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CSJ 0414-01-001, SH 165 within the Texas State Cemetery Travis County, Austin District

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CSJ 0414-01-001, SH 165 within the Texas State Cemetery Travis County, Austin District

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Report for Archeological Survey

CSJ 0414-01-001, SH 165 within
the Texas State Cemetery
Travis County, Austin District

Jon Budd, Principal Investigator; Antiquities Permit No. 8212
6 November 2017

The environmental review, consultation, and other actions required by applicable Federal environmental laws for this project are being, or have been, carried-out by TxDOT pursuant to 23 U.S.C. 327 and a Memorandum of Understanding dated December 16, 2014, and executed by FHWA and TxDOT.

Abstract

On November 6, 2017 TxDOT archeologists conducted an intensive archeological survey under Texas Antiquities Permit Number 8212 for the proposed widening of the east/west segment of State Highway (SH) 165 located within the Texas State Cemetery in Austin in Travis County, Texas. The Texas State Cemetery has been previously determined eligible for listing on the National Register of Historic Places and is also recorded as a Texas State Antiquities Landmark. The cemetery has been previously recorded as the archeological site, 41TV1700.

The existing 328 foot long by 12 foot wide east/west segment of SH 165 roadway would be widened to 22 feet. The undertakings area of potential effects is defined as a 22 foot wide by 328 foot long area centered on the existing east/west segment of SH 165 beginning at Comal Street and extending west to the north/south segment of SH 165. The depth of impacts is estimated to be approximately 3 feet below the current ground surface. The project area incorporates approximately 0.165 acres. All funding and oversight for the project is under the purview of the State of Texas. No Federal funding or oversight is involved. Therefore, this project is being coordinated under the Antiquities Code of Texas only.

During informal consultation with the Texas Historical Commission (THC), the THC recommended that the intensive archeological investigation consist of three mechanical trenches excavated on the south side and parallel to the east/west segment of SH 165 to assess the potential for the APE to contain unmarked human interments. As per the THC recommendations, TxDOT archeologists excavated three trenches measuring 12 by 3 feet and up to 8 feet in depth. TxDOT also conducted a 100% pedestrian inspection of the project area. No marked or unmarked human interments were observed. One fragment of blue on white transfer ware, one fragment of a white porcelain plate, one rusted metal fragment, a charred twig, and one modern aluminium Coca-Cola were observed within imported fill sections. These were recorded as isolated finds and not part of any archeological site. No other archeological materials were observed or recorded. No materials were collected. Therefore, no materials are curated.

Based upon the results of the investigation, TxDOT recommends that the widening of the east/west segment of SH 165 will have no adverse effect to any portion of the National Register of Historic Places eligible archeological site or State Antiquities Landmark (41TV1700). No further work is recommended.

Project Identification

- **Date:** 11/07/2017
- **Date(s) of Survey:** 11/06/2017
- **Archeological Survey Type:** Reconnaissance Intensive
- **Report Version:** Draft Final
- **Jurisdiction:** Federal State
- **Texas Antiquities Permit Number:** 8212
- **District:** Austin
- **County or Counties:** Travis
- **USGS Quadrangle(s):** Austin East (3097-242) 7.5' USGS Topographic Quadrangle
- **Highway:** SH 165 beginning at Comal Street and extending 328 feet west.
- **CSJ:** 0414-01-001
- **Report Author(s):** Jon Budd
- **Principal Investigator:** Jon Budd

Texas Historical Commission Approval

Signature

Date

Project Description

- **Project Type:** Widen roadway
- **Total Project Impact Acreage:** 0.165 acres
- **New Right of Way (ROW) Acreage:** 0.0 acres
- **Easement Acreage:** 0.0 acres
- **Area of Pedestrian Survey:** 0.165 acres
- **Project Description and Impacts:** The TxDOT Austin District proposes to widen the existing east by west segment of State Highway (SH) 165 located within the Texas State Cemetery located within the City of Austin in Travis County, Texas. The existing 12 foot wide roadway would be widened to 22 feet. All work would be conducted on Texas State owned property within the State Cemetery and funded by Texas State Funds. No Federal funding or oversight is involved.
- **Area of Potential Effects (APE):** The project footprint consists of the proposed 22 foot wide roadway centered on the existing east/west segment of SH 165 beginning at Comal Street and extending 328 feet west to the north/south section of SH 165 (See Figure 2). According to the roadway design, the depth of impacts is estimated to be up to 3 feet below the current ground surface. The project area consists of approximately 0.165 acres.
- **Survey Area:** Same as APE.
- **Parcel Number(s):** Not applicable.
- **Project Area Ownership:** The State of Texas

Project Setting

- **Topography:** The Texas State Cemetery is located with a setting of gently rolling hills ranging from 500 to 530 feet in elevation. The cemetery is located within the intensively developed urban area of the city of Austin.
- **Geology, Soils, and Potential Archeological Liability Map:** See attached Geological Observations, Scraping along the Southern Margin of SH 165, Texas State Cemetery by Jim Abbott for details.
- **Historic Land Use:** The Texas State Cemetery is located within the extensively developed, urban center of Austin. Austin was initially founded in 1839 under the name, “Waterloo”. The cemetery was subsequently established in 1851 with the internment of General Edward Burleson and has been used as a cemetery since.
- **Land Use:** The areas surrounding the APE have been used as a cemetery since 1851.
- **Vegetation:** The cemetery is professionally cared for with manicured grass, native and decorative trees, statues, grave-markers, and benches.

