Archeological Survey Report

Neches River Bridge from Archie Street to Old US 90
Jefferson & Orange Counties, Texas (Beaumont District)
TxDOT Rail Division, CSJ: 7220-01-001

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1.0 PROJECT DESCRIPTION AND MANAGEMENT SUMMARY

In December of 2015, on behalf of the Texas Department of Transportation (TxDOT), Hicks & Company conducted an intensive archeological survey for the construction of an additional rail bridge over the Neches River parallel to and north of the Kansas City-Southern (KCS) Railway lift bridge in Jefferson and Orange Counties, Texas. The proposed project would also involve construction of a second mainline track to allow for rail crossovers and realign industry connections in downtown Beaumont. The existing bridge averages seven to eight lifts per week, which result in train delays while ships navigate the river below. TxDOT conducted a feasibility study for the crossing of the Neches River in 2013. An Environmental Assessment and associated technical studies are currently underway and will fulfill the requirements under the National Environmental Policy Act (NEPA) of 1969 and Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended.

The western terminus of the proposed project is located approximately 170 feet north of the intersection of Archie Street and the existing KCS Railway line in downtown Beaumont; the eastern terminus is located at the Old US 90 alignment just west of Rose City (see Figure 1 and Appendix A: Design Plans). The length of the proposed facility is approximately 1.7 miles. The proposed rail bridge would be constructed just north of the existing bridge and would be a through-truss lift span bridge. According to the preliminary design plans in Appendix A, the proposed rail bridge would be supported by six-foot cast-in-place concrete piers on drilled shafts. The existing fendering system would be expanded to extend underneath the proposed bridge and would continue to provide 200 feet of horizontal clearance between channel fenders. The lift span would extend between two 55-foot-wide lift towers. The east bridge approach would utilize an embankment, while the west bridge approach would utilize either an embankment or a retaining wall in order to minimize impacts to the adjacent Riverfront Park. The existing rail bridge would remain in place and operational.

The Area of Potential Effects (APE) for this project is defined as the entirety of existing right of way (36.00 acres), proposed new right of way acres (3.90), permanent and temporary easements (21.50 acres), utility relocations, and proposed project specific locations, for a total APE of 61.40 acres. Depth of impacts for the proposed project would vary from entirely surficial to approximately 12 feet, depending on the requirements for approach construction (see Appendix A: Design Plans, Sheet 78). Drilling for bridge support piers at the river would include deeper impacts into geologic deposits.

In consultation with TxDOT, it was determined that 18.04 acres of the APE would require archeological survey, with 14.93 acres of existing and proposed right of way and 3.11 acres of a proposed temporary easement to be utilized as a staging area. The survey was conducted for TxDOT under Section 106 of the NHPA and under the Antiquities Code of Texas (ACT) in compliance with 36 CFR 800, 36 CFR 60, and 13 TAC 26. The proposed project was coordinated with the Texas Historical Commission (THC) and TxDOT under Antiquities Permit #7494.
Totaling approximately 66 field hours, archeological investigations were conducted on December 10 and 11, 2015. Due to access constraints at the time of the survey (standing water and lack of access to existing railroad right of way), field investigations were limited to 4.92 acres of the total APE. Investigations at accessible segments of the existing and proposed right of way located east of the Neches River channel noted, without exception, that these areas were entirely underwater as a combined result of recent rains within a marsh environment and landform modification associated with the construction and embankment of the existing KCS Railway. As a result of inundation, no subsurface testing was conducted within this surveyed area, and it was determined that backhoe access was infeasible. During the time of survey, access to the segment of the proposed temporary easement recommended for survey was unavailable. This area was assessed from the eastbound I-10 service road and noted to be mostly disturbed and currently in use as a cleared lot for storing heavy machinery and construction materials, with only the far eastern extent retaining vegetation.

Based on the results of the current survey, Hicks & Company recommended that no archeological historic properties (36 CFR 800.16(1)) or State Antiquities Landmarks (13 TAC 26.12) would be affected by the proposed project for the 4.92-acre area surveyed and for unsurveyed areas mapped as wetlands, approximately 4 acres. No further archeological investigations are recommended for these locations prior to construction. For unsurveyed segments of the APE, totaling approximately nine acres, it is recommended that an intensive archeological survey be conducted once right of entry and/or ground conditions permit. Both TxDOT and the THC concurred with these recommendations.

