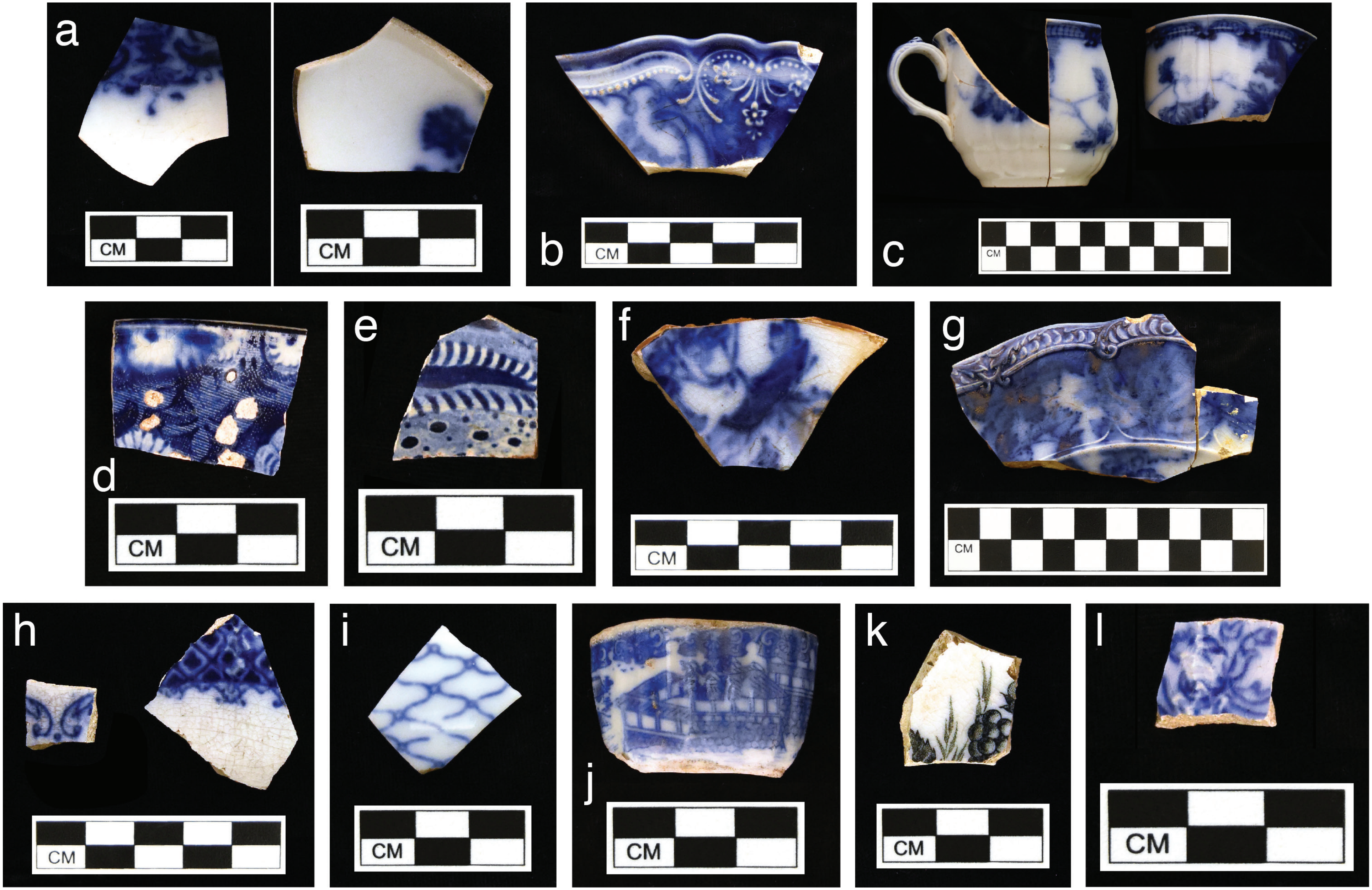


Figure 3.10. Selected blue transfer-printed sherds recovered during the 2024 excavations: (a) flow blue teacup with interior decoration (1104.001); (b) flow blue plate rim that matches sherds from 2021 and 2024 (1111.001); (c) flow blue teacup (1261.004,1263.010, 1362.003); (d,e) 1820s-1840s plates (1261.022,1261.023); (f) flow blue plate (1261.029), (g) flow blue molded rim plate (1263.004), (h) flow blue teacup (1263.005, 1368.001), (i) teacup (1263.007); (j) small molded vessel (1263.008); (k) very dark blue with berry motif (1261.009), and (l) floral motif body sherd (1368.002).

***Figure 3.11**. Selected late 19th century aesthetic transferware ceramics from the 2024 excavations (a,b) brown interior body sherds (1106.002,1261.033); (c) brown molded lidded container with portion of makers mark (1261.011,1263.026); (d) green saucer (1261.021); (e) dark blue ironstone platter rim with Wood and Sons Dovedale pattern makers mark (1261.027, 1263.002); (f) brown waste bowl exterior and interior in the Oban pattern from Alfred Meakin (1261.030, 1263.060); (g) green saucer with J & G Meakin Chicago pattern mark (1261.086, 1262.021, 1263.019).*

***Figure 3.12**. Selected teal and green transfer-printed ceramics recovered during the 2024 excavations: (a) body (1102.001); (b) body (1263.023); (c) teacup (1104.002, 1263.015, 1362.002, 1437.001); (d) saucer rim (1203.003, 1262.018, 1263.018, 1367.001); (e) saucer with Pitcairn Limited mark (1261.018); (f) plate rim (1261.020, 1263.016); (g) saucer rim with mark (1262.025, 1362.001); (h) mid-19th century bright green transfer print plate rim (1359.001).*

***Figure 3.13**. Selected overglaze decal decorated ceramics from the 2024 excavations: (a) molded porcellaneous ware tableware with faded floral decals (1105.001, 1106.001, 1107.001); (b) molded whiteware pitcher with faded rose decal (1143.001, 1144.001); (c) molded porcellaneous ware teacup with faded floral motif (1261.010, 1263.112); (d) floral motif porcellaneous ware, unknown vessel (1146.002); (e) floral whiteware plate rim (1259.002); (f) floral whiteware, unknown vessel (1146.001); (g) whiteware plate rim with molded dots and floral decal (1203.002); (h) teapot with art deco decal and Homer Laughlin mark on base (1203.001); (i) floral molded and gilded porcellaneous ware unknown vessel (1263.024); (j) unknown molded vessel with dot pattern and floral (1259.001); (k) unknown floral whiteware vessel (1261.016, 1263.001); (l) molded scalloped plate rim (1360.001); (m) molded unknown vessel with blue floral (1262.014, 1263.029).*

3.13h) from Trench I has a mark identifying it as the Empress collection. As is common for much of the early 20th century Homer Laughlin china, Empress refers to the vessel shapes in the line, rather than the decorative pattern (Gonzalez 2024). This line was made from 1913 to 1940. The scalloped plate with molded dots along the edges in Figure 3.13g is likely from the Homer Laughlin Angelus line of vessels, made from 1905-1916. This sherd was recovered from Trench I. The unidentified hollowware vessel sherd in Figure 3.13j is also likely from the same line; it was recovered from the backdirt and likely is from Trench J.

Three additional decorative methods make up the remaining 13% of the decorated refined earthenwares (Figure 3.14). The most common of these were hand-painted ceramics. A rim sherd from a porcelain bowl recovered from the west end of Trench I had orange overglaze printed and hand-painted porcelain in a Japanese Geisha Girl motif (Figure 3.14a). These wares were first made in 1875 and were imported into the United States until at least 1950 (Litts 1988). Initially, the molded green and red hand-painted floral pattern ironstone from

Figure 3.14. *Selected hand-painted and sponge-decorated ceramics from the 2024 excavations: (a) Porcellaneous ware bowl with Japanese Geisha Girl Ware painted motif (1113.001); (b) Canton ware plate with cobalt hand-painted leaf design (1263.003); (c) Molded whiteware vessel with polychrome floral motif that refits with sherds from the 2022 excavations (1113.007, 1335.001, 1381.001); (d) Cobalt blue sponge-decorated whiteware plate rim that matches sherds from the 2021 excavations (1259.003, 1362.005); Hand-painted copper luster: (e) lid (1261.004); (f) saucer with Alfred Meakin mark (1262.004, 1263.050); (g) pitcher with W.H. Grindley & Company mark (1261.018, 1263.032).*

Trench F (see Figure 3.14b) were thought to be 19th century hand-painted ceramics from Staffordshire, but the vessel form and molded decoration indicate that this sherd is from the 20th century. A blue hand-painted Canton ware sherd with a botanical motif (Figure 3.14c) was recovered from the Trench I/J backdirt. These sherds were made in China and exported to the U.S. in the late 19th/early 20th century.

Three different ironstone sherds with hand-painted copper luster tea leaves are shown in Figure 3.14e, f, and g. Figure 3.14e is a lid, Figure 3.14f is a plate, and Figure 3.14g is most of a pitcher. Hand-painted copper luster tea leaf motifs date from the 1850s to 1910 (Upchurch 1995). Sherds with this motif were made in Staffordshire. They were popular in North America but not in England (Upchurch 1995). All copper luster tea leaf sherds in Figure 3.14 were recovered from Trench J. The saucer sherd shown in Figure 3.14e has a maker's mark from the Alfred Meakin Pottery, Ltd., which dates after 1897 (Kowalsky and Kowalsky 1999) and up to 1910, when tea leaf production ceased. The pitcher in Figure 3.14f was made by W. H. Grindley & Co., who started using the Royal Arms mark in 1891.

Sponge-decorated stoneware sherds have already been described (see Figure 3.7). Three sherds from the rim of a cut sponge-decorated whiteware plate were recovered from Trenches I and J (Figure 3.14d). Ceramics decorated with cut-sponges in areas bounded by hand-painted lines were imported from Staffordshire from 1845 to the 1870s and regained popularity in the 1920s and 1930s (Samford and Miller 2024).

Maker's marks are frequently found on the bases of refined earthenwares and porcellaneous wares. Because ceramic makes frequently changed their marks as they changed their decorations, maker's marks can narrow date ranges for ceramics. Sherds with maker's marks and no other decoration are pictured in Figure 3.15. The sherd in Figure 3.15d is part of the brown aesthetic transfer-print bowl shown in Figure 3.11f, dating between 1875 and 1897. Six of the marks (Figure 3.15a,b,c,e,q,r) are from hotel ironstones made for use by hotels and restaurants in the early 20th century. All but one were recovered from Trench J. The remaining identified marks came from the first decade of the 20th century.

<u>Dating the Ceramic Assemblage.</u> The stoneware glazes, decorated ceramics, and makers marks in the Trench F – J artifact assemblage reveal some important trends in the dating of ceramics at Oaklawn Cemetery. The ceramics from Trench J date earlier than the ceramics in Trenches F-I. Many of the sherds from Trench J were from patterns or had marks that were no longer made by 1910. The aesthetic transferware, green transfer-printed copper luster tea leaf ironstone, makers marks, comparatively lower percentage of decal-decorated ceramics, and comparatively higher percentage of Albany slip stoneware all support the conclusion that Trench J is earlier in time than Trenches F – I. Trench J is of interest because it had the highest artifact density by far. Trench J appears to have intersected a discrete area along the buried stream where large amounts of trash were dumped, likely over a period of a few years. The ceramics indicate this occurred roughly between 1890-1910. The recovery of sherds in Trenches F – I was substantially lower than in Trench J, but some conclusions still can be drawn. The higher proportions of overglaze multi-color decal decorations and of molded porcellaneous wares in Trenches F – I indicate that these assemblages are comparatively more recent. The Trench F assemblage includes some earlier types, such as a sherd of hand-painted copper luster and parts of flow blue transfer-printed plates. The glass assemblage should provide further evidence that supports the dating trends noted in the ceramics.

Glass

The glass analysis collected data including glass color, broad type, container type and portion, manufacturing and finish method, and embossing. The glass assemblage consisted of 2,385 pieces of glass, included 454 from Trench F – H, 333 from Trench I, and 1,598 from Trench J. Unlike the previous excavations, the glass counts to weights were similar across the three trenches, indicating that breakage rates for glass were consistent across the excavation area. The soils during the 2024 excavations were better saturated than they were in the 2022 and 2023 field seasons.

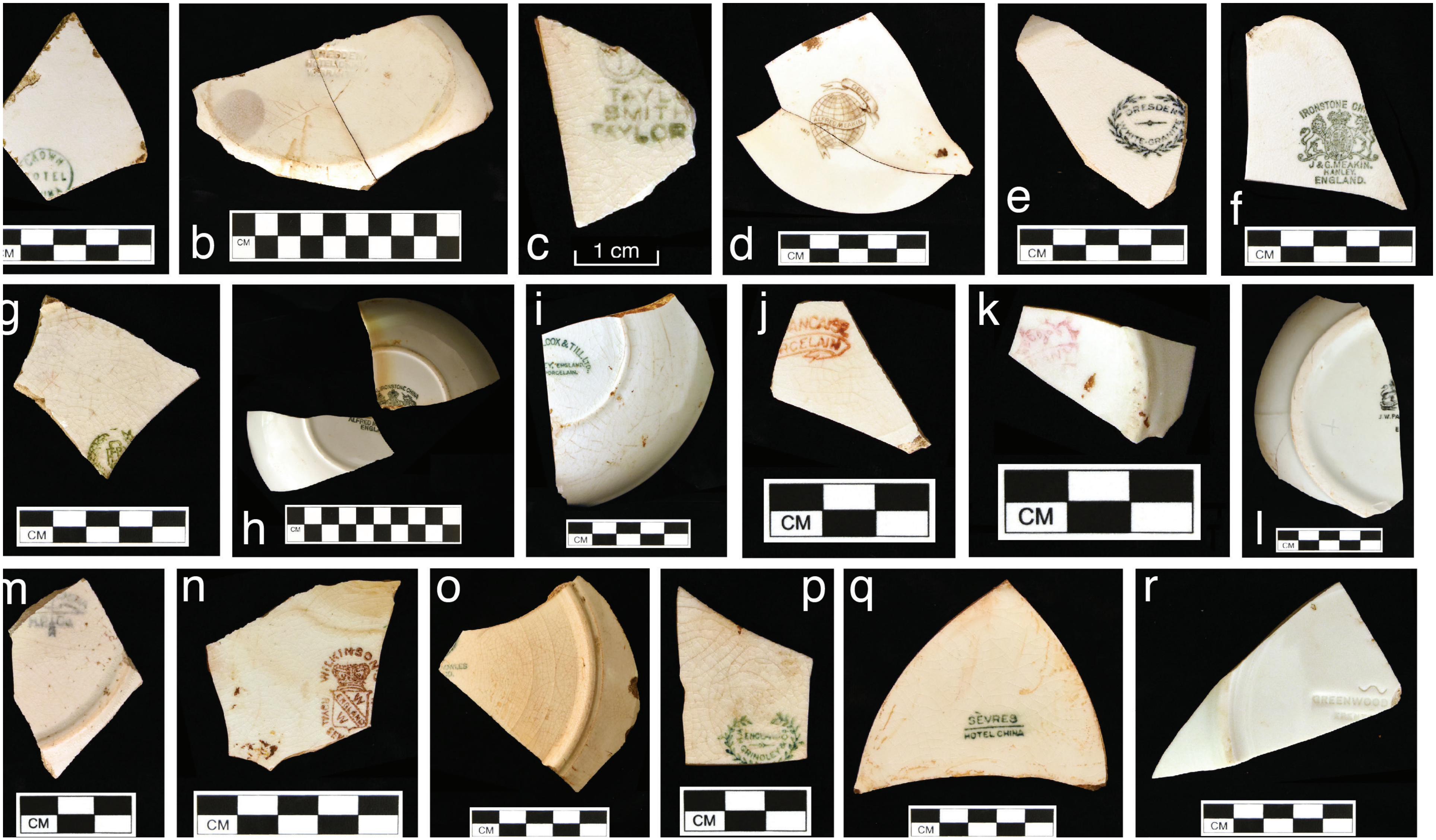


Figure 3.15. SSelected maker's marks from the 2024 excavations: (a) Crown Hotel China, 1891+ (1178.001); (b) impressed Dresden Hotel China, 1882-1925 (1261.045, 1263.110); (c) Taylor, Smith, & Taylor, 1901+ (1261.012); (d) OBAN pattern by Alfred Meakin, 1875-1897 (1261.026, 1263.005); (e) printed Dresden White Granite,1882-1925 (1437.002), (f) J & G Meakin, 1890+ (1261.082); (g) unidentified mark with laurel wreath (1261.032); (h) Alfred Meakin, 1891-1897 (1362.013); (i) Dudson, Wilcox, & Till, Ltd., 190-1926 (1262.026); (j) Francaise Porcelain, the French China Company, 1898-1915 (1357.002); (k) Unidentified "MANY" mark (1366.002); (l) J. W. Pankhurst & Co., 1852-1883 (1376.001); (m) Harker Potteries, 1890-1920 (1263.036); (n) Wilkinson's, 1891+ (1263.039); (o) Knowles, Taylor, Knowles Co., 1870-1891 (1263.040); (p) W. H. Grindley & Co., 1914-1925 (1263.042); (q) Sevres Hotel China, 1900-1908 (1263.042); (r) Greenwood China, 1886 (1263.008).

Glass colors. Table 3.7 provides counts of the glass colors present in the Trench A – D assemblages. Only a handful glass colors are of chronological value. Colorless glass has some utility in dating bottles. The term colorless is used in lieu of clear glass to described glass without any color tint. Colorless glass made up just over half of the assemblage from all three excavation areas. Colorless glass bottles were introduced after 1870 but only became the majority after 1910, when glassmaking shifted to a largely mechanized process (Lindsey 2024). Colorless tablewares were common earlier than colorless bottles. Milk glass, an opaque white glass that makes up just about 3 percent of the Trench F – J glass, was commonly used in cosmetic jars from the 1890s to the 1920s. Milk glass also was used to produce lid liners for canning jars from the 19th century through at least World War II (Lindsey 2024). The representation of milk glass is much higher in Trench I due to a single pink milk glass lamp shade recovered in many pieces across multiple contexts (Figure 3.16).

Colorless glass that has manganese added to the glass recipe as a decolorant takes on an observable purplish tinge with exposure to sunlight. Manganese was used in glass produced between 1875 and 1918 (Lindsey 2024). Manganese glass, also referred to as light amethyst glass, makes up 9 percent of the total assemblage. It has a somewhat lower overall representation in Trench J, where it makes up 8 percent of the assemblage, than in Trenches F – I, where it makes up 10 percent of the assemblage.

The glass assemblage includes various shades of green glass, including light yellow, olive, emerald, bright green, and dark olive. Only a few shades of green have utility for dating. Bright (7-Up) green glass is very rare prior to 1900; almost all examples of this glass are dated to the 20th century. Three bright green pieces of glass were recovered from Trench F – H and one piece was recovered from Trench J. The Trench F – H assemblage includes three pieces of thick patinated dark olive green glass (Figure 3.17), a color frequently associated with 19th century alcohol bottles that all but disappeared after 1890 (Lindsey 2024). They are part of a wine bottle smoothed over in a turn mold while it was still hot in order to achieve a smoothed surface in which no seams are visible (Lindsey 2024). These shards may be part of the same bottle as a base recovered from Trench C (433.003) in 2004.

Table 3.7. Glass Colors from Trenches F - J.

Glass Color	Trench F-H Total		Trench I Total		Trench J Total		Total	
	Count	%	Count	%	Count	%	Count	%
Amber/Brown/Black Amber	5	1.1	20	6.6	171	12.6	196	9.2
Aqua/Light Aqua	49	10.4	35	11.5	190	14.0	274	12.8
Bright (7-Up Green)	3	0.6	0	0.0	1	0.1	4	0.2
Cobalt/Sapphire Blue	0	0.0	0	0.0	1	0.1	1	0.0
Colorless	242	51.3	157	51.6	696	51.1	1095	51.2
Dark Olive/Olive Green/Olive Amber	5	1.1	2	0.7	6	0.4	13	0.6
Deep Blue/Deep Green Aqua	113	23.9	31	10.2	144	10.6	288	13.5
Emerald Green	1	0.2	0	0.0	11	0.8	12	0.6
Manganese (Light Amethyst)	48	10.2	32	10.5	107	7.9	187	8.7
Light Blue	0	0.0	1	0.3	2	0.1	3	0.1
Light Green/Light Yellow Green	0	0.0	2	0.7	0	0.0	2	0.1
Light Yellow (Straw)/Yellow	0	0.0	0	0.0	7	0.5	7	0.3
Milk Glass	6	1.3	24	7.9	26	1.9	56	2.6
Total	**472**	**22.1**	**304**	**14.2**	**1362**	**100.0**	**2138**	**100.0**

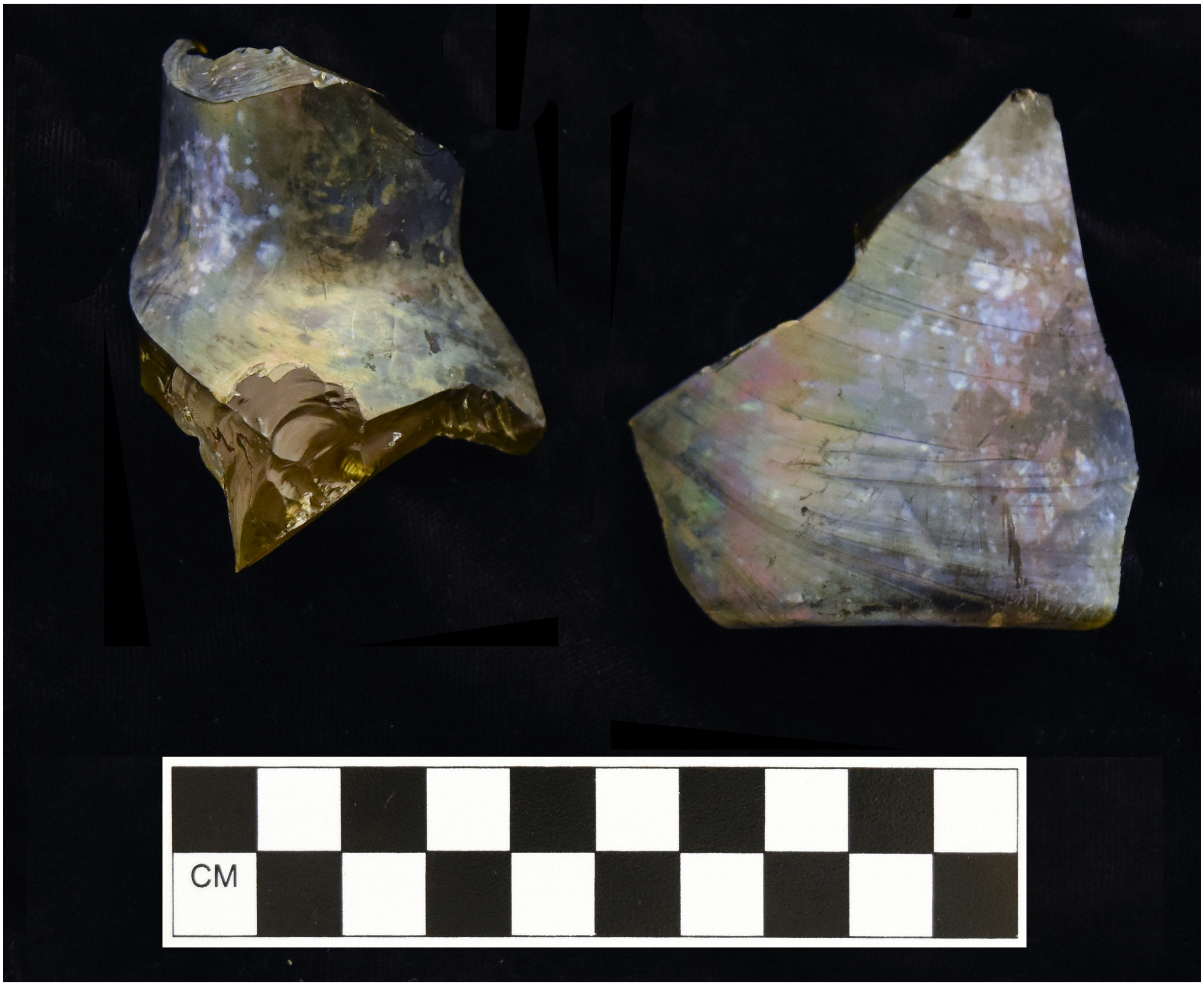


Figure 3.16. *Patinated dark olive glass wine bottle neck and body fragments made in a turn mold recovered from Trench F (1335.007).*

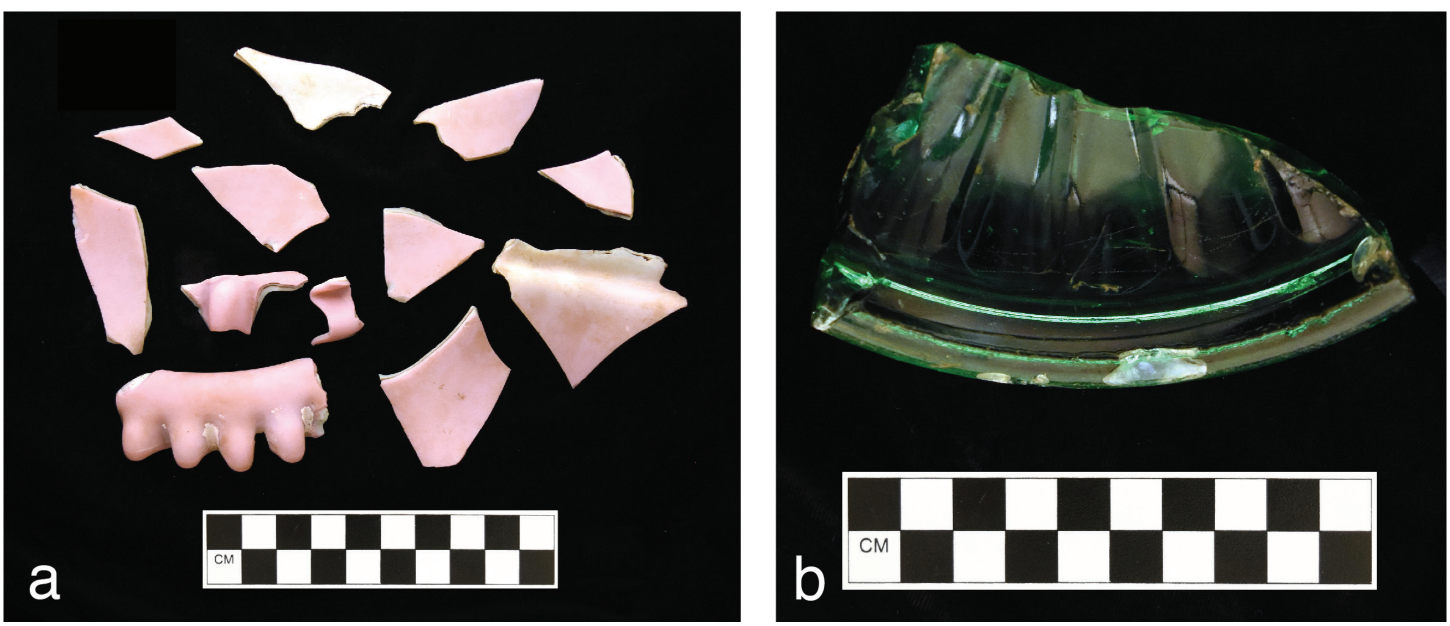


Figure 3.17. *Selected glass kerosene lamp parts from the 2024 excavations: (a) pink milk ruffled glass lamp shade (1190.002 and 1263.097) and (b) light yellow green fluted lamp base (1357.003).*

Other glass colors have less utility for establishing a narrow date range. Aqua glass of all shades, which makes up ten percent of the Trench F – H glass, 12 percent of Trench I, and 14 percent of the Trench J glass, has a very wide date range. Aqua coloring may be intentional, or it may result from the use of sands with iron content in the glass recipe. Aqua glass was replaced by colorless glass at the start of the 20th century as decoloring agents and glass-making technology improved, but soda bottles and canning jars continued to be primarily aqua until at least the 1930s (Lindsey 2024). Cobalt and sapphire blue glass colors, which make up a low percentage of the Trench F – J glass also have little dating utility.

Amber glass could also result from impurities in the glass sands or from intentional addition of coloring agents (Lindsey 2024). Most of the amber glass in the assemblage was the medium reddish brown to amber colors used in modern beer bottles. Lindsey (2024) notes that 19th century amber glass occurred in a variety of shades with tints ranging from reddish to olive to black. Amber colors became more and more standardized as bottle production became increasingly mechanized in the early 20th century.

Overall, the glass colors indicate a late 19th – early 20th century date for the glass assemblage. The glass color quantities are not useful for further refining the dates of the excavation areas.

<u>Container Types.</u> Table 3.8 provides a breakdown of the number of identifiable containers by type. Containers can be identified from shards of glass containers using multiple lines of evidence, including the presence of vessel landmarks, including finishes, shoulders, and bases, curvature or other shape of the shards, and presence and content of embossing. Even if they were recovered in multiple pieces, which was frequently the case, the containers in Table 3.8 were counted individually. A single canning jar broken into 14 different pieces was counted as one jar. The containers are divided into three broad categories, jars, bottles, and tableware. Bottles were the most common container, representing 71 percent of the total Trench F – J containers.

Jars made up 16 percent of the total glass container assemblage. They made up 26 percent of the containers in Trenches F – H, 17 percent of Trench I containers, and 13 percent of the Trench J containers. The recovered jars primarily served as food containers. Only a handful of cosmetic jars, making up three percent of the total jars, were recovered. Canning jars are ubiquitous on archaeological sites from the late 19th/mid-20th century, reflecting the widespread practice of preserving seasonal foods within the household. Canning jars to tend to have long use lives in households as they can be cleaned and used again year after year. Fragments of 50 canning jars, representing 57% of all jars, were recovered during the 2024 excavations (Figure 3.18). The earliest canning jar, which has a wax seal finish and was made in a post-bottom mold, was recovered from Trench J (Figure 3.18f). Jars with wax seal finishes were phased out by the end of the 1880s.

The canning jar in Figure 3.18a from Trench F was made by Mason Fruit Jar & Bottle Company of Coffeyville, Kansas. The company only operated from 1907-1909 before it was bought by Ball Brothers (Creswick 1987:88). Several canning jars with "PAT. NOV 30, 1858" embossed the body were recovered. There jars frequently had a Maltese cross embossed on the shoulder above the patent date, as seen in the example in Figure 3.18h from Trench J. This represents the patent date for the screw threads on the lid of screw cap jars. Jars with this embossed 19th century patent date were made as late as 1915 (Lockhart 2024). The jar in Figure 3.18h has a horizontal shoulder, which is where the canning seal between the zinc lid and the jar would form. Jars with horizontal shoulders were gradually replaced with jars with a beaded ledge below the threads after 1910. The 2024 assemblage includes five jars with later bead seals. Four were recovered from Trench F and one was from Trench J. Six jars had the earlier horizontal shoulder seals. Four were recovered from Trench J and two were recovered from Trenches F – H. The canning jars once again follow the pattern of artifacts from Trench J trending earlier than those from Trenches F – I.

Fragments of commerical food jars were recovered from all three excavations areas (see Figure 3.18b,e). Three jars, which are not pictured, were marked with patent dates in 1903 and 1906 embossed on the interior of

Table 3.8. Glass Container Types from Trenches F - J

Broad Type	Container Type	Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%
Jars	Canning Jar	16	59.3	6	46.2	28	58.3	50	56.8
	Cosmetic Jar	2	7.4	0	0.0	1	2.1	3	3.4
	Unidentified Jar	5	18.5	1	7.7	7	14.6	13	14.8
	Commercial Food Jar	3	11.1	4	30.8	4	8.3	11	12.5
	Large jar	0	0.0	1	7.7	0	0.0	1	1.1
	Mason Jar Lid Liner	1	3.7	1	7.7	8	16.7	10	11.4
	Total	27	25.5	13	16.9	48	12.6	88	15.6
Bottles	Condiment Bottle	1	1.6	6	15.0	24	8.1	31	7.8
	Liquor Bottle	4	6.3	5	12.5	13	4.4	22	5.5
	Wine bottle	1	1.6	0	0.0	0	0.0	1	0.3
	Soda/Beer Bottle	13	20.3	5	12.5	18	6.1	36	9.0
	Milk bottle	0	0.0	3	7.5	0	0.0	3	0.8
	Medicine/Extract Bottle	6	9.4	10	25.0	87	29.5	103	25.8
	Ink/Polish Bottle	0	0.0	0	0.0	5	1.7	5	1.3
	Oil bottle	0	0.0	0	0.0	2	0.7	2	0.5
	Perfume/Toiletry bottle	0	0.0	1	2.5	2	0.7	3	0.8
	Stopper	0	0.0	0	0.0	6	2.0	6	1.5
	Unidentified bottle	39	60.9	10	25.0	138	46.8	187	46.9
	Total	64	60.4	40	51.9	295	77.4	399	70.7
Tablewares	Compote	0	0.0	0	0.0	0	0.0	0	0.0
	Goblet	1	7.1	0	0.0	3	9.1	4	0.0
	Vase	0	0.0	0	0.0	1	3.0	1	0.2
	Lid	0	0.0	0	0.0	0	0.0	0	0.0
	Bowl	0	0.0	0	0.0	1	3.0	1	0.2
	Tumbler/Snuff jar	5	35.7	5	25.0	23	69.7	33	5.9
	Unidentified Tableware	8	57.1	15	75.0	5	15.2	28	5.0
	Total	14	13.2	20	26.0	33	8.7	67	11.9
	Kerosene Lamp	1	10.0	4	40.0	5	1.3	10	1.8
Total for Identified Containers		**106**	**18.8**	**77**	**13.7**	**381**	**67.6**	**564**	**100**

the bases. Those dates indicate that the jars were a type of vacuum sealed glass container produced by the Beech Nut Corporation. These jars were sold with a variety of contents, including meat products (lard, dried beef, and bacon), peanut butter, jelly, soup or strained and chipped foods. This type of jar was often used as a drinking glass once the product inside was used. The milk glass jar in Figure 3.18b from Trench J held MacLaren's Imperial Cheese, a soft cheese introduced around 1891 that became popular enough that John D. Rockefeller became a spokesperson for the company in 1904 (Bay Bottles 2021). The company, was headquartered in Ontario, Canada and also had a production facility in Detroit to avoid import taxes. It was bought by Kraft in 1920 and is still

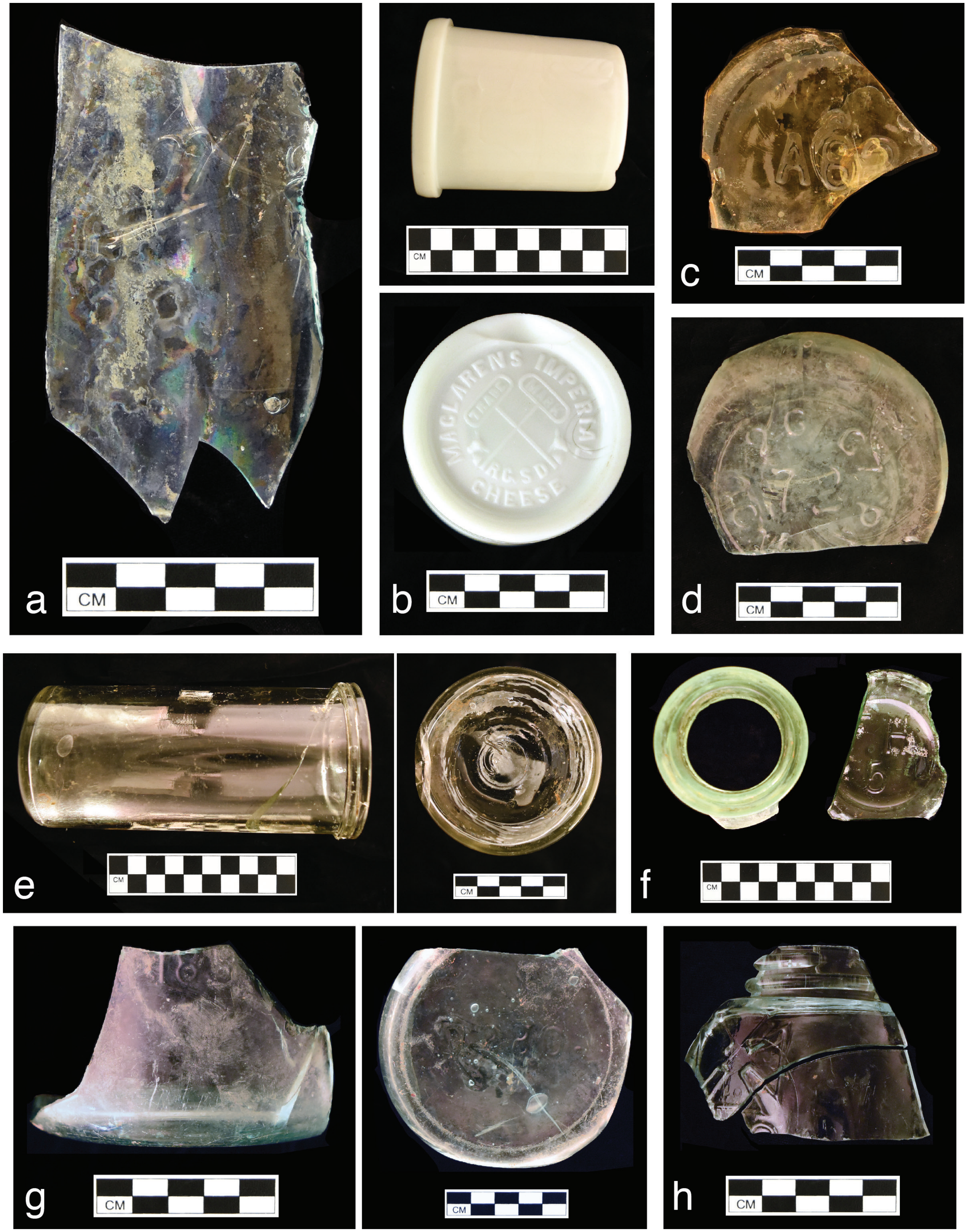


Figure 3.18. *Selected jar fragments from the 2024 excavations: (a) deep blue aqua canning jar by Mason Fruit Jar and Bottle Company of Coffeyville, Kansas (1113.005); (b) milk glass MacLaren's Imperial Cheese jar (1261.015); (c) yellow canning jar base embossed "A62" (1263.095); (d) colorless post-bottom mold jar base with embossed Nov 26 patent date (1263.085); (e) colorless preserve jar (1261.064); (f) wax seal mason jar finish and base (1261.068 and 1261.077); (g) deep blue aqua canning jar embossed "D380"(1362.028); (h) aqua horizontal shoulder canning jar with maltese cross (1366.007).*

produced today, although it is now packaged in a plastic container. The tall jar in Figure 3.18e is a preserve jar recovered from Trench J. It has a suction scar on the base from a press-and-blow machine. This machine was used for glass jar production starting in 1906.

Bottle and jar production. For most of the history of bottle production, going back at least as far as ancient Rome, glass bottles were free blown. Glass blowers took a blob of hot glass from a furnace onto the end of a blow pipe and blew, creating a hollow bubble of glass that they could shape into a container using tongs. Beginning in the 19th century, as demand for glass containers grew, glass blowers increased their production speed by blowing bottles into molds. The use of molds also resulted in a more consistent product that could be embossed with product names and maker's marks. The various types of bottle and container molds left identifiable marks on the body and base of the finished bottle.

The technology of bottle making, including novel methods of production and finish application, use of text embossing, and the use maker's marks on bases, changed over well-documented intervals in the 19th and 20th century. Prior to development and spread of fully-automated machines after World War I, these technologies were developed and reached peak popularity before falling out of use as they were supplanted by newer innovations. Speed of production and a uniform product were the ultimate goal. That fact that archaeologists can now use the marks left by various molds and other production techniques to reliably date the production date bottles dating from 19th and early 20th century sites is a fortunate side effect of these innovations.

At the start of the 20th century, inventors began developing machines that turned glass container production into an automated, machine-driven process. Semi-automated machines like the Owens Automatic Bottle Machine and press-and-blow machines were introduced in the early 20th century. This mode of production dominated the bottle market through the 1920s (Lindsey 2021). Initially these machines were used only to produce wide-mouth vessels, particularly jars. Fully automated machines capable of producing bottle necks and finishes were introduced in 1908 but did not fully replace the semi-automated machines until after World War I.

Table 3.9 provides the counts and dates for bottles and jars with identifiable manufacture methods. The methods of bottle production are perhaps the best indicator that the Trench J artifacts are earlier in time. Almost seventy percent of the overall container assemblage were blow into molds. Within each assemblage, 48 percent of the bottles and jars in Trenches F – H and 37 percent in Trench I were machine-made, while only 20 percent

Table 3.9. Glass Bottle and Jar Manufacture Methods from Trenches F - J.

Manufacture Method	Date Range	Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%
Key Mold	1840-1870	0	0	0	0.0	1	0.9	1	0.5
Post-Bottom Mold	1840-1905	3	5.0	8	22.9	17	18.3	28	10.1
Cup-Base Mold	1880-1920	27	45.0	13	37.1	74	63.8	114	54.0
Plate Mold	1840-1920	1	0.5	0	0.0	0	0.0	1	0.5
Turn Mold	1880-1915	0	0.0	1	2.9	1	1.1	2	2.1
Total Blown into Mold		31	51.7	22	62.9	93	80.2	146	69.2
Owens Machine	1905-1930	7	11.7	3	8.6	2	1.7	12	3.2
Press-and-Blow Machine	1905-1930	19	31.7	4	11.4	9	7.8	32	14.7
Machine Made	1908+	3	5.0	6	17.1	12	10.3	21	35.5
Total Machine Made		29	48.3	13	37.1	23	19.8	65	30.8
Total		**60**	**28.4**	**35**	**16.6**	**116**	**55.0**	**211**	**100.0**

of the Trench J bottles, which represent half of the total container assemblage, were machine made. This, of course, means that 80 percent of the Trench J bottles were blown into molds. Since machine made bottles post-date 1906, with the advent of the press-and-blow machine, this also indicates that the Trench J trash was deposited earlier in time than the Trench F – I artifacts. The types of recovered bottles, which will be discussed below, also factor into the manufacture methods, since certain classes bottles were more likely to be produced using certain methods.

Figure 3.19. Base of a light aqua bottle made in a key mold (1362.012). Bottles made using this method typically date between 1840 and 1870. The seam is visible as a diagonal line extending from the upper right corner to the center of the base.

The methods of mold blowing also indicate that Trench J was earlier. Trench J includes the only bottle made in a key mold (Figure 3.19). Key molds were introduced around 1840 and became obsolete by 1875 (Lindsey 2024), so this is likely another heirloom like the early transfer-printed sherds from Trench J. Trench J also has the highest representation of post-bottom mold made bottles. Post-bottom molds, which were first made in the 1850s, produced thicker containers. They were commonly used for soda bottles and canning jars as late as 1905 (Lindsey 2024). The majority of the bottles in Trench J, 64 percent, were made in cup-bottom molds, which were introduced in the 1880s. Cup-bottom molds were frequently used for small pharmacy bottles well into the 20th century when machines were taking over glass container production (Lindsey 2024).

As mold production technology changed, glass producers also developed new ways of adding a finish, the technical term for the lip of a bottle, at the end of production. The finishes on mold-blown glass bottles were formed after the hot glass left the mold by either (a) applying additional glass to form the lip or (b) using a special tool to shape the hot glass into the finish (Lindsey 2021). These types of finishes are referred to as applied and tooled, respectively. The automated machines included the finish in the manufacturing process. Table 3.10 shows the quantities for finish methods in the 2024 assemblage. Applied finishes, which were the exclusive finish type used during much of the 19th century, began to drop off in use by 1875. Two bottles with applied finishes were recovered during 2024 from Trench I and Trench J (Figure 3.20 and Figure 3.21j). These are the first applied finishes recovered from all five seasons of Oaklawn excavations.

Table 3.10. Methods of Container Finishes from Trench F - J.

Finish Method	Date Range	Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	Percent
Applied	1800-1895	0	0.0	1	5.0	1	1.1	2	0.5
Tooled	1870-1930	34	82.9	15	75.0	81	89.0	130	59.3
Machine Made	1910+	7	17.1	4	20.0	9	9.9	20	40.2
Total		41	30.5	20	30.7	91	59.9	152	100.0

Figure 3.20. *Applied mineral style aqua bottle finish recovered from Trench I (1183.001).*

Tooled finishes were first used around 1870 and became the dominant finish type by the 1880s. Tooled finishes were produced until the 1930s but dropped off significantly in use with the rise of the various machine-making process after 1910. These quantities further support the notion that Trench J is earlier in time than Trenches F – I. Tooled finishes were more common, than machine made finishes, representing 60 percent of the 2024 bottles. Later machine made finishes were about half as common in Trench J as they were in Trenches F – H. This further suggests the glass containers span the transition from mouth-blown to machine made bottles, which occurred during the first decades of the 20th century.

Container finish styles, which differed based on the purpose of the container and the type of closure, were recorded when they were identified. For the most part, finish style has less temporal utility but can provide clues as to the purpose of the container.

<u>Bottle types.</u> The glass bottles were subdivided into 13 categories by use. The bottle groups were subdivisions of the broader categories of food, beverage, medicine, toiletry, and household bottles. Roughly 47 percent of the bottles (n=187) were unidentified. Trench I had the highest rate of identification, with 30 out of 40 bottles identified. Half of the bottles in Trench J were identified and only 40 percent of the bottles from Trenches F – H were identified.

Condiment and relish bottles made up approximately 8 percent of the identified bottles. Figure 3.21 shows selected condiment bottles from Trenches F – J, many of which are complete. Condiments, including ketchups, vinegars, mustards, relishes, horseradishes, olives, pepper sauces, and pickles were very popular additions to the dining table during the late 19th and early 20th centuries. Trench I had the highest percentage of condiment bottles, at 15 percent of the bottles, followed by Trench J at 8 percent, and Trenches F – H at 2 percent.

Figure 3.21 (a,h, & i) shows three cup-based mold made bottles made by Heinz and a bottle stopper with crossed skeleton keys from a ketchup or sauce bottle (Figure 3.21k). Two additional identical Heinz bottles are not pictured and were reburied. One of the bottles was machine made, the others were made in a cup-bottom mold. The Heinz bottles all were recovered from Trenches I and J. According to Lockhart et al. (2016:109), Heinz started using H.J. Heinz on cup-based mold made bottles beginning in 1888. The company added its first Owens machine in 1910, meaning that four of these bottles date between 1888 and 1910. Only one dates after 1910.

Figure 3.21b shows a nearly-complete olive bottle made with a press-and-blow machine from Trench I. It dates after 1906. The Keokuk Pickle Company bottle (Figure 3.21d) was made in Keokuk, Iowa. The Keokuk Canning factory was established in 1880. This bottle like dates before 1910. The two manganese glass bottles in Figure 3.21e,f were also made in cup-bottom mold, likely by the Hirsch Brothers Company of Louisville, Kentucky. Finally, the condiment bottle in Figure 3.21l, has the logo for the Hawkeye Pickle Company of Burlington, Iowa and Kansas City, Kansas, which was in business in the late 19th century, likely into the 20th century. This bottle fragment does not include any landmarks that provide dating information.

