Intensive Archaeological Survey of the Hemisfair Martinez Street Surface Parking Lot Project and a Segment of the Acequia del Alamo/Acequia Madre (41BX8), San Antonio, Bexar County, Texas

Antiquites Permit No. 7511
Principal Investigator:
Mary Jo Galindo, Ph.D., RPA

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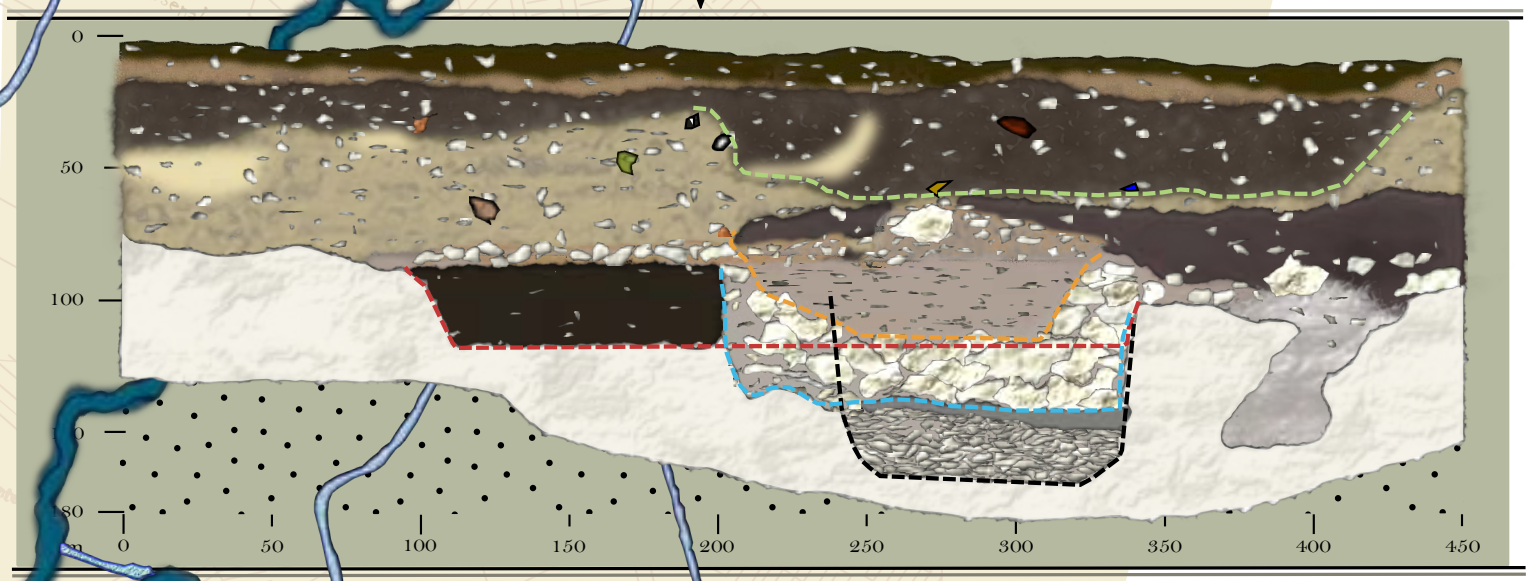

January 2017

PAPE-DAWSON ENGINEERS

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Abstract

At the request of Hemisfair Park Area Redevelopment Corporation, Pape-Dawson Engineers (Pape-Dawson) conducted an intensive archaeological survey of the proposed Hemisfair Martinez Street Surface Parking Lot Project in Bexar County, Texas. As part of the compliance process, the City of San Antonio's Office of Historic Preservation Office (SA-OHP) requested that an archaeologist monitor the subsequent construction excavations within a portion of the project area. The irregularly shaped project area in downtown San Antonio is bounded by East César E. Chávez Boulevard and Martinez Street to the north and south, respectively. The east and west boundaries are South Presa and South Alamo Streets, which situates the project area about 0.56 mile (0.90 kilometer [km]) northwest of the intersection of East César E. Chávez Boulevard and Interstate Highway 37. The project area consists of a roughly rectangular, grass-covered area with mature pine and oak trees along the perimeter. It is maximally 81 feet (ft) (25 meters [m]) north to south and 365 ft (111 m) east to west, for a total area of 0.64 acre (0.26 hectare [ha]). The estimated depth of impacts for the project would be about 1 ft (0.30 m) throughout, and up to 4 ft (1.22 m) for the installation of light poles and ticket kiosks.

This project will occur within City of San Antonio (COSA)-owned property; therefore, the investigations and monitoring were conducted in compliance with the Antiquities Code of Texas under Antiquities Permit No. 7511. The project is located within the COSA City Limits; therefore, compliance with the Historic Preservation and Design Section (Article 6 35-360 to 35-634) of COSA's Unified Development Code was necessary. However, as the project did not involve either federal funding or permitting, cultural resources work in compliance with Section 106 of the National Historic Preservation Act was not required. The purpose of the investigations was to identify all historic or prehistoric cultural resources located within the project area and to evaluate the significance and eligibility of identified resources for designation as a State Archeological Landmark (SAL). All work was done in accordance with the archaeological survey standards and guidelines as developed by the Council of Texas Archaeologists (CTA) and adopted by the Texas Historical Commission (THC). The goal of the monitoring was to gather information on the nature and types of cultural resources possibly buried in the buffered portion of the project area, and focused on potentially significant resources related to the Spanish Colonial era, the Acequia del Alamo/Acequia Madre (41BX8) (hereafter referred to as Acequia del Alamo), or the nineteenth-century residential occupation of the project area.

The investigations included a cultural resources background literature and records review and an intensive survey with mechanical trenching. Subsequently, archaeological monitoring was performed during construction activities that occurred on April 28, 2016. The background review determined that the project area has been previously surveyed and that structures were present within the project area in the late-nineteenth and early-twentieth centuries. Additionally, although not previously confirmed by archaeology, a projected route of a segment of the Acequia del Alamo is mapped as traversing the west side of the project area, which is within the COSA Lavaca Historic District and adjacent to the La Villita National Register Historic District. Finally, archaeological site 41BX303, dating to the latter half of the nineteenth century, extends into the northern portion of the project area.

Pape Dawson's intensive archaeological survey included the excavation of four backhoe trenches on January 13 and 14, 2016. The survey exceeded the CTA/THC standards, which require three shovel tests per acre for a 0.64-acre (0.26 ha) project area. Artifacts associated with late-nineteenth- and early-twentieth-century occupations were encountered in all trenches and a segment of the Acequia del Alamo was documented within BHT 2. Based on the results of the survey, site revisit forms were filed noting the location of the Acequia del Alamo (41BX8) within the project area, and extending the boundary of site 41BX303 to include the project area.

The portions of sites 41BX8 and 41BX303 that are within the project area were evaluated according to the criteria in 13 Texas Administrative Code 26.10. Based on these criteria, the segment of the Acequia del Alamo (41BX8) that is within the project area is eligible for designation as an SAL, and Pape-Dawson recommends avoidance of site 41BX8. The methodology for archaeological monitoring of the parking lot construction where avoidance is not possible is detailed in the Summary and Recommendations section of this report. A letter from the THC that concurred with the findings of the draft survey report on March 18, 2016, is included in Appendix E, while the monitoring report is Appendix F.

The portion of site 41BX303 that is within the project area is not eligible for SAL designation, based on the disturbed nature of the cultural deposits and lack of intact features. Pape-Dawson recommends no further archaeological work at 41BX303. Diagnostic artifacts, project records, and photographs will be curated at the Center for Archaeological Research at the University of Texas at San Antonio. Any non-diagnostic material that was collected for analysis in Pape-Dawson's Archaeological Laboratory will be discarded in consultation with the THC.

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Introduction

On behalf of the Hemisfair Park Area Redevelopment Corporation, Pape-Dawson Engineers (Pape-Dawson) conducted a cultural resources background literature and records review and an intensive survey with mechanical trenching of the proposed Hemisfair Martinez Street Surface Parking Lot Project in downtown San Antonio, Bexar County, Texas (Figure 1). As part of the compliance process, the City of San Antonio's Office of Historic Preservation Office (SA-OHP) requested that an archaeologist monitor the subsequent construction excavations within a portion of the project area. The property is owned by the City of San Antonio (COSA); therefore, all investigations and monitoring were conducted under Antiquities Permit No. 7511 and in consultation with the SA-OHP. This project is located within the COSA City Limits; therefore, compliance with the Historic Preservation and Design Section (Article 6 35-360 to 35-634) of COSA's Unified Development Code (UDC) was necessary. However, as the project did not involve either federal funding or permitting, cultural resources work in compliance with Section 106 of the National Historic Preservation Act was not required.

The project area consists of a roughly rectangular, grass-covered area with mature pine and oak trees along the perimeter (Figures 2 and 3). It is maximally 81 feet (ft) (25 meters [m]) north to south and 365 ft (111 m) east to west, for a total area of 0.64 acre (0.26 hectare [ha]). Bounded by East César E. Chávez Boulevard and Martinez Street to the north and south, respectively, and to the east and west by South Presa and South Alamo Streets, the project area is about 0.56 mile (0.90 kilometer [km]) northwest of the intersection of East César E. Chávez Boulevard and Interstate Highway 37.

Pape-Dawson's investigations included an extensive background records and literature review, followed by an intensive pedestrian survey with backhoe trenching. The goal of the work was to locate and identify all prehistoric and historic archaeological sites in the project area, to establish vertical and horizontal site boundaries within the project area, and to evaluate the significance and eligibility of any sites recorded within the project area for designation as a State Antiquities Landmark (SAL). All work was done in accordance with the standards and guidelines of the Texas Historical Commission (THC) and the Council of Texas Archeologists (CTA), and in compliance with the Antiquities Code of Texas. Pape-Dawson archaeologists Mary Jo Galindo, Katie Hill, and Jacob I. Sullivan conducted the field work on January 13 and 14, 2016.

Based on the results of the intensive survey, SA-OHP requested that an archaeologist monitor the construction excavations within a portion of the project area. Monitoring was performed during construction activities that occurred on April 28, 2016. The goal of the monitoring was to gather information on the nature and types of cultural resources possibly buried in the buffered portion of the project area, and focused on potentially significant resources related to the Spanish Colonial era, the Acequia del Alamo/Acequia Madre (41BX8) (hereafter referred to as Acequia del Alamo), or the nineteenth-century residential occupation of the project area. The methodology for archaeological

Figure 1 : General Location Map

Figure 2: Overview of the project area and Backhoe Trench 1, facing northeast.

Figure 3 : Project Location Map

monitoring of the parking lot construction where avoidance is not possible is detailed in the Summary and Recommendations section of this report, while the monitoring report is included in Appendix F.

Project Setting

The project area is situated within the Blackland Prairies of the Gulf Coastal Plains physiographic region (Wermund 1996), and about 913 ft (278 m) east of the artificially channelized San Antonio River. Prior to channelization the project area would have been approximately 514 ft (157 m) east of a prominent bend in the river. The underlying geology is Pleistocene-age fluviatile terrace deposits associated with the San Antonio River (Bureau of Economic Geology [BEG] 1983). These terrace deposits consist of predominately gravel, limestone, dolomite, and chert, with sand, silt, and clay. Most of these low terrace deposits along the San Antonio River are above flood level (BEG 1983).

Soils within the project footprint are mapped entirely as Houston Black clay terrace deposits with 1 to 3 percent slopes. Houston Black clay typically occurs on upland terraces and is characterized by very deep, moderately well-drained, and very slowly permeable soil. The Houston series forms in clayey residuum derived from calcareous mudstone of Upper Cretaceous age (Taylor et al. 1991; United States Department of Agriculture Soil Conservation Service [USDA-SCS] 2015). If present, cultural materials in this upland setting would likely be encountered at or near ground surface. Houston Black gravelly clay is usually moist, but when dry it forms cracks ranging from 0.5 to 4 inches (1.25 to 10 cm) wide that extend from the surface to a depth of 12 inches (30.5 cm) or more. Cracks remain open for 90 to 150 cumulative days in most years (Taylor et al. 1991; USDA-SCS 2015). Thus, artifacts on the surface may be displaced downward by these vertic features. Additionally, the project area's proximity to downtown and prior nineteenth- and twentieth-century occupations suggest that cultural deposits may be buried beneath layers of fill.

Historic Setting

San Antonio was the site of many occupations by prehistoric peoples, but Europeans did not explore the area until the seventeenth century. Alonso de León's 1689 and 1690 expeditions and Domingo Terán de los Ríos' 1691 expedition were likely some of the first interactions between Europeans and Native groups (de la Teja 1995:6). These explorations helped the Spanish choose locations to establish five missions in and around what would later become San Antonio. Don Martín de Alarcón established the first mission, San Antonio de Valero, in 1718, on the west bank of the San Pedro Creek, followed by the Presidio San Antonio de Béxar and the Villa de Béxar (de la Teja 1995). However, by 1722 the Marqués de San Miguel de Aguayo had moved the presidio and villa downstream to a second location along San Pedro Creek. Other missions, including Mission San José y San Miguel de Aguayo, Nuestra Señora de la Purísma Concepción, San Juan Capistrano, and San Francisco de la Espada were established in the area from 1720 to 1731 (Clark et al. 1975). Most of the Native American people recruited to live at these missions comprised many different groups (Campbell 1977), but it is difficult to know all the groups that were present due to the variations in spelling and phonetic complexity. The missions used this Native labor force to construct acequias, or irrigation ditches, which helped them to develop self-sustaining communities bordered by farmland (Long 2010).

In 1731, Spain sent 16 families from the Canary Islands to the villa de Béxar to establish the secular village. With the arrival of these families, surveyors set out the city's main plaza, or Plaza de las Islas, next to the church, designated a spot for the Casas Reales, and began to establish residential lots (Spell 1962). In 1773, San Antonio de Béxar Presidio was named the capital of Spanish Texas, and the settlement including mission Indians had a population of about 2,000 by 1778 (Fehrenbach 2010). During this period of early settlement, water was an essential component for successful settlement and survival. The acequia system, begun with the arrival of the missionaries, continued to expand to serve irrigation and drinking water needs. The acequia system influenced the street layout in the city (Cox 2005:20) and played an integral part in contact between the Spanish, who brought the engineering concepts for the system, and the indigenous groups forced to provide the construction labor.

During the 1820s and early 1830s, American settlers began moving to San Antonio in increasing numbers, though the population remained predominately Mexican. In 1824, Texas and Coahuila were united into a single state with its capital at Saltillo. San Antonio fought for Mexican Independence in 1813, then for its own sovereignty during the Texas Revolution. The Siege of Bexar and the Battle of the Alamo, in 1835 and 1836, were both located within San Antonio, showing its importance in the region. After Texas gained its independence from Mexico in 1836, Bexar County was created and San Antonio was chartered as its seat (Long 2010). However, this was not the end of conflict in the city; a dispute with Comanche Indians resulted in the Council House Fight in 1840, and Woll's invasion in 1842 precipitated Texas' entrance into the United States as the 28th state.

On March 2, 1861, Texas seceded from the Union about a month before the Civil War began. San Antonio became a Confederate storage area as well as a location where military units could be organized; however, the city kept its distance from most of the actual fighting (Fehrenbach 2010). After the Civil War, San Antonio continued to grow larger, spurred on by the arrival of the railroad in 1877 (Fehrenbach 2010). Industries such as cattle, distribution, ranching, mercantile, gas, oil, and military centers in San Antonio prospered. The city served as the distribution point for the Mexico-United States border as well as the rest of the southwest. At the turn of the twentieth century, San Antonio was the largest city in Texas with a population of more than 53,000. Much of the city's growth after the Civil War was a result of an influx of southerners fleeing the decimated, reconstruction-era south. An additional population increase came after 1910, when large numbers of Mexicans began moving into Texas to escape the Mexican Revolution (Fehrenbach 2010).

Modernization increased dramatically between the 1880s and the 1890s, compared to the rest of the United States. Civic government, utilities, electric lights and street railways, street paving and maintenance, water supply, telephones, hospitals, and a city power plant were all built or planned around this time (Fehrenbach 2010). The First United States Volunteer Cavalry was organized in San Antonio during the Spanish-American War, and San Antonio was an important military center for the army and air forces during both world wars. Its five military bases provided an important economic base and contributed to the evolution of the city's medical research industry.

In 1921, a disastrous flood engulfed downtown San Antonio with up to 12 ft (3.7 m) of water. The Olmos Dam was built in response to this event to prevent further flooding. Sections of the San Antonio River were straightened and widened in areas to control the water flow. Another recommendation was to construct an underground channel in downtown San Antonio and to cover portions of the river with concrete. This last idea was controversial, but a compromise was eventually agreed upon to create a Riverwalk with shops and restaurants along the water channel, which was completed in 1941 (Fisher 2010).

Methods

Records Review

Prior to fieldwork, Pape-Dawson archaeologists conducted a thorough background literature and records search of the proposed project area. This research included reviewing the San Antonio East (2998-133) USGS 7.5-minute topographic quadrangle map at the Texas Archeological Research Laboratory (TARL) and searching the Texas Archeological Sites Atlas online database for any previously recorded surveys and historic or prehistoric archaeological sites located within a 0.31 mile (0.5 km) radius of the project area. The review also included information on the following types of cultural resources: National Register of Historic Places (NRHP)-listed properties and sites, NRHP districts, State Antiquities Landmarks (SAL), Official Texas Historical Markers (OTHM), Recorded Texas Historic Landmarks (RTHL), and cemeteries. In addition, archaeologists consulted the COSA Historic Landmark Sites and Historic Geodatabases to locate any local historic landmarks. The archaeologists also examined the U.S. Department of Agriculture Soil Survey of Bexar County, Natural Resources Conservation Service Web Soil Survey, the Geologic Atlas of Texas-San Antonio Sheet, and historic maps and aerials that depict the project area, including Sanborn Fire Insurance (Sanborn) maps.

Archival

With the exception of the San Antonio City Archives online records, and maps from the Texas Department of Transportation (TxDOT) Texas Historic Overlay, Pape-Dawson archaeologists consulted only secondary sources for contextual information and project area history. These sources included previous archaeological reports for the project area, acequia maps on file with SA-OHP, I. Waynne Cox's (2005) book on Spanish Colonial Acequias, and the Handbook of Texas Online. In addition, Pape-Dawson historians conducted a limited chain of title search on the property and city directory research along with census research to determine potential occupants associated with the portion of site 41BX303 that is encompassed by the project area.

Fieldwork

After obtaining an Antiquities Permit, Pape-Dawson archaeologists conducted an intensive cultural resources survey of the proposed 0.64-acre project area that included a 100-percent pedestrian survey augmented with mechanical trenching. Archaeologists focused on locating structural remains and/or archaeological deposits associated with former structures, and revisiting known resources within the project area. Pape-Dawson archaeologists excavated four trenches that were approximately 3.6 to 5.9 ft

(1.1 to 1.8 m) deep, 9.8 to 21.3 ft (3.0 to 6.5 m) long, 3.3 to 4.9 ft (1.0 to 1.5 m) wide, and were excavated in 4-inch (10.2-centimeter [cm]) levels. Prior to these investigations, a One-Call (Texas 811) was requested to verify there are no existing utilities within the proposed excavation area. The One-Call notification required a 48-hour period prior to any survey excavations to allow for proper marking and noting of any existing utilities. All trenching work was performed in accordance with Occupational Safety and Health Administration (OSHA) (29 CFR Part 1926) and Sections 756.021 through 756.023 of the Texas Health and Safety Code regarding trench safety. Appropriate measures were taken for any trenches that exceeded 4 feet in depth, following OSHA safety protocols for safe ingress and egress. All trenches were backfilled and leveled upon completion of excavation and recording.

Pape-Dawson archaeologists thoroughly photographed and recorded representative trench profiles, and mapped the trenches and any archaeological deposits with a sub-meter accurate, handheld Trimble Global Positioning System (GPS) unit. The acequia and archaeological deposits associated with sites 41BX8 and 41BX303 were thoroughly documented and the COSA Archaeologist was notified. Sites were recorded on TexSite forms in the field, and the forms submitted to TARL in order to document the revisits. Diagnostic artifacts were collected and brought to Pape-Dawson's Archaeological Laboratory in Austin for cleaning, analysis, and curation. A representative sample of non-diagnostic artifacts observed during the survey was photographed and documented in the field, but not collected. Archaeological sites were evaluated according to the criteria in 13 Texas Administrative Code 26.10, which includes:

1. the site has the potential to contribute to a better understanding of the prehistory and/or history of Texas by the addition of new and important information;
2. the site's archeological deposits and the artifacts within the site are preserved and intact, thereby supporting the research potential or preservation interests of the site;
3. the site possesses unique or rare attributes concerning Texas prehistory and/or history
4. the study of the site offers the opportunity to test theories and methods of preservation, thereby contributing to new scientific knowledge; and
5. there is a high likelihood that vandalism and relic collecting has occurred or could occur, and official landmark designation is needed to ensure maximum legal protection, or alternatively, further investigations are needed to mitigate the effects of vandalism and relic collecting when the site cannot be protected.

Results

Records Review

The background review determined that the project area has been previously surveyed at the reconnaissance level (Fox 1979), and that, although not previously located archaeologically, a projected acequia route associated with the Acequia del Alamo/Acequia Madre (41BX8) (also called Alamo Ditch and Alamo Madre, but hereafter referred to as Acequia del Alamo) is mapped as traversing the west side of the project area in maps on file with the SA-OHP. The project area is within the COSA Lavaca Historic District and adjacent to the La Villita National Register Historic District. Additionally, structures were present within the project area as early as 1892 and continued to be present through the

twentieth century, according to Sanborn maps. Finally, archaeological site 41BX303, dating to the latter half of the nineteenth century, extends into the northern portion of the project area (Appendices A and B; Figures 4, 5, 6, and 7a through 7e). There are no other previously recorded archaeological sites, NRHP-listed properties, SALs, OTHMs, RTHLs, cemeteries, or local historic landmarks within the project area. Within a 0.31-mile (0.5-km) radius of the project footprint there are 37 other previously recorded archaeological sites (one of which has been designated an SAL [41BX677 La Villita]), three NRHP-listed properties, six NRHP historic districts, 23 OTHMs (20 of which are also RTHLs), five COSA historic districts, and 164 COSA Historic Landmarks (see Appendices A and B; Figures 4, 5, 6, and 7a through 7e).

Prior Surveys

The project area was included in a reconnaissance-level survey along with a large swath of downtown paralleling the San Antonio River in 1979 on behalf of the U.S. Army Corps of Engineers, Fort Worth District (Fox 1979). There is no Antiquities Permit number associated with this survey, and the report contains only general, locational information regarding historic structures and prehistoric sites within the survey area. The current project area is not mentioned in the report. The majority of the previously conducted investigations within a 0.31-mile (0.5-km) radius are located within or adjacent to Hemisfair Park, including five surveys (Feit 2009; Fields et al. 2015; Fox 1979; Lawrence and Galindo 2013; Muray et al. 2015; Peyton 2010), two archival studies (Fields and McWilliams 2012; Dase and Griffith 2012), five testing projects (Fox and Cox 1990; Ivey 1978; Katz et al. 1978; THC 2015), and seven monitoring projects (Fields et al. 2015; Fox and Cox 1990; Labadie et al. 1986; Meissner 2001; Stotts and Acuña 2014; Muray et al. 2015). The Atlas depicted three more linear projects within a 0.31-mile (0.5-km) radius, but no further information about them was available (THC 2015).

COSA Lavaca Historic District

As mentioned, the APE is within the local Lavaca Historic District. The boundary of the local historic district varies from that defined for the Lavaca National Register Historic District, which does not encompass the current project area (see Figures 5 and 7a). The COSA Lavaca Historic District was developed residentially starting in the mid-nineteenth century. Prior to that time it was part of the Labor de Afuera or farmlands of Mission San Antonio de Valero (the Alamo), and of the Elario Montoyo land grant, dating from the Spanish Colonial period (SA-OHP 2015). Lavaca Historic District was initially a closely organized neighborhood with small houses facing both streets and alleys, and designed primarily for working class families. The neighborhood contains adobe and stone saltbox homes from the Spanish era and the 1850s, several styles of vernacular homes from the turn-of-the-century era, and more modern early-twentieth-century bungalows (SA-OHP 2015). Archaeological deposits associated with these structures could exist throughout the district, including within the project area. As mentioned, Sanborn maps indicate structures were present within the project area during the late-nineteenth- and early-twentieth centuries, suggesting that structural remnants and/or archaeological deposits may exist within the project area, perhaps sealed beneath fill. Information from the Sanborn maps is discussed in detail below.

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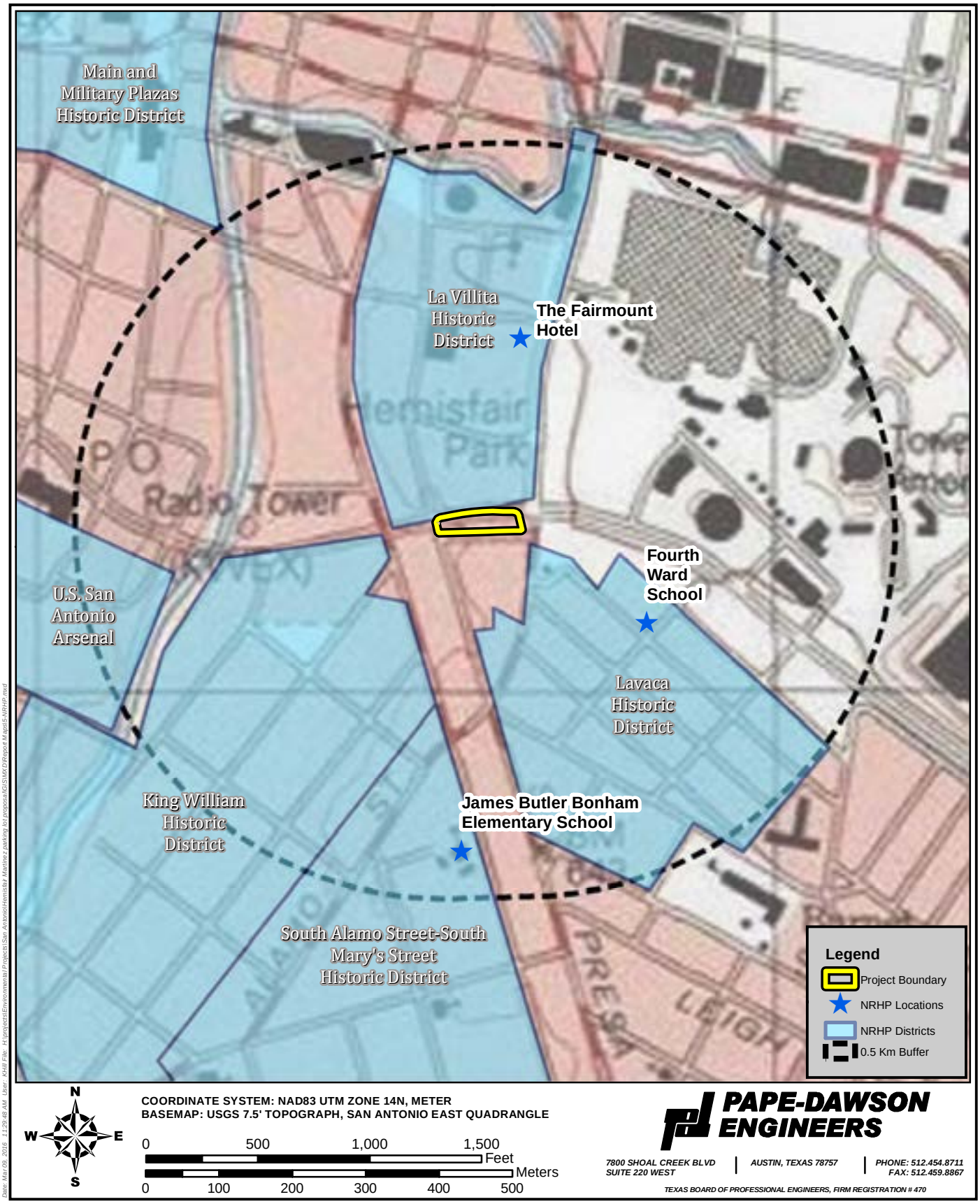


Figure 5 : NRHP Properties and Districts within a 0.5-km radius

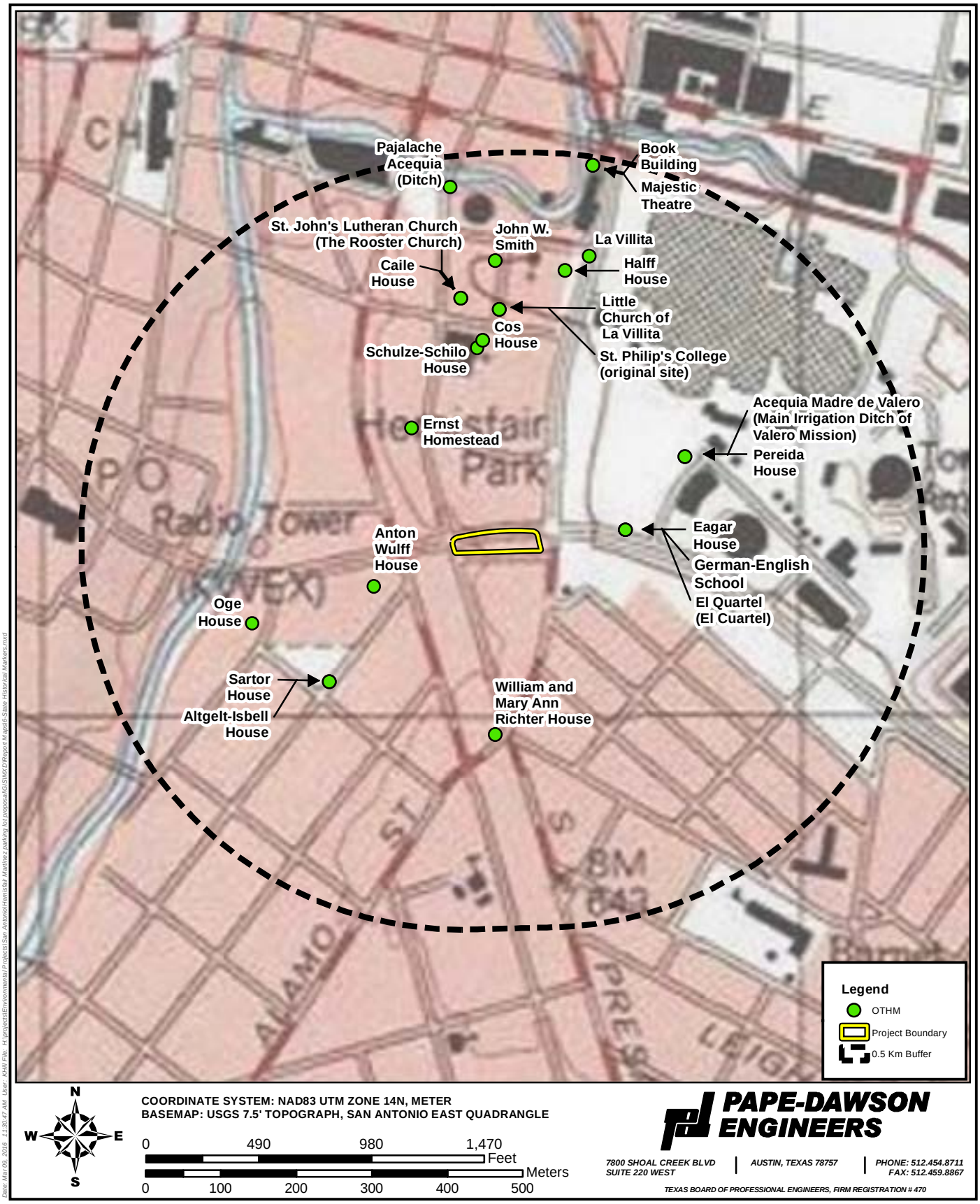


Figure 6 : Official Texas Historical Markers within 0.5-km radius

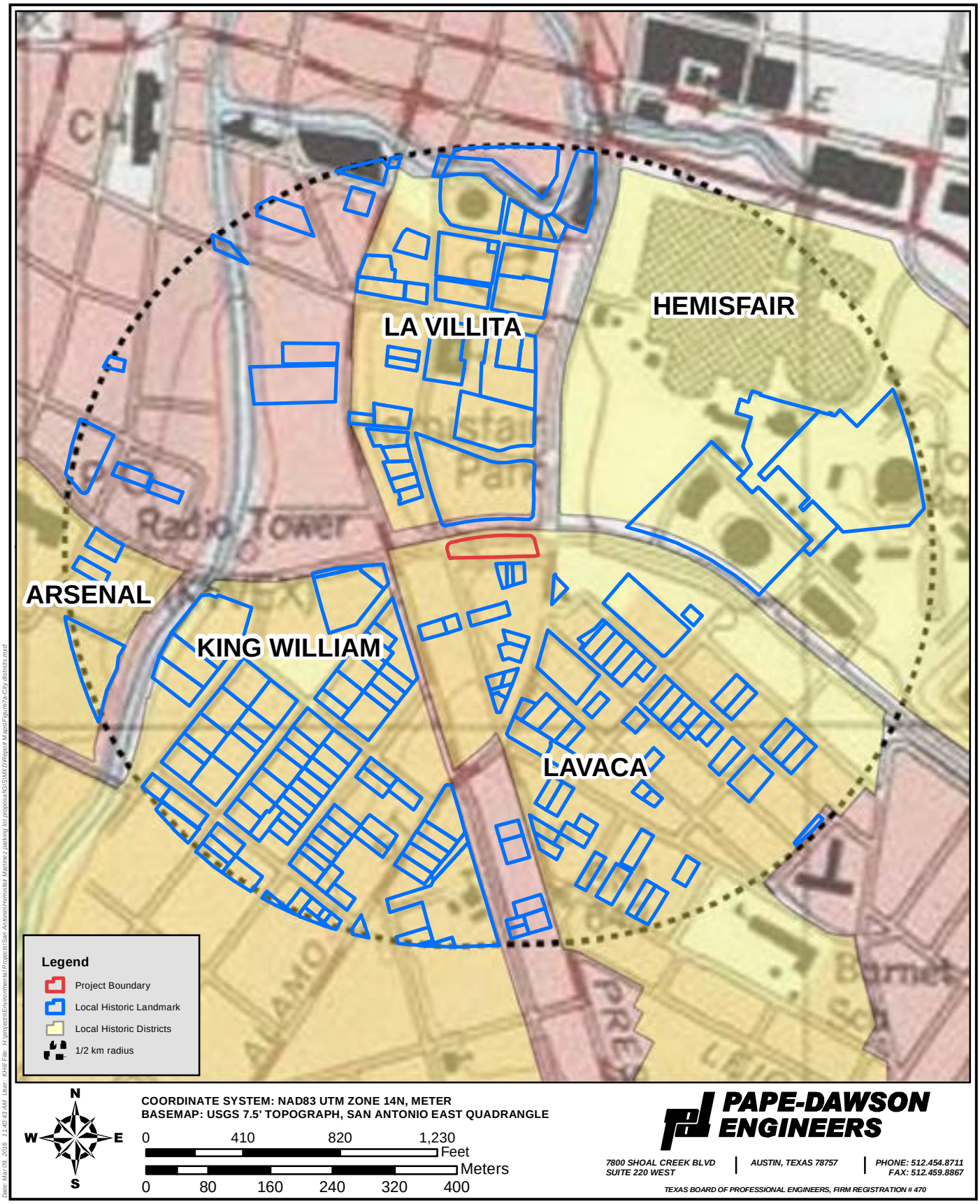


Figure 7a: City of San Antonio Historic Districts and Local Historic Landmarks within 0.5-km radius