- **Estimated Ground Surface Visibility:** 0%
- **Previous Investigations and Known Archeological Sites:** Due to the APE being located within the extensively developed, urban setting of the City of Austin, there have been many archeological sites and previously investigations conducted within 1 kilometer of the project area. However, with the exception of the Texas State Cemetery, also recorded as the archeological site 41TV1700, all of the sites are located more than 100 meters away from the APE and will not be impacted by the proposed project (see Figure 3).
- The Texas State Cemetery was established in 1851, with the death of General Edward Burleson. Burleson served with Sam Houston in the Battle of San Jacinto and as Vice President of the Republic of Texas. Throughout the years other notable Texans have been buried or reburied on the cemetery grounds including: Stephen F. Austin, General Albert Sidney Johnston, Governor Allan Shivers, Governor John Connally, and Lieutenant Governor Bob Bullock. The cemetery has also been the final resting place of many Civil War Confederate Veterans. Restoration projects for the cemetery were conducted in 1915, 1930, and 1996. The oldest part of the cemetery has been determined to be eligible for listing on the National Register of Historic Places and is a State Antiquities Landmark. It is also listed as the Texas State Cemetery National Register District.
- The east/west segment of SH 165 proposed for widening is bordered by the Confederate Veteran portion of the cemetery on the south. The northern most row of gravestones is within approximately 16-22 feet of the existing edge of pavement of the east/west segment of SH 165. In 1995, Prewitt and Associates Inc. (PAI), conducted data recovery of the western most row of Confederate Veteran graves (Dockall et. al. 1996). At that time, the north/south segment of SH 165 was slated for widening and the western most row of Confederate Veteran Graves were exhumed and reburied in order to facilitate that widening. PAI exhumed a total of 57 graves with burial dates ranging from 1884 to 1951. They confirmed that the gravestone locations corresponded fairly well with the actual burials (within 2 feet at the farthest). The PAI investigation confirmed that the exhumed Confederate Veteran's and spouses died and were buried well after the Civil War. Finally, the PAI investigation confirmed that in regard to the western most row of Confederate Veterans and spouses, there were no more graves within that single, western most row as it approached the east/west Segment of SH 165.
- A newer portion of the cemetery is located north of the east/west segment of SH 165. This portion of the cemetery has not been included within the National Register Listing. Interments in this area date to much more recent times and the cemetery management possess relatively modern records of the burials in this latter area. Members of the cemetery staff have confirmed that there are no burials in or near the expansion of the proposed roadway segment on the north side.
- **Comments on Project Setting:** The cemetery was established in 1851, a relatively early date. The SH 165 east/west segment appears to have been placed on a 1 meter high fill

section. Due to these factors, efforts to assess the potential for the presence of unmarked human interments within the project area are warranted.

Survey Methods

- **Surveyors:** Jon Budd and Jim Abbott Ph.D., TxDOT staff archeologists. Jenifer McWilliams, Texas Historical Commission Cemetery Expert, Richard Garcia and Anthony Horne, TxDOT Austin District Staff were present during the investigation. TxDOT Area Office Maintenance staff present included Chris Rizzo (Gradall Operator), Matt Heinze (Foreman), and Ed Bisland (Swamper) were present as well. Jason Walker, Texas State Cemetery Director of Research was also present.
- **Methodological Description:** The Texas State Cemetery dates back as far as 1851. Due to the potential for the presence of unmarked graves, an intensive archeological survey including Gradall Scraping was recommended and implemented to confirm the absence of burials within the APE.
- **Subsurface Probes:** See attached plan view with the three Gradall Trench locations plotted.

Method	Quantity in Existing ROW	Quantity in Proposed New ROW	Quantity in Proposed Easements	Total Number per Acre
Shovel Test Units				
Auger Test Units				
Mechanical Trenching	3			18

- **Other Methods:** The entire 0.165 acres of the APE was pedestrian inspected.
- **Collection and Curation:** NO YES If yes, specify facility.
- **Comments on Methods:** Based upon informal consultation with the THC, the placement of a total of three mechanical trenches on the south side of the east/west segment of SH 165 were determined as an adequate strategy. The Confederated Veteran’s portion of the cemetery is located south of the east/west segment of SH 165.

Gradall Trenches 1, 2, and 3 were all 3 feet in width, 12 feet in length (east/west) and paralleled the east/west segment of SH 165 on the south. The Gradall used a two foot wide, smoothed bladed bucket. After the introduced fill was removed, TxDOT archeologists ensured that the bucket blade scraped increments of 2 to 4 inches to confirm the presence

or absence of grave shafts (soil discolorations), bones, or coffin hardware. GT#1 was 7.5 feet in depth, GT#2 was 7 feet, and GT#3 was 6 feet.

- **Survey Results:** No marked or unmarked graves were identified anywhere within the APE.
- **Project Area Description:** The project area consists of an elevated section of the east/west segment of SH 165 measuring 238 feet in length. The roadway is located upon a 1 meter high fill section. The current roadway is covered with cemented cobble stone pavement measuring 12 feet in width. Prior to the 1996 cemetery improvements, the roadway measured 20 feet in width.
- **Adjacent Area Description:** Rows of marked Confederate Veteran's graves are located within 12 to 20 feet of the APE. More recent, marked, modern internments as well as decorative hydraulic water features are located within 8 to 12 feet north of the APE.
- **Archeological Materials Identified:** One blue on white transfer ware porcelain fragment, one white porcelain plate fragment, one chunk of rusted iron, and one charred twig fragment were observed in the introduced fill in Gradall Trench #1 (5 to 6 feet below ground surface). One aluminium Coca-Cola can with a pull tab and labelled with the 1996 Olympics was observed 20 centimeters below the current ground surface in fill section of the western portion of Gradall Trench #2. All of these finds were recorded as isolated finds and not part of any funeral activity (see attached photograph #8 under Figure 6).
- **APE Integrity:** The upper 5 to 7 feet of the APE is comprised of introduced fill used to elevate and level the east/west section of SH 165. Below the fill, the ground is relatively intact with Austin Chalk geologic formations.
- **Recommendations:** The widening of the east/west segment of SH 165 will not adversely affect any contributing element to the Cemetery's status as a State Antiquities Landmark. No further work is recommended.
- **Results Valid Within:** Only the 22 foot wide by 328 foot long APE. If any additional cemetery property is required, then additional work is warranted to confirm the absence of any marked or unmarked graves.
- **Archeological Site Evaluations:** The Texas State Cemetery, also recorded as the archeological site 41TV1700 has previously been determined eligible for listing on the National Register of Historic Places(36 CFR 800 and 36 CFR 60). Therefore it inherently warrants status as a State Antiquities Landmark (13 TAC 26). However, since this intensive archeological survey investigation that included the excavation of 3 Gradall Trenches resulted with no human interments, this widening of the SH 165 east/west roadway will have no adverse effect on any portion of the site eligible for listing on the National Register of Historic Places or warranting status as a State Antiquities Landmark.
- **Comments on Evaluations:** None.

- **Further Work:** No further work is warranted for the proposed 328 foot long by 22 foot wide APE. If the project design changes to incorporate any more of the cemetery property, then additional archeological investigations and THC consultation may be required.
- **Justification:** See Attached.

