INTENSIVE ARCHEOLOGICAL SURVEY OF THE SAN ANTONIO RIVER AUTHORITY'S WESTSIDE CREEKS IMPROVEMENT PROJECT: ALAZAN AND MARTINEZ PHASE
BEXAR COUNTY, TEXAS

Antiquities Permit #6914

Hicks & Company Archeology Series #262

Submitted to:

San Antonio River Authority,
City of San Antonio
and
Texas Historical Commission

Principal Investigator:

Josh Haefner

Written by:

Josh Haefner, Ashleigh Knapp, and Dr. Victor Galan

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ABSTRACT

In July and August of 2014, under Texas Antiquities Permit #6914, Hicks & Company completed an intensive archeological survey of the Alazan Creek and Martinez Creek Hike and Bike Trail Improvements Project in Bexar County, Texas. Since construction of the new trails and park improvements will take place on land to be owned by the City of San Antonio, it is subject to the Antiquities Code of Texas. Additionally, the project will require permit coordination with the United States Army Corps of Engineers, necessitating compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

The archeological investigations consisted of pedestrian survey supplemented by shovel testing (n = 18) and backhoe trenching (n = 2). No archeological sites were revisited or newly recorded during this survey. Archival research and in-person interviews with local scholars indicate that the current location of the historical marker for the Battle of the Alazan could be in the wrong place, with the battle possibly occurring approximately 2,400 meters northwest of its current assumed location. However, posited possible new locations have not been archeologically confirmed. The remainder of the project area, due to its location in an urban and industrial setting and by landform modifications to the drainages, has been extensively disturbed and demonstrates limited potential to contain intact archeological deposits. Hicks & Company recommends that the proposed project be allowed to proceed with no further cultural resource coordination.

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ACKNOWLEDGEMENTS

During the background research phase for this project, Hicks & Company was very fortunate to be put in contact with Yolanda and Larry Kirkpatrick of San Antonio through a recommendation by Kay Hindes, City Archaeologist. The Kirkpatrick's have devoted much of their time researching the Battle of the Alazan and graciously agreed to meet with us and freely share their findings. Much of the background and archival work regarding posited locations of the Battle of the Alazan contained in this report is a direct result of this meeting, with the bulk of data regarding this battle as occurring within the immediate vicinity of Woodlawn Lake credited to Yolanda and Larry, with Hicks & Company fortunate enough to report them as part of our investigations.

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TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

LIST OF APPENDICES

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MANAGEMENT SUMMARY AND PROJECT DESCRIPTION

Hicks & Company archeologists, working on behalf of the San Antonio River Authority (SARA), Bexar County, and the City of San Antonio (COSA), recently conducted a 100-percent intensive linear survey of approximately 1,690 meters of proposed recreational trail improvements in San Antonio, Texas, just west of downtown. These investigations were focused on two segments of SARA's Westside Creeks Trails Improvements Project: the Alazan Creek Trail Phase and the Martinez Creek Trail Phase (**Figure 1**).

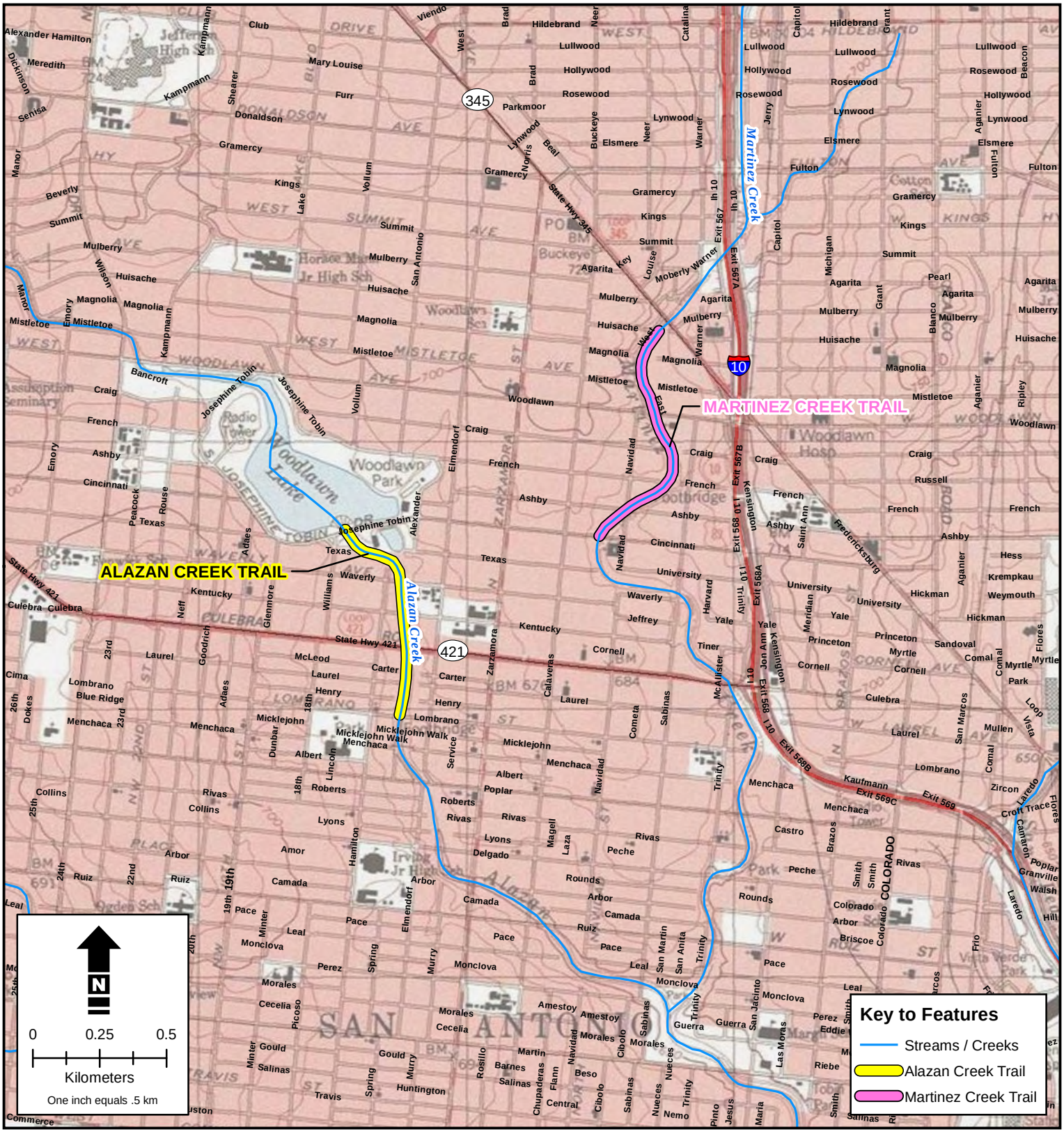
The proposed Alazan Creek Trail phase consists of creating approximately 750 linear meters of recreational trail beginning at the southwest corner of the intersection of South Josephine Tobin Drive and Alexander Avenue and ending at the northeast corner of the intersection of Lombrano Street with Alazan Creek. According to current design plans, the proposed trail system will be constructed within a 3.1-meter wide corridor (**Appendix A: Sheets C1.00-C1.05**). In addition to the trail system, the proposed Alazan Creek Trail phase will consist of activity areas and trailheads that tie into existing sidewalk infrastructure at Alexander Avenue, Texas Avenue, Waverly Avenue, Kentucky Avenue, Culebra Road, Henry Street, and Lombrano Street (**Appendix A: Sheets SL1.00-SL1.02**). Typically, these locations will have wider walkways, fountains, signage, benches, picnic tables, and sunshades. Other project elements for the proposed trail system include grading and installation of retaining walls, culverts, and elevated pedestrian bridges (**Appendix A: Sheets C1.00-C1.05 and DT1.01-DT1.13**).

The proposed Martinez Creek Trail phase consists of creating approximately 940 linear meters of recreational trail beginning at the southwest corner of the intersection of Fredericksburg Road and West Huisache Avenue and ending at the northwest corner of Cincinnati Avenue and North Navidad Street. According to current design plans, the proposed trail system will be constructed within a 3.1-meter wide corridor (**Appendix A: Sheets C2.00-C2.07**). In addition to the trail system, the proposed Martinez Creek Trail phase will consist of activity areas and trailheads that tie into existing sidewalk infrastructure at Fredericksburg Road, West Magnolia Avenue, West Mistletoe Avenue, West Woodlawn Avenue, North Sabinas Street, and Cincinnati Avenue (**Appendix A: Sheets SL2.00-SL2.04**). Typically, these locations will have wider walkways, fountains, signage, benches, picnic tables, and sunshades. At West Mistletoe and Cincinnati Avenues, these activity areas include proposed parking lots. Other project elements for the proposed trail system include grading and installation of retaining walls, culverts, and elevated pedestrian bridges (**Appendix A: Sheets C2.00-C2.07 and DT1.01-DT1.13**).

No archeological sites were revisited or newly recorded during this survey. However, archival research and in-person interviews with local scholars indicate that the current location of the historical marker for the Battle of the Alazan is likely in the wrong place, with the battle possibly occurring approximately 2,400 meters northwest of its current assumed location. Evidence suggests that the Battle of the Alazan occurred at or near the northern extent of Alazan Creek

near present day Woodlawn Park or, a less viable consideration, east of the Woodlawn Park vicinity at Martinez Creek. Though, as of this writing, any posited possible new location has not been archeologically confirmed. It should be noted that the plaque that commemorates the battle has been removed from its current mapped location with this occurrence assumed to be unrelated to any debate on where the battle took place.

Investigations were conducted under Texas Antiquities Committee (TAC) Permit #6914 and involved pedestrian survey, supplemented with shovel testing, as well as geoarcheological investigations, supplemented with mechanical backhoe trenching. In total, 18 shovel tests and 2 backhoe trenches were excavated. Fieldwork for the archeological survey occurred on July 8 and August 7, 2014 requiring approximately 72 person-hours to complete. Josh Haefner served as Principal Investigator for the project and Gregg Cestaro served as Project Archeologist. Josh Haefner, Gregg Cestaro, Diamond Kapanday, and Greg Sundborg conducted the pedestrian survey. Josh Haefner, Shannon Smith, Christopher Lamon, and Dr. Victor Galan conducted the geoarcheological investigations. Jerod McCleland is credited for the Geographic Information System (GIS) mapping. Josh Haefner, Dr. Victor Galan, and Ashleigh Knapp authored the report. Subsequent sections of this report include environmental and cultural backgrounds, a description of research and field methodology, a discussion of previous investigations and current archival research, and a discussion of the results of the field investigations. This is followed by a conclusion section with formal regulatory recommendations. Included as appendices are design plans (**Appendix A**), the location of shovel tests and backhoe trenches (**Appendix B**), shovel test data (**Appendix C**), and regulatory correspondence **(Appendix D**). As no sites were recorded during the investigations, all project-related notes, forms, and photographs will be permanently curated at Hicks & Company in Austin, Texas. This report is offered in partial fulfillment of TAC Permit #6914.



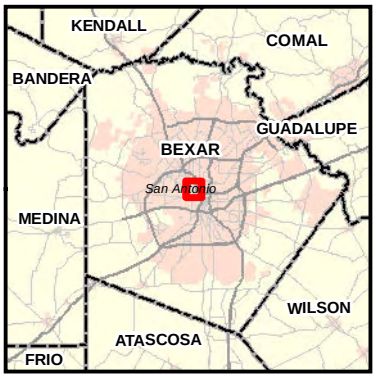


FIGURE 1

PROJECT LOCATION

USGS 7.5 Minute Topographic Quadrangles:
San Antonio West, Tx

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ENVIRONMENTAL SETTING

The project area lies within the Blackland Prairies physiographic region of Texas. To the west, the Blackland Prairies are bounded by the Edwards Plateau. To the east, the Prairies grade into the Post Oak Savannah. The Blackland Prairies region has a complex geology that has resulted in a variety of soil types, terrain, and vegetative communities.

GEOLOGY

Geologically, the proposed trail projects along Alazan Creek and Martinez Creek lie within a single zone composed of eroded materials associated with the Edwards uplift: the Navarro Group and Marlbrook Marl, undivided (Knb) formation (**Figure 2**). The Navarro Group and Marlbrook Marl formation is divided into two parts (Barnes 1981). The 580-foot thick upper portion is a heavily eroded material derived from the Pecan Chalk formation and is comprised of marl, clay, sandstone, fine-grained siltstone, limonite, and siderite concretions, and large boulders of bluish-grey siliceous limestone in a yellowish-brown matrix. The lower part is predominately a greenish-gray to brownish-gray clay which weathers into a thick black clayey soil that can reach 400 feet in thickness. This formation dates to the Cretaceous and long predates the arrival of humans in the Americas. Hence, any archeological sites within this geological context would likely be surficial or near-surficial in depth.

PEDOLOGY

According to the United States Department of Agriculture's (USDA's) Web Soil Survey, accessed May 12, 2013, three soil series are mapped as underlying the proposed project areas (USDA 2013). The Alazan Creek Trail project area is predominately mapped as the Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded (Tf), with the very northern extent mapped as Branyon clay, 1 to 3 percent slopes (HtB). The Martinez Creek Trail project area is dominantly mapped as Tinn and Frio soils (Tf) with a small extent mapped as Austin silty clay, 3 to 5 percent slopes (AuC) (**Figure 3**). Tinn and Frio soils are described as clay and clay loams located in low lying, flat floodplains formed by repeated yearly flooding. This soil series occurs along the immediate floodplains of the Alazan and Martinez creeks. As a soil that developed from recent alluvial deposits, locales that are mapped as the Tinn and Frio series exhibit moderate to high potential to contain buried and intact archeological deposits. The Branyon series is comprised of very deep, moderately well drained, soils that formed in calcareous clayey alluvium derived from mudstone of Pleistocene age formed on upland terraces. The Austin silty clay is a dark, clayey upland soil, heavily calcareous, formed from eroded chalk and chalky marl. Archeological sites in these latter contexts are generally found on the ground surface or shallowly buried.

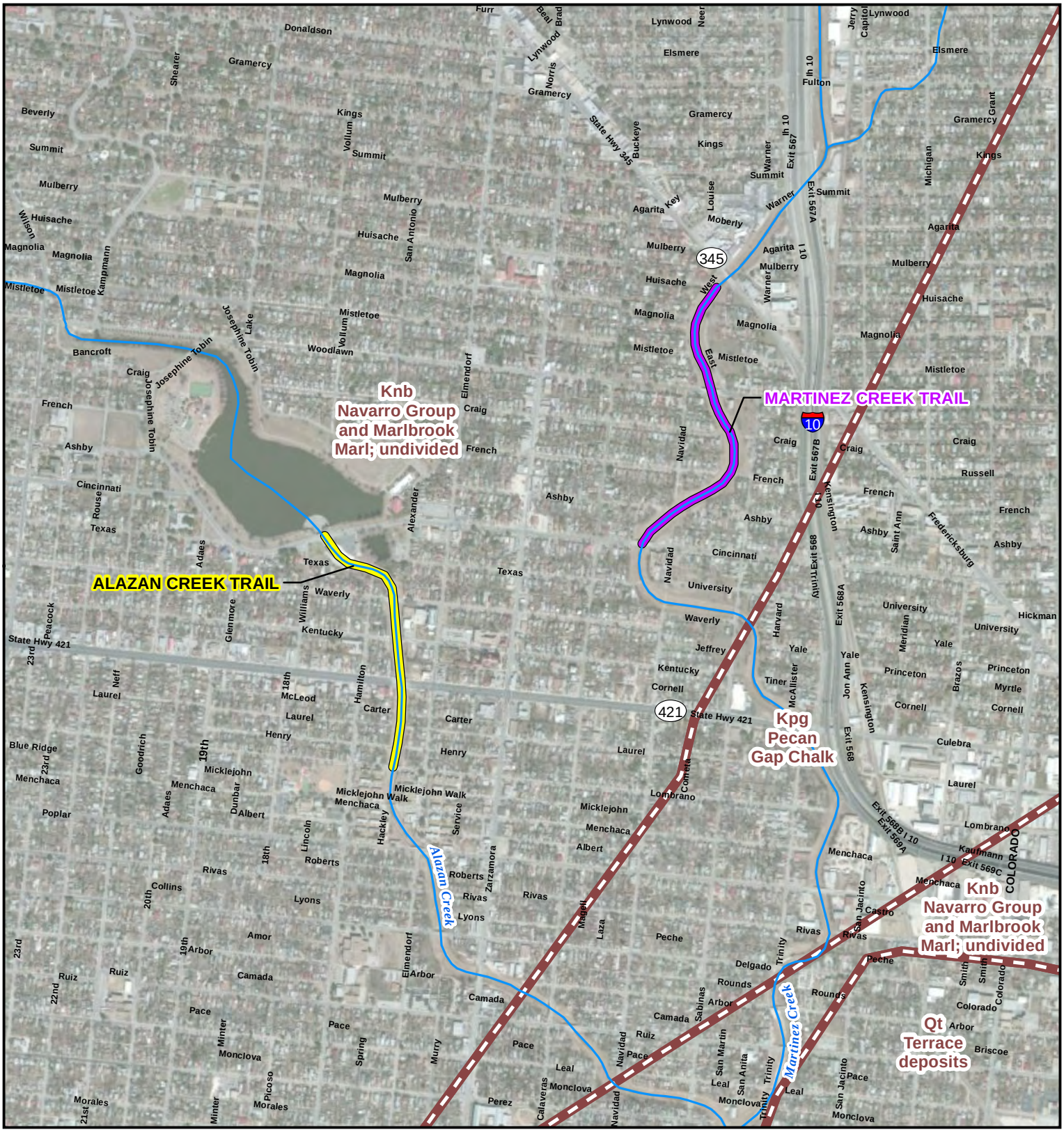
FLORA AND FAUNA

The project area is located at the southern extent of the Blackland Prairie ecological zone, just north of the Post Oak Savannah and South Texas Plains, and just south of the Edwards Plateau. The modern vegetation regime is dominated by oak-hickory forests, bunch grasses, and short grasses. Flora elements associated with the juniper-oak-mesquite savannah of the Edwards Plateau and associated with the mesquite chaparral regime of the South Texas Plains are also expected in the area (McMahan et al. 1984). Vegetation expected to occur in the project area and surrounding region includes Oak-Mesquite-Juniper Parks and Silver Bluestem-Texas Wintergrass Grassland. Commonly associated species in this area include Texas oak (*Quercus texana*), live oak (*Q. fusiformis*), shin oak (*Q, sinuata* var. *breviloba*), Ashe juniper (*Juniperus ashei*), cedar elm (*Ulmus crassifolia*), Texas wintergrass (*Nassella leucotricha*), little bluestem (*Schizachyrium scoparium*), curly mesquite (*Hilaria belangeri*), Texas grama (*Bouteloua rigidiseta*), and so forth.

HYDROLOGY AND CLIMATE

The project area is primarily located at the northern extents of Alazan and Martinez Creeks. Along with the Olmos, San Pedro, Apache, and Zarzamora Creeks, the Alazan and Martinez are two of the drainages that flow into the San Antonio River. Collectively, these waterways comprise the San Antonio River Watershed.

The climate of the south-central Texas area is considered humid subtropical (Thornthwaite 1948). Hot summers and cool winters characterize the seasonal climate of the area with the coldest month typically being January, the warmest months being July and August, and an average annual temperature of 70 degrees (Carr 1967). Precipitation in the region, based on measured years 1871–2013, averages 29.11 inches a year. However, it should be noted that the area is prone to intensive rainfall and concomitant flooding due to a variety of factors, including proximity to the Gulf of Mexico and the effects of tropical storms, the orographic uplift of moist gulf air masses that occurs as they meet the Balcones Escarpment, and the movement of polar air masses from the north into central Texas.


ALAZAN CREEK TRAIL
MARTINEZ CREEK TRAIL
Knb
Navarro Group
and Marlbrook
Marl; undivided
Kpg
Pecan
Gap Chalk
Knb
Navarro Group
and Marlbrook
Marl; undivided
Qt
Terrace
deposits
Alazan Creek
Martinez Creek
COLORADO
345
421
10
State Hwy 421
State Hwy 345
Exit 567
Exit 567A
Exit 567B
Exit 568
Exit 568A
Exit 568B
Exit 569A
Exit 569C
Trinity
Fulton
Kensington
Navidad
Elmendorf
Alexander
Josephine Tobin
Lake
Vollum
Woodlawn
Mistletoe
Magnolia
Huisache
Mulberry
Summit
Kings
Gramercy
Lynwood
Donaldson
Bancroft
Craig
French
Ashby
Cincinnati
Texas
Waverly
Kentucky
Jeffrey
Yale
Cornell
Tiner
McAllister
Harvard
University
Princeton
Culebra
Laurel
Henry
Carter
Hamilton
McLeod
Micklejohn
Micklejohn Walk
Menchaca
Albert
Dunbar
Goodrich
Hackley
Service
Lincoln
Roberts
Zarzamora
Rivas
Lyons
Collins
Amor
Arbor
Camada
Ruiz
Pace
Monclova
Morales
Picoso
Spring
Murry
Perez
Calaveras
Leal
Peche
Delgado
Rounds
Sabinas
San Martin
San Anita
San Jacinto
Castro
Lombrano
Comeal
Maget
Laza
Briscoe
Colorado
Smith
Grant
Michigan
Russell
Saint Ann
Fredericksburg
Meridian
Brazos
Myrtle
Hickman
Shearer
Gramercy
Beverly
Summit
Mulberry
Huisache
Magnolia
Mistletoe
Kampmann
Wilson
Josephine Tobin
Adaes
Peacock
Glenmore
Williams
Neff
Laurel
18th
19th
20th
22nd
23rd
Blue Ridge
Poplar
Menchaca
Ruiz
Minter
Navidad
Ruiz
Pace
Leal
Monclova
Trinity
Martinez Creek
Agarita
Key
Louise
Moberly
Warner
Buckeye
Norris
Brad
Bea
Furr
Neer
Jerry
Capitol
Elsmere
Lynwood
Gramercy
Grant
Kings
Summit
Michigan
Agarita
Mulberry
Huisache
Magnolia
Mistletoe
Craig
French
Ashby
Cincinnati
Texas
Waverly
Kentucky
Jeffrey
Yale
Cornell
Princeton
Culebra
Laurel
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Albert
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Micklejohn Walk
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University

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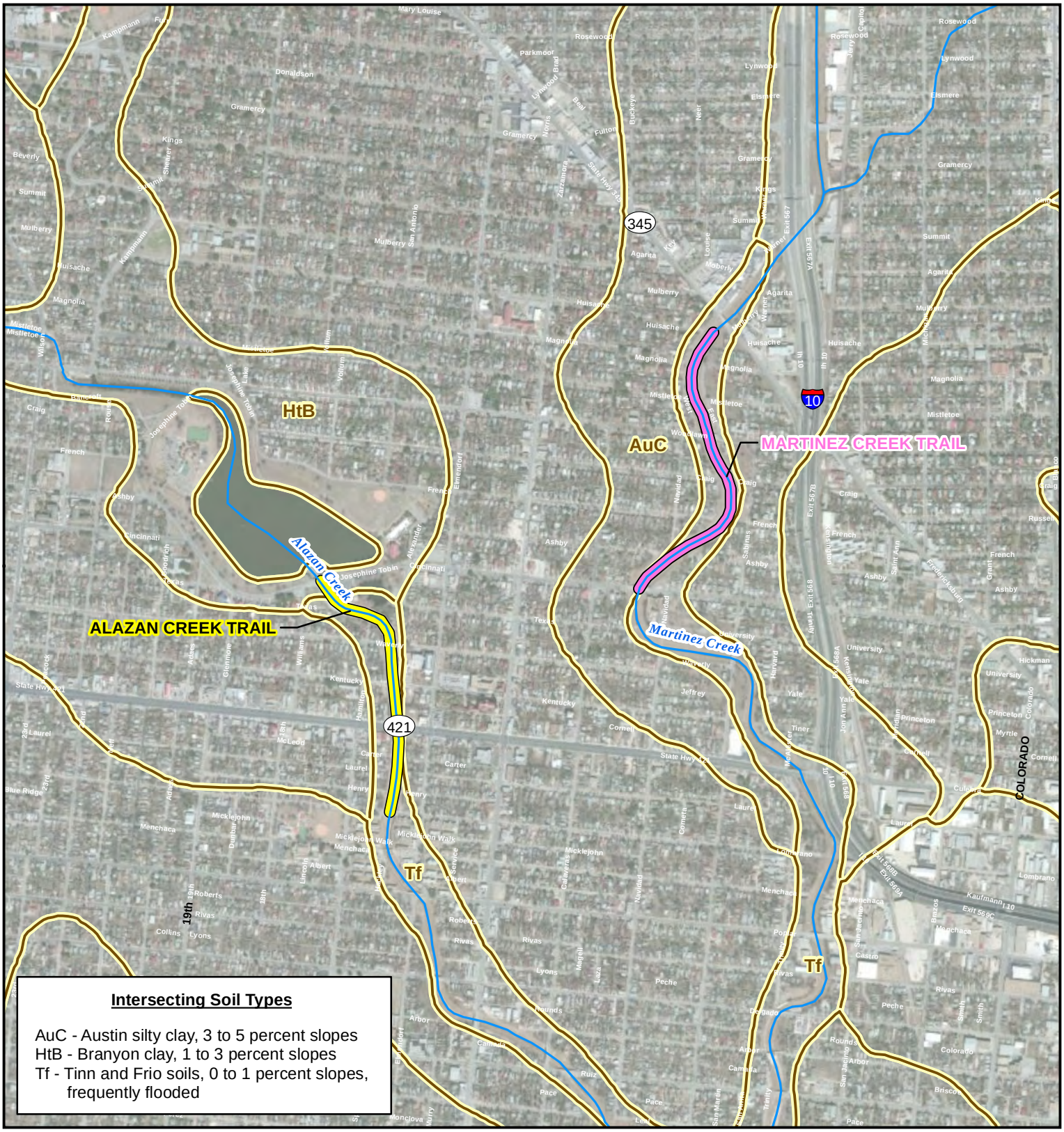

FIGURE 3

PROJECT AREA
SOILS

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CULTURAL BACKGROUND

PREHISTORIC CONTEXT

The proposed project areas are at the southern reach of the Central Texas archeological region, as defined by Collins (2004). This region encompasses the Edwards Plateau and portions of the Blackland Prairies to its east and the upper reaches of the South Texas Plains located below the Balcones Escarpment (**Figure 4**). Because this region has great variation in faunal, floral and water resources, there is also great variation in this region's archeological record. Prehistoric archeological sites on the periphery would be expected to have characteristics typical of neighboring regions. In a broad sense, the temporal divisions of prehistory in the Central Texas archeological region generally corresponds with changes in technology, settlement patterns, and subsistence strategies. These periods are as follows: the Paleoindian (11,500–8800 B.P.), the Archaic (8800–1200 B.P.), and the Late Prehistoric (1200–400 B.P.) periods.

Paleoindian Period (11,500–8800 B.P.)

Beginning at the close of the Pleistocene, the Paleoindian period is estimated at ca. 11,500–8800 B.P. in Central Texas (Collins 2004). Collins (2004) divides this period into two early and late subperiods. Diagnostic projectile points of the early Paleoindian interval include Clovis and Folsom projectile points, followed by late Paleoindian lanceolate forms such as Angostura, Golondrina, St. Mary's Hall, and Barber, with early stemmed points appearing later. The noted wide distribution of Clovis-type points across most of North America and even into Central America attests to a wide dispersal of and interaction with the people who knapped them (Kelly 1993). For the state of Texas, Bever and Meltzer (2007) have documented the presence of 544 Clovis points in 149 of 254 counties. For the Central Texas region, the distribution of Clovis points generally follows the Balcones Escarpment, where high-quality chert is readily available. Further south, below the Balcones Escarpment, fewer than expected Clovis points have been documented. For example, only four Clovis points have been recorded from Bexar County. The early Paleoindian culture in Central Texas is believed to be related to the well-known big game hunting tradition of the Great Plains (Hester 1980). Most of the well-documented early Paleoindian sites in Texas that are associated with extinct megafauna are located north and west of Central Texas on the Llano Estacado and on adjacent areas of the Southern High Plains. In general, early Paleoindian sites are scarce in Central Texas, or at least not as visible as later sites. Conversely, later Paleoindian sites are numerous in south and Central Texas, although both are usually identified from only surface-collected artifacts (Black and McGraw 1985).

Following the Clovis and Folsom style intervals in the archeological record are a series of dart point styles (Angostura, San Patrice, Wilson, Golondrina, St. Mary's Hall, Barber, etc.) for which the temporal and technological context is currently unclear. Subsistence data from several late Paleoindian sites does suggests that small game was exploited rather than now-extinct megafauna. This data supports the idea that a hunting and gathering lifestyle may have already

been adopted across much of southwest and Central Texas prior to the advent of the Archaic period. For Central Texas, Hester (1976:9) notes that the "terminal Pleistocene in Texas appears to have a wide range of adaptations, reflecting the use of fairly localized environments and resources, and leading to the development of regional lithic specializations."

With the exception of the Bone Bed, Lubbock Lake, Wilson-Leonard and the Wilson Sites, most Paleoindian sites on record for Texas have low artifact counts (Bousman et al. 2004). Predominantly, sites that have been discovered in Central Texas have been mostly described as campsites (e.g.,Wilson-Leonard, Loeve-Fox, Richard Beene, and Levi Rock Shelter). In contrast, sites along the Plains and the Lower Pecos are predominantly recorded as short-term occupation kill/butchery sites (Bousman et al. 2004). Early Paleoindian assemblages are more known from the Plains, where their assemblages are dominated by projectile points and unifacial tools. One important Paleoindian Site located in the San Antonio area is 41BX52, the Pavo Real Site. Located adjacent to Loop 1604, Pavo Real was originally recorded in 1970 and has been intensively excavated and researched over the past 45 years. A multi-component site, with multiple burned rock features and artifact clusters, Pavo Real has occupations that span the Paleo and Archaic time periods.

Two additional continuously inhabited sites located in San Antonio are Site 41BX708, the Chandler Site, and Site 41BX1396. Located in northwest San Antonio, Chandler is a deeply buried stratified site with occupations that date from the Paleoindian period through all phases of the Archaic and the early part of the Historic Period. In addition to extensive burned rock middens, documented lithic artifacts noted at this site include projectile points (including a brass arrow point), cores, debitage, faunal remains, and pottery. As reported in Shafer and Hester (2007), McKenzie and Moses' (2005) report on excavations by the Southern Texas Archaeological Association's Field School at Chandler dates the Late Paleoindian occupation to approximately 9000-10,000 B.P. This occupation includes a St. Mary's Hall Component (Kay Hindes, Personal Communication).

Site 41BX1396 was initially documented in 1979 by Katz and Fox during an archeological survey of Brackenridge Park. During this survey, two locales of activity located along the San Antonio River were noted. A revisit by SWCA in 2001 noted that the previously described locales were connected by a continuous scatter of artifacts (Barile et al. 2002). Subsequent data recovery investigations conducted on segments of this site by SWCA recovered Uvalde, Bandy, Travis, Pedernales, Kinney, and Langtry projectile point types. In 2011, the Center for Archaeological Research conducted data recovery excavations at segments of Site 41BX1396. Artifacts collected during excavation include a Clearfork Adze, Guadalupe tools, Angostura points, St. Mary's Hall points, and a Dalton point (Ulrich et. al. 2012). Follow-up investigations focused on the St. Mary's Hall component with associated radio carbon dates returning a range of 10,490-10,230 B.P. (Kay Hindes, Personal Communication). These dates are earlier than the

age range of 9990-8870 B.P. reported for this point type by Bousman et al. (2004). Site 41BX1396 is currently listed as an SAL.

Archaic Period (8800–1200 B.P.)

As the warming trend that marks the transition from Pleistocene to Holocene climates began to take effect in Texas, prehistoric inhabitants adapted with changes in lifestyle. Material culture became more diverse, with the increased exploitation of diverse flora evidenced by the use of burned rock middens. This climatic shift is also marked by the decline and extinction of the mammoth, mastodon, horse, camel, and giant bison (*Bison antiquus*) that began at the end of the Early Paleoindian period and reached a zenith during the advent of the Archaic. Evidence suggests that sometime after 11,000 B.P., large, gregarious game animals were extinct in Texas, except for the bison. These extinctions would have forced hunters to concentrate on deer, antelope, and other medium-sized or smaller game. Changes in the subsistence base required technological shifts that began during the Late Paleoindian period and continued into Archaic. Collins (2004) divides the Archaic into Early, Middle, and Late sub-periods based on technological, environmental, and adaptive changes.

The Early Archaic marks a shift to the use of multiple tons of burned limestone and other rocks in the form of scatters, hearths, middens and other features for the heated processing of plant foods. This represents the start of a long-lived Archaic cooking tradition, which lasted from approximately 8800 to 1400 B.P. This tradition was characterized by the repeated utilization of earth ovens and the resulting creation of burned rock middens at strategic places on the landscape. These new subsistence practices began with a distinctive cooking technology using layered arrangements of heated rocks in earth ovens which allowed for the exploitation of a broad range of geophytes. These included upland xerophytic plants like sotol and other species, such as Lily family onion bulbs, which grow in wetter environments (Decker et al. 2000).

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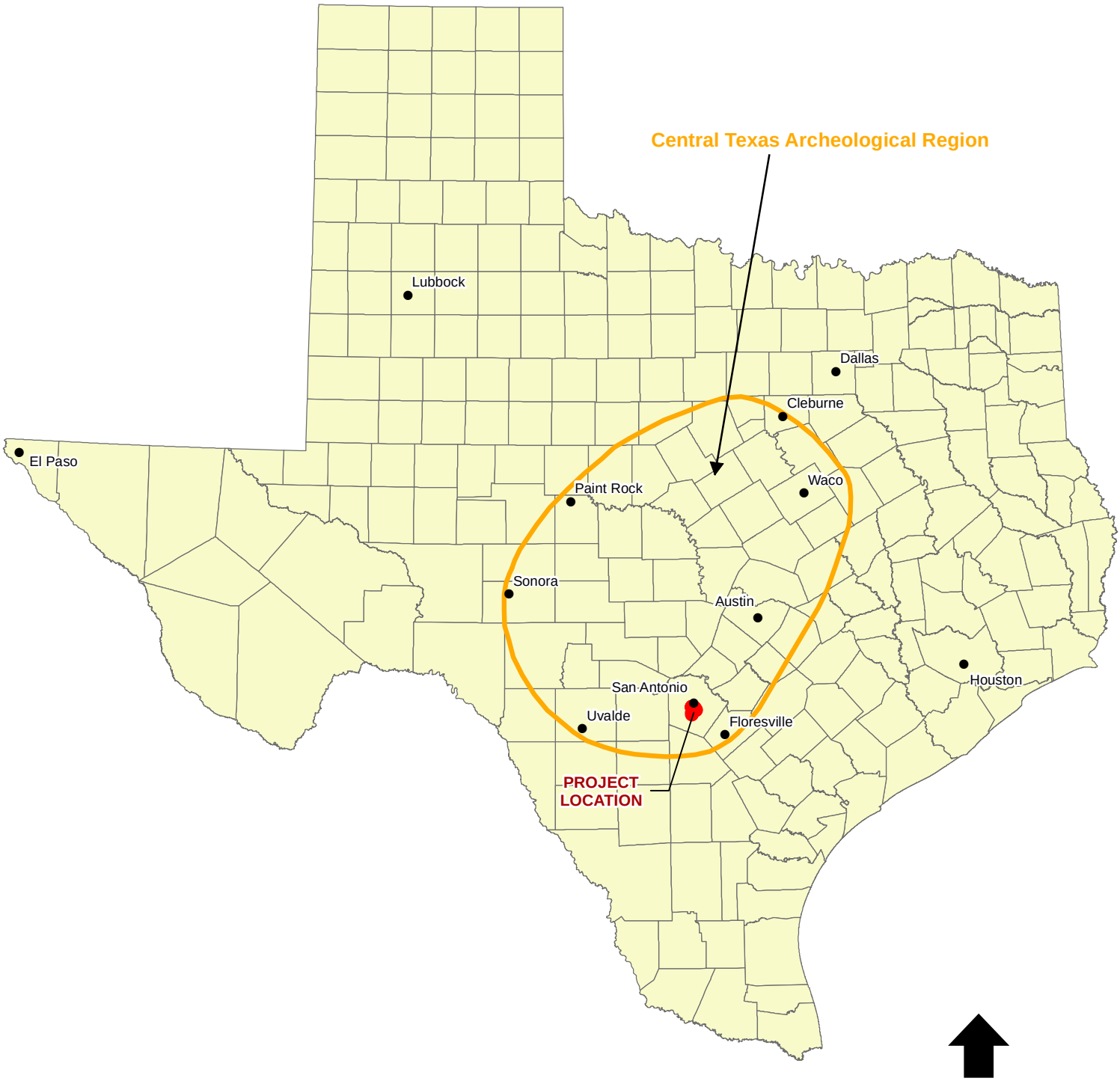

Figure 4

Central Texas Archeological Region

The widespread use of rock and earth ovens (and the resultant formation of burned rock middens) for processing and cooking plant foods evidences a subsistence technology that was parcel to a generalized foraging strategy. Within Central Texas during certain periods of the Archaic, this generalized foraging economy appears to have shifted to a more specialized strategy focused on bison hunting (Collins 1968).

While the data and resulting models concerning environmental change during the Paleolithic-Holocene transition are robust, cultural adaptations for the same period are still unclear. This is especially true for Texas (McKinney 1981). Historically, the primary difference between Paleoindian and Archaic peoples was in associated subsistence strategies, and, by extrapolation, mobility patterns and lithic technology; Paleoindians were envisioned as nomadic specialized big game hunters, while Archaic humans followed a migratory hunting and gathering lifeway (Suhm et al. 1954; Willey and Phillips 1958). Locally, the long Archaic Period was envisioned as a transitional time between nomadic hunters and sedentary, pottery-producing agriculturalists (Suhm et al. 1954). However, as discussed above, the idea of exclusive big-game hunting cultures is no longer apropos when describing the entirety of the material assemblages or subsistence strategies of the Paleoindian time period. Adaptations that were once wholly ascribed to the Archaic have manifestations that date before 8800 B.P. Likewise, "survivals" of past adaptations would be expected to infiltrate the Early Archaic. In addition to the above-noted sites of 41BX52, 41BX708, and 41BX1439 which, in addition to Paleoindian components have Archaic components, additional important archaic sites in Bexar County include: 41BX126, the Culebra Creek Site; 41BX184, the Higgins Site; 41BX228, the Panther Springs Site; 41BX831, the Richard Beene Site; and Site 41BX996, the Number-6 Site.

Late Prehistoric (ca. 1200–400 B.P.)

The Late Prehistoric or Post-Archaic (ca. AD 600–1600) (Johnson 1995) in Central Texas is initially marked by the replacement of the dart and atlatl with the bow and arrow, as reflected in the shift from dart points to smaller, thinner and lighter arrow points (Ricklis and Collins 1994). Despite the shift to the bow and arrow, evidence indicates that the broad-based hunting-gathering economy of the Late Archaic persisted into and through most of the Late Prehistoric period. The latter part of this period is marked by the appearance of pottery and a distinctive complex of tools composed of contracting-stem Perdiz arrow points; an abundance of unifacial end scrapers; thin, alternately beveled bifacial knives; and drills or perforators made of flakes and blades. The Post-Archaic era again turned dry and somewhat arid toward the middle of the Late Prehistoric, during which there was a rather dramatic increase in bison exploitation. In addition to the above-noted sites of 41BX52, 41BX228, 41BX831which, in addition to Archaic components also have Late Prehistoric components, some important Late Prehistoric Sites in Bexar County include: 41BX24, the Orchard Site; 41BX274, the Ed P. Walsh Site; 41BX338, the Haase Site; and Site 41BX669.

Historic Period (AD 1528–Present)

The most radical changes in the Native American history of Central Texas came during the historic era (Black 1989). The horse was introduced into North America by Spanish settlers in the sixteenth century; nomadic groups, initially the Apaches and later the Comanches, adopted the horse and rapidly altered the aboriginal situation of Central Texas. These nomadic groups entered Central Texas from the plains and mountains to the north and west and within 150 years had forced most of the native peoples to flee. Most groups were destroyed by the combined effects of the nomadic raiders and the foreign diseases introduced by Europeans. Others moved south, entering Spanish missions and settlements, or eastward to join various agricultural groups such as the Wichita (Black 1989). This resulted in massive depopulation and cultural disintegration among Native American groups.

Due to the complex history of Texas, particularly San Antonio, it is helpful to subdivide the Historic Period into subperiods that each represent vastly different social conditions often resulting from shifts in political power. The Spanish Missions and Colonizing Period (A.D. 1528-1800) begins with the arrival of the Spanish to Texas and includes the establishment of several missions in the vicinity of present day San Antonio. The Mexican Independence and the Texas Revolution Period (A.D. 1800-1900) covers the Mexican War of Independence, the arrival of Anglo-American settlers, the Texas Revolution, and Annexation of Texas to the United States. The 20th Century Texas Period (A.D. 1900-1941) briefly summarizes more recent historic developments in San Antonio.