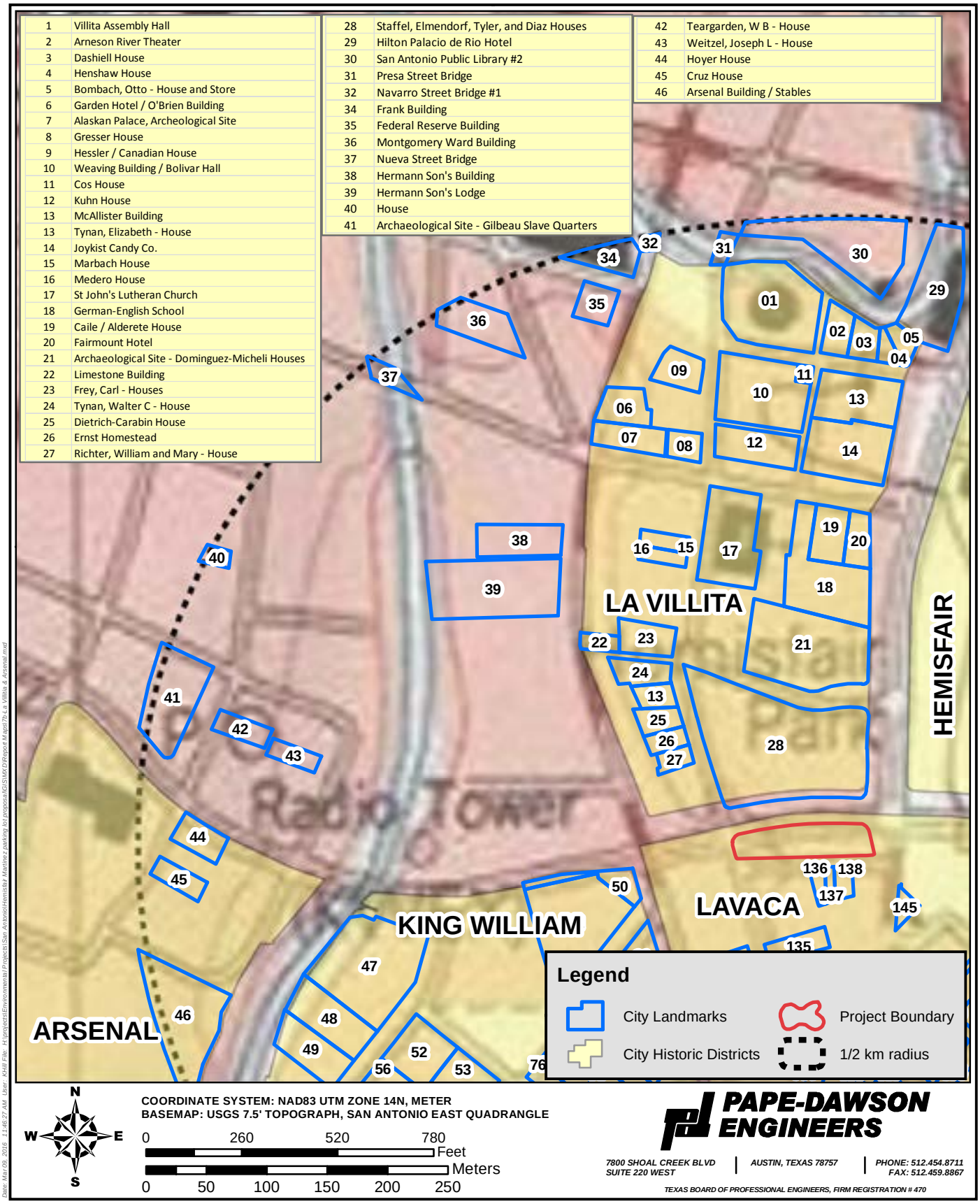
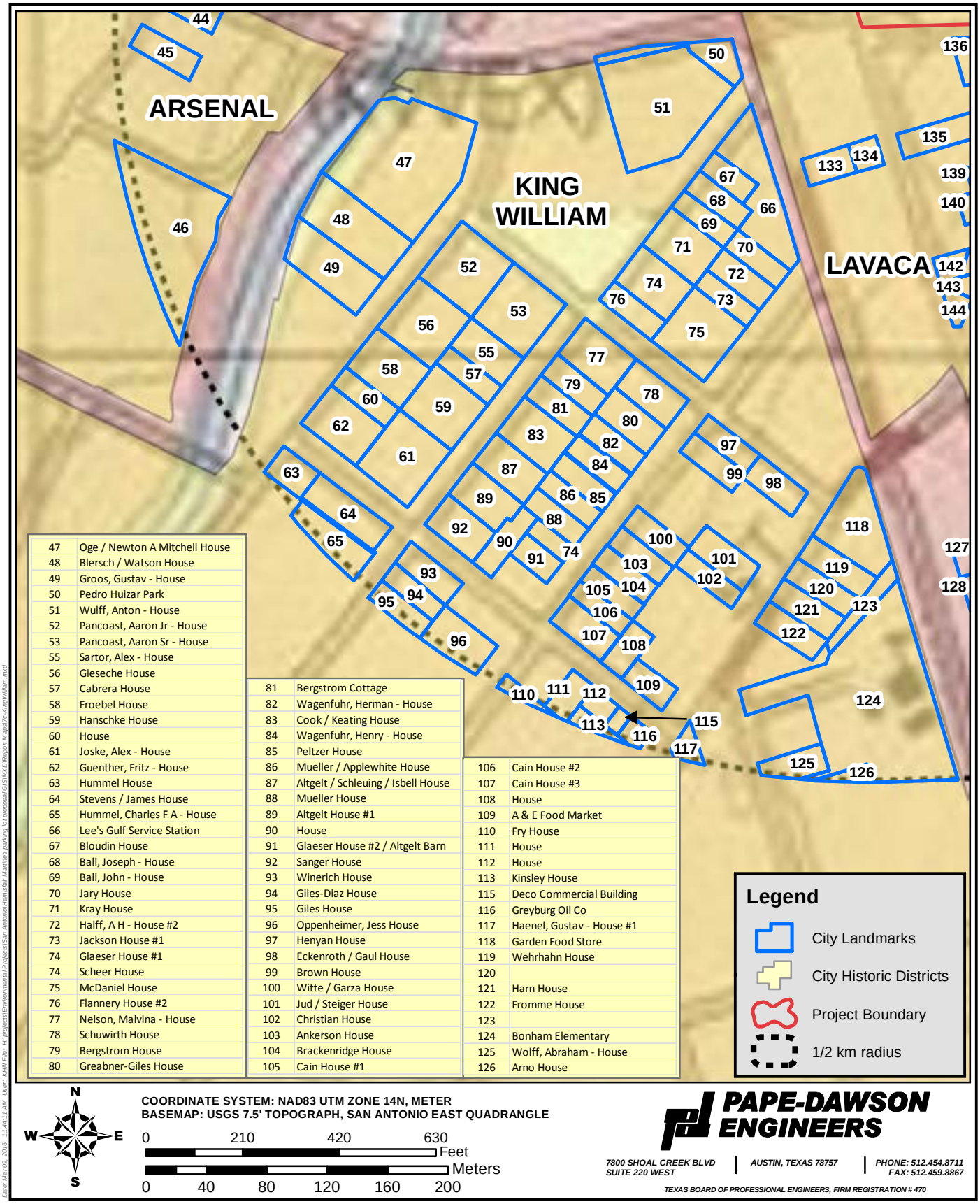
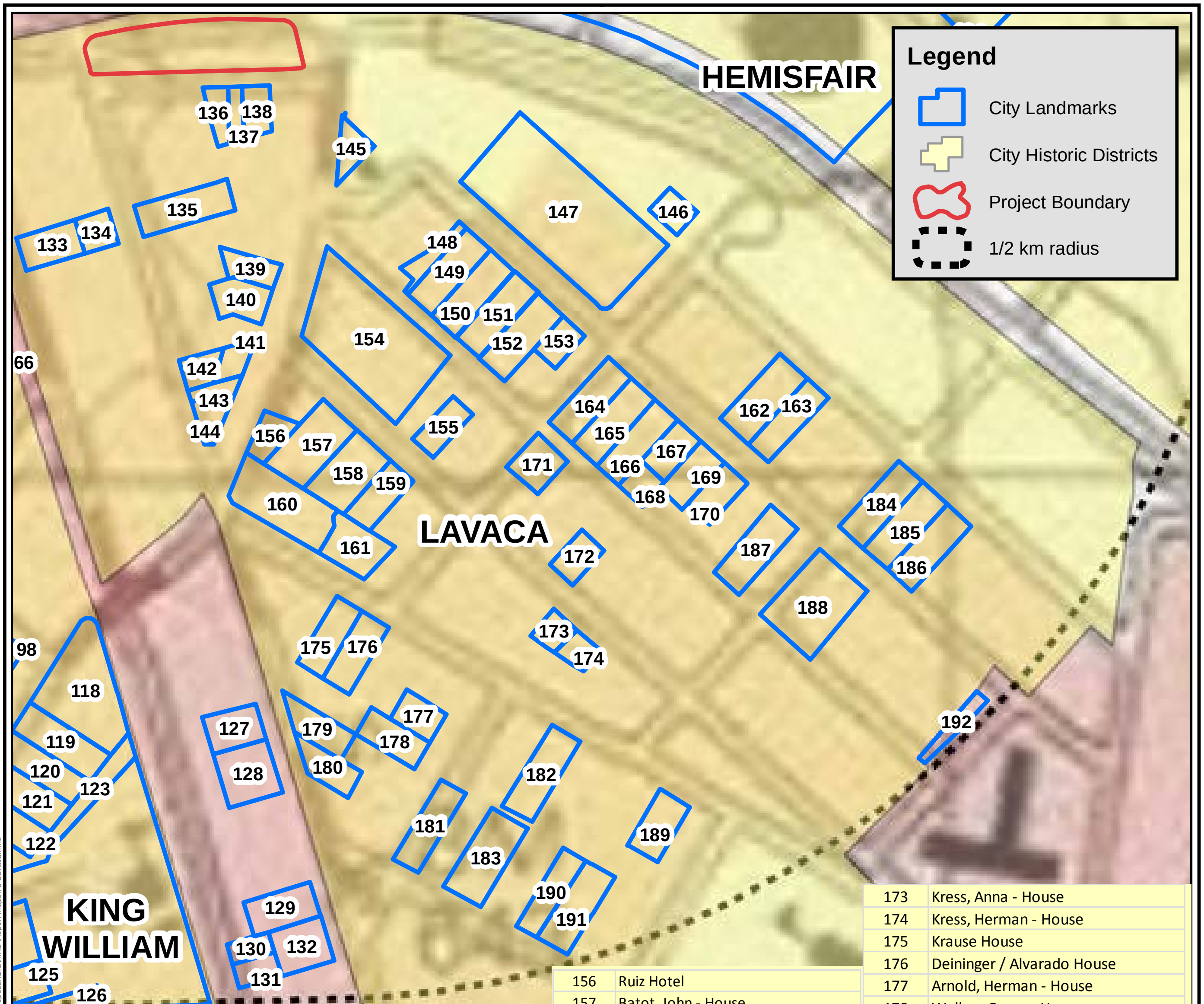


Figure 7b : Local Historic Landmarks within 0.5-km radius (northwest quadrant)



47	Oge / Newton A Mitchell House
48	Blersch / Watson House
49	Groos, Gustav - House
50	Pedro Huizar Park
51	Wulff, Anton - House
52	Pancoast, Aaron Jr - House
53	Pancoast, Aaron Sr - House
55	Sartor, Alex - House
56	Gieseche House
57	Cabrera House
58	Froebel House
59	Hanschke House
60	House
61	Joske, Alex - House
62	Guenther, Fritz - House
63	Hummel House
64	Stevens / James House
65	Hummel, Charles F A - House
66	Lee's Gulf Service Station
67	Bloudin House
68	Ball, Joseph - House
69	Ball, John - House
70	Jary House
71	Kray House
72	Halff, A H - House #2
73	Jackson House #1
74	Glaeser House #1
74	Scheer House
75	McDaniel House
76	Flannery House #2
77	Nelson, Malvina - House
78	Schuwirth House
79	Bergstrom House
80	Greabner-Giles House
81	Bergstrom Cottage
82	Wagenfuhr, Herman - House
83	Cook / Keating House
84	Wagenfuhr, Henry - House
85	Peltzer House
86	Mueller / Applewhite House
87	Altgelt / Schleuing / Isbell House
88	Mueller House
89	Altgelt House #1
90	House
91	Glaeser House #2 / Altgelt Barn
92	Sanger House
93	Winerich House
94	Giles-Diaz House
95	Giles House
96	Oppenheimer, Jess House
97	Henyan House
98	Eckenroth / Gaul House
99	Brown House
100	Witte / Garza House
101	Jud / Steiger House
102	Christian House
103	Ankerson House
104	Brackenridge House
105	Cain House #1
106	Cain House #2
107	Cain House #3
108	House
109	A & E Food Market
110	Fry House
111	House
112	House
113	Kinsley House
115	Deco Commercial Building
116	Greyburg Oil Co
117	Haenel, Gustav - House #1
118	Garden Food Store
119	Wehrhahn House
120	
121	Harn House
122	Fromme House
123	
124	Bonham Elementary
125	Wolff, Abraham - House
126	Arno House

Figure 7c : Local Historic Landmarks within 0.5-km radius (southwest quadrant)



No.	Name
127	Shed
128	Goehring, R - House
129	Reich, Julias - House
130	House
131	House
132	Sartor, A L - House
133	El Mirador
134	Dixon, F L - House
135	Stone House
136	Rossy, Charles W - House
137	Kuppers, Peter - House
138	Demazieres House and Store
139	Seale Dry Goods Co
140	Simms Building
141	Siedeman Building
142	Archaeological Site
143	Medex Medical Supplies
144	McKnight & Gabriel
145	Fire Station #07
146	Pollock, A F - House
147	Fourth Ward School
148	Brian, Luis - House
149	Stone House
150	Basse House
151	Dielman, John - House
152	Deussen House
153	Fredericksen House
154	Vollrath Building
155	Reidner, Albert - House
156	Ruiz Hotel
157	Batot, John - House
158	Hehn, Peter - House
159	Umscheid / Hehn House
160	Caliche Block House / Beyer House
161	McDowell, Rev W - House
162	Magerstadt House
163	Neil, John - House
164	Vinck House
165	Jud, Peter - House
166	Bippert / Jud House
167	Storms House
168	House
169	Mannewitz, Max - House
170	Mannewitz / Yznaga House
171	Hung KuoKuo Min Tong
172	Weingartz, Fritz - House
173	Kress, Anna - House
174	Kress, Herman - House
175	Krause House
176	Deininger / Alvarado House
177	Arnold, Herman - House
178	Walker, George House
179	House
180	Santelben House
181	Wehmeyer, F W - House
182	Arnold House
183	Wilson, W C - House
184	Umscheid, Joanna - House
185	Siebert House
186	Du Menil. August - House
187	Schultz, John - House
188	Briam, August - House
189	Looff, Alvina - House
190	Demerritt, James - House
191	Marshall, J F - House
192	Commercial Building

COORDINATE SYSTEM: NAD83 UTM ZONE 14N, METER
BASEMAP: USGS 7.5' TOPOGRAPH, SAN ANTONIO EAST QUADRANGLE

0 210 420 630 Feet
0 40 80 120 160 200 Meters

N E S W

PAPE-DAWSON ENGINEERS
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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

Figure 7d :Local Historic Landmarks within 0.5-km radius (southeast quadrant)

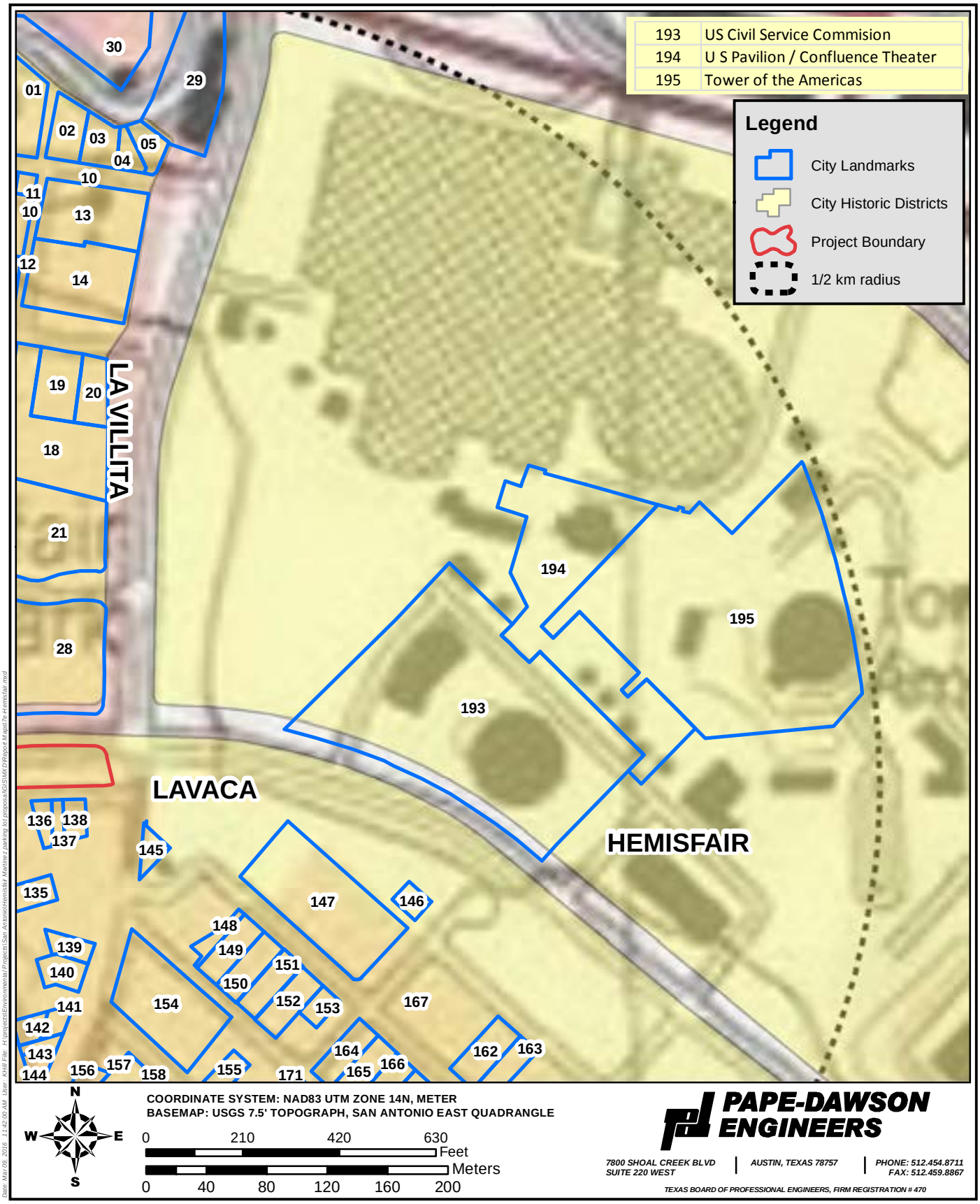

Figure 7e : Local Historic Landmarks within 0.5-km radius (northeast quadrant)

Previously Recorded Sites

Acequia del Alamo (41BX8)

Although not confirmed by archaeology, a segment of the Acequia del Alamo (41BX8), is mapped as traversing the west side of the project area from north to south according to acequia maps on file with the SA-OHP and an 1853 survey map from the COSA archives (Figures 8 and 9). An acequia route in approximately the same location is also visible on maps from the TxDOT Texas Historic Overlay dating to 1868, 1883 (Figure 10), and 1912 (Foster et al. 2006), but is not depicted on 1892 or later Sanborn maps. The Acequia del Alamo was the first canal excavated at the San Antonio Springs between 1719 and 1744. It diverted water from the east side of the headwaters of the San Antonio River, just below San Antonio Springs, in present-day Brackenridge Park.

The Acequia del Alamo was a principal element of an irrigation and water supply system using spring water that the Spanish devised as they established missions in Bexar County. Friars supervised the labor of Indians, settlers, and soldiers to construct acequias, or canals, and dams (Cox 2005). Overall, they built 7 gravity-flow ditches, 5 dams and an aqueduct that comprised a 15-mile network capable of irrigating about 3,500 acres (Tarin 2015). The system eventually distributed water not only for agriculture, but also personal consumption and other household uses (Porter 2009). Thus, the system represents the first municipal water system in what would become the United States. The Acequia del Alamo continued to supply water until the early 1900s, and is a contributing element of both the San Antonio Missions National Historic Park NRHP District (Ivey and Bush Thurber 1983), and the Brackenridge Park NRHP District (Pfeiffer and Tomka 2011). The source of the acequia was the San Antonio River where water was diverted by means of a diversion dam that extended into the stream from its western bank. The acequia served to raise and direct the flow of water toward the eastern bank to a canal intake. In present-day San Antonio, this point can be found in Brackenridge Park, south of the intersection of Broadway and Hildebrand, near the Witte Museum.

According to one historian, the Acequia del Alamo was expanded during the 1860s by adding a branch that reached backward at Martinez Street towards Garden Street (present-day South St. Mary's Street) (Corner 1890:45). While Corner (1890) dates the construction of this branch to the 1860s, it was already depicted on maps by 1853 (see Figure 8), and even by 1850 (discussed below). This branch crossed the Acequia Pajalache (also called Concepción Acequia) at Garden Street via a *canoa*, or hollowed cypress log, before rejoining the (unchannelized) river (Corner 1890:45). As mentioned, prior to channelization a prominent bend in the San Antonio River was approximately 514 ft (157 m) west of the project area, and this is where the acequia branch would have rejoined the river immediately after crossing the Acequia Pajalache (see Figure 10). Corner's (1890) description also matches the depiction of an acequia path that crosses the project area on maps that are on file with the SA-OHP (see Figure 9). Cox (2005:30) describes a similar canoa crossing of the Acequias del Alamo and Pajalache near the present-day intersection of South St. Mary's and South Alamo Streets, before it was formalized with a stone aqueduct in the mid-1800s.

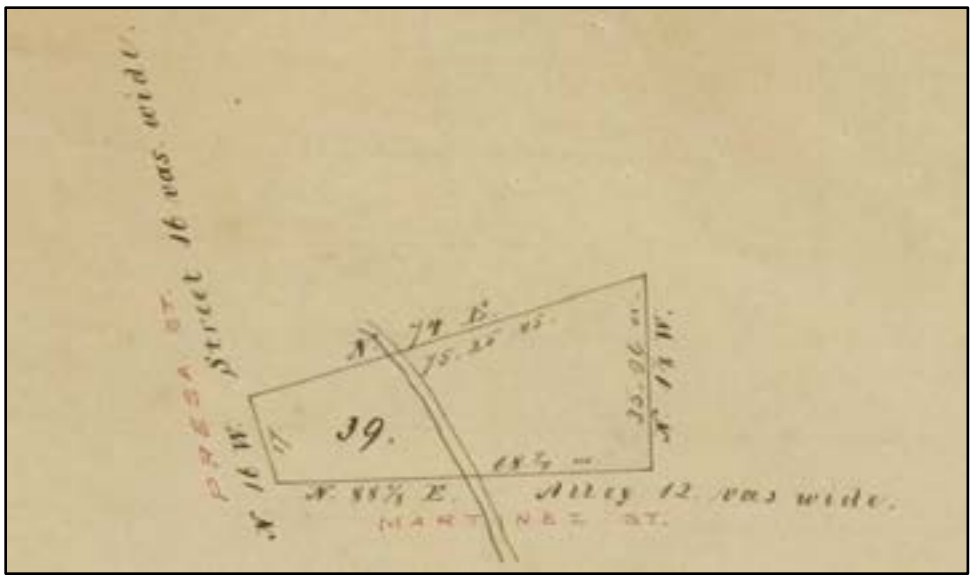

Figure 8. Plat and field notes by R. E. Clements indicating a ditch traverses Lot 39 of Old/New City Block 901, which is within the project area near the corner of South Presa and Martinez Streets (Subdivision, Civil Engineer, Survey Book 1:191, August 10, 1853).

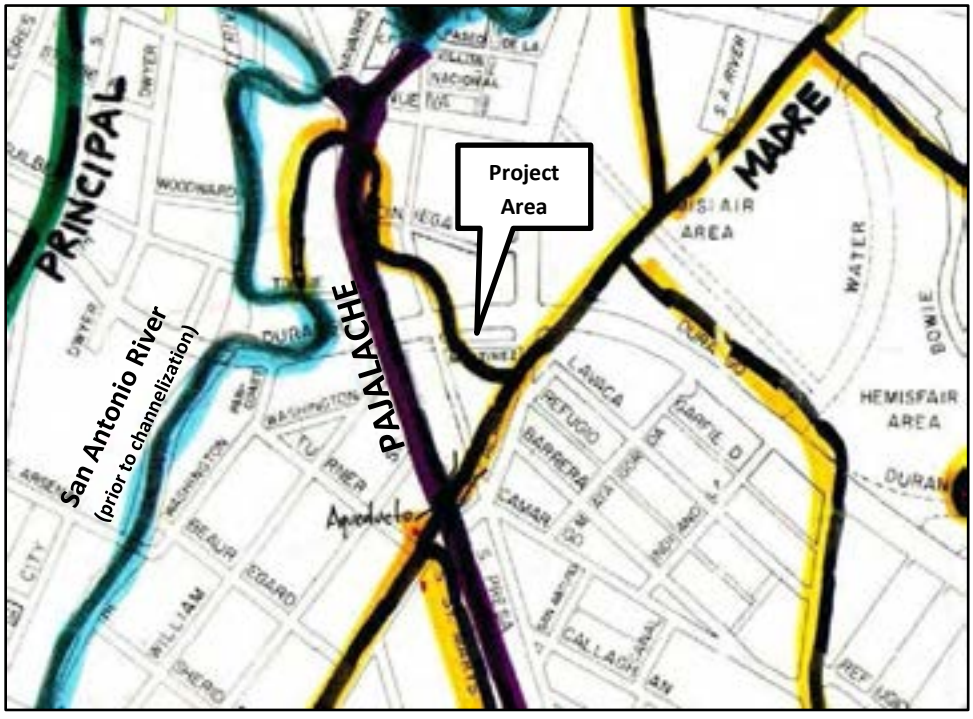

Figure 9. Project area on a portion of an acequia map that is on file with the SA-OHP.

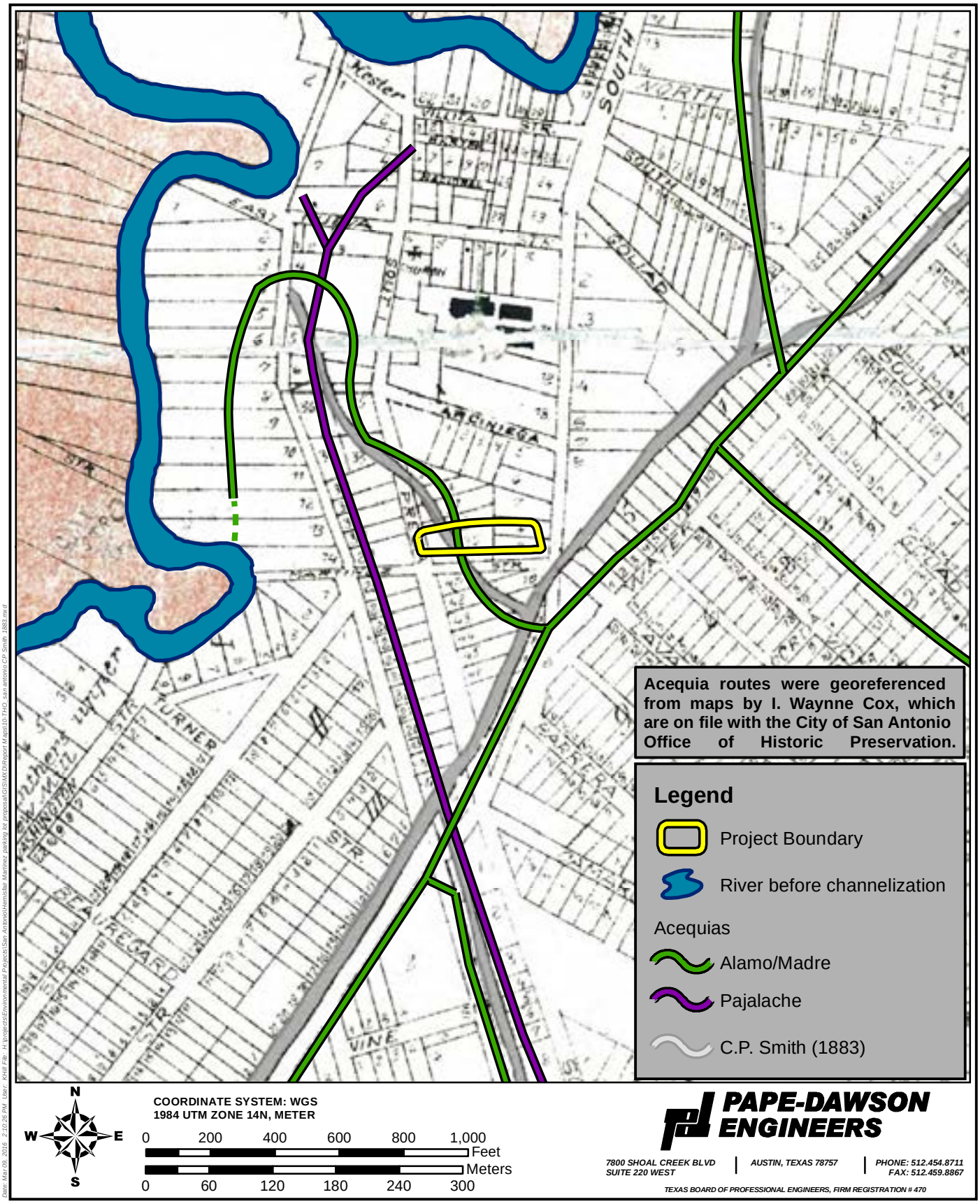

Figure 10. 1883 C.P. Smith map of San Antonio (Foster et al. 2006)

Two other historic depictions of this acequia branch were located in the COSA archives (Figures 11 and 12), supplying more evidence that it was intended as a branch of the Acequia del Alamo. As mentioned, the first plat map is from 1850—a decade before Corner (1890) said the branch was constructed. Labeled, "Cortador," or short-cut, the acequia branch separates from the Acequia del Alamo (labeled "Acequia de los Mochos") at Lot 11 of New City Block (NCB) 901, catches the corner of Lot 10 before traversing Lots 40 and 41, and crossing Martinez Street. It then traverses Lots 35 through 39 of NCB 903 before crossing Presa Street. The current project area is within Lot 39. The branch's termination at either the Acequia Pajalache or the San Antonio River was not depicted. The second plat map is dated 1880 and it depicts NCB 903, which is across Martinez Street and south of the project area. The Acequia del Alamo is labeled, "Alamo Ditch," while the channel that traverses the project area is labeled, "Branch Ditch." It follows much the same path as in the 1850 map, originating in Lot 11 and crossing Lots 10, 41, and 40 before crossing Martinez Street and entering the project area.

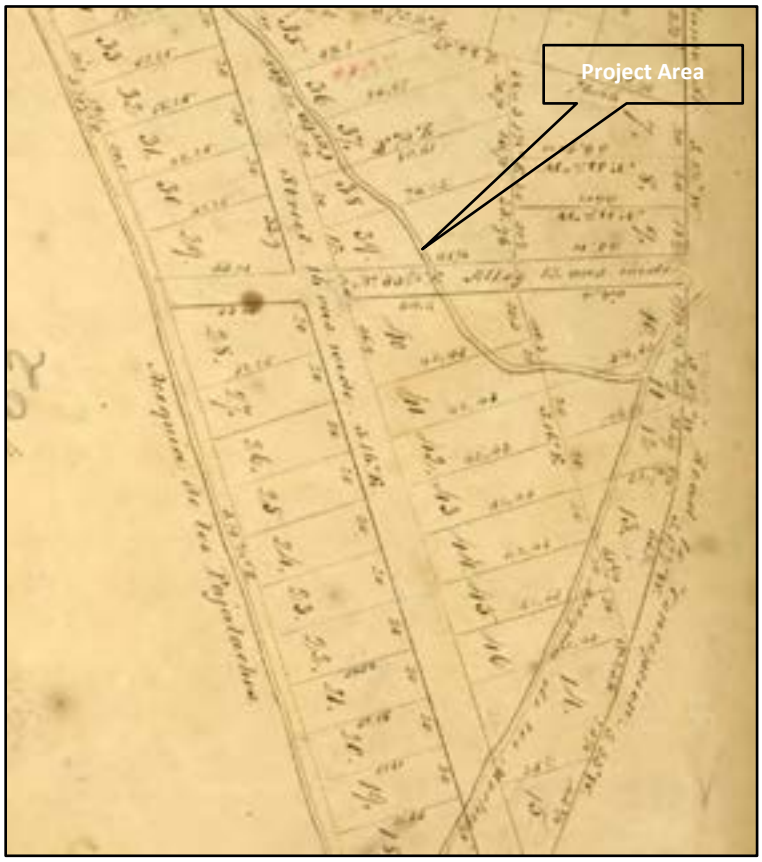

Figure 11: Plat map by F. Giraud of an acequia branch crossing the project area (Subdivision, Civil Engineer, Survey Book 1:134, February 14, 1850).

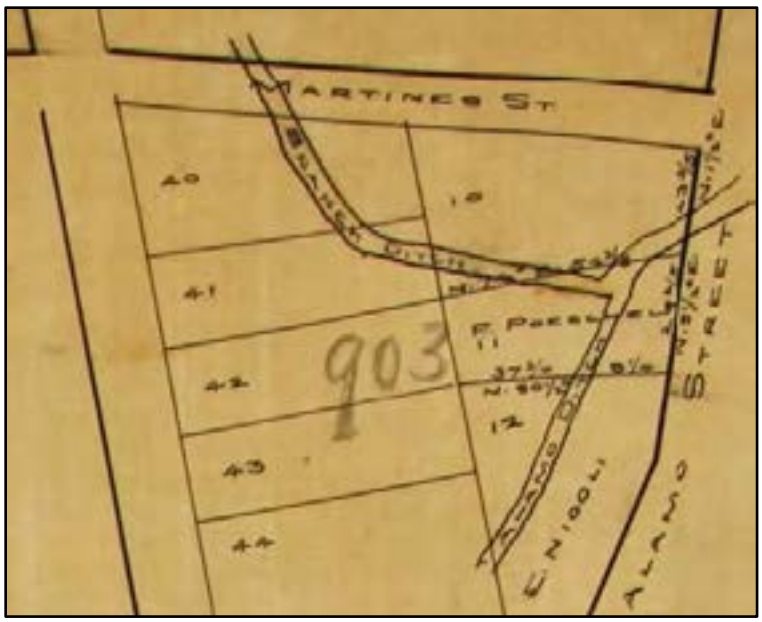

Figure 12. Plat map and field notes by L. Giraud for the survey of Lots 11 and 12 NCB 903, south of the project area. (Plats Book 2:81, December 9, 1880).

Prior to the 1880 plat map that recognized the transfer of ownership of Lots 11 and 12 of NCB 903 to Emil Niggli and Francis Poeschel (see Figure 12), the property where the acequia branch originated was owned by Sophie Desmazieres and her daughter Elizabeth Martin (BCCR 11:103). Sophie Desmazieres was the sister of Francis Louis Desmazieres, a merchant who built a two-story store in 1853 and a residence in 1854 at the southwestern quadrant of the intersection of South Alamo Street and Martinez Street, directly south of the current project area (Historic American Building Survey TEX-33-A-2). The store and house were within Lot 10 of NCB 903 (see Figure 12). He died in Paris, France, in 1862, leaving one quarter of his estate to his widowed mother Amilie Cavignon Desmazieres, and three-quarters to his four siblings, including Sophie Desmazieres (BCCR W1:496).

The 1850 U.S. Census indicates that Sophie Desmazieres was 12 years older than her brother and that her married name was Manchiz, although she had apparently been widowed. The 1879 city directory lists Sophie Desmazieres living along the east side of Martinez Street between Alamo and Presa Streets with her daughter Eliza Martin, who was also widowed (Morrison and Fourmy 1879). The following year, the U.S. Census lists 81-year-old Sophie Desmazieres living with her daughter and five grandchildren ages 22 to 10. The eldest three were working as a store clerk, domestic servant, and domestic laborer. Elizabeth Martin and three of her children continue to reside along Martinez Street in the 1900 U.S. Census. Francis Louis Desmazieres also owned el Rancho de San Francisco, which he bought for 440 pesos from Capt. José Menchaca in 1838 (BCCR F1:44). As a prominent resident, Desmazieres may have been able to commission the construction of the acequia branch through his property on Martinez Street. Alternatively, the acequia ditch owes its construction to Vicente Micheli, who was noted as the owner prior to the land's subdivision by Thomas Devine and J. L. Hewitt in 1850 (see Figure 11).

Site 41BX8 was first investigated by Mardith Schuetz (1970), who exposed a 95-ft (29-m), rock-lined segment in Hemisfair Plaza in 1966. This investigation determined that the rock walls of the acequia extended 5.2 ft (1.6 m) below the surface and that the acequia was 6.3 ft (1.9 m) wide (Schuetz 1970). The rock walls did not extend to the bottom of the acequia channel and were apparently added in the mid-nineteenth century by German immigrants (Fox and Cox 1990). The fill within the acequia contained numerous ceramic, glass, and metal artifacts that dated from the 1890s to the 1930s, which were interpreted as reflective of the time period when the acequia was closed (Schuetz 1970). This acequia section is about 1,000 ft (305 m) northwest of the current project area.

Anne Fox (1985) excavated a trench in Hemisfair Plaza—southwest of Schuetz' investigation—that revealed a segment of the Acequia del Alamo with one rock wall intact at 2.7 ft (0.8 m) below the surface. The overall dimensions were similar to those determined by Schuetz (1970), although the second wall had been reduced to a pile of limestone rubble. Six trenches were then excavated by Fox and Cox (1990) between the acequia segments revealed by Schuetz (1970) and Fox (1985). Within these trenches, the acequia had been filled and then capped by 1.0 to 2.5 ft (0.3 to 0.8 m) of imported fill. Based on the results, a segment of the acequia was reconstructed and remains on display in Hemisfair Plaza.

The Acequia del Alamo or its associated *desages* (discharge channels) have also been revealed in excavations outside Hemisfair Plaza. For example, segments at the Alamo (Schuetz 1970; Sorrow 1972), and at the CPS Energy Tenth Street Substation (Cox 1985) have been documented. The segment at the Alamo was stone-lined, but the segment was not lined at the substation. Instead, Cox (1985) encountered an unlined, shallow ditch approximately 15 ft (4.6 m) wide and 5 ft (1.5 m) deep. The backhoe trench profile illustrated that the acequia had been up to 21 ft (6.4 m) wide at some point. Cox (1985) interpreted the greater width as reflecting the acequia's meandering and rechanneling episodes during its long use. More recently, a segment of the Acequia del Alamo was investigated near the Witte Museum (Ulrich Miller 2011). Two separate channels, neither lined with stone, were documented. The first was a narrow (6.6 ft [2 m]) trench, while the second was adjacent to the first and twice as wide (13.1 ft [4 m]) (Ulrich Miller 2011). Both had been cut into natural clay and caliche.

Contemporaneous with the current investigation, CAR-UTSA encountered a stone-lined segment of the Acequia del Alamo during a monitoring project for the COSA Internal Streets Project at Hemisfair (José Zapata personal communication 2016). Revealed along the former Goliad Street near its intersection with the former Water Street, this segment is situated 600 ft (183 m) northwest of the Martinez Street project area. As the report had not been finalized, the dimensions are not included here. Perhaps the most relevant for the current investigation, a section of the Acequia del Alamo or an associated desage was documented across César E. Chávez Boulevard at site 41BX303, which is discussed below.

Site 41BX303

Site 41BX303 is bounded by Arciniega Street, South Alamo Street, César E. Chávez Boulevard, and South Presa Street, and is immediately west of the southern portion of Hemisfair Plaza. The mapped boundary of site 41BX303, an entire block of structures and foundations dating primarily to the latter half of the nineteenth century, extends into the project area; however, the southern boundary recorded on the site

form in 1978 is East Durango Boulevard (present-day East César E. Chávez Boulevard). Durango Boulevard was constructed sometime between 1969 and 1973. Prior to its construction, however, the project area would have been part of the same city block designated as site 41BX303. It was recorded in 1978 by the Center for Archaeological Research at the University of Texas at San Antonio (CAR-UTSA) prior to the construction of the Plaza Nacional Hotel (present-day Marriott Plaza Hotel) at this location (Katz et al. 1978). Three of the 12 residential and commercial structures documented on the block were left intact and renovated for use by the hotel: 422 Presa Street, 204-6 Arciniega Street, and 220 Arciniega Street. Of the remaining nine locations, five were determined eligible for NRHP listing and investigated to varying degrees (426, 416-18, and 412 South Presa Street, 224 and 228 Arciniega Street, and 501-505 South Alamo Street).

Seven cultural features, unattached to any of the residential structures, were identified and investigated, including three irrigation ditches, one cistern with a possible cooling chamber, one domestic trash pit, one latrine, and one pit of undetermined function (Katz et al. 1978). Historical documentation suggests site 41BX303 was utilized exclusively for agricultural purposes until at least 1811-1813 and perhaps as late as 1840-1841. The decade of the 1880s saw the construction of most of the houses at the site; the earliest two were built between 1841 and 1851, the latest in 1912 (Katz et al. 1978). According to historic Sanborn maps, the current project area is the former location of 330/422 South Presa Street, 299/523-525 South Alamo Street, and 519 South Alamo Street, none of which were investigated by Katz et al. (1978), probably because East Durango Boulevard had already separated the current project area from the rest of the city block (41BX303).

A portion of an acequia was identified in Feature 7 in the southwestern corner of the site. Katz et al. (1978) documented an intrusion of lighter, sandier soil into the gray clayey subsoil. Their backhoe trench intersected the remnant obliquely and made measurements difficult. The edge of the ditch was 9.06 inches (23 cm) below the asphalt pavement, and 30.31 inches (77 cm) at its deepest point (Katz et al. 1978:35). No measurement of Feature 7's width was given, but it appears to be less than 50 cm wide in a scaled drawing, although its depth in the same drawing also appears to be between 90 and 110 cm below the asphalt pavement (Katz et al. 1978:38). Investigators cited a depiction of an acequia route traversing City Block 901 in a map drawn by Francis Giraud in 1850 that was on file with the COSA Engineer's Office (see Figure 11) and theorized that Feature 7 represented a primary acequia lateral that connected the Acequia Pajalache to the Acequia del Alamo (Katz et al. 1978:35). This theory would be explored during the current investigations, in part because the varying dimensions and depths of the acequia encountered made association with either the Acequia Pajalache or Acequia del Alamo challenging to discern.