Beverage bottles containing liquor, wine, beer, soda, and milk (n=62) were the second most common category in the 2024 assemblage. Soda and beer bottles (n=36) made up the largest portion of the Trench F – H beverage bottle assemblage (Figure 3.22). Two of the bottles in Figure 3.22 (a,c) were made in a post-bottom

Figure 3.21. *Selected condiment bottles from the 2024 excavations: (a) aqua complete Heinz H10 bottle (1102.003); (b) colorless nearly-complete cap seat finish bottle (1106.002); (c) manganese complete small mouth external thread finish bottle (1105.002); (d) aqua Keokuk Pickle Company bottle (1261.056); (e) manganese oval Hirsch's bottle (1261.063); (f) manganese cylindrical Hirsch's bottle (1261.062); (g) aqua ring style pepper sauce bottle (1361.023); (h) aqua Heinz 13 bottle (1357.006); (i) colorless Heinz bottle (1362.013); (j) colorless condiment bottle with applied patent finish (1261.071); (k) colorless Heinz skeleton key bottle stopper (1261.074); (l) colorless Hawkeye Pickle Company bottle (1263.096).*

mold. The amber beer bottle from Trench J has a very faint "R & Co." mark on the base that was used by the Reed and Company between 1892 and 1902 (Lockhart et al. 2017:110-112). Two of the soda bottles (Figure 3.22b,d), which are also from Trench J, have embossing that provides clues as to their dates. Both have marks that indicate they were made when Tulsa was still part of Indian Territory, prior to Oklahoma statehood in 1907. The Hutchson bottle (Figure 3.22b) was made by the Southwestern Bottling Company and dates after 1880. The other bottle (Figure 3.22d) was made by the Tulsa Electric Bottling Works. Finally, the beer bottle in Figure 3.22e was made by Schuster's Brewing of Rochester, Minnesota, which was founded in 1870 and operated until 1922, when they were shuttered due to Prohibition. Two soda bottles made by the American Bottle Company of Belleville, Illinois with the well-known interlocking "AB" ligature mark were recovered from Trench F and Trench J. Those bottles, which were reburied, were made between 1906 and 1909.

Liquor bottles (Figure 3.23) were the second most-common beverage bottle. Most of the liquor bottles from 2024 were portions of flask-style bottles. All three of the bottles in Figure 3.23 were recovered from Trench J. The oldest (Figure 3.23a) is the post-bottom mold made Union style flask with an "A" on the base. The Dandy or Eagle style flask in Figure 3.23b is marked "PAUL JONES" on the base. It contained one of the whiskey brands owned by Paul Jones, which includes Four Roses. Jones ran a distillery in Louisville starting in 1894. This cup-bottom mold made bottle dates from 1894. Cup-bottom mold made Dandy and Eagle flasks were phased out of production around 1915 (Lockhart 2024).

Two pieces of etched bottle glass (Figure 3.24) were recovered from Trenches I and J during the 2024 season. During the etching process, tools cut lettering or designs into the surface of the glass. Etching was found on liquor and beer bottles, siphon bottles for soda water, and large shop bottles in pharmacies (Lindsey 2024). Unfortunately, etching has little dating value. The glass shards in Figure 3.24 are too thin to be soda siphon bottles but could be beverage bottles or pharmacy shop bottles.

Figure 3.22. *Selected soda and beer bottles from the 2024 excavations (a) aqua unmarked post-bottom mold made, with "37" on base (1190.001); (b) aqua "The Southwestern Bottling Company, Tulsa, I.T.", Hutchinson Style (1261.055); (c) medium amber post-bottom mold made beer, with "Reed and Company" mark (1263.089); (d) colorless "Tulsa Electric Bottling Company, Tulsa, Ind. Ter." bottle (1263.067); (e) amber Schuster's Malt Extract Beer Bottle (1262.034).*

Figure 3.23. *Selected liquor bottles from the 2024 excavations: (a) amber post-bottom mold Union oval flask (1261.069); (b) amber Paul Jones cup-bottom mold Dandy or Eagle style flask (1263.093); (c) amber Baltimore oval style cup-bottom mold flask with "S" on base (1362.011).*

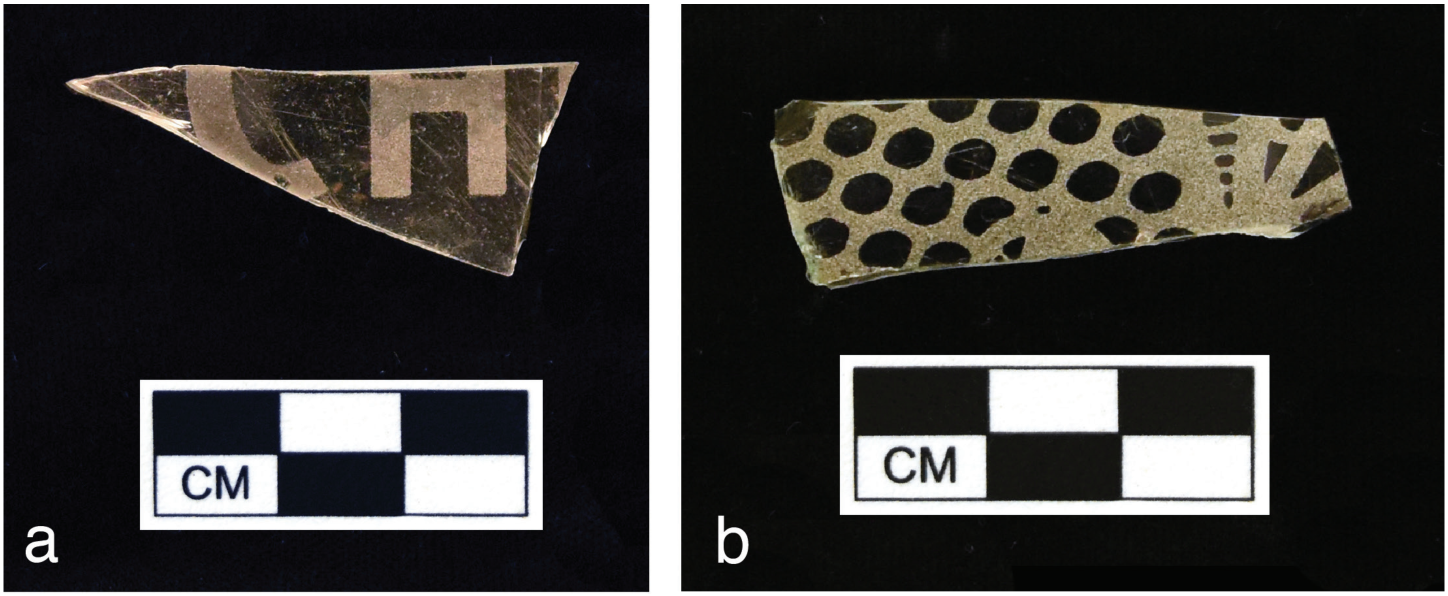


Figure 3.24. *Selected etched glass from the 2024 excavations: (a) colorless container glass with etched"CH" (1188.001); (b) colorless etched glass with oval pattern (1262.033).*

Medicine/extract bottles were the most common type of bottle from Trenches F – J, with 103 bottles identified. Medicine bottles were the most common type of bottle from Trench J, while beverage bottles were more common in Trenches F - I. Many of the recovered medicine bottles had product names embossed on them (Figure 3.25). Most were unregulated patent medicines that promised to cure a variety of illnesses. All the patent medicines and extract bottles in Figure 3.25 were recovered from Trench J. One of these bottles (Figure 3.25h) is an actual extract bottle, which is embossed "HEWSON'S FLAVORING EXTRACTS" on the front panel. The side panels, which are incomplete, indicate the product was distributed from an unknown "MFG Co." headquartered in Kansas City. Little information can be found about the company, but based on two product cards found on online auction sites, the company sold vanilla and fruit extracts in addition to baking powder. Another of the bottles (Figure 3.25g) held a product called "CHARLES HOOD'S SARSAPARILLA EXTRACT," which was a patent medicine and not a food product. Charles Hood built one of the largest patent medicine companies in the United States during a time when patent medicines were flourishing. The product, named for the sarsaparilla root it contained, also included dandelion, gentian, juniper berries, and 18% alcohol (Griffin 2014). Like many similar medicines, it claimed to be a cure-all that "purified the blood" and cured various illnesses and afflictions, ranging from weakness, loss of appetite, and constipation to syphilitic lesions and bone cancer. The company was one of the first to saturate the market with colored lithograph advertising booklets, calendars, trade cards, and posters, many of which have been digitized. The company apparently survived the 1906 passage of the Pure Food & Drug Act, which regulated ingredients in these concoctions, and only shuttered in 1922 after Hood died (Griffin 2014).

Additional patent medicines represented include Dr. J. H. McLean's Strengthening Cordial and Blood Purifier, The Great Dr. Kilmer's Swamp Root Kidney, Liver, and Bladder Cure, Five Drops cough medicine, Paracamph Company first aid medicine, Dr. Caldwell's Syrup of Pepsin, Lane's Emulsion cold preventative, Warner's Safe Liver & Kidney Cure, Chamberlain's Colic, Cholera, and Diarrhoea Remedy, and Lydia Pinkham's Vegetable Compound. Lydia Pinkham folded in 1906 as a result of the Pure Food and Drug Act, which required patent medicine producers to list their ingredients (Horwitz 2017). Chamberlain's contained opium and was known to be responsible for deaths. The formula was reworked after passage of the Pure Food and Drug Act and the company remained in business until the 1930s (Mackie 2016). Warner's Safe Remedies, Dr. Kilmer's, Lane's Emulsion, which was essentially cod liver oil, and Dr. Caldwell's all survived into the 20th century. The medicine bottle assemblage also included parts of roughly a dozen reburied bottles of Dr. Samuel Brubaker Hartman's "Peruna," a patent medicine created in 1877 for cure of "catarrh," a mysterious mechanism that caused disease all over the body. Peruna, which largely was made up of liquor and water, was incredibly popular in the late 19th century and became one of the inspirations for the 1906 Pure Food and Drug Act (Sullivan 2007).

Figure 3.25. *Selected embossed glass medicine/extract bottles from the 2024 excavations: (a) aqua Dr. J. H. McLean's Cordial and Blood Purifier (1259.005, 1263.074, and 1368.006); (b) aqua The Great Dr. Kilmer's Swamp Root Kidney, Liver, and Bladder Cure (1261.049); (c) aqua Five Drops Chicago cough medicine (1261.052); (d) colorless Paracamph Company first aid medicine (1261.053); (e) aqua Dr. Caldwell's Syrup of Pepsin (1262.029); (f) colorless United States Medicine Company, New York (1262.030); (g) aqua Sarsparilla extract bottle (1437.007); (h) colorless Hewson's Maple Flavoring, Kansas City (1263.069); (i) medium amber Lane's Emulsion cold preventative (1263.073); (j) medium amber Warner's Safe Liver & Kidney Cure (1263.076); (k) colorless Chamberlain's Colic, Cholera, and Diarrhoea Remedy (1362.016); (L) aqua Pinkham's Vegetable Compound (1263.068).*

Figure 3.26 shows the medicine bottles with embossed bases, all of which were once again recovered from Trench J. Two of these logos represent lines of medicine bottles made by large glass producers (Figure 3.26a,e). Bottles with the “Rex” script logo on the base were made by the O’Bear Nestor Glass Company between 1896 and the 1930s (Lockhart et al. 2018). Bottles with “BLUE RIBBON” embossed on the base were made by the Standard Glass Company between 1908 and 1932. The bottle that has “OXIDINE” on the base (Figure 3.26d) contained Oxidine Malaria and Fever Cure, a patent medicine made by the Crazy Water Company of Mineral Wells, Texas. The bottle marked “CHATTANOOGA” (Figure 3.26c) contained McElree’s Wine of Cardui, for “Women’s Relief.” The medicine, which started production in 1889, contained 19% alcohol, potassium, and salt. Two bottle bases have glass company names (Figure 3.26b,f). One, a Klondike style bottle made by A.M. Foster, dates between 1897 and 1900 (Lindsey et al. 2021a). The other was made by the Acme Glass Company. Dates for bottles with this script logo are speculative, but Lindsey et al. (2021b:152-153) suggest a production range of 1896 – 1926.

***Figure 3.26**. Selected branded medicine bottle bases: (a) colorless oval Rex base (1262.044); (b) colorless A. M. Foster base (1263.072); (c) colorless Chattanooga base (1263.075); (d) manganese Oxidine base (1263.078); (e) colorless Blue Ribbon base (1263.088); (f) colorless Acme base (1357.006).*

All the dateable medicine bottles recovered from Trench J are mouth-blown and those with bases were blown into cup-bottom molds.

Household bottles, which include ink, shoe polish, and oil bottles made up a very small portion of the typed bottles (Figure 3.27). The bottle in Figure 3.27a contained shoe polish made by the Whittemore Brothers Company of Boston. This bottle was made in a cup-bottom mold with a tooled finish. Two bottles contained sewing machine oil (Figure 3.27b,c). Sewing machines were common in households of the late 19th through early 20th century, and they required oil to stay running. The bottom row of bottles in Figure 3.27 were all ink bottles. The inks were made by major ink companies Carter’s and Sanford and L. B. M. Co., which is not a known ink maker.

Figure 3.27*. Selected household bottles from the 2024 excavations: (a) aqua Whittemore Shoe Polish, Boston, U. S. A. (1261.054); (b) aqua oil bottle marked "Sperm Sewing Machine Oil/Will not gum" (1262.031); (c) colorless sewing machine oil marked "Will not corrode" (1262.043); (d) aqua LBM Ink Company bottle base (1263.079); (e) colorless Sanford ink bottle (1263.091); (f) colorless Diamond Ink Company bottle (1263.092).*

Three toiletry bottles and one cosmetic jar were recovered from Trenches I and J (Figure 3.28). Two of these bottles and one jar (Figures 3.28b,c,d) held perfume. The third bottle (Figure 3.28a) held Sanitol Tooth Powder, a precursor to toothpaste introduced to the market in 1898.

Tableware is a broad category that includes decorative and functional glass vessels such as tumblers, compotes, goblets, and vases. The percentages of recovered tableware vessels was highest in Trench I, where tablewares made up just over a quarter of the identified vessels. Fewer tableware containers were recovered from Trenches F – H, at thirteen percent of identified vessels, and in Trench J at 9 percent of identified vessels. Most of the recovered tablewares are hollow vessels produced by pressing hot glass into a patterned mold. These patterns remain highly collectible and many can be identified. Figure 3.29 shows tablewares recovered from Trenches F – J. Two of the recovered pressed shards had iridescent carnival finishes applied to the exterior (Figure 3.29b,d). This manganese glass shard, from Trench H, likely dates to the 1910s. The date for the blue glass with the ruffled edge from Trench J is not known.

Three pieces of glass from Trench J had ruby-staining (Figure 3.29l,o). Ruby-stained vessels were frequently given out or bought as souvenirs and carnival prizes during the late 19th and early 20th centuries. One of these vessels from Trench J was from an identified pattern, the Button Arches pattern by Jefferson Glass Company, which dates after 1908. Other identified patterns found on the pattern molded tablewares from Trench J (Figure 3.29h,i,n,p) include the Teardrop and Tassel pattern by the National Glass Corporation, made between 1899-1903, the Admiral Pattern by Bryce Higby and Company, made between 1899-1907, the Juno pattern by Indiana Glass Company, made after 1905, and Pattern 507 by the Kokomo Glass Company, made after 1904.

Figure 3.28. *Toiletry bottles from the 2024 excavations: (a) colorless Sanitol Tooth powder, front and side panel (1102.002); (b) colorless tapered perfume bottle (1261.059); (c) colorless C. H. Selick Perfumer bottle (1362.017); (d) colorless Richard Hudnut Chemist, New York jar (1335.004).*

There are some differences in the types of glass containers recovered from the three excavation seasons. Condiment bottles were far less common in the Trenches F – H. Medicine bottles were more common in the Trench J assemblage than the other contexts. Beverage bottles were common in Trenches F – I, but far less frequent in Trench J. Even with the knowledge that medicine bottles were blown into molds much later than any other category of bottles, Trench J still appears to be earlier than Trenches F – I. A number of the bottles from Trench J were from patent medicines that ceased production in 1906. This becomes even more evident when the glass and ceramic assemblages are considered together.

In addition to the glass containers, the Trench F – J assemblages included decorative flat glass, typically used for windowpanes, glass insulators, light fixture glass, kerosene lamp parts (see Figure 3.16b), and a fragment of a marble. Eight fragments of textured emerald and white flat glass, likely from a decorative windowpane, were recovered from Trench J (Figure 3.30). Several fragments of roller glass, a patterned glass first made in 1890, also were recovered. Roller glass was frequently found in Victorian and Craftsman-style homes and maximized

Figure 3.29. *Selected pressed and pattern molded glass from the 2024 excavations: (a) colorless vessel base (1107.002); (b) manganese with carnival finish (1107.004); (c) colorless starburst base (1257.001); (d) blue ruffled edge with carnival finish (1261.006) ; (e) colorless urn shaped vessel with beaded rim and handles (1261.039); (f) colorless urn-shaped vessel with dots (1261.065, 1262.036, and 1362.007); (g) colorless triangle pattern (1261.071, 1263.104, and 1366.003); (h) mug with Teardrop and Tassel pattern by the National Glass Corporation (1362.015); (i) colorless Admiral Pattern by Bryce Higby and Company (1261.073); (j) emerald rims (1262.028 and1263.094); (k) pedestal base with square pattern (1263.080); (k) ruby-stained glass base (1263.083); (l) ruby-stained glass in the Button Arches pattern by Jefferson Glass Co. (1263.087); (m) colorless possible votive with square pattern (1261.076 and 1263.102); (n) colorless glass in the Juno pattern by Indiana Glass Company (1263.081); (o) colorless glass with grapes in Pattern 507 by the Kokomo Glass Company (1263.082); (p) manganese bowl with starburst patterns (1265.002); (q) colorless with fan pattern (1368.003).*

light and privacy within the home (Lee 2009). Roller glass is still being produced today, but it is likely that the examples from Oaklawn date to the same period as the rest of the excavations, from 1890 into the early 20th century. A fragment of an orange and white shooter marble (Figure 3.31) was recovered from Trench J.

Figure 3.30. *Fragments of emerald green and white textured flat glass from window pane recovered from Trench J (1261.078).*

Figure 3.31. *Fragment of an orange and white glass shooter marble (1263.099).*

Metal

As noted above, the recovery of metal artifacts steadily declined over the four field seasons. Metal artifacts have had the highest reburial rate across all four field seasons. Ninety-five percent of the metal artifacts from 2024 were reburied. During analysis, the metal artifacts were sorted by metal type, object type, and use group (Table 3.11). Very few of the recovered metal artifacts can provide any dating information. The most common category of metal artifacts were unidentified ferrous metal fragments. Just over 58 percent of the metal artifacts from Trenches F – J were unidentifiable, heavily rusted fragments of ferrous metal.

The second most common category of metal artifact from Trenches F – J were wire nails. Wire nails, which have a round shank, were introduced at the tail end of the 19th century. They were adopted in coffin construction by 1890 and in building construction by 1900. Nails were more common in Trenches F – H and J than in Trench I. A single machine cut nail from the 19th century (Figure 3.32b) was recovered from Trench J. The only can fragments recovered were part of a paint can with dried yellow paint still inside (Figure 3.32c). Multiple railroad spikes, presumably associated with the rail line that ran west of Oaklawn in the early 20th century, were recovered in from Trenches I & J, but not from Trenches F – H. A metal hasp from the latch of a steamer truck was recovered from the southern extent of Trench F (Figure 3.32f).

Several copper-based artifacts of interest were recovered. These include a .20 gauge shotgun shell from Trench F (Figure 3.32a). Unfortunately, any markings on the base have weathered away. Figure 3.32d is a decorative bridle rosette with domed glass attached to a copper backing recovered from Trench J. Bridle rosettes, which have ancient origins but reached peak popularity in the 19th century Victorian era, were decorative badges

Table 3.11. Metal Artifacts from Trenches F - J.

Metal Type	Artifact Category	Trench F - H		Trench I		Trench J		Total	
		Count	Percent	Count	Percent	Count	Percent	Count	Percent
Ferrous	Unidentified Ferrous Metal	0	0.0	5	7.7	26	23.0	31	14.9
	Cut Nails	0	0.0	0	0.0	1	0.9	1	0.5
	Wire Nails	10	33.3	1	1.5	47	41.6	58	27.9
	Fence staple	0	0.0	6	9.2	0	0.0	6	2.9
	Carriage bolt	1	3.3	1	1.5	0	0.0	2	1.0
	Unidentified flat ferrous metal	1	3.3	26	40.0	16	14.2	43	20.7
	Spark plug	0	0.0	1	1.5	0	0.0	1	0.5
	Cast pipe/tube	0	0.0	3	4.6	0	0.0	3	1.4
	Railroad spikes	0	0.0	2	3.1	3	2.7	5	2.4
	Ferrous metal rods	4	13.3	2	3.1	5	4.4	11	5.3
	Ferrous spring	1	3.3	0	0.0	0	0.0	1	0.5
	Ferrous chain link/ring	1	3.3	1	1.5	1	0.9	3	1.4
	Hasp for steamer trunk	1	3.3	0	0.0	0	0.0	1	0.5
	Latch pin	0	0.0	0	0.0	1	0.9	1	0.5
	Sewing machine leg	1	3.3	0	0.0	0	0.0	1	0.5
	Stove foot	0	0.0	0	0.0	1	0.9	1	0.5
	Crown bottle cap	0	0.0	0	0.0	1	0.9	1	0.5
	Possible clamp	1	3.3	0	0.0	0	0.0	1	0.5
	Cans/lids	0	0.0	10	15.4	0	0.0	10	4.8
	Wire (Barbed/Baling)	3	10.0	0	0.0	4	3.5	7	3.4
	Metal straps	0	0.0	0	0.0	1	0.9	1	0.5
	Buckle	1	3.3	0	0.0	1	0.9	2	1.0
	Cutlery	0	0.0	0	0.0	1	0.9	1	0.5
	Handle fragments	2	6.7	1	1.5	0	0.0	3	1.4
Cuprous	.20 ga. Shotgun shell	1	3.3	0	0.0	0	0.0	1	0.5
	Cuprous clothing hardware	1	3.3	4	6.2	2	1.8	7	3.4
	Cuprous lid	1	3.3	0	0.0	0	0.0	1	0.5
	Stamped strap	0	0.0	1	1.5	1	0.9	2	1.0
	Oil lamp part	0	0.0	0	0.0	1	0.9	1	0.5
	Copper wire	0	0.0	1	1.5	0	0.0	1	0.5
Total		**30**	**14.4**	**65**	**31.3**	**113**	**54.3**	**208**	**100.0**

Figure 3.32*. Selected metal artifacts recovered during the 2024 excavations: (a) .20 gauge shotgun shell (1112.003); (b) machine cut nail (1261.081); (c) ferrous metal paint cans with dried yellow paint (1148.002); (d) Cuprous and glass bridle rosette (1263.108); (e) repousse copper strap (1263.109); (f) ferrous metal hasp, likely from a steamer trunk (1360.006).*

attached to horse tack. They typically had hand-painted or lithographed full-color images between the glass dome and metal backing. Equestrian scenes themed around horses and hunting dominated the motifs, but dogs, cats, birds, people, floral and nature images were also made (Quinn 2015). The decorative repousse copper strap recovered from Trench J is not dateable (Figure 3.32e).

Other artifacts

The "Other artifacts" category includes 224 pieces of architectural debris, faunal material, coal, leather, and other artifacts that do not fit into the ceramics, glass, and metal designation (Table 3.12). The largest portion of this group were faunal remains, with 129 pieces of animal bone and shell recovered. Trench J had the most faunal material, which will be discussed below.

Table 3.12. Other Artifacts from Trenches F - J.

Artifact Category	Trench F - H		Trench I		Trench J		Total	
	Count	Percent	Count	Percent	Count	Percent	Count	Percent
Animal bone	23	63.9	8	80.0	94	53.1	125	56.1
Mollusk shell	0	0.0	0	0.0	4	2.3	4	1.8
Coal	0	0.0	2	20.0	37	20.9	39	17.5
Rubber	1	2.8	0	0.0	0	0.0	1	0.4
Leather shoe fragments	11	30.6	0	0.0	36	20.3	47	21.1
Chipped stone	1	2.8	0	0.0	0	0.0	1	0.4
Bakelite	0	0.0	0	0.0	1	0.6	1	0.4
Brick	0	0.0	0	0.0	1	0.6	1	0.4
Graphite	0	0.0	0	0.0	0	0.0	0	0.0
Marble furniture top	0	0.0	0	0.0	1	0.6	1	0.4
Dried paint	0	0.0	0	0.0	2	1.1	2	0.9
Charred paper	0	0.0	0	0.0	1	0.6	1	0.4
Total	**36**	**16.1**	**10**	**4.5**	**177**	**79.4**	**223**	**100.0**

Forty-seven leather shoe fragments were recovered during the 2024 season. Single shoes, and artifacts like plates, cups and saucers, medicine bottles, and silverware placed atop coffins have been well-documented in African American burials (Davidson 2010). A shoe heel was documented atop Burial 52, located in Trench C. In the case of the rest of the shoes, their positioning demonstrates that they were discarded with the trash dumped into the southwest corner of the cemetery. Shoes, which were being mass-produced by the end of the 19th century (Anderson 1968), were discarded at the end of their use life alongside other trash. A single piece of chipped stone, the by-product of stone tool made by the people who lived in the Tulsa area and was made prior to contact with European colonists in the 18th century

Three of the artifacts from this category were retained (Figure 3.33). The first was a fragment of a bakelite comb from Trench J (Figure 3.33a). Bakelite is a precursor to modern plastic made from wood by-products. It was developed in 1907 and quickly grew in popularity. A pencil, made of a mixture of graphite and clay, (Figure 3.33b) that was not encased in woodwas recovered from Trench J. A piece of chert debitage from Trench J was retained.

***Figure 3.33**. Selected artifacts in the "Other Material" category recovered during the 2024 excavations: (a) bakelite comb (1263.106) and (b) graphite pencil (1362.024).*

Analysis of Faunal Material from the 2021-2024 Excavations Seasons

A total of 263 faunal fragments, including animal bone and mollusk shell, were recovered during the 2021-2024 excavations. The count for faunal remains by excavation trench are presented in Table 3.11. As expected, Trenches E and J had the highest quantity of faunal material, followed by Trench A. Reburial rates differ by excavation season. Much of the Trench A faunal was reburied, aside from a handful of identifiable specimens, was reburied after analysis was completed. Following the 2021 season, most unidentifiable bone fragments were retained for future analysis at the Oklahoma Archeological Survey. Bivalve mollusk shell was reburied after each season because it was generally in a poor state of preservation and not complete enough for species identification. Other small specimens that would not be identifiable were also reburied. The faunal remains were analyzed by zooarchaeologist Dr. Brandi Bethke, who serves as the Laboratory Director for the Oklahoma Archeological Survey.

Table 3.13. Faunal Material Recovered during the 2021 - 2024 Excavations by Trench

Trench	Count	Percent	Reburied - Not Analyzed
A	37	13.8	35
B	0	0.0	0
C	9	3.3	2
D	2	0.7	0
E	95	35.3	0
F - H	23	8.6	2
I	8	3.0	4
J	95	35.3	10
Total	**269**	**100.0**	**53**

Methods. All faunal material was weighed (in grams) and counted. For each specimen the provenience, taxon, element, side, portion, taphonomic information, and aging data were recorded. Taxonomic identification was accomplished to the most detailed level possible using the comparative collections housed at the Oklahoma Archeological Survey in Norman, OK. Unidentified mammal remains were assigned to one of the following categories: unidentified large mammal (e.g., cow, horse, large pig), unidentified medium mammal (e.g., sheep, goat, deer, smaller pig), and unidentified mammal, size unknown. The following sections report the findings of this analysis.

Taphonomic Characteristics. Taphonomic modifications consist of any alterations or damage to faunal elements occurring either before or after disposal that may result from both natural and human action, or a combination of these factors. Taphonomic data were recorded for all specimens. Weathering stages were recorded following the system developed by Behrensmeyer (1978), where each stage demonstrations progressively greater damage from 0 (no weathering) to 5 (advanced exfoliation). Faunal remains recovered from the site are generally well preserved with the majority of the assemblage exhibited no or very little evidence of weathering (57% weathering stages 0-1), however some elements did exhibit more severe degrees of weathering (31% weathering stages 2-3) and/or exfoliation (12% weathering stages 4-5). Minimal root etching and mineral staining was also noted on several specimens. Only very minimal rodent gnawing and burning (2 specimens) was witnessed. Human modifications include metal saw and cut marks, described below by species.

Taxonomic Identification. Of the 269 total specimens recovered from the excavations, 216 specimens (2,572.9g) were analyzed (Table 3.12). The assemblage contained primarily the remains of cow, but pig, sheep or goat, horse, white-tailed deer, and chicken were also identified. No human remains are present within the assemblage. More information about each species is presented in the following sections. The freshwater mussel shell was likely naturally occurring and will not be discussed further.

Cow. A total of 30 individual specimens were identified as modern cattle (*Bos taurus*) (Table 3.13). Based on the element representation, portions of elements remaining, and location of saw and cut marks, it is likely the cow remains recovered from the site represent cuts of meat from several different regions (Figure 3.34). Two scapula

Table 3.14. Species Recovered by NISP (Number of Identifiable Specimens) and Mass (g)

Taxon	NISP	Mass (g)
Cow (*Bos taurus*)	30	1754.1
Pig (*Sus scrofa domesticus*)	9	254.3
Sheep/Goat (*Ovis ares/ Capra aegagrus hircus*)	5	37.1
Horse (*Equus caballus*)	2	53.1
White-tailed Deer (*Odocoileus virginianus*)	1	9.3
Unidentified Large Mammal	61	295
Unidentified Medium Mammal	12	108.1
Unidentified Mammal, Size Unknown	65	41.6
Chicken (*Gallus domesticus*)	6	11.1
Unidentified Freshwater Mussel	25	9.2
Total	**216**	**2572.9**

Table 3.15. Elements identified for Cow by NISP and Mass (g)

Element	NISP	Mass (g)
Axis	1	11
Cervical Vertebrae	4	133.2
Rib	2	62.6
Innominate	3	121.7
Scapula	2	98.2
Humerus	1	61.6
Radius	4	300.7
Ulna	1	78.2
Femur	5	359.8
Patella	1	27.7
Tibia	3	302.8
Astragalus	2	100.4
Calcaneus	1	62.6
Total	**30**	**1720.5**

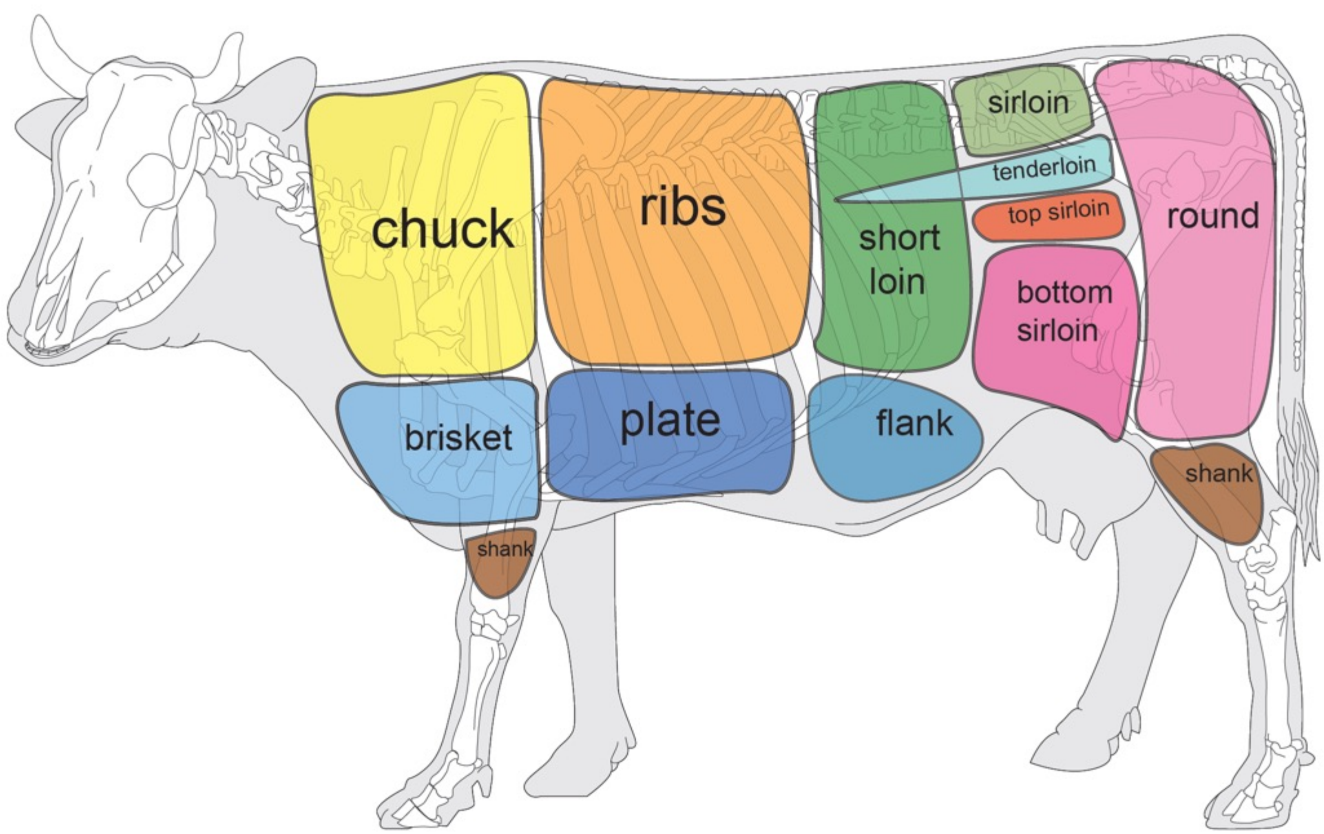


Figure 3.34. *Common Meat Cuts of Beef (Figure adopted from Schulz and Gust 1983, Fig. 1 by the Arizona State Museum).*

blade fragments were identified. One of these specimens was sawed on both ends and likely represents a blade steak (from the chuck region). One proximal epiphysis of a humerus was sawed parallel to epiphysis (proximal to distal) and perpendicular to shaft, possibly the cast off from a chuck cut. One ulna and four radii were identified. Each of these elements are from the proximal end of the element and have had their diaphysis cross-cut by a metal saw. These portions possibly represent the remains of butchering for brisket cuts. Three fragments from the ilium were identified. Two of these fragments were cross-sectioned using a metal saw and represent the remains of a sirloin or tenderloin cut.

A total of five femurs were identified. Two of these were relatively large (3-4 inches) of diaphysis sawed on both ends. A third diaphysis was cut much thinner and represents the remains of a "round steak" cut of beef (Figure 3.35). Two distal portions of the femur were also identified with saw and cut marks, likely representing the discard from bottom sirloin cuts. Three tibia portions were identified, one distal epiphysis fragment, one proximal epiphysis fragment, and one diaphysis that has been sawed on both ends using a metal saw, likely representing the remains of a posterior shank cut. Not enough of the two rib fragments remain to definitively determine rib number and they exhibit no human modifications, but the ribs likely represent the remains of butchering for rib, chuck, or short loin cuts. Other elements identified from the assemblage likely represent posterior shank (patella, astragalus, calcaneus) or neck (axis, cervical) cuts or cast-offs from butchering activities.

Overall, the cow assemblage represents high value meat cuts (sirloin, round and possibly ribs and/ or short loin), medium value meat cuts (brisket and chuck), and low value meat cuts (posterior shank, neck). Meat value determinations are based on a value scale commonly used by archaeologists in working in the North American west during Historic Period (Lyman 1979; Schulz and Gust 1983:14).

Figure 3.35. *Cow femur bone cut by metal saw into a round steak cut from Trench E (Catalog 862).*

Pig. A total of nine specimens were identified as pig (*Sus scrofa domesticus*) (Table 3.14). All elements except for a single rib fragment and a femur diaphysis exhibit mechanical sawing. The remains come primarily from the "loin" area (4 thoracic vertebrae, sawed on the dorsal-ventral axis likely for initial splitting of the carcass) and the "leg" area (2 femur diaphysis, 1 femur proximal + ½ diaphysis, and innominate portion). These remains generally correspond to known butcher cuts, such as pork chops and bone-in ham. At least one of these cuts, from Trench came from a very large pig (femur, Cat. 1339).

Table 3.16. Elements identified for Pig by NISP and Mass (g).

Element	NISP	Mass (g)
Thoracic Vertebrae	4	23
Rib	1	6.1
Innominate	1	11.1
Femur	3	214.1
Total	**9**	**254.3**

Sheep/goat. A total of five specimens were identified as sheep or goat (Ovis ares or Capra aegagrus hircus) (Table 3.15). Sheep and goat skeletal elements are almost indistinguishable morphologically and identification to either species is not possible. However, given the time period and location, sheep is more likely represented in the assemblage. Only one tibia diaphysis exhibited mechanical sawing, the rest of the elements had no saw or cut marks. Elements correspond to the for shank (radius, ulna, metacarpal), hind shank (tibia), and neck (cervical) regions.

Table 3.17. Elements Identified for Sheep/Goat by NISP and Mass (g).

Element	NISP	Mass (g)
Cervical Vertebrae	1	2.8
Radius	1	9.4
Ulna	1	2.9
Metacarpal	1	11.5
Tibia	1	10.5
Total	**5**	**37.1**

Horse. Two nearly complete elements—a 3rd phalanx and a 3rd tarsal—were identified as horse (*Equus caballus*). No human modifications were witnessed on either specimen.

Deer. A single fragment of antler from a white-tailed deer (*Odocoileus virginianus*) was identified. No human modifications were witnessed, and it is unknown whether the antler was naturally shed by a deer in the area or if it was moved from a secondary location and discarded at site.

Other Mammal. In addition to the specimens identified to species, a total of 138 (444.7g) fragments were identified to mammals of either large, medium, or unknown size (see Table 3.12). Many of these specimens exhibit metal sawing and/or cutmarks similar to those described by species above and likely represent the fragmented remains of common domesticates (cow, pig, sheep/goat) butchered for consumption.

Chicken. A total of six specimens were identified to Chicken (*Gallus domesticus*). All of these remains are from the appendicular skeleton and exhibit no human modification.

Summary and Interpretation. Overall, the faunal assemblage recovered from the 2021, 2022, 2023, and 2024 excavations at the Oaklawn Cemetery likely represents the remains of multiple domestic animals that were butchered and consumed by nearby residents. Given the fact that nearly all the portions are from common butchery cuts and likely discarded from meat bought and consumed from a butcher. as well as the urban context, it is likely that these various cuts of meat were purchased from a butcher or grocer, consumed, and then discarded versus being raised and butchered at the site. The results from this analysis are in line with what archaeologists would expect to find within an early 20th century trash dump.

Summary of the Trench F – J Non-Mortuary Artifacts

The analysis of recovered non-mortuary artifacts from the 2024 season has provided some important clues about the timing of trash deposition in the southwest corner of Oaklawn Cemetery. The artifact analysis indicates that Trench J is earlier in time than Trenches F – H and I. This is evident in both the ceramic ware and decorative types represented and in the manufacture methods of the recovered glass containers. Trench J had a high concentration of ironstone/white granite, transfer-printed ceramics, Albany-slipped stoneware, and patent medicine bottles. Trenches F – H and I had higher percentages of overglaze decal-decorated whitewares and porcellaneous wares and beverage bottles. The artifacts in both areas represent domestic trash, which was dumped along the stream that ran on the south edge of Oaklawn Cemetery, emptying into a pond in the area that is now the IDL overpass.

Trench J also has the highest artifact density of any of the areas of Oaklawn Cemetery excavated between 2020 and 2024. It is a discrete zone where heavy amounts of trash were dumped sometime between about 1895 and 1910. The boundaries of this area are not known because the rows on either side of Trench J were not excavated. The artifacts from Trenches F – H and I are slightly later in time, dating mostly from about 1900 to roughly 1917, when the southwest corner of the cemetery is thought to have been filled in with soil to raise the elevation in that corner and expand the Potters Field. Both trenches also yielded artifacts that were placed on graves to memorialize the dead and then moved from their original locations and later artifacts from the mid-20th century that were left behind by cemetery visitors. In the following section, I synthesize the artifact data from the four previous excavation seasons in the southwest corner of Oaklawn and the 2020 Sexton Area to create a better picture of the southwestern corner of the cemetery over time.

The 2020 – 2024 Artifact Assemblage

Artifact Density and Distributions

While recovering these early artifacts was not the goal of the excavation, analyzing them does aid in understanding the history of the southwest corner of Oaklawn, the timing of the landscape modifications that occurred around 1917, and the things left behind by cemetery visitors. Tracking the general locations where artifacts were recovered allowed for an analysis of artifact distributions. Given the nature of the backhoe excavations, horizontal control was far better than vertical, which is mostly based on notes recorded during excavation. Two observations can be made about the vertical trends in artifact density. Across all trenches, the upper meter and half of excavated soil had a lower density of artifacts. These upper levels are interpreted as zones of fill used to raise the ground level in the southwest corner of Oaklawn Cemetery (see Green et al. 2022 and Regnier 2022 for those interpretations). The artifacts recovered from the upper levels typically dated after 1920. They were usually beverage bottles or ceramic and glass containers used as grave decorations. Earlier artifacts do occur in the upper levels, but this is rare. These earlier artifacts were brought to higher depths when grave shafts were excavated into the deep deposits and then refilled.

Table 3.16 provides the counts of artifacts from the trenches, size of the trenches in square meters, and the calculated density of artifacts per square meter.[2] The mean artifact density of Trenches A – J was 11.9 artifacts per square meter. The density of artifacts varied widely across the individual trenches. At more than 101 artifacts per square meter, Trench J had the highest density by a magnitude of 5. Trench E was the next highest with 18 artifacts per square meter. Trench B had the lowest artifact density. Maps showing artifact recovery by context were created to better understand the artifact distribution across the excavated area. Two distribution maps were produced. One shows artifact counts (Figure 3.36) and the other shows artifact weights (Figure 3.37). It is crucial to consider both types of data because artifacts were broken into more pieces in the dry soils of the Trench B & C excavations in 2022, leading to artificially higher artifact counts

The map of artifact counts shows that the density of artifacts is highest in Trench J and the west side of Trench E. The west side of Trench E may be the eastern edge of the Trench J trash deposit. The western edge of the trash deposit apparently ends abruptly, given the low density of artifacts at the eastern end of Trench I. Most of Trench E has relatively artifact density, with the exception of the two northern extensions that extend into the areas of higher elevation.

2 The sexton area excavations will not be included in the density analysis because the artifact recovery methodology was significantly different in this area and the vertical depth was so much greater.

Table 3.18. Density of Artifacts in the 2021 - 2024 Excavation Trenches.

Trench	Area in Square Meters	Artifacts Recovered	Artifacts/Sq. m
A	206	1858	9.0
B	96	149	1.6
C	112	935	8.3
D	52	700	13.5
E	366	6663	18.2
F-H	197	703	3.6
I	130	511	3.9
J	26	2635	101.3
Total	**1185**	**14154**	**11.9**

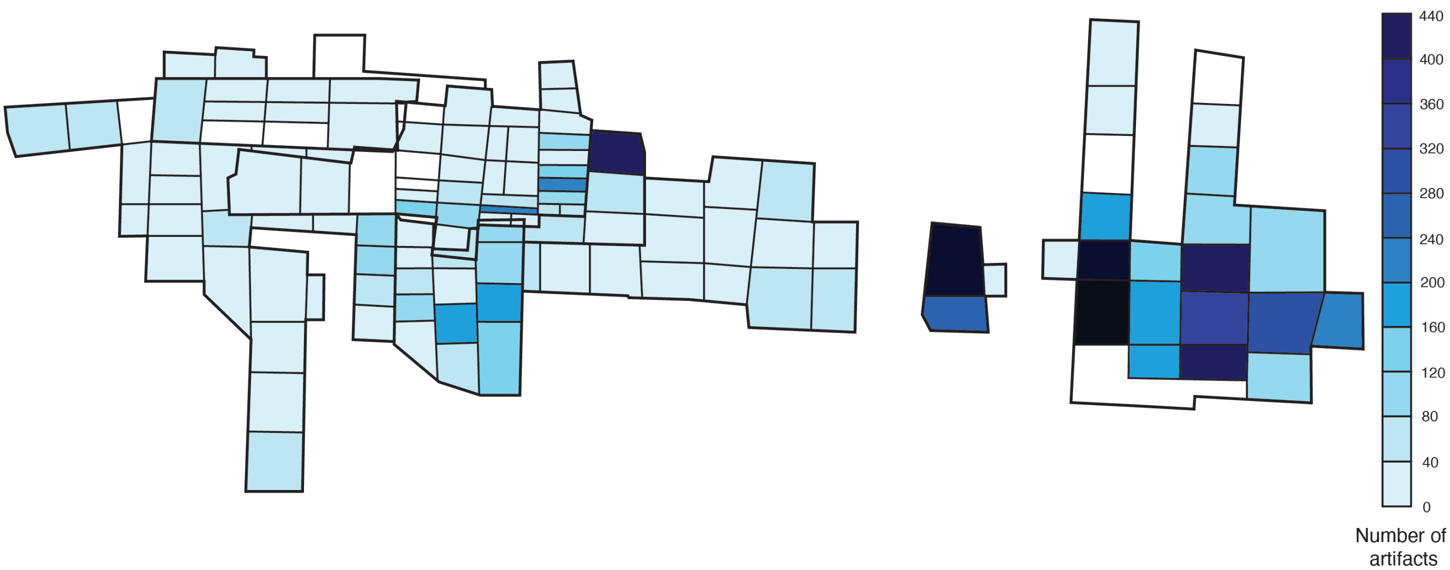


***Figure 3.36**. Artifact densities by count from Trenches A – J at Oaklawn Cemetery.*

In the west trench, the northeast corner of Trench D has the highest artifact density. This may be another dump area. There is a general northeast-southwest trend line of high artifact density from Backhoe Row 2 in Trench A. This line roughly follows the submerged stream that crosscuts the excavation blocks. Another concentration of artifacts is evident along the east edge of Trench C. The artifact densities in Trench B, much of Trench F, and Trench I are low. These are away from the stream. A subtle increase in artifact density is evident in the areas where Trench F intersects the southern and western cemetery boundaries.

The map of artifact weights provides a different, but complementary, view of the artifact concentrations. The weight contours show the same northeast-southwest line of high-density areas across the west trench, low

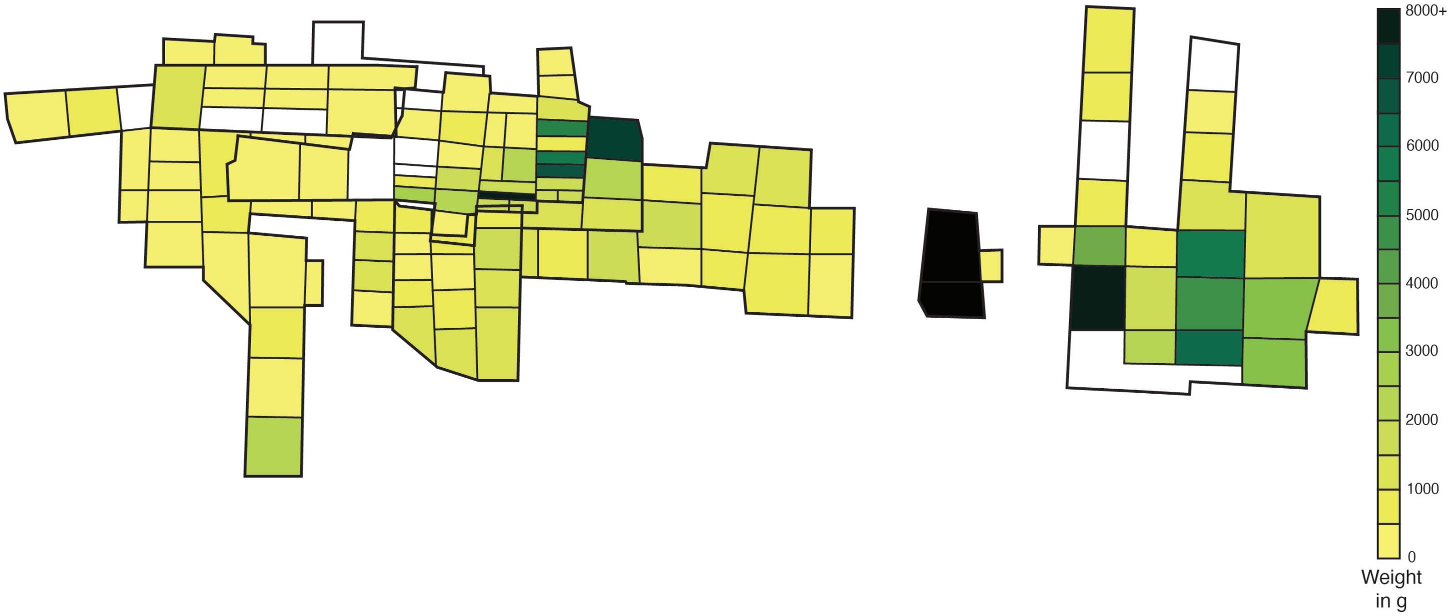


***Figure 3.37**. Artifact densities by weight from Trenches A – J at Oaklawn Cemetery.*

density of artifacts in Trench B, much of Trench F, and Trench I, and increase in artifact density near the southern fence. Trench C has a lower cumulative weight of artifacts, with the highest recovery along the eastern edge of the southern trench extension. Trench E has lower density in some areas, but still is generally higher than the west trenches. And Trench J remains the highest density area.