Spanish Missions and Colonizing Period (A.D. 1528–1800)

The historic period in Texas begins with the arrival of Alvar Nunez Cabeza de Vaca and other survivors of the Navarez expedition on the Texas coast in 1528, although there may have been earlier landings. In any case, the influences of European colonization were not felt strongly in Texas until several centuries later. By the middle of the eighteenth century, though, the Spanish had established several missions and settlements in what is now South Texas. The Payaya, an indigenous tribal group observed by early Spanish explorers, eventually became prominent among the missionized peoples of Mission San Antonio de Valero from its founding in 1718 until 1776. The mission population also included the Xarames (Aranamas) and the Yerebipiamos (Fox et al. 1976).

Colonial settlement of what would become the city of San Antonio began in the late 17th and early 18th centuries. The area had been part of New Spain since the conquest of Mexico in 1540 (Steen 1948), but beyond a few forays north of the Rio Grande, Spain paid little attention to the area until the 17th century when French encroachments raised concerns. After the French explorer René-Robert Cavelier, Sieur de La Salle landed on the Texas coast in 1685, the Spanish responded with the founding of a mission in east Texas, San Francisco de los Tejas (Ramsdell

1959). In 1691, the newly named governor of the province of Texas, Domingo de Teran, ventured deeper into the territory to found additional missions. His motives were largely twofold: to establish a secure intermediate point for expeditions passing to and from east Texas and to relocate the failing Mission San Francisco de Solano away from the Rio Grande. Domingo de Teran, accompanied by Padre Massanet traveled northeast, then east, across the territory, eventually entering into the San Antonio region. During their stay, the men noted the river in which they camped along sustained numerous fish, the banks contained several types of trees, and the wild chickens and buffalo were present in high numbers. It was at this time that the settlements of the Papaya Indians were first observed by the expedition occupying an area from San Antonio southwestward, extending beyond the Frio River (Campbell, 2010). These people were a Coahuiltecan- speaking group who referred to their village, as well as the San Antonio River as *Yanaguana* (Campbell, 2010; Hatcher, 1932; Crimmins and Freeman 2010). The area where they lived near the headwaters of the San Antonio River was later christened "San Antonio" in honor of San Antonio de Padua by both Domingo Teran and Padre Massanet in 1691 (Donecker 2010; Jordan 2004).

The Spanish returned to "the site called San Antonio" in 1718, and Governor Martin de Alarcon formally established the Presidio de Bexar and the villa as well as an acequia along the banks of San Pedro Creek. Several jacales were built. Father Olivares founded the first site of Mission San Antonio de Valero approximately half a league to three-quarters of a league south of the villa and presidio possibly near the present day "Chapel of the Miracles," west of the San Antonio River (Ramsdell 1959) or at a site recently discovered on land owned by the Christopher Columbus Society (Kay Hindes, personal communication). The mission was soon moved east of the San Antonio River, though the complex was destroyed by a 1724 hurricane. It was then rebuilt at its current location on today's Alamo Plaza. In addition to Mission San Antonio de Valero, four other missions were subsequently founded, extending south along the San Antonio River. Mission San Jose was established in 1720, and Missions Concepción, San Juan, and Espada were relocated from east Texas along the river in 1731.

Second phase development centered around today's Military and Main Plaza, west of the Alamo, between San Pedro Creek and the San Antonio River. At the site of today's Military Plaza, the second location of the *presidio* (fort) was constructed, where military officers and their families lived. The population for the period 1718-1731 has been estimated at approximately 400, with a settlement of about 100 houses (SABHC 1976). In 1731, a group of families from the Canary Islands arrived on order from the King of Spain to help settle the area. A town, called San Fernando, was established for them in the vicinity of present day Main Plaza, east of the presidio at "the distance of a gunshot" (SABHC 1976). At the same time the Villa of San Fernando was surveyed in 1731, a route for an acequia was planned along the watershed between San Pedro Creek and the San Antonio River; the acequia was completed in 1738 (SABHC 1976). The residence of the commandant of the Presidio was constructed in 1747 (now known as the

Governor's Palace).

In 1773, San Antonio became the capital of Spanish Texas. At that time the population numbered about 2,000, divided between six distinct communities: Mission San Antonio de Valero; the Presidio; missions to the south; Villa San Fernando; San Pedro Springs settlement; and La Villita (between the villa and the mission) (SABHC 1976). All of the missions were secularized by 1795, and the religious offices of San Antonio de Valero were consolidated into San Antonio de Bexar (Schoelwer 2010). At the end of the 18th century the Spanish influence on the city was waning.

Mexican Independence and the Texas Revolution Period (A.D. 1800–1900)

Spanish Texas in the first two decades of the 1800s witnessed a period of violence and unrest due to the Mexican War of Independence, which consisted of a series of revolts in response to growing political tensions between Spain and Mexico. Father Miguel Hidalgo y Costilla led a rebellion against political corruption and Spanish rule in Mexico City, which began in September 16, 1810, with an army largely composed of "Indians and mixed-blood peasantry" (de la Tejas 2010a). Due to economic crisis and rampant corruption in Mexico City because of Napolean's war in Europe, Hidalgo's message of revolution against Spain quickly spread to the northern provinces. Due to political rivalry between the United States and Spain, Texas and San Antonio de Bexar as the provincial capital assumed strategic importance vastly inconsistent with its economic importance and geographic position in the Spanish Empire (de la Tejas 2010b).

Casas Revolt was one of the many subsequent challenges to Spanish authority after Hildalgo's initial actions. Mexican revolutionaries, Francisco Ignacio Escamilla and Antonio Saenz, aiming to seek aid from the United States through Texas were caught by Manuel Maria de Salcedo, the royalist governor of Texas, and imprisoned at San Antonio Valero Mission. Unable to raise troops to end the rebellion in Texas, Governor Salcedo was arrested by Captain Juan Bautista de las Casas and the rebellious militia who demanded the release of Escamilla and Saenz. Casas, now the interim governor of Texas, aligned with Hildgo's revolution and gained support from leadership in Coahuila. The rebellion continued in the northern provinces until loyalist Lt. Col. Juan Manuel Zambrano captured Casas and imprisoned him as a traitor. On August 3, 1811 Casas was executed and royal authority was soon regained in the province of Texas with Salcedo as governor (Caldwell 2010).

All insurgent leadership was successfully removed by loyalists to Spain and any successes of the rebellion were thus shortlived in Texas, Nuevo Santander, and Coahuila until the summer of 1812 when Mexican and American troops under the leadership of Jose Bernardo Gutierrez and Augustus Magee invaded Texas (de la Tejas 2010a). The Gutierrez-Magee expedition crossed the Sabine River into Texas on August 7, 1812 and by August 12, the Republican Army of the North had taken Nacogdoches. The rebels generally experienced repeated victories at the Siege

of Goliad and in scattered skirmishes culminating on the Battle of Rosillo in March of 1813 (Thonhoff 1989). Following the Battle of Rosillo, Governor Salcedo surrendered San Antonio de Bexar to the Republican Army of the North, and Texas was briefly independent of royal authority (de la Tejas 2010b).

With the aim of recapturing Texas, Brig. Gen. Joaquin de Arredondo ordered Lt. Col. Ygnacio Elizondo and about 1500 troops to the Frio River in order to observe the rebels. Desperate to redeem his honor after repeatedly trading sides during the Mexican War for Independence, Elizondo disregarded his orders and proceeded to the outskirts of San Antonio de Bexar along Alazan Creek. On June 20, 1813, approximately 1000 troops under the command of Gutierrez and Major Henry Perry annihilated the Spanish Royalist Army at the Battle of Alazan Creek. The victory of the Battle of Alazan Creek was brief. In August of 1813, Jose Alvarez de Toledo replaced Gutierrez as the leader of the republicans, and destroyed the company's moral by segregating the troops (Santos 1966). The Republican Army of the North was finally defeated by General Arredondo and the Spanish Royalist Army at the bloody Battle of Medina on August 18, 1813 and secured Texas for the crown (de la Tejas 2010b).

In the years following several local revolts for Mexican Independence were made and quickly contained by royal authority (de la Tejas 2010a). Meanwhile, in an effort to keep Texas under Spanish rule, Luis de Onis negotiated with John Quincy Adams between 1816 and 1819 over conflicting territorial claims. On February 22, 1819, the Adams-Onis Treaty was signed giving the United States possession of Florida and Spain a clearly demarcated northeastern boundary in Texas (de la Tejas 2010b). Two years later in 1821, Spanish loyalist Agustin de Iturbide and Mexican rebel Vicente R. Guerroro proposed the Plan de Iguala requesting Mexican Independence from Spain, which was granted on August 24, 1821 (de la Tejas 2010a). With Mexican Independence from Spain, Texas became the northern extent of Mexican territory.

The first group of Anglo-American colonists came to Texas in the same year, when Stephen F. Austin received permission from the government of Mexico to settle 300 families in the coastal plain between the San Antonio and Brazos Rivers. Located in the northeastern fringe of Mexico, settlers were left generally untouched, aside from violent raids from the Comanche and Apache reacting to the wave of Anglo-American settlers encroaching on the Comanchera. In reaction to the interest of behalf of the United States to acquire Texas, the Mexican government halted legal immigration in 1830. Tensions between Anglo-American immigrants and the Mexican government rose into the 1830s over issues of taxes, land claims, and the autonomy of local governments (Barr 1990). Texas was again positioned in the center of political rivalry.

In the mid-1830s, San Antonio began to resist the rule of Santa Anna, the harsh dictator-President of Mexico. Joining in the movement for independence, San Antonio was the site of several battles of the Texas Revolution. Mexico sent large numbers of troops to San Antonio in 1835, but the revolutionists won several small victories, notably at Goliad and Gonzales. From

October to early December of 1835, Texan volunteers under the leadership of Stephen F. Austin laid siege to the Mexican army occupying San Antonio de Bexar in the major military campaign known as the Siege of Bexar (Barr 2010). The Battle of Concepcion occurred on October 28, 1835, and was the first major engagement of the Siege of Bexar, in which General Cos advanced on a group of Texan revolutionaries under the leadership of James Bowie along the San Antonio River. The battle resulted in the retreat of the Mexican army into the fortified city (Barr 1990).

After Austin left the battlefield for diplomatic duties, Edward Burleson was selected as the new leader of the Texas Revolution. On November 26, 1835, a Mexican cavalry escort left San Antonio de Bexar to guide reinforcements to the fortified portion of the city. Burleson ordered the seizure of the supply train, and the Texan and Mexican troops engaged near Alazan Creek west of town. The Mexican troops once again retreated into San Antonio, and the engagement became known as Grass Fight because the captured supply train carried only horse hay in stead of the rumored pay for Mexican troops (Barr 2010). The Grass Fight was the last skirmish in the Siege of Bexar before the final Texan assault. Beginning on December 5, 1835, Texan forces bombarded the Alamo with artillery and quickly advanced on the city taking each fortified building until the Mexican army was demoralized and General Cos surrendered on December 9 (Barr 2010).

The victory at the Siege of Bexar was a true turning point in the Texas Revolution. Though Santa Anna exacted his revenge at the Battle of the Alamo in March of 1836, the revolutionists won a decisive victory at the Battle of San Jacinto, earning independence for Texas. In 1836, following establishment of the Republic of Texas, Bexar County was created with San Antonio as the county seat. San Antonio was subject to several Mexican raids in the 1840s, and the population had dropped to about 800 in 1846. In 1845, Texas entered the Union, and under the protection of the United States, began to grow more rapidly. German immigrants comprised a large portion of new settlers to the city (and elsewhere in Texas) during this period.

San Antonio's first railroad was the Galveston, Harrisburg and San Antonio Railway (GH&SA), which reached the city in February 1877 and connected San Antonio to the coast (Long 2014). San Antonio saw rapid population growth after the arrival of the rail; the population reached 20,550 in 1880, compared to around 12,000 in 1870. The railroads brought prosperity to San Antonio and, equally significantly, contributed to an evolution of the city's character. New Anglo settlers and access to manufactured building products transformed the city from a community dominated by Mexican traditions to one with a mix of influences (Long 2014). From the late 1870s through the 1880s, the city was transformed "from a rude Spanish outpost to a modern city" (Ramsdell 1959:46). In 1878, new waterworks shifted city water supply from the acequias to artesian wells. In the same year, San Antonio's first street cars provided a route between Alamo Plaza and San Pedro Springs. Stone crossings were also added to the unpaved downtown streets (Ramsdell 1959).

Beginning in the second half of the 19th century, San Antonio also developed into an important military center. In 1846, the U.S. Army set up a quartermaster depot in San Antonio, which provided support for American military operations during the Mexican War (NRHP 1975). San Antonio served as the headquarters of the U.S. Army 8th Military Department from 1849 until 1869, when the headquarters were moved to Austin (NRHP 1975). Hoping to keep the depot even though the headquarters had moved, the city offered the Army land for a permanent post (NRHP 1975).

20th Century Texas Period (A.D. 1900–1941)

In 1900, San Antonio was the largest city in the state for the first time since 1860 and sustained this position until 1930, fueled by immigration and the development of local service industries. The confluence of Hispanic, German, and Southern Anglo-American cultures in San Antonio made for a distinct culture and built environment. In the 1930s, the New Deal provided another round of civic improvements for the city, including paving streets, and building bridges, sewers and parks. Larger New Deal improvements would become defining elements of the city, including the renovation of La Villita and the San Antonio missions and the construction of the Riverwalk along the San Antonio River in the center of the city (Long 2014).

San Antonio began to expand into suburbs in the 1940s with the growing dominance of the automobile. Although the first Texas skyscraper was constructed in San Antonio in the early 20th century, high density development did not continue, and the city's center of population steadily moved northward (Fehrenbach 2014).

During World War I, Kelly and Brooks fields (which later became Kelly Air Force Base and Brooks Air Force Base) were established to train pilots, and Randolph field was opened in 1931 (Long 2014). During World War II, Bexar County's already large military presence grew even more and became the city's leading economic generator for many years (Fehrenbach 2014).

PREVIOUS INVESTIGATIONS AND ARCHIVAL RESEARCH

Sources examined in preparation for the current investigations include the THC's Online Archeological Sites Atlas (the Atlas), the Texas Historic Overlay (THO) map collection, the Sanborn Fire Insurance maps for San Antonio, the Bexar Archives, and historic maps of San Antonio currently housed at the University of Texas' Briscoe Center for American History. Resources initially anticipated within or near the project area include historic irrigation canals (particularly the Alazan Acequia), and military earthworks associated with the Battle of Alazan in 1813 and the Siege of Bexar in 1835.

PREVIOUS INVESTIGATIONS AND IDENTIFIED CULTURAL RESOURCES

According to the Atlas accessed on May 22, 2014, there are no previous archeological surveys or previously recorded archeological sites that intersect the project areas for either the proposed Alazan Creek Trail or Martinez Creek Trail. Located approximately 1500 meters southeast of the proposed Martinez Creek trail alignment, the nearest recorded site is Site 41BX620, the Alazan Acequia. Additionally, there are two National Register Properties in the vicinity of the project areas: Our Lady of Mount Carmel and Saint Therese Church, and Lerma's Nite Club, both located between the respective project areas. Additionally, there are two historical markers located in the vicinity: the Protestant Home for Destitute Children and the Battle of Alazan (**Figure 5**).

The Alazan Acequia (Site 41BX620)

The Alazan Acequia was constructed In the late 19th century.Acequias are gravity-fed irrigation ditches, often stone-lined, that transported water from the river to the agricultural fields that surrounded the missions. In San Antonio, they continued to supply water to the city into the twentieth century. After 1903, with the expansion and modernization of San Antonio, the Alazan Acequia was filled in as most of the ditches outlived their intent and usefulness. It is documented that a segment of the Alazan Acequia is buried beneath Frio Street, though the condition of this stretch is unknown. The entirety of the length of this acequia has not been fully documented.

Our Lady of Mount Carmel and St. Therese Church

Our Lady of Mount Carmel and Saint Therese Church, also called the National Shrine of Little Flower, and adjacent Discalced Carmelite monastery, is a National Register Property located on Kentucky Avenue in San Antonio, Texas. Stylistically, the structures are regional, eclectic expressions of Beaux Arts design combining several motifs and styles. Erected in 1931, the buildings continue in their original use, retain a high degree of architectural integrity, and dominate the local urban landscape.

Lerma's Nite Club

Listed on the National Register of Historic Places (NRHP), Lerma's Nite Club is located on North Zarzamora Street in the historic Hispanic West Side neighborhood of San Antonio. The night club is significant to regional history in that it "stood in the heart of cojunto music in the city" from 1948 to 2010. Even in a dilapidated condition, this site is also designated as a San Antonio Historic Landmark.

The Protestant Home for Destitute Children

The San Antonio Home for Destitute Children moved to its current location on Kentucky Avenue in 1890, changing its name to The Protestant Home for Destitute Children. The institution served as an orphanage until 1926, and was later used as a Catholic mission and residential apartments. The site is currently listed as a historical marker.

The Battle of Alazan

The historical marker for the Battle of Alazan was located at 2300 West Commerce Street from 1967 until 2007, when it was reported missing[1]. This battle between the Spanish Royalist Army and the Republican Army of the North is presumed to have occurred in this vicinity in late June of 1813. This location is most likely based on where the Presidio Rio Grande is posited to have crossed Alazan Creek with some sources suggesting Commerce Street aligns with the old roadway (Kay Hindes, personnel communication) (see **Figure 6** below). However, recent research by local scholars cast doubts on the accuracy of this location (Yolanda and Larry Kirkpatrick, personal communication, 2014) (also, see below). Accounts note that Elizondo's forces arrived at Alazan Creek on June 18 and, after his demands of the surrender of Bexar were rejected, had fortified his troops at an encampment "across a deep ravine near a pond of water named the "*Charco del Alazan*" (Thonhoff 2013:II-9). It was here, during Sunday Mass, that the Royalist troops were set upon by the Republicans in a surprise attack. Overrun and suffering a dispraportionate number of casualties, Elizondo is said to have retreated along the Camino Real corridor to Presidio San Juan Bautista.

ARCHIVAL MAP RESEARCH

Due to the long history of San Antonio, there are a plethora of available maps illustrating the historic geography of the area; however, most of the maps are to high-scale and low-resolution to contain pertinent information regarding historic resources within the proposed project areas. Both Alazan Creek and Martinez Creek are well outside the historic bounds of San Antonio, and are not often illustrated on historic maps of the city.

[1] The THC's GIS locational data has the marker approximately 250 meters north of this address. For all pertinent figures, this location as well as the 2300 West Commerce Street location, as confirmed by listed UTMs for the historical marker are both given.

Figure 5 removed due to sensitive site location information.

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The Sanborn Fire Insurance maps for San Antonio are primary cartographic resources used in the research projects in the San Antonio area due to their high-resolution, and other historic maps of San Antonio are often used as supplemental information. The proposed Alazan and Martinez Creek trails project areas are located on the outskirts of San Antonio and not included on the Sanborn maps until 1904 and 1911, and later maps only include additions to the city not pertaining to the project area. The 1885 and 1888 Sanborn maps were used to verify the location of the Alazan Acequia, which is well east of the proposed Alazan Creek Trail and southeast of the proposed Martinez Creek Trail; therefore, any documented and undocumented segments of Site 41BX620 are outside the scope of the current project.

The review of the THO and Sanborn maps (particularly 1904) in conjunction with other historic maps of San Antonio revealed noteworthy information regarding the actual historical locations of Alazan Creek and Martinez Creek. According to modern-day maps of San Antonio, Alazan Creek is located to the *west*, and Martinez Creek located to the *east* and as a tributary to Alazan. The majority of the available maps that label Alazan Creek and Martinez Creek prior to 1921 illustrate a slightly different geographic understanding with major historical implications.

On the Sanborn map of 1904, the historic location of Alazan Creek just below West End Lake and above its confluence with Martinez Creek is not depicted; instead only the alignment of Martinez Creek from its northern-most point is shown (**Figure 6**). On a 1903 USGS map of San Antonio (**Figure 7**), the *western* creek channel is labeled Martinez Creek, and the eastern channel is not labeled. On the Rullman's Map of the City of San Antonio (1890), Alazan Creek is labeled as the *eastern* channel near the historic bounds of San Antonio, while Martinez Creek is labeled as the *western* channel, further from the city, extending from West End Lake (now Woodlawn Lake) (**Figure 8**). In other words, according to at least some map sources, it appears that during the late nineteenth to early twentieth century, the names and spatial understanding of Alazan and Martinez Creeks were reversed from our present day understanding. Hence, historic references to Alazan Creek may actually refer to the present-day location of Martinez Creek.

That said, an 1835 map of San Antonio from a historical reference authored by Henderson Yoakum illustrates the locations of these creeks matching the modern geographic understanding, in which Arroyo del Alazan (also called Alazan Creek) is located to the *west* and Juan Martin (now called Martinez Creek) is located to the *east* (Yoakum 1935) (**Figure 9**). Yoakum, a Texas historian, lived from 1810 to 1856 and presumably created the map of San Antonio dating to 1835 from his personal understanding of the area and involvement in military engagements (Yoakum 2010). However, the two volume series containing the 1835 map, titled *History of Texas*, was reprinted in 1935 and may have been altered in the period in-between to conform to the geographic standard of the modern era. The Yoakum map of San Antonio only compounds the cartographic confusion regarding the locations of Alazan and Martinez Creeks. As noted above, the current historical marker location is based on where the Presidio Rio Grande

(Commerce Street) is posited to have crossed Alazan Creek. The Yoakum Map has been overlayed on a modern-day San Antonio Map, illustrating the correlation between the two roadways and the current marker location (**Figure 10**).

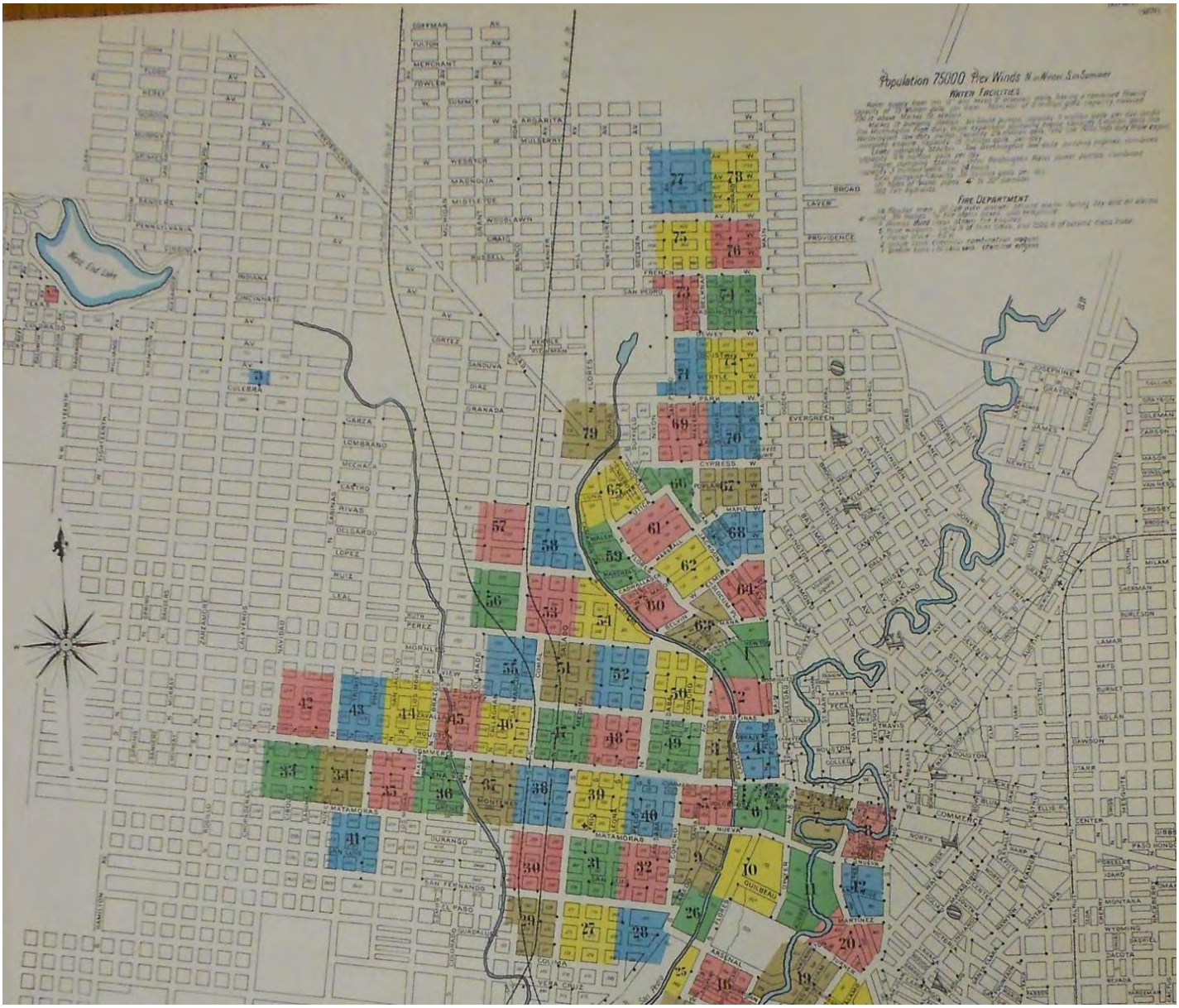
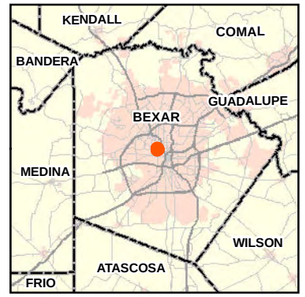


Figure 6: Northwestern extent of 1904 City of San Antonio Sanborn Map.

SAN ANTONIO
1903 USGS MAP



Key to Features

- Battle of the Alazan (Historical Marker)
- Martinez Creek Trail
- Alazan Creek Trail

Map provided by the Texas State Library and Archives Commission

N

0 300 600 900
Meters

1 in equals 600 meters

FIGURE 7

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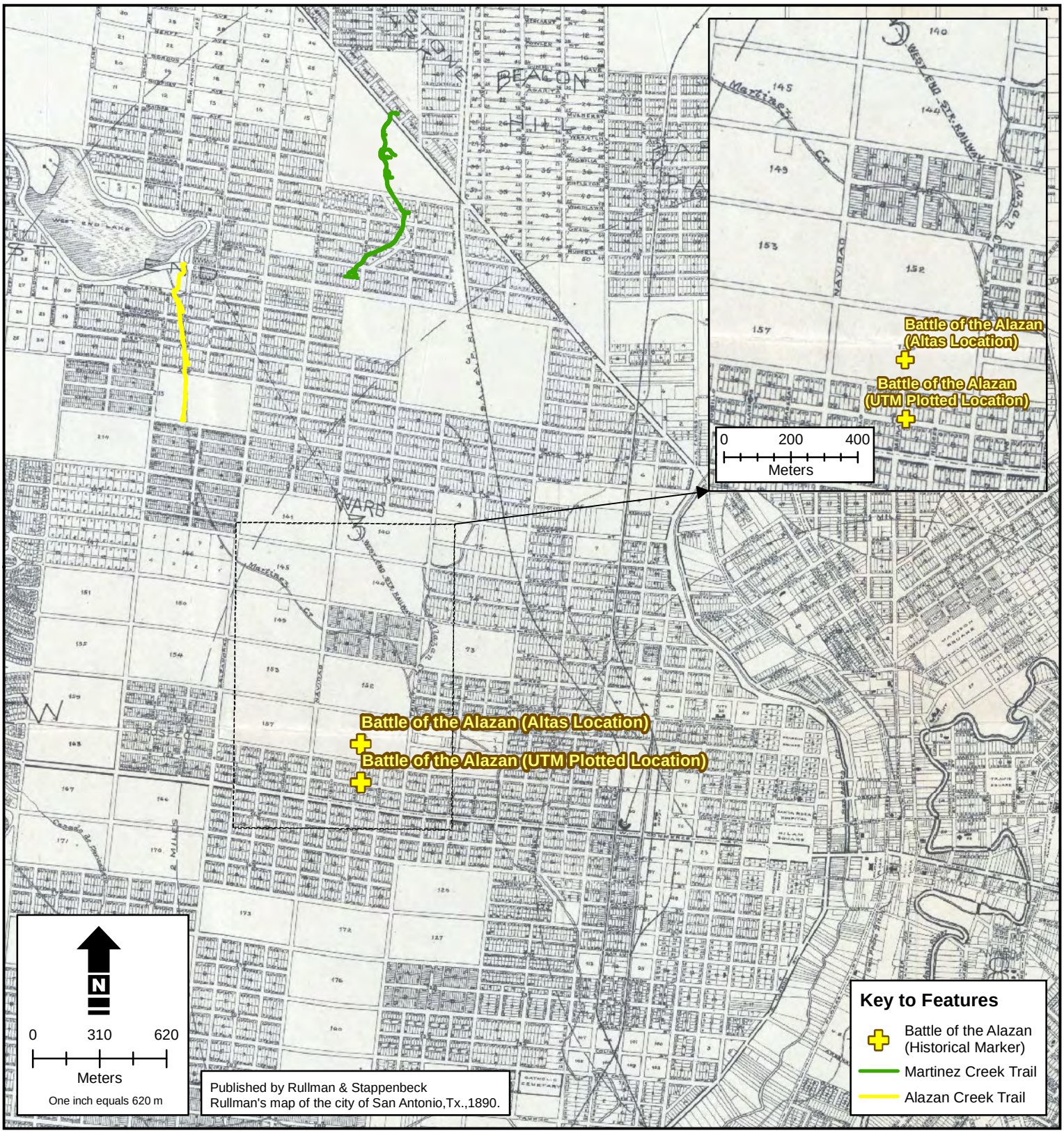

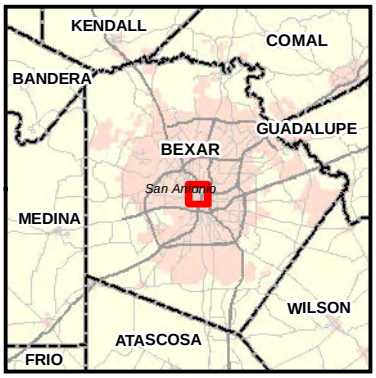

FIGURE 8

RULLMAN'S MAP OF
SAN ANTONIO 1890

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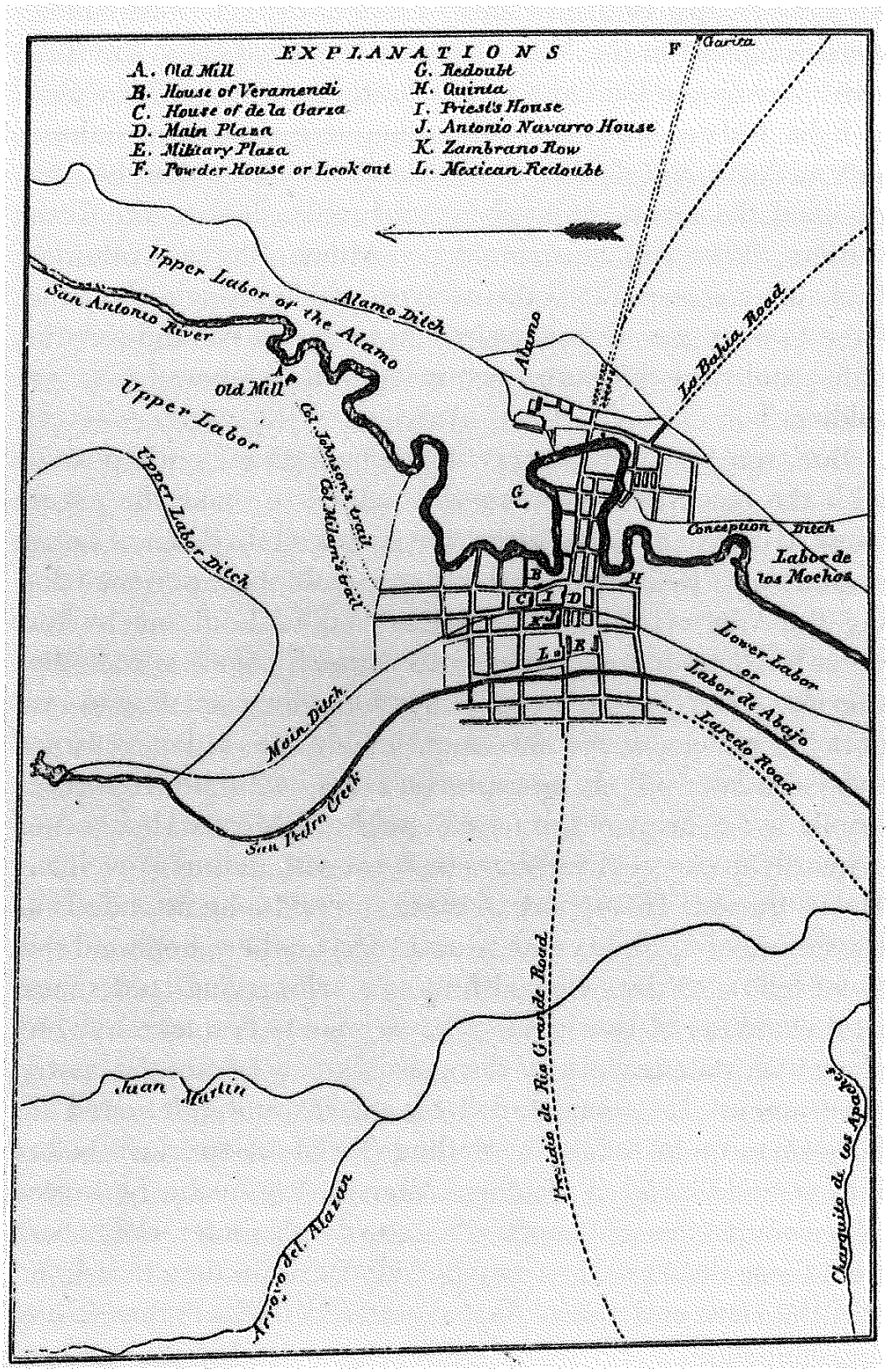

Figure 9: San Antonio in 1835. *Source: from Henderson Yoakum, History of Texas (New York Redfield, 1855): II, following page 26.*

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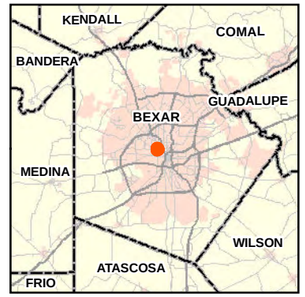
Battle of the Alazan (Altas Location)

Battle of the Alazan (UTM Plotted Location)

YOAKUM MAP & COSA MAP COMBINED



Key to Features

- Battle of the Alazan (Historical Marker)
- Martinez Creek Trail
- Alazan Creek Trail

N

0 0.25 0.5 0.75
Kilometers

1 inch equals 0.5 kilometers

0 0.25 0.5
Miles

FIGURE 10

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The archival map research pertaining to the location of Alazan Creek and Martinez Creek illustrates the fluidity of place names over time. It is possible that at least some of the historic references to the Alazan refer to present-day Martinez Creek to the east, the upper reaches of the Alazan to the west, or the segment of the creek south of the confluence. Acknowledging the ambiguousness of "Alazan Creek" as a place name and geographic landmark is of particular importance in historic accounts of the Battle of Alazan Creek in 1813. Rectifying this fluidity while working back through the annals of local history is no easy feat. For instance, despite the possibility that daiange names where changed in the course of history, some historians describe the potential location of the Battle of Alazan Creek as being in proximity to present-day Woodlawn Park and in the vicinity of the Alazan Creek Trail project area (Matovina and de la Tejas 2013:49, footnote 49). However, historic accounts of the battle describe the Republican Army of the North leaving San Antonio in a westerly direction, crossing the San Pedro Creek to engage with the Spanish Royalist Army along Alazan Creek (Santos 1966). In these accounts, there is no mention of crossing another creek between San Pedro and Alazan called Martinez Creek; however, this does not rule out the possibility that battle took place south of the confluence on Alazan Creek or that the historical accounts simply neglect to mention the crossing of Martinez Creek. Still, considering the noted descripencies in drainage labels over time, the possibility exists that the Battle of Alazan Creek occurred along what is now called Martinez Creek.

Spanish maps suggest that the Battle of Alazan Creek, also called the Battle of Alazan Heights, occurred northwest of the historic settlement (**Figure 11**). Though, the scale and marker location on this figure do little to in solving the dilemma on creek names. Historic accounts of the battle indicate that the Spanish Royalist Army met the forces of the Republican Army of the North approximately half a league outside the City (Thonhoff 1989). Here again, one is presented with a wrestle of labels; the term "league" is not a fixed measurement, instead varying with usage. **Table 1** notes some of various uses of the term "league" that may have been *en vogue* in San Antonio during the early nineteenth century and their estimated distance. The distance and direction imore accurately describe a battle location along modern-day Martinez Creek or further up the Alazan, north of its current marked location.

Table 1: Variations in usage of the term "League". Measurements from Spence 1997 and Encyclopedia Britannica.

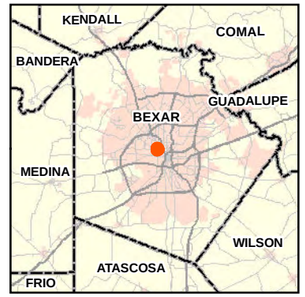
League Variant	Full Measurement
Colonial Spanish League	2.5 miles/4.02 kilometers 2.63 miles is generally more accurate during the 18th century
English League	3.0 miles/4.83 kilometers
Spanish Legua Geographica (1700-1830)	3.8 miles/6.1 kilometers
Spanish Legua Nueva (since 1766)	4.2 miles/6.7 kilometers

According to historic accounts, the Battle of Alazan Creek occurred on a ridge near a small pond of the creek, which is also more characteristic of the topography surrounding present-day Martinez Creek (Matovina and de la Tejas 2013:49, footnote 34). A plotting of a 2.5-3.0 arc from historic downtown San Antonio on the Siege of Bexar Map, the 1889 City of San Antonio Map, and the 1929 City of San Antonio Map indicate that only a half of a colonial Spanish league would align with the current historical marker location. Both the Spanish *Legua Geographica* and the Spanish *Legua Nueva*, at half their distance, would place the battle along the Alazan, 400 meters south of Woodlawn Lake or northeast of this location, along Martinez Creek (**Figures 12-14**). Further, none of these maps indicate a spring (or *Charco*), or the channels of Alazan or Martinez in close proximity to the current location of the Battle of Alazan Historic Marker. The COSA's developmental history of Woodlawn Lake Park, indicate that the Lake was created by constructing a dam across Alazan Creek in 1889 which was supplied by two artesian wells (COSA OHP 2104). This indicates the possibility of the occurrence of natural artesian springs at this location. However, it should be noted that this same developmental history notes that the sediment excavated for dam construction was removed from the area that became the casting pond still in use today. While, evidence suggests a good possibility of natural springs being present here in 1813, the exact area of the*Charco del Alazan* is unlikely to be exactly at the casting pond, and, if indeed located in the vicinity, could be anywhere within or adjacent to the current boundaries of the lake.

The Siege of Bexar in 1835

During the Siege of Bexar, General Martín Perfecto de Cos fortified the town plazas on the west side of the San Antonio River and a former mission, the Alamo, on the east side, in which approximately 650 Mexican forces were concentrated during the Siege of Bexar in 1835 (Barr 2010). Though the majority of military earthworks are expected within the fortified city (**Figure 12**), several skirmishes occurred outside the city and potentially within the project areas. References to Alazan Creek in historic accounts of the Grass Fight most likely refer to the eastern creek channel or the creek south of the confluence as indicated by the illustrated location of Alazan Creek on the Siege of Bexar map.