Historic Maps and Aerial Photographs

A review of 15 Texas Historic Overlay maps from 1767 to 1953 determined that structures were depicted within the subject property on these historic-age maps (Foster et al. 2006). Specifically, an 1868 map of San Antonio by an unknown artist, an 1883 map of San Antonio by C. P. Smith, and a 1912 San Antonio Officials map depict an acequia segment traversing the western half of the project area (see Figure 10) (Foster et al. 2006). According to the 1912 map, the entire block that includes the project area was once agricultural land owned by Vicente Micheli. A house is depicted on the corner of South Presa

and Martinez Streets on 1868 and 1873 maps, and by 1883 the entire block had been subdivided into lots (Foster et al. 2006). The 1953 U.S. Geological Survey topographic map illustrates the project area prior to the construction of César E. Chávez Boulevard (formerly Durango Boulevard), but information about individual properties within the project area is limited in these historic maps. Instead, Sanborn maps were consulted for more specific information about historical development in the project area. As mentioned previously, Sanborn maps indicate structures were present within the project area in the late-nineteenth and early-twentieth centuries. Specifically, Sanborn maps from 1892 to 1912 depict three residences and various outbuildings within the project area. These correspond to 330/422 South Presa Street, 299/523-525 South Alamo Street, and 519 South Alamo Street, and their associated outbuildings.

1892 Sanborn Fire Insurance Map

The 1888 Sanborn maps do not extend coverage to the project area; however, the 1892 Sanborn (Sheet 18) illustrates two homes within the project area, one facing South Presa Street and the other facing South Alamo Street (Figure 13). The home at 330 South Presa Street is a 2-1/2-story frame structure with brick veneer and a slate or tin roof. A 3-story turret is depicted at the southwest corner with a shingled roof. There was a 1-story porch facing South Presa Street and another at the dwelling's northeastern corner. A stately home, it has an extensive L-shaped, 2-story porch along the southern side and a bay window facing north. The home was built on two lots and another residence with attached stables is northeast of the main dwelling, labeled 330-1/2 South Presa Street. A portion of 330-1/2's stable and porch extends into the project area. (The location of the remainder of the 330-1/2 South Presa Street dwelling would now be within the right-of-way of East César E. Chávez Boulevard.) A small frame stable with a slate or tin roof is labeled 330-1/3 South Presa Street at the eastern end of the lot and within the current project area.

The 1892 Sanborn (Sheet 18) also illustrates a residence at 299 South Alamo Street that is a 1-story stone building with a slate or tin roof. A 1-story porch spans the length of the structure, facing east to South Alamo Street. A second L-shaped porch is nestled amidst the house's three main rooms and faces Martinez Street to the south. Behind the house is a small frame building with brick nogging (masonry used to fill the spaces between frame studs) and a slate or tin roof. Its small porch faces north. A separate address for this building is not indicated; however, at the back corner of the lot is a small frame stable with an address of 299-1/2 South Alamo Street. The stable has a slate or tin roof and its porch faces south to Martinez Street. Its northwestern corner is depicted adjacent to the southeastern corner of the stable at 330-1/3 South Presa Street.

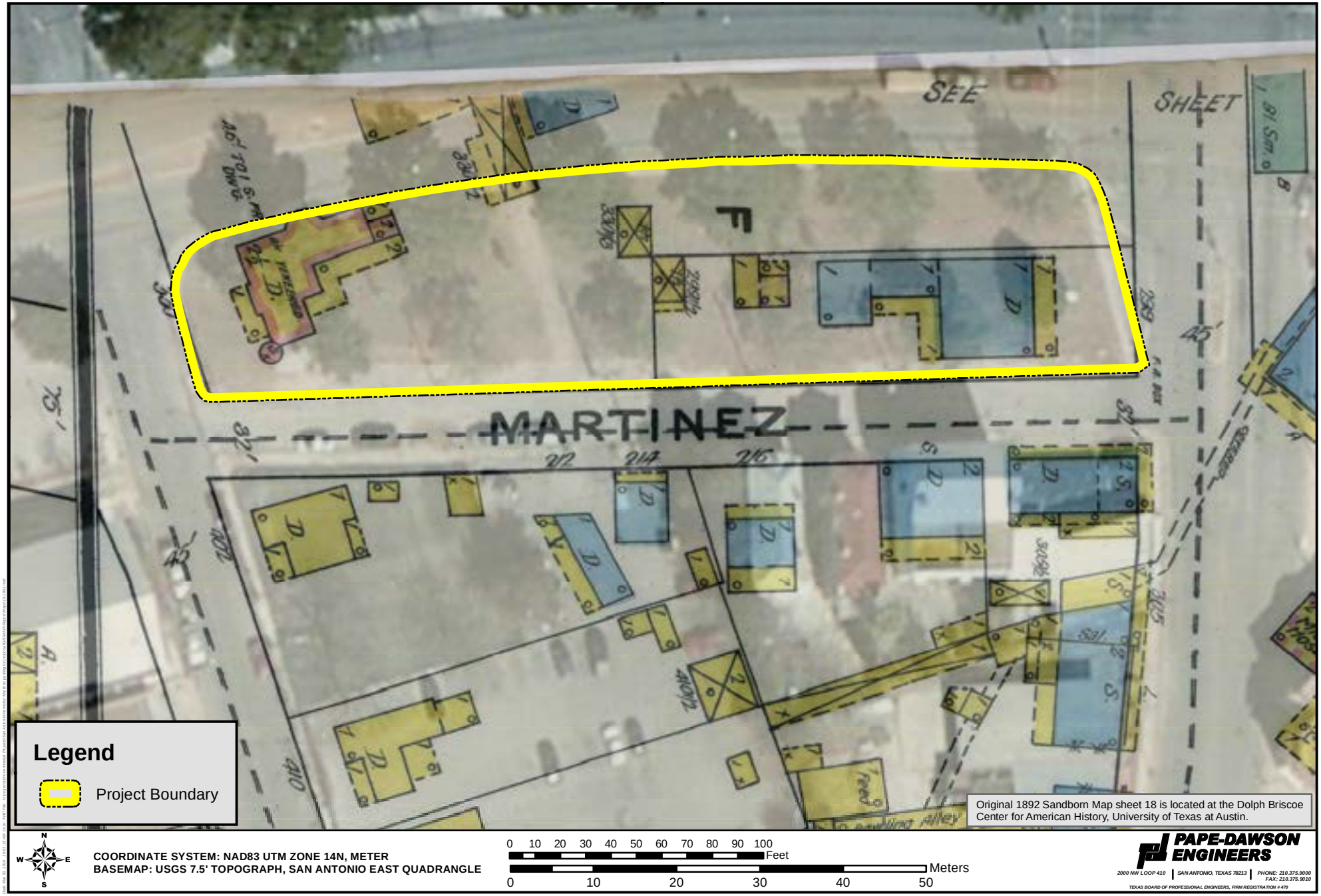

Figure 13 : 1892 Sanborn Map with Project Boundary

1896 Sanborn Fire Insurance Map

The 1896 Sanborn (Sheet 31) illustrates the same two residences, but the house numbers are different (Figure 14). The dwelling at 442 South Presa Street (330 South Presa Street in 1892) appears much the same as in the prior map; however, the stable in the eastern end of the lot that had been designated 330-1/3 South Presa Street is no longer depicted. The second dwelling and stable labeled 442-1/2 South Presa Street (330-1/2 South Presa Street in 1892) is still extant. A portion of 442-1/2's stable and porch is now depicted with a brick-nogged room on the southern end that extends into the project area.

The dwelling at 523 South Alamo Street (299 South Alamo Street in 1892) appears the same as in the prior map, although the small stable at the northwestern corner of the property no longer has a porch or a separate address, appears smaller than in 1892, and now has a shingled roof. This may be an entirely new structure. The back room of the middle structure is now depicted as a stable.

1904 Sanborn Fire Insurance Map

The 1904 Sanborn (Volume 1 Sheet 12) illustrates the same two residences along with a third within the current project area. The dwelling at 442 South Presa Street appears the same as in the prior map except there is a new stable in the southeastern corner of the lot with a wrap-around porch that is more than double the width of the slate- or metal-roofed stable. The building material for 442-1/2 South Presa Street is now labeled adobe instead of stone. Portions of the 442-1/2 South Presa Street stable and porch continue to extend into the project area.

The dwelling at 523 South Alamo Street appears unchanged, but like its neighbor, the building material is labeled adobe instead of stone. The stable in the northwestern corner of the lot is larger than in 1896. A portion of the middle building that had been designated a stable is now part of an L-shaped, wrap-around porch. A residence and outbuilding are now depicted to the north of 523 South Alamo Street with the address of 519 South Alamo Street. The 2-story frame house with brick-veneered front gables has a slate or metal roof and a 2-story porches across half of both its façade and rear. There is a 1-story frame and iron-clad outbuilding with a slate or metal roof along the northern property line.

1912 Sanborn Fire Insurance Map

The 1912 Sanborn (Volume 3 Sheet 237) illustrates the same three residences within the current project area. The dwelling at 442 South Presa Street has not changed, but the stable in the southeastern corner of the lot is gone, along with the dwelling at 442-1/2 South Presa Street and most of its associated stables. The portion of the stables that remains does not extend into the current project area.

The dwelling at 523 South Alamo Street appears unchanged, but an additional address (525 South Alamo Street) is now also associated with the lot. The house's building material continues to be labeled adobe, but the structure in the northwestern corner of the lot is no longer designated a stable and now has a slate or metal roof. The entire middle building is now designated a stable with no porch.

The residence and iron-clad outbuilding at 519 South Alamo Street appear unchanged, although the house is now depicted as entirely brick-veneered, not just the front gables. An additional outbuilding (frame with a slate or metal roof) is along the western property line.

Figure 14 : 1896 Sanborn Map with Project Boundary

Historic Map Summary

According to historic Sanborn maps, the current project area is the former location of 330/422 South Presa Street, 299/523-525 South Alamo Street, and 519 South Alamo Street, and their associated outbuildings. As stated previously, none of these residences were investigated by Katz et al. (1978), likely because E. Durango Boulevard had already separated the current project area from the rest of the city block that corresponds to site 41BX303. Structural remnants and/or archaeological deposits associated with this historical development were targeted by the current archaeological investigation.

Additional Historic Research

Because historic artifacts were encountered during the survey that are associated with site 41BX303, Pape-Dawson historians conducted a limited chain of title search on the property and city directory research along with census research to determine potential occupants associated with former structures within the portion of site 41BX303 that is encompassed by the project area. Addresses for these former structures were taken from the Sanborn maps and used to cross reference with information in city directories. However, as detailed below, some discrepancies were noted between the two sets of addresses.

South Presa Street

The earliest entry for 422 South Presa Street was in 1892 when Nathan Mitchell and workers for two different railroads resided here (Appler 1892). The 1892 city directory does not have a section that lists residents by street; instead, it is only indexed by last name. It does contain a street index that provides the block number, and according to the index, the 400 block of South Presa Street was between Arciniega and Martinez Streets. Thus, the 330 South Presa Street address in the 1892 Sanborn was erroneous, or the address numbering system changed. In addition to an alphabetical listing of residents by last name, the city directories contain a list of streets with residents beginning in 1903.

South Alamo Street

E. W. Reuss lived at 523 South Alamo Street in 1892, but it wasn't until 1905 that the city directory lists 519 South Alamo Street as the residence of W. M. Gardner (Appler 1905). This date correlates with the appearance of a residence at 519 South Alamo Street in the 1904 Sanborn map. The address of 525 South Alamo is not listed in any city directory between 1903 and 1948; thus, the 1912 Sanborn map address was either erroneous, or the address numbering system changed. All three addresses appear to have been rooming houses at some point in their history, with the slate of residents usually changing annually, although occasionally some tenants stayed two or three years. Based on the volume of residents at 519 and 523 South Alamo Street, and their transitory nature, further research was not attempted. Instead, information about the longer-term residents of 442 South Presa Street is detailed below.

Nathan and Cornelia Mitchell

The residence at 442 South Presa Street is the exception, with Nathan or Cornelia Mitchell occupying it from 1892 until 1913 (Appler 1892; 1899; 1901; 1905; 1907; 1908; 1909; 1912; 1913). Mabel McChesney then resided there and rented rooms from 1914 to 1922, after which the building was known as the

Wilkes Apartments (Appler 1914; 1915; 1916; 1917; 1918; 1919; 1921; Appler Directory Company 1922; 1924; Worley 1926; 1927; 1929; 1946; 1948).

Nathaniel (Nathan) Mitchell apparently built the residence at 442 South Presa Street and lived there until his death in 1897 (Appler 1892; 1893; 1894; 1895; 1897; Texas Democrat 1897). Before his appearance in the 1892 directory, both the 1881 and 1887 city directories list Nathan Mitchell as a farmer residing on the west side of Presa Street, while 442 South Presa Street would have been on the east side of the street (Morrison and Fourmy 1881; 1887). He married Cornelia (nee Martin) Mitchell in 1883, and she continued to reside in the South Presa house until her death in 1913, renting rooms to boarders (Texas Democrat 1897; Appler 1899; 1901; 1903; 1905; 1907; 1908; 1909; 1911; 1913; Texas Publishing Company 1910). Cornelia was born in 1842 and in both the 1870 and 1880 U.S. Censuses, Cornelia was living with her family in rural Arcola Township, Douglas County, Illinois. In 1870, there were seven brothers and two sisters besides Cornelia and her parents, while in 1880, all three daughters (ages 40, 37, and 23) still lived at home, along with one of their brothers. Cornelia was about 41 when she married 66-year-old Nathaniel in 1883, which was apparently the first marriage for each of them (Texas Democrat 1897).

Nathaniel was a veteran of the 1836 Battle of San Jacinto, was elected as a member of the Republic of Texas Constitutional Convention of 1836, and was the eldest son of Asa and Charlotte Mitchell, who were among the original settlers in the Austin Colony (Isbell 2010). Nathaniel was born in Pennsylvania in 1817 and moved from Kentucky to Texas with his family in 1822 (McKeehan 2016). Charlotte Mitchell (nee Woodmancy) died in 1832 in Velasco (Brooks 1896). Mitchell County in west Texas is named for Asa and his brother Eli (Amin and Leffler 2010). Asa Mitchell acquired extensive ranch property near San Antonio, in particular a large ranch on the Medina River, and moved to Bexar County in 1840 (Isbell 2010). An unmarried 30-year-old Nathaniel is recorded living and working as a merchant in the lower Rio Grande Valley in the 1850 U.S. Census. He appears on the Bexar County tax roll in 1851, and was living with his father and step-mother in San Antonio in 1860, according to the census. He worked for the U.S. Customs Service as a storekeeper in Brownsville during 1873 to 1875, and was known to have been a good speaker of Spanish (U.S. Department of the Interior 1874; 1876; Texas Democrat 1897). He represented Cameron County at the 1874 Republican Convention and was appointed to the Committee on Platform and Resolutions (San Antonio Express 1874.).

Nathaniel was living in San Antonio on the west side of Acequia Street between Rodriguez and Fourth Streets in 1879 (Morrison and Fourmy 1879). An unmarried, 62-year-old Nathaniel was recorded as living on Soledad Street in 36-year-old Martha Lacey's household in the 1880 census. As mentioned, in 1881 he was farming on the west side of Presa Street south of the city limit (Morrison and Fourmy 1881). Nathaniel registered his livestock brand in Bexar County in 1885 (Bexar County Clerk Records [BCCR] Book I, page 62), and two years later he was still living on the west side of Presa Street, described as 0.75 mile south of the Southern Pacific Railway (Morrison and Fourmy 1887). In 1888, Nathaniel transferred to Cornelia ownership of a parcel of land northwest of San Pedro Springs that he inherited from his father in 1880 (BCCR Book 39 Page 382). He also gave her power of attorney in 1896 (BCCR Book 149 Page 384). He signed his last will and testament on October 5, 1895, appointing his wife as the sole executrix, bequeathing her all of his property, and filing it on November 4, 1897 (Bexar County

Probate Records Volume 7). Cornelia was involved in a series of judgments from 1899 to 1908, after which she began to sell portions of the former Asa Mitchell land around San Pedro Springs, and the southern portion of the 442 South Presa property (various BCCR volumes). Her younger sister—Ella M. Martin of Arthur, Douglas County, Illinois—sold the remainder of the South Presa property acting as the executrix of Cornelia's estate in 1916 (Bexar County Courthouse Record Book 481 Page 235).

Mabel McChesney

According to her death certificate and obituary, Mabel Claire McChesney was born 1880 in Jackson County, Texas, to James Moffett McChesney and Maria Ellen McChesney (nee Ward). Her obituary lists Edna Cemetery in Jackson County as Mabel's burial place; her mother, who died in 1907, is also buried there. James M. McChesney was a veteran of the Civil War, having served in the Confederate Army. He died in 1931 in San Antonio and is buried at the State Cemetery in Austin, according to his death certificate.

The 1910 census lists her at age 27 in her brother-in-law's household in Jackson County. By 1914, an unmarried Mabel McChesney had a telephone (T1279) and lived at 442 South Presa Street along with Nettie H. Bringhurst, who was the recent widow of W. L. Bringhurst, and J. W. Howard, who was the proprietor of the San Antonio Grain Company (Appler 1914). The next year, the residence is listed as the homestead of Mary (sic) McChesney with the same telephone number, and her brother Lafayette Joseph (L. J.) McChesney, who works in real estate, also resides there (Appler 1915). Mary (sic) McChesney continues to be the homesteader in 1916 with L. J. McChesney, and J. J. Gorman, who works at Auto Exchange, residing and sharing the same telephone number at 442 South Presa Street (Appler 1916). The next year, Mabel McChesney is renting apartments using the same telephone number, while L. J. McChesney, H. M. Carroll, Sr. (dentist), Mary Carroll, Minnie Mathews (teacher), and Mittie Mathews (teacher) reside with her (Appler 1917). Mabel McChesney continues to rent apartments at 442 South Presa Street in 1918, and live with her brother, J. D. and Grace Frey, and five members of the Karoly family (Appler 1918). Mabel McChesney's tenants in 1919 include physician Herbert C. Schenck, Western Union Telegraph operator Carrie Summer, and government worker William Summer (Appler 1919). The 1920 census lists her as the owner of an apartment building at 438 South Presa Street, along with members of the Meck, Wilkes, Marke, and Carter families. The 1921 city directory also has 438 South Presa Street as the address for her, and it is the last even-numbered residence on the block, so it more likely that the street numbering changed rather than she moved next door (Appler 1921). Mabel McChesney moved from South Presa Street after 1922 and died in San Antonio in 1968.

Fieldwork

Introduction

The 0.64-acre (0.26-ha) project area is south of Hemisfair Plaza within an urban setting. Four backhoe trenches (BHT 1-4) were excavated during the survey and situated near the center of the project area to avoid the root zones of mature oaks along the perimeter of the project area (Figure 15 and Appendix C). All four trenches were oriented roughly east to west and ranged in length from 9.8 to 21.3 ft (3 to 6.5 m). BHTs 1 and 2 were deeper (4.6 to 5.9 ft [1.4 to 1.8 m]) than those excavated to the east (3.6 ft [1.1 m]) where bedrock was encountered at shallower depths. The trenches were placed at 10- to 20-ft

Figure 15 : Results Map

(3.05- to 6.10-m) intervals across the project area, and targeted prior residential occupations that were evident on historic Sanborn maps, including the residence at 442 South Presa Street and the outbuildings associated with 523 South Alamo Street. Based on the findings, the boundary of site 41BX303 was extended to encompass the project area and the boundary of site 41BX8 (Acequia del Alamo) was extended to include the acequia segment encountered within BHT 2.

Site 41BX303

The investigations encountered brown (10YR4/3) loam and yellowish brown (10YR5/6) sand fill in the top 5.91 to 9.84 inches (15 to 25 cm) below surface in all trenches. These were designated Zones I and II, respectively (Figure 16). Zone III varied in thickness between 9.84 to 19.69 inches (25 to 50 cm), and consisted of a dark gray brown (10YR4/2) to light yellowish brown (10YR6/4) clay with limestone pebbles and cobbles ranging in diameter from 0.39 to 3.94 inches (1 to 10 cm). The matrix in Zone III exhibited about 20 to 50 percent mottling with very pale brown (10YR7/4) sandy clay. Besides root and rootlet inclusions, undiagnostic yellow and red bricks and brick fragments were noted in Zone III of all BHTs. All of these bricks were isolated, and while some had mortar attached, no brick features were encountered. The short exterior sides of the red bricks were consistently discolored with a black material that proved to be tar. Although no maker's mark was stamped into them, these red bricks were in manufacture during the 1890s (Kay Hindes personal communication 2016) and were apparently used as paving stones. One specimen from BHT 2 retained a layer of asphalt attached to it (Figure 17). Zone IV varied in each trench. In BHT 1, Zone IV was a very dark brown (10YR2/2) clay that appeared to be intact. Zone V was white (10YR8/1) limestone bedrock, which was evident in all trenches.

BHT 1 was placed in the vicinity of the former dwelling at 442 South Presa Street (330 South Presa Street in 1892). Late-nineteenth and early-twentieth century artifacts encountered in Zone III of BHT 1 included clay sewer pipe fragments with a brown to reddish brown glaze, ferrous metal fragments including a pipe fitting, a decorative cuprous fragment, an aqua-colored glass bottleneck fragment with an applied finish, an aqua-colored glass bottle fragment with a post mold base, undecorated whiteware fragments, square nails, glass window pane fragments, and cut bone fragments. A defunct cast iron pipe oriented north to south extended into BHT 1 at about 15.75 inches (40 cm) below surface, while a plastic pipe associated with a sprinkler system was encountered at 7.87 inches (20 cm) below surface. Several cut bone specimens were noted in the back dirt of BHT 1, including rib fragments that were cut lengthwise, a large mammal (probably cow) femur fragment, and many uncut bones and fragments that are from sheep or goat (Figure 18). The bone fragments were collected so that analysis might be accomplished in the Pape-Dawson Archaeological Laboratory, but will be discarded in consultation with the THC. The sheep and goat bones, while uncut, include mainly lower extremities, suggesting they represent waste from slaughtered animals. Whether they were processed on site cannot be determined with certainty because they were recovered from what is likely a fill context.

Based on the amount of cultural material noted during the BHT 1 excavation, an 11.81-by-11.81-inch (30-by-30-cm) column sample was excavated along the northern wall in 3.94-inch (10-cm) layers. Artifacts encountered in the BHT 1 column sample include a square nail in Zone III (11.81-15.75 inches [30-40 cm] below surface), an aqua glass bottle base fragment with an open pontil scar at the interface between Zones III and IV (11.81-19.69 inches [30-50 cm] below surface) (Figure 19), an undecorated

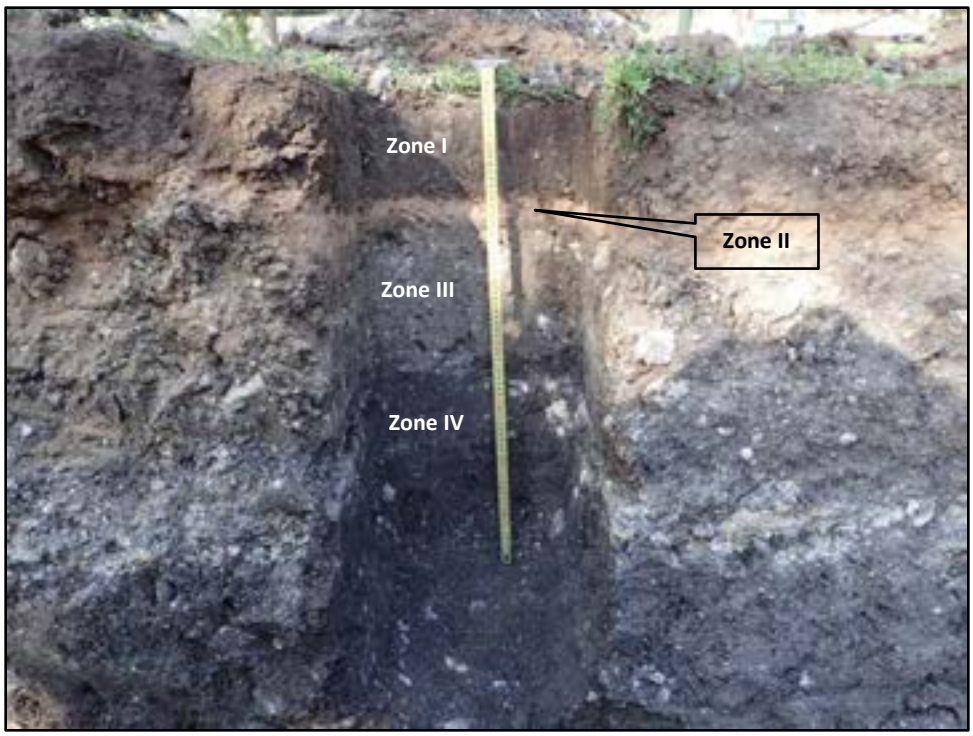

Figure 16: Strata identified in BHT 1 (Column Sample A), facing north. Not pictured is Zone V, bedrock.

Figure 17: Circa 1890s red brick paver with asphalt layer attached.

Figure 18: Animal bone sample from the BHT 1 back dirt pile. A) Large mammal rib fragment cut lengthwise; B) Left metapodia (distal end and partial shaft) of an adult sheep or goat; C) Left metacarpal (proximal end and partial shaft) of an adult sheep or goat; D) Large mammal (probably cow) femur shaft fragment with cut mark; E) First phalanx of an adult sheep or goat; F) Second phalanx of an adult sheep or goat.

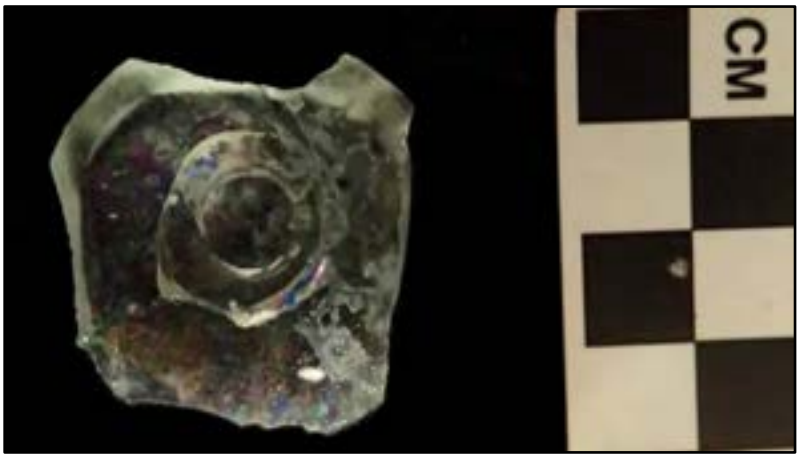

Figure 19. Glass bottle base fragment with an open pontil scar from BHT 1 column sample.

ceramic whiteware sherd in Zone IV (19.69-23.62 inches [50-60 cm] below surface), and charcoal from Zone IV (23.62-27.56 inches [60-70 cm] below surface). These artifacts were collected, but with the exception of the glass bottle base fragment with the open pontil scar, they will be discarded in consultation with the THC.

An open pontil scar is a distinctive round and hollow shaped disk of glass that was usually formed on a bottle base when a hollow blowpipe was used as the pontil rod (Lindsey 2016). A pontil is typically an iron rod that is attached to the base of a glass object to secure it while the neck and finishing were being applied. By substituting the blowpipe for the pontil rod in this stage of the bottle-making process, the glass blower would have used fewer tools and may have saved time and the need for additional labor (Lindsey 2016). Pontil marks were common features on utilitarian bottles until about 1860. Between 1850 and 1860, the pontil was gradually replaced by the snap-case tool, which was a tong that snapped to the bottle heel and left no mark when removed (Intermountain Antiquities Computer System [IMACS] 1992). The base is slightly concave, having a push-up that would have helped to withstand internal pressure from fermented or carbonated contents (IMACS 1992); however, based on small size of the glass fragment, no other details about the bottle or its contents can be discerned.

BHT 2 was placed about 32.81 ft (10 m) east of BHT 1 and a segment of the Acequia del Alamo or an associated desage was encountered, along with historic-age artifacts like ferrous metal fragments, milled lumber fragments, window glass shards, clay sewer pipe fragments, ironstone and annular ware sherds, cut bone, linoleum fragments, and red clay tiles associated with the domestic occupation of site 41BX303. The acequia channels revealed in BHT 2 are detailed below.

BHT 3 was excavated near the rear property line between the former residences at 442 South Presa Street and 523 South Alamo Street. An undecorated whiteware rim sherd, clear and green bottle glass shards, and window pane fragments were noted in Zones III and IV. Fragments of a Ferris-brand red brick, yellow brick, red tile, and a red brick with a partial maker's mark (…ESB…) were noted in the back dirt pile of BHT 3 (Figure 20).

BHT 4 was placed in the vicinity of a small frame building with brick nogging that was depicted behind the house at 523 South Alamo Street in historic Sanborn maps. Defunct iron, clay sewer, and plastic sprinkler pipes were encountered in BHT 4. An aqua glass shard was noted. The iron and clay sewer pipes were oriented east to west, while the sprinkler pipe was perpendicular to the trench. The iron pipe was at 19.69 inches (50 cm) below surface, while the sewer pipe was between 23.62 and 27.56 inches (60 and 70 cm) below surface. The red clay sewer pipe had brown and green glazes and fit together in segments. It was evident in both the northern and western walls of BHT 4.

Figure 20. A representative sample of artifacts encountered in BHT 3.

In summation, the boundary of site 41BX303 was extended southward to include the entire project area, based on encountering material dating to the late-nineteenth and early-twentieth centuries in all four backhoe trenches excavated (Figure 21). The age of this material corresponds to the occupations documented through historic Sanborn maps and research conducted using city directories, census data, and deed records. No intact structural remnants or features were encountered and the material was mainly fragmentary and appeared to be in secondary, fill contexts that were either associated with the filling of the acequia, the demolition of the historic-age structures, or both.

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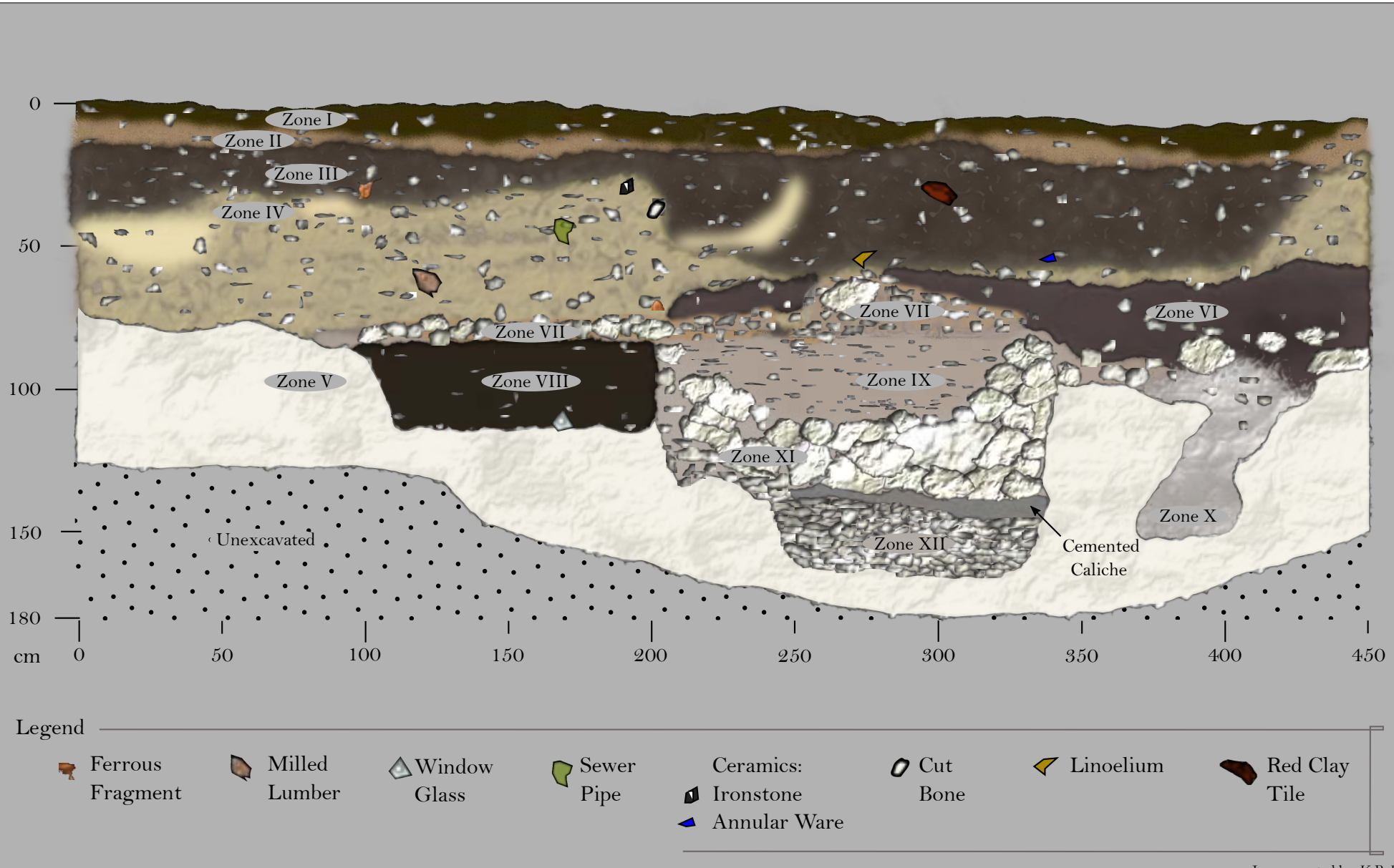
Acequia del Alamo (41BX8)

Excavations continued within the newly extended boundary of site 41BX303, revealing the outlines of several superimposed acequia or desage channels. BHT 2 was placed about 32.81 ft (10 m) east of BHT 1 and a segment of the Acequia del Alamo or an associated desage was encountered within the western half of the 21.33-ft (6.50-m) trench (Figures 22 and 23). Twelve zones of matrix were defined for the south wall profile of BHT 2 (Table 1). Zones I through III and V were identical to those encountered in BHT 1 and described above. Zones IV and VI through XII relate to five construction and fill episodes associated with the acequia.

Most clearly evident in the southern wall profile, the acequia channel had been cut into bedrock, and the deepest cut in the center had been filled with gravel and sealed with caliche cement or plaster (Figures 24 and 25). In the north wall, the bedrock cut was maximally about 12.30 ft (3.75 m) wide, while in the south wall it was about 7.9 ft (2.40 m), measuring from the eastern side of Construction Sequence 2 (CS 2) to the western side of CSs 1, 2, and 3 (see Figure 23). The deepest channel in the north profile was cut into the bedrock at about 5.91 ft (1.80 m) below surface in the north wall and at 5.25 ft (1.60 m) in the south wall of BHT 2, where the channel was 3.30 ft (1 m) wide. The uppermost acequia channel in the south wall profile is between 7.9 to 19.7 inches (20 to 50 cm) below surface. The variations between the north and south wall profiles are likely related to modifications made to the acequia through time and separate fill episodes evident in Zones III, IV, VI, VII, VIII, and IX. Additionally, the exact alignment of the acequia could not be determined in BHT 2, but it appeared to be north-northeast to south-southwest orientation, based on the alignment of the deepest channels in both the north and south wall profiles of BHT 2. However, this would be at odds with the mapped route that is aligned north-northwest to south-southeast.

A five-stage construction sequence is discernible in the south wall profile, although some details of the following description are necessarily tentative. The deepest channel (5.25 ft [1.60 m] below current ground surface) appears to be the initial excavation into the bedrock that was about 3.3 ft (1 m) wide and 27.6 inches (70 cm) deep (see Figure 23, CS 1). The lower 9.8 inches (25 cm) of CS 1 was later filled with uniform-sized gravel and capped with a caliche-based cement or plaster. Zone XII may represent a location where the raw material for the cement was obtained; the resulting hole would have been filled with excess gravel. Whether this filling and capping was related to CS 1 or a subsequent use stage is not clear. At some point the channel was widened to 7.9 ft (2.4 m) with a depth of 11.8 inches (30 cm) and probably raised about 7.9 inches (20 cm) with larger (3.9- to 13.8-inch [10- to 35-cm] diameter) limestone cobbles (see Figure 23, CS 2). This wider CS 2 was then narrowed to 4.6 ft (1.4 m) by adding fill (see Figure 23, Zone VIII) and deepened into bedrock by about 7.9 inches (20 cm) (see Figure 23, CS 3), for a channel depth of 17.7 inches (45 cm). The bottom of CS 3 would have been comprised of bedrock and cemented caliche. Next, this channel was raised about 9.8 inches (25 cm) by lining it with medium-sized (3.9- to 5.9-inch [10- to 15-cm] diameter) limestone cobbles (see Figure 23, CS 4). CS 4 would have been 4.3 ft (1.3 m) wide and 11.8 inches (30 cm) deep. The last channel in the sequence is the upper one (7.9 inches [20 cm] below current ground surface), which measures 7.5 ft (2.3 m) wide and about 11.8 inches (30 cm) deep (see Figure 23, CS 5).