Except for Trench I, the areas of high artifact density follow the course of the relic stream channel that flows along the south edge of the cemetery. The areas with low recovery are away from the stream. Trash deposition was highest in Trenches J and E. The deposits from Trench J may extend all the way to Trench E, but a difference in the assemblages was noted in the field. Trench E encountered a high density of architectural materials, including numerous bricks, chunks of mortar, and wire nails. Grave diggers encountered these bricks when interring burials, and they reused them to bolster metal temporary markers in Trench E. Trench J did not have this same density of architectural material.

Artifact Cross-Mends

Figure 3.38 shows the locations of vessels that cross-mend with artifacts from Trenches F – J across the trenches. Cross-mends from the 2021 to 2023 seasons are documented elsewhere (Regnier 2022,2024). The cross-mends only include the ceramics, shown in Figure 3.39 that refit or are clearly from the same vessel. Several flow blue ceramics from the 2021 – 2023 season were decorated with the Mentone pattern by Alfred Meakin and Company (Figure 3.40). It is clear from the vessel forms and the makers marks that despite having the same decorated pattern these sherds are not from the same vessel.

Cross-mends occurred between Trenches C & F, A & I, D & I, I & J, and J & E. No ceramics from Trench E cross-mended with ceramics from Trenches A – I. The cross-mended vessels included the teal transfer-printed teacup in the Myrtle pattern made between 1894 and 1901 by by Pitcairn's Limited discussed above. Sherds from this teacup were recovered from Trenches E and J. A plate in the same pattern matched between Trenches I and J. The whiteware plate rims decorated with cobalt blue cut-sponge stamps were a distant match between the eastern sides of both Trench I and Trench A. The hand-painted floral plate, which looked at first glance like a 19th century polychrome ceramic, were from the early 20th century. They are from adjacent catalog numbers in Trenches C and F. Piece from the base of a molded holloware vessels matched across Trenches I and D.

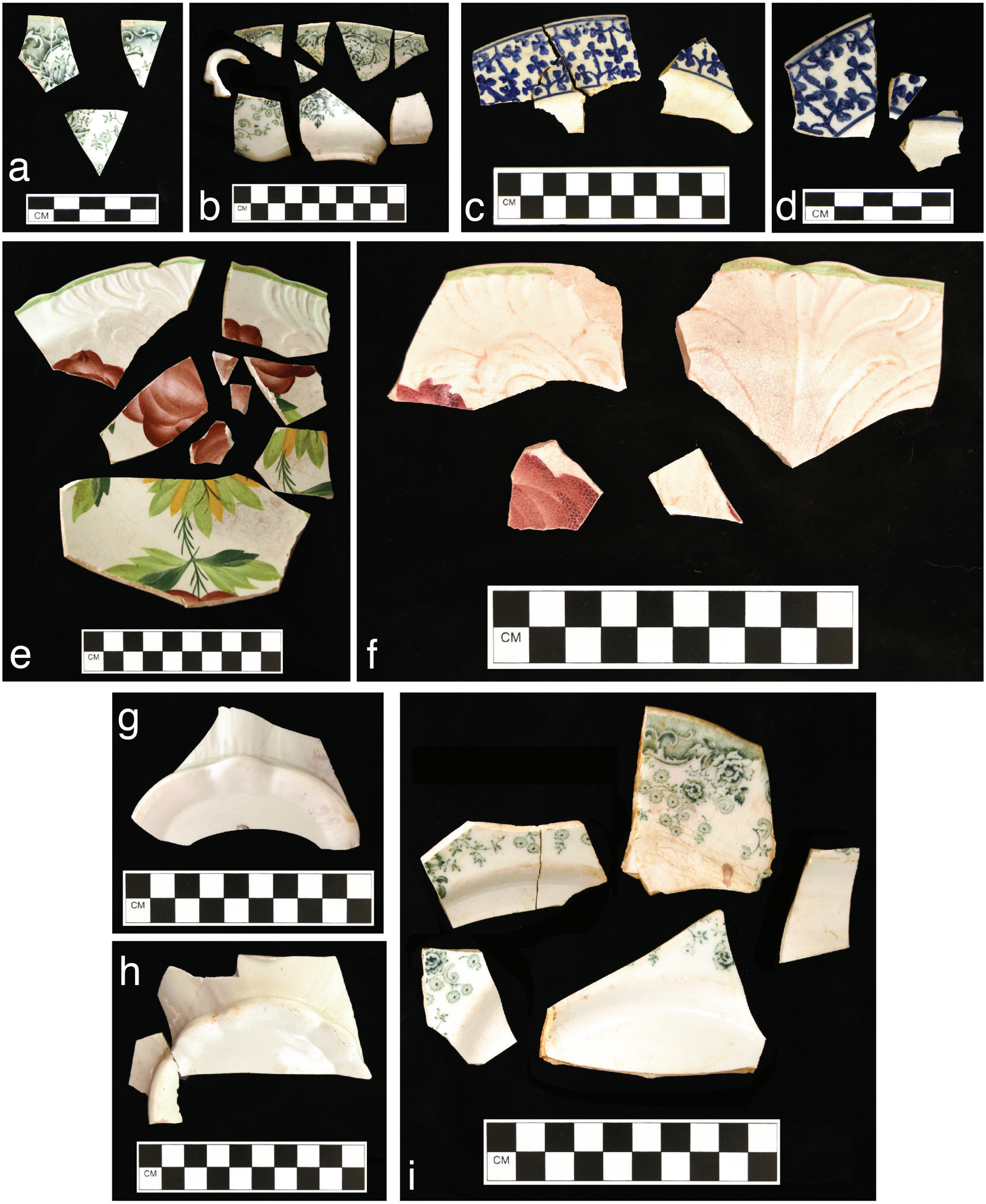


Figure 3.38. *Ceramic vessels that mend across multiple trenches: Teal transfer-print teacup, (a) 752.001, 755.001, and 756.001, (b) 1104.002, 1263.015, 1362.002, and 1437.001; blue cut sponge-decorated: (c) 3.002, 5.001, (d) 1259.003, 1368.005; Hand-painted and molded polychrome plate with roses: (e) 1113.007, 1335.001, 1381.001, (f) 433.001; Molded whiteware hollowware vessel base: (g) 921.014, (h)1184.002; Teal transfer-print: (i) 1203.003, 1262.018, 1263.018, 1357.001.*

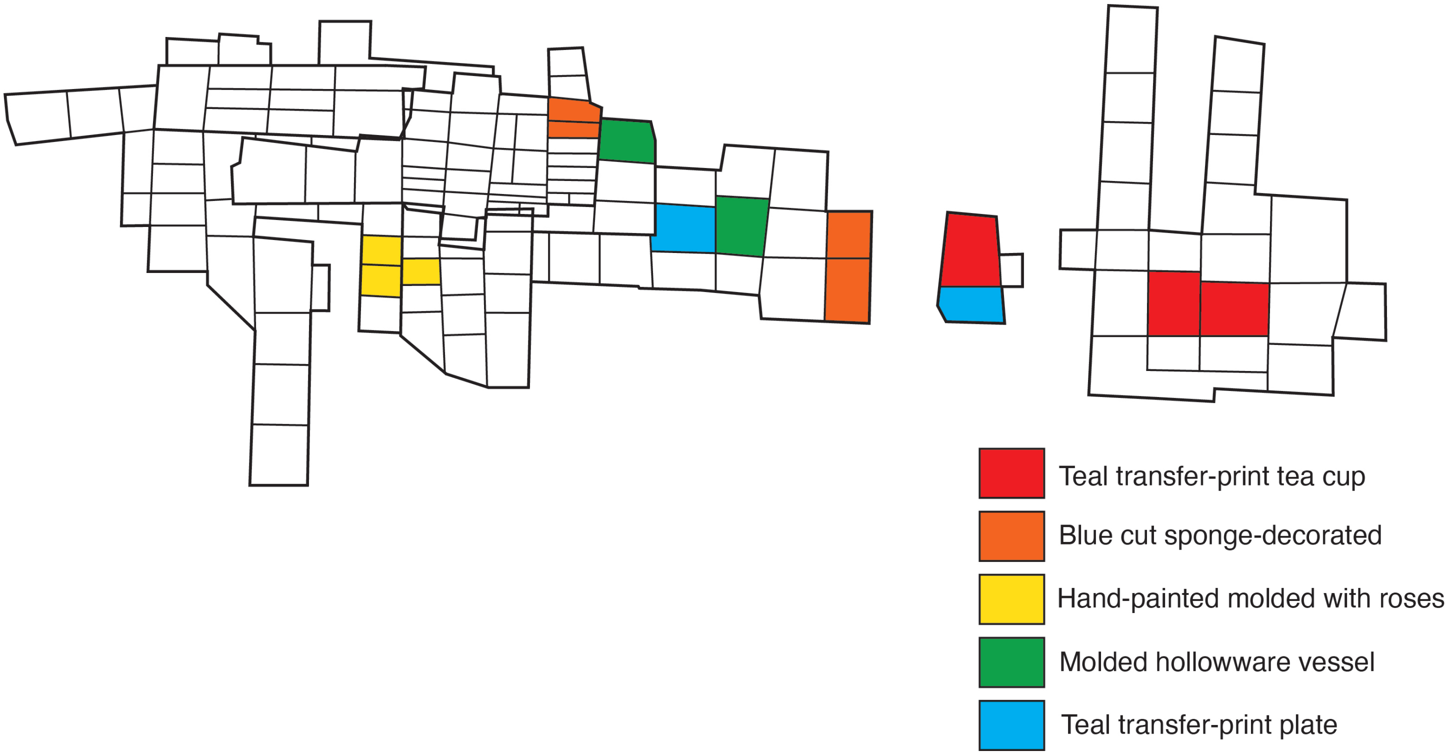


***Figure 3.39**. Locations of cross-mends that span multiple trenches at Oaklawn Cemetery.*

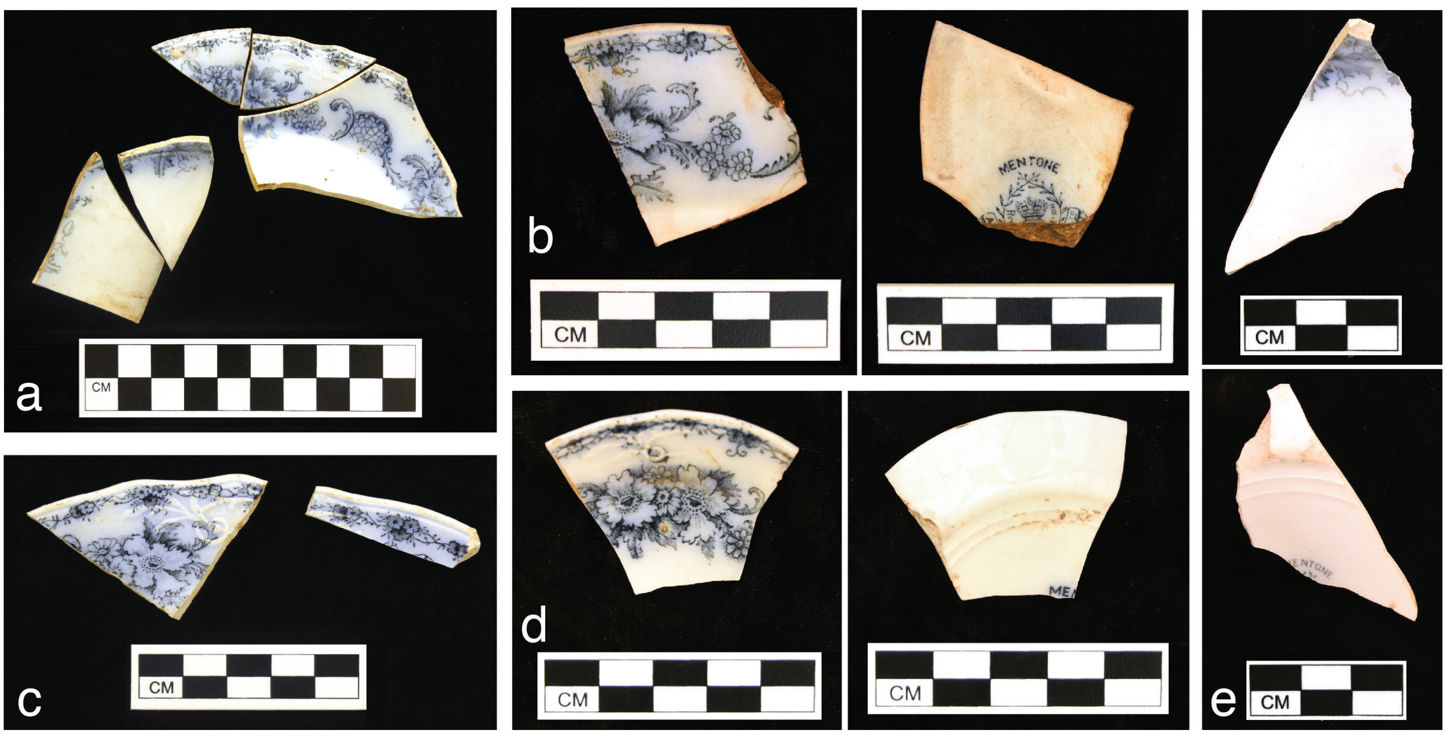


***Figure 3.40**. Mentone sherds from the 2020-2023 field seasons: (a) Charger plate (18.005, 23.003, 337.002); (b) Saucer with decoration and maker's mark (23.001); (c) Plate (19.001 and 24.001); (d) Shallow bowl and portion of the "Mentone" mark (23.002); (e) saucer (924.001).*

Ceramics from Trenches A – J

Table 3.17 provides counts and weights for all four categories of artifacts by trench for the 2021-2024 excavations. The Trench A artifact assemblage was 24 times heavier than the Trench B, about 6 times heavier than the C assemblage and about 4 times heavier than the Trench D and Trench F - H assemblage. Numerous large and heavy chunks of ferrous metal were recovered from the deeply-buried stream soils in the southern portion of

Table 3.19. Artifacts Recovered from 2021-2024 Excavation Trenches by Category.

Material Type	Trench A				Trench B				Trench C				Trench D				Trench E			
	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%
Ceramics	347	18.7	8247	16.5	19	12.8	126	6.1	82	8.8	960	10.7	156	22.3	3149	24.9	757	11.4	12752	17.6
Glass	534	28.7	13626	27.3	96	64.4	1048	50.7	578	61.8	3467	38.8	432	61.7	6987	55.3	2848	42.7	25301	34.8
Metal	972	52.3	27854	55.8	32	21.5	609	29.5	257	27.5	3410	38.2	108	15.4	1224	9.7	2807	42.1	23626	32.5
Other Materials	5	0.3	161	0.3	2	1.3	283	13.7	18	1.9	1101	12.3	4	0.6	1276	10.1	251	3.8	10945	15.1
Total	**1858**	**13.1**	**49888**	**21.2**	**149**	**1.1**	**2067**	**0.9**	**935**	**6.6**	**8938**	**3.8**	**700**	**4.9**	**12636**	**5.4**	**6663**	**47.1**	**72624**	**30.8**

Material Type	Trenches F - H				Trench I				Trench J				Total			
	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%	Count	%	Weight (g)	%
Ceramics	183	26.0	2718	23.4	101	19.8	1192	7.8	744	28.2	20260	32.3	2389	16.9	49403	21.0
Glass	454	64.6	6862	59.1	333	65.2	7943	52.3	1598	60.6	32349	51.6	6873	48.6	97583	41.4
Metal	30	4.3	1592	13.7	67	13.1	4571	30.1	116	4.4	7551	12.0	4389	31.0	70438	29.9
Other Materials	36	5.1	430	3.7	10	2.0	1483	9.8	177	6.7	2592	4.1	503	3.6	18270	7.8
Total	**703**	**5.0**	**11602**	**4.9**	**511**	**3.6**	**15189**	**6.4**	**2635**	**18.6**	**62752**	**26.6**	**14154**	**100.0**	**235695**	**100.0**

Trench A. These appear to be the walls from a cast iron stove or a boiler. These artifacts were not present in the other excavated trenches.

Ceramics made up 17 percent of the artifacts recovered that could be assigned to specific excavation trenches. The percentages of ceramics in each trench ranged between 9 and 28 percent of the total assemblages. The increasing percentage of ceramics as field seasons progressed is partly the result of changes in collection strategies, as fewer and fewer unidentifiable metal artifacts were recovered. Trench C has the lowest percentage of ceramics, while Trench J has the highest. The percentages of ceramic wares for all excavated trenches are shown in Table 3.18. There are a couple of notable differences across the trenches. Trenches F – H and J have the highest percentages of ironstones. Trenches E & J both have higher percentages of stonewares.

The types of decoration found on refined earthenwares and porcellaneous wares, shown in Table 3.19, provide a better basis for comparing ceramic assemblages among excavation trenches. Transfer-printed sherds

Table 3.20. Ceramic Ware Types from the 2021-2024 Excavation Trenches.

Ware Type	Trench A		Trench B		Trench C		Trench D		Trench E		Trench F-H		Trench I		Trench J		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Whiteware	134	38.6	4	21.1	40.0	48.8	78	50.0	300	40.2	72	39.3	47	46.5	231	31.0	772	38.0
Ironstone/White Granite	67	19.3	1	5.3	5.0	6.1	25	16.0	82	11.0	51	27.9	23	22.8	242	32.5	429	21.1
Other Refined Earthenware	0	0	0	0	0.0	0	1	0.6	16	2.1	0	0.0	0	0.0	0	0.0	17	0.8
Bisque	5	1.4	0	0.0	1.0	0.0	0	0.0	26	3.5	2	1.1	1	1.0	2	0.3	32	1.6
Porcellaneous Ware	64	18.4	13	68.4	14.0	17.1	18	11.5	11	1.5	29	15.8	24	23.8	75	10.1	184	9.1
Stoneware	46	13.3	1	5.3	11.0	13.4	24	15.4	171	22.9	23	12.6	5	5.0	180	24.2	415	20.4
Yellowware	19	5.5	0	0.0	4.0	0.0	0	0.0	107	14.3	3	1.6	0	0.0	2	0.3	116	5.7
Coarse Earthenware	7	2.0	0	0.0	5.0	0.0	7	4.5	5	0.7	2	1.1	1	1.0	6	0.8	26	1.3
Redware	0	0	0	0	0.0	0	1	0.6	6	0.8	1	0.5	0	0.0	2	0.3	10	0.5
Ceramic Tile	5	1.4	0	0.0	0.0	0.0	1	0.6	5	0.7	0	0.0	0	0.0	0	0.0	6	0.3
Toilet ware	0	0.0	0	0.0	2.0	0.0	1	0.6	18	2.4	0	0.0	0	0.0	4	0.5	25	1.2
Total	**347**	**17.1**	**19**	**0.9**	**82.0**	**4.0**	**156**	**7.7**	**747**	**36.8**	**183**	**9.0**	**101**	**5.0**	**744**	**36.6**	**2032**	**100.0**

Table 3.21. Ceramic Decoration Types from the 2021-2024 Excavation Trenches.

Decorative Type	Date	Peak Popularity	Trench A		Trench B		Trench C		Trench D		Trench E		Trench F-H		Trench I		Trench J		Total	
			Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Molded	1660+	1870-1950	47	36.2	0	0.0	13	48.1	37	72.5	160	52.6	26	39.4	21	51.2	121	50.6	425	48.7
Edgeware	1775+	1790-1860	0	0.0	0	0.0	0	0.0	0	0.0	2	0.7	0	0.0	0	0.0	0	0.0	2	0.2
Flow blue transfer-printed	1841+	1890-1904	40	30.8	1	6.7	0	0.0	4	7.8	1	0.3	2	3.0	1	2.4	11	4.6	60	6.9
Transfer-printed	1783+	1820-1870	8	6.2	0	0.0	1	3.7	2	3.9	28	9.2	3	4.5	4	9.8	60	25.1	106	12.1
Spongeware/ Spatteware	1820+	1840-1880	4	3.1	0	0.0	0	0.0	1	2.0	24	7.9	0	0.0	3	7.3	3	1.3	35	4.0
Hand-Painted Copper luster (Tea Leaf)	1850+	1850-1900	0	0.0	0	0.0	0	0.0	0	0.0	8	2.6	1	1.5	0	0.0	4	1.7	13	1.5
Hand-painted Japanese Geisha Girl ware	1875+	1875-1960	0	0.0	0	0.0	0	0.0	0	0.0	6	2.0	1	1.5	0	0.0	1	0.4	8	0.9
Hand-painted (Polychrome and Blue)	1775+	1820-1920	2	1.5	1	6.7	5	18.5	2	3.9	3	1.0	12	18.2	0	0.0	3	1.3	28	3.2
Gilded	1760+	1900-1950	1	0.8	0	0.0	0	0.0	0	0.0	0	0.0	2	3.0	0	0.0	4	1.7	7	0.8
Multi-color overglaze decal	1875+	1900-1950	28	21.5	13	86.7	1	3.7	1	2.0	52	17.1	18	27.3	12	29.3	31	13.0	156	17.9
Variegated	1800+	1800-1815	0	0.0	0	0.0	0	0.0	0	0.0	7	2.3	0	0.0	0	0.0	0	0.0	7	0.8
Colored, Fiesta Style Glaze	1926+	1936-1970	0	0.0	0	0.0	7	25.9	4	7.8	4	1.3	1	1.5	0	0.0	1	0.4	17	1.9
Art glaze	1910+	1920-1950	0	0.0	0	0.0	0	0.0	0	0.0	9	3.0	0	0.0	0	0.0	0	0.0	9	1.0
Totals			**130**	**14.9**	**15**	**1.7**	**27**	**3.1**	**51**	**5.8**	**304**	**34.8**	**66**	**7.6**	**41**	**4.7**	**239**	**27.4**	**873**	**100.00**

make up 19 percent of the total decorated assemblage from all trenches. Trench A has the highest percentage of transfer-printed ceramics at 37 percent of the decorated ceramics. This also includes flow blue. This high percentage is a bit misleading because many of the transfer-printed sherds from Trench A are part of a single refitted flow blue plate. Trench J is next with 30 percent of the decorated sherds being transfer-printed. Based on the recovered artifacts, the ceramic assemblages from Trenches A and J both date between about 1890 and 1910. Several transfer-printed sherds from Trenches A and J were made in the mid-19th century; these are likely heirloom sherds. The late 19th century aesthetic transfer-printed sherds were recovered from Trenches A, D, E, and J. More ceramics in the Trench B, C, and I assemblages date later in time, including some of the molded and decal-decorated porcelaneous wares, colored Fiesta-style glazed sherds, and the cross-mending hand-painted molded plate with red floral decoration discussed above.

Trenches F – H and I have the highest percentages of decal-decorated ceramics, at 27 and 29 percent. A is slightly lower at 22 percent and J has only 13 percent. As discussed above, the lower overall percentage of decal-decorated ceramics in Trench J indicate that the garbage in this area of Oaklawn is earlier in time. Decal-decorated ceramics replaced transfer-printed ceramics as the most popular decorative type during the early 20th century. The stoneware data also support the earlier date for Trench J. Table 3.20 shows the stoneware glazes found in across all 2021-2024 excavation trenches. Trench J again has the earliest glazes; Trench E also has an early salt-glazed sherd and a high quantity of Albany slipped interior and exterior sherds. Based on the ceramic date, Trench J has the earliest ceramics, with Trenches E, A, and D being slightly later, followed in time by Trenches F – H and I. Trenches B and C also seem to be slightly later in time, but the samples of ceramics from those trenches are so limited, it is difficult to firmly establish this.

Glass from Trenches A – J

The recovered glass from the excavated trenches confirms the ceramic results. The artifact data from the Sexton Area is included in the cumulative glass tables. The Sexton Area ceramics were not included because it is not comparable. While most of the 2021-2024 ceramics were household refuse, most of the Sexton Area artifacts appear to have been grave decorations swept up and deposited in this area during periodic cemetery cleanups. While some of the Sexton Area glass assemblage consists of containers used as grave decorations, most of these containers were the same type of household containers recovered from Trenches A - J. Table 3.21

Table 3.22. Stoneware Glazes from the 2021-2024 Excavation Trenches.

Stoneware Glazes	Date	Trench A		Trench B&C		Trench D		Trench E		Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Salt-glazed	mid to late 19th c.	0	0	0	0	0	0	0	0.0	0	0.0	0	0.0	2	1.4	2	0.6
Salt glazed int/Albany slip ext	mid to late 19th c.	0	0	0	0	0	0	2	2.0	0	0.0	0	0.0	4	2.7	6	1.7
Albany Slip	mid to late 19th c.	9	22.0	2	16.7	0	0.0	38	37.3	3	13.0	1	20.0	33	22.3	86	24.2
Bristol slip ext/Albany slip int	late 19th to early 20th c.	5	12.2	9	75.0	1	4.0	3	2.9	9	39.1	1	20.0	0	0.0	28	7.9
Bristol slip ext/Salt glazed int	late 19th to early 20th c.	0	0.0	0	0.0	0	0.0	32	31.4	0	0.0	0	0.0	5	3.4	37	10.4
Bristol slip	20th c.	24	58.5	1	8.3	24	96.0	17	16.7	9	39.1	1	20.0	88	59.5	164	46.1
Bristol slip with maker's mark/decoration	20th c.	0	0.0	0	0.0	0	0.0	2	2.0	1	4.3	0	0.0	0	0.0	3	0.8
Light blue glaze	early - mid-20th c.	1	2.4	0	0.0	0	0.0	6	5.9	1	4.3	1	20.0	2	1.4	11	3.1
Tan glaze	unknown	1	2.4	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	2	0.6
Brown glazed ext/Albany slip int (gray clay body)	unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	9	6.1	9	2.5
Matte Reddish-brown Glaze	unknown	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	20.0	5	3.4	6	1.7
Unglazed	unknown	1	2.4	0	0.0	0	0.0	1	1.0	0	0.0	0	0.0	0	0.0	2	0.6
Totals		**41**	**11.5**	**12**	**3.4**	**25**	**7.0**	**102**	**28.7**	**23**	**6.5**	**5**	**1.4**	**148**	**41.6**	**356**	**97.8**

breaks the glass down by colors and by trench. Just under half (48 percent) of the complete glass assemblage is colorless. The precentage of colorless glass varies across the trenches from 43 percent in Trench E to 63 percent in Trench B. The trenches with the highest percentages of colorless glass, Trenches B and C, have the lowest percentages of aqua glass. Trenches A, D, E, and J, which have been interpreted as earlier in time, have higher percentages of pale aqua to aqua glass. Aqua glass bottles dropped off significantly in the 1920s as preference for colorless glass, which made a product more visible, grew (Lindsey 2024). Aqua was used into the mid-20th century in certain soda bottles, particularly Coca Cola bottles, and Ball canning jars, which were common in a distinctive deep blue aqua shade that is presented separately in this table. Purple-tinted manganese glass, which dates between 1875 and 1918, made up 8 percent of the cumulative assemblage. It made up over 10 percent of the assemblage in Trenches B, C, F - H, and I, which have the latest artifact assemblages. Manganese glass has a lower representation in the Sexton Area. This is likely because so many of the containers from this area were made between the 1920s - 1930s, when glass producers had stopped the use of manganese as a decolorant. In general, it is difficult to ascertain ages from the remainder of the recorded glass colors.

Table 3.23. Glass Colors from the 2021-2024 Excavation Trenches.

Glass Color	Trench A		Trench B		Trench C		Trench D		Trench E		Trench F - H		Trench I		Trench J		Total	
	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Amber/Brown/Black Amber	52	9.7	9	9.9	42	7.5	85	20.8	232	9.5	5	1.1	20	6.6	171	12.6	616	10.0
Aqua/Light Aqua	96	18.0	3	3.3	51	9.1	53	13.0	505	20.7	49	10.4	35	11.5	190	14.0	982	15.9
Bright (7-Up Green)	1	0.2	2	2.2	1	0.2	3	0.7	7	0.3	3	0.6	0	0.0	1	0.1	18	0.3
Cobalt/Sapphire Blue	3	0.6	0	0.0	4.0	0.0	2	0.5	10	0.4	0	0.0	0	0.0	1	0.1	20	0.3
Colorless	276	51.7	57	62.6	332	59.4	192	46.9	1037	42.6	242	51.3	157	51.6	696	51.1	2989	48.4
Dark Olive/Olive Green/Olive Amber	0	0.0	0	0.0	23	4.1	7	1.7	29	1.2	5	1.1	2	0.7	6	0.4	72	1.2
Deep Blue/Deep Green Aqua	47	8.8	7	7.7	19	3.4	34	8.3	240	9.8	113	23.9	31	10.2	144	10.6	635	10.3
Emerald Green	0	0.0	0	0.0	0	0.0	2	0.5	0	0.0	1	0.2	0	0.0	11	0.8	14	0.2
Manganese (Light Amethyst)	38	7.1	11	12.1	62	11.1	29	7.1	194	8.0	48	10.2	32	10.5	107	7.9	521	8.4
Light Blue	0	0.0	1	1.1	2	0.4	0	0.0	0	0.0	0	0.0	1	0.3	2	0.1	6	0.1
Light Green/Light Yellow Green	6	1.1	0	0.0	2	0.4	0	0.0	0	0.0	0	0.0	2	0.7	0	0.0	10	0.2
Citron	0	0.0	0	0.0	0.0	0.0	0	0.0	9	0.4	0	0.0	0	0.0	0	0.0	9	0.1
Light Yellow (Straw)/Yellow	0	0.0	0	0.0	17	3.0	0	0.0	3	0.1	0	0.0	0	0.0	7	0.5	27	0.4
Jet	0	0.0	1	1.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.0
Milk Glass	15	2.8	0	0.0	6	1.1	2	0.5	148	6.1	6	1.3	24	7.9	26	1.9	227	3.7
Peach	0	0.0	0	0.1	0.0	0.0	0	0.0	23	0.9	0	0.0	0	0.0	0	0.0	23	0.4
Total	**534**	**8.7**	**704**	**11.4**	**561**	**9.1**	**409**	**6.6**	**2437**	**39.5**	**472**	**7.6**	**304**	**4.9**	**1362**	**22.1**	**6170**	**100.0**

Tables 3.22 and 3.23 present the methods of container production and finish application across all excavation trenches, which are more telling concerning dating of each trench. Fifty-eight percent of the 585 containers with identifiable production methods were blown into molds and 42 percent were machine made. The container production method demonstrates that the Sexton Area is definitely later in time. Seventy percent of containers in the Sexton Area assemblage were machine-made. Trench B has an even higher percentage of machine-made containers, but a smaller sample. Trench C has the next highest rate of machine-made at 56 percent. Most of the containers in both the Sexton Area and Trenches B and C likely were deposited when Oaklawn was a cemetery. Trench J, with the highest concentration of domestic trash, also had the lowest percentage of machine-made containers at only 20 percent of containers. Trench J also has the oldest recovered bottle. This bottle was made in a key mold, which were used between 1840 and about 1875 (see Figure 3.19). As expected, the trenches interpreted as having earlier deposits had higher percentages of mold-blown containers. Trench D was second only to Trench J, with 74 percent of containers mold-blown, followed by Trenches A and E, which each had over half mold-blown botttles. Trench I had a surprisingly high percentage of mold-blown bottles at 63 percent.

The bottle finishes in the entire assemblage reflect these same temporal trends. Seventy precent of the container finishes recovered from the Sexton Area had twentieth-century machine-made finishes. None of the 2021 - 2024 trenches were even close to this percentage. Trench C had the second highest pecentage of machine-made finishes at 46 percent. The earlier trenches had as many as 90 percent tooled finishes in Trench J to 72 percent tooled finishes in Trench A. The only 19th century applied finishes from the 2021 - 2024 excavation trenches were from Trench J, which had a condiment bottle with an applied finish, and Trench I, where an untyped bottle with an applied finish was recovered. Two of the containers in the Sexton Area had appplied finishes, which was unexpected given the later date of this assemblage. These may be from the deeper southern end of the trench, which did encounter pond deposits that may date back to the original use of the area as an alottment.

Table 3.24. Glass Container Manufacture Methods from the 2021-2024 Excavation Trenches.

Manufacture Method	Date Range	Sexton Area		Trench A		Trench B		Trench C		Trench D		Trench E		Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%
Key Mold	1840-1875	0	0.0	0	0	0	0	0	0	0	0	0	0	0	0	0	0.0	1	0.9	1	0.8
Post-Bottom Mold	1840-1905	5	6.8	10	15.9	0	0.0	1	4.0	3	7.1	21	12.9	3	5.0	8	22.9	17	18.3	68	11.6
Cup-Base Mold	1880-1920	13	17.6	23	36.5	2	28.6	9	36.0	26	61.9	67	41.1	27	45.0	13	37.1	74	63.8	254	43.4
Plate Mold	1840-1920	0	0.0	2	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	0.5	0	0.0	0	0.0	3	0.5
Turn Mold	1880-1915	4	5.4	1	1.6	0	0.0	1	4.0	2	4.8	4	2.5	0	0.0	1	2.9	1	1.1	14	2.4
Total Blown into Mold		22	29.7	36	57.1	2	28.6	11	44.0	31	73.8	92	56.4	31	51.7	22	62.9	93	80.2	340	58.1
Owens Machine	1905-1930	18	24.3	3	4.8	1	14.3	3	12.0	3	7.1	21	12.9	7	11.7	3	8.6	2	1.7	61	10.4
Press-and-Blow Machine	1905-1930	2	2.7	8	12.7	0	0.0	0	0.0	3	7.1	12	7.4	19	31.7	4	11.4	9	7.8	57	9.7
Machine Made	1908+	32	43.2	16	25.4	4	57.1	11	44.0	5	11.9	38	23.3	3	5.0	6	17.1	12	10.3	127	21.7
Total Machine Made		52	70.3	27	42.9	5	71.4	14	56.0	11	26.2	71	43.6	29	48.3	13	37.1	23	19.8	245	41.9
Total		**74**	**12.6**	**63**	**10.8**	**7**	**1.2**	**25**	**4.3**	**42**	**7.2**	**163**	**27.9**	**60**	**10.3**	**35**	**6.0**	**116**	**19.8**	**585**	**100**

Table 3.25. Glass Container Finish Methods from the 2021-2024 Excavation Trenches.

Finish Method	Date Range	Sexton Area		Trench A		Trench B		Trench C		Trench D		Trench E		Trench F-H		Trench I		Trench J		Total	
		Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	%	Count	Percent
Applied	1800-1895	2	5.1	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	1	5.0	1	1.1	4	1.1
Tooled	1870-1930	10	25.6	13	72.2	4	66.7	6	54.5	14	73.7	73	64.6	34	82.9	15	75.0	81	89.0	250	69.8
Machine Made	1910+	27	69.2	5	27.8	2	33.3	5	45.5	5	26.3	40	35.4	7	17.1	4	20.0	9	9.9	104	29.1
Total		39	10.9	18	5.0	6	1.7	11	3.1	19	5.3	113	31.6	41	11.5	20	5.6	91	25.4	358	100.0

Conclusions

After five seasons of excavations, ongoing analysis of artifacts from the southwest corner of Oaklawn Cemetery and the Sexton Area allows us to reconstruct activity in the area before this corner of Oaklawn was annexed by the City of Tulsa and after it began use a cemetery. The trenches will be discussed working from east to west. The Trench E assemblage was divided into shallow and deep contexts during excavation (see Regnier

2024). Artifacts from the shallow context, which extended to roughly 30 cm below the ground surface, consisted largely of ceramics and glass left behind by visitors to Oaklawn, either as trash or as decoration placed on graves. These artifacts largely date between the 1920s and 1950s. Trench E had a high density of household trash and architectural materials, including bricks, mortar, window glass, nails, and tile, encountered at just over a meter below the ground surface. The bricks used to support temporary markers in Trench E were likely encountered when grave shafts were excavated into these deposits (see Stackelbeck and Green 2024 for images of these bricks in place). The density of architectural materials suggest that portions of a demolished building were dumped in this area before it was filled and then used as a cemetery. There appears to have been a second fill episode sometime in the 1930s, perhaps during the WPA-sponsored clean up of Oaklawn. This raised the ground surface to its current level in this area. The west side of Trench E had a higher density of artifacts than the east side. These artifacts were deposited along the buried stream between about 1895 and 1915. The northern extensions of Trench E encountered highly compacted and dry soils and few to no artifacts. The handful of recovered artifacts from these northern extensions appear to have been left as grave decorations and not household trash.

Trench J, located just west of Trench E, had the heaviest density of artifacts and the earliest artifacts. This trash largely appears to have been deposited between 1890 and 1910. The Trench J deposits do not include much brick but did include plain and decorative window glass. This is quite different from the nearby Trench E deposits, where bricks were very common. The trash in Trench J is also slightly earlier than the trash in Trench E. The Trench J deposits included many thick white granite hotel china platters, butchered domestic animal bone, and medicine bottles. It is possible this trash may have been from a boarding house where residents paid a fee to a homeowner in exchange for a room and some meals, which would explain the number of ironstone serving platters, or even a hotel. Tulsa city directories from the early 20th century, which provide addresses for the citizens of Tulsa during a period when the population was ballooning, list many of the city residents as boarders.

Moving east, Trench I had a low density of archaeological material. The excavations did not encounter the buried stream in Trench I, so artifacts were far less frequent and generally dated later in time. It is possible that the stream meanders north before dipping south across Trench A. This would explain why the artifact density is so high in the northeast corner of Trench D, where large quantities of household trash were again encountered. It would also explain why the artifact assemblage in Trench D is slightly earlier, like the Trench E assemblage. The artifact density is high on the eastern edge and across the southern boundary of Trench A. The Trench A artifacts included standard household trash and a number of pieces of a heavy cast iron object, possibly a stove or a boiler. The artifacts in this portion of Trench A date to the same period as those in Trench D. Trench C is on the south side of the buried stream. The density of artifacts drops moving away from the stream to the south and the artifacts recovered away from the stream are later in time. The west side of Trenches A, B and C, as well as Trench F, have very low densities of artifacts. The few recovered artifacts are later and many were deposited after 1917. There is a slight increase in artifact density in the portions of Trench F extended to the current southern and western boundaries of the cemetery.

North of Trench F, the southern portion of the Sexton Area trench encountered deposits from a north-south flowing stream. Ceramics from the late 19th/early 20th century were recovered from these low-lying deposits. Artifacts from the overlying soils in the Sexton Area are much later; most are from the 1920s - 1940s. This area was used by the sexton as a refuse dump during that period, and many of the recovered artifacts appear to be grave decorations deposited there during cemetery clean up events.

The recovered non-mortuary artifacts provide important clues about the landform history and the history of the southwest corner of Oaklawn Cemetery. They also provide information about life in Tulsa during a period of rapid population growth. As Tulsa expanded around the cemetery (see Regnier 2024 for more information), the residents faced a problem of what to do with the refuse they generated. Until 1917, the southwest corner of Oaklawn was a low-lying and unused marshy area, making it an ideal location for refuse disposal. It is unclear whether this was systematic dumping or whether individual residents simply chose to leave their trash in the area because it was inhabited. The earliest deposits in this corner of Oaklawn are deep in the Sexton Area and may be associated with the use of the area as an alottment in the late 19th century. Trench J appears to represent a discrete area where the earliest deposition occurred along the now-buried stream flowing roughly parallel to 11th Street; the Trench J assemblage indicates this refuse was from a boarding house or hotel. The artifacts and the faunal remains appear to cross-cut a variety of socioeconomic levels, with artifacts on the more expensive spectrum and high-value cuts of meat alongside cheaper artifacts and lower-value cuts of meat. This indicates a variety of households were responsible for the dumping. It is also possible one of the services contracted by the city for trash removal used the area as a dump for a short time. Deposition continued along the stream in Trenches A, D, and E until the southwest corner of Oaklawn was raised with fill dirt and the cemetery was expanded in 1917. Many of the recovered artifacts from Trenches B, C, F - H, and I appear to be items deposited when this area was incorporated into Oaklawn Cemetery. Trench E also shows evidence of 30 cm of fill added sometime around the 1930s, and the artifacts from the upper levels of this area are later in time and likely memorial items left on graves.

CHAPTER 4

ARCHAEOLOGICAL FINDINGS FROM EXCAVATION BLOCKS F-J

by Kary L. Stackelbeck and Ryan Peterson

Earlier and on-going phases of our investigation revealed that likely victims of the 1921 Tulsa Race Massacre are buried amongst non-victims in the Original 18 Area—the southwest corner of Oaklawn Cemetery (see Figures 1.1 and 1.2). Some appear to be in close proximity to one another but do not appear to be buried in obvious rows or contiguous plots. This creates challenges to the process of discovery, but the archaeological methods we are employing (Chapter 2 and Appendix A, this volume) demonstrate our ability to successfully locate unmarked graves and respectfully recover the remains of individuals who fit some or all of our search parameters for this area—namely adult men who suffered trauma and were buried in simple wooden caskets. Our excavation process provides detailed documentation of the individual remains and their burial context, which facilitates osteological evaluations by the forensic team (Chapter 5, this volume) and the ensuing DNA recovery. It also meaningfully informs the genetic genealogical process. Our methods also allow us to continue to fully evaluate the various leads that guide our investigation (Ellsworth 2022), acknowledging that oral historic accounts may not be precise and urban development since 1921 has dramatically altered the locations of interest throughout the City of Tulsa.

When taken collectively with the previous results, the archaeological data presented here expand our understanding of the nature of the burials and their context in Oaklawn Cemetery. This is particularly important in Section 20, which lacks better documentation that exists elsewhere in the cemetery—such as well-maintained markers and ledger entries with names of individuals buried in specific plots. The archaeological data help to recover some understanding of those who were interred in this part of the cemetery, particularly when combined with forensic, genetic, and genealogical data.

This chapter presents a summary of archaeological data gleaned from the burials that were exhumed in the 2024 field season.

2024 Exhumed Burial Population

During the 2024 field season, the archaeological team documented 56 graves and partially documented an additional 20 graves in Section 20 of Oaklawn Cemetery (see Figure 2.11). Detailed summaries of the excavation of these burials may be found in Appendix A (this volume). Among the individuals who were not exhumed, the decision to leave them in place was based on several factors: 1) subadult size (N = 7); 2) evidence of decorative hardware (N = 45); 3) if the casket was inside an external crate (N = 14); and/or 4) association with a buried marker that appears to be in its original position (i.e., not moved after the introduction of fill or other post-depositional activity (N = 7). These graves do not match the search parameters for massacre victims based on limited historical accounts (Stubblefield 2024). They were mapped and assigned burial numbers (seeFigure 2.11). Beyond these interments, ten additional burials were observed and mapped in the westernmost extension of Block F (see Figure 2.11). We propose to conduct further evaluation of these graves and surrounding areas during the upcoming 2025 field season.

The remains of 11 adults from 11 graves were exhumed because they appeared to meet—or partially meet—the search parameters as possible massacre victims. Six individuals were exhumed from Block F, three from Block H, and two from Block I (Table 4.1, Figure 2.11). Among these exhumed individuals, two are females and nine are males (Table 4.1, Figure 4.1).

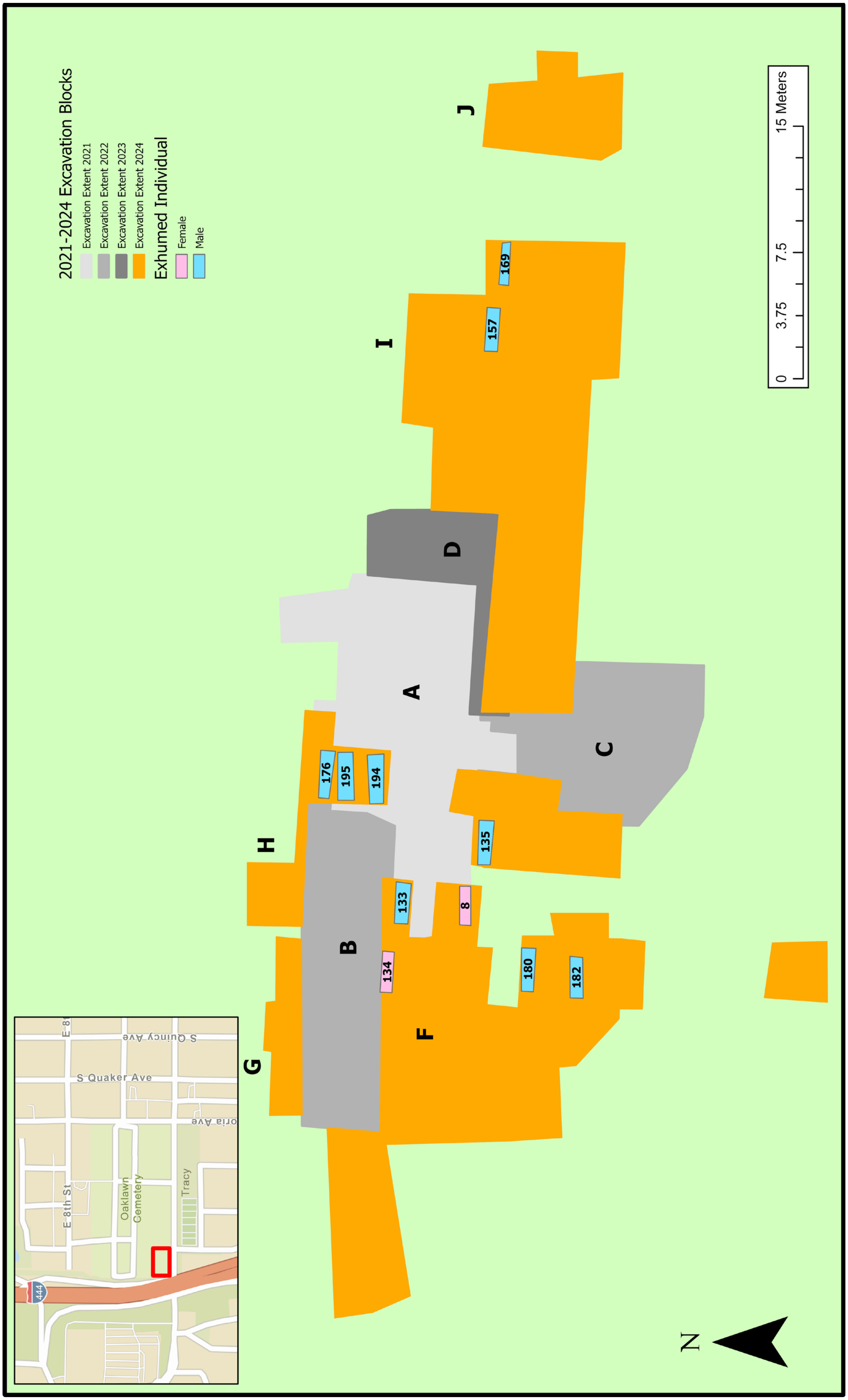


***Figure 4.1.** Distribution of graves of individuals exhumed in 2024 from Excavation Blocks F, H, and I based on biological sex.*

Table 4.1. Sex Determinations for Burials Exhumed in 2024.