References

Dockall, Helen Danzeiser, Douglas K. Boyd, Martha Doty Freeman, Rolando L. Garza ,
Kevin E. Stork, Karl W. Kibler, and Joan E. Baker
1996 Confederate Veterans at Rest: Archeological and Bioarcheological Investigations
at the Texas State Cemetery, Travis County, Texas. Texas Parks and Recreation,
Austin, Texas

Figures

Figure 1: The Texas State Cemetery Location on the Austin East (3097-242) 7.5' USGS Topographic Quadrangle

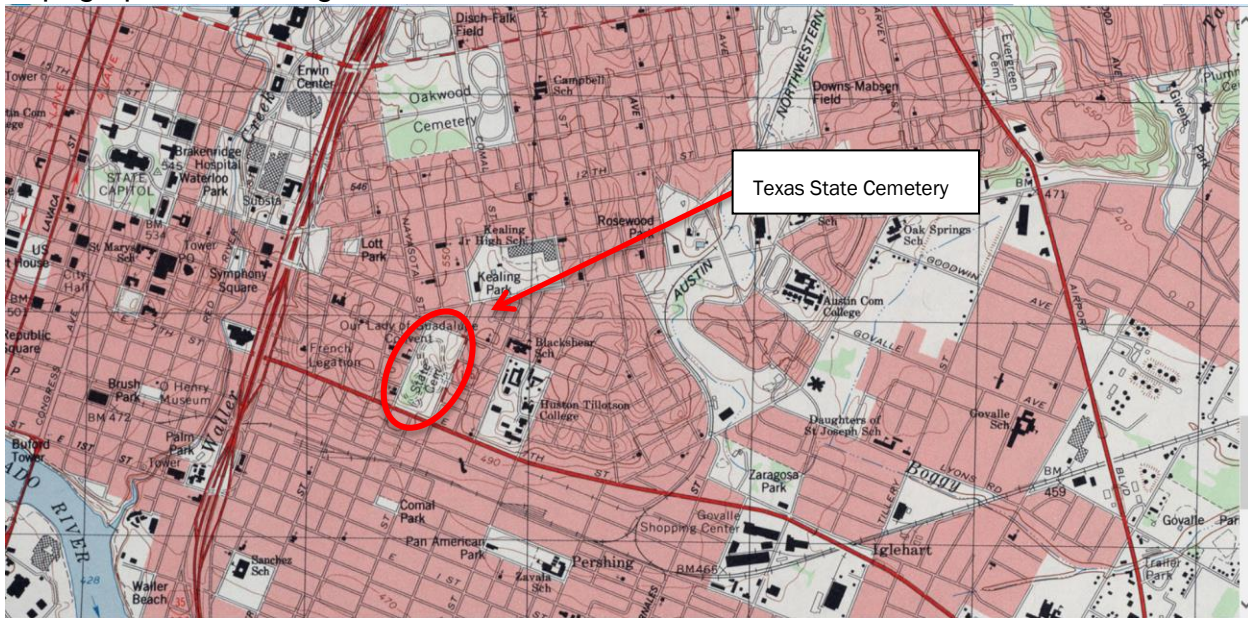


Figure 2: Street Map of the Texas State Cemetery

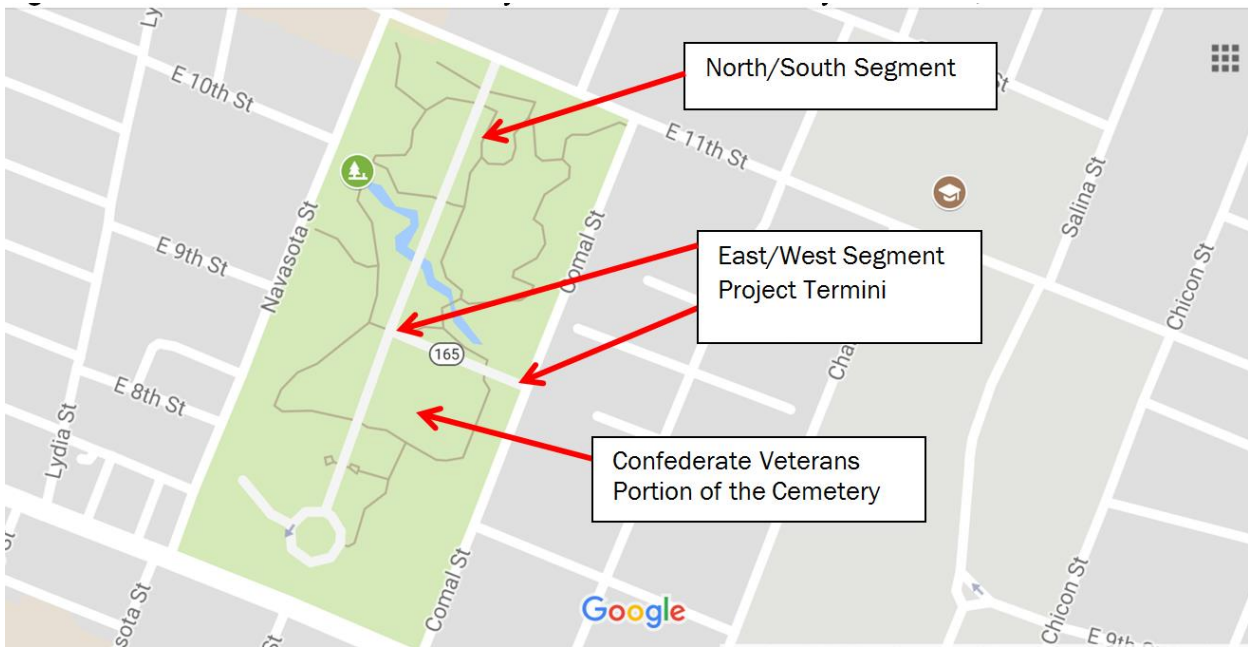
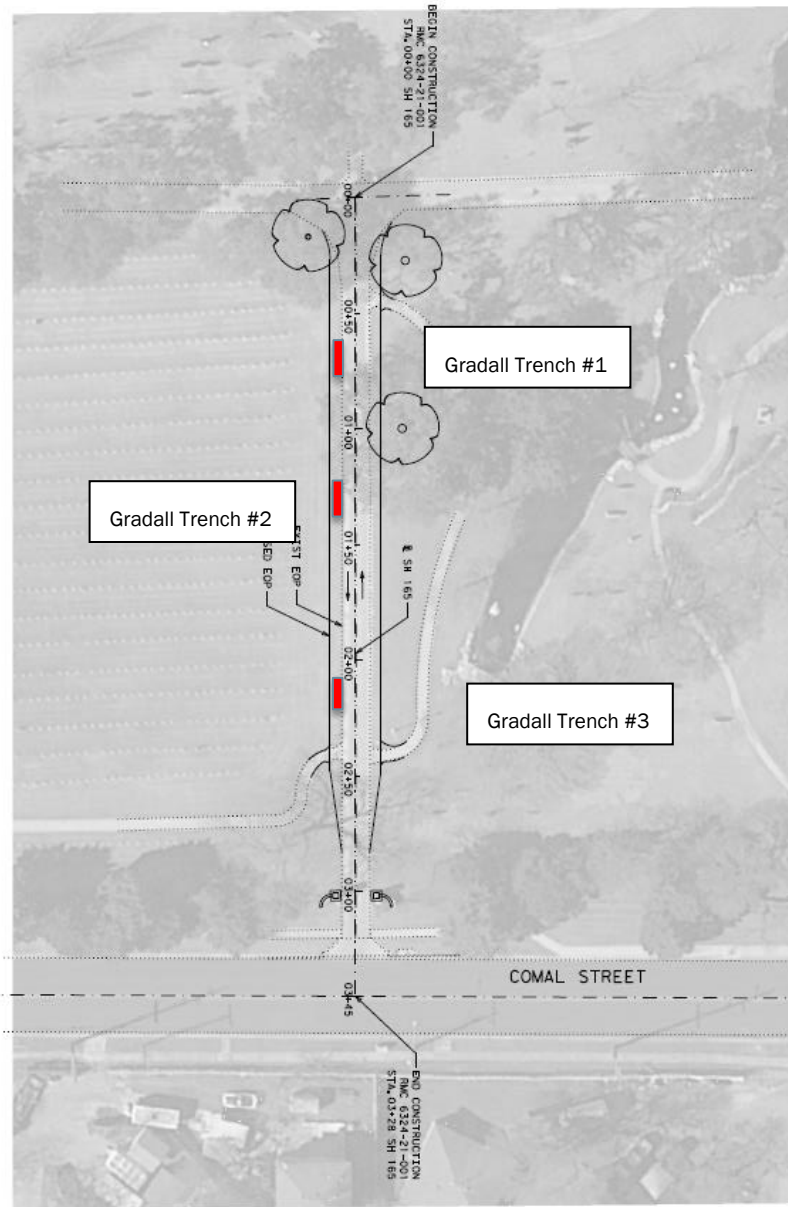