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Hemisfair Parking Lot PN: 7645-20
Bexar County, Texas
Cultural Resources Report
January 2017

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Figure 22: BHT 2 South Wall Profile

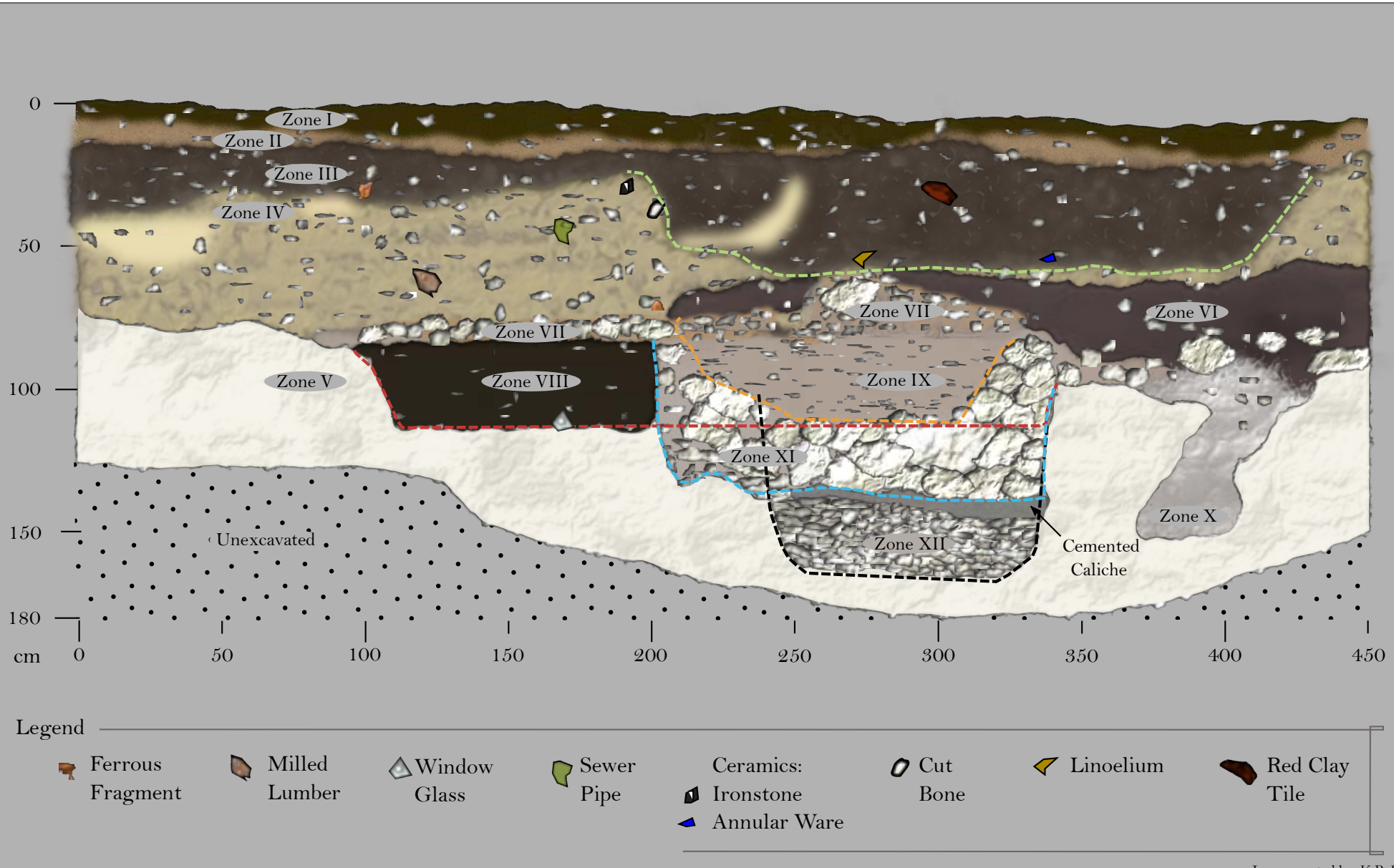

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Figure 23: BHT 2 South Wall Profile

Table 1. Stratigraphic Zones Identified in BHT 2

Zone	Munsell	Soil Description
I	10YR2/2 Very Dark Brown	Loam
II	10YR6/4 Light Yellowish Brown	Sand
III	10YR5/3 Brown with 10YR7/6 Yellow Mottles	Loamy Clay with sand mottles and some gravel and small cobbles
IV	10YR5/2 Grayish Brown	Clay with some gravel and small cobbles
V	5YR8/1 White	Bedrock
VI	10YR3/2 Very Dark Grayish Brown	Clay-loam with some gravel and cobbles
VII	10YR6/4 Light Yellowish Brown	Sand with medium- to large-size cobbles
VIII	10YR3/1 Black	Clay with some gravel
IX	10YR6/2 Light Brownish Gray	Clay with small gravel
X	10YR5/1 Gray	Clay loam with degraded limestone and cobbles
XI	10YR6/1 Gray	Predominantly medium to large cobbles with little soil
XII	10YR6/1 Gray	Predominantly gravel and small- to medium-sized cobbles with little soil

Figure 24: BHT 2 South wall profile detail of bedrock cut, facing southwest.

Figure 25: BHT 2 South wall profile detail of central bedrock cut with gravel fill and plaster seal, facing south.

This interpretation is necessarily tentative because it is based on what is currently visible; however, it is possible that other construction episodes were obliterated by these five and that the sequence is more complex than what is presented here. Historical information about construction and engineering methods used to build the acequias is scant, perhaps because the basic principles were considered common knowledge by people accustomed to irrigation being an integral part of their environment (Cox 2005:17). Additionally, it is difficult to assign temporal affiliations to episodes in the sequence with any confidence.

The dimensions and depths of the various channels enumerated above are within the range of the generally accepted morphology of the Acequia del Alamo (Table 2). The documented width of the channel ranges between 1.6 to 3.3 ft (50 to 100 cm) (Katz et al. 1978) and 15 to 21 ft (4.6 m to 6.4 m) (Cox 1985). The dimensions of CS 1 through CS 5 in BHT 2 comport with those revealed in other investigations, ranging from 3.3 ft (1 m) to 7.9 ft (2.4 m). The documented depth of the channel ranges between 24 inches (61 cm) (Fox 1985) and 6.3 ft (1.9 m) (Schuetz 1970). CS 1 at 27.6 inches (70 cm) deep is within this range, but CS 2 through CS 5 are shallower at 11.8 to 17.7 inches (30 to 45 cm). Uncertainty about the elevation of the ground surface through time complicates determining the depth of the channels when they were in use, so the depths given in the table below for CS 1 through CS 5 reflect only what was observed in BHT 2.

Table 2. Acequia Madre Dimensions

Investigation	Feature	Depth Below Surface (to top of acequia)	Width of Channel	Depth of Channel
Schuetz (1970)		0	6.3 ft (1.9 m)	63 inches (160 cm)
Katz et al. (1978)		9 inches (23 cm)	1.6 to 3.3 ft (50 to 100 cm)	30.31 inches (54 cm)
Fox (1985)		30 inches (76.2 cm)	4 to 6 ft (1.2 m to 1.8 m)	24 inches (61 cm)
Cox (1985)		12 inches (30.5 cm)	15 to 21 ft (4.6 m to 6.4 m)	60 inches (152 cm)
Fox and Cox (1990)		30 inches (76.2 cm)	10 ft (3 m)	48 inches (122 cm)
Ulrich Miller (2011)	Feature 2	57.1 inches (145 cm)	6.6 ft (2 m)	59.1 inches (150 cm)
Ulrich Miller (2011)	Feature 3 B	59.1 inches (150 cm)	13.1 ft (4 m)	59.1 inches (150 cm)
BHT 2	CS 1	35.4 inches (90 cm)	3.3 ft (1 m)	27.6 inches (70 cm)
BHT 2	CS 2	53.1 inches (135 cm)	7.9 ft (2.4 m)	11.8 inches (30 cm)
BHT 2	CS 3	31.5 inches (80 cm)	4.6 ft (1.4 m)	17.7 inches (45 cm)
BHT 2	CS 4	29.5 inches (75 cm)	4.3 ft (1.3 m)	11.8 inches (30 cm)
BHT 2	CS 5	7.9 inches (20 cm)	7.5 ft (2.3 m)	11.8 inches (30 cm)

Cox (2005:78) described the Acequia del Alamo as at near surface level, while the Acequia Pajalache was 6 ft (1.8 m) below surface. Katz et al. (1978:35) theorized that their Feature 7 represented a primary acequia lateral that connected the Acequia Pajalache to the Acequia del Alamo. Based on the location of Feature 7 and an acequia route depicted on a map drawn by Francis Giraud in 1850, Katz (et al. 1978) projected an acequia route that comes within 6.6 ft (2 m) of the segment in BHT 2. Comparing the dimensions of the acequia recorded by Katz et al. (1998) to the various channels in BHT 2, CS 1 seems to be the best fit, although it was encountered 26.4 inches (67 cm) deeper than the acequia recorded by Katz et al. (1998). If Feature 7 (Katz et al. 1998) is indeed a primary acequia lateral that connected the

Acequia Pajalache to the Acequia del Alamo, then the varying dimensions of the segment within BHT 2 may be explained by it having to accommodate the distinct flow levels between the two acequias. Alternatively, the segment of the acequia within the project area may have been deepened or widened in response to attempts to alleviate flooding in this area of San Antonio. The five-stage construction sequence may also reflect distinct cleaning episodes that had the effect of changing the depth and width of the channel for more efficient water conveyance.

The Acequia Pajalache is among the oldest acequias, having been completed by 1724, a few years before Mission Concepción was built (Cox 2005). Its channel was both wide and deep, originating on the east side of the San Antonio River at a relatively large dam (Corner 1890). The dam spanned an area near a major ford in the river that is at present-day Presa Street in La Villita. Because this was one of the highest points in the city, the acequia required a large (15 ft [4.6 m] deep) cut to initiate the downward flow (Cox 2005:30; Corner 1890). The dam was recognized as a major obstruction of the river as early as 1828, but because there was no alternative for landowners to irrigate their fields, the problem went unresolved (Cox 1995). The dam initially stood about 5 ft (1.5 m) high, but in May 1858, the dam for the Acequia Pajalache was raised by 3 ft (0.9 m), which subsequently caused flooding (Cox 2005). Heavy rains on March 26, 1865, caused the San Antonio River to rise 14 ft (4.3 m) above normal, causing flooding throughout downtown (Cox 1995:3). Other episodes of flooding that were exacerbated by poorly maintained channels or the intentional filling of acequias were also common (Kay Hindes personal communication 2016). The Acequia Pajalache was abandoned in 1869 (Arneson 1921).

To explore whether the acequia in BHT 2 is related to the Acequia Pajalache, the dimensions of previously recorded segments of the acequia were compiled from the literature and are presented in Table 3. The documented width of the channel ranges between 5.3 ft (1.6 m) (Meissner et al. 2007) and 32.8 ft (10 m) (Iruegas et al. 2009). Only the dimensions of CS 2 and CS 5 in BHT 2 comport with those revealed in other investigations, ranging from 7.5 ft (2.3 m) to 7.9 ft (2.4 m), while the channel widths of CS 1, CS 3, and CS 4 are narrower (3.3 to 4.6 ft [1 to 1.4 m]). The documented depth of the Acequia Pajalache channel ranges between 32.7 inches (83 cm) (Iruegas et al. 2009) and 63 inches (160 cm) (Tennis 2001). None of the acequia channels in BHT 2 is within this range.

Table 3. Acequia Pajalache Dimensions

Investigation	Feature	Depth Below Surface (to top of acequia)	Width of Channel	Depth of Channel
Ivey and Fox (1999)	Unit 27, Block VI	56.4 inches (143 cm)	1.3 ft (0.4 m)+ [partial]	40.8 inches (104 cm)
Ivey and Fox (1999)	Unit 45, Block VII	59.8 inches (152 cm)	7.1 ft (2.2 m)+	35 inches (89 cm)
Tennis (2001)		23.6 inches (60 cm)	12.1 ft (3.7 m)	63 inches (160 cm)
Meissner et al. (2007)		31.5 inches (80 cm)	5.3 ft (1.6 m)	51.2 inches (130 cm)
Iruegas et al. (2009)		38.6 inches (98 cm)	32.8 ft (10 m)	32.7 inches (83 cm)
Hanson (2011)	BHT 12, 165 to 177 cmbs	65 inches (165 cm)	23 ft (7 m)+	4.7 inches (12 cm)
Hanson (2011)	BHT 12, 200 to 350 cmbs	78.7 inches (200 cm)	23 ft (7 m)+	59 inches (150 cm)+
BHT 2	CS 1	35.4 inches (90 cm)	3.3 ft (1 m)	27.6 inches (70 cm)
BHT 2	CS 2	53.1 inches (135 cm)	7.9 ft (2.4 m)	11.8 inches (30 cm)
BHT 2	CS 3	31.5 inches (80 cm)	4.6 ft (1.4 m)	17.7 inches (45 cm)
BHT 2	CS 4	29.5 inches (75 cm)	4.3 ft (1.3 m)	11.8 inches (30 cm)
BHT 2	CS 5	7.9 inches (20 cm)	7.5 ft (2.3 m)	11.8 inches (30 cm)

As discussed in the background review results section of this report, the Acequia del Alamo was expanded at some point before 1850 by adding a branch that reached backward at Martinez Street towards Garden Street (present-day South St. Mary's Street) (Corner 1890:45). This branch crossed the Acequia Pajalache at Garden Street via a *canoa*, or hollowed cypress log, before rejoining the (unchannelized) San Antonio River about 514 ft (157 m) west of the project area (Corner 1890:45). Corner's (1890) description matches the depiction of the project area in acequia maps on file with the SA-OHP, an 1883 map, and plat maps in the COSA archives (see Figures 9, 10, 11, and 12).

There is no apparent topographic feature that would allow the water in this branch to be conveyed by gravity; rather, the branch is entirely within the level floodplain. Thus, the only control on the flow of water would have been the internal grade of the channel. Given its late, post-colonial construction, perhaps the branch never functioned as designed. If so, this might explain the various construction sequences visible in BHT 2 as attempts to adjust the flow in this branch by raising or lowering its channel during the 40 to 50 years it was in operation. Alternatively, perhaps this branch was meant to eventually replace the Acequia Pajalache after 1869 in a portion of downtown that the Acequia del Alamo could not service. Based on Corner (1890), 1850 and 1880 plat maps, the results of the comparative analyses, and the relatively shallow dimensions of the various channels, the segment evident in BHT 2 is interpreted as part of the Acequia del Alamo, and a site revisit form was filed for 41BX8.

Artifacts

Cultural material was evident in Zones III, IV, and VI of the south wall profile. Diagnostic artifacts include an English ironstone fragment with a partial maker's mark and a sherd of blue-banded whiteware (or annular ware) that were collected from the interface between Zones III and IV; and a 0.01-inch (2.52-millimeter [mm]) thick window pane fragment from the juncture of Zone VI (homogenous, very dark grayish brown [10YR3/2] clay fill) and bedrock (Figure 26; see Figure 22). The partial maker's mark includes the letters, "ENGL" in an arc over a stylized sunrise pattern and an apparent triangle with a dot inside centered above the lettering. Ironstone dates from 1840 to the present, while blue-banded whiteware from England date between 1830 and 1860 (Brown 1982). Afterwards, similar versions produced in the United States continue in popularity into the twentieth century (Brown 1982).

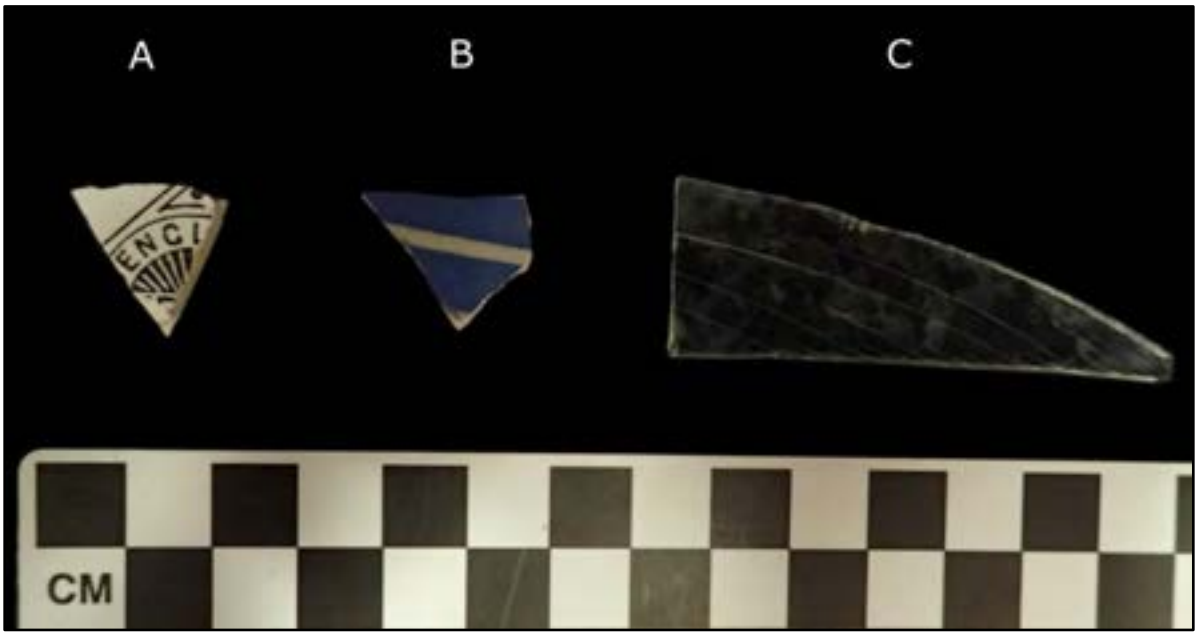

Figure 26: A) Ironstone; B) blue-banded annular ware; and C) window pane glass from the south wall profile of BHT 2.

Window glass analysis is a process of determining a relative initial construction date for historic structures by measuring its thickness (Weiland 2009). Using cylinder glass to produce window glass began during the first part of the nineteenth century. As window size increased during the next 70-100 years, the thickness of the glass gradually increased. After the first few decades of the twentieth century, skilled laborers in the window glass production process were replaced with machines (Douglas and Frank 1972) and the thickness of glass was standardized at 0.12 to 0.13 inches (3.0 to 3.3 mm) (Walker 1971; Moir 1987; Weiland 2009). The thickness of the window pane fragment from the south wall profile of BHT 2 can be correlated to a date of manufacture according to a formula developed by Randall W. Moir (1987), who used glass from 45 sites in south and northeast Texas. According to Moir (1987), the window glass fragment dates to between 1918 and 1932; however, Moir recommends using glass from the best possible context (scatters along foundation lines or walls), and using about a 30-piece sample. The single specimen from the south wall profile of BHT 2 is most likely in a fill context. Additionally, variations in the difference between thickness-to-date correlations are consequences of

regional differences in the glass industry and socioeconomic factors (Moir 1987; Schoen 1990; Weiland 2009).

Summary and Recommendations

On behalf of Hemisfair Park Area Redevelopment Corporation, Pape-Dawson conducted an intensive archaeological survey of the proposed 0.64-acre (0.26-ha) Hemisfair Martinez Street Surface Parking Lot Project in Bexar County, Texas. As part of the compliance process, the COSA-OHP requested that an archaeologist monitor the subsequent construction excavations within a portion of the project area. The irregularly shaped project area in downtown San Antonio is a grass-covered area with mature pine and oak trees along the perimeter. The estimated depth of impacts for the project is about 1 ft (0.30 m) throughout, and up to 4 ft (1.22 m) for the installation of light poles and ticket kiosks.

As this project will occur within COSA-owned property, the investigations and monitoring were conducted in compliance with the Antiquities Code of Texas under Antiquities Permit No. 7511. The project is located within the COSA City Limits; therefore, compliance with the Historic Preservation and Design Section (Article 6 35-360 to 35-634) of COSA's UDC was necessary. However, as the project did not involve either federal funding or permitting, cultural resources work in compliance with Section 106 of the National Historic Preservation Act was not required. The purpose of the investigations was to identify all historic or prehistoric cultural resources located within the project area and evaluate the significance and eligibility of identified resources for designation as an SAL. All work was done in accordance with the archaeological survey standards and guidelines as developed by the CTA and adopted by the THC. The survey exceeded the CTA/THC standards, which require three shovel tests per acre for a project of this size. The goal of the monitoring was to gather information on the nature and types of cultural resources possibly buried in the buffered portion of the project area, and focused on potentially significant resources related to the Spanish Colonial era, the Acequia del Alamo (41BX8), or the nineteenth-century residential occupation of the project area.

The investigations included a cultural resources background literature and records review and an intensive survey with mechanical trenching. Subsequently, archaeological monitoring was performed during construction activities that occurred on April 28, 2016. The background review determined that the project area has been previously surveyed and that structures were present within the project area in the late-nineteenth and early-twentieth centuries. Additionally, although not previously confirmed by archaeology, a segment of the Acequia del Alamo is mapped as traversing the west side of the project area, which is within the COSA Lavaca Historic District and adjacent to the La Villita National Register Historic District. Finally, archaeological site 41BX303, dating to the latter half of the nineteenth century, extends into the northern portion of the project area.

Pape Dawson's intensive archaeological survey included the excavation of four backhoe trenches that encountered artifacts associated with late-nineteenth- and early-twentieth-century occupations in all trenches. A segment of the Acequia del Alamo was documented within BHT 2. Based on the results of the survey, site revisit forms were filed noting the location of the Acequia del Alamo (41BX8) within the project area, and extending the boundary of site 41BX303 to include the project area. The portions of

sites 41BX8 and 41BX303 that are within the project area were evaluated according to the criteria in 13 TAC 26.10. Based on these criteria, the segment of the Acequia del Alamo (41BX8) that is within the project area is eligible for designation as an SAL, and Pape-Dawson recommends avoidance of site 41BX8. The methodology for archaeological monitoring of the parking lot construction where avoidance is not possible is detailed below. The portion of site 41BX303 that is within the project area is not eligible for SAL designation, based on the disturbed nature of the cultural deposits and lack of intact features. Pape-Dawson recommends no further archaeological work at 41BX303.

Four diagnostic artifacts (glass bottle base fragment with a pontil scar from BHT 1 column sample and an ironstone fragment, annular ware fragment, and window pane fragment from BHT 2 south wall profile), project records, and photographs will be curated at the Center for Archaeological Research at the University of Texas at San Antonio. Any non-diagnostic material that was collected for analysis in Pape-Dawson's Archaeological Laboratory will be discarded in consultation with the THC.

Avoidance Plan

After consultation with the SA-OHP, Pape-Dawson developed an avoidance plan to minimize subsurface impacts within a 32.8-ft (10-m) buffer around two proposed routes for the acequia through the project area (Figure 27). These routes were based on acequia maps by I. Waynne Cox that are on file with SA-OHP, and from a map drawn by Francis Giraud in 1850 that is on file with the COSA Engineer's Office (Katz et al. 1978:2). The 32.8-ft (10-m) buffer was superimposed on the engineering plans dated December 31, 2015, and it was determined that proposed vertical impacts within the area included 12 inches (0.3 m) below surface throughout for grading, up to 4 ft (1.2 m) for a light pole, 24 inches (0.6 m) for associated electrical conduit, and 24 inches (0.6 m) for a washout pit and staging area. Because the uppermost acequia segment in the profile is between 7.9 to 19.7 inches (20 to 50 cm) below surface, these proposed vertical impacts would have adversely impacted the segment of the acequia that traverses the project area. Subsequently, the locations for the light pole, electrical conduit, washout pit, and staging area were moved outside the Acequia Buffer Area on construction plans dated February 17, 2016 (Appendix D). Because the grading throughout the buffer could not be avoided, the SA-OHP required that ground disturbing activities within the Acequia Buffer Area be archaeologically monitored, and that the buffer be depicted on the construction plans along with the text, "Do not conduct ground disturbing activities within the Acequia Buffer Area without an archaeological monitor present. Provide 24-hour's notice by calling Principal Investigator Dr. Mary Jo Galindo at 512-563-7999 to arrange for monitoring." A copy of these plans is included in Appendix D of this report. The methodology for archaeological monitoring is detailed in the section below.

Archaeological Monitoring Methods

The goal of the monitoring will be to gather information on the nature and types of cultural resources possibly buried in the buffered portion of the project area. The archaeologist will coordinate all field activities with appropriate personnel and any on-site construction foremen regarding scheduling and safety. The archaeologist will comply with all applicable safety regulations and wear all required safety equipment (e.g., hardhat and steel-toed boots). Monitoring will consist of a qualified archaeologist observing the excavation process, the excavation area, and the resulting fill, while frequently inspecting

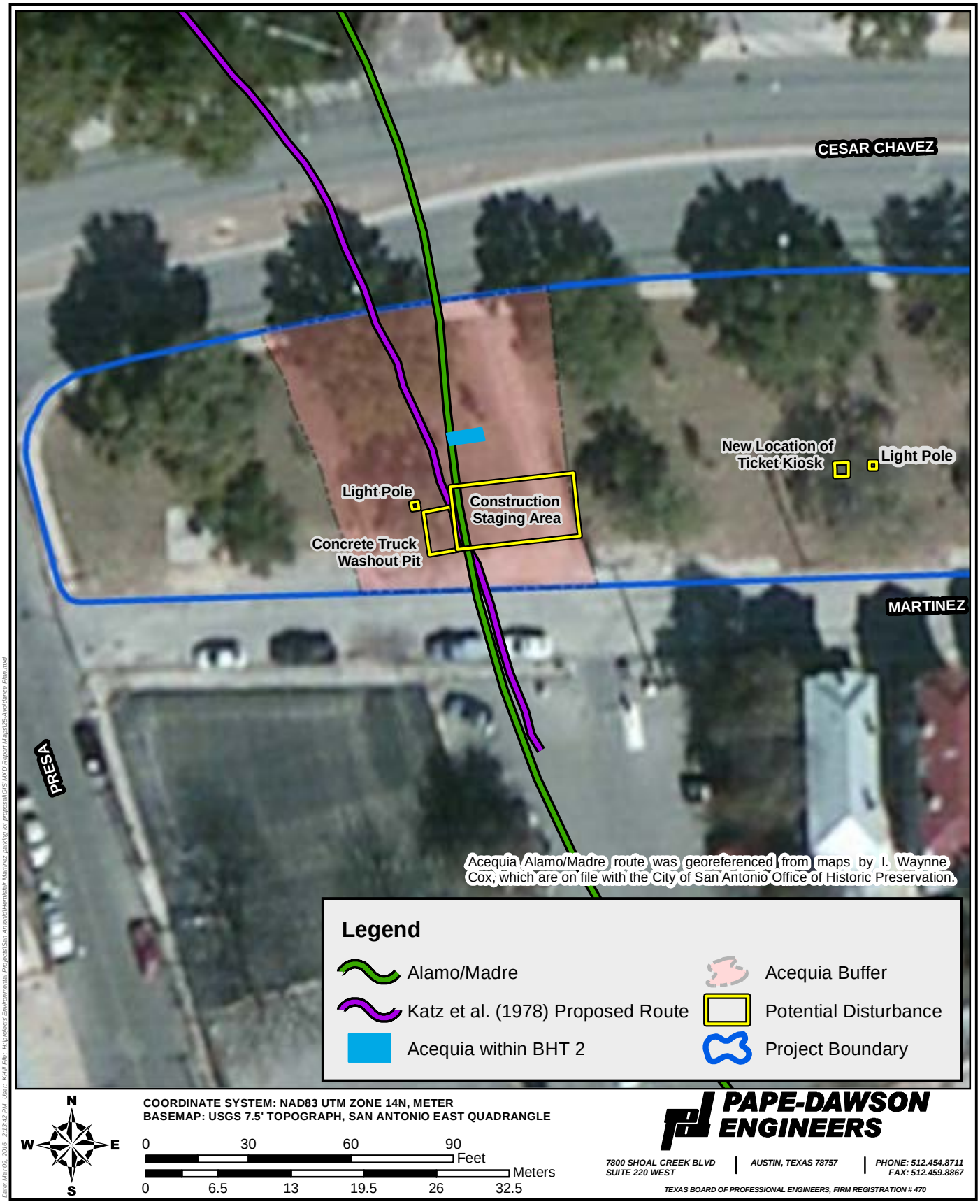

Figure 27 : Avoidance Plan Map

it for cultural remains. When encountered, artifacts will be examined, quantified, and assessed as to age and origin. Diagnostic artifacts or those of particular interest are to be collected for further study at Pape-Dawson's Archaeological Laboratory in Austin. Particular attention will be given to any cultural resources that may date to the nineteenth century. If intact archaeological deposits are revealed during the construction process, the archaeologist will attempt to make a determination as to potential significance. At this point, construction will be temporarily halted so that the archaeologist can better examine the cultural materials or features, take photographs, and thoroughly document the finds. Once the materials are assessed, construction will recommence, and continue as planned. Only if the materials are assessed as extremely significant (mainly intact features or human remains) is construction in the immediate area to be halted. If a localized work stoppage is required, the monitoring archaeologist will immediately contact all involved parties through the appropriate Pape-Dawson project manager (Hemisfair Park Area Redevelopment Corporation, THC, SA-OHP, etc.) to discuss the find and formulate a plan of action.

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Appendix A

Archaeological Sites found within 0.31 mile (0.5 km) of the Project Area

Table A-1. Archaeological Sites found within 0.31 mile (0.5 km) of the Project Area

Archaeological Site	Site Type	Landform	Depth of Deposits (cmbs)	Distance and Direction From Project Area	Determination of Eligibility per THC Atlas
41BX8	Acequia Madre	Terrace	Varies	Historic maps depict it traversing project area	Eligible
41BX236	Mid/Late Nineteenth-Century residence	Terrace	Unknown	0.13 km (0.08 mi) SW	Undetermined
41BX303	Mid/Late Nineteenth-Century structures and foundations	Terrace	Unknown	Within Project Boundary	Undetermined
41BX304	Mid/Late Nineteenth Century, Cosgrove House	Terrace	Unknown	0.23 km (0.14 mi) N	Undetermined
41BX326	Late Nineteenth/Early Twentieth Century; Mayer House	Terrace	Unknown	0.14 km (0.09 mi) WSW	Undetermined
41BX329	Nineteenth-Century structures, Dolores Aldrete House	Terrace	Unknown	0.23 km (0.14.47 mi) N	Undetermined
41BX342	Late Nineteenth Century (1868-1900), Guenther Upper Mill	Terrace	Unknown	0.47 km (0.29 mi) SW	Undetermined
41BX369	Mid/Late Nineteenth Century, Gresser-Hayes House and Acequia	Terrace	Unknown	0.32 km (0.20 mi) N	Undetermined
41BX572	Mid Nineteenth Century, Wietzel House	Terrace	Unknown	0.48 km (0.29 mi) NE	Undetermined
41BX574	Late Nineteenth/Early Twentieth Century, O.K. Bar	Terrace	Unknown	0.47 km (0.29 mi) NE	Undetermined
41BX575	Early Nineteenth Century, Schultz Store (1891)	Terrace	Unknown	0.20 km (0.12 mi) N	Undetermined
41BX576	Late Nineteenth Century, Sweeny House	Terrace	Unknown	0.29 km (0.18 mi) NNE	Undetermined
41BX577	Mid Nineteenth Century, Schultz House	Terrace	Unknown	0.25 km (0.16 mi) NE	Undetermined
41BX578	Late Nineteenth Century (1893), Halff House	Terrace	Unknown	0.24 km (0.15 mi) NE	Undetermined
41BX579	Late Nineteenth Century (1885), Kusch House	Terrace	Unknown	0.27 km (0.17 mi) ENE	Undetermined

Archaeological Site	Site Type	Landform	Depth of Deposits (cmbs)	Distance and Direction From Project Area	Determination of Eligibility per THC Atlas
41BX580	Late Nineteenth Century (1893), Maximilian Schultz House	Terrace	Unknown	0.35 km (0.22 mi) E	Undetermined
41BX581	Late Nineteenth Century (1859-1867), Richter House	Terrace	Unknown	0.37 km (0.23 mi) E	Undetermined
41BX582	Mid Nineteenth Century, Tynan House	Terrace	Unknown	0.38 km (0.24 mi) E	Undetermined
41BX583	Late Nineteenth Century (1859-1868), Dugosh House	Terrace	Unknown	0.35 km (0.22 mi) E	Undetermined
41BX584	Mid Nineteenth/Early Twentieth Century, Beethoven Hall	Terrace	Unknown	0.24 km (0.15 mi) NNE	Undetermined
41BX585	Late Nineteenth Century (ca. 1892), Acosta House	Terrace	Unknown	0.23 km (0.15 mi) NNE	Undetermined
41BX586	Mid/Late Nineteenth Century (ca. 1877), Kampmann/Halff House	Terrace	Unknown	0.13 km (0.09 mi) NNE	Undetermined
41BX587	Late Nineteenth Century (1869), Eagar House	Terrace	Unknown	0.16 km (0.10 mi) NE	Undetermined
41BX588	Late Nineteenth/Early Twentieth Century Hermann Carriage House	Terrace	Unknown	0.20 km (0.12 mi) NE	Undetermined
41BX589	Mid Nineteenth Century (1857), Smith House	Terrace	Unknown	0.15 km (0.09 mi) NE	Undetermined
41BX590	Mid Nineteenth Century (ca. 1855), Solis House	Terrace	Unknown	0.25 km (0.15 mi) ENE	Undetermined
41BX591	Mid/Late Nineteenth Century (ca. 1883), Pereida House	Terrace	Unknown	0.07 km (0.04 mi) NE	Undetermined
41BX592	Late Nineteenth Century (ca. 1877), Koehler House	Terrace	Unknown	0.18 km (0.11 mi) E	Undetermined
41BX593	Late Nineteenth Century (ca. 1877), Espinosa House	Terrace	Unknown	0.15 km (0.09 mi) E	Undetermined
41BX622	Mid Nineteenth to Mid Twentieth Century (ca. 1858 to ca. 1950), San Antonio Arsenal	Terrace	Unknown	0.40 km (0.25 mi) WSW	Eligible
41BX677	Unknown Prehistoric, Historic (1830-1850), La Villita Earthworks	Terrace	25 cmbs (9.8 in)	0.23 km (0.14 mi) N	State Antiquities Landmark; Eligible
41BX917	Unknown Prehistoric, Historic (ca. 1876) Little Church at La Villita	Terrace	60.9-91.4 cmbs (2-3 ft)	0.35 km (0.22 mi) N	Recorded Texas Historic Landmark; Eligible
41BX982	Mid Nineteenth/Mid Twentieth Century (1859-1864), Heubaum Home	Terrace	30.5 cmbs (24 in)	0.16 km (0.10 mi) E	Undetermined

Archaeological Site	Site Type	Landform	Depth of Deposits (cmbs)	Distance and Direction From Project Area	Determination of Eligibility per THC Atlas
41BX1298	Mid/Late Nineteenth Century residence foundation	Terrace	12.7-91.4 cmbs (5 in-3 ft)	0.30 km (0.19 mi) NE	Ineligible
41BX1299	Mid/Late Nineteenth Century residence foundation	Terrace	91.4 cmbs (3 ft)	0.31 km (0.19 mi) NE	Ineligible
41BX1300	Mid/Late Nineteenth Century residence foundation	Terrace	134.6 cmbs (4.4 ft)	0.35 km (0.22 mi) ENE	Ineligible
41BX1977	Unknown Prehistoric, Late Eighteenth to Mid Nineteenth Century glass bottle	Terrace	330 cmbs (10.8 ft)	0.29 km (0.18 mi) WNW	Undetermined
41BX2068	Mid/Late Nineteenth Century, Trash Pit	Terrace	80 cmbs (2.6 ft)	0.09 km (0.06 mi) NE	Undetermined

Appendix B

Historic Resources found within 0.31 mile (0.5 km) of the Project Area

Table B-1. Historic Resources found within 0.31 mile (0.5 km) of the Project Area