Josh Haefner was the Principal Investigator for this project. In addition to Josh Haefner, field crew for the investigations consisted of Will Pratt and Emily McCuistion. Josh Haefner authored the report on the investigations. All work was conducted under the terms and conditions of the Memorandum of Understanding (MOU) between TxDOT and the THC. No artifacts were collected during the investigations. All project notes, forms, and photographs will be curated at the Texas Archeological Resource Laboratory (TARL) in Austin, Texas. This report is offered in partial fulfillment of Antiquities Permit #7494.
Figure 1
Project Area Location

Neches River Bridge
Jefferson and Orange Counties
CSJ: 7220-01-001
USGS 7.5-minute Topographic Quadrangle: Beaumont East, Tx
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2.0 ENVIRONMENTAL SETTING

2.1 Physiography

The APE lies within the Texas Coastal Plain, a segment of the Western Gulf Coastal Plain, which extends from the Balcones Escarpment to the Mississippi River Valley and is bounded to the south by the Gulf of Mexico (Murray 1961). This region is characterized by nearly flat prairies and extensive coastal marshes with relief sloping towards the gulf at approximately five feet or less per mile (Fisher et al. 1973). The immediate area of the proposed project is generally flat with slopes increasing towards the Neches River, which bisects the APE.

2.2 Geology

The APE is located in an area of relict deltaic formations mapped as the Beaumont Formation, areas predominately sand (Qbs); fill and spoil deposits (Fs); and recent Holocene-age alluvial deposits (Qal) (see Figure 2). The Beaumont Formation is derived from fluvial deposits of clays, silts, and sands (Solis 1981). It includes mainly stream channel, point bar, natural levee, and backswamp deposits, and, to a lesser extent, coastal marsh, mud flat, lagoonal, recent and older lake, clay dune, and sand dune deposits. Holocene-age alluvial deposits within the vicinity of the APE are comprised of clay, silt, sand, gravel, and organic matter deposited as point bars, natural levees, mud flats, clay and/or sand dunes, and oyster reef deposits. Fill and spoil areas include material dredged for raising land surface above alluvium and barrier island deposits. The properties of these areas are highly variable and include mixed mud, silt, sand, and shell.

2.3 Soils

Soil data was retrieved from the United States Department of Agriculture Natural Resources Conservation Service (USDA NRCS) Web Soil Survey (http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey) on March 7, 2015. Four soil series have been mapped within the APE, including: League–Urban land complex, 0 to 1 percent slopes; Neches coarse sand, 2 to 5 percent slopes; Neel clay, 2 to 5 percent slopes, occasionally flooded, tidal; and the Neel–Urban land complex, 2 to 5 percent slopes, rarely flooded, tidal (see Figure 2). The League series consists of very deep, somewhat poorly drained, very slowly permeable soils formed on the flat coastal plains and parented from clayey fluvimarine deposits derived from the Beaumont Formation. The Neches series consists of very deep, well drained soils. These gently sloping soils formed in sandy and loamy sediments derived from dredge spoil banks. The Neel series consists of man-made soils mainly in marshes. They formed in clayey materials dredged from marshes and shallow bays. These gently sloping to moderately sloping soils are located on levees and spoil banks in the Gulf Coast Saline Prairies and the Gulf Coast Marsh.

2.4 Geoarcheological Potential

As a response to the final Wisconsin glaciations, Gulf Coast sea levels began dropping between 50,000 and 60,000 years before present (B.P.) (Fisher et al. 1973:16). At approximately 18,000 B.P., at its lowest point, sea levels were 400 feet lower than today with the coastline 50 miles south of its current location. At this time, the APE would have been an upland setting available for human occupation and
exploitation (Pearson 1983). With the Beaumont Formation long predating human occupation of the region, areas mapped as such have limited geoarcheological potential (Abbott 2001). Holocene alluvium coincides with the presence of humans in the Americas; as such, cultural deposits in these areas have the potential to be located in shallow or deeply buried contexts with high potential for stratification.

Both the Neches and Neel Series formed from redeposited dredge and spoil material. Because of their relocated nature, any housed cultural deposits would be expected to have compromised integrity. Geoarcheological probability of this series is considered extremely low. Derived from the Beaumont Formation, League soils have low geoarcheological potential. Additionally, any soil complex that is partially urban is generally expected to consist of anthro-modified sediment and would be considered to have low potential to contain intact archeological deposits.

