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# Phase One Cultural Resource/Archaeological Investigation Results, Northern Natural Gas, Bakersfield Compressor Station Project, Pecos County, Texas

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# Phase One Cultural Resource/Archaeological Investigation Results, Northern Natural Gas, Bakersfield Compressor Station Project, Pecos County, Texas (Redacted Report Version)

**Prepared for Stantec Consulting Services Inc.**

**August 30, 2017**

**Texas Antiquities Field Study Permit #8038**

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## Abstract

The following report describes the results field and literature research conducted as part of a Phase One Cultural Resource/Archaeological Investigation requested by Stantec Consulting Services Inc., (Stantec) on behalf of Northern Natural Gas Company (Northern) for a proposed pipeline and future location of a planned compressor station and interconnect station to be located south of US Interstate 10 in rural Pecos County, Texas.

In compliance with requirements of Federal (Sections 106 and 110 of the National Historic Preservation Act) and applicable elements of Texas State laws (Texas Statues 138.40, 138.665, and 116B), a Phase I Cultural Resources (intensive survey) study was made for the Project area to investigate the presence or absence of archeological materials. Since the Project is on state-owned land, a Texas Antiquities Field Study Permit was approved by Texas Historical Commission (Permit # 8038).

The majority of the Project corridor is located in the Trans-Pecos area. A portion of the surveyed area includes an existing roadway and utility line corridors that have been previously graded and heavily disturbed from the excavation and installation of these facilities during the latter half of the 20$^{th}$ century. No standing structures are present in the immediate Project corridor.

The described investigation identified two rock pile/cairn human grave size surface features that are located in the original environmental buffer zone. These features are not identified as graves but are the size and type of other grave examples seen by the Principal Investigator (John G. Hodgson).

Following consultation with Northern and THC, the Project area was redefined to exclude the general area of the rock pile/cairn features from the environmental buffer area. The cairn piles are now located more than 100 feet from the nearest construction workspace and are on the opposite side of the road from any construction related activity. The locations have both been reported to Texas Archaeological Research Laboratory (TARL) and assigned the trinomial archaeological site numbers 41-PC-0821 (Feature 1) and 41-PC-0822 (Feature 2). The sites were not investigated beyond identification as archaeological features. As a result, both sites been reported to TARL and having “undetermined” NRHP eligibility.

The two features are outside of the area proposed for ground disturbance and will not be physically affected by the proposed Project activities. To protect the two features, Northern will place “no project access” signs along the western side of the access road prior to the start of construction. No construction-related traffic will be allowed on the west side of the road.

Aside from these two features, the survey did not locate any archaeological or historic cultural resources within the Project area. Based on study findings, the current Project design will have no effect on historic properties. As a result of the investigation, the principal investigator recommends that no further archaeological or cultural resource investigations be required prior to proceeding with planned construction for the described Project.

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## Introduction

The following report describes the results of a Phase One Cultural Resource Investigation (Intensive Survey) conducted for the proposed Northern Natural Gas Company (Northern) Bakersfield Compressor Station Project (Project). The investigation was made to identify the presence or absence of cultural resources within the Project area and to determine the potential for adverse effect on any archeological and other cultural materials either listed in, or potentially eligible for, the National Register of Historic Places (NRHP).

The study was made in compliance with requirements of Federal (Sections 106 and 110 of the National Historic Preservation Act) and applicable elements of Texas State laws (Texas Administrative Code, Title 13, Part 2).

Prior to fieldwork, a Texas Antiquities Research Application for Archaeology was completed by the Principal Investigator and the University of Texas (land-holder).

The investigation was directed by John G. Hodgson as Principal Investigator. As required by Federal law, the principal investigator meets all standards of the Secretary of the Interior's criteria for "Archaeologist" as specified in Appendix A of 36 CFR 61.