Figure 4: Gradall Trench Locations on the SH 165 Plan Layout Plan



* NOTE *
 AERIAL PHOTOGRAPHY IS
 FOR REFERENCE PURPOSES
 ONLY. IT IS TAKEN FROM
 GOOGLE EARTH IMAGERY.

Austin District
 North Travis Area Office

Texas Department of Transportation

SH 165

PROJECT LAYOUT

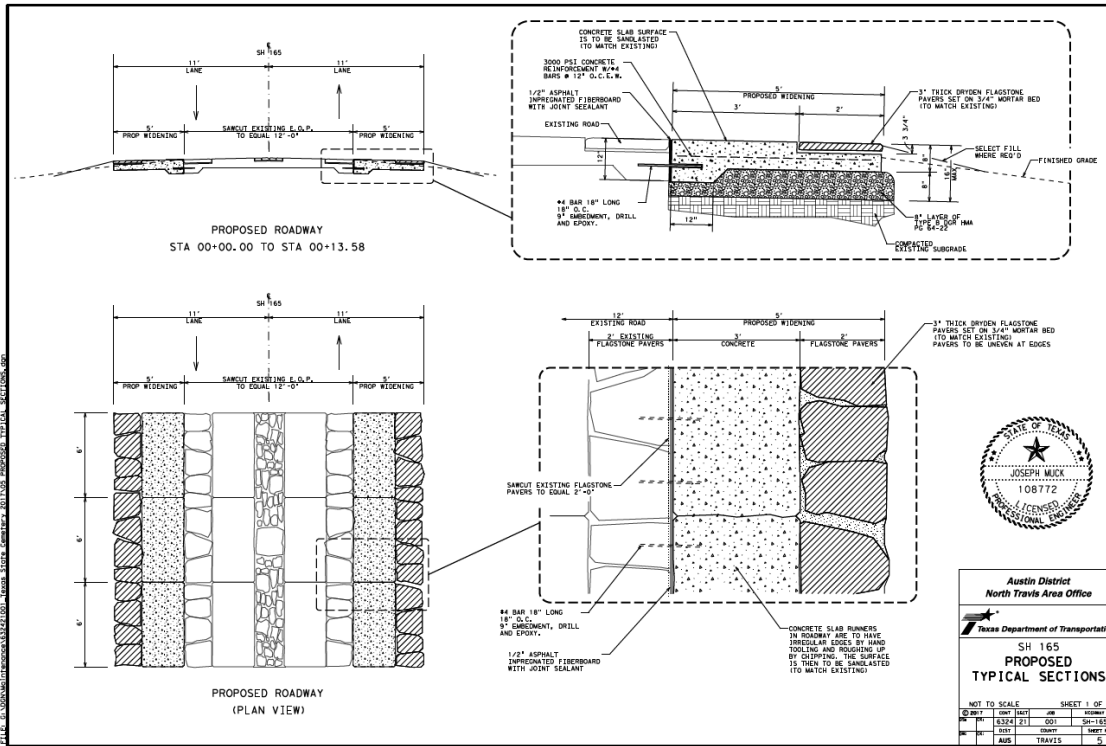
SHEET 1 OF 1

DATE	01/11/11	BY	WJW	REVISION	
DATE	01/11/11	BY	WJW	REVISION	
DATE	01/11/11	BY	WJW	REVISION	
DATE	01/11/11	BY	WJW	REVISION	

SCALE 1/4" = 100 FEET



Figure 5: Project Plans



Austin District
North Travis Area Office

Texas Department of Transportation

SH 165
PROPOSED
TYPICAL SECTIONS

NOT TO SCALE SHEET 1 OF 1

DATE	BY	CHKD	APP	REV
08/11/11	KJW	JL	QD	SH-165
08/11/11				

Figure 6: Photos of the Project Area



Photo #1: Closeup facing east toward the APE from the intersection of SH 165 east/west and SH 165 north/south. Note the orange flags delineating the southern edge of the APE.



Photo #2: Facing east toward the APE from the intersection of SH 165 east/west and SH 165 north/south. Note the rows of white gravestone delineating the Confederate Veteran's portion of the cemetery in relation to the APE.



Photo #3: Facing east toward Gradall Trench (GT) #1.



Photo #3: Facing east toward Gradall Trench (GT) #1.



Photo #4: Facing west toward Gradall Trench (GT) #1. Note the fill levels in the right hand side of the frame.



Photo #5: Facing west toward Gradall Trench GT #2. Note the fill levels in the right hand side of the frame.



Photo #5: Facing east toward GT #2. Note the fill levels in the left hand side of the frame.



Photo #6: Facing east toward GT #3. Note the chalk bedrock in the bottom of the trench.



