PUBLIC

Final

CULTURAL RESOURCES INVENTORY OF 60.2 ACRES FOR THE PROPOSED EL PASO CENTRAL PROCESSING CENTER PROJECT, EL PASO, U.S. CUSTOMS AND BORDER PROTECTION, EL PASO SECTOR El PASO COUNTY, TEXAS

June 2020

PUBLIC

FINAL REPORT

CULTURAL RESOURCES INVENTORY OF 60.2 ACRES FOR THE PROPOSED EL PASO CENTRAL PROCESSING CENTER PROJECT, EL PASO, U.S. CUSTOMS AND BORDER PROTECTION, EL PASO SECTOR, El PASO COUNTY, TEXAS

Prepared for:

Border Patrol & Air and Marine PMO
24000 Avila Road, Suite 5020
Laguna Niguel, CA 92677
Contract Number: 47QRAA19D006W
Task Order: 70B01C20F00000041
Work Order: 10-1
GSRC Project Number 80337001g
Texas Antiquities Committee Permit Number: 9284

Prepared by:

John Lindemuth
Principal Investigator

Gulf South Research Corporation
8081 Innovation Park Drive
Baton Rouge, LA 70820
(225) 757-8088
Fax (225) 761-8077

June 2020

ABSTRACT

GSRC personnel conducted an intensive cultural resources survey of a 60.2-acre parcel for the construction, operation, and maintenance of a permanent U.S. Border Patrol (USBP) Central Processing Center (CPC) facility located in northeast El Paso, El Paso County, Texas. No previously recorded archaeological sites or previously conducted archaeological investigations were found to overlap with the 60.2-acre survey parcel. No aboveground/architectural historic properties were noted within the 1.6-kilomter (1-mile) search radius of the 60.2-acre survey parcel. Fieldwork for the survey was conducted by the Principal Investigator and an archaeological technician over a 5-day period from February 24 to 28, 2020. The survey consisted of a non-collection intensive pedestrian archaeological survey supplemented with the excavation of shovel test pits (STPs) across the property. Twenty-seven isolated occurrences (IOs) were recorded, four of which consisted of prehistoric material and the remaining 23 consisting of historical material. None of the 27 IOs recorded are considered archaeological sites and are recommended not eligible for the National Register of Historic Places (NRHP).

THIS PAGE LEFT INTENTIONALLY BLANK

MANAGEMENT SUMMARY

GSRC personnel conducted an intensive cultural resources survey of a 60.2-acre parcel for the construction, operation, and maintenance of a permanent U.S. Border Patrol (USBP) Central Processing Center (CPC) facility located in northeast El Paso, El Paso County, Texas. Mr. John Lindemuth served as the Principal Investigator for the project, and Ms. Eve Carter served as the archaeological field technician. Both Mr. Lindemuth and Ms. Carter conducted the field investigations for the project. Fieldwork was conducted February 24 to 28, 2020 and took five days to complete. The surveys were conducted for U.S. Customs and Border Protection under Contract Number 47QRAA19D006W, Task Order 70B01C20F00000041, Work Order 10-1. The surveys were also conducted under Texas Antiquities Committee Permit number 9284.

No previously recorded archaeological sites or previously conducted archaeological investigations were found to overlap with the 60.2-acre survey parcel. No aboveground/architectural historic properties were noted within the 1.6-kilometer (1-mile) search radius of the 60.2-acre survey parcel. The survey consisted of a non-collection intensive pedestrian archaeological survey supplemented with the excavation of STPs across the property. The pedestrian survey was conducted utilizing 48 transects spaced 15 meters apart. Data from archival research of the mapped soil and geologic units for the survey parcel determined that there was a potential for subsurface cultural deposits across the APE. As a result, the pedestrian survey was augmented with the excavation of STPs. The excavation of STPs across the survey parcel was done in accordance with the Proposed Revised Terrestrial Survey Standards dated March 4, 2019, provided to Mr. Lindemuth by the West Texas regional reviewer at the Texas Historical Commission (THC). In accordance with the revised survey standards, a minimum of 57 STPs should be excavated for the 60.2-acre survey parcel. GSRC personnel excavated 61 shovel test pits across the property, exceeding the minimum number of STPs required under the revised standards. One additional STP was not excavated due to observable heavy disturbance in the area from the installation of water lines. None of the transect STPs excavated were positive for cultural material. Twenty-seven isolated occurrences (IOs) were recorded from the surface, four of which consisted of prehistoric material and the remaining 23 consisting of historical material. None of the 27 IOs recorded are considered archaeological sites and are recommended not eligible for the National Register of Historic Places (NRHP).

THIS PAGE LEFT INTENTIONALLY BLANK

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

LIST OF APPENDICES

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 1: INTRODUCTION

U.S. Customs and Border Protection's (CBP's) proposed Undertaking is the construction, maintenance, and operation of a new U.S. Border Patrol (USBP) Central Processing Center (CPC) in the USBP El Paso Sector, El Paso, Texas. The new CPC facility in El Paso would provide immediate, safe, and secure processing and detention space for migrant families and unaccompanied children in the USBP El Paso Sector. The need for the Undertaking is the inadequacy of existing CBP and USBP facilities to accommodate the number of migrants without overcrowding and provide the necessary separation of males, females, adults, and unaccompanied children being held. Further, this CPC would allow for a sustainable humanitarian processing and holding facility. The proposed Area of Potential Effect (APE) for the El Paso CPC would be located along Patriot Freeway (U.S. Highway 54) in northeast El Paso, Texas (Figure 1). The proposed location is a 60.2-acre undeveloped parcel that is owned by the City of El Paso (Property ID: 411468; Geographic ID: X58099911601000). The CPC would be located in the north center of the parcel, providing a buffer from adjacent land use activities (Figure 2).

The proposed CPC would provide a permanent facility to accommodate 965 migrants and a staff of 200 for the processing and temporary holding of migrant families and unaccompanied children who have crossed into the U.S. The CPC would be a 113,000 square-foot, one-story facility with 200,000 square feet of parking that includes 350 parking spaces adjacent to the facility. Construction would be expected to last 18 months and include earthwork, installation of a stormwater detention basin, paving, connection to utilities, concrete placement, installation of a communication tower, installation of perimeter fencing and security lighting, installation of signage, installation of emergency backup power with diesel-fueled generators, installation of fuel storage containment, and other general improvements. The total project area would be approximately 10 acres in size.

Operation of the El Paso CPC would be expected to begin upon completion of construction. The CPC would operate 24 hours per day and 7 days per week. Operational activities would consist primarily of the transportation of migrants to and from the CPC using buses or other motor vehicles on established public roadways and facility driveways; transfer of migrants from buses into the CPC using a sally port or similar building for processing; utilization of public utilities for power, heating, ventilation, air conditioning, potable water, and waste disposal to run the CPC; and transportation by CBP, USBP, and contractor personnel in three shifts per day to the CPC for staffing.

Maintenance of the El Paso CPC would also be expected to begin upon completion of construction. Maintenance activities could include routine upgrade, repair, and maintenance of the buildings, roofs, parking area, grounds, or other facilities that would not result in a change in their functional use (e.g., replacing door locks or windows, painting interior or exterior walls, resurfacing a road or parking lot, grounds maintenance, or replacing essential facility components such as an air conditioning unit).

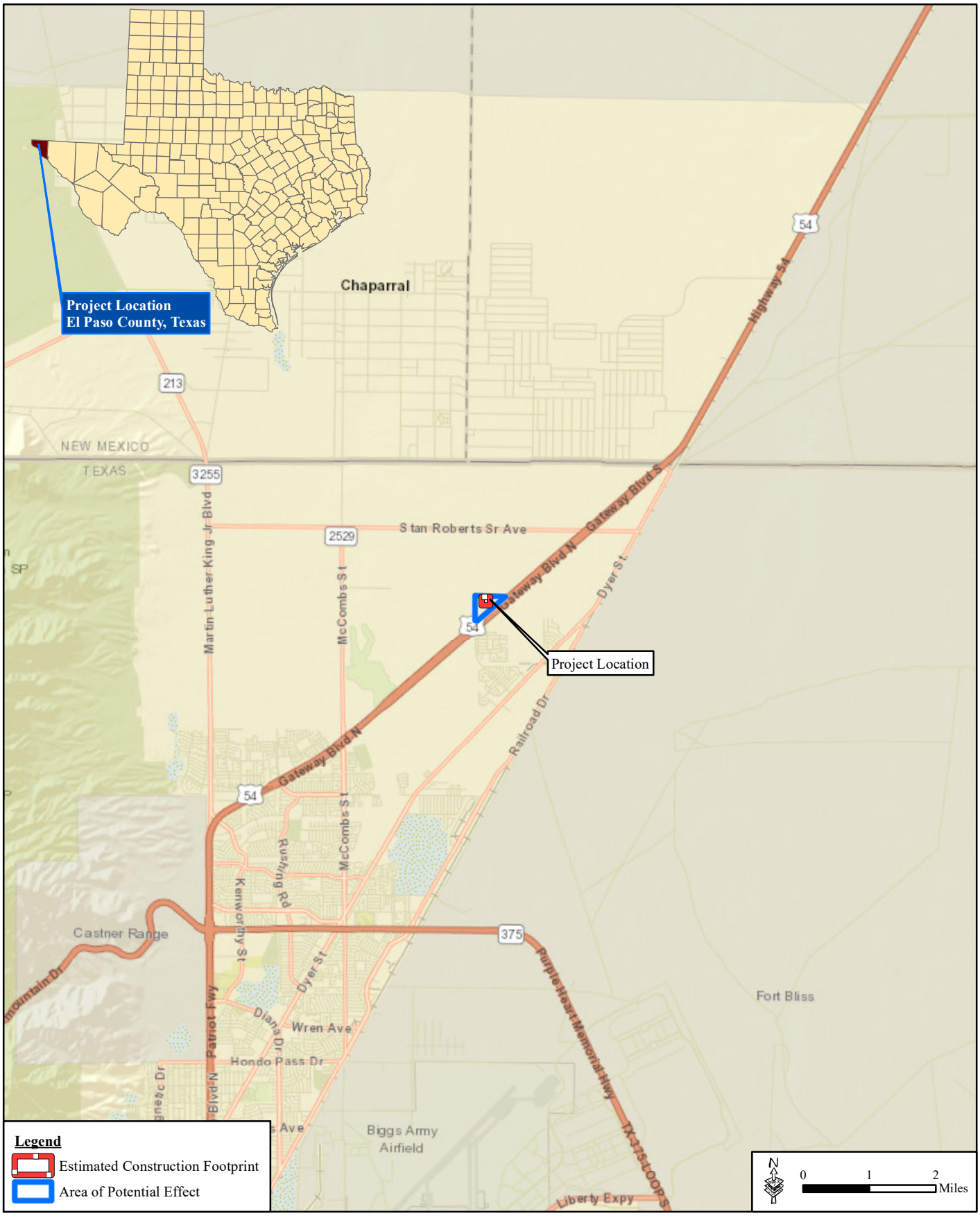


Figure 1. Vicinity map

GSRC

March 2020

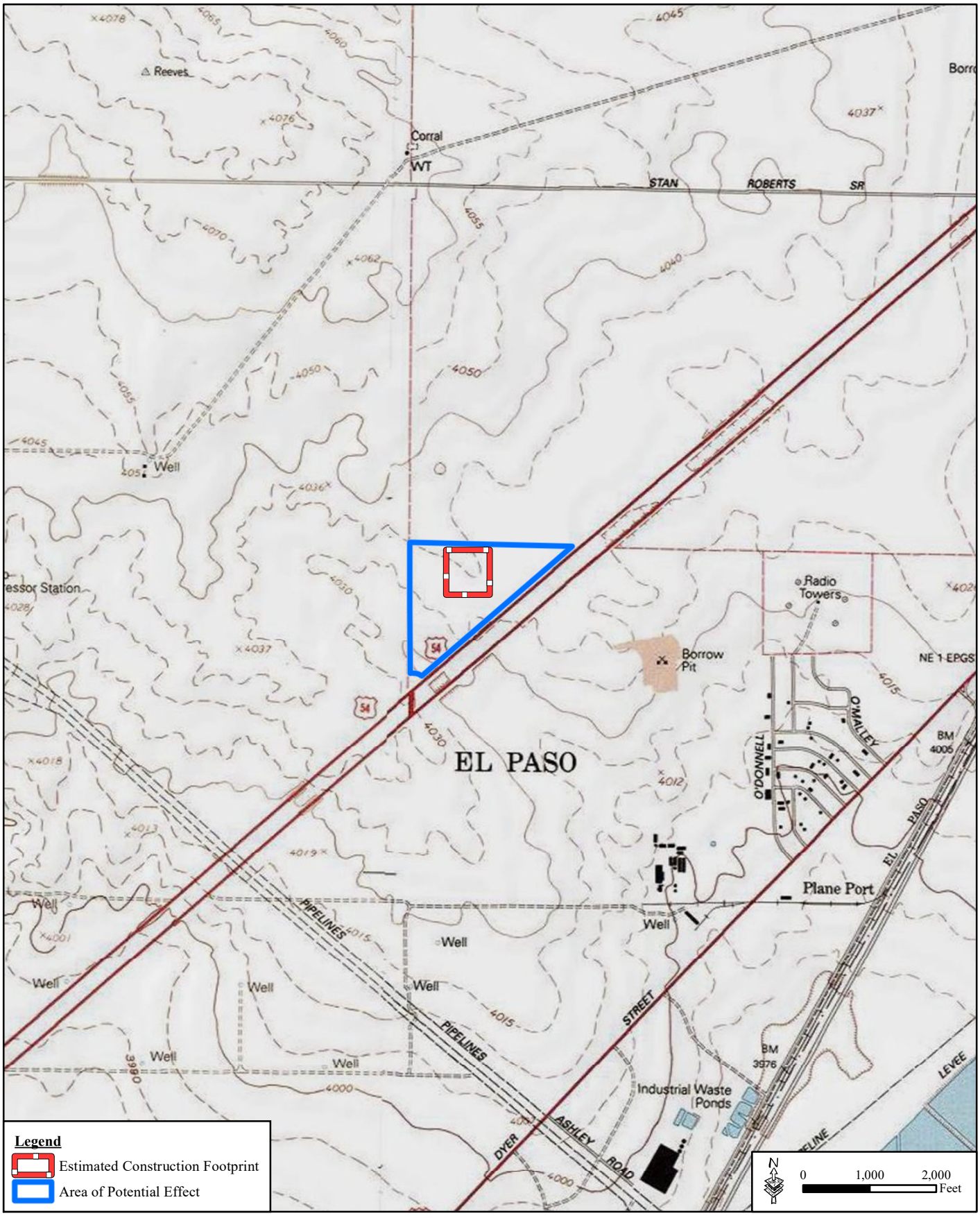


Figure 2. Portions of the Fort Bliss NE, TX and North Franklin Mountain, TX 7.5-minute topographic quadrangles showing the location of the Area of Potential Effect.

GSRC

March 2020

As part of their compliance with the National Historic Preservation Act (NHPA) as amended, the Border Patrol and Air and Marine Program Management Office (BPAM-PMO) within CBP has contracted Gulf South Research Corporation (GSRC) to conduct archaeological and architectural/aboveground resources surveys to identify any potential historic resources that may be adversely affected by the proposed CPC facility.

For the archaeological investigation, Mr. John Lindemuth served as the Principal Investigator and Ms. Eve Carter served as the archaeological technician. Mr. Lindemuth, and Ms. Carter conducted the intensive pedestrian archaeological surveys supplemented with the excavation of shovel test pits (STPs) from February 24 to 28, 2020. The survey was conducted for the U.S. Customs and Border Protection under Contract Number 47QRAA19D006W, Task Order 770B01C20F00000041, Work Order 10-1. The surveys were also conducted under Texas Antiquities Committee Permit number 9284.

Mr. Lindemuth served as the author of the cultural resources management report. Chapter 1 of the report provides a general introduction of the project and Chapter 2 provides an environmental background of the project including the flora and fauna, soils, and geology of the project region. Chapter 3 provides a cultural overview of the project area including a cultural history of the Trans-Pecos region. Chapter 4 outlines the previous investigations and previously recorded cultural resources in the vicinity of the survey parcel and Chapter 5 outlines the survey methods used during the field investigation of the project for both the archaeological and architectural/aboveground resources surveys. Chapter 6 outlines the results of the archaeological survey. Chapter 7 presents the results of the architectural/aboveground resources survey. Chapter 8 summarizes the findings of the cultural resources surveys and recommendations for the cultural resources identified and Chapter 9 provides the references cited in this report. Appendix A provides an STP summary log for the transect STPs excavated during the archaeological survey and Appendix B provides the photographs referenced in the report.

CHAPTER 2: ENVIRONMENTAL SETTING

El Paso County is located in the Trans-Pecos region of far-western Texas, bordered on the southwest by the Rio Grande and Mexico, on the north and west by the State of New Mexico, and on the east by Hudspeth County, Texas. The county covers 2,738 square kilometers (km^2) (1,057 square miles [mi^2]) of desert and irrigated land (Bryson 2019). The major physiographic features that make up El Paso county are the floodplain of the Rio Grande that runs along the southwest portion of the county, an old desiccated terrace, or lakebed which lies northeast and parallel to the floodplain, the Hueco Bolson within the central portion of the county, the Franklin Mountains in the western portion of the county, and the Hueco Mountains in the eastern portion of the county (Jaco 1971). The APE for the CPC project lies within the Hueco Bolson.

The climate in El Paso County is characterized by an abundance of sunshine throughout the year with high daytime temperatures during the summer with very low humidity and scanty rainfall and relatively cool winters. From historical climate data from 1961 to 1965, the county has an average minimum temperature of -1.4º Celsius (C) (29.5º Fahrenheit [F]) in January and an average high temperature of 35.2º C (95.4º F) in June. Rainfall in the county is limited and irrigation is necessary for farm crops. Dry periods in the county can last for several months without any appreciable rainfall. The average annual precipitation, based on data from 1930 to 1960, is 20.1 centimeters (cm) (7.9 inches [in]) (Jaco 1971).

GEOLOGY AND SOILS

The APE falls within the Bolson deposits (Qb) geologic map unit, which is Pleistocene and Holocene in age (Figure 3). These deposits consist of lacustrine and fluviatile deposits of clay, silt, sand, and Gypsums that are found on bolsons (Barnes 1968, 1992).

Soils within the APE are mapped as Turney-Berino association, undulating (Figure 4). This map unit consists of predominantly Turney and similar soils (75 percent) and Berino and similar soils (20 percent) with the remaining five percent being composed of other minor components. Turney soils are found on basin floors and their parent material is a loamy alluvium (United States Department of Agriculture [USDA] 2020). The typical pedon for a Turney series soil has an A horizon from 0 to 6 inches below ground surface (inbgs) (0 to 15 centimeters below ground surface [cmbgs]) consisting of a pale brown (10YR 6/3) sandy clay loam (brown [10YR 4/3] moist) that has a weak, very thin to thin platy structure and is slightly hard, very friable, and slightly sticky and plastic. This is followed by a Bw horizon from 6 to 21 inbgs (15 to 34 cmbgs) consisting of a light brown (7.5YR 7/4) (brown [7.5YR 6/4] moist) sandy clay loam with a moderate very coarse prismatic structure that is hard, very friable, and slightly sticky and plastic, with soft masses of calcium carbonate. This is followed by two Bk horizons, a Bk1 horizon from 21 to 28 inbgs (34 to 71 cmbgs) consisting of a pink (7.5YR 7/4) (light brown [7.5YR 6/2] moist) sandy clay loam that is massive, very hard, firm, slightly sticky and slightly plastic with soft masses and concretions of calcium carbonate and a Bk2 horizon from 28 to 64 (71 to 163 cmbgs) consisting of a pinkish white (7.5YR 8/2) (pinkish gray [7.5YR 6/2] moist) sandy clay loam that has a massive structure and is very hard, firm, slightly sticky and plastic with weakly cemented calcium carbonate in its upper portions (USDA 2014).

Figure 3. Aerial photograph showing the mapped geologic units of the Area of Potential Effect.

GSRC

March 2020

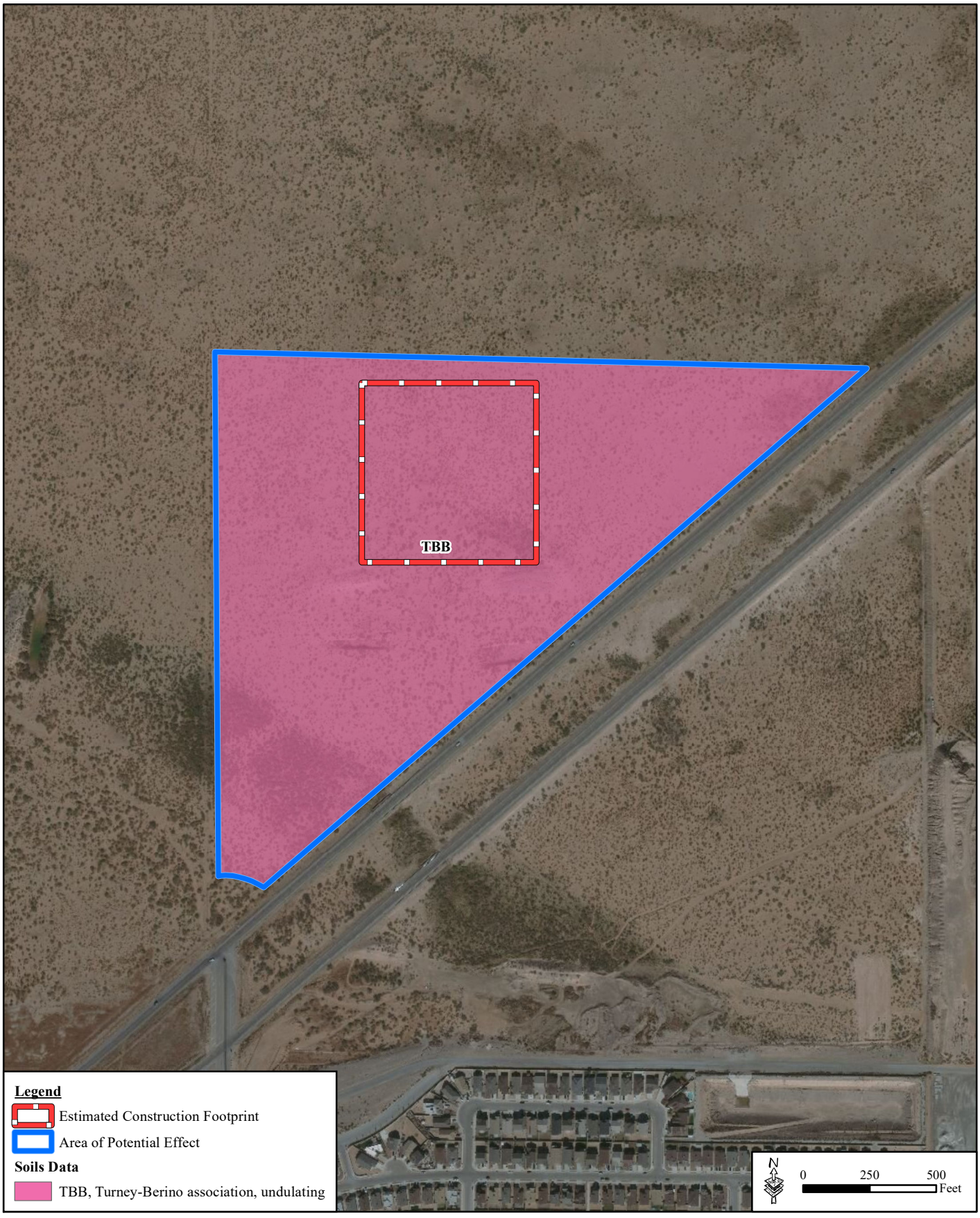


Figure 4. Aerial photograph showing the mapped soils units of the Area of Potential Effect.

GSRC

March 2020

Berino soils are found on fan piedmonts and its parent material is a Pleistocene-age loam alluvium (USDA 2020). The typical pedon for a Berino series soil has an A horizon from 0 to 4 inbgs (0 to 10 cmbgs) consisting of a brown (7.5YR 5/4) (brown [7.5YR 4/4] moist) loamy fine sand that has a moderate fine granular structure that is soft and very friable. This is followed by two Bt horizons, a Bt1 horizon from 4 to 8 inbgs (10 to 20 cmbgs) consisting of a reddish brown (5YR 5/4) (reddish brown [5YR 4/4] moist) fine sandy loam that has a very coarse prismatic structure parting to moderate coarse subangular structure and is hard and very friable, and a Bt2 horizon from 8 to 25 inbgs (20 to 64 cmbgs) consisting of a reddish brown (5YR 5/4) (reddish brown [5YR 4/4] moist) sandy clay loam with a moderate coarse prismatic structure parting to moderate coarse subangular blocky structure and is very hard, friable and slightly sticky. The Bt horizon is followed by a Btk horizon from 25 to 35 inbgs (63 to 89 cmbgs) consisting of a yellowish red (5YR 5/6) (yellowish red [5YR 5/6] moist) sandy clay loam with a moderate coarse subangular blocky structure that is very hard, very friable and slightly sticky, with soft masses and thin filaments of carbonates. This Btk horizon is followed by a Bk horizon from 35 to 60 inbgs (89 to 152 cmbgs) consisting of a pink (5YR 7/4) (reddish brown [5YR 5/4] moist) sandy clay loam that has a very weak coarse subangular blocky structure and is extremely hard, friable, and slightly sticky with medium and large soft masses, concretions, and filaments of carbonates distributed throughout (USDA 2007).

FLORA AND FAUNA

The 60.2-acre survey parcel lies within the Chihuahuan Basins and Playas (24a) of the Chihuahuan Deserts ecoregion (24). The broad Chihuahuan Deserts ecoregion extends from Madrean Archipelago in southeastern Arizona to the Edwards Plateau in south-central Texas and extends more than 500 miles south into Mexico. The physiography of the region is a continuation of the basin and range terrain that is typical of the Mojave Basin and Range and the Central Basin and Range ecoregions to the west and north respectively (Griffith et al. 2007:8).

The Chihuahuan Basins and Playas (24a) ecoregion includes alluvial fans, internally drained basins, and river valleys below 3,500 feet in elevation. The major basins of this ecoregion include the Salt, Presidio, and Hueco basins, where the current survey parcel is located. The playas and basin floors of these basins have saline or alkaline soils and consist of areas of salt flats, dunes, and windblown sand. Within the saline flats and alkaline playa margins typical plant species include fourwing saltbush (*Atriplex canescens*), seepweed (*Suaeda* spp.), pickleweed ((*Allenrolfea occidentalis*), and alkali sacaton (*Sporobolus airoides*). Within gypsum land typical species include gyp grama (*Bouteloua breviseta*), gyp mentzelia (*Mentzelia humilis*), and Torrey ephedra (*Ephedra torreyana*). Finally within desert shrub land, like the current APE, typical vegetation includes creosote brush (*Larrea tridentate*), tarbush (*Flourensia cernua*), yuccas (*Yucca* spp.), sandsage (*Artemisia filifolia*), blackbrush (*Acacia rigidula*), tasajillo (*Opuntia leptocaulis*), and lechuguilla (*Agave lechuguilla*), and cenzia (*Leucophyllum* spp.). All of the species that grow within the ecoregion must be able to withstand large diurnal ranges in temperature, low available moisture, and an extremely high rate of evapotranspiration (Griffith et al. 2007).

Fauna typical of the ecoregion includes several lizard species that can be considered indicators of the ecoregion due to their habitat preferences and include side-blotched (*Uta stansburiana*),

Texas horned (*Phyrnosoma cornutum*), and little-striped whiptail (*Cnemidophorus inornatus*). The most common bird species found typically in this ecoregion is the blackthroated sparrow (*Amphispiza bilineata*). Many of the mamals in the region are nocturnal and included species such as kangaroo rat (*Dipodomys* spp.), kit fox (*Vulpes velox macrotis*), and jackrabbit (*Lepus californicus*) (Griffith et al. 2007).

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 3: CULTURAL HISTORY

PREHISTORIC OVERVIEW

The Trans-Pecos region is located west of the Lower Pecos region and consists of those portions of Texas west of the Pecos River. The Trans-Pecos region has been variously divided into sub-regions in the past. One subdivision provided by Mallouf (1985) divides the Trans-Pecos region into western and larger eastern subregions. Another subdivision provided by Hicks (Simmons et al. 1989) divides the region, from west to east, into Puebloan, Interior, and Plains subregions. The Puebloan subregion is analogous to Mallouf's western region while the Interior and Plains subregion are roughly analogous to Mallouf's eastern region. The prehistory of the Trans-Pecos region is based on the general chronological framework of the west Texas region and can be broken down into five temporal periods (Mallouf 1985, 1986; Simmons et al. 1989). It is important to note that the general chronological framework of west Texas is closely affiliated with that of the adjacent region of southern New Mexico and on a general level, many cultural trends spanned across both regions.

Temporal periods are principally defined by the presence of diagnostic projectile points (Mallouf 1985), but are intended to represent more generalized developmental facies based on subsistence practices, settlement patterns, technology, environment, etc. within the Trans-Pecos region. It is important to note, however, that the chronological framework for these areas is very cursory and that very little supporting data, outside of diagnostic artifacts, are available for any one period. Many of the diagnostic artifacts dating to a particular period often are found in mixed association with materials from other periods. Furthermore, the radiometric dating of any one period has been tenuous at best.

The five prehistoric periods are as follows:

- Paleo-Indian 10,000 – 6500 B.C.
- Early Archaic 6500 – 3000 B.C.
- Middle Archaic 3000 – 500 B.C.
- Late Archaic 500 B.C. – A.D. 1000
- Late Prehistoric A.D. 1000 – 1600

Paleo-Indian Period

On a general level, the Paleo-Indian period represents the first comparatively well-documented settlement of the New World by aboriginal peoples of Eurasian decent, who crossed the Bering Land Bridge during the close of the Pleistocene epoch (ca. 11,500 B.P.). The Paleo-Indian period in the Trans-Pecos region is defined by the presence of basally ground, lanceolate projectile points which include Clovis, Folsum, Plainview, Golondrina, Meserve, Angostura and Lerma types (Simmons et al. 1989:36; Turner and Hester 1999). The Paleo-Indian Period can be divided into three subperiods commonly referred to as Llano (early), Folsom (middle), and Plano (late). Subsistence activities are presumed to have heavily relied on large game hunted by small nomadic bands of 20 to 30 people.

The climate during the early Paleo-Indian period was probably more moist and cooler than today, and the lower elevations would have been covered with pinyon-juniper parklands with grassy understories (Mallouf 1981:126, 1986:70; Simmons et al. 1989:36, 38). By the late Paleo-Indian period the climate in the Trans-Pecos region was becoming drier and many of the forested areas were supplanted with plants and animals affiliated with the Chihuahuan Desert Regime (Mallouf 1981:337, 1986:70).