All aspects of the investigation were conducted in accordance with methodological guidelines mandated in the Archaeological Survey Standards for Texas by the Texas Historical Commission (THC: not dated) and Guidelines for Cultural Resource Management Reports published by the Council of Texas Archaeologists (CTA: not dated). These methods are endorsed by the THC and provide the standard for conducting legislative compliance related archaeological research in Texas. Since the Project is on state-owned land, a Texas Antiquities Field Study Permit was approved by Texas Historical Commission (Permit # 8038).

As presented under the Texas Antiquities Permit-Terms and Conditions and Texas Administrative Code Title 13, Part 2, Chapter 26.C.26.17, Phase One Archaeological Services Inc. will be responsible for preparing all specimens, artifacts, materials, samples, and original field notes, maps, drawings, and photographs for curation at the Texas Archaeological Research Laboratory (TARL). A housing agreement is provided with this research design and a curation form will accompany the collection and be sent to the TARL and THC.

Literature research for the proposed Project was conducted by the Principal Investigator prior to fieldwork using the THC Atlas database, other on-line resources and in consultation with the Annie Riggs Museum in Fort Stockton prior to the field investigation.

The archaeological field investigation took place over the period of eight hours on the 30th of March 2017 with a crew of two individuals including John Hodgson as Principal investigator and John Bass as a field assistant.

During the investigation, the entire Project area (environmental clearance boundary) was surveyed. The general area is in open plain surrounded by mesas to the south of Tunas Creek and US Interstate 10. The investigation did not locate any archaeological resources or historical structures within the immediate boundaries of the proposed Project construction.

Two surface features, the size and shape of human graves or "cairn burials" were observed within the original environmental buffer zone of the proposed survey area (Figures Twelve-Fifteen). The two features, recorded during the field investigation as "Feature One" and "Feature 2".

Following consultation with Northern and THC, the Project area was redefined to exclude the area of the burials from the environmental clearance boundary. The cairn piles are now located more than 100 feet from the nearest construction workspace and are on the opposite side of the road from any construction related activity. The locations have both been reported to TARL and assigned the trinomial archaeological site numbers 41-PC-0821 (Feature 1) and 41-PC-0822 (Feature 2). The sites were not investigated beyond identification as archaeological features. As a result, both sites been reported to TARL and having "undetermined" NRHP eligibility.

The two features are outside of the area proposed for ground disturbance and will not be physically affected by the proposed Project activities. To protect the two features, Northern will place "no project access" signs along the western side of the access road prior to the start of construction. No construction-related traffic will be allowed on the west side of the road. Aside from the two site locations described above, no other cultural features were noted during the survey.

Based on study findings, the current Project will not affect historic properties. The Principal Investigator recommends that the planned construction be allowed to continue as proposed without the requirement of further archaeological or other cultural resource investigations.

**Project Location**

The Project area is located in eastern Pecos County south of STH 10, to the southwest of the City of Bakersfield and to the southeast of Fort Stockton (Figures One and Two). The latitude/longitude coordinates for the compressor station are GPS: 30.87569, -102.38553.

**Project Description**

Northern plans to install new aboveground facilities including: a compressor station with buildings with a maximum height of 40 feet; an exhaust stack approximately 50 feet in height; a fence; and an interconnect site with buildings (15 feet or less in height). Northern will also install below-grade natural gas pipeline to interconnect the new facilities located near Fort Stockton, Texas.

The new compressor station will be located on approximately 11.02 acres with an additional 7.38 acres of temporary workspace. The proposed interconnect pipeline will extend approximately 1.5 miles between the new compressor station facility and the interconnect location. The interconnect facility will be constructed on an estimated 200 by 200-foot lot near an existing natural gas pipeline. Northern plans to utilize an existing road (BP West Access Road) during construction and operation. Approximately 206.5 acres within Northern's environmental clearance boundary were surveyed in March 2017.

## Project Natural Environment

The proposed Project area is located in Texas' Trans-Pecos and Edwards Plateau Land Resource Area (Texas State Historical Association 2017). Pecos County is located in the Trans-Pecos Wildlife District. This district is characterized by both mountain and desert habitats., resulting in a wide range of vegetation diversity, which includes 268 grass species and 447 species of woody plants (http://tpwd.texas.gov).