SPANISH PROVINCE
OF TEXAS 1821



Map provided by the Texas State Library and Archives Commission

N

0 25 50 75
Kilometers

1 in equals 50 kilometers

FIGURE 11

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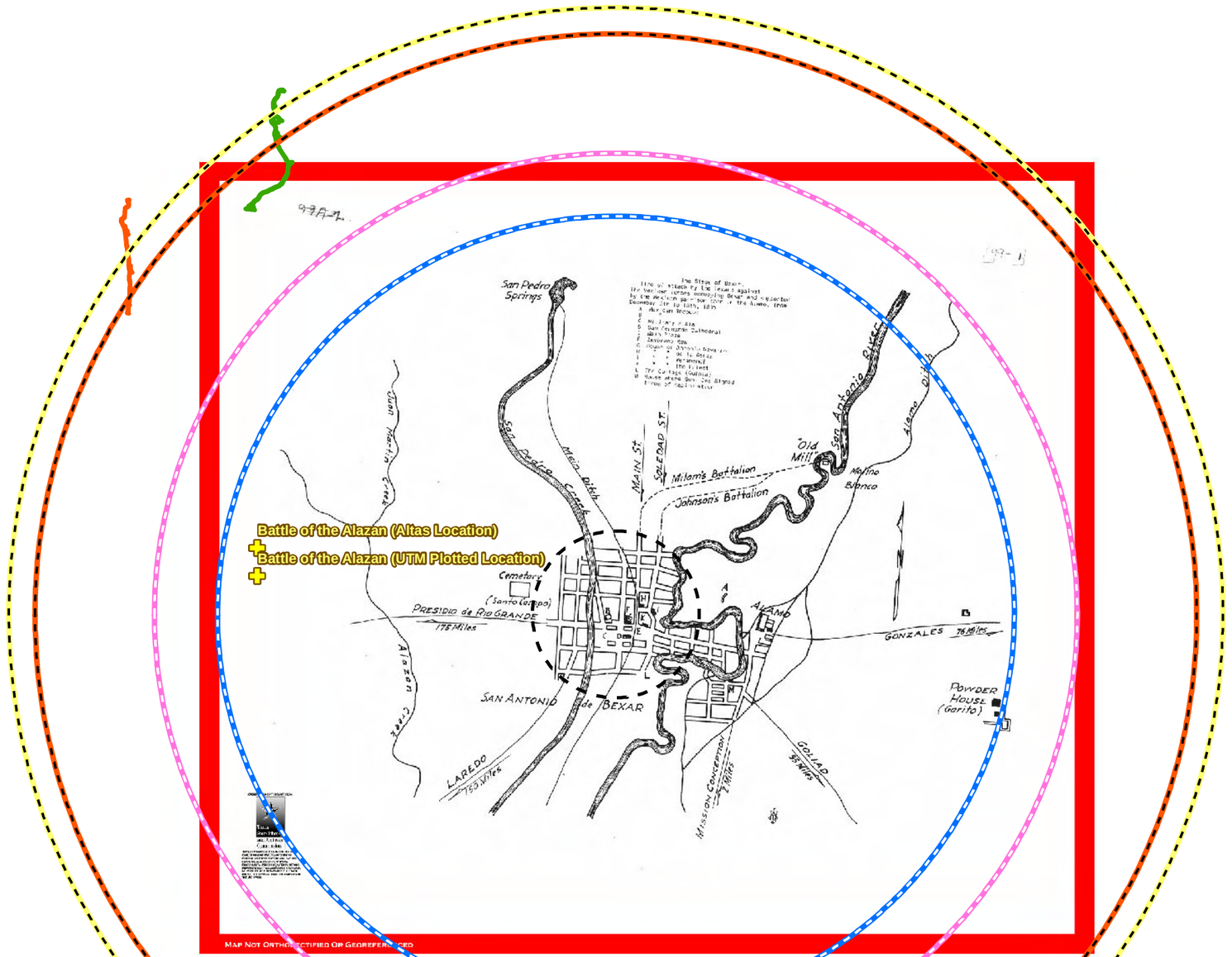
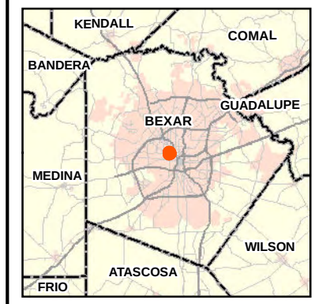
SIEGE OF BEXAR 1835





Key to Features

- Battle of the Alazan (Historical Marker)
- Origination Perimeter
- Colonial Spanish Half League (1.25 miles)
- English Half League (1.5 miles)
- Spanish Legua Geographica Media(1700-1830) (3176.5 meters)
- Spanish Legua Nueva Media (since 1766) (3343.62 meters)
- Martinez Creek Trail
- Alazan Creek Trail

Map provided by the Texas State Library and Archives Commission

N

0 400 800 1,200
Meters

0 0.25 0.5 0.75
Miles

FIGURE 12

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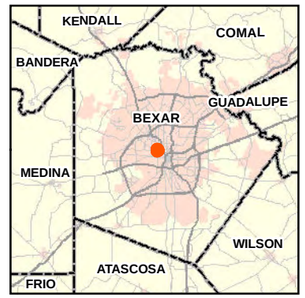
1889 CITY OF SAN ANTONIO MAP



Key to Features

- Battle of the Alazan (Historical Marker)
- Martinez Creek Trail
- Alazan Creek Trail
- Origination Perimeter
- Colonial Spanish Half League (1.25 miles)
- English Half League (1.5 miles)
- Spanish Legua Geographica Media(1700-1830) (3176.5 meters)
- Spanish Legua Nueva Media (since 1766) (3343.62 meters)

Published by J.J. Olsen & Son, Map of the City of San Antonio, Tx., 1889

N

0 0.25 0.5 0.75
Kilometers
1 in equals 0.5 kilometers

0 0.25 0.5
Miles

FIGURE 13

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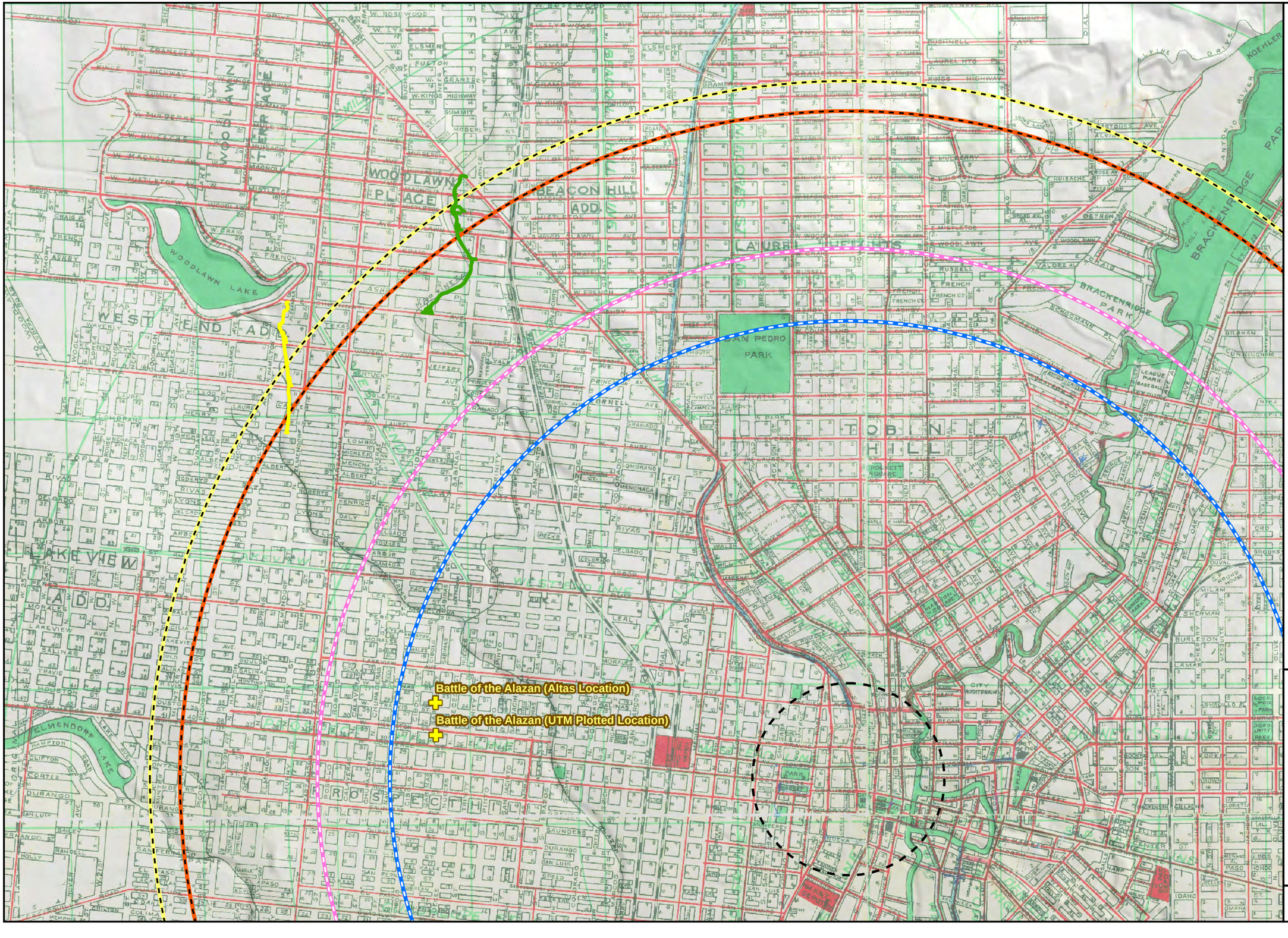
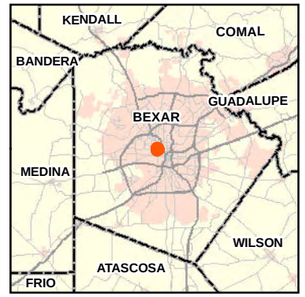


1929 CITY OF SAN ANTONIO MAP



Key to Features

- Battle of the Alazan (Historical Marker)
- Martinez Creek Trail
- Alazan Creek Trail
- Origination Perimeter
- Colonial Spanish Half League (1.25 miles)
- English Half League (1.5 miles)
- Spanish Legua Geographica Media(1700-1830) (3176.5 meters)
- Spanish Legua Nueva Media (since 1766) (3343.62 meters)

Published by Jules A. Appler
San Antonio, Tx,, and Suburbs. 1929

N

0 0.25 0.5 0.75
Kilometers

1 inch equals 0.5 kilometers

0 0.25 0.5
Miles

FIGURE 14

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METHODOLOGY

The field methodology utilized in the course of the archeological survey was tailored to provide the broadest possible evaluation of cultural resources within the project area. This section provides an overview of the field methodology and a discussion of the manner in which the historical archeological resources found within and adjacent to the site area were evaluated for significance.

Hicks & Company archeologists conducted a 100-percent intensive pedestrian survey of the project area following the THC/Council of Texas Archeologist's (CTA's) minimum survey standards for linear projects of less than 30 meters in width for proposed trail locations. Where planned improvements exceeded 30 meters in width, these areas were tested according to their acreage and THC/CTA guidelines. All shovel tests were terminated at a maximum depth of 100 centimeters below surface unless pre-Holocene deposits, bedrock, or extremely dense clays or clay loams were encountered. All excavated soil from shovel tests was screened through quarter-inch wire mesh or hand-sorted where clays could not be screened. Each shovel test was recorded in ten-centimeter levels on standardized forms and their location plotted using a GPS. Once test data were recorded, all shovel tests were backfilled.

For the geoarcheological investigations, backhoe trenches were excavated at locations where trail modification will require excavation below 90 centimeters (cms) (36 in) to explore for Holocene epoch stratified deposits. All areas with such depths were located on maps prior to field investigations and initially assessed during survey and shovel testing. Some areas were not mechanically trenched because slopes were very steep, making working conditions unsafe or access was limited by development along the channel. Additionally, potential backhoe trench locations were assessed for likelihood of being relatively undisturbed alluvial terraces with the potential to contain deeply buried intact archeological deposits by the project's geoarcheologist, Dr. Victor Galan and the project's Principal Investigator, Josh Haefner. Assessments were based on degree of intactness and level of modern disturbance in correlation with previous shovel test and geoarcheological data collected during this project and recent work in the immediate area by Haefner and others (2014). Hence, certain areas that were identified during initial desktop review as potential backhoe locations were not found to be such when ground and data-truthed. Mechanical trenches were monitored by 2-3 archeologists during their excavation with both trench and the spoil-pile monitored simultaneously for artifacts and cultural features. Following excavation, a one meter wide section of each trench was trowled smooth. This section was photographed and described using standard geologic and pedologic terminology. All backhoe trench locations were recorded with a GPS and referenced to aerial photos of the project area. Backhoe excavations were directed and monitored by an archeologist certified as a competent person trained in Occupational Safety and Health Association (OSHA) trench safety standards. While the number of mechanical trench excavations for this investigation is limited, the write-up is intended for use in tandem with the geoarcheological investigations reported in Haefner et al.

2014. Investigators used handheld GPS units and detailed maps to locate and record excavations within the proposed project area. GPS positions were recorded for all shovel tests and backhoe trenches. All GPS positions were downloaded and plotted on 7.5-minute USGS topographic maps and aerial photographs by Hicks & Company GIS personnel

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RESULTS OF FIELD INVESTIGATIONS

PEDESTRIAN SURVEY AND SHOVEL TESTING FOR THE MARTINEZ CREEK TRAIL PHASE

On July 8, 2014 Hicks & Company archeologists performed a 100-percent intensive pedestrian survey supplemented by shovel testing of the approximately 942 meter-long proposed Martinez Creek Hike and Trail. The proposed alignment initiates along the sidewalk along the northbound travel lane of State Highway 345 (SH 345) across from its intersection with Mulberry Street. From this point the proposed trail follows the general alignment of Martinez Creek eastward towards Woodlawn Creek Road, staying approximately 30 to 60 meters south of the channel, on the flat grade of a downtown urban neighborhood, crossing Magnolia Street and East Street (**Figure 15** and **Figure 16**). Along this segment of Martinez Creek, five shovel tests (STDK1, STDK2, GC1, JH1, and JH2) were excavated noting silty clay sediment that ranged in color from dark yellowish-brown (10YR 4/4) to gray (7.5YR 5/1) above very dark brown (10YR 2/2) dense silt clays. Shovel Test GC1 encountered a white 7.5YR 8/1 silt at 30 centimeters below the ground surface (cmbs) with small pebble and grit-like inclusions. This stratum is likely construction fill.

Figure 15: Overview of Project Area facing East from STJH1 towards STDK1. White truck in background is parked at Magnolia Street.

Figure 16: Overview of Project Area facing west towards Woodlawn Street Bridge.

Crossing the Woodlawn Street Bridge, the alignment of the proposed Martinez Creek trail more closely parallels the slopped bank of the drainage, following the channel eastward for an approximate distance of 280 meters, before turning northwestward just north of the French Street for a distance of 370 meters (**Figure 17** and **Figure 18**). Five shovel tests (STDK3, STGC2, STGC3, STJH3, and STJH4) were excavated along this reach noting hard silty clays, ranging from dark yellowish-brown (10YR 4/4) to gray (7.5YR 5/1) in color. High amounts of gravel were noted, increasing in concentration with depth. None of the shovel tests conducted along the proposed Martinez Creek trail alignment were positive for cultural materials greater than 50 years in age.

Figure 17: Overview of Project Area facing west towards Cincinnati Street Bridge from STJH4.

Figure 18: Overview of western terminus of proposed Martinez Creek trail facing northwest towards Cincinnati Street Bridge from STGC3.

PEDESTRIAN SURVEY AND SHOVEL TESTING FOR THE ALAZAN CREEK PHASE

On July 8, 2014 Hicks & Company archeologists performed a 100-percent intensive pedestrian survey supplemented by shovel testing of the 750 meter-long proposed new Alazan Creek hike and trail. The proposed alignment initiates at the northwest corner of Josephine Tobin Drive and Alexander Avenue, to travel south utilizing the existing trail within Woodlawn Park for a distance of approximately 90 meters (**Figure 19**). Immediately adjacent-south of Woodlawn Park, the proposed trail alignment enters the former Villareal property, recently acquired by the San Antonio River Authority (**Figure 20** and **Figure 21**). Two shovel Tests, CL1 and CL2, were excavated on this tract, noting dark gray (10YR 4/1) silty clay with high and increasing gravel content. Additionally, shovel test CL2 noted modern-era trash debris to 30 centimeters below the ground surface.

Figure 19: Overview of Woodlawn Park facing south from Josephine Tobin Drive. Existing hike and bike trail is far-left frame.

Figure 20: Overview of entry-point to acquired parcel facing south from terminus of Texas Avenue at casting pond.

Figure 21: Overview of proposed Hike and Bike trail alignment through acquired parcel facing south from STCL12.

Exiting the former Villareal property to the north, the proposed project aligns along the sloped south bank of Alazan Creek, following its alignment eastward, crossing under the Waverly Street Bridge, the State Highway 421 (SH 421) Bridge to terminate at Lombrano Street. Shovel tests STJH5 and STDK4 were excavated between the former Villareal property and the Waverly Street Bridge (**Figure 22**). These tests noted gray (10YR 5/1) and brown (10YR 5/3) sediments with high concentrations of gravel throughout. Both shovel tests terminated within gravel matrices at approximately 20 centimeters below the ground surface (cmbs). Three shovel tests (STDK5, STGC5, and STJH6) were conducted between the Waverly Street Bridge and the SH 421 Bridge, noting gray (7.5YR 5/1) silty clays and clay loams that ranged from very dark gray (10YR 3/1) to gray (10YR 5/1) in color. Shovel Test GC4 was excavated between the SH 421 Bridge and the Lombrano Street Bridge (**Figure 23**). This shovel test noted a ghard silty clay sediment, gray (7.5YR 5/1) in color. Gravel inclusions that increased in concentration with depth were noted throughout these four shovel tests. None of the shovel tests conducted along the proposed Alazan Creek trail segment were positive for cultural materials greater than 50 years in age.

Figure 22: Overview of Project Area facing west from STJH5 towards archeologist at STDK4.

Figure 23: Overview of Project Area facing west towards Lombrano Street Bridge from drainage culvert within project area, located just north of Laurel Street towards.

GEOARCHEOLOGICAL INVESTIGATIONS

Geoarcheological Background

The proposed Alazan Creek and Martinez Creek project areas are located at the boundary between Upper Cretaceous Marl and Chalk and Lower Paleocene sandstone and mudstone. Initially, the Navarro Group and Austin Chalk were deposited as thick layers of marl and clay approximately 99.6 to 65.5 million years ago (mya) during the Late Cretaceous. Subsequent gulf transgression and regression during the Tertiary formed the Gulf Coastal Plain as the ancestral Gulf of Mexico deposited sands, shales, clays, and marls in sedimentary geologic formations and material from the nearby Navarro and Austin deposits eroded into the shallow sea (Ward 2006). Succeeding glacial events allowed for streams to cut into the plain deeply incising their channels. The geologic units in the project area is dominated by Quaternary terrace deposits (Qt) between the San Antonio River to the east and Leon Creek to the west, with a small portion of the Navarro Group and Marlbrook Marl undivided and Escondido Formation (Kknm) and Anacacho Limestone/Pecan Gap Chalk/Austin Chalk (Kpg) to the north (Barnes 1982). These Quaternary terraces are the result of eroded material entering from the adjacent uplands into the plain, followed by small stream channel migration across the surface for the past two million years.

Despite the "Quaternary Terrace" label given to the surface geology of the project area, the sediments and amount of change in the past 15,000 years is limited. Given the small size of the streams and information from the NRCS (1965), it is most likely that this terrace was deposited in the Pleistocene between 2.6 mya and 10,000 years ago. The age of the geologic formations and associated soils suggest that sites from any cultural time period may be found on or near the surface. It is likely that any prehistoric sites will be surface or near surface sites with a high degree of disturbance from bioturbation and modern development. The more recent deposits, close to the stream channels, have the greatest potential for containing deeply buried and stratified archeological sites; however, stream channel migration can remove archeological deposits. An examination of soil survey information provides a summary of the depositional data and the potential for buried soil horizons within the upper 230 cms (90 inches [in]) of the sediments.

The combination of geologic deposits, alluvial geomorphology, and vegetation and climate variation over time produce varying soils. Geologic and geomorphological factors provide sediments with particular chemical and textural characteristics. Climate provides energy in the form of temperature and the precipitation to encourage soil formation. Floral and faunal resources provide additional chemical and mechanical energy to the landscape as the soils form. Therefore, soils are the result of both paleo and modern environments. Characterization of the soils by location on the landscape, origin, texture, and depth aid in understanding the potential for both finding archeological sites and determining the potential for finding intact buried cultural features. Bexar County spans the intersection of four Land Resource Areas: the Northern Rio Grande, the Post Oak/Claypan, the Blackland Prairie, and the Edwards Plateau (NRCS 2014). The project area is in the Blackland Prairie near the boundary with the Edwards Plateau. Blackland Prairie bottomland soils are deep, dark gray, alkaline clays. Edwards Plateau bottomland soils are mostly deep, dark, alkaline clays.

General soil associations in the project area are the Lewisville-Houston Black terrace association with deep calcareous clayey soils in old alluvium further from the stream channels and the Venus-Frio-Trinity association with deep calcareous soils on bottom land and terraces adjacent to the stream channels (NRCS 1965). The Lewisville-Houston Black Terrace association consists of higher lying deposits from the Pleistocene in the Leon Creek and San Antonio River valleys. The Venus-Frio-Trinity association is closer to stream channels, is frequently flooded, and consists of old alluvium. Gravel beds are common close to streams. Soil series along the trails are limited to Tinn and Frio series (Tf) with Lewisville (LvA and LvB), Branyon (HtB), Houston Black (HsB), and Austin (AuC) series nearby (NRCS 2014). The Tinn series soils consist of clay 45 cms (18 in) deep over clay with an A/Bss profile. Frio series soils consists of silty clay loam 102 cms (40 in) deep over silty clay with an A/Bk profile. Lewisville, Branyon, Houston Black, and Austin series have similar profiles with silt clay or clay over B horizons with either slick-n-slide (ss) features or calcium carbonate (k) features in excess of 152 cms (60 in) deep.

Descriptions of Backhoe Trench Excavations at Alazan Creek

Backhoe Trench One and Backhoe Trench Two

Two backhoe trenches, Backhoe Trench One (BHT1) and Backhoe Trench Two (BHT2) were excavated along the proposed project area of the planned Alazan Creek hike and bike trail (**Appendix B**). Due to access limitations and degree of disturbance noted during pedestrian survey and shovel testing, no trenches were excavated along Martinez Creek. Backhoe Trench One was excavated on the eastern slope of Alazan Creek north of Waverly Road. The trench was roughly 3 meters (10 feet) long and 0.6 meters (2 feet) deep. Excavation was halted at a layer of large cement fragments and other boulder-size debris (**Figure 24**). All of the material was considered fill material because of the inclusion of modern trash among the boulders. No profile was prepared. Backhoe Trench 2 was excavated on the edge of the slope east of BHT1. This area was adjacent to a retention pond and overflow chute. Excavation of BHT2 found cobble and boulder size gravel along with material to create the pond area (**Figure 25**). Excavation was halted once the pond construction material was uncovered. No profile was prepared.

Figure 24: Overview of BHT1 facing towards east wall.

Figure 25: Overview of BHT2 facing towards northeast corner.

CONCLUSION AND RECOMMENDATIONS

On behalf of Bexar County, the COSA and SARA, Hicks & Company archeologists have completed a 100-percent pedestrian survey of the proposed Alazan Creek and Martinez Creek Hike and Bike trail project, a distance of approximately 1,690 meters. The survey consisted of pedestrian survey supplemented by shovel testing (n = 18), and geoarcheological investigations supplemented by mechanical trench excavations (n = 2) within the proposed project's footprint. The survey area was found to be within a heavily modified stream channel and floodplain in dense urban setting with much of the area disturbed by the creation and maintenance of underground utility corridors, and USACE stream channel modifications. No archeological sites were revisited or newly recorded during the investigations. However, as discussed above in the Previous Investigations and Archival Research Chapter, background research and in-person interviews with local scholars indicate that the current location of the historical marker for the Battle of Alazan is most likely in the wrong place, with the battle posited as occurring approximately 2,400 meters north or northwest of its current assumed location. Evidence suggests that the Battle of the Alazan occurred at or near the northern extent of Alazan Creek near present day Woodlawn Park or, a less viable consideration, east of the Woodlawn Park vicinity at Martinez Creek.

Based on the results of the current survey, it is recommended that no archeological historic properties (36 CFR 800.16(1)) or State Antiquities Landmarks (13 TAC 26.12) will be affected by this project and that no further archeological investigations are necessary for the proposed project area prior to construction. In the unlikely event that cultural materials are found during construction, all work in the area is recommended to cease until the COSA Office of Historic Preservation and the THC are contacted so a professional archeologist can assess the finding and make recommendations for any future action that may be required. This report is offered in partial fulfillment of the requirement of TAC Permit #6914. All project-related materials will be curated at Hicks & Company in Austin, Texas.

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REFERENCES CITED

Barile, K.S., B.A. Houk, and K.A. Miller

2002 *A Cultural Resource Survey of the San Antonio Water System's Customer Distribution Line Project, City of San Antonio, Bexar County, Texas.* SWCA Cultural Resource Report No. 02-304. SWCA Environmental Consultants, Austin, Texas.

Barnes, V. E.

1981 *Geological Atlas of Texas, Austin Sheet*. Bureau of Economic Geology, University of Texas, Austin.

Barr, Alwyn

1990 *Texans in Revolt: The Battle for San Antonio, 1835.* University of Texas Press, Austin.

2010 Siege of Bexar. *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/geb01), accessed June 13, 2014. Uploaded June 12, 2010. Published by the Texas State Historic Association.

Bever, M.R. and D.J. Meltzer

2007 Exploring Variation in Paleoindian Lifeways: The Third Revised Edition of the Texas Clovis Fluted Point Survey. *Bulletin of the Texas Archeological Society* 78:65-99.

Black, Steve

1989 Central Texas Plateau Prairie. In *From the Gulf to the Rio Grande: Human Adaptation in Central, South, and Lower Pecos Texas,* by T.R. Hester, S.L. Black, D.G. Steele, B.W. Olive, A.A. Fox, K.J. Reinhard, and L.C. Bement, pp 17-36. Research Series No. 33. Arkansas Archeological Survey, Fayetteville.

Black, Stephen L. and A.J. McGraw

1985 *The Panther Springs Creek Site: Cultural Change and Continuity in the Upper Salado Creek Drainage, South-Central Texas*. Archaeological Survey Report No. 100. Center for Archaeological Research, The University of Texas at San Antonio.

Bousman, C.B., Barry W. Baker and Anne C. Kerr

2004 Paleoindian Archeology in Texas. In *The Prehistory of Texas* edited by Timothy K. Perttula, p. 15-97. Texas A&M University Press, College Station.

Caldwell, Laura

2010 Casas Revolt. *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/jcc02), accessed June 13, 2014. Uploaded June 12, 2010. Published by the Texas State Historic Association.

Campbell, T.N

2010 Papaya Indians, in the *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/bmp53), accessed October 22, 2014. Uploaded on June 15, 2010. Published by the Texas State Historical Association

Carr, T.R.

1967 The Climate and Physiography of Texas. Report No. 53. Texas Water Development Board, Austin.

City of San Antonio Office of Historic Preservation (COSA OHP)

2014 *Woodlawn Lake*. Electronic Document, http://www.sanantonio.gov/historic/Districts/Woodlawn_Lake.aspx, accessed September 2, 2014.

Collins, M.B.

1968 A Note on the Broad Corner-Notched Projectile Points used in Bison Hunting in Western Texas. *The Bull Roarer 3(2) 13-14*. The University of Texas Anthropology Society, Department of Anthropology, The University of Texas at Austin.

2004 Archeology in Central Texas. In *The Prehistory of Texas* edited by Timothy K. Perttula, pp. 101-126. Texas A&M University Press, College Station.

Crimmons, M.L. and M.D. Freeman

2010 Yanaguana Society, in the *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/vty01), accessed October 22, 2014. Uploaded on June 15, 2010. Published by the Texas State Historical Association.

Decker, S., S.L. Black, and T. Gustavson

2000 *Woodrow Heard Site, 41UV88, a Holocene Terrace Site in the Western Balcones Canyonland of Southwestern Texas.* Studies in Archeology 33. Texas Archeological Research Laboratory, The University of Texas at Austin, and Archeology Studies Program 14. Texas Department of Transportation, Environmental Affairs Division, Austin.

de la Tejas, Jesus F.

2010a Mexican War of Independence. *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/gdmcg), accessed June 13, 2014. Uploaded on June 15, 2010. Published by the Texas State Historic Association.

2010b Texas in the Age of Mexican Independence. *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/nptsd), accessed June 13, 2014. Uploaded on June 15, 2010. Modified on September 7, 2010. Published by the Texas State Historic Association.

Donecker, Frances

2010 San Antonio River. In *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/rns06), accessed October 20, 2014. Uploaded on June 15, 2010. Published by the Texas State Historical Association.

Encyclopedia Britannica

2014 "League." Accessed December 10, 2104 at http://www.britannica.com/EBchecked/topic/333855/league

Fehrenbach, T.R.

2014 "San Antonio, Texas." The Handbook of Texas Online. Electronic document, http://www.tshaonline.org/handbook/online/articles/hds02. Accessed August 11, 2014.

Fox, A.A., F. Bass, Jr., and T.R. Hester

1976 *The Archaeology and History of Alamo Plaza.* Center for Archaeological Research, The University of Texas at San Antonio, Archaeological Survey Report 16.

Haefner, Josh, Victor, Galan, and Gregg Cestaro

2014 *Draft: Intensive Archeological Survey of the San Antonio River Authority's Westside Creeks Improvement Project: Apache Creek and San Pedro Creek Phase, Bexar County, Texas.* Hicks & Company Archeology Series #No. 261. Austin, Texas.

Hatcher, M.A

1932 *The Expedition of Don Domingo Terán de los Ríos into Texas*, ed. Paul J. Foik (Preliminary Studies of the Texas Catholic Historical Society 2.1 [1932]).

Hester, T.R.

1976 Late Pleistocene Aboriginal Adaptations in Texas. In Papers on Paleo-indian Archaeology in Texas: I, pp. 1-10. Special Report No. 3. Center for Archaeological Research, the University of Texas at San Antonio.

1980 *Digging into South Texas Prehistory*. Corona Publishing Company, San Antonio, Texas.

Johnson, L.R.
1995 *Past Cultures and Climates at Jonas Terrace, 41EM29, Medina County, Texas*. Office of the State Archeologist Report 40, Texas Historical Commission and Texas Department of Transportation, Austin.

Jordan, S.P.
2004 *The Teran de los Rios Massanet Expedition of 1691: A Scholarly Edition and Comparative Study.*, Masters Thesis. Texas A&M University.

Kelly, T.C.
1993 Preceramic Projectile-Point Typology in Belize. *Ancient Mesoamerica* 4:205-227.

Long , Christopher
2014 "Bexar County." The Handbook of Texas Online. Electronic Document, http://www.tshaonline.org/handbook/online/articales/hcb07. Accessed May 12, 2014.

McKenzie, C. and B. Moses
2005 *Preliminary Results of the 2005 Field Scho*ol. Paper presented at the September Quarterly Meeting of the Southern Texas Archaeological Association, San Antonio.

Matovina, Timothy and Jesus F. de la Teja
2013 Recollections of a Tejano Life: Antonio Menchaca in Texas History. University of Texas Press, Austin, Texas.

McKinney, Wilson W.
1981 Early Holocene Adaptations in Central and Southwestern Texas: The Problem of the Paleoindian-Archaic Transition. *Bulletin of the Texas Archeological Society* 52: 92-120.

McMahan, C. A., R. G. Frye and K. L. Brown
1984 *The Vegetation Types of Texas, including Cropland*. Texas Parks and Wildlife Department, Austin, Texas.

National Register of Historic Places (NRHP)
1975 Fort Sam Houston, San Antonio, Bexar County, Texas, National Register #75001950.

Natural Resources Conservation Service (NRCS)

1966 Bexar County Soil Survey, online document accessed at websoilsurvey.nrcs.usda.gov

Ramsdell, Charles.
1959 *San Antonio: A Historical and Pictorial Guide.* University of Texas Press, Austin, Texas.

Ricklis, R.A. and M.B. Collins
1994 *Archaic and Late Prehistoric Human Ecology in the Middle Onion Creek Valley, Hays County, Texas, Volume 1: Archeological Components*. Studies in Archeology 19, Texas Archeological Research Laboratory, The University of Texas, Austin.

San Antonio Bicentennial Heritage Committee (SABHC).
1976 *San Antonio in the Eighteenth Century*.

Santos, Richard
1966 Bexar County's Forgotten Battle of Alazan Creek. *San Antonio Express Newspaper*, Saturday, June 18, 1966.

Schoelwer, Susan Prendergast
2010 San Antonio de Valero Mission. In *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/uqs08), accessed October 20, 2014. Uploaded on June 15, 2010. Published by the Texas State Historical Association.

Shafer, H.J. and T.R. Hester
2007 *An Archaeological Survey of the Westwood Center Unit 11, Bexar County, Texas.* Abasolo Archaeological Consultants, San Antonio.

Spence, E. Lee
1997 *Spence's Guide to Shipwreck Rescue*. Narwhal Press. Charleston.

Steen, R.W.
1948 *The Texas Story*. Steck Company, Austin.

Suhm, Dee Ann, Alex D. Kreiger, and Edward B. Jelks
1954 An Introductory Handbook of Texas Archeology. *Bulletin of the Texas Archeological Society*, 25:1-562.

Thonhoff, Robert H.
1989 The Battle of Medina: August 18, 1813. Selected Essays from the 1986 and 1987 San Antonio Missions Research Conference. National Parks Service.

2013 The Battles 1812-1813 in *Battle of Medina 1813: Revisited on the 200th Anniversary* pp. II-1to II-17. The History Shop, Bexar County Archives, San Antonio, Texas.

Thornthwaite, C.W.
1948 An Approach toward a Rational Classification of Climate. In *Geographical Review* 38:55–94.

Ulrich, K.M, et al.
2012 *Intensive Pedestrian Survey and Constructun Monitoring along a Portion of Trail 11 in Brackenridge Park, San Antonio, Bexar County, Texas*. Center for Archaeological Research, San Antonio.

USDA
2013 *Soil Survey of Bexar County*. United States Department of Agriculture, Soil Conservation Services. Washington D.C.

Ward, B.
2006 Geologic History of South Central Texas. Presented at the Native Plant Society for Texas Symposium. Convergence and Diversity: Native Plants of South Central Texas. 2006 Symposium Proceedings. San Antonio.

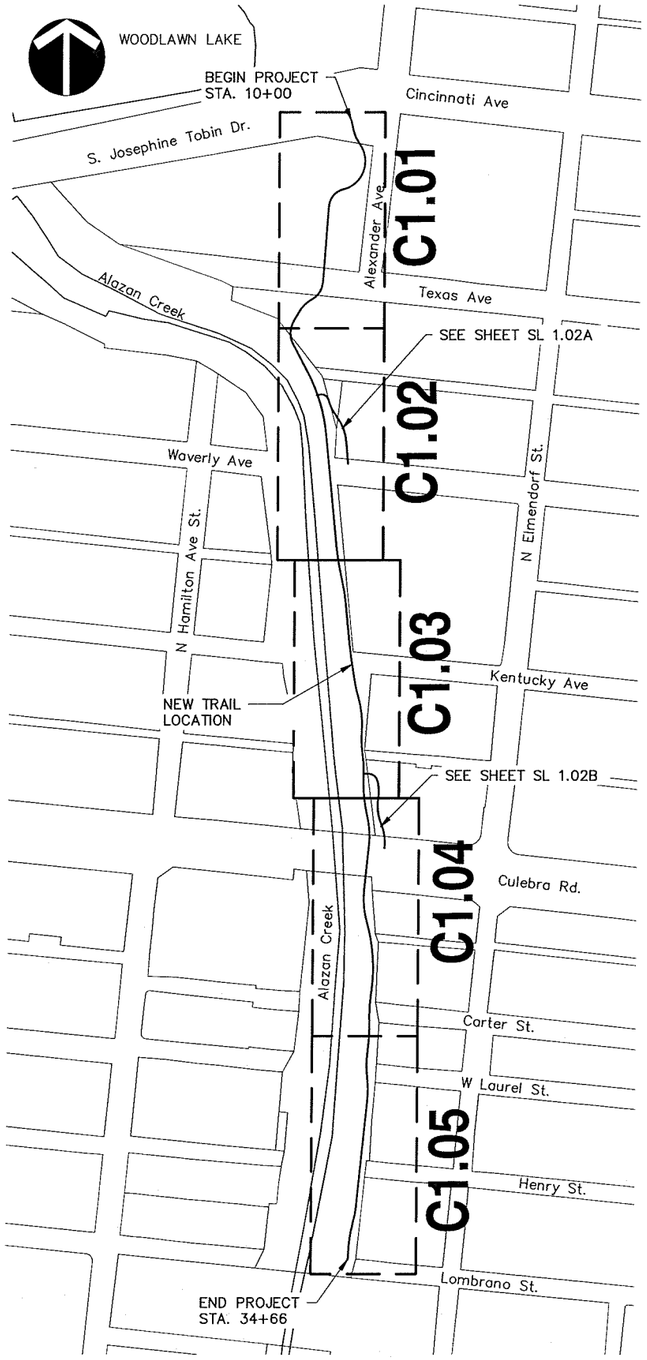
Wiley, Gordon R. and Phillip Phillips
1958 Method and Theory in American Archaeology. University of Chicago Press, Chicago

Yoakum, Henderson
1935 *History of Texas*, 2 vols. Steck, Austin.

Yaokum, Thomas P.
2010 Yoakum, Henderson King. *Handbook of Texas Online* (http://www.tshaonline.org/handbook/online/articles/fyo04), accessed June 18, 2014. Uploaded on June 15, 2010. Published by the Texas State Historic Association.