Early Archaic Period

During or slightly before the more arid climate, starting in the Late Paleo-Indian period, the Archaic, or hunting and gathering lifeway, began in the northern desert region, including the Trans-Pecos. This hunting and gathering lifeway persisted in some areas, even into the Historic Period (Mallouf 1986:70-71). Though existing data would indicate that much of the region was probably occupied during the Early Archaic period, virtually nothing is known about the lifeways of these people (Mallouf 1986:71). The few excavated assemblages that can be assigned to the Early Archaic suggest an economically diversified hunting and gathering lifeway (Mallouf 1986:71). In the Trans-Pecos region, there has been a general lack of substantive excavations (Mallouf 1986:72). There seems to be a stronger clustering of Early Archaic sites in the eastern half of the northern desert and Trans-Pecos regions than the western half. The adjoining Lower Pecos area to the east has yielded strong evidence of utilization of rockshelters and open silt-terrace sites during the Early Archaic period (Mallouf 1986:72). In Coahuila, Mexico to the south, Early Archaic assemblages in rockshelters have been found to contain such items as wads of human hair, rattlesnake rattles, sandals made from agave, dart foreshafts, limestone choppers, spatulate bone awls, and agave needles (Mallouf 1986:72). The Early Archaic inhabitants of northern Mexico and the Lower Pecos appear to have placed greater importance on desert succulents for food and fiber, and may have supplemented their diet with game (Mallouf 1986:72).

The Early Archaic period of the Trans-Pecos region is essentially defined by the presence of projectile points, which were stemmed, corner or side-notched. Examples of such projectile points are Martindale, Baker/Uvalde, Nolan, Pandale, and Bulverde points (Simmons et al. 1989: 36). Points such as the Meserve (and possibly the Lerma) appear to represent transitional forms between the Late Paleo-Indian and Early Archaic periods or may also represent just reworked Plainview projectile points (Turner and Hester 1999).

Middle Archaic Period

The Middle Archaic period represents a continuation of the general Archaic lifestyle of broad-based hunting and gathering, in addition to an increase in population growth and expansion, which can be seen throughout Texas including in the Trans-Pecos region. During this time period, the climatic conditions in the area became increasingly drier and warmer with some intervening wet spells (Mallouf 1981:128-131). Though stratigraphic data for the Middle Archaic Period is generally poor, a review of the literature indicates that material associations of basketry, sandals, cordage, matting, netting, pointed sticks, fending sticks, dart foreshafts, stone and shell beads, antler flaking tools, grinding slabs, abraders, bone awls, manos, retouched flakes, scraping implements, cores and hammerstones are in use (Mallouf 1986:72). There is a strong indication of the use of stone-lined pit ovens in processing plant foods, particularly in the eastern half of the region, and Middle Archaic dart points have been found in association with hearth fields along basin arroyos (Mallouf 1986:72). Sites in the Big Bend region of Texas

consisted of open-air lithic scatters, burned rock middens, hearth fields, and some rockshelters. Based on these sites, it appears that peoples of the Middle Archaic period developed an increased dependence on plant resources (Mallouf 1985:115). In the Big Bend area, Middle Archaic sites tend to occur in the basin and foothill zones, although occasional finds occur in the mountain zones as well (Mallouf 1986:72).

The Middle Archaic period in the Trans-Pecos region is defined by the presence of large stemmed, corner, and side notched projectile points along with some basal notched forms. Examples of some Middle Archaic Projectile points include Langtry, Val Verde, Castroville, Montell, Lange, Conejo, Almagre, Williams, Shumla, and Marcos points (Simmons et al. 1989:70).

Late Archaic Period

The Late Archaic period in the Trans-Pecos region represents a marked increase in population growth and intensification of food gathering practices. For example, the Late Archaic sites are found at all elevations, in a variety of physiographic settings, and are more heavily reoccupied, resulting in overall deeper midden deposits (Simmons et al. 1989:73; Mallouf 1985:120-121). Ring middens and pit ovens also appear in greater abundance across the Trans-Pecos region suggesting an increased subsistence on local plants such as prickly pear, stool (*Dasylirion* spp.), and lechuguilla (*Agave lechuguilla*) (Simmons et al. 1989:73). This is also supported by the dramatic increase in the proportion of ground stone, especially querns, manos, and metates, found at Late Archaic sites (Simmons et al. 1989:72). In the eastern Trans-Pecos, the evidence strongly indicates that a continuation or strong re-entrenchment of a hunting-gathering lifeway existed that was to last well into the Historic Period (Mallouf 1986:74).

Data for the El Paso area and south central New Mexico suggest the advent of sedentism and incipient agriculture in these areas at an early date. Some indications of early structural remains come from the Middle and Late Archaic Period in the El Paso area, and by A.D. 300, pithouses and ceramics are found in the Mogollon and Mimbres areas of southern New Mexico (Mallouf 1986:74). The introduction of cultigens, such as maize, cotton, and chili peppers into the Trans-Pecos region, principally in the Rio Grande floodplain, may have occurred during this time as well, perhaps as early as A.D. 200 to 500 (Mallouf 1985:127).

The Late Archaic in the Trans-Pecos region is defined predominantly by the presence of smaller, side notched and corner-notched projectile points as well as some bifurcated forms. Some examples of Late Archaic projectile points include Figeroa, Ellis, Darl, Edgewood, Frio, Paisano, Palmillas and Ensor projectile points (Simmons et al. 1989).

Late Prehistoric Period

The Late Prehistoric Period in the Trans-Pecos region is defined by the presence of arrow points and ceramics, and in some areas, principally along the Rio Grande, the presence of cultigens (Simmons et al. 1989). The Late Prehistoric Period encompasses developments that in other areas have been included within the Protohistoric (Simmons et al. 1989:113). Common arrow points associated with the Trans-Pecos Late Prehistoric Period include Cliffton, Toyah, Scallorn, Perdiz, Livermore, Harrell, and Fresno Points. Prehistoric ceramics associated with the Late Prehistoric Period include El Paso Brown, El Paso Polychrome, Chupadero Black on White, Jornado Brown, Three Rivers Red on Terra Cotta, Mimbres Black on White, Northern Mexican

wares (Polished Tan, Corrugated Tan, Playas Red Incised, and plain wares), Galisteo Black on White, Black on Red Glaze, and Middle Pecos Micaceous Brown.

The earliest and most prolific Late Prehistoric occupations in the Trans-Pecos regions occurred along the Rio Grande near El Paso, Texas and can be identified culturally as the Jornada Mogollon (Kelley 1952a). The Jornada Mogollon were agriculturalists and grew maize, squash, beans, and bottle gourds.

Archaeological excavations have revealed that in relatively late prehistoric times the natives of this region were from the Puebloan civilization of the Southwest, with the largest group being the Jumanos. Evidence seems to favor their being speakers of a Uto-Aztecan tongue (Newcombe 2002). In northern Mexico and Arizona, on the Colorado Plateau and along the Rio Grande and its tributaries, the Puebloan peoples were in evidence, numbering over 40,000 individuals at the height of their influence (Taylor 2004).

The Jumanos occupied the lands from El Paso down the Rio Grande Valley as far as the Big Bend region, extending a short way into Mexico up the Rio Conchos in Chihuahua. All of Texas, south and west of the Pecos River could be considered the extent of the Jumanos or their nomadic relatives (Newcombe 2002).

In the Interior subregion, ceramics and the bow and arrow were probably introduced from the Rio Grande valley as early as A.D. 300 in the north, and were present in other parts sometime after A.D. 900 (Mallouf 1985:129; Simmons et al. 1989:116). To date, none of the Late Prehistoric occupations in the Interior subregion appear to represent true agricultural settlements; cultigens have not been found in any convincing quantities. Nevertheless, sites with Jornada Mogollon ceramics have been found along alluvial fans, playa edges, and other level, low-lying areas which would have been conducive for simple rain-based agriculture (Mallouf 1985:129). Overall, it appears that Late Prehistoric populations in the Interior subregion carried on subsistence strategies, which were similar to those practiced in the Late Archaic (Simmons et al. 1989:117). It is likely that the hunter-gatherers from the interior were engaged in extensive contacts with agriculturalists living along the Rio Grande Valley, as reflected in the relations between the Patarabueye and Jumano during early historic times (Mallouf 1985:136-138).

HISTORIC OVERVIEW

The historic chronology of the Trans-Pecos region can be divided into five temporal periods. These historic periods are defined by distinct artifact assemblages along with historic archival and documentary evidence.

- Spanish Exploration A.D. 1535-1659
- Spanish Colonial A.D. 1659-1821
- Mexican Colonial A.D. 1821-1836
- Texas Republic and Nineteenth Century American A.D. 1836-1900
- Twentieth Century American A.D. 1900-present

Spanish Exploration Period

The Spanish Exploration period begins with the presence of European explorers, mostly of Spanish descent in the Trans-Pecos region. The first Europeans thought to enter the area were Alvar Nuñez, better known as Cabeza de Vaca, along with three companions (Sánchez 1992:54). The Panfilo de Narváez expedition, of which Cabeza de Vaca was a member, was shipwrecked on the upper Texas coast, at a location they described as the Isla del Malhado (Sánchez 1992:54; Hester 1999:17). The Isla del Malhado was probably Galveston Island or a nearby island, given the known enthnohistoric and archaeological record (Hester 1999:17). There is disagreement among historians, anthropologists, and archaeologists on the route taken by Cabeza de Vaca's group across Texas. The Krieger route, which takes Cabeza de Vaca from the upper and central Texas coast, through southern Texas, into northeastern Mexico, and perhaps back into west Texas, is the most probable of all the routes proposed given the archaeological and ethnohistoric record (Hester 1999:17). By 1535, Cabeza de Vaca and his three companions crossed southern Texas, reaching different points along the Rio Grande (Sánchez 1992:54). One of these points is believed to be in the vicinity of Del Rio, another at Santa Elena Canyon in the Big Bend, and a third in or near present day El Paso (Sánchez 1992:5).

The expedition of Francisco Sánchez de Chamuscado was the first legal expedition to cross the Rio Grande from the direction of Santa Barbara, Mexico (Sánchez 1992:54). The route he took on the expedition would eventually become part of the famous Camino Real de Tierra Adrento, which ultimately ran from Mexico City to Santa Fe, New Mexico (Sánchez 1992:54). The route taken by Sánchez and his Indian guides ran north from Santa Barbara along the Rio San Gregorio, on the upper branches of the Rio Conchos, to its confluence with the Florido and beyond to the Rio Conchos (Sánchez 1992:54). Along the way, they met two Indian tribes that they named Conchos and Cabris, the latter being associated with the Jumanos, a much larger tribe that lived north of the Rio Grande (Sánchez 1992:54-55). The Cabris cultivated small patches of land and their faces, arms, and bodies were "striped with pleasing lines" (Sánchez 1992:55).

At La Junta de Los Rios, near present day Presidio, where the Conchos enters the Rio Grande, they found another tribe that they called the Amotomanco, later known as Otomoaco (Sánchez 1992:55). These people were part of the Jumano Nation who ranged in a wide area north and east of the Rio Grande in the Southern Plains where they hunted Buffalo (Sánchez 1992:55). The Amotomaco wore stripes on their faces, lived in houses made of sticks and brush plastered with mud, raised corn, and stored an abundance of pumpkins and beans (Sánchez 1992:55).

From La Junta de Los Rios the expedition continued upstream along the Rio Grande staying predominantly on the western side of the river where they met two more groups of Jumano (Sánchez 1992:55-56). Both groups recalled the passing of Cabeza de Vaca. Hernán Gellegos, a chronicler of the expedition, wrote that the Spaniards asked the first group:

> If any men like us passed that way, and they replied that long ago four Christians had passed through there. By description they gave us we say plainly and clearly that it must have been Alvar Nuñez Cabeza de Vaca because according to his account he had come by way of these people (Sánchez 1992:56).

Continuing up the Rio Grande, the expedition met the last of the Jumano settlements, a group they called Magdalena, south of the present day ruins of Fort Quitman in Texas. From here, the expedition continued past the marshlands that separate Guadalupe from El Paso, crossed to the east side of the river, and continued to the southernmost Piro Pueblo of New Mexico. Though they found the Pueblo deserted, it was well stocked with supplies. From here, they went north to Puaray, in the valley of present day Albuquerque. The expedition explored as far north as Taos Pueblo, as far east as the Canadian and Pecos rivers, southeast to the saline lakes beyond the Manzano and west to Zuni Pueblo, before returning to Santa Barbara (Sánchez 1992:56).

The Antonio de Espejo expedition followed the Chamuscado expedition. The expedition was formed, partly, to rescue some Fransicans who were left in the Pueblos of the Rio Grande. The Espejo expedition left Santa Barbara in November 1582 and followed the route of the Chamuscado expedition. Along the way they met the Conchos, the Pazaguantes, and other tribes of Jumanos. They observed that the tribes adjoining "the Pazaguates on the Conchos and extending for some distance up the Rio Grande were known as the Patarabueyes or the Otomoacas; those living at the junction of the Rivers and south of it were called Abriades; and those who lived across the Rio Grande and roamed the plains in pursuit of buffalo were known as the Jumano proper" (Mecham as quoted by Sánchez 1992:56).

By December 9, 1582, they reached the Rio Grande, which had been named Rio Norte by Sánchez Chamuscado, at La Junta de Los Rios. They camped a short distance from an Indian settlement that they called San Bernadino and traded with the natives for maize, beans, mescal, dried pumpkins, gourd vessels, buffalo skins, and bows and arrows (Sánchez 1992:57). At La Junta de Los Rios, they visited another Indian settlement they called Santo Tomás and crossed the Rio Grande into Texas to a pueblo on the opposite side of the Rio Grande that Chamuscado called Del Norte (Sánchez 1992:57). This is the first recorded crossing into Texas (Sánchez 1992:57). The Espejo expedition named this Pueblo San Juan Evangelista. After spending a night at the pueblo, the expedition moved farther up the east side of the river visiting another pueblo, opposite of the mouth of the Conchos River, that they named Santiago (Sánchez 1992:57). At this pueblo, and in all the others, the Indians "told us how Cabeza de Vaca and his two companions and a negro had been there" (Sánchez 1992:57). They spent eight days there among the Jumanos and they visited nearly all the settlements in the vicinity of La Junta de los Rios on both sides of the Rio Grande (Sánchez 1992:57). On December 17, 1582, they crossed to the west side of the Rio Grande and started north, arriving at the southernmost pueblos of the Piros in New Mexico, 45 days later (Sánchez 1992:57).

From the southernmost pueblos of the Piros, the Espejo expedition explored in every direction, visiting the Rio Grande pueblos, exploring west to the Verde River in Arizona, and eastward to the Great Plains, reaching the Pecos River on July 5, 1583 (Sánchez 1992:57). They followed the Pecos River, hoping to find a new route back to La Junta de los Rios, but learned from the Jumanos that the Pecos River comes out very far from the Conchos River. The Jumanos offered to take the expedition by good roads to the juncture of the Rio Grande and the Conchos River (Sánchez 1992:57). They arrived on the Rio Grande north of La Junta de los Rios and remained among the Patarabueyes for two days before leaving for La Junta de los Rios on August 20, 1583. Upon arriving at La Junta de los Rios, the expedition crossed the Rio Grande and visited the Pueblo of Santo Tomás where they remained for three days. Finally on August 26, 1583,

Espejo and his companions started on their last leg back to Santa Barbara. The expedition had been away for 10 months and they had explored more than 563 kilometers km (350 mi) of the Pecos River and, after abandoning the river, were the first Europeans to journey cross-country to the Rio Grande near its confluence with the Rio Conchos (Sánchez 1992: 58). The reports of this expedition aroused widespread interest and desire among Spanish officials to occupy the lands that were visited.

In 1598, the Spanish crown authorized Juan de Oñate to lead an expedition to establish a settlement in New Mexico. The expedition left the valley of San Bartolomé bound for San Geronimo on the Conchos River (Sánchez 1992:59). Oñate did not follow the Conchos River to La Junta de los Rios but instead took a direct overland route. The expedition reached the Rio Grande at the end of April 1598 and followed the river to the ford at El Paso (Sánchez 1992:60). The expedition crossed the Rio Grande on May 4, 1598, establishing the ford at El Paso as part of the Camino Real (Sánchez 1992:60). The crossing was named "Los Puertos", although later it would be known as El Paso del Norte (Sánchez 1992:60).

The Spanish Colonial Period

The Spanish Colonial period in the Trans-Pecos region begins with the establishment of a mission and frontier post near El Paso in 1659 (Simmons et al. 1989:139). In 1680, the Pueblo revolt in New Mexico killed more than 1,000 Spaniards and drove all others southward out of Pueblo Country (Spicer 1983:42). Refugee Spanish colonists from Santa Fe and other northern Rio Grande settlements relocated to the small mission complex at El Paso called Our Lady of Guadalupe. The Spanish reorganized their forces in El Paso along with a few Indians from the Southern Pueblos and began a fifteen year effort to regain the Pueblo towns to the north (Spicer 1983:42). Shortly thereafter, in 1683, several missions and presidios were established farther down river in the La Junta area (Kelley 1952b:266). These later missions were established by the request of local aboriginal populations residing in the La Junta area for protection against raids from hostile Plains Indians and also to consolidate the frontier boundaries along the northern border lands claimed by the Royal Government. The La Junta mission settlements were intermittently occupied until 1732 when they were permanently occupied until the end of the Spanish Colonial Period (Kelley 1952b:266-270; Tyler 1975:26).

During this time, the Apache and Comanche, who also entered the Trans-Pecos region from the territory of New Mexico, engaged in conflicts with the Spanish colonists and Native Americans staying at the missions (Spicer 1983:44). These Apache and Comanche activities consisted of raids and counter attacks which took place chiefly along the Rio Grande Valley resulting in a state of intermittent warfare (Spicer 1983:44). As a result of the Apache and Comanche raiding, more missions and presidios were established throughout the Rio Grande in the Trans-Pecos area (Tyler 1975:31-33).

By the last quarter of the Eighteenth Century, many of the Native Americans from the Plains were using the Trans-Pecos region extensively as a place of refuge and raiding. As a result, military expeditions organized to repel these raiding tribes, such as those carried out by Ugalde in 1787, were commissioned regularly by the Spanish Authorities (Simmons et al. 1989:139). Military campaigns were carried out in the area until 1791, at which time a peace treaty was finally agreed upon by all warring parties (Tyler 1975:49). Nevertheless, the Comanche, as well

as some Apaches, continued their raiding activities in the Trans-Pecos region through the first half of the Nineteenth Century (Simmons et al. 1989:139).

Though the thrust of the Spanish empire was initially strong, by the late Eighteenth Century it was starting to wane. The frontier of New Spain lost support as a result of the weakening of Spain itself. Missionaries had increasing difficulties in recruiting both funds and dedicated workers. The expenditures for maintaining the military posts also declined. Furthermore, no mines of any importance were discovered north of Chihuahua, which made administrative interest in the area weak (Spicer 1983:64). No new Spanish colonists arrived after the middle of the Eighteenth Century. As a result, the population of the Spanish villages was nearly stable by the early Nineteenth Century. This resulted in a relationship between the Spanish and the Indians that was uncomplicated by either competition for land or political control (Spicer 1983:65).

Mexican Period

Mexico was granted political independence from Spain in 1821. This started the Mexican period that was characterized by the Impresario Grant System, which was initiated during the closing days of the Royal Spanish Government and was carried on by the newly independent Mexicans. This allowed for the settlement of the Texas borderlands by Anglo-Americans and immigrant Europeans. In the Trans-Pecos region, no Impresario land grants were issued and no new settlements were established along the Rio Grande or in other parts of the interior. As a result, lives of the local inhabitants along the Rio Grande remained essentially the same as during the colonial times. The Hispanic communities in this area continued to become more independent from the policies of Mexico City (USACE 1999:IV-56). The Mexican period would only last 15 years.

Texas Republic and Nineteenth Century American Period (1836-1900)

This period begins with the establishment of the Republic of Texas in 1836, and the subsequent incorporation of Texas into the U.S. in 1845. During this initial part of the Nineteenth Century, trade relations between the U.S., Texas, and Mexico increased significantly. As a result, already established local centers such as Santa Fe, San Antonio, and El Paso grew proportionately. Because of this growth, there was a need to improve previous overland trade routes, such as the Santa Fe Trail and the Camino Real, as well as to create new routes which could connect with these older trails.

By the end of the 1840s and the beginning of the 1850s, the Chihuahua Trail was established, connecting Chihuahua City, Mexico to Indianola, Texas on the Gulf Coast (Tyler 1975:54-55). The trail used the Spanish route established by Sánchez de Chamuscado along the Rio Conchos to La Junta and then crossed overland to the northeast (Sánchez 1992:54; Tyler 1975:54-55). The importance of the Chihuahua trail in the Trans-Pecos region was two-fold. First, it diverted some of the trade from the Santa Fe Trail, promoting more interaction with urban areas such as San Antonio. Second, it helped to establish new settlements (posts, forts, and towns) in the Interior subregion of the Trans-Pecos (Simmons et al. 1989:140).

When Mexican lands were annexed by the U.S. after the Mexican-American War (1846-1848), settlement of the Trans-Pecos regions increased significantly. On March 15, 1848 the Texas

legislature established Santa Fe County which included a broad area of west Texas and much of the present-day New Mexico and included the area of present-day El Paso County. The Texas legislature would further subdivide Santa Fe into four smaller counties in 1950, one of which was name El Paso County and established San Elizario, as its County seat. El Paso County would be further subdivided in November 1850 as part of the Compromise of 1850 passed by the United States Congress. At that time, El Paso County included present day Hudspeth and Culberson Countyies (Bryson 2019).

With the Treaty of Hidalgo, a series of military forts were established across the Trans-Pecos area to secure area from Native American populations and also further incursions from Mexico. Fort Leaton and the Town of Presidio were established in the La Junta area in 1848, and systematic mapping of the Trans-Pecos region was started in the early 1850s (Tyler 1975:77, 81, 101). Fort Leaton was not a military post but more of a fortress-home and trading post built by Ben Leaton (Timanus 2001:117). More than 40 rooms opened into a central courtyard inside a large adobe enclosure, which had walls that averaged 4.6 m (15.0 ft) in height to protect against raids from, predominantly, the Apache and Comanche (Timanus 2001:117-118).

Fort Davis was established in 1854 to protect a newly laid El Paso-San Antonio road from Native American raids (primarily Apache and Comanche) (Timanus 2001:154). This newly laid road was surveyed in 1850 as part of the mapping of the Trans-Pecos region (Tyler 1975:101). Six companies of the Eighth Infantry arrived to build and garrison the fort in 1854. Though there was a disagreement between General Persifor F. Smith and Lieutenant Colonel Washington Seawell, the company commander, over the proposed location of the fort, by 1856 six stone barracks had been erected in a line across the mouth of a canyon in the Davis Mountains (Timanus 2001:155-156). From the fort, the Eighth Infantry mounted patrols against the Apache and Comanche raiders (Timanus 2001:156).

Fort Bliss was established in 1848, and occupied several different sites in its first years of existence, including Smith's Ranch, Stephenson's (or Concorida) Ranch, Magoffinsville, and Hart's Mill. It would be at this later site in 1878 that the U.S. Government actually purchased the land instead of leasing it (Timanus 2001:120).

Fort Quitman was established 129 km (80 mi) southeast of El Paso in 1858. Like Fort Davis, Fort Quitman was established to protect the El Paso-San Antonio road from the raiding of the Apache, Comanche, and Mexican bandits. Fort Quitman got the distinction of being the most uncomfortable post in Texas and all supplies were shipped in at inflated prices (Timanus 2001:175).

Many of these newly established Nineteenth Century forts and settlements in the Trans-Pecos region suffered during the Civil War due to relocation of Federal troops to the southeast. Fort Davis was abandoned and immediately taken over by Confederate troops in June 1861. The Confederate occupation of the fort lasted for a year and it was abandoned in the spring of 1862 (Timanus 2001:156). As a consequence, raiding activities by the Apache and Comanche increased significantly in the area. The fort was regarrisoned by four companies of the Ninth Cavalry, a newly formed African-American regiment, two years after the Civil War. The regiment began reconstruction of the fort in 1867 (Timanus 2001:156-157). The Ninth Cavarly

patrolled the El Paso-San Antonio road and Native American hostilities temporarily subsided until 1867, but increased thereafter. Many of these later raids were initiated by the Mescalero Apache under the leadership of Victorio (Tyler 1975:117-119; Timanus 2001:158). In the 1879-1880 campaign, the soldiers at Fort Davis prevented Victorio from reentering the U.S. from his stronghold in Mexico (Timanus 2001:158). Because his escape routes to the U.S. were blocked, he was eventually killed by Mexican troops in 1880 (Tyler 1975:117-119; Simmons et al. 1989:140; Timanus 2001: 158). With the death of Victorio, peace came to the region. The African American troops of Fort Davis were transferred to New Mexico for the Geronimo campaign in 1885 and the post was officially abandoned by the army in 1891 (Timanus 2001:158).

A similar pattern was seen at Fort Bliss, which was also taken over by Confederate troops in 1861 and used as a base for the headquarters for the Confederacy's operations in the Southwest. The fort was located in Magoffinsville at the time, and was later destroyed in the face of advancing Union troops in 1862 (Timanus 2001:120). In 1868, the garrison was moved to Concordia Ranch, where two barracks and several adobe structures were built (Timanus 2001:121). This location was abandoned in 1876 and a new location, consisting of 54.6 ha (135.0 ac), was purchased at Hart's Mill in 1878. Construction at the new site went slowly because much needed laborers were drawn away by both the Victorio and Geronimo Campaigns. Fort Bliss provided the much needed protection in the region that allowed El Paso, and to a large extent, the Mexican Town of Juarez, to grow from 1878 to 1893 (Timanus 2001:122). In 1893, the fort was moved, for the final time, to an area 8 km (5 mi) northeast of El Paso (Timanus 2001:123).

Fort Quitman saw a different pattern of development during and after the Civil War than Fort Bliss or Fort Davis. Federal troops gladly abandoned the fort at the beginning of the Civil War. Despite being abandoned, Confederate troops never occupied the fort and Union troops from California only occupied it for a brief period during the Civil War in 1862 before returning to the West Coast. After the fort was abandoned by the Union troops, the Confederates stripped the wood from it. Units from the Ninth Cavalry reoccupied Fort Quitman in 1868. The adobe buildings at the fort still stood but were devoid of roofs, windows, window frames, doors, and door frames. The troops stationed at the fort rebuilt and, by 1876, there were two company-sized barracks, five buildings containing two officers' quarters each, a guard house, a bakery, some workshops, two storehouses, and a stable. The fort was ordered abandoned just one year later in 1877 (Timanus 2001:175). It was regarrisoned as a subpost of Fort Davis during the Campaign against Victorio and was abandoned for good in 1882 (Timanus 2001:175-176).

It was only after the Civil War that Fort Hancock was established, originally as Camp Rice, in 1881 (Timanus 2001:110). On September 14, 1882 Camp Rice was officially declared a subpost for Fort Davis and troops formed a routine of five day scouts searching for Indians, escorting mail, and furnishing detachments to protect workmen building the Texas and Pacific Railroad (Fort Hancock, n.d.:1). Fort Hancock was established on the Mexican border between Fort Bliss and Fort Quitman (Timanus 2001:110). Land was purchased for a new camp from Greenville M. Dodge and his wife by deed, and from the Texas and Pacific Railroad (Fort Hancock, n.d.:2). The fort was completed in July 1885 and a War Department order of May 11, 1886 named it Fort Hancock (Fort Hancock, n.d.:3). By the time it was renamed Fort Hancock in 1886, Indian raids

in the area had all but ceased (Timanus 2001:110). The buildings in Fort Hancock were of brick with barracks and quarters boasting broad two story verandas in the front and rear. Accommodations were considered ample for officers, a surgeon, about 75-90 men, and 64 horses. Fort Hancock had its own warehouses, guardhouse, bakery, and 12-bed hospital (Fort Hancock, n.d.:3). During its operation, the post was plagued with flooding and sickness. After a series of mishaps around the post, it was abandoned in October 1895 (Fort Hancock, n.d.:3; Timanus 2001:11). The town around Fort Hancock experienced a dramatic drop in its population from around 200 people to 50 people after the closing of the fort (Timanus 2001:11).

Significant increases in settlement of the Trans-Pecos region, especially the Interior subregion, continued after the end of Indian hostilities and the arrival of the railroads in the early 1880s (Simmons et al. 1989:140). As a result of the railroads, cattle ranching became the dominant industry in the Interior subregion of the Trans-Pecos (Simmons et al. 1989:140). The railroads also served to stimulate agriculture in the region, particularly in the El Paso area. In 1883, the City of El Paso was established as the county seat for El Paso County. The decision to establish the City of El Paso as the county seat was the result of the city's increasing importance as a transportation hub (Bryson 2019). The discovery of silver in the Chinati Mountains in the middle 1800s and the discovery of mercury in 1894 increased mining activity significantly around the Big Bend area and other parts of the Interior subregion (Tyler 1975:138-145).

Twentieth Century American Period

The Twentieth Century American period represents the modern era, which arbitrarily begins in 1900. In the Trans-Pecos region, cattle ranching, agriculture, and mining continued to prosper and settlements in the Interior subregion increased in size and number. The population of El Paso County increased from 3,845 in 1880, to 15,678 in 1890, and to 24,886 in 1900 (Bryson 2019). The City of El Paso was showing even greater growth from more than 10,000 in 1890, to 15,906 in 1900 and 39,279 in 1910 (Timmons 2020). In El Paso County, the number of cattle increased from 1,631 in 1890 to almost 95,000 by 1910. Similar increases were occurring in the agricultural industry, with the number of farms increasing from 196 in 1890, to 318 in 1900, and to 669 in 1910. Crops of sorghum and other feed grains dominated the agricultural products being produced to support the rapidly growing ranching of the area, with almost 10,000 acres of land being planted in sorghum by 1910. Other agricultural industry increases included fruit orchards, particularly pears and poultry, which by 1910 had increased to more than 14,200 birds being raised for eggs and meat. The manufacturing industry also increased from the end of the nineteenth century into the beginning of the twentieth century as a result of the railroads reaching the area. While in 1880 there were only four manufacturing establishments in El Paso County that employed 423 workers, by 1900 this had increased to 143 manufacturing establishments (Bryson 2019). In the Big Bend area, candelilla wax factories were established in 1911, which continue to be a major industry on both sides of the border today (Simmons et al. 1989:140).

While the population in the El Paso area was steadily increasing from the end of the nineteenth century into the beginning of the twentieth century, the greater Interior and Plains subregions, as a whole, remained sparsely populated with a scattering of small communities and isolated ranches. Due to the basin and range topography and low population density, this area gained a reputation as a place of refuge and was used extensively between 1912 and 1920 by Pancho Villa and other Mexican revolutionaries as a staging ground for raids along the border (Simmons et al.