Burial #	Excavation Block	Biological Sex
8	F	Female
133	F	Male
134	F	Female
135	F	Male
157	I	Male
169	I	Male
176	H	Male
180	F	Male
182	F	Male
194	H	Male
195	H	Male

Archaeological Evidence of Trauma

Bullets were observed during the excavation of four individuals, Burials 135, 157, 194, and 195 (Figure 4.2). The forensic team, under the direction of Dr. Phoebe Stubblefield, discovered further indications of trauma among these individuals and one other (Burial 182) during laboratory analysis, as discussed in detail in Chapter 5 (this volume). The bullets were observed and described by munitions specialist, Douglas Scott, Ph.D. (Appendix B, this volume).

The individual in Burial 135 was the victim of multiple gunshot wounds to his lower body, including pellets from a shotgun and a .32-caliber lead bullet that was fired from a Colt, Smith & Wesson, or Winchester firearm (Scott, Appendix B, this volume) (Figures 4.2a and 4.2b).

The young man in Burial 157 suffered multiple gunshot wounds. One bullet recovered from this individual was “a small, deformed lead shot pellet, possibly hardened with tin or antimony” (Scott, Appendix B, this volume) (Figure 4.2c).

The individual in Burial 194 suffered multiple gunshot wounds from two guns based on the recovery of a .22-caliber bullet from his thorax and a .38-caliber bullet from his pelvis (Scott, Appendix B, this volume) (Figures 4.2d and 4.2e).

Bullets found in Burial 195 were assessed by Scott (Appendix B, this volume) as follows: “minimally the person was shot with at least one .38-caliber firearm, one .38-Special-caliber firearm, and a shotgun” (Figures 4.2f - h). This individual was also exposed to burning, which was evident to excavators based on substantial charring of the skeletal remains (Drew, Appendix A, this volume).

Taken collectively with the results from previous field seasons, there are six confirmed gunshot victims whose remains have been recovered from the New Potters Field portion of Section 20 at Oaklawn Cemetery. Among these individuals, a minimum of five different calibers of bullets were used to shoot these six victims. Five of these trauma victims display evidence of multiple gunshot wounds. At least three of these individuals were struck with bullets of multiple calibers.

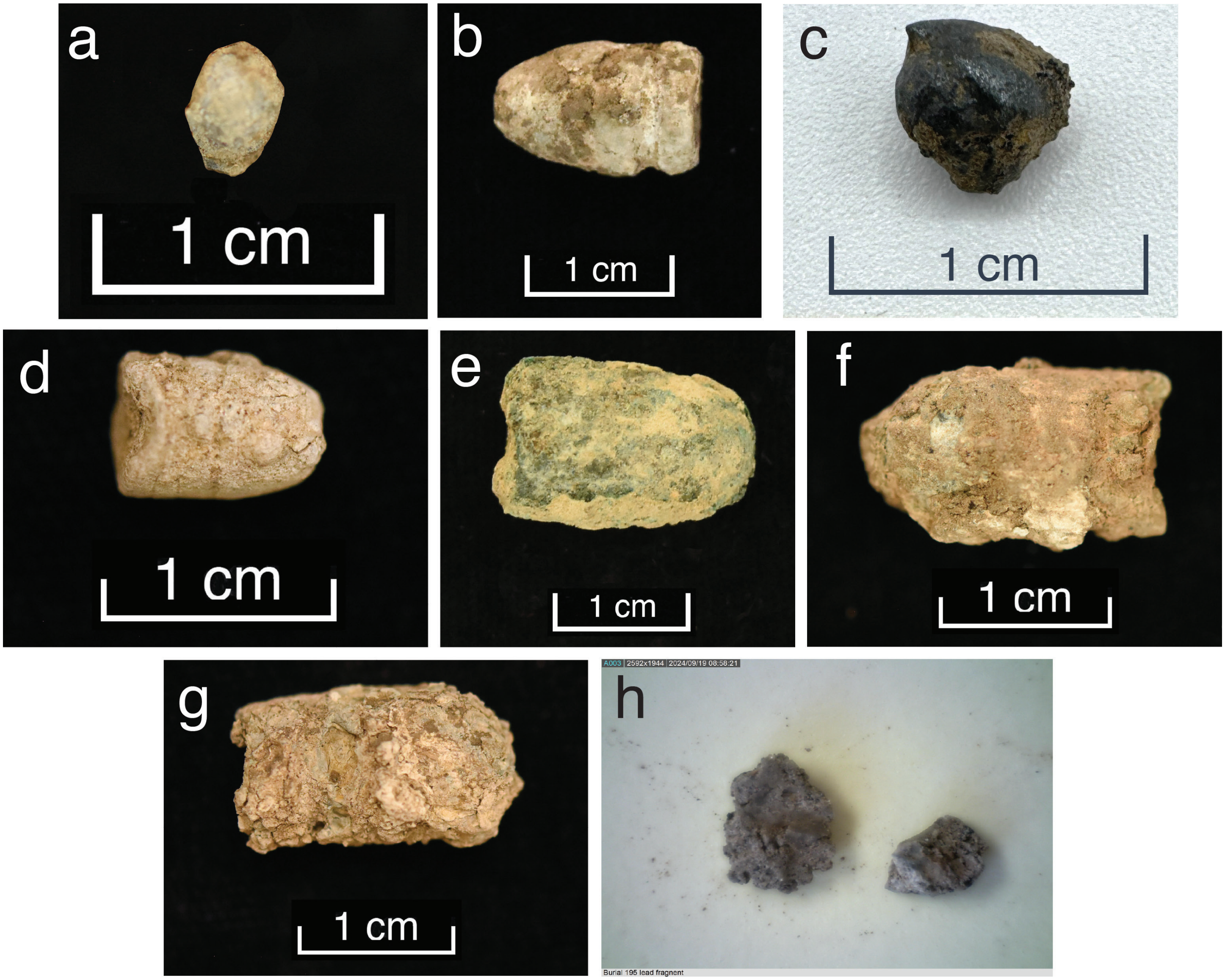


***Figure 4.2**. Photographs of several bullets recovered during the 2024 field season, including: (a) lead shot pellet embedded in left metatarsal (Burial 135; image edited to remove visibility of the bone matrix); (b) nominal .32-caliber lead bullet (Burial 135); (c) small deformed lead shot pellet (Burial 157); (d) small caliber lead bullet consistent with a .22-caliber (Burial 194); (e) nominal .45-caliber jacketed bullet (Burial 194); (f) impact-damaged lead bullet consistent with a nominal .38-caliber or .380-caliber (Burial 195); (g) lead bullet consistent with a nominal .38-caliber (Burial 195); (h) two impact-damaged lead shot pellets (Burial 195) (Scott, Appendix B, this volume).*

Burial Containers

Standardization and commercialization of undertaker or funeral home practices took hold following the Civil War and were prominent by the early 20th century (Aguero 2022). The use of rectangular caskets—as opposed to octagonal coffins—had become more common by this time (Brennan 2007). Industries that produced caskets commercially allowed funeral homes to keep some in stock or to purchase and have them shipped as needed (Brennan 2007), but not to the exclusion of local manufacture—particularly of simpler forms. Locally produced wooden caskets were often less expensive, but undertakers still generally maintained professional pride in making them with attention to detail—such as accuracy of container size to adequately fit the decedent (Crane & Breed Manufacturing Company 1921). Beyond the basic functional purpose of burying the dead, characteristics of the container can also reveal information about the intended treatment of the decedent, the context of their death, and/or the care taken by those who were responsible for burying them.

Nine of the 11 exhumed individuals in the 2024 burial population were interred in simple wooden caskets without decorative hardware. Two individuals—both adult male trauma victims—were buried adjacent to one another in Burials 194 and 195 in wooden crates that were repurposed as burial containers.

Wood samples from the containers of exhumed individuals were analyzed by paleoethnobotanist, Jennifer Haney, Ph.D. at the Oklahoma Archeological Survey (Appendix C, this volume). The results indicate the containers were produced from trees of the following taxa: bald cypress (n = 2), pine (n = 1), and southern hard pine group (n = 5) (Appendix F, this volume; Figures 4.3 and 4.4). Samples from the container for Burial 169 were from two taxa: bald cypress and pine. The burial container for Burial 8 was manufactured from an unidentified type of wood. No sample of the container wood for Burial 195 was retrieved. However, a sample of burned wood from inside the container in association with the remains, which were also burned, was identified as larch. As noted by Haney (this volume): “western larch is used in building materials, such as edge-grained flooring and interior finish materials.” It is reasonable to conclude that burned fragments of larch wood—perhaps representing architectural remnants—were inadvertently collected with the burned, fragmentary remains of this individual before they were transported and interred in Burial 195 at Oaklawn Cemetery.

According to Haney (Appendix C, this volume): “Of the 92 containers (cases and crates) thus far examined, only four have not been properly dried and so they are apparently outliers within the examined sample at Oaklawn.” Two of those containers were from Burials 65 and 95 and are discussed further in the previous technical report (Haney 2024; Stackelbeck and Peterson 2024:96). The other two containers with “green” wood were from Burials 157 and 180, which were investigated in the 2024 season. Burial 157 is an adult male who suffered multiple gunshot wounds and was buried in a simple wooden casket that was too small for his stature. Burial 180 is an adult male buried in a simple wooden casket that may have been too small for his stature. No personal items or grave goods were recovered with either of these individuals. The selection of uncured wood for these containers could reveal information about the process of production, the carpenter’s access to raw materials, and/or timing and proximity of manufacture in relation to the death of the decedent. “All the wood specimens examined from these proveniences had not been seasoned and properly dried prior to use. As such, it seems likely that these burial cases were made by a local carpenter rather than purchased from a manufacturer/supplier”

Among the wooden containers of exhumed individuals from the 2024 field season, no two had the same length and width dimensions. Indeed, none of the containers measured during the 2024 field season had the same dimensions. The variability in size of these containers, coupled with the use of various types of wood that would have been locally (or regionally) available, suggests local manual construction. Five of the caskets may have been produced at or near the time of use and tailored to suit the size of the decedent. However, three other caskets were too small—or nearly so—for the individuals they contained (Burials 157, 180, and 182); Figure 4.5). The opposite phenomenon was observed for three other burials, where the casket (Burial 135) and crates (Burials 194 and 195) were larger than necessary to accommodate the remains they contained. Additional details on these latter two individuals are provided below that may help explain the disparity between the stature of these individuals and their respective burial containers.

Over half of the containers used for individuals exhumed in 2024 (n=6 or 54.5%) were somehow unusual. The use of a repurposed shipping crate (Burials 194 and 195), a casket that is too small for the decedent (Burials 157, 180, and 182) or too large (Burial 135), or substandard building materials (such as “green” wood in Burials 157 and 180) may reflect one or multiple of the following behaviors: hasty burial; intentional disrespectful treatment; lack of access to appropriately cured wood; economical use of raw materials; inexperience of the craftsman; or lack of involvement or advocacy by loved ones in burial preparations.

Burial Position

With the exception of Burial 194, all individuals exhumed in 2024 were buried in the extended supine position—on their backs with their legs extended straight and their heads oriented to the west (Appendix A, this volume). The original body placement of the individual in Burial 194 was difficult to assess given the unusual position of the remains, which appear to have shifted toward the east end of the container, perhaps due in part to

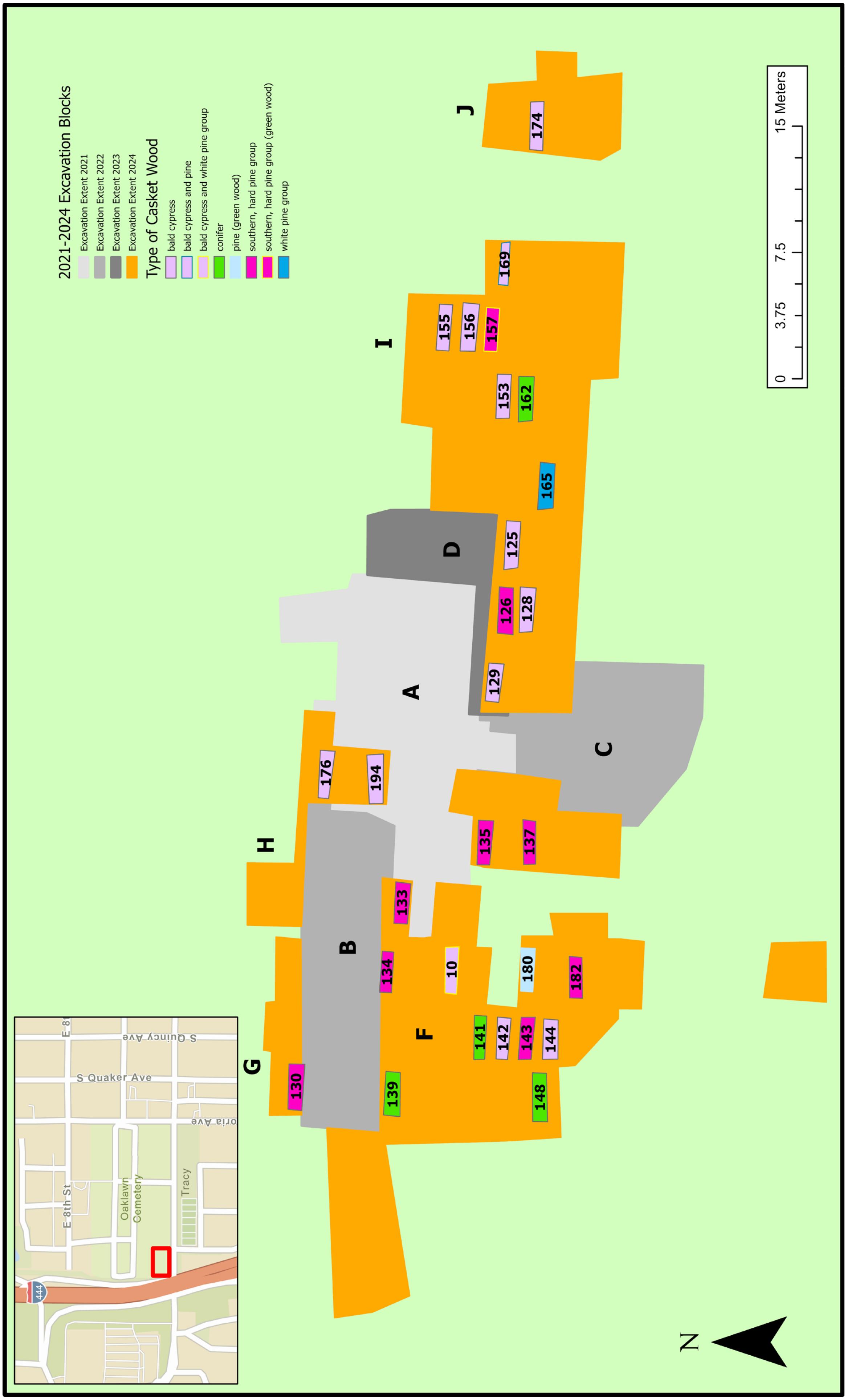


Figure 4.3. *Types of wood identified for burial containers examined during the 2024 field season; see full description in Appendix C, this volume.*

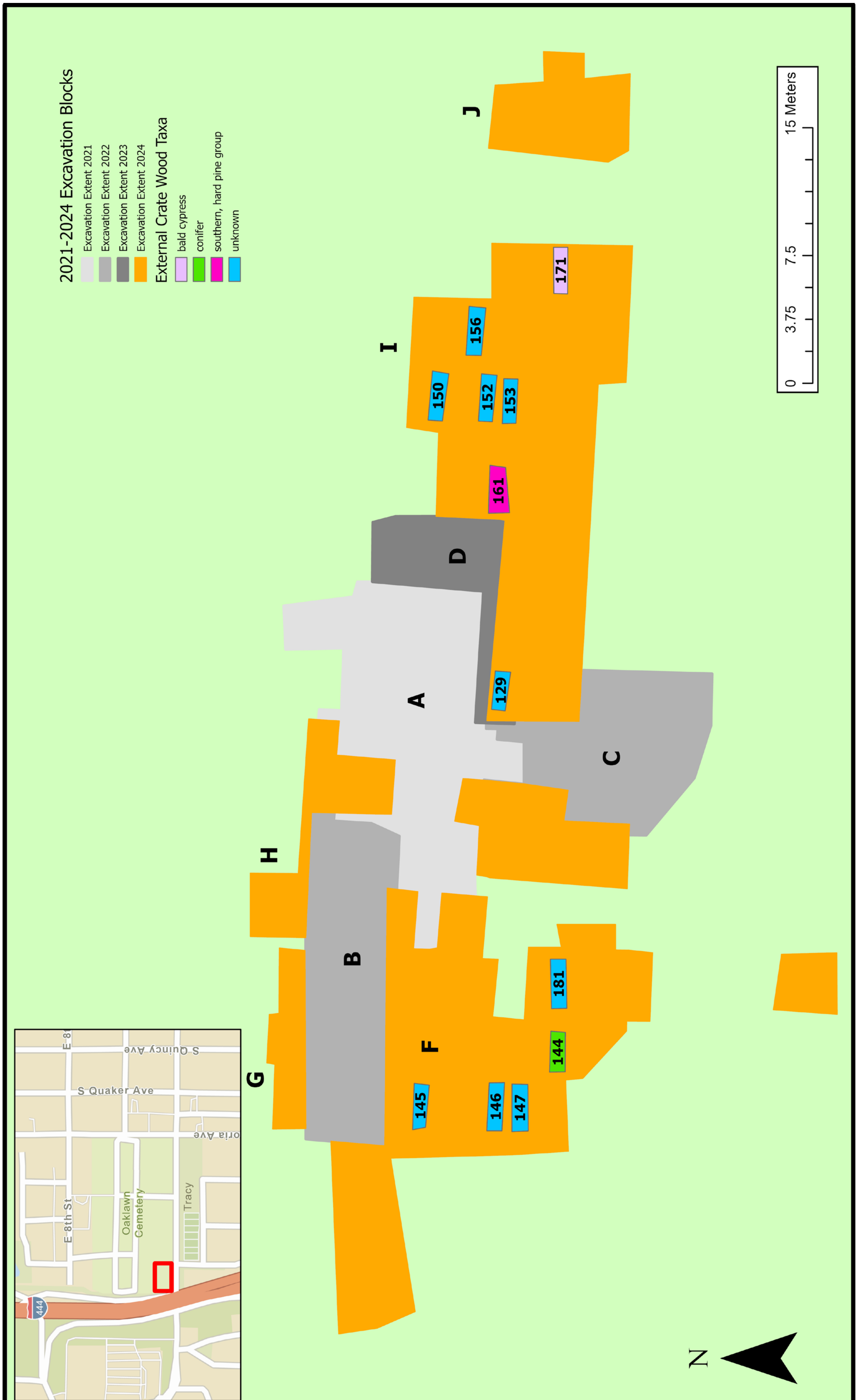


Figure 4.4. *Types of wood identified for 12 of the 14 external crates observed during the 2024 field season; see full description in Appendix C, this volume.*

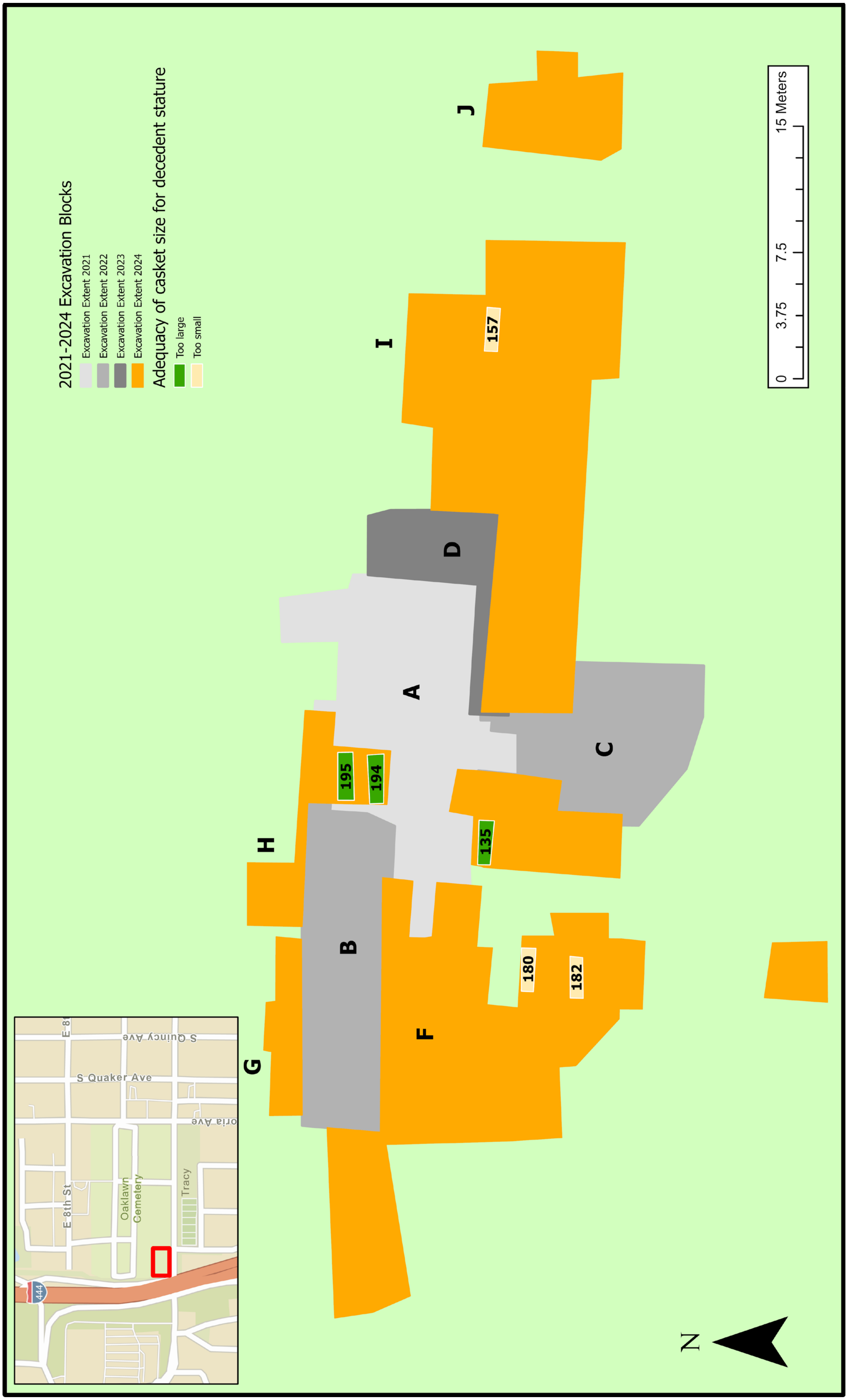


Figure 4.5. *Distribution of burials exhumed in 2024 whose caskets appeared to be too small (or nearly so) or larger than necessary for the decedent contained therein.*

post-depositional water infiltration and the size of the crate. Some elements were articulated but out of anatomical position. Nonetheless, excavators were able to observe that the arms appear to have been flexed with the hands near the sternum and the legs were bent toward the chest, suggesting the decedent was buried in a semi-flexed position (Appendix A, this volume).

The individual in Burial 195 suffered substantial post-mortem burning, resulting in the loss of several elements prior to burial in Oaklawn Cemetery. That, coupled with the awkward positioning of the skeletal remains that were present, made it difficult to evaluate the position of this individual at the time of burial. "Excavators noted the pelvis, left femur and most of the axial skeleton were articulated and in anatomical position, but the left lower limb was located to the side and at an angle to the left femur. Additionally, the right tibia was located slightly west of and under the right pelvis. The arms appear to have shifted against the south wall and under the thorax on the left. No hand or foot elements were recovered" (Appendix A, this volume).

As discussed further below, burial position can be impacted by post-depositional (i.e., after burial) movement of remains; this phenomenon was observed for at least five of the 11 individuals exhumed in 2024 (Burials 8, 134, 135, 169, and 194). These remains likely shifted somewhat as a result of water infiltrating the containers after they were buried, but at a point when the remains had not yet fully decomposed.

Personal Effects

Personal objects were documented during the archaeological excavation of five of the 2024 exhumed individuals (Appendix A, this volume). A ring was still in place on a left finger of the man in Burial 194 (Figure 4.6a). At least four individuals were likely clothed at the time of burial based on the recovery of fragments of fabric (Burials 135 and 195 [Figure 4.6b]), rivets (Burials 8 and 135), clothing snaps (Burial 8 [Figure 4.6c]), and buttons (Burial 182 [Figure 4.6d]).

One of the exhumed individuals (Burial 180) had yellow metal tooth crowns that were observable during excavation. Additional personal items and yellow metal teeth were documented during the forensic evaluations of these and other exhumed individuals (see Chapter 5, this volume). Such personal details can be important in the process of trying to recover these individuals' identities.

It is worth noting that there can be discrepancies between the archaeological and forensic assessments of objects found in association with burials. For example, some items may be encased in soil and not readily apparent at the time of excavation—only to be exposed and visible during the subsequent osteological examination. This is particularly the case for small metal objects—such as safety pins or bullet fragments—that become more visible upon X-ray examination. For further details on this topic, refer to the osteological report in Chapter 5, this volume.

Post-Depositional Processes Affecting the Graves

The act of burying individuals in a cemetery upon their death represents primary deposition—we intentionally excavate a grave shaft and place a coffin or casket with the decedent into that hole and cover it with backdirt. We *deposit* the person into the ground and bury them. The archaeological signature of that process typically results in a relatively rectangular area of dirt—the shaft—that is disturbed above and around a casket that contains the physical remains of a decedent (Stackelbeck 2022: Figure 3.3). Over time, those remains become skeletonized and the container begins to naturally decompose—both processes add organic content to the soil above and around the burial. Anything that happens to alter the position of the skeletal remains or the container or otherwise disturb the burial context is considered a "post-depositional process." The study of such processes is known as "taphonomy." It is important to understand the taphonomic forces affecting a given archaeological site or cemetery as it helps us more accurately reconstruct the primary context. Several taphonomic forces have impacted the burials documented in Section 20 of Oaklawn Cemetery.

As noted in a previous technical report (Green et al. 2022), much of Section 20 is affected by the presence of two relict streams that once flowed along the western and southern boundaries. These streams have impacted the burial context in three principal ways. First, the continued flow of water—albeit subsurface now—is having

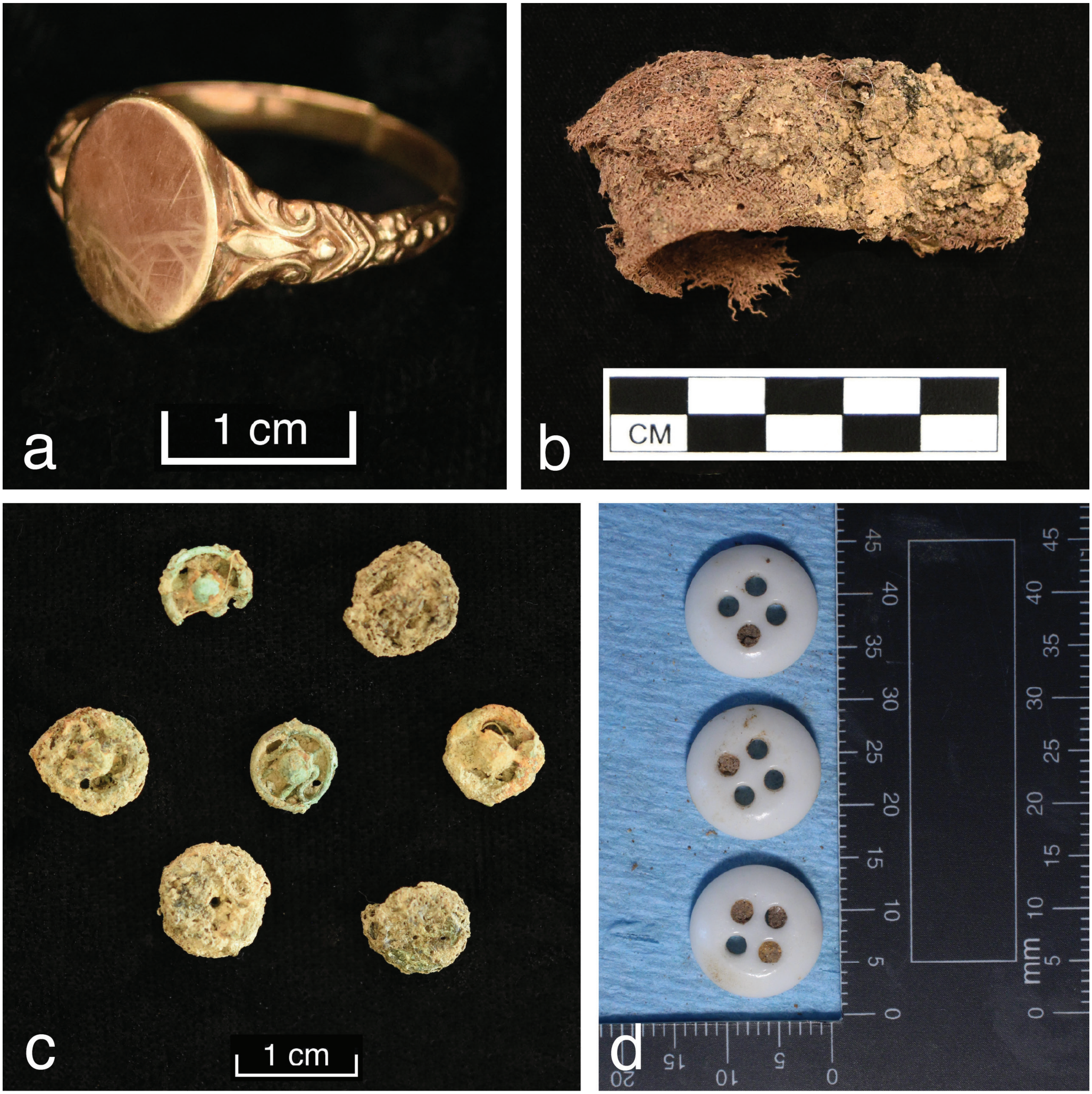


Figure 4.6*. Composite image of several personnel effects from individuals exhumed in 2024, including: (a) ring (Burial 194); (b) fabric (Burial 195); (c) clothing snaps (Burial 8); and (d) buttons (Burial 182).*

a homogenizing effect on the soils and sediments in this part of the cemetery. Second, the streams have been the locus of numerous episodes of dumping of trash and deposition of fill dirt. Indeed, the burials that have been documented to-date in the southern relict stream channel were buried entirely within layers of domestic trash and artificial fill and covered by additional layers of fill dirt. The cumulative effect is a context where it difficult to discern the grave shafts, which are normally relatively easy to distinguish archaeologically from the surrounding soil matrix. Despite the difficulties in archaeological visibility, we have now successfully documented 193 graves in this part of Oaklawn Cemetery.

The third effect of continued waterflow in the southern part of the cemetery is postdepositional movement of human remains inside the caskets. Among the burials exhumed in 2024, at least five (Burials 8, 134, 135, 169, and 194) display evidence of dislocation of some remains, likely at a stage of decomposition when at least some soft tissue was still present. In these cases, select skeletal elements have clearly shifted while others remain in their correct, articulated anatomical position (Appendix A: Figures 2, 19, 22, 60, and 81). Several of these burials also contained layers of fine-grained alluvial sediment inside the casket with the remains, which indicates that water infiltrated and receded multiple times since the container was placed in the ground. This water activity likely accounts for some of the observed differential dislocation of remains for these five individuals. It is also possible that these individuals may have been buried under similar weather conditions (i.e., substantial rain events occurred shortly after, but not immediately after, interment).

Beyond movement of remains from fluvial activity, another postdepositional force affecting these burials is casket collapse, which was noted by archaeological excavators for the graves of most of the exhumed individuals. When the wood boxes containing these individuals degrade over time, the structural integrity of the container begins to fail—particularly under the weight of the overlying soil. Skeletal remains inside the casket may become partially damaged as a result of collapse. Such impacts are distinctive compared to damage that may be caused by blunt force trauma, which is discussed further in the osteological report (Chapter 5, this volume).

Summary

The 2024 field season at Oaklawn Cemetery resulted in the recovery of 11 sets of remains from 11 burials in the New Potter's Field portion of Section 20. All exhumed individuals were interred in simple wooden containers; two were repurposed crates and the others were unadorned rectangular caskets that were likely manufactured locally at/near the time of use.

To date, Haney (this volume) has examined wood samples from 92 containers in Section 20 from the 2021-2024 field seasons. Among those caskets and crates, "only four have not been properly dried and so they are apparently outliers within the examined sample at Oaklawn" (Haney, this volume). Of further interest is the fact that among the individuals buried in the containers made from "green" wood, one is a female trauma victim (Burial 65), one is an adult male with multiple gunshot wounds (Burial 157), and two are adult males whose containers appear to have been too small for their stature (Burials 95 and 180). In other words, the potential expediency of manufacture of the burial containers is not the only thing that makes these four individuals stand out compared to the rest of the burial population.

Specific characteristics of over half of the burials (Burials 135, 157, 180, 182, 194, and 195) and their context could demonstrate some form of non-standard treatment in burial practices. Four of these individuals (Burials 135, 157, 194, and 195) are gunshot victims. It is worth noting three of these individuals—Burials 135, 194 and 195—demonstrate characteristics of having suffered particularly violent deaths and post-mortem treatment—more so than any other individuals we have observed to date during our investigation.

The spatial distribution of the gunshot victims and other burials that fit or approximate our target profile or are otherwise of archaeological interest lie entirely within the southern relict stream channel or along the edges of it (Appendix E). Burials that lie uphill on the terrace to the north of the stream channel are part of the Old Potter's Field (see Figure 2.12) and likely predate the Massacre. Burials documented south of the channel likely post-date the Massacre. This does not preclude the possibility of victims being buried outside of the relict stream channel, but it does provide some sense of the areas where we are most likely to encounter graves from 1921.

Osteological analysis of the 11 sets of fully exhumed remains is presented in the following chapter. Chapter 6 presents a summary of our overall findings and recommendations for additional fieldwork and continued forensic analysis.

THE TULSA RACE MASSACRE INVESTIGATION
REPORT OF OSTEOLOGICAL EXAMINATIONS IN THE 2024 FIELD SEASON

by Phoebe R. Stubblefield

Followers of the 1921 Tulsa Race Massacre (TRM) Investigation will recognize this as the fourth field season and continuation of the search for the remains of the victims with documented burials in the Colored Potters Field (Section 20; Figure 5.1) of Oaklawn Cemetery (1133 E 11th St, Tulsa Oklahoma, 74120). This report presents the result of the osteological analyses of the eleven (11) burials exhumed between July 29 and August 16, 2024. In consideration of this being the last report under Mayor G.T. Bynum's leadership, a short review and discussion of the osteological methods and findings since 2021 is included.

These excavations were contracted by the City of Tulsa and conducted by the University of Oklahoma (OU) Archeological Survey, with contract assistance from Stantec Inc. The 2024 search area is referred to as the "Original 18" location due to the newspaper documentation (e.g., Figure 5.2 regarding thirteen of the victims) of eighteen Black male burials. During this season, the tree (Figure 5.3) was removed in order to examine the graves beneath its radius. We were excited to return to the Original 18 area in order to examine more burials in the vicinity of Burial 03 (Figure 5.4). On July 12, 2024, our Intermountain Forensics genealogy team, with the assistance of his great-relatives, announced the identification of the man in burial 03 as Private C.L. Daniel, a veteran of WWI, formerly of Newnan, GA. Pvt. Daniel was documented as "killed in a race riot in Tulsa Oklahoma in 1921" in

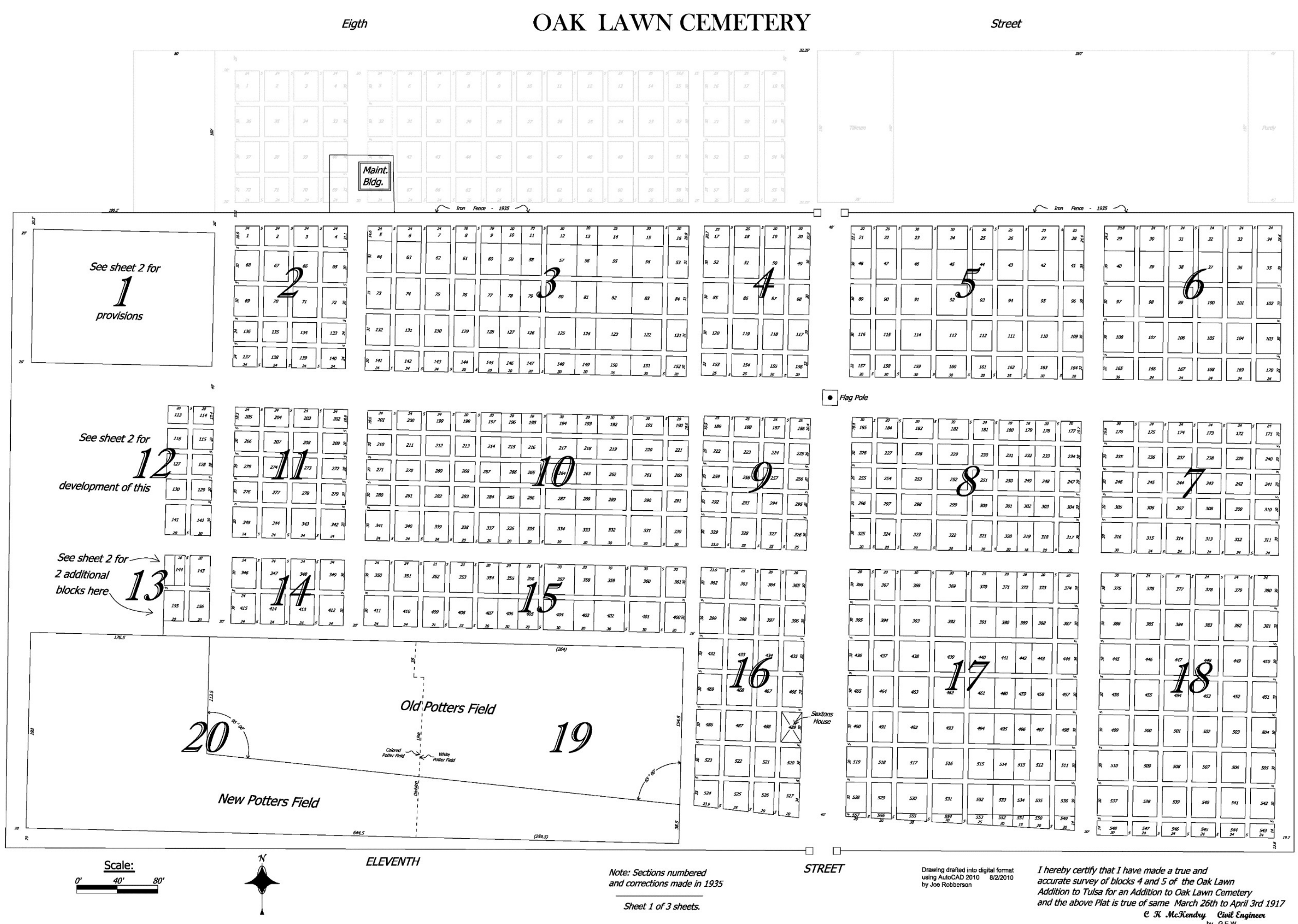
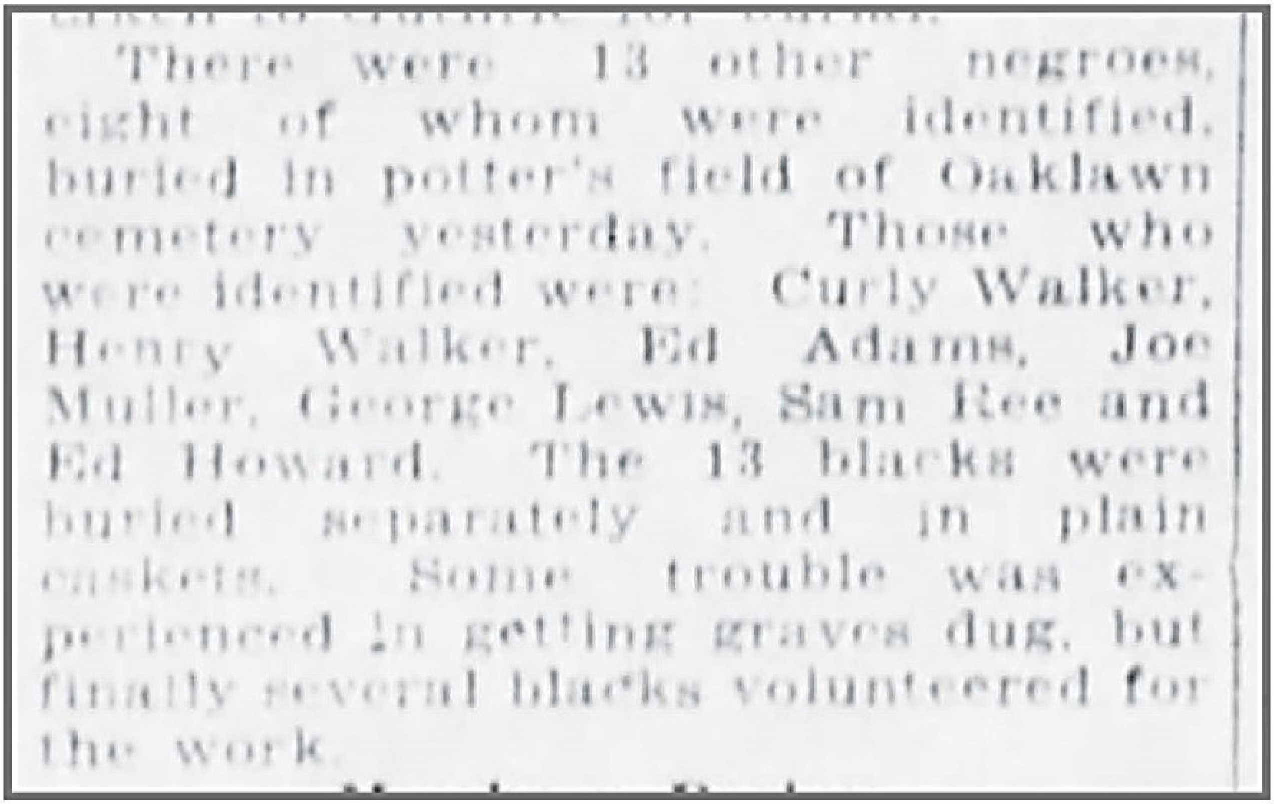


Figure 5.1. *1917 Plat Map of Oaklawn Cemetery.*



There were 13 other negroes, eight of whom were identified, buried in potter's field of Oaklawn cemetery yesterday. Those who were identified were: Curly Walker, Henry Walker, Ed Adams, Joe Muller, George Lewis, Sam Ree and Ed Howard. The 13 blacks were buried separately and in plain caskets. Some trouble was experienced in getting graves dug, but finally several blacks volunteered for the work.

Figure 5.2. *Clipping from the Morning Tulsa Daily World 3 June 1921, indicating male decedents buried in the potter's field of Oaklawn Cemetery.*

Figure 5.3. *The tree in the Original 18 area of Section 20 with Angela Berg on site in Oaklawn Cemetery in July 2024.*

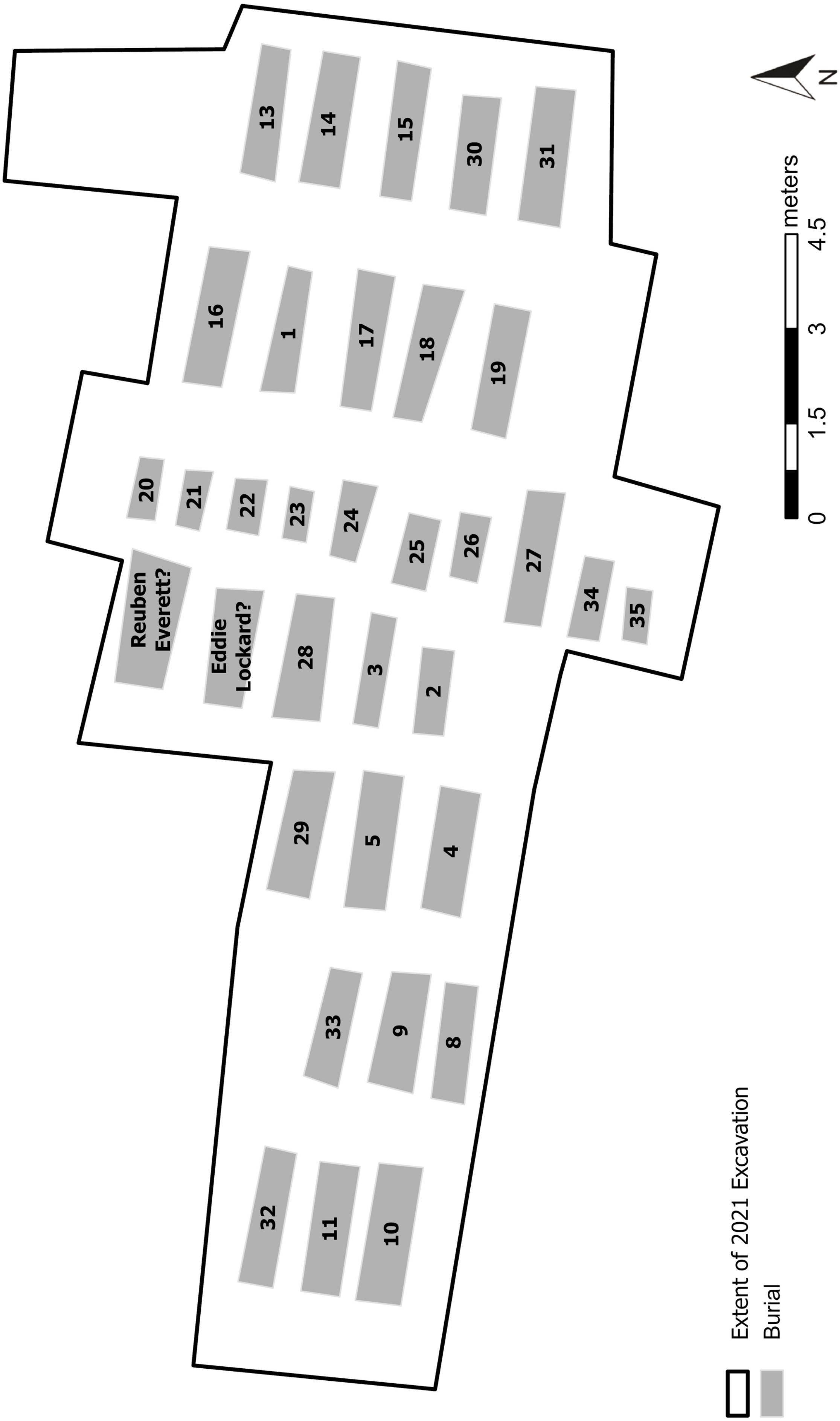
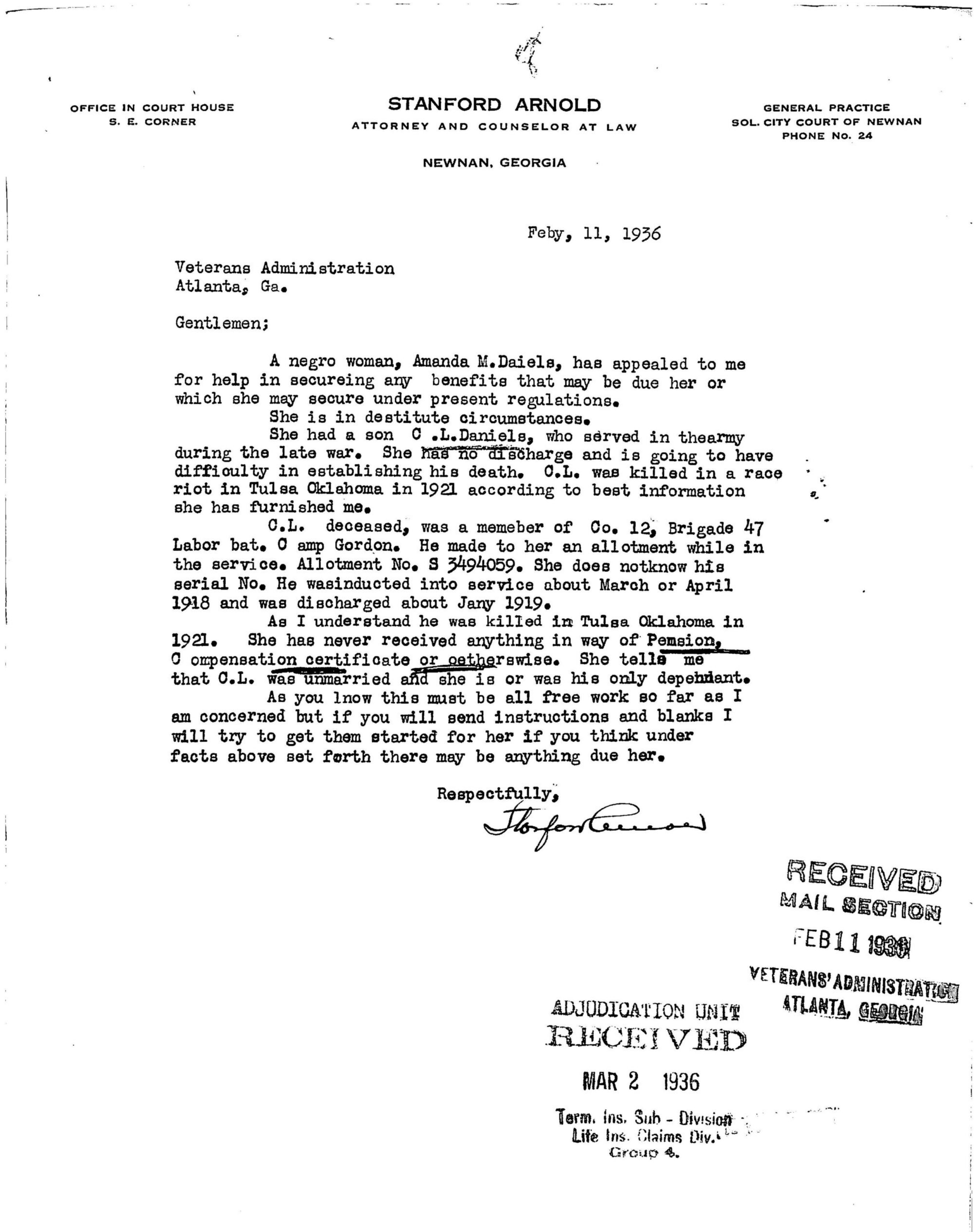


Figure 5.4. *The 2021 Oaklawn 1921 Graves exposed burials map.*

a letter to the Veterans Administration (Figure 5.5). Pvt. Daniel's osteological examination report is included in our previous report "Archaeological and Forensic Research in Support of the 1921 Tulsa Race Massacre Graves Investigation: The 2020-2021 Field Seasons at Oaklawn Cemetery" (Stackelbeck and Stubblefield 2021), but it is worth reminding here that no evidence of trauma was observed in his remains.