APPENDIX A

DESIGN PLANS



SITE LAYOUT
NOT TO SCALE

LEGEND

EXISTING

- PROPERTY LINE
- OHE — OVERHEAD ELECTRIC
- G — GAS
- W — WATER
- SS — SANITARY SEWER
- CHAIN LINK FENCE
- WIRE FENCE
- EDGE OF PAYMENT
- WATER EDGE
- 662 — INDEX CONTOUR LINE WITH ELEVATION
- CONCRETE SURFACE
- GV — GAS VALVE
- GAS METER
- PP, LP — POWER AND LIGHT POLE
- GUY WIRE
- SPRINKLER HEAD
- DI — DRAIN INLET
- CO — CLEANOUTS
- TELEPHONE MANHOLE
- MHS — STORM MANHOLE
- TELEPHONE PEDESTAL
- MHW — WASTEWATER MANHOLE
- ELECTRIC METER
- WM — WATER METER
- WV — WATER VALVE
- FH — FIRE HYDRANT
- PBX — POWER BOX
- SIGN
- JUNCTION BOX
- IRRIGATION CONTROL VALVE
- FAUCET
- CP — CONTROL POINT
- TREES

NEW

- NEW TRAIL CENTERLINE ALIGNMENT
- NEW CONCRETE TRAIL
- NEW 5' INDEX CONTOUR
- NEW 1' INDEX CONTOUR
- NEW RETAINING WALLS
- NEW STORM PIPING
- NEW HEAD WALL STRUCTURES
- 1% — SLOPE PERCENTAGE
- D-1 / 19.5 — DRAINAGE AREA ID / NUMBER OF ACRES
- SURFACE FLOW
- DESIGN BY OTHERS

ABBREVIATIONS

A	AREA
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
C	RUN OFF COEFFICIENT
CCP	CONCRETE CYLINDER PIPE
CF	CUBIC FEET
CL	CENTER LINE
COMM	COMMUNICATIONS
CR	COUNTY ROAD
DIA.	DIAMETER
E	EASTING
E.F.	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
EX. OR EXIST.	EXISTING
F.A.	FINISHED GRADE
FM	FARM TO MARKET
FOC	FIBER OPTIC CABLE
FT	FEET
GA	GAUGE
HORIZ	HORIZONTAL
I	RAINFALL INTENSITY (IN/HR)
Is	RAINFALL INTENSITY 5 YEAR EVENT (IN/HR)
IN	INCH
LBS	POUNDS
LF	LINEAR FOOT
LG	LONG
LP	LIGHT POLE
m	METER
MIL	ONE THOUSANDTH OF AN INCH
MIN	MINIMUM
mm	MILLIMETER
mph	MILES PER HOUR
N	NORTHING
NO , #	NUMBER
NTS	NOT TO SCALE

ABBREVIATIONS

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O/S	OFFSET
OSHA	OCCUPATIONAL SAFTEY AND HEALTH ADMINISTRATION
PB	PULLBOX
PC	POINT OF CURVATURE
PLCS	PLACES
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INFLECTION
Q	PEAK DISCHARGE (CUBIC FEET PER SECOND)
Q_5	PEAK DISCHARGE 5 YEAR EVENT(CUBIC FEET PER SECOND)
RCP	REINFORCED CONCRETE PIPE
RECT	RECTANGULAR
REF	REFERENCE
REQ	REQUIRED
RP	POINT OF RADIUS
S.S.	STAINLESS STEEL
SCH	SCHEDULE
SEC	SECTION
SHT	SHEET
SP.	SPACING
SPECS	SPECIFICATIONS
SQ.	SQUARE
STA.	STATION
t	TIME (MIN)
TEL	TELEPHONE
T.O.P.	TOP OF PIPE
TCEQ	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
TCP	TRAFFIC CONTROL PLAN
THWN	THERMOPLASTIC HEAT AND WATER RESISTANT NYLON COATED
TYP	TYPICAL
VAR	VARIOUS
VERT	VERTICAL
VOL	VOLUME
V.V.	VALVE VAULT
W.L.	WATER LINE
W/	WITH

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TEXAS P.E. NO.101394
DATE: 1/23/2014

ARCADIS
Infrastructure - Water - Environment - Buildings
70 N.E. LOOP 410, SUITE 1150
SAN ANTONIO, TEXAS, 78216
TBPE FIRM REGISTRATION NO. F-533

ALAZAN CREEK TRAIL

S. Josephine Tobin Dr.
To Lombrano St.
San Antonio, Texas

REVISION	DATE

Project no: 06363029-00100-01
Date: 1/21/2014
Sheet: __ OF __

SITE LAYOUT AND LEGEND

C1.00

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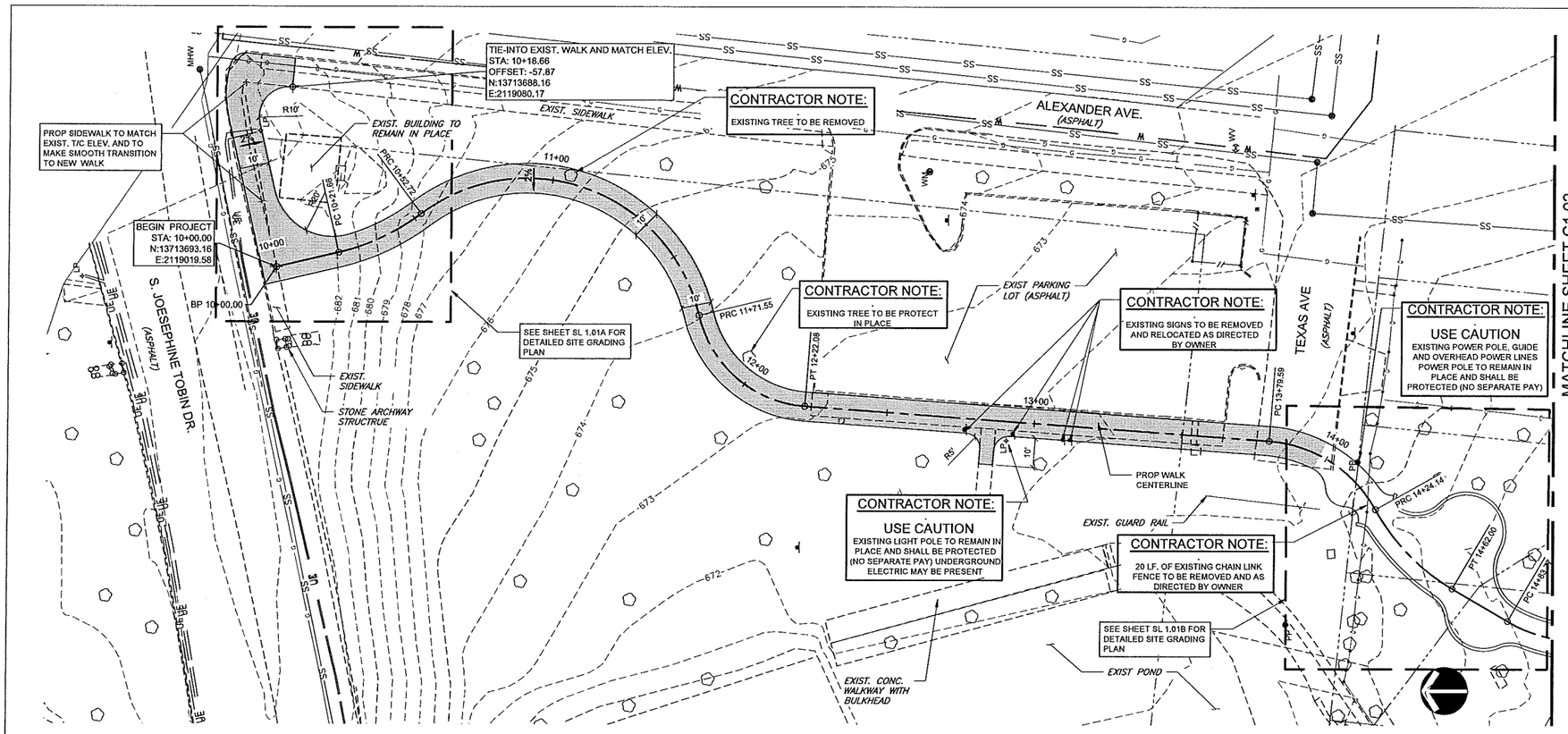

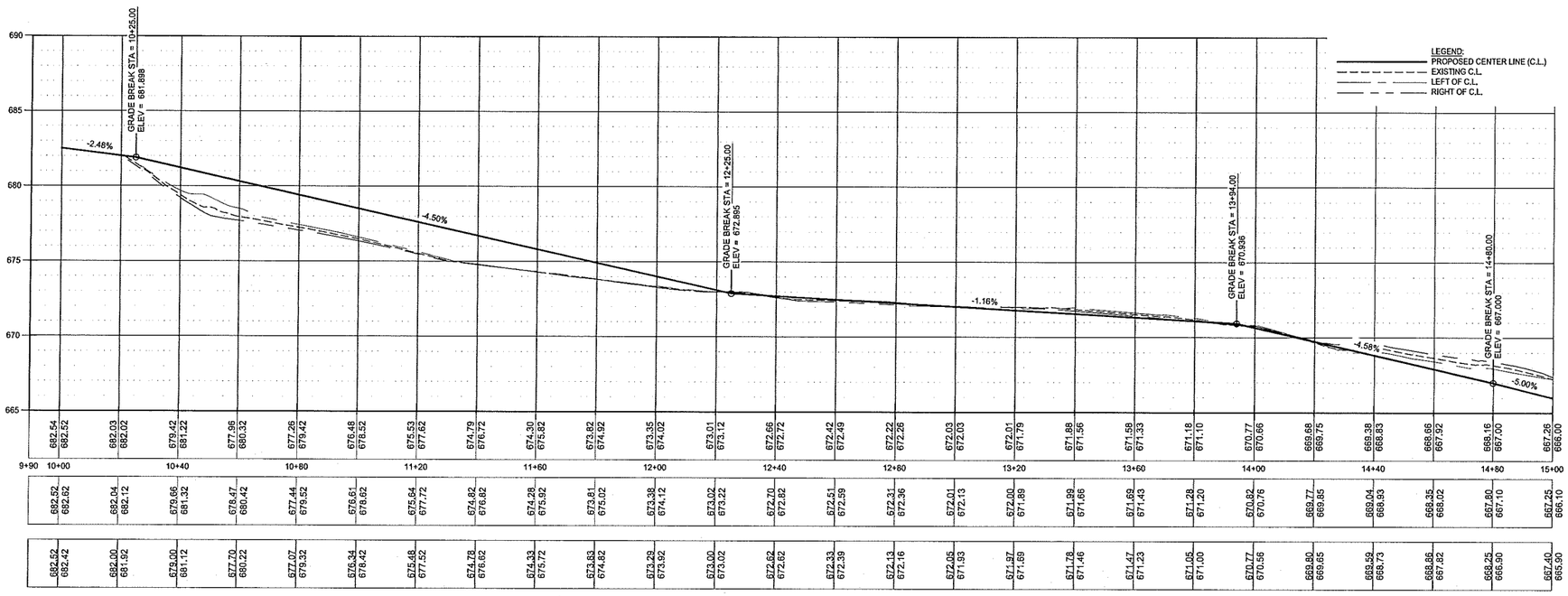

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ALAZAN CREEK TRAIL

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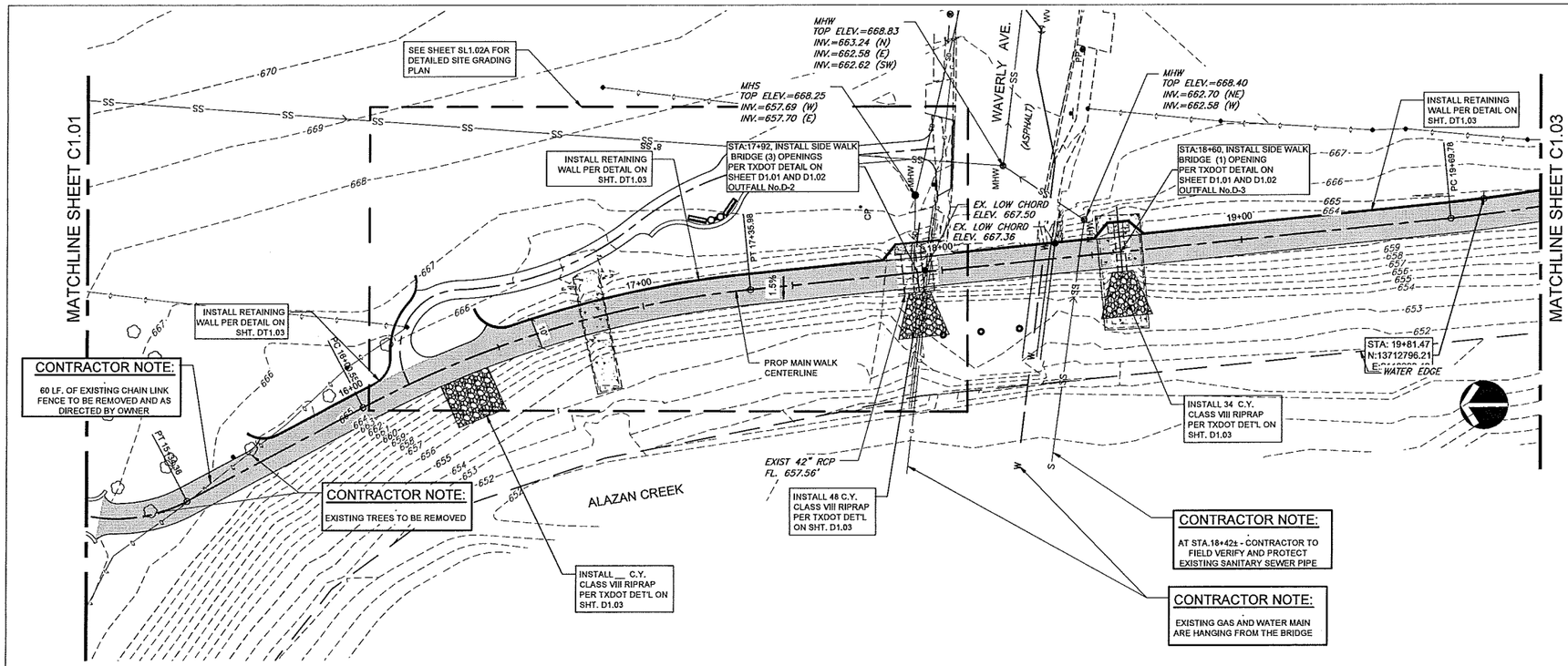
REVISION	DATE

Project no: 06363029-00100-01
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 10+00 to 15+00

C1.01



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ALAZAN CREEK TRAIL

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Project no: 06363029-00100-01
Date: 1/21/2014
Sheet: __ OF __

PLAN AND PROFILE STATION 15+00 TO 20+00

C1.02

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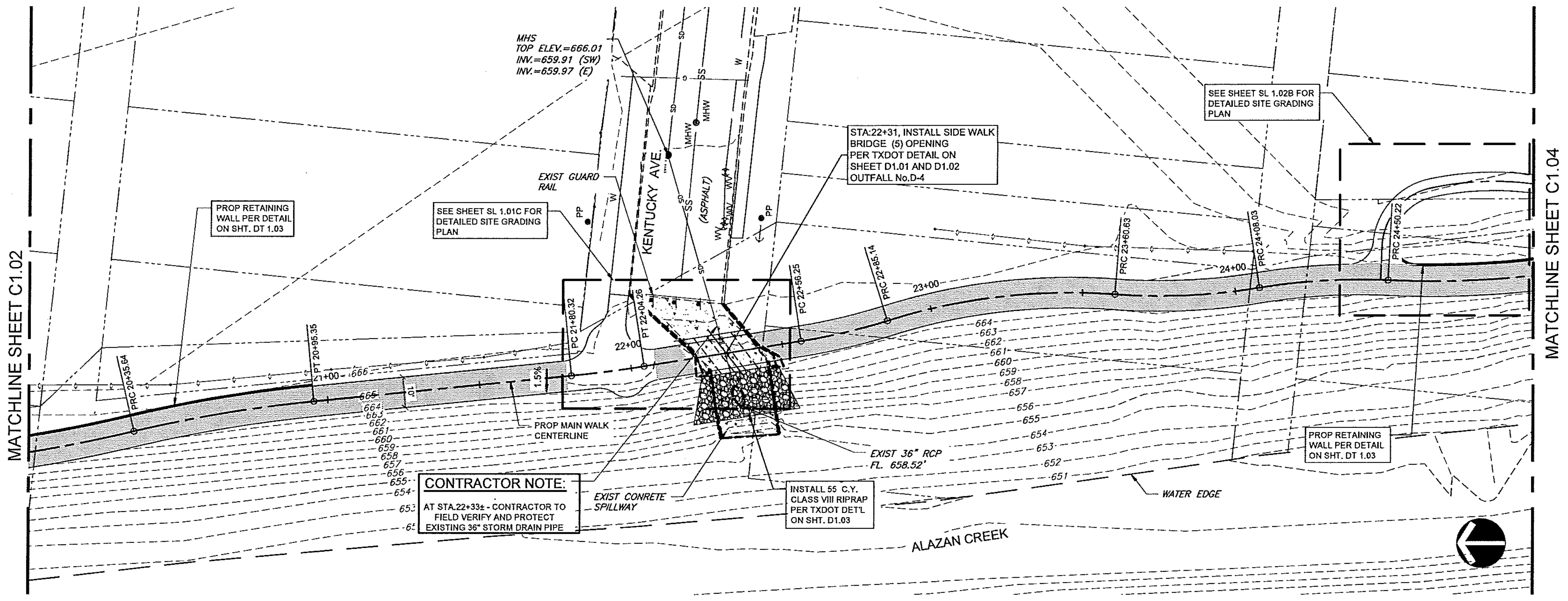

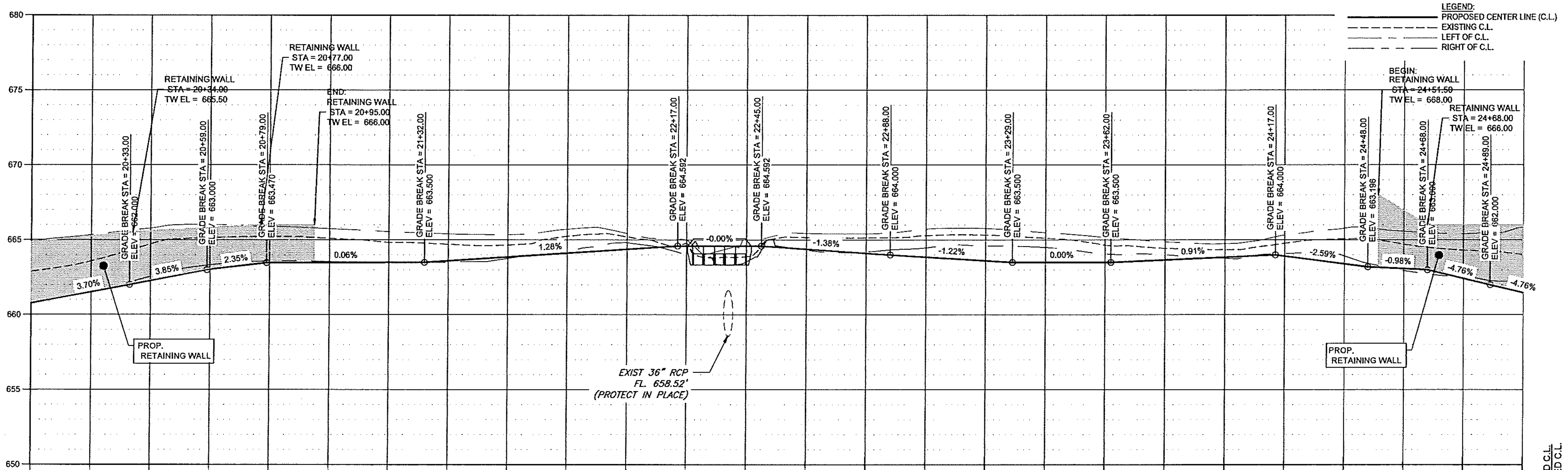

	EXISTINGD C.L.	PROPOSED C.L.	LEFT C.L.		RIGHT C.L.	
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	663.59	661.52	665.33	661.62	661.53	661.42
20+40	664.72	662.27	665.80	662.37	662.66	662.17
	665.15	663.02	666.02	663.12	663.42	662.92
20+80	665.23	663.47	665.89	663.57	663.58	663.37
	665.10	663.48	665.75	663.58	663.56	663.38
21+20	664.84	663.49	665.55	663.59	663.52	663.39
	664.71	663.60	665.41	663.70	663.51	663.50
21+60	664.65	663.86	665.35	663.96	663.76	663.76
	665.25	664.12	665.72	664.22	664.43	664.02
22+00	665.21	664.37	665.43	664.48	664.77	664.27
	664.77	664.59	664.98	664.70	664.10	664.49
22+40	663.89	664.59	665.03	664.70	663.53	664.49
	665.16	664.39	665.43	664.49	664.30	664.29
22+80	665.14	664.11	665.41	664.21	664.20	664.01
	665.28	663.85	665.73	663.96	664.47	663.76
23+20	665.33	663.61	665.77	663.71	664.59	663.51
	665.12	663.50	665.49	663.60	664.50	663.40
23+60	664.66	663.50	665.10	663.60	664.02	663.40
	664.44	663.66	664.87	663.77	664.02	663.57
24+00	664.36	663.85	664.75	663.95	663.77	663.75
	664.77	663.92	665.33	664.03	664.10	663.83
24+40	665.07	663.40	665.77	663.50	663.92	663.30
	664.72	663.08	665.58	663.18	662.95	662.98
24+80	664.31	662.43	665.39	662.53	662.50	662.33
25+00	664.04	661.48	665.82	661.58	662.22	661.38

PROFILE SCALE:
HORIZONTAL 1"=20'-00"
VERTICAL 1"=4'-00"

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ALAZAN CREEK TRAIL

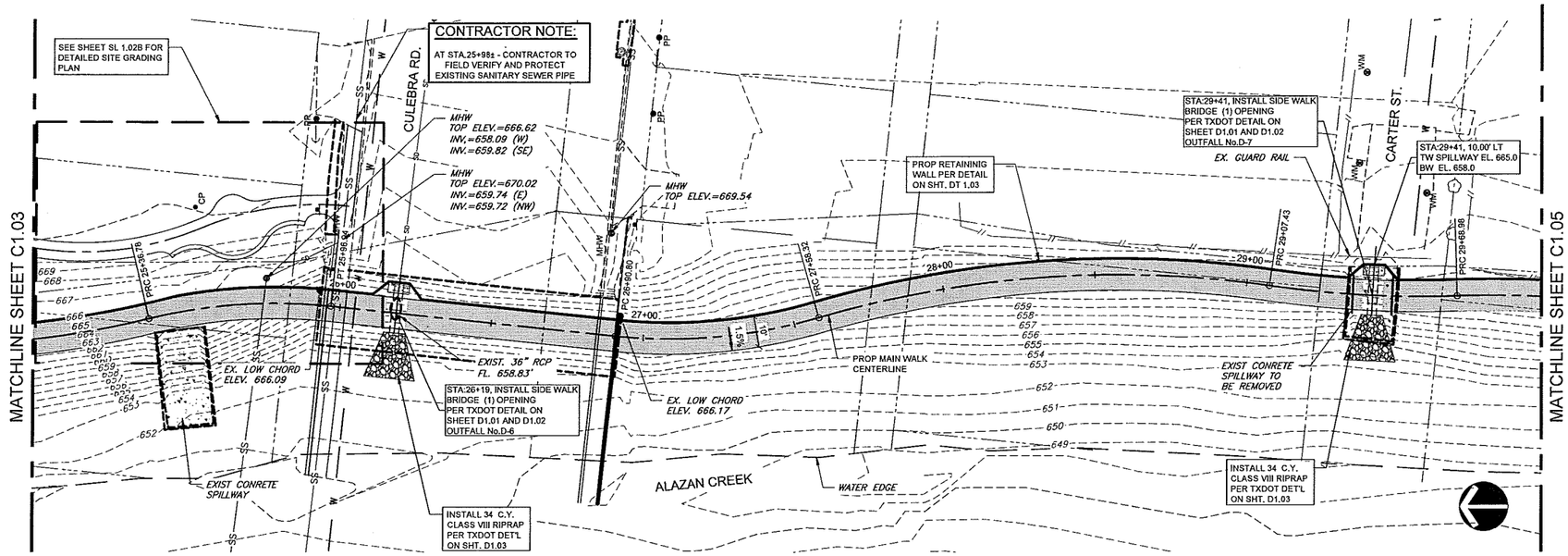
S. Josephine Tobin Dr.
To Lombrano St.
San Antonio, Texas

REVISION	DATE

Project no: 06363029-00100-01
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 20+00 TO 25+00

C1.03



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ALAZAN CREEK TRAIL

S. Josephine Tobin Dr.
To Lombrano St.
San Antonio, Texas

REVISION	DATE

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Date: 1/21/2014
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PLAN AND PROFILE STATION 25+00 TO 30+00

C1.04

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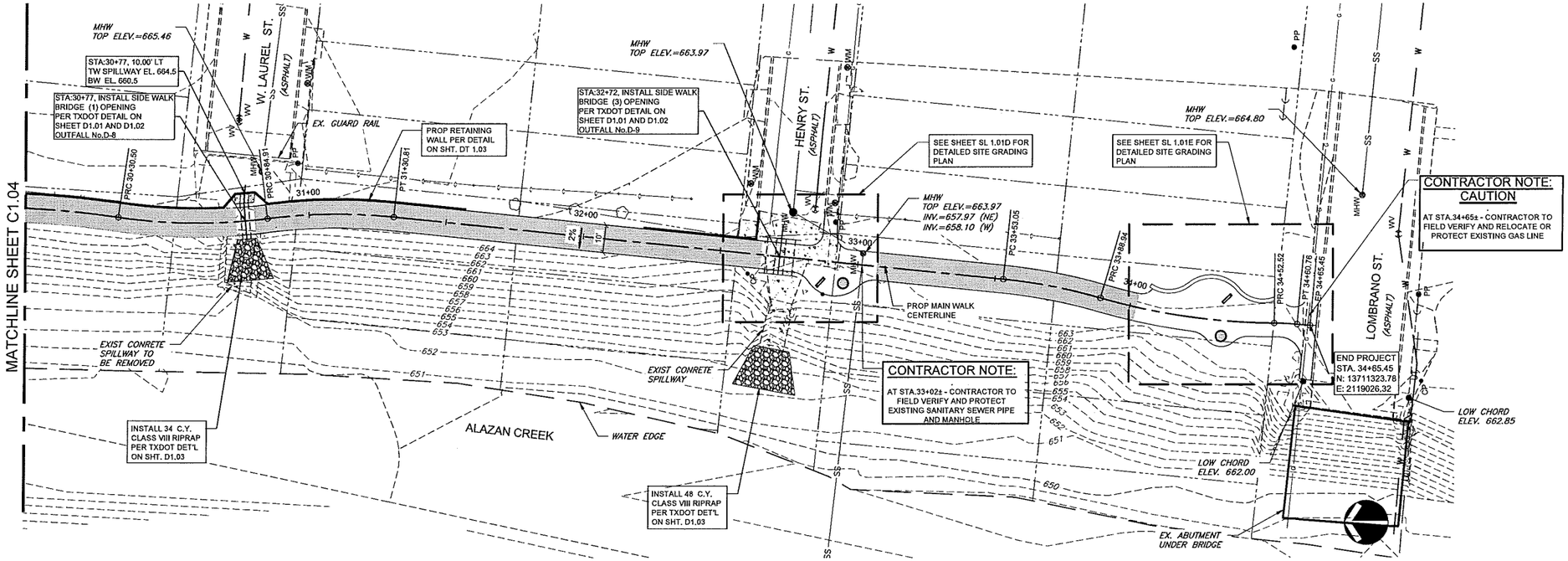

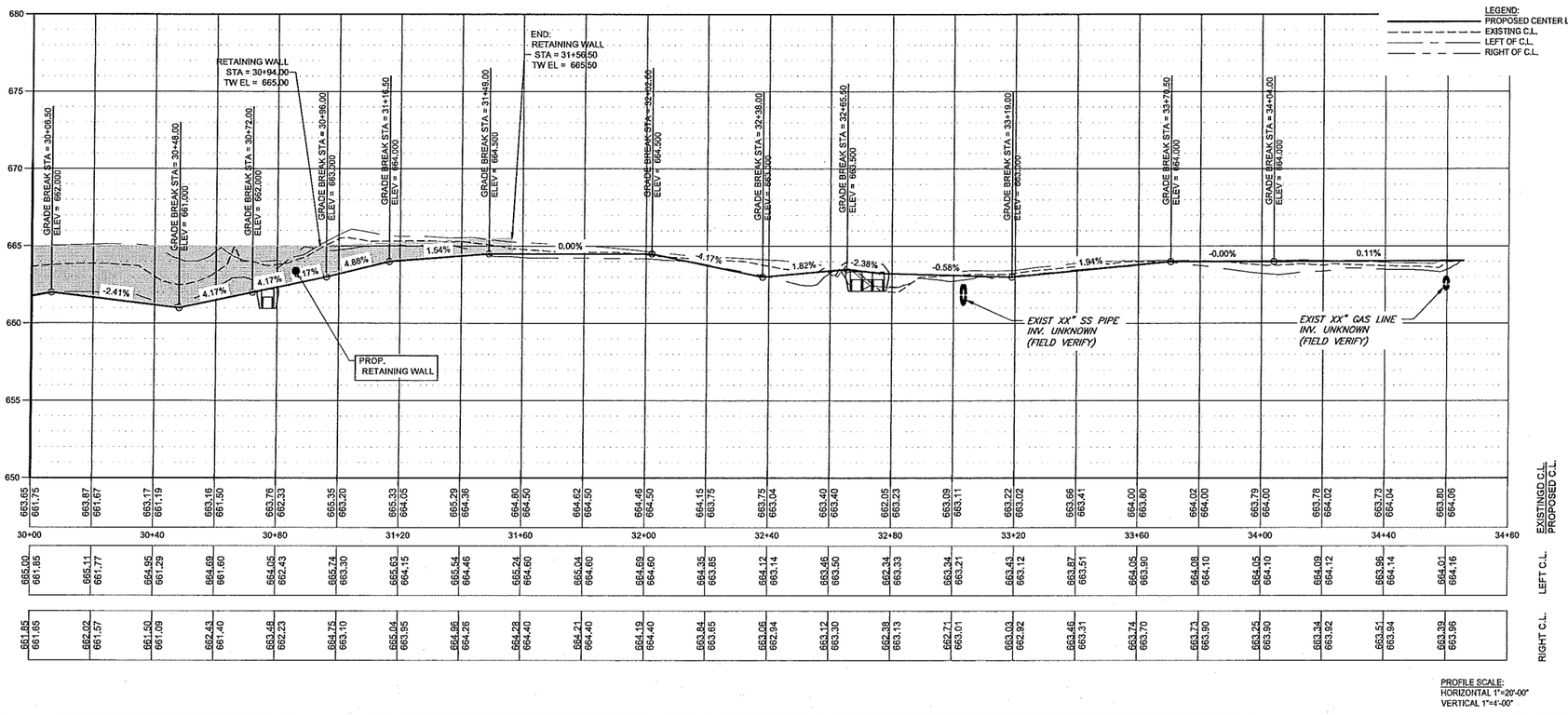

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ALAZAN CREEK TRAIL

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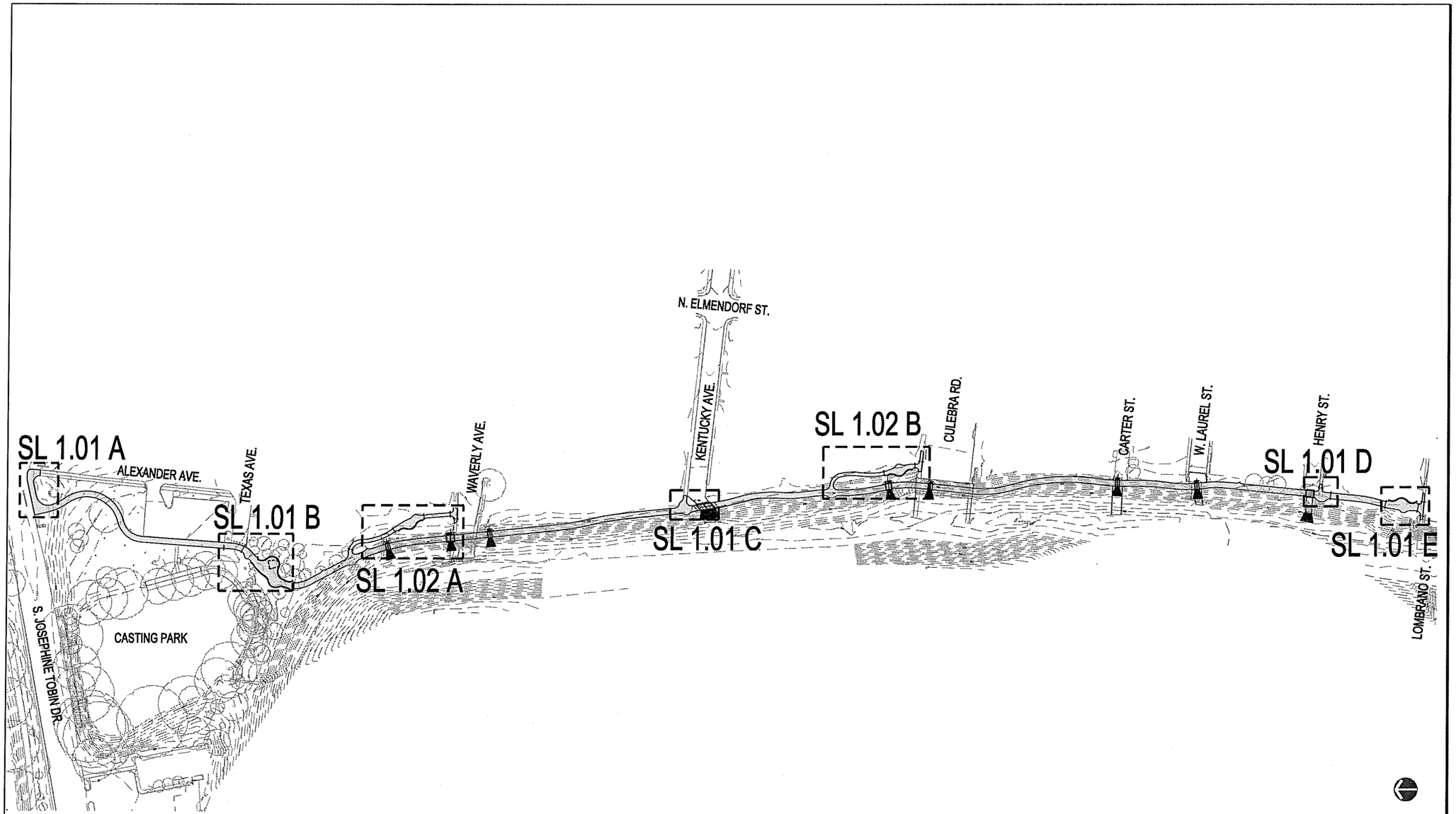
REVISION	DATE

Project no: 06363029-00100-01
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 30+00 TO END

C1.05



TRAIL NOTES:

TRAIL LENGTH - 2,117 LINEAR FEET (0.40 MILES)

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ALAZAN CREEK TRAIL

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

0' 40' 80'

Project no:
Date: JANUARY 22, 2014
Sheet:

OVERALL SITE LAYOUT

SL 1.00

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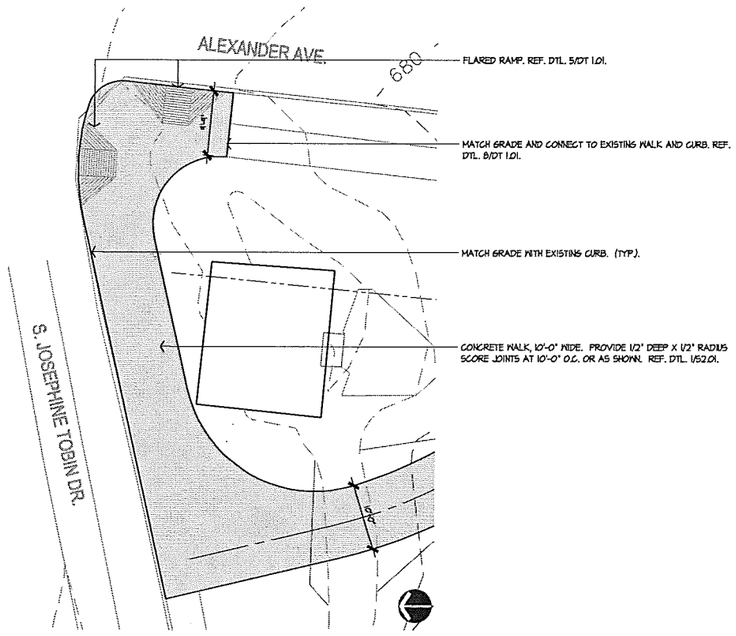

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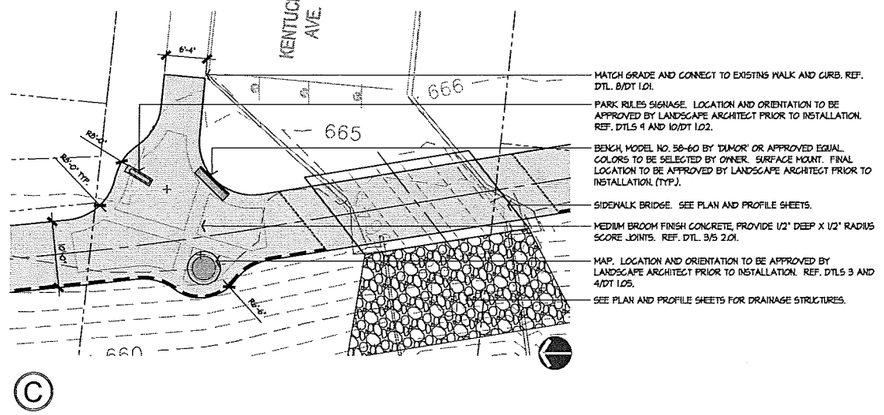

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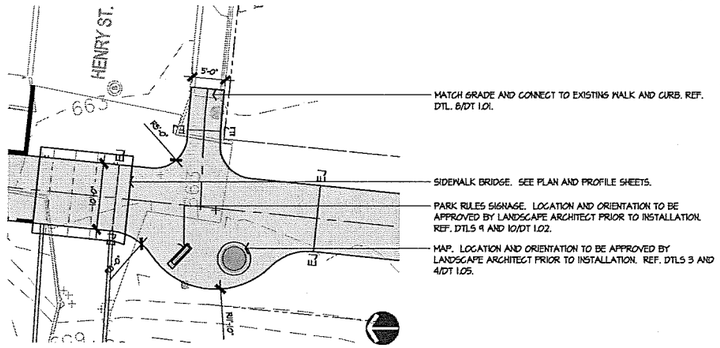

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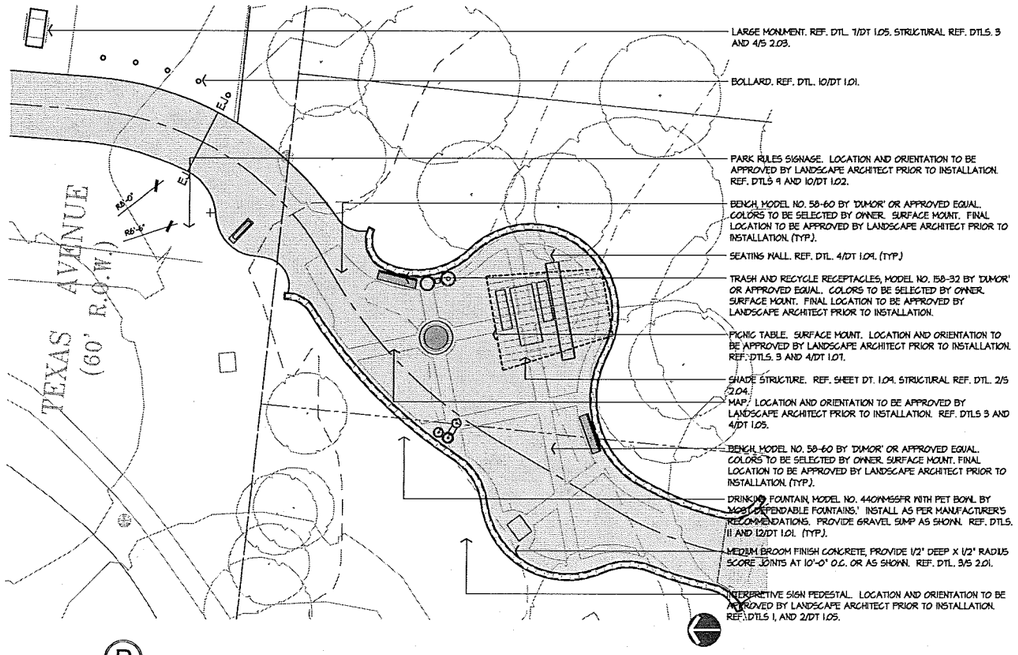

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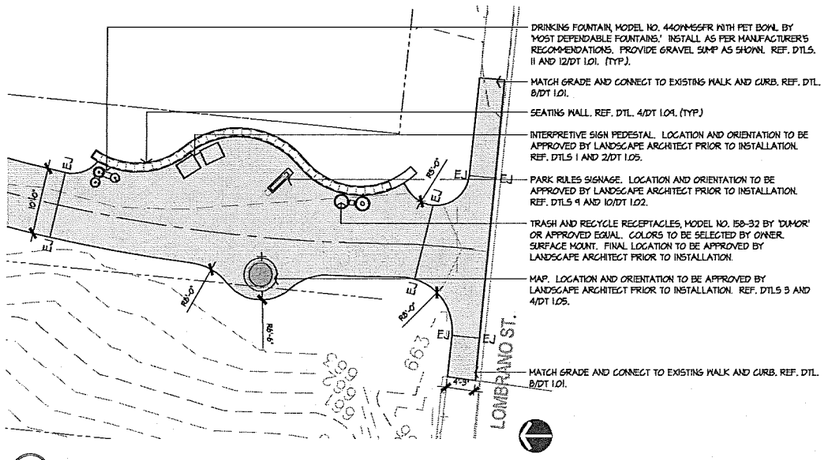

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ALAZAN CREEK TRAIL

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

0' 5' 10'

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE LAYOUT

SL 1.01

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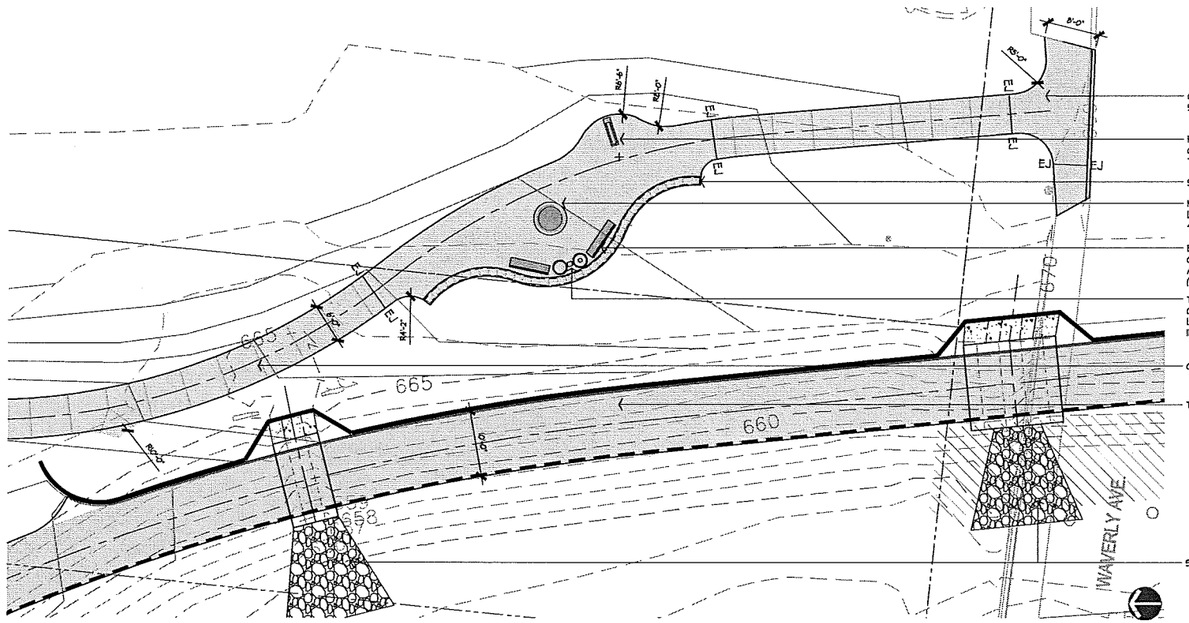


CONCRETE WALK, 6'-0" WIDE. PROVIDE 1/2" DEEP X 1/2" RADIUS SCORE JOINTS AT 6'-0" O.C. OR AS SHOWN. REF. DTL. 1/5 2.01.

PARK RULES SIGNAGE. SURFACE MOUNT. LOCATION AND ORIENTATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. REF. DTLS 9 AND 10/DT 1.02.

SEATING WALL. REF. DTLS. 4/DT 1.09 (TYP.).

MAP. LOCATION AND ORIENTATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. REF. DTLS 3 AND 4/DT 1.05.

BENCH, MODEL NO. 58-60 BY 'DUMOR' OR APPROVED EQUAL. COLORS TO BE SELECTED BY OWNER. FINAL LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. (TYP.).