1989:140). Instability in the region affected U.S. businesses operating in Mexico. This would come to a head in January 12, 1916 when a stalled passenger train was attacked by a group of 100 revolutionary soldiers under command of Villista Col. Pablo López. American passengers on the train included workers returning to the Cusihuiriáchic Mining company mines in Chihuahua. The attack left 18 Americans dead. The arrival of the bodies in El Paso on January 13, 1916 sparked unrest in the City of El Paso as enraged American marched in the streets seeking retribution for the killing of Americans. As tensions escalated throughout the day, American soldiers from Fort Bliss also took to the streets and attacked two Mexican men near the "Chihuahuita" district. Crowds in downtown streets swelled to almost 1,500 men including Anglos and U.S. soldiers erupting into a riot. As hostilities increased, General John J. Pershing, commander at Fort Bliss, ordered the Sixteenth Infantry to occupy downtown streets and help the local police force to restore order in the city. Once the riot was quelled, Pershing declared martial law in the city and established the "Dead Lines" containment policy, which restricted the Mexicans leaving the "Chichuahuita" district and Americans from entering it as well as closing the international bridge denying Americans access to Ciudad Juárez and Mexicans access to El Paso. The policy remained in effect for almost a year. The El Paso Race Riot of 1916 intensified the racial divisions between Anglos and Mexicans in the El Paso border region for years to come (Levario 2020).

By the early 1920s, conditions along the border became more stabilized (Tyler 1975:157-187) and the Trans-Pecos region outside of El Paso took on the modern character of small western mining and ranching towns, with large cattle ranches filling in the otherwise vacant basin and range country. The exodus of refugees fleeing the disruption of the Mexican Revolution as well as the enlargement of Fort Bliss during World War I further contributed to the growth of El Paso County and the City of El Paso. The population of El Paso County continued to increase at an accelerated rate reaching 101,877 in 1920 and 131,957 by 1930 (Bryson 2019). Similarly, the population of the City of El Paso increased to 77,560 by 1925 and 102,421 by 1930 (Timmons 2020).

The 1920s saw a cotton boom come to the El Paso area. Little if any cotton was in production in the El Paso area in 1900 and only 1,548 acres were devoted to cotton in 1920. By 1929 this had increased to more than 46,300 acres of cotton production across the county. Poultry production saw a similar spike, and by 1929, the amount of chickens raised in the county had increased to more than 57,300, producing more than 377,000 dozen eggs for the market. Fruit production also spiked, and by 1929, there were over 122,000 fruit trees in cultivation across the county. Finally, the manufacturing industry, which had been steadily increasing since the late nineteenth century, continued to rise. By 1929, there were 160 manufacturing establishments, which employed 6,224 workers (Bryson 2019). The petroleum industry provided an additional boost to the local economy of the City of El Paso in the late 1920s with the establishment of major refineries by Standard Oil Company of Texas and Texas and Phelps Dodge in 1928 and 1929. Finally, the establishment of Prohibition also provided an unexpected boost to the economy of the El Paso area by stimulating a growing tourist trade with drinking and gambling establishments still operating across the border in Juárez. Today, much of the Trans-Pecos region continues to get its revenue from tourism (Timmons 2020).

The Great Depression severely impacted the agricultural and manufacturing industries heading into the 1930s. Cotton production dropped more than 30 percent in the period from 1929 to 1930 and the number of farms in El Paso County decreased from 1,263 to 1,075. Similarly, manufacturing establishments declined from 160 in 1930 to 132 in 1940 leaving thousands of workers unemployed. With the economic downturn came a moderate decline in population, with the population of El Paso County declining to 131,067 and the population of the City of El Paso declining to 96,810 by 1940 (Bryson 2019; Timmons 2020).

World War II and the enlargement of Fort Bliss during the war helped the El Paso area recover by stimulating a new cycle of growth, particularly in the manufacturing industry. The number of manufacturing establishments had increased to 148 employing 6,167 workers by 1947, to 251 employing 14,916 workers by 1963, and to 471 employing 38,300 workers by 1982. The increase in the manufacturing industry also prompted increases in the populations of El Paso County and the City of El Paso. The population of the County of El Paso had increased to 194,968 by 1950, to 314,070 by 1969, to 359,291 by 1970, and to 479,899 by 1980 (Bryson 2019). Similarly, postwar development and rapid military and commercial expansion contributed to the growth of the City of El Paso and by 1950 the city absorbed the town of Ysleta. Population in the city increased to 130,003 by 1950, 276,687 by 1960, 339,615 by 1970, and 425,259 by 1980. The military, and Fort Bliss in particular, remains one of the most important economic entities to the City of El Paso, with military personnel making up one-fourth of the city's population and accounting for one out of every five dollars of the City of El Paso economy as of 1986. Textiles, tourism, the manufacture of cement and building materials, the refining of metals and petroleum, and food processing were the City of El Paso most important industries in 1980 (Timmons 2020).

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 4: PREVIOUS INVESTIGATIONS

PREVIOUSLY CONDUCTED ARCHAEOLOGICAL INVESTIGATIONS, PREVIOUSLY RECORDED ARCHAEOLOGICAL SITES, AND PREVIOUSLY RECORDED HISTORIC RESOURCES

Prior to the initiation of fieldwork, an archival records check was performed using the Texas Archeological Site Atlas maintained by the Texas Historical Commission (THC). All previously conducted archaeological investigations, archaeological sites, National Register of Historic Places (NRHP)-listed properties, Recorded Texas Historic Landmarks (RTHLs), Official Texas Historical Markers (OTHMs), and Historic Texas Cemeteries (HTCs) within a 1-mile search radius were reviewed. This information was used to identify any resources that may be affected by the proposed project. In addition, the information also provided insight into the types of resources that may be encountered during the surveys.

A total of five previously recorded archaeological sites and seven previously conducted archaeological investigations were identified within 1-mile of the APE (Figure 5; Tables 1 and 2) (THC 2020). No NRHP-listed properties or districts, RTHLs, OTHMs, or HTCs are located within the 1-mile search radius of the APE. None of the previously recorded archaeological sites or previously conducted archaeological investigation overlap with the current APE.

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

Table 1. Previously Conducted Archaeological Investigations within 1 mile of the Area of Potential Effect.

Atlas Number		Project Type	Texas Antiquities Commission Permit	Sites Discussed
8500011346	An Intensive Cultural Resources Survey for the Proposed Northeast Parkway, El Paso County, Texas	Survey	3559	41EP25-2493, 41EP2501, 41EP2789, 41EP2900, 41EP2913, 41EP2921, 41EP5739-5741, 41EP5756-5758, 41EP7-1664
8500011350	Cultural Resource Survey for the Proposed SFPP El Paso to Phoenix Pipeline Expansion, Segment A and Portions of Segment B, El Paso County, Texas Addendum to the Cultural Resource Survey for the Proposed SFPP El Paso to Phoenix Pipeline Expansion, Segment A and Portions of Segment B, El Paso County, Texas Variance to the Cultural Resource Survey, An Additional 6.3 Miles, for the Proposed SFPP El Paso to Phoenix Pipeline Extension, Segment B, El Paso County, Texas — El Paso County Data Recovery and Monitoring at Six Sites and Archival Research at One Site along the SFPP El Paso to Phoenix Expansion Project, Texas Portion, Texas Antiquities Committee Permits 4375, 4034, and 3999 — El Paso County	Survey	4034	41EP5596, 41EP5741, 41EP5795, 41EP5796, 41EP8, 41EP5799, 41EP5800, 41EP5612, 41EP5801, 41EP5798, 41EP5746
8500061389	Cultural and Environmental Resources Survey of 5.79 Miles for a Proposed Waterline Installation, El Paso Water Utilities-Public Service Board, El Paso County, Texas	Survey	6705	41EP5741
8500014025	A Cultural Resource Survey of a Pipe Yard as Part of the Proposed SFPP El Paso to Phoenix Pipeline Expansion, El Paso County, Texas	Survey	NA	None
8500080320	Cultural Resources Survey of the Proposed Franklin 1A Elevated Storage Tank and Access Road, Plant, El Paso County, Texas	Survey	8114	None

Table 1, continued

Atlas Number		Project Type	Texas Antiquities Commission Permit	Sites Discussed
850008757	Cultural Resources Survey of the Proposed North 2 Elevated Storage Tank and Access Road, El Paso County, Texas	Survey/ Reconnaissance	7831	None
8500081182	Report for Archeological Survey: Northeast Parkway from MLK Jr. Blvd. and State Line Drive to Loop 375 in El Paso County, Texas (El Paso District)	Survey	7853	41EP25, 41EP319, 41EP1699, 41EP2493, 41EP2501, 41EP2610, 41EP2900, 41EP2908, 41EP2913, 41EP2920, 41EP2921, 41EP2926, 41EP5739, 41EP5740, 41EP5741, 41EP5756, 41EP5757, 41EP5796, 41EP7228

THC (2020)

Table 2. Previously Recorded Archaeological Resources Recorded within 1 mile of the Area of Potential Effect.

Atlas Number	Number/ Name	Site Type	Designation/Eligibility
Archaeological Sites			
9141031901 9141031902	41EP319	Open/Ceramic	No determination listed
9141032301	41EP323	Prehistoric scatter	No determination listed
9141171601	41EP1716	Habitation site; ceramic scatter	1/28/1997- Prehistoric -Ineligible
9141290701	41EP2907	Open campsite, ceramic and lithic scatter	No determination listed
9141574101 9141574102 9141574103 9141574104 9141574105	41EP5741	Early 20th century historic settlement	8/10/2006 – Historic – Ineligible 9/29/2006 – Historic - Eligible 1/22/2007 – Historic – Eligible 1/26/2011 – Historic – Eligible 7/2/2013 – Historic - Eligible

THC (2020)

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 5: SURVEY METHODS

ARCHAEOLOGICAL RESOURCES SURVEY

Prior to the initiation of fieldwork, an archival records check was performed using the *Texas Archeological Site Atlas* maintained by the Texas Historical Commission (THC). All previously conducted archaeological investigations, archaeological sites, National Register of Historic Places (NRHP)-listed properties, Recorded Texas Historic Landmarks (RTHLs), Official Texas Historical Markers (OTHMs), and Historic Texas Cemeteries (HTCs) within a 1.6-kilometer (1.0-mile) search radius were reviewed. This information was used to identify any resources that may be affected by the proposed project. In addition, the information also provided insight into the types of resources that may be encountered during the surveys. Project historians also examined the Historic American Buildings Survey and Historic American Engineering Record of the National Park Service (NPS), as well as historic maps and subdivision plats documenting the historic development of the respective study areas.

Archaeological resource surveys were conducted across the entire 60.2-acre survey parcel. The Archaeological surveys consisted of both pedestrian survey with surface inspection along transects spaced 15 meters apart and the excavation of STPs across the survey parcel. The pedestrian surveys focused on blowouts and interdunal areas where there was the greatest potential of exposed cultural material. The excavation of STPs was done in accordance with the *Revised Archeological Survey Standards* that were provided by the regional reviewer at THC. Given the survey parcel was 60.2 acres in size, a minimum of 57 STPs would be required by the revised standards. The excavation of STPs also used the base transects as a guide to placing the shovel tests but focused on the coppice, or vegetated dunes that were scattered across the survey area. GSRC personnel excavated 61 STPs across the survey parcel (Appendix A). An additional STP was not excavated due to visible disturbance from the placement of a water line and associated infrastructure. STPs measured 30 centimeters (cm) by 30 cm and were excavated to the base Holocene deposits where possible. All material was screened through ¼-inch mesh screens, and any recovered cultural material was analyzed in the field and returned to the STP prior to backfilling. All STPs excavated were recorded on standardized STP forms, which noted stratigraphy of the STP, cultural material found within the STP, as well as the excavator and date of excavation. The positions of all excavated STPs were recorded using a sub-meter accurate Trimble GPS unit. All STPs were backfilled upon completion.

For the purpose of this study, archaeological sites are defined as five or more artifacts from STPs or from the surface in a 15-meter area that are determined to be 50 years old or older. After consultation with the regional reviewer regarding roadside historic trash scatters that are modern in nature, it was determined that while these modern scatters (post-1950) would be recorded as sites in the field, they would be treated as isolated occurrences (IOs) and not assigned trinomials in the report. Possible historical-age material (50+ years) was noted scattered across the western portion of the survey area. Predominantly, this material consisted of pull tab beverage cans that were in production from 1965 to 1975. Three historical scatters had sufficient concentration of artifacts to be recorded in the field as archaeological sites. The remaining scattered material outside of these concentrations were plotted with a sub-meter accurate GPS and made into individual IOs since they were not in sufficient enough concentrations to be recorded as a site.

In addition to the modern historic material noted across the survey parcel, four prehistoric IOs were also recorded. The surface areas around the prehistoric IOs were examined for additional material and STPs were also excavated to determine if additional subsurface material was present. One to six STPs were excavated near each prehistoric loci to determine if there was additional subsurface material present that would make the loci a site. An additional 34 delineation STPs were excavated across seven of the isolated occurrences.

Photographic data was also collected during the survey. Photographs were taken utilizing a digital camera with a minimum of 8 megapixels of resolution. Images were submitted in JPEG or TIFF format at 300 dots per inch or greater resolution. Images of poor quality were not submitted if there were other images of superior quality available. Sufficient photographs were taken at each IO to record the significant information describing the IO. At a minimum, photographs depicting an overview of the IO and significant features of the IO were taken. A survey photo log was maintained for the duration of the study. The survey photo log was sequentially numbered and included the cardinal directions of the image, the subject, and the date the image was taken.

ARCHITECTURAL/ABOVEGROUND RESOURCES SURVEY

A desktop archival review was conducted for the visual APE for the proposed CPC facility to assess if there was the potential for effects on aboveground/architectural historical resources. GSRC personnel consulted the *Texas Historic Sites Atlas* to determine what previously recorded historic resources were located within each APE. Additionally, GSRC utilized the Google Earth "timeline" feature, to eliminate any building in each APE that was constructed after 1995, and further refined the search for built structures utilizing NETR-Online historic aerials. During the archival and historical aerial photograph review, it was determined that no historical-age aboveground resources were located within the 0.5-mile visual APE of the proposed CPC facility.

CHAPTER 6: ARCHAEOLOGICAL RESOURCES SURVEY RESULTS

The archaeological survey was conducted from February 24 to 28, 2020 and consisted of a pedestrian survey supplemented with the excavation of STPs (Appendix B: Photographs 1 to 3). Mr. Lindemuth and Ms. Carter conducted the surveys. A total of 61 STPs were excavated across the 60.2 acre survey parcel (Figure 6; Appendix A). One STP was not excavated due to existing built environment (water line and infrastructure) (Appendix B: Photograph 4). None of the STPs excavated were positive for cultural material (Appendix B: Photographs 5 to 8). In addition to the disturbance noted from the recent construction of the waterline and associated infrastructure, two areas of probable disturbance were noted during the surveys consisting of two possible excavated areas and their associated spoil piles (Appendix B: Photograph 9). Transect STPs (T24-4 and T28-2), excavated near the largest of the spoil piles, noted mixed soils, confirming the areas are disturbed (Appendix B: Photograph 10). The two areas of disturbance first appear in an aerial photograph in 1967. In that aerial photograph they are connected to an existing mining industrial site by unimproved roads. As a result, the two areas of excavation probably represent gravel or caliche extraction test pits, given their limited nature. Twenty seven IOs were recorded during the surveys, which consisted of four prehistoric IOs, three historical scatters of modern material that were delineated as sites in the field, but recorded as IOs, and 20 scattered isolated artifacts that were not definitively historical and mapped as IOs (Figure 7). None of the IOs are considered eligible for inclusion on the NRHP. Detailed results of the recording of the prehistoric IOs and the historical scatters are presented below. The remaining 20 isolated non-definitive historical artifacts are summarized in a table following the detailed discussion.

ISOLATED OCCURRENCES

IO-1

IO-1 was originally recorded from a single tertiary flake of chert and a pull tab beverage can (ca. 1965 to 1975). The area within 30 meters of the find was examined for any additional cultural material but no additional prehistoric or potentially historical cultural material was noted from the surface during the delineation. Four delineation STPs were excavated around the tertiary flake at 5 meter intervals oriented to the cardinal directions (Figure 8; Table 3; Appendix B, Photograph 11). No additional subsurface cultural material was noted in any of the STPs. Given the lack of any additional cultural material the loci was recorded as an IO (IO-1) (Appendix B: Photograph 12). No additional archaeological work is recommended for the IO and the IO is recommended ineligible for the NRHP under any criteria.

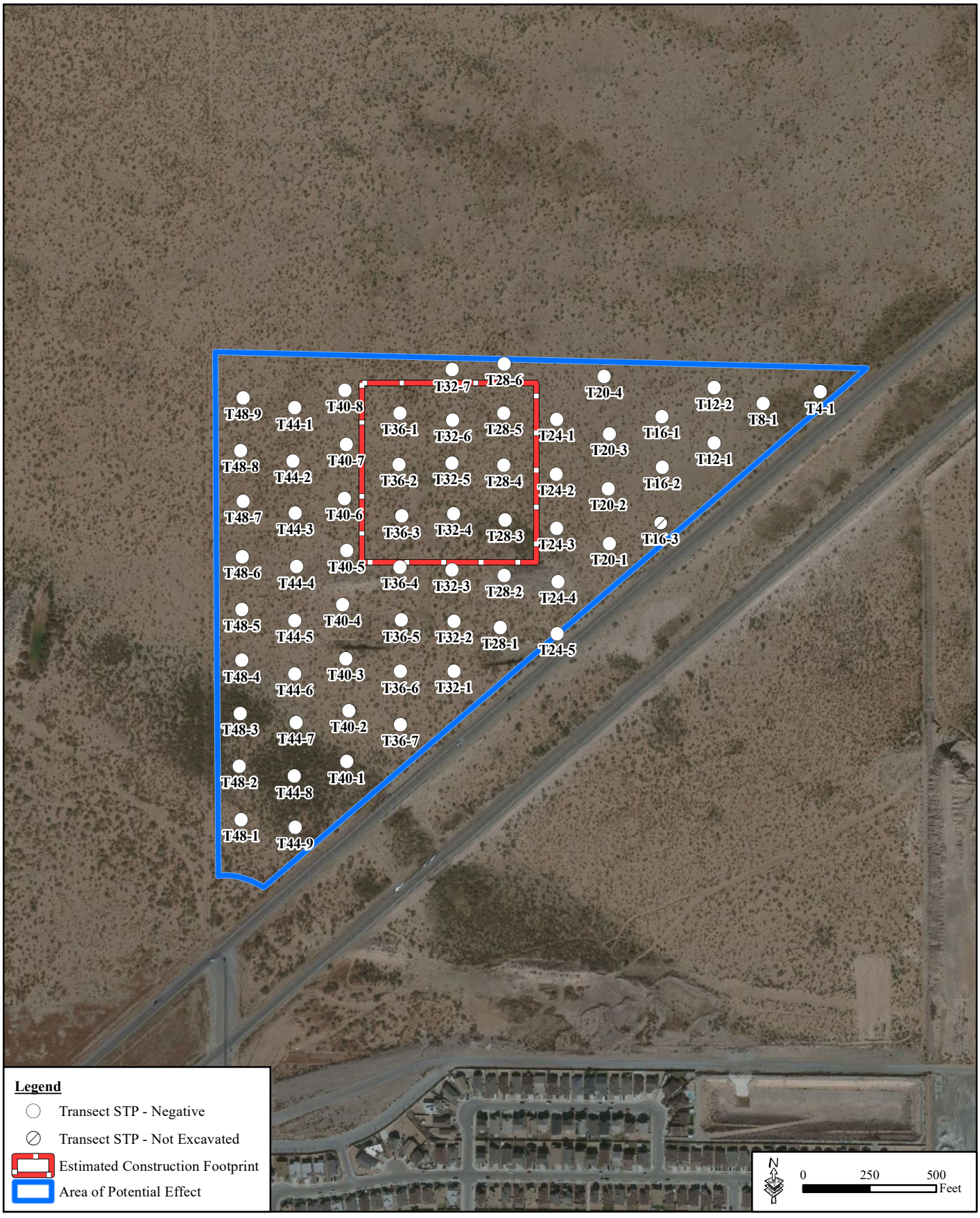


Figure 6. Aerial photograph showing the shovel test pits excavated during the survey.

GSRC

March 2020

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

Table 3. Delineation STPs Excavated at IO-1.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	EC	2/25/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 40-47 cmbgs reddish yellow (7.5YR 6/6) compact sandy clay loam with calcium carbonate	-	5 meters south of surface flake
D-2	JFL	2/25/2020	1: 0-9 cmbgs strong brown (7.5YR 5/6) sandy loam with ~ 20 percent gravel; 2: 9-49 cmbgs strong brown (7.5YR 4/6) sandy clay loam with ~25 percent gravel; 3: 49-55 cmbgs reddish yellow (7.5YR 6/6) sandy clay loam	-	5 meters west of surface flake
D-3	EC	2/25/2020	1: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 15-40 cmbgs brown (7.5YR 4/4) compact sandy clay loam with calcium carbonate	-	5 meters east of surface flake
D-4	JFL	2/25/2020	1: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 8-36 cmbgs brown (7.5YR 4/4) sandy clay loam with ~ 20 percent gravels and calcium carbonate nodules.	-	5 meters north of surface flake.

IO-2

IO-2 was originally recorded from a surface find of a groundstone fragment. Pedestrian delineation of the area around the groundstone fragment only identified one additional artifact within 30 meters, an unidirectional core tool, which represents a possible tested cobble. An additional six shovel test pits were excavated around the metate fragment and tested cobble, all of which were negative for cultural material (see Figure 8; Table 4; Appendix B, Photograph 13). The groundstone fragment represents a slab metate fragment of granite that has a maximum length of 95 millimeters (mm), a maximum width of 68 mm, and a thickness of 22 mm on the unmodified portion. The ground portion of the metate fragment measures 16 mm thick (Appendix B: Photographs 14 and 15). The tested cobble consisted of a small chert cobble measuring 55 mm by 50 mm by 18 mm in size with a single flake removed (Appendix B: Photographs 16 and 17). No additional material was noted within the 30 meter area of the groundstone and the two artifacts together were recorded as an IO (Appendix B: Photograph 18). IO-2 is recommended ineligible for the NRHP and no additional archaeological investigations are recommended for IO-2.

Table 4. Delineation STPs Excavated at IO-2.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	EC	2/25/2020	1: 0-18 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 18-40 cmbgs brown (7.5YR 4/6) sandy clay loam; 3: 40-45 cmbgs brown (7.5YR 4/6) compact sandy clay loam	-	5 meters west of groundstone; pebbles and cobbles throughout

Table 4, continued

STP	Excavator	Date	Soil profile	+/-	Comments
D-2	JFL	2/25/2020	1: 0-9 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 9-53 cmbgs brown (7.5YR 4/6) sandy clay loam; 3: 53-83 cmbgs strong brown (7.5YR 5/6) sandy loam; 4: 83-93 cmbgs white (7.5YR 8/1) clay loam/calcium carbonate	-	5 meters south of groundstone; unusually deep profile
D-3	EC	2/25/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-35 cmbgs brown (7.5YR 4/6) sandy clay loam; 3: 35-40 cmbgs brown (7.5YR 4/6) compact sandy clay loam with calcium carbonate	-	5 meters north of groundstone
D-4	JFL	2/25/2020	1: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam with 10 percent gravel; 2: 8-47 cmbgs brown (7.5YR 4/6) sandy clay loam; 3: 47-57 cmbgs brown (7.5YR 5/4) sandy clay loam (compact)	-	On coppice dune; 5 meters east of groundstone.
D-5	EC	2/25/2020	1: 0-14 cmbgs dark yellowish brown (10YR 4/6) sandy loam; 2: 14-47 cmbgs yellowish brown (10YR 5/4) sandy clay loam; 3: 47-56 cmbgs yellowish brown(10YR 5/4) compact sandy clay loam	-	5 meters east of tested cobble
D-6	JFL	2/25/2020	1: 0-7 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 7-43 cmbgs brown (7.5YR 4/6) sandy clay loam with 10 percent gravel; 3: 43-50 cmbgs brown (7.5YR 5/6) sandy clay loam with 20 percent gravel	-	

IO-3

IO-3 was recorded from a single piece of lithic debitage that was found on the surface 30 meters from IO-2. The piece of lithic debitage was a secondary flake of chert. Given its distance from IO-2 it was delineated as its own IO. Surface examination of the area around the piece of lithic debitage noted no additional artifacts within 30 meters. Four STPs were excavated around the surface find to determine if any additional cultural material was present subsurface (see Figure 8; Table 5; Appendix B, Photograph 19). All four STPs were negative for cultural material. Given the lack of any additional cultural material, the flake was recorded as an IO (Appendix B, Photograph 20). No additional archaeological work is recommended for this IO and it is recommended ineligible for the NRHP under any criteria.

Table 5. Delineation STPs Excavated at IO-3.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	JFL	2/26/2020	1: 0-9 cmbgs strong brown (7.5YR 5/6) sandy loam with 10 percent gravel; 2: 9-53 cmbgs strong brown (7.5YR 4/6) sandy clay loam with 10 percent gravel; 3: 53-61 cmbgs pinkish white (7.5YR 8/2) sandy clay loam with calcium carbonate	-	5 meters north of flake; non-coppice dune.

Table 5, continued

STP	Excavator	Date	Soil profile	+/-	Comments
D-2	EC	2/26/2020	1: 0-20 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 21-50 cmbgs strong brown (7.5YR 4/6) sandy clay loam (compact)	-	5 meters east of flake; interdunal
D-3	JFL	2/26/2020	1: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 8-47 cmbgs strong brown (7.5YR 4/6) sandy clay loam with 10 percent gravel; 3: 47-50 cmbgs strong brown (7.5YR 5/6) sandy clay loam (compact)	-	5 meters west of flake.
D-4	EC	2/26/2020	1: 0-10 cmbgs reddish yellow (7.5YR 6/6) sandy loam; 2:10-45 cmbgs strong brown (7.5YR 5/6) sandy clay loam; 3: 45-55 cmbgs brown (7.5YR 5/4) sandy clay loam (compact)	-	5 meters south of flake; dune; 30 percent gravels and pebbles throughout

IO-4

IO-4 was originally recorded from the surface find of a hafted biface (Appendix B, Photographs 21 and 22). The hafted biface was made of white chert and with very weak to absent shoulders and a deep concave base. The hafted biface measured 6 mm thick and 46 mm in total length, with a 22 mm haft length, 2 mm base depth, a 16 mm maximum blade width, 18 mm neck width, and 10 mm wide base. The point has been tentatively identified as Bajada type, which is a Middle Archaic point. A surface examination around the area of the hafted biface failed to identify any additional cultural material. Four STPs were excavated around the surface find to determine if any additional cultural material was present subsurface (see Figure 8; Table 6; Appendix B, Photograph 23). All four STPs were negative for cultural material. Given the lack of any additional cultural material, the hafted biface was recorded as an IO (Appendix B, Photograph 24). No additional archaeological work is recommended for this IO and it is recommended ineligible for the NRHP under any criteria.

Table 6. Delineation STPs Excavated at IO-4.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	EC	2/26/2020	1: 0-30 cmbgs reddish yellow (7.5YR 6/6) sandy loam; 2: 30-55 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 55-70 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam	-	5 meters north of biface; in dune; 30 percent pebbles/gravels throughout
D-2	JFL	2/26/2020	1: 0-63 cmbgs strong brown (7.5YR 4/6) sandy loam; 2: 63-76 cmbgs strong brown (7.5YR 5/6) sandy clay loam with 10 percent calcium carbonate coated gravels	-	On coppice dune; 0-63 cmbgs represents wind blown dune deposits, 5 meters east of biface
D-3	EC	2/26/2020	1: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 15-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 40-50 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam	-	5 meters south of biface.
D-4	JFL	2/26/2020	1: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 8-41 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 41-48 cmbgs reddish yellow (7.5YR 6/6) compact sandy lay loam with calcium carbonate coated gravels	-	5 meters west of biface.

IO-5

IO-5 was recorded from a diffuse scatter of possible historic material noted from the surface. A negative transect STP near the center of the IO was used as a base for conducting the subsurface tests at IO-5. An additional five delineation STPs were excavated at 20 meter intervals at the site, all of which were negative for cultural material (Figure 9; Table 7; Appendix B, Photograph 25). As a result, the IO boundary was determined from the surface scatter of artifacts. The boundary of the IO measures 114 meters north to south by 28 meters east to west and has a total area of 2,416 square meters (m^2) (Appendix B, Photograph 26).

Table 7. Delineation STPs Excavated at IO-5.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	JFL	2/27/2020	1: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 5-46 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 46-47 cmbgs brown (7.5YR 5/4) sandy clay loam with gravel coated in calcium carbonate (compact)	-	Near foot of dune; 20 meters north of transect negative
D-2	EC	2/27/2020	1: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 15-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 40-50 cmbgs brown (7.5YR 5/4) compact sany clay loam with calcium carbonate coated gravels	-	On dune; 20 meters east of transect negative
D-3	JFL	2/27/2020	1: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 5-36 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 36-41 cmbgs light brown (7.5YR 6/4) sandy clay loam with 10 percent calcium carbonate coated gravels	-	20 meters west of transect negative
D-4	EC	2/27/2020	1: 0-30 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 30-47 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 47-60 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	-	On edge of dune; 20 meters south of transect negative
D-5	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-30 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 30-50 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 10 percent calcium carbonate coated gravels	-	

During the delineation of IO-5, one artifact concentration was noted and mapped as AC-1 (Appendix B, Photograph 27). An artifact inventory for AC-1 is presented in Table 8. Artifacts recorded in the concentration included curved glass shards (amber and green), bottle base fragments (amber and green), whole machine-made bottle (amber), decorated whiteware, decorated porcelain, a barbed wire fragment, metal straps, a metal crown bottle cap, and milled wood fragments. Several of the amber bottles and bottle base fragments had identifiable maker's marks. All of the maker's marks noted on the amber bottles and bottle base were the "CGD"

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

Table 8. Artifact Inventory Artifact Concentration 1 (AC-1)

Type	Count
Glass	
Amber, curved	100+
Amber, whole bottle	3
Amber, bottle base fragment	7
Green, curved	55
Green, bottle base fragment	2
Ceramics	
Decorated whiteware, blue transfer, body	4
Decorated whiteware, blue transfer, rim	4
Decorated whiteware, blue transfer, rim/base	1
Decorated Porcelain, banded, body	1
Decorated Porcelain, banded, rim	1
Decorated Porcelain, banded, rim	1
Metal	
Barbed wire, iron	1
Straps, iron	5
Crown bottle cap, iron	1
Total	186+

mark of the Coors Glass Division, which was in use from 1976 to 1995 (Appendix B, Photographs 28 to 31). All of the bases have a two number identifier below and to the right of the maker's mark, which represents a date position for the mark. Numbers listed in the date positions of the various bases and whole bottles include 83 (n=7) and a single 82, dating all the amber bottles within the concentration to post 1982 and not historical. The decorated whiteware consisted of blue transfer print decorated sherds, including a partial rim and base fragment that had a maker's mark (Appendix B, Photographs 32 to 35). All of the sherds present seem to be from a single bowl. The maker's mark is for the Wood & Sons Pottery of England and dates ca. 1917+ with "Willow" denoting the pattern name (ThePotteries 2020). Given its association with the multiple bottle bases as well as the extensive scatter of amber shards intermingled with the sherds, it was also most probably deposited in this location after 1983 and not historical. The porcelain sherds had a simple annular decoration and no maker's mark and were of limited temporal diagnostic utility. None of the other material within the artifact concentration was temporally diagnostic.

