Proposed Clinker Production Increase at the CEMEX Construction Materials South, LLC, Balcones Cement Plant, Comal County, Texas

Cultural Resources Review

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ABSTRACT

Horizon Environmental Services, Inc. (Horizon), has been contracted to provide a cultural resources background review for the proposed upgrade of the existing Balcones Cement Plant located at 2580 Wald Road, New Braunfels, Comal County, Texas, 78132. The Balcones Cement Plant is owned and operated by CEMEX Construction Materials South, LLC (CEMEX), and the existing CEMEX facility consists of 2 cement kilns, raw and finish mills, clinker coolers, and ancillary material transfer equipment. CEMEX is proposing to authorize the use of additional alternate fuels for both cement kilns (Kiln Nos. 1 and 2), including engineered "Sharps" (including plastic) and rubberized asphalt; to increase Kiln No. 2 clinker production; and to authorize upgrades to the main kiln burners in Kiln Nos. 1 and 2 to multipath adjustable units. The production upgrades would improve kiln fuel efficiency; however, CEMEX is not proposing a production increase related to this upgrade, no physical changes to the existing kiln system would be required, and no ground disturbance would be required to install the upgrades to the existing kilns.

As the proposed upgrades would require a Prevention of Significant Deterioration (PSD) permit issued by the US Environmental Protection Agency (EPA), the undertaking falls under the regulations of Section 106 of the National Historic Preservation Act (NHPA) of 1966, as amended, which is invoked when federal funds are utilized or when federal permitting is required for a proposed project. The NHPA states that the Advisory Council for Historic Preservation (ACHP) and the Texas Historical Commission (THC), which serves as the State Historic Preservation Office (SHPO) for the state of Texas, must be afforded the opportunity to comment when any cultural resources potentially eligible for inclusion in the National Register of Historic Places (NRHP) are present in a project area affected by federal agency actions or covered under federal permits or funding.

In November 2012, Horizon conducted a cultural resources background review for the proposed project. The background review examined an area extending 1.0 mile from the proposed kiln site. Two previously recorded archeological sites, 41CM107 and 41CM332, are located within the 1.0-mile review radius; however, both of these sites are located outside the proposed kiln upgrade location. Both sites were recommended as ineligible for listing on the NRHP and/or for designation as State Archeological Landmarks (SAL) when they were originally recorded in 1978 and 2011, respectively, and both sites have been either largely or entirely destroyed from prior industrial development. Neither site would be affected by the

proposed undertaking. No cemeteries, listed NRHP properties or districts, or SALs were identified within the 1.0-mile review radius or at the location of the proposed kiln upgrades.

Furthermore, the location of the 2 existing cement kilns on the Balcones Cement Plant was surveyed for cultural resources in 1978 prior to construction of the cement plant. No cultural resources were recorded at the location of the kilns during this prior survey.

Based on the extent of prior disturbances on the proposed project site resulting from construction of the existing Balcones Cement Plant and its ancillary facilities and the limited scope of the proposed upgrades to the 2 existing cement kilns, the proposed undertaking would have no potential to adversely affect any significant cultural resources. The portion of the Balcones Cement Plant in which the 2 existing cement kilns are located was surveyed for cultural resources in 1978 prior to construction of the plant, and no cultural resource sites were recorded at this location. It is Horizon's opinion that the proposed project site does not require any further cultural resources investigations and that no archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected.

TABLE OF CONTENTS

LIST OF FIGURES

Page

LIST OF TABLES

Page

1.0 INTRODUCTION

Horizon Environmental Services, Inc. (Horizon), has been contracted to provide a cultural resources background review for the proposed upgrade of the existing Balcones Cement Plant located at 2580 Wald Road, New Braunfels, Comal County, Texas, 78132. The Balcones Cement Plant is owned and operated by CEMEX Construction Materials South, LLC (CEMEX), and the existing CEMEX facility consists of 2 cement kilns, raw and finish mills, clinker coolers, and ancillary material transfer equipment. CEMEX is proposing to authorize the use of additional alternate fuels for both cement kilns (Kiln Nos. 1 and 2), including engineered ―Sharps" (including plastic) and rubberized asphalt; to increase Kiln No. 2 clinker production; and to authorize upgrades to the main kiln burners in Kiln Nos. 1 and 2 to multipath adjustable units. The production upgrades would improve kiln fuel efficiency; however, CEMEX is not proposing a production increase related to this upgrade, no physical changes to the existing kiln system would be required, and no ground disturbance would be required to install the upgrades to the existing kilns (Figures 1 and 2).

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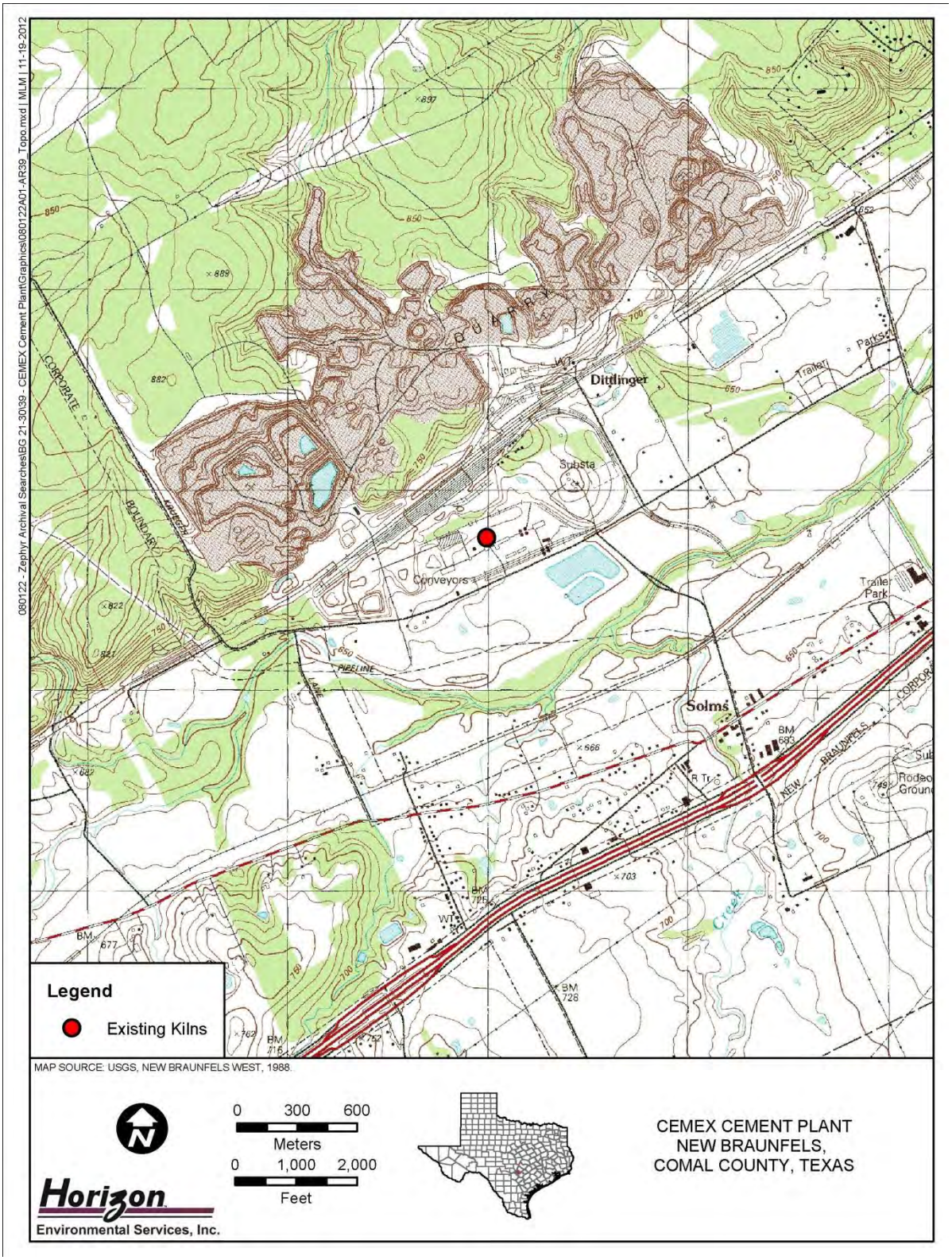

Figure 1. Location of Project Area on USGS Topographic Quadrangle

Figure 2. Location of Project Area on Aerial Photograph

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Furthermore, the location of the 2 existing cement kilns on the Balcones Cement Plant was surveyed for cultural resources in 1978 in connection with a US EPA undertaking prior to construction of the existing facility. No cultural resources were recorded at the location of the kilns during this prior survey.

Based on the extent of prior disturbances on the proposed project site resulting from construction of the existing Balcones Cement Plant and its ancillary facilities and the limited scope of the proposed upgrades to the 2 existing cement kilns, the proposed undertaking would have no potential to adversely affect any significant cultural resources. The portion of the Balcones Cement Plant in which the 2 existing cement kilns are located was surveyed for cultural resources in 1978 prior to construction of the plant, and no cultural resource sites were recorded at this location. It is Horizon's opinion that the proposed project site does not require any further cultural resources investigations and that no archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected.

This document presents the results of Horizon's cultural resources background review of the proposed project site. Following this introductory chapter, Chapters 2.0 and 3.0 present the environmental and cultural backgrounds of the project area, respectively. Chapter 4.0 presents the results of the background review, and Chapter 5.0 summarizes the results of the background review and presents management recommendations for the proposed undertaking. Chapter 6.0 lists the references cited in the document. Appendix A provides representative overview photographs of the existing plant facility and the proposed project area; Appendix B includes the resume of Jesse Owens, Horizon senior staff archeologist, who served as Principal Investigator for this project; Appendix C provides a copy of a prior cultural resources survey report that included the current project area; and Appendix D consists of a CD-ROM that contains copies of references cited in this report.