2.5 Land Use and Vegetation

The majority of the APE recommended for survey consists of existing KCS Railway right of way and proposed new right of way to be acquired from the Navigation District of Beaumont (see Figure 4 in Section 4). A single temporary easement location consists entirely of property currently owned by Bo-Mac Real Estate, LLC. The KCS Railway right of way is utilized in support of the rail system and has been extensively disturbed by construction and maintenance of rail line, berms, and drainage ditches. An overhead utility line runs parallel to the KCS Railway and uses the KCS-owned right of way. The western extent of the APE, located west of the Neches River, includes urban housing and industrial complex development and associated underground and above-ground utilities and other associated infrastructure. A review of historic maps and aerial photos reveals this segment of the APE has been heavily utilized by the waterfront industry since 1900. Flora observed within the western extent of the APE was limited to sparse grasses and intermittent manicured oak trees, consistent with Texas Parks and Wildlife Department’s (2014) Urban High Intensity vegetation type. Vegetation observed within the APE east of the Neches River includes thick stands of tall grasses, oaks and loblolly pines, yaupon, palmetto, woody vines, and poison ivy. The surveyed segment of the APE located west of the Neches River exceeded 60 percent ground surface visibility while surface visibility for surveyed segments of the APE located east of the Neches was less than 5 percent, due to detritus and standing water.
Port of Beaumont

Beaumont Formation;
areas predominantly sand

Neches River Bridge

Jefferson and Orange Counties

CSJ: 7220-01-001

Soil Series

LuA - League-Urban land complex, 0 to 1 percent slopes
Ncc - Neches coarse sand, 2 to 5 percent slopes
NeA - Neel clay, 2 to 5 percent slopes, occasionally flooded, tidal
NuC - Neel-Urban land complex, 2 to 5 percent slopes, rarely flooded, tidal
W - Water

Sources: USDA-NRCS 2007; Study Team 2015.
3.0 PREVIOUS INVESTIGATIONS

Prior to field investigations, a records search was conducted at TARL, online at the THC’s Online Archeological Sites Atlas (the Atlas), and using the THC’s Archeological Reports Library to locate previously recorded archeological sites, surveys, NRHP-listed sites, and SALs.

3.1 Previously Conducted Investigations

According to the Atlas, four terrestrial archeological aerial surveys have been conducted within 0.62 mile (one kilometer) of the APE (see Figure 3). In December of 1980, the United States Army Corps of Engineers (USACE) conducted a series of large-sized aerial surveys for land management practices. In February and May of 2006, Horizon Environmental Services, Inc., (Horizon) conducted survey on behalf of the Jefferson County Drainage District. During this survey, Sites 41JF82 and 41JF83 were recorded. In 1989, an archeological survey was conducted for the proposed Riverfront Park Phase II Project by Bravos Valley Research Associates. No sites were recorded during this survey, and it was noted that the immediate area was highly disturbed (THC 2015). In 2011, SWCA conducted a small-sized aerial survey on behalf of EXP Energy Services. No sites were recorded during this survey. In addition to these aerial surveys, linear surveys have been conducted within one kilometer of the APE by the Interstate Commerce Commission (ICC) and by Horizon on behalf of Jefferson Refinery, LLC. No archeological sites were documented during either of these surveys.

According to data available from the THC’s Archeological Reports Library, four marine archeological investigations have been conducted within one kilometer of the proposed facility. The above-noted 1980 survey conducted on behalf of the USACE included a marine archeological component. During these investigations, five shipwreck sites were recorded, including two partially exposed wooden vessels (41JF55 and 41JF59) and three wooden barges (41JF56, 41JF57, and 41JF58) (Hoskins et al. 2007).

In 2003, PBS&J conducted remote-sensing investigations designed to identify historic properties, oyster reefs, pipelines, wells, and other obstructions within the Sabine-Neches Waterway. This survey was conducted in portions of Jefferson and Orange Counties, Texas, and Cameron Parish, Louisiana (see Figure 3) (Enright and Gearhart 2005). Potential anomalies that could represent underwater historic properties, including shipwrecks and submerged structures, were identified through a combination of magnetometer and side-scan sonar imaging survey. During this investigation, no anomalies that were considered to potentially be historic properties were identified within one kilometer of the APE.