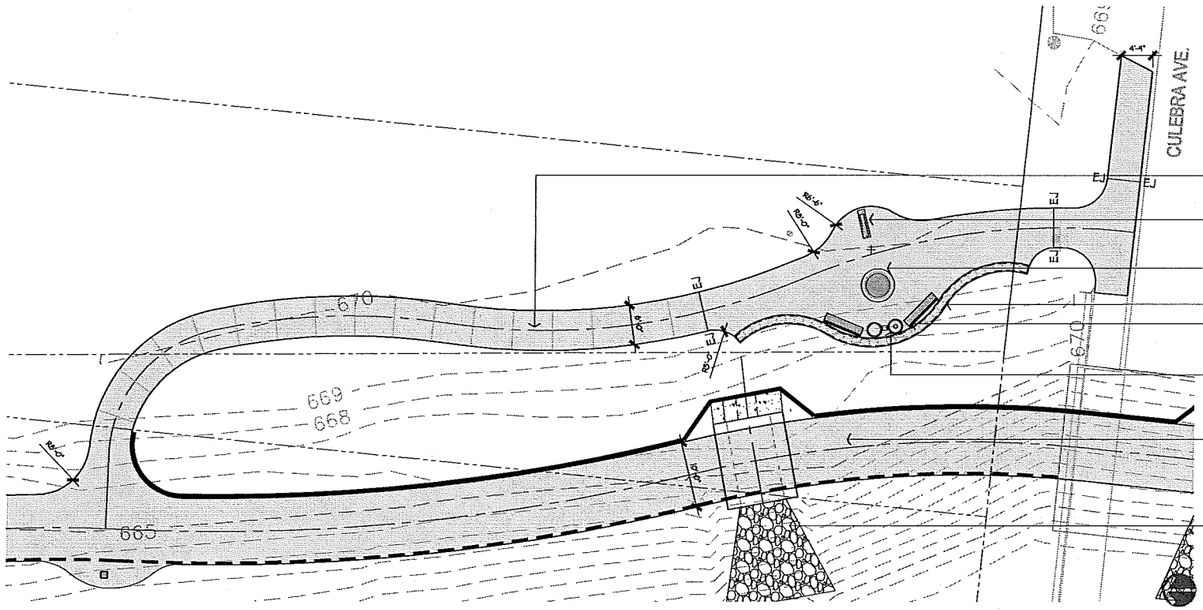
TRASH AND RECYCLE RECEPTACLES, MODEL NO. 58-32 BY 'DUMOR' OR APPROVED EQUAL. COLORS TO BE SELECTED BY OWNER. FINAL LOCATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION.

CONCRETE TRAIL WITH TOE DOWN, 6'-0" WIDE. REF. DTL. 3/5 2.01.

TRAIL, TOE DOWN AND RETAINING WALL. REF. DTL. 4/5 2.01.

SEE PLAN AND PROFILE SHEETS FOR DRAINAGE STRUCTURES.

Ⓐ



CONCRETE WALK, 6'-0" WIDE. PROVIDE 1/2" DEEP X 1/2" RADIUS SCORE JOINTS AT 6'-0" O.C. OR AS SHOWN. REF. DTL. 1/5 2.01.

PARK RULES SIGNAGE. SURFACE MOUNT. LOCATION AND ORIENTATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. REF. DTLS 9 AND 10/DT 1.02.

MAP. LOCATION AND ORIENTATION TO BE APPROVED BY LANDSCAPE ARCHITECT PRIOR TO INSTALLATION. REF. DTLS 3 AND 4/DT 1.05.

SEATING WALL. REF. DTL. 4/DT 1.09. (TYP.).

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CONCRETE TRAIL, TOE DOWN AND RETAINING WALL. REF. DTL. 4/5 2.01.

SEE PLAN AND PROFILE SHEETS FOR DRAINAGE STRUCTURES.

Ⓑ

STATE OF TEXAS
WALTER H. HEARD
629
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ALAZAN CREEK TRAIL

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

0' 5' 10'

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE LAYOUT

SL 1.02

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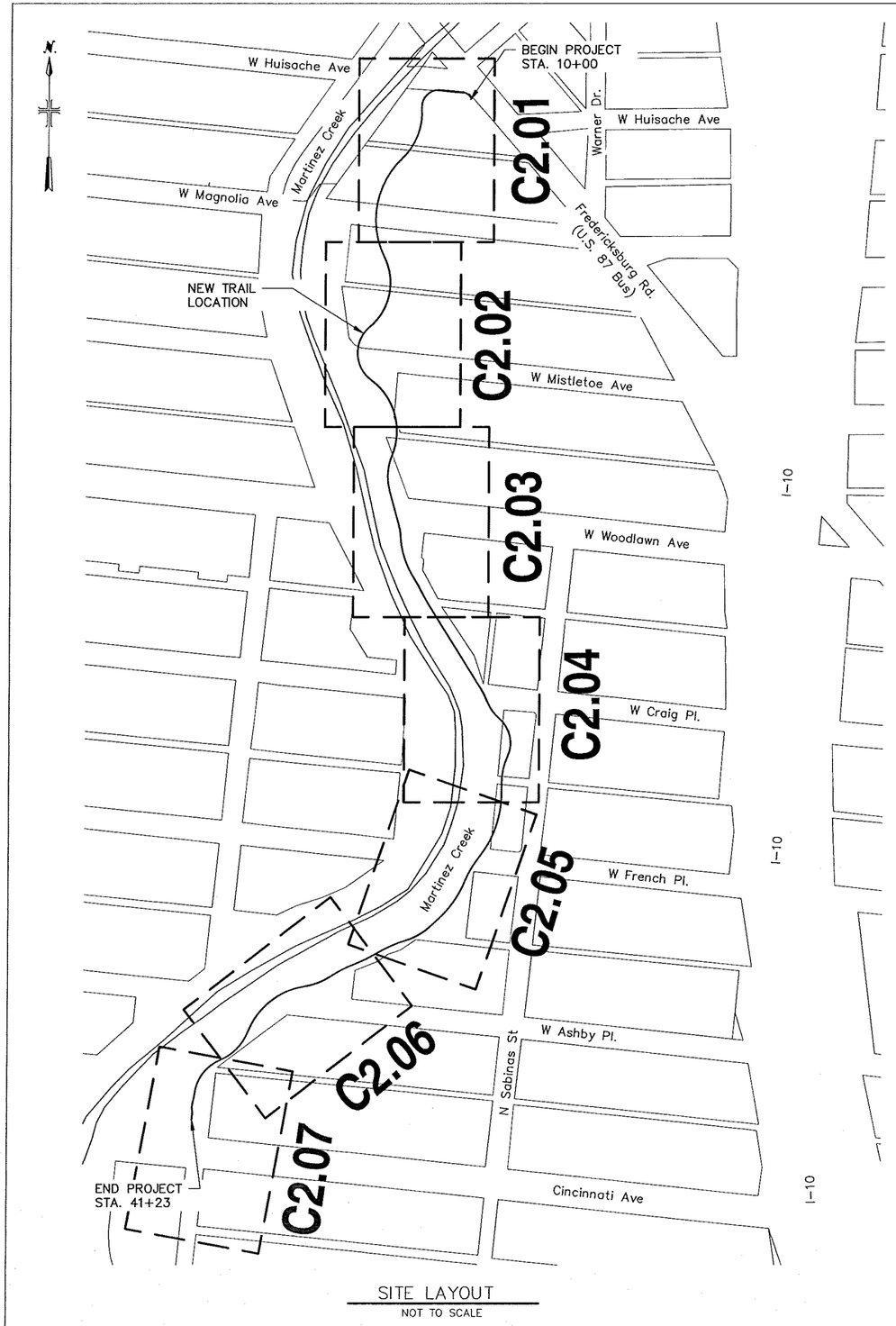

SITE LAYOUT
NOT TO SCALE

LEGEND

EXISTING		NEW	
	PROPERTY LINE		NEW TRAIL CENTERLINE ALIGNMENT
OHE	OVERHEAD ELECTRIC		NEW CONCRETE TRAIL
G	GAS		NEW 5' INDEX CONTOUR
W	WATER		NEW 1' INDEX CONTOUR
SS	SANITARY SEWER		NEW RETAINING WALLS
	CHAIN LINK FENCE		NEW STORM PIPING
	WIRE FENCE		NEW HEAD WALL STRUCTURES
	EDGE OF PAYMENT	1%	SLOPE PERCENTAGE
	WATER EDGE	D-1 19.5	DRAINAGE AREA ID NUMBER OF ACRES
662	INDEX CONTOUR LINE WITH ELEVATION		SURFACE FLOW
	CONCRETE SURFACE		DESIGN BY OTHERS
GV	GAS VALVE		
	GAS METER		
PP LP	POWER AND LIGHT POLE		
	GUY WIRE		
	SPRINKLER HEAD		
DI	DRAIN INLET		
CO	CLEANOUTS		
T	TELEPHONE MANHOLE		
MHS S	STORM MANHOLE		
TP	TELEPHONE PEDESTAL		
MHW	WASTEWATER MANHOLE		
E	ELECTRIC METER		
WM	WATER METER		
WV	WATER VALVE		
FH	FIRE HYDRANT		
PBX	POWER BOX		
	SIGN		
	JUNCTION BOX		
	IRRIGATION CONTROL VALVE		
	FAUCET		
CP	CONTROL POINT		
	TREES		

ABBREVIATIONS

A	AREA
AASHTO	AMERICAN ASSOCIATION OF STATE HIGHWAY TRANSPORTATION OFFICIALS
ANSI	AMERICAN NATIONAL STANDARDS INSTITUTE
APPROX.	APPROXIMATE
ASTM	AMERICAN SOCIETY FOR TESTING & MATERIALS
AWWA	AMERICAN WATER WORKS ASSOCIATION
C	RUN OFF COEFFICIENT
CCP	CONCRETE CYLINDER PIPE
CF	CUBIC FEET
CL	CENTER LINE
COMM	COMMUNICATIONS
CR	COUNTY ROAD
DIA.	DIAMETER
E	EASTING
E.F.	EACH FACE
EL	ELEVATION
ELEC	ELECTRICAL
EX. OR EXIST.	EXISTING
F.A.	FINISHED GRADE
FM	FARM TO MARKET
FOC	FIBER OPTIC CABLE
FT	FEET
GA	GAUGE
HORIZ	HORIZONTAL
I	RAINFALL INTENSITY (IN/HR)
Is	RAINFALL INTENSITY 5 YEAR EVENT (IN/HR)
IN	INCH
LBS	POUNDS
LF	LINEAR FOOT
LG	LONG
LP	LIGHT POLE
m	METER
MIL	ONE THOUSANDTH OF AN INCH
MIN	MINIMUM
mm	MILLIMETER
mph	MILES PER HOUR
N	NORTHING
NO , #	NUMBER
NTS	NOT TO SCALE

ABBREVIATIONS

O.C.	ON CENTER
O.D.	OUTSIDE DIAMETER
O/S	OFFSET
OSHA	OCCUPATIONAL SAFTEY AND HEALTH ADMINISTRATION
PB	PULLBOX
PC	POINT OF CURVATURE
PLCS	PLACES
PRC	POINT OF REVERSE CURVE
PROP	PROPOSED
PSI	POUNDS PER SQUARE INCH
PT	POINT OF TANGENCY
PVI	POINT OF VERTICAL INFLECTION
Q	PEAK DISCHARGE (CUBIC FEET PER SECOND)
Q_5	PEAK DISCHARGE 5 YEAR EVENT(CUBIC FEET PER SECOND)
RCP	REINFORCED CONCRETE PIPE
RECT	RECTANGULAR
REF	REFERENCE
REQ	REQUIRED
RP	POINT OF RADIUS
S.S.	STAINLESS STEEL
SCH	SCHEDULE
SEC	SECTION
SHT	SHEET
SP.	SPACING
SPECS	SPECIFICATIONS
SQ.	SQUARE
STA.	STATION
t	TIME (MIN)
TEL	TELEPHONE
T.O.P.	TOP OF PIPE
TCEQ	TEXAS COMMISSION ON ENVIRONMENTAL QUALITY
TCP	TRAFFIC CONTROL PLAN
THWN	THERMOPLASTIC HEAT AND WATER RESISTANT NYLON COATED
TYP	TYPICAL
VAR	VARIOUS
VERT	VERTICAL
VOL	VOLUME
VV	VALVE VAULT
W.L.	WATER LINE
W/	WITH

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MARTINEZ CREEK TRAIL

Fredericksburg Rd.
To Cincinnati Ave.
San Antonio, Texas

REVISION	DATE

Project no: 06353029-00100-02
Date: 1/21/2014
Sheet: _ OF _

SITE LAYOUT AND LEGEND

C2.00

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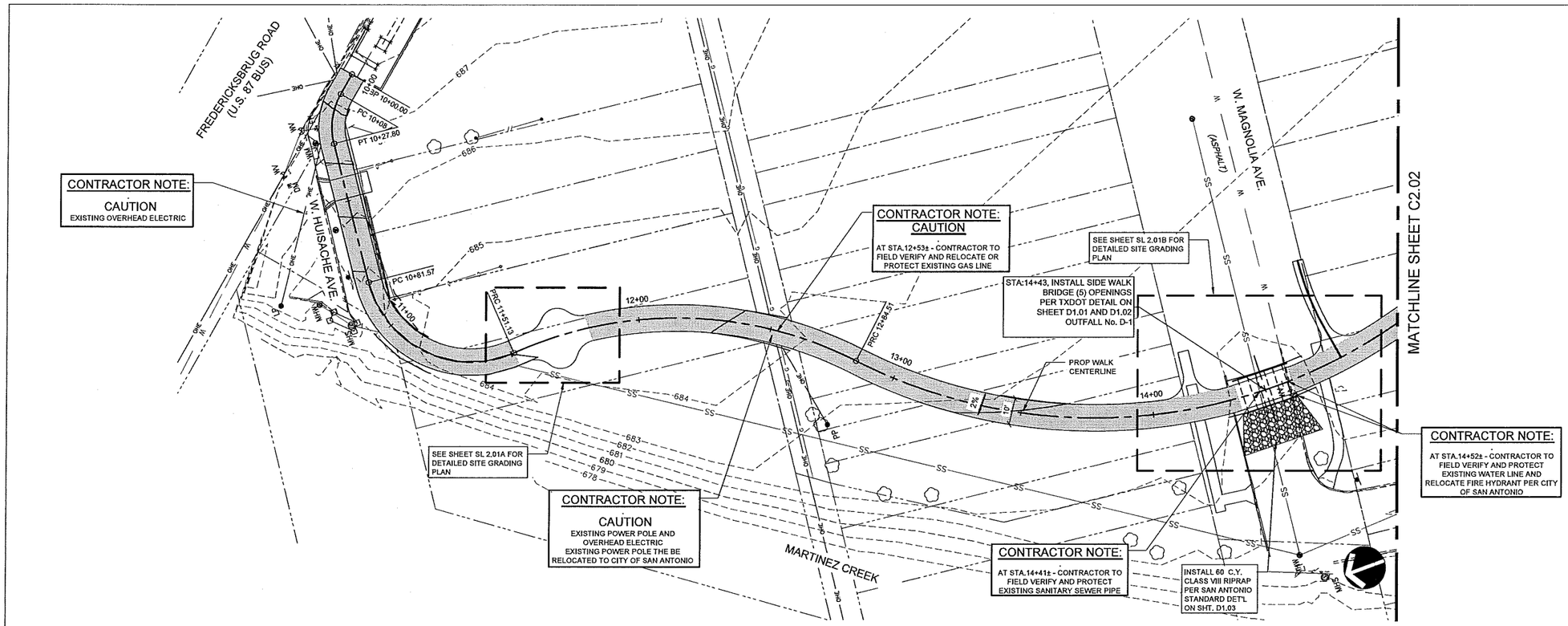

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Last Saved By: BStonaglio Jan 22, 2014 - 12:22pm
Layout Name: Block

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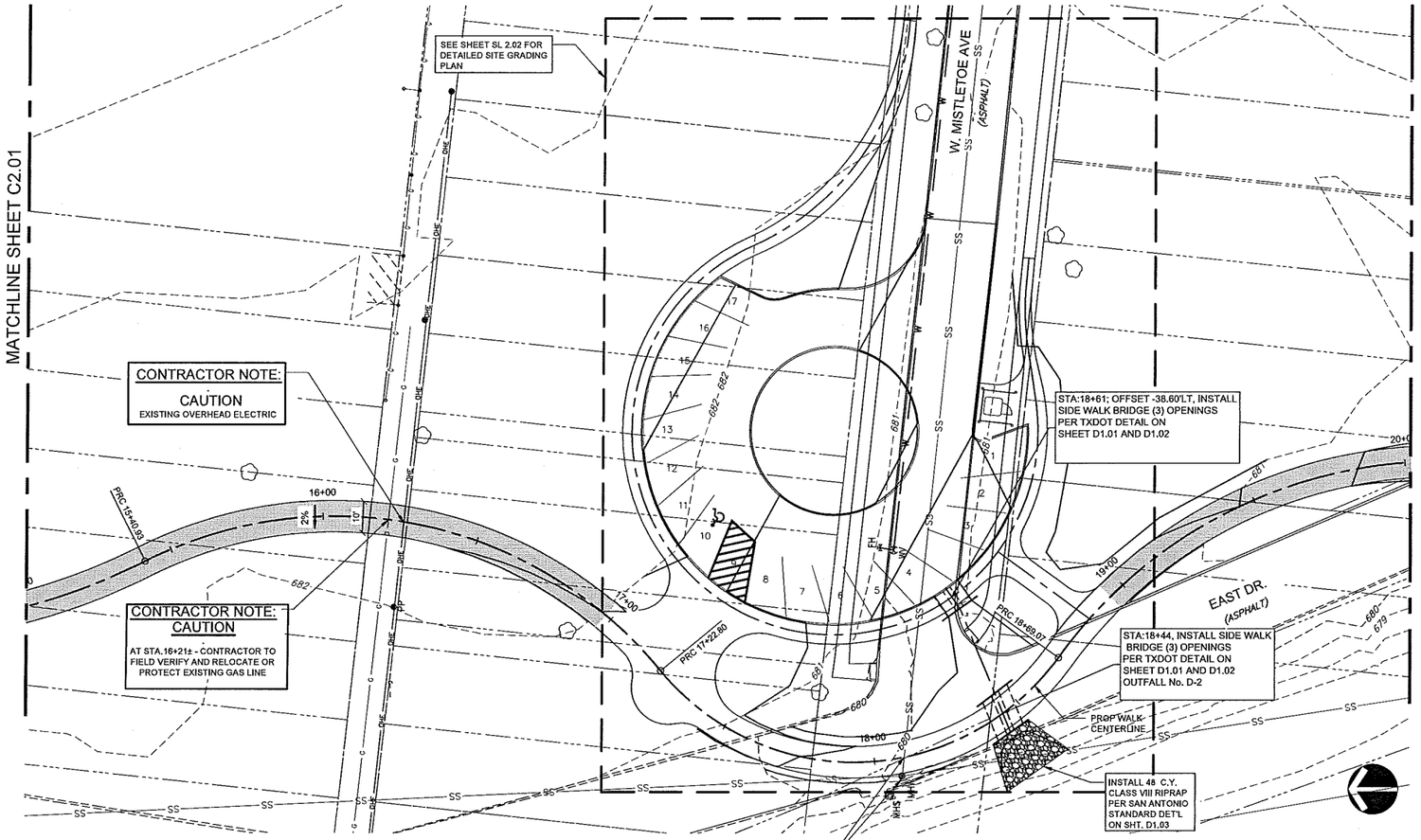
PLAN AND PROFILE STATION 10+00 TO 15+00

C2.01



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PLAN AND PROFILE STATION 15+00 TO 20+00

C2.02

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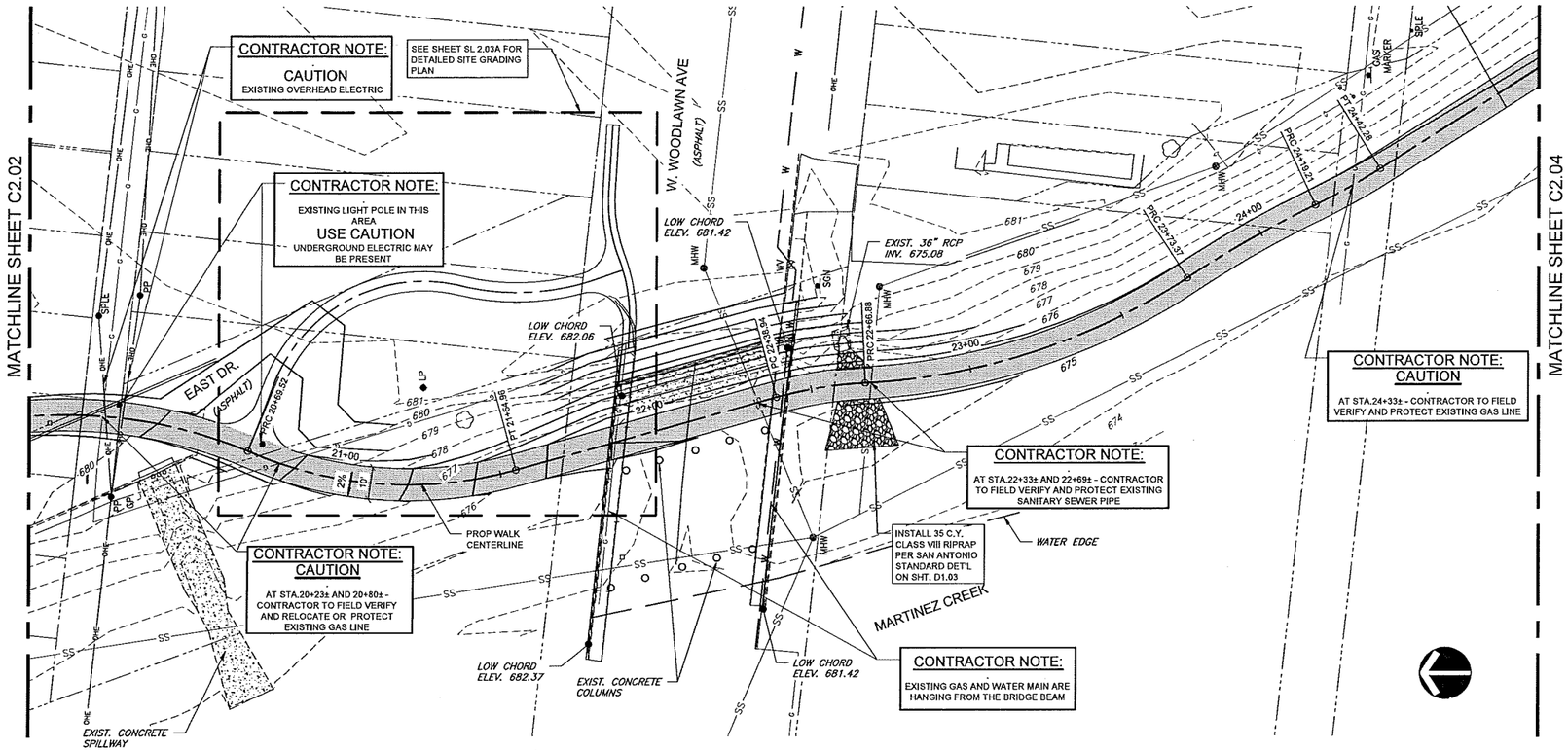

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Layout Name: Black

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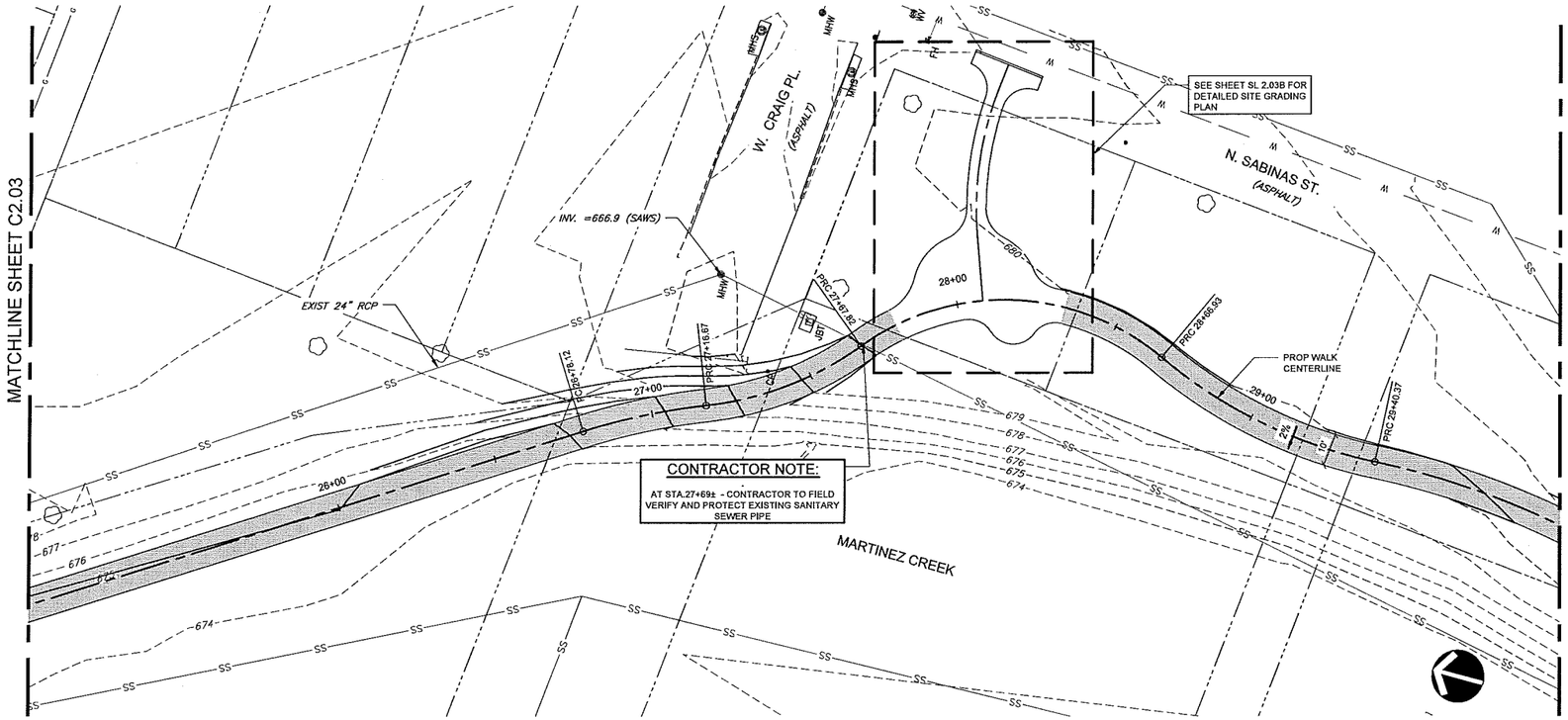
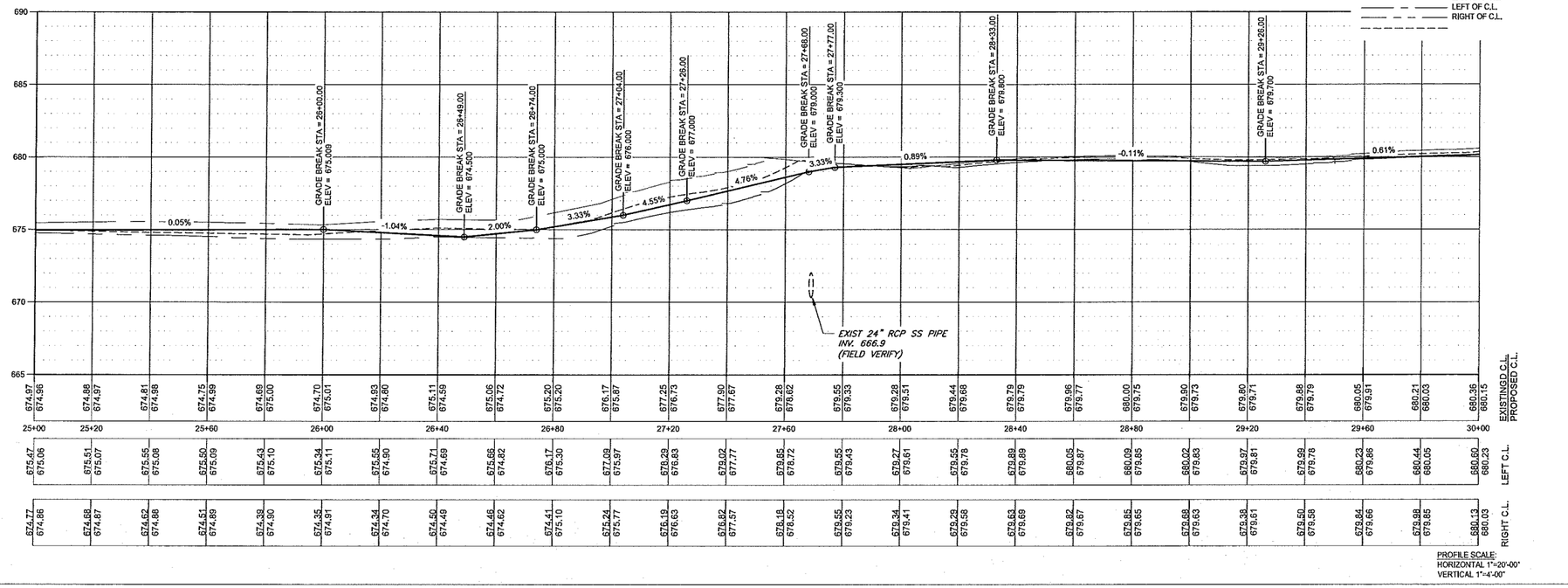
PLAN AND PROFILE STATION 20+00 TO 25+00

C2.03





Date: Jan 22, 2014 - 11:47am jhenrichsmeyer
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Last Saved By: RSmoggins Jan 22, 2014 - 12:40pm
Layout Name: Block

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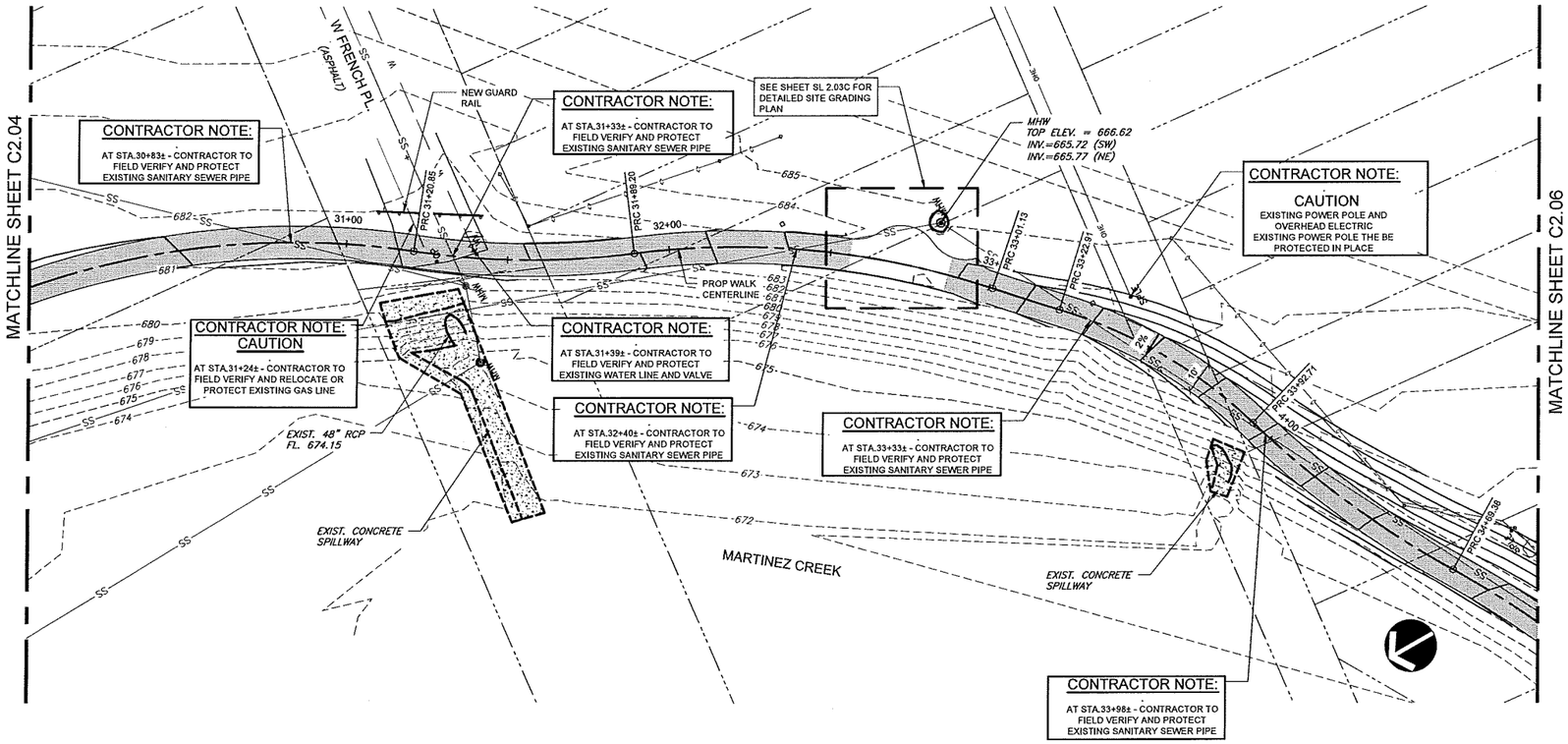
Project no: 06353029-00100-02
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 25+00 TO 30+00

C2.04



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MARTINEZ CREEK TRAIL

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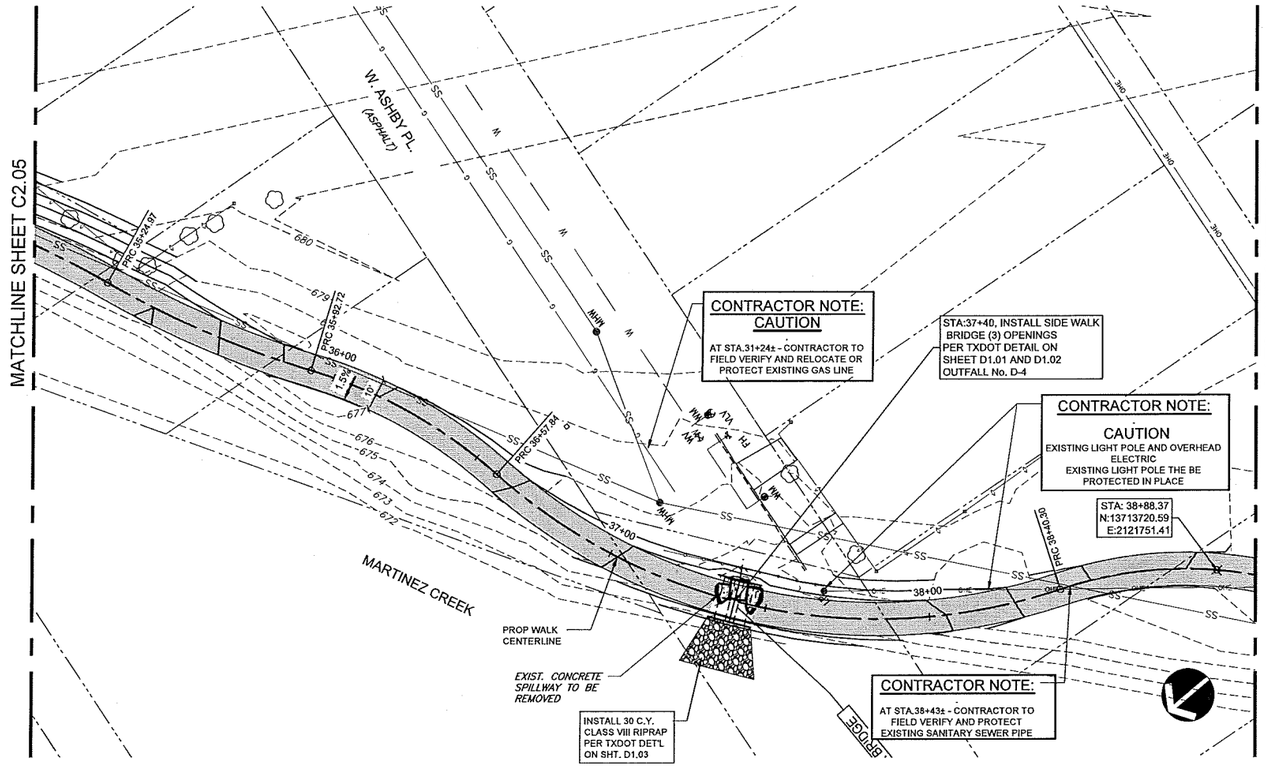
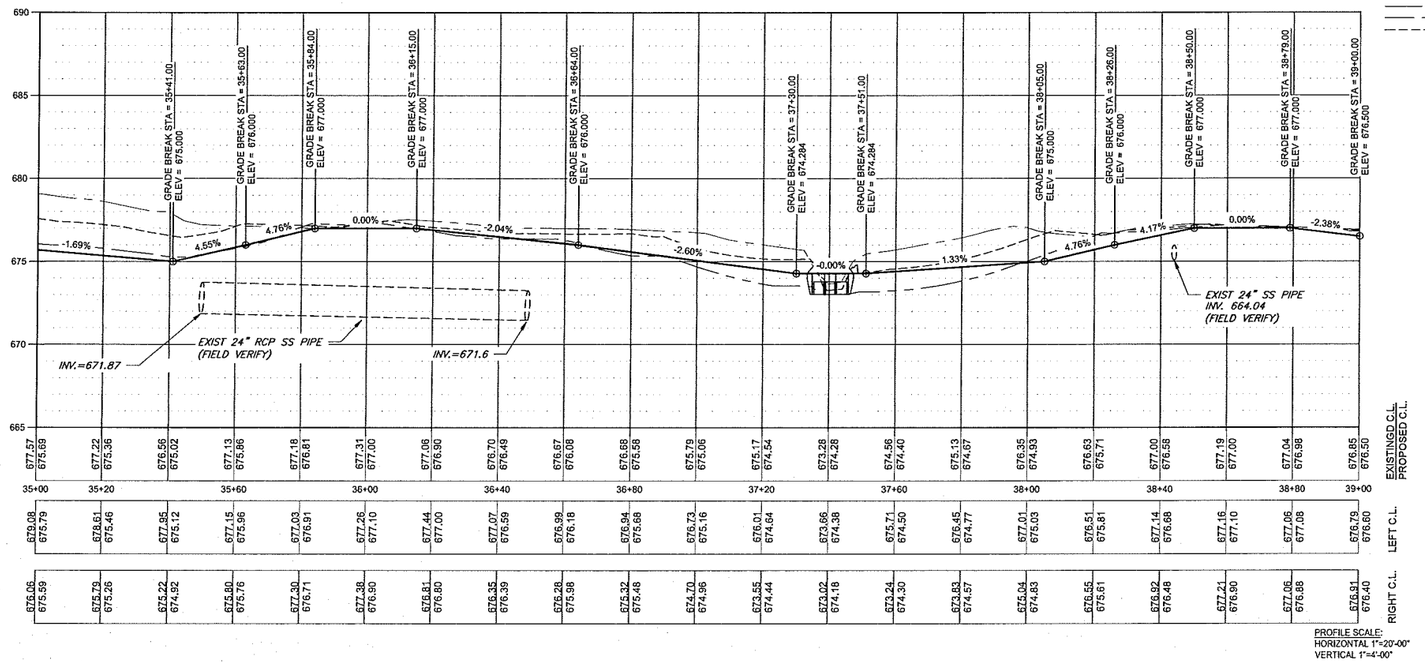
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 30+00 TO 35+00

C2.05





PROFILE SCALE:
HORIZONTAL 1"=20'-00"
VERTICAL 1"=4'-00"

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Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 35+00 TO 39+00

C2.06

Date: Jan 22, 2014 - 12:49pm User:BScoggins
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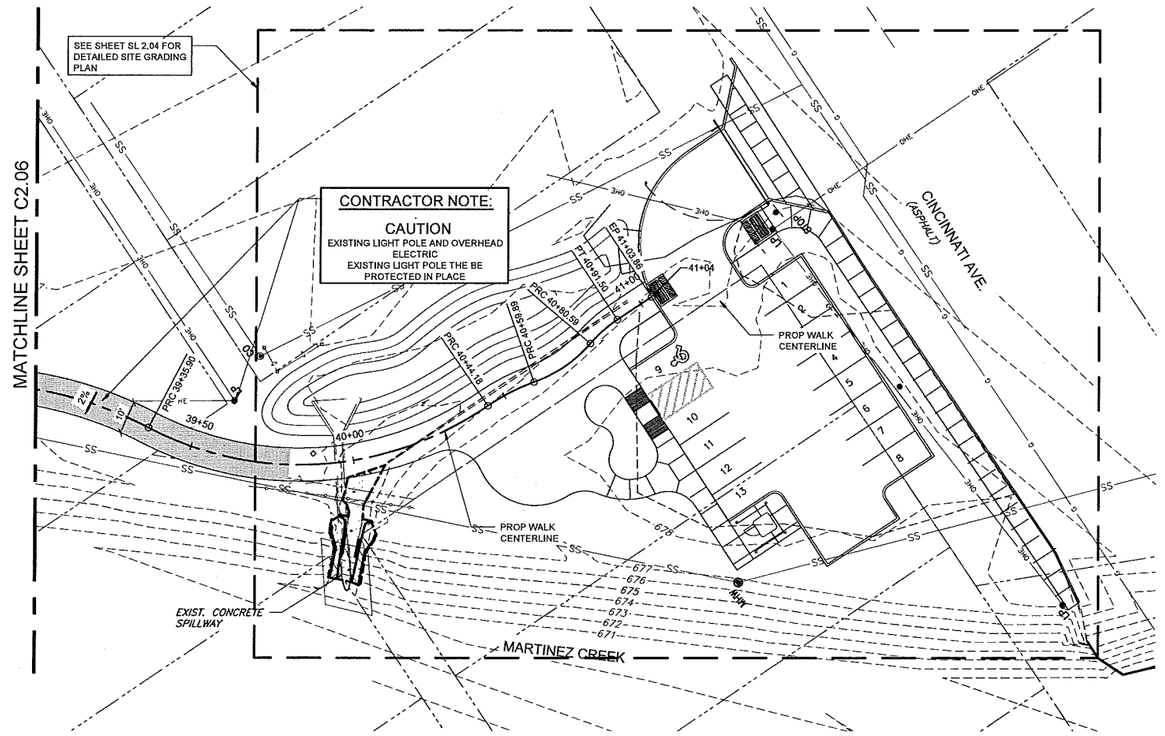

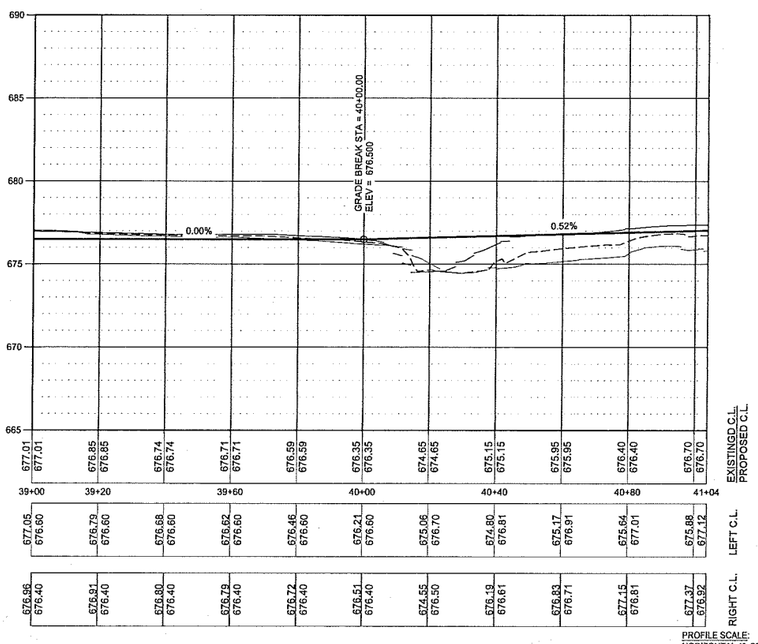

LEGEND:
- PROPOSED CENTER LINE (C.L.)
- EXISTING C.L.
- LEFT OF C.L.
- RIGHT OF C.L.