Notable fauna in this district include Mule Deer, white-tailed deer, pronghorn antelope, desert bighorn sheep, and javelina, as well as mountain lions, black bear, and bobcats (http://tpwd.texas.gov). Vegetation within the Project area consists of desert shrub, composed of creosote flats, yucca, and cholla (http://tpwd.texas.gov).

The underlying geology of the Project area consists primarily of Quaternary sand, with a minor component of limestone at the foot of Big Mesa (Stoeser et al. In Press; Bureau of Economic Geology 1992). Soils for the investigated area are sandy and rocky. Rock outcrops are present on the western edge of the survey area (USDA NRCS 2017- See Appendix A).

The elevation for the general region ranges from approximately 2,500 to 2,600 feet above mean sea level, with highest elevation nearby at the large mesa "Big Mesa" located approximately 0.75 mile to the west of the investigated area. The closest source of perennial water is Tunas Creek which drains into the Pecos River located to the north of the investigated area.

## Literature Investigations

As part of the Phase I investigation, modern and historical documents were examined. These sources included 19th and 20th century maps, land use records, and descriptive histories for the general area. During the literature review the following sources were reviewed:

1) United States Geological Survey (USGS) 7.5' series topographic maps.
2) Texas Archaeological Sites Atlas and Historical Data Search.
3) NRHP listings for Pecos County, Texas.
4) Historic topographic maps (e.g., USGS 1929).

Historical topographic maps that were reviewed for this Project include the USGS *1929 Independence Draw* topographic map and USGS 1954 *Skyscraper Peak, Texas* 1:24,000-scale Series topographic map.

These maps do not depict any buildings or structures to have been or to be located within the Project area. Additionally, no historic or formerly extant cemeteries were identified as being within the Project area.

The far southern portion of the project area intersects with the former corridor of the "Old Spanish Trail", an early 20th century coast to coast highway extending from Florida to California. Portions of the former highway outside of the project area have been assigned the archaeological site trinomial 41-PC-616. Based on the Texas Atlas information, the section of the highway

located within the project area has not been designated as an archaeological site. The proposed project will not physically disturb the former highway corridor.

A review of aerial imagery dated from 1953 indicates the Project area has seen minimal to no development for the past 64 years, aside from the oil well development to the northeast and wind farms to the south. Available documents do not record the presence of historic structures or locations of archaeological interest situated in the immediate area of the proposed Project.

*Texas Cultural Resources and Archaeological Sites Atlas Database*

A review of the standing structures and historical point of interest files available on the Texas Sites Atlas indicated that there are no cultural resources in this category reported within the immediate the Project area. Additionally, no historic standing-structures or other historical properties currently listed on the NRHP are located within a one-mile radius of the proposed Project area.

A review of the archaeological database available on the Texas Archaeological Sites Atlas indicates that 7 prehistoric archaeological sites: 41-PC-603 (Burned Rock Concentration), 41-PC-606 (Burned Rock Concentration), 41-PC-607 (Rock Shelter), 41-PC-608 (Rock Shelter), 41-PC-612 (Hearths and FCR concentrations), 41-PC-613 FCR concentrations, Burned Rock Mound and lithic scatters), and 41-PC-614 (FCR concentration and Campsite) are located either within the one-mile or within proximity to the one-mile search radius from the Project area. Archaeological site locations are confidential information and are not depicted or presented in this report.

No other previously reported archaeological sites were identified within one mile of the Project area.

Several previous cultural resource surveys have been conducted within one mile of the proposed Project area. The location of the previous cultural resource surveys is shown on Figures One and Two.

**Investigation Research Design**

The investigation was conducted as an “intensive survey” focused on the identification of cultural resources that are located within the designated direct Area of Potential Effect (APE) based on the potential for ground disturbance of the planned Project and the indirect APE dependent on physical conditions and topography etc., surrounding the Project area.