Photo #7: Facing west toward GT #3. Note the chalk bedrock in the bottom of the trench



Photo #8: One blue on white transfer ware porcelain plate fragment, one white porcelain plate fragment, one chunk of rusted iron, and one charred twig fragment were observed in the introduced fill in Gradall Trench #1 (5 to 6 feet below ground surface). One aluminium Coca-Cola can with a pull tab and labelled with the 1996 Olympics was observed 20 centimeters below the current ground surface in fill section of the western portion of Gradall Trench #2. Nothing was found in Gradall Trench #3.

This report was written on behalf of the Texas Department of Transportation by:
Jon Budd – TxDOT staff Archeologist



Geoarcheological Observations, Scraping Along Southern Margin of SH165, Texas State Cemetery

CSJ: 0414-01-001

Produced in Partial Fulfillment of Texas Antiquities Permit # 8212

James T Abbott, Environmental Affairs Division

INTRODUCTION

This report describes geoarcheological observations made during sample scraping for grave shafts at the Texas State Cemetery on November 6, 2017. The State Cemetery, variously characterized as twenty two acres (Muir n.d.; Wikipedia contributors n.d.) and eighteen acres (Unknown n.d.) in area, is located in the eastern part of Austin (note that calculation of the area by this author in ArcGIS supports the latter figure). This work was conducted in advance of minor widening of State Highway 165, the designation of the one-lane road that runs through the cemetery grounds. The proposed maintenance project would widen part of this narrow road to allow two vehicles to pass abreast. The roadway currently consists of two concrete strips for the vehicle's wheels, separated by a strip of small sandstone flagstones and flanked by larger limestone flagstones, with a total width of 12-13 ft (**Figure 1**). This roadway enters the cemetery from the east (Comal St.) and runs west along the northern limit of a section dedicated to Confederate veterans and their wives, then turns north toward its terminus at 11th Street. There is also a section of the road that runs south to a circular turn-around, but there is no egress to the cemetery except to the north and east.

The study area is in a long-urbanized part of east central Austin. The geology is mapped as Pleistocene terrace deposits in the northern part of the cemetery and Austin chalk in the southern part, including the current study locale (Barnes 1974). Soils mapped in the study area include Travis soils and urban land, 1 to 8% slopes, which are mapped north of the cemetery and in its northern third and the western part of its central third; Urban land, Austin, and Whitewright soils, 1 to 8% slopes, which are mapped in the remainder of the cemetery, including the current study area; and Urban land, which is mapped south of 7th street outside the cemetery (Soil Survey Staff, n.d.).

Travis soils are classified as Ultic Paleustalfs, and are typical of ancient stream terrace deposits. They exhibit a typical A-E-Bt1-Bt2-BCt-BC profile consisting of dark brown to brown fine sandy loam over red sandy clay and gravelly clay. Colors in the subsoil are in the 5YR and 2.5YR range. Siliceous pebbles in the lower horizons range from trace amounts to more than 75% of the volume (Soil Survey Staff, n.d.). These soils are coincident with deposits of the ancestral Colorado River, specifically the Capitol Terrace mapped by Weber (1968).

Austin soils are classified as Udorthentic Haplustolls. They are typical of weathered chalk, and exhibit a typical Ap-A-Bw-Bk-Cr profile that averages 30 inches (75 cm) to the C horizon. The horizons consist of silty clay, and grade through the 10YR hues from very dark grayish brown to brown. Although there are some carbonate nodules in the Bw and (particularly) Bk horizon, gravels are not a feature of the typical profile.

Urban land is not a soil series. Rather, it is a map unit that indicates areas where the natural soil has been fundamentally altered or destroyed by human activity, including, dumping, borrowing, and the introduction of household refuse, construction debris, fill dirt and the like. As a result, there is no typical profile—urban lands may be underlain by historic age

deposits of diverse character and wildly differing thicknesses, sometimes interspersed with preserved segments of “natural” soil.

In general, the Texas State Cemetery is not a natural landscape in any sense of the word. Originally established in the early 1850s, the cemetery has been reworked several times, most recently in 1994, when a full scale restoration project was conducted (Freeman 1996; Muir n.d.; Unknown n.d.). The most relevant alteration for our purposes is the construction of SH165 (originally the Lou Kemp Highway), which was originally built in 1929-30 (Freeman 1996). However, the “highway” replaced previous cemetery roads dating back to the late 19th Century (Freeman 1996), and we do not know exactly when the current road was established. However, given that it runs straight into the cemetery from the eastern entrance, it is likely that it dates to well before 1930.

Figure 2 presents a comparison between a map showing the configuration of the cemetery prior to the 1994 renovation and an aerial photograph taken in 1940. There are several aspects of this comparison that are of interest. First, note that the cemetery road enters and exits the grounds at only one gate, on the east side of the property—the “highway” consists of a series of several loop roads. Since the 1994 work, there are two vehicular entrances—the original east gate, and a new gate at the north end that enters off of 11th street (**Figure 3**) (there are also several pedestrian entrances along the western boundary and in the northwest corner)—the original southern gate and walkway explored by Prewitt & Associates (Dockall et al.1996) was apparently long abandoned by 1940. Second, the entrance road is broader in 1940 than it is now—based on measurements taken from the photos in ArcGIS, the width was decreased from approximately 20 ft to 13 ft with the 1994.

The purpose of the current highway project is to widen that segment of the road again so that two cars may pass abreast. The purpose of the archeological investigation was to sample the natural ground surface beneath the road berm fill to make sure that burials—the most likely of which would be those associated with the adjacent Confederate Veterans field—are not present beneath the roadway. Although the proposed project would not directly affect any such burials (depth of impact is unlikely to exceed 18 inches), TxDOT seeks to avoid paving over burials to avoid indirect effects, access limitation, and unintended direct effects of unanticipated future projects.

It is worth noting that with few exceptions, burials in the Confederate section of the cemetery do not date to the Civil War. Rather, in the 1880's, separate homes for disabled and indigent Confederate veterans and Confederate women were established in Austin, and the cemetery ranks grew as these people aged and died well into the mid-20th century (Freeman 1996). In fact, a brief examination of the ranks of headstones immediately adjacent to the current study area revealed none that predated the 20th century, and many dated to the mid-century (several are much younger brides born in the 1860's and 1870's, some of whom lived into the 1960's). On the other hand, an undated sketch map found by Prewitt & Associates (PA&I) (**Figure 4**) appears to show the plots adjacent to the roadway location were all occupied prior to 1928. However, this sketch is clearly intended to be impressionistic rather than literal; for example, it shows eleven rows in an E-W direction,

while the aerial photo shows 22 rows (not including the additional row of 57 burials moved by PA&I)(**Figure 5**).