Resource Name	Designation	Within Project Area (Yes/No)
Acequia Madre de Valero (41BX8)	COSA Landmark, NRHP Historic District, OTHM, RTHL	Yes
A & E Food Market, 955 Alamo St S	COSA Landmark, King William Local Historic District	No
Alaskan Palace, Archeological Site, 102 Navarro	COSA Landmark, La Villita Local Historic District	No
Altgelt / Schleuing / Isbell House, 226 King William	COSA Landmark, King William Local Historic District, RTHL	No
Altgelt House #1 236 King William	COSA Landmark, King William Local Historic District	No
Ankerson House, 226 Madison St	COSA Landmark, King William Local Historic District	No
Archaeological Site - Dominguez-Micheli Houses, 423 Alamo St S	COSA Landmark	No
Archaeological Site - Gilbeau Slave Quarters, 506 Main Ave S	COSA Landmark	No
Archaeological Site, 540 Presa St S	COSA Landmark, Lavaca Local Historic District	No
Arneson River Theater, 503 Villita St	COSA Landmark, La Villita Local Historic District	No
Arno House, 128 Cedar St	COSA Landmark, King William Local Historic District	No
Arnold House, 212 Camargo	COSA Landmark, Lavaca Local Historic District	No
Arnold, Herman - House, 105 San Arturo	COSA Landmark, Lavaca Local Historic District	No
Arsenal Building / Stables, 646 Main Ave S	COSA Landmark	No
Ball, John - House, 120 King William	COSA Landmark, King William Local Historic District	No
Ball, Joseph - House, 116 King William	COSA Landmark, King William Local Historic District	No
Basse House, 130 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Batot, John - House, 108 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Bergstrom Cottage, 210 King William	COSA Landmark, King William Local Historic District	No
Bergstrom House, 208 King William	COSA Landmark, King William Local Historic District	No
Bippert / Jud House, 210 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Blersch / Watson House, 213 Washington St	COSA Landmark, King William Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Bloudin House, 112 King William	COSA Landmark, King William Local Historic District	No
Bombach, Otto - House and Store, 231 Alamo St S	COSA Landmark, La Villita Local Historic District	No
Bonham Elementary, 925 St Marys S	NRHP, COSA Landmark, King William Local Historic District	No
Book Building, 140 East Houston	OTHM, RTHL	No
Brackenridge House, 230 Madison St	COSA Landmark, King William Local Historic District	No
Briam, August - House, 302 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Brian, Luis - House, 122 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Brown House, 206 Madison St	COSA Landmark, King William Local Historic District	No
Cabrera House, 221 King William	COSA Landmark, King William Local Historic District	No
Caile / Alderete House, 526 Nueva St E	COSA Landmark, La Villita Local Historic District, OTHM, RTHL	No
Cain House #1 234 Madison St	COSA Landmark, King William Local Historic District	No
Cain House #2 236 Madison St	COSA Landmark, King William Local Historic District	No
Cain House #3 242 Madison St	COSA Landmark, King William Local Historic District	No
Caliche Block House / Beyer House, 740 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Christian House, 935 Alamo St S	COSA Landmark, King William Local Historic District	No
Commercial Building, 411 Barrera St	COSA Landmark	No
Cook / Keating House, 222 King William	COSA Landmark, King William Local Historic District	No
Cos House, 418 Villita St	COSA Landmark, La Villita Local Historic District, OTHM, RTHL	No
Cruz House, 442 Dwyer	COSA Landmark, Arsenal Local Historic District	No
Dashiell House, 511 Villita St	COSA Landmark, La Villita Local Historic District	No
Deco Commercial Building, 320 Beauregard St	COSA Landmark, King William Local Historic District	No
Deininger / Alvarado House, 120 Camargo	COSA Landmark, Lavaca Local Historic District	No
Demazieres House and Store, 322 Martinez St	COSA Landmark, Lavaca Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Demerritt, James - House, 123 Callaghan Ave	COSA Landmark, Lavaca Local Historic District	No
Deussen House, 140 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Dielman, John - House, 136 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Dietrich-Carabin House, 409 Presa St S	COSA Landmark, La Villita Local Historic District	No
Dixon, F L - House, 519 Presa St S	COSA Landmark, Lavaca Local Historic District	No
Du Menil. August - House, 309 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Eckenroth / Gaul House, 915 Alamo St S	COSA Landmark, King William Local Historic District	No
Eagar House, 434 S. Alamo St.	OTHM, RTHL	No
El Mirador, 722 St Marys St S	COSA Landmark	No
El Quartel (El Cuartel), 401 S. Alamo St.	OTHM	No
Ernst Homestead, 411 Presa St S	COSA Landmark, La Villita Local Historic District, OTHM, RTHL	No
Fairmount Hotel, 401 Alamo St S	NRHP, COSA Landmark, La Villita Local Historic District	No
Federal Reserve Building, 127 Navarro	COSA Landmark	No
Fire Station #07 604 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Flannery House #2 138 King William	COSA Landmark, King William Local Historic District	No
Fourth Ward School, 141 Lavaca St	NRHP, COSA Landmark, Lavaca Local Historic District	No
Frank Building, 145 Navarro	COSA Landmark	No
Fredericksen House, 144 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Frey, Carl - Houses, 339 Presa St S	COSA Landmark, La Villita Local Historic District	No
Froebel House, 228 Washington St	COSA Landmark, King William Local Historic District	No
Fromme House, 928 Alamo St S	COSA Landmark, King William Local Historic District	No
Fry House, 310 Madison St	COSA Landmark, King William Local Historic District	No
Garden Food Store, 903 St Marys S	COSA Landmark	No
Garden Hotel / O'Brien Building, 118 Navarro	COSA Landmark, La Villita Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
German-English School, 421 Alamo St S	COSA Landmark, La Villita Local Historic District, RTHL	No
Gieseche House, 218 Washington St	COSA Landmark, King William Local Historic District	No
Giles House, 308 King William	COSA Landmark, King William Local Historic District	No
Giles-Diaz House, 306 King William	COSA Landmark, King William Local Historic District	No
Glaeser House #1 233 Madison St	COSA Landmark, King William Local Historic District	No
Glaeser House #2 / Altgelt Barn, 235 Madison St	COSA Landmark, King William Local Historic District	No
Goehring, R - House, 635 Presa St S	COSA Landmark	No
Greabner-Giles House, 209 Madison St	COSA Landmark, King William Local Historic District	No
Gresser House, 227 Presa St S	COSA Landmark, La Villita Local Historic District	No
Greyburg Oil Co, 1001 Alamo St S	COSA Landmark, King William Local Historic District	No
Groos, Gustav - House, 231 Washington St	COSA Landmark, King William Local Historic District	No
Guenther, Fritz - House, 250 Washington St	COSA Landmark, King William Local Historic District	No
Haenel, Gustav - House #1 1008 Alamo St S	COSA Landmark, King William Local Historic District	No
Halff House, HemisFair Plaza, S. Alamo St.	OTHM, RTHL	No
Halff, A H - House #2 105 Madison St	COSA Landmark, King William Local Historic District	No
Hanschke House, 225 King William	COSA Landmark, King William Local Historic District	No
Harn House, 930 Alamo St S	COSA Landmark, King William Local Historic District	No
Hehn, Peter - House, 118 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Henshaw House, 515 Villita St	COSA Landmark, La Villita Local Historic District	No
Henyan House, 202 Madison St	COSA Landmark, King William Local Historic District	No
Hermann Son's Building, 515 St Marys S	COSA Landmark	No
Hermann Son's Lodge, 525 St Marys S	COSA Landmark	No
Hessler / Canadian House, 207 Presa St S	COSA Landmark, La Villita Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Hilton Palacio de Rio Hotel, 223 Alamo St S	COSA Landmark	No
House, 1010 St Marys S	COSA Landmark	No
House, 1014 St Marys S	COSA Landmark	No
House, 215 Beauregard St	COSA Landmark, King William Local Historic District	No
House, 215 Refugio	COSA Landmark, Lavaca Local Historic District	No
House, 232 Washington St	COSA Landmark, King William Local Historic District	No
House, 307 Beauregard St	COSA Landmark, King William Local Historic District	No
House, 310 Beauregard St	COSA Landmark, King William Local Historic District	No
House, 315 Dwyer Ave	COSA Landmark	No
House, 316 Beauregard St	COSA Landmark, King William Local Historic District	No
House, 628 Presa St S	COSA Landmark, Lavaca Local Historic District	No
Hoyer House, 432 Dwyer Ave	COSA Landmark	No
Hummel House, 104 Beauregard St	COSA Landmark, King William Local Historic District	No
Hummel, Charles F A - House, 309 King William	COSA Landmark, King William Local Historic District	No
Hung KuoKuo Min Tong, 802 Matagorda St	COSA Landmark, Lavaca Local Historic District	No
Jackson House #1 107 Madison St	COSA Landmark, King William Local Historic District	No
Jary House, 103 Madison St	COSA Landmark, King William Local Historic District	No
Jerra House, 1019 St Marys S	COSA Landmark, King William Local Historic District	No
Joske, Alex - House, 241 King William	COSA Landmark, King William Local Historic District	No
Joykist Candy Co., 345 Alamo St S	COSA Landmark, La Villita Local Historic District	No
Jud / Steiger House, 931 Alamo St S	COSA Landmark, King William Local Historic District	No
Jud, Peter - House, 206 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
King William Historic District	NRHP Historic District, Local Historic District	No
Kinsley House, 1007 Alamo St S	COSA Landmark, King William Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Krause House, 116 Camargo	COSA Landmark, Lavaca Local Historic District	No
Kray House, 122 King William	COSA Landmark, King William Local Historic District	No
Kress, Anna - House, 220 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Kress, Herman - House, 224 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Kuhn House, 521 Nueva St E	COSA Landmark, La Villita Local Historic District	No
Kuppers, Peter - House, 318 Martinez St	COSA Landmark, Lavaca Local Historic District	No
Lavaca Historic District	NRHP Historic District, Local Historic District	Yes
La Villita Historic District	NRHP Historic District, Local Historic District, RTHL	No
Lee's Gulf Service Station, 701 St Marys S	COSA Landmark, King William Local Historic District	No
Limestone Building, 540 St Marys S	COSA Landmark	No
Little Church of La Villita, 508 La Villita	OTHM, RTHL	No
Looff, Alvina - House, 232 Camargo	COSA Landmark, Lavaca Local Historic District	No
Magerstadt House, 219 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Majestic Theatre, 212 E. Houston St.	OTHM, RTHL	No
Main and Military Plazas Historic District	NRHP Historic District, Local Historic District	No
Mannewitz / Yznaga House, 224 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Mannewitz, Max - House, 218 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Marbach House, 315 Presa St S	COSA Landmark, La Villita Local Historic District	No
Marshall, J F - House, 127 Callaghan Ave	COSA Landmark, Lavaca Local Historic District	No
McAllister Building, 323 Alamo St S	COSA Landmark, La Villita Local Historic District	No
McDaniel House, 117 Madison St	COSA Landmark, King William Local Historic District	No
McDowell, Rev W - House, 921 Matagorda St	COSA Landmark, Lavaca Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
McKnight & Gabriel, 733 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Medero House, 317 Presa St S	COSA Landmark, La Villita Local Historic District	No
Medex Medical Supplies, 727 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Montgomery Ward Building, 419 St Marys S	COSA Landmark	No
Mueller / Applewhite House, 225 Madison St	COSA Landmark, King William Local Historic District	No
Mueller House, 229 Madison St	COSA Landmark, King William Local Historic District	No
Navarro Street Bridge #1 155 Navarro St	COSA Landmark	No
Neil, John - House, 225 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Nelson, Malvina - House, 202 King William	COSA Landmark, King William Local Historic District	No
Nueva Street Bridge, 221 Nueva St E	COSA Landmark	No
Oge / Newton A Mitchell House, 209 Washington St	COSA Landmark, King William Local Historic District, OTHM, RTHL	No
Oppenheimer House, 316 King William	COSA Landmark, King William Local Historic District	No
Oppenheimer, Jess House, 309 Madison St	COSA Landmark, King William Local Historic District	No
Pajalache Acequia, Presa at Riverwalk	OTHM	
Pancoast, Aaron Jr - House, 102 Turner	COSA Landmark	No
Pancoast, Aaron Sr - House, 203 King William	COSA Landmark, King William Local Historic District	No
Pedro Huizar Park, 101 King William	COSA Landmark	No
Peltzer House, 221 Madison St	COSA Landmark, King William Local Historic District	No
Pereida House, 502 S. Alamo St.	RTHL	No
Pollock, A F - House, 609 Matagorda St	COSA Landmark, Lavaca Local Historic District	No
Presa Street Bridge, 110 Presa St N	COSA Landmark	No
Pursch House, 1009 Alamo St S	COSA Landmark, King William Local Historic District	No
Reich, Julias - House, 703 Presa St S	COSA Landmark	No
Reidner, Albert - House, 125 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Richter, William and Mary - House, 419 Presa St S	COSA Landmark, La Villita Local Historic District, OTHM, RTHL	No

Resource Name	Designation	Within Project Area (Yes/No)
Rossy, Charles W - House, 316 Martinez St	COSA Landmark, Lavaca Local Historic District	No
Ruiz Hotel, 726 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
San Antonio Public Library #2 210 Market St W	COSA Landmark	No
Sanger House, 242 King William	COSA Landmark, King William Local Historic District	No
Santelben House, 634 Presa St S	COSA Landmark, Lavaca Local Historic District	No
Sartor, A L - House, 711 Presa St S	COSA Landmark	No
Sartor, Alex - House, 217 King William	COSA Landmark, King William Local Historic District, OTHM, RTHL	No
Scheer House, 130 King William	COSA Landmark, King William Local Historic District	No
Schultz, John - House, 232 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Schulze-Schilo House, 221 Adams St.	OTHM, RTHL	No
Schuwirth House, 203 Madison St	COSA Landmark, King William Local Historic District	No
Seale Dry Goods Co, 709 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Shed, 629 Presa St S	COSA Landmark	No
Siebert House, 305 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Siedeman Building, 723 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Simms Building, 713 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Smith, John W., Villita St.	OTHM	No
South Alamo Street-South Mary's Street Historic District	NRHP Historic District	No
St John's Lutheran Church, 502 Nueva St E	COSA Landmark, La Villita Local Historic District, OTHM, RTHL	No
St. Philip's College (original site), 502 Villita St.	OTHM, RTHL	No
Staffel, Elmendorf, Tyler, and Diaz Houses, 206 Arciniega	COSA Landmark	No
Stevens / James House, 303 King William	COSA Landmark, King William Local Historic District	No
Stone House, 126 Lavaca St	COSA Landmark, Lavaca Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Stone House, 516 Presa St S	COSA Landmark, Lavaca Local Historic District	No
Storms House, 216 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Teargarden, W B - House, 408 Dwyer Ave	COSA Landmark	No
Tower of the Americas, 701 Bowie St S	COSA Landmark, Hemisfair Plaza Local Historic District	No
Tynan, Elizabeth - House, 405 Presa St S	COSA Landmark, La Villita Local Historic District	No
Tynan, Walter C - House, 401 Presa St S	COSA Landmark, La Villita Local Historic District	No
Umscheid / Hehn House, 122 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Umscheid, Joanna - House, 301 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
U.S. Civil Service Commission, 643 Durango Blvd	COSA Landmark, Hemisfair Plaza Local Historic District	No
U.S. Pavilion / Confluence Theater, 655 Durango Blvd E	COSA Landmark, Hemisfair Plaza Local Historic District	No
U.S. San Antonio Arsenal	NRHP Historic District, Local Historic District	No
Villita Assembly Hall, 401 Villita St	COSA Landmark	No
Vinck House, 202 Lavaca St	COSA Landmark, Lavaca Local Historic District	No
Vollrath Building, 712 Alamo St S	COSA Landmark, Lavaca Local Historic District	No
Wagenfuhr, Henry - House, 217 Madison St	COSA Landmark, King William Local Historic District	No
Wagenfuhr, Herman - House, 213 Madison St	COSA Landmark, King William Local Historic District	No
Walker, George House, 113 San Arturo	COSA Landmark, Lavaca Local Historic District	No
Weaving Building / Bolivar Hall, 214 Presa St S	COSA Landmark, La Villita Local Historic District	No
Wehmeyer, F W - House, 103 Callaghan Ave	COSA Landmark, Lavaca Local Historic District	No
Wehrhahn House, 918 Alamo St S	COSA Landmark, King William Local Historic District	No
Weingartz, Fritz - House, 215 Barrera St	COSA Landmark, Lavaca Local Historic District	No
Weitzel, Joseph L - House, 111 Aubrey	COSA Landmark	No
Wilson, W C - House, 111 Callaghan Ave	COSA Landmark, Lavaca Local Historic District	No
Winerich House, 302 King William	COSA Landmark, King William Local Historic District	No

Resource Name	Designation	Within Project Area (Yes/No)
Witte / Garza House, 222 Madison St	COSA Landmark, King William Local Historic District	No
Wolff, Abraham - House, 120 Cedar St	COSA Landmark, King William Local Historic District	No
Wulff, Anton - House, 107 King William	COSA Landmark, King William Local Historic District, OTHM, RTHL	No

Appendix C

Backhoe Trench Table

Table C-1. Backhoe Trench Table

Trench	Depth (cmbs)	Munsell	Soil Color	Soil Texture Description	Structure	Inclusions	Lower Boundary	Comments
1	0-10	10YR4/3	Brown	loam	loose	rootlets	abrupt	grass layer
	10-15	10YR5/6	Yellowish Brown	sand	loose	glass, roots	abrupt	none
	15-65	10YR4/3	Brown	loamy clay	loose	10YR5/6 mottles, yellow and red bricks, few limestone gravel	clear	none
	65-100	10YR2/2	Very Dark Brown	clay	firm	none	abrupt	intact soil
	100-130	10YR8/1	White	limestone	firm	none	unobserved	limestone bedrock
2	0-15	10YR4/3	Brown	loam	loose	rootlets	abrupt	profile examined at east end of acequia
	15-20	10YR5/6	Yellowish Brown	sand	loose	rootlets	abrupt	none
	20-55	10YR4/2	Dark Grayish Brown	clay	firm	50% 10YR7/4 mottles, rootlets, loose red brick with black on exterior, 10% unsorted limestone cobbles 0-5 cm diameter to boulders	diffuse	none
	55-65	10YR7/4	Very Pale Brown	clay	firm	10% 10YR4/2 mottles, rootlets	diffuse	none
	65-150	10YR4/2	Dark Grayish Brown	clay	friable	10-15 cm diameter limestone cobbles at interface with bedrock	abrupt	appears to be intact soil or clean fill
	150-180	5YR8/1	White	bedrock	firm	none	unobserved	terminated below acequia cut
3	0-10	10YR4/4	Dark Yellowish Brown	loam	loose	rootlets	abrupt	grass layer
	10-25	10YR5/8	Yellowish Brown	sand	loose	rootlets	abrupt	none
	25-50	10YR6/4	Light Yellowish Brown	clay	loose	50% 10YR8/4 mottles, rootlets	gradual	none
	50-65	10YR6/3	Pale Brown	clay	firm	50-70% tile fragments, limestone cobbles 0-5 cm diameter, rootlets	distinct	none
	65-110	10YR8/1	White	limestone	firm	none	unobserved	limestone bedrock
4	0-10	10YR4/4	Dark Yellowish Brown	loam	loose	rootlets	abrupt	grass layer
	10-15	10YR5/8	Yellowish Brown	sand	loose	rootlets	abrupt	none
	15-50	10YR6/4	Light Yellowish Brown	clay	loose	50% 10YR8/4 mottles, rootlets	gradual	none
	50-70	10YR6/3	Pale Brown	clay	firm	50-70% limestone cobbles 0-5 to 15+ cm diameter	diffuse	iron pipe 50 cmbs and clay sewer pipe 60-70 cmbs in west wall profile
	70-80	10YR6/3	Pale Brown	clay	firm	50% 10YR8/3 mottles, limestone cobbles and boulders	abrupt	none
	80-110	10YR8/1	White	limestone	firm	none	unobserved	limestone bedrock

Appendix D

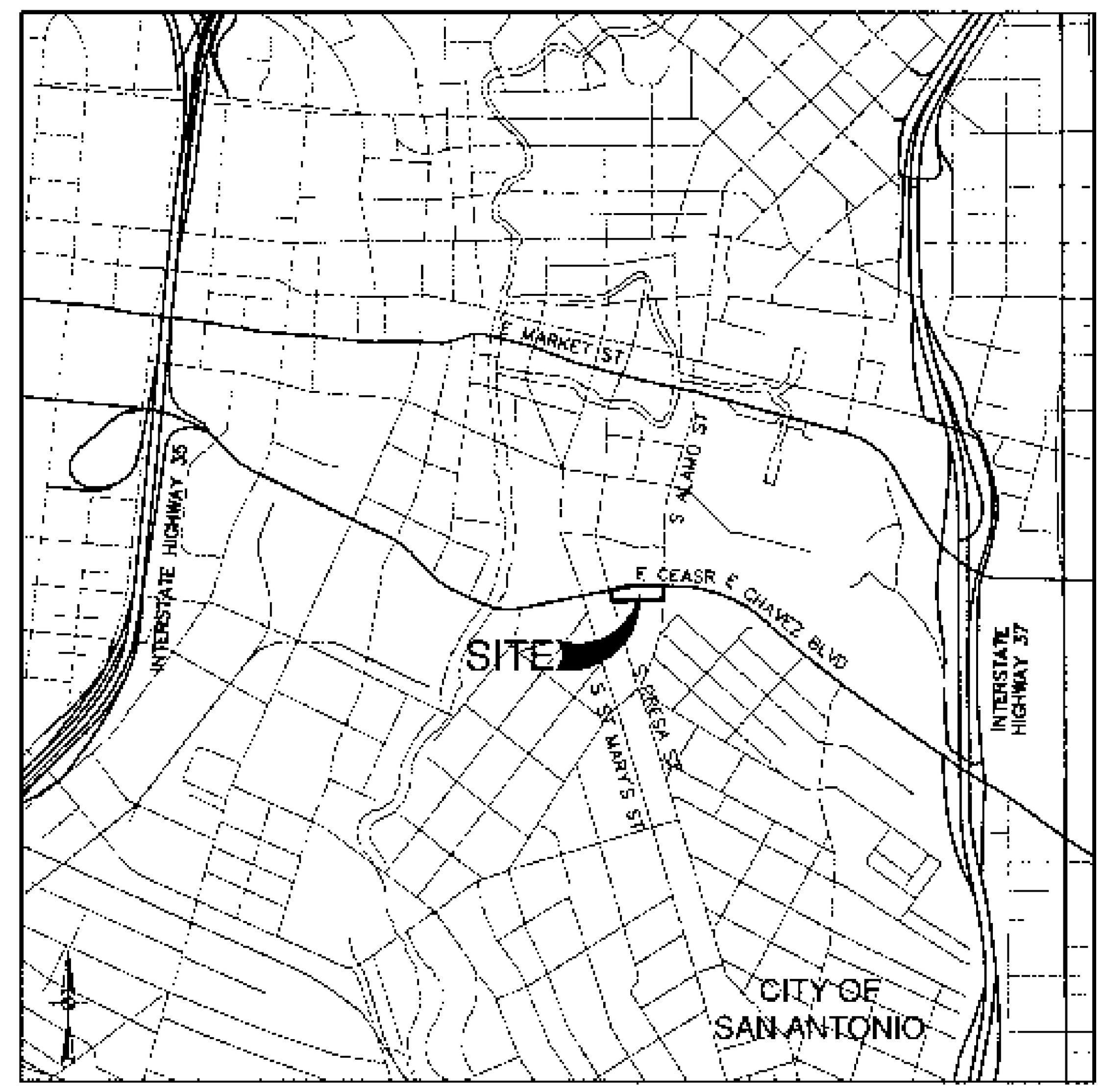
Construction Plans

HEMISFAIR SURFACE PARKING LOT

SAN ANTONIO, TEXAS

CIVIL CONSTRUCTION PLANS

NO.	REVISION	DATE
1	ACEQUIA BUFFER	02/17/16



LOCATION MAP
NOT-TO-SCALE

SHEET INDEX

HEMISFAIR PARK AREA REDEVELOPMENT CORPORATION
435 S. ALAMO ST
SAN ANTONIO, TEXAS 78205

DECEMBER 2015

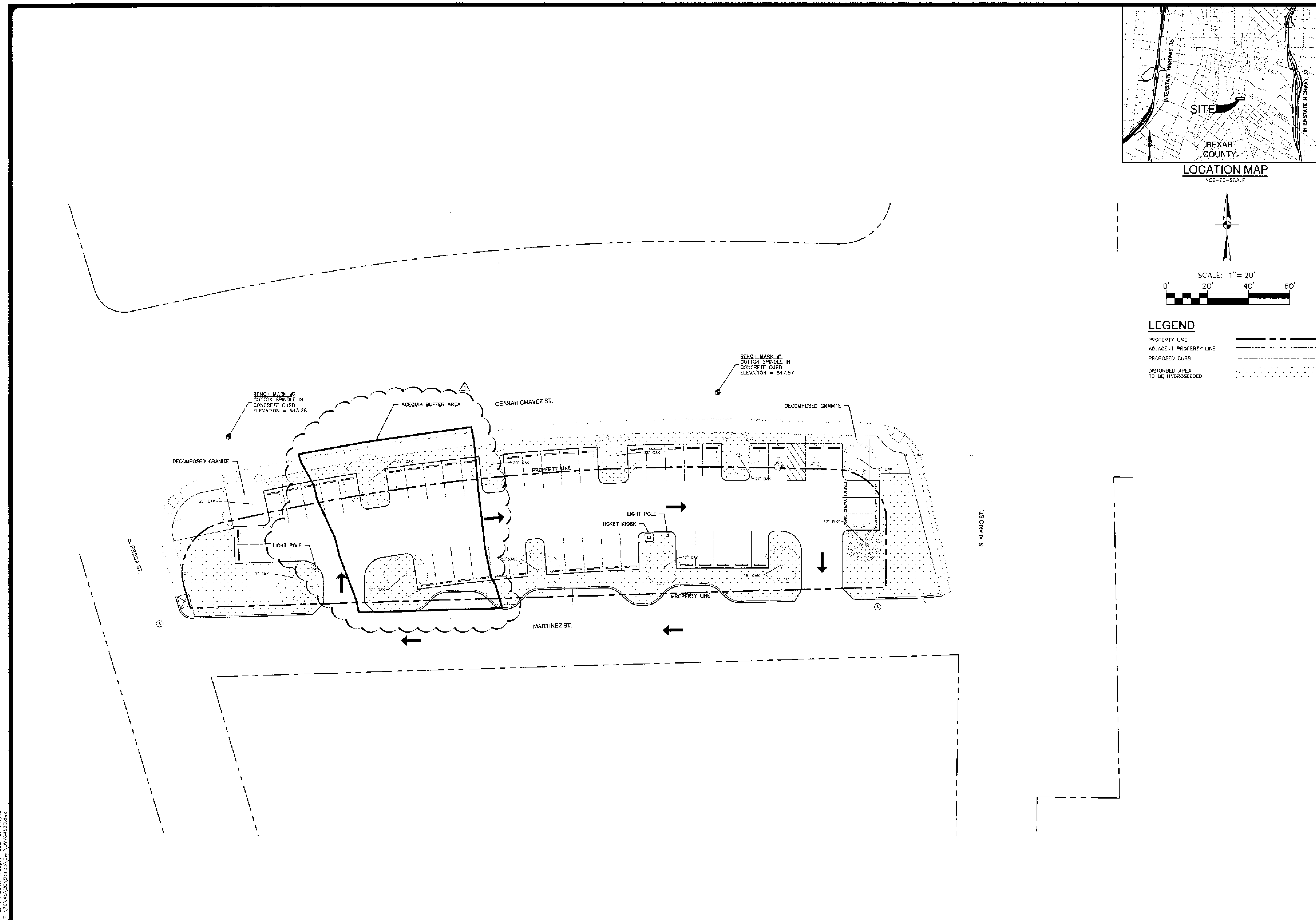
2-18-16

STATE OF TEXAS
THOMAS MATTHEW CARTER
79272
LICENSED
PROFESSIONAL ENGINEER

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10193974

PD JOB NO. 7645-20 HEMISFAIR SURFACE PARKING LOT

SHEET C0.00



NO.	REVISION	DATE
0	BID SET	12-31-15
1	ACEQUIA BUFFER	02-17-16

STATE OF TEXAS
THOMAS MATTHEW CARTER
79272
LICENSED
PROFESSIONAL ENGINEER
2-15-16

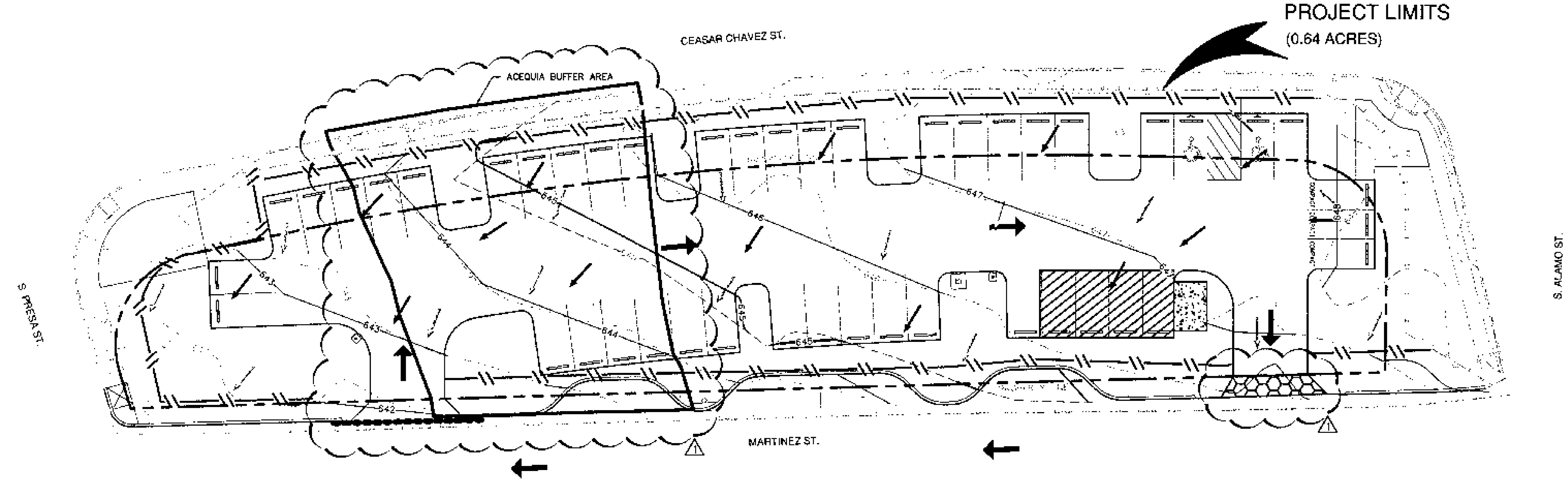
PAPE-DAWSON ENGINEERS

2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

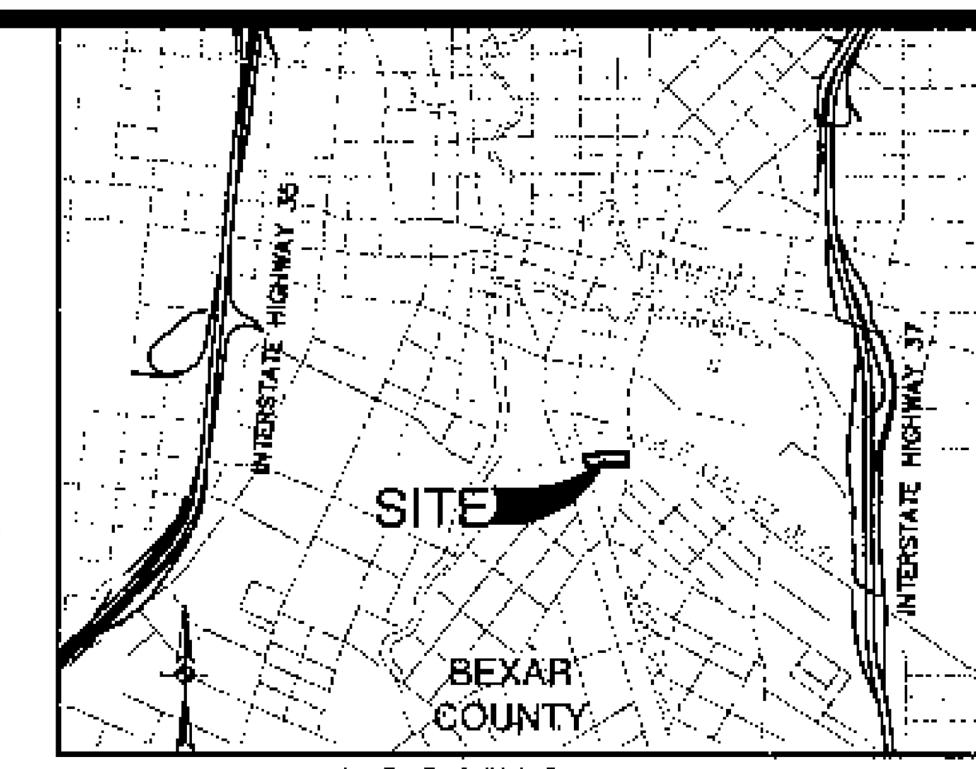
HEMISFAIR SURFACE PARKING LOT
SAN ANTONIO, TEXAS

OVERALL SITE PLAN

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CO DRAWN JR
SHEET C1.00



SCALE: 1"= 20'
0' 20' 40' 60'



LOCATION MAP
NOT-TO-SCALE

LEGEND

- PROPERTY LINE
- EXISTING CONTOURS
- PROPOSED CONTOURS
- FLOW ARROW (EXISTING GRADES)
- FLOW ARROW (PROPOSED GRADES)
- STABILIZED CONSTRUCTION ENTRANCE/EXIT (TO BE FIELD LOCATED)
- CONCRETE TRUCK WASHOUT PIT (TO BE FIELD LOCATED)
- CONSTRUCTION STAGING AREA (TO BE FIELD LOCATED)
- SILT FENCE
- PROJECT LIMITS
- GRAVEL FILTER BAGS

GENERAL NOTES

1. DO NOT DISTURB VEGETATED AREAS (TREES, GRASS, WEEDS, BRUSH, ETC.) ANY MORE THAN NECESSARY FOR CONSTRUCTION.

2. CONSTRUCTION ENTRANCE/EXIT LOCATION, CONCRETE WASH-OUT PIT, AND CONSTRUCTION EQUIPMENT AND MATERIAL STORAGE YARD TO BE DETERMINED IN THE FIELD.

3. STORM WATER POLLUTION PREVENTION CONTROLS MAY NEED TO BE MODIFIED IN THE FIELD TO ACCOMPLISH THE DESIRED EFFECT. ALL MODIFICATIONS ARE TO BE NOTED ON THIS EXHIBIT AND SIGNED AND DATED BY THE RESPONSIBLE PARTY.

4. RESTRICT ENTRY/EXIT TO THE PROJECT SITE TO DESIGNATED LOCATIONS BY USE OF ADEQUATE FENCING, IF NECESSARY.

5. ALL STORM WATER POLLUTION PREVENTION CONTROLS ARE TO BE MAINTAINED AND IN WORKING CONDITIONS AT ALL TIMES.

6. FOR A COMPLETE LISTING OF TEMPORARY STORM WATER POLLUTION PREVENTION CONTROLS REFER TO THE TPDES STORM WATER POLLUTION PREVENTION PLAN.

7. STORM WATER POLLUTION PREVENTION STRUCTURES SHOULD BE CONSTRUCTED WITHIN THE SITE BOUNDARIES. SOME OF THESE FEATURES MAY BE SHOWN OUTSIDE THE SITE BOUNDARIES ON THIS PLAN FOR VISUAL CLARITY.

8. AS SOON AS PRACTICAL ALL DISTURBED SOIL THAT WILL NOT BE COVERED BY IMPERVIOUS COVER SUCH AS PARKWAY AREAS, EASEMENT AREAS, EMBANKMENT SLOPES, ETC. WILL BE STABILIZED PER APPLICABLE PROJECT SPECIFICATIONS.

9. BEST MANAGEMENT PRACTICES MAY BE INSTALLED IN STAGES TO COINCIDE WITH THE DISTURBANCE OF UPGRADIENT AREAS.

10. BEST MANAGEMENT PRACTICES MAY BE REMOVED IN STAGES ONCE THE WATERSHED FOR THAT PORTION CONTROLLED BY THE BEST MANAGEMENT PRACTICES HAS BEEN STABILIZED IN ACCORDANCE WITH TPDES REQUIREMENTS.

11. UPON COMPLETION OF THE PROJECT, INCLUDING SITE STABILIZATION, AND BEFORE FINAL PAYMENT IS ISSUED, CONTRACTOR SHALL REMOVE ALL SEDIMENT AND EROSION CONTROL MEASURES, PAYING SPECIAL ATTENTION TO ROCK BERMS IN DRAINAGE FEATURES.

12. WHERE VEGETATED FILTER STRIPS ARE INDICATED, CONTRACTOR SHALL VERIFY THAT SUFFICIENT VEGETATION EXISTS, OTHERWISE CONTRACTOR SHALL PLACE SILT FENCING IN LIEU OF VEGETATED FILTER STRIP.

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

SWP3 MODIFICATIONS

DATE	SIGNATURE	DESCRIPTION

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 2

NO.	REVISION	DATE
0	BID SET	12-31-15
1	ACEQUIA BUFFER	02-17-16

STATE OF TEXAS
THOMAS MATTHEW CARTER
79272
LICENSED
PROFESSIONAL ENGINEER
2-15-16

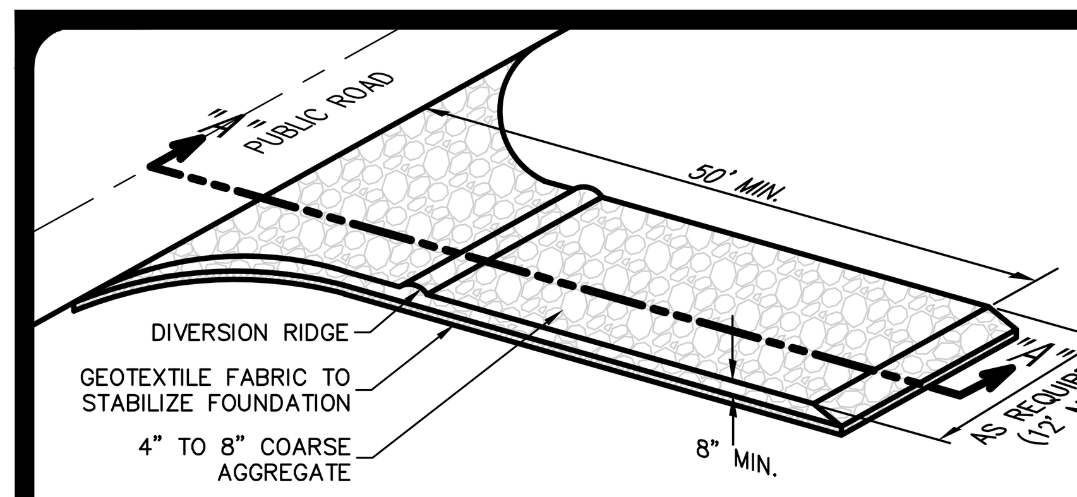
PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

HEMISFAIR SURFACE PARKING LOT
SAN ANTONIO, TEXAS

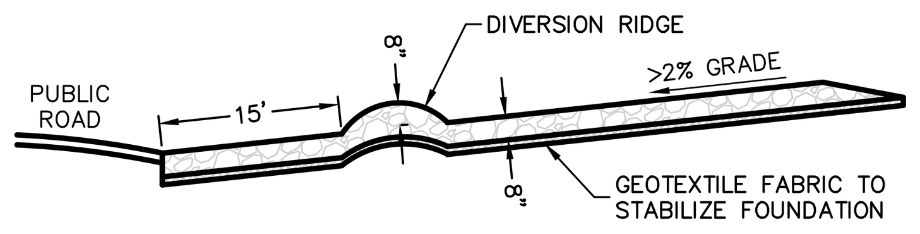
SWPPP

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CD DRAWN JR
SHEET C2.00

Date: Feb 17, 2016, 3:55pm User ID: JReyna
File: P:\76\45\20\Design\Civil\EP764523.dwg



SCHEMATIC OF TEMPORARY CONSTRUCTION ENTRANCE/EXIT



SECTION "A-A" OF A CONSTRUCTION ENTRANCE/EXIT

MATERIALS

1. THE AGGREGATE SHOULD CONSIST OF 4-INCH TO 8-INCH WASHED STONE OVER A STABLE FOUNDATION AS SPECIFIED IN THE PLAN.

2. THE AGGREGATE SHOULD BE PLACED WITH A MINIMUM THICKNESS OF 8-INCHES.

3. THE GEOTEXTILE FABRIC SHOULD BE DESIGNED SPECIFICALLY FOR USE AS A SOIL FILTRATION MEDIA WITH AN APPROXIMATE WEIGHT OF 6 OZ/YD², A MULLEN BURST RATING OF 140 LB/IN², AND AN EQUIVALENT OPENING SIZE GREATER THAN A NUMBER 50 SIEVE.

4. IF A WASHING FACILITY IS REQUIRED, A LEVEL AREA WITH A MINIMUM OF 4-INCH DIAMETER WASHED STONE OR COMMERCIAL ROCK SHOULD BE INCLUDED IN THE PLANS. DIVERT WASTEWATER TO A SEDIMENT TRAP OR BASIN.

INSTALLATION

1. AVOID CURVES ON PUBLIC ROADS AND STEEP SLOPES. REMOVE VEGETATION AND OTHER OBJECTIONABLE MATERIAL FROM THE FOUNDATION AREA. GRADE CROWN FOUNDATION FOR POSITIVE DRAINAGE.

2. THE MINIMUM WIDTH OF THE ENTRANCE/EXIT SHOULD BE 12 FEET OR THE FULL WIDTH OF EXIT ROADWAY, WHICHEVER IS GREATER.

3. THE CONSTRUCTION ENTRANCE SHOULD BE AT LEAST 50 FEET LONG.

4. IF THE SLOPE TOWARD THE ROAD EXCEEDS 2%, CONSTRUCT A RIDGE, 6-INCHES TO 8-INCHES HIGH WITH 3:1 (H:V) SIDE SLOPES, ACROSS THE FOUNDATION APPROXIMATELY 15 FEET FROM THE ENTRANCE TO DIVERT RUNOFF AWAY FROM THE PUBLIC ROAD.

5. PLACE GEOTEXTILE FABRIC AND GRADE FOUNDATION TO IMPROVE STABILITY, ESPECIALLY WHERE WET CONDITIONS ARE ANTICIPATED.

6. PLACE STONE TO DIMENSIONS AND GRADE SHOWN ON PLANS. LEAVE SURFACE SMOOTH AND SLOPE FOR DRAINAGE.

7. DIVERT ALL SURFACE RUNOFF AND DRAINAGE FROM THE STONE PAD TO A SEDIMENT TRAP OR BASIN.

8. INSTALL PIPE UNDER PAD AS NEEDED TO MAINTAIN PROPER PUBLIC ROAD DRAINAGE.

COMMON TROUBLE POINTS

1. INADEQUATE RUNOFF CONTROL–SEDIMENT WASHES ONTO PUBLIC ROAD.

2. STONE TOO SMALL OR GEOTEXTILE FABRIC ABSENT, RESULTS IN MUDDY CONDITION AS STONE IS PRESSED INTO SOIL.

3. PAD TOO SHORT FOR HEAVY CONSTRUCTION TRAFFIC–EXTEND PAD BEYOND THE MINIMUM 50-FOOT LENGTH AS NECESSARY.

4. PAD NOT FLARED SUFFICIENTLY AT ROAD SURFACE, RESULTS IN MUD BEING TRACKED ON TO ROAD AND POSSIBLE DAMAGE TO ROAD.

5. UNSTABLE FOUNDATION – USE GEOTEXTILE FABRIC UNDER PAD AND/OR IMPROVE FOUNDATION DRAINAGE.

INSPECTION AND MAINTENANCE GUIDELINES

1. THE ENTRANCE SHOULD BE MAINTAINED IN A CONDITION, WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS-OF-WAY. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT.

2. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS-OF-WAY SHOULD BE REMOVED IMMEDIATELY BY CONTRACTOR.