The direct area of potential adverse effect was defined as the actual areas of physical ground disturbance (e.g., construction and roadways, etc.). The indirect APE was defined as the general area surrounding the immediate construction area where the planned facilities will be visible. For the purposes of this investigation, the direct APE was of primary concern as there are no standing structures or other historic locations in proximity to the Project area or within a one-mile search radius.

The goal of the investigation was to identify the presence or absence of archaeological and historic resources such as standing structures and historical locations in order to determine the potential for adverse effect on any cultural resources either listed in or potentially eligible for the National Register of Historic Places (NRHP).

During the first task of the research design, a background investigation was completed with the goal of identifying documented and previously identified prehistoric and historic cultural resources located in the immediate areas of proposed construction. The investigation also identified resources within a one-mile search radius from the outer edges of the proposed Project area using the THC Atlas database.

No archaeological sites or other cultural resources are presented in the THC Atlas Database within the immediate area of the proposed Project activities (existing utility corridors). The investigation did identify a large number of known cultural resources within one mile or less of the Project area. The second goal of the research design was therefore accomplished: planning the field investigation methods and creating expectations for cultural resource types and locations within the Project APE.

Following National Park Service guidelines for Phase I archaeological investigations, an intensive survey for the proposed Project area was planned. Field methods used during the field survey were dependent on levels of surface visibility and ground cover. The field work involved survey of the entire Project area using pedestrian survey methods. The pedestrian survey consisted of transects placed at appropriate distances to allow for the visual overlap of the ground surface that can be viewed by each surveyor on each transect line, generally no more than a three-meter interval.

The third task of the research design was accomplished after the field investigation. This task involved the analysis of data from the Project area field survey and background investigations. Following analysis, the information was placed into its cultural and temporal contexts.

The final task of the research design was the generation of a final report presented in this document which discusses the investigation's findings and identifies any potential direct and indirect adverse effects to cultural resources.

**Field Investigations**

Following the plan of the research design, the archaeological field investigation was conducted for the Project area (Figure Three) on March 30th, 2017, using pedestrian walk-over survey methods.

The majority of the investigated area displays open and vegetation-free exposures with 90-100% visibility (Figures Five-Sixteen). The entire Project area was walked using pedestrian survey methods in transects at less than three-meter interval.

During the course of the field investigation, no prehistoric or historic period artifacts (aside from 20th century trash- Figures Seventeen and Eighteen), archaeological features, or other cultural resources were observed in the immediate area of the proposed construction.

Two surface features, similar to the size of human graves or rock cairn burials were observed on the western side of the investigation area within the environmental clearance boundary. These features were not positively identified as human burials but are not natural or made from bulldozer scraping etc.

The locations of the two surface features have both been reported to the TARL and assigned the trinomial archaeological site numbers 41-PC-0821 and 41-PC-0822. In order to minimize the potential for disturbance, Northern has redefined the Project boundaries to exclude the area of both of the archaeological sites.

The former route of the "Old Spanish Trail" highway, a roadway that was constructed in the early 20th Century and ran from San Diego, California to St. Augustine Florida is located at the southern end of the Project area (Figure Four). Portions of the former highway outside of the project area have been assigned the archaeological site trinomial 41-PC-616. Based on the Texas Atlas information, the section of the highway located within the project area has not been designated as an archaeological site. The proposed project will not physically disturb the former highway corridor.

Portions of the old highway corridor located within the Project area are now used as an access road to a ranch house located to the east of the investigated area. The former roadway will not be impacted by the proposed Project activities.

Aside from the two site locations and the "Old Spanish Trail", no other cultural features were noted during the survey.