2.0 ENVIRONMENTAL SETTING

2.1 PHYSIOGRAPHY AND HYDROLOGY

The existing Balcones Cement Plant is located in southwestern New Braunfels in southeastern Comal County in Central Texas. The project site is located on an old alluvial terrace remnant along the northern margins of the Dry Comal Creek floodplain. The project site is situated within an existing industrial cement plant. The landscape within the existing industrial facility has been artificially leveled via prior construction of the plant, and the elevation of the project site is 660 feet above mean sea level. Hydrologically, the project area is situated within the Dry Comal Creek basin, which drains into the Guadalupe River on the eastern side of New Braunfels. The Guadalupe River, in turn, flows southeastward before ultimately discharging into the Gulf of Mexico near Port Lavaca. The project site is drained to the south toward Dry Comal Creek.

2.2 GEOLOGY AND GEOMORPHOLOGY

Comal County is underlain by a relatively thick sequence of Cretaceous-age, sedimentary rock strata. These strata are composed of 3 formations, including the Anachaco Limestone, Pecan Gap Chalk, and Austin Chalk formations (Fisher 1976). These formations range in depth from 30 to 152 meters (m) (100 to 500 feet [ft]) and are composed of limestone and marl, chalk and chalky marl, and chalk and marl, respectively. Specifically, the project site is situated on the Early Pleistocene Leona Formation, which consists of fine calcareous silt grading down into course gravels.

Specifically, the project area is underlain by Branyon clay, 1 to 3% slopes (ByB), which consists of clayey alluvium of Quaternary age derived from mixed sources found on stream terraces (NRCS 2012). A typical profile of this soil type consists of deep, undifferentiated deposits of clay extending to depths of more than 80 inches below surface. This soil is moderately well drained.

2.3 CLIMATE

The modern climate in Comal County is typically dry to subhumid with long, hot summers and short, mild winters. The climate is influenced primarily by tropical maritime air masses from the Gulf of Mexico, but it is modified by polar air masses. Tropical maritime air

masses predominate throughout spring, summer, and fall. Modified polar air masses are dominant in winter and provide a continental climate characterized by considerable variations in temperature.

In winter, the average temperature is 52 degrees Fahrenheit (°F); however, during winter the temperature tends to fluctuate greatly as air masses move in and out of the area. These air masses can produce light rain and drizzle, and conditions can become cloudy. Spring is relatively dry, with some thunderstorms and cool spells. Summer temperatures are high, with the daily maximum temperature often reaching or exceeding 90°F. Fall is warm, dry, and pleasant, with increasing cold spells.

The average precipitation within the region is 33 inches. The majority of this precipitation occurs as rain that falls between April and September. The growing season is approximately 265 days long.

2.4 FLORA AND FAUNA

The project area is situated in the southwestern portion of the Texan biotic province (Blair 1950), an intermediate zone between the forests of the Austroriparian and Carolinian provinces and the grasslands of the Kansan, Balconian, and Tamaulipan provinces (Dice 1943). Some species reach the limits of their ecological range within the Texan province. Rainfall in the Texan province is barely in excess of water need, and the region is classified by Thornwaite (1948) as a C_2 (moist subhumid) climate with a moisture surplus index of from 0 to 20%.

Edaphic controls on vegetation types are important in the Texan biotic province, which is located near the border between moisture surplus and moisture deficiency. Sandy soils support oak-hickory forests dominated by post oak (*Quercus stellata*), blackjack oak (*Q. marilandica*), and hickory (*Carya buckleyi*). Clay soils originally supported a tall-grass prairie, but much of this soil type has been placed under cultivation. Dominant tall-grass prairie species include western wheatgrass (*Agrophyron smithii*), silver beardgrass (*Andropogon saccharoides*), little bluestem (*Andropogon scoparius*), and Texas wintergrass (*Stipa leucotricha*). Major areas of oak-hickory forest include the Eastern and Western Cross Timbers, and major tall-grass prairie areas include the Blackland, Grand, and Coastal prairies. Some characteristic associations of the Austroriparian province occur locally in the Texan province, such as a mixed stand of loblolly pine (*Pinus taeda*) and blackjack and post oak in Bastrop County and a series of peat and bog marshes distributed in a line extending from Leon to Gonzales counties.

3.0 CULTURAL BACKGROUND

The project site is located within Prewitt's (1981, 1985) Central Texas Archeological Region. The indigenous human inhabitants of Central Texas practiced a generally nomadic hunting and gathering lifestyle throughout all of prehistory, and, in contrast to much of the rest of North America, mobility and settlement patterns do not appear to have changed markedly through time in this region.

3.1 PALEOINDIAN PERIOD (CA. 12,000 TO 8500 B.P.)

The initial human occupations in the New World can now be confidently extended back before 12,000 B.P. (Dincauze 1984; Haynes et al. 1984; Kelly and Todd 1988; Lynch 1990; Meltzer 1989). Evidence from Meadowcroft Rockshelter in Pennsylvania suggests that humans were present in Eastern North America as early as 14,000 to 16,000 years ago (Adovasio et al. 1990), while more recent discoveries at Monte Verde in Chile provide unequivocal evidence for human occupation in South America by at least 12,500 years ago (Dillehay 1989, 1997; Meltzer et al. 1997). Most archeologists presently discount claims of much earlier human occupation during the Pleistocene glacial period (cf. Butzer 1988).

The earliest generalized evidence for human activities in Central Texas is represented by the PaleoIndian period (12,000 to 8500 B.P.) (Collins 1995). This stage coincided with ameliorating climatic conditions following the close of the Pleistocene epoch that witnessed the extinction of herds of mammoth, horse, camel, and bison. Cultures representing various periods within this stage are characterized by series of distinctive, relatively large, often fluted, lanceolate projectile points. These points are frequently associated with spurred end scrapers, gravers, and bone foreshafts. PaleoIndian groups are often inferred to have been organized into egalitarian bands consisting of a few dozen individuals that practiced a fully nomadic subsistence and settlement pattern. Due to poor preservation of floral materials, subsistence patterns in Central Texas are known primarily through the study of faunal remains. Subsistence focused on the exploitation of plants, small animals, fish, and shellfish, even during the PaleoIndian period. There is little evidence in this region for hunting of extinct megafauna, as has been documented elsewhere in North America. Rather, a broad-based subsistence pattern appears to have been practiced throughout all prehistoric time periods. In Central Texas, the PaleoIndian stage is divided into 2 periods based on recognizable differences in projectile point styles. These include the Early PaleoIndian period, which is recognized based on large, fluted projectile points (i.e., Clovis, Folsom, Dalton, San Patrice, and Big Sandy), and the Late

PaleoIndian period, which is characterized by unfluted lanceolate points (i.e., Plainview, Scottsbluff, Meserve, and Angostura).

3.2 ARCHAIC PERIOD (CA. 8500 TO 1200 B.P.)

The onset of the Hypsithermal drying trend marks the beginning of the Archaic period (8500 to 1200 B.P.) (Collins 1995). This climatic trend marked the beginning of a significant reorientation of lifestyle throughout most of North America, but this change was far less pronounced in Central Texas. Elsewhere, the changing climatic conditions and corresponding decrease in the big game populations forced people to rely more heavily upon a diversified resource base composed of smaller game and wild plants. In Central Texas, however, this hunting and gathering pattern is characteristic of most of prehistory. The appearance of a more diversified tool kit, the development of an expanded groundstone assemblage, and a general decrease in the size of projectile points are hallmarks of this cultural stage. Material culture shows greater diversity during this broad cultural period, especially in the application of groundstone technology.

Traditionally, the Archaic period is subdivided into Early, Middle, and Late subperiods. Changes in projectile point morphology are often used as markers differentiating these 3 subperiods, though other changes in material culture occurred as well. Perhaps most markedly, burned rock middens appear during the Middle Archaic subperiod, continuing into the Late Archaic subperiod, and large cemeteries appear during the Late Archaic subperiod. In addition, the increasing density of prehistoric sites through time is often considered to constitute evidence of population growth, though differential preservation probably at least partially accounts for the lower numbers of older sites.

3.3 LATE PREHISTORIC PERIOD (CA. 1200 TO 350 B.P.)

The onset of the Late Prehistoric period (1200 to 350 B.P.) (Collins 1995) is defined by the appearance of the bow and arrow. In Central Texas, pottery also appears during the Late Prehistoric period (though ceramics appear earlier in Southeast Texas). Use of the atlatl (i.e., spearthrower) and spear was generally discontinued during the Late Prehistoric period, though they continued to be used in the inland subregion of Southeast Texas along with the bow and arrow through the Late Prehistoric period (Patterson 1980, 1995; Wheat 1953). In Texas, unifacial arrow points appear to be associated with a small prismatic blade technology. The Late Prehistoric period is generally divided into 2 phases, the Austin and Toyah phases. Austin phase sites occur earliest to the north, which has led some researchers (e.g., Prewitt 1985) to suggest that the Austin-phase populations of Central Texas were migrants from the north, and lack the ceramic industry of the later Toyah phase.

3.4 HISTORIC PERIOD (CA. 350 B.P. TO PRESENT)

The first European incursion into what is now known as Texas was in 1519, when Álvarez de Pineda explored the northern shores of the Gulf of Mexico. In 1528, Cabeza de Vaca crossed South Texas after being shipwrecked along the Texas Coast near Galveston Bay. However, European settlement did not seriously disrupt native ways of life until after 1700. The

first half of the 18th century was the period in which the fur trade and mission system, as well as the first effects of epidemic diseases, began to seriously disrupt the native culture and social systems. This process is clearly discernable at the Mitchell Ridge site, where burial data suggest population declines and group mergers (Ricklis 1994) as well as increased participation on the part of the Native American population in the fur trade. By the time that heavy settlement of Texas began in the early 1800s by Anglo-Americans, the indigenous Indian population was greatly diminished.