Outside of the mapped artifact concentration there was a diffuse scatter of historical material. Material noted outside of the artifact scatter is listed in Table 9. Materials recorded outside of the artifact scatter were predominantly metal, which included pull tab beverage cans (ca. 1965 to 1975), sanitary can lids, a rectangular metal coffee tin, corrugated metal, sanitary cans, an aluminum light bulb base, and various pieces of metal hardware. In addition to metal, other artifacts included glass (curved amber and an amber bottle base), ceramics (blue transfer print decorated whiteware), and synthetic material (rubber hose) (Appendix B, Photographs 36 to 41). The amber bottle base has a "C" in a circle maker's mark on its base. This maker's mark is for the Chattanooga Glass Company that was used from ca. 1927 through 1988 (Lockhart et al. 2020a).

Table 9. General Surface Artifact Inventory IO-5

Type	Count
Glass	
Amber, curved	25
Amber, bottle base fragment	1
Ceramics	
Decorated whiteware, blue transfer, body	1
Metal	
Pull tab beverage can	2
Rectangular coffee tin	1
Corrugated metal	2
Sanitary can, crushed	1
Sanitary can lid, can opener opened	2
Unidentifiable metal hardware	3
Synthetic	
Rubber hose fragment	1
Total	39

Historic aerials of the parcel show the entire 60.2-acre survey parcel was undeveloped in 1942 and 1957 (Appendix C, Figures C-1 and C-2. By 1967 several large scrapes or gravel/caliche test pits appear in the aerials, two of which fall within the 60.2-acre survey parcel (Appendix C, Figure C-3). Dirt roads connecting these scrapes or test pits run to an existing gravel/caliche mining area appear in the 1967 and 1972 historic aerials (Appendix C, Figures C-3 and C-4). During this time the size and configuration of the scrapes change little suggesting these scrapes or pits were not extensively used for gravel or calcihe extraction. Patriot Highway appears in the 1996 aerial cutting the dirt roads to these pits suggesting they are no longer actively utilized (Appendix C, Figure C-5). The idle pits are visible also in the 2002 and 2012 aerial photographs though become less distinct through the years (Appendix C, Figures C-6 and C-7). No structures or other aboveground resources were noted anywhere within the survey parcels in any of the historic aerials examined.

Given the review of historic aerials and the artifact assemblage, IO-5 represents a late twentieth century roadside trash scatter, possibly dumping associated with the late twentieth century testing of the area for possible gravel or caliche extraction. Given the late age of the material and their probable secondary deposition, the scatter was recorded as an IO. IO-5 is recommended ineligible for the NRHP under any criteria and no additional archaeological work is recommended for the IO.

IO-6

IO-6 was recorded from a moderate to light surface scatter of possible historical material. None of the transect STPs excavated in the vicinity of the surface scatter were positive for cultural material. The closest negative transect STP (T36-7) was used to layout the delineation STPs for the scatter. Five Delineation STPs were excavated off to the south, east, and west oriented within the scatter of artifacts (Figure 10; Table 10; Appendix B, Photograph 42). All five

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

delineation STPs were negative for cultural material. As a result, the boundary of the IO was determined from the surface expression of artifacts. IO-6 measures 55 meters north-south by 57 meters east to west and has a total site area of 1,076 m^2 (Appendix B, Photograph 43).

Table 10. Delineation STPs Excavated at IO-6.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-35 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 35-50 cmbgs brown (7.5YR 5/4) compact sandy clay loam with 5 percent nodules of calcium carbonate	-	20 meters south of transect negative.
D-2	JFL	2/27/2020	1: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 6-27 cmbgs mottled strong brown (7.5YR 5/6 and 7.5YR 4/6) sandy clay loam with caliche nodules, 3: 27-31 cmbgs strong brown (7.5YR 5/6) sandy clay loam with caliche nodules	-	20 meters east of D-1
D-3	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 40-60 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam	-	20 meters south of D-1
D-4	JFL	2/27/2020	1: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 5-55 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 55-103 cmbgs light brown (7.5YR 4/6) sandy clay loam with 10 percent gravel coated in calcium carbonate	-	20 meters north and 20 meters east of D-2
D-5	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-35 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam	-	20 meters west of D-3, 30 percent gravels throughout.

Artifacts recorded during the delineation of IO-6 were limited to middle to late twentieth century material. An artifact inventory of surface artifacts recorded at IO-6 is presented in Table 11. Artifacts were limited to glass and metal. Glass artifacts included curved glass (aquamarine, colorless, amber, and green), bottle bases (colorless, amber, and aquamarine), and whole bottles (amber). Only a few of the bottle bases and whole bottles had identifiable maker's marks on their base. One colorless bottle base was embossed with "84 – 78"/"LIQUOR BOTTLE"/"2, an L inside a circle, 19." The "L" inside a circle maker's mark matches with two manufacturer's marks, the Latchford Glass Company which dates from 1957 to 1989 or the W.J. Latchford Company which dates to the 1930s (Lockhart et al. 2020b) (Appendix B, Photographs 44 and 45). Another whole amber bottle had a base embossed with "2" "AO" "AHK" "79" and "REG. U.S. PAT. 87. M. OFF." (Appendix B, Photographs 46 and 47). The "AHK" maker's mark belongs to the Kerr Glass Mfg. Co. and dates from 1944 to ca. 1999 (Lockhart 2020c). If the "79" on the base represents a date mark, then the bottle was produced in 1979. The final colorless glass bottle was embossed "VITA FRESH" on its shoulder and "L-232/06"/"18" "34"/"77" on its base (Appendix B, Photographs 48 and 49). It has no identifiable maker's mark. The remaining glass bottles and bottle bases had no identifiable marks on their bases.

Table 11. General Surface Artifact Inventory IO-6

Type	Count
Glass	
Colorless, curved	36
Colorless, whole bottle	1
Aquamarine, Curved	250
Aquamarine, bottle base	2
Amber, curved	25
Amber, bottle base fragment	1
Amber, whole bottle	2
Green, curved	9
Metal	
Pull tab beverage can	3
Rectangular container	1
Strap	1
Bailing wire	4
Sanitary can, crushed	2
Bolt	3
Nut	2
Washer	
Spring	1
Oil Filter	1
Unidentifiable vehicle/machinery parts	12
Crown bottle cap	3
Architectural	
Cinder construction block fragments	7
Total	39

Metal artifacts at the site included pull tab beverage cans (ca. 1965 to 1975), bailing wire, crown bottle caps, nuts, bolts, a washer, a spring, straps, an oil filter, unidentifiable vehicle parts, and a rectangular metal container (possibly a fuel can) (Appendix A, Photographs 50 to 52).

A summary of the review of historical aerial photography is presented under IO-5. No known historical structures have been identified in any of the aerial photographs examined. Given the review of historic aerials and the artifact assemblage, IO-6 represents a late twentieth century roadside trash scatter, possibly dumping associated with the late twentieth century testing of the area for possible gravel or caliche extraction. Given the late age of the material and their probable secondary deposition, the scatter was recorded as an IO. IO-6 is recommended ineligible for the NRHP under any criteria and no additional archaeological work is recommended for the IO.

IO-7

IO-7 was recorded from a broad scatter of artifacts and a single glass artifact concentration noted during the pedestrian survey of the 60.2-acre survey parcel. None of the transect STPs excavated across the broad scatter of surface artifacts comprising IO-7 were positive for cultural material. One of the negative transect STPs near the center of the surface scatter of artifacts (T44-6) was used to layout six delineation STPs to determine if any subsurface material was present at the IO. Delineation STPs were excavated north, east, south and west of STP T44-6 and all were negative for cultural material (Figure 11; Table 12; Appendix B, Photograph 53). As a result, the boundaries for the IO were determined from the surface scatter of artifacts. IO-7 measures 144 north to south, by 126 east to west and has a total area of 10,762 m^2 (Appendix B, Photograph 3).

Table 12. Delineation STPs Excavated at IO-7.

STP	Excavator	Date	Soil profile	+/-	Comments
D-1	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-43 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 43-51 cmbgs brown (7.5YR 5/4) compact sandy clay loam with nodules of calcium carbonate	-	20 meters north of transect negative
D-2	JFL	2/27/2020	1: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 5-33 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 33-37 cmbgs strong brown (7.5YR 5/4) sandy clay loam, compact with gravel coated in calcium carbonate	-	20 meters east of transect negative.
D-3	EC	2/27/2020	1:0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 40-50 cmbgs brown (10YR 5/4) compact sandy clay loam with 10 percent calcium carbonate nodules	-	20 meters north of D-1
D-4	JFL	2/27/2020	1: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 6-39 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 39-43 cmbgs light brown (7.5YR 6/4) sandy clay loam with approximately 10 percent gravels coated in calcium carbonate	-	20 meters east of D-2
D-5	EC	2/27/2020	1: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 10-40 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam; 3: 40-50 cmbgs strong brown (7.5YR 5/4) very compact sandy clay loam	-	20 meters north of transect negative; Calcium carbonate throughout
D-6	JFL	2/27/2020	1: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; 2: 6-34 cmbgs strong brown (7.5YR 4/6) sandy clay loam; 3: 34-40 cmbgs light brown (7.5YR 6/4) sandy clay loam with 10 percent gravels coated in calcium carbonate	-	20 meters south of D-4

This page contains Restricted Cultural Resource Information and was removed in accordance with Texas Administrative Code, Title 13, Part 2, Chapters 24 and 26.

Artifacts recorded at IO-7 were limited to late twentieth century historical artifacts. One artifact concentration (AC-1) was noted during the delineation of IO-7(Appendix B, Photograph 54). An inventory of artifacts recorded in AC-1 is presented in Table 13. This artifact concentration was predominantly glass artifacts and included 100+ colorless curved glass shards, 100+ green glass shards, 100+ amber glass shards as well as several complete cosmetic bottles (Appendix B: Photographs 55 to 59). None of the cosmetic bottles has identifiable maker's marks on their bases. While none of the cosmetic bottles had identifiable maker's marks, the Cover Girl Nail Slicks brand debuted in April 1976.

Table 13. Artifact Inventory Artifact Concentration 1 (AC-1)

Type	Count
Glass	
Amber, curved	100+
Colorless, curved	100+
Colorless, whole bottle	3
Green, curved	100+
Green, bottle base fragment	3
Metal	
Barbed wire, iron	2
Container, screw cap	1
Spark plugs	6
Indeterminate metal fragments	5
Architectural	
Concrete/cinder construction block fragments	2
Total	322+

In addition the cosmetic bottles, one green bottle base was also recorded within the artifact concentration. The green bottle base was molded with "1505"/a stylized "g" in an oval/"32 0" (Appendix B, Photograph 60). The stylized "g" in an oval is the maker's mark for the E&J Gallo company that was in use from 1958 to present (Lockhart et al. 2020d). In addition to glass artifacts several metal artifacts were present in the scatter including a metal container with screw top, barbed wire fragments, indeterminate metal fragments, and spark plugs.

Outside of the artifact concentration is a broad scatter of late twentieth century historical material, which includes a large amount of glass, metal, ceramics, architectural material, and milled wood. Table 14 presents the artifact inventory of IO-7 outside of the AC-1. Glass artifacts were dominated by curved glass shards (colorless, amber, green, and aquamarine) but also included bottle base fragments (colorless, green, aquamarine, and amber), bottle necks and finishes (colorless, amber, aquamarine, and green), whole bottles (colorless and amber), a green glass handle, and a yellow glass marble. Manufacture on all the bottles that could be identified was machine-made.

Table 14. General Surface Artifact Inventory IO-7

Type	Count
Glass	
Colorless, curved	100+
Colorless, flat	100+
Colorless, whole bottle	6
Colorless, bottle base	8
Colorless, tray	10
Colorless, neck/finish	5
Aquamarine, curved	31
Aquamarine, flat	6
Aquamarine, bottle base	1
Aquamarine, bottle neck/finish with crown cap	1
Amber, curved	18
Amber, bottle base fragment	8
Amber Neck/Finish	6
Amber, whole bottle	1
Green, curved	56
Green, bottle base	5
Green, neck/finish, small mouth/external thread	5
Green, handle	1
Yellow, marble	1
Ceramics	
Undecorated redware body	54
Undecorated redware rim	3
Whiteware, plain	6
Metal	
Pull tab beverage can	20
Pull tab beverage can, with label	1
Bullet casing	2
Metal lid	5
Bucket	1
Paint can	4
Spray paint can	1
Bailing wire	2
Square metal tube	1
Sanitary can	14
Unidentifiable vehicle/machinery parts	15
Oil Filter	1
Metal can with screw cap	1
Corrugated metal	1
Lid, 55-gallon drum	1

Table 14, continued

Type	Count
Pipe	1
Architectural	
Cinder construction block fragments	
Ceramic tile	5
Brick	2
Milled wood	1
Synthetic	
Rubber fragments	1
Total	

A large amount of the bottle bases had molded marks, some of which could be attributed to known maker's marks. A partial colorless bottle base had "13" "8" / "6" in a partial circle on its base, but could not be associated with a known maker's mark (Appendix B; Photographs 61 and 62). Another partial colorless bottle base (G.2) was molded with "T1"/"..."/"87" and also could not be attributed to a known maker's mark (Appendix B, Photographs 63 and 64). A partial green bottle base is molded with "L" and "LG" along its bottom edge (Appendix B, Photographs 65 and 66). This mark matches that of the Liberty Glass Co. and was in use from 1955 to 1994 (Lockhart et al. 2020b). A partial amber bottle base (G.4) was molded with "BN-1034"/"N" inside square (Appendix B, Photograph 67). This matches the maker's mark for the Obear-Nester Glass Co. that was in use from 1915 to 1978 (Lockhart et al. 2020b). A whole colorless machine-made bottle (G.5) had a screw top finish and two "R"s molded back to back on its shoulder (Appendix B, Photograph 68). Molded into the bottle's base was "78" "an M and upside V in a triangle" and "5" (Appendix B, Photograph 69). This corresponds with a Mexican glass company mark for the Vidriera Monterrey company, which was in use from the 1930s through the late 1980s (Lockhart et al. 2020e). A whole colorless machine-made glass jar (G.6) had no markings on its body but did have "DES PAT 234913"/"6" An anchor in a square "27" molded on its base (Appendix B, Photographs 70 and 71). This maker's mark is for the Anchor Glass Container Corporation that is in use from 1980 to the present (Lockhart et al. 2020f). An amber bottle base fragment (G.7) was molded with "552", a connected "N" and "W", "78", and "E5" (Appendix B, Photographs 72 and 73). This maker's mark corresponds with the Northwestern Glass Company and was in use from 1931 to 1987 (Lockhart et al. 2020g). The molded "78" is a probable date code, which suggests the bottle was produced in 1978 (Lockhart et al. 2020h). A partial colorless bottle base (G.8) was molded with "…E IN MEXICO" on its body and a "VR" in a circle on its base (Appendix B, Photographs 74 and 75). This is possibly identified as a maker's mark used by the Mexican glass company Vidriera los Reyes and in use from ca. 1980s to 1990s (Lockhart et al. 2020e). A partial colorless glass bottle base (G.14) had a cursive "Ball" with closed "B", "Quilted Crystal" and "U.S.A." molded on its base (Appendix B, Photograph 76). This particular logo with the closed "B" was used by the Ball Brothers Glass Mfg. Co. from 1960 to the present (Lockhart et al. 2020i). A colorless bottle base (G.15) had a partial maker's mark of what appears to be an "f" in a sunburst, which could not be associated with a known glass maker's mark (Appendix B, Photograph 77). A green bottle base fragment (G.16) was molded with "1009A"/An "S" in a jug or bottle/ "64" on its base (Appendix B, Photograph 78). The maker's mark could not be matched with a maker's mark from a known glass manufacturer. Another green bottle base (G.17) was molded with "750 ML" and "VL"

(Appendix B, Photograph 79). This maker's mark also could not be matched with a known mark of a glass manufacturer. A whole colorless glass bottle with crown finish (G.18) had the scripted "Pepsi" logo and "10 FL. OZ" molded on its shoulder and a "B" in a circle, "9118"/"14"/"76"/"28" molded in its base (Appendix B, Photographs 80 and 81). This maker's mark is for the Brockway Glass Company. While Lockhart et al. (2020j) state that the "B" in a circle with no serifs dates from ca. 1980 to ca. 1996, the "76" in the date position of this base suggests that this bottle was produced in 1976. Another interesting whole amber bottle (G.19) was molded on the base with "4232"/a "U" inside a partially closed circle "F-1"/"2" (Appendix B, Photographs 82 and 83). While the bottle is an interesting shape, the molded marks on the base could not be definitively matched with a known mark from a glass manufacturer. A partial colorless glass bottle base (G.20) was molded with "DES PAT.."/"6" "45"/an anchor in a rectangle on its base (Appendix B, Photograph 84). Like the whole colorless jar (G.6), this maker's mark is for the Anchor Glass Container Corporation that is in use from 1980 to the present (Lockhart et al. 2020f). Another colorless glass bottle base (G.21) had "..MH661"/"80" two "G" inverted on one another ":L"/"4" in a circle "-A" molded into its base (Appendix B, Photograph 85). The two inverted Gs is the maker's mark for the Glass Container Corp. and was in use from 1967 to 1987 (Lockhart et al. 2020d). Another colorless glass bottle base (G.22) was molded with "3"/"H-257"/"6" "B" in a Circle with 2 serifs "4" on its base (Appendix B, Photograph 86). This maker's mark was for the Brockway Glass Company and was in use from 1935 to ca. 1980 (Lockhart et al. 2020j). A whole colorless glass bottle with cap had no molded markings on its body and concentric circles molded on its base with a illegible maker's mark in the center (Appendix B, Photographs 87 and 88). Given the illegibility of the maker's mark, it could not be matched with a known mark from a glass manufacturer. A final amber bottle base had "CGD/"10" "79"/"6" molded on its base (Appendix B, Photograph 89). This maker's mark is for the Coors Glass Division which was used from 1976 to 1995 (Lockhart et al. 2020a). The "79" most probably represents a date code which indicates that the bottle was made in 1979.

The remaining artifacts recorded at IO-7 were largely undiagnostic temporally. Ceramics were limited to undecorated whiteware and redware (Appendix B; Photographs 90 and 91). Metal artifacts included several pull tab beverage cans (ca. 1965 to 1975) one of which still bore its label (Appendix B, Photographs 92 and 93). Another partially crushed sanitary can was stamped with "SEP 80"/"P10"/"25 YEARS" on its base (Appendix B, Photographs 94 and 95). This suggests a 1980 date for the sanitary can. No additional temporally diagnostic material was noted during the delineation of the IO.

A summary of the review of historical aerial photographs is presented under IO-5. No known historical structures have been identified in any of the aerial photographs examined. Given the review of historic aerials and the artifact assemblage, IO-7 represents a late twentieth century roadside trash scatter, possibly dumping associated with the late twentieth century testing of the area for possible gravel or caliche extraction. Given the late age of the material and their probable secondary deposition the scatter was recorded as an IO. IO-7 is recommended ineligible for the NRHP under any criteria and no additional archaeological work is recommended for the IO.

IOs 8 to 27

IOs 8 through 27 represent scattered possible historical material that does not have the density to be recorded as a site and lack attributes that definitively make them historical in age. The vast majority of these scattered IOs represent pull tab beverage cans that were in production from 1965 to 1975. All of these scattered possible historical materials were mapped with a sub-meter accurate GPS and summarized in table 15 below (see Figure 7). None of the IOs are recommended eligible for the NRHP and no further archaeological investigations are recommended for the scattered IOs.

Table 15. Summary of Isolated Occurrences 8 through 27.

Label	Comment	Type	Age	Photographs Appendix B
IO-8	Sanitary Can Fragment	Metal	1904 to present	
IO-9	Pull tab beverage can	Metal	1965 to 1975	
IO-10	Pull tab beverage can	Metal	1965 to 1975	
IO-11	Pull tab beverage can	Metal	1965 to 1975	
IO-12	Pull tab beverage can	Metal	1965 to 1975	
IO-13	Drum with Bullet Holes	Metal	-	
IO-14	Square can	Metal	-	
IO-15	Pull tab beverage can	Metal	1965 to 1975	
IO-16	Square can	Metal	-	
IO-17	Milled Wood	Metal	-	
IO-18	Pull tab beverage can	Metal	1965 to 1975	
IO-19	Metal Cap with Plastic	Metal	-	
IO-20	Pull tab beverage can	Metal	1965 to 1975	
IO-21	Metal Lid	Metal	-	
IO-22	Pull tab beverage can	Metal	1965 to 1975	
IO-23	Pull tab beverage can	Metal	1965 to 1975	
IO-24	Oil Filter	Metal	-	
IO-25	Sanitary Can - crushed - modern	Metal	1904 to present	
IO-26	5 Spikes and milled wood	Feature	-	Photograph 96
IO-27	Colorless Bottle Base - modern	Glass	1935 to 1980	Photographs 97 and 98

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 7: ARCHITECTURAL/ABOVEGROUND RESOURCES SURVEY RESULTS

Ms. Edwards conducted an archival and desktop review of the visual APE associated with the proposed El Paso CPC. A review of the archival data identified no known NRHP-listed properties, RTHLs, OTHMs, or HTCs within a 1-mile search radius conducted. In addition historical aerial photographs were examined for an 0.5-mile visual search area. The property remained undeveloped until the 1967 aerial photograph where two scrapes representing possible gravel/caliche test pits appear. The test pits remain fairly unchanged in the 2003, 2004, 2010, and 2016 aerial photographs though become less distinct through the years. No structures or other aboveground resources were noted anywhere within the survey parcel. Outside of the survey parcel within the 0.5-mile visual APE of the proposed CPC facility the area remained largely undeveloped. A gravel pit/mining facility while present as early as 1967 has changed considerably in the recent years. All of the buildings present and noted on a 1996 aerial were removed and all the existing above ground resources associated with the gravel operations post-date 1996. The other two aboveground resources within the visual APE, two water towers located on the opposite side of the highway, were both placed post-2016. Given the modern nature of all the aboveground resources noted within the aerial photograph search, there is no potential for historical age aboveground resources within the visual APE of the proposed CPC facility. No additional architectural investigations are recommended for the project.

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 8: SUMMARY AND RECOMMENDATIONS

ARCHAEOLOGICAL RESOURCES

The archaeological survey was conducted on from February 24 to 28, 2020 and consisted of a pedestrian survey supplemented with the excavation of STPs. None of the STPs excavated were positive for cultural material. Twenty seven surface IOs were recorded during the surveys which consisted of four prehistoric IOs, three historical scatters of modern material that were delineated as sites but recorded as IOs, and 20 scattered isolated artifacts that were not definitively historical and mapped as IOs. None of the IOs are considered eligible for inclusion on the NRHP and no additional archaeological investigations are recommended for any of the 27 IOs recorded. Given the results of the survey, no adverse effects on archaeological resources are anticipated.

If archaeological material is inadvertently discovered during the construction of roads, the Texas State Historic Preservation Officer (SHPO) should be notified immediately and all work should cease in the vicinity of the find until a professional archaeologist can examine and assess the importance of the inadvertent discovery.

ARCHITECTURAL/ABOVEGROUND RESOURCES

A desktop review was conducted to assess the potential for historical architectural/aboveground resources within the 0.5-visual APE of the proposed El Paso CPC facility. The review of archival data noted no known previously recorded historic aboveground properties within the visual APE of the El Paso CPC. A review of historical aerial photograph showed the area has been largely undeveloped and that existing aboveground resources present within the APE are modern post-dating 1996. As a result, there is no potential for historical architectural/aboveground resources within the visual APE. No additional architectural/aboveground resources investigations are recommended for the project.

THIS PAGE LEFT INTENTIONALLY BLANK

CHAPTER 9: REFERENCES

Barnes, Virgil E., project supervisor
1968 *Van Horn-El Paso Sheet, Geologic Atlas of Texas*. Bureau of Economic Geology, University of Texas at Austin, scale 1:250,000.
1992 *Geologic Map of Texas*. Bureau of Economic Geology, University of Texas at Austin, scale 1:500,000.

Bryson, Conrey
2019 "El Paso County" *Handbook of Texas Online*. Electronic resource, https://tshaonline.org/handbook/online/articles/hce05, accessed March 11, 2020.

Fort Hancock Post Office
n.d. *Fort Hancock*. Unpublished account of the history of Fort Hancock.

Griffith, Glenn, Sandy Bryce, James Omernik, and Anne Rogers
2007 *Ecoregions of Texas*. Project report prepared for the Texas Commission on Environmental Quality. Electronic resource, ftp://newftp.epa.gov/EPADataCommons/ORD/Ecoregions/tx/TXeco_Jan08_v8_Cmprsd.pdf, accessed April 3, 2019.

Hester, T. R.
1999 Artifacts, Archeology, and Cabeza de Vaca in Southern Texas and Northeastern New Mexico. *Bulletin of the Texas Archeological Society* 70:17-28

Jaco, Hubert B.
1971 *Soil Survey of El Paso County, Texas*. United States Department of Agriculture in Cooperation with the Texas Agricultural Experiment Station.

Kelley, J.C.
1952a Factors Involved in the Abandonment of Certain Peripheral Southwestern Settlements. *American Anthropologist* 54(3):356-387
1952b The Historic Indian Pueblos of La Junta de los Rios. *New Mexico Historical Review* 27(4):257-295.

Levario, Miguel A.
2020 El Paso Race Riot of 1916 in *Handbook of Texas Online*. Electronic document, https://tshaonline.org/handbook/online/articles/jce01, accessed April 2, 2020.

Lockhart, Bill, Bill Lindsey, Carol Serr, Pete Sculz, Beau Schriever
2020a Manufacture's Marks and other Logos on Glass Containers, C Table. Electronic document, https://sha.org/bottle/pdffiles/CLogoTable.pdf, accessed March 16, 2020.
2020b Manufacture's Marks and other Logos on Glass Containers, L Table. Electronic document, https://sha.org/bottle/pdffiles/LLogoTable.pdf, accessed March 16, 2020.
2020c Manufacture's Marks and other Logos on Glass Containers, A Table. Electronic document, https://sha.org/bottle/pdffiles/ALogoTable.pdf, accessed March 16, 2020.

2020d Manufacture's Marks and other Logos on Glass Containers, G Table. Electronic document, https://sha.org/bottle/pdffiles/GLogoTable.pdf, accessed March 16, 2020.
2020e Manufacture's Marks and other Logos on Glass Containers, Mexico Table. Electronic document, https://sha.org/bottle/pdffiles/MexicoLogoTable.pdf, accessed March 16, 2020.
2020f Manufacture's Marks and other Logos on Glass Containers, Symbols Table. Electronic document, https://sha.org/bottle/pdffiles/SymbolsLogoTable.pdf, accessed March 16, 2020.
2020g Manufacture's Marks and other Logos on Glass Containers, N Table. Electronic document, https://sha.org/bottle/pdffiles/NLogoTable.pdf, accessed March 16, 2020.
2020h Northwestern Glass Co. Electronic document, https://sha.org/bottle/pdffiles/NorthwesternGlass.pdf, accessed March 20, 2020.
2020i Ball Brothers Glass Mfg. Co.. Electronic document, https://sha.org/bottle/pdffiles/BallBros.pdf, accessed March 20, 2020.
2020j Brockway Machine Bottle Co. and Brockway Glass Co. Electronic document, https://sha.org/bottle/pdffiles/Brockway.pdf, accessed March 20, 2020.

Mallouf, R. J.
1981 Observations Concerning Environmental and Cultural Interactions During the Terminal Pleistocene and Early Holocene in the Big Bend of Texas and Adjoining Regions. *Bulletin of the Texas Archeological Society* 52:121-146
1985 *A Synthesis of Eastern Trans-Pecos Prehistory*. Master's Thesis. The University of Texas at Austin.
1986 Prehistoric Cultures of the Northern Chihuahuan Desert. *Invited Papers from the Second Symposium on Resources of the Chihuahuan Desert Region*. Chihuahuan Desert Research Instutitute, Sul Ross University, Alpine, Texas, pages 69-78.

Newcombe, Jr., W.W.
2002 *The Indians of Texas: From Prehistoric to Modern Times*. University of Texas Press. Thirteenth Edition. Austin, Texas.

Sánchez, J. P.
1992 From El Paso to Eagle Pass: Spanish Entradas along the Lower Rio Grande in the Sixteenth and Seventeenth Centuries. *Bulletin of the Texas Archeological Society* 63:53-66.

Simmons, A. H., A. L. Wiener Stodder, D. D. Dykeman, and P. A. Hicks
1989 *Human Adaptations and Cultural Change in the Greater Southwest*. Arkansas Archeological Survey Research Series No. 32. Arkansas Archeological Survey, Fayetteville.

Spicer, E. H.
1983 *A Short History of the Indians of the United States*. Robert E. Krieger Publishing Company. Malabar, Florida.

Taylor, Colin F.
2004 *The American Indian*. Salamander Books, Ltd. London, England.

Texas Historical Commission
2020 Texas Archeological Sites Atlas. Electronic database, https://atlas.thc.state.tx.us/Account/Login, accessed January 16, 2020.

ThePotteries
2020 North Staffordshire Pottery Marks, Wood & Son (s) (Ltd). Electronic document, http://www.thepotteries.org/mark/w/wood_sons.html, accessed March 16, 2020.

Timanus, R.
2001 *An Illustrated History of Texas Forts*. Republic of Texas Press. Plano, Texas.

Timmons, W. H.
2020 El Paso, TX in *Handbook of Texas Online*. Electronic document, https://tshaonline.org/handbook/online/articles/hde01, accessed April 2, 2020.

Turner, E.S. and T.R. Hester
1999 *A Field Guide to Stone Artifacts of Texas Indians*. Gulf Publishing, Lanham, Maryland.

Tyler, R.C.
1975 *The Big Bend: A History of the Last Texas Frontier*. U. S. Department of the Interior, Washington, D.C.