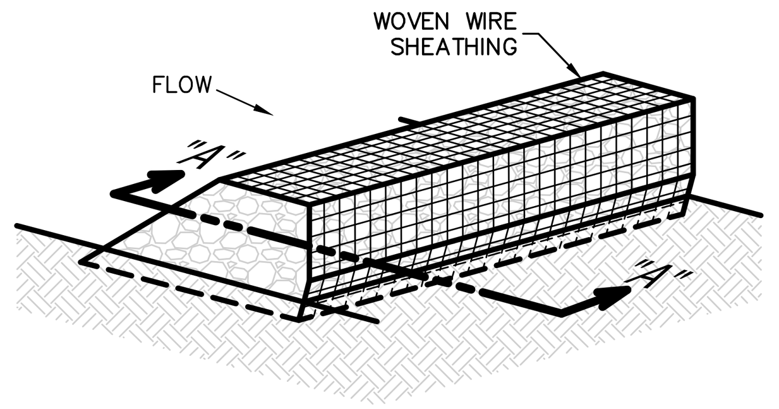
3. WHEN NECESSARY, WHEELS SHOULD BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC RIGHT-OF-WAY.

4. WHEN WASHING IS REQUIRED, IT SHOULD BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE THAT DRAINS INTO AN APPROVED SEDIMENT TRAP OR SEDIMENT BASIN.

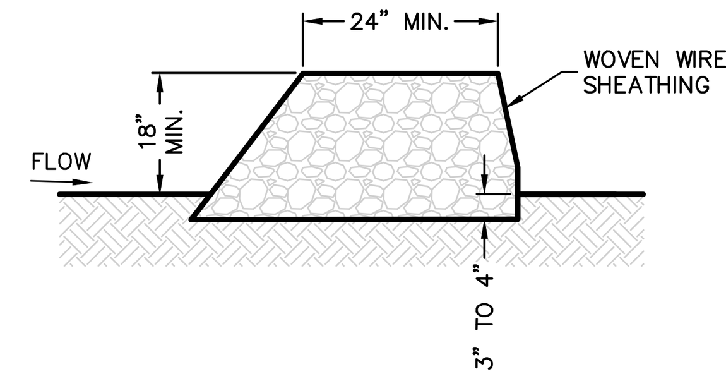
5. ALL SEDIMENT SHOULD BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH OR WATER COURSE BY USING APPROVED METHODS.

STABILIZED CONSTRUCTION ENTRANCE/EXIT DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW



SECTION "A-A"

ROCK BERMS

THE PURPOSE OF A ROCK BERM IS TO SERVE AS A CHECK DAM IN AREAS OF CONCENTRATED FLOW, TO INTERCEPT SEDIMENT-LADEN RUNOFF, DETAIN THE SEDIMENT AND RELEASE THE WATER IN SHEET FLOW. THE ROCK BERM SHOULD BE USED WHEN THE CONTRIBUTING DRAINAGE AREA IS LESS THAN 5 ACRES. ROCK BERMS ARE USED IN AREAS WHERE THE VOLUME OF RUNOFF IS TOO GREAT FOR A SILT FENCE TO CONTAIN. THEY ARE LESS EFFECTIVE FOR SEDIMENT REMOVAL THAN SILT FENCES, PARTICULARLY FOR FINE PARTICLES, BUT ARE ABLE TO WITHSTAND HIGHER FLOWS THAN A SILT FENCE. AS SUCH, ROCK BERMS ARE OFTEN USED IN AREAS OF CHANNEL FLOWS (DITCHES, GULLIES, ETC.). ROCK BERMS ARE MOST EFFECTIVE AT REDUCING BED LOAD IN CHANNELS AND SHOULD NOT BE SUBSTITUTED FOR OTHER EROSION AND SEDIMENT CONTROL MEASURES FARTHER UP THE WATERSHED.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL BY THE RESPONSIBLE PARTY. FOR INSTALLATIONS IN STREAMBEDS, ADDITIONAL DAILY INSPECTIONS SHOULD BE MADE.

2. REMOVE SEDIMENT AND OTHER DEBRIS WHEN BUILDUP REACHES 6 INCHES AND DISPOSE OF THE ACCUMULATED SILT IN AN APPROVED MANNER THAT WILL NOT CAUSE ANY ADDITIONAL SILTATION.

3. REPAIR ANY LOOSE WIRE SHEATHING.

4. THE BERM SHOULD BE RESHAPED AS NEEDED DURING INSPECTION.

5. THE BERM SHOULD BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

6. THE ROCK BERM SHOULD BE LEFT IN PLACE UNTIL ALL UPSTREAM AREAS ARE STABILIZED AND ACCUMULATED SILT REMOVED.

MATERIALS

1. THE BERM STRUCTURE SHOULD BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM OPENING OF 1 INCH AND A MINIMUM WIRE DIAMETER OF 20 GAUGE GALVANIZED AND SHOULD BE SECURED WITH SHOAT RINGS.

2. CLEAN, OPEN GRADED 3-INCH TO 5-INCH DIAMETER ROCK SHOULD BE USED, EXCEPT IN AREAS WHERE HIGH VELOCITIES OR LARGE VOLUMES OF FLOW ARE EXPECTED, WHERE 5-INCH TO 8-INCH DIAMETER ROCKS MAY BE USED.

INSTALLATION

1. LAY OUT THE WOVEN WIRE SHEATHING PERPENDICULAR TO THE FLOW LINE. THE SHEATHING SHOULD BE 20 GAUGE WOVEN WIRE MESH WITH 1 INCH OPENINGS.

2. BERM SHOULD HAVE A TOP WIDTH OF 2 FEET MINIMUM WITH SIDE SLOPES BEING 2:1 (H:V) OR FLATTER.

3. PLACE THE ROCK ALONG THE SHEATHING AS SHOWN IN THE DIAGRAM TO A HEIGHT NOT LESS THAN 18".

4. WRAP THE WIRE SHEATHING AROUND THE ROCK AND SECURE WITH TIE WIRE SO THAT THE ENDS OF THE SHEATHING OVERLAP AT LEAST 2 INCHES, AND THE BERM RETAINS ITS SHAPE WHEN WALKED UPON.

5. BERM SHOULD BE BUILT ALONG THE CONTOUR AT ZERO PERCENT GRADE OR AS NEAR AS POSSIBLE.

6. THE ENDS OF THE BERM SHOULD BE TIED INTO EXISTING UPSLOPE GRADE AND THE BERM SHOULD BE BURIED IN A TRENCH APPROXIMATELY 3 TO 4 INCHES DEEP TO PREVENT FAILURE OF THE CONTROL.

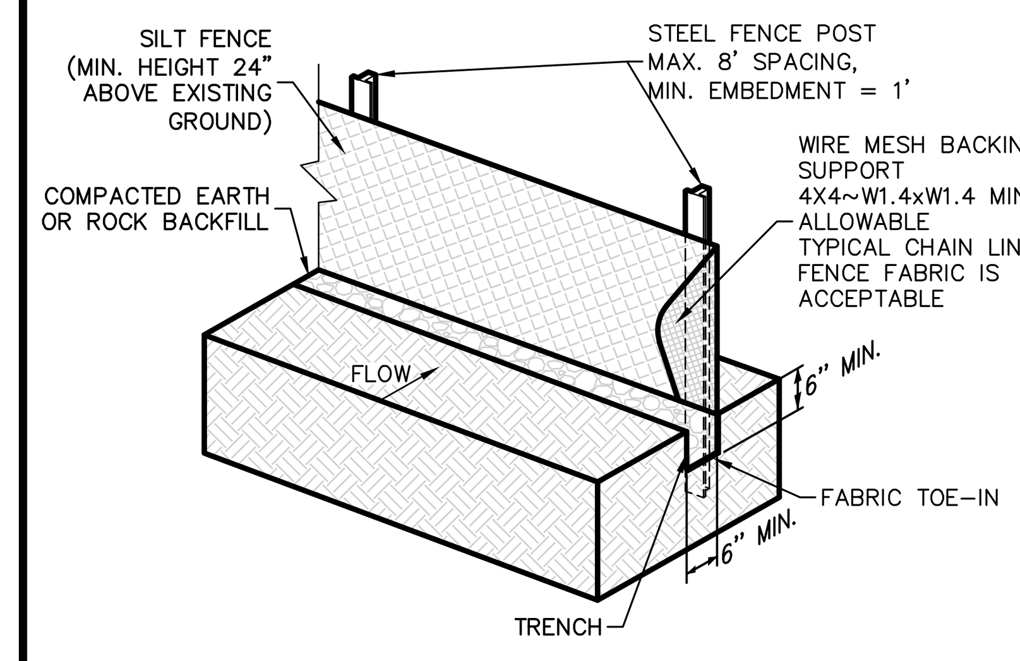
COMMON TROUBLE POINTS

1. INSUFFICIENT BERM HEIGHT OR LENGTH (RUNOFF QUICKLY ESCAPES OVER THE TOP OR AROUND THE SIDES OF BERM).

2. BERM NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND ONE SIDE).

ROCK BERM DETAIL

NOT-TO-SCALE



ISOMETRIC PLAN VIEW

SILT FENCE

A SILT FENCE IS A BARRIER CONSISTING OF GEOTEXTILE FABRIC SUPPORTED BY METAL POSTS TO PREVENT SOIL AND SEDIMENT LOSS FROM A SITE. WHEN PROPERLY USED, SILT FENCES CAN BE HIGHLY EFFECTIVE AT CONTROLLING SEDIMENT FROM DISTURBED AREAS. THEY CAUSE RUNOFF TO POND, ALLOWING HEAVIER SOLIDS TO SETTLE OUT. IF NOT PROPERLY INSTALLED, SILT FENCES ARE NOT LIKELY TO BE EFFECTIVE.

THE PURPOSE OF A SILT FENCE IS TO INTERCEPT AND DETAIN WATER-BORN SEDIMENT FROM UNPROTECTED AREAS OF A LIMITED EXTENT. SILT FENCE IS USED DURING THE PERIOD OF CONSTRUCTION NEAR THE PERIMETER OF A DISTURBED AREA TO INTERCEPT SEDIMENT WHILE ALLOWING WATER TO PERCOLATE THROUGH. THIS FENCE SHOULD REMAIN IN PLACE UNTIL THE DISTURBED AREA IS PERMANENTLY STABILIZED. SILT FENCE SHOULD NOT BE USED WHERE THERE IS A CONCENTRATION OF WATER IN A CHANNEL OR DRAINAGE WAY. IF CONCENTRATED FLOW OCCURS AFTER INSTALLATION, CORRECTIVE ACTION MUST BE TAKEN SUCH AS PLACING A ROCK BERM IN THE AREAS OF CONCENTRATED FLOW.

SILT FENCING WITHIN THE SITE MAY BE TEMPORARILY MOVED DURING THE DAY TO ALLOW CONSTRUCTION ACTIVITY PROVIDED IT IS REPLACED AND PROPERLY ANCHORED TO THE GROUND AT THE END OF THE DAY. SILT FENCES ON THE PERIMETER OF THE SITE OR AROUND DRAINAGE WAYS SHOULD NOT BE MOVED AT ANY TIME.

MATERIALS

1. SILT FENCE MATERIAL SHOULD BE POLYPROPYLENE, POLYETHYLENE, OR POLYAMIDE WOVEN OR NONWOVEN FABRIC. THE FABRIC SHOULD BE 36 INCHES, WITH A MINIMUM UNIT WEIGHT OF 4.5 OZ/YD, MULLEN BURST STRENGTH EXCEEDING 190 LB/IN2, ULTRAVIOLET STABILITY EXCEEDING 70%, AND MINIMUM APPARENT OPENING SIZE OF U.S. SIEVE NUMBER 30.

2. FENCE POSTS SHOULD BE MADE OF HOT ROLLED STEEL, AT LEAST 4 FEET LONG WITH TEE OR Y-BAR CROSS SECTION, SURFACE PAINTED OR GALVANIZED, MINIMUM WEIGHT 1.25 LB/FT, AND BRINDELL HARDNESS EXCEEDING 140.

3. WOVEN WIRE BACKING TO SUPPORT THE FABRIC SHOULD BE GALVANIZED 2" X 4" WELDED WIRE, 12 GAUGE MINIMUM.

INSTALLATION

1. STEEL POSTS, WHICH SUPPORT THE SILT FENCE, SHOULD BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POSTS MUST BE EMBEDDED A MINIMUM OF 1-FOOT DEEP AND SPACED NOT MORE THAN 8 FEET ON CENTER. WHERE WATER CONCENTRATES, THE MAXIMUM SPACING SHOULD BE 6 FEET.

2. LAY OUT FENCING DOWN-SLOPE OF DISTURBED AREA, FOLLOWING THE CONTOUR AS CLOSELY AS POSSIBLE. THE FENCE SHOULD BE SITED SO THAT THE MAXIMUM DRAINAGE AREA IS ¼ ACRE/100 FEET OF FENCE.

3. THE TOE OF THE SILT FENCE SHOULD BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWN-SLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CANNOT BE TRENCHED IN (E.G., PAVEMENT OR ROCK OUTCROP), WEIGHT FABRIC FLAP WITH 3 INCHES OF PEA GRAVEL ON UPHILL SIDE TO PREVENT FLOW FROM SEEPING UNDER FENCE.

4. THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

5. SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST. THERE SHOULD BE A 3-FOOT OVERLAP, SECURELY FASTENED WHERE ENDS OF FABRIC MEET.

6. SILT FENCE SHOULD BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

COMMON TROUBLE POINTS

1. FENCE NOT INSTALLED ALONG THE CONTOUR CAUSING WATER TO CONCENTRATE AND FLOW OVER THE FENCE.

2. FABRIC NOT SEATED SECURELY TO GROUND (RUNOFF PASSING UNDER FENCE).

3. FENCE NOT INSTALLED PERPENDICULAR TO FLOW LINE (RUNOFF ESCAPING AROUND SIDES).

4. FENCE TREATING TOO LARGE AN AREA, OR EXCESSIVE CHANNEL FLOW (RUNOFF OVERTOPS OR COLLAPSES FENCE).

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECT ALL FENCING WEEKLY, AND AFTER RAINFALL.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES 6 INCHES.

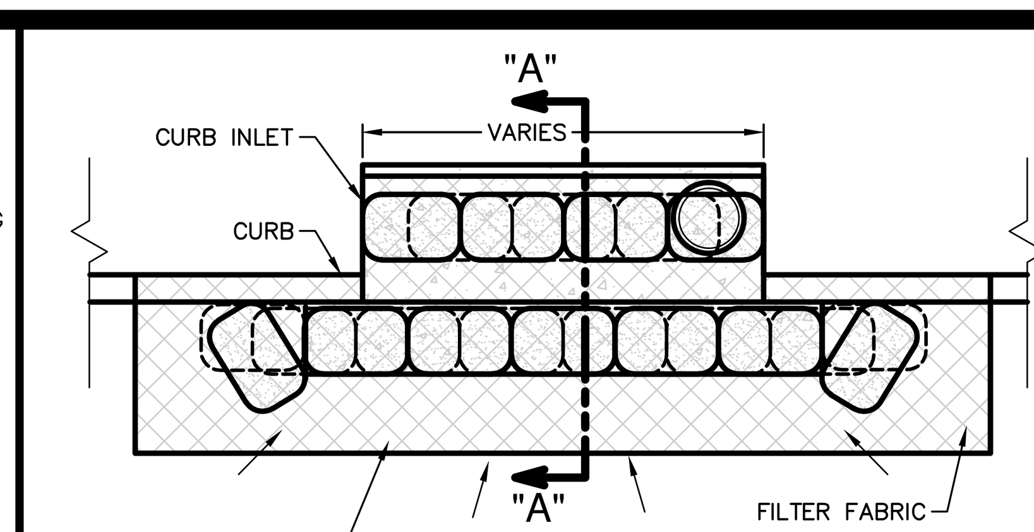
3. REPLACE TORN FABRIC OR INSTALL A SECOND LINE OF FENCING PARALLEL TO THE TORN SECTION.

4. REPLACE OR REPAIR SECTIONS CRUSHED OR COLLAPSED IN THE COURSE OF CONSTRUCTION ACTIVITY. IF A SECTION OF FENCE IS OBSTRUCTING VEHICULAR ACCESS, CONSIDER RELOCATING IT TO A SPOT WHERE IT WILL PROVIDE EQUAL PROTECTION, BUT WILL NOT OBSTRUCT VEHICLES. A TRIANGULAR FILTER DIKE MAY BE PREFERABLE TO A SILT FENCE AT COMMON VEHICLE ACCESS POINTS.

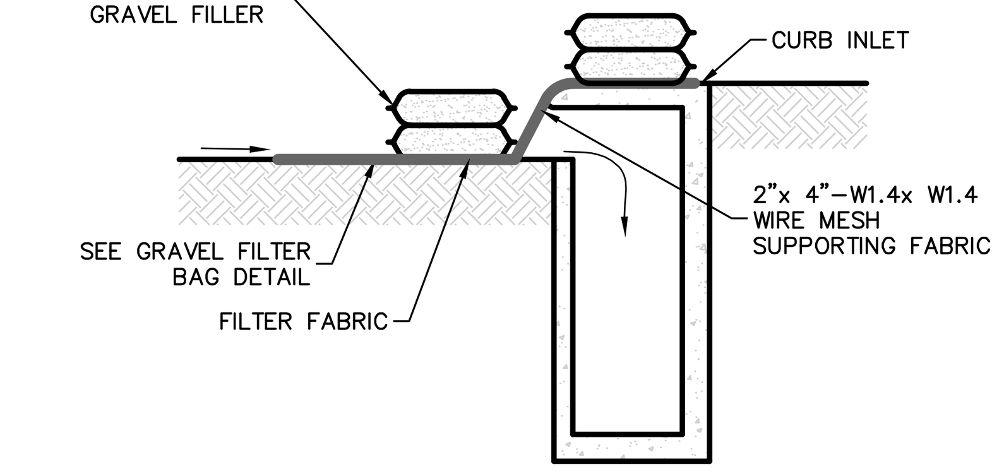
5. WHEN CONSTRUCTION IS COMPLETE, THE SEDIMENT SHOULD BE DISPOSED OF IN A MANNER THAT WILL NOT CAUSE ADDITIONAL SILTATION AND THE PRIOR LOCATION OF THE SILT FENCE SHOULD BE REVEGETATED. THE FENCE ITSELF SHOULD BE DISPOSED OF IN AN APPROVED LANDFILL.

SILT FENCE DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. CONTRACTOR TO INSTALL 2"x4"-W1.4xW1.4 WIRE MESH SUPPORTING FILTER FABRIC OVER THE INLET OPENING. FABRIC MUST BE SECURED TO WIRE BACKING WITH CLIPS OR WIRE TIES AT THIS LOCATION. SAND BAGS FILLED WITH WASHED PEA GRAVEL SHOULD BE PLACED ON TOP OF WIRE MESH ON TOP OF THE INLET AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SANDBAGS FILLED WITH WASHED PEA GRAVEL SHOULD ALSO BE PLACED ALONG THE GUTTER AS SHOWN ON THIS DETAIL TO HOLD WIRE MESH IN PLACE. SAND BAGS TO BE STACKED TO FORM A CONTINUOUS BARRIER AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MANNER THAT IT WILL NOT ERODE.

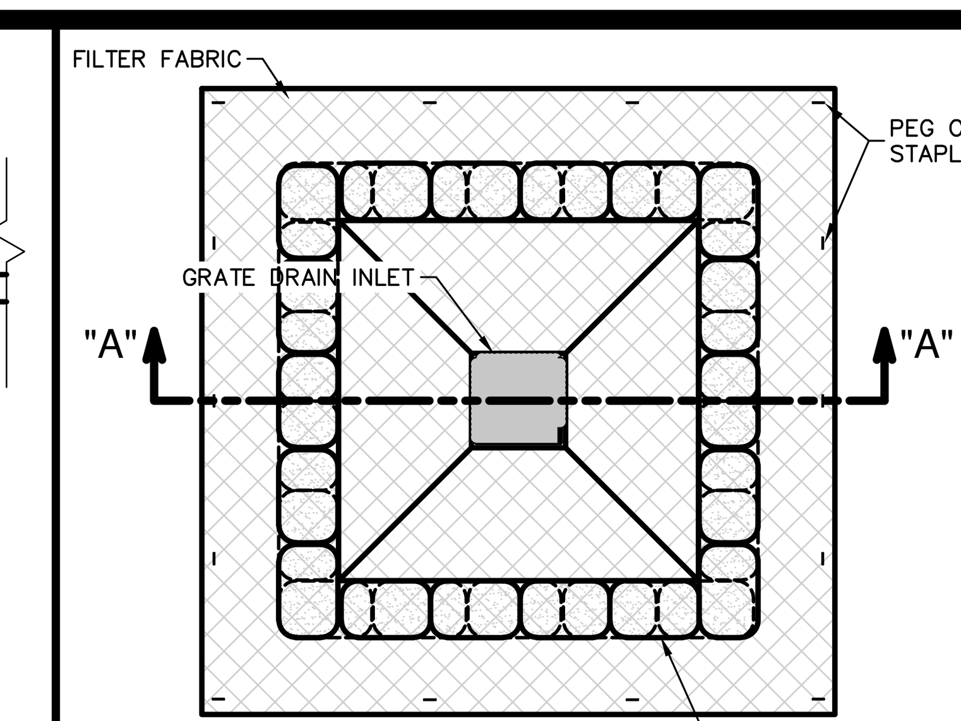
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

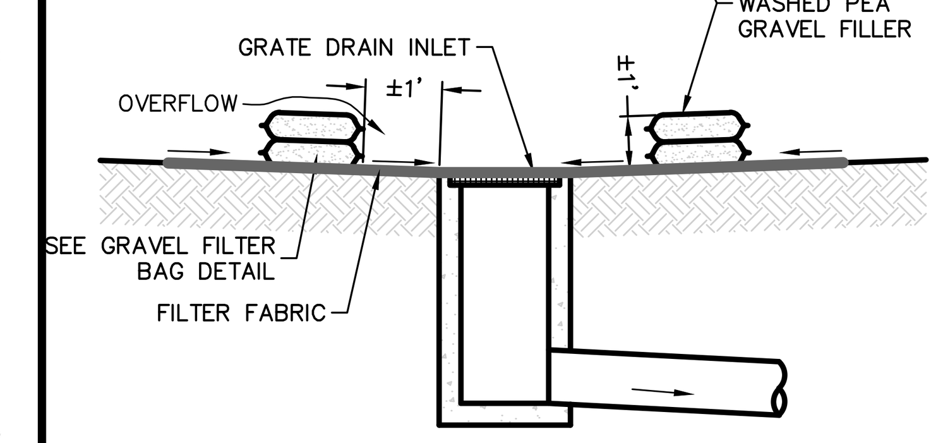
5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

BAGGED GRAVEL CURB INLET PROTECTION DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. THE SANDBAGS SHOULD BE FILLED WITH WASHED PEA GRAVEL AND STACKED TO FORM A CONTINUOUS BARRIER ABOUT 1 FOOT HIGH AROUND INLETS.

2. THE BAGS SHOULD BE TIGHTLY ABUTTED AGAINST EACH OTHER TO PREVENT RUNOFF FROM FLOWING BETWEEN THE BAGS.

INSPECTION AND MAINTENANCE GUIDELINES

1. INSPECTION SHOULD BE MADE WEEKLY AND AFTER EACH RAINFALL. REPAIR OR REPLACEMENT SHOULD BE MADE PROMPTLY AS NEEDED BY THE CONTRACTOR.

2. REMOVE SEDIMENT WHEN BUILDUP REACHES A DEPTH OF 3 INCHES. REMOVED SEDIMENT SHOULD BE DEPOSITED IN A SUITABLE AREA AND IN SUCH A MATTER THAT IT WILL NOT ERODE.

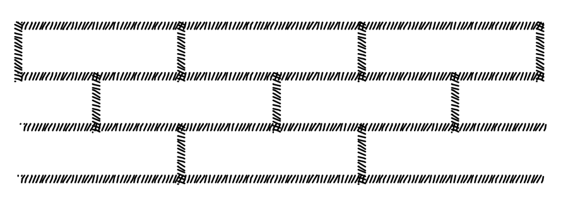
3. CHECK PLACEMENT OF DEVICE TO PREVENT GAPS BETWEEN DEVICE AND CURB.

4. INSPECT FILTER FABRIC AND PATCH OR REPLACE IF TORN OR MISSING.

5. STRUCTURES SHOULD BE REMOVED AND THE AREA STABILIZED ONLY AFTER THE REMAINING DRAINAGE AREA HAS BEEN PROPERLY STABILIZED.

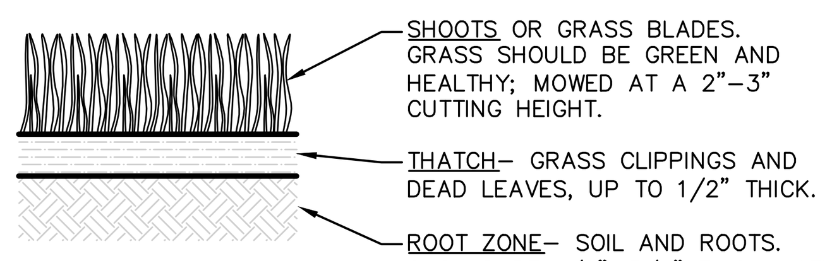
BAGGED GRAVEL GRATE INLET PROTECTION DETAIL

NOT-TO-SCALE



LAY SOD IN A STAGGERED PATTERN. BUTT THE STRIPS TIGHTLY AGAINST EACH OTHER. DO NOT LEAVE SPACES AND DO NOT OVERLAP. A SHARPENED MASON'S TROWEL IS A HANDY TOOL FOR TUCKING DOWN THE ENDS AND TRIMMING PIECES.

BUTTING – ANGLED ENDS CAUSED BY THE AUTOMATIC SOD CUTTER MUST BE MATCHED CORRECTLY.

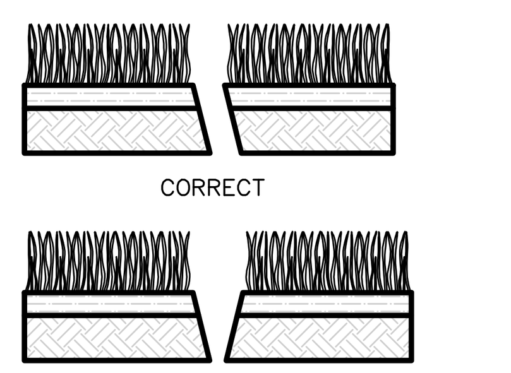


APPEARANCE OF GOOD SOD

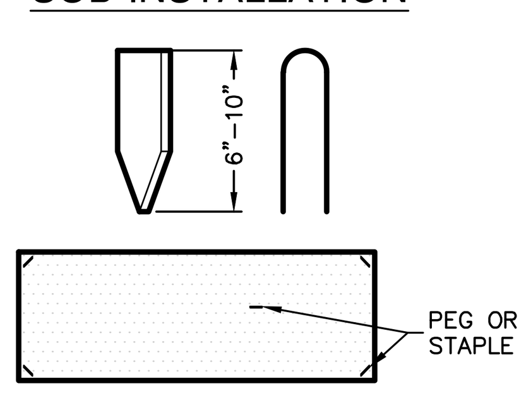
NOTES:
1. ROLL SOD IMMEDIATELY TO ACHIEVE FIRM CONTACT WITH THE SOIL.

2. WATER TO A DEPTH OF 4" AS NEEDED. WATER WELL AS SOON AS THE SOD IS LAID.

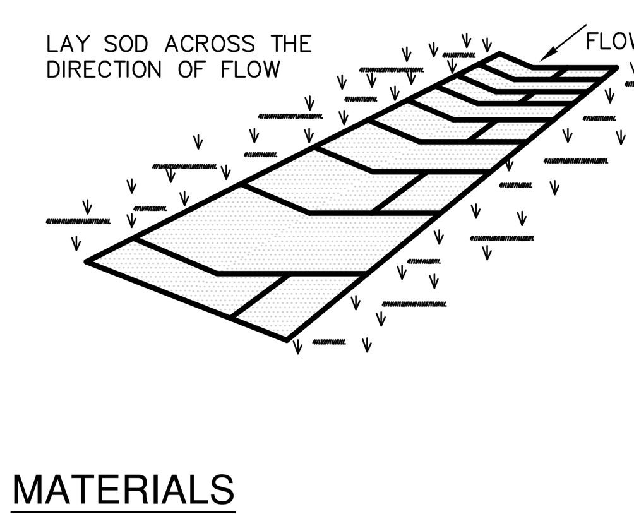
3. MOW WHEN THE SOD IS ESTABLISHED – IN 2-3 WEEKS. SET THE MOWER HIGH (2"-3").

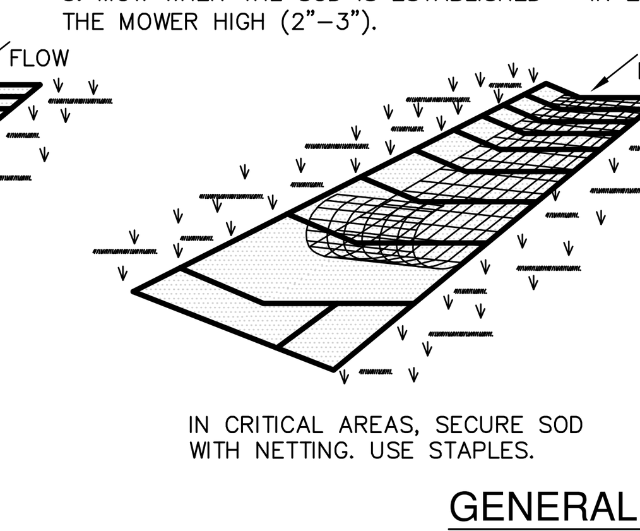


SOD INSTALLATION



USE PEGS OR STAPLES TO FASTEN SOD FIRMLY – AT THE ENDS OF STRIPS AND IN THE CENTER, OR EVERY 3-4 FEET IF THE STRIPS ARE LONG. WHEN READY TO MOW, DRIVE PEGS OR STAPLES FLUSH WITH THE GROUND.





IN CRITICAL AREAS, SECURE SOD WITH NETTING. USE STAPLES.

MATERIALS

1. SOD SHOULD BE MACHINE CUT AT A UNIFORM SOIL THICKNESS OF 3/4" INCH (± 1/4" INCH) AT THE TIME OF CUTTING. THIS THICKNESS SHOULD EXCLUDE SHOOT GROWTH AND THATCH.

2. PIECES OF SOD SHOULD BE CUT TO THE SUPPLIER'S STANDARD WIDTH AND LENGTH, WITH A MAXIMUM ALLOWABLE DEVIATION IN ANY DIMENSION OF 5%. TORN OR UNEVEN PADS SHOULD NOT BE ACCEPTABLE.

3. STANDARD SIZE SECTIONS OF SOD SHOULD BE STRONG ENOUGH TO SUPPORT THEIR OWN WEIGHT AND RETAIN THEIR SIZE AND SHAPE WHEN SUSPENDED FROM A FIRM GRASP ON ONE END OF THE SECTION.

4. SOD SHOULD BE HARVESTED, DELIVERED, AND INSTALLED WITHIN A PERIOD OF 36 HOURS.

SITE PREPARATION

1. PRIOR TO SOIL PREPARATION, AREAS TO BE SODDED SHOULD BE BROUGHT TO FINAL GRADE IN ACCORDANCE WITH THE APPROVED PLAN.

2. THE SURFACE SHOULD BE CLEARED OF ALL TRASH, DEBRIS AND OF ALL ROOTS, BRUSH, WIRE, GRADE STAKES AND OTHER OBJECTS THAT WOULD INTERFERE WITH PLANTING, FERTILIZING OR MAINTENANCE OPERATIONS.

3. FERTILIZE ACCORDING TO SOIL TESTS. FERTILIZER NEEDS CAN BE DETERMINED BY A SOIL TESTING LABORATORY OR REGIONAL RECOMMENDATIONS CAN BE MADE BY COUNTY AGRICULTURAL EXTENSION AGENTS. FERTILIZER SHOULD BE WORKED INTO THE SOIL TO A DEPTH OF 3 INCHES WITH A DISC, SPRINGTOOTH HARROW OR OTHER SUITABLE EQUIPMENT. ON SLOPING LAND, THE FINAL HARROWING OR DISCING OPERATION SHOULD BE ON THE CONTOUR.

INSTALLATION IN CHANNELS

1. SOD STRIPS IN WATERWAYS SHOULD BE LAID PERPENDICULAR TO THE DIRECTION OF FLOW. CARE SHOULD BE TAKEN TO BUTT ENDS OF STRIPS TIGHTLY (SEE FIGURE ABOVE).

2. AFTER ROLLING OR TAMPING, SOD SHOULD BE PEGGED OR STAPLED TO RESIST WASHOUT DURING THE ESTABLISHMENT PERIOD. MESH OR OTHER NETTING MAY BE PEGGED OVER THE SOD FOR EXTRA PROTECTION IN CRITICAL AREAS.

GENERAL INSTALLATION (VA. DEPT. OF CONSERVATION, 1992)

1. SOD SHOULD NOT BE CUT OR LAID IN EXCESSIVELY WET OR DRY WEATHER. SOD ALSO SHOULD NOT BE LAID ON SOIL SURFACES THAT ARE FROZEN.

2. DURING PERIODS OF HIGH TEMPERATURE, THE SOIL SHOULD BE LIGHTLY IRRIGATED IMMEDIATELY PRIOR TO LAYING THE SOD, TO COOL THE SOIL AND REDUCE ROOT BURNING AND DIEBACK.

3. THE FIRST ROW OF SOD SHOULD BE LAID IN A STRAIGHT LINE WITH SUBSEQUENT ROWS PLACED PARALLEL TO AND BUTTING TIGHTLY AGAINST EACH OTHER. LATERAL JOINTS SHOULD BE STAGGERED TO PROMOTE MORE UNIFORM GROWTH AND STRENGTH. CARE SHOULD BE EXERCISED TO ENSURE THAT SOD IS NOT STRETCHED OR OVERLAPPED AND THAT ALL JOINTS ARE BUTTED TIGHT IN ORDER TO PREVENT VOIDS WHICH WOULD CAUSE DRYING OF THE ROOTS (SEE FIGURE ABOVE).

4. ON SLOPES 3:1 OR GREATER, OR WHEREVER EROSION MAY BE A PROBLEM, SOD SHOULD BE LAID WITH STAGGERED JOINTS AND SECURED BY STAPLING OR OTHER APPROVED METHODS. SOD SHOULD BE INSTALLED WITH THE LENGTH PERPENDICULAR TO THE SLOPE (ON CONTOUR).

5. AS SODDING OF CLEARLY DEFINED AREAS IS COMPLETED, SOD SHOULD BE ROLLED OR TAMPED TO PROVIDE FIRM CONTACT BETWEEN ROOTS AND SOIL.

6. AFTER ROLLING, SOD SHOULD BE IRRIGATED TO A DEPTH SUFFICIENT THAT THE UNDERSIDE OF THE SOD PAD AND THE SOIL 4 INCHES BELOW THE SOD IS THOROUGHLY WET.

7. UNTIL SUCH TIME A GOOD ROOT SYSTEM BECOMES DEVELOPED, IN THE ABSENCE OF ADEQUATE RAINFALL, WATERING SHOULD BE PERFORMED AS OFTEN AS NECESSARY TO MAINTAIN MOIST SOIL TO A DEPTH OF AT LEAST 4 INCHES.

8. THE FIRST MOWING SHOULD NOT BE ATTEMPTED UNTIL THE SOD IS FIRMLY ROOTED, USUALLY 2-3 WEEKS. NOT MORE THAN ONE THIRD OF THE GRASS LEAF SHOULD BE REMOVED AT ANY ONE CUTTING.

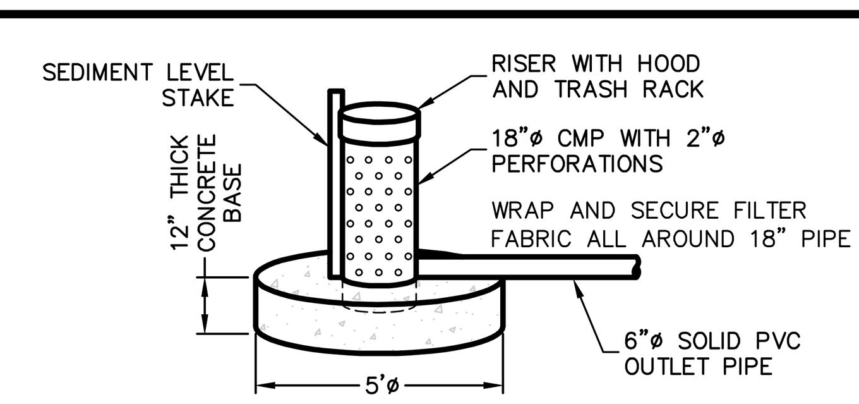
INSPECTION AND MAINTENANCE GUIDELINES

1. SOD SHOULD BE INSPECTED WEEKLY AND AFTER EACH RAIN EVENT TO LOCATE AND REPAIR ANY DAMAGE.

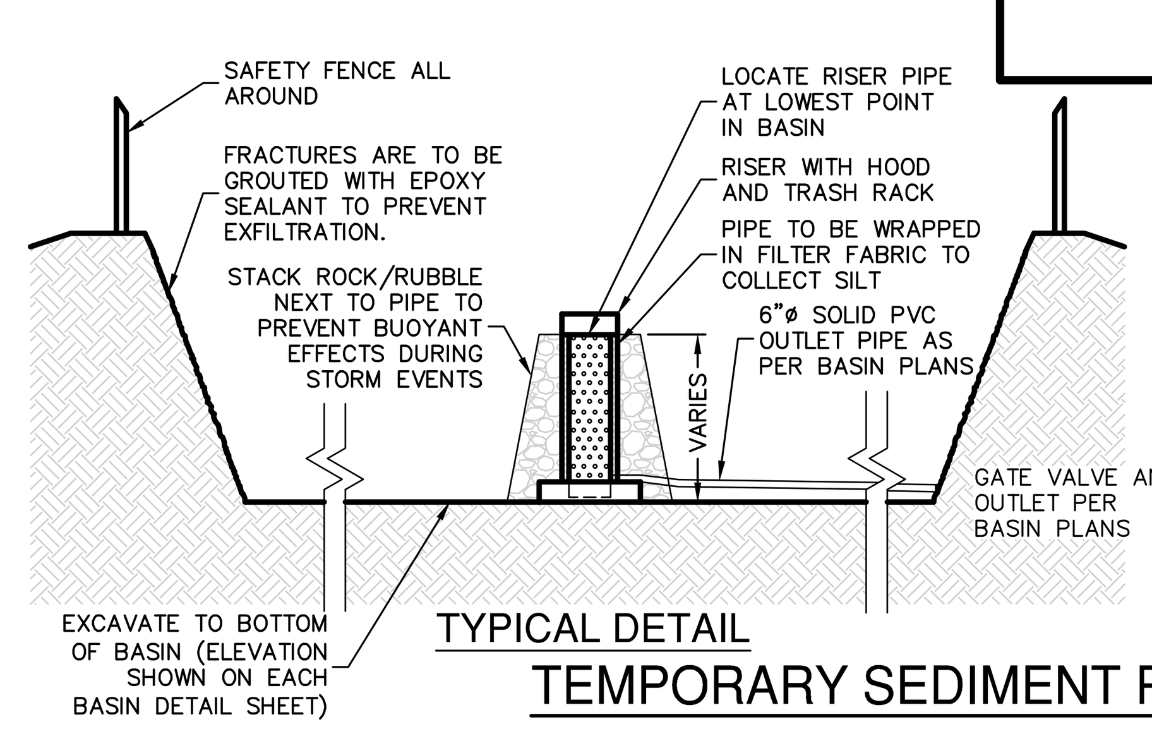
2. DAMAGE FROM STORMS OR NORMAL CONSTRUCTION ACTIVITIES SUCH AS TIRE RUTS OR DISTURBANCE OF SWALE STABILIZATION SHOULD BE REPAIRED AS SOON AS PRACTICAL.