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REVISION	DATE

Project no: 06353029-00100-02
Date: 1/21/2014
Sheet: _ OF _

PLAN AND PROFILE STATION 39+00 TO END

C2.07

Date: Jan 22, 2014 - 12:45pm Lisa Bolognino
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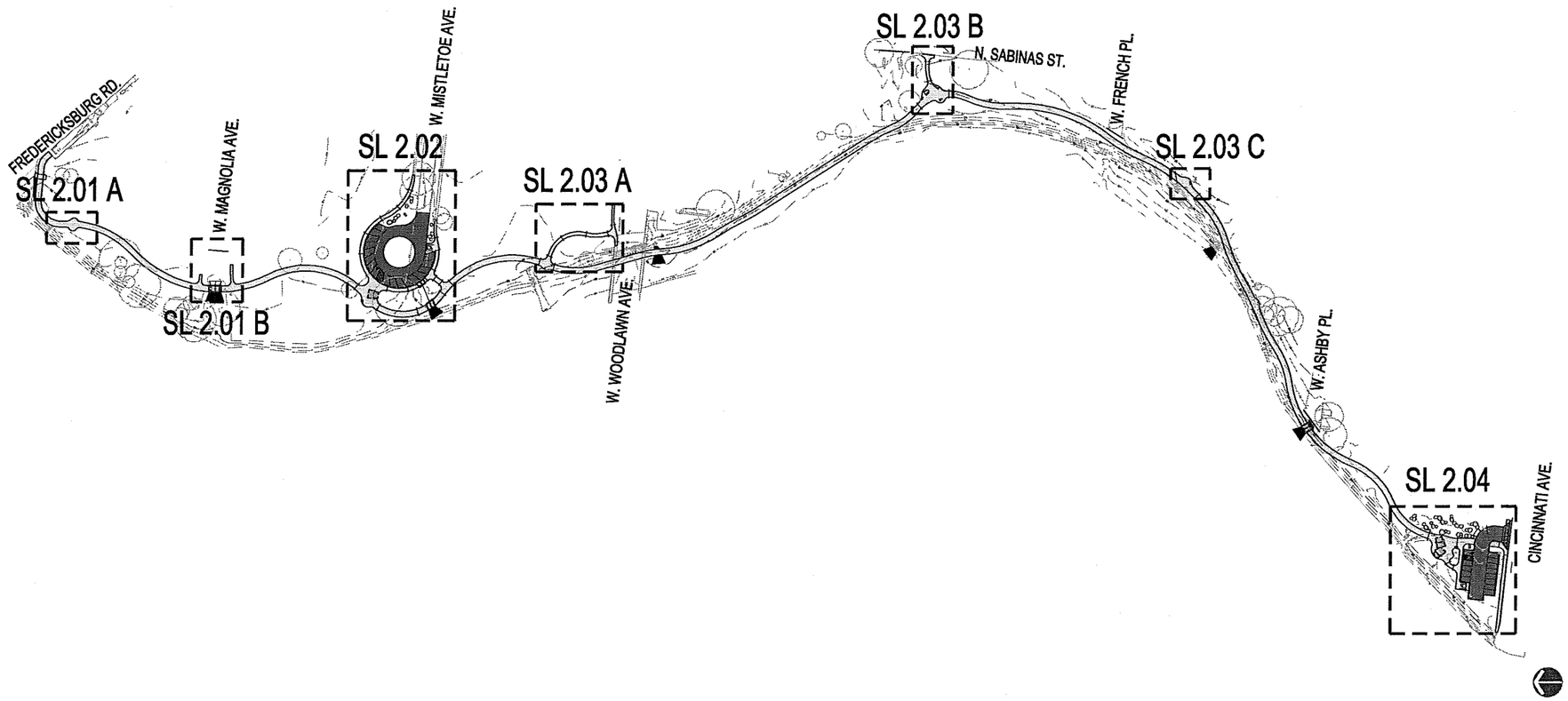

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MARTINEZ CREEK TRAIL

San Antonio, Texas

REVISION	DATE

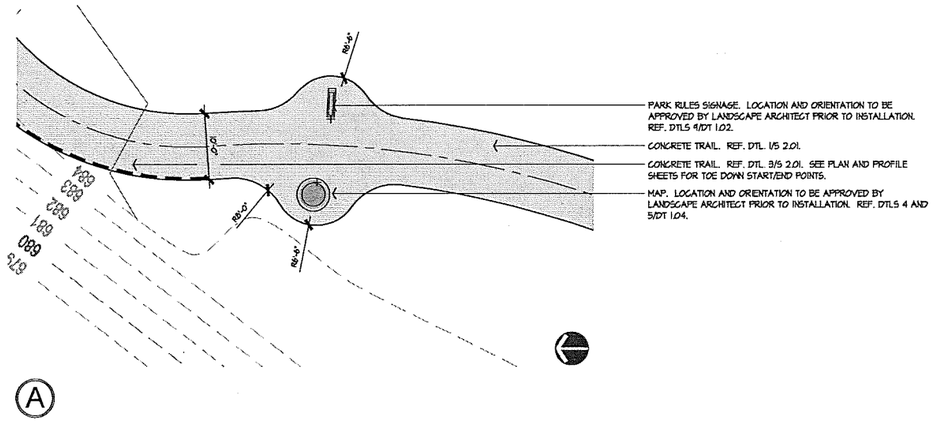
0' 50' 100'

Project no:
Date: JANUARY 22, 2014
Sheet:

OVERALL SITE LAYOUT

SL 2.00

95% CONSTRUCTION DOCUMENT



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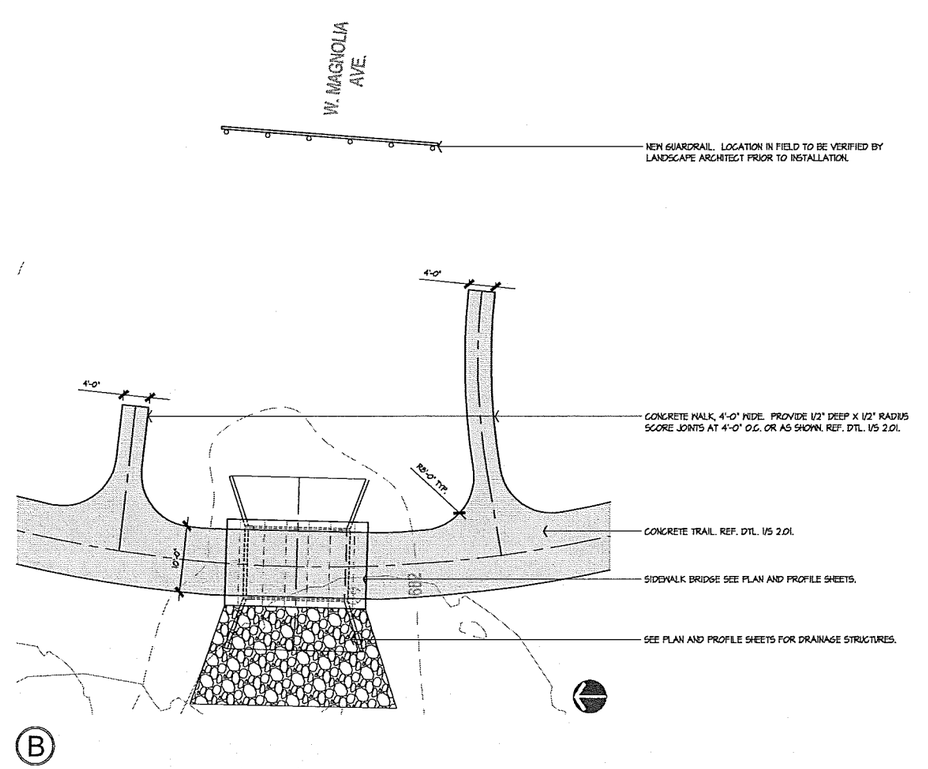

B

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MARTINEZ CREEK TRAIL

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REVISION	DATE

0' 5' 10'

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Date: JANUARY 22, 2014
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SITE LAYOUT

SL 2.01

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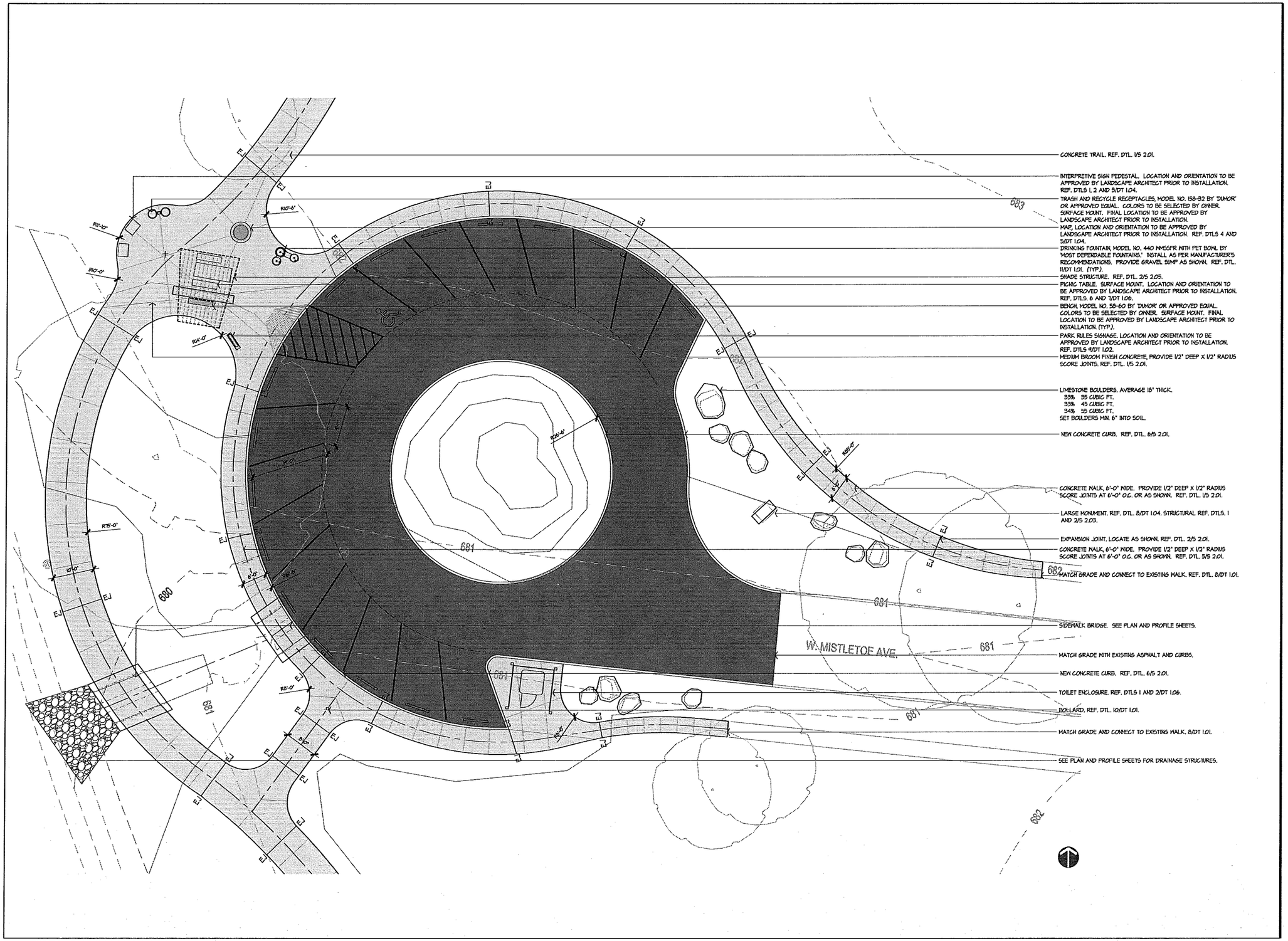

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MARTINEZ CREEK TRAIL

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0' 5' 10'

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Sheet:

SITE LAYOUT

SL 2.02

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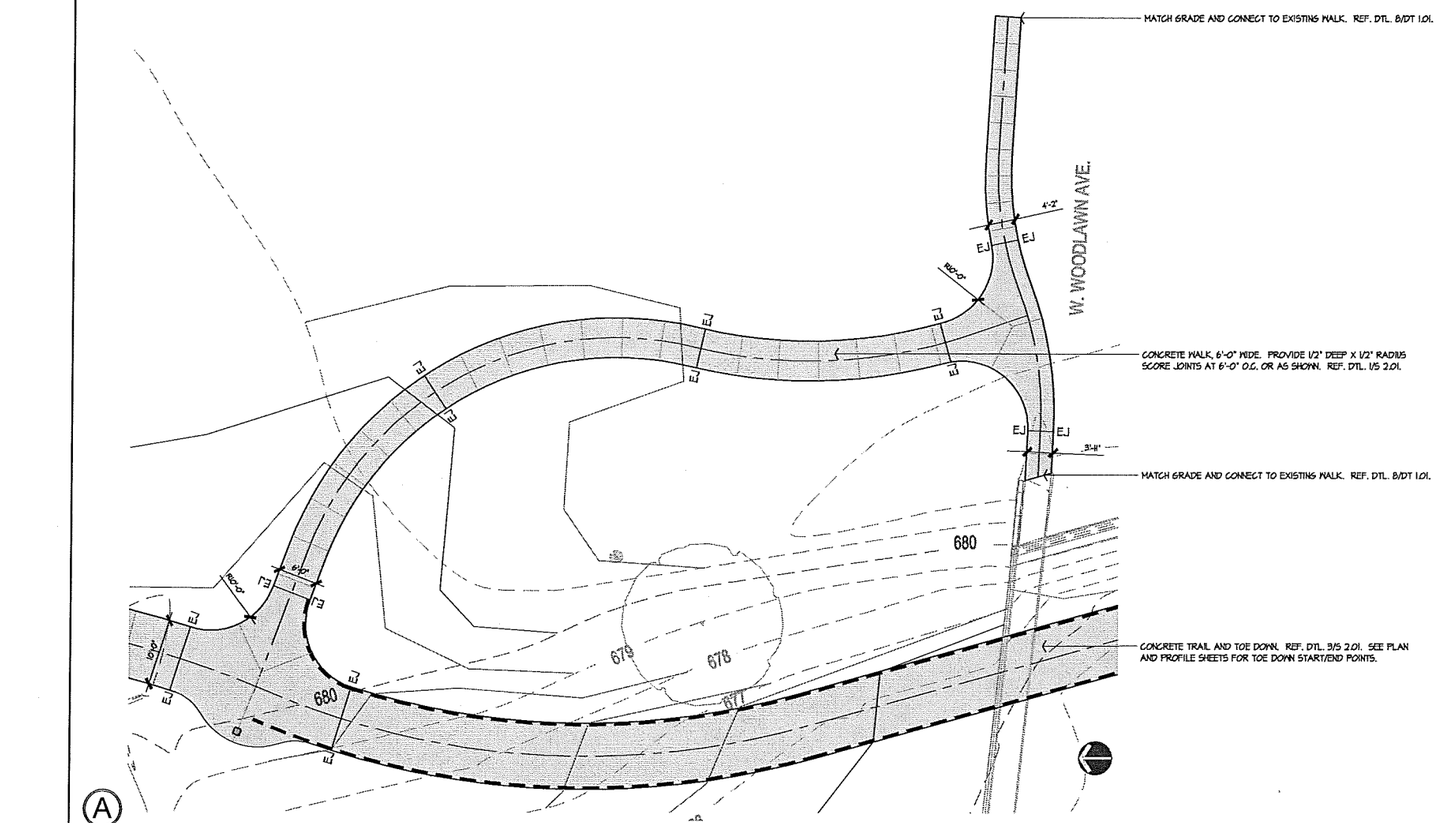

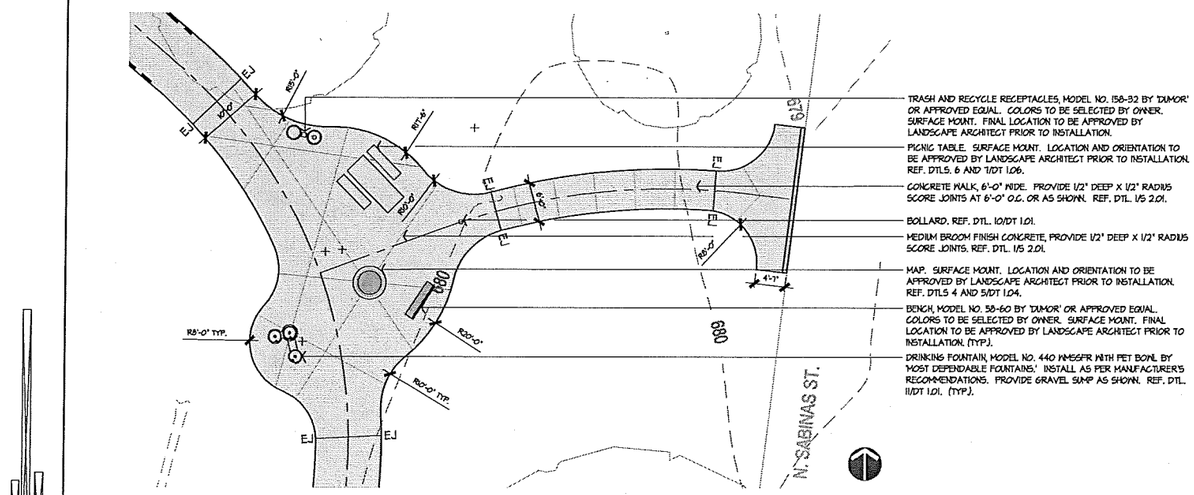

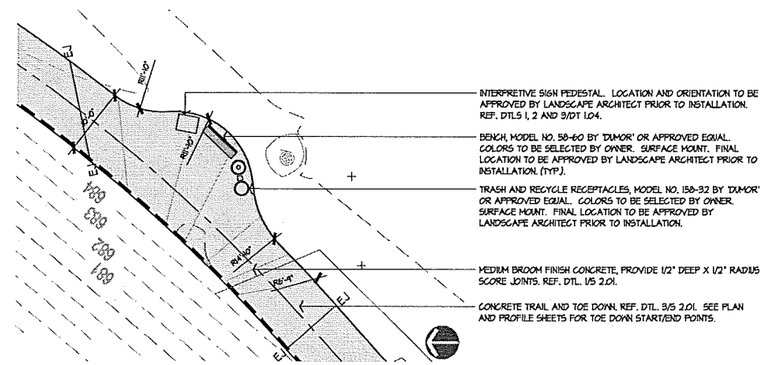

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MARTINEZ CREEK TRAIL

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REVISION	DATE

0' 5' 10'

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE LAYOUT

SL 2.03

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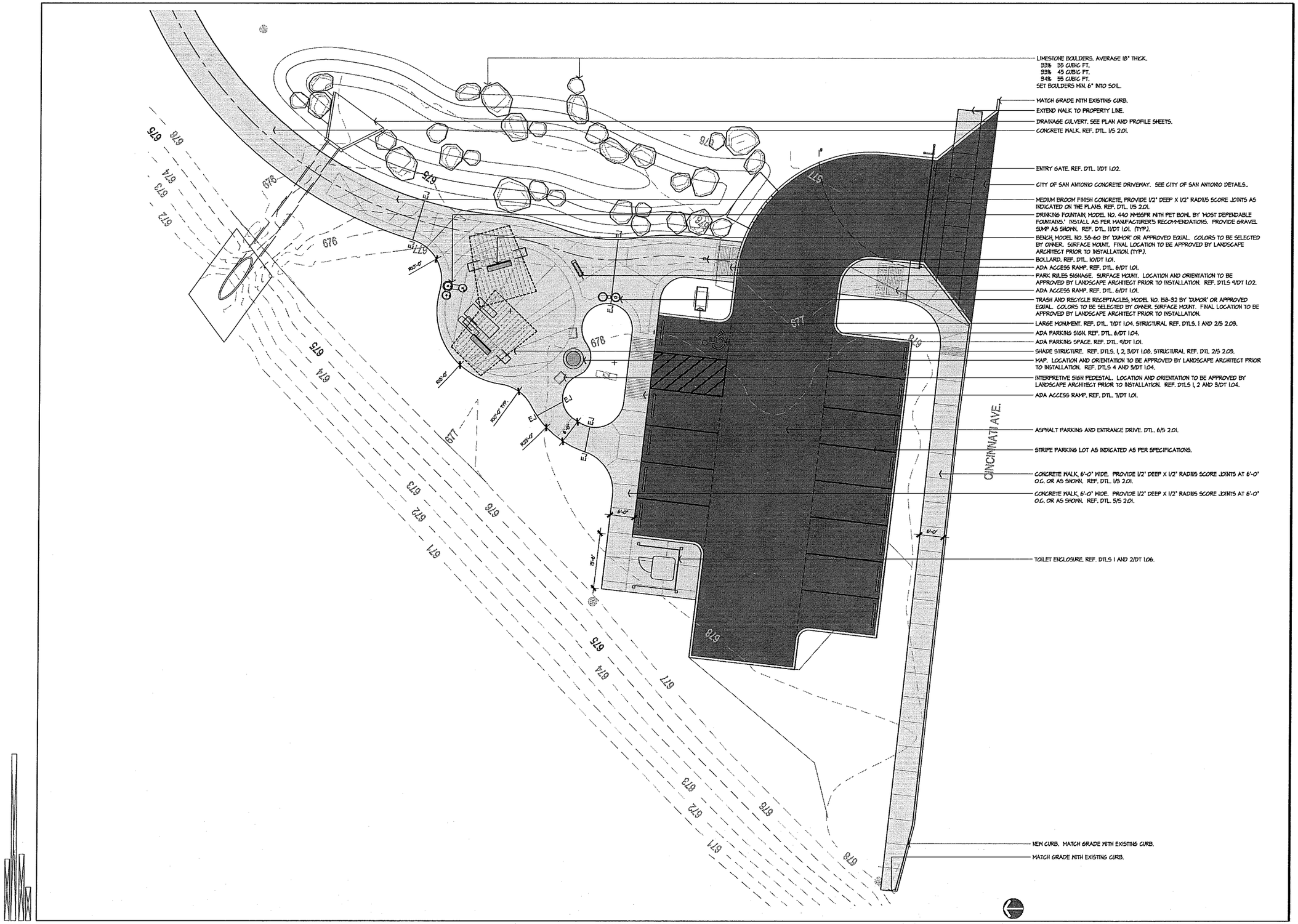

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MARTINEZ CREEK TRAIL

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REVISION	DATE

0' 5' 10'

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE LAYOUT

SL 2.04

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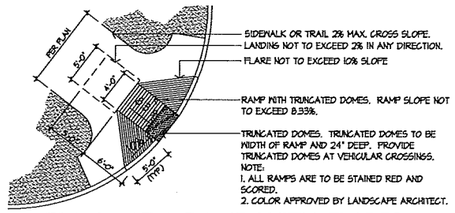
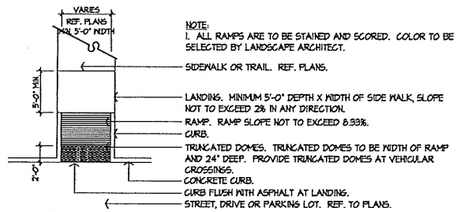
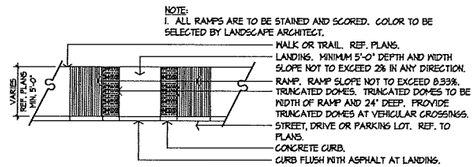


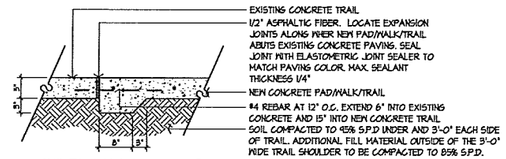
5 PLAN: ADA RAMP WITH FLARES
Scale: 1/8" = 1'-0"



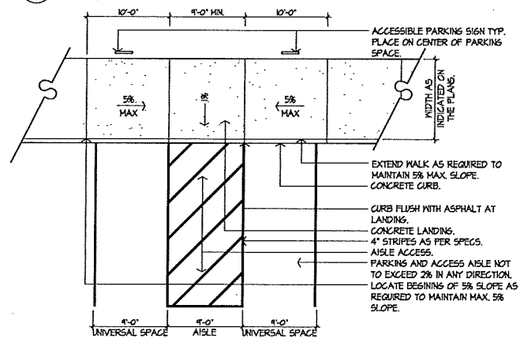
6 PLAN: ADA ACCESS
Scale: 1/8" = 1'-0"



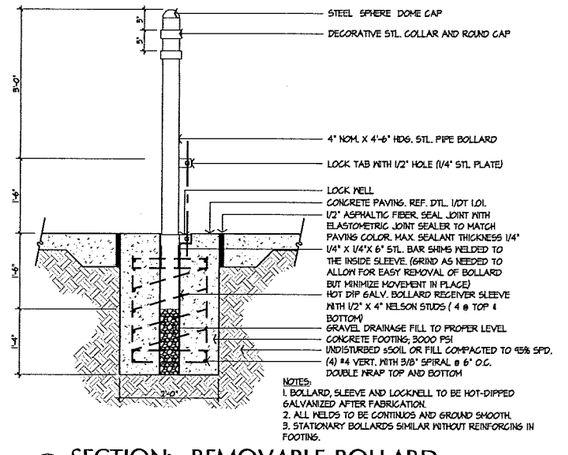
7 PLAN: ADA ACCESS
Scale: 1/8" = 1'-0"



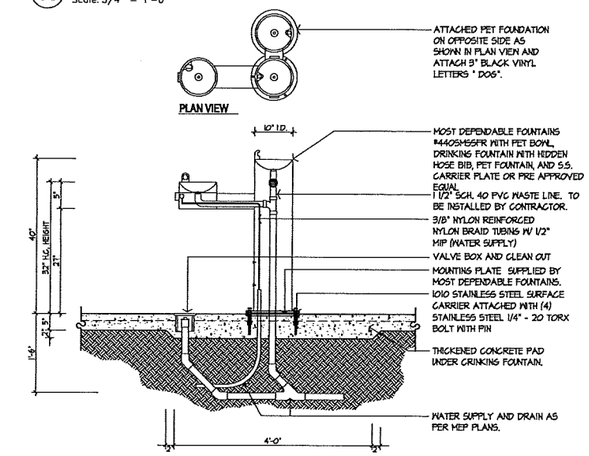
8 SECTION: EXISTING WALK SECTION
Scale: 3/4" = 1'-0"



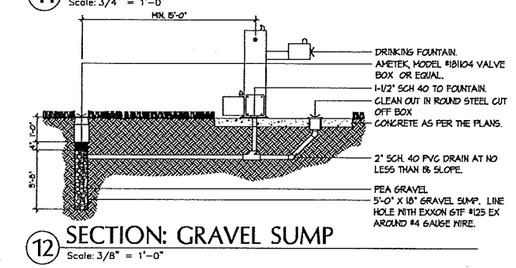
9 PLAN: ACCESSIBLE PARKING SPACE
Scale: 1/8" = 1'-0"



10 SECTION: REMOVABLE BOLLARD
Scale: 3/4" = 1'-0"



11 SECTION: DRINKING FOUNTAIN
Scale: 3/4" = 1'-0"



12 SECTION: GRAVEL SUMP
Scale: 3/8" = 1'-0"

STATE OF TEXAS
WALTER H. HEARD
629
REGISTERED LANDSCAPE ARCHITECT

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ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

DT 1.01

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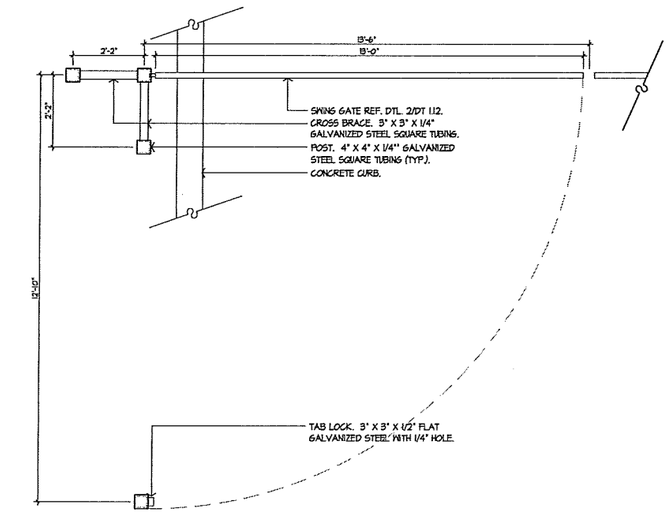
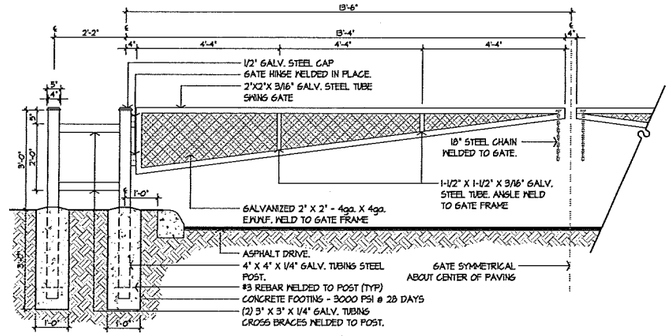
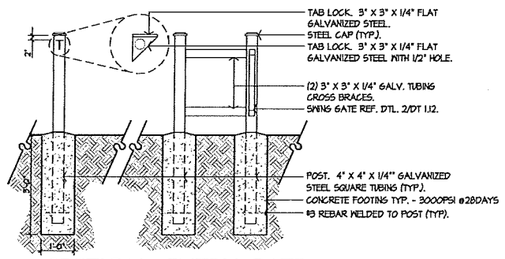


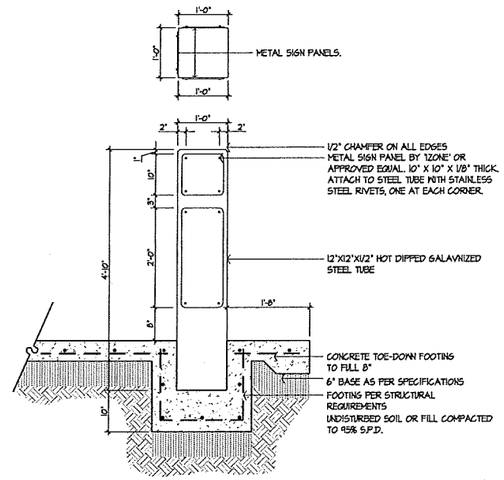
1 PLAN: ENTRY GATE
Scale: 1/2"=1'-0"



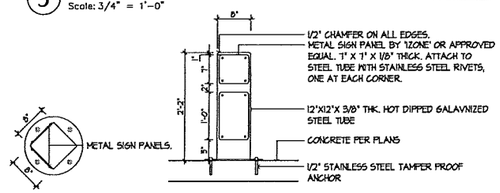
2 SECTION: ENTRY GATE
Scale: 1/2"=1'-0"



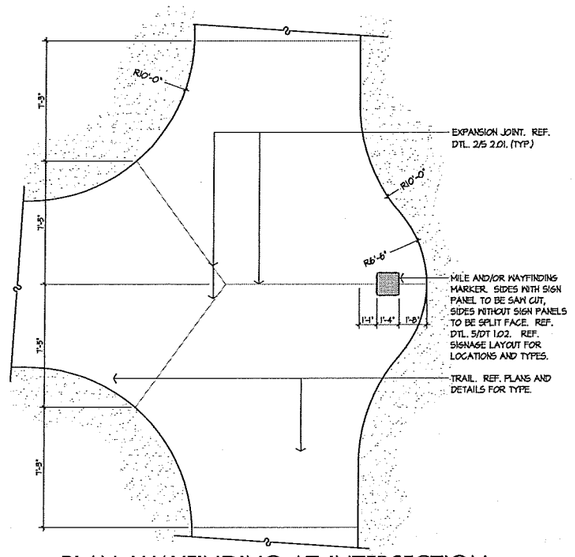
3 SECTION: ENTRY GATE
Scale: 1/2"=1'-0"



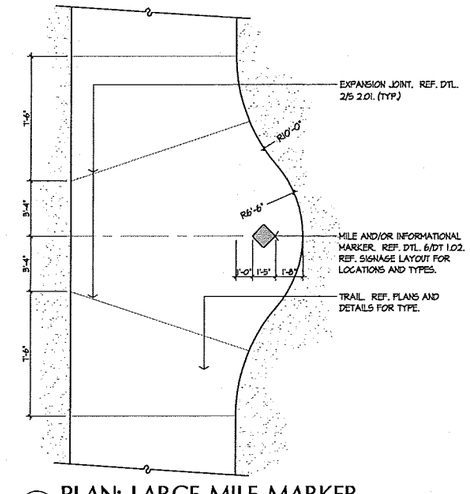
5 ELEVATION: LARGE MILE/WAYFINDING
Scale: 3/4" = 1'-0"



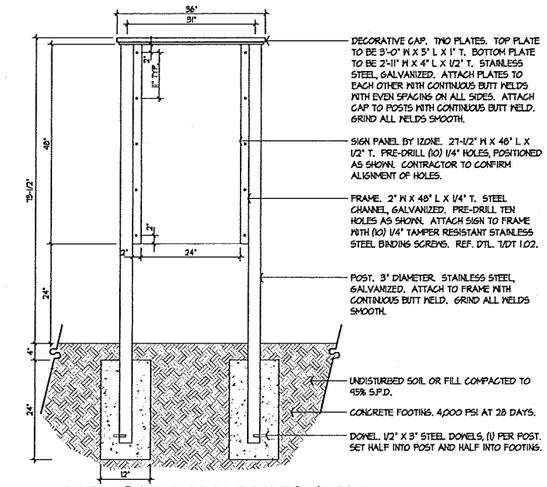
6 ELEVATION: 1/4 MILE MARKER
Scale: 3/4" = 1'-0"



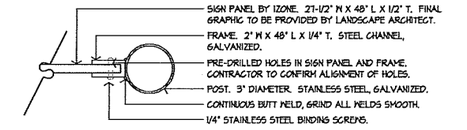
7 PLAN: WAYFINDING AT INTERSECTION
Scale: 1/4" = 1'-0"



8 PLAN: LARGE MILE MARKER
Scale: 1/4" = 1'-0"



9 SECTION: PARK RULES SIGN
Scale: 3/4" = 1'-0"



10 DETAIL: PARK RULES SIGN
Scale: 3" = 1'-0"

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ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

DT 1.02

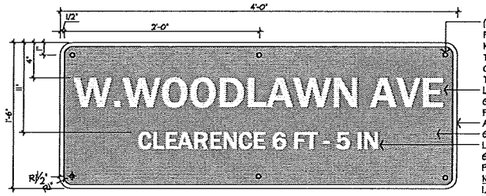
95% CONSTRUCTION DOCUMENT

SUMMARY OF ALAZAN CREEK TRAIL DIRECTIONAL SIGNAGE

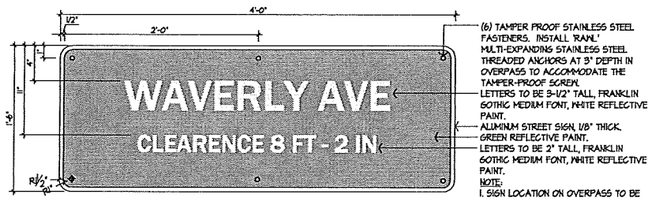
PLAN SHEET NO.	SIGN NO.	SIGN TYPE	SIGN TYPE		SIGN DIMENSIONS	BACKGROUND COLOR	FONT COLOR	FONT TYPE	WHITE DIRECTIONAL ARROW	ADDITIONAL GRAPHICS
SGL 1.01	1A	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	WAVERLY AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	RIGHT	
				TEXAS AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	UP	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	DOWN	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	RIGHT	2-1/4" SQ. FLASH FLOOD SYMBOL
SGL 1.01	1B	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96			5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	WAVERLY AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	DOWN	
				TEXAS AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	RIGHT	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	LEFT	
				NEAREST DRINKING FOUNTAIN (160 FEET AHEAD)			WHITE WHITE	ARIAL- 60 PT. ARIAL- 50 PT.	RIGHT	2-1/4" SQ. DRINKING FTN. SYMBOL
SGL 1.01	1C	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	WAVERLY AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	LEFT	
				TEXAS AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	DOWN	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	UP	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	LEFT	2-1/4" SQ. FLASH FLOOD SYMBOL
SGL 1.02	2A	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	CULEBRA AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	RIGHT	
				LOMBRANO STREET			WHITE	ARIAL- 60 PT.	DOWN	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	UP	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	RIGHT	2-1/4" SQ. FLASH FLOOD SYMBOL
SGL 1.02	2B	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96			5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	CULEBRA AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	DOWN	
				LOMBRANO STREET			WHITE	ARIAL- 60 PT.	LEFT	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	RIGHT	
				NEAREST DRINKING FOUNTAIN (950 FEET AHEAD)			WHITE WHITE	ARIAL- 60 PT. ARIAL- 50 PT.	LEFT	2-1/4" SQ. DRINKING FTN. SYMBOL
SGL 1.02	2C	WAYFINDING	TOP PANEL:	ACT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4"ALAZAN CREEK LOGO
			BOTTOM PANEL:	CULEBRA AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	LEFT	
				LOMBRANO STREET			WHITE	ARIAL- 60 PT.	UP	
				KENTUCKY AVENUE RESTNODE			WHITE	ARIAL- 60 PT.	DOWN	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	LEFT	2-1/4" SQ. FLASH FLOOD SYMBOL

SUMMARY OF MARTINEZ CREEK TRAIL DIRECTIONAL SIGNAGE

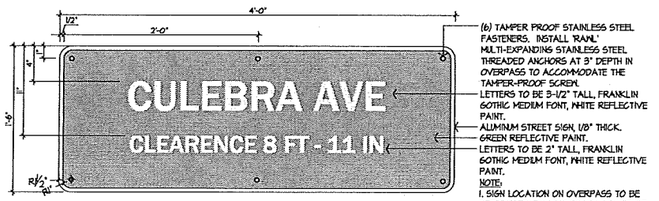
PLAN SHEET NO.	SIGN NO.	SIGN TYPE	SIGN TYPE		SIGN DIMENSIONS	BACKGROUND COLOR	FONT COLOR	FONT TYPE	WHITE DIRECTIONAL ARROW	ADDITIONAL GRAPHICS
SGL 2.01	3A	WAYFINDING	TOP PANEL:	MCT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4" MARTINEZ CREEK LOGO
				MILE 0.25			H-68, S-16, V-96	ARIAL- 60 PT.		
			BOTTOM PANEL:	W. WOODLAWN AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	RIGHT	
				CINCINNATI AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	DOWN	
				W. MISTLETOE AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	UP	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	RIGHT	2-1/4" SQ. FLASH FLOOD SYMBOL
SGL 2.01	3B	WAYFINDING	TOP PANEL:	MCT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96			5" X 2-1/4" MARTINEZ CREEK LOGO
				MILE 0.25			H-68, S-16, V-96	ARIAL- 60 PT.		
			BOTTOM PANEL:	W. WOODLAWN AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	DOWN	
				CINCINNATI AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	LEFT	
				W. MISTLETOE AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	RIGHT	
				NEAREST DRINKING FOUNTAIN (350 FEET AHEAD)			WHITE WHITE	ARIAL- 60 PT. ARIAL- 50 PT.	RIGHT	2-1/4" SQ. DRINKING FTN. SYMBOL
SGL 2.01	3C	WAYFINDING	TOP PANEL:	MCT	10" X 10"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 140 PT.		5" X 2-1/4" MARTINEZ CREEK LOGO
				MILE 0.25			H-68, S-16, V-96	ARIAL- 60 PT.		
			BOTTOM PANEL:	W. WOODLAWN AVENUE	24" X 10"	H-29, S-59, V-27	WHITE	ARIAL- 60 PT.	LEFT	
				W. MISTLETOE AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	DOWN	
				CINCINNATI AVENUE TRAILHEAD			WHITE	ARIAL- 60 PT.	UP	
				NEAREST FLASH FLOOD EXIT			WHITE	ARIAL- 60 PT.	LEFT	2-1/4" SQ. FLASH FLOOD SYMBOL
SGL 2.02	4A	1/4 MILE MARKER	TOP PANEL:	MCT	7" X 7"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 130 PT.		
				MILE 0.50			H-68, S-16, V-96	ARIAL- 70 PT.		
			BOTTOM PANEL:	FLOOD EXIT	12" X 7"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 70 PT.	RIGHT	3-1/2" SQ. FLASH FLOOD SYMBOL
SGL 2.02	4B	1/4 MILE MARKER	TOP PANEL:	MCT	7" X 7"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 130 PT.		
				MILE 0.50			H-68, S-16, V-96	ARIAL- 70 PT.		
			BOTTOM PANEL:	FLOOD EXIT	12" X 7"	H-29, S-59, V-27	H-68, S-16, V-96	ARIAL- 70 PT.	RIGHT	3-1/2" SQ. FLASH FLOOD SYMBOL