U.S. Army Corps of Engineers (USACE)
1999 Environmental Baseline Document in Support of the Supplemental Programmatic Environmental Impact Statement for INS and JTF-6 Activities Along the U.S./Mexico Border, Volume 2: Texas Land Border Study Area. Unpublished manuscript on file with the U.S. Army Corps of Engineers, Fort Worth District, Fort Worth, Texas.

United State Department of Agriculture (USDA)
2007 Official Series Description – BERINO series. Electronic document, https://soilseries.sc.egov.usda.gov/OSD_Docs/B/BERINO.html, last accessed January 16, 2020.
2014 Official Series Description – TURNEY Series. Electronic document, https://soilseries.sc.egov.usda.gov/OSD_Docs/T/TURNEY.html, last accessed January 16, 2020
2020 Web Soil Survey. Online database, https://websoilsurvey.sc.egov.usda.gov/App/HomePage.htm, last accessed January 16, 2020.

THIS PAGE LEFT INTENTIONALLY BLANK

APPENDIX A
TRANSECT SHOVEL TEST PITS EXCAVATED DURING THE EL PASO CENTRAL PROCESSING CENTER SURVEY

Appendix A: Transect Shovel Test Pits Excavated During the El Paso CPC Survey

STP Number	Excavator	+/-	Stratigraphy	Comments
4-1	EC	-	I: 0-45 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 45-55 cmbgs brown (7.5YR 5/4) compact sandy clay loam	
8-1	JFL	-	I: 0-48 cmbgs strong brown (7.5YR 5/6) sandy loam with 10 percent gravels; II: 48-64 cmbgs brown (7.5YR 5/4) sandy loam with 30 percent gravels	
12-1	EC	-	I: 0-40 cmbgs reddish yellow (7.5YR 6/6) sandy loam; II: 40-55 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam	
12-2	JFL	-	I: 0-44 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 44-54 cmbgs strong brown (7.5YR 4/6) sandy clay loam	II probably B+ horizon; edge of coppice dune
16-1	EC	-	I: 0-40 cmbgs strong brown (7.5YR 5/6) sandy clay loam; II: 40-55 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam with 30 percent gravels	
16-2	JFL	-	I: 0-40 cmbgs strong brown (7.5YR 5/6) sandy clay loam; II: 40-49 cmbgs strong brown (7.5YR 4/6) very compact gravel	
16-3	EC	NE		Water line
20-1	EC	-	I: 0-24 cmbgs yellowish brown (10YR 5/6) sandy loam; II: 24-40 cmbgs dark yellowish brown (10YR 4/6) sandy clay loam; III: 40-55 cmbgs dark yellowish brown (10YR 4/6) compact sandy clay loam with gravels	Nodule of unworked obsidian found on surface within 1m of STP
20-2	JFL	-	I: 0-8 cmbgs brown (7.5YR 5/4) sandy loam; II: 8-46 cmbgs brown (7.5YR 4/4) clay loam, 10 percent gravels; III: 46-49 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam ~30 percent gravels	Near edge of coppice dune
20-3	EC	-	I: 0-35 cmbgs yellowish brown (10YR 5/6) sandy loam; II: 35-50 cmbgs dark yellowish brown (10YR 4/6) sandy clay loam; III: 50-55 cmbgs dark yellowish brown (10YR 4/6) compact sandy clay loam with gravels	
20-4	JFL	-	I: 0-8 cmbgs brown (7.5YR 5/4) sandy loam; II: 8-47 cmbgs brown (7.5YR 4/4) sandy clay loam; III: 40-55 cmbgs strong brown (7.5YR 5/6) sandy clay loam	
24-1	EC	-	I: 0-20 cmbgs strong brown (7.5YR 4/6) sandy loam; II: 20-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-50 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam with 30 percent gravels	

STP Number	Excavator	+/-	Stratigraphy	Comments
24-2	JFL	-	I: 0-24 cmbgs yellowish brown (10YR 5/4) sandy loam; II: 24-59 cmbgs yellowish brown (10YR 5/6) sandy clay loam; III: 59-64 cmbgs yellowish brown (10YR 5/4) sandy clay loam with 20 percent gravels	
24-3	EC	-	I: 0-30 cmbgs strong brown (7.5YR 4/6) sandy loam; II: 30-45 cmbgs brown (7.5YR 5/4) very compact sandy clay loam	
24-4	JFL	-	I: 0-5 cmbgs light brown (7.5YR 6/4) sandy loam; II: 5-28 cmbgs reddish yellow (7.5YR 8/6) sandy clay loam; III: 28-39 cmbgs brown (7.5YR 5/4) sandy loam; IV: 39-47 cmbgs reddish yellow (7.5YR 8/6) sandy clay loam	At foot of large rise, probably man-made; appears disturbed and modern
24-5	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-52 cmbgs pink (7.5YR 7/4) compact sandy clay loam with calcium carbonate	
28-1	EC	-	I: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 15-55 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 55-65 cmbgs pink (7.5YR 7/4) compact sandy clay loam	
28-2	JFL	-	I: 0-14 cmbgs yellowish brown (10YR 5/6) sandy loam with 20 percent gravels; II: 14-48 cmbgs yellowish brown with reddish yellow (10YR 5/6 mottled with 7.5YR 8/6) sandy clay loam with calcium carbonate and 30 percent gravel	On rise, soil is mottled in between the A and Bk horizons
28-3	EC	-	I: 0-7 cmbgs yellowish brown (10YR 5/4) sandy loam; II: 7-30 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 30-40 cmbgs brown (7.5YR 5/4) compact sandy clay loam	
28-4	JFL	-	I: 0-10 cmbgs brown (7.5YR 5/4) sandy loam; II: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-49 cmbgs brown (7.5YR 5/4) sandy clay loam	Not much gravel
28-5	EC	-	I: 0-11 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 11-45 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 45-55 cmbgs brown (7.5YR 4/4) compact sandy clay loam	
28-6	JFL	-	I: 0-9 cmbgs brown (7.5YR 5/4) sandy loam with 20 percent gravels; II: 9-47 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 47-49 cmbgs brown (7.5YR 5/4) compact sandy clay loam	Non-coppice
32-1	EC	-	I: 0-23 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 23-43 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam	On coppice dune

STP Number	Excavator	+/-	Stratigraphy	Comments
32-2	JFL	-	I: 0-17 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 17-57 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 57-63 cmbgs brown (7.5YR 5/4) sandy clay loam	Edge of coppice dune
32-3	EC	-	I: 0-14 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 14-45 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 45-60 cmbgs brown (7.5YR 5/4) compact sandy clay loam	On coppice dune; Gravels at 40 cmbgs
32-4	JFL	-	I: 0-21 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 21-47 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 47-52 cmbgs brown (7.5YR 5/4) sandy clay loam with ~5 percent calcium carbonate coated gravels	
32-5	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-50 cmbgs brown (7.5YR 5/4) compact sandy clay loam with calcium carbonate	
32-6	JFL	-	I: 0-23 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 23-58 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 58-63 cmbgs reddish yellow (7.5YR 8/6) sandy clay loam with ~40 percent calcium carbonate coated gravels	
32-7	EC	-	I :0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-33 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 33-42 cmbgs brown (7.5YR 5/4) compact sandy clay loam	On coppice dune
36-1	JFL	-	I: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 5-66 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 66-77 cmbgs reddish yellow (7.5YR 8/6) sandy clay loam with ~10 percent calcium carbonate coated gravels	
36-2	EC	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-50 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 50-60 cmbgs light brown (7.5YR 6/4) compact sandy clay loam	
36-3	JFL	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-52 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 52-62 cmbgs reddish yellow(7.5YR 6/6) sandy clay loam with 10 percent calcium carbonate coated gravels	Edge of coppice dune
36-4	EC	-	I: 0-20 cmbgs brown (7.5YR 5/4) sandy loam; II: 20-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-60 cmbgs strong brown (7.5YR 5/6) sandy clay loam	Edge of coppice dune; gravels throughout
36-5	JFL	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-49 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 49-54 cmbgs light brown (7.5 6/4) sandy clay loam with 10 percent calcium carbonate coated gravels	On coppice dune

STP Number	Excavator	+/-	Stratigraphy	Comments
36-6	EC	-	I: 0-20 cmbgs strong brown (7.5YR 5/8) sandy loam; II: 20-50 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 50-60 cmbgs strong brown (7.5YR 4/6) compact sandy clay loam	Edge of coppice dune
36-7	JFL	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-38 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 38-40 cmbgs strong brown (7.5 YR 5/6) sandy clay loam with 10 percent calcium carbonate coated gravels	Modern baling wire noted
40-1	EC	-	I: 0-10 cmbgs brown (7.5YR 5/4) sandy loam; II: 10-35 cmbgs strong brown (7.5YR 5/8) sandy clay loam; III: 35-45 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam	Edge of coppice dune
40-2	JFL	-	I: 0-7 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 7-34 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 34-38 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam with ~2 percent calcium carbonate coated gravels	Edge of small coppice dune
40-3	EC	-	I: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 15-45 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 45-55 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam	Edge of coppice dune
40-4	JFL	-	I: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 6-55 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 55-62 cmbgs light brown (7.5YR 6/4) sandy clay loam with nodules of calcium carbonate and 10 percent calcium carbonate coated gravels	On small coppice dune
40-5	EC	-	I: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 5-45 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 45-55 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam with 10 percent calcium carbonate coated gravels	
40-6	JFL	-	I: 0-52 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 52-73 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 73-82 cmbgs light brown (7.5YR 6/4) sandy clay loam with calcium carbonate coated gravels	
40-7	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-50 cmbgs brown (7.5YR 4/4) sandy clay loam; III: 50-60 cmbgs light brown (7.5YR 6/4) compact sandy clay loam	
40-8	JFL	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-38 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 38-41 cmbgs light brown (7.5YR 6/4) sandy clay loam with ~10 percent calcium carbonate coated gravels	

STP Number	Excavator	+/-	Stratigraphy	Comments
44-1	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-50 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	Edge of coppice dune
44-2	JFL	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-52 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 52-60 cmbgs light brown (7/5YR 6/4) sandy clay loam with 5 percent calcium carbonate coated gravels	
44-3	EC	-	I: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 5-30 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 30-45 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	
44-4	JFL	-	I: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 15-19 cmbgs (wood lense); III: 19-29 cmbgs strong brown (7.5YR 4/6) sandy loam; IV: 29-47 cmbgs light brown (7.5YR 6/4) sandy clay loam with 5 percent calcium carbonate coated gravels	On coppice dune
44-5	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-50 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	
44-6	JFL	-	I: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 6-39 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 39-45 cmbgs brown (7.5YR 5/4) sandy clay loam with 5 percent calcium carbonate coated gravels	Edge of coppice dune
44-7	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-30 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 30-45 cmbgs brown (7.5YR 5/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	
44-8	JFL	-	I: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 6-48 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 48-55 cmbgs brown (7.5YR 5/4) compact sandy clay loam with 5 percent calcium carbonate coated cobbles	
44-9	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-50 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 50-60 cmbgs brown (7.5YR 5/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	

STP Number	Excavator	+/-	Stratigraphy	Comments
48-1	JFL	-	I: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 5-63 cmbgs strong brown (7.5YR 4/6) sandy clay loam 10 percent gravels; III: 63-74 cmbgs light brown (7.5YR 6/4) sandy clay loam with ~10 percent calcium carbonate coated gravels	
48-2	EC	-	I: 0-10 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 10-35 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 35-45 cmbgs reddish yellow (7.5YR 6/6) compact sandy clay loam	
48-3	JFL	-	I: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 6-38 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 38-40 cmbgs strong brown (7.5YR 5/6) compact sandy clay loam with 5 percent calcium carbonate coated gravels	Edge of coppice dune
48-4	EC	-	I: 0-5 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 5-45 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 45-55 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with 5 percent calcium carbonate coated gravels	
48-5	JFL	-	I: 0-8 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 8-34 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 34-49 cmbgs brown (7.5YR 5/4) sandy clay loam with 10 percent calcium carbonate coated gravels	
48-6	EC	-	I: 0-15 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 15-40 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 40-45 cmbgs brown (7.5YR 5/4) compact sandy clay loam with 10 percent calcium carbonate coated gravels	
48-7	JFL	-	I: 0-16 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 16-62 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 62-75 cmbgs brown (7.5YR 6/4) sandy clay loam with nodules of calcium carbonate and 10 percent calcium carbonate coated gravels	On coppice dune
48-8	EC	-	I: 0-20 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 20-55 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 55-65 cmbgs light brown (7.5YR 6/4) compact sandy clay loam with nodules of calcium carbonate and 10 percent calcium carbonate coated gravels	
48-9	JFL	-	I: 0-6 cmbgs strong brown (7.5YR 5/6) sandy loam; II: 6-51 cmbgs strong brown (7.5YR 4/6) sandy clay loam; III: 51-57 cmbgs light brown (7.5YR 6/4) sandy clay loam with 10 percent calcium carbonate coated gravels	

APPENDIX B
PHOTOGRAPHS

Photograph 1. Overview of survey parcel from eastern end, facing west.

Photograph 2. Overview of survey parcel from northern end, facing south.

Photograph 3. Overview of IO-7 facing east and survey parcel from western end, facing east.

Photograph 4. Overview of area disturbed by waterline construction, facing west, unexcavated shovel test pit noted by orange pin flags.

Photograph 5. Overview of negative STP T16-2, terminal depth 49 centimeters below ground surface (cmbgs), facing south.

Photograph 6. Overview of negative STP T32-2, terminal depth 63 cmbgs, facing south.

Photograph 7. Overview of negative STP T40-1, terminal depth 38 cmbgs, facing north.

Photograph 8. Overview of negative STP T48-5, terminal depth 49 cmbgs, facing west.

Photograph 9. Overview of spoil area noted within the survey area, facing west, pin flags and pack shows location of STP T24-4.

Photograph 10. Overview of STP T24-4 showing mixed soils in profile, terminal depth 47 cmbgs, facing south.

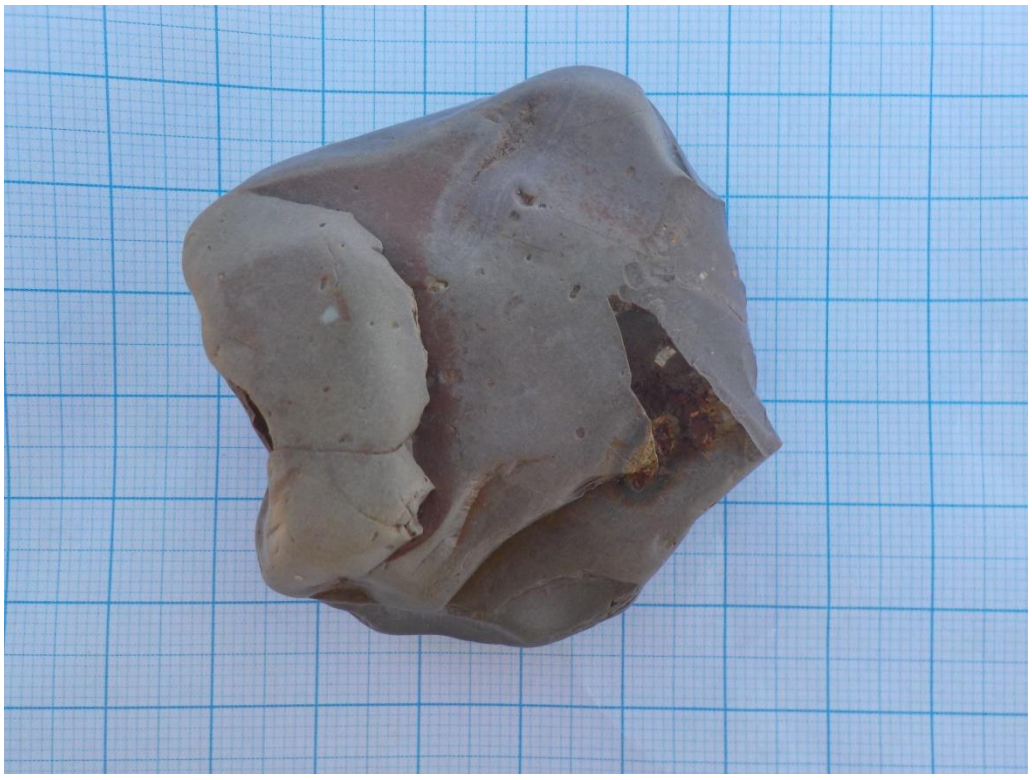
Photograph 11. Overview of negative STP D-3 excavated at IO-1, terminal depth 40 cmbgs, facing north.

Photograph 12. Overview of IO-1, facing east.

Photograph 13. Overview of negative STP D-2 excavated at IO-2, terminal depth 93 cmbgs, facing west.

Photograph 14. Groundstone metate fragment recorded at IO-2, obverse.

Photograph 15. Groundstone metate fragment recorded at IO-2, reverse.



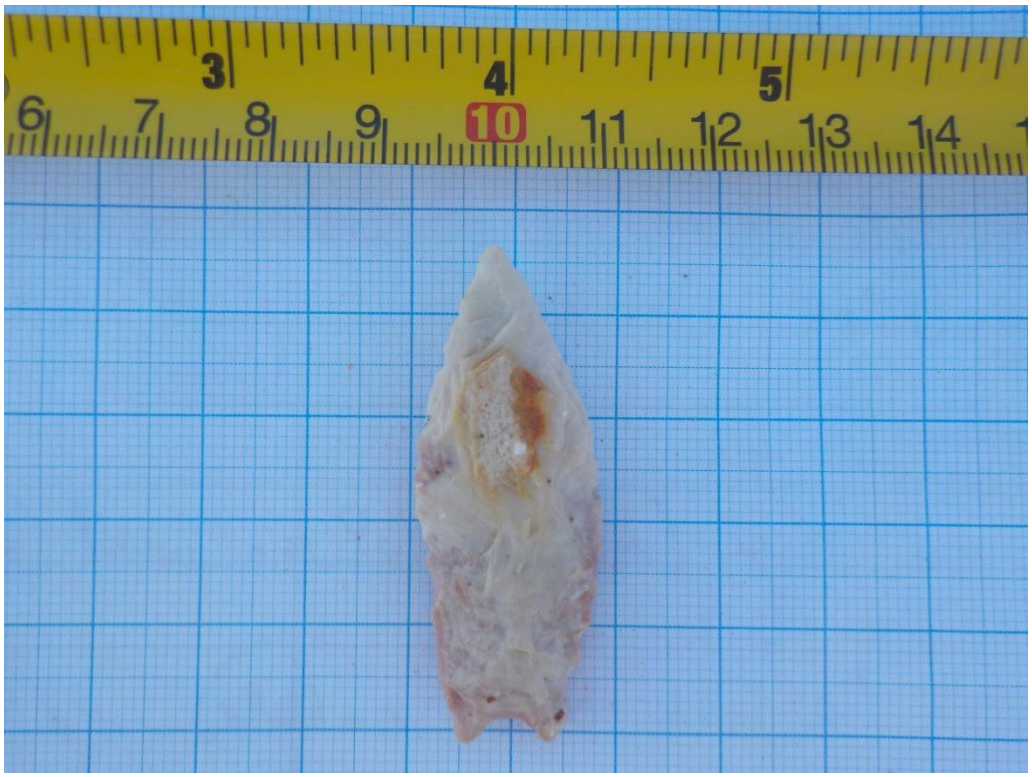
Photograph 16. Unidirectional core tool, possible tested cobble, recorded at IO-2, obverse.

Photograph 17. Unidirectional core tool, possible tested cobble, recorded at IO-2, reverse.

Photograph 18. Overview of IO-2, facing east.

Photograph 19. Overview of negative STP D-1 excavated at IO-3, terminal depth 61 cmbgs, facing south.

Photograph 20. Overview of IO-3, facing south.



Photograph 21. Hafted biface, probably Bajada type, recorded at IO-4, obverse.

Photograph 22. Hafted biface, probably Bajada type, recorded at IO-4, reverse.

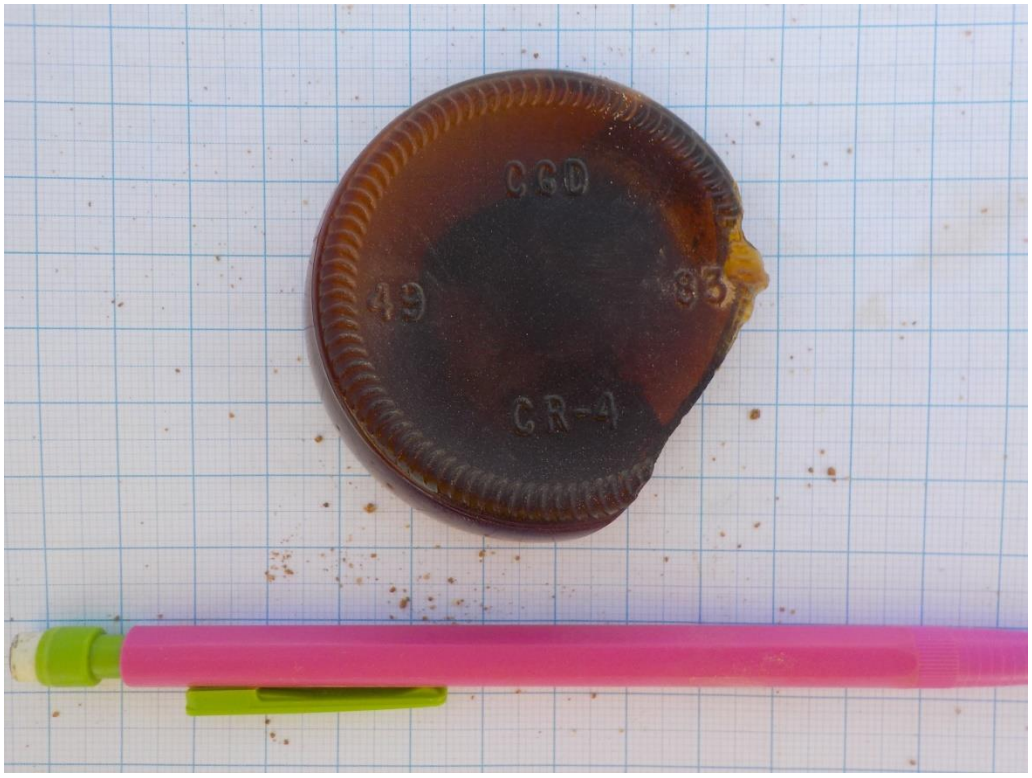
Photograph 23. Overview of negative STP D-4 excavated at IO-4, terminal depth 48 cmbgs, facing east.

Photograph 24. Overview of IO-4, facing east.

Photograph 25. Overview of negative STP D-4 excavated at IO-5, terminal depth 60 cmbgs, facing north.

Photograph 26. Overview of IO-5, facing south.

Photograph 27. Overview of artifact concentration (AC-1) recorded at IO-5, facing north.

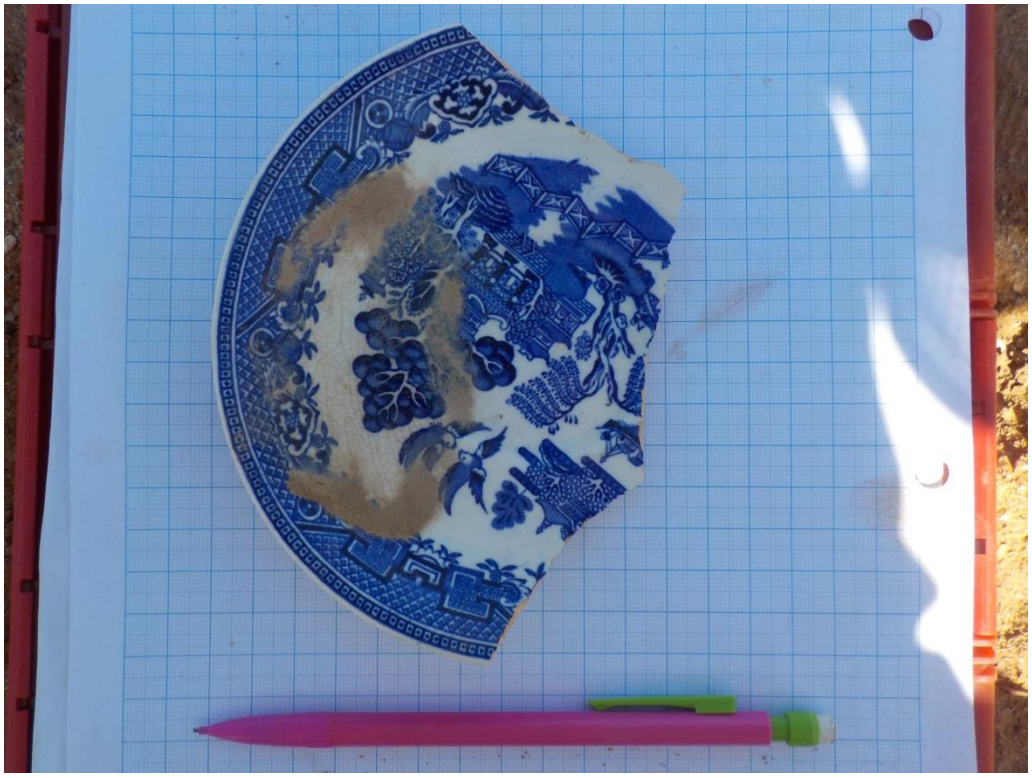


Photograph 28. Machine-made amber bottle base with stippling, "CGD" maker's mark, and "83" in date position, obverse.

Photograph 29. Machine-made amber bottle base with stippling, "CGD" maker's mark, and "83" in date position, reverse.

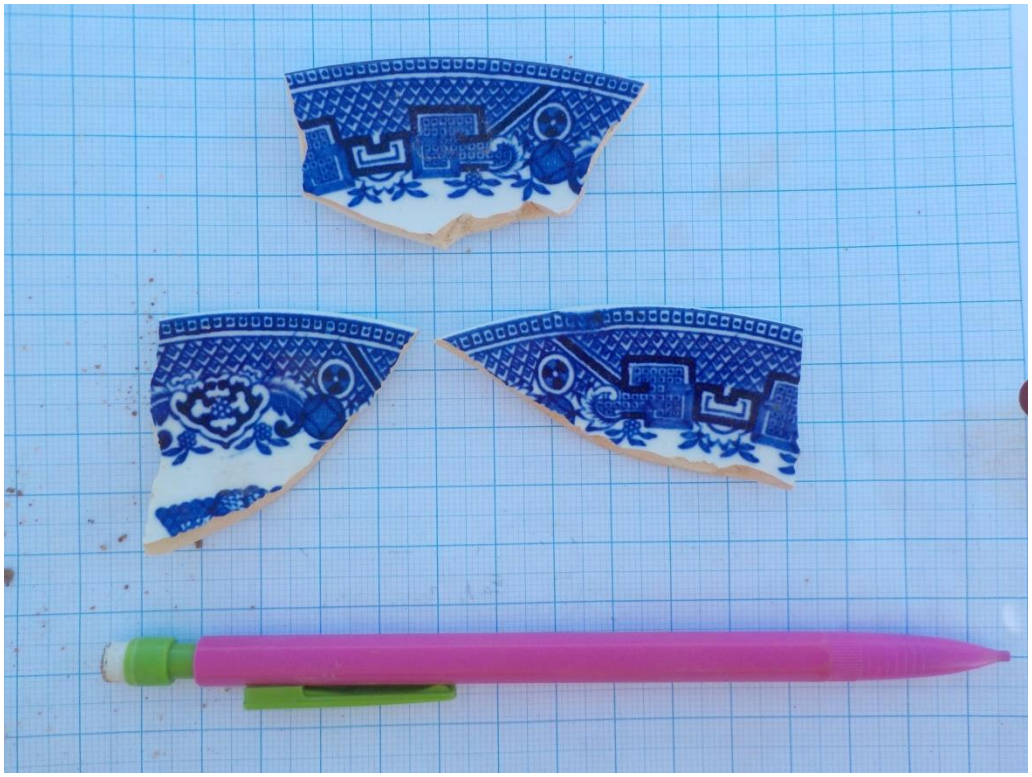
Photograph 30. Whole machine-made amber bottle from AC-1, profile view.

Photograph 31. Base of machine-made whole amber bottle with with stippling, "CGD" maker's mark, and "83" in date position.



Photograph 32. Blue transfer print decorated whiteware bowl, partial rim and base, recorded within AC-1, obverse.

Photograph 33. Blue transfer print decorated whiteware bowl, partial rim and base, showing maker's mark, recorded within AC-1, reverse.



Photograph 34. Blue transfer print decorated whiteware rim sherds recorded within AC-1, obverse.

Photograph 35. Blue transfer print decorated whiteware rim sherds recorded within AC-1, reverse.

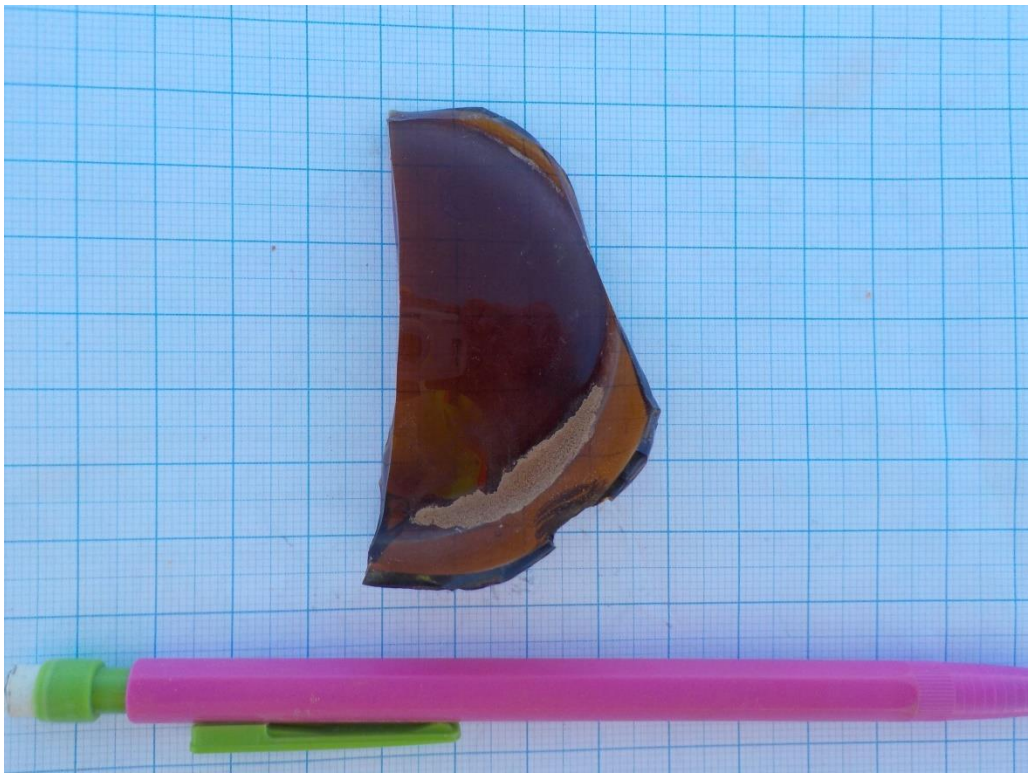
Photograph 36. Rectangular coffee tin recorded at IO-5, profile view.