In 2006, PBS&J conducted marine archeological investigations at Brakes Bayou and the Neches River in the immediate vicinity of I-10 to determine if any potentially historic shipwrecks could be impacted by a replacement of the I-10 Bridge (Hoskins et al. 2007). During this survey, a shipwreck, Site 41OR90, was discovered. Follow-up investigations were conducted in 2007 to assess this site’s eligibility for listing in the NRHP and as an SAL as further described below.
3.2 Previously Recorded Resources

According to the Atlas, three terrestrial archeological sites have been recorded within one kilometer of the proposed project: Sites 41JF82, 41JF83, and 41OR34. None of these three sites are within the APE of the proposed project.

41JF82

Recorded by Horizon during their 2006 survey, Site 41JF82 is the remnants of an industrial facility associated with past shipyard/wharf activities located on a west bank terrace adjacent to the Neches River (THC 2015). Two buried cultural zones were identified by Horizon: (1) an upper zone consisting of a thick deposit of shell hash that may represent a road base or perhaps construction fill, and (2) a lower zone consisting of a thick deposit of darkly stained clay littered with fragments of brick and lignite. Shipyard-like remnants were also noted mixed in with this debris suggesting a structure once stood at this location. Following this survey, the THC requested SAL/NRHP eligibility for Site 41JF82. Subsequent testing determined that Site 41JF82 was ineligible for inclusion on the NRHP and for listing as an SAL.

41JF83

Site 41JF83 is a historic-age trash scatter likely associated with the C.W. George’s Manufacturing Company and Sash, Door, & Blind factory that once operated in the adjacent area (THC 2015). Recorded by Horizon during their 2006 survey, backhoe trenching conducted at this site noted stained flat glass, bottle glass, soft and hard bricks, machine cut square nails, and miscellaneous unidentified iron materials between 51 inches (130 centimeters) to 63 inches (160 centimeters) below the ground surface. Subsequent testing excavations revealed that the cultural deposits were primarily jumbled debris that lacked integrity. As a result, portions of Site 41JF83 within Horizon’s project area were determined to be ineligible for formal designation as an SAL or for listing on the NRHP.

41OR34

Located on a low bluff near the intersection of I-10 and Baird’s Bayou, Site 41OR34 was first recorded in 1964 by Charles Bollich (THC 2015). During this recordation, it was observed that this site consists of three pimple mounds with subsurface cultural deposits consisting of lithic debitage and sherds. A site revisit in 1980 noted that the three pimple mounds remained intact, but more than half of the southern extent of the site had been destroyed by construction. A revisit in 1999 by TRC Mariah Associates did not encounter any elements of this site within the right of way of the I-10 road alignment. Sherds at this site were identified as Tchefuncte-like, suggesting that this site dates to the first half of the Early Ceramic Period of southeast Texas, approximately A.D. 150–450 (Ricklis 2004). The eligibility of this site for listing as an SAL or on the NRHP is undetermined.

In addition to the above-listed terrestrial archeological sites, 14 shipwreck sites have been recorded within one kilometer of the proposed facility. These sites are described below.
41JF55–41JF58

Four shipwrecks (41JF55–41JF58) recorded during the 1980 USACE survey (see Section 3.1) are located within one kilometer of the proposed project. Site 41JF55 consists of the remains of a wooden hull vessel. During recordation, the observed exposed section was noted to be in good condition (THC 2015). Site 41JF56 is a sunken wooden barge that is missing its decking. As a result, only the outer sides, bottom, and two inner bulkheads remain intact. This shipwreck is entirely exposed underwater (THC 2015). Site 41JF57 is similar in construction and intactness to Site 41JF56 as it too is a sunken wooden barge, located entirely underwater, and is missing its decking. Partially exposed above the waterline, Site 41JF58 is a wooden barge with a ferrous, hopper-type deck and three bulkheads. Sites 41JF55–41JF58 are not within the APE of the proposed project.