**Figure One (Redacted): Project location, one-mile search radius, previous surveys and surface features plotted on USGS 7.5 Topographic Map sections (ArcGIS- sections of USGS 1969a,1969b,1969c, and 1969d).**

**Figure Two (Redacted): Orthographic image showing Project location, one-mile search radius, previous surveys and surface features investigation (surveyed) area.**

**Figure Three (Redacted): Orthographic image showing the Project area and different proposed construction activities (Image courtesy of Stantec).**

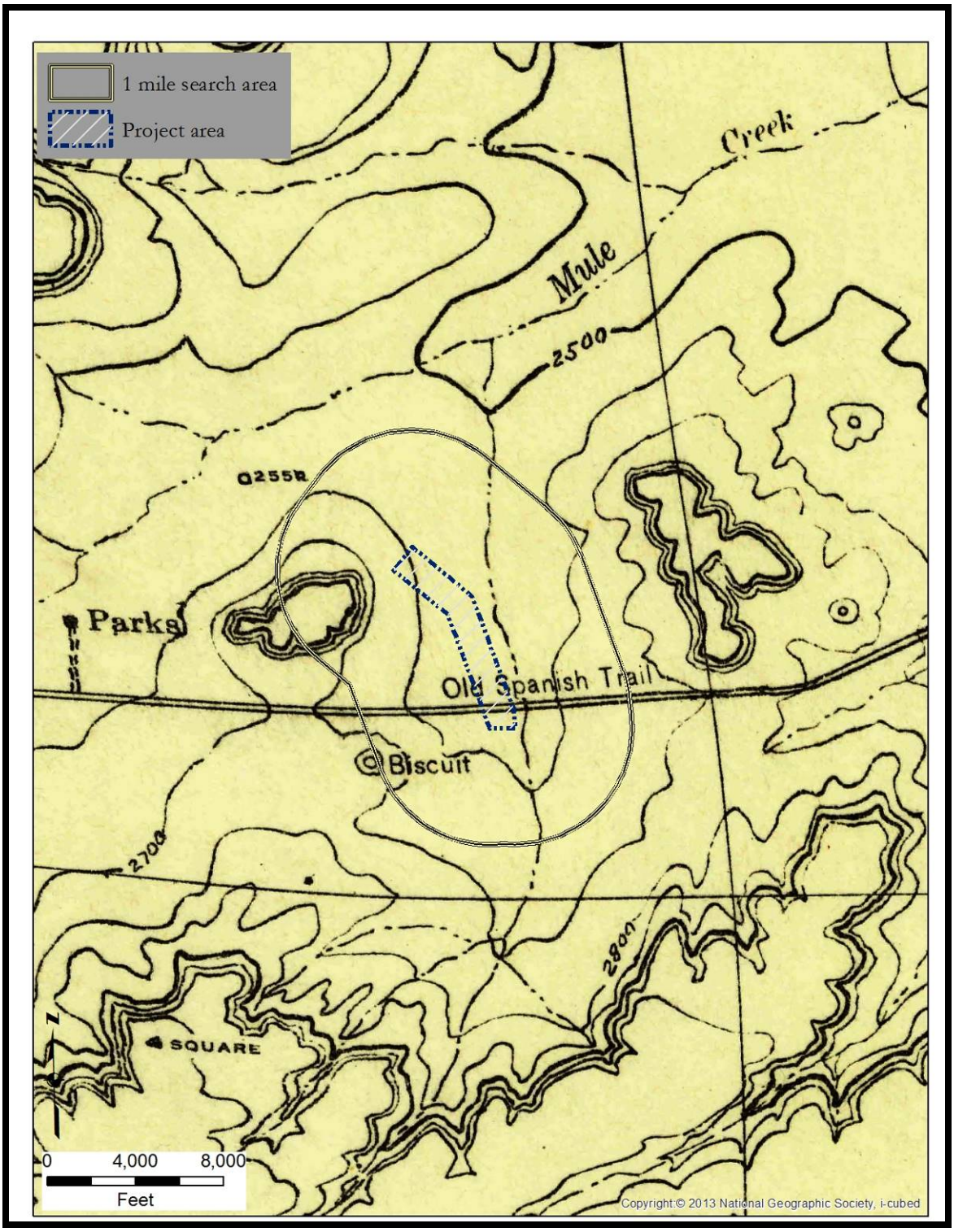


**Figure Four: Historic 1929 topographic map showing the Project area and the "Old Spanish Trail" early 20th century roadway (USGS 1929).**