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ATTORNEY AND COUNSELOR AT LAW
NEWNAN, GEORGIA

GENERAL PRACTICE
SOL. CITY COURT OF NEWNAN
PHONE No. 24

Feby, 11, 1936

Veterans Administration
Atlanta, Ga.

Gentlemen;

A negro woman, Amanda M.Daiels, has appealed to me for help in secureing any benefits that may be due her or which she may secure under present regulations.

She is in destitute circumstances.

She had a son C .L.Daniels, who served in thearmy during the late war. She has no discharge and is going to have difficulty in establishing his death. C.L. was killed in a race riot in Tulsa Oklahoma in 1921 according to best information she has furnished me.

C.L. deceased, was a memeber of Co. 12, Brigade 47 Labor bat. C amp Gordon. He made to her an allotment while in the service. Allotment No. S 3494059. She does notknow his serial No. He wasinducted into service about March or April 1918 and was discharged about Jany 1919.

As I understand he was killed in Tulsa Oklahoma in 1921. She has never received anything in way of Pemsion, C ompensation certificate or oetherswise. She tells me that C.L. was unmarried and she is or was his only depehdant.

As you lnow this must be all free work so far as I am concerned but if you will send instructions and blanks I will try to get them started for her if you think under facts above set forth there may be anything due her.

Respectfully,

RECEIVED
MAIL SECTION
FEB 11 1936
VETERANS' ADMINISTRATION
ATLANTA, GEORGIA

ADJUDICATION UNIT
RECEIVED
MAR 2 1936
Term. Ins. Sub - Division
Life Ins. Claims Div.
Group 4.

Figure 5.5. *Stanford Arnold letter to Veteran's Administration Atlanta, Ga 11 Feb 1936, regarding Pvt. C. L. Daniel.*

During the reopening of the excavation area, we extracted additional DNA samples from one interred burial (09) and one bundled burial (45) from previous seasons. These burials yielded insufficient DNA from their previous samples to proceed to genealogical analysis. The samples (Figures 5.6 and 5.7) were submitted to our DNA and genetic genealogy colleagues at Intermountain Forensics, now DNA International.

Figure 5.6. *Burial 09 DNA samples sealed for submission.*

Figure 5.7. *Burial 95 DNA samples sealed for submission.*

Forensic analysis was conducted from July to September 2024 for eleven (11) individuals (Figure 5.8; Table 5.1) exhumed from plain caskets. Our selection parameters for exhumation derived from the 1921 newspaper accounts and death certificates, which described decedents with the following characteristics:

1) male biological sex
2) burial in plain casket
3) evidence of gunshot wounds and/or thermal damage

Where preservation made determination of biological sex uncertain, individuals in plain caskets were exhumed even if appearing feminine, in order to include potential young male decedents. The remains were exhumed and placed into cardboard cremation trays, then escorted by Greenwood community members and investigation personnel to the on-site field laboratory located this year in Section 20 in part on the old internal cemetery south lane and in part on 11th street.

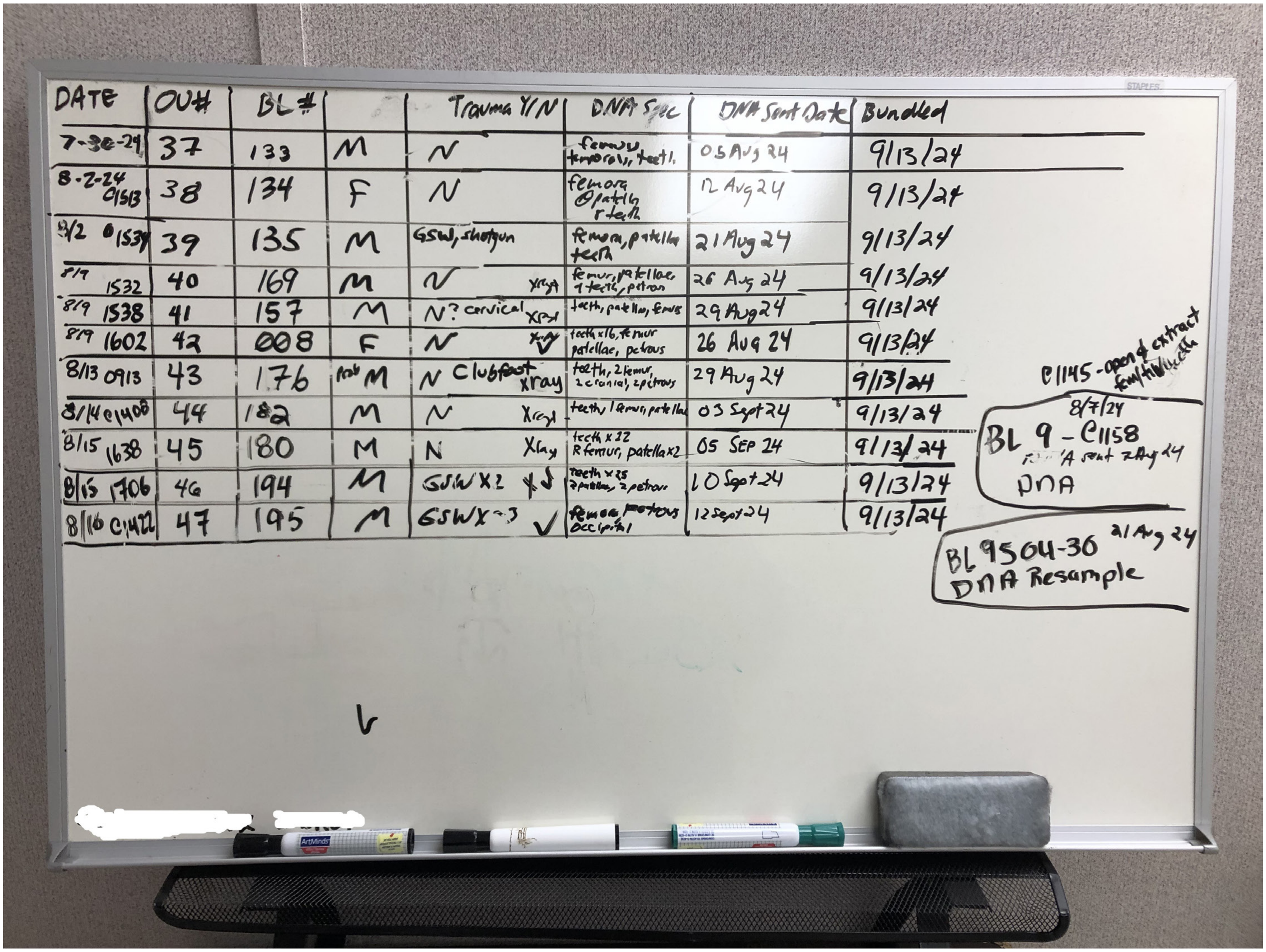

Figure 5.8. *Intake board for the eleven (11) individuals exhumed during the 2024 field season.*

Table 5.1. Burial #, Oaklawn Unknown #, and Date of Escort to the biological anthropology laboratory for each excavated burial.

Burial #	Oaklawn Unknown #	Date Escorted to Lab
133	37	30 July 2024
134	38	02 August 2024
135	39	02 August 2024
169	40	09 August 2024
157	41	09 August 2024
8	42	09 August 2024
176	43	13 August 2024
182	44	14 August 2024
180	45	15 August 2024
194	46	15 August 2024
195	47	16 Augut 2024

Our team again was formed by many returning scientists and community members, while also welcoming a few new faces and visitors (Figures 5.9, 5.10, 5.11, and 5.12). The following individuals participated in the 2024 field season to perform osteological analyses or assist with escorting the decedents to the laboratory:

Phoebe R. Stubblefield, Ph.D., University of Florida, Director of the C.A. Pound Human Identification Lab
Angela Berg, M.A., Forensic Anthropologist, Oklahoma Office of the Medical Examiner
Arion Mayes, Ph.D., Associate Professor, Co-Director of the Biological Anthropology Lab, San Diego State University
Carlos Zambrano, Ph.D., Forensic Anthropologist, Oklahoma Office of the Medical Examiner
Sara Getz, Ph.D., Forensic Anthropologist, Oklahoma Office of the Medical Examiner
Aaron Young, M.A., University of Arizona Graduate Student
Jessica Cerezo-Roman, Associate Professor, University of Oklahoma
Robert Pickering, Emeritus, University of Tulsa
Finn Maggard
Sawyer Maggard
Corey Toler-Franklin, Ph.D., Barnard College
Debra Green, Ph.D., University of Oklahoma

Members of the Public Oversight Committee and Tulsa Communities:

Brenda Nails-Alford, former Public Oversight Committee Chair
Reverend Gerald Davis, Church of the Restoration
Vanessa Adams-Harris, John Hope Franklin Center for Reconciliation
Michael Williams, MD., Oklahoma Office of the Medical Examiner
Michelle Burdex, Program Coordinator, Greenwood Cultural Center
Donna Ross
Antonio Ross

Figure 5.9. *Lab installation July 2024 featuring assorted team members. From left to right, Brenda Nails-Alford, Finn Maggard, Sawyer Maggard, and Phoebe R. Stubblefield.*

Figure 5.10. *Assorted team members from the 2024 field season. From left to right, Sarajane Smith, Phoebe R. Stubblefield, Brenda Nails-Alford, and Kary Stackelbeck.*

__Figure 5.11.__ 11 Assorted team members from the 2024 field season. From left to right, Johnny Ellsworth (visiting), Arion Mayes, Phoebe R. Stubblefield, Brenda Nails-Alford, and Scott Ellsworth.

__Figure 5.12.__ Assorted team members comprising the 2024 field season. From left to right, Lewis Dolmas, Debra Green, Phoebe R. Stubblefield, Brenda Nails-Alford, and Carlos Zambrano.

Kyra Carby, City of Tulsa
Jackson Williams of Moore Funeral Home
University of Tulsa Students Skye, Savannah, and Anastasia (last names not recorded)

Graduate Student Assistants:

Sarajane Smith, Mississippi State
Sheridan Lea, University of Florida
Lewis Dolmas, University of Oklahoma

Forensic anthropologists and osteologists Phoebe Stubblefield, Angela Berg, Bob Pickering, Carlos Zambranos, Sara Getz, Arion Mayes, Aaron Young, and Jessica Cerezo-Roman, and graduate student Sheridan Lea performed osteological examinations and documentation of remains and artifacts. Brenda Nails-Alford and Sarajane Smith assisted with preparation of the remains, escorting remains to the lab, documentation of findings, and lab maintenance and hygiene. Finn and Sawyer Maggard, Debra Green, and Lewis Dolmas assisted greatly with lab set up and take down and made it possible to have a safe and efficient field season. The following individuals were invaluable as escorts of the decedents to the laboratory, sacrificing hours and sometimes days to be on-site to contribute to the investigation: Brenda Nails-Alford, Vanessa Adams-Harris, Michelle Burdex, Rev. Gerald Davis, Donna Ross and Antonio Ross, sister and nephew respectively of our mourned POC chair Kavin Ross, Dr. Michael Williams, and Kyra Carby, grant manager of the City of Tulsa's Emmett Till Cold Case grant, which was awarded by the Bureau of Justice Assistance in part to assist with the identification of the TRM victims. Dr. Williams and Angela Berg also worked with genealogist Alison Wilde of Intermountain Forensics to determine the path forward for re-certifying Pvt. C.L. Daniel's identity from unknown, to known.

Accessory Historical and Genealogical Research

The historical documents that led to our identification of Pvt. Daniel as a TRM victim included a letter written by A. Sidney Camp, the member of the House of Representatives for the area including Newnan GA. Mr. Camp expressed a personal interest in procuring financial support for Pvt. Daniel's mother. In the hope of finding more information about the Daniel family, our genealogy team indicated we should examine the University of Georgia Special Collections Library which contains the Sidney Camp papers. Stubblefield traveled to Athens, Georgia enroute to Tulsa, and scanned a portion of the papers consisting of personal letters. Although no additional information was obtained, a few other records including telegrams and letters of condolence were still in need of examination, something the Daniel family planned to do at the time of this report.

Osteological Examinations Procedural Notes

The following sections of this chapter are the osteological findings for the burials exhumed in 2024, reported in order by burial number. Summary data can be found in the tables at the end of the chapter.

Most of the vocabulary used in these reports will be accessible to individuals with knowledge of human skeletal anatomy, although in this report more effort has been made to use common vocabulary for certain bones and teeth, such as using "lower leg bones" in place of tibia and fibula. The Universal Numbering System, which numbers the adult dentition from 1 to 32, starting with the right upper back molar, heading left, down to the lower left back molar, then returning to the right, is used for the dental inventory. Description of teeth, such as for the presence of a carie (cavity) or restoration (a filling, crown, or other technique for restoring function to a tooth), might refer to the universal number and the tooth name (molar, premolar, canine, incisor) and location. Anthropologists refer to the premolars as numbers 3 and 4, such as the "upper left fourth premolar." Anthropological molars occur as first, second, and third, from front to back (i.e., wisdom teeth are third molars). The Summary and Opinion section of each osteological report will contain language that is more generalized and hopefully accessible to a broad readership.

Additional terms that may be used interchangeably are “white metal” for “lead”, as the oxidized appearance of lead particles has a white color. In radiographs the density of lead identifies it as a metal and not bone or most rocks. The term “white metal” is used to indicate that lead is the probable element, but no chemical testing has occurred. Similarly, “yellow-metal” is used for “gold,” because the object may be gold-colored, but no chemical testing has been conducted.

Process

We followed our standard procedures with only slight modifications. The exhumed remains were recorded into our laboratory information management system based on burial number (BL). The burial number documents the presence and order of burial features as encountered in the field but does not represent the sequence of excavation. The exhumed remains received an Oaklawn Unknown number (OU#). The remains are unknowns because the burials targeted by our mission and exhumation notice were in locations that had no markers.

The Burial Number was photographed in association with the skeletal remains during excavation and analysis. Certain elements, especially intact long bones or the cranium, were stabilized with Butvar ® B-98 or self-adhesive bandages (e.g., Vet Wrap or Coban) prior to exhumation. Exhumed remains were moved by hand, either as isolated skeletal elements or in blocks of soil, into cardboard cremation trays (Starmark EZ-Fold™), which were internally and externally labeled with the burial and unknown number designators. After covering the tray with a cot drape and the City of Tulsa flag (Figure 5.13), the exhumed remains were escorted to the lab by a team of Tulsa and Greenwood community representatives and anthropologists.

Figure 5.13. *Exhumed remains covered in a cot drape and City of Tulsa flag being escorted by community, forensic and archaeology team members to the forensic laboratory.*

Upon arrival to the lab, remains were photographed, radiographed, inventoried, and examined for areas of further analysis. When radiopaque features were noted on the radiographs, the skeletal remains were cleaned and/or reconstructed to enable identification of the radiographic feature and to improve documentation and analysis of the associated skeletal area. The burials were wet-sieved in the laboratory in an attempt to preserve structures, especially the pubic symphyses.

Features that would be individualizing in a modern forensic examination, such as dental restorations, dental modifications, skeletal evidence of disease processes, healed fractures in any location, signs of parturition (childbirth), or atypical anatomy, were cleaned, reconstructed, and documented when possible.

Ancestry Determination

Each adult skeleton was assessed for indicators of ancestry. The goal of ancestry assessment is to acquire information that may lead to identification and reconnection of a decedent to his or her family. In the modern forensic context, that means that race terms have meaning if the decedent or the decedent's family used race terms to form the identity. The vocabulary of ancestry analysis in the forensic context commingles concepts of "race" and "ancestry." Forensic anthropologists differ on the use of race and ancestry terminology. Dr. Stubblefield defines race as a population label that in the mind of the user combines biological, social, and behavioral concepts. The concepts may not necessarily be shared by the user and the target of the term. The concepts also may not be stable between uses and through time. Dr. Stubblefield uses the term "ancestry" to indicate the biological relationships of recent geographic populations, including African, European, and Asian.

We assessed both morphological (shape) and metric (measurement) data for indicators of relationship. In the manner that one expects to resemble his or her cousins, the underlying cranium supports that expectation by having physical features of resemblance.Those physical features may be observable or measurable. In the current context, we strove to avoid making one-trait ancestry determinations, despite the temptation to do so in the presence of relatively poorly preserved remains. If preservation was too limited to provide multiple morphological characters when metric analysis was unfeasible, we designated ancestry as indeterminate.

Whenever possible, we used metric analysis to estimate ancestry, relying on the statistical package Fordisc (Jantz RL and SD Ousley, 2005). Preservation during the 2022 and 2023 field seasons made metric analysis of ancestry generally unfeasible, although it was useful for stature estimation. We encourage the reader to the *References* below for the technical details. Fordisc is software that utilizes several databases of skeletal measurements to generate statistics on race, sex, and stature. The analyst using Fordisc is aware that the function must produce a result, and that the result must then be interpreted. Fordisc results consist of a population assignment, then numerical values of posterior probability and typicalities F, Chi, and R. In this TRM Investigation report, we provide the posterior probabilities and summary typicalities and interpret them in the context of an allegedly sorted burial cohort (individuals buried in the Colored Potter's Field). We are operating under an assumption that a pre-sort has occurred, in that those selected for burial in this location would have identified, or been identified, as Black. However, the lack of burial records for Section 20 leaves room to hypothesize that race designation for this section was flexible.

Genetic Sampling

After the skeletal examination was completed, all unrestored teeth lacking cavities, and one or both femurs if the shaft were sufficiently intact, were submitted as DNA samples. If preservation was so poor that femurs were too fragmentary, the petrous temporals or patellae were submitted. The samples were transferred, as each case was completed, to Intermountain Forensics via Fedex.

All remains were bundled for reburial and then transferred to on-site secure storage pending confirmation of sufficient DNA extraction.

Condition of remains

The preservation of remains was similar to previous field seasons. General features shared by all of the exhumed remains are described here. Specific observations are presented in the individual burial analysis sections.

Most pre-exhumation views indicated that the skeletal remains derived from articulated bodies buried in individual graves. The dried bones were earth-stained to a deep brown color and very fragile. Intact leg bones were common, and skulls were frequently present although facial skeletons were often detached. Vertebrae and ribs were typically fragmentary to the point where the vertebral bodies were not recovered, and ventral rib ends were very rare. There was no odor of decomposition. There were few personal effects, and the usual safety pin observed near head and hip were uncommon in this season.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 08
OAKLAWN UNKNOWN NUMBER: 42
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1403-1408, 1423, 1464

<u>Condition of Remains.</u> *In situ*, the remains appeared as a predominately intact articulated skeleton (Figure 5.14). These remains were very fragile and poorly preserved and continued to break during exhumation. The bones were crumbling as they were exposed to air. The ribs and vertebrae were very fragmentary and the long bones were in large fragments. Eight (8) clothing snaps (Figure 5.15) were recovered from the torso area, although one disintegrated.

[SENSITIVE CONTENT]

Figure 5.14. *In situ overview of the Burial 08 remains.*

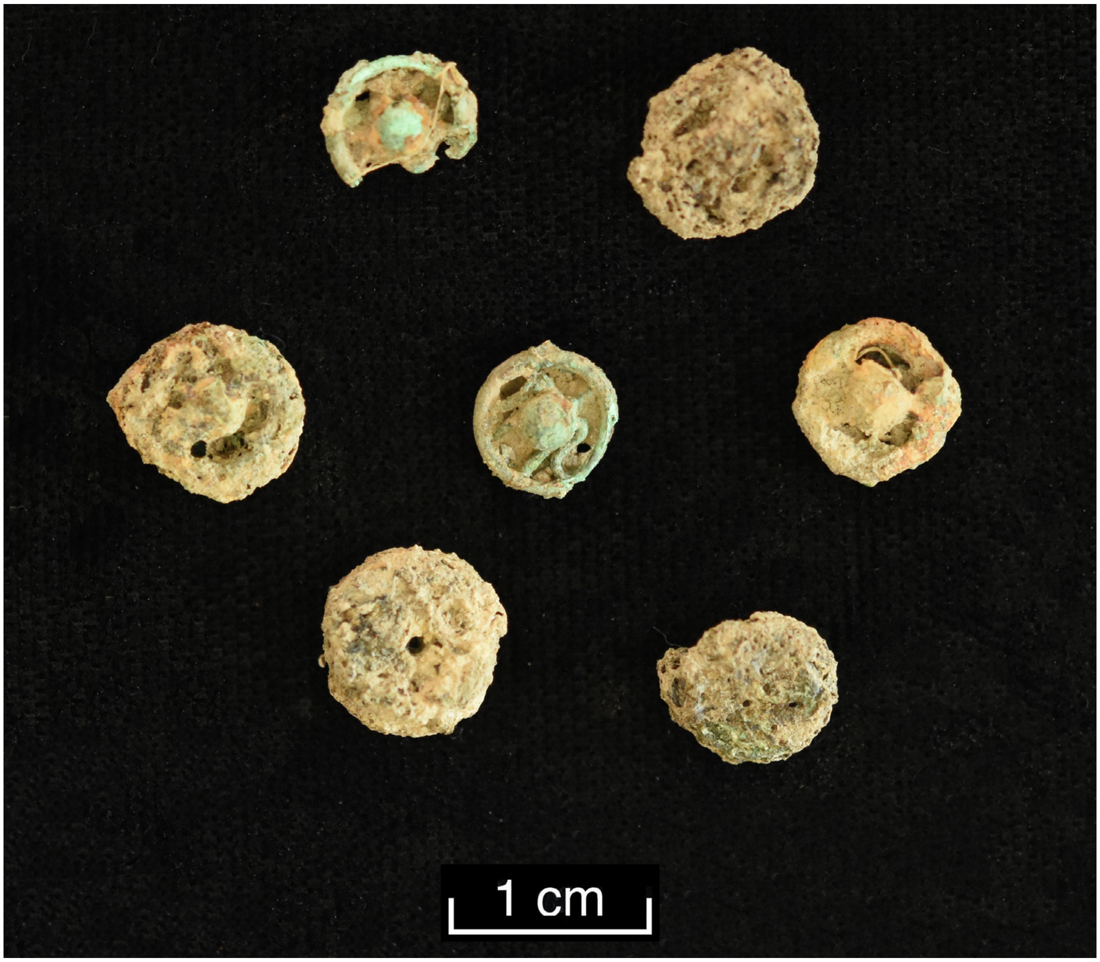

Figure 5.15. *Clothing snaps recovered from the torso area of Burial 08.*

Number of individuals. One (1) individual was represented by these remains (Figure 5.16). Despite or due to the poor preservation, no duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated that fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	sacrum
teeth #1-6, 10-32	cervical vertebrae
right and left ribs	thoracic vertebrae
right and left scapulae	lumbar vertebrae
right and left clavicles	coccygeal vertebrae
right and left humeri	right and left femora
right and left ulnae	right and left patellae
right and left radii	right and left tibiae
carpals and metacarpals	right and left fibulae
right and left os coxae	tarsals, metatarsals, pedal phalange

[SENSITIVE CONTENT]

Figure 5.16. *Post-cleaning overview of the Burial 08 remains. The cubic container and vial contain artifacts associated with the burial.*

Sex. This individual was a biological female. The dimensions of the femoral head and scapular glenoid fossa were feminine (Spradley and Jantz 2011; Dabbs and Moore-Jansen 2010). The skeletal remains were gracile in appearance, consistent with this metric estimate of sex.

Ancestry. Ancestry was not estimated due to the poor preservation of these remains. Race is likely to be “Colored” or “Black” as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was a young adult, possibly in her late twenties. Age estimation based on morphology of the auricular surfaces produced determinations of Phases 3 and 4, representing an age range of 16 to 35 years (Lovejoy et al. 1985). However, late-stage fusion of a vertebral ring was observed (Figure 5.17), providing an age estimate of less than 27 years (Albert and Maples 1995). There was a remnant fusion line on the distal right fibula, but this line can be retained through life. Smooth articular surfaces absent of lipping or other arthritic development were observed on the femoral fovea capitis and scapular glenoid fossae, as well as the other joint surfaces recovered.

[SENSITIVE CONTENT]

Figure 5.17. *Posterior view of a thoracic vertebra from Burial 08 showing late stage fusion.*

Stature. Stature for this individual was estimated at 64.3 ± 3.5 inches, using the maximum length of the humerus using the Bass 19th Century Black female sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula for this estimate was 0.12090 * HUMXLN (314 mm) + 26.36 inches.

Individualizing traits or anomalies**.** No individualizing traits or skeletal anomalies were observed in this individual.

Antemortem or pathological conditions. This individual displayed signs of dental disease (Figure 5.18). Cavities were present on the upper right third molar, the upper right first molar, the lower left third molar, the lower left first molar, and with destruction of the crown on the lower right third molar (teeth #1,3,17,19, and 32). Plaque was prevalent on the buccal surfaces of most teeth.

[SENSITIVE CONTENT]

Figure 5.18. *Burial 08 maxillary and mandibular dentitions.*

Perimortem trauma. No evidence of perimortem trauma, or trauma associable with a cause of death, was observed in these remains.

Postmortem damage. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

DNA sampling. The right and left petrous temporals, teeth #2, 3, 4, 5, 11, 12, 13, 15, 17, 18, 20, 22, 27, 28, 29, and 30, right and left femoral shafts, and the right and left patellae were submitted for DNA analysis (Figure 5.19). Following DNA sampling, the remains were bundled for reburial (Figure 5.20).

Figure 5.19. *Petrous temporals, sixteen (16) teeth, femora and patellae from Burial 08 submitted for DNA analysis.*

Figure 5.20. *The bundled Burial 08 remains.*

Summary of conclusions and opinions. The individual in burial 08 was a female in her late twenties, who had an estimated stature of 64.3 ± 3.5 inches. She was recovered with eight (8) clothing snaps from her torso area. Her ancestry was not estimated due to poor preservation of the skull, but her race was probably Black as she was recovered from the Colored Potters field. She had signs of dental disease in the form cavities in five teeth and plaque build-up. No evidence of perimortem trauma was observed. Postmortem damage was consistent with the exhumation processes of fragile skeletal remains. Both petrous temporals, femoral shafts, patellae, and sixteen (16) teeth were submitted for DNA analysis. As a female decedent, this individual is not consistent with the documented victims of the Tulsa Race Massacre who were buried in Oaklawn cemetery. However, identification of this individual will assist in reconstruction of the use of this section of the cemetery and assist in identification of the documented victims.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 133
OAKLAWN UNKNOWN NUMBER: 37
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1172-1176

Condition of remains. *In situ*, these remains presented as a predominately intact skeleton (Figure 5.21), with one arm positioned under the pelvic girdle according to the excavation notes. Fragmentation was present throughout, in large fragment sizes for the leg bones. The cranial vault collapsed during exhumation. Thoracic elements were not immediately observable, although foot elements were observed.

Number of individuals. One (1) individual was represented by these remains (Figure 5.22). Despite or due to the poor preservation, no duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

[SENSITIVE CONTENT]

Figure 5.21. *In situ overview of the Burial 133 remains.*

skull (cranium and mandible)	right and left os coxae
teeth #1-4, 6-32	cervical vertebrae
right and left ribs	thoracic vertebrae
right and left scapulae	lumbar vertebrae
left clavicle	right and left femora
right and left humeri	right and left patellae
right and left ulnae	right and left tibiae
right and left radii	right and left fibulae
carpals and metacarpals	tarsals and metatarsals

Sex. This individual was male. The morphology of the pubic area displayed a vertical ventral ridge, linear subpubic contour, and broad ischiopubic ramus, which was consistent with male pelvic morphology (Phenice 1969). The dimensions of the scapular glenoid fossa, humeral head, and femoral head, and the morphology of the cranium were consistent with male biological sex.

Ancestry. Based on morphology of the facial skeleton, this individual was probably of African descent. The nasal aperture displayed a gutter (Figure 5.23), the inferior border to the nasal aperture was smooth on the right, with a slight sill on the left, and the breadth of the aperture was wide in the preserved portions. Race was likely to be "Colored" or "Black" as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was in his thirties or forties, based on the morphology of the pubic symphyses and an isolated sternal rib end (Figures 5.24 and 5.25). The pubic symphyses were scored as phase IV (Brooks and Suchey 1990), which has a mean age of 35.2 years ± 9.4 years, with a 95% confidence interval age range of 23 to 57 years. The sternal rib end received a composite score of 8 (Işcan et al. 1984), which has a mean age of 27 and a 95% confidence interval of 23 to 30.8 years.

Stature. Stature for this individual was estimated at 66.9 ± 2.4 inches, based on the combined lengths of the calcaneus, femur and tibia, and using the Bass 19th Century Black male sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula used was 0.04854 * CALCXL+FEMXLN+TIBXLN (938 mm) + 21.41 inches.

Individualizing traits or anomalies. This individual retained the right deciduous upper canine, which would have been observable in life as a smaller tooth than its neighbors. The wear facet or chip on the right central incisor (tooth #8) would have been observable in life (Figure 5.26).

[SENSITIVE CONTENT]

Figure 5.22. *Post-cleaning overview of the Burial 133 remains.*

[SENSITIVE CONTENT]

Figure 5.23. *Anterior view of the Burial 133 maxilla showing the nasal aperture.*

[SENSITIVE CONTENT]

Figure 5.24. *Medial view of the Burial 133 pubic symphyses.*

[SENSITIVE CONTENT]

[SENSITIVE CONTENT]

Figure 5.26. *Burial 133 upper teeth, showing the retained upper right deciduous canine (arrow).*

Antemortem or pathological conditions. Cavities were present on several anterior upper teeth and the left fourth lower premolar (teeth #4, 6, 8, 10, and 20; see Figure 5.26, Figures 5.27 and 5.28).

Perimortem trauma. No evidence of perimortem trauma, or trauma associable with a cause of death, was observed.

Postmortem damage. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

DNA sampling. The right and left petrous temporals, teeth #1, 2, 3, 14, 15, 16, 17, 18, 19, 30, 31, and 32, and the right and left femora were submitted for DNA analysis (Figure 5.29). Following DNA sampling, the remains were bundled for reburial (Figure 5.30).

[SENSITIVE CONTENT]

Figure 5.27. *Burial 133 maxillary dentition with view of cavity present on tooth #4.*

[SENSITIVE CONTENT]

Figure 5.28. *Burial 133 mandibular dentition with view of the cavity on tooth #20.*

Figure 5.29. *Petrous temporals, twelve (12) teeth, and femora from Burial 133 submitted for DNA analysis*

Figure 5.30. *The bundled Burial 133 remains.*

<u>Summary of conclusions and opinions.</u> The individual recovered from burial 133 was a male of probable African descent. He was in his thirties or forties and had a stature of approximately 66.9 inches. While he had cavities on several anterior teeth, indicators of ill health or trauma associable with a cause of death were not observed. His upper right deciduous canine was retained, which, like the wear facet in the right front tooth, would have been noticeable in life. Postmortem damage was consistent with the exhumation processes of fragile skeletal remains. The right and left petrous temporals, twelve (12) teeth, and the right and left femora were submitted for DNA analysis. Although not demonstrating gunshot wound trauma or burning, this male buried in a plain casket is not excluded as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 134
OAKLAWN UNKNOWN NUMBER: 38
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1315-1317

Condition of remains. *In situ*, these remains represented a predominately complete skeleton (Figure 5.31). The remains were fragmentary, in large fragment sizes for the larger limb elements. The forearm bones were in splinters. The vertebrae were observable, and plant roots had infiltrated the cranium.

Number of individuals. One (1) individual was represented by these remains (Figure 5.32). Despite or due to the poor preservation, no duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	right and left os coxae
hyoid body and left cornu	sacrum
sternum manubrium	cervical vertebrae
teeth #1-16, 18-29, 31, 32	thoracic vertebrae
right and left ribs	lumbar vertebrae
right and left scapulae	right and left femora
right and left clavicles	right and left patellae
right and left humeri	right and left tibiae
right and left ulnae	right and left fibulae
right and left radii	tarsals and metatarsals
carpals and metacarpals	

[SENSITIVE CONTENT]

Figure 5.31. *In situ overview of the Burial 134 remains.*

[SENSITIVE CONTENT]

Figure 5.32. *Overview of the Burial 134 remains after transport to the forensic laboratory.*

Sex. This individual was a biological female. Poor preservation of the pubic elements precluded assessment for biological sex. However, the dimensions of the humeral head, scapular glenoid, and femoral head were consistent with female sex (Spradley and Jantz 2011; Dabbs and Moore-Jansen 2010). Morphology of the cranium (Figures 5.33 and 5.34 - nuchal crest, mastoid process size, supraorbital margin, glabella, and the mental eminence) was predominately feminine (Buikstra and Ubelaker 1994).

[SENSITIVE CONTENT]

Figure 5.33. *Anterior view of the Burial 134 cranium.*

[SENSITIVE CONTENT]

Figure 5.34. *Right lateral view of Burial 134 cranium.*

Ancestry: This individual was likely of African descent. The morphology of the facial skeleton displayed maxillary prognathism, and the nasal area displayed a low sill and a gutter to the inferior nasal margin (see Figures 5.33 and 5.34). Race was likely to be “Colored” or “Black” as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged, possibly in her forties. Assessment of the left pubic symphysis according to the technique of Brooks and Suchey (1990) yielded a categorization of phase IV, which has a mean age of 38.2 and a 95% confidence interval age range of 26 to 70 (Figure 5.35). Inspection of the maxillary sutures (Mann et al., 1987) indicated an age of over 43 years due to obliteration of the transverse palatine suture, but under 60 due to incomplete fusion of at least two sutures. Arthritic development was observed throughout the thorax, on the humeral head, and on the acetabulum, which was consistent with middle-aged features in an active person.

Stature. Stature of this individual was estimated at 63.6 ± 2.9 inches, based on the combined lengths of the femur and humerus, using the Bass 19th century Black female sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The formula used was 0.03535 * FEMBLN+FEMXLN+HUMXLN (1180 mm) + 21.89 inches.

[SENSITIVE CONTENT]

Figure 5.35. *Medial view of the left pubic symphysis from Burial 134.*

<u>Individualizing traits or anomalies.</u> No individualizing traits or anomalies were observed.

<u>Antemortem or pathological conditions.</u> Cavities were present on molar teeth #18 and #32, and there was resorption of the socket margins for tooth #16 (Figures 5.36 and 5.37). The buccal surfaces of the maxillary teeth were stained and retained plaque along the gingival margin. Plaque was present on the lingual surfaces of the lower incisors as well. The stained teeth and plaque may have derived from habitual mastication of staining substances, such as tobacco. Maxillary tori were present adjacent to teeth #1-3 and tooth #15 (see Figure 5.37).

Her femora displayed coxa vara, a condition in which the normal angle of the femoral head to the shaft is less than 120 degrees. No non-arthritic alterations to the acetabula were observed and the femora were symmetrical, so this state may have been asymptomatic.

<u>Perimortem trauma.</u> No evidence of perimortem trauma, or trauma associable with a cause of death, was observed in these remains.

[SENSITIVE CONTENT]

Figure 5.36. *Occlusal view of the mandibular dentition from Burial 134.*

[SENSITIVE CONTENT]

Figure 5.37. *Occlusal view of the maxillary dentition from Burial 134 showing resorption of the socket margins for tooth #16.*

<u>Postmortem damage.</u> Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

<u>DNA sampling.</u> Teeth #1, 2, 3, 14, 15, 16, 19, and 31, the right and left femora, and the adhered right patella were submitted for DNA analysis (Figure 5.38). Following DNA sampling, the remains were bundled for reburial (Figure 5.39).

<u>Summary of conclusions and opinions.</u> The individual in burial 134 was an African American middle-aged female possibly in her forties, who had a stature of approximately 63.6 inches. Arthritic changes to shoulders, hips, and throughout the thorax suggested an active lifestyle. Her dental health was poor, demonstrated by the presence of multiple cavities, dental staining, and plaque, and resorption of the socket for the upper left third molar. Her femora displayed coxa vara, but whether this condition had an impact on her life is undetermined. No evidence of perimortem trauma or trauma associable with a cause of death was observed. Postmortem damage was consistent with the exhumation processes of fragile skeletal remains. Eight (8) teeth, both femora, and the right patella were submitted for DNA analysis. As a female decedent, this individual is not consistent with the documented victims of the Tulsa Race Massacre who were buried in Oaklawn cemetery. However, identification of this individual will assist in reconstruction of the use of this section of the cemetery and assist in identification of the documented victims.

Figure 5.38. *Eight (8) teeth and femora from Burial 134 submitted for DNA analysis.*

Figure 5.39. *The bundled Burial 134 remains.*

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 135
OAKLAWN UNKNOWN NUMBER: 39
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1318-1329, 1466-1470

Condition of remains. *In situ*, these remains presented as a predominately complete articulated skeleton (Figure 5.40). These remains were fragmentary with large fragment sizes. The facial skeleton was detached from the vault. A bullet was recovered from the lower thoracic area during exhumation (Figures 5.41 and 5.42). A safety pin was observed in the upper thorax during intake radiography (Figure 5.43)

Number of individuals. One (1) individual was represented by these remains (Figure 5.44). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	right and left os coxae
teeth #1-17, 19-29, 31, 32	sacrum
right and left ribs	cervical vertebrae
sternum gladiolus	thoracic vertebrae
right and left scapulae	lumbar vertebrae
right and left clavicles	right and left femora
right and left humeri	right and left patellae
right and left ulnae	right and left tibiae
right and left radii	right and left fibulae
carpals, metacarpals, manual phalange	tarsals, metatarsals, pedal phalange

Sex. This individual was a biological male. The morphology of the preserved portions of the pubic symphyses showed a vertical ventral contour and broad ischiopubic rami, features consistent with male biological sex (Phenice 1969). The dimensions of the femoral head were consistent with male biological sex (Spradley and Jantz 2011). The morphology of the cranium was consistently probably-male (Buikstra and Ubelaker 1994).

[SENSITIVE CONTENT]

Figure 5.40. *In situ overview of the Burial 135 remains.*

[SENSITIVE CONTENT]

Figure 5.41. Bullet found in Burial 135 in situ.

[SENSITIVE CONTENT]

Figure 5.42. Closeup of bullet in thoracic region of Burial 135, in situ.

[SENSITIVE CONTENT]

Figure 5.43. *Radiograph of Burial 135 thorax with safety pin.*

[SENSITIVE CONTENT]

Figure 5.44. *Overview of cleaned remains from Burial 135. The cubic containers and vial contain artifacts recovered with the burial.*

Ancestry. This individual was of African descent. Metric analysis of seventeen cranial measurements using Fordisc version 3.1.322 (Jantz and Ousley 2005) indicated that this individual was closest to the Black Male population in the forensic database, with a posterior probability of 0.764 and typicalities that supported accepting the hypothesis of membership in that population. Race is likely to be "Colored" or "Black" as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged, in his thirties to forties. Analysis of the pubic symphyses (Figure 5.45) according to the technique of Suchey-Brooks (Brooks and Suchey 1990) yielded a categorization of phase IV, which has a mean age of 35.2 years and a 95% confidence interval range of 23-57 years. Arthritic development throughout the skeleton supports an age range in the thirties to forties.

[SENSITIVE CONTENT]

Figure 5.45. *Medial view of the Burial 135 pubic symphyses.*

Stature. This individual had a stature of approximately 67.9 ± 2.8 inches, based on the combined lengths of the femur, humerus and tibia, and the Bass 19th century Black male sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula used was 0.03924 * FEMXLN+HUMXLN+TIBXLN (1206 mm) + 20.54 inches.

Individualizing traits or anomalies. No individualizing traits or skeletal anomalies were observed.

Antemortem or pathological conditions. Cavities were present on teeth #3, 4, and 32. Teeth #5 and 29, upper and lower premolars, were reduced to root stumps. Tooth #16 had a broken crown and teeth #18 and 30 were lost antemortem (Figures 5.46 and 5.47). There was arthritic development in the form of slight lipping throughout the skeleton, especially in the upper limb elements and hips. The distal right fibula had a large enthesophyte related to either the interosseus ligament or the insertion of peroneus brevis (Figure 5.48). The anterolateral aspects of both tibiae also displayed large enthesophytes for the lower quarter of the interosseous ligament insertion. These enthesophytes may have been a response to a bilateral healed strain or habitual activity stress.

Perimortem trauma. This individual displayed cranial blunt force trauma and multiple gunshot wounds (GSW) to the lower body.

The facial skeleton was pushed inward, resulting in fractures at the frontal-maxillary sutures, fractures to the maxillae medial to the zygomatic-maxillary sutures and extending horizontally into the nasal aperture (Figure 5.49), and displaced the zygomatico-maxillary area to the inferior, on the left side (Figure 5.50). No evidence of healing was associated with these fractures.

[SENSITIVE CONTENT]

Figure 5.46. *Maxillary dentition for Burial 135.*

[SENSITIVE CONTENT]

Figure 5.47. *Mandibular dentition for Burial 135.*

[SENSITIVE CONTENT]

Figure 5.48. *Enthesophyte on the right fibula of Burial 135.*

[SENSITIVE CONTENT]

Figure 5.49. *Anterior view of Burial 135 cranium demonstrating perimortem fractures to maxillary region.*

[SENSITIVE CONTENT]

Figure 5.50. *Inferior view of Burial 135 cranium demonstrating asymmetry of facial bones due to perimortem fractures.*

During exhumation a bullet was recovered from the soil of the abdominal area (see Figures 5.41 and 5.42 and Figure 5.51). No observable skeletal trauma was associated with this bullet, although soft tissue damage would have occurred.

Radiographic observation of the right tibia indicated a radio-opaque particle on the distal tibia, which was observed to be a metallic pellet (Figures 5.52, 5.53, and 5.54). Radiographs of the feet elements indicated additional pellets embedded in the left foot, specifically in the cuboid, lateral cuneiform, and the first and second metatarsals. An additional pellet was recovered from a bone fragment detached from the posterior lateral surface of the left calcaneus (Figures 5.55 and 5.56). No evidence of healing was associated with these embedded pellets.

<u>Postmortem damage.</u> Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

<u>DNA sampling.</u> Teeth #1, 2, 3, 14, 15, 17, 19, and 31, the right and left patellae, and the right and left femora were submitted for DNA analysis (Figures 5.57). Following DNA sampling, the remains were bundled for reburial (Figure 5.58), except the left foot and bullet from the abdomen which were retained for examination by appropriate experts (Figure 5.59).