Spanish explorers were familiar with the Comal Springs area but showed little interest in settling the region.[1] After the expedition of Domingo Terán de los Ríos of 1691, the Old San Antonio Road crossed the Guadalupe River near the future site of New Braunfels. Subsequent French and Spanish expeditions, including those of the Marqués de Aguayo and Louis Juchereau de St. Denis, commonly passed through what later became southeastern Comal County. In 1756, Comal Springs became the site of the short-lived Nuestra Senora de Guadalupe Mission, but, rather than fortify the mission against anticipated Comanche depredations, Spanish authorities closed it in 1758. Nearly a century passed before settlement became permanent, although a Mexican land grant of 1825 gave title of the area around the springs to Juan M. Veramendi. During the 18th century, the springs and river (which had been called Las Fontanas and the Little Guadalupe, respectively) took the name Comal, Spanish for ~~fl~~at dish." It is thought that the name was suggested to the Spanish by the numerous small islands in the river or by the shallow basin through which the river runs.

The inhabitants of the region on the eve of settlement were primarily Tonkawa and Waco Indians, although Lipan Apaches and Karankawas also roamed the area. Early settlers' contacts with the indigenous populations were generally uneventful. Nomadic Wacos camped at springs north of New Braunfels moved their camp west within a year of the founding of the settlement, and a village of some 500 Tonkawas on the Guadalupe River above New Braunfels initially welcomed German visitors. Notwithstanding the rapid influx of settlers in the 1840s and 1850s and isolated incidents of violence, county fathers and Indian leaders generally maintained peaceful relations.

Permanent settlement of the area began in 1845, when Prince Carl of Solms-Braunfels secured title to 1,265 acres of the Veramendi grant, including the Comal springs and river, for the Adelsverein. In succeeding years, thousands of Germans and Americans were attracted to the rich farm and ranch land around New Braunfels. Settlement progressed rapidly; in March 1846 the Texas legislature formed Comal County from the Eighth Precinct of Bexar County and made New Braunfels the county seat. The final boundary determination was made in 1858 with the separation of part of western Comal County to Blanco and Kendall counties. The first county elections were held on 13 July 1846. In 1854, the county commissioners divided the county into 8 public school districts, and, in 1858, long before they were required by law to do so, New Braunfels citizens voted to collect a tax for support of public schools. The population of

[1] The following historical summary has been adapted from TSHA (2012).

the county grew 133% between 1850 and 1860, and numbered more than 4,000 on the eve of the Civil War.

Comal County was exceptional among the largely German counties of southern and western Central Texas in the strength of its 1861 vote in favor of secession. The county contributed 3 all-German volunteer companies—2 cavalry and 1 infantry—to the Confederate cause. There is little to suggest that the county's support for the Confederacy reflected enthusiasm for slavery. Free labor predominated over slave labor in all counties with large German populations; a survey of 130 German farms in Comal and 2 other counties in 1850 revealed no slave laborers. By 1860, as Anglo-Americans settled alongside the German pioneers, blacks still made up less than 5% of county residents, and the family remained the primary source of labor. Comal County residents seem to have embraced the Southern cause because of their support of the larger cause of states' rights. There is no record in the county of the violence between Unionists and Confederates that broke out in German counties to the northwest.

From the early years of its settlement, Comal County supported diversified farming and ranching industries. Corn was almost universally cultivated by pioneers and quickly became a staple both of the German diet and of the local economy as a cash crop. It declined in importance relative to other crops and to livestock, however, during and after the Civil War as county ranchers and farmers began to produce commercially significant amounts of cotton, wheat, oats, wool, dairy products, and beef.

As farming and ranching spread beyond the environs of New Braunfels into the Hill Country, the county seat developed as an important supply and processing center for products of the expanding agricultural frontier. Many immigrants brought manufacturing experience and commercial acumen to their new home and applied these skills to the products of local agriculture. Comal County never developed as a major cotton-producing area, but the crop played an important role in the local economy. Production rose from 1,220 bales in 1860 to a peak of more than 16,000 bales in 1900. Perhaps more significant, however, was early interest in cotton processing. The first cotton gin in the county was built in the mid-1850s, and there were 20 gins by 1885. During the Civil War, John F. Torrey imported machinery and looms to manufacture cotton textiles and laid the foundation of the Comal County cotton industry of the 20th century. At almost the same time, another New Braunfels industrialist, George Weber, established the first cottonseed press in the state. Local businessmen also moved rapidly from sheep herding to woolen textiles. Production of raw wool expanded from 621 pounds in 1850 to 72,000 pounds in 1890, and a company was organized in New Braunfels in 1867 for the manufacture of woolen products.

After World War I, Comal County farming declined relative to ranching. As the diversified farms and ranches of the original Comal County agriculturalists gave way to the livestock economy of the 20th century, local industrialists were increasing the scope and the scale of county manufactures. By 1982, 50 manufacturers, employing almost 30% of the county labor force, had a gross product of more than $188 million. The production of such construction materials as gravel, sand, limestone, crushed stone, and concrete, in addition to the manufacture of textiles and clothing and the milling of wheat and corn, were still the mainstays

of the industrial sector and accounted for much of its expansion. Metal and wood work and food processing also became important industries.

The county grew rapidly after World War II and boomed after 1970. From 16,357 residents in 1950, the population expanded by 21% in the subsequent decade and by the same amount in the 1960s, reaching 24,165 by 1970. In 1980, the figure was 36,446, a 50% increase from the previous census.

The emergence of tourism as a primary industry, as well as attendant increases in retail and service employment, explains much of the population growth. The county is located in the ―corridor" along Interstate Highway 35 between San Antonio and Austin; in 1973, it was included in the San Antonio Metropolitan Statistical Area. Between 1970 and 1984, the number of residents employed in trade nearly doubled, to 2,287; the number of jobs in service industries increased more than 600% to 1,977; and employment in financial, insurance, and real estate businesses rose 400%.

4.0 ARCHIVAL RESEARCH

Project maps showing the location of the 2 existing kilns that are proposed for upgrades at the Balcones Cement Plant, located at 2580 Wald Road, New Braunfels, Comal County, Texas, 78132, are presented in Appendix A.

Background archival research conducted via the Internet at the THC's online *Texas Archeological Sites Atlas* (Atlas) restricted-access database indicated that the presence of 2 previously recorded archeological sites within a 1.0-mile radius of the project site (Table 1) (THC 2012), while a review of the National Park Service's (NPS) NRHP Google Earth map layer indicated the presence of no historic properties listed on the NRHP within the review area (NPS 2012).

Site 41CM107 was originally recorded in 1978 in connection with a survey conducted for General Portland, Inc. (GPI) prior to construction of the cement plant (Howry 1978), a copy of which is provided in Appendix C. Site 41CM107 was recorded as a surficial scatter of aboriginal lithic artifacts in what was then a plowed agricultural field. A temporally diagnostic projectile point associated with the Middle to Late Archaic periods was observed among the artifacts on the site. Cultural materials were observed only on the surface of the plowed field, though the site form does not specify whether or not any subsurface investigations were undertaken, so the depth of cultural deposits is unknown. The site was recommended as ineligible for inclusion in the NRHP. While the mapped location of site 41CM107 places it approximately 100 feet southwest of the location of the existing cement kilns that are being proposed for upgrades, this site was recorded prior to construction of the Balcones Cement Plant. Prior construction of the plant would have destroyed any vestiges of this ephemeral prehistoric site.

Site 41CM332 represents the remnants of the mid-20th-century company town of Dittlinger, also known locally as The Village, or alternately the USG Village (for the US Gypsum Company). Site 41CM332 was recorded in 2011 during a cultural resources survey conducted by the Lower Colorado River Authority (LCRA) for a New Braunfels Utilities transmission line project (Malof et al. 2012). Dittlinger was established between 1917 and 1936, though probably closer to 1936, to provide housing and community services for the workers of the nearby US Gypsum mines. By 1951, Dittlinger consisted of approximately 30 individual homes situated on 50-foot lots that ran along APG Lane. The town was officially closed in 1968 over a labor dispute. A few of the residents purchased their homes and continued to live in them, but

Table 1. Summary of Documented Cultural Resources within 1.0 Mile of Project Site

Site No.	Site Type	NRHP/SAL Eligibility	Distance/Direction from Project Area	Potential to be Impacted by Project?
41CM107	Middle to Late Archaic aboriginal lithic scatter	Recommended ineligible	100 feet southwest	No
41CM332	Mid-20th century company town (Dittlinger)	Recommended ineligible	1,075 feet northeast	No

km Kilometer
NRHP National Register of Historic Places
SAL State Archeological Landmark

the rest were demolished. Based on the extent of prior disturbance observed when the former community of Dittlinger was recorded as an archeological site in 2011, the site was recommended as being ineligible for designation as an SAL under the Antiquities Code of Texas, and no further investigations were recommended.

Both sites 41CM107 and 41CM332 were recommended as ineligible for listing on the NRHP and/or for designation as State Archeological Landmarks (SAL) when they were originally recorded in 1978 and 2011, respectively, and both sites have been either largely or entirely destroyed from prior industrial development. Neither site would be affected by the proposed undertaking. No cemeteries, listed NRHP properties or districts, or SALs were identified within the 1.0-mile review radius or at the location of the proposed kiln upgrades.

Furthermore, the location of the 2 existing cement kilns on the Balcones Cement Plant was surveyed for cultural resources in 1978 in connection with a US EPA undertaking prior to construction of the existing facility (Howry 1978). No cultural resources were recorded at the location of the 2 cement kilns that are proposed for upgrades in connection with the current project during this prior survey.

Based on the extent of prior disturbances on the proposed project site resulting from construction of the existing Balcones Cement Plant and its ancillary facilities and the limited scope of the proposed upgrades to the 2 existing cement kilns, the proposed undertaking would have no potential to adversely affect any significant cultural resources. The portion of the Balcones Cement Plant in which the 2 existing cement kilns are located was surveyed for cultural resources in 1978 prior to construction of the plant, and no cultural resource sites were recorded at this location. It is Horizon's opinion that the proposed project site does not require any further cultural resources investigations and that no archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected.