41OR90

In December 2006, while performing a marine remote-sensing survey of the Neches River on behalf of TxDOT, PBS&J located a shipwreck that was later designated as Site 41OR90. This wreck was recommended for further investigation to assess its eligibility for listing on the NRHP and as an SAL. Additional investigations were conducted in March of 2007 with side-scan sonar, multibeam bathymetric surveys, and underwater video documentation performed at the wreck site. Results of the sonar survey correlated with archival research that indicated that this vessel was one of the Emergency Fleet Corporation (EFC) Ferris-type steam ship fleet once harbored at Beaumont and constructed as a response to Allied merchant ship losses resulting from Germany’s submarine warfare during World War I (WWI) (Hurley 1927). Video and multibeam data revealed that the vessel is in a good state of preservation with workmanship detail still visible on wood elements and minimal signs of corrosion on the metal elements.

To be eligible for the National Register, a vessel must maintain integrity of location, design, setting, materials, workmanship, feeling, and association. In the case of wrecked vessels, integrity is maintained if enough of the vessel remains where architectural, technological, or other research concerns can be addressed. Results of the eligibility testing indicate that elements of Site 41OR90 retain sufficient integrity. Further, as potentially one of the best examples of Ferris-type ship produced specifically for WWI, a major federal undertaking with considerable economic impacts, Site 41OR90 was found to likely yield information important to prehistory or history (Hoskins et al. 2007). Therefore, it was determined that this site was eligible for listing on the National Register under Criterion D. Site 41OR90 is not within the APE of the proposed project.

Shipwrecks 1296 and 1297

Yet to be assigned trinomials, Shipwrecks 1296 and 1297 are posited to be located just south of I-10 within the Neches River. Little information is known about these shipwrecks as their locations have not been confirmed by marine archeological survey. However, they do appear on the U.S. Coast and Geodetic Survey 1969 nautical charts provided by the National Oceanic and Atmospheric Administration (NOAA 1969). Neither of these shipwrecks is within the APE of the proposed project.
Shipwrecks 2449–2455

Yet to be assigned trinomials, Shipwrecks 2449–2455 are located on the west bank of the Neches River just south of I-10. Though not recorded during marine archeological survey, aerial imagery including the 1930 Tobin Beaumont aerial photo, the 1938 General Land Office Beaumont aerial photo, and U.S. Geological Survey images for the area dating to 1989, 1996, and 1998 depict these vessels at the currently assumed location. The size and shape of these vessels are consistent with that of the WWI U.S. Shipping Board EFC vessels that were abandoned in the Neches River in the 1920s (Borgens, personal communication August 19, 2015). Shipwrecks 2449–2455 are not within the APE of the proposed project.

Cemeteries

No cemeteries are located within one kilometer of the APE.

3.3 Settlement Patterns

For the coastal region of southeast Texas, burial sites, shell middens and pimple mounds have been recorded as occurring, the latter two with frequency (Ricklis 2004; Abbott 2001; THC 2015). These site types have been recorded in soil series generally noted as having low geoarcheological potential. For example, as evidenced by a cluster of sites located approximately 4,000 meters from the APE of the proposed project, prehistoric campsites (Site 41OR50) and shell middens (Sites 41OR1, 41OR3, 41OR51, and 41OR88) have been recorded in locales mapped as the Neches and Larose Soil Series. Also, as evidenced by above-described Site 41JF82 and Site 41JF83, there is little conformity between soils and geology and potentially eligible, historic-period sites (THC 2015). Since its first settlement by Anglos during the 1820s, agriculture, manufacturing, and port activities in the Beaumont area have been nearly exclusively concentrated on the west bank of the Neches River (Block 1976; Isaac N.D.). Historic sites on the east bank in the vicinity of any of the alternatives would likely be associated with railroad construction or the riverine/maritime shipping industry.
Figure 3 has been redacted due to sensitive site material.
4.0 METHODS

4.1 Existing Disturbances

Recent satellite imagery reveals that differing degrees of disturbance occur within the APE. The very western extent of the APE includes urban housing and industrial complex development. Further, a review of historic maps and aerial photos revealed the project area had been heavily utilized by the waterfront industry since 1900. Land clearing and modification associated with these disturbances could have potentially compromised the integrity of the location of any surficial or near-surficial cultural deposits. The Neches River has been dredged intermittently through the years, with spoil redeposited along its west bank. Dredging could have affected undocumented marine archeological resources or compromised known, but unprotected, resources. Any redeposited spoil could have capped terrestrial resources, burying them to considerable depths, or displaced cultural materials from the channel itself. Further, surficial and near-surficial cultural deposits may have been subjected to vertical and horizontal movement and/or breakage, affecting integrity of material and design. Any of the above-noted existing disturbances would likely have displaced any present cultural deposits, possibly affecting integrity of material, design, and location.