**Figure Five: Example of survey conditions for the majority of Project area. View to south.**

**Figure Six: Example of surface conditions in the southern Project area.**

**Figure Seven: Example of surface conditions at the northern edge of the Project Area.**

**Figure Eight: Modern road at southern end of Project area. View to south,**

**Figure Nine: Typical example of surface conditions on western edge of survey area. View to north.**

**Figure Ten: Example of surface conditions in the southeastern survey area. View to northwest.**

**Figure Eleven: Trail or early roadway to the north of the "Old Spanish Trail". View to northeast.**

**Figure Twelve (Redacted): Rock cairn/pile recorded as Feature One (41-PC-0821). View to south.**

**Figure Thirteen (Redacted): Rock cairn/pile recorded as Feature One (41-PC-0821). View to west.**

**Figure Fourteen (Redacted): Rock cairn/pile recorded as Feature Two (41-PC-0822). View to west.**

**Figure Fifteen (Redacted): Rock cairn/pile recorded as Feature Two (41-PC-0822). View to south.**

**Figure Sixteen: Javelina wallow area and example of survey area conditions. View to west.**

**Figure Seventeen: Typical mid-20th century surface find within survey area.**

**Figure Eighteen: Typical mid-20th century surface find within survey area.**

**Study Results and Recommendations**

Based on the results of investigation, the proposed construction and operation of the Project will not affect historic properties (identified archaeological sites, historical materials, or other cultural resources).

In response to study findings, the Principal Investigator does not recommend any further cultural resource or archaeological investigations to be conducted at the proposed Project location.

Two potential cultural features "Feature One" (41-PC-0821) and "Feature Two" (41-PC-0822) were observed within the original environmental buffer area. Following consultation with Northern and THC, the Project area was redefined to exclude the area of the burials from the environmental clearance boundary. The cairn piles are now located more than 100 feet from the nearest construction workspace and are on the opposite side of the road from any construction related activity. To protect the two features, Northern will place "no project access" signs along the western side of the access road prior to the start of construction. No construction-related traffic will be allowed on the west side of the road.

It is important to note that any modifications to the Project design may require additional investigations and a modified survey report. If changes are made to plans, personnel from THC should be consulted to ensure that compliance standards have been met prior to any construction at the proposed Project location.

In the event any archaeological materials are encountered during the Project, it is recommended that all construction activities be brought to a halt and the Principal Investigator or the THC should be consulted prior to continuing work.

Pursuant to Federal and Texas State laws, should grave markers or human skeletal remains be encountered during construction, all activities in the find area are required to cease immediately and THC must be contacted at for further instructions at 512-463-5853.