5.0 SUMMARY AND RECOMMENDATIONS

5.1 ELIGIBILITY CRITERIA FOR INCLUSION IN THE NATIONAL REGISTER OF HISTORIC PLACES

Determinations of eligibility for inclusion in the NRHP are based on the criteria presented in the Code of Federal Regulations (CFR) in 36 CFR §60.4(a-d). The 4 criteria of eligibility are applied following the identification of relevant historical themes and related research questions:

> The quality of significance in American history, architecture, archeology, and culture is present in districts, sites, buildings, structures, and objects that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and:
>
> a. [T]hat are associated with events that have made a significant contribution to the broad patterns of our history; or,
>
> b. [T]hat are associated with the lives of persons significant in our past; or,
>
> c. [T]hat embody the distinctive characteristics of a type, period, or method of construction, or that represent a significant and distinguishable entity whose components may lack individual distinction; or,
>
> d. [T]hat have yielded, or may be likely to yield, information important in prehistory or history.

The first step in the evaluation process is to define the significance of the property by identifying the particular aspect of history or prehistory to be addressed and the reasons why information on that topic is important. The second step is to define the kinds of evidence or the data requirements that the property must exhibit to provide significant information. These data requirements in turn indicate the kind of integrity that the site must possess to be significant. This concept of integrity relates both to the contextual integrity of such entities as structures, districts, or archeological deposits and to the applicability of the potential database to pertinent research questions. Without such integrity, the significance of a resource is very limited.

For an archeological resource to be eligible for inclusion in the NRHP, it must meet legal standards of eligibility that are determined by 3 requirements: (1) properties must possess significance, (2) the significance must satisfy at least 1 of the 4 criteria for eligibility listed above, and (3) significance should be derived from an understanding of historic context. As discussed here, historic context refers to the organization of information concerning prehistory and history

according to various periods of development in various times and at various places. Thus, the significance of a property can best be understood through knowledge of historic development and the relationship of the resource to other, similar properties within a particular period of development. Most prehistoric sites are usually only eligible for inclusion in the NRHP under Criterion D, which considers their potential to contribute data important to an understanding of prehistory. All 4 criteria employed for determining NRHP eligibility potentially can be brought to bear for historic sites.

Criterion A—Events

To be considered for listing under Criterion A, a property must be associated with 1 or more events important in the defined historic context. Criterion A recognizes resources associated with single events, such as the founding of a town, or with a pattern of events, repeated activities, or historic trends, such as the gradual rise of a port city's prominence in trade and commerce. The event or trends, however, must clearly be important within the associated context of settlement, in the case of the town, or development of a maritime economy, in the case of the port city. Moreover, the property must have an important association with the event or historic trends, and it must retain historic integrity.

Criterion B—Persons

Criterion B applies to resources associated with individuals whose specific contributions to history can be identified and documented. Persons –significant in our past" refers to individuals whose activities are demonstrably important within a local, state, or national historic context. The criterion is generally restricted to those resources that illustrate (rather than commemorate) a person's important achievements.

Criterion C—Design or Construction

This criterion applies to resources significant for their physical design or construction, including such elements as architecture, landscape architecture, engineering, and artwork. To be eligible under this criterion, a property must meet *at least one* of the following requirements—embody distinctive characteristics of a type, period, or method of construction; represent the work of a master; possess high artistic value; or represent a significant and distinguishable entity whose components may lack individual distinction.

Criterion D—Information Potential

Certain important research questions about human history can only be answered by the actual physical material of cultural resources. Criterion D encompasses the resources that have the potential to answer, in whole or in part, those types of research questions. The most common type of property nominated under this Criterion is the archeological site (or a district composed of archeological sites). Buildings, objects, and structures (or districts composed of these property types), however, can also be eligible for their information potential. Criterion D has 2 requirements, which must *both* be met for a property to qualify—the property must have, or have had, information to contribute to our understanding of human history or prehistory, and the information must be considered important.

5.2 SUMMARY AND RECOMMENDATIONS

Based on the results of the background Atlas review, inspection of current maps and aerial photographs, and inspection of site photographs provided by Zephyr, the proposed project site area is the site of an existing industrial cement plant with no low potential to contain intact cultural resources that would meet the criteria for significance for inclusion in the NRHP. Two previously recorded archeological sites, 41CM107 and 41CM332, are located within the 1.0-mile review radius; however, both of these sites are located outside the proposed kiln upgrade location. Both sites were recommended as ineligible for listing on the NRHP and/or for designation as State Archeological Landmarks (SAL) when they were originally recorded in 1978 and 2011, respectively, and both sites have been either largely or entirely destroyed from prior industrial development. Neither site would be affected by the proposed undertaking. No cemeteries, listed NRHP properties or districts, or SALs were identified within the 1.0-mile review radius or at the location of the proposed kiln upgrades.

Furthermore, the location of the 2 existing cement kilns on the Balcones Cement Plant was surveyed for cultural resources in 1978 prior to construction of the cement plant. No cultural resources were recorded at the location of the kilns during this prior survey.

Based on the extent of prior disturbances on the proposed project site resulting from construction of the existing Balcones Cement Plant and its ancillary facilities and the limited scope of the proposed upgrades to the 2 existing cement kilns, the proposed undertaking would have no potential to adversely affect any significant cultural resources. The portion of the Balcones Cement Plant in which the 2 existing cement kilns are located was surveyed for cultural resources in 1978 prior to construction of the plant, and no cultural resource sites were recorded at this location. It is Horizon's opinion that the proposed project site does not require any further cultural resources investigations and that no archeological or historic properties that are listed on, eligible for, or potentially eligible for inclusion in the NRHP would be adversely affected.

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APPENDIX A:

Project Area Overview Photographs

(Provided by Zephyr Environmental Corporation)

CEMEX entry

Front of CEMEX Facility looking north

Front of CEMEX Facility looking southwest

Front of CEMEX Facility looking west

Inside facility looking northwest

Aerial view of facility looking north

Aerial view of the facility looking north

Aerial view of facility looking northeast settling ponds

Aerial view of the facility looking west

Aerial view of facility looking east

APPENDIX B:

Resume of Principal Investigator

Horizon Environmental Services, Inc.

Jeffrey D. Owens, M.A., R.P.A.

Archeological Principal Investigator/Project Manager

EXPERTISE

- Prehistoric Archeology
- Historic Archeology

RESEARCH AREAS

- Eastern North America (esp. Midwest, Southeast)
- Great Plains
- American Southwest

AREAS OF EXPERTISE

- Project Management
- Archival and Historical Research
- Archeological Survey, Testing, and Data Recovery
- National Register of Historic Places (NRHP) Evaluations
- Section 106 of the National Historic Preservation Act (NHPA)
- Antiquities Code of Texas (ACT)
- Native American Graves Protection and Repatriation Act (NAGPRA)
- Lithic and Ceramic Analysis
- Technical Writing and Editing
- Quality Assurance/ Quality Control

EDUCATION

- A.B.D., Anthropology, Southern Methodist University, 1997
- M.A., Anthropology, New York University, 1995
- B.A., Anthropology, New York University, 1991

Mr. Owens is an accomplished cultural resources professional with more than 23 years of experience in archeological fieldwork, research and analysis, and cultural resources management (CRM). He is an adept principal investigator and project manager, proficient at managing suites of turnkey, fast-turnaround projects as well as long-term, multidisciplinary research projects. He is fully versed in historic and environmental preservation laws, assessing the National Register of Historic Places (NRHP) eligibility of cultural resources, and developing management plans for historic properties that ensure compliance with applicable federal, state, and local laws while ensuring projects meet construction schedules and adhere to budgetary constraints.

Mr. Owens has planned, implemented, and successfully completed cultural resources survey, testing, and data recovery projects in Arizona, Arkansas, Illinois, Louisiana, Mississippi, Missouri, New Jersey, New Mexico, New York, Oklahoma, Pennsylvania, and Texas. He has completed hundreds of projects for a broad range of clients in the public and private sectors, including oil and gas exploration, development, and transportation; ethanol and petrochemical production; coastal and inland residential, commercial, and industrial land development; solid waste landfills; dredging activities; municipal planning; reservoir development; coastal port and channel improvements; transportation infrastructure; water and wastewater transportation and treatment; electricity generation and transportation; military reservations; and university research.

Mr. Owens also regularly contributes cultural resources oversight to the preparation of environmental regulatory documents, including Environmental Assessments (EA), Environmental Impact Statements (EIS), Biological Assessments (BA), and Categorical Exclusions (CE) for National Environmental Policy Act (NEPA) compliance projects.

Mr. Owens' project management style incorporates innovative leadership skills, resourcefulness, versatility, swift adaptability, and attention to the bottom line. His success is due in part to his thorough familiarity with federal, state, and local historic preservation laws and long-standing personal relationships with regulatory agency reviewers.

CERTIFICATIONS/QUALIFICATIONS

- Meets all Secretary of the Interior's standards for performing cultural resources investigations
- Permittable to perform cultural resource investigations on federal and state projects
- Listed on qualified cultural resource consultant lists in numerous states
- Pre-certified by TxDOT for Service 2.10.1 (Archeological Surveys, Documentation, Excavations, Testing, Reports, and Data Recovery Plans) and Service 2.11.1 (Historical and Archival Research)

PROFESSIONAL AFFILIATIONS

- Register of Professional Archaeologists (RPA)
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n.d. *Proposed Alpha Olefin Chemical Company, LLC, Alpha Olefins Plant, Freeport, Brazoria County, Texas—Cultural Resources Assessment*. HJN 110012.21. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed 0.67-acre Lindshire Lane Wastewater System Improvements Project, Austin, Travis County, Texas*. HJN 130138. Horizon Environmental Services, Inc., Austin, Texas.