A far more extensive geoaerchological evaluation of the cemetery than the current work represents was conducted by Kibler during archeological work in the mid-1990's (Boyd and Kibler 1996). This evaluation was primarily based on 12 backhoe trenches excavated during the 1994 revitalization, but also referenced more than subsequent 30 gradall scrapes made during the same project. Kibler noted the presence of the Capitol Terrace deposits and extensive bodies of gravelly artificial fill throughout the cemetery. All twelve trenches were capped with fill ranging in thickness from 35 cm to 82 cm in thickness. In most cases, underlying deposits were noted as gravelly high terrace deposits of the Colorado River, probably associated with the Capitol terrace.

WORK PERFORMED

The current work was conducted adjacent to the pavement on the southern side of the east-west oriented segment (see Figure 5). Each trench was carefully scraped to depth under the observation of two TxDOT archeologists, supplemented at times by the Texas Historical Commission's Cemetery Coordinator, the State cemetery caretaker, and various Austin District environmental and maintenance staff. Excavation was performed with a Gradall hydraulic excavator fitted with a two-foot, smooth bladed bucket (see Figure 2). As a result of negotiations between TxDOT, the Texas Historical Commission, and the Texas State Cemetery caretaker, impacts were to be limited to three trenches excavated immediately south of the paving flagstones marking the south side of the road, each measuring no more than 3 x 12 ft in plan, and all efforts would be made to minimize cosmetic damage to the cemetery caused by the work (**Figure 6**). As a consequence, excavated fill was placed directly into a dump truck, so all observations were made on the character of the cut, and safety benching of the trenches was not possible. Given the thick gravelly fill, the lack of geotechnical shoring, and the inability to open safety benches, trenches were not entered when depth exceeded four feet, so most observations were made from the ground surface. Each trench was excavated, recorded briefly with photographs, notes, and sketches, and backfilled. The following day, new sod was placed on the refilled excavations.

RESULTS

Three trenches were excavated on the southern shoulder of the roadway, which is underlain by an artificial berm (**Figure 7; Figure 8**). No evidence of grave shafts was noted in any of the trenches. Each trench displayed variations on the same basic profile, consisting of multiple artificial fill packets (Ap horizons) over a thick buried A horizon representing the natural soil. The appearance and sequence of each of these diverse Ap horizons was similar among all three trenches, as would be expected if the deposits were systematically laid down and spread along the trend of the road to build up the berm. The only significant differences between the profiles were minor differences in the relative thickness of the various horizons

and fill packets, and the presence lowest (Cr) horizon, which was only exposed in the easternmost trench. Gradall Trench (GT)1 was the furthest west of the three trenches, and was excavated to a depth of approximately 230 cmbs, while GT2 was excavated to 215 cm and GT3 to 185 cm. See Figure 5 for the location of the trenches, **Figure 9** for an illustration of the profile of GT1, **Figure 10** for an illustration of GT2, and **Figure 11** for a more informal view of GT3.

Although the sequence of fill packets was similar in all three trenches, it could be readily divided into two distinct packets of artificial fill that probably represent different periods of construction. The upper fill consisted of a sequence of distinctly stratified gravelly loams 50 to 80 cm thick. The surficial part of this unit consisted of reddish brown (5YR4/4) sandy clay loam supporting a thin, somewhat darker sandy clay loam A horizon. This 10-15 cm-thick zone appears to represent fill dirt or sod. It graded abruptly into the first of two thin, pale yellowish brown (10YR 6/3 to 6/4) zones that appear to represent caliche or crushed limestone, and were probably laid down to stabilize the road base. Underlying that was a zone of grayish-brown (10YR 4/2 to 10YR 5/2) gravelly clay loam 20-30 cm thick. It was underlain by the lower of the two yellowish brown zones, and more of the grayish brown gravelly clay. At about 80 cmbs in GT1 and GT2, and 50 cmbs in GT3, the profile graded into the visually distinct lower fill unit, which consisted of a dark grayish brown to very dark grayish brown (10YR4/2 to 10YR 3/2) very gravelly clay loam. This massive unit contained copious gravels, primarily consisting of stream-rounded siliceous clasts, some of which were quite large (10-15 cm). At approximately 150 cmbs in GT 1 and GT2, and just over 1 m bgs in GT 3, this fill graded into a weakly structured to massive black (10YR 2/1 to 2/2) gravelly clay that is interpreted as the Ab horizon of the natural soil that the road berm was built on. This horizon had common fine (<1-2 cm diameter) siliceous gravels dispersed through it, which is unusual for a clay soil weathered from chalk, but otherwise resembled the A horizon of the Austin series that is mapped at the location. With depth, this horizon graded into a very dark grayish brown (10YR 3/2) to grayish brown (10YR 4/2) clay loam ABb horizon (GT1 & 2) or Bw horizon (in GT3). This horizon extended to the base of the trench in GT 1 and GT2. In GT3, weathered chalk of the Cretaceous Austin Chalk was encountered at 180 cmbs. The only artifacts recovered were one whiteware and one blue transfer ware ceramic sherd recovered from the buried A horizon in GT1 (see attached report by Budd)

As noted previously, no soil features potentially representing grave shafts were present in any of the trenches. Given the similarity of the profiles, it is likely that the Austin chalk was only slightly deeper than the base of GT 1 and GT2. While it is unfortunate that the chalk subsoil was not exposed, the soil ABb horizons at the base of the trench were relatively uniform in color, and the backfill of grave shafts penetrating into the underlying chalk should have been obvious in the cut. The other issue worth discussion is the gravel content of the buried A horizons, which is not typical of the Austin series. There are two possible sources of this gravel. One possibility is that it simply represents colluvial gravel shed downslope from the Capitol terrace. However, given the small drainage to the north, it is considered much more likely that this fine gravel represents the first phase of improvements to the cemetery in the early 20th century, when driveways and walks were gravelled (Freeman 1996:28).

Natural cracking of the ground during the dry season, and wheeled and shod traffic (both human and equine) during the wet season, would serve to work this material into the clay soil.

CONCLUSIONS

In summary, three trenches were excavated to depths of between 1.8 and 2.3 m along the southern margin of the E-W segment of SH165 in the Texas State Cemetery to assure that unknown graves are not present in the proposed construction zone. Based upon agreement with the cemetery and THC, the project was limited to three trenches with a size of 12 ft x 3 ft each, arrayed along the roadside in a manner that would prevent damage to cemetery infrastructure (e.g., sprinklers). This prevented safety benching of the trenches, and the lack of available shoring meant that the trenches could not be entered safely below a depth of approximately four feet. Consequently, all observations of the trench bases were made from the surface. Nevertheless, visibility of the natural sediment was sufficient to convince us that no grave shafts were present in the excavated trenches, and we believe that it is extremely unlikely that any are present elsewhere along the margin of the E-W portion of SH165.