4.2 Field Methodology

As discussed previously, both the prevailing geology and pedology of the area indicate that segments of the APE overlay areas that could contain intact archeological deposits with integrity of location and association. In consultation with TxDOT and the THC, it was determined that an intensive areal survey supplemented with shovel testing was warranted for these areas. Additionally, due to anticipated depth of impacts and potential for the presence of deeply buried prehistoric cultural deposits, backhoe trenching was deemed warranted for segments of the APE where anticipated impacts would extend below three feet into Holocene-age geology and soils of high to very high geoarchaeological potential in accessible, non-disturbed contexts. Further, prevailing data indicate that both prehistoric and historic sites with potentially intact deposits are possible in areas considered to have low geoarchaeological potential. In total, it was determined that 18.04 acres of the APE would require archeological survey, including 14.93 acres of existing and proposed right of way and 3.11 acres of a proposed temporary easement within a variable width right of way from approximately 100 to 200 feet (30 to 60 meters) (see Figure 4). Areas recommended for survey are on both public land (owned by the Navigation District of Beaumont [Port of Beaumont], the KCS Railroad, or the City of Beaumont) and private land (owned by Bo-Mac Real Estate, LLC.)

According to current THC/Council of Texas Archeologists (CTA) standards approximately 22 shovel tests would be required to assess the segments of the APE recommended for survey. Due to access constraints at the time of the survey (standing water and lack of access to existing railroad right of way for safety reasons related to railroad operation, and to the proposed temporary easement area located on land owned by Bo-Mac Real Estate LLC ), field investigations were limited to 4.92 acres of the 18.04 acres recommended for survey. Though hampered by existing conditions, investigators conducted survey in two transects spaced 2–30 meters apart as the accessible segments had an approximate width.
of 100 feet (30 meters). As a result of inundation, no subsurface testing was conducted, and it was determined that backhoe access was infeasible.

Access to the APE beyond the area surveyed was attempted from all dry-land access points available to the investigators during the time of survey. However in many areas, pockets of water approached three feet (one meter) in depth with loose mud bottom conditions. As these depths and conditions were also reported during field investigations for a wetlands study associated with proposed project (TxDOT 2015), it is posited that for areas of APE mapped as wetlands, these conditions are pervasive. According to U.S. Fish and Wildlife Service (2015), 7.30 acres, or approximately 40 percent, of the areas recommended for survey are mapped as wetlands (Figure 5).
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FIGURE 5
AREAS OF APE ACCESSED & WETLAND DATA
Neches River Bridge
Jefferson and Orange Counties
CSJ: 7220-01-001
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5.0 RESULTS OF FIELD INVESTIGATIONS

Archeological investigations of the APE were conducted on December 10 and 11, 2015. Investigations initiated at the easternmost terminus of the proposed project, with archeologists surveying in transects spaced approximately 25–30 meters apart. Along this segment it was noted that the entirety of the APE was inundated by standing water (see Figures 6 and 7). At a distance of approximately 380 meters southwest of the eastern terminus, depth of standing water was observed to approach 50 centimeters in some areas, prohibiting further access to additional segments of the APE located east of the Neches River (see Figure 8). As a result of inundation, no subsurface testing was conducted, and it was determined that backhoe access was infeasible. No prehistoric or historic artifacts or cultural features were observed within the surveyed portion of this segment of the APE. Much of the immediate area was littered with late twentieth-century trash including tires, aluminum cans, glass and plastic bottles, and miscellaneous metal.

Figure 6: Standing water facing south at eastern terminus of APE.
Figure 7: Standing water within APE facing southwest approximately 350 meters west of eastern terminus of the proposed project.

Figure 8: Standing water facing northwest approximately 200 meters west of eastern terminus of the proposed project.
Encompassing an area approximately 0.16 acres in size, the surveyed APE along the west bank of the Neches was observed to consist of a modified landform where local sediment had been consolidated to form a raised berm. Shell hash and gravel intermittently cover the surface of this landform (see Figure 9). Due to landform modification and the presence of underground utility markers indicating that the area is bisected by a high-pressure gas line, shovel testing was not performed at this location (see Figures 10 and 11).