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n.d. *Intensive Cultural Resources Survey of Segments of Browder Loop Road, Eldridge Lane, and North Butch Arthur Road, San Jacinto County, Texas*. HJN 130103. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of the Proposed Enterprise Mont Belvieu Complex Fractionation Units 9 and 10 Project, Chambers County, Texas*. HJN 110012.17. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Intensive Cultural Resources Survey of 5.9 Miles of Proposed Subsurface Utility Relocations, FM 1637 Expansion Project, Waco, McLennan County, Texas*. HJN 130031. Horizon Environmental Services, Inc., Austin, Texas.

n.d. *Proposed Victoria Power Station Expansion Project, Victoria, Victoria County, Texas—Cultural Resources Review*. HJN 110012.11. Horizon Environmental Services, Inc., Austin, Texas.

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n.d. *Intensive Cultural Resources Survey for the Proposed Kansas City Southern K478.0 Bridge Construction and Railroad Alignment Project, Little River County, Arkansas*. HJN 130023. Horizon Environmental Services, Inc., Austin, Texas.

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n.d. *Proposed Clinker Production Increase at the CEMEX Construction Materials South, LLC, Balcones Cement Plant, Comal County, Texas—Cultural Resources Review*. HJN 080122.39. Horizon Environmental Services, Inc., Austin, Texas.

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n.d. *Intensive Cultural Resources Survey of a Proposed 20-Acre Expansion Tract Adjacent to an Existing PL Propylene, LLC, Facility, Houston, Harris County, Texas*. HJN 080122.30. Horizon Environmental Services, Inc., Austin, Texas.

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2012 *Intensive Cultural Resources Survey for the Penn City Coal Expansion Project, Houston, Harris County, Texas*. HJN 110097. Horizon Environmental Services, Inc., Austin, Texas.

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2012 *Intensive Cultural Resources Survey, One USACE Jurisdictional Area on the Existing Eskridge to Kearney Pipeline Right-of-Way, Platte County, Missouri*. HJN 120075. Horizon Environmental Services, Inc., Austin, Texas.

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2011 *Intensive Cultural Resources Survey of 6 Jurisdictional Stream Crossings for the City of Hamshire Water System Improvements Project, Hamshire, Jefferson County, Texas*. HJN 110070. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Cultural Resources Investigations on the Proposed Waller Creekside Apartments Tract, Austin, Travis County, Texas*. HJN 110116. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Cultural Resources Survey of the Woodland Oaks Wastewater Treatment Plant Proposed 1.3-Acre Expansion Tract, Houston, Harris County, Texas*. HJN 100024. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Archeological Survey of the Farm-to-Market Road 1660 Realignment Project, Hutto, Williamson County, Texas*. HJN 090047. Horizon Environmental Services, Inc., Austin, Texas.

2011 *Intensive Archeological Survey of a 3.7-Acre Tract in San Marcos, Hays County, Texas*. HJN 110124. Horizon Environmental Services, Inc., Austin, Texas.

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2011 *Intensive Cultural Resources Survey of the Orange County Sewer and Natural Gas Infrastructure Improvements Project, Orange County, Texas*. HJN 110121. Horizon Environmental Services, Inc., Austin, Texas.

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2011 *Intensive Cultural Resources Survey for the City of Liberty Wastewater System Improvement Project, Liberty County, Texas*. HJN 110005. Horizon Environmental Services, Inc., Austin, Texas.

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Smith, and David DeMar). TRC Technical Report No. 02353. ARM Series, Research Report No. 60. TRC Environmental Corporation, Austin, Texas.

2011 *Archeological Avoidance Plan for the Proposed North Clinton Dome 3D Seismic Survey Project, Houston, Harris County, Texas*. HJN 110011. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Cultural Resources Survey Activities for the Shelby East 3D Seismic Survey Project, Areas 1 and 2, Sabine National Forest, San Augustine and Shelby Counties, Texas*. HJN 090017. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Cultural Resources Survey Activities for the Shelby East 3D Seismic Survey Project, Areas 1 and 2, Sabine National Forest, San Augustine and Shelby Counties, Texas. Addendum #1—Access Routes*. HJN 090017. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the 10.6-Acre Helbig Road Tract, Beaumont, Jefferson County, Texas*. HJN 100099. Horizon Environmental Services, Inc., Austin, Texas

2010 *Intensive Cultural Resources Survey of the 44-Acre Creekside Park, Section 18, Tract, The Woodlands, Harris County, Texas*. HJN 100079. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the 66-Acre Royal Shores Tract, Kingwood, Harris County, Texas*. HJN 100005. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the Proposed 74 Ranch Pittman 1-H Well Pad, Campbellton, Atascosa County, Texas*. HJN 100093.001. Horizon Environmental Services, Inc., Austin, Texas

2010 *Intensive Cultural Resources Survey of the Proposed 74 Ranch Axis 1-H Well Pad, Campbellton, Atascosa County, Texas*. HJN 100093.002. Horizon Environmental Services, Inc., Austin, Texas

2010 *An Intensive Cultural Resources Survey of a Proposed HDD Location Under an Abandoned Tram Road in Nacogdoches County, Texas*. HJN 100019. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey for the Green Valley Special Utility District's Water Supply Improvement Project, Guadalupe County, Texas*. HJN 090102. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive and Reconnaissance Survey of the Proposed Lake Halbert Water Treatment Plant Expansion Project, Corsicana, Navarro County, Texas*. HJN 100015. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of a Proposed 2.9-Mile-Long Force Main Right-of-Way, Houston, Harris County, Texas*. HJN 100051. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of a 13.9-Acre Tract for the Proposed Fort Bend County MUD No. 116 Wastewater Treatment Plant Project, Richmond, Fort Bend County, Texas*. HJN 100047. Horizon Environmental Services, Inc., Austin, Texas.

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2010 *Intensive Cultural Resources Survey of the 21.6-Acre Kalentari Tract, San Marcos, Hays County, Texas*. HJN 100055. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resource Survey of a 14.8-Acre Tract on Williams Gully in Houston, Harris County, Texas*. HJN 090127. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Cultural Resources Survey of the Proposed Crossroad Exhibit Hall Expansion, Fort Griffin State Historic Site, Shackelford County, Texas*. HJN 090019. Horizon Environmental Services, Inc., Austin, Texas.

2010 *Intensive Phase I Cultural Resources Survey of 3.5 Miles of M2 LGS, LLC's, Proposed Natural Gas Pipeline Right-of-Way on the Mansfield Battlefield, DeSoto Parish, Louisiana*. HJN 090055.025. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Archeological Survey of the US Highway 69 Expressway and Reliever Route, Jacksonville, Cherokee County, Texas*. HJN 080173. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Proposed 5.4-Acre Floral Gardens Senior Living Apartments Tract, Houston, Harris County, Texas*. HJN 090129. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey, PEC Marshall Ford to Buttercup Substations Transmission Line Rebuild Project, Travis and Williamson County, Texas*. HJN 090096. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resources Survey of the Possum Kingdom Lake Hike and Bike Trail, Phase III, Palo Pinto County, Texas*. HJN 090053. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Proposed 2.2-Acre Junker-Spencer Well No. 69, Fannett, Jefferson County, Texas*. HJN 090079. Horizon Environmental Services, Inc., Austin, Texas.

2009 *Cultural Resource Survey of the Proposed 60-Acre Harrison Ranch Park, Dripping Springs, Hays County, Texas*. HJN 090080. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of the Tyrrell Park Storm Water Detention Pond Project, Beaumont, Jefferson County, Texas*. HJN 090042. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of 7 Miles of Proposed Dredge Disposal Areas along Green Pond Gully, Beaumont, Jefferson County, Texas*. HJN 090041. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of for the Lumberton Lift Station Rehabilitation Project, Loeb, Hardin County, Texas*. HJN 080008. Horizon Environmental Services, Inc. Austin, Texas.

2009 *An Intensive Cultural Resources Survey of the Port of Houston Authority's 43-Acre Acryl Tract, Seabrook, Harris County, Texas*. HJN 080163. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resource Survey of 34 Acres of Dredge Disposal Areas along Bayou Din, Beaumont, Jefferson County, Texas*. HJN 090038. Horizon Environmental Services, Inc. Austin, Texas.

2009 *Intensive Cultural Resources Survey of the 2.8-Acre Harris County MUD No. 148 Wastewater Treatment Plant No. 2, Harris County, Texas*. HJN 090048. Horizon Environmental Services, Inc., Austin, Texas.

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APPENDIX C:

Copy of Howry (1978) Cultural Resources Survey Report

Document P-3377
June 1978

Prepared for
General Portland Inc.

Cultural resources survey for GPI properties in Comal and Guadalupe Counties, Texas

Prepared by
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ERT
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TABLE OF CONTENTS

PHASE I RECONNAISSANCE SURVEY

TABLE OF CONTENTS (Continued)

PHASE II SUPPLEMENTARY SURVEY

1. INTRODUCTION

1.1 Study Objectives

General Portland (GPI) is currently planning to develop a cement manufacturing facility to be located in Comal County, southwest of New Braunfels, Texas. Section 1.2 provides a brief description of this project.

As part of the planning for the project, GPI had requested that Environmental Research & Technology, Inc. (ERT) undertake a cultural resource survey of lands acquired for the project and portions of which that would be developed as part of the construction and operation of the proposed cement manufacturing facility. The objective of the cultural resource survey was to evaluate the potential for impacts of planned development on both known and as yet unreported prehistoric archeological sites and historic properties. This report describes ERT's survey work and provides an assessment of the potential for impact that general site development would have on both archeological and historic resources on and near the GPI properties. Section 1.3 describes the approach or survey design employed by ERT for this work. Sections 2 and 3 provide information on the topics of prehistoric archeological and historical properties, respectively. Each of these sections is divided into subsections that (1) briefly summarize information contained in relevant literature, (2) present field survey results, (3) summarize findings, (4) assess the potential for impacts and (5) make recommendations.