Photograph 37. Rectangular coffee tin recorded at IO-5, top view.

Photograph 38. Pull tab beverage can recorded at IO-5, obverse.

Photograph 39. Pull tab beverage can recorded at IO-5, obverse.

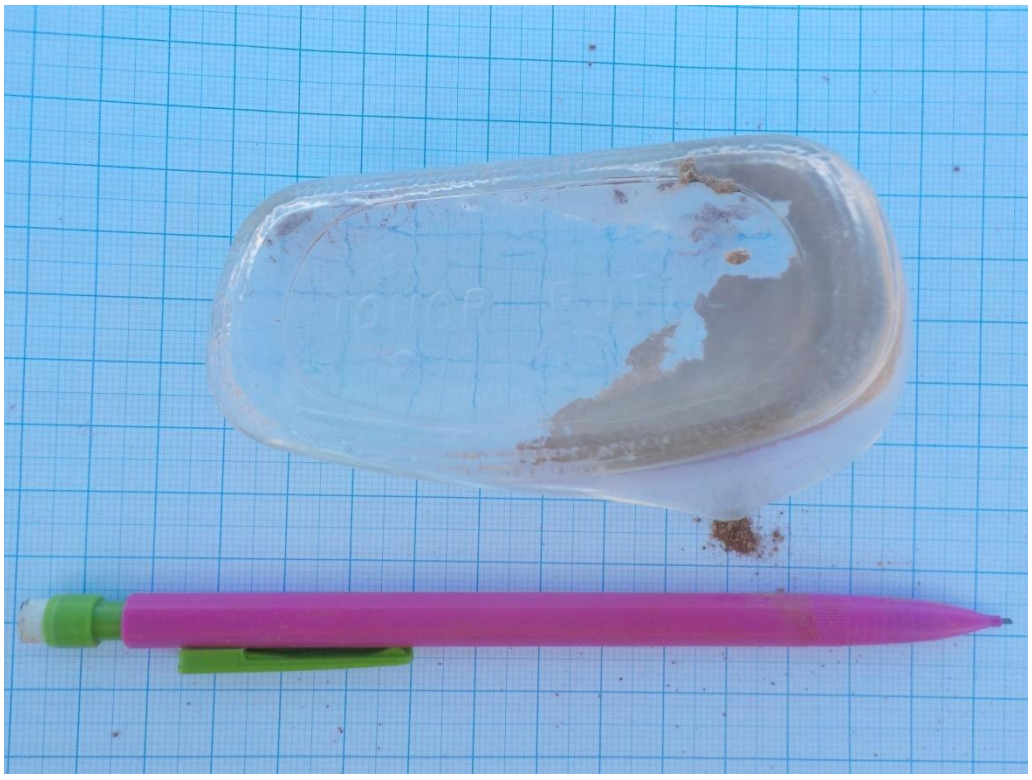
Photograph 40. Amber bottle base fragment recorded at IO-5, obverse.



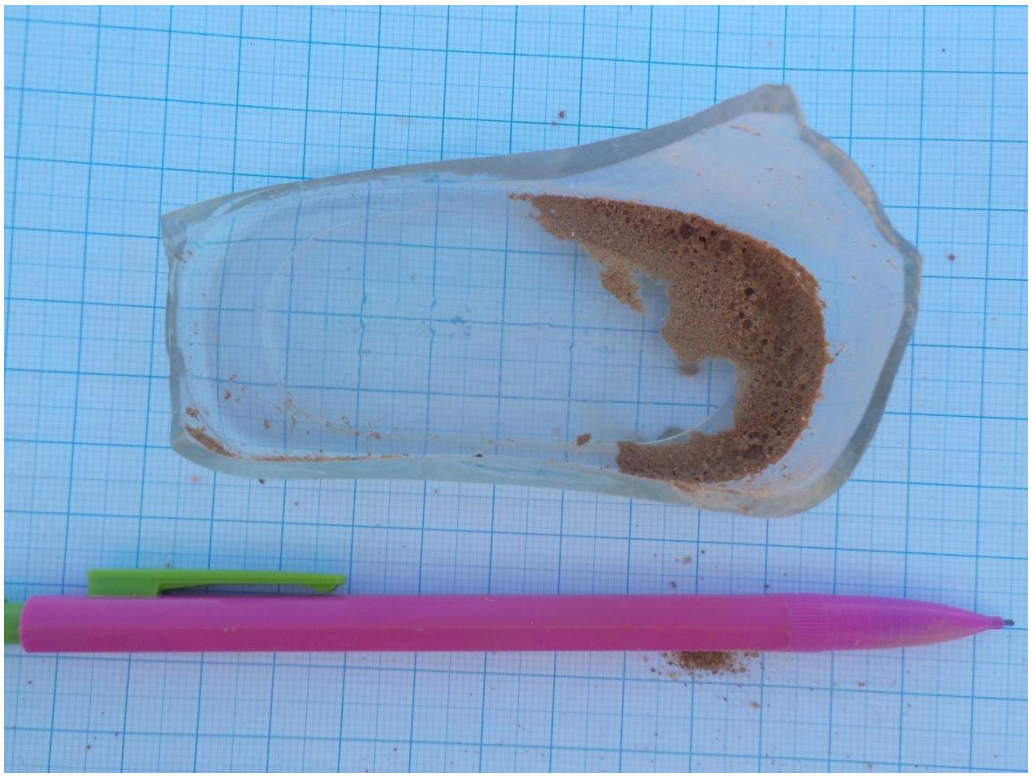
Photograph 41. Amber bottle base fragment recorded at IO-5, obverse.

Photograph 42. Overview of negative STP D-3 excavated at IO-6, terminal depth 60 cmbgs, facing north.

Photograph 43. Overview of IO-6, facing south.



Photograph 44. Colorless bottle base with "L" in circle maker's mark recorded at IO-6, obverse.

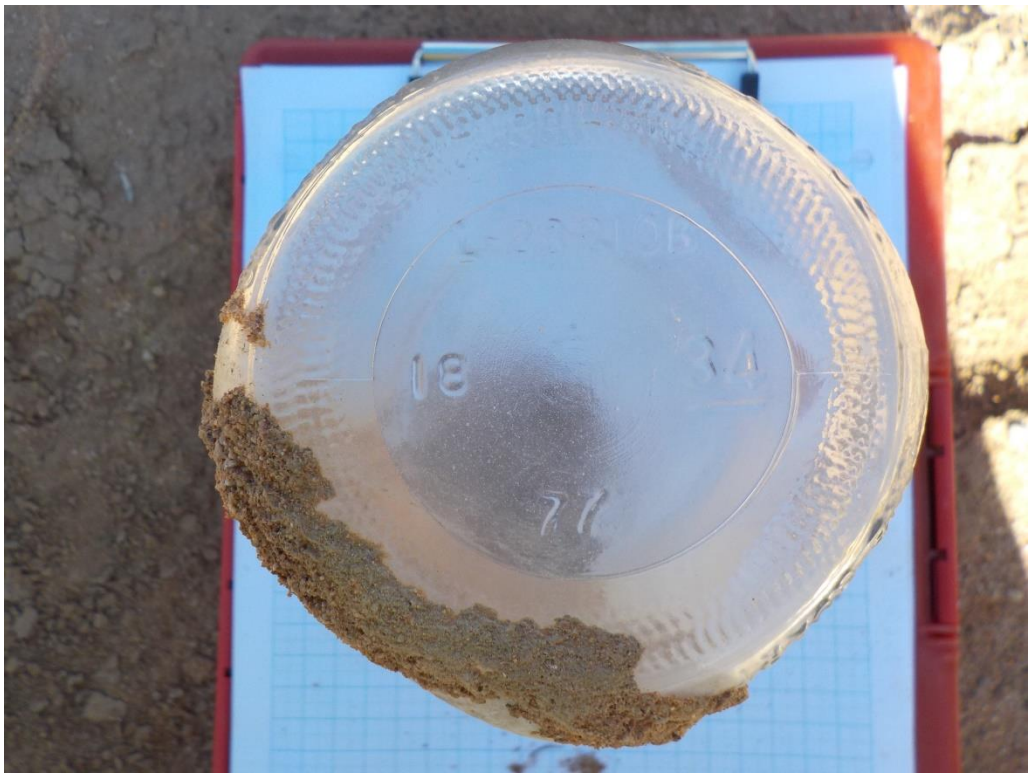


Photograph 45. Colorless bottle base with "L" in circle maker's mark recorded at IO-6, reverse.

Photograph 46. Whole machine-made bottle with "AHK make's mark recorded at IO-6, profile view.

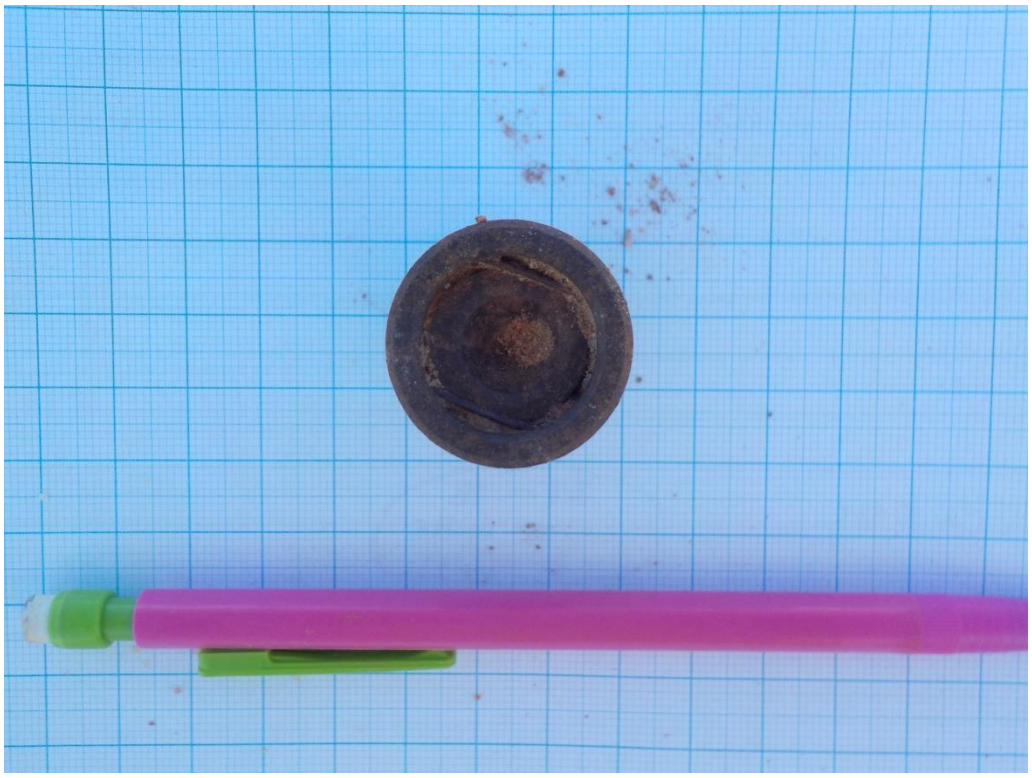
Photograph 47. Whole machine-made bottle with "AHK make's mark recorded at IO-6, base view.

Photograph 48. Whole machine-made colorless glass bottle molded with "VITA FRESH" on shoulder and indeterminate marks on base recorded at IO-6, profile view.



Photograph 49. Whole machine-made colorless glass bottle molded with "VITA FRESH" on shoulder and indeterminate marks on base recorded at IO-6, base view.

Photograph 50. Unidentified vehicle/machinery part recorded at IO-6, profile view.



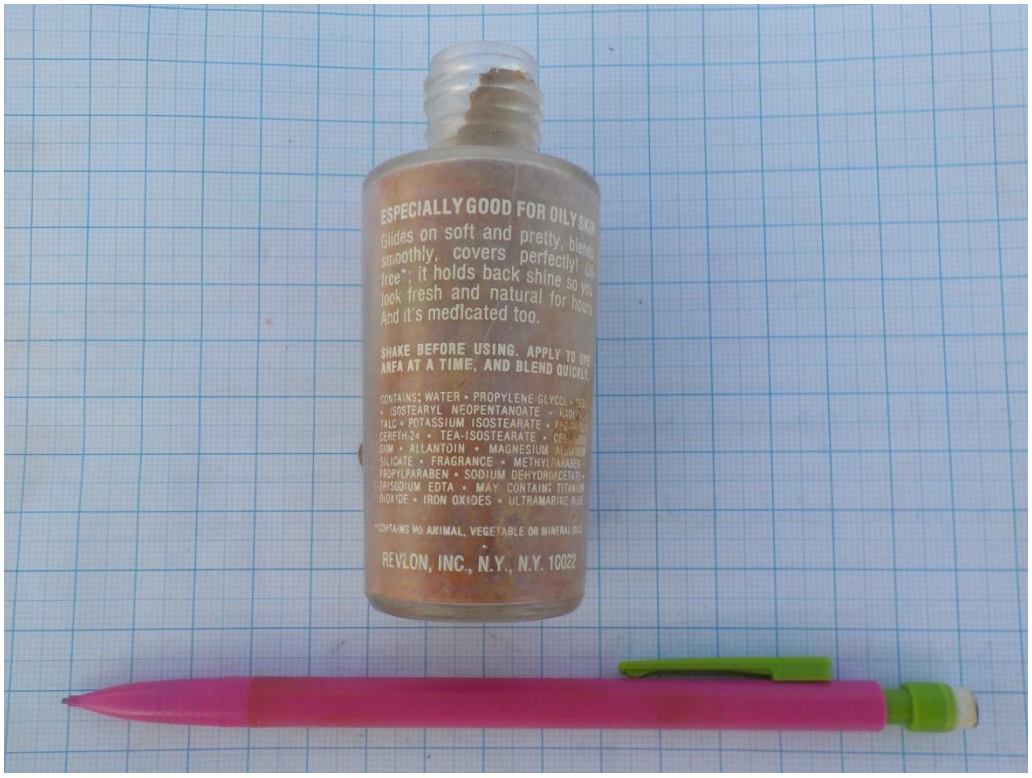
Photograph 51. Unidentified vehicle/machinery part recorded at IO-6, top view.

Photograph 52. Metal rectangular container recorded at IO-6, facing north.

Photograph 53. Overview of negative STP D-1 excavated at IO-7, terminal depth 51 cmbgs, facing north.

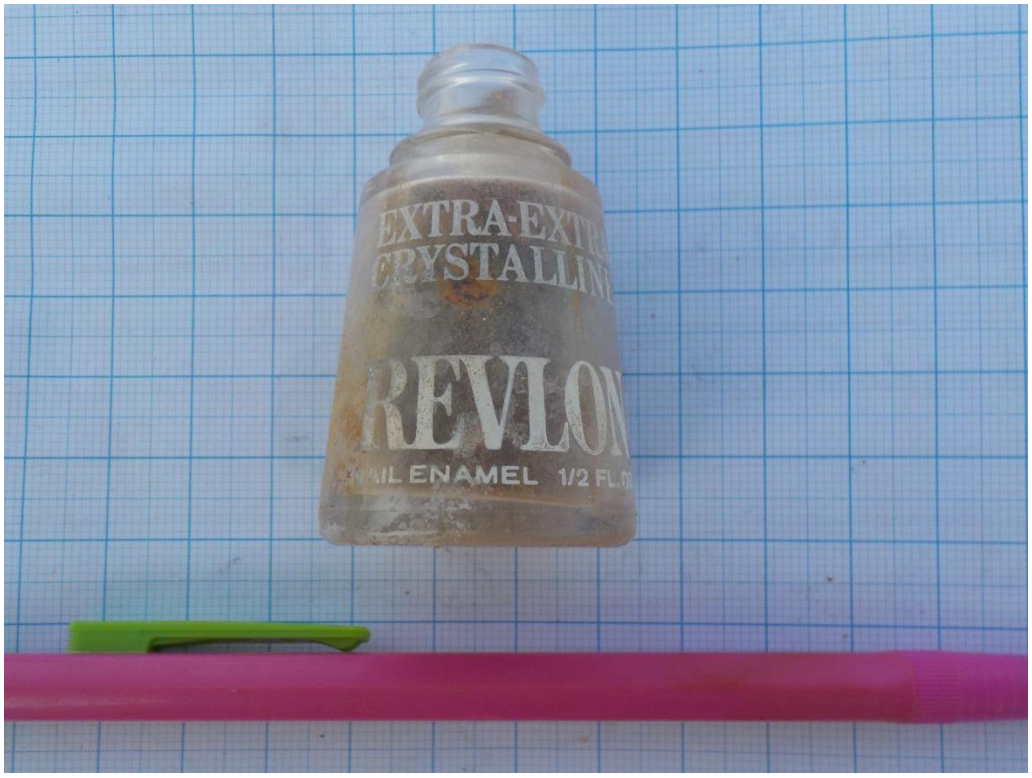
Photograph 54. Overview of artifact concentration (AC-1) recorded at IO-7, facing north.

Photograph 55. Colorless Tawny Beige, Oil-Free Medicated Makeup, Natural Wonders Revlon Makeup bottle recorded within AC-1 at IO-7, obverse.



Photograph 56. Colorless Tawny Beige, Oil-Free Medicated Makeup, Natural Wonders Revlon Makeup bottle recorded within AC-1 at IO-7, reverse.

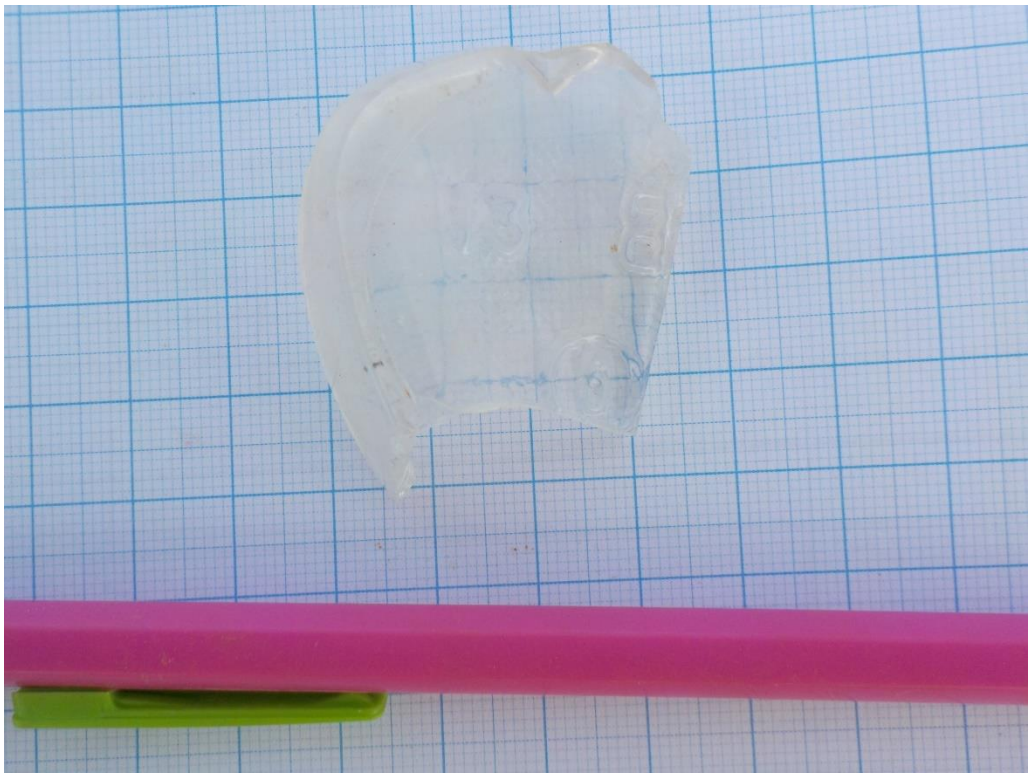
Photograph 57. Colorless CG NailSlicks Cover Girl Nail Polish bottle recorded within AC-1 at IO-7, obverse.



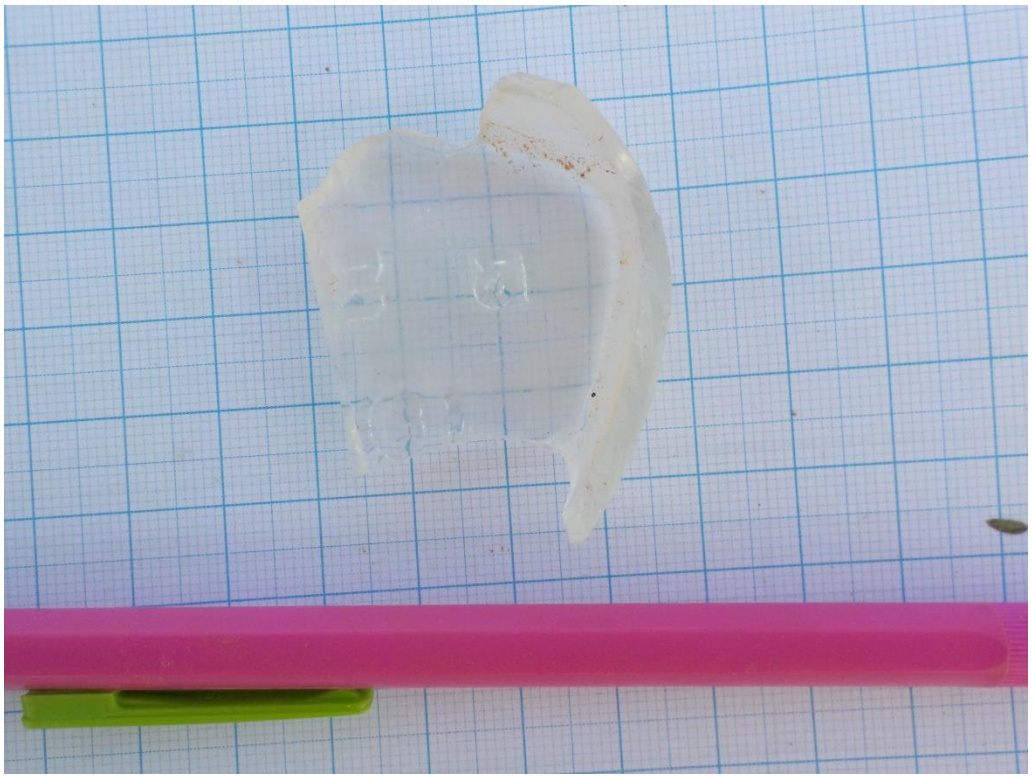
Photograph 58. Colorless Extra-Extra Crystalline Revlon Nail Enamel bottle recorded within AC-1 at IO-7, obverse.

Photograph 59. Colorless Extra-Extra Crystalline Revlon Nail Enamel bottle recorded within AC-1 at IO-7, obverse.

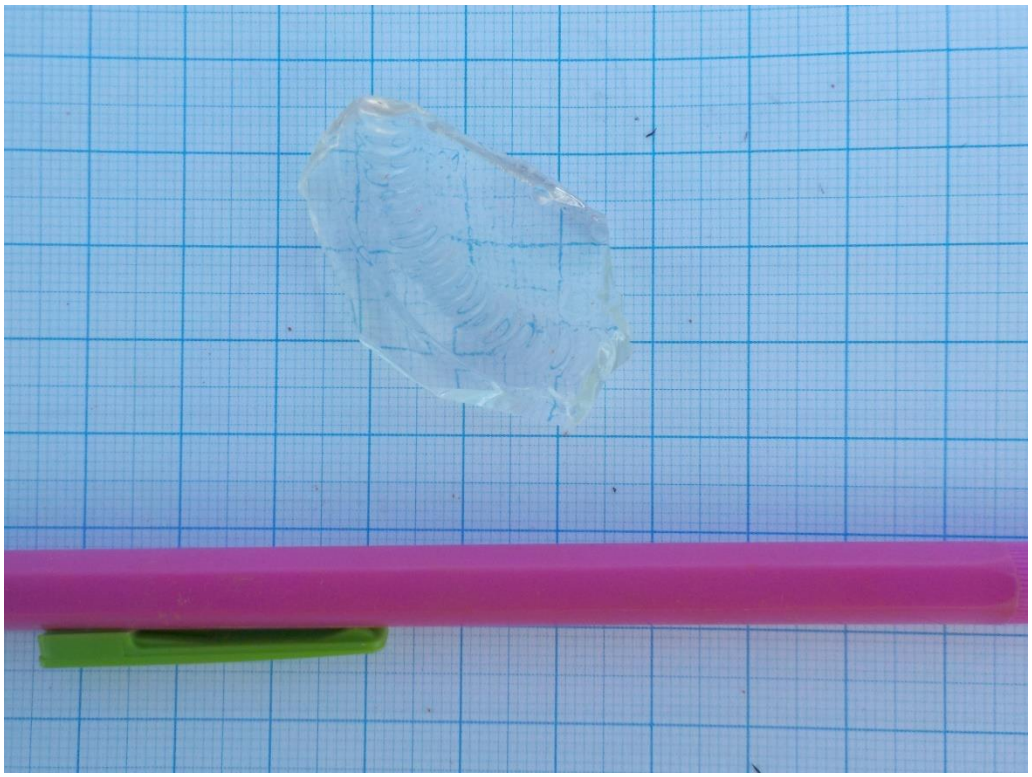
Photograph 60. Green bottle base fragment with E&J Galo maker's mark, obverse.



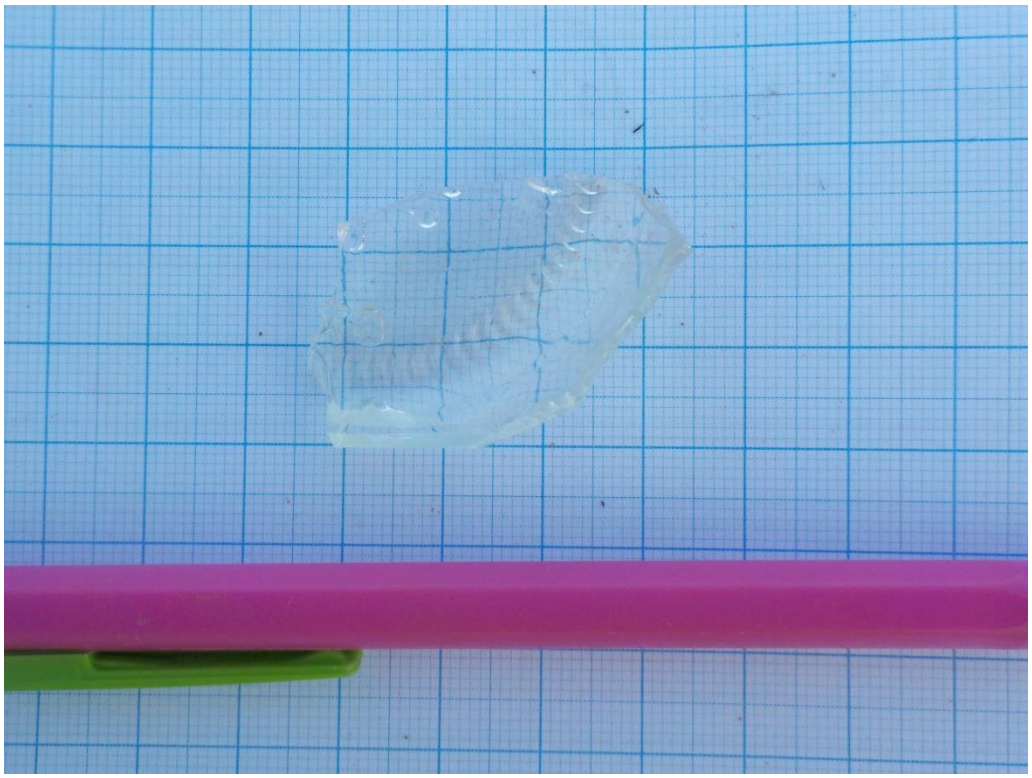
Photograph 61. Partial colorless bottle base (G.1) recorded at IO-7, obverse.



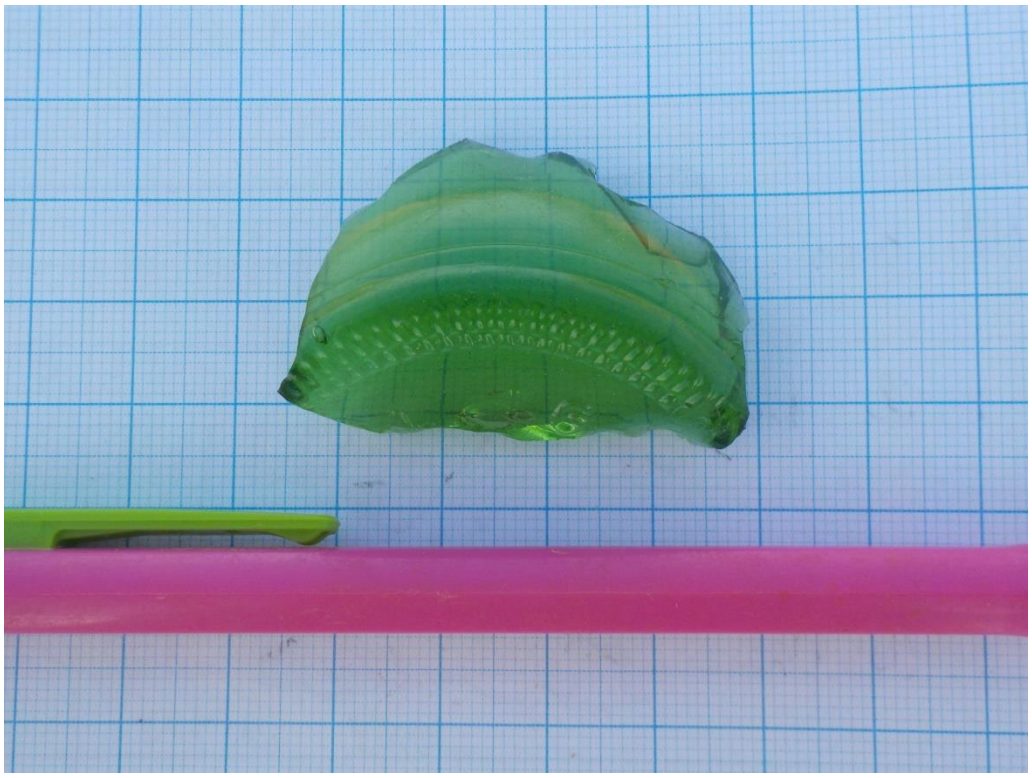
Photograph 62. Partial colorless bottle base (G.1) recorded at IO-7, reverse.