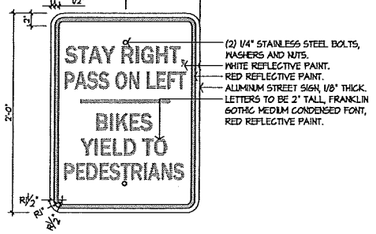
3 DETAIL: OVERPASS SIGN 3
Scale: 1-1/2" = 1'-0"



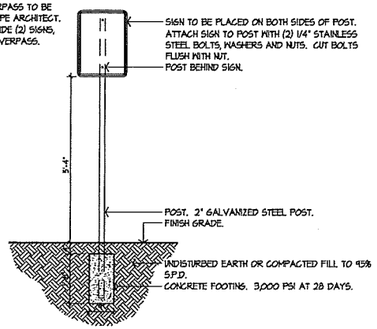
1 DETAIL: OVERPASS SIGN 1
Scale: 1-1/2" = 1'-0"



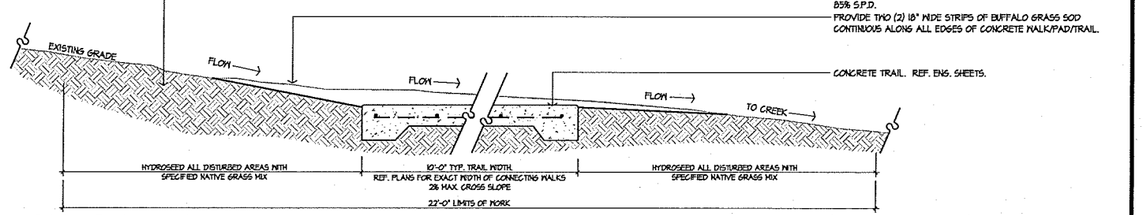
2 DETAIL: OVERPASS SIGN 2
Scale: 1-1/2" = 1'-0"



4 DETAIL: PASSING SIGN
Scale: 1-1/2" = 1'-0"



6 SECTION: PASSING SIGN
Scale: 1/2" = 1'-0"



5 SECTION: TRAIL
Scale: 3/4" = 1'-0"

STATE OF TEXAS
WALTER H. HEARD
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ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

DT 1.03

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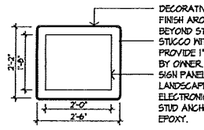
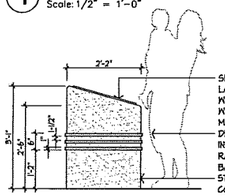
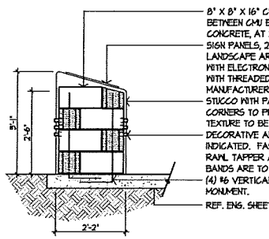


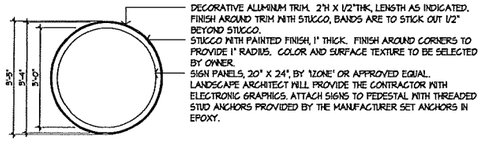
1 PLAN: INTERPRETIVE PEDESTAL
Scale: 1/2" = 1'-0"



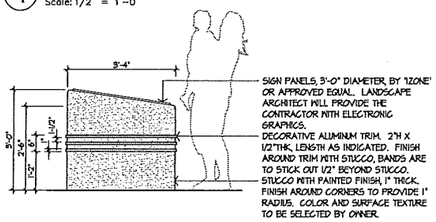
2 ELEVATION: INTERPRETIVE PEDESTAL
Scale: 1/2" = 1'-0"



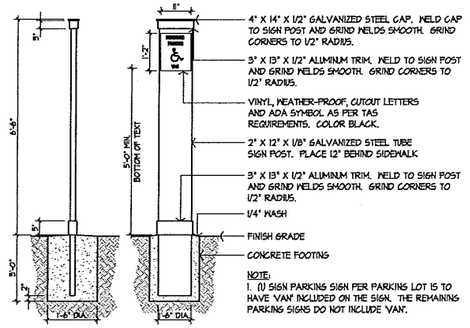
3 SECTION: INTERPRETIVE PEDESTAL
Scale: 1/2" = 1'-0"



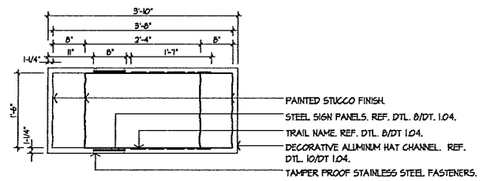
4 PLAN: MAP PEDESTAL
Scale: 1/2" = 1'-0"



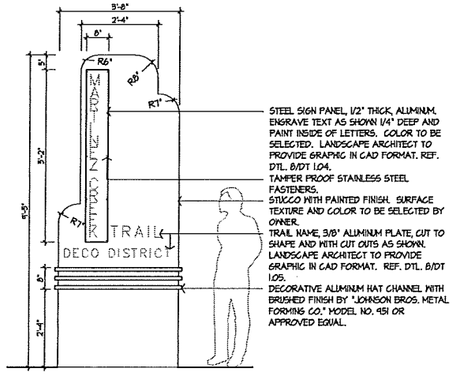
5 ELEVATION: MAP PEDESTAL
Scale: 1/2" = 1'-0"



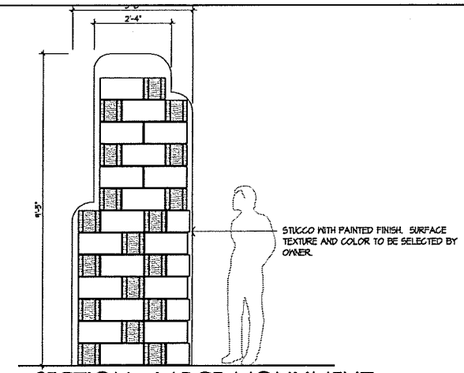
6 ELEVATION: ACCESSIBLE PARKING SIGN
Scale: 1/2" = 1'-0"



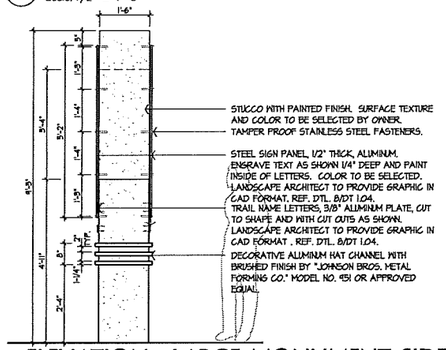
7 PLAN: LARGE MONUMENT
Scale: 3/4" = 1'-0"



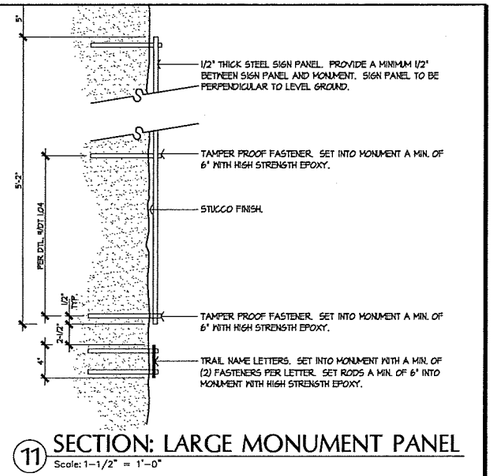
8 ELEVATION: LARGE MONUMENT
Scale: 1/2" = 1'-0"



9 SECTION: LARGE MONUMENT
Scale: 1/2" = 1'-0"



10 ELEVATION: LARGE MONUMENT SIDE
Scale: 1/2" = 1'-0"



11 SECTION: LARGE MONUMENT PANEL
Scale: 1-1/2" = 1'-0"

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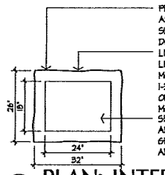
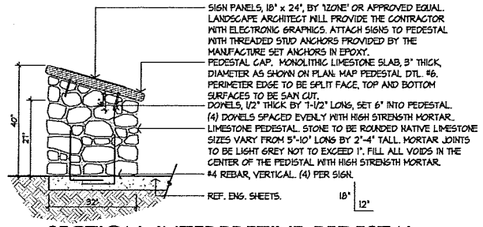
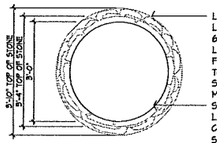


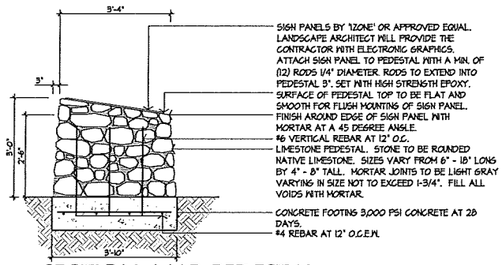
1 PLAN: INTERPRETIVE PEDESTAL
Scale: 1/2" = 1'-0"



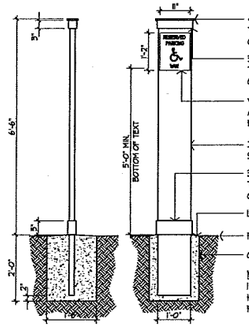
2 SECTION: INTERPRETIVE PEDESTAL
Scale: 1/2" = 1'-0"



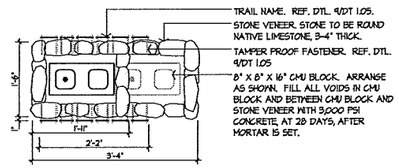
3 PLAN: MAP PEDESTAL
Scale: 1/2" = 1'-0"



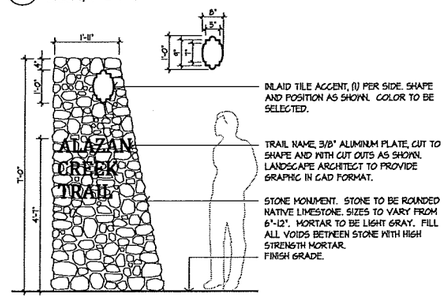
4 SECTION: MAP PEDESTAL
Scale: 1/2" = 1'-0"



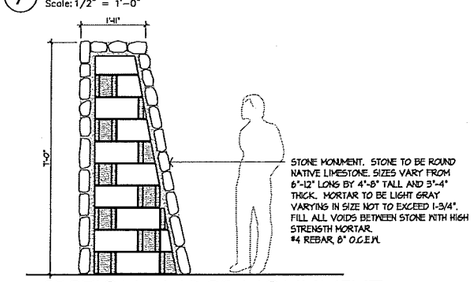
5 ELEVATION: ACCESSIBLE PARKING SIGN
Scale: 1/2" = 1'-0"



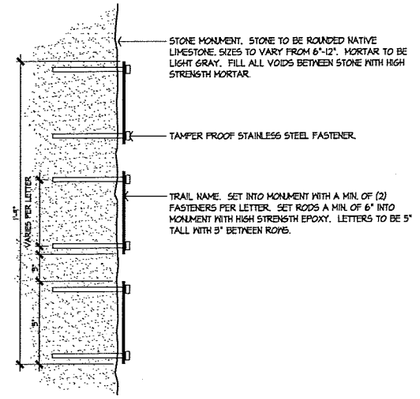
6 PLAN: LARGE MONUMENT
Scale: 3/4" = 1'-0"



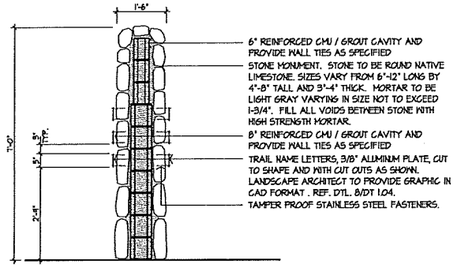
7 ELEVATION: LARGE MONUMENT
Scale: 1/2" = 1'-0"



8 SECTION: LARGE MONUMENT
Scale: 1/2" = 1'-0"



9 SECTION: LARGE MONUMENT PANEL
Scale: 1-1/2" = 1'-0"



10 SECTION: LARGE MONUMENT SIDE
Scale: 1/2" = 1'-0"

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ALAZAN AND MARTINEZ CREEK TRAILS

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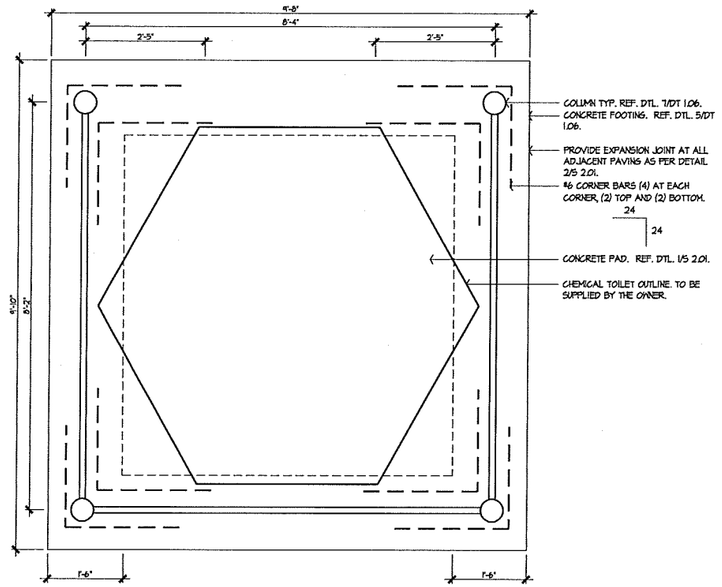
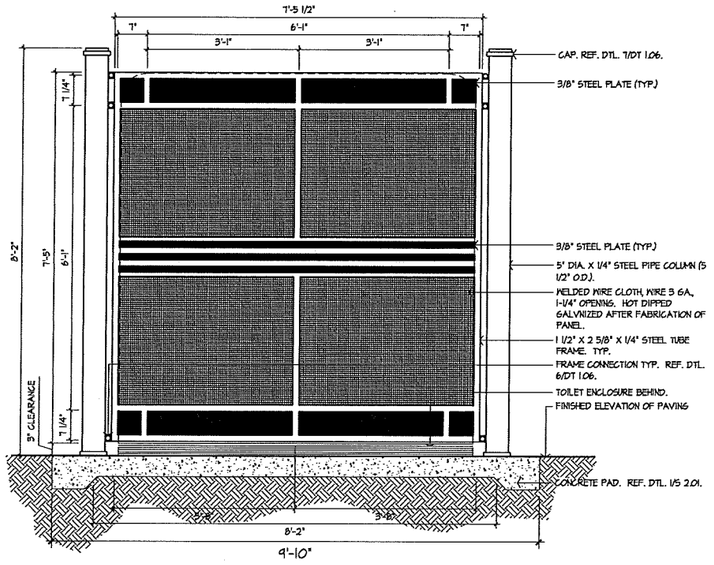


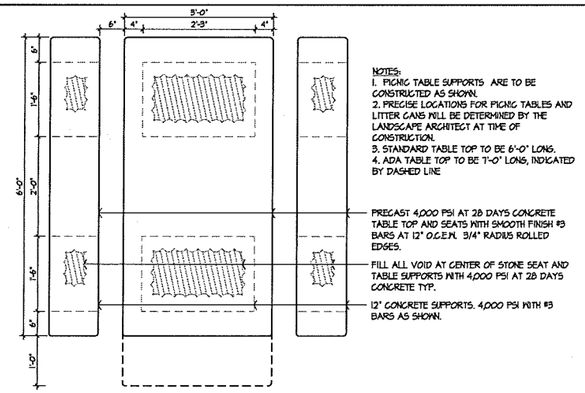
1 PLAN: TOILET ENCLOSURE

Scale: 3/4" = 1'-0"



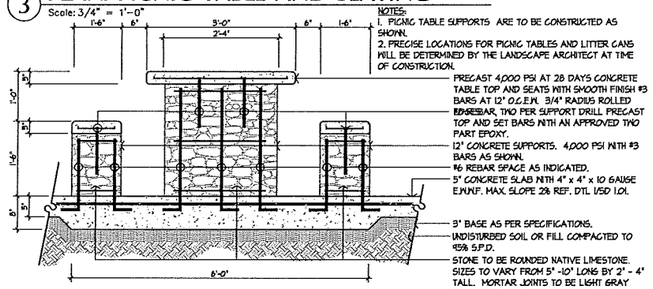
2 ELEVATION: TOILET ENCLOSURE SIDE

Scale: 3/4" = 1'-0"



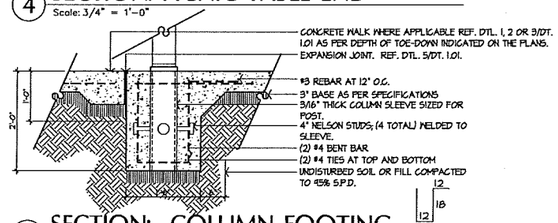
3 PLAN: PICNIC TABLE AND SEATING

Scale: 3/4" = 1'-0"



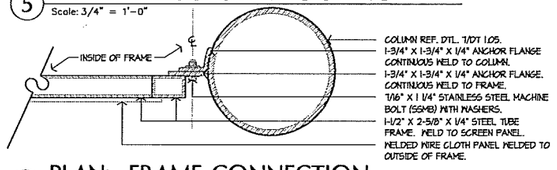
4 SECTION: PICNIC TABLE END

Scale: 3/4" = 1'-0"



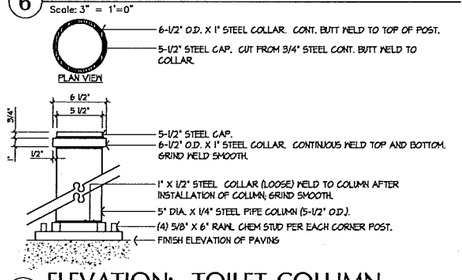
5 SECTION: COLUMN FOOTING

Scale: 3/4" = 1'-0"



6 PLAN: FRAME CONNECTION

Scale: 3" = 1'=0"



7 ELEVATION: TOILET COLUMN

Scale: 1-1/2" = 1'-0"

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ALAZAN AND MARTINEZ CREEK TRAILS

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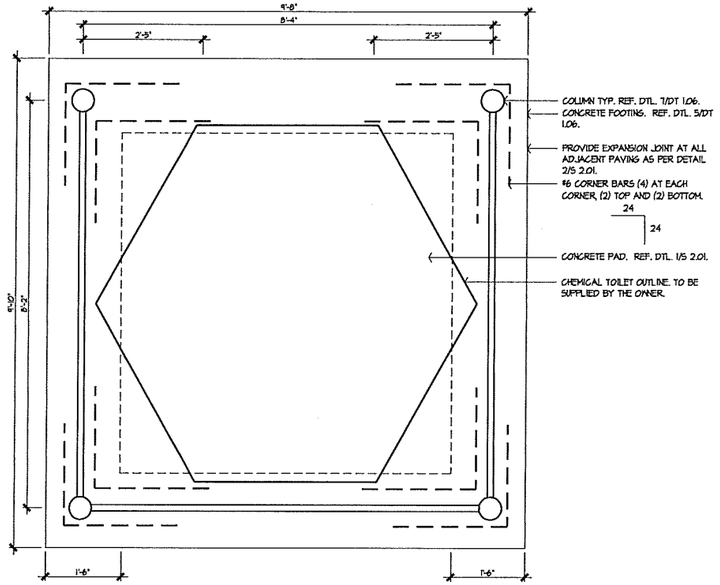
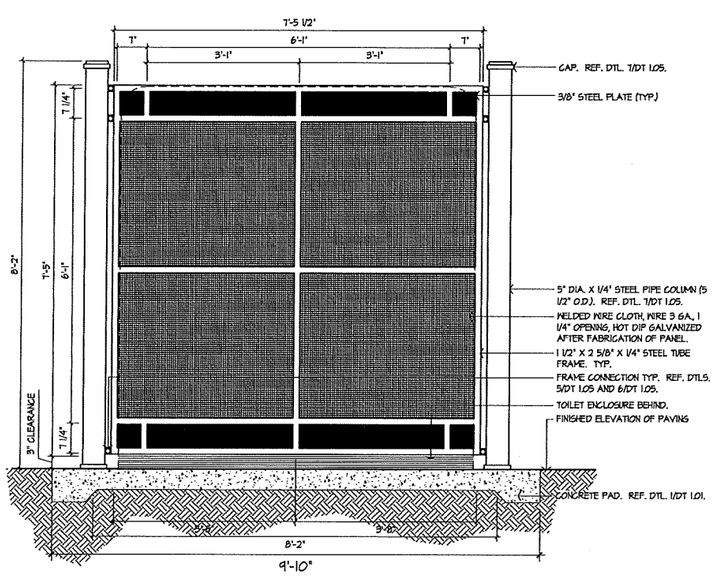


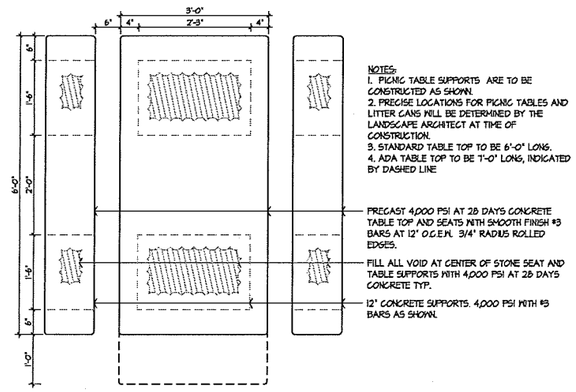
1 PLAN: TOILET ENCLOSURE

Scale: 3/4" = 1'-0"



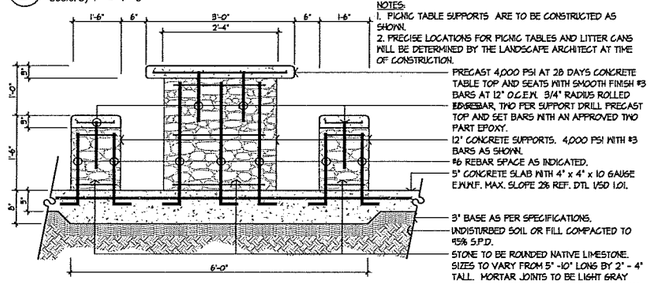
2 ELEVATION: TOILET ENCLOSURE SIDE

Scale: 3/4" = 1'-0"



3 PLAN: PICNIC TABLE AND SEATING

Scale: 3/4" = 1'-0"



4 SECTION: PICNIC TABLE END

Scale: 3/4" = 1'-0"

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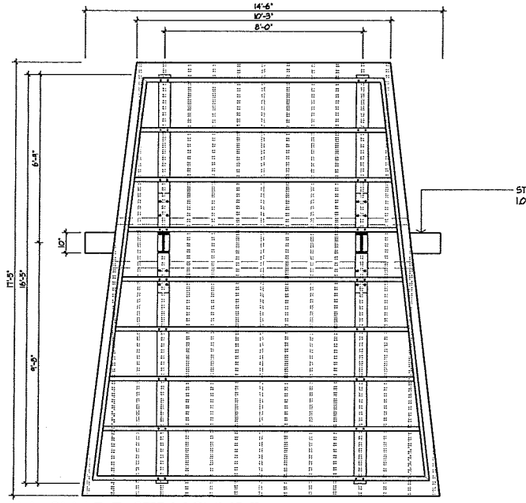
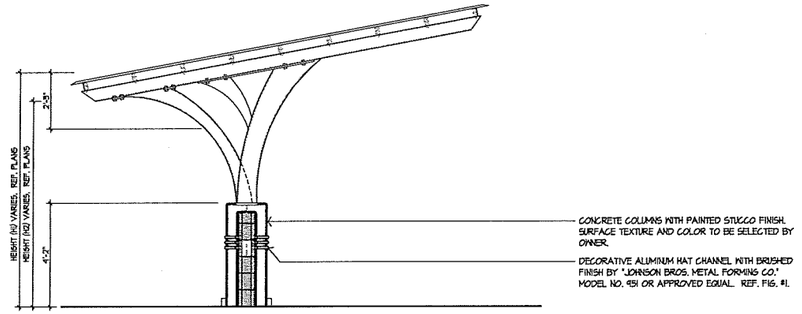
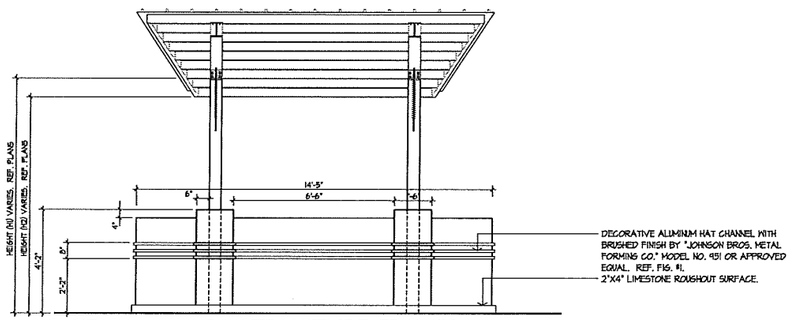


1 PLAN: SHADE STRUCTURE
Scale: 3/8" = 1'-0"



3 SECTION: SHADE STRUCTURE SIDE
Scale: 3/8" = 1'-0"



2 SECTION: SHADE STRUCTURE FRONT
Scale: 3/8" = 1'-0"

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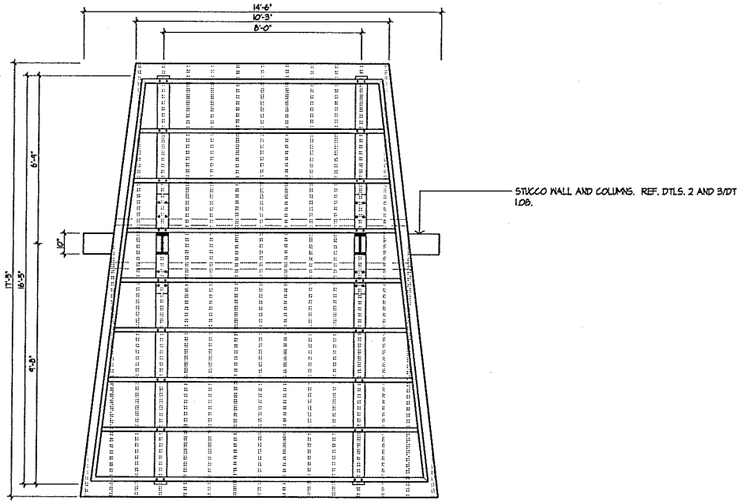
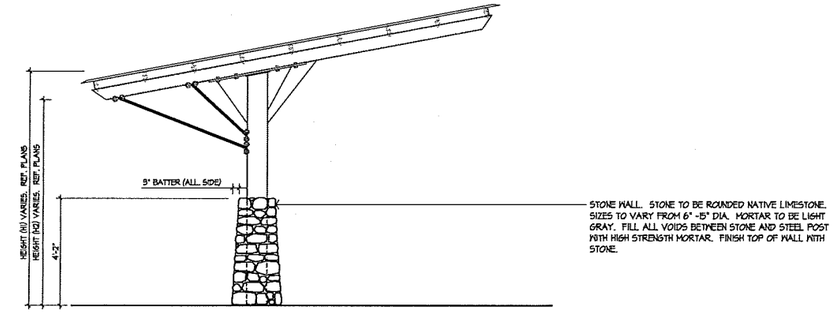
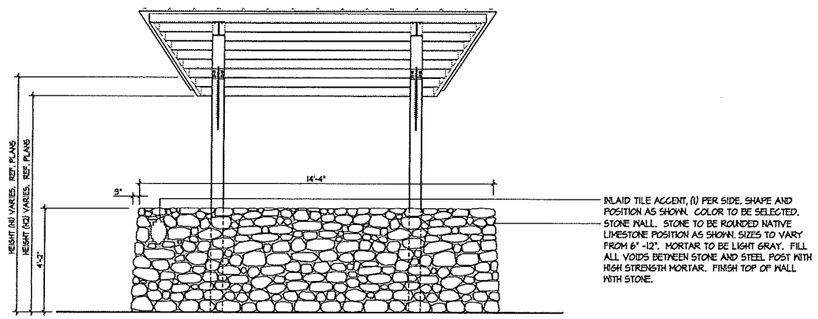


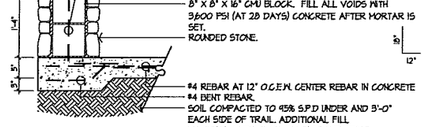
1 PLAN: SHADE STRUCTURE
Scale: 3/8" = 1'-0"



3 SECTION: SHADE STRUCTURE SIDE
Scale: 3/8" = 1'-0"



2 SECTION: SHADE STRUCTURE FRONT
Scale: 3/8" = 1'-0"



4 SECTION: SEAT WALL
Scale: 3/4" = 1'-0"

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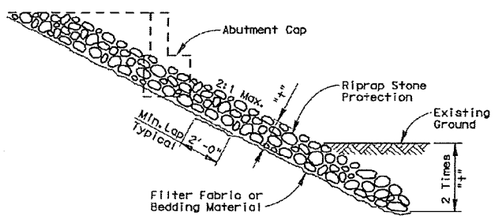
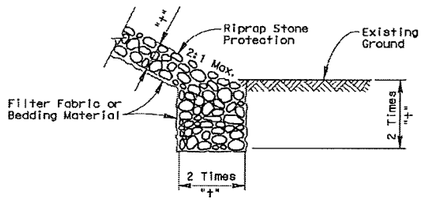
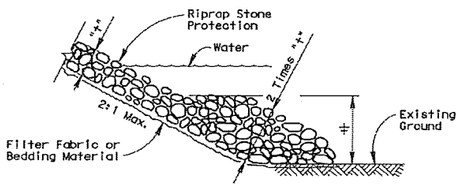
EMBANKMENT



TOE DETAIL ①



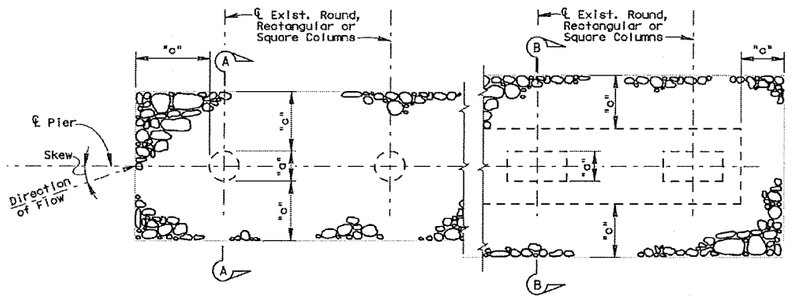
TOE DETAIL ①
(ALTERNATE)



TOE DETAIL ①
UNDER WATER

‡ 2 times the thickness ("t") or maximum expected scour considering site history if available.

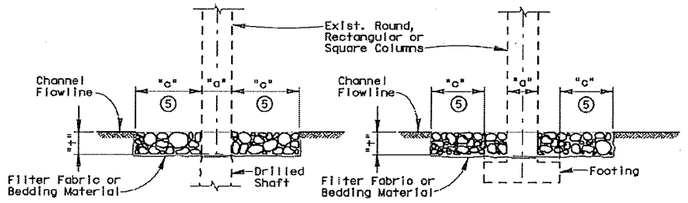
PIER



COLUMN ON DRILLED SHAFT OR PILING

COLUMN ON SPREAD FOOTING

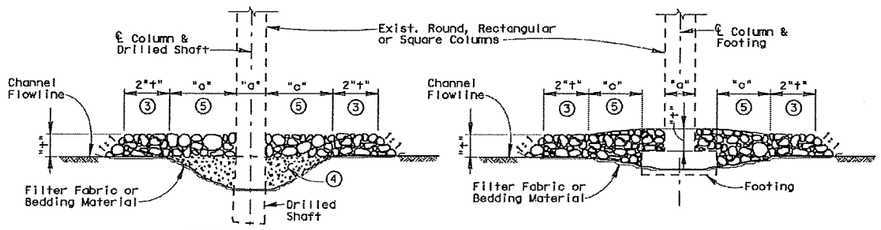
PLAN VIEW



SECTION A-A

SECTION B-B

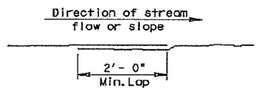
ELEVATION



SECTION A-A

SECTION B-B

ELEVATION UNDER WATER OR SCOUR CRITICAL



FILTER FABRIC LAP

NOTES:

① Toe required at all boundaries of stone protection except where placed next to a structure such as an abutment or pier.

② Bedding material is not required if filter fabric is used. Filter Fabric will be Type 2 (6 oz/sy) as per DMS 6200.

③ In areas where excavation in the channel will exacerbate scour, an additional width of stone protection is required as shown.

④ Scour damage may be filled with a material having a gradation equal to the bedding material but will not be more coarse than stone protection being placed, as specified in Item 432 "RIPRAP", approval of the engineer is required.

⑤ Surface of stone protection will slope away from the pier, but not exceed 2:1.

GENERAL NOTES:

Refer to Item 432 for the gradation of stone protection and bedding material, alternate gradations are not permitted. Placement of stone protection will not be performed in a manner that will cause segregation such as dumping or pushing material in place.

See Layout for limits and thickness of riprap specified, design table provided below is a guide for the designer. All work will be performed in accordance with Item 432.

DESIGN TABLE:

Minimum specific gravity for stone protection is 2.40
Minimum thickness permissible is 12 inches, channel velocities (V) for a given thickness and gradation will not exceed the limits indicated in the table below.

"t" = Thickness of revetment
"a" = Column width
Skew = Angle between direction of flow and center of pier
"o" = 2"a"/cos (skew)
"v" = Stream velocity

	REVETMENT TYPE		
	ABUTMENT OR CHANNEL BANK	PIER	
		RECT. NOSE	ROUND NOSE
"t" in.	"v" (max.) ft/s	"v" (max.) ft/s	"v" (max.) ft/s
12	5.8	6.0	6.8
15	6.5	6.8	7.7
18	7.1	7.2	8.2
21	7.7	7.7	8.7
24	8.2	7.8	8.8
30	9.2	9.1	10.3

SAN ANTONIO DISTRICT STANDARD

Texas Department of Transportation
San Antonio District (Structural Design)

FLEXIBLE RIPRAP
STONE PROTECTION EMBANKMENTS AND PIERS

FRR (SP)

I:\Engcalc\Standards\StoneProtect.dgn		PREPARED BY AND FOR USE OF TxDOT.			
ORIGINAL DRAWING DATE: SEPT. 2007		STATE DISTRICT	FEDERAL REGION	FEDERAL AID PROJECT #	SHEET
DR.: JHK	REVISIONS	SAT	6		
CK.: JGD 09-01-08					
DR.: MRM		COUNTY		CONTROL SECTION JOB	HIGHWAY
CK.: JHK					

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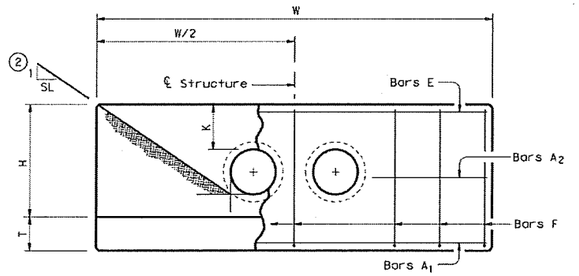
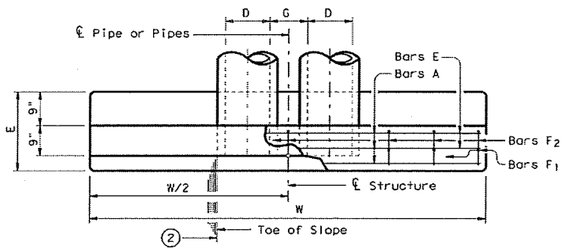
TABLE OF VARIABLE DIMENSIONS AND QUANTITIES FOR ONE HEADWALL (4)

SLOPE	DIA OF PIPE, D	Values for one Pipe W	Reinf (Lbs)	Conc (CY) (1)	Values to be added for each addt'l Pipe W	Reinf (Lbs)	Conc (CY) (1)
2:1	12"	9'- 0"	122	1.1	1'- 9"	15	0.2
	15"	10'- 3"	136	1.3	2'- 2"	16	0.2
	18"	11'- 6"	163	1.5	2'- 8"	19	0.3
	21"	12'- 9"	200	1.8	3'- 1"	31	0.4
	24"	14'- 0"	217	2.1	3'- 7"	34	0.4
	27"	15'- 3"	254	2.4	3'-11"	37	0.5
	30"	16'- 6"	272	2.7	4'- 4"	40	0.6
	33"	17'- 9"	314	3.1	4'- 8"	43	0.6
	36"	19'- 0"	371	3.9	5'- 1"	46	0.8
	42"	21'- 6"	442	4.9	5'-10"	52	1.0
	48"	25'- 0"	569	6.4	6'- 7"	59	1.3
	54"	27'- 6"	701	7.5	7'- 6"	82	1.6
	60"	30'- 0"	794	8.8	8'- 3"	90	1.8
	66"	32'- 6"	894	10.2	8'- 9"	96	2.0
	72"	35'- 0"	1055	11.7	9'- 4"	103	2.3
3:1	12"	13'- 0"	175	1.6	1'- 9"	14	0.2
	15"	14'- 9"	193	1.9	2'- 2"	17	0.2
	18"	16'- 6"	228	2.2	2'- 8"	19	0.3
	21"	18'- 3"	299	2.6	3'- 1"	31	0.4
	24"	20'- 0"	323	3.0	3'- 7"	33	0.4
	27"	21'- 9"	371	3.5	3'-11"	37	0.5
	30"	23'- 6"	415	4.0	4'- 4"	40	0.5
	33"	25'- 3"	469	4.6	4'- 8"	43	0.6
	36"	27'- 0"	556	5.7	5'- 1"	46	0.8
	42"	30'- 6"	675	7.1	5'-10"	52	1.0
	48"	35'- 6"	837	9.2	6'- 7"	59	1.3
	54"	39'- 0"	1015	11.0	7'- 6"	84	1.6
	60"	42'- 6"	1171	12.9	8'- 3"	91	1.8
	66"	46'- 0"	1298	14.9	8'- 9"	98	2.0
	72"	49'- 6"	1561	17.1	9'- 4"	103	2.3
4:1	12"	17'- 0"	229	2.0	1'- 9"	15	0.2
	15"	19'- 3"	266	2.4	2'- 2"	17	0.2
	18"	21'- 6"	308	2.9	2'- 8"	19	0.3
	21"	23'- 9"	382	3.5	3'- 1"	31	0.3
	24"	26'- 0"	430	3.9	3'- 7"	34	0.4
	27"	28'- 3"	486	4.7	3'-11"	37	0.5
	30"	30'- 6"	539	5.2	4'- 4"	40	0.6
	33"	32'- 9"	603	6.0	4'- 8"	42	0.6
	36"	35'- 0"	738	7.5	5'- 1"	47	0.8
	42"	39'- 6"	881	9.3	5'-10"	52	1.0
	48"	46'- 0"	1102	12.1	6'- 7"	61	1.3
	54"	50'- 6"	1364	14.4	7'- 6"	84	1.6
	60"	55'- 0"	1547	16.9	8'- 3"	91	1.8
	66"	59'- 6"	1741	19.5	8'- 9"	98	2.0
	72"	64'- 0"	2069	22.4	9'- 4"	102	2.3
6:1	12"	25'- 0"	336	3.0	1'- 9"	14	0.2
	15"	28'- 3"	384	3.6	2'- 2"	17	0.2
	18"	31'- 6"	452	4.2	2'- 8"	19	0.3
	21"	34'- 9"	581	5.1	3'- 1"	31	0.4
	24"	38'- 0"	644	5.8	3'- 7"	34	0.4
	27"	41'- 3"	737	6.9	3'-11"	37	0.5
	30"	44'- 6"	807	7.7	4'- 4"	39	0.6
	33"	47'- 9"	912	8.9	4'- 8"	44	0.6
	36"	51'- 0"	1108	11.0	5'- 1"	48	0.8
	42"	57'- 6"	1318	13.7	5'-10"	54	1.0
	48"	67'- 0"	1674	17.9	6'- 7"	59	1.3
	54"	73'- 6"	2064	21.3	7'- 6"	83	1.6
	60"	80'- 0"	2343	24.9	8'- 3"	89	1.8
	66"	86'- 6"	2635	28.9	8'- 9"	96	2.0
	72"	93'- 0"	3123	33.1	9'- 4"	101	2.3

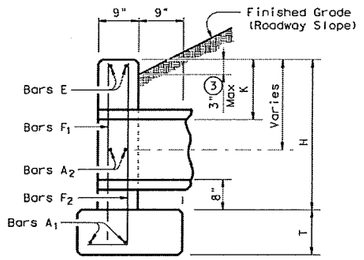
LEVELS DISPLAYED
ACC:



ELEVATION



PLAN OF NON-SKEWED PIPES



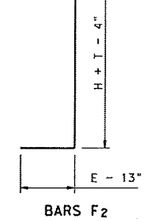
℄ SECTION

TABLE OF CONSTANT DIMENSIONS

DIA OF PIPE, D	G	K	H	T	E
12"	9"	1'- 0"	2'- 8"	9"	1'- 9"
15"	11"	1'- 0"	2'-11"	9"	1'- 9"
18"	1'- 2"	1'- 0"	3'- 2"	9"	1'- 9"
21"	1'- 4"	1'- 0"	3'- 5"	9"	2'- 0"
24"	1'- 7"	1'- 0"	3'- 8"	9"	2'- 0"
27"	1'- 8"	1'- 0"	3'-11"	9"	2'- 3"
30"	1'-10"	1'- 0"	4'- 2"	9"	2'- 3"
33"	1'-11"	1'- 0"	4'- 5"	9"	2'- 6"
36"	2'- 1"	1'- 0"	4'- 8"	1'- 0"	2'- 6"
42"	2'- 4"	1'- 0"	5'- 2"	1'- 0"	2'- 9"
48"	2'- 7"	1'- 3"	5'-11"	1'- 0"	3'- 0"
54"	3'- 0"	1'- 3"	6'- 5"	1'- 0"	3'- 3"
60"	3'- 3"	1'- 3"	6'-11"	1'- 0"	3'- 6"
66"	3'- 3"	1'- 3"	7'- 5"	1'- 0"	3'- 9"
72"	3'- 4"	1'- 3"	7'-11"	1'- 0"	4'- 0"

TABLE OF REINFORCING STEEL (4)

Bar	Size	Spa	No.
A1	# 5	~	2
A2	# 5	1'-6"	~
E	# 5	~	2
F	# 5	1'-0"	~



BARS F2

GENERAL NOTES:

Designed according to AASHTO LRFD Specifications.