1.2 Project Location and Description

GPI, a Delaware Corporation with headquarters in Dallas, TX, plans to build a new cement manufacturing facility in Comal County, three miles southwest of New Braunfels, TX. Figure 1-1 shows the location of the site, consisting of approximately 130 to 150 acres, both in relation to the six-county region between San Antonio and Austin, and in relation to the local roads, topographic features and other industrial facilities in the vicinity of New Braunfels. This plant site is referred to as the Comal County site in this report.

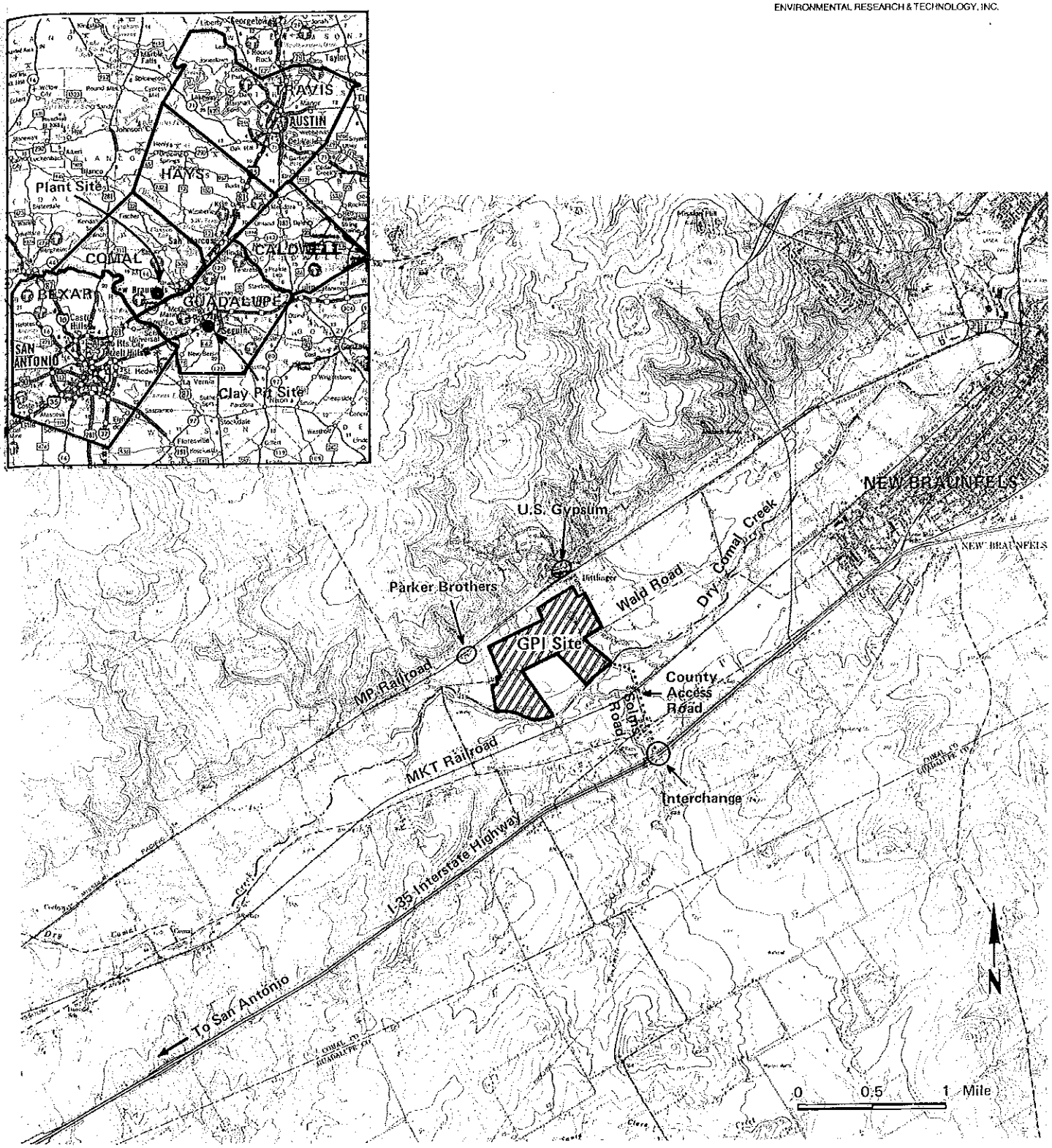


Figure 1-1 Site Location Map

The Comal County site was selected to take advantage of the limestone outcropping of the Balcones fault and the existing quarrying operation run by the Parker Brothers & Company, Inc. of Houston (Parker Brothers). Parker Brothers will supply limestone, the primary raw material, for the GPI cement manufacturing operation. This location will also offer easy access to available highway and railroad transportation systems and an excellent labor market.

The Comal county plant site is located on the edge of the Edwards Plateau along the Balcones fault, between the bluff and Dry Comal Creek. The natural vegetation of the site is a juniper-oak-mesquite savanna, which now contains cedar. Most of the plant site, both cleared and reforested, has been cultivated. The reforested sections are confined to the drainage areas. Site drainage, which runs in a northwest to southeast direction is indicated in Figure 1-2. Dry Comal Creek, which is part of the Dunlap Watershed supplying the Guadalupe River (Braudes and Andrews 1977), provides the major drainage.

The cement facility will be built on part of the GPI site located to the north of Wald Road. An earthen pond, which will catch site runoff and serve as a reservoir for cooling waters, is also planned to be developed on a portion of this site south of Wald Road and near Solms Road and Dry Comal Creek.

As part of this project, GPI will also develop a clay pit to provide clay as a raw material. As shown in Figure 1-1, the clay pit will be located approximately 13 miles southeast of the cement facility site in Guadalupe County. The clay pit site will consist of about 730 acres located approximately two miles south of the I-10/US-90 interchange west of Seguin, TX. All other raw materials will be purchased and brought to the cement facility by truck or rail. The clay pit site is referred to as the Guadalupe County site in this report.

The Guadalupe County site is bordered on the north by Deadman Creek and extends southward to Leissner Road, the east-west county road (Figure 1-3). Nearly all of this land is currently used for livestock grazing purposes. Much of this site has been disturbed by past contour plowing to control erosion. Vegetation consisting largely of live-oak trees currently grows along Deadman Creek and a few of the smaller drainages as indicated in Figure 1-3.