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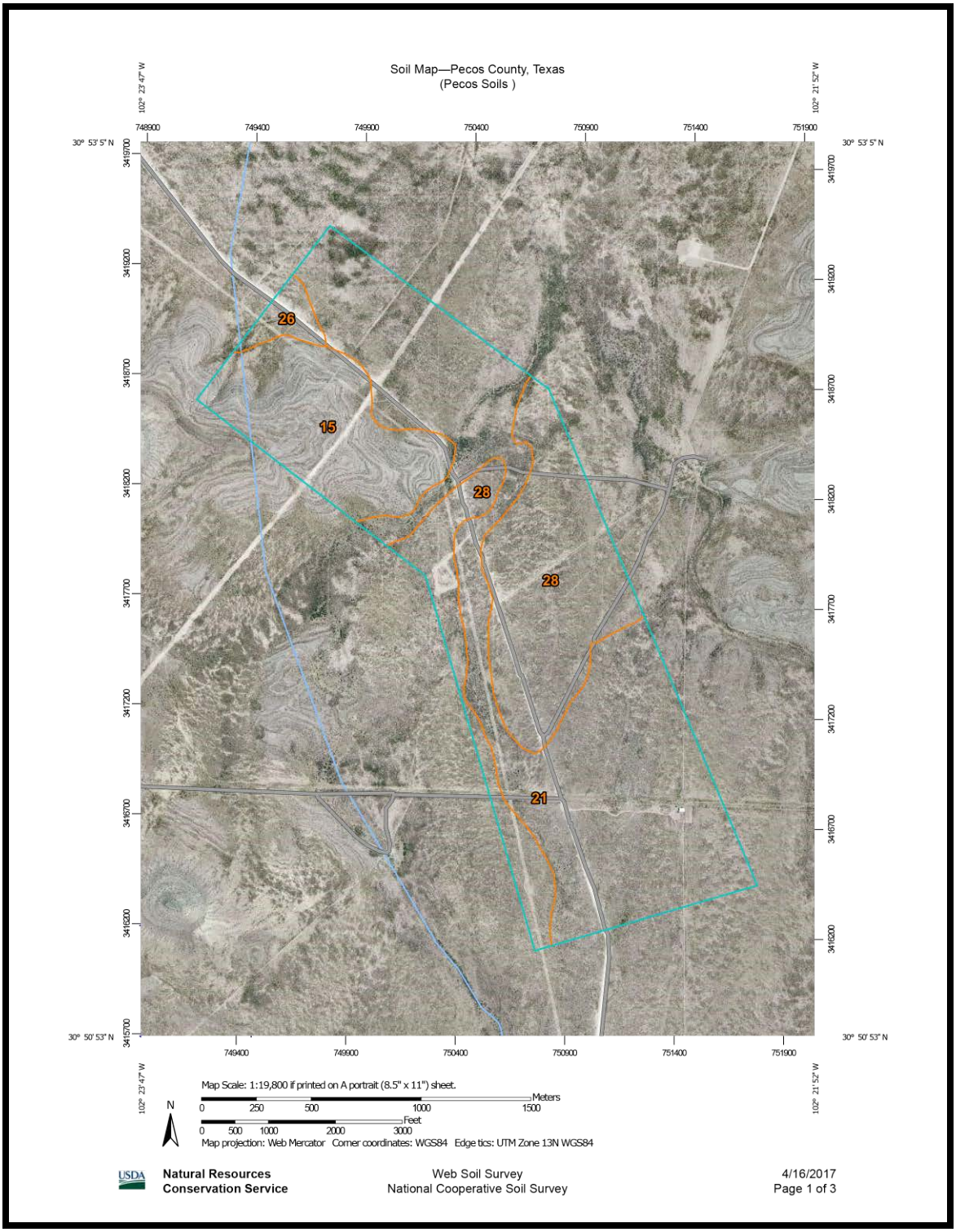
1969b Bootleg Canyon, Texas (Map). Series 7.5 Quadrangle, 1:24000 scale Topographic map. USGS Publishing, Reston, Virginia.

1969c Sherbino Mesa, Texas (Map). Series 7.5 Quadrangle, 1:24000 scale Topographic map. USGS Publishing, Reston, Virginia.

1969d Skyscraper Peak, Texas (Map). Series 7.5 Quadrangle, 1:24000 scale Topographic map. USGS Publishing, Reston, Virginia.




**A-1**: **NRCS Soil Data for the general Project area.**

**A-2: NRCS Soil Data for the general Project area.**

## Map Unit Legend

| Pecos County, Texas (TX371) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 15 | Lozier-Rock outcrop association, steep | 131.1 | 16.2% |
| 21 | Reagan-Hodgins association, nearly level | 427.6 | 52.8% |
| 26 | Sanderson-Upton complex, 1 to 8 percent slopes | 16.1 | 2.0% |
| 28 | Upton association, gently sloping | 234.9 | 29.0% |
| **Totals for Area of Interest** | | **809.7** | **100.0%** |



**A-3: NRCS Soil Data for the general Project area.**