Reinforcing steel shall be placed with the center of the outside layer of bars 2" from the surface of the concrete.

All reinforcing steel shall be Grade 60.

All concrete shall be Class "C" and shall have a minimum compressive strength of 3600 psi.

No bridge rails of any type may be mounted directly to these culvert headwalls.

(1) Quantities shown are for concrete pipe and will increase slightly for metal pipe installations.

(2) Indicated slope is perpendicular to centerline Pipe or Pipes.

(3) For vehicle safety, curbs shall project no more than 3" above finished grade. Curb heights shall be reduced, if necessary, to meet these requirements. No changes will be made in quantities and no additional compensation will be allowed for this work.

(4) Quantities shown are for one structure end only (one headwall).

Texas Department of Transportation
Bridge Division

CONCRETE HEADWALLS WITH PARALLEL WINGS FOR NON-SKEWED PIPE CULVERTS

CH-PW-0

FILE: chpw0ste.dgn	DN: TxDOT	CK: TxDOT	DW: TxDOT	CK: GAF
©TxDOT February 2010	DISTRICT	FEDERAL AID PROJECT		SHEET
REVISIONS				
	COUNTY	CONTROL	SECT	JOB	HIGHWAY

STATE OF TEXAS
WALTER H. HEARD
629
REGISTERED LANDSCAPE ARCHITECT

Tdg
Terra design group, inc.
816 camaron, suite 103
san antonio, texas 78212
210.220.1400
210.220.1404
wheard@terradesignsa.com

ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

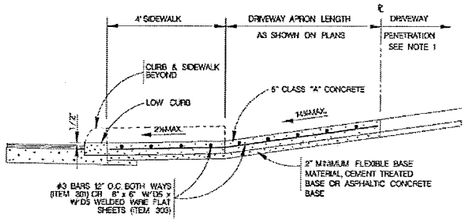
REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

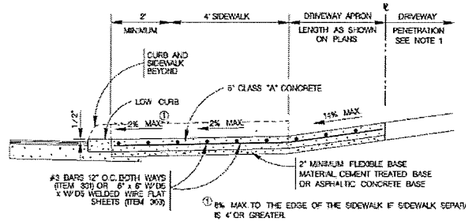
DT 1.11

95% CONSTRUCTION DOCUMENT



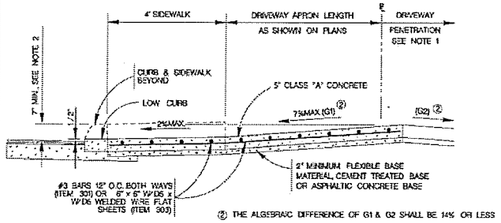
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.1



TYPICAL RESIDENTIAL DRIVEWAY SECTION

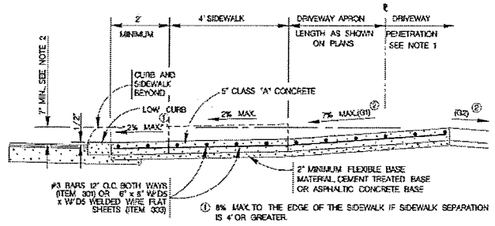
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.1



② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS ABUTTING CURB
ITEM 503.1

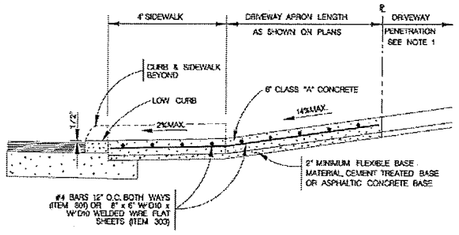


① 8% MAX TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② THE ALGEBRAIC DIFFERENCE OF G1 & G2 SHALL BE 14% OR LESS

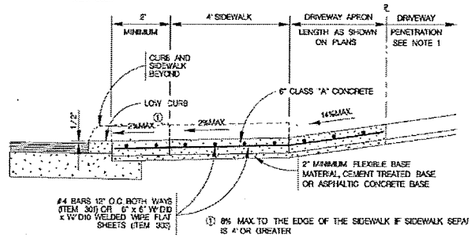
TYPICAL RESIDENTIAL DRIVEWAY SECTION

WHERE PROPERTY IS LOWER THAN STREET & SIDEWALK IS SEPARATED FROM CURB
ITEM 503.1



TYPICAL COMMERCIAL DRIVEWAY SECTION

WITH SIDEWALK ABUTTING CURB
ITEM 503.2



TYPICAL COMMERCIAL DRIVEWAY SECTION

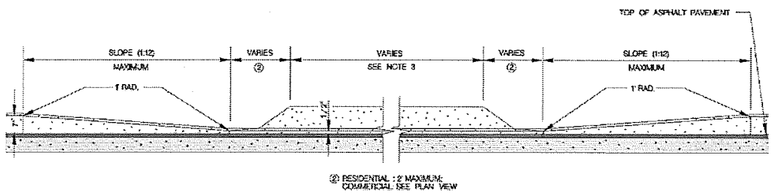
WITH SIDEWALK SEPARATED FROM CURB
ITEM 503.2

CONCRETE DRIVEWAY NOTES

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. 7" MINIMUM HEIGHT WILL NOT NECESSARILY OCCUR AT THE PROPERTY LINE. IT MAY OCCUR WITHIN THE RIGHT OF WAY OR WITHIN THE DRIVEWAY PENETRATION ON PRIVATE PROPERTY.
3. 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
RESIDENTIAL	10'	20'
COMMERCIAL - ONE WAY	12'	20'
COMMERCIAL - TWO WAY	24'	30'

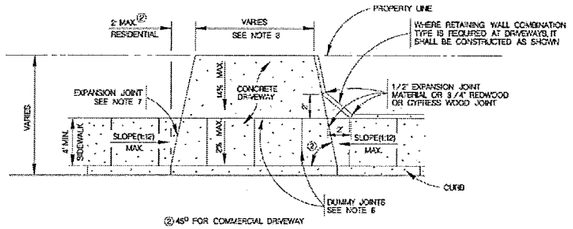
4. FOR LOCAL TYPE "A" STREETS, SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND IF SEPARATED FROM THE CURB, THE SIDEWALK SHALL BE LOCATED A MINIMUM OF 2' FROM THE BACK OF CURB.
5. FOR OTHER THAN LOCAL TYPE "A" STREETS, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 4' AND SEPARATED A MINIMUM OF 2' FROM THE BACK OF CURB OR, AS AN OPTION, THE SIDEWALK SHALL HAVE A MINIMUM WIDTH OF 6' WHEN LOCATED AT THE BACK OF CURB.
6. DUMMY JOINTS PARALLEL TO THE CURB SHALL BE PLACED WHERE THE SIDEWALK MEETS THE DRIVEWAY. DUMMY JOINTS PERPENDICULAR TO THE CURB, AND WITHIN THE BOUNDARIES OF THE PARALLEL DUMMY JOINTS, SHALL BE PLACED AT INTERVALS EQUAL TO THE WIDTH OF THE SIDEWALK.
7. A MINIMUM OF TWO ROUND AND SMOOTH DOWEL BARS 3 /4" IN DIAMETER AND 18" IN LENGTH SHALL BE SPACED 18" APART AT EACH EXPANSION JOINT.
8. SIDEWALK RAMP LENGTHS SHALL BE OF SUFFICIENT LENGTH TO MAINTAIN 8.33% (1:12) MAXIMUM SLOPE WHERE SIDEWALKS CROSS DRIVEWAYS, SIDEWALK CROSS SLOPE SHALL NOT EXCEED 2%.
9. SIDEWALK RAMP SURFACE SHALL BE BRUSH FINISHED.



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

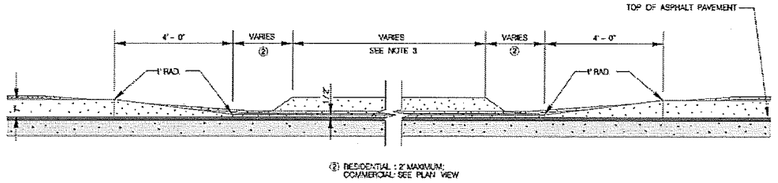
WITH SIDEWALK ABUTTING CURB



② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

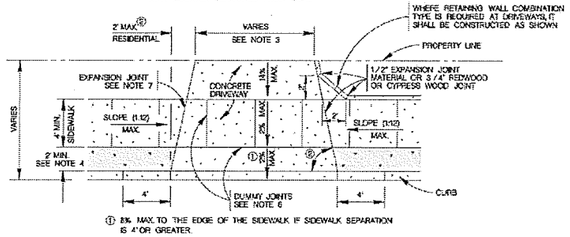
WITH SIDEWALK ABUTTING CURB



② RESIDENTIAL : 2' MAXIMUM; COMMERCIAL: SEE PLAN VIEW

CURB PROFILE AT DRIVEWAY

WITH SIDEWALK SEPARATED FROM CURB

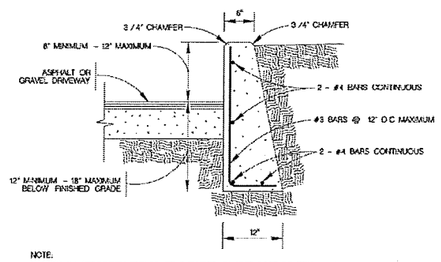


① 8% MAX. TO THE EDGE OF THE SIDEWALK IF SIDEWALK SEPARATION IS 4' OR GREATER.

② 45° FOR COMMERCIAL DRIVEWAY

TYPICAL DRIVEWAY PLAN VIEW

WITH SIDEWALK SEPARATED FROM CURB



NOTE:
1. COST OF REINFORCEMENT TO BE INCLUDED IN UNIT COST OF ITEM 307.1.
2. CONCRETE RETAINING WALL COMBINATION TYPE SHALL BE USED FOR CONCRETE DRIVEWAYS.

DRIVEWAY – CONCRETE RETAINING WALL

ON COMPACTED SUBGRADE
ITEM 307.1

MAY 2009

CITY OF SAN ANTONIO
CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

CONCRETE DRIVEWAY STANDARDS

% SUBMITTAL	PROJECT NO.:	DATE:
DRWN. BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.: OF

STATE OF TEXAS
WALTER H. HEARD
629
REGISTERED LANDSCAPE ARCHITECT

THESE SHEETS ARE FOR PRELIMINARY REVIEW ONLY. THESE ARE NOT FOR CONSTRUCTION DOCUMENTS.

Terra design group, inc.
818 cameron, suite 103
san antonio, texas 78212
210.220.1400
210.220.1404
wheard@terradesignsa.com

ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

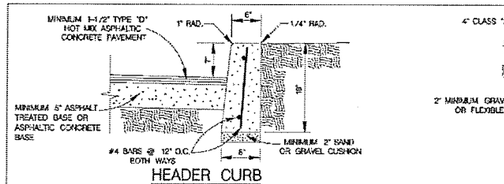
REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

DT 1.12

95% CONSTRUCTION DOCUMENT



HEADER CURB

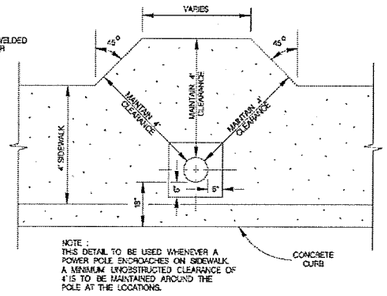
ITEM 500 ON SAND OR GRAVEL

SCALE : 1" = 2'

CONCRETE SIDEWALK SECTION

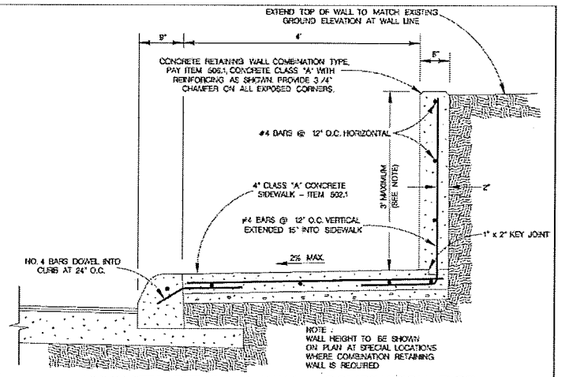
ITEM 502

SCALE : 1" = 2'



CONCRETE SIDEWALK @ UTILITY POWER POLE DETAIL

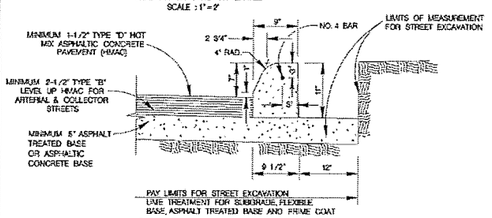
SCALE : 1" = 4'



CONCRETE RETAINING WALL - COMBINATION TYPE

ITEM 508

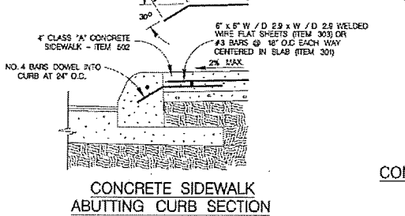
SCALE : 1" = 2'



CONCRETE CURB

ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE

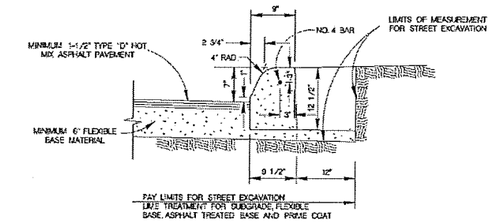
SCALE : 1" = 2'



CONCRETE SIDEWALK ABUTTING CURB SECTION

ITEM 502

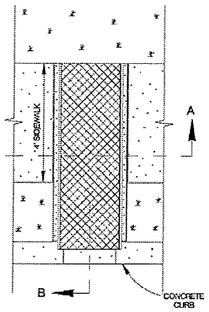
SCALE : 1" = 2'



CONCRETE CURB

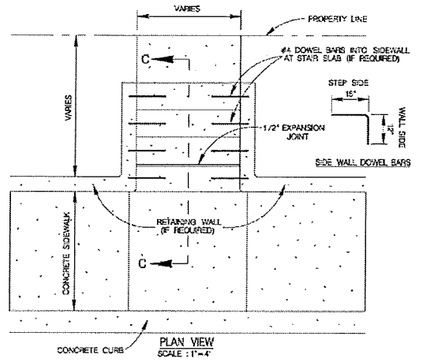
ITEM 500 ON FLEXIBLE BASE MATERIAL

SCALE : 1" = 2'



CONCRETE SIDEWALK DRAIN DETAIL

SCALE : 1" = 4'

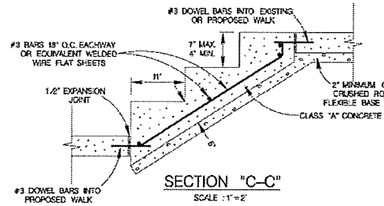


PLAN VIEW

SCALE : 1" = 4'

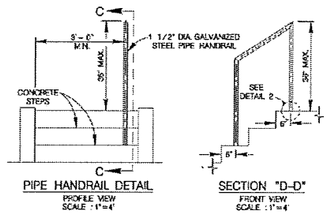
CONCRETE STEPS

ITEM 522



SECTION "C-C"

SCALE : 1" = 2'



PIPE HANDRAIL DETAIL

PROFILE VIEW

SCALE : 1" = 4'

SECTION "D-D"

FRONT VIEW

SCALE : 1" = 4'

NOTE:
CURB TRANSITIONS SHALL NOT BE PAID FOR SEPARATELY BUT SHALL BE INCLUDED IN ITEM 500 CONCRETE CURBING

MOUNTABLE CURB

ITEM 500 ON COMPACTED SUBGRADE

SCALE : 1" = 2'

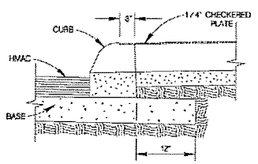
SECTION A-A

SCALE = 1 : 12

TYPICAL CURB & GUTTER DETAIL

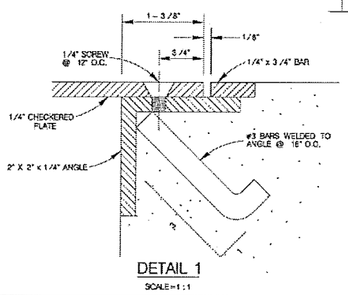
ITEM 500 ON ASPHALT TREATED BASE OR ASPHALTIC CONCRETE BASE

SCALE : 1" = 2'



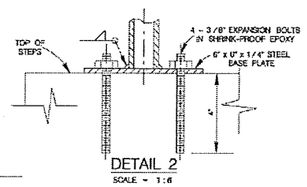
SECTION B

SCALE : 1" = 2'



DETAIL 1

SCALE = 1 : 1



DETAIL 2

SCALE = 1 : 6

NOTES :
1. PLACE STEPS TO CONFORM WITH PROPOSED PARKWAY GRADING
2. 1-1/2" DIA GALVANIZED STEEL PIPE HANDRAIL REQUIRED ON ONE SIDE OF THE STEPS WHEN 3 OR MORE RISERS ARE USED, OR AS DESIGNED BY ENGINEER TO BE PAID UNDER ITEM 522

HANDRAIL FOR CONCRETE STEPS

ITEM 522

MAY 2009

CITY OF SAN ANTONIO

CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT

MISCELLANEOUS CONSTRUCTION STANDARDS I

% SUBMITTAL	PROJECT NO.:	DATE:
DRAWN BY: V. VASQUEZ	DSGN. BY:	CHKD. BY: R.S. HOSSEINI, P.E.	SHEET NO.: OF

STATE OF TEXAS
WALTER H. HEARD
629
REGISTERED LANDSCAPE ARCHITECT

THESE SHEETS ARE FOR PRELIMINARY REVIEW ONLY. THESE ARE NOT FOR CONSTRUCTION DOCUMENTS.

Terra design group, inc.
816 cameron, suite 103
san antonio, texas 78212
210.220.1400
210.220.1404
wheard@terradesigners.com

ALAZAN AND MARTINEZ CREEK TRAILS

Woodlawn Lake
S Josephine Tobin Dr.
San Antonio, Texas

REVISION	DATE

Project no:
Date: JANUARY 22, 2014
Sheet:

SITE DETAILS

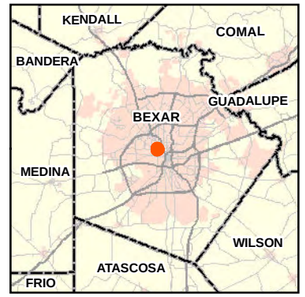
DT 1.13

95% CONSTRUCTION DOCUMENT

APPENDIX B

SHOVEL TEST AND BACKHOE TRENCH LOCATIONS

MARTINEZ CREEK SHOVEL TEST LOCATIONS



STGC3
STJH4
STDK3
STGC2
STJH3
STDK2
STJH1
STDK1
STJH2
STGC1
Martinez Creek
Navidad
Sabinas
Trinity
Mistletoe
West
East
Calaveras
Ashby
French
Craig
Woodlawn
Cincinnati
Magnolia
Huisache
Mulberry
Warner
State Hwy 345
345
Exit 568
I 10
Ih 10

Key to Features

- Shovel Test Locations
- Streams / Creeks (NHD)
- Martinez Creek Trail

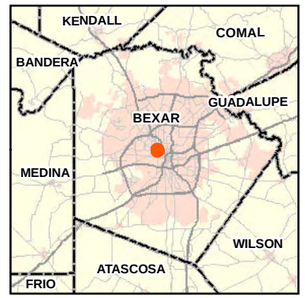
0 30 60 90

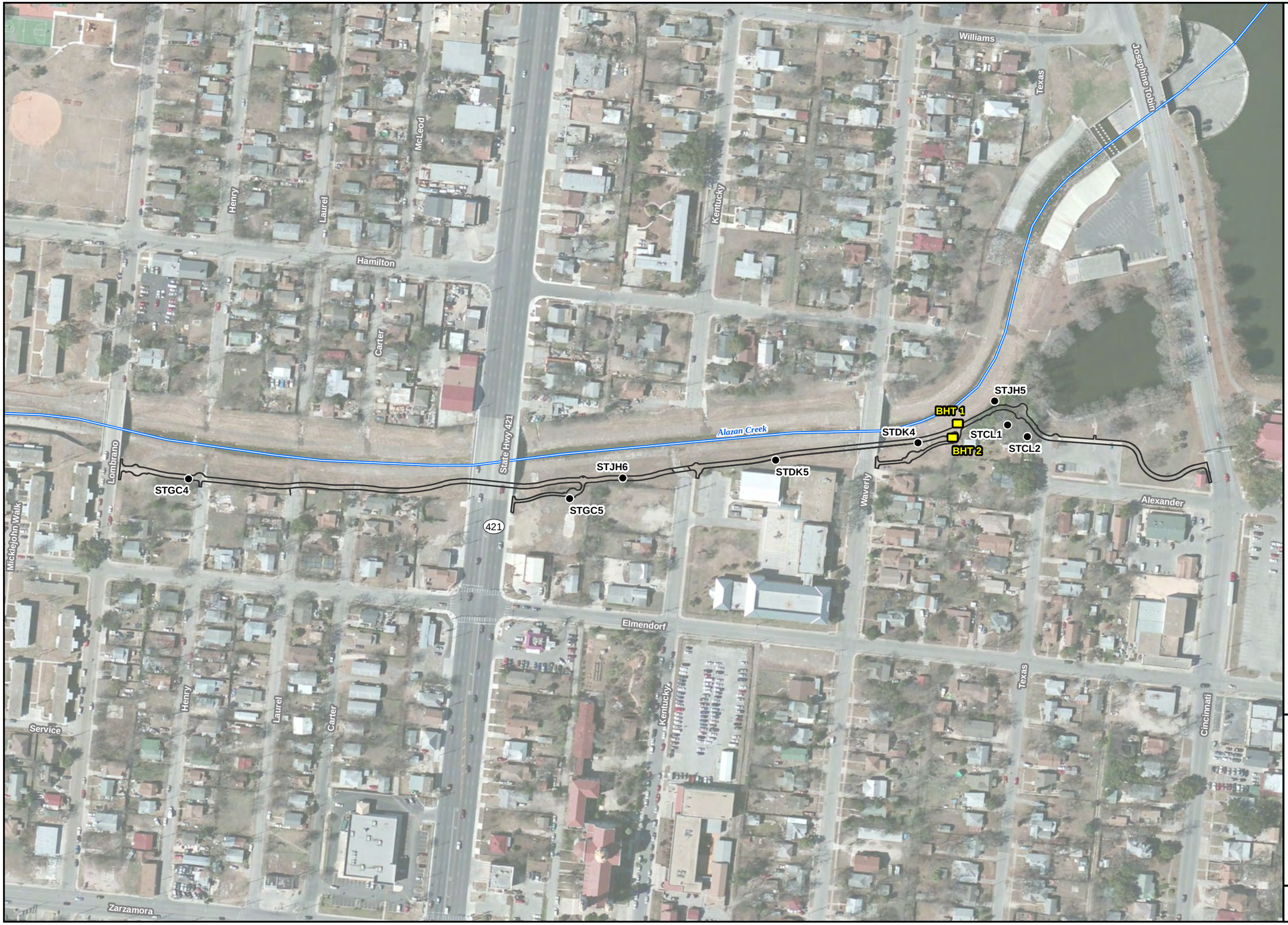
Meters

One inch equals 60 meters

APPENDIX B

ALAZAN CREEK SHOVEL TEST & BHT LOCATIONS





Key to Features

- Backhoe Trench Locations
- Shovel Test Locations
- Streams / Creeks (NHD)
- Alazan Creek Trail

0 30 60 90

Meters

One inch equals 60 meters

APPENDIX B

APPENDIX C

SHOVEL TEST RESULTS

Table 1. Martinez Creek Trail Shovel Test Results				
Shovel Test	**+/–**	**Location**	**Description**	**Comments/Cultural Materials**
GC1	_	Open lot near electric rail	0-30 cmbs: Gray (7.5YR 5/1) silty clay with alluvial gravel. 30-36 cmbs: White (7.5 YR 8/1) clay silts with pebbles/grit inclusions.	Reason for Termination: Clay
GC2	_	Open lot trail feature near road	0-23 cmbs: 7.5YR 5/1 silty clay with alluvial gravel. 23-26 2.5 YR 7/4 clay silt with grit inclusions.	Reason for termination: hard clay
GC3	_	Corner gravel parking lot.	0-20 cmbs 7.5 YR 5/1 silty clay with alluvial gravels. 20+ cmbs 2.5 YR 7/4 clay with grit.	Reason for termination: clay
DK1	_	Adjacent to Magnolia Street.	0-15 cmbs silty clay with dense gravel. 15-20 silty clay with very dense gravel. 10 YR 4/2	Reason for Termination: Gravel
DK2	_		0-10 cmbs silty clay 10YR 4/1 with 60-70% dense gravel. 10-15 silty clay 10YR 2/2 very dense gravel (<80%).	Reason for Termination: gravel. Gravel at surface with in survey area.
DK3	_	Near intersection of French and Sabinas	0-20 cmbs hard, crumbly compact clay with gravels 10YR 4/2. 20-25 cmbs compact clay with dense gravels 10YR 2/2	Reason for Termination: Gravel
JH1	_	In flat open over grown grass lot, cattycorner to house and road (?). East of West Street. 40 MCM	10 YR 4/1 loam with pebbles inclusions and CaCo2	Reason for Termination: Lime stone gravel
JH2	_	At sidewalk tie-in area	10 YR 4/1 clay loam	Reason for termination: lime stone gravel bed
JH3	_	South of Woodlawn road west of church	0-20 cmbs 10 YR 4/2 silty loam with periodic 1 BRE 20-40 cmbs 10YR 3/1 clay loam	Reason for Termination: bedrock gravel.
JH4	_	On flat, rise adjacent to home.	0-25 cmbs 10YR 4/2 silty loam 25-40 cmbs mottled clay 10YR 3/1 and 10 YR 5/8, some limestone and chert inclusions	Reason for Termination: thick impenetrable clay.

Table 2. Alazan Creek Trail Shovel Test Results				
Shovel Test	**+/–**	**Location**	**Description**	**Comments/Cultural Materials**
CL1	_	Within former Villareal property adjacent to Woodlawn Park	0-32 cmbs: Dark Gray (10YR 4/1) silty clay with <40% gravel inclusions.	Reason for Termination: Compacted sediment
CL2	_	Within former Villareal property adjacent to Woodlawn Park	0-35 cmbs: Dark Gray (10YR 4/1) silty clay with <40% gravel inclusions.	Reason for Termination: Gravel matrix bed. ST had numerous items of modern debris
GC4	-	Between apartments and drainage, North of Lombrano Street.	0-25 cmbs 2.5 YR 5/1 Hard silty clay with rocks and gravel.	Reason for Termination: Clay
GC5	_	Of Parkway area behind 5 Ersrelles	0-20 cmbs 7.5YR 5/1, hard silty clay with gravel	Reason for Termination: Hardened at 20 cmbs
DK4	_	West of creek and drainage just south of BHT possible marked location	0-20 cmbs 10YR 5/1, dry crumbly hard clay with gravels increasing with depth.	Reason for Termination: Gravel
DK5	_	South of Waverly road	0-15 cmbs 10YR 5/1 dry crumbly had clay with dense gravel.	Reason for Termination: Gravel
JH5	_	Near Villareal parcel, alone known overgrown area on slight flat at channel area.	0-20 cmbs 10YR 5/3 silty clay with gravel (upland) matrix with 10YR 5/3 sandy sediment inclusions.	Reason for Termination: Gravel
JH6	_	On flat above channel cut.	10YR 3/1 clay loam with 5-10% gravel inclusions.	Reason for Termination: roots and hill cut.

APPENDIX D

REGULATORY CORRESPONDENCE

HICKS & COMPANY

1504 WEST 5TH STREET AUSTIN, TEXAS 78703 TEL: 512 / 478.0858 FAX: 512 / 474.1849

ENVIRONMENTAL
ARCHEOLOGICAL
AND PLANNING
CONSULTANTS

May 20, 2013

Mark Wolfe
State Historic Preservation Officer
Texas Historical Commission
P.O. Box 12276 – Capitol Station
Austin, Texas 78711

RE: Antiquities Code of Texas Coordination for the San Antonio River Authority's West Side Creeks Restoration Project – Bexar County, Texas

Dear Mr. Wolfe,

The San Antonio River Authority (SARA) is planning an interconnected hike and bike trail network as part of planned restoration and improvements to the Westside Creeks area of San Antonio, Bexar County, Texas. The proposed project consists of two components: pedestrian trail design and improvements to Elmendorf Lake Park. The trail design component will create trail systems along portions of Alazan, Martinez, Apache, and San Pedro creeks, totaling approximately 37,000 linear feet in length within a 50-foot design corridor. Design elements proposed for Elmendorf Lake Park include water quality improvements, property acquisition, street realignment, utility relocation, and facilities development. The limits of the project are: Elmendorf Lake from Commerce Street to 19th Street; along Apache creek from 19th Street to San Pedro Creek; San Pedro Creek from Apache Creek to the San Antonio River; Alazan Creek from Woodlawn Lake to Lombrano Street; and Martinez Creek from Fredericksburg Road to Cincinnati Avenue (**Figure 1**).

Hicks & Company has been contracted by Terra Design Group to conduct coordination with the Texas Historical Commission (THC) and the City of San Antonio (COSA) to identify potential cultural resource constraints for the proposed project. Since construction of the new trails and park improvements will take place on land to be owned by COSA, it is subject to the Antiquities Code of Texas (ACT). The project will likely require federal 404 and, potentially, 408 permitting, necessitating compliance with Section 106 of the National Historic Preservation Act of 1966, as amended.

Geologically (BEG 1983), the proposed Westside Creeks Restoration project areas lies within two geological zones composed of eroded materials associated with the Edwards uplift: The Navarro Group and Marlbrook Marl, undivided (Kkb) formation and Terrace deposits (Qt) (**Figure 2**). The former is present in the northern portions of the project area, associated with locales within the vicinity of the confluence of Alazan and Martinez creeks. The Navarro Group and Marlbrook Marl formation is divided into two parts. The 580-foot-thick upper portion is a heavily eroded material derived from the Pecan Chalk formation and is comprised of marl, clay, sandstone, fine grained siltstone, limonite and siderite concretions, and large boulders of bluish gray siliceous limestone in a yellowish brown matrix. The lower part is predominately a greenish gray to brownish gray clay which weathers to a thick black clayey soil that can reach 400 feet in thickness. This formation dates to the Cretaceous and long predates the arrival of humans in the Americas. Hence, any archeological sites within this context would likely be surficial or near-surficial in depth. The area south of the confluence of Alazan and Martinez Creeks, extending past Conception Park, is mapped as Late Pleistocene fluviatile terrace deposits. These deposits are composed of gravels, sand, silt and clay derived primarily from Tertiary limestone dolomite and cherts that form low floodplain terraces surrounding deeply cut and eroded streams. This formation dates to the Pleistocene and, with deposits that may coincide with the arrival of the first humans into the continent, has moderate potential to contain deeply buried archeological sites or materials.

According to the Web Soil Survey (USDA 2013), accessed May 12, 2013, six soils are mapped as underlying the proposed project area: Tinn and Frio soils, 0 to 1 percent slopes, frequently flooded (Tf); Brayon clay, 1 to 3 percent slopes (HtB); Austin silty clay, 3 to 5 percent slopes (AuC); Lewisville silty clay, 0 to 1 percent slopes (LvA); Lewisville silty clay, 1 to 3 percent slopes (LvB); and Loire clay loam (Fr) , 0 to 2 percent slopes, occasionally flooded (**Figure 3**). The northern half of the project area is mapped as Branyon clay, 1 to 3 percent slopes and Austin silty clay 3-5 percent slopes. Branyon clays are clayey, upland soils that are dark gray to black in color, located on flat surfaces or on strongly sloped lobes. Gravels tend to be found in the fine blocky structure of the upper layers, while the deeper layers exhibit a medium blocky structure of mottled and calcareous clay with inclusions of shale and gypsum. Similarly, the Austin silty clay is a dark, clayey upland soil, heavily calcareous formed from eroded chalk and chalky marl. Archeological sites in these contexts are generally found on the ground surface or shallowly-buried.

The southern portion of the project area is mapped as Lewisville silty clay, 0-1 percent slopes; Lewisville silty clay, 1-3 percent slopes; and Loire clay loams, 0-2 percent slopes, occasionally flooded. Lewisville soils are located in broad flat alluvial settings and consist of moderately deep, dark colored, silty clays of a fine angular or blocky structure, with water-rounded limestone inclusions. Within the proposed project area, Loire soils are mapped south of the confluence of the San Pedro River and the San Antonio River. These soils are described as light brown to gray colored silty to sandy clay loams that with water-rounded limestone inclusions.

Tinn and Frio soils are described as clay and clay loams located in low lying, flat, floodplains formed by repeated yearly flooding. Within the proposed project area, this series is mapped as occurring along the immediate floodplains of Apache, Alazan, Martinez, and San Pedro creeks. As soils that developed from recent alluvial deposits, locales within the project area that are mapped as the Lewisville, Tinn and Frio, and/or the Loire series exhibit moderate to high potential to contain buried and intact archeological deposits.

According to the THC's Sites Atlas (THC 2013), accessed on May 2-3, 2013, a total of eighteen intensive archaeological surveys (sixteen areal and two linear) have been conducted within 500 meters from the proposed project area (**Figures 4-7**). Areal surveys include work conducted by or for the National Park Service in 1980 and in 1986; the THC in 1976; the Archdiocese of San Antonio Survey in 2009; the City of San Antonio in 2001 and in 2010; the Fort Worth Corp of Engineers in 1979; the Department of Housing and Urban Development in 1981, 1983, and in 1986; the Federal Highway Administration (FHWA) in 1998; a private survey in 2003; and unnamed surveys in 1978 and 1981. Linear surveys include work conducted on behalf of the General Services Administration in 1981 and the FHWA in 1991. The alignment of the 1976 survey sponsored by the THC intersects the project area approximately 200 meters north of the southern terminus of the proposed San Pedro Creek alignment.

According to the Sites Atlas (THC 2013), five archaeological sites are located within 500 meters of the proposed project area: Sites 41BX238, 41BX257, 41BX511, 41BX607, and 41BX794. Site **41BX238** is a historic structure that has been noted as being heavily disturbed with modern ceramics, glass and prehistoric flake artifacts. Site **41BX257**, known as the Padre Navarro House (Roy Bean House), is a historic structure constructed of caliche block. Site **41BX511** is a heavily disturbed historic structure/artifact scatter featuring ceramics, nails, and glass, but none of the structure remains. Site **41BX607** is a historic structure associated with Tamalina Milling and was utilized in the production of dehydrated masa. Brick, concrete, ceramics, glass, and metal dating to ca. 1912 was found in association with this site. Site **41BX794,** is a historic structure known as the John Stewart McDonald house. This house has a limestone foundation dated approximately to 1731-1855 and was utilized as "farm acreage prior to changing to residential use between 1855 and 1905."

There are seven historic districts within the near vicinity of the proposed project (**Figures 8-10**). From north to south, these districts are: the San Antonio Arsenal Historic District; the King William Historic District; the South-Alamo Street-South Mary's Street Historic District; the Blue Star Street Industrial District; the Mission Parkway Historic District; and the San Antonio Missions National Historic Park and Mission Conception District. Noted National Register properties within the vicinity of the project area include the Mission Concepcion in the Mission Parkway District, the Carl Himlar Guether House in the King William District, and the Jose Antonio Navarro Elementary School.

In addition to the above described cultural resources, there are two cemeteries adjacent to the proposed project. The first, San Fernando Cemetery #1 is considered one of the oldest cemeteries in the U.S., believed to have existed since 1840 (COSA Cultural Affairs 2013). Figures important to San Antonio's history are buried in the San Fernando Cemetery #1, including signers of the Texas Declaration of Independence. This cemetery borders the northern edge of Apache Creek, along Tampico Street. The second cemetery is associated with *Our Lady of the Lake University*, an independent Catholic university founded in 1895 by the Sisters of the Congregation of Divine Providence, a religious institute originating in Lorraine, France. This cemetery is located at the south end of the university campus, approximately 190 meters from Apache Creek.

While exact trail alignments have yet to be finalized, the proposed project is located within and adjacent to areas of documented historical significance with little of the proposed project area previously surveyed. Therefore, it is Hicks & Company's recommendation that intensive linear survey, supplemented with shovel testing and, where depth of impacts are expected to exceed a meter, backhoe trenching for portions of the project that exhibits potential to contain intact buried deposits. This letter represents initiation of formal coordination with the THC and the COSA to determine obligations for the proposed project under ACT and NRHP regulations. Please offer your comments relative to any responsibility for achieving ACT compliance in order for construction to proceed. If you have any questions or require any additional information, please contact me at (512) 478-0858.

Sincerely,

Josh Haefner

CC: Marc Zak; Terra Design Group John Kuhl, Hicks & Company

TEXAS HISTORICAL COMMISSION
real places telling real stories

AUG - 1 2013

July 29, 2013

Josh Haefner
Senior Archeologist
Hicks & Co.
1504 West 5th St.
Austin, TX 78703

Re: Project review under the Antiquities Code of Texas and Section 106 of the National Historic Preservation Act of 1966.
San Antonio River Authority's West Side Creeks Restoration Project – Bexar County, Texas

Dear Mr. Haefner:

Thank you for your correspondence describing the above referenced project. This letter serves as comment on the proposed undertaking from the State Historic Preservation Officer, the Executive Director of the Texas Historical Commission.

The review staff, led by Bradford Jones, has reviewed your letter and examined our records. As noted in your coordination letter, the proposed project areas are situated in locations that are previously identified as historically significant or have the potential to contain significant cultural resources, but have only been subjected to limited archeological or historic survey.

Therefore, a professional archeologist should survey the proposed project area. This cultural resource survey should conform to the "Archeological Survey Standards for Texas" (available online at: www.thc.state.tx.us/rulesregs/rrother.shtml) and be conducted throughout the proposed project area once final alignment is determined. As this project will occur on lands controlled by a subdivision of the State of Texas, a Texas Antiquities Code permit for archeological investigations will need to be obtained before any survey is conducted. If federal permitting is determined necessary for this project, the survey should also include an architectural survey of all properties within the direct or indirect effect areas of the Area of Potential Effect (APE). A report of investigation should be produced in conformance with the Secretary of Interior's Guidelines: Archeological and Historic Preservation for report standards. You may obtain lists of most professional archeologists in Texas on-line at: www.counciloftexasarcheologists.org/?page_id=5 or www.rpanet.org. Please note that other potentially qualified archeologists not included on these lists may be used.

Thank you for your cooperation in this review process, and for your efforts to preserve the irreplaceable heritage of Texas. **If you have any questions concerning our review or if we can be of further assistance, please contact Bradford Jones at 512/463-5865.**

Sincerely,

William A. Martin

for
Mark Wolfe, State Historic Preservation Officer
Executive Director

MW/bmj