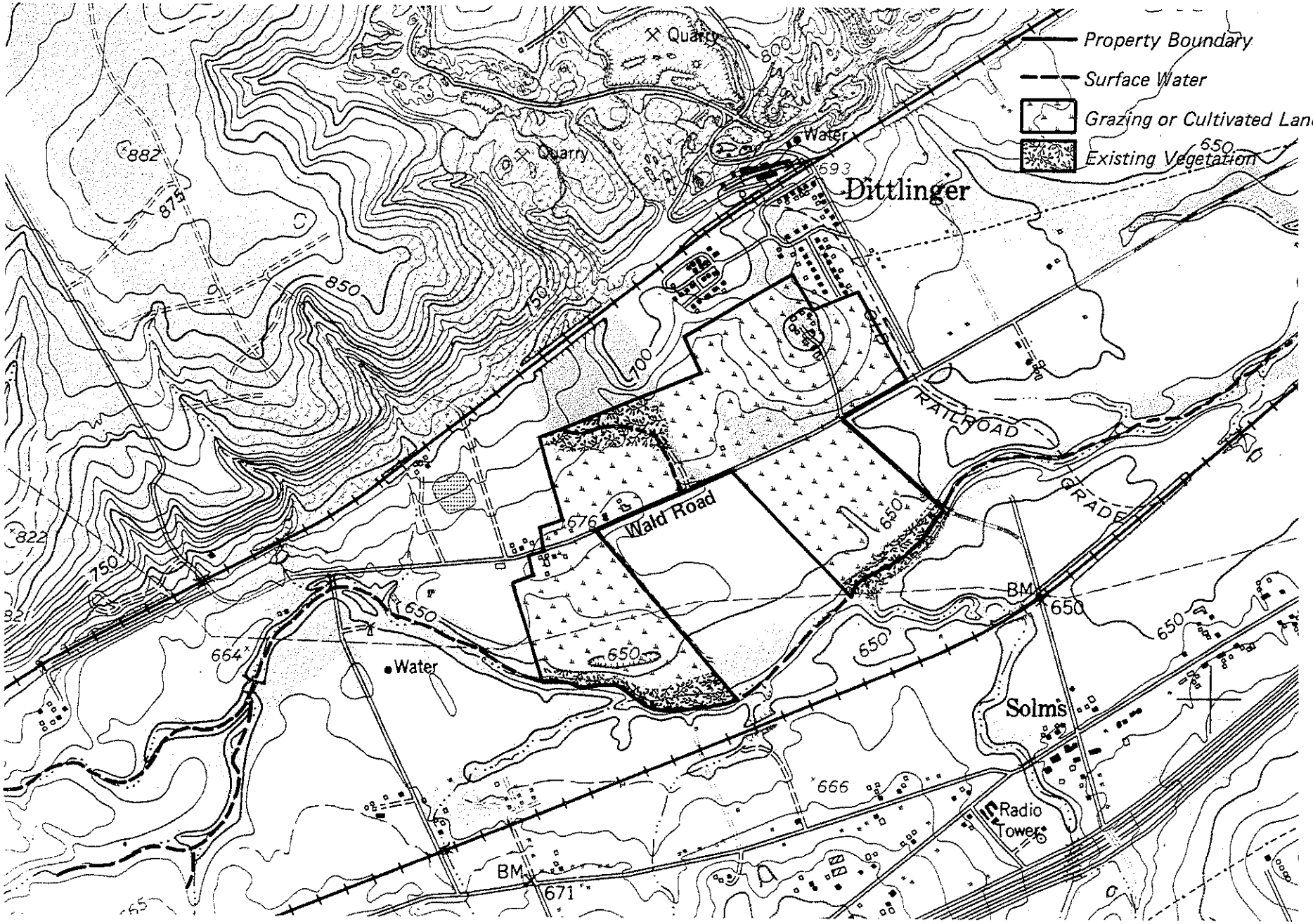


Figure 1-2 Comal County Property and Land Use

New Braunfels West 2998-413

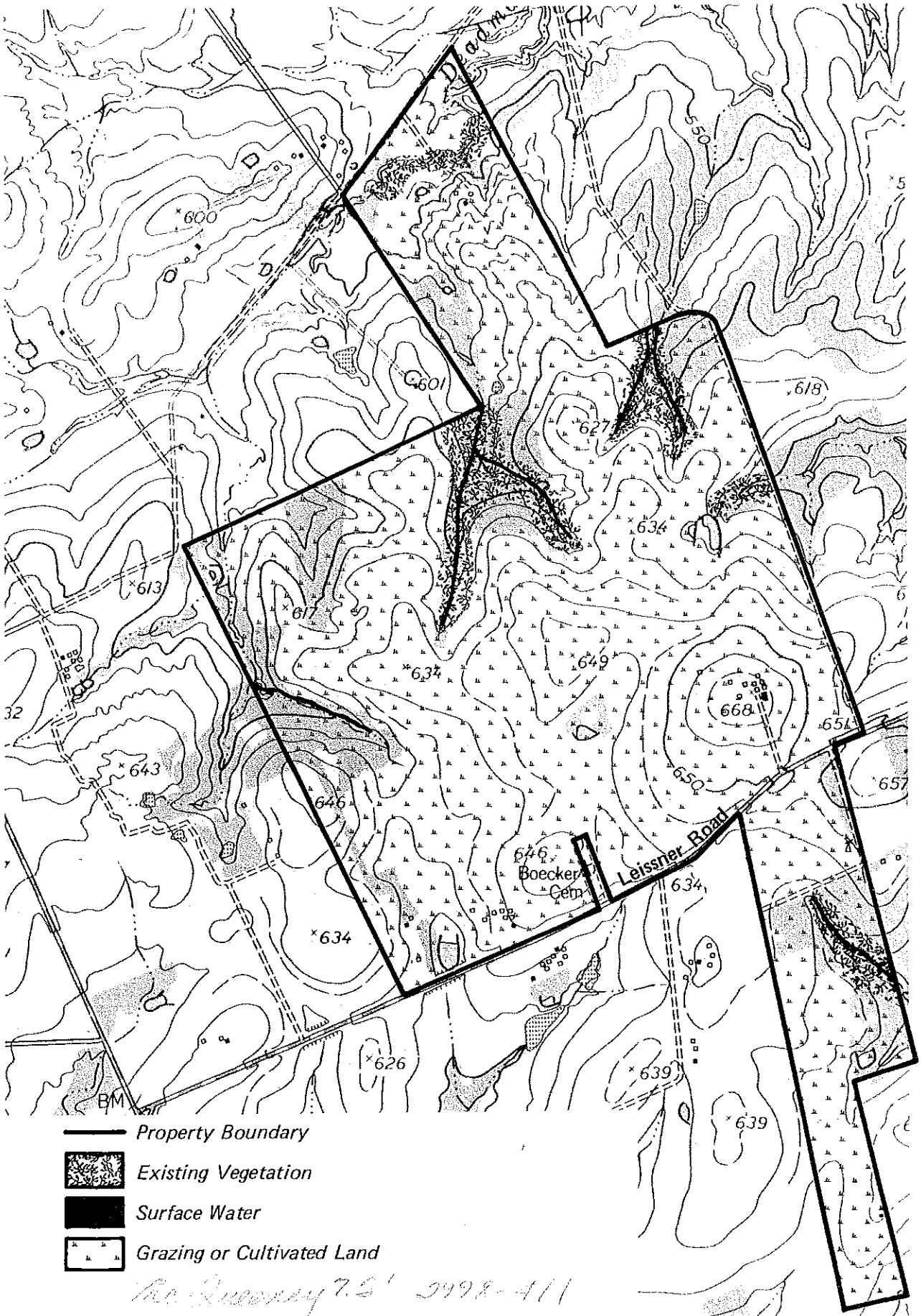


Figure 1-3 Guadalupe County Property and Land Use

Development on this site will begin in the northernmost section, south of Deadman Creek, where the underlying clay will be excavated in an open pit construction. Most of the remaining property will be left unaltered except for continued agricultural activity.

1.3 Cultural Resources Survey Design

All property currently owned or optioned by GPI pertaining to the project was evaluated as part of this cultural resource assessment. Prehistoric resources were evaluated by examining the surface of the GPI sites for artifacts indicating previous occupation. The field survey was conducted along transects parallel to selected drainage and topographic features. The locations of these transects were established after previous cultural resource survey work in the region was reviewed. Thus, particular attention was focused on portions of the GPI sites believed to have the potential for containing yet unidentified cultural resources. Specifically, cultural resource reports available at the Balcones Research Center, University of Texas, Austin, were reviewed as noted in Sections 2.1 and 3.1. Dr. Jeffrey C. Howry, Senior Archeologist at ERT, had overall responsibility for this cultural resource survey program. The field work was undertaken by Dr. Howry with the assistance of Mr. Harvey Smith from the Center for Archeological Research, University of Texas, San Antonio, on 9 and 10 March 1978. Mr. Smith is currently conducting site survey and excavation work in the Comal County region.

Similarly, a limited review of known historic properties in the vicinity of the GPI sites was undertaken before the field survey work. Structures of potential historic significance were visited and photographed. Several local residents believed knowledgeable of the history of the GPI sites were also interviewed (for example, Mr. Felix Kneuper of New Braunfels regarding some of the structures on the Comal County site and Mr. Cox, Leissner Road, regarding some features on the Guadalupe County site). Further background research was conducted at the Baker Library of Texas History, University of Texas, Austin, regarding the general history of the New Braunfels and Seguin because of the relative proximity of these communities to the GPI sites.

Mr. Alton Briggs, archeologist from the Texas Historical Commission, was consulted with respect to possible concerns of the Commission in December 1977 and March 1978. Mr. Briggs' recommendations were incorporated in the subsequent cultural resource survey work.

Figures 1-4 and 1-5 indicate the location of eight areas or zones surveyed within the GPI Comal County and Guadalupe County sites, respectively. Survey Zones I, II and III are included within the Comal County property, while the remaining survey Zones IV through VIII refer to areas within the Guadalupe County site. Survey transect locations are also indicated on these same figures. Information presented in Section 2, Prehistoric Archeology, and Section 3, Historic Properties and Structures, reference eight survey zones.

1.4 Summary of Findings

This section summarizes the major findings of the cultural resources survey. The following conclusions are included in this report:

1) No National Register sites or nominated sites exist on or in close proximity to either of the GPI sites surveyed. No impact on such cultural resources is anticipated.

2) A homestead site associated with the early settlement of New Braunfels exists on a portion of the Comal County property. One of the remaining structures, the main house, may be of some local significance. The structure is situated on a portion of the GPI property that will not be developed, but will remain undisturbed within a "buffer zone." GPI has met with the local historical society in New Braunfels and has offered to donate the main house if sufficient interest in moving it to another location exists. GPI plans to maintain this structure until such time as it is removed. Adverse impact on this possibly locally significant structures is, therefore, also not anticipated.

3) Prehistoric resource materials were found on both the Comal and Guadalupe County sites. However, at no location on either site were artifacts found in sufficient density and variety or in stratigraphic deposits to suggest extended occupation.