SOD INSTALLATION DETAIL

NOT-TO-SCALE



OUTLET STRUCTURE DETAIL



TYPICAL DETAIL

TEMPORARY SEDIMENTATION BASIN NOTES

1. CONTRACTOR TO CONSTRUCT BASINS IN ACCORDANCE WITH CONSTRUCTION PLANS FOR PERMANENT SEDIMENTATION/ FILTRATION WITH THE EXCEPTION OF THE GRAVEL DRAIN LAYER AND SAND FILTER LAYERS.

2. INSTALL PERMANENT STAKE TO INDICATE SEDIMENT LEVEL IN THE BASIN. STAKE SHOULD BE MARKED TO INDICATE WHEN SEDIMENT OCCUPIES 50% OF THE VOLUME OF THE BASIN.

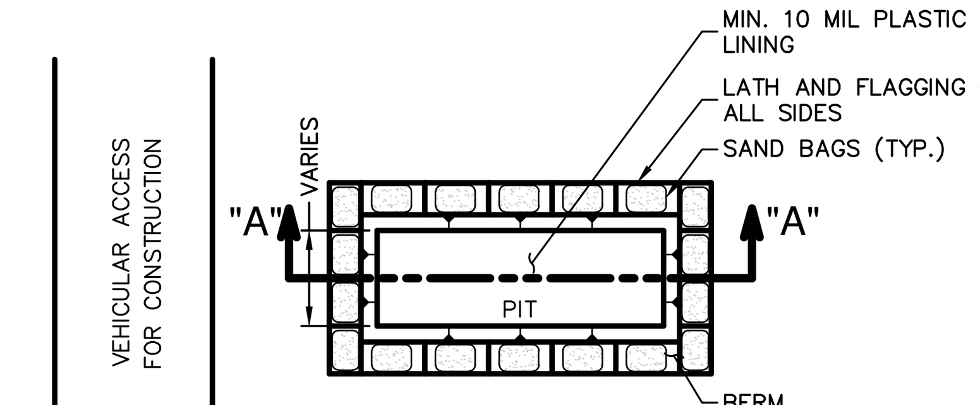
3. SEDIMENT WILL BE REMOVED WHEN MORE THAN 50% OF THE BASIN CAPACITY IS EXCEEDED.

4. CONTRACTOR TO SECURE PIPE TO BOTTOM OF BASIN TO PREVENT BUOYANCY DURING A RAIN EVENT. A CONCRETE ANCHOR MAY BE USED.

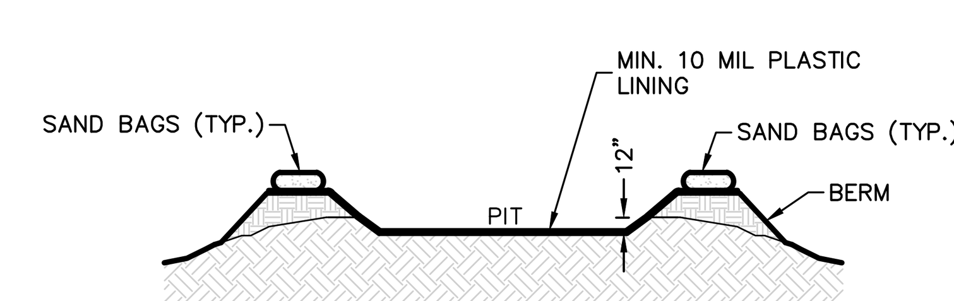
5. DISCHARGE PIPE TO BE INSTALLED SO AS TO BE IN PLACE FOR PERMANENT STRUCTURE.

TEMPORARY SEDIMENT POND DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

GENERAL NOTES

1. DETAIL ABOVE ILLUSTRATES MINIMUM DIMENSIONS. PIT CAN BE INCREASED IN SIZE DEPENDING ON EXPECTED FREQUENCY OF USE.

2. WASHOUT PIT SHALL BE LOCATED IN AN AREA EASILY ACCESSIBLE TO CONSTRUCTION TRAFFIC.

3. WASHOUT PIT SHALL NOT BE LOCATED IN AREAS SUBJECT TO INUNDATION FROM STORM WATER RUNOFF.

4. LOCATE WASHOUT AREA AT LEAST 50 FEET FROM SENSITIVE FEATURES, STORM DRAINS, OPEN DITCHES OR WATER BODIES.

5. TEMPORARY CONCRETE WASHOUT FACILITY SHOULD BE CONSTRUCTED WITH SUFFICIENT QUANTITY AND VOLUME TO CONTAIN ALL LIQUID AND CONCRETE WASTE GENERATED BY WASHOUT OPERATIONS.

MATERIALS

PLASTIC LINING MATERIAL SHOULD BE A MINIMUM OF 10 MIL IN POLYETHYLENE SHEETING AND SHOULD BE FREE OF HOLES, TEARS, OR OTHER DEFECTS THAT COMPROMISE THE IMPERMEABILITY OF THE MATERIAL.

MAINTENANCE

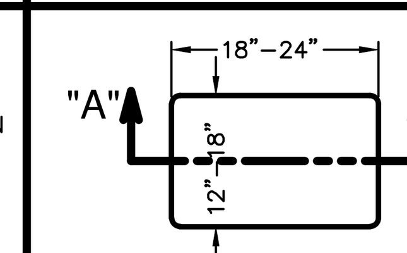
1. WHEN TEMPORARY CONCRETE WASHOUT FACILITIES ARE NO LONGER REQUIRED FOR THE WORK, THE HARDENED CONCRETE SHOULD BE REMOVED AND DISPOSED OF.

2. MATERIALS USED TO CONSTRUCT TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE REMOVED FROM THE SITE OF THE WORK AND DISPOSED OF.

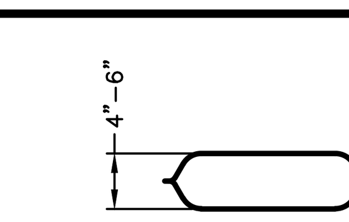
3. HOLES, DEPRESSIONS OR OTHER GROUND DISTURBANCES CAUSED BY THE REMOVAL OF THE TEMPORARY CONCRETE WASHOUT FACILITIES SHOULD BE BACKFILLED AND REPAIRED.

CONCRETE TRUCK WASHOUT PIT DETAIL

NOT-TO-SCALE



PLAN VIEW



SECTION "A-A"

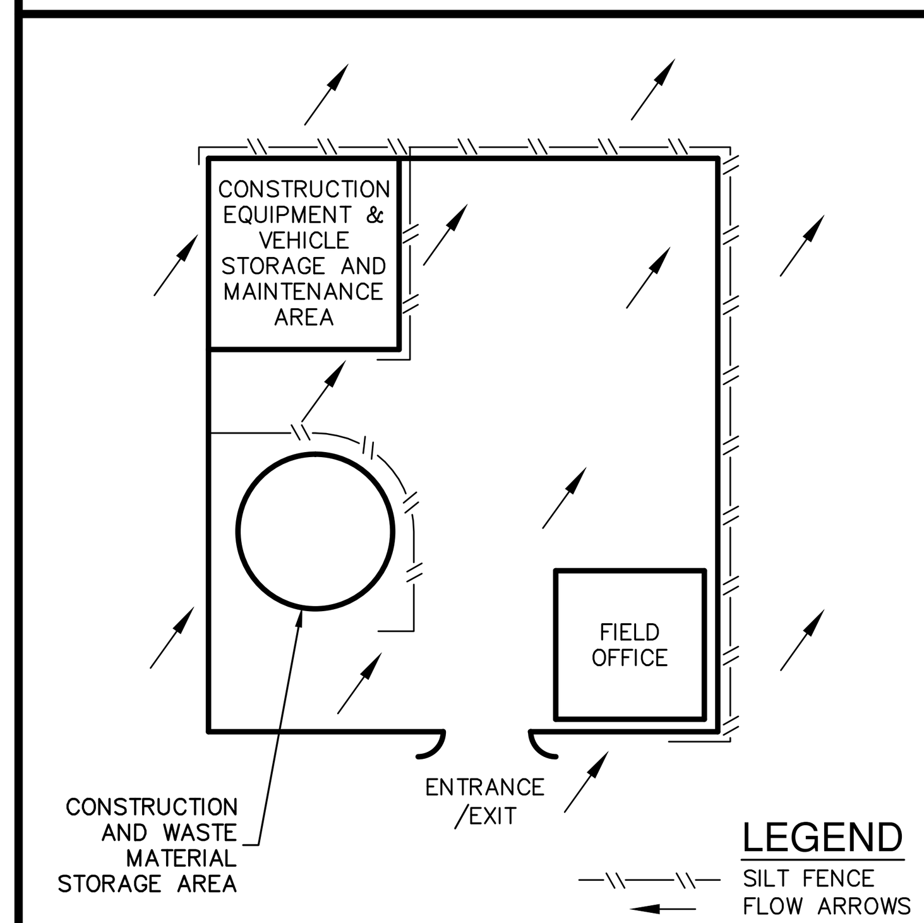
NOTES:
1. THE FILTER BAG MATERIAL SHALL BE MADE OF POLYPROPYLENE, POLYETHYLENE OR POLYAMIDE WOVEN FABRIC, MIN. UNIT WEIGHT OF 4 OUNCES/SY, HAVE A MULLEN BURST STRENGTH EXCEEDING 300 PSI AND ULTRAVIOLET STABILITY EXCEEDING 70%.

2. THE FILTER BAG SHALL BE FILLED WITH CLEAN, MEDIUM WASHED PEA GRAVEL TO COARSE GRAVEL (0.31 TO 0.75 INCH DIAMETER).

3. SAND SHALL NOT BE USED TO FILL THE FILTER BAGS.

GRAVEL FILTER BAG DETAIL

NOT-TO-SCALE



CONSTRUCTION STAGING AREA

NOT-TO-SCALE

THE ENGINEERING SEAL HAS BEEN AFFIXED TO THIS SHEET ONLY FOR THE PURPOSE OF DEMONSTRATING COMPLIANCE WITH THE TPDES-STORM WATER POLLUTION PREVENTION PLAN (SWP3) REGULATIONS.

THIS SHEET HAS BEEN PREPARED FOR PURPOSES OF THE SWP3 ONLY. ALL OTHER CIVIL ENGINEERING RELATED INFORMATION SHOULD BE ACQUIRED FROM THE APPROPRIATE SHEET IN THE CIVIL IMPROVEMENT PLANS.

EXHIBIT 3

NO.	REVISION	DATE

This document is released for INTERIM REVIEW purposes ONLY under the authorization of Thomas Matthew Carter, P.E. #79272 on 10/21/2015
This document is not to be used for CONSTRUCTION.

PAPE-DAWSON ENGINEERS
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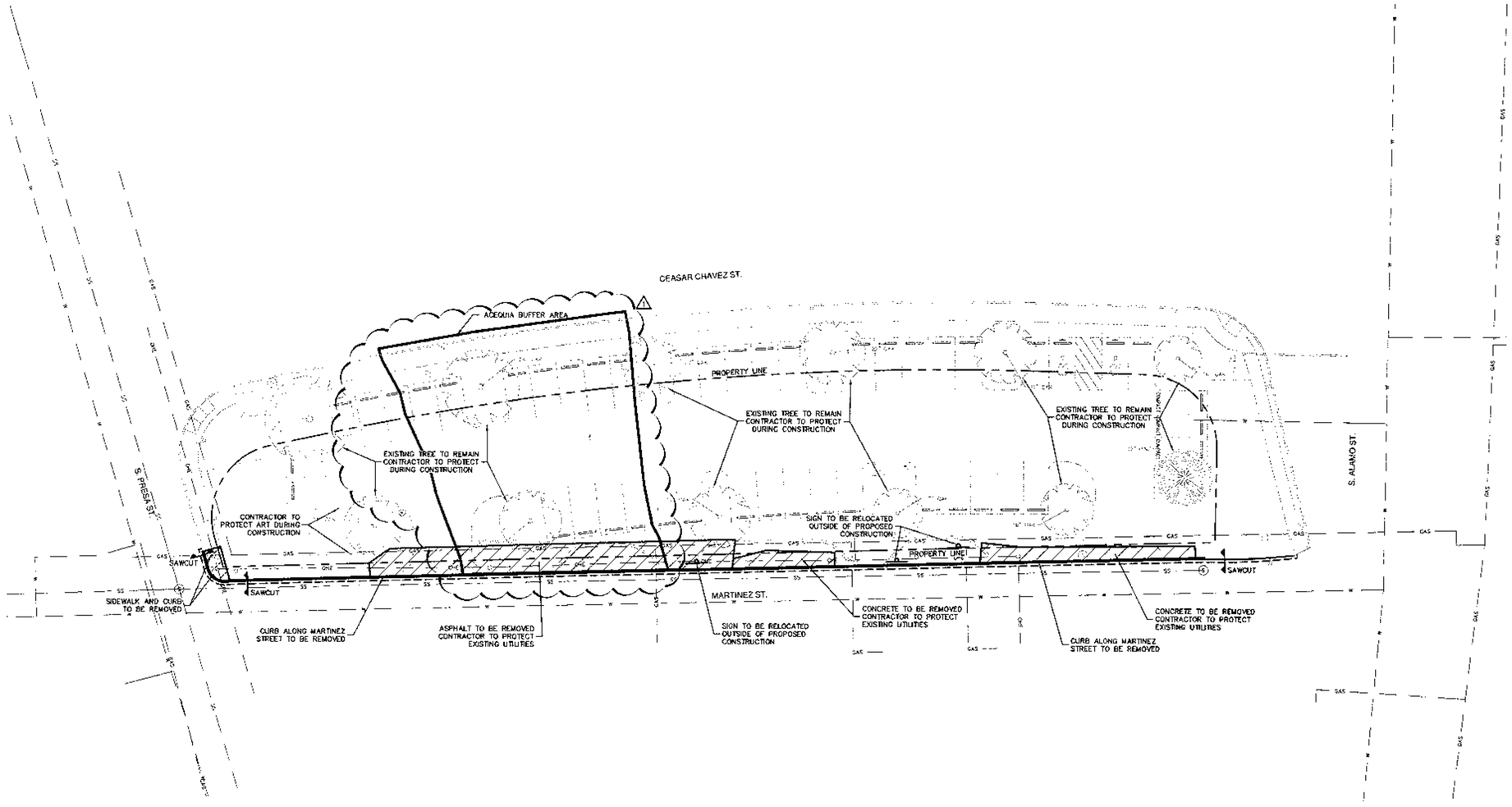
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

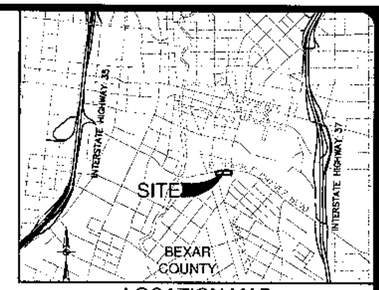
HEMISFAIR SURFACE PARKING LOT
SAN ANTONIO, TEXAS
SWPPP DETAILS

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CO DRAWN JR
SHEET C2.10



SCALE: 1"= 20'

0' 20' 40' 60'



LOCATION MAP

NOT-TO-SCALE

LEGEND

PROPERTY LINE	
EXISTING FEATURE TO REMAIN	
EXISTING UTILITIES	
DEMOLISHED FEATURES	
PROPOSED CONSTRUCTION	
SAWCUT LINE	
EXISTING PAVEMENT/CONCRETE TO BE REMOVED	

DEMOLITION NOTES:

1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL NECESSARY PERMITS/APPROVALS BEFORE BEGINNING DEMOLITION.
2. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVING FROM THE SITE ALL ITEMS SHOWN TO BE DEMOLISHED UNLESS OTHERWISE INDICATED. ALL MATERIALS SHALL BE DEMOLISHED AND REMOVED FROM SITE IN ACCORDANCE WITH ALL APPLICABLE, FEDERAL, STATE AND LOCAL REGULATIONS.
3. ALL EXISTING ITEMS NOT SPECIFICALLY NOTED TO BE DEMOLISHED SHALL REMAIN. CONTRACTOR IS RESPONSIBLE FOR REPLACING EXISTING ITEMS REMOVED DURING DEMOLITION THAT WERE TO REMAIN.
4. CONTRACTOR IS RESPONSIBLE FOR COORDINATION WITH ALL UTILITY COMPANIES REGARDING REMOVAL OF EXISTING SERVICES. POWER POLES TO BE REMOVED, VERIFYING UTILITIES ARE SHUT OFF OR DISCONNECTED, AND THAT ALL POSSIBLE SAFETY PRECAUTIONS HAVE BEEN ENACTED TO ENSURE THE SAFEST ENVIRONMENT FOR ALL PERSONNEL.
5. LOCATION AND DEPTH OF EXISTING UTILITIES SHOWN HEREON ARE APPROXIMATE ONLY. ACTUAL LOCATIONS AND DEPTHS MUST BE VERIFIED BY THE CONTRACTOR PRIOR TO THE CONSTRUCTION AND THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF ALL UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, THROUGHOUT ALL PHASES OF CONSTRUCTION.
6. ALL NECESSARY EROSION CONTROL MEASURES ARE TO BE IN PLACE PRIOR TO CONSTRUCTION. EROSION CONTROL MEASURES ARE TO BE MAINTAINED AND IN WORKING CONDITION AT ALL TIMES.
7. CONTRACTOR SHALL CONFIRM WITH THE OWNER OR HIS DESIGNATE WHETHER TO SALVAGE AND MAKE ARRANGEMENTS TO STORE TRANSPLANTABLE TREES PRIOR TO REMOVAL.
8. FOR TREES SHOWN TO REMAIN, THE CONTRACTOR SHALL INSTALL TREE PROTECTION IN ACCORDANCE WITH THE PROJECT PLANS AND SPECIFICATIONS. THE CONTRACTOR SHALL NOT REMOVE OR DAMAGE ANY TREES WITHOUT A PERMIT TO DO SO.
9. NO PARKING AND/OR STORAGE SHALL BE ALLOWED WITHIN THE DRIP LINE OF THE TREES TO REMAIN.
10. THE CONTRACTOR SHALL SAW CUT EXISTING PAVEMENT, CURBS AND SIDEWALKS AT NEW PAVEMENT, CURB AND SIDEWALK JUNCTURES, NO JAGGED OR IRREGULAR CUTS WILL BE ACCEPTED.
11. THE CONTRACTOR SHALL PROTECT ALL PROPERTY PINS, BENCH MARKS, CONSTRUCTION STAKES, HUBS, OR OTHER KEY CONTROL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO RE-ESTABLISH ANY SUCH POINTS AT THEIR OWN EXPENSE.
12. DEMOLITION CONTRACTOR IS RESPONSIBLE FOR CLEARING THE SITE OF ALL OBSTRUCTIONS THAT EXIST ON THIS SITE PRIOR TO THE START OF CONSTRUCTION OR DURING THE CONSTRUCTION SO AS TO NOT IMPEDE THE BUILDING CONSTRUCTION CONTRACTOR.
13. CONTRACTOR SHALL COORDINATE WITH THE OWNER TO IDENTIFY ANY MATERIAL OR EQUIPMENT SCHEDULED FOR REMOVAL TO BE SALVAGED AND RELISED. CONTRACTOR SHALL REPLACE AT HIS EXPENSE ANY DESTROYED MATERIAL OR EQUIPMENT THAT WAS MARKED FOR SALVAGE.
14. NO EXISTING ASPHALT OR CONCRETE PAVING SCHEDULED FOR REMOVAL SHALL REMAIN ON-SITE OR BE USED AS FILL MATERIAL. CONTRACTOR SHALL BE RESPONSIBLE FOR REMOVAL AND DISPOSAL OF ALL HAZARDOUS MATERIAL OFFSITE FOLLOWING ALL APPLICABLE DISPOSABLE REGULATIONS.
15. CONTRACTOR SHALL REMOVE ALL EXISTING IRRIGATION PIPING ON SITE, CUT AND CAP LATERALS AT PROJECT LIMITS TO ALLOW PROPER FUNCTION OF ZONES EXTENDING OFF-SITE.
16. CONTRACTOR SHALL NOT DEMOLISH ANY PUBLIC WATER OR SANITARY SEWER LINES WITHOUT APPROVAL. EXISTING WATER AND SANITARY SEWER SERVICES SHALL REMAIN OPERATIONAL UNTIL NEW SERVICE IS COMPLETE. CUT AND CAP ANY ABANDONED SANITARY SEWER AND WATER SERVICES AT THE EXISTING MAIN. NO ABANDONED SERVICES SHALL REMAIN CONNECTED TO THE PUBLIC MAIN.
17. THE USE OF EXPLOSIVES WILL NOT BE PERMITTED.
18. ALL WASTE MATERIAL REMAINING AFTER OWNER SALVAGE IS COMPLETE AND RESULTING FROM DEMOLITION OPERATIONS BECOMES THE PROPERTY OF THE CONTRACTOR. APPROPRIATE DISPOSAL OF WASTE MATERIAL SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR AT HIS OWN EXPENSE. OWNER WILL PROVIDE LIST OF ITEMS TO BE SALVAGED.
19. THE CONTRACTOR SHALL BE REQUIRED TO LOCATE ALL PUBLIC OR PRIVATE UTILITIES INCLUDING BUT NOT LIMITED TO: WATER, SEWER, TELEPHONE, FIBER OPTIC LINES, SITE LIGHTING ELECTRIC, SECONDARY ELECTRIC, PRIMARY ELECTRICAL DUCT BANKS, LANDSCAPE IRRIGATION FACILITIES, AND GAS LINES. ANY UTILITY CONFLICTS THAT ARISE SHOULD BE COMMUNICATED TO THE ENGINEER IMMEDIATELY AND PRIOR TO CONSTRUCTION. THE CONTRACTOR SHALL CONTACT 1-800-DIG-TESS A MINIMUM OF 48 HOURS PRIOR TO THE START OF CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR AND THE REPAIR SHALL BE AT THE CONTRACTORS SOLE EXPENSE WHETHER THE UTILITY IS SHOWN ON THESE PLANS OR NOT.
20. THE CONTRACTOR SHALL MAINTAIN THE SITE IN A CLEAN AND ORDERLY MANNER.
21. THE CONTRACTOR SHALL MEET ALL LOCAL, STATE, AND FEDERAL REGULATIONS FOR DUST CONTROL. THE CONTRACTOR SHALL BE RESPONSIBLE AT THEIR OWN EXPENSE FOR ANY FUGITIVE DUST ON ADJOINING PROPERTIES.

NO.	REVISION	DATE
0	BID SET	12-31-15
1	ACEQUIA BUFFER	07-17-16

2-15-16

THOMAS MATTHEW CARTER 79272 LICENSED PROFESSIONAL ENGINEER STATE OF TEXAS

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 100288-00

HEMISFAIR SURFACE PARKING LOT

SAN ANTONIO, TEXAS

DEMOLITION PLAN

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CO DRAWN JR
SHEET C3.00

EDGE OF PAVEMENT POINTS		
POINT #	NORTHING	EASTING
200	13699925.68	2130992.93
201	13699919.76	2130994.60
202	13699915.40	2131000.54
203	13699916.91	2131057.16
204	13699922.23	2131064.63
205	13699933.17	2131064.63
206	13699943.16	2131054.26
207	13699941.95	2131021.75
208	13699959.95	2131021.09
209	13699960.48	2131035.36
210	13699964.09	2131038.36
211	13699977.35	2131036.61
212	13699985.69	2131080.60
213	13699970.88	2131083.02
214	13699968.41	2131088.46
215	13699969.67	2131094.51
216	13699973.08	2131097.03
217	13699987.92	2131094.80
218	13699993.76	2131140.18
219	13699978.84	2131141.78

EDGE OF PAVEMENT POINTS		
POINT #	NORTHING	EASTING
220	13699976.17	2131145.06
221	13699976.74	2131150.67
222	13699980.02	2131153.36
223	13699994.95	2131151.97
224	13699998.38	2131197.55
225	13699983.39	2131198.30
226	13699980.56	2131201.50
227	13699980.96	2131209.96
228	13699984.07	2131212.83
229	13699999.07	2131212.22
230	13699999.95	2131257.94
231	13699984.95	2131257.94
232	13699981.95	2131260.94
233	13699981.95	2131268.82
234	13699984.95	2131271.82
235	13699999.95	2131271.82
236	13699999.95	2131316.82
237	13699984.95	2131316.82
238	13699981.95	2131319.82
239	13699981.95	2131334.82

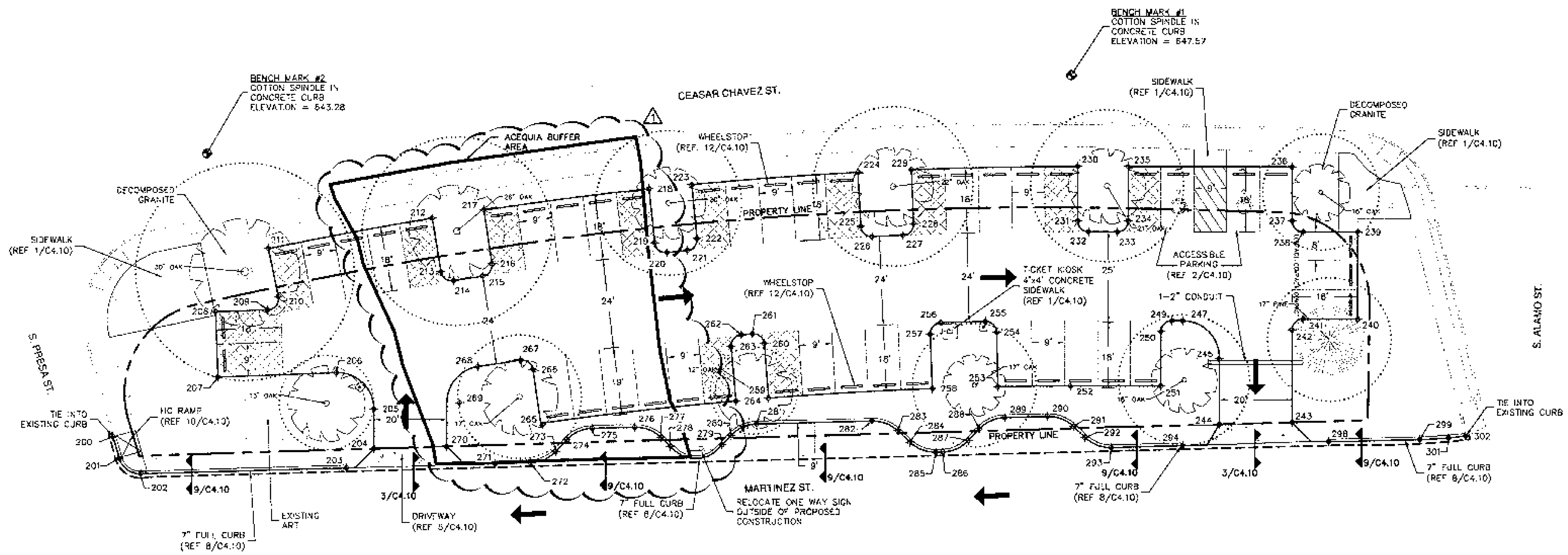
EDGE OF PAVEMENT POINTS		
POINT #	NORTHING	EASTING
240	13699957.95	2131334.82
241	13699957.95	2131319.82
242	13699954.95	2131316.82
243	13699929.48	2131316.82
244	13699928.91	2131296.82
245	13699946.95	2131296.82
247	13699957.45	2131286.82
249	13699957.45	2131283.82
250	13699954.45	2131280.82
251	13699939.45	2131280.82
252	13699939.45	2131255.90
253	13699939.25	2131235.97
254	13699954.25	2131235.68
255	13699957.19	2131232.62
256	13699956.84	2131220.32
257	13699953.73	2131217.43
258	13699938.75	2131217.98
259	13699936.10	2131173.06
260	13699951.05	2131171.85
261	13699953.79	2131168.61

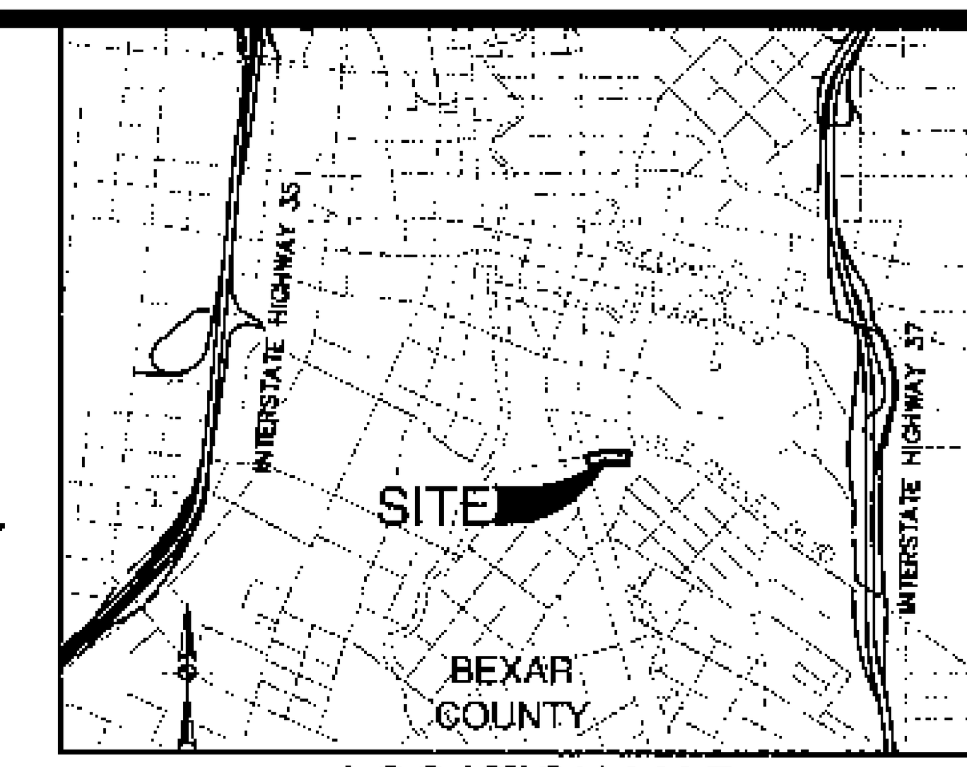
EDGE OF PAVEMENT POINTS		
POINT #	NORTHING	EASTING
262	13699953.53	2131165.48
263	13699950.27	2131162.75
264	13699935.34	2131164.09
265	13699928.63	2131110.89
266	13699943.94	2131108.34
267	13699940.48	2131104.94
268	13699944.72	2131093.15
269	13699934.81	2131088.12
270	13699922.81	2131084.63
271	13699916.00	2131097.97
272	13699918.75	2131107.59
273	13699921.37	2131114.58
274	13699924.59	2131117.64
275	13699927.71	2131124.63
276	13699928.02	2131136.34
277	13699925.28	2131143.49
278	13699922.80	2131146.10
279	13699923.18	2131160.24
280	13699925.83	2131162.75
281	13699928.95	2131169.75

EDGE OF PAVEMENT POINTS		
POINT #	NORTHING	EASTING
282	13699929.76	2131201.44
283	13699927.05	2131208.54
284	13699923.93	2131211.87
285	13699921.22	2131218.98
286	13699921.27	2131220.87
287	13699924.38	2131227.86
288	13699927.62	2131230.93
289	13699930.73	2131237.92
290	13699931.04	2131249.63
291	13699926.31	2131256.78
292	13699925.24	2131260.01
293	13699922.50	2131267.16
294	13699923.02	2131286.76
298	13699924.09	2131326.87
299	13699924.76	2131351.96
301	13699925.28	2131359.85
302	13699925.73	2131364.53

SCALE: 1"= 20'

0' 20' 40' 60'





LOCATION MAP

NOT-TO-SCALE

LEGEND

- PROPERTY LINE
- EXISTING CURB
- PROPOSED CURB (REF. 4.10)
- SAW CUT LINE
- PROPOSED ASPHALT PAVEMENT (REF. 4/C4.10)
- CROSS SECTION DETAIL (C4.10)
- HEADER CURB
- PROPOSED CONCRETE PAVEMENT (REF. 5/C4.10)
- DECOMPOSED GRANITE
- POROUS PAVEMENT (REF. 14/C4.10)
- TREE DRIP LINE

DIMENSIONAL CONTROL NOTES:

1. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MY ARISE CONCERNING THE INTENT, PLACEMENT OR LIMITS OF DIMENSIONS NECESSARY FOR CONSTRUCTION OF THE PROJECT.
2. THE CONTRACTOR SHALL PRESERVE ALL CONTROL POINTS, PROPERTY PINS, BENCH MARKS, HUBS OR OTHER KEY CONTROL POINTS. THE CONTRACTOR SHALL BE RESPONSIBLE TO RE-ESTABLISH ANY SUCH POINTS AT THEIR OWN EXPENSE IN THE EVENT THEY ARE REMOVED.
3. THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS PRIOR TO THE START OF CONSTRUCTION AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
4. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ESTABLISHING ALL HORIZONTAL AND VERTICAL CONTROL PER THE CONSTRUCTION DRAWINGS.
5. UNLESS OTHERWISE NOTED, THE CONTRACTOR SHALL USE THE PROPERTY PINS FOR HORIZONTAL CONTROL POINTS. BENCHMARKS ARE NOT TO BE USED FOR HORIZONTAL CONTROL.
6. COORDINATES FOR HORIZONTAL CONTROL POINTS ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE, NAD 83(96) DISPLAYED IN SURFACE VALUES USING A SURFACE ADJUSTMENT FACTOR FOR EACH COUNTY.
(THE SURFACE ADJUSTMENT FACTOR FOR BEXAR COUNTY IS 1.00017. OTHER COUNTIES WILL HAVE A DIFFERENT FACTOR. CHECK WITH THE SURVEYOR TO OBTAIN THE CORRECT SURFACE ADJUSTMENT FACTOR FOR PROJECTS LOCATED OUTSIDE OF BEXAR COUNTY.)
7. BENCHMARK ELEVATIONS ARE BASED ON NAVD 88, GEOID 03.
8. ALL DIMENSIONAL CONTROL POINTS OR DIMENSIONS ARE TO THE FACE OF CURB, FACE OF RETAINING WALL, AND CENTER OF PAINT STRIPING. ALL DIMENSIONS ARE PERPENDICULAR TO THE POINT OF REFERENCE.
9. CURB RADII ARE 3' UNLESS OTHERWISE NOTED ON THE DRAWINGS.

PAVEMENT NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY OR TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. THE CONTRACTOR SHALL LOCATE AND PROTECT ALL EXISTING UTILITY AND STORM DRAIN SYSTEMS PRIOR TO CONSTRUCTION.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
4. THE CONTRACTOR SHALL VERIFY ELEVATIONS AND LOCATIONS OF EXISTING FACILITIES AND NOTIFY THE ENGINEER OF ANY CONFLICTS PRIOR TO BEGINNING CONSTRUCTION.
5. ALL PAINT SHALL BE 4" WIDE REFLECTIVE PAINT: WHITE ON ASPHALT PAVING AND YELLOW ON CONCRETE UNLESS OTHERWISE NOTED ON THE DRAWINGS.
6. ALL PAVEMENT MARKINGS SHALL RECEIVE TWO COATS OF PAINT.
7. CONTRACTOR SHALL USE SUPERSPOTS PAVEMENT MARKINGS FOR TRUEGRID ALTERNATE.
8. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.
9. ALL SIGNS SHALL CONFORM TO MUTCD, LATEST EDITION.
10. THE CONTRACTOR SHALL SAW CUT EXISTING PAVING, CURB, AND SIDEWALKS TO PROVIDE A SMOOTH TRANSITION. NO JAGGED OR IRREGULAR EDGES WILL BE ALLOWED.

NO.	REVISION	DATE
0	BID SET	12-31-15
1	ACEQUIA BUFFER	02-17-16

STATE OF TEXAS
THOMAS MATTHEW CARTER
79272
LICENSED PROFESSIONAL ENGINEER
2-19-16

PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

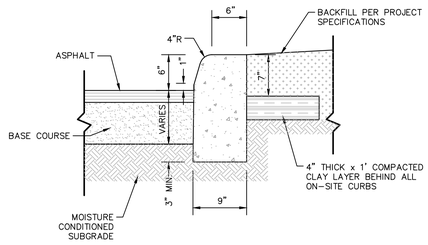
HEMISFAIR SURFACE PARKING LOT

SAN ANTONIO, TEXAS

DIMENSIONAL CONTROL PLAN

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CO DRAWN JR
SHEET C4.00

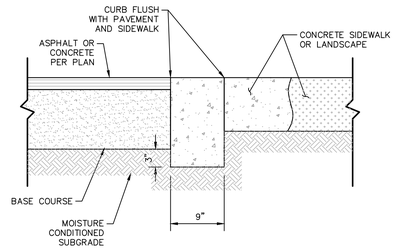
AB



NOTE: CURB TO EXTEND A MINIMUM OF 3" INTO SUBGRADE.