In closing, it is worth noting that the current project to widen the roadways is not without irony. In the earliest phases of cemetery use, the 4 acre plot then in use at the south end was crossed by two perpendicular “avenues” measuring 30 ft wide (Freeman 1996); given that the plot in question was apparently at the southern end of the tract near 7th street, these avenues were probably not the precursors of SH 165. However, by the early 20th century, it is likely that the E-W road entering the cemetery from Comal Street was well established, and this road was designated a State Highway in the early 1930’s. The earliest aerial photo we have available, from 1940, shows the road was not only in place (which is reassuring), but that it was considerably wider than the current design (approximately 20 ft, as opposed to the modern 13 ft design). The current project, therefore, represents a reversal of a long-term trend towards narrower roadways in the cemetery grounds.

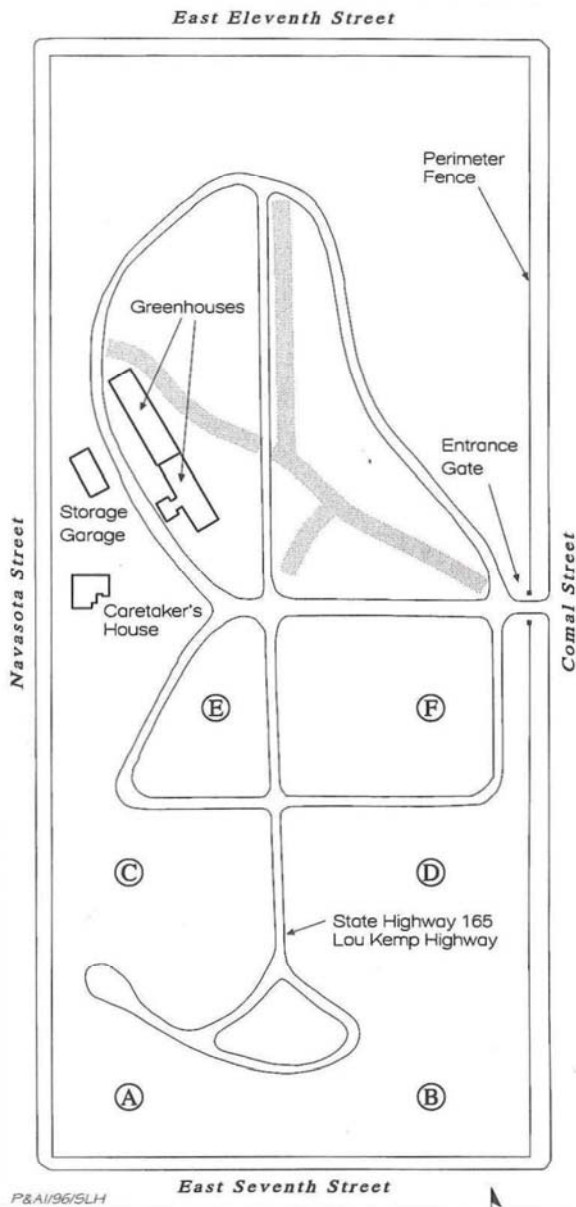
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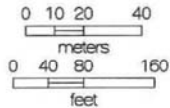
Figure 1: View of SH165 from the center of the cemetery, where the road turns from E-W to N-S. Photo is looking north. Note the character of construction.



P&A/96/SLH

LEGEND

- (A) Cemetery Section Designation
- Drainage



Map of Texas State Cemetery prior to 1994 renovation, from Dockall et al. 1996. drawing by Sandra Hannum



Detail of 1940 aerial photograph of the Texas State Cemetery (note: gray 'y' shaped lines that enter from top center and upper left, join in upper center, and exit in center right are pencil lines on original photograph)

Detail from aerial photograph 1940_COR-05-020_W obtained from the City of Austin

Figure 2: Comparison of drawing from Prewitt & Associates report (Dockall et al. 1996), showing configuration of the cemetery immediately prior to the 1994 renovations, with aerial photograph of cemetery in 1940, approximately 10 years after construction of SH165.