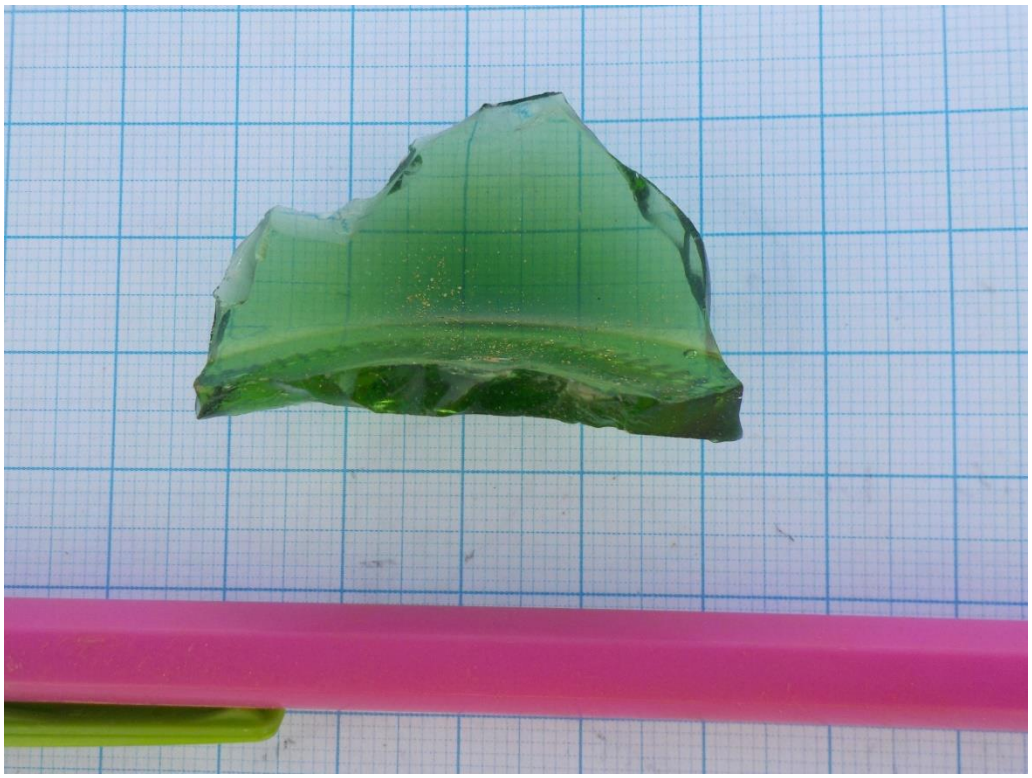
Photograph 63. Partial colorless bottle base (G.2) recorded at IO-7, obverse.



Photograph 64. Partial colorless bottle base (G.2) recorded at IO-7, reverse.



Photograph 65. Partial green bottle base (G.3) recorded at IO-7, obverse.



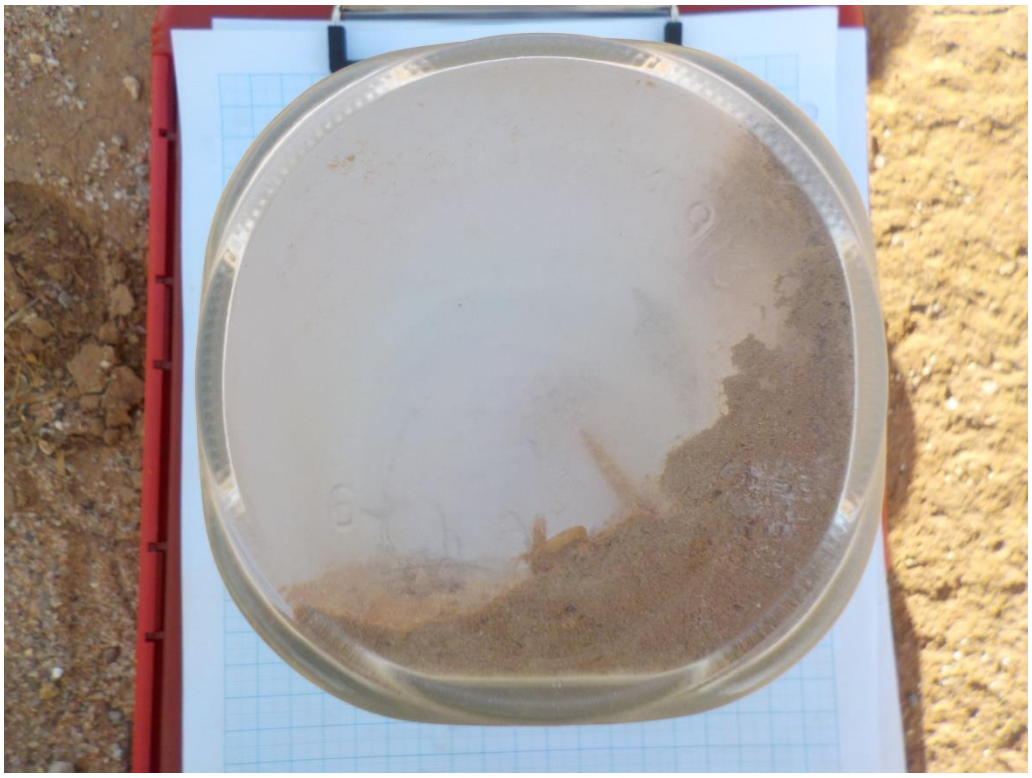
Photograph 66. Partial green bottle base (G.3) recorded at IO-7, reverse.

Photograph 67. Partial amber bottle base (G.4) recorded at IO-7, obverse.

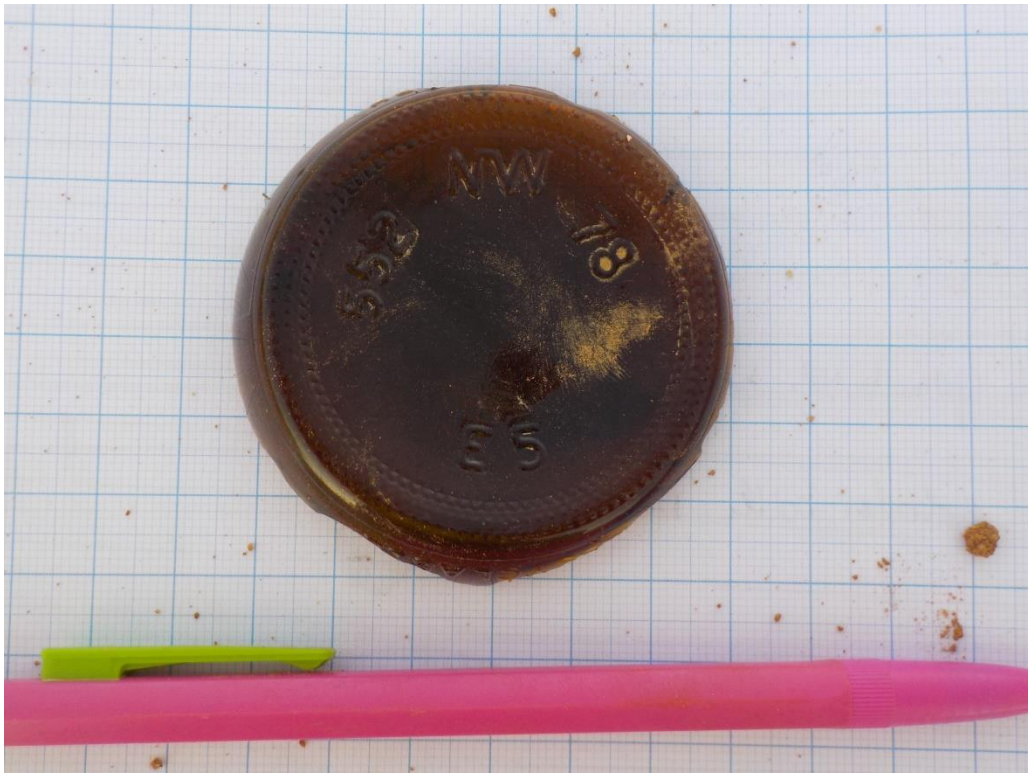
Photograph 68. Whole colorless machine-made bottle with screw top finish and back to back Rs molded on the shoulder recorded at IO-7, profile view.

Photograph 69. Whole colorless machine-made bottle (G.5), base view.

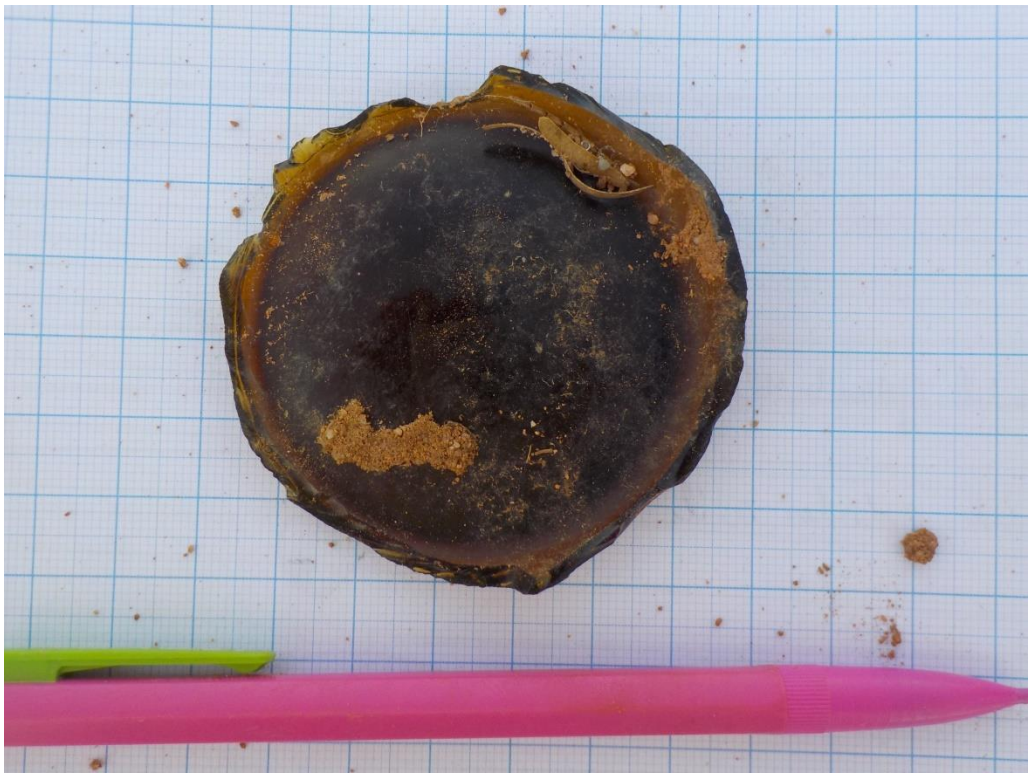
Photograph 70. Whole colorless glass jar (G.6) recorded at IO-7, profile view.



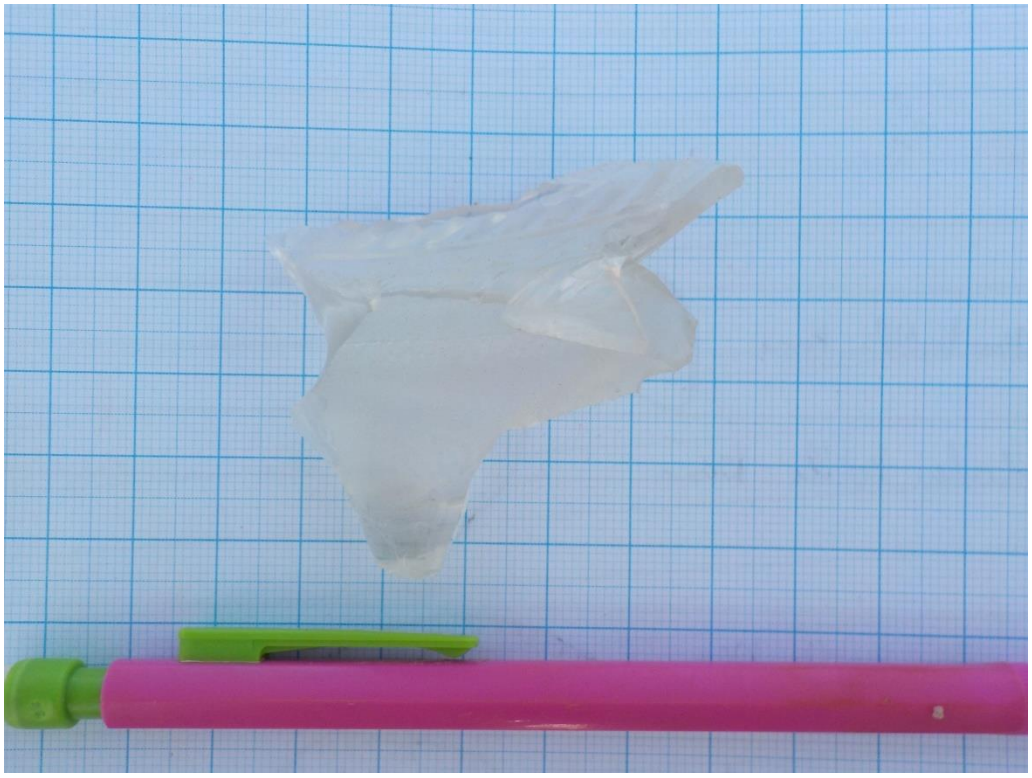
Photograph 71. Whole colorless glass jar (G.6) recorded at IO-7, base view showing the anchor in square maker's mark.



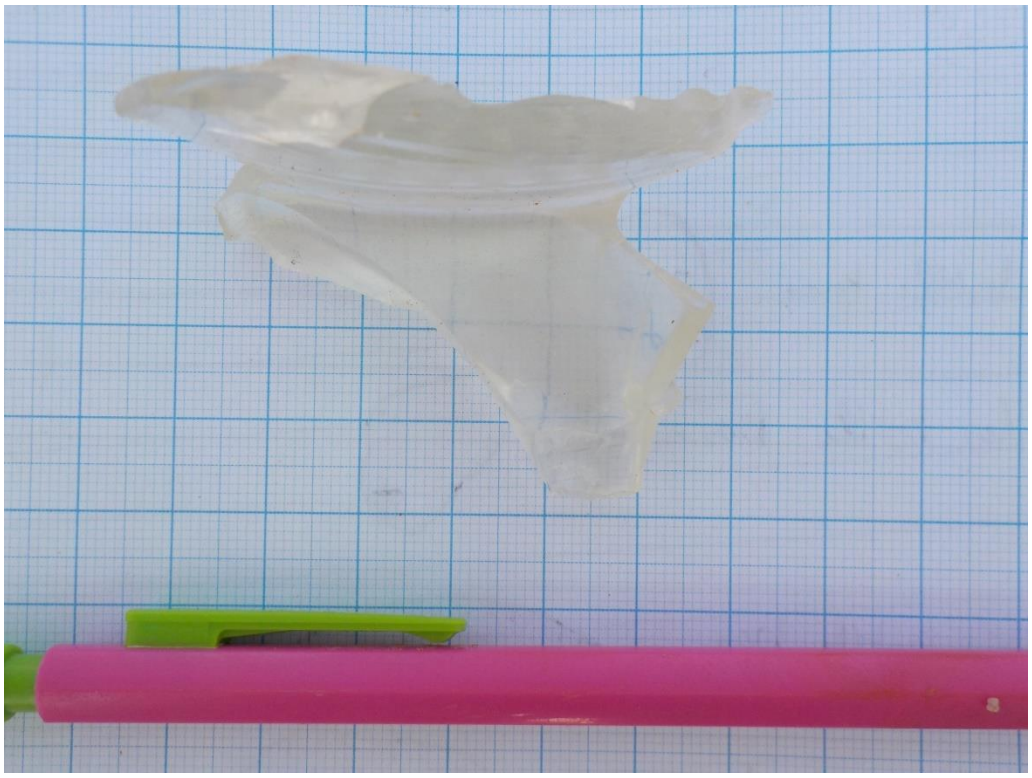
Photograph 72 Amber bottle base fragment (G.7) with connected NW maker's mark, obverse.



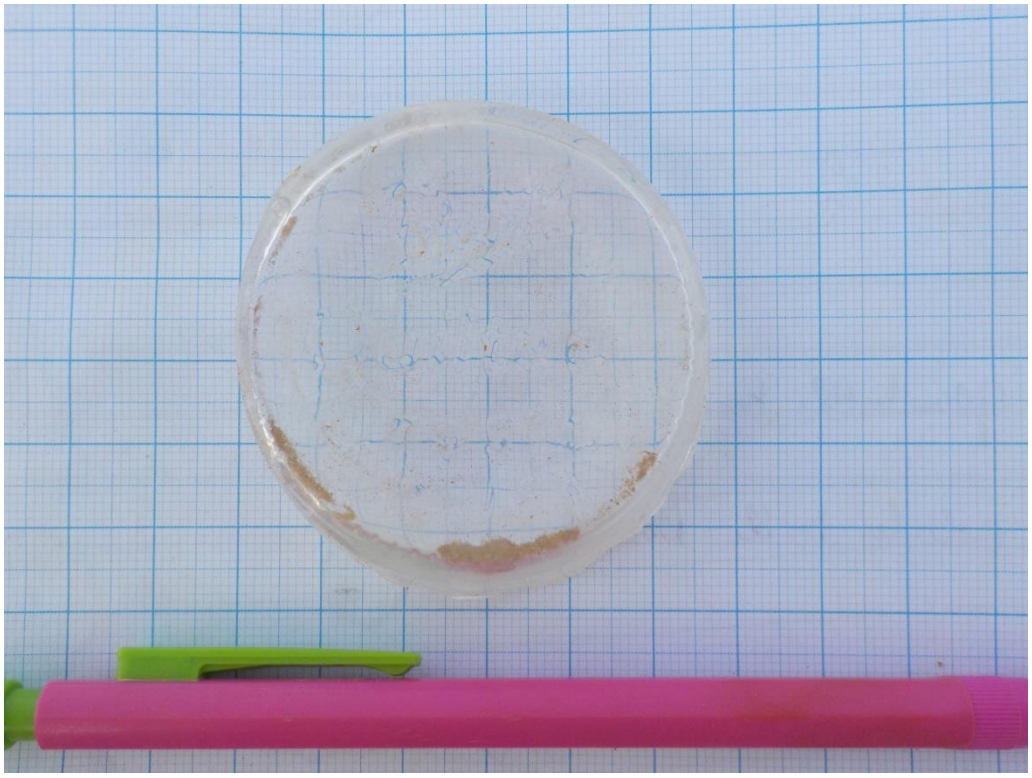
Photograph 73. Amber bottle base fragment (G.7) with connected NW maker's mark, reverse.



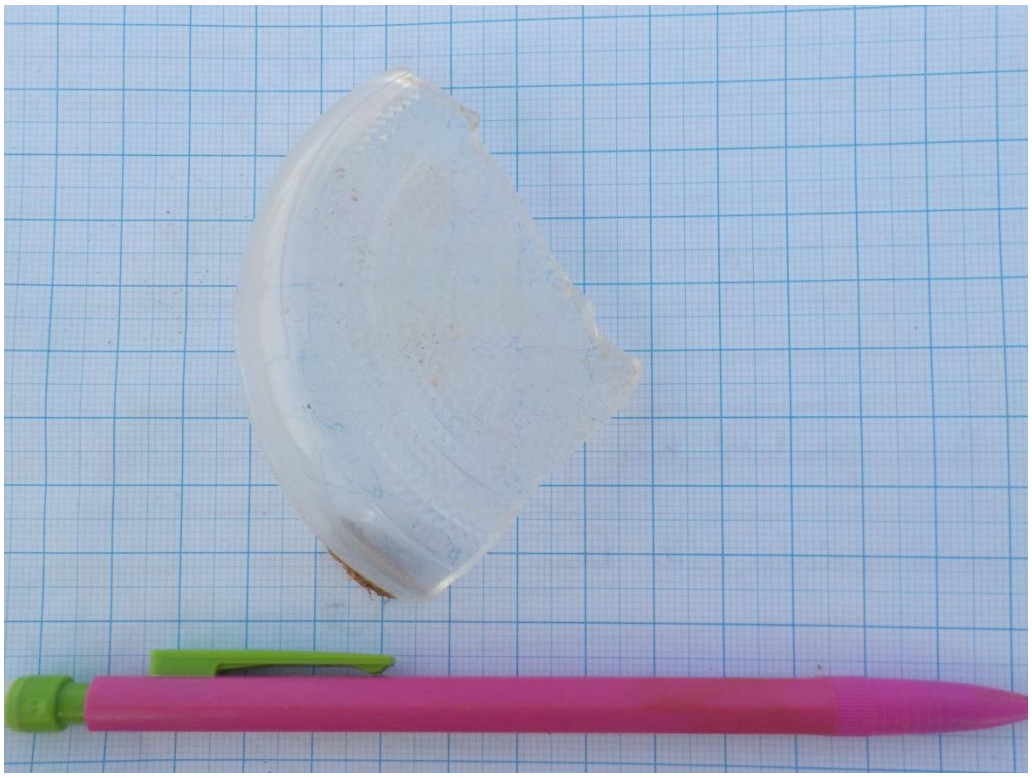
Photograph 74. Colorless bottle base fragment (G.8) with "..E IN MEXICO" molded on side and a "VR" in a circle maker's mark molded on its base recorded at IO-7, obverse.



Photograph 75. . Colorless bottle base fragment (G.8) with "..E IN MEXICO" molded on side and a "VR" in a circle maker's mark molded on its base recorded at IO-7, reverse.

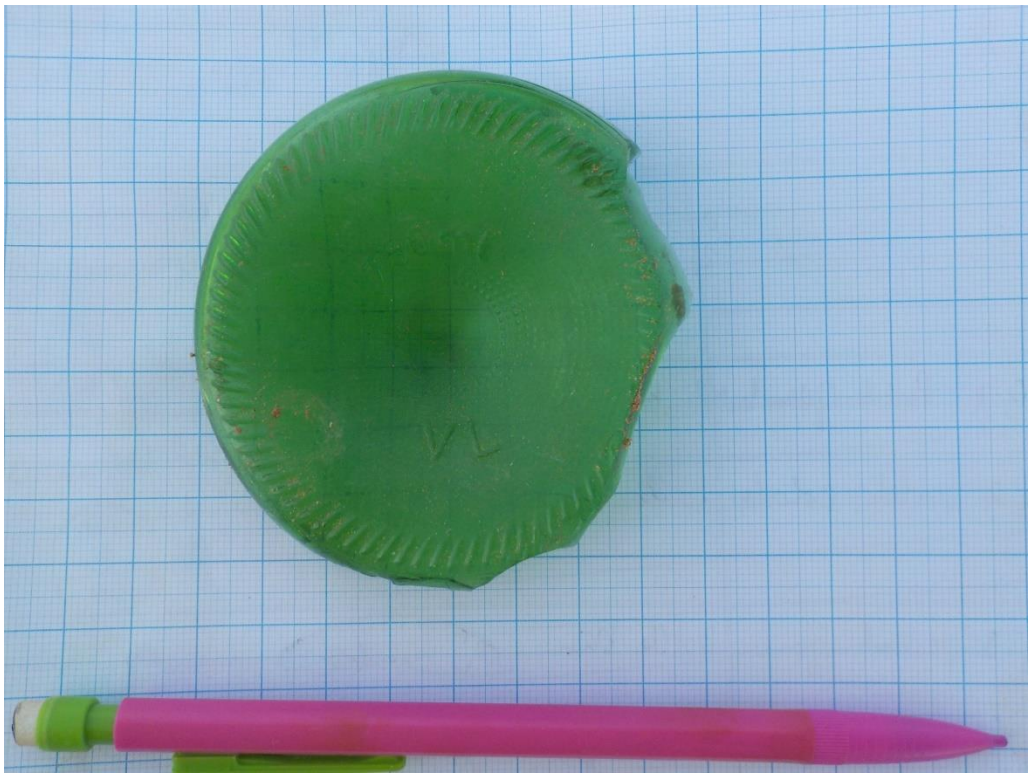


Photograph 76. Colorless bottle base (G.14) with cursive "Ball" "Quilted Crystal" and "U.S.A." on its base recorded at IO-7, obverse.



Photograph 77. Colorless glass bottle base fragment (G.15) with an indeterminate partial maker's mark recorded at IO-7, obverse.

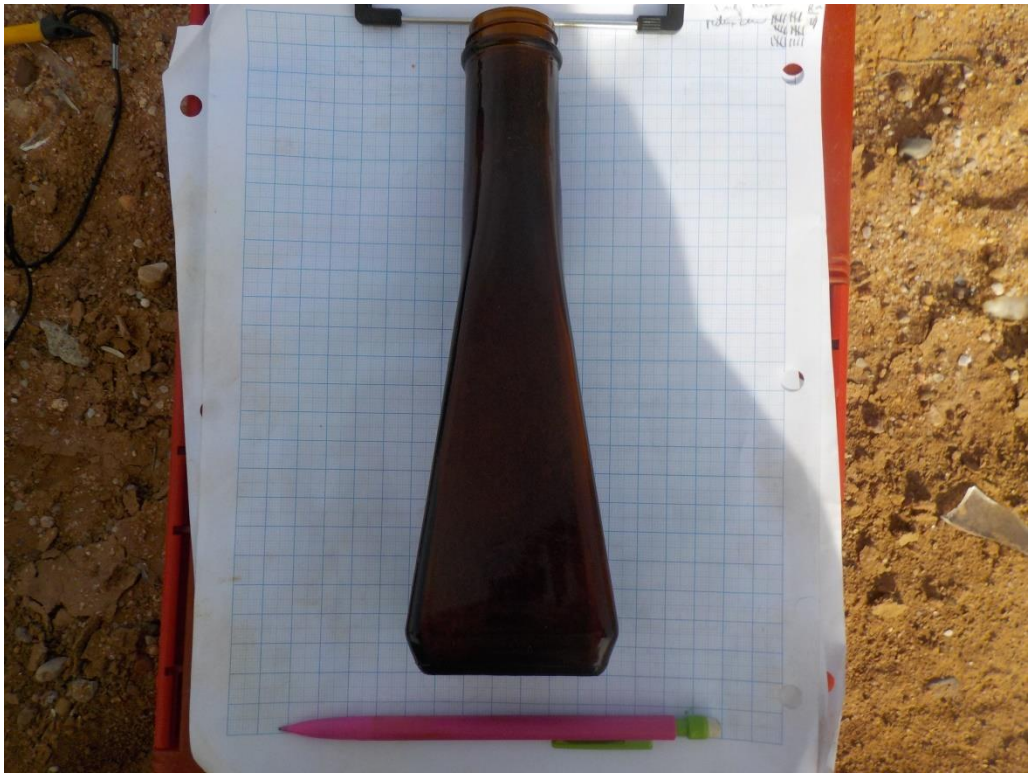
Photograph 78. Green glass bottle base fragment (G.16) molded with "1009A"/An "S" in a jug or bottle/ "64"recorded at IO-7, obverse.



Photograph 79. Green glass bottle base (G.17) molded with "750 ML"/"VL" recorded at IO-7, obverse.

Photograph 80. Colorless whole machine-made glass bottle (G.18) with crown finish and scripted "Pepsi" logo and "10 FL. OZ: molded on shoulder recorded at IO-7, profile view.

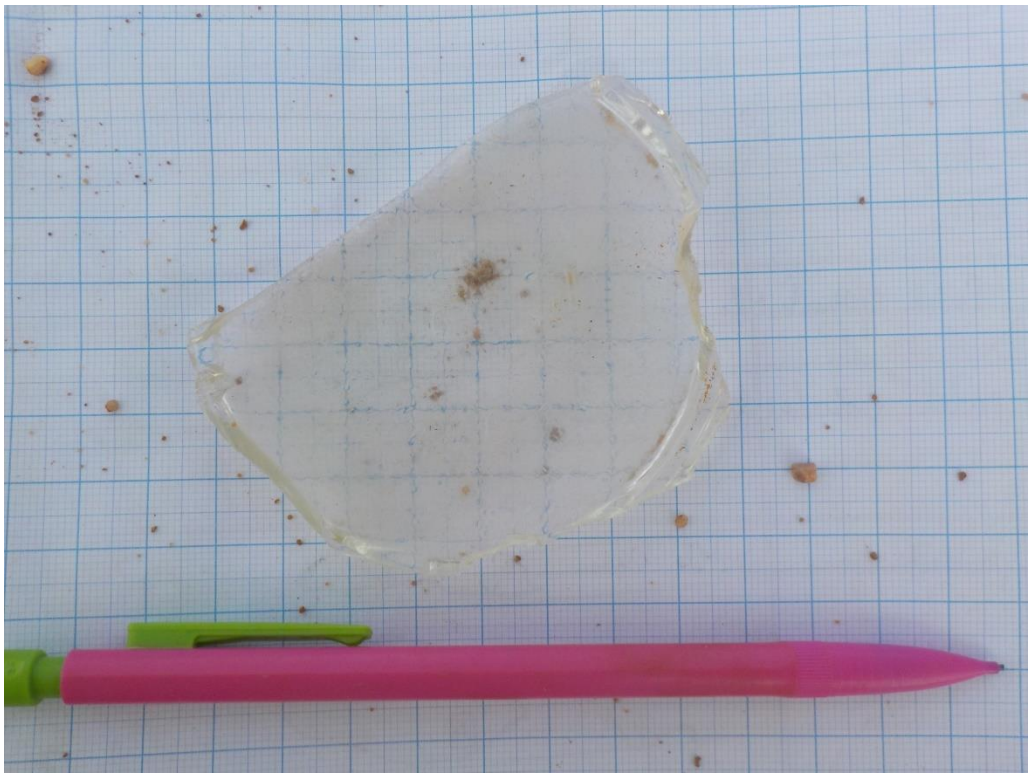
Photograph 81. Colorless whole bottle (G.18) with "B" in a circle, "9118"/"14"/"76"/"28" molded in its base, base view.