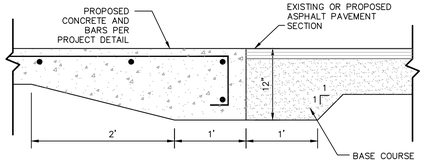
① 6" CONCRETE CURB WITH CLAY BACKFILL DETAIL

NOT-TO-SCALE



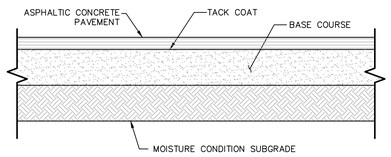
② HEADER CURB DETAIL

NOT-TO-SCALE



③ CONCRETE/ASPHALT JUNCTURE DETAIL

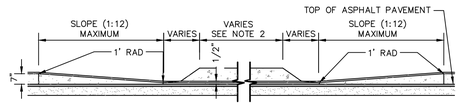
NOT-TO-SCALE



PAVEMENT MATERIALS	LIGHT DUTY ASPHALT (IN.)
ASPHALTIC CONCRETE SURFACE COURSE	2
CRUSHED LIMESTONE BASE COURSE	8
LIME TREATED SUBGRADE	6

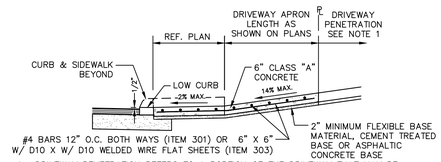
④ FLEXIBLE PAVEMENT SECTIONS

NOT-TO-SCALE



CURB PROFILE AT DRIVEWAY

WITH SIDEWALK ABUTTING CURB

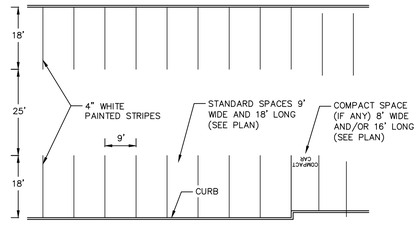


1. DRIVEWAY PENETRATION REFERS TO A PORTION OF THE DRIVEWAY THAT MAY BE NECESSARY TO RECONSTRUCT WITHIN PRIVATE PROPERTY TO COMPLY WITH A MAXIMUM DRIVEWAY SLOPE. THIS PORTION OF THE DRIVEWAY SHALL BE PAID FOR UNDER THE FOLLOWING ITEMS AS MAY APPLY:
   A.) CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.1 OR 503.2.
   B.) ASPHALTIC CONCRETE DRIVEWAY PAID FOR UNDER ITEM NO. 503.4 AND SHALL INCLUDE A MINIMUM OF 1" ASPHALT TYPE 'D' & 6" FLEXIBLE BASE
   C.) GRAVEL DRIVEWAY PAID FOR UNDER ITEM NO. 503.5 AND SHALL INCLUDE A MINIMUM OF 6" FLEXIBLE BASE
2. THE PROPOSED DRIVEWAY SHOULD MATCH THE EXISTING WIDTH AT THE PROPERTY LINE BUT UNLESS AUTHORIZED BY THE CITY TRAFFIC ENGINEER, THE WIDTH SHALL BE WITHIN THE FOLLOWING VALUES:

TYPE	MINIMUM	MAXIMUM
COMMERCIAL – ONE WAY	12'	20'
COMMERCIAL – TWO WAY	24'	30'

⑤ TYPICAL COMMERCIAL DRIVEWAY SECTION

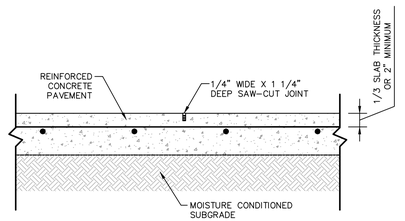
NOT-TO-SCALE
WITH SIDEWALK ABUTTING CURB
ITEM 503.2



NOTE: ALL SPACES SHOWN ON PLAN STD. (9x18) UNLESS OTHERWISE NOTED

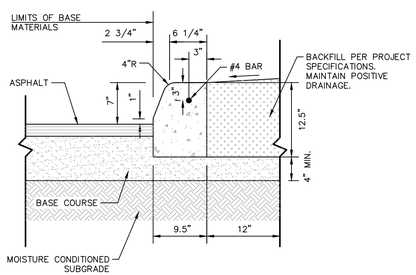
⑥ STRIPING FOR 90-DEGREE PARKING

NOT-TO-SCALE



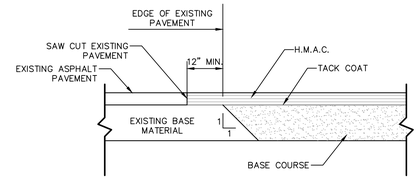
⑦ SAWCUT CONTROL JOINT DETAIL

NOT-TO-SCALE



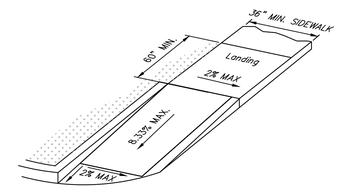
⑧ 7" CONCRETE CURB DETAIL

NOT-TO-SCALE



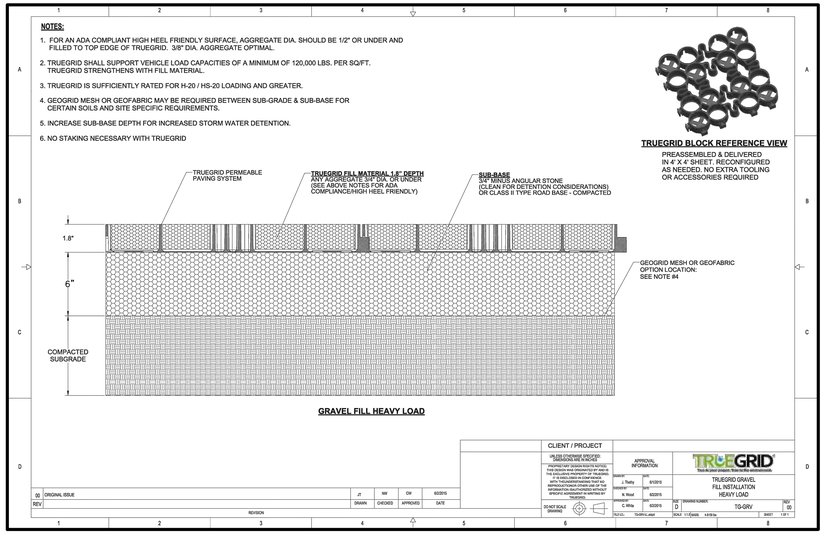
⑨ ASPHALT/ASPHALT JUNCTURE DETAIL

NOT-TO-SCALE



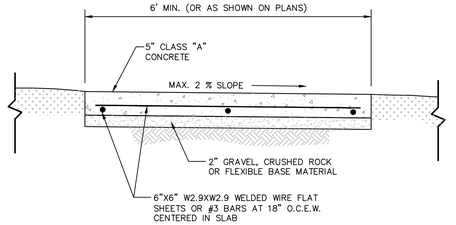
⑩ CURB RAMP TYPE "B"

NOT-TO-SCALE



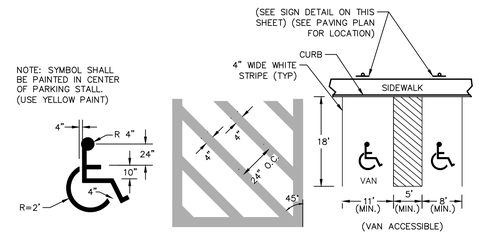
⑪ TRUEGRID PAVEMENT SECTIONS

NOT-TO-SCALE



⑫ SIDEWALK DETAIL

NOT-TO-SCALE



ACCESSIBLE PARKING STALL SYMBOL

NOTE: ALL PAVEMENT MARKINGS AND SIGNAGE OF ACCESSIBLE PARKING AREAS SHALL BE IN ACCORDANCE WITH THE MOST CURRENT ACCESSIBILITY MANUAL.

STRIPING DETAIL

ACCESSIBLE PARKING AREA DETAIL

AS AN EXCEPTION, VAN PARKING SPACES MAY BE A MINIMUM OF 8' WIDE WHEN THE ACCESS AISLE IS A MINIMUM OF 8'.

⑬ ACCESSIBLE PARKING DETAILS

NOT-TO-SCALE

NO.	REVISION	DATE

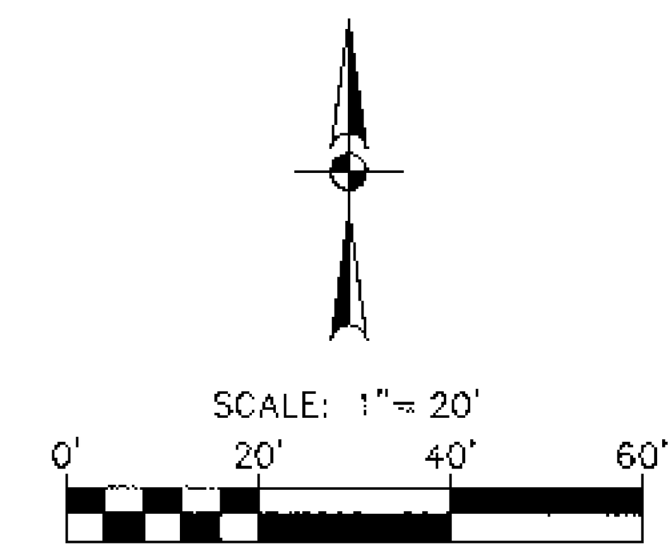
This document is released for INTERIM REVIEW purposes ONLY under the authorization of Thomas Matthew Carter, P.E. #79272 on 10/21/2015
This document is not to be used for CONSTRUCTION.

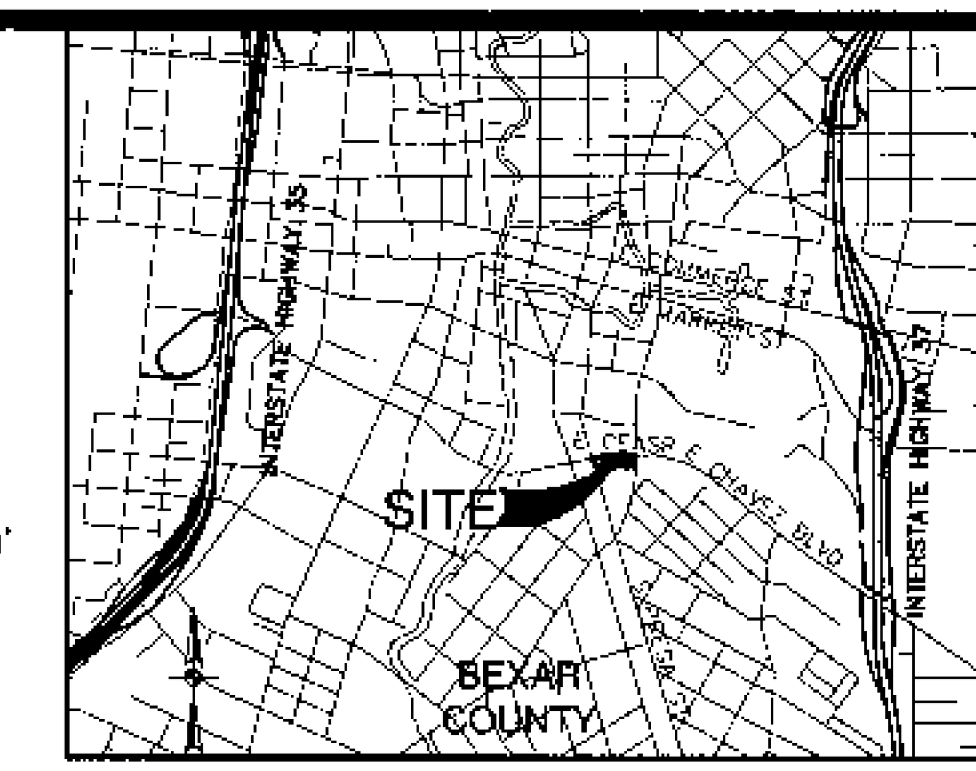
PAPE-DAWSON ENGINEERS
2000 NW LOOP 410 | SAN ANTONIO, TEXAS 78213 | PHONE: 210.375.9000 FAX: 210.375.9010
TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470
TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

HEMISFAIR SURFACE PARKING LOT
SAN ANTONIO, TEXAS

PAVING DETAILS

PLAT NO. -
JOB NO. 7645-20
DATE OCTOBER 2015
DESIGNER AB
CHECKED CO DRAWN JR
SHEET C4.10



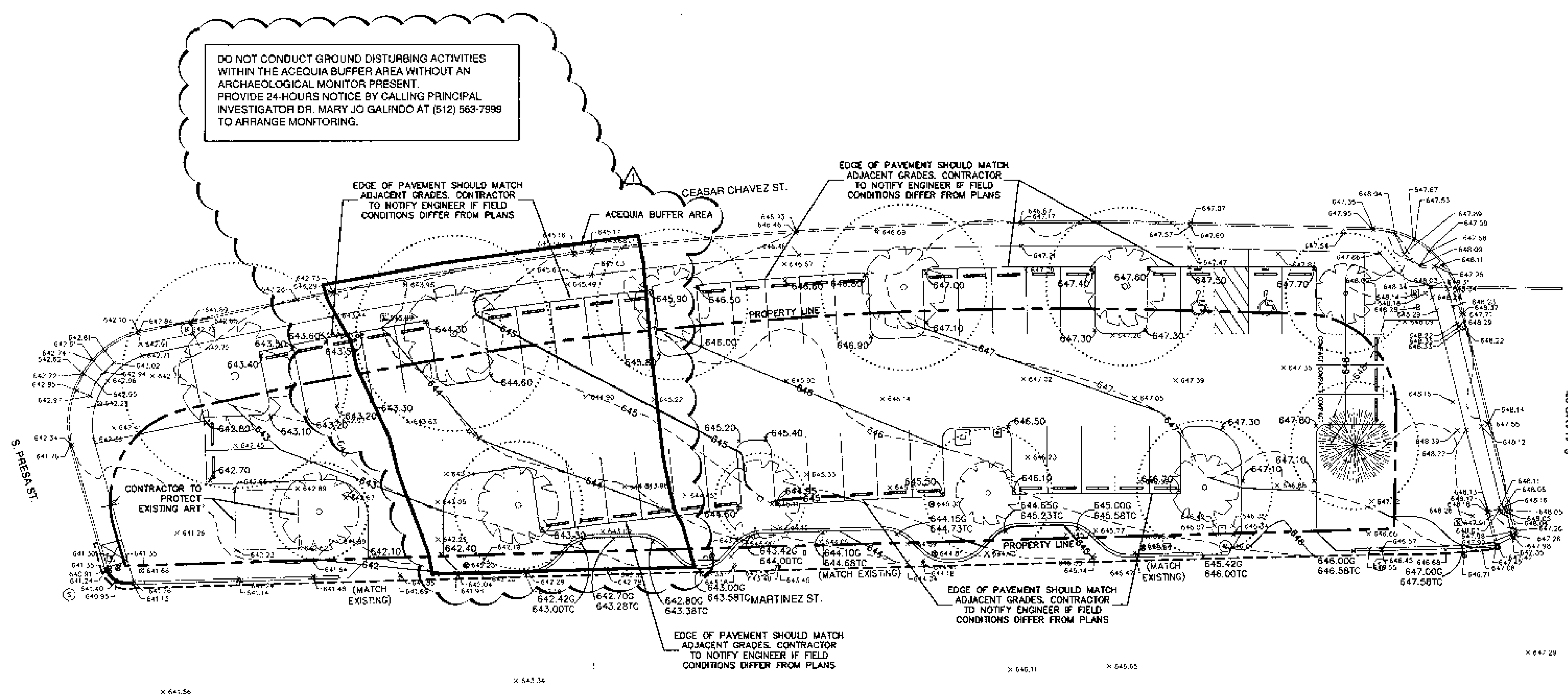


LOCATION MAP

NOT-TO-SCALE

LEGEND

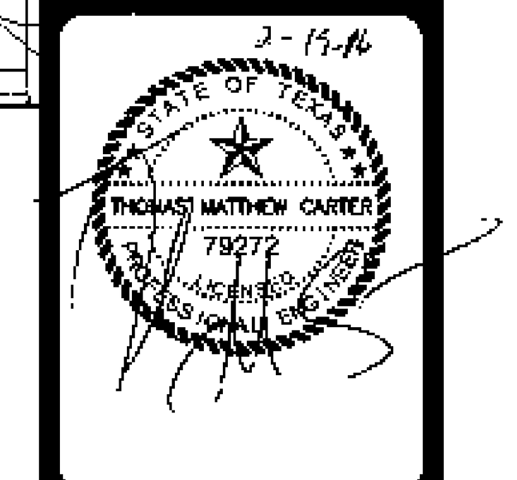
- PROPERTY LINE
- EXISTING CURB
- PROPOSED STANDARD CURB
- PROPOSED HEADER CURB
- EXISTING CONTOURS
- PROPOSED CONTOURS
- PROPOSED SPOT ELEVATIONS ×885.00
- EXISTING SPOT ELEVATION
- TREE DRIP LINE



GRADING NOTES:

1. ALL MATERIALS AND CONSTRUCTION PROCEDURES WITHIN THIS SCOPE OF WORK WHERE NOT SPECIFICALLY COVERED IN THE SPECIFICATIONS OR GEOTECHNICAL REPORT SHALL CONFORM TO ALL APPLICABLE CITY, COUNTY AND TXDOT STANDARD SPECIFICATIONS FOR PUBLIC WORKS CONSTRUCTION (LATEST EDITION).
2. SITE PREPARATION, GRADING, EXCAVATION AND FILL SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT GEOTECHNICAL REPORT AND SPECIFICATIONS.
3. ALL SELECT FILL MATERIAL PROVIDED SHALL BE APPROVED BY THE GEOTECHNICAL ENGINEER PRIOR TO PLACING AND COMPACTING.
4. ALL ELEVATIONS AND PROPOSED CONTOURS SHOWN ON THIS GRADING PLAN REFLECT FINISHED GRADES. THE THICKNESS OF PAVING, BASE, GRASS, TOPSOIL, AND MULCH MUST BE SUBTRACTED TO OBTAIN SUBGRADE ELEVATIONS.
5. THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER OF ANY QUESTIONS THAT MAY ARISE CONCERNING THE INTENT, PLACEMENT, OR LIMITS OF DIMENSIONS OR GRADES NECESSARY FOR CONSTRUCTION OF THIS PROJECT.
6. THE CONTRACTOR SHALL VERIFY THE SUITABILITY OF ALL EXISTING AND PROPOSED SITE CONDITIONS INCLUDING GRADES AND DIMENSIONS BEFORE COMMENCEMENT OF CONSTRUCTION. THE ENGINEER SHALL BE NOTIFIED IMMEDIATELY OF ANY DISCREPANCIES.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ACQUIRING ALL PERMITS, TESTS, APPROVALS AND ACCEPTANCES REQUIRED TO COMPLETE CONSTRUCTION OF THIS PROJECT.
8. THE CONTRACTOR SHALL REMOVE TOP SOIL, GRASS, ROOTS, DEBRIS, ETC. AND DISPOSE OFF SITE THOSE MATERIALS NOT SUITABLE FOR EMBANKMENT AND TOPSOIL. CLEAN STRIPPINGS AND TOPSOIL MAY BE STOCKPILED ON SITE FOR REUSE IN A LOCATION SPECIFIED BY THE OWNER.
9. THE SITE CONTRACTOR SHALL BE RESPONSIBLE FOR SITE STABILIZATION. ALL DISTURBED AREAS SHALL BE REVEGETATED IN ACCORDANCE WITH PROJECT SPECIFICATIONS AND TPDES/SWPPP REQUIREMENTS. REFERENCE THE LANDSCAPE ARCHITECT'S PLAN, IF APPLICABLE.
10. THE CONTRACTOR SHALL TAKE ALL NECESSARY PRECAUTIONS (USE OF SILT FENCES, ETC.) TO KEEP DRAINAGE AND SILT FROM WASHING ONTO ADJACENT PROPERTY, STREETS, OR DRAINAGE WAYS. CONTRACTOR SHALL IMMEDIATELY REMOVE SILT/DEBRIS WHICH WASHES OFFSITE OR INTO EXISTING STORM DRAIN SYSTEMS. (SEE SWPPP PLANS & TPDES BOOK).
11. THE CONTRACTOR SHALL OBTAIN GRADES SHOWN HEREON WITHIN +/- ONE-TENTH (0.10) FOOT.
12. IN PROPOSED PAVING AREAS, IT IS INTENDED THAT THE MINIMUM GRADE IS 1%. ALL EARTHEN SLOPES SHALL BE A MAXIMUM OF 3:1 AND A MINIMUM OF 1.0% UNLESS OTHERWISE SHOWN.
13. THE CONTRACTOR SHALL PROVIDE A SMOOTH TRANSITION BETWEEN EXISTING SITE AND PROPOSED IMPROVEMENTS.
14. THE CONTRACTOR SHALL BE RESPONSIBLE FOR RESTORING TO ITS ORIGINAL, OR BETTER, CONDITION ANY DAMAGE DONE TO EXISTING TREES, BUILDINGS, UTILITIES, FENCES, PAVEMENT, CURBS, OR DRIVEWAYS (NO SEPARATE PAY ITEMS).
15. THE CONTRACTOR SHALL EXERCISE EXTREME CAUTION IN WORKING NEAR UTILITIES, GAS LINES, SEWER, OR EXISTING APPURTENANCES. PRIOR TO PERFORMING ANY EXCAVATION, CONTRACTOR SHALL CONTACT ALL UTILITY COMPANIES AND ASSURE HIMSELF THAT ALL UTILITIES HAVE BEEN ADEQUATELY LOCATED AND IDENTIFIED. THE ENGINEER SHALL BE NOTIFIED IF ANY UTILITY CONFLICTS ARE DISCOVERED.
16. UTILITIES SHOWN ON THE PLANS ARE FROM INFORMATION SOURCES AVAILABLE AT THE TIME OF DESIGN BUT MAY NOT REPRESENT ALL EXISTING UTILITIES ON SITE. THE CONTRACTOR WILL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL UTILITIES WHETHER SHOWN ON THE PLANS OR NOT. THE CONTRACTOR SHALL UNCOVER EXISTING UTILITIES PRIOR TO CONSTRUCTION AND VERIFY SIZE, GRADE AND LOCATION. THE CONTRACTOR SHALL NOTIFY THE ENGINEER IMMEDIATELY OF ANY DEVIATIONS FROM PLANS PRIOR TO BEGINNING CONSTRUCTION. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN ON THE PLANS OR NOT, SHALL BE THE CONTRACTORS RESPONSIBILITY TO REPAIR, AT HIS OWN EXPENSE.
17. POSITIVE DRAINAGE SHALL BE MAINTAINED THROUGHOUT THE SCOPE OF THE PROJECT. DRAINAGE SHALL BE DIRECTED AWAY FROM ALL BUILDING FOUNDATIONS. CONTRACTOR SHOULD TAKE PRECAUTIONS NOT TO ALLOW ANY PONDING OF WATER.
18. FOR FILL PLACEMENT ON HILL SIDES OR STEEP SLOPE AREAS, THE CONTRACTOR SHALL REFERENCE THE PROJECT SPECIFICATIONS AND GEOTECHNICAL REPORT FOR SPECIAL INSTRUCTIONS REGARDING BENCHING.
19. NO WORK SHALL BE PERFORMED IN A PUBLIC RIGHT-OF-WAY WITHOUT A PERMIT.

NO.	REVISION	DATE
0	BID SET	12-31-15
1	ACEQUIA BUFFER	02-17-16



PAPE-DAWSON ENGINEERS

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TEXAS BOARD OF PROFESSIONAL ENGINEERS, FIRM REGISTRATION # 470

TEXAS BOARD OF PROFESSIONAL LAND SURVEYING, FIRM REGISTRATION # 10028800

HEMISFAIR SURFACE PARKING LOT

SAN ANTONIO, TEXAS

GRADING PLAN

PLAT NO. -

JOB NO. 7645-20

DATE OCTOBER 2015

DESIGNER AB

CHECKED CO DRAWN JR

SHEET C5.00

Appendix E

Regulatory Correspondence

PAPE-DAWSON ENGINEERS

February 22, 2016

Mark Denton
Texas Historical Commission
1511 Colorado Street
Austin, TX 78701

RE: Intensive Archaeological Survey of the Proposed Hemisfair Martinez Street Surface Parking Lot Project Draft Report, San Antonio, Bexar County, Texas; Antiquities Permit #7511

Dear Mr. Denton:

Enclosed is a draft copy of the above-referenced report for your review. Pape-Dawson performed this work in compliance with Texas Antiquities Permit #7511 and with the Historic Preservation and Urban Design Section of the City of San Antonio's (COSA) Unified Development Code. A copy of the draft report has also been submitted to the COSA archaeologist Kay Hindes for review.

The investigations included a cultural resources background literature review and an intensive survey with mechanical trenching. The background review determined that structures were present within the project area in the late-nineteenth and early-twentieth centuries. Additionally, a segment of the Acequia Madre (41BX8) is mapped as traversing the west side of the project area, and the boundary of archaeological site 41BX303 extends into the northern portion of the project area.

Based on the results of the survey and in accordance with 13 TAC 26.10, the segment of the Acequia Madre that is within the project area is recommended eligible for designation as a State Antiquities Landmark (SAL), and Pape-Dawson recommends avoidance of site 41BX8, or archaeological monitoring where avoidance is not possible. Conversely, the portion of site 41BX303 that is within the project area is not eligible for SAL designation, based on the disturbed nature of the cultural deposits and lack of intact features, and Pape-Dawson recommends no further archaeological work at site 41BX303. With this submission, Pape-Dawson is initiating consultation with your office for this project and requesting concurrence with our findings.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers, Firm Registration no 470

Mary Jo Galindo, Ph.D., RPA
Senior Archaeologist

CONCUR
by _____
for Mark Wolfe
Executive Director, THC
Date 3-16-16
Track#

DRAFT REPORT ACCEPTABLE

RECEIVED
MAR 21 2016

PAPE-DAWSON ENGINEERS

May 16, 2016

Mark Denton
Texas Historical Commission
1511 Colorado Street
Austin, TX 78701

RE: Artifacts Proposed for Discard, Hemisfair Martinez Street Surface Parking Lot Project, San Antonio, Bexar County, Texas; Antiquities Permit #7511; Sites 41BX8 (Acequia del Alamo) and 41BX303

Dear Mr. Denton:

Enclosed please find a list of artifacts proposed for discard that were collected during the survey of the above referenced project area. Pape-Dawson performed this work in compliance with Texas Antiquities Permit #7511 and with the Historic Preservation and Urban Design Section of the City of San Antonio's (COSA) Unified Development Code. A copy of this letter has also been submitted to the COSA Office of Historic Preservation Archaeologist Kay Hindes for review.

Prior to being discarded, the artifacts would be photographed with a scale, and the resulting images would be catalogued and curated along with the paperwork for the project. The artifacts proposed for discard at site 41BX303 were collected mainly from the backdirt of Backhoe Trench 1 (BHT 1); however, some were encountered within a column sample excavated along the north wall of BHT 1. A total of 19 bone fragments from BHT 1 backdirt would be discarded, including large-mammal rib and long bone fragments, a bovine femur fragment, and 15 uncut, lower-extremity bones and fragments that are from sheep or goat. Fifteen other artifacts proposed for discard are glass, ceramic, and metal fragments, and a charcoal sample.

Artifacts associated with site 41BX8 were recovered from the north and south profiles of BHT 2. Eleven artifacts are proposed for discard and include fragments of ceramic, brick, asphalt, glass, metal, plastic, rock, and faunal bone. The remaining eight diagnostic artifacts (glass bottle base fragment with a pontil scar and a square nail from BHT 1 column sample; two aqua-colored bottle glass fragments and another square nail from the backdirt of BHT 1 [41BX303]; and an ironstone fragment, annular ware fragment, and window pane fragment from BHT 2 south wall profile [41BX8]) are proposed for curation. With this submission, Pape-Dawson is continuing consultation with your office for this project and requesting concurrence with our recommendations regarding the discard of certain artifacts.

Sincerely,
Pape-Dawson Engineers, Inc.
Texas Board of Professional Engineers Firm Registration #470

[redacted]

[redacted]

Enclosures
cc: Kay Hindes

CONCUR
by: [signature]
for Mark Wolfe
Executive Director, THC
date: 6/2/16
ACT#

Appendix F

Monitoring Report

MEMORANDUM

TO: MARK DENTON, TEXAS HISTORICAL COMMISSION

FROM: MARY JO GALINDO, PH.D., RPA, PRINCIPAL INVESTIGATOR, PAPE-DAWSON

SUBJECT: CULTURAL RESOURCES MONITORING REPORT FOR THE PROPOSED HEMISFAIR MARTINEZ STREET SURFACE PARKING LOT PROJECT, **ANTIQUITIES PERMIT #7511**

DATE: 5/24/2016

CC: KAY HINDES, COSA OFFICE OF HISTORIC PRESERVATION
CHRIS OREM, PAPE-DAWSON

Project Description

On behalf of the Hemisfair Park Area Redevelopment Corporation, Pape-Dawson Engineers (Pape-Dawson) previously submitted to your office a draft report of an intensive survey with mechanical trenching of the proposed Hemisfair Martinez Street Surface Parking Lot Project in downtown San Antonio, Bexar County, Texas (Figure 1). Based on the results and recommendations of the draft survey report (Galindo 2016)—which were concurred upon by the Texas Historical Commission on March 18, 2016 (Galindo 2016: Appendix E)—and at the behest of the City of San Antonio Office of Historic Preservation (SA-OHP), an archaeologist monitored the construction excavations within a portion of the project area referred to as the Acequia Buffer (Figure 2). The property is owned by the City of San Antonio (COSA); therefore, all initial investigations and subsequent monitoring were conducted under Antiquities Permit No. 7511 and in consultation with the SA-OHP. Monitoring was performed during construction activities that occurred on April 28, 2016. This letter reports presents the results of the archaeological monitoring.

The project area consists of a roughly rectangular, grass-covered area with mature pine and oak trees along the perimeter. It is maximally 81 feet (ft) (25 meters [m]) north to south and 365 ft (111 m) east to west, for a total area of 0.64 acre (0.26 hectare [ha]). Bounded by East César E. Chávez Boulevard and Martinez Street to the north and south, respectively, and to the east and west by South Presa and South Alamo Streets, the project area is about 0.56 mile (0.90 kilometer [km]) northwest of the intersection of East César E. Chávez Boulevard and Interstate Highway 37.

The Acequia Buffer area was defined in consultation with the SA-OHP by placing a 32.8-ft (10-m) buffer around two proposed routes for the Acequia del Alamo/Acequia Madre (41BX8) (hereafter referred to as Acequia del Alamo) through the project area. These routes were based on acequia maps by I. Waynne Cox that are on file with SA-OHP, and from a map drawn by Francis Giraud in 1850 that is on file with the COSA Engineer's Office (Katz et al. 1978:2). The 32.8-ft (10-m) buffer was superimposed on the

Figure 1 : General Location Map

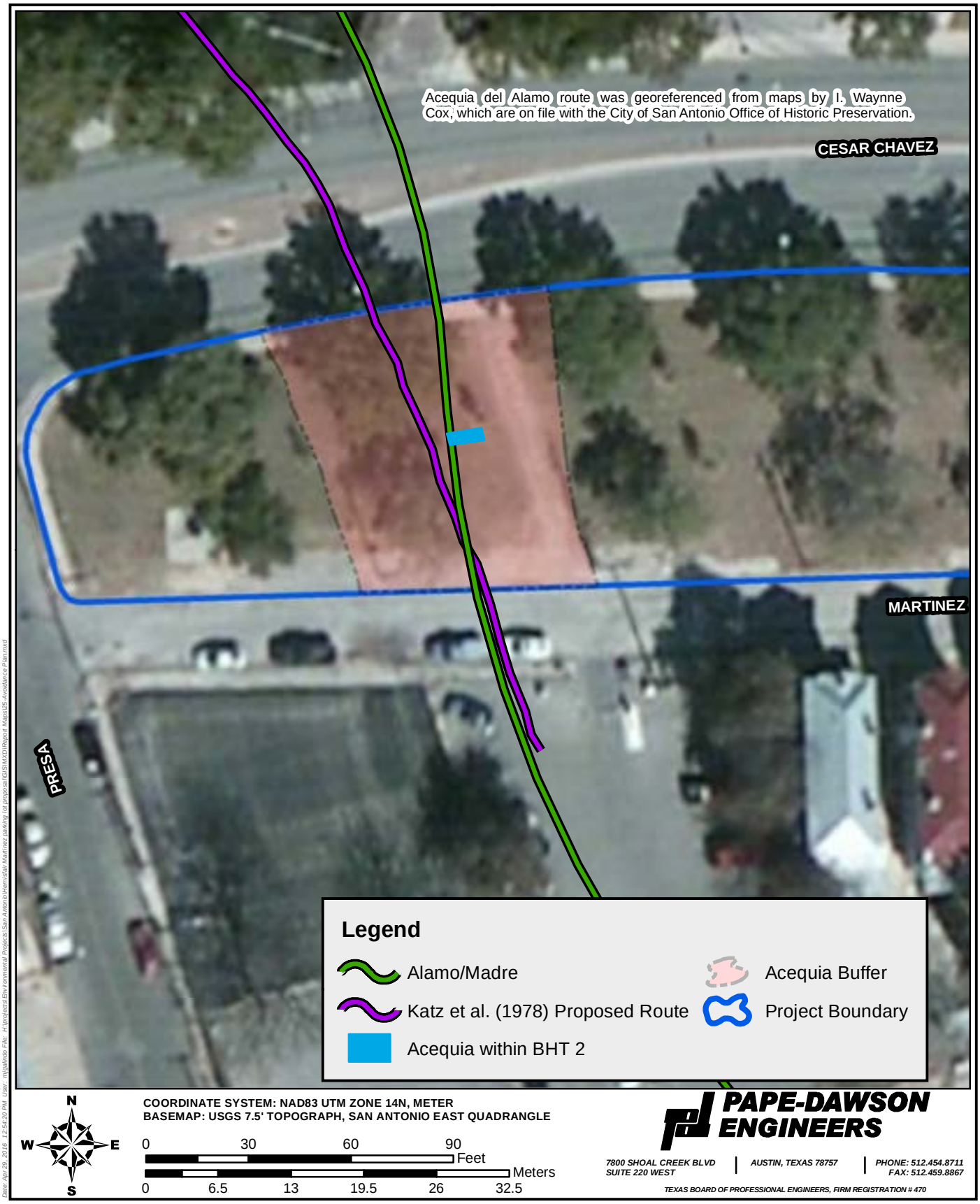

Figure 2 : Acequia Buffer Map

engineering plans dated February 17, 2016 (Galindo 2016:Appendix D), and it was determined that proposed vertical impacts within the Acequia Buffer were limited to 12 inches (30 centimeter [cm]) below surface throughout for grading. Because the uppermost acequia segment in the profile is between 7.9 to 19.7 inches (20 to 50 cm) below surface (Galindo 2016: Figure 23), it was determined that these proposed vertical impacts would likely adversely impact the segment of the Acequia del Alamo that traverses the project area, specifically the uppermost construction sequence that was documented at 7.9 inches (20 cm) below current ground surface (see Galindo 2016: Figure 23, CS 5). The uppermost channel measured 7.5 ft (2.3 m) wide and about 11.8 inches (30 cm) deep as revealed in the south wall profile of Backhoe Trench 2 (BHT 2) during the initial survey (Galindo 2016:Table 2).

Methodology

The goal of the monitoring was to gather information on the nature and types of cultural resources possibly buried in the buffered portion of the project area, with a focus on potentially significant resources related to the Spanish Colonial era, the Acequia del Alamo, or the nineteenth-century residential occupation of the project area. The archaeologist coordinated all field activities with appropriate construction personnel including the on-site construction foremen regarding scheduling and safety. The archaeologist complied with applicable safety regulations and wore all required safety equipment (e.g., hardhat and steel-toed boots). Monitoring consisted of a qualified archaeologist observing the mechanical grading/scraping of soil within the Acequia Buffer area, while frequently inspecting the buffer area and backdirt piles for cultural remains. When encountered, artifacts were examined, quantified, and assessed as to age and origin. Diagnostic artifacts or those of particular interest were to be collected for further study at Pape-Dawson's Archaeological Laboratory in Austin; however, none was encountered.

If intact archaeological deposits had been revealed during the construction process, the archaeologist would have attempted to make a determination as to potential significance. At this point, construction would have been temporarily suspended so that the archaeologist could have better examined the cultural materials or features, taken photographs, and thoroughly documented the finds. Once the materials were assessed, construction would have recommenced, and continued as planned. Only if the materials had been assessed as extremely significant (e.g., intact features or human remains) would construction in the immediate area have been halted. If a localized work stoppage had been required, the monitoring archaeologist would have immediately contacted all involved parties (Hemisfair Park Area Redevelopment Corporation, THC, SA-OHP, etc.) through the appropriate Pape-Dawson project manager to discuss the find and formulate a plan of action. However, during the course of the monitoring it was not necessary to implement this emergency contingency plan.

Monitoring Results

On April 28, 2016, Dr. Mary Jo Galindo observed the mechanical grading process within the Acequia Buffer. Prior to the start of excavations and guided by a sub-meter accurate Trimble GPS unit, the location of Construction Sequence 5 within BHT 2 and the projected acequia routes as plotted by Cox and Giraud were spray painted on the grass to orient the grader operator. The BHT 2 south wall profile

that illustrated the acequia was also shared and discussed with the operator, and a strategy was mutually agreed upon for grading to proceed from east to west as much as possible given the constraints of the project area, so that the north-south oriented acequia route would stand the best chance of being revealed. The operator attempted to remove approximately 2 inches (5.1 cm) with each pass (Figure 3). For most of the process, the archaeologist was situated along the northern edge of the grading within the acequia buffer, and attempted to remain oriented with the two projected routes that corresponded roughly with the trunk (Katz' proposed route) and the outer eastern canopy (Cox' proposed route) of the nearby tree (see Figure 2). But the nature of the grading process also required the archaeologist to walk next to the machine as it scrapped the ground and revealed a window of exposed ground surface between the blade and rear tires. As the grader moved along, its rear tires obliterated about two-thirds of what had been revealed.

Figure 3. Initial grading in progress, facing west. Note foot path in foreground.

The monitoring encountered brown (10YR4/3) loam fill (Zone I) over yellowish brown (10YR5/6) sand fill (Zone II) as it was removed from roughly the top 5.91 to 9.84 inches (15 to 25 cm) below surface (Figure 4). An extensive irrigation system was revealed that was associated with the Zone II sand, pockets of which were observed to extend downward into Zone III. A dark gray brown (10YR4/2) to light yellowish

Figure 4. Acequia Buffer overview, facing southeast.

brown (10YR6/4) clay mottled 20 to 50 percent with very pale brown (10YR7/4) sandy clay, Zone III was ubiquitous across the graded area, along with the aforementioned pockets of Zone II.

Artifacts noted within Zone III include nondiagnostic yellow and red bricks, concrete and asphalt fragments, and colorless glass shards. All of these bricks were isolated, and while some had mortar attached, no brick features were encountered. Likewise, the concrete was fragmentary and did not represent an intact feature. The short exterior sides of the red bricks were consistently discolored with a black material that proved to be tar, indicating that they were apparently used as paving stones. The practice of using brick in road construction dates as early as the 1890s (Kay Hindes personal communication 2016). During the survey, one specimen from BHT 2 retained a layer of asphalt attached to it (Galindo 2016: Figure 17).

Grading proceeded to 12 inches (30 cm) below surface. At this point, the backfill outline of BHT 2 was still visible, and the recorded location of CS 5 in its western end was noted. Grading proceeded for another three 2-inch lifts (total of 6 inches [15 cm]) immediately south of BHT 2, but no trace of an

Figure 5. Acequia Buffer overview, facing west. BHT 2 former location corresponds to the tire track in central foreground.

acequia channel corresponding to CS 5 was encountered during the archaeological monitoring of construction for the Hemisfair Martinez Street Surface Parking Lot Project (Figure 5).

Overall, no definitive evidence suggested by artifacts or features were observed during the current monitoring effort within the Acequia Buffer area that could be associated with the Spanish Colonial era or the Acequia del Alamo (41BX8). All work within the Acequia Buffer area was conducted within extensively disturbed fill deposits predominantly dating to the late-nineteenth and twentieth centuries, based on artifacts observed during monitoring and the results of the survey. Some construction material observed during monitoring may be associated with the residential occupation of site 41BX303, but its research value is limited by its secondary context as fill. Additionally, the nature of the grading process severely fragmented the few artifacts, such as colorless glass shards, that were observed.

Pape-Dawson made a reasonable and good faith effort to identify historic properties within the project area. Based on the results of the monitoring efforts, the excavation within the Hemisfair Martinez Street Surface Parking Lot Project area had no effect on significant cultural properties.

References

Galindo, Mary Jo, Katie Hill, and Jacob I. Sullivan

2016 *Intensive Archaeological Survey and Monitoring of the Hemisfair Martinez Street Surface Parking Lot Project and a Segment of the Acequia del Alamo/Acequia Madre (41BX8), San Antonio, Bexar County, Texas*. Antiquities Permit 7511. Pape-Dawson Engineers, Austin.