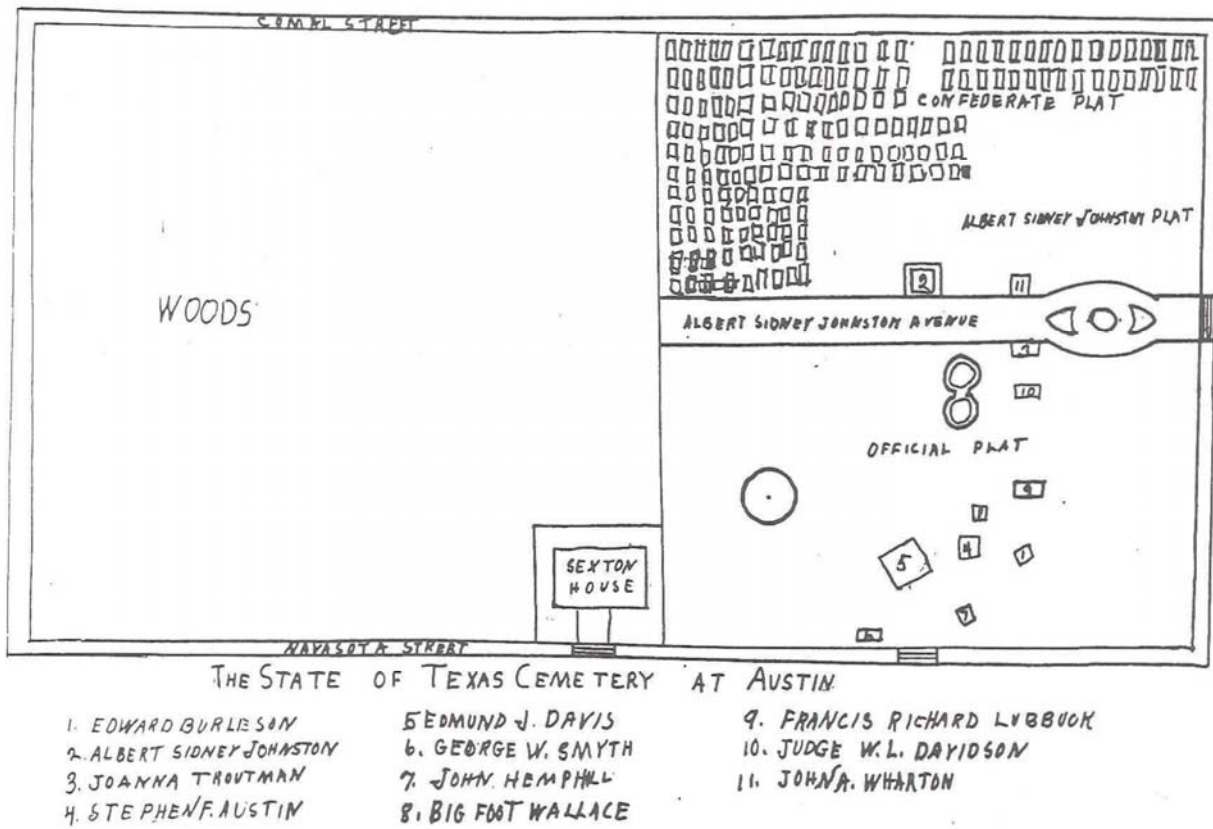


Figure 3: Undated and unattributed pre-1928 sketch obtained by Prewitt & Associates from files at the Texas Historical Commission. Reprinted from Dockall et al 1996, Figure 7.



Figure 4: Google Earth images of the northern gate constructed in 1994 (top) and older eastern gate (bottom).

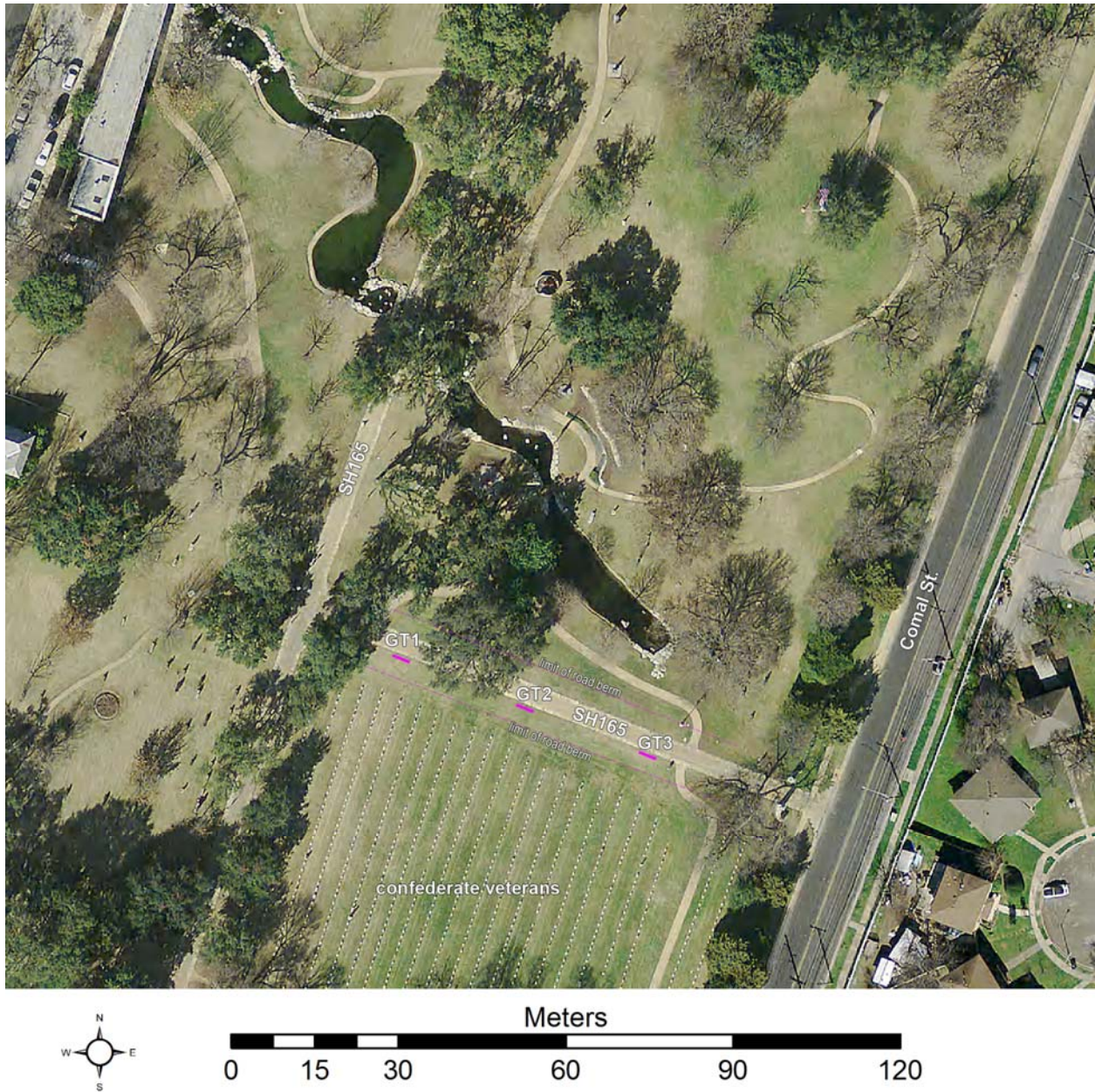


Figure 5: High (6 in) resolution aerial photograph of the State Cemetery annotated to show the location of trenches and the approximate extent of artificial road berm. Note ornamental pond north of the study area, which follows the path of the unnamed natural drainage flowing to the east (drainage is buried beneath fill east of pond). As a consequence, the portion of the cemetery for confederate veterans (and their wives) slopes gently to the north.

Texas State Cemetery, 909 Navasota St

☉ 253°W (T) ☉ 14 N 622533 3348940 ±32.8ft ▲ 517ft



Figure 6: View of GT1 after excavation, showing the minimal impacts to the surrounding landscape.



Figure 7: View looking northwest from south of entrance gate on Comal Street. Gradall is parked at location of GT2. Note broad, elevated road berm, which is visible only with reference to the gravestones on adjacent “natural” surface.



Figure 8: View looking SSW from the vicinity of the pond, showing the artificial road berm and the Confederate Veterans section behind it.

Texas State Cemetery, 909 Navasota St

☉ 288°W (T) ☉ 14 N 622531 3348945 ±32.8ft ▲ 526ft



Figure 9: Annotated profile of GT1.

Texas State Cemetery, 909 Navasota St

☉ 227°SW (T) ● 14 N 622556 3348931 ±32.8ft ▲ 510ft



Figure 10: Annotated profile of GT2. See GT1 for horizon designations.



Figure 11: View of GT3, showing the exposure of chalk/marl bedrock at base of trench.