Figure 5.51. *Closeup of bullet recovered from Burial 135 abdominal region.*

[SENSITIVE CONTENT]

Figure 5.52. *Burial 135 tibiae with pellet in the right tibia (arrow).*

[SENSITIVE CONTENT]

Figure 5.53. *Close up of pellet on distal portion of right tibia of Burial 135 (arrow).*

[SENSITIVE CONTENT]

Figure 5.53. *Close up of pellet on distal portion of right tibia of Burial 135 (arrow).*

[SENSITIVE CONTENT] [SENSITIVE CONTENT]

Figure 5.54. *Radiograph of Burial 135 right tibia with radiopaque pellet.*

Figure 5.55 . *Burial 135 left foot with pellets indicated by white markers.*

Figure 5.57. *Eight (8) teeth, patellae, and femora from Burial 135 packaged for DNA analysis.*

Figure 5.58. *Burial 135 remains bundled for reburial.*

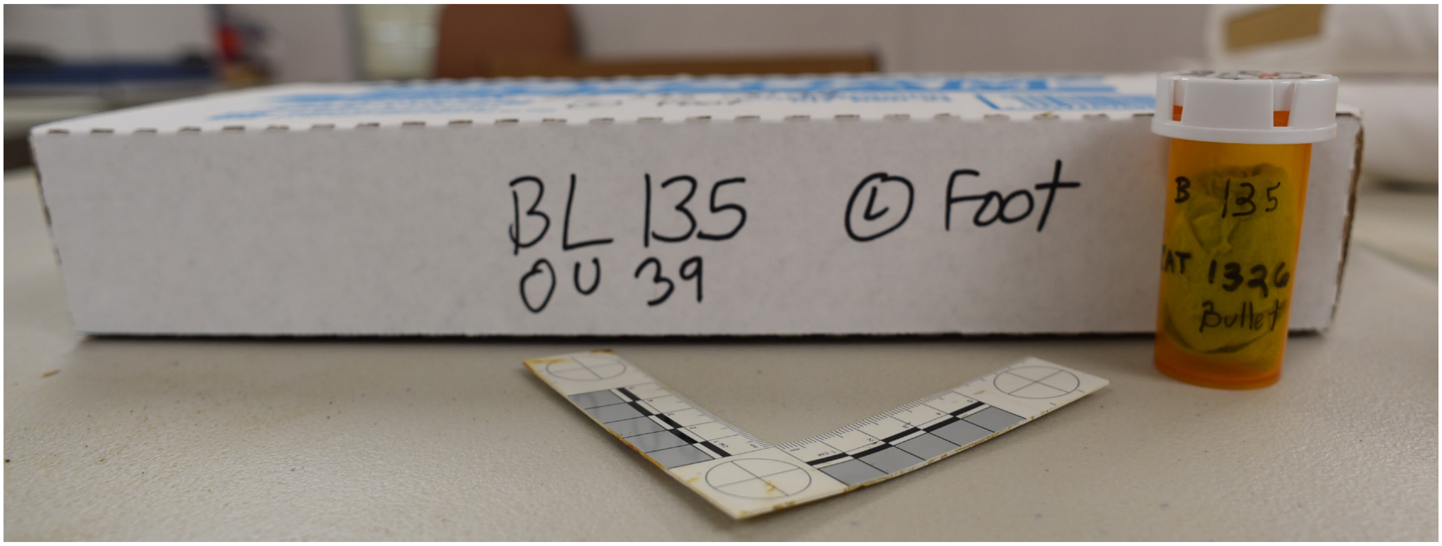

Figure 5.59. *Burial 135 left foot with pellets and bullet core retained for ballistic analysis.*

<u>Summary of conclusions and opinions.</u> The individual in burial 135 was an African American middle-aged male, who had a stature of approximately 67.9 inches. Dental health was poor as demonstrated by caries, broken teeth, and tooth loss. Both ankles exhibited enthesophytes suggestive of repetitive injury or stress. Perimortem trauma was consistent with blunt force trauma to the face, a retained projectile to the abdomen, and shotgun wounds to the right lower leg and left foot. Postmortem damage was consistent with the exhumation processes of fragile skeletal remains. Eight (8) teeth, both femora, and both patellae were submitted for DNA analysis.

The shotgun pellets may have struck while this individual was running, as his right leg retained one pellet while his left foot retained five. The wounds would likely have been disabling. The bullet retrieved from the abdominal soil was consistent with a gunshot wound to the gut. The blunt force trauma to the face was consistent with a blow by kicking the face or being struck by a blunt object.

The suite of trauma exhibited by this individual was consistent with the narrative of pursuit and homicide of African Americans as described by survivors of the 1921 Tulsa Race Massacre. This individual received a potentially disabling shotgun blast to the legs and feet, probably followed by the abdominal gunshot wound that would have caused a prolonged death. Blunt force trauma to the face was consistent with abuse of a disabled victim. As a male in a plain casket, displaying multiple forms of ballistic trauma as well as blunt force trauma, this individual is a person of interest as a victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 157
OAKLAWN UNKNOWN NUMBER: 41
UNIVERSITY OF OKLAHOMA CATALOG NUMBERS: 1386-1397, 1457

<u>Condition of remains.</u> *In situ,* these remains were fragmentary, but retained large fragments and some intact long bones (Figure 5.60). The vault was cracked and displayed plastic deformation from lateral compression, but many facial elements were preserved. An unidentified round metallic object was recovered from the soil between the lower legs (Figures 5.61 and 5.62).

<u>Number of individuals.</u> One (1) individual was represented by these remains (Figure 5.63). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	sacrum
teeth #1-19, and 21-32	cervical vertebrae
sternum manubrium	thoracic vertebrae
right and left ribs	lumbar vertebrae
right and left scapulae	coccygeal vertebrae
right and left clavicles	right and left femora
right and left humeri	right and left patellae
right and left ulnae	right and left tibiae
right and left radii	right and left fibulae
carpals, metacarpals, and manual phalange	tarsals, metatarsals, and pedal phalange
right and left os coxae	

[SENSITIVE CONTENT]

Figure 5.60. *In situ overview of the Burial 157 remains*

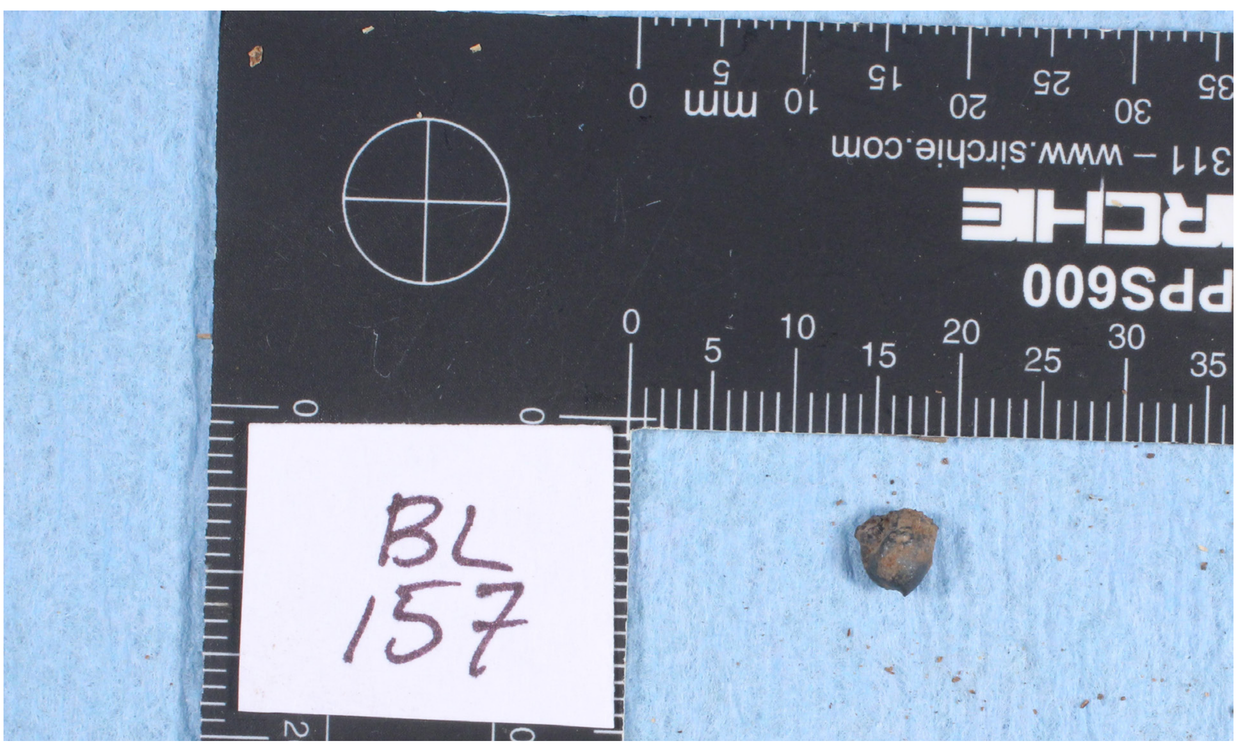

Figure 5.61. *Side view of unidentified metal object removed from soil of lower leg area of Burial 157.*

Figure 5.62. *Top view of unidentified metal object removed from soil of lower leg area of Burial 157.*

[SENSITIVE CONTENT]

Figure 5.63. *Post-cleaning overview of the remains recovered from Burial 157. The vials contain artifacts associated with the burial.*

Sex. This individual was a biological male. Although the pubic area was not intact, the dimensions of the humeral head, femoral head, and scapular glenoid were consistent with male biological sex (Spradley and Jantz 2011). The morphology of the cranium varied from probable male to male.

Ancestry. This individual was of African descent. Race is likely to be "Colored" or "Black" as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery. Based on discriminant function analysis of eleven cranial measurements, using Fordisc software version 3.1.322 (Jantz and Ousley, 2005) forensic database, this individual was most similar to the Black Male sample, with a posterior probability of 0.948, and typicalities which support accepting the hypothesis of African ancestry.

The cranial morphology of this individual was consistent with African descent, displaying facial prognathism and a nasal aperture with a smooth inferior margin (Figure 5.64).

[SENSITIVE CONTENT]

Figure 5.64. *Anterior view of the partial face of Burial 157.*

Age. This individual was a young man, probably in his early twenties. The preserved component of the left pubic symphysis (Figure 5.65) was scored to phase II (Brooks and Suchey 1990), which has a mean age of 23.4 and a 95% confidence interval range of 19 to 34. The medial clavicles were partially fused (Figure 5.66), an area that is usually fully fused in the mid to late twenties. Recently fused annular rings were observed in cervical, thoracic (Figure 5.67), and lumbar vertebral bodies, and two rib heads (Figure 5.68) were recovered in a state of partial fusion, which was consistent with an age in the early twenties. Interestingly, the triradiate areas of the acetabula were not fully fused (Figures 5.69 and 5.70), which would be expected by the late teens.

[SENSITIVE CONTENT]

Figure 5.65. *Medial view of the Burial 157 pubic symphyses.*

[SENSITIVE CONTENT]

Figure 5.66. *View of the Burial 157 medial clavicle epiphyses.*

[SENSITIVE CONTENT]

Figure 5.67. *Burial 157 thoracic vertebrae with unfused annular rings.*

[SENSITIVE CONTENT]

Figure 5.68. *Burial 157 ribs with partially fused heads (arrows).*

Stature. Stature of this individual was estimated to approximately 67.8 ± 2.3 inches, based on the combined lengths of the clavicle, femur and fibula, and the Bass 19th Century Black Male sample in Fordisc (version 3.1.322; Jantz and Ousley 2005). The regression formula used was 0.04705 * CLAXLN+FEMXLN+FIBXLN (1025 mm) + 19.53 inches.

Individualizing traits or anomalies. Sagittal synostosis, or early fusion of the cranial sagittal suture and a slight sagittal keel were reported. The femora were asymmetrical in length, which might have resulted in a remarkable gait (Figures 5.71 and 5.72).

[SENSITIVE CONTENT]

[SENSITIVE CONTENT]

Figure 5.69. *Left acetabulum of Burial 157 with a partially fused triradiate area.*

Figure 5.70. *Left acetabulum of Burial 157 with a partially fused triradiate area.*

<u>Antemortem or pathological conditions.</u> Cavities were present in many of the molars, specifically teeth #2, 3, 14, 18, 30, and 31 (Figures 5.73 and 5.74). An abscess was present in the alveolus of tooth #3 (Figure 5.75).

<u>Perimortem trauma.</u> Evidence of two (2) gunshot wounds were indicated in these remains. Radiography of the cervical area revealed several metallic particles in association with the cervical vertebrae. (Figures 5.76 and 5.77) These particles did not resemble lead fragments as they were not oxidized to a white coloration and were not as radiopaque. The composition of the particles was identified as a mixture of predominately lead and tin, consistent with pewter (Fenn 2024, this volume). Ballistic expert Douglas Scott (2024, this volume) indicated that the round object recovered from the lower leg area was a deformed bullet, composed of lead likely hardened with tin or antimony. Presence of the particles in the cervical area, and a bullet in the leg area, indicated this individual received multiple gunshot wounds. No other radiological or traumatic findings were observed in the remains.

<u>Postmortem damage.</u> Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

[SENSITIVE CONTENT]

Figure 5.71. Anterior view of Burial 157 asymmetrical femora.

[SENSITIVE CONTENT]

Figure 5.72. Posterior view of Burial 157 asymmetrical femora.

<u>DNA sampling.</u> Teeth #1, 6, 13, 16, 17, 21, 22, 27, 28, 29, 32, the right and left patellae, and the right and left femora, were submitted for DNA analysis (Figure 5.78). Following the DNA sampling, the remains were bundled for reburial (Figure 5.79). The metallic particles retrieved from the cervical area and round object from the leg area were retained for examination by appropriate experts.

<u>Summary of conclusions and opinions.</u> The individual in burial 157 was a young African American man in his early twenties. His stature was approximately 67.8 inches, and if he were without hair, a slight sagittal keel may have been observable on the top of his head and he may have had an unusual gait due to limb length differences. He had cavities in most of his molars, and an abscess above his upper right first molar. Evidence of two (2)

[SENSITIVE CONTENT]

Figure 5.73. *Occlusal view of Burial 157 maxillary teeth.*

[SENSITIVE CONTENT]

Figure 5.74. *Occlusal view of Burial 157 mandibular teeth.*

[SENSITIVE CONTENT]

Figure 5.75. *Abscess in alveolus of Burial 157 maxilla.*

[SENSITIVE CONTENT]

Figure 5.76. *Radiograph of Burial 157 cranial and cervical areas with metallic particles.*

[SENSITIVE CONTENT]

Figure 5.77. *Radiograph of Burial 157 cervical vertebrae with metallic particles.*

Figure 5.78. *Eleven (11) teeth, patellae, and femora from Burial 157 sealed for submission to DNA analysis.*

Figure 5.79. *Burial 157 remains bundled for reburial.*

gunshot wounds was indicated by the pewter particles recovered from the neck area and the deformed bullet of probably similar chemical composition recovered from the lower leg area. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. Eleven (11) teeth, both patellae, and both femora were submitted for DNA analysis. As a male in a plain casket, with anomalous pewter particles in the neck area and a bullet from the lower limb region, this individual is a person of interest, and is not excluded as a possible victim of the Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 169
OAKLAWN UNKNOWN NUMBER: 40
UNIVERSITY OF OKLAHOMA CATALOG NUMBERS: 1415-1422

Condition of remains. *In situ*, these remains present as a predominately intact articulated skeleton (Figure 5.80). The preservation was fragmentary with large fragment sizes. The cranium was predominately crushed except for portions of the facial skeleton. The vertebrae were not intact, and there was minor cortical bone flaking on the femora.

Number of individuals. One (1) individual was represented by these remains (Figure 5.81). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	right and left os coxae
hyoid body	sacrum
teeth #1-6, 8-30, 32	cervical vertebrae
right and left ribs	thoracic vertebrae
sternum manubrium	lumbar vertebrae
right and left scapulae	coccygeal vertebrae
right and left clavicles	right and left femora
right and left humeri	right and left patellae
right and left ulnae	right and left tibiae
right and left radii	right and left fibulae
carpals, metacarpals, manual phalange	tarsals, metatarsals, pedal phalange

Sex. This individual was a biological male. The dimensions of the femoral and humeral heads were consistent with male biological sex (Spradley and Jantz 2011). The morphology of the cranium, e.g., the nuchal crest, supraorbital margin, and mental eminence, was consistently male or probable male (Buikstra and Ubelaker 1994).

Ancestry. This individual was of African descent. The morphology of the fragmentary facial skeleton displayed maxillary prognathism, parabolic dental arcades, and a gutter in the nasal aperture (Figures 5.82, 5.83, and 5.84). Analysis of a limited (four measurements) data in Fordisc version 3.1.322 (Jantz and Ousley 2005) indicated this individual was closest to the Black Male sample, although results using more measurements were preferred. Race was likely to be "Colored" or "Black" as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged, possibly in his forties. The right pubic symphysis (Figure 5.85) was scored

[SENSITIVE CONTENT]

Figure 5.80. *In situ overview of the Burial 169 remains.*

[SENSITIVE CONTENT]

Figure 5.81. *Post-cleaning overview of the Burial 169 remains.*

[SENSITIVE CONTENT]

Figure 5.82. *Morphology of the Burial 169 fragmentary facial skeleton displaying maxillary prognathism.*

[SENSITIVE CONTENT]

Figure 5.83. *The Burial 169 parabolic maxillary dental arcade.*

[SENSITIVE CONTENT]

Figure 5.84. *The Burial 169 nasal aperture showing gutter (arrows).*

to phase V, which has a mean age of 45.6 and a 95% confidence interval range of 27 to 66 years (Brooks and Suchey 1990). The left auricular surface was reported as phase 6, which has an age range of 45-49 (Buckberry and Chamberlain 2002). Arthritic changes were noted throughout the skeleton, including lipping of the major limb joints, and occurrence of multiple Schmorl's nodes on the lower thoracic vertebrae (Figure 5.86) which was consistent with middle age.

<u>Stature.</u> The stature of this individual was approximately 69.5 ± 2.9 inches, based on the combined dimensions of the humerus and ulna, using the Bass 19th century Black male sample in Fordisc (version 3.1.322; Jantz and Ousley 2005). The regression formula used was 0.08596 * HUMXLN+ULNPHL (610 mm) + 17.04 inches.

<u>Individualizing traits or anomalies.</u> The mandibular canines were rotated (Figure 5.87) and there was crowding of the mandibular incisors. This would have been observable in life, as well as the cavities at the cervical enamel junction on the labial surface of the upper central incisors (Figure 5.88).

An olecranon foramen was present in the left humerus (Figure 5.89).

<u>Antemortem or pathological conditions.</u> There were indicators of declining dental health. Cavities were present on the labial surfaces of the maxillary central incisors (see Figure 5.88). An abscess was present at tooth #18, which also had complete loss of the crown (see Figure 5.87). Alveolar resorption was severe at tooth #32. Linear enamel hypoplasia was observed on all teeth (see Figure 5.88), including the third molars, indicating repeat episodes of severe health stress from infancy throughout childhood.

<u>Perimortem trauma.</u> No evidence of perimortem trauma, or trauma associable with a cause of death, was observed in these remains.

<u>Postmortem damage.</u> Postmortem damage was consistent with fragmentation due to the extended burial period,

[SENSITIVE CONTENT]

Figure 5.85. *Medial view of the Burial 169 right pubic symphysis.*

[SENSITIVE CONTENT]

Figure 5.86. *View of the Burial 169 lower thoracic vertebrae showing multiple Schmorl's nodes.*

[SENSITIVE CONTENT]

Figure 5.87. *View of the Burial 169 mandibular dentition showing crowding and tooth loss.*

[SENSITIVE CONTENT]

Figure 5.88. *View of the Burial 169 left humerus with an olecranon foramen (arrow).*

[SENSITIVE CONTENT]

Figure 5.89. *View of the Burial 169 left humerus with an olecranon foramen (arrow).*

exhumation processes, and transport.

DNA sampling. The left petrous temporal, teeth #1, 2, 3, 14, 15, 16, 17, 27, and 32, the right and left patellae, and the left femur were submitted for DNA analysis (Figure 5.90). Following DNA sampling, the remains were bundled for reburial (Figure 5.91).

Summary of conclusions and opinions. The individual in burial 169 was a middle-aged African American male,

Figure 5.90. *Petrous temporals, nine (9) teeth, patellae, and the Burial 169 left femur submitted for DNA analysis.*

Figure 5.91. *View of the Burial 169 remains bundled for reburial.*

with a stature of approximately 69.5 inches. In life his smile would have displayed rotated and crowded anterior lower teeth, and cavities at the gumline on his upper central incisors. Linear enamel hypoplasia was observed on all teeth, indicating repeated episodes of severe health stress in childhood. No evidence of perimortem trauma or trauma associable with a cause of death was observed. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. The left petrous temporal, nine (9) teeth, both patellae, and the left femur were submitted for DNA analysis. Although absent of trauma, as a male buried in a plain casket, this individual is not excluded as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 176
OAKLAWN UNKNOWN NUMBER: 43
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1377-1379

Condition of remains. *In situ*, these remains presented as a predominately complete skeleton (Figure 5.92). The preservation was very poor, with fragmentation in small sizes, and delamination of the denser cortical bone.

Number of individuals. One (1) individual was represented by these remains (Figure 5.93). Despite or due to the poor preservation, no duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	sacrum
teeth #2-15, 18, 20-29, 31	cervical vertebrae
right and left ribs	thoracic vertebrae
right and left scapulae	lumbar vertebrae
right and left clavicles	right and left femora
right and left humeri	right and left patellae
right and left ulnae	right and left tibiae
right and left radii	right and left fibulae
carpals, metacarpals, manual phalange	tarsals and metatarsals
right and left os coxae	two pedal sesamoids

Sex. This individual was possibly male. Preservation and the young age of this individual limited evaluation for sex indictors. The morphology of the preserved portions of the cranium was of indeterminate sex, but the occipital exhibited slight development of an inion hook (Figure 5.94). The diameters of the still fusing femoral heads were feminine or intermediate (Spradley and Jantz 2011). The sciatic notch was narrow, consistent with a probable male (Phenice 1969). The humeral and femoral shafts were fairly robust, contributing to an assessment of probable male.

Ancestry. Ancestry was not estimated, due to the poor preservation of this individual. Race was likely to be “Colored” or “Black” as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was a teenager, probably 14 to 16 years old. Several areas in the skeleton were in the process of maturing. The distal femoral and proximal tibial epiphyses were unfused (Figures 5.95, 5.96, 5.97, 5.98, and 5.99). The distal ulna was unfused (Figures 5.100 and 5.101). These areas begin fusing between age 14 to 17,

[SENSITIVE CONTENT]

Figure 5.92. *In situ overview of the Burial 176 remains.*

[SENSITIVE CONTENT]

Figure 5.93. *Post-cleaning overview of the Burial 176.*

[SENSITIVE CONTENT]

Figure 5.94. *View of the Burial 176 occipital showing hint masculine feature (arrow).*

[SENSITIVE CONTENT]

Figure 5.95. *Inferior view of the Burial 176 unfused left distal femoral epiphysis.*

[SENSITIVE CONTENT]

Figure 5.96. *Superior view of the Burial 176 unfused left distal femoral epiphysis.*

[SENSITIVE CONTENT]

Figure 5.97. *View of the Burial 176 right proximal tibia presenting with unfused epiphysis.*

[SENSITIVE CONTENT]

Figure 5.98. *Superior view of the Burial 176 left proximal tibia presenting with unfused epiphyses.*

depending on the sex of the individual (Scheuer and Black 2000). However, the mandibular second molar root was completely developed (Figure 5.102), making an age younger than 14 unlikely (AlQahtani et al., 2010). Unfortunately, agenesis of the third molars prevented refining the age estimate.

Stature. Stature was estimated photogrammetrically from the length of the remains in burial prior to exhumation (see Figure 5.92). The distance from the crown of the cranium to the approximate location of the pedal elements was 1.76 m, or 69.29 inches.

[SENSITIVE CONTENT]

Figure 5.99. *Inferior view of the Burial 176 unfused left proximal tibial epiphysis.*

[SENSITIVE CONTENT]

Figure 5.100. Inferior view of the Burial 176 unfused distal ulna epiphysis.

[SENSITIVE CONTENT]

Figure 5.101. Superior view of the Burial 176 unfused distal ulna epiphysis.

[SENSITIVE CONTENT]

Figure 5.102. *Radiograph of the Burial 176 mandibular second molar.*

Individualizing traits or anomalies. The right second upper incisor was peg-shaped (Figure 5.103), which would have been visible in life. As described below, this individual had an anomaly of the left foot.

Antemortem or pathological conditions. Cavities were present on teeth #2, 3, 4, 12, 13, 14, 15, 18, 20, 21, 29, and 31, representing most premolars and molars in the dentition (Figures 5.104, 5.105, and 5.106). The mandibular first molars were probably extracted shortly before death, as the alveoli were remodeling (see Figure 5.106). The third molars were congenitally absent (see Figures 5.102, 5.104, 5.105, and 5.106). Linear enamel hypoplasia was observed on the maxillary canines (see Figure 5.103) and most mandibular anterior teeth.

The left talus lacked the head and neck (Figures 5.107 and 5.108). Radiography of both tali demonstrated that the left talus had an abnormal trabecular pattern (Figure 5.109), supporting that the absent head and neck was congenital or developmental. Possible etiologies of this talar morphology included clubfoot and developmental talar neck dislocation, although other causes were not excluded.

Perimortem trauma. No evidence of perimortem trauma, or trauma associable with a cause of death, was observed in these remains.

Postmortem damage. Postmortem damage was consistent with fragmentation due to the extended burial period,

[SENSITIVE CONTENT]

Figure 5.103. *View of the Burial 176 maxillary dentition showing a peg shaped right second upper incisor (arrow).*

[SENSITIVE CONTENT]

Figure 5.104. *View of the Burial 176 maxillary dentition.*

[SENSITIVE CONTENT]

Figure 5.105. *View of the Burial 176 mandibular dentition with arrows at the first molar sockets.*

[SENSITIVE CONTENT]

Figure 5.106. *The Burial 176 right mandibular dentition showing remodeling alveolus.*

[SENSITIVE CONTENT]

Figure 5.107. *Superior view of the Burial 176 right and left tali.*

[SENSITIVE CONTENT]

Figure 5.108. *Inferior view of the Burial 176 right and left tali.*

[SENSITIVE CONTENT]

Figure 5.109. *Radiograph of the Burial 176 tali demonstrating abnormal trabecular pattern of the left talus.*

exhumation processes, and transport.

<ins>DNA sampling.</ins> The right and left petrous temporals, the occipital and the left parietal, teeth #3, 5, 6, 8, 9, 10, 11, 12, 14, 21, 22, 23, 24, 25, 26, 27, and 28, and the right and left femora were submitted for DNA analysis (Figures 5.110). Following DNA sampling, the remains were bundled for reburial (Figure 5.111).

<ins>Summary of conclusions and opinions.</ins> The individual in burial 176 was a teenager, possibly male, of indeterminate ancestry. The stature based on supine body length was approximately 69.29 inches. This person had several cavities and both lower first molars were extracted shortly before death. A peg-shaped right second upper incisor would have been visible in life, as well as a possible left foot deformity. No evidence of perimortem trauma, or

Figure 5.110. *Petrous temporals, the occipital and the left parietal, seventeen (17) teeth, and the femora submitted for DNA analysis*

Figure 5.111. *View of the Burial 176 remains bundled for reburial.*

trauma associable with a cause of death was observed. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. Both petrous temporals, the left parietal and occipital, seventeen (17) teeth, and both femoral shafts were submitted for DNA analysis. As a possible male in a plain casket, this person is not excluded as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 180
OAKLAWN UNKNOWN NUMBER: 45
UNIVERSITY OF OKLAHOMA CATALOG NUMBER: 1438-1443

<u>Condition of remains.</u> *In situ*, these remains presented as a predominately complete articulated skeleton (Figure 5.112). Yellow-metal crowns were present in the maxilla (Figure 5.113). The facial skeleton was detached from the vault. The ribs and vertebrae were very fragmentary, but several upper and lower limb bones were preserved intact.

<u>Number of individuals.</u> One (1) individual was represented by these remains (Figure 5.114). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

<u>Sex.</u> This individual was a biological male. The morphology of the pubic symphyses displayed a vertical ventral

skull (cranium and mandible)	cervical vertebrae
teeth #1-9, 11-19, 21-29, and 31	thoracic vertebrae
sternum manubrium	lumbar vertebrae
right and left ribs	coccygeal vertebra
right and left scapulae	right and left femora
right and left clavicles	right and left patellae
right and left humeri	right and left tibiae
right and left ulnae	right and left fibulae
right and left radii	tarsals, metatarsals, and pedal phalange
carpals, metacarpals, and manual phalange	two pedal sesamoids
right and left os coxae	

[SENSITIVE CONTENT]

Figure 5.112. *In situ overview of the Burial 180 skeletal remains.*

[SENSITIVE CONTENT]

Figure 5.113. *View of the Burial 180 maxillary dentition showing yellow-metal crowns.*

[SENSITIVE CONTENT]

Figure 5.114. *Post-cleaning overview of the Burial 180 remains.*

contour, a linear subpubic contour, and a broad ischiopubic ramus, features consistent with male biological sex (Phenice 1969). The dimensions of the humeral, radial, and femoral heads and scapular glenoid fossa were masculine (Spradley and Jantz 2011; Dabbs and Moore-Jansen 2010).

Ancestry. This individual was of African descent. Discriminant function analysis of sixteen cranial measurements using Fordisc version 3.1.322 (Jantz and Ousley 2005) indicated that this individual was closest to the Black Male sample, with posterior probability of 0.853 and typicalities that support accepting the hypothesis of membership in the Black Male sample. The limited morphological data, which included maxillary prognathism, a wide nasal aperture, presence of a nasal gutter, and a low to absent nasal sill (see Figure 5.113, Figures 5.115 and 5.116), was consistent with African ancestry. Race was likely to be "Colored" or "Black" as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged, possibly in his thirties to forties. Age indicators were limited due to poor

[SENSITIVE CONTENT]

Figure 5.115. *Anterior view of the Burial 180 partial face.*

[SENSITIVE CONTENT]

Figure 5.116. *Lateral view of the Burial 180 partial face.*

preservation. Analysis of the morphology of the partial pubic symphyses (Figure 5.117) produced an estimate of Phase IV, which has a mean age of 35.2 years and a 95% confidence range of 25 to 57 years (Brooks and Suchey 1990). Scoring of the auricular surfaces (Figure 5.118; Buckberry and Chamberlain 2002) yielded scores of phases IV and VI, which have mean ages of 51.41 (age range 29-81 years) and 66.71 (age range 39-91 years), respectively. Early middle-age was supported due to the presence of small enthesophytes in the tarsals, slight lipping on shoulder and hip joints and patellae, and the retention of lines of fusion on the anterior femoral head (Figure 5.119). The dentition retained most teeth despite the presence of several cavities (see Figure 5.115), which supported the early middle-age estimate.

<u>Stature.</u> This individual had a stature of approximately 68.5 ± 2.4 inches, based on the dimensions of the clavicle, femur and tibia and using the Bass 19th century Black Male sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula used was 0.04584 * CLAXLN+FEMXLN+TIBXLN (1045 mm) + 20.62 inches.

<u>Individualizing traits or anomalies.</u> This individual had two yellow-metal crowns on teeth #9 and 11, and a yellow-metal crown-bridge replacing the lost tooth #10 (see Figures 5.113, 5.115, and 5.116, Figures 5.120, and 5.121). The crowned teeth were the upper left incisors and left canine, and would have been visible in life.

<u>Antemortem or pathological conditions.</u> Cavities are present in most molars (see Figure 5.121 and Figure 5.122),

[SENSITIVE CONTENT]

Figure 5.117. *Medial view of the Burial 180 partial pubic symphyses.*

[SENSITIVE CONTENT]

Figure 5.118. *View of the auricular surfaces of the Burial 180 left and right ilia.*

[SENSITIVE CONTENT]

Figure 5.119. *View of the Burial 180 femora showing retention of lines of fusion on the anterior femoral heads.*

[SENSITIVE CONTENT]

Figure 5.120. *View of the Burial 180 maxillary dentition showing two yellow-metal crowns and a yellow-metal crown-bridge.*

[SENSITIVE CONTENT]

Figure 5.121. *Occlusal view of the Burial 180 maxillary dentition.*

specifically teeth #1, 2, 15, 16, 19, 28, and 29. Tooth #30, the right lower first molar, was lost shortly before death, based on the reactive bone in the alveolus (see Figures 5.122 and Figure 5.123). The left clavicle displayed a reactive area with recent healing on the superior surface (Figure 5.124), which could have derived from a minor injury, infection, or strain from an active lifestyle, among other unknown causes.

Perimortem trauma. No evidence of perimortem trauma, or trauma associable with a cause of death, was observed

[SENSITIVE CONTENT]

Figure 5.122. *Occlusal view of the Burial 180 mandibular dentition.*

in these remains.

Postmortem damage. The facial skeleton was dislodged from the vault due to lateral compression in burial. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

DNA sampling. Teeth #3, 4, 5, 6, 7, 8, 12, 13, 14, 16, 17, 18, 19, 21, 22, 23, 24, 25, 26, 27, 28, and 31, the right and left patellae, and the right femur were submitted for DNA analysis (Figure 5.125). Following DNA sampling, the remains were bundled for reburial (Figure 5.126).

Summary of conclusions and opinions. The individual in burial 180 was a middle-aged male, possibly in his

[SENSITIVE CONTENT]

Figure 5.123. *Lateral view of the Burial 180 right mandibular dentition showing the reactive bone in an alveolus.*

[SENSITIVE CONTENT]

Figure 5.124. *Superior view of the Burial 180 left clavicle displaying an area of recent healing on the superior surface (arrow).*

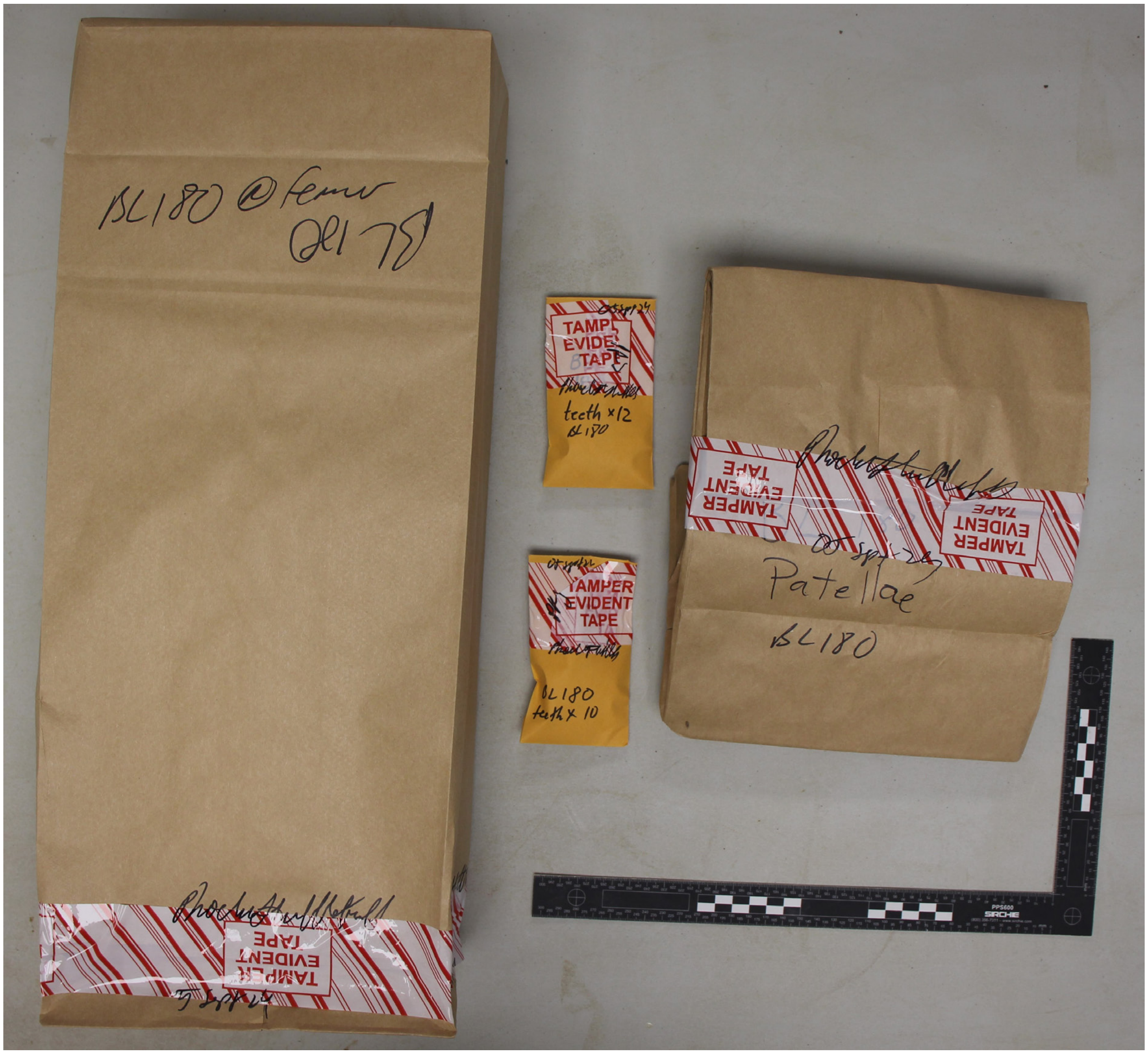

Figure 5.125. *Twenty-two (22) teeth, patellae, and the right femur submitted for DNA analysis.*

Figure 5.126 *View of the Burial 180 remains bundled for reburial.*

thirties or forties, of African descent with a stature of approximately 68.5 inches. A yellow-metal bridge affected his upper left incisors and canine. He also had several cavities and had lost the right lower first molar shortly before death. The left clavicle displayed recently healed, reactive bone on its superior surface, that could have been due to a variety of causes including minor injury, infection, or activity strain. No evidence of perimortem trauma or trauma associable with a cause of death was observed. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. Twenty-two (22) teeth, both patellae, and the right femur were submitted for DNA analysis. As a male buried in a plain casket, this individual is not excluded as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 182
OAKLAWN UNKNOWN NUMBER: 44
UNIVERSITY OF OKLAHOMA ACCESSION NUMBER: 1424-1429

Condition of remains. *In situ*, these remains presented as a predominately intact articulated skeleton (Figure 5.127). Ribs and vertebrae were fragmentary but some vertebrae were intact, as well as many long bones. A black and white bi-layered substance was recovered near and on the head (Figure 5.128) and under the torso area (Figure 5.129). Three white buttons were also recovered from the torso area (Figure 5.130).

Number of individuals. One (1) individual was represented by these remains (see Figure 5.130). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	right and left os coxae
teeth #1-15, 17, 18, 20-32	sacrum
hyoid body and right and left cornu	cervical vertebrae
right and left ribs	thoracic vertebrae
sternum manubrium and gladiolus	lumbar vertebrae
right and left scapulae	coccygeal vertebra
right and left clavicles	right and left femora
right and left humeri	right and left tibiae
right and left ulnae	right and left fibulae
right and left radii	tarsals, metatarsals and pedal phalange
carpals, metacarpals and manual phalange	

Sex. This individual was a biological male. The morphology of the pubic symphyses displayed a vertical ventral contour, a linear subpubic contour, and a broad ischiopubic ramus, features consistent with male biological sex (Phenice 1969). The dimensions of the humeral, radial, and femoral heads and scapular glenoid fossa were masculine (Spradley and Jantz 2011; Dabbs and Moore-Jansen 2010).

Ancestry. Ancestry was undetermined for this individual. Metric analysis of the cranium without facial measurements using Fordisc version 3.1.322 yielded results that supported concluding that this individual was not included in the Fordisc forensic population database. Race was likely to be “Colored” or “Black” as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged. Analysis of the left pubic symphysis (Figure 5.131) using the Suchey-

[SENSITIVE CONTENT]

Figure 5.127. *In situ overview of the Burial 182 skeletal remains.*

[SENSITIVE CONTENT]

Figure 5.128. *Lateral view of Burial 182 cranium showing material adhered.*

Brooks technique (Brooks and Suchey 1990) indicated a state of Phase V, which has a mean age of 45.6 years and a 95% confidence interval range of 27 to 66 years). The auricular surfaces scored (Buckberry and Chamberlain 2002) to phases VI and VII, which have mean ages of 66.71 years (range of 39-91) and 72.25 (range of 53-91), respectively. Arthritic changes were present as lipping on shoulder, elbow, and hip joints consistent with middle age. Dental health was declining and there was tooth loss, which was consistent with middle-age.

Stature. Stature for this individual was approximately 65.4 ± 2.7 inches, based on the combined dimensions of the clavicle, femur, and os coxa and the "any population" formula in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula used was 0.06448 * CLAXLN+FEMBLN+INNOHT (808 mm) + 13.31 inches.
Individualizing traits or anomalies. A black and white bi-layered substance was collected near and on the cranium

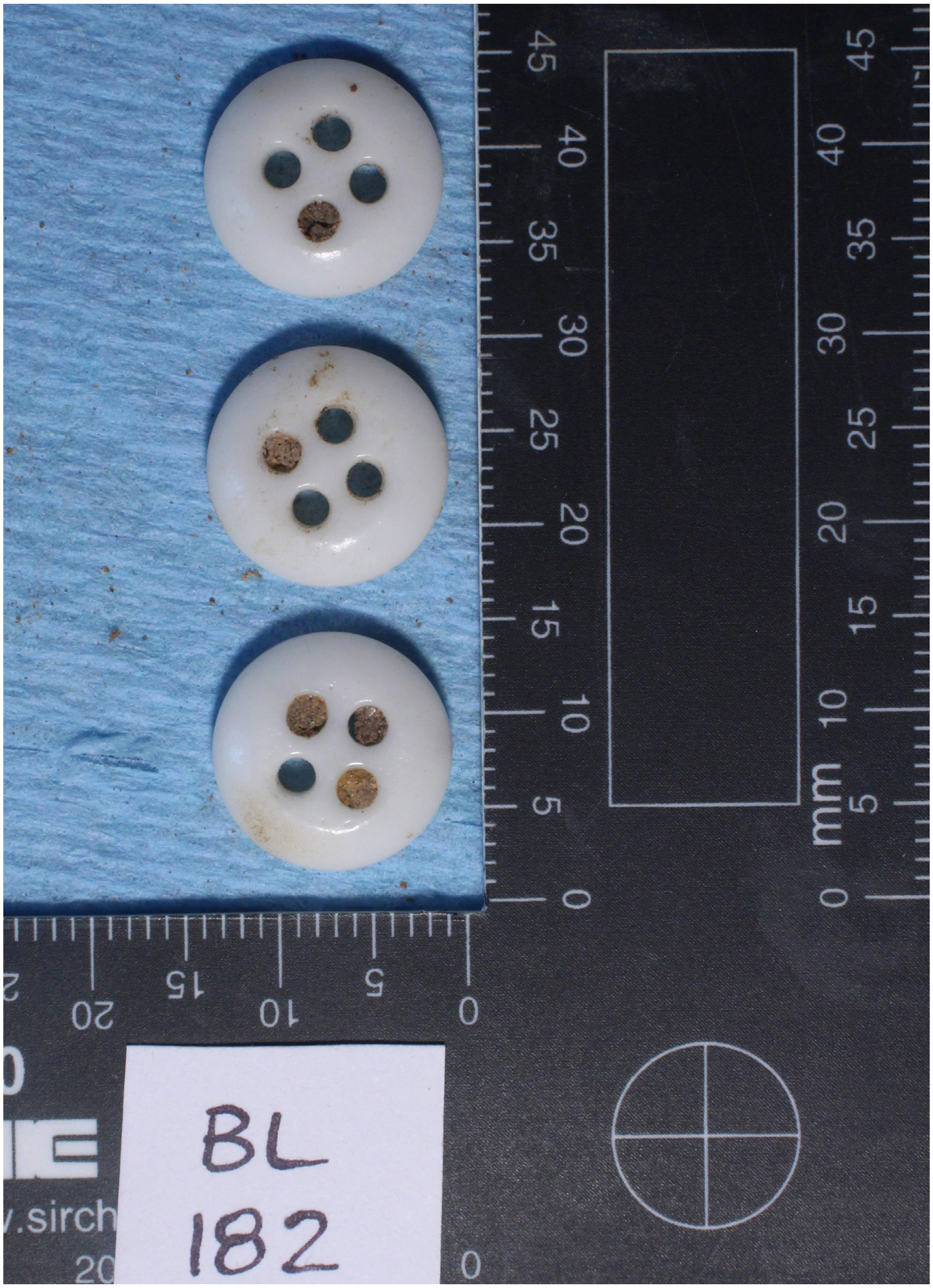

Figure 5.129. *View of three (3) white buttons recovered from the torso area of Burial 182.*

[SENSITIVE CONTENT]

Figure 5.130. *Post-cleaning overview of the Burial 182 remains.*

[SENSITIVE CONTENT]

Figure 5.131. *Medial view of the Burial 182 pubic symphyses.*

and under the torso (see Figures 5.128 and 5.130). This matter had the appearance of a black substance bonded to a white fabric or to a white substance also bonded to fabric. The warp and weft of fabric was imprinted into the white layer (Figures 5.132, 5.133, 5.134, 5.135, and 5.136). The three white buttons retrieved from the upper torso area were likely associated with the layered material and possibly together composed an item of clothing. Samples of the layered material were submitted to chemist Angus Lamar at the University of Tulsa for analysis, who obtained inconclusive results as of this writing. He surmised under preliminary analysis that the black component was cellulose triacetate, a plastic that was available in the 1920s, but likely not used with fabric due to its rigidity. Due to the substance being present on the cranium and in the torso area, other fabric-based items should be considered.

The right patella displayed a well-developed vastus notch (Figure 5.137), but this may not have been observable in life.

<u>Antemortem or pathological conditions.</u> Dental health was poor, although all but two (2) teeth were still present. Cavities were present on teeth #1-4, 14, 15, 17, 18, and 20 (Figures 5.138 and 5.139), and plaque was present on all teeth. Stained plaque coated the lingual surfaces of the upper posterior teeth and defined the gingival line

[SENSITIVE CONTENT]

Figure 5.132. *View of the black side of the material collected near the cranium and under the torso of Burial 182.*

[SENSITIVE CONTENT]

Figure 5.133. *View of the soil side of the material collected near the cranium and under the torso of Burial 182.*

[SENSITIVE CONTENT]

Figure 5.134. *View of the black side of additional pieces of material collected near the cranium of Burial 182.*

[SENSITIVE CONTENT]

Figure 5.135. *View of the soil side of the additional pieces of material collected near the cranium of Burial 182.*

Figure 5.136. *View of the white side of material collected from Burial 182 showing warp and weft of fabric.*

[SENSITIVE CONTENT]

Figure 5.137. *Anterior view of the Burial 182 patellae displaying a well-developed vastus notch (arrow).*

[SENSITIVE CONTENT]

Figure 5.138. *Occlusal view of the Burial 182 maxillary dentition.*

[SENSITIVE CONTENT]

Figure 5.139. *Occlusal view of the Burial 182 mandibular dentition.*

of the anterior teeth (Figure 5.140). A very thick coating of plaque was present the buccal side of the upper right posterior teeth (Figure 5.141).

[SENSITIVE CONTENT]

Figure 5.140. *Stained plaque on the lingual surfaces of the Burial 182 maxillary teeth.*

[SENSITIVE CONTENT]

Figure 5.141. *A thick coating of plaque on the buccal side of the Burial 182 right maxillary posterior teeth.*

Compressed disc surfaces were reported on the inferior disc spaces of the lower lumbar vertebrae, probably due to a history of heavy lifting, although other causes were not excluded.

Perimortem trauma. Blunt force trauma to the facial area was observed. The upper right maxilla was compressed into the right orbit, fracturing the frontal process of the maxilla at its articulation to the frontal and the right nasal bone (Figure 5.142). Both maxillae were fractured at or just medial to the zygomatico-maxillary suture. The basisphenoid, which is directly posterior to the maxilla and in the same line of force as the compression damage, was fractured (Figure 5.143). No indications of healing were associated with these fractures. Postmortem occurrence is not excluded, as focused compression in this area may have caused the damage.

[SENSITIVE CONTENT]

Figure 5.142. *Anterior view of Burial 182 cranium displaying perimortem fractures of the maxillae.*

[SENSITIVE CONTENT]

Figure 5.143. Inferior view of Burial 182 cranium displaying the fractured basisphenoid (arrow).

Postmortem damage. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

DNA sampling. Teeth #5, 6, 7, 8, 9, 10, 11, 12, 24, 25, 26, 27, 28, and 29, the right and left patellae, and the left femur were submitted for DNA analysis (Figure 5.144). Following DNA sampling, the remains were bundled for reburial (Figure 5.145).