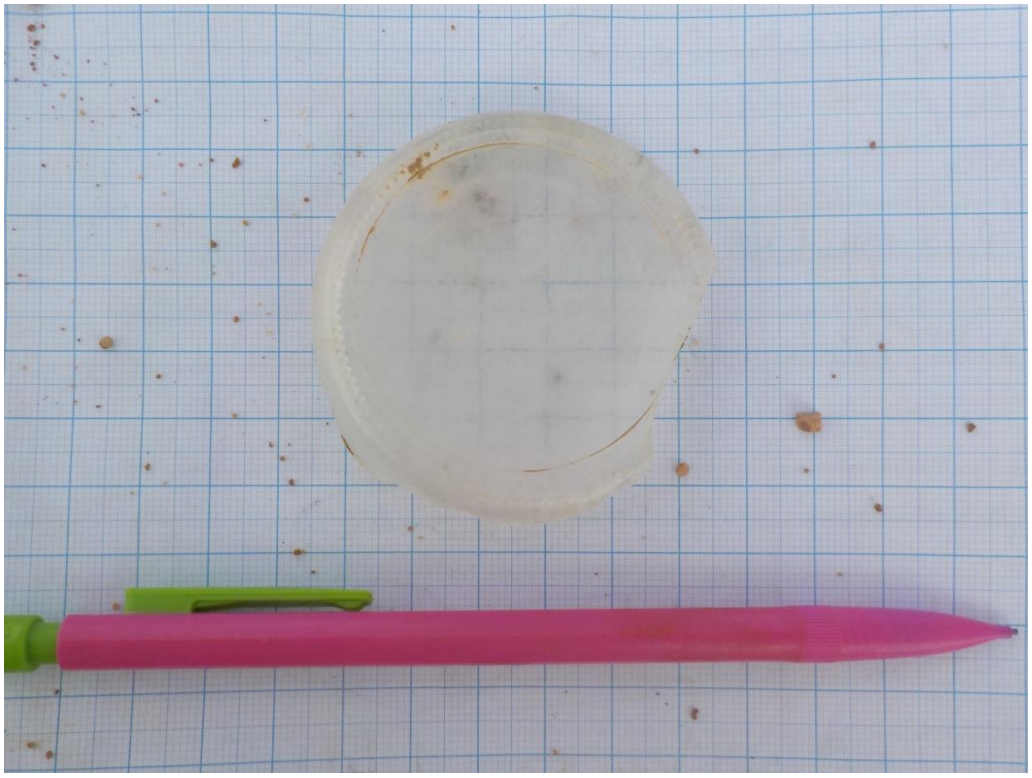
Photograph 82. Whole amber machine-made bottle (G.19) with screw top finish recorded at IO-7, profile view.

Photograph 83. Whole amber machine-made bottle (G.19)with "4232"/a "U" inside a partially closed circle "F-1"/"2" molded on its base recorded at IO-7, base view.

Photograph 84. Colorless glass bottle base (G.20) molded with "DES PAT.."/"6" "45"/an anchor in a rectangle recorded at IO-7, obverse.



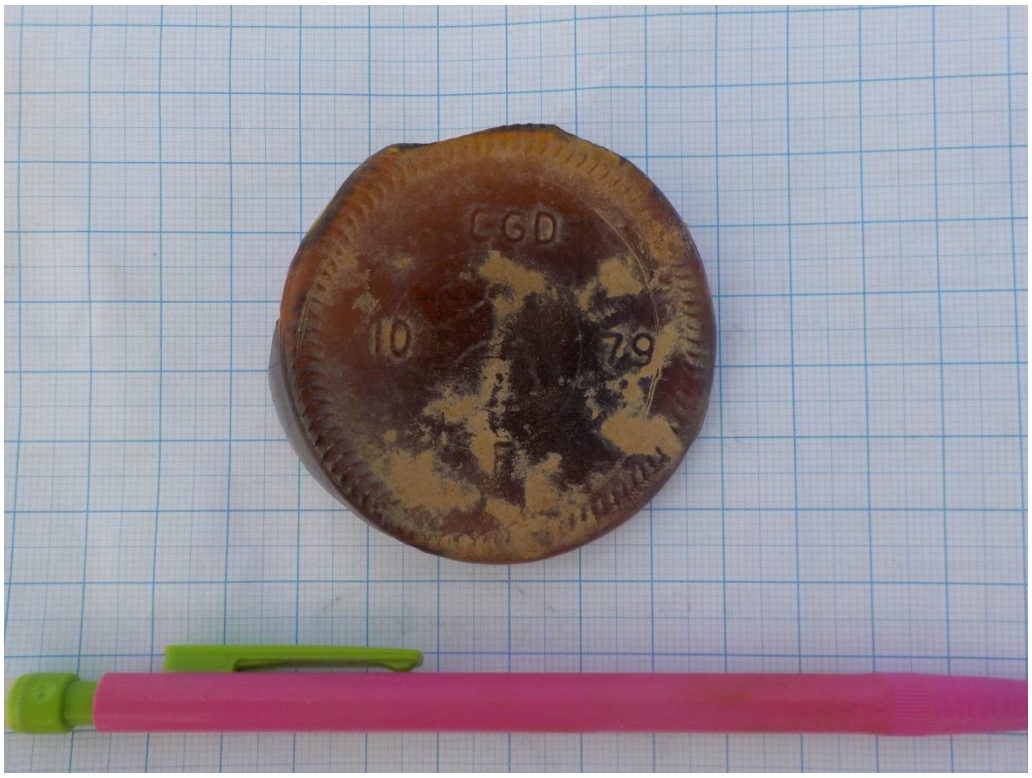
Photograph 85. Colorless bottle base (G.21) with "..MH661"/"80" two "G" inverted on one another ":L"/"4" in a circle"-A" molded into its base recorded at IO-7, obverse.



Photograph 86. Colorless glass bottle base (G.22) with "3"/"H-257"/"6" "B" in Circle with 2 serifs "4" molded into the base recorded at IO-7, obverse.

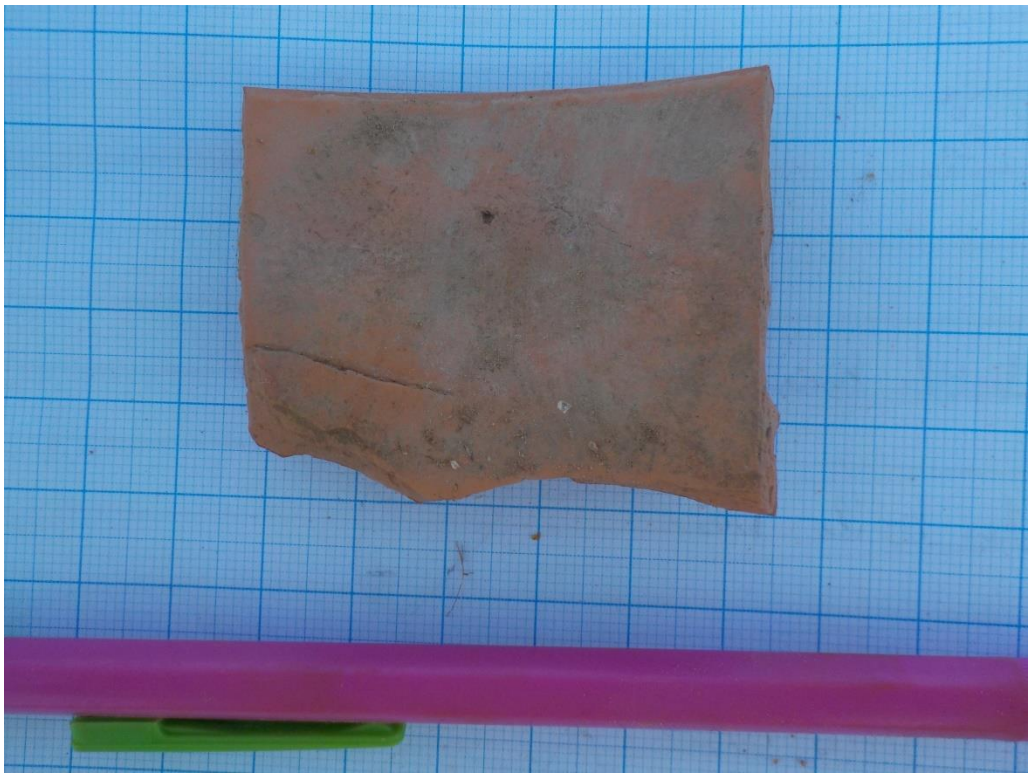
Photograph 87. Whole colorless machine-made bottle with cap recorded at IO-7, profile.

Photograph 88. Whole colorless machine-made bottle with cap and concentric circles and illegible maker's mark molded on the base recorded at IO-7, base view.



Photograph 89. Amber glass bottle base (G.24) molded with "GGD"/"10" "79"/"6" on its base recorded at IO-7, obverse.

Photograph 90. Plain historic redware rim sherd recorded at IO-7, obverse.



Photograph 91. Plain historic redware rim sherd recorded at IO-7, reverse.

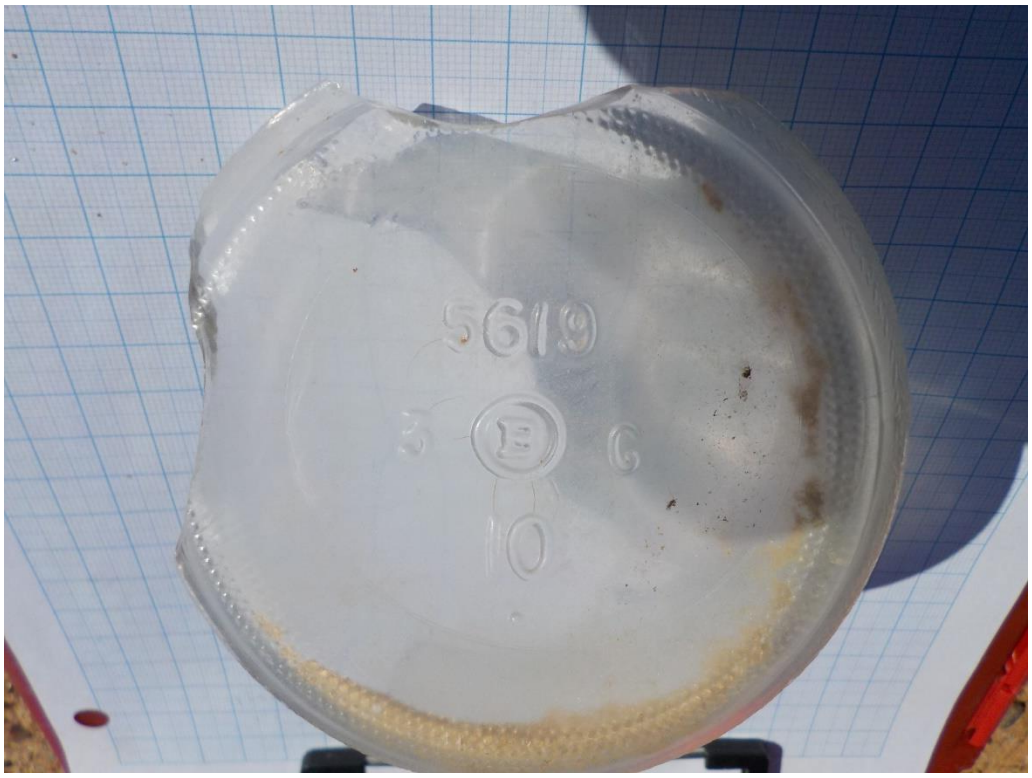
Photograph 92. Metal pull tab beverage can with label recorded at IO-7, obverse.

Photograph 93. Metal pull tab beverage can with label recorded at IO-7, reverse.

Photograph 94. Partially crushed sanitary can recorded at IO-7, profile view.

Photograph 95. Partially crushed sanitary can with "SEP *)"/P!)"/"25 YEARS" stamped on its base recorded at IO-7, profile view.

Photograph 96. Isolated feature IO-27 comprised of 5 spikes and milled wood embedded in surface, facing south.



Photograph 97. Colorless glass bottle base with molded "5619"/"3" "B" with two serifs in a circle "G"/"O" recorded as IO-28, obverse.

Photograph 98. Colorless glass bottle base with molded "5619"/"3" "B" with two serifs in a circle "G"/"O" recorded as IO-28, reverse.

APPENDIX C
HISTORICAL AERIALS

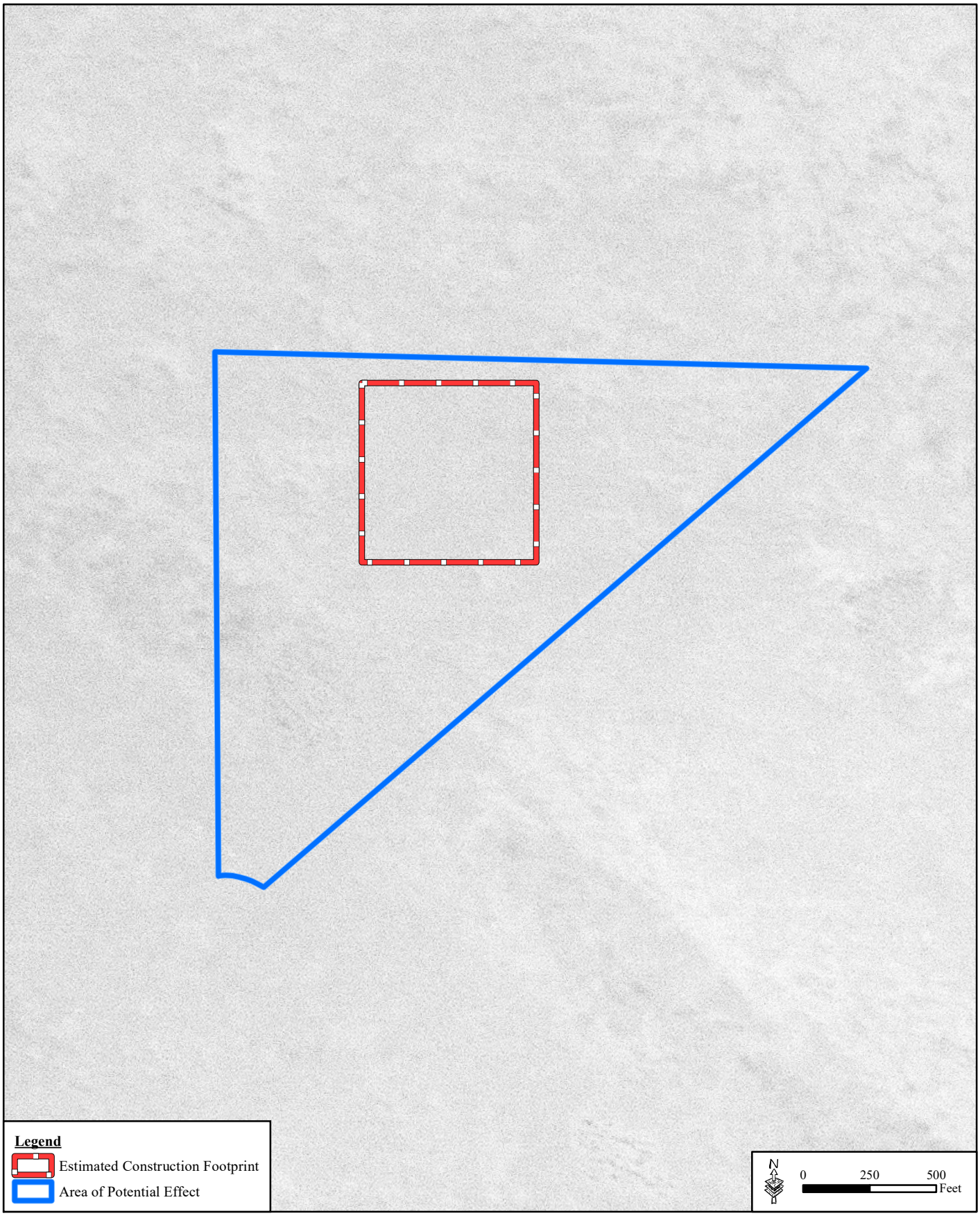


Figure C-1. 1942 Historical Aerial

GSRC

March 2020

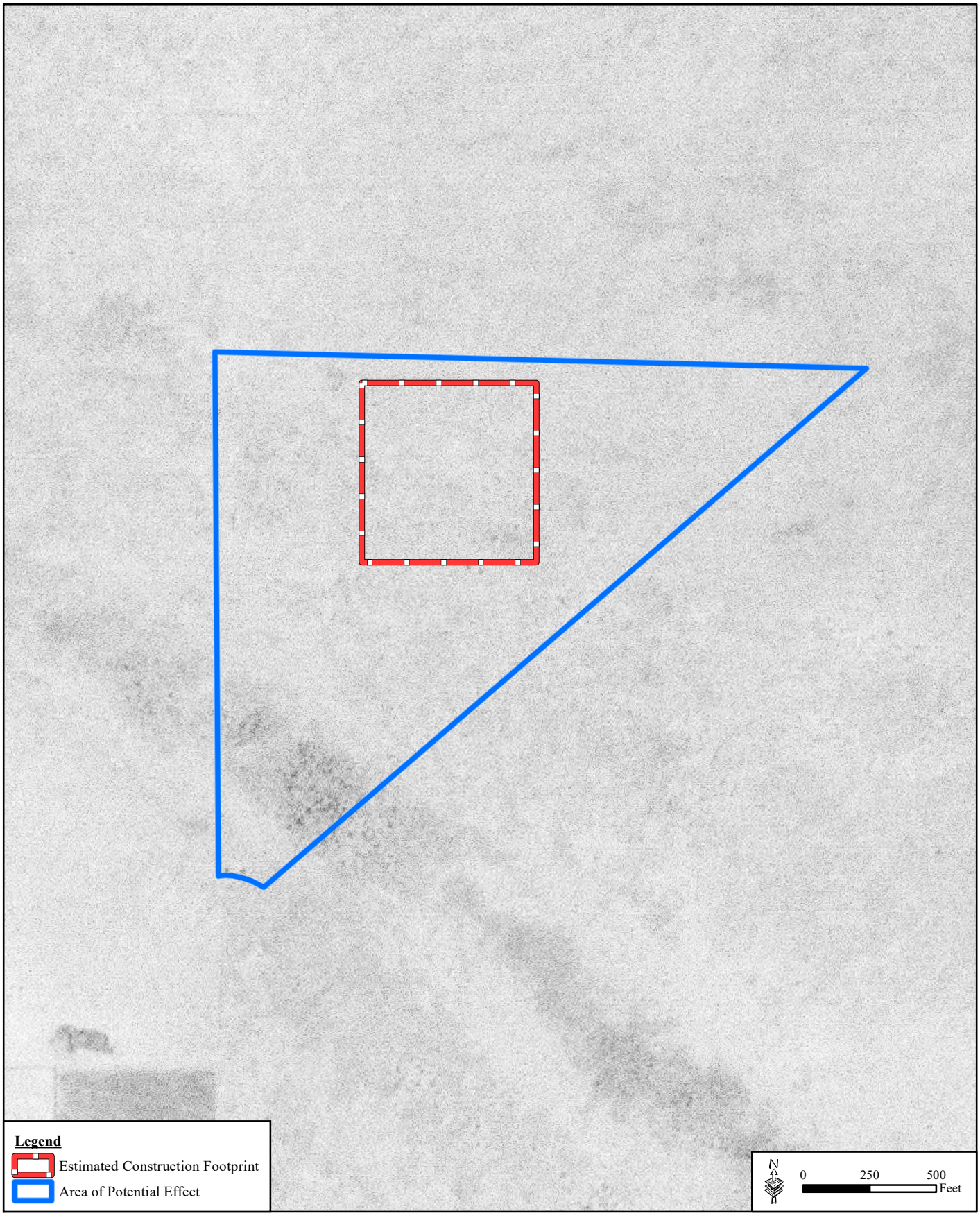


Figure C-2. 1957 Historical Aerial

GSRC

March 2020

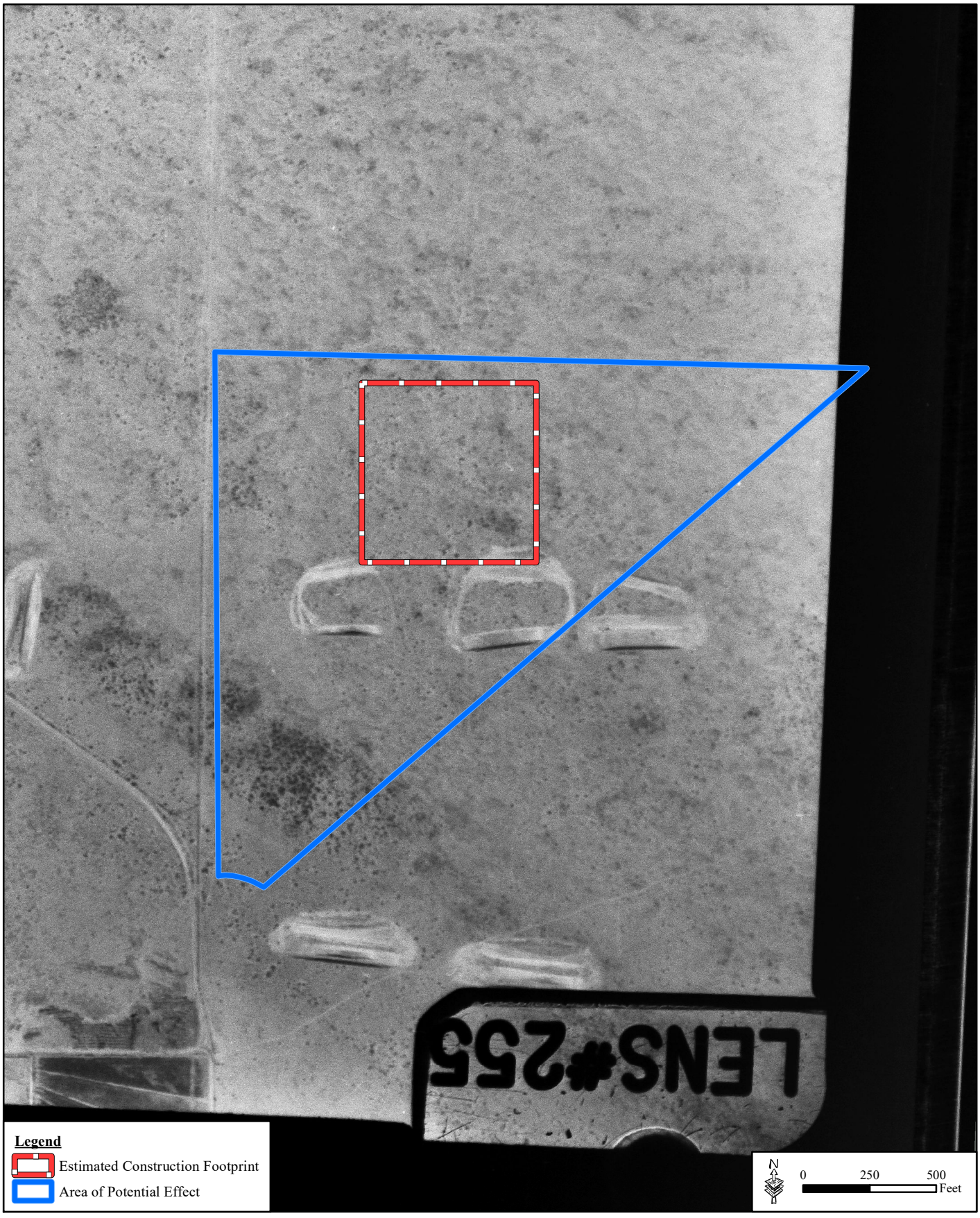


Figure C-3. 1967 Historical Aerial

GSRC

March 2020

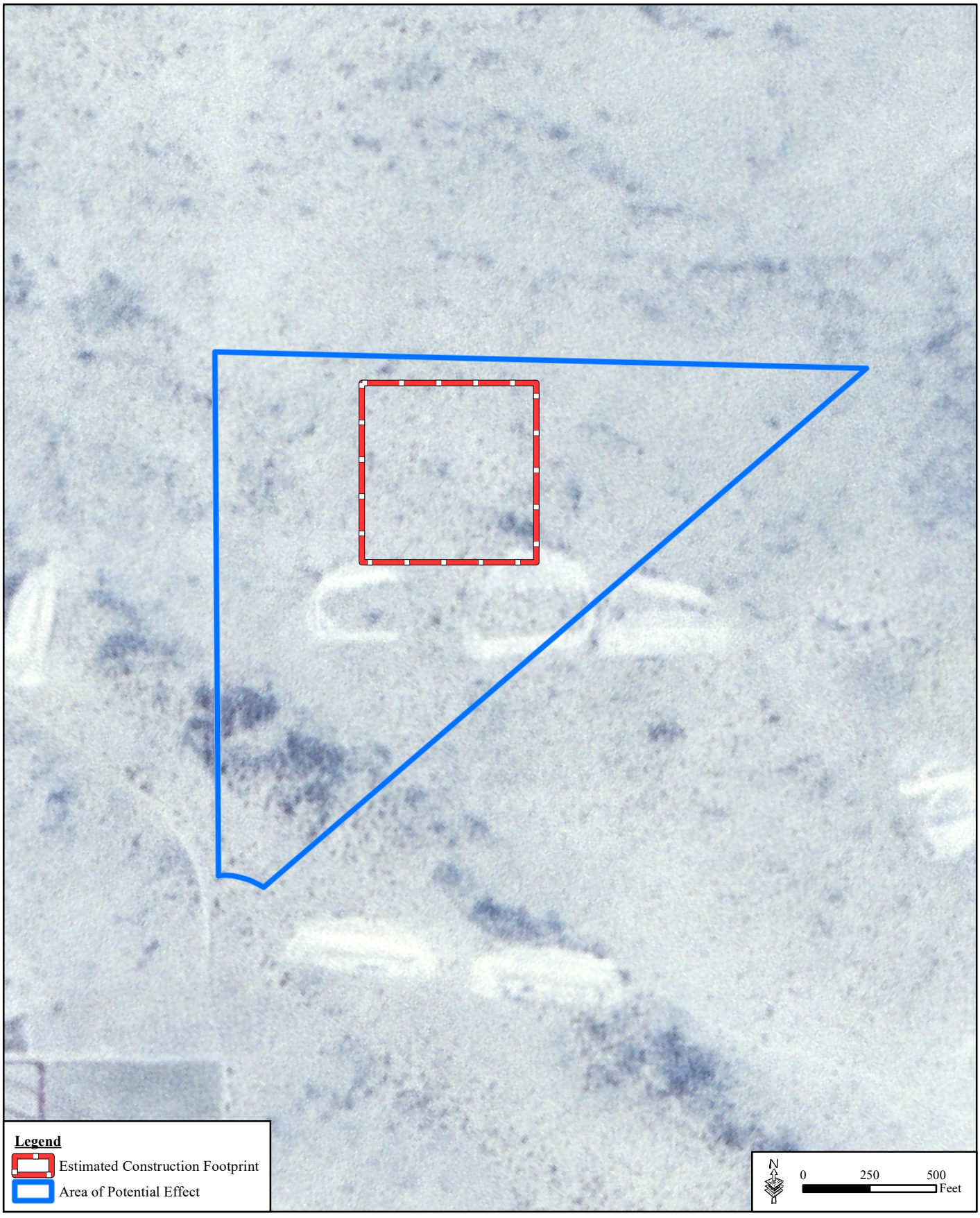


Figure C-4. 1972 Historical Aerial

GSRC

March 2020

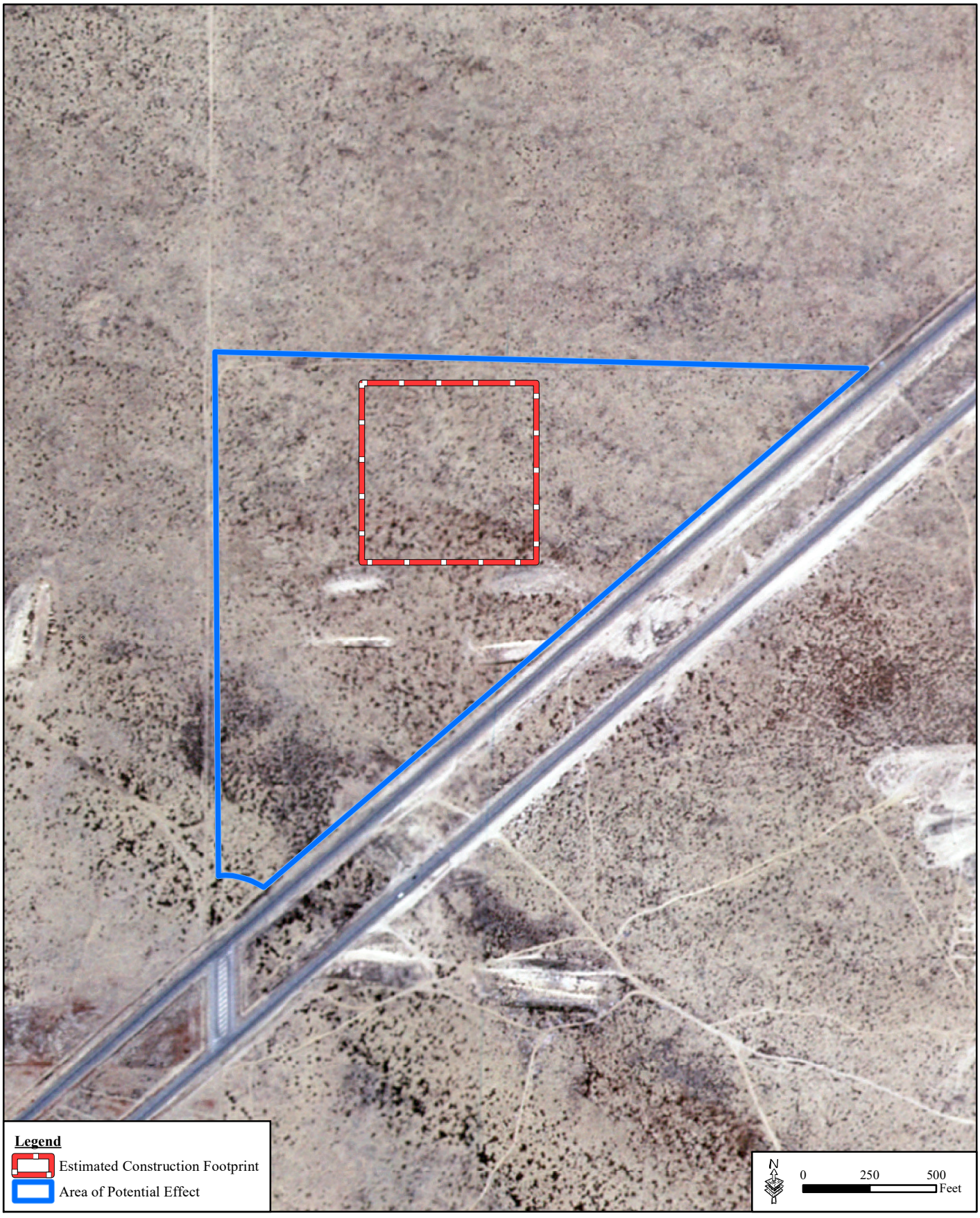


Figure C-5. 1996 Historical Aerial

GSRC

March 2020

Figure C-6. 2002 Historical Aerial

GSRC

March 2020

Figure C-7. 2012 Historical Aerial

GSRC

March 2020