Figure 9: Overview of far western extent of survey area facing south along the bank of the Neches River.
Figure 10: Overview of markers for underground utility lines that bisect the APE.

Figure 11: Overview of markers for underground utility lines within the APE.
During the time of survey, access to the segment of the proposed temporary easement recommended for survey located just south of the eastbound I-10 service road was not available. This area was assessed from the service road and was noted to be currently in use as a cleared lot for storing heavy machinery and construction materials, with only the far eastern extent retaining vegetation (see Figure 12).

Figure 12: Overview of eastern extent of proposed temporary easement facing south from the I-10 eastbound service road.
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6.0 CONCLUSION AND RECOMMENDATIONS

Pedestrian survey of the accessible portions of APE (4.92 acres) for the Neches River Bridge project resulted in recordation of no prehistoric or historic archeological sites or features. Due to heavy inundation and limited access, certain segments of the APE, a total of 13.12 acres, were not accessible for survey during the field investigations discussed herein. Observations made of inaccessible portions of the APE from the areas that were accessible suggest that these areas are within a heavily inundated marsh environment possessing limited potential to contain cultural deposits, either prehistoric or historic that retain integrity of location, design, setting, materials, workmanship, feeling, or association (36 CFR 60.4).

Based on the results of the current survey, Hicks & Company recommended that no archeological historic properties (36 CFR 800.16(1)) or State Antiquities Landmarks (13 TAC 26.12) would be affected by the proposed project for the 4.92-acre area surveyed and for unsurveyed areas mapped as wetlands by the USFWS, approximately four acres in size, and that no further archeological investigations are recommended for these locations prior to construction. For unsurveyed segments of the APE that are not mapped as wetlands, totaling nine acres in size, it was recommended that an archeological survey be conducted once right of entry and/or ground conditions permit (see Figure 13). Both TxDOT and the THC concurred with these recommendations. In accordance with 36 CFR 800.4, Hicks & Company has made a reasonable and good faith effort to identify archeological historic properties in the APE. Hicks & Company offers this draft report in partial fulfillment of Antiquities Permit #7494. No cultural materials were collected during the survey. All project related notes, forms, and photographs will be permanently curated at TARL in Austin, Texas.
FIGURE 13
AREAS RECOMMENDED FOR ADDITIONAL WORK

Neches River Bridge
Jefferson and Orange Counties

CSJ: 7220-01-001
7.0 REFERENCES CITED

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United States Fish and Wildlife Department (USFWS)
2015 *National Wetlands Inventory. Wetlands Mapper.*
APPENDIX A

DESIGN PLANS
STATE OF TEXAS
DEPARTMENT OF TRANSPORTATION

PLANS OF PROPOSED
RAILROAD IMPROVEMENT

ALTERNATIVE E-1
JEFFERSON & ORANGE COUNTY
LIMITS FROM GULF COAST RTE TO TOWER 31

ALTERNATIVE E-1
CSJ 7220-01-001

TOTAL LENGTH OF PROJECT = 8652 FT. = 1.68 MILES

TYPE OF WORK: FOR THE CONSTRUCTION OF A NEW 2ND MAINLINE TRACK AND LIFT BRIDGE OVER NECHES RIVER, PROVIDE CROSSOVERS AND REALIGN INDUSTRY CONNECTIONS.

"NOT FOR CONSTRUCTION"

HORIZONTAL CONTROL IS BASED ON NAD 83(2011)
VERTICAL CONTROL IS BASED ON NAVD 88
ALL BEARINGS AND DISTANCES ARE BASED ON THE TEXAS STATE PLANE COORDINATE SYSTEM, SOUTH CENTRAL ZONE. ALL DISTANCES AND COORDINATES SHOWN ARE SURFACE AND MAY BE CONVERTED TO GID BY DIVIDING BY A COMBINED SCALE FACTOR OF 1.00007.

NOTE:
TYPICAL SECTION - TANGENT APPROACH SPAN
STA. 40360+01.59 TO 40371+21.54
STA. 40374+96.54 TO 40375+41.54
STA. 40375+86.54 TO 40377+66.53

TYPICAL SECTION - THRU PLATE GIRDER
STA. 40375+41.54 TO 40375+86.54