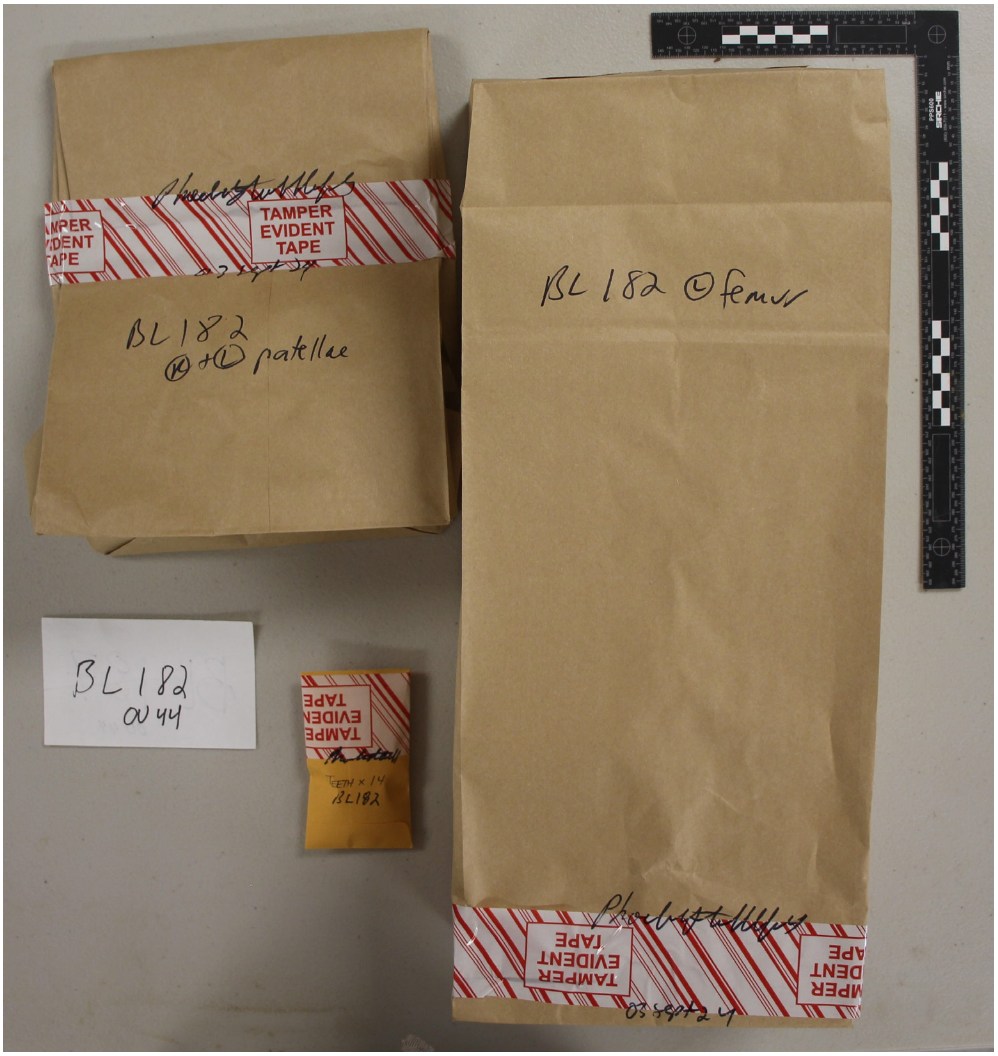

Figure 5.144. *Fourteen (14) teeth, patellae, and the left femur of Burial 182 submitted for DNA analysis.*

Figure 5.145. *View of the Burial 182 remains bundled for reburial.*

Summary of conclusions and opinions. TThe individual in burial 182 was a male of unknown ancestry, who was middle-aged. His stature was approximately 65.4 inches. He was recovered with a substance that resembles fabric coated with a black substance. Rain gear was one hypothesis, such as a hood, but analysis of the black material found it similar to cellulose triacetate, a rigid plastic not suitable for rain gear. Three (3) buttons, probably associated with the coated fabric, were recovered from the torso area. His dental health was poor, as he had plaque coating his teeth, several cavities, and loss of two (2) teeth during life. He also exhibited compressed lumbar vertebrae suggestive of a history of heavy lifting. Possible blunt force trauma to the face was observed. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. Fourteen (14) teeth, both patellae, and the left femur were submitted for DNA analysis. As a male in a plain casket with evidence of blunt force trauma, this individual is a person of interest as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 194
OAKLAWN UNKNOWN NUMBER: 46
UNIVERSITY OF OKLAHOMA CATALOG NUMBERS: 1444-1450, 1465

Condition of remains. *In situ*, these remains represented a predominately intact skeleton in which the torso and limbs were disarranged while in articulation (Figure 5.146). These remains were buried in a wooden crate. The elbows were acutely folded such that the hand elements were recovered from the thoracic area. Half of the rib cage was adjacent to the pelvic area. The right femur was migrated between the tibiae, which were still in anatomical position with the fibulae and feet. The arrangement suggested that several elements shifted to one end during decomposition, possibly due to water movement in the crate but other causes cannot be excluded. The remains were fragile and presented in large fragment sizes, and the long bones were exfoliating. The facial skeleton had detached from the vault. A bullet was observed in the pelvic area (Figure 5.147). A yellow-metal ring was observed on a proximal phalanx of the left hand (see Figure 5.146).

Number of individuals. One (1) individual was represented by these remains (Figure 5.148). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

skull (cranium and mandible)	right and left os coxae
teeth #1-32	cervical vertebrae
right and left ribs	thoracic vertebrae
sternum manubrium and gladiolus	lumbar vertebrae
right and left scapulae	sacrum
right and left clavicles	right and left femora
right and left humeri	right and left tibiae
right and left ulnae	right and left fibulae
right and left radii	tarsals, metatarsals, pedal phalange
carpals, metacarpals, manual phalange	

Sex. This individual was a biological male. The morphology of the right pubic symphysis demonstrated a vertical ventral profile, linear subpubic contour, and broad ischiopubic ramus, features consistent with male sex (Phenice 1969).

[SENSITIVE CONTENT]

Figure 5.146. *In situ overview of the Burial 194 remains. The arrow indicates a yellow-metal ring on the left hand.*

[SENSITIVE CONTENT]

Figure 5.147. *Close view of the bullet discovered in situ in the Burial 194 pelvic area. This image lacks both scale and identifier.*

[SENSITIVE CONTENT]

Figure 5.148. *Post-cleaning overview of the Burial 194 remains. The vials on the right side contain artifacts recovered with the remains.*

Ancestry. This individual was of African descent. Morphological features of the cranium included a smooth margin to the inferior nasal aperture, presence of a nasal gutter, and a probable (predicted based on retained fragments) wide nasal aperture, features which were consistent with African ancestry. Discriminant function analysis of eight cranial measurements, using the Fordisc version 3.1.322 forensic database indicated that this individual is closest to the Black Male sample, with a posterior probability of 0.563 and typicalities that supported accepting the hypothesis of membership in this group. Race is likely to be “Colored” or “Black” as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was middle-aged, in his thirties to forties. Assessment of the pubic symphyses (Figure 5.149) according to the Suchey-Brooks method (Brooks and Suchey 1990) categorized them as phase IV, which has a mean age of 35.2 years and a 95% confidence interval range of 23 to 57 years.

Stature. Stature for this individual was approximately 66.1 ±2.4 inches, based on the combined lengths of the calcaneus, femur, and tibia and the Bass 19th century Black Male sample in Fordisc version 3.1.322 (Jantz and Ousley 2005). The regression formula used was 0.04854 * CALCXL+FEMXLN+TIBXLN (921 mm) + 21.41 inches.

Individualizing traits or anomalies. A yellow-metal ring was recovered on a proximal phalanx of the left hand (Figure 5.150). The sternebra segment inferior to the manubrium was independent of the remaining gladiolus (Figure 5.151).

Antemortem or pathological conditions. Dental health was good, although there were cavities present on teeth #14 and 18, and some calculus was present (Figures 5.152 and 5.153). Fragments of the right clavicle, ribs, and fibula were reported with an abnormal volume of trabeculae which was probably systemic (Figures 5.154 and 5.155). The etiology or significance of this anomaly was unknown.

[SENSITIVE CONTENT]

Figure 5.149. *Medial view of the Burial 194 pubic symphyses.*

Figure 5.150. *Superior oblique view of the yellow-metal ring recovered with the left hand of Burial 194.*

[SENSITIVE CONTENT]

Figure 5.151. *Anterior view of the Burial 194 sternum, showing the second segment from the left was unfused to the other segments.*

[SENSITIVE CONTENT]

Figure 5.152. *Occlusal view of the Burial 194 maxillary dentition.*

[SENSITIVE CONTENT]

Figure 5.153. *Occlusal view of the Burial 194 mandibular dentition.*

[SENSITIVE CONTENT]

Figure 5.154. View of dense trabeculae in a rib from Burial 194.

[SENSITIVE CONTENT]

Figure 5.155. View of dense trabecula in the right fibula of Burial 194.

Perimortem trauma. During excavation, a green-colored bullet was recovered from the soil in the pelvic area (see Figure 5.147, Figures 5.156, 5.157, and 5.158). No skeletal damage was associated with this bullet, but as it was recovered from the pelvic area, it likely derived from an abdominal wound that affected soft tissue. A small lead core, was observed on radiograph of the thoracic area, and recovered from behind the thoracic vertebrae (Figures 5.159, 5.160, 5.161, 5.162, and 5.163). The vertebrae were fragmentary when exhumed and an association of the bullet with bone fractures was not made. No evidence of healing amongst the vertebral fragments was observed.

Figure 5.156. *Lateral view of the in situ bullet recovered near the Burial 194 pelvis.*

Figure 5.157. *Additional lateral view of the in situ bullet recovered near the Burial 194 pelvis.*

Figure 5.158. *View of the base of the in situ bullet recovered near the Burial 194 pelvis.*

[SENSITIVE CONTENT]

Figure 5.159. *Radiograph of the Burial 194 thorax showing a bullet core adjacent to thoracic vertebrae.*

Figure 5.160. *Lateral of the bullet core recovered from the Burial 194 thorax.*

Figure 5.161. *Additional lateral view of the bullet core recovered from the Burial 194 thorax.*

Figure 5.162. *View of the tip of the view of the bullet core recovered from the Burial 194 thorax.*

Figure 5.163. *View of the base of the bullet core recovered from the Burial 194 thorax.*

<u>Postmortem damage.</u> Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport.

<u>DNA sampling.</u> The right and left petrous temporals, teeth #1, 2, 3, 4, 5, 6, 7, 10, 11, 12, 13, 15, 16, 17, 18, 19, 20, 21, 22, 27, 28, 29, 30, 31, and 32, and the right and left patellae, were submitted for DNA analysis (Figure 5.164). Following DNA sampling, the remains were bundled for reburial (Figure 5.165). The ballistic evidence was retained for examination by appropriate experts (Figure 5.166).

Figure 5.164. *The petrous temporals, twenty-five teeth, and both patellae sealed for transport for DNA analysis.*

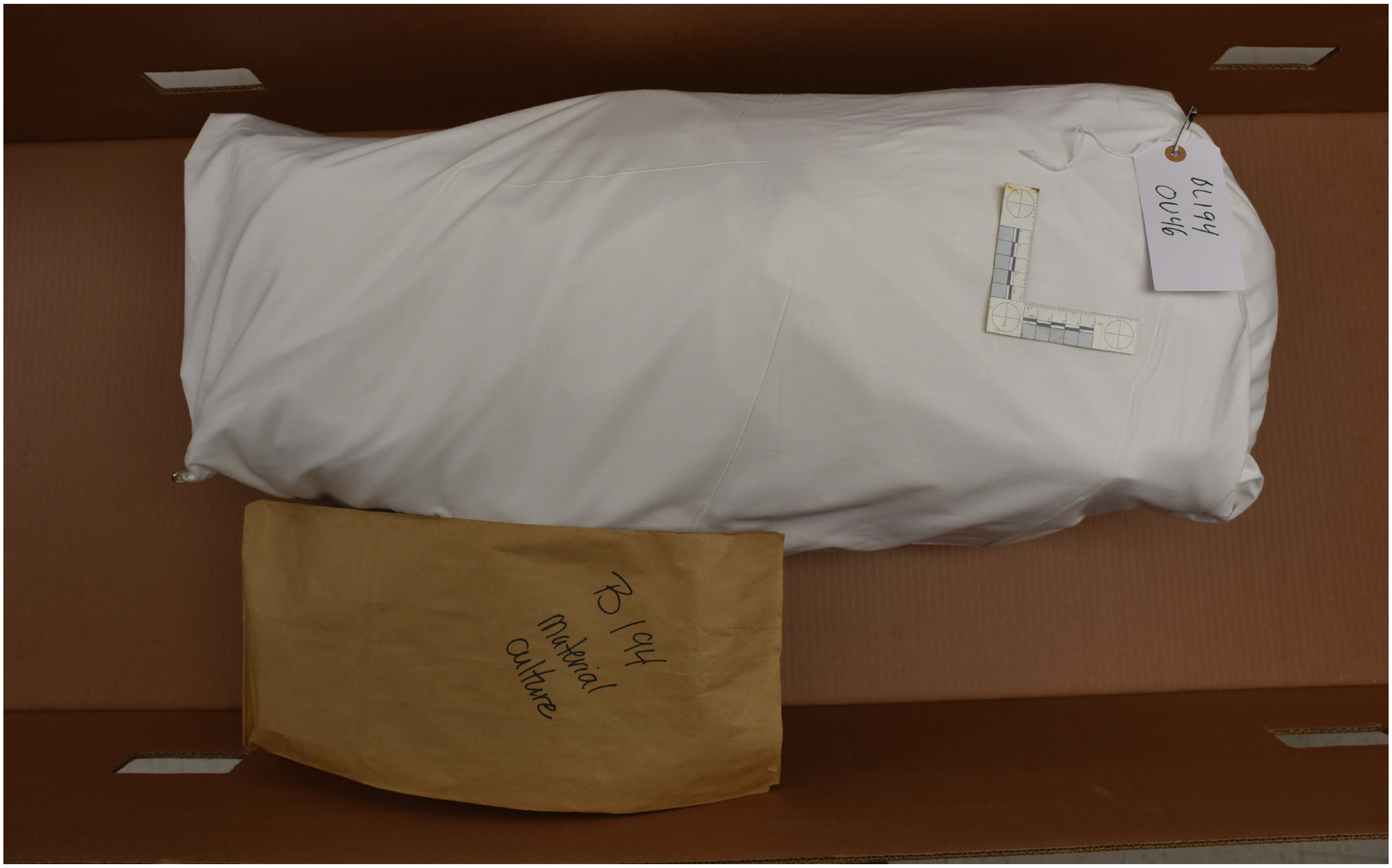

Figure 5.165. *The Burial 194 remains bundled for reburial.*

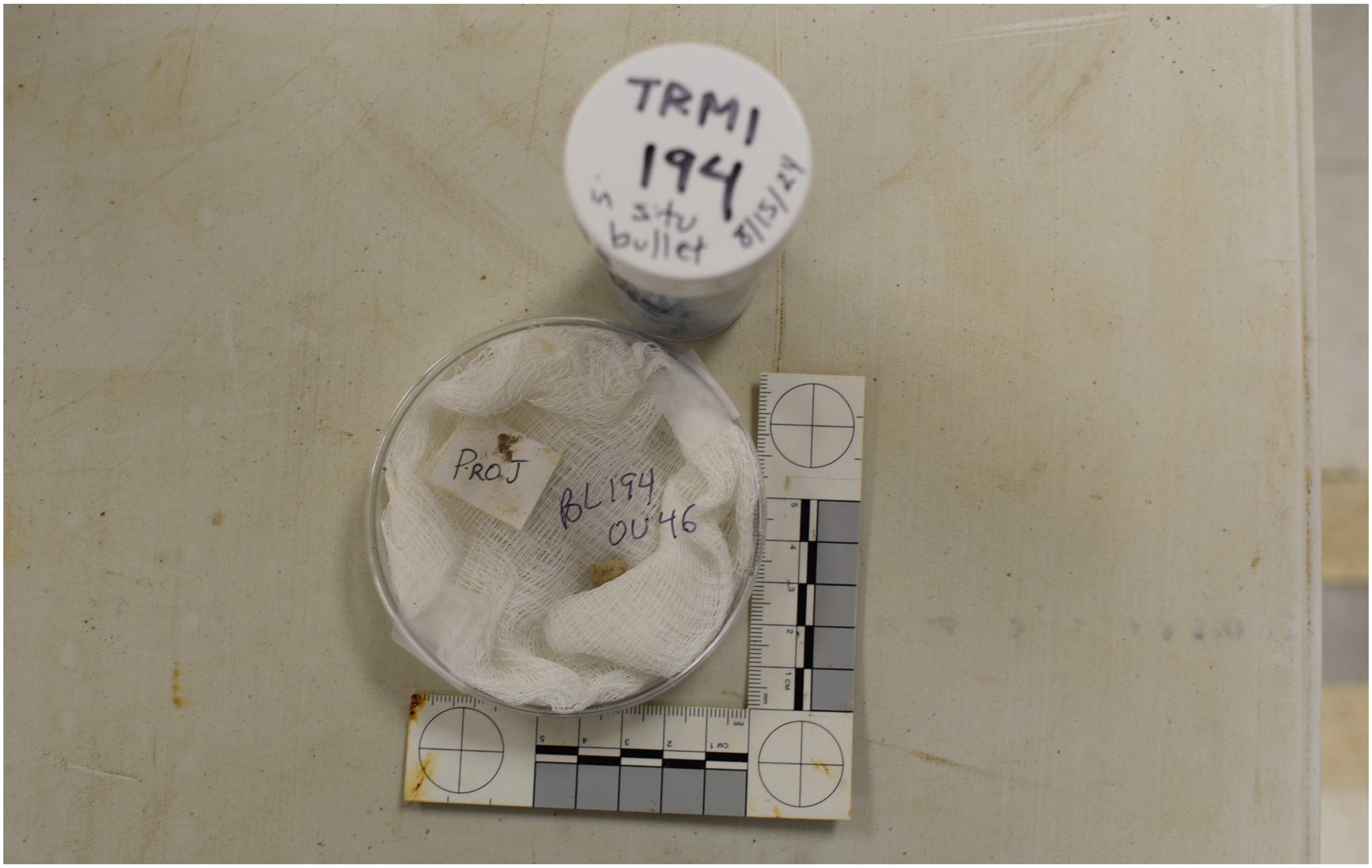

Figure 5.166. *The Burial 194 ballistic evidence retained for further analysis.*

Summary of conclusions and opinions. The individual in burial 194 was a male of African descent who was in his thirties or forties. His stature was approximately 66.1 inches. He was recovered with a yellow-metal ring on his left hand. His dental health was good, as he retained all of his teeth, had two cavities, and minimal plaque coating the teeth. He displayed an anomalous condition of dense volume of trabeculae observed in several bones, although the cause or significance of this probable systemic feature was unknown. Evidence of two (2) gunshot wounds was indicated by the bullet recovered from the upper chest and the bullet of recovered from the pelvis. Postmortem damage was consistent with fragmentation due to the extended burial period, exhumation processes, and transport. Both petrous temporals, twenty-five (25) teeth, and both patellae were submitted for DNA analysis. As a male individual buried in this case in a plain wooden crate, showing evidence of gunshot wounds, this individual is a person of interest as a possible victim of the 1921 Tulsa Race Massacre.

TULSA RACE MASSACRE INVESTIGATION BURIAL NUMBER: 195
OAKLAWN UNKNOWN NUMBER: 47
UNIVERSITY OF OKLAHOMA ACCESSION NUMBER: 1451-1456, 1458-1462, 1471-1478

Condition of remains. *In situ*, these remains represented an incomplete skeleton with evidence of burning (Figure 5.167). Charred bone was observed. Fabric was recovered from the leg area (Figure 5.168) and a bullet was recovered in the soil near the pelvis (Figure 5.169). Cranial elements were not immediately observable.

Number of individuals. One (1) individual was represented by these incomplete remains (Figure 5.170). No duplicate skeletal elements were observed, and no elements of anomalous size or developmental stage were recovered.

Visual inspection and radiography indicated fragments from the following classes of skeletal elements were observed:

cranium (left and right parietals, occipital)	thoracic vertebrae
right and left ribs	lumbar vertebrae
right and left scapulae	right and left os coxae
right clavicle	sacrum
right and left humeri	right and left femora
right and left ulnae	right and left tibiae
cervical vertebrae	right and left fibulae

[SENSITIVE CONTENT]

Figure 5.167. *In situ overview of the Burial 195 remains. The head is to the right.*

[SENSITIVE CONTENT]

Figure 5.168. *View of brown fabric (arrows) preserved with the Burial 195 remains.*

[SENSITIVE CONTENT]

Figure 5.169. *In situ view of the lead core recovered from the soil near the Burial 195 pelvis, which is the curved bone directly below the bullet in this view.*

[SENSITIVE CONTENT]

Figure 5.170. *Overview of the cleaned Burial 195 remains.*

Sex. This individual was male. Dimensions of the femoral heads were consistent with male biological sex (Spradley and Jantz 2011). The preserved occipital displayed a well-developed inion and postcranial elements were robust, consistent with male biological sex (Figures 5.171 and 5.172).

Ancestry. Due to the lack of cranial elements, ancestry was not estimated for these remains. Race was likely to be "Colored" or "Black", as this individual was recovered from the Colored Potters Field of Oaklawn Cemetery.

Age. This individual was an adult, possibly middle-aged in his thirties or forties. No open epiphyses were observed, but damage to these remains limited the available data for interpretation. Only half of each pubic symphysis was available (Figure 5.173) and those fragments were similar to Phases IV and V (Brooks and Suchey 1990), which have a mean age of 35.2 years and a 95% confidence interval of 23-57, and 45.6 years with a 95% confidence interval of 27-66 years, respectively.

[SENSITIVE CONTENT]

Figure 5.170. *Posterior view of the Burial 195 occipital bone with a masculine inion hook (arrow).*

[SENSITIVE CONTENT]

Figure 5.172. *View of the Burial 195 femora, displaying large femoral heads.*

[SENSITIVE CONTENT]

Figure 5.173. *Medial view of the Burial 195 pubic symphyses.*

Stature. Stature was estimated using the photogrammetrically measured length of the left femur from modeling taken prior to exhumation. Based on an estimated length of 470 mm and using the Bass 19th century Black Male sample in Fordisc version 3.1.322 (Jantz and Ousley 2005), stature was estimated at 67.6 ± 3.0 inches. The regression formula used was 0.09546 * FEMXLN (470 mm) + 22.76 inches.

Individualizing traits or anomalies. No skeletal anomalies or individualizing features were observed. Radiography of the cranial remnant and upper thorax revealed a yellow-metal fragment and a copper-green sphere in the occipital area (Figures 5.174, 5.175, and 5.176). Also revealed on radiograph of the thoracic area was a glass button with thread and seven (7) glass beads (Figures 5.177 and 5.178). This individual may have had jewelry, or a yellow-metal dental crown, that was damaged during the trauma and/or thermal damage described below. A small, copper-green ballistic cap was recovered from the soil between the ribs and left scapula (Figures 5.179 and 5.180), which according to ballistic expert Douglas Scott, was unfired (2024, this volume).

Antemortem or pathological conditions. This individual may have had hyperdensity of the trabeculae, based on rib fragments (Figure 5.181). The etiology or significance of this condition was not known.

Perimortem trauma. This individual had multiple gunshot wounds, at least three, but possibly as many as five separate projectile events.

[SENSITIVE CONTENT]

Figure 5.174. *Radiograph of the head and right thorax area of Burial 195, showing radiopaque objects at the head area and mid thorax (arrows).*

[SENSITIVE CONTENT]

Figure 5.175. *Close up of cranial artifacts on Burial 195 head and thorax radiograph, showing yellow-metal fragment (1), green sphere (2), and a glass bead (3).*

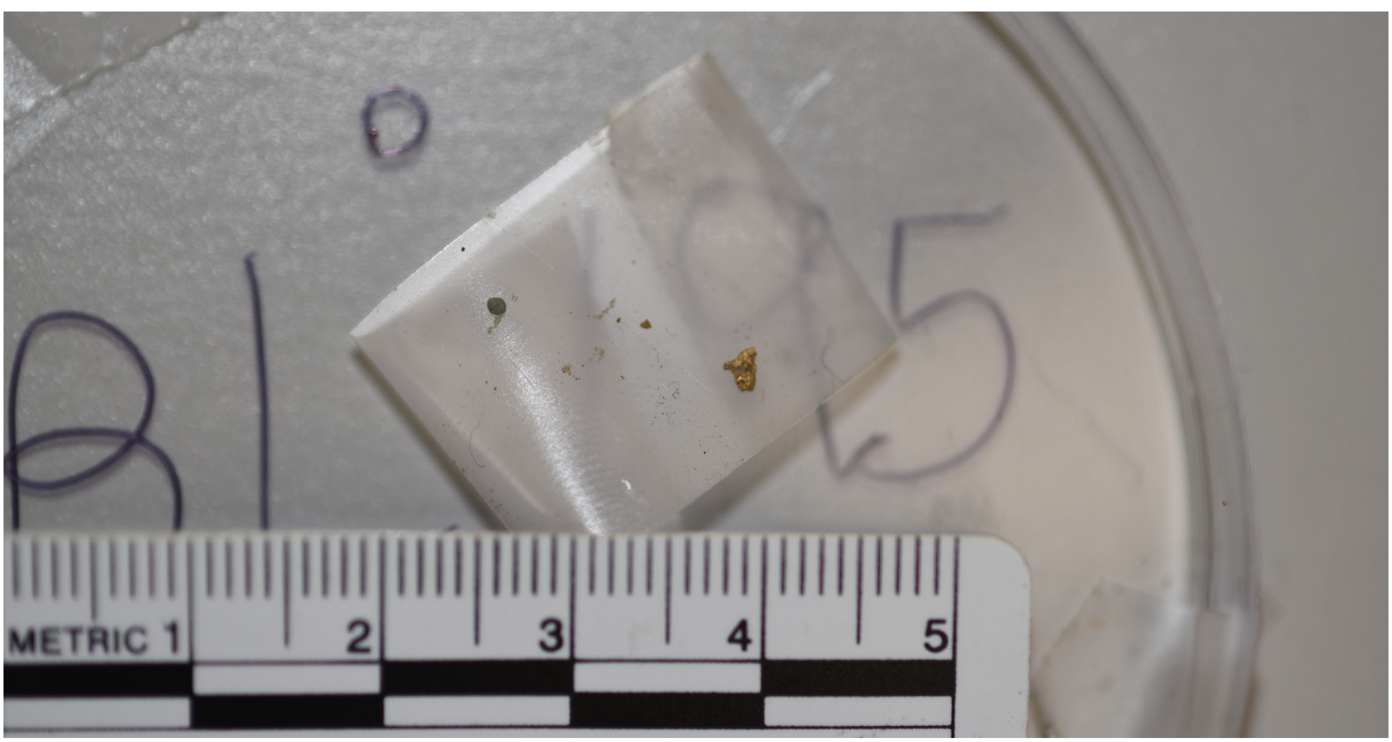

Figure 5.176. *View of the Burial 195 yellow-metal fragment and green sphere, in petri dish.*

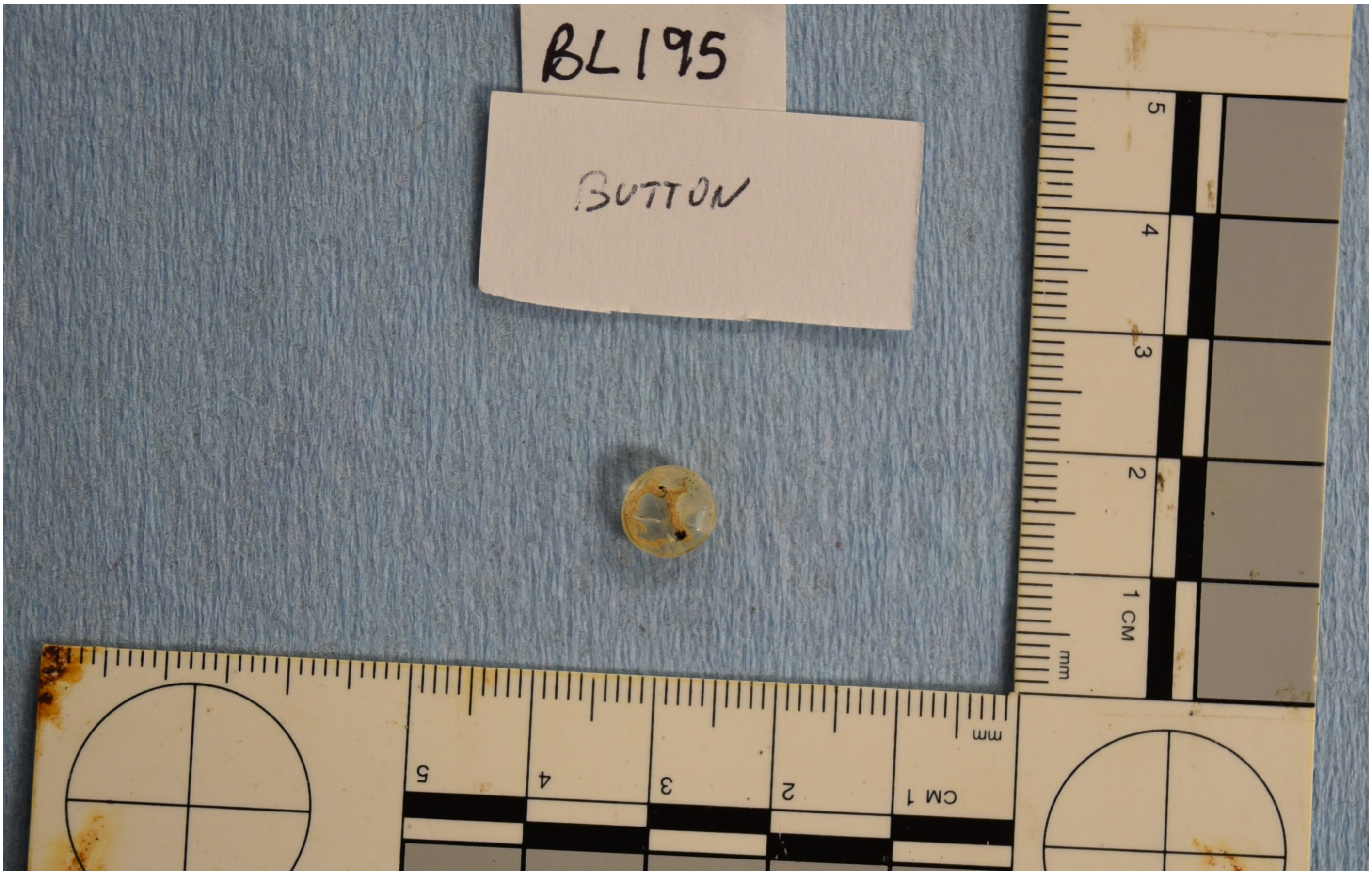

Figure 5.177. *The glass button recovered from the thoracic area of the Burial 195 remains.*

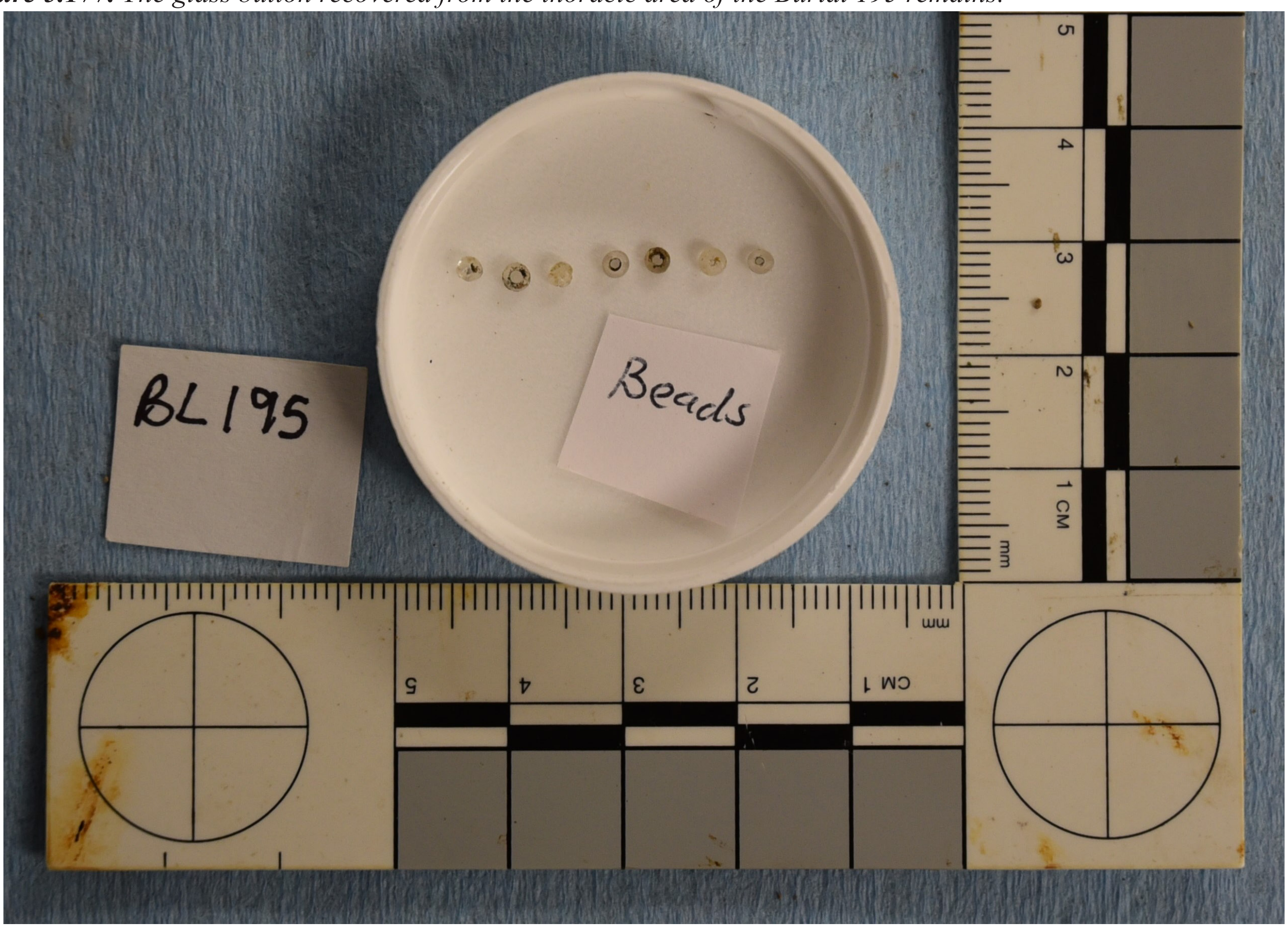

Figure 5.178. *Seven (7) glass beads recovered from the Burial 195 cranial and thoracic areas.*

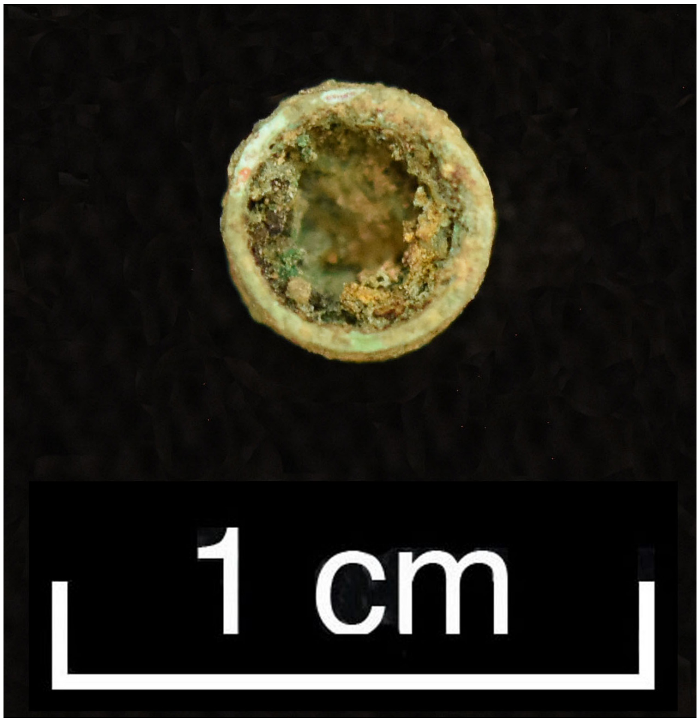

Figure 5.179. *Internal view of the ballistic cap recovered from the Burial 195 left shoulder.*

Figure 5.180. *External view of the ballistic cap recovered from the Burial 195 left shoulder.*

[SENSITIVE CONTENT]

Figure 5.181. *View of dense trabeculae in a rib from Burial 195.*

- The yellow-metal fragment suggested breakage of a gold crown or breakage of jewelry if associated with the beads, which was damage that was more likely to have been caused by ballistic impact than by burning.

- An unjacketed lead core and adjacent fragments were recovered from amongst vertebral fragments in the upper thorax (Figures 5.182 and 5.183). The bullet was recovered from a gap that should have been occupied by a thoracic vertebra rather than the soil encasing the bullet. No evidence of healing was observed in the associated vertebral fragments.

- Additional white metal fragments were present in the thorax, more than attributable to the above-mentioned single lead core (Figure 5.184). These fragments did not have consistent shape and may be attributable to shotgun pellets altered by thermal damage and oxidation during burial. One of the irregular fragments was embedded in bone (Figure 5.185) and the bone fragment appeared to be thin cortical bone, which was consistent with rib morphology. No evidence of healing was observed on this bone fragment.

- A bullet was recovered *in situ* from the soil near the pelvis (see Figure 5.168 and Figure 5.186). This bullet was slightly deformed at the base, so it may be the source of the white metal fragments recovered from the soil in the pelvic area and embedded in the sacrum (Figures 5.187, 5.188, and 5.189). No evidence of healing was observed at the sacral injury.

- Three (3) flattened pellets were observed embedded onto the left fibula (Figures 5.190, 5.191, and 5.192). No evidence of healing was associated with these pellet injuries.

[SENSITIVE CONTENT]

Figure 5.182. *Radiograph of the Burial 195 lower thorax, showing a lead core and adjacent fragments. The "T" pins are markers indicating the location of objects of interest under the soil. The lower left T was for the bead above it.*

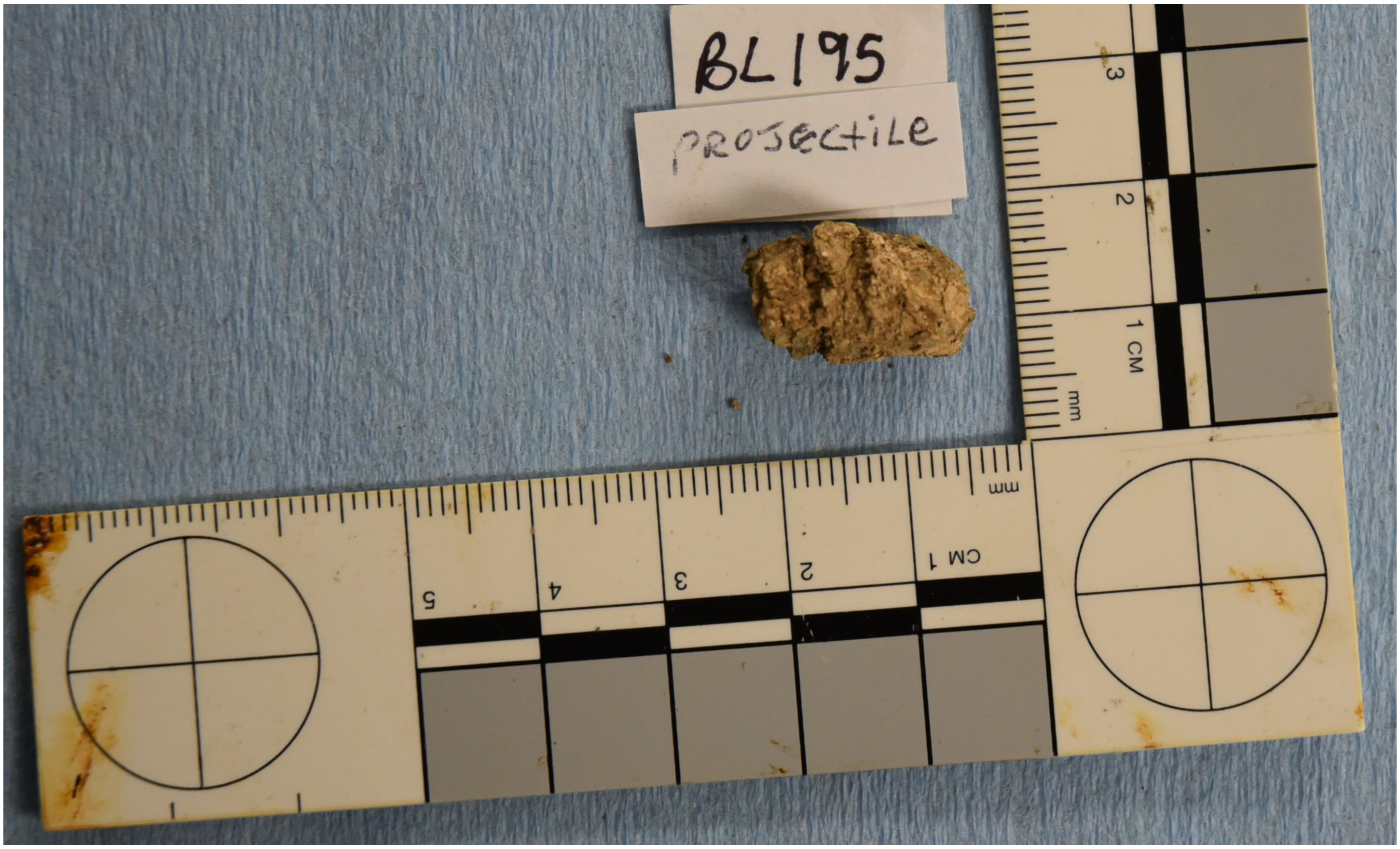

Figure 5.183. *View of the lead core recovered from the Burial 195 lower thorax.*

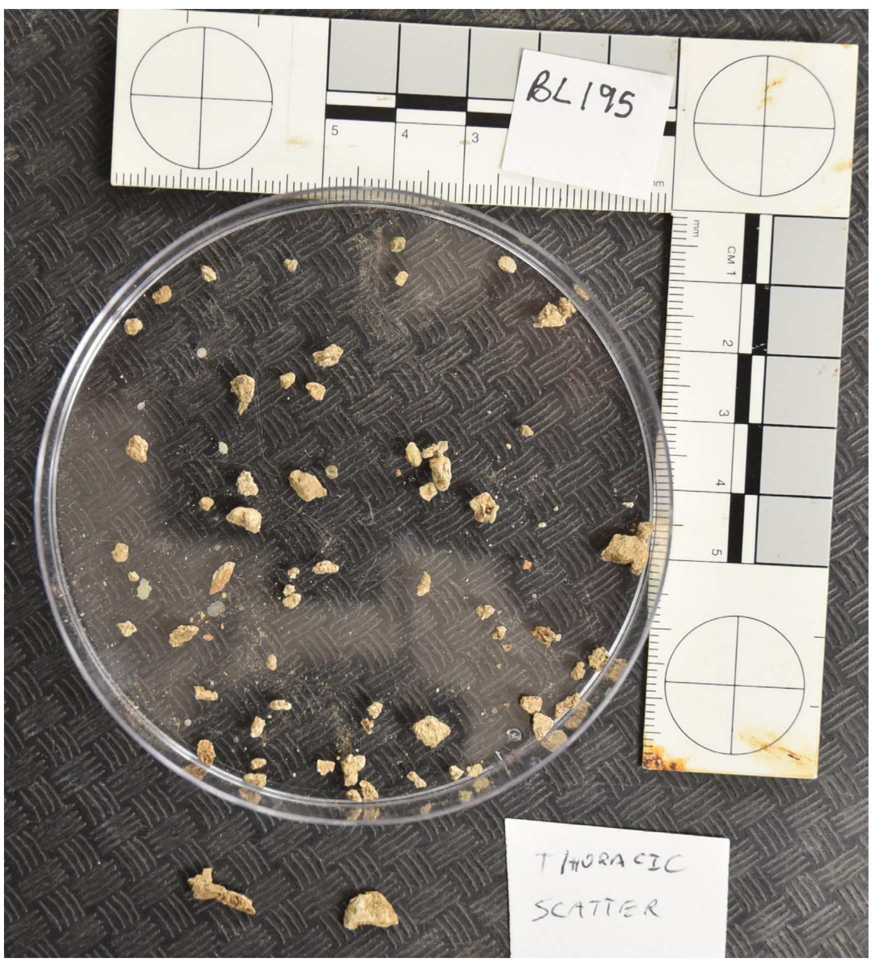

Figure 5.184. *The collected lead scatter from the Burial 195 thorax.*

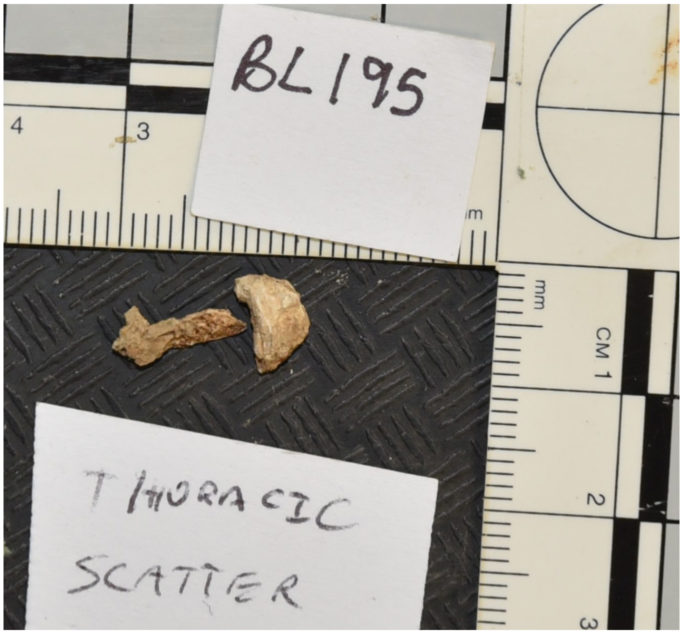

Figure 5.185. *Closer view of two larger lead fragments from the Burial 195 thorax, showing bone attached to the left fragment.*

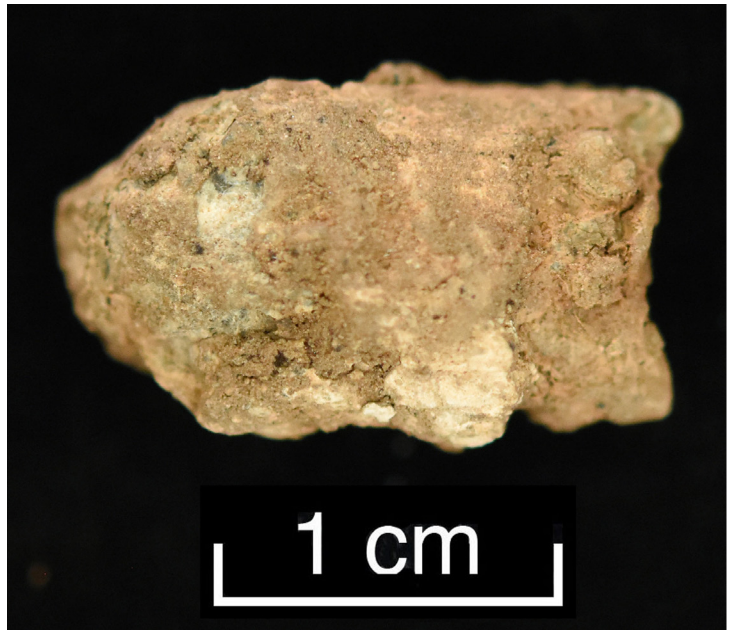

Figure 5.186. *View of the bullet recovered from the Burial 195 pelvic area.*

[SENSITIVE CONTENT]

Figure 5.187. *Radiograph of the Burial 195 pelvic area, showing a scatter of radiopaque particles (T marker).*

[SENSITIVE CONTENT]

Figure 5.188. *Post-cleaning radiograph of the Burial 195 sacrum, showing embedded lead scatter (arrow to sacrum). A nail is visible to the upper left.*

Figure 5.189. *A lead fragment recovered from the scatter in the Burial 195 pelvic area.*

[SENSITIVE CONTENT]

Figure 5.190. *Radiograph of the Burial 195 left tibia, fibula, and femur (left to right). Three radiopaque objects are visible on the fibula.*

[SENSITIVE CONTENT]

Figure 5.191. *Recovery of one of the shotgun pellets from the Burial 195 fibula (arrow).*

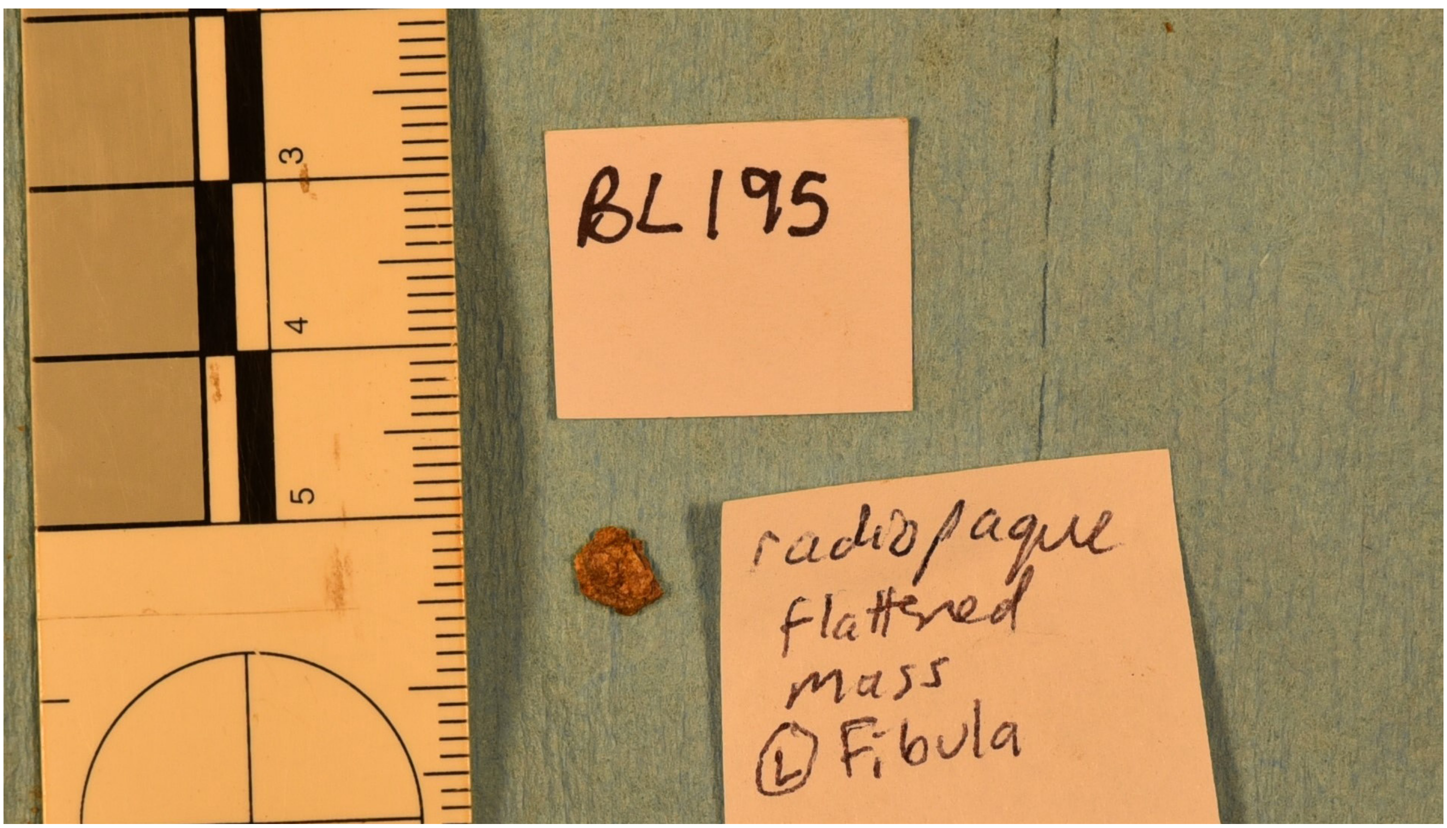

Figure 5.192. *Isolated pellet removed from the Burial 195 fibula.*

Postmortem damage. These remains demonstrated a combination of thermal modification and prolonged burial damage. The anterior skull including all teeth and the facial skeleton, the hands and nearly complete forearms, the feet, and half of the right femur were lost to thermal damage. In burn victims, the extremities are often charred black and made indistinguishable from debris for the untrained eye or burned to a calcined state and disintegrated during recovery (Di Maio and Di Maio 2001). The recovery of the BL 195 individual resembled victims retrieved by personnel who did not recognize burned bone, as most of the skull, the hands, and feet were not recovered. In a skilled recovery, the skull would be represented by fragments of at least the mandible. It is possible that the skull was damaged by gunshot prior to being burned, as implied by the presence of the yellow-metal shard in the occipital area; such damage would make retrieval of fragments by untrained personnel unlikely as they would not have recognizable anatomical associations after burning. However, loss from decomposition during burial in combination with thermal damage was not excluded as a source of loss of these elements.