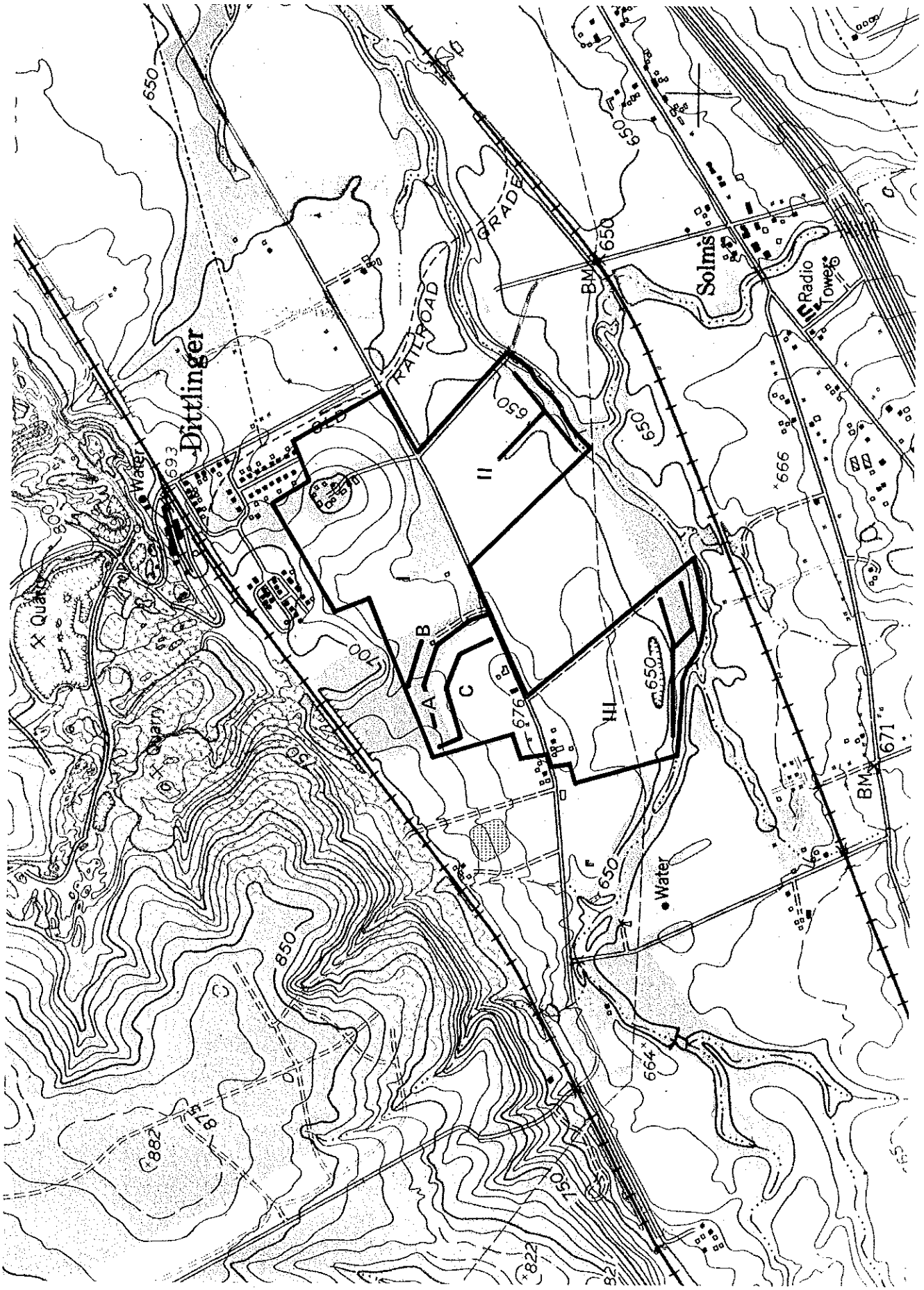


Figure 1-4 Zones of Archeological Survey, Comal County, Texas

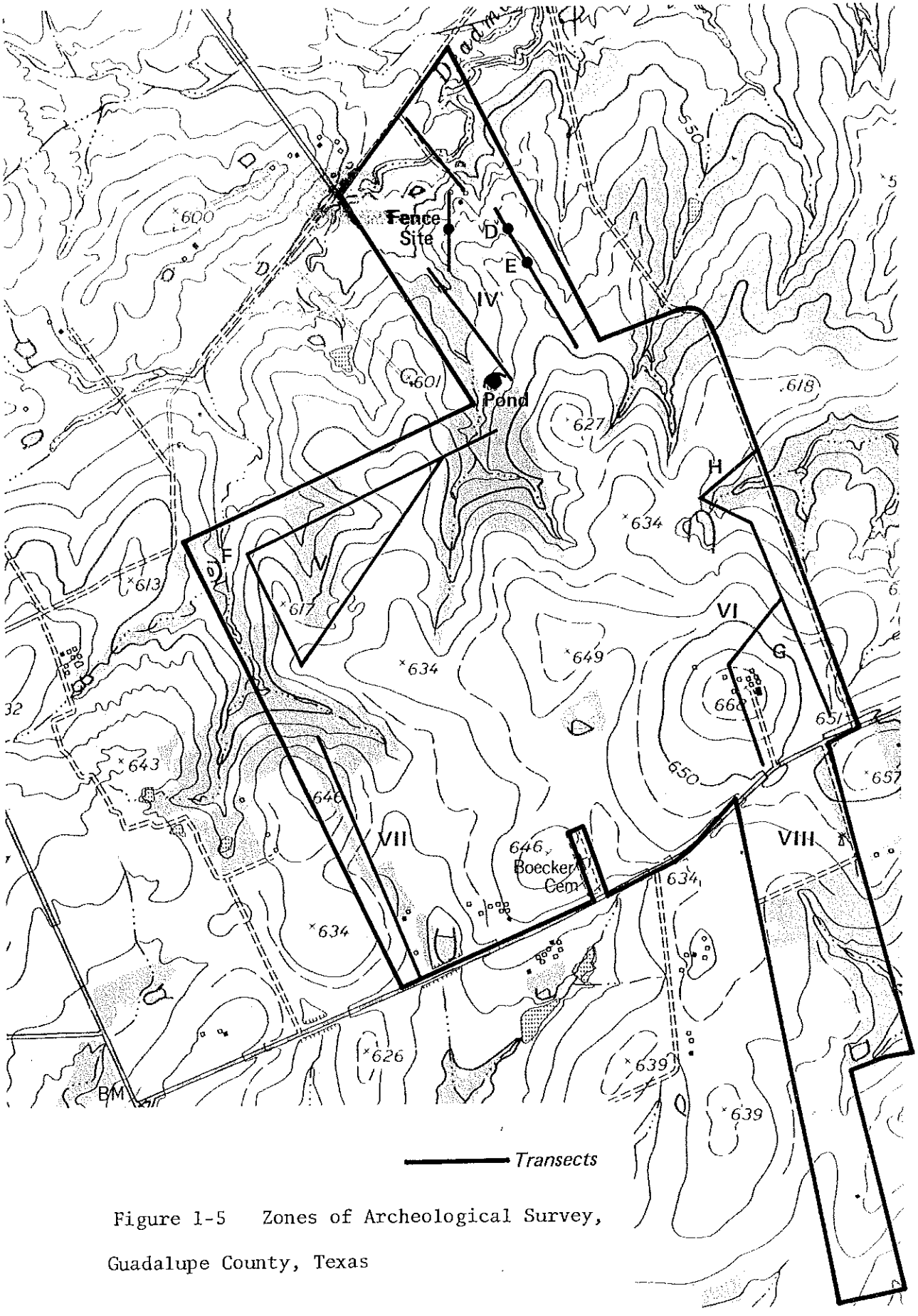


Figure 1-5 Zones of Archeological Survey, Guadalupe County, Texas

454-3

It is believed that distribution and location of materials in proximity to seasonal drainages indicates that only temporary camps and hunting activities occurred on various parts of the GPI sites in prehistoric times. The absence of defined prehistoric sites on the Comal County property and the equally light scatter of cultural materials on the Guadalupe County property precludes significant adverse impacts on prehistoric resources.

4) Recommendations regarding prehistoric and historic resources are presented in Sections 2 and 3.

2. PREHISTORIC ARCHEOLOGY

2.1 Regional and Local Prehistory

A review of available literature relevant to the project site areas was undertaken by ERT. Information from this review is briefly summarized below.

The two project sites in Comal and Guadalupe counties represent the separate environmental settings of the Edwards Plateau and coastal plain, respectively. Although ecologically distinct, they share similar prehistoric traditions, which can be broadly characterized as Paleo-Indian, 9200 to 6000 BC, Archaic 6000 BC to 500/1000 AD and Neo-American 500/1000 AD to 1600 AD (Johnson, Suhm and Tunnell 1962, Figure 45). Both project sites are located within the Guadalupe River drainage system. Within this drainage system, five general types of prehistoric sites have been identified as part of other previous research and include:

1) open occupation sites with temporary and repeated occupation,
2) burned rock middens,
3) rock shelters,
4) chert workshops consisting of flint working or surveying stations and
5) burial sites.

In addition to prehistoric occupation, considerable historic Indian settlement in the region occurred and included the Comanche, Tonkawa and Delaware. The Tonkawa are specifically known to have been in the New Braunfels areas (Hester, Bass and Kelly 1975).

Several archeological surveys have been conducted in Comal county, all in the Guadalupe River drainage (Stephenson 1951; Johnson et al. 1962; Hester et al. 1975; Shafer 1963; Kelly and Hester 1975; Kelly and Hester 1976). The most recent investigation by Kelly and Hester focused on the upper portions of Dry Comal Creek as part of a review for a flood control project.

The area covered by this previous survey is located about two miles northwest of the Comal County GPI plant site. Evidence uncovered consists of occupation zones along tributaries running directly off the plateau. Archeological sites identified were near intermittent streams and included extensive lithic scatter, a diversity of tools and burned rock believed to be the remains from campfires by prehistoric inhabitants. Archeological material discovered as part of this work was roughly dated to the Archaic period for both habitation and quarry sites. These sites occurred both adjacent to streams and on terraces on either side of stream drainage.

2.2 Survey Results

A complete inventory of all materials collected is presented in Appendix A. Nomenclature is that used by Kelly and Hester (1976). The technique for survey employed by the field team consisted of walking transects approximately 50 to 100 feet apart in parallel lines, with a random zig-zag along each transect of approximately 20 feet. This technique was modified in Zone I where heavy vegetation necessitated general survey and selected removal of surface litter.

2.2.1 Comal County Property

Zone 1

The cement manufacturing plant will be constructed on part of Zone I. A shallow drainage exists in the central part of Zone I, running roughly northwest to southeast and surrounded by a dense stand of live-oak and cedar. A dirt road runs north from Wald Road, the southern boundary of Zone I, to a barn adjacent to this drainage. The northern Zone I boundary is marked by a cleared fence line separating the GPI property from that of Parker Brothers and U.S. Gypsum.

The areas on both sides of this Zone I drainage were extensively investigated and disclosed a thin scatter of primary and secondary flakes as well as several bifacial tools. Only one diagnostic artifact was found, the corner of a Pedernales Point, along with portions of

several other tools that cannot be as specifically dated. Figures 2-1 and 2-2 are photographs of the most significant materials collected in Zone I. The Pedernales Point was recovered in the cleared field west of this drainage and is believed characteristic of the middle to late Archaic period (Suhm and Jelks 1962, page 235) and dates from 4000 BC to 1000 AD. An Archaic time frame is consistent with the other tools collected, including a Clear Fork Gauge and large bifacial hand axes found at Point C (see Figure 1-4). An open field, which has undergone heavy contour plowing, exists on the eastern portion of Zone I on which a large pond has been constructed.

Zone II

Zone II is bounded on the north by Wald Road and the south by Dry Comal Creek. This open field is planted with a thick cover of Bermuda grass. A drainage ditch bisects the southern portion of this field and extends down to the Dry Comal Creek and exposes up to 10 feet of alluvial deposit on the lower portion of the field adjacent to the creek. The eroded bank of the Dry Comal Creek and first terrace was surveyed for evidence of prehistoric habitation, but none