The posterior surfaces of the head and back were spared and less damage occurred to the lower limb elements on the left side. The presence of burned wood amongst the ribcage suggests he was likely recovered from a structural fire. The preservation of the back of this individual indicated that the decedent was likely supine (on his back) with legs rotated to the left (right leg protected left leg) at the time of the fire. Retention of fabric on the lower limbs suggested that the fire contacted the remains at the upper body first, leading to the loss of the face, hands, and most of the forearms, before spreading to the lower legs.

DNA sampling. The occipital, right and left petrous temporals, and right and left femora were submitted for DNA analysis (Figure 5.193). Following DNA sampling, the remains were bundled for reburial (Figure 5.194). The ballistic and fabric artifacts were retained for examination by appropriate experts (Figure 5.195).

Figure 5.193. *Burial 195 petrous temporals, occipital, and femoral shafts sealed for transport for DNA analysis.*

Figure 5.194. *The Burial 195 remains bundled for reburial.*

Figure 5.195. *The Burial 195 artifacts retained for further analysis.*

<u>Summary of conclusions and opinions.</u> The individual in burial 195 was an adult male, possibly in middle age. His stature was estimated at approximately 67.6 inches. His remains exhibited extensive thermal damage, causing loss of most of the skull, the hands and forearms, and the feet. No health indicators were observed in this limited set of remains. Several artifacts were recovered, including a yellow-metal fragment, a copper-green sphere, a copper-green ballistic cap, a glass button with thread, seven glass beads, a bullet, a lead core, white metal fragments, three flattened pellets, and fabric in the pelvic and leg region. Three cranial bone fragments and both femoral shafts were submitted for DNA analysis.

The suite of trauma exhibited by this individual was consistent with the narrative of pursuit and homicide of African Americans as described by survivors of the 1921 Tulsa Race Massacre. This individual received a potentially disabling shotgun blast to a leg, and possibly received a blast to the torso as well, probably followed by the abdominal gunshot wound that would have caused a prolonged death. A cranial gunshot wound is also possible, based on the fragment of yellow-metal. This male buried in a plain wooden container is a person of interest as a victim of the 1921 Tulsa Race Massacre.

Summary of Findings and Recommendations

Eleven (11) individuals were exhumed and examined in the on-site forensic laboratory during the 2024 field season. Two (2) women and nine (9) men were recovered (Table 5.2). Four (4) of the men exhibited multiple gunshot wounds (GSW) and one was also burned. Two of the men (one also a gunshot wound victim) had possible facial blunt force trauma. This season produced five burials of interest as probable victims of the 1921 Tulsa Race Massacre. No evidence of trauma was observed in either of the female individuals exhumed and in consistence with the historical narrative, are excluded from consideration as victims (Table 5.3).

Tables 5.4 and 5.5 summarize the probable victim status for the male burials exhumed since 2021, with former status marked in parentheses when a change has occurred. The female burials are not listed because we have no documentation of female burials in Oaklawn Cemetery related to the race massacre. Although we have exhumed females buried in plain caskets, none of them exhibited trauma consistent with the narrative of gunshots and arson. Our investigation has generated one identified victim as Pvt. C.L. Daniel, five individuals with gunshot wounds, usually multiple, and two other individuals of interest because of anomalous metal particles.

Five of the six GSW victims had multiple gunshot wounds, Burial 27 from the 2021 season, and Burials 135, 157, 194, and 195 from the 2024 season. Burials 135 and 195 had shotgun pellets in the lower limbs, as well as bullet cores recovered from the abdominal and pelvic area. Burial 194 had a bullet core recovered from the abdominal area and a smaller caliber bullet recovered from his upper back. Shotgun blasts to the legs would have impeded fleeing and escape, which was a strategy consistent with the reported hunting of African Americans during the night of May 31st and day of June 1st 1921. The multiple calibers and types of weapons indicated that numerous individuals were participants in these homicides and was also consistent with mob violence.

From the historical record and known photographs, approximately thirty-nine (39) blocks of the Greenwood community were destroyed by fire. The recovery of Burial 195 demonstrated that in the subterranean conditions of that burial, indications of burning in the form of charred wood and fabric were preserved. The archaeological notes indicated calcined bone was preserved, but these features were not observed in laboratory. Temperatures sufficient for calcination are implied by the deformation of some of the glass beads recovered from the torso area. Although the Oaklawn burials do not demonstrate identical environmental conditions, such as seen in the very wet burials recovered in 2021, Burial 195 indicated that other burned victims might exhibit typical features of burned bodies despite over a century of burial. In addition to charring, Burial 195 exhibited characteristics of forensic recoveries in which untrained personnel performed the recovery of the remains--the torso and attached extremities are recovered, while omitting detached fragments beneath and beside the body, such as hands, feet, and portions of the skull.

Based on the burned features of Burial 195, the 2022 Burial 45 (Figure 5.196) was reassigned from "a person of interest" to the "not excluded as a possible victim" status. The damage to the metacarpals was more likely attributed to coffin rub instead of fire damage, as no charring was evident on any skeletal elements and the extremities were preserved, including the phalanges associated with the eroded metacarpals. Therefore, Burial 45 now is not a burial of interest, but cannot be excluded as a victim of the 1921 Tulsa Race Massacre as he was a young male in a plain casket.

This 2024 field season presented a sample of the type of violence consistent with the historical documentation. The identification of Pvt. Daniel demonstrates that not all victims will have evidence of trauma, which is to be expected since the preference for inflicting abdominal wounds has been demonstrated. Any bullets that passed through soft tissues after causing fatal damage would not be detectable.

Table 5.2. Biological Profile Data from the Oaklawn Unknown Individuals by Burial Number for each excavated burial.

Burial Number	OU Number	Sex	Age	Ancestry	Stature (inches)	Individualizing Traits or Personal Effects	Health Indicators	Trauma Associated w/ Cause of Death	Extraordinary Postmortem Damage
8	42	Female	late 20s	undetermined	64.3 ± 3.5	eight (8) clothing snaps	periodontal disease	none	none
133	37	Male	thirties to forties	African descent	66.9 ± 2.4	retained deciduous canine	cavities	none	none
134	38	Female	possible forties	African descent	63.6 ± 2.9	none	periodontal disease and maxillary tori; coxa vara	none	none
135	39	Male	thirties to forties	African descent	67.9 ± 2.8	safety pin	dental crown loss	facial blunt force trauma; multiple gunshot wounds	none
157	41	Male	early twenties	African descent	67.8 ± 2.3	sagittal synostosis and keel, femoral asymmetry	periodontal disease; abscess	multiple gunshot wounds	none
169	40	Male	middle-aged forties	African descent	69.5 ± 2.9	rotated lower canines; olecranon foramen	periodontal disease; abscess	none	none
176	43	Male	teenager 14-16 years	undetermined	69.29	peg-shaped upper incisor; probable clubfoot	periodontal disease; probable clubfoot	none	none
180	45	Male	late middle-aged	African descent	68.5 ± 2.4	yellow-metal crowns and bridge on upper teeth	periodontal disease; healed clavicle	none	none
182	44	Male	middle-aged	undetermined	65.4 ± 2.7	black and white layered material; three white buttons	periodontal disease; compressed lumbar vertebrae	facial blunt force trauma	none
194	46	Male	thirties to forties	African descent	66.1 ± 2.4	yellow-metal ring on left hand	dense trabeculae in ribs, clavicles, fibula	multiple gunshot wounds	none
195	47	Male	adult, possibly middle-aged	undetermined	67.6± 3.0	fabric; shard of yellow-metal; seven glass beads; ballistic cap	dense trabeculae in ribs	multiple gunshot wounds	burned emphasizing head and upper arms

Table 5.3. Oaklawn Unknown Individuals Assessed for Characteristics of the Original 18 Burials from 2024.

Burial Number	OU Number	Sex	Trauma or Features of Interest	Included as possible victim	Not excluded as a possible victim	Excluded as victim
8	42	Female	none			X
133	37	Male	none		X	
134	38	Female	none			X
135	39	Male	facial blunt force trauma; multiple gunshot wounds	X		
157	41	Male	multiple gunshot wounds	X		
169	40	Male	none		X	
176	43	Male	none		X	
180	45	Male	none		X	
182	44	Male	possible facial blunt force trauma	X		
194	46	Male	multiple gunshot wounds	X		
195	47	Male	multiple gunshot wounds and burned	X		

Table 5.4. Male Oaklawn Unknown Individuals Assessed for Characteristics of the Original 18 Burials from 2021-2022.

Burial Number	OU Number	Plain Container	Evidence of Projectile Trauma or Burning	Burial of Interest/Included as possible victim	Not excluded as possible victim	Excluded as victim	Identification	Confirmed Victim of Race Massacre
3	14	Yes	none observed		(X)		Pvt. C.L. Daniel	Yes
9	17	Yes	none observed		X			
15	3	Yes	none observed		X			
17	10	Yes	none observed		X			
19	4	Yes	none observed		X			
27	18	Yes	multiple GSWs	X				
29	16	No	none observed			X		
30	19	Yes	none observed		X*			
36	25	Yes	none observed		X			
39	22	Yes	none observed		X			
41	23	Yes	none observed		X			
42	21	Yes	GSW	X				
45	24	Yes	none observed		X			
67	26	Yes	none observed		X			

*very poor health indicators at time of death

Table 5.6. Male Oaklawn Unknown Individuals Assessed for Characteristics of the Original 18 Burials from 2023-2024.

Burial Number	OU Number	Plain Container	Evidence of GSW, Trauma, or Burning	Burial of Interest/Included as possible victim	Not excluded as possible victim	Excluded as victim	Identification	Confirmed Victim of Race Massacre
79	28	Yes	none observed		X			
84	29	Yes	none observed		X			
95	30	Yes	none observed		X			
101	31	Yes	none observed	X				
118	32	Yes	none observed		X			
124A	34	Yes	none observed		X			
133	37	Yes	none observed		X			
135	39	Yes	Blunt force trauma, multiple GSWs	X				
157	41	Yes	multiple GSWs	X				
169	40	Yes	none observed		X			
176	43	Yes	none observed		X			
180	45	Yes	none observed		X			
182	44	Yes	Blunt force trauma	X				
194	46	Yes	multiple GSWs	X				
195	47	Yes	multiple GSWs & burned	X				

[SENSITIVE CONTENT]

Figure 5.196. *In situ overview of Burial 45.*

Since 2021, our investigation of Section 20 has recovered males, females, and juveniles (Table 5.6), with decreasing numbers of the females and juveniles as the reliability of historical records became apparent, and as we reconstructed how Section 20 was used. As more identifications are made, additional males recovered in our investigation may be identified as victims. Not all of the males recovered so far will be victims, but we hope to identify them all in order to honor their posthumous contribution to the investigation, and to reconstruct the Section 20 cemetery record.

Table 5.6. Sex of all excavated Oaklawn Unknown individuals from 2021-2024.

Year	Female	Male	Juvenile (Unsexed)	Totals
2021	6	8	5	19*
2022	2	6	0	8
2023	2	6	1	9
2024	2	9	0	11

*fetal remains recovered with Burial 4 were not separately enumerated

Although this progress has taken years, our investigatory team of anthropologists, archaeologists, and genealogists have produced updates to the identification of the known decedents of the Tulsa Race Massacre. The summary death certificate data in Table 5.7 reflects in bold the updates from the historical record, showing the recertification of John White's death in 1925, and the newest update, the first genealogically identified victim, Pvt. C.L. Daniel. We also include the only identified female victim, Ella Morrison, who died from her riot related injuries, according to Red Cross Director Maurice Willows (Hower 1998).

There are definitely three race massacre victims not yet recovered; all burn victims according to the

Table 5.7. Race Massacre Death Certificate List Adjusted After Identifications of Previously Unknown Individuals

Name	Age	Cause of Death	Place of Burial	Death Certificate Number
Lewis, ?		GSW	Tulsa (Oaklawn)	443
Howard, Ed		GSW	Tulsa (Oaklawn)	444
Miller, Joe	35	GSW	Tulsa (Oaklawn)	449
Adams, Ed	32	GSW	Tulsa (Oaklawn)	450
Walker, Henry	40	GSW	Tulsa (Oaklawn)	451
Walker, Curley	30	GSW	Tulsa (Oaklawn)	452
Unidentified		Burns	Tulsa (Oaklawn)	453
Unidentified		Burns	Tulsa (Oaklawn)	454
Alexander, Greg	35	GSW	Tulsa (Oaklawn)	455
Unidentified		Burns	Tulsa (Oaklawn)	456
Ree, Sam	30	GSW	Tulsa (Oaklawn)	457
John White*		GSW	Tulsa (Oaklawn)	458
Unidentified	28	GSW	Tulsa (Oaklawn)	459
Unidentified		Burns	Tulsa (Oaklawn)	463
Jeffrey, George	36	GSW	Tulsa (Oaklawn)	468
Unidentified		GSW	Tulsa (Oaklawn)	470
C.L. Daniel		Unknown	Tulsa (Oaklawn)	471
Turner, William		GSW	Tulsa (Oaklawn)	477
Morrison, Ella	37	miscarriage with septicemia	Muskogee County	1862

original 1921 death certificate data, summarized in Table 5.8. Four (4) individuals were buried as unidentified burn victims and we have only recovered one. Continued search for the three remaining burn victims is strongly recommended, a search that may yield additional gunshot wound victims as well. However, as illustrated by the recovery of Pvt. C.L. Daniel, individuals without evidence of projectile trauma may be eventually identified as victims.

Table 5.8. List of Black Race Massacre Victims Buried in Oaklawn Cemetery Based on the Original Death Certificate Data

Name	Age	Cause of Death	Place of Burial	Death Certificate Number
Lewis, ?		GSW	Tulsa (Oaklawn)	443
Howard, Ed		GSW	Tulsa (Oaklawn)	444
Miller, Joe	35	GSW	Tulsa (Oaklawn)	449
Adams, Ed	32	GSW	Tulsa (Oaklawn)	450
Walker, Henry	40	GSW	Tulsa (Oaklawn)	451
Walker, Curley	30	GSW	Tulsa (Oaklawn)	452
Unidentified		Burns	Tulsa (Oaklawn)	453
Unidentified		Burns	Tulsa (Oaklawn)	454
Alexander, Greg	35	GSW	Tulsa (Oaklawn)	455
Unidentified		Burns	Tulsa (Oaklawn)	456
Ree, Sam	30	GSW	Tulsa (Oaklawn)	457
Unidentified		GSW	Tulsa (Oaklawn)	458
Unidentified	28	GSW	Tulsa (Oaklawn)	459
Unidentified		Burns	Tulsa (Oaklawn)	463
Jeffrey, George	36	GSW	Tulsa (Oaklawn)	468
Unidentified		GSW	Tulsa (Oaklawn)	470
Unidentified		Unknown	Tulsa (Oaklawn)	471
Turner, William		GSW	Tulsa (Oaklawn)	477

CHAPTER 6

FINDINGS AND RECOMMENDATIONS FROM THE 2024 FIELD SEASON

by Kary L. Stackelbeck and Phoebe R. Stubblefield

The previous chapters of this report and the appendices present detailed descriptions of the methods employed to expand the search for victims of the 1921 Tulsa Race Massacre in Oaklawn Cemetery during the 2024 field season, as well as the various analyses and results. Expanded excavations in the Original 18 Area were conducted to increase the likelihood of encountering additional individuals who fit our target profile—adult male trauma victims buried in simple wooden caskets. This target profile does not preclude consideration of other individuals as potential victims, but it provides our team with a historical framework to differentiate those burials that are most likely to be potential Massacre victims and warrant exhumation and forensic analyses.

Excavation Blocks F-J were completed between July 22-August 16, 2024 (see Figure 2.11). Portions of Block F and H overlapped with areas that had been partially explored during previous phases of fieldwork in Blocks A, B, C, and D (see Figure 2.11). Seventy-two new graves were recorded in these new excavation blocks, most of which were unmarked. Eleven individuals were exhumed as follows: 1) six individuals from Block F; 2) three from Block H; and 3) two from Block I (see Figure 2.11).

This closing chapter presents a cumulative assessment of the burials of interest documented since 2021 for this investigation, summary details of burials of particular interest from the 2024 fieldwork, and our team's recommendations for next steps.

Summary Observations Among the 28 Burials of Interest

To-date, excavations in Blocks A-J have resulted in the documentation of at least 193 graves in Section 20 of Oaklawn Cemetery (Figure 6.1). Twenty-eight individuals in the burial population are of interest because they fit at least two of the characteristics from our target profile (Figure 6.2).

Several traits are observed among these 28 burials of interest:

- One confirmed Massacre victim—Pvt. C. L. Daniel—has been identified (Burial 3, exhumed in 2021).
- Five individuals were victims of multiple gunshot wounds: Burials 27, 135, 157, 194, and 195 (further details below).
- One individual, Burial 42, was the victim of one gunshot wound.
- One individual—Burial 101—displays evidence of a possible gunshot wound.
- All 28 individuals of interest are males.
- All are buried in plain wooden containers, including 24 unadorned rectangular caskets, one six-sided coffin (Burial 176), and three crates (likely repurposed shipping containers).
    - Observations of the construction style and variability in dimensions of the simple caskets suggest non-commercial, local production. Many of these appear to have been built to suit the size of the decedent.

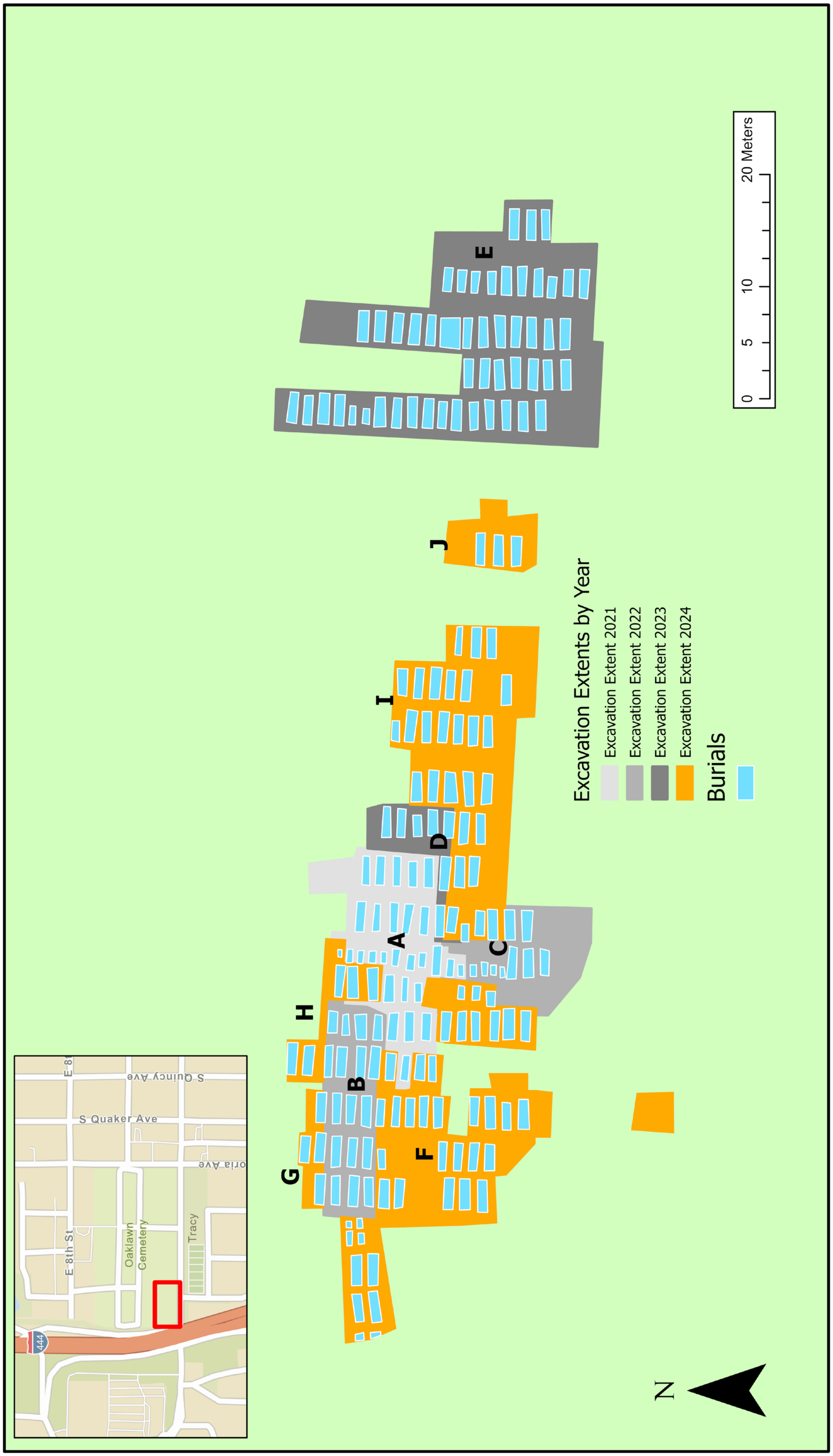

Figure 6.1. *Distribution of all burials documented by the 2020-2024 phases of the investigation.*

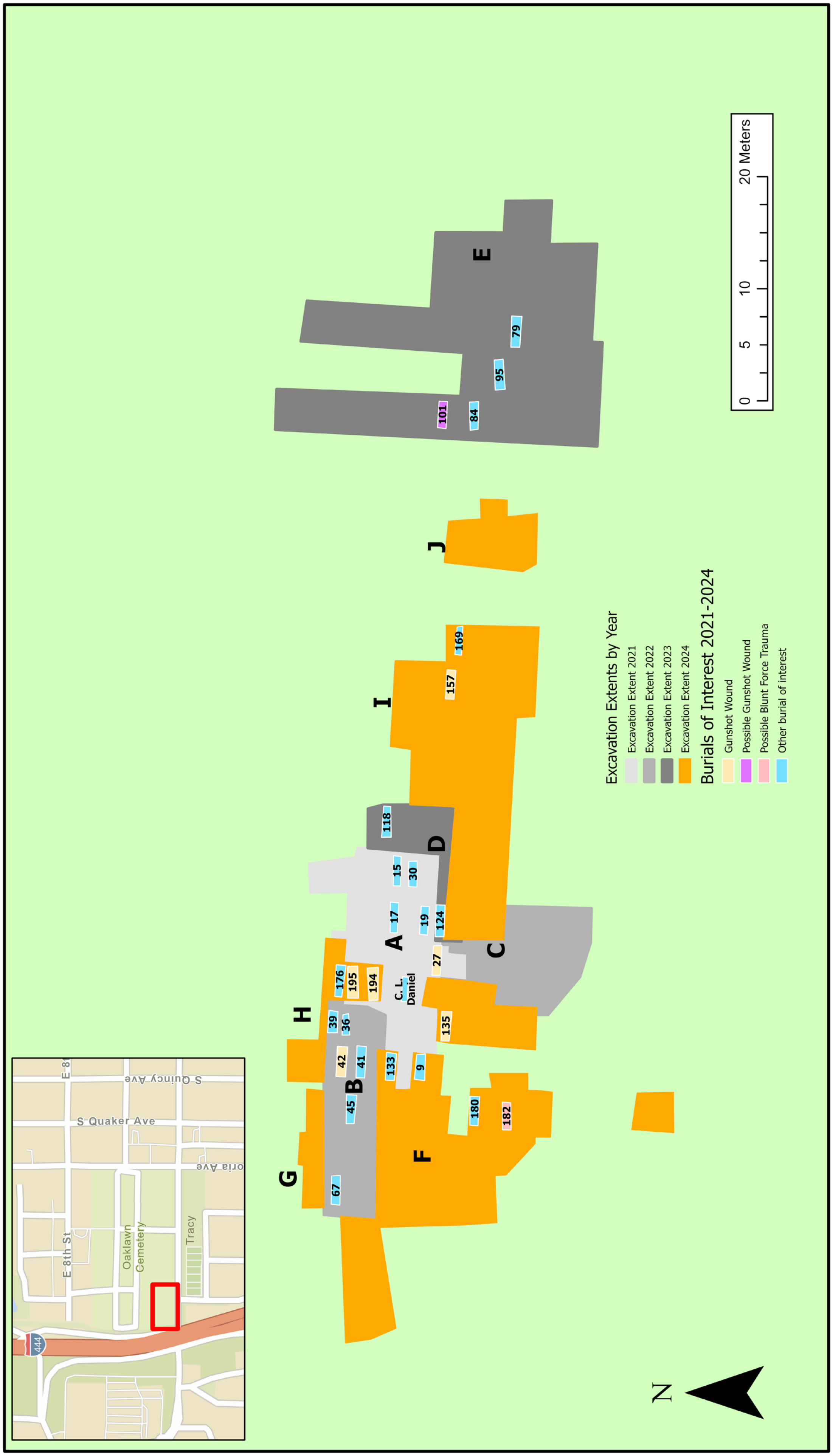

Figure 6.2. *Distribution of burials of interest (N = 28), including gunshot victims, possible gunshot victims, victims of blunt force trauma, and other burials of interest documented in 2020-2024.*

- o Seven caskets appear to have been too small for the decedents they contained—or nearly so—including Burials 3, 17, 19, 45, 95, 157, and 182 (and perhaps Burials 84, 124, and 180).
- o Two other containers—those of Burials 135 and 194—display the opposite phenomenon; they were too large for their respective individuals.
- o The casket for Burial 169 was manufactured from multiple types of wood—which suggests local production and apparent lack of access to sufficient raw materials to use a single source of wood (Appendix C, this volume).
- o Burials 42, 194, and 195 were each interred in a crate—likely repurposed shipping containers. Each of these individuals was a trauma victim whose remains may not have been easily accommodated in a standard casket.
- o Four additional examples of expediency are demonstrated by the containers for Burials 65, 95, 157, and 180. These caskets were manufactured from uncured "green" pine wood that had not properly dried, suggesting hasty, local construction with substandard materials. These burials are among those who have not yet been ruled out as Massacre victims except Burial 65. Burial 65 is that of an adult female who suffered blunt force trauma (Stubblefield 2024). She is not currently among the 28 individuals of forensic interest, but she is of archaeological interest and she is included among the individuals undergoing DNA and genetic genealogical research.

- Beyond C. L. Daniel, ten others of these individuals have genetic genealogical profiles for which potential surnames and areas of interest have been previously announced by the Intermountain Forensics (IMF) team, including Burials 15, 17, 41, 45, 84, 135, 169, 180, 182, and 194. DNA analysis is on-going for the remaining individuals and additional profiles are expected (https://www.cityoftulsa.org/mayor/1921graves-investigation/genealogy-process/).

- At least 11 of the burials (Burials 17, 19, 27, 41, 42, 67, 79, 84, 135, 169, and 194) display evidence of probable postdepositional dislocation of remains at a stage of decomposition when soft tissue was likely still present.

- Among the burials of interest, all but Burial 15 is buried with his head to the west. Burial 15 is oriented with his head to the east.

- All 28 individuals of interest were interred in the relict stream channel that runs along the southern boundary of the cemetery in the New Potter's Field portion of Section 20, which was established sometime prior to 1917 (see Figure 2.12).

Burials of Particular Interest from 2024 Season

The following descriptions of individual burials of particular interest from the 2024 season draws from the archaeological data, osteological evaluations, and specialized analyses on the recovered bullets and wood samples as presented elsewhere in this volume (Chapters 2, 4, and 5 and Appendices A-D).

Burial 135

The individual in Burial 135 was a middle-aged adult male in his 30s to 40s. He was buried in a simple wooden casket that was significantly larger than necessary for the size of the individual. The recovery of a copper rivet and textile fragments around his abdomen and pelvis suggest he was clothed at the time of interment. He was the victim of multiple gunshot wounds to his lower body, including pellets from a shotgun and a .32-caliber lead bullet that was fired from a Colt, Smith & Wesson, or Winchester firearm (see Figure 4.2a and b; Appendix B: Figures 7 and 8). In addition to his gunshot wounds, he may have also suffered blunt force trauma to the face. As

Stubblefield (this volume) notes: "This individual received a potentially disabling shotgun blast to the legs and feet, probably followed by the abdominal gunshot wound that would have caused a prolonged death."

Burial 157

Burial 157 is that of a young adult male, perhaps in his early 20's who suffered multiple gunshot wounds. One bullet recovered from this individual was "a small, deformed lead shot pellet, possibly hardened with tin or antimony" (Scott, this volume; Appendix B: Figure 9). This individual was interred in a simple wooden casket that was too small for his stature.

Burial 182

The individual in Burial 182 is that of a middle-aged male who may have suffered blunt force trauma to the face. The casket was small for the decedent's stature. The recovery of three buttons and fragments of possible fabric provide limited evidence that he was likely clothed or wearing some type of garment at the time of interment (see Figure 4.6d).

Burial 194

This individual was a male in his 30's or 40's who suffered multiple gunshot wounds from two guns based on the recovery of a .22-caliber bullet (see Figure 4.2d) from his thorax and a .38-caliber bullet (see Figure 4.2e) from his pelvis (see also Appendix B: Figures 10 and 11). He was wearing a ring on his left hand at the time of burial (see Figure 4.6a). The ring is a 10K-gold Ostby and Barton signet-style band (Drew, Appendix A, this volume). The context of his burial was highly unusual compared to others in the burial population. Portions of the skeletal remains were articulated but out of anatomical position. He appears to have been buried in a semi-flexed position with his knees bent towards his chest. No other burials documented to date have displayed this kind of positioning. He was buried in a crate that was repurposed as a casket; it was a large container that was too large for the decedent. The amount of open voided space may have facilitated post-depositional movement of the remains, particularly with water infiltration. This may explain why most of the remains had shifted toward the east end of the container. However, such displacement would not fully account for the odd burial position as it was encountered during excavation.

Burial 195

The individual in this burial was an adult male, possibly middle-aged in his 30's or 40's. According to Stubblefield (this volume): "This individual received a potentially disabling shotgun blast to a leg, and possibly received a blast to the torso as well, probably followed by the abdominal gunshot wound that would have caused a prolonged death. A cranial gunshot wound is also possible." According to munitions specialist, Doug Scott (this volume): "minimally the person was shot with at least one .38-caliber firearm, one .38-Special-caliber firearm, and a shotgun" (see Figures 4.6f-h; see also Appendix B: Figures 12, 13, 15 and 16). He was exposed to burning, which resulted in substantial charring and destruction of the remains. Several elements were missing from the burial, including his hands, feet, and portions of the skull.

He was buried in an unadorned rectangular container that was too poorly preserved to determine the precise type and dimensions. However, we believe it was a repurposed crate of thin wood based on comparisons with other similar containers documented in the cemetery. The position of nails at what would have been the corners of the container allowed the excavators to approximate the dimensions, which were substantially smaller than the grave shaft.

Intermingled with his remains were objects that likely derived from the scene of the recovery of his body, including carbonized timber fragments of larch wood, which is principally used in building materials (Haney, this volume). Additional unusual objects were documented with this individual, though it is unclear if they were on his person at the time of death or recovered from the scene together with his remains. These include a glass button with thread and seven glass beads (Stubblefield, this volume) and an unfired ballistic cap (Scott, this volume; Appendix B:

Figure 14a-b). The recovery of textile fragments suggests the victim was clothed at the time of burial (see Figure 4.6b).

Burial 195 is in a grave that is below the headstone for Reuben Everett. However, the individual in this burial diverges from the death certificate data for Everett by being burned, which is not documented in Everett's record. These remains also were likely unidentifiable at the time of recovery due to loss of most of the cranium and hands. The headstone is most likely misplaced.

Reburial Ceremony

These individuals, along with others who were exhumed during the 2022-2024 field seasons, were reinterred and honored with a ceremony on November 12, 2024 (Figures 6.3-6.4). Pvt. C. L. Daniel was also honored in this ceremony (Figures 6.5-6.6), which was attended by several of his descendants who assisted the genetic genealogical team with the recovery of his identity. The family issued a letter, a copy of which is included with this report (Appendix F).

Markers were placed on the graves of all individuals who have been exhumed as part of this investigation, as well as unmarked graves of individuals whose remains were exposed through excavation but not exhumed (Figure 6.7). A monument regarding the investigation was erected adjacent to the excavation area (Figure 6.8). The monument was developed in coordination with the memorialization committee led by Ms. Brenda Nails-Alford. Pvt. Daniel's name appears on the back of the monument, with space for the addition of other names as identities of victims are recovered (Figure 6.9).

Proposed Next Steps

Taking all the above evidence into consideration, along with other details from the archaeological and forensic investigations, we propose to expand excavations at Oaklawn Cemetery (Figure 6.10). We have not yet recovered the number of gunshot victims and burn victims that are expected to be buried in Oaklawn based on death

Figure 6.3. *Mayor G. T. Bynum speaking at the reburial ceremony in Oaklawn Cemetery on November 12, 2024 (Photo by Kary L. Stackelbeck).*

Figure 6.4. *Community member and descendant representative, Brenda Nails-Alford, speaking at the reburial ceremony in Oaklawn Cemetery on November 12, 2024 (Photo by Kary L. Stackelbeck).*

Figure 6.5. *Playing of taps in honor of World War I veteran and Massacre victim, Pvt. C. L. Daniel, at the 2024 reburial ceremony (Photo by Kary L. Stackelbeck).*

Figure 6.6. *Honor guard folding an American flag in honor of World War I veteran and Massacre victim, Pvt. C. L. Daniel, at the 2024 reburial ceremony (Photo by Kary L. Stackelbeck).*

Figure 6.7. *Example of a marker erected for previously unmarked graves investigated as part of this investigation; this specific marker is for C. L. Daniel (Photo by Kary L. Stackelbeck).*

Figure 6.8. *Memorial placed near the excavation area in Section 20 of Oaklawn Cemetery (Photo by Kary L. Stackelbeck).*

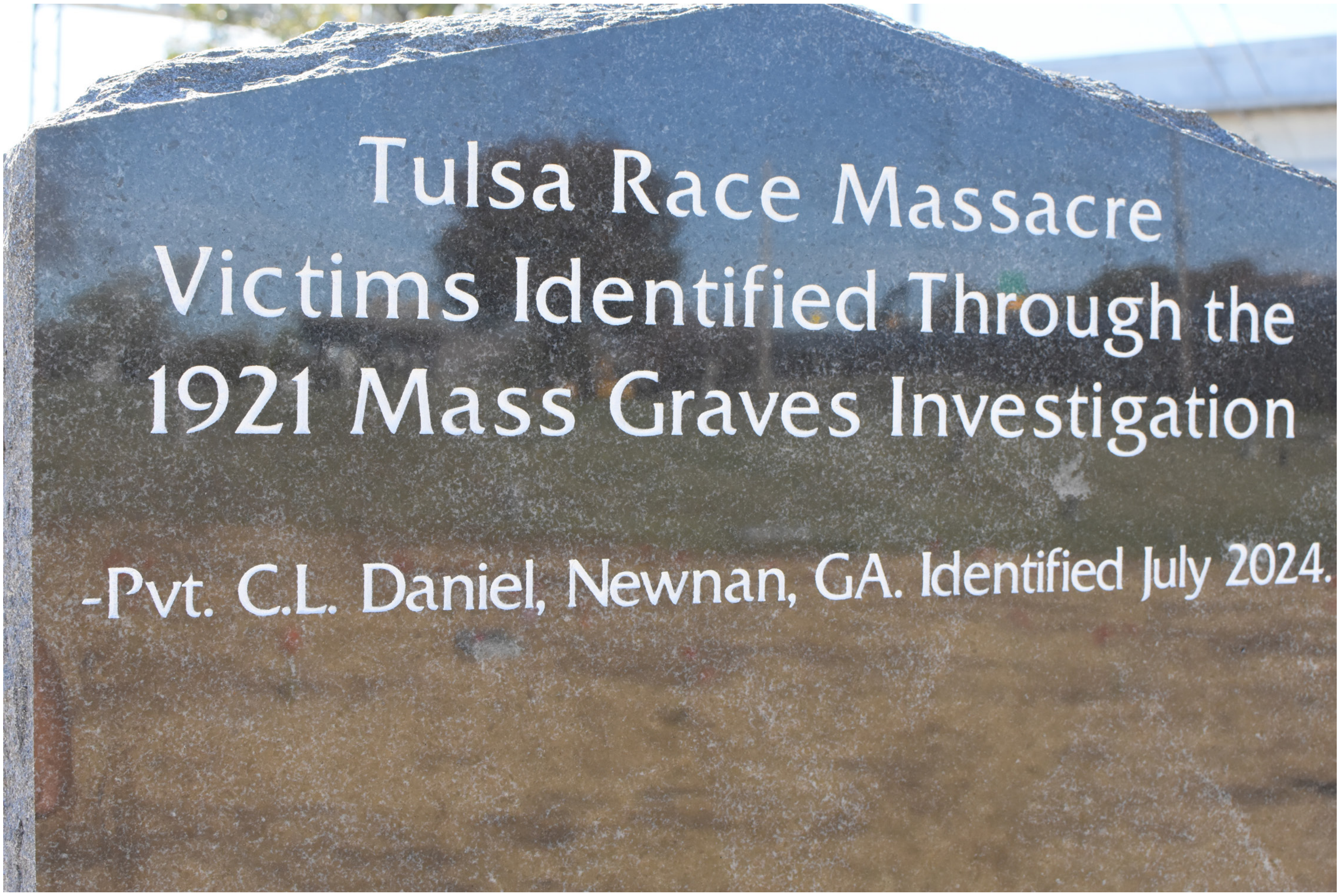

Figure 6.9. *Back side of the memorial etched with the name of Pvt. C. L. Daniel. Names of other Massacre victims will be added as their identities are recovered (Photo by Kary L. Stackelbeck).*

certificate data. Block K will target areas west of Block F inside the existing fence line (Figure 6.10) and will complete documentation of at least ten graves (Burials 184-193) in Block F that were only partially exposed in the 2024 field work (see Figure 2.11). The process of excavation, *in situ* documentation, exhumation, on-site forensic analysis, and extraction of samples for DNA and genetic genealogical analyses will be consistent with previous phases of the investigation.

Upon completion of the forensic analysis and documentation of all exhumed individuals, their remains will be reinterred in their original respective burial locations. Details of the reburial ceremony, placement of burial markers, and further memorialization efforts will be determined at a later date. In addition, markers that were removed for protection during the excavations will be restored to their original positions.

In closing, the investigative team wishes to express our profound appreciation and gratitude for the support of Mayor Monroe Nichols, former Mayor G. T. Bynum, the City Council, and the citizens of Tulsa as our team continues to search for additional victims of the 1921 Tulsa Race Massacre.

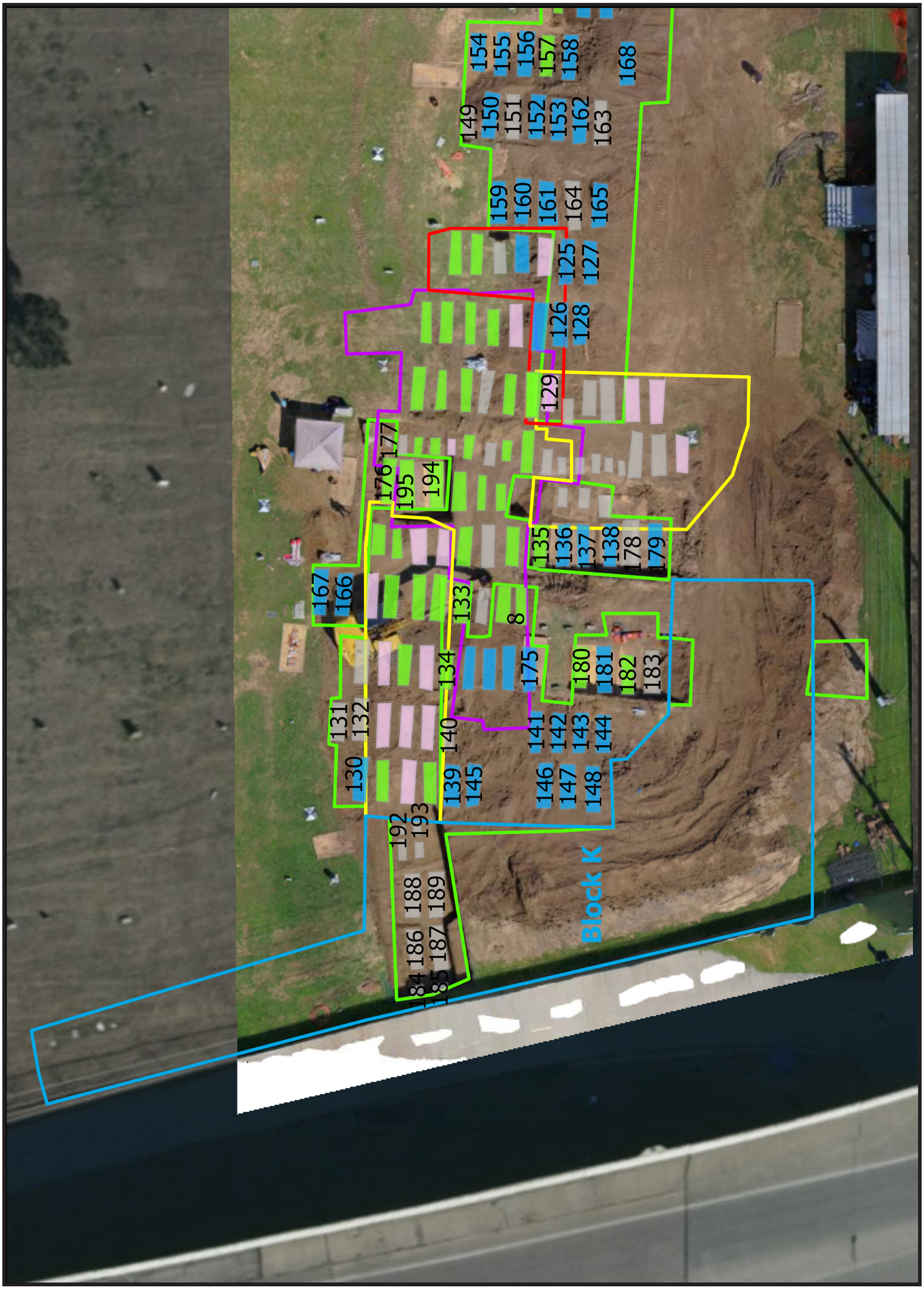

Figure 6.10. *Aerial image displaying previous excavations (Blocks A-C and F-H), distribution of documented graves within those blocks, and the proposed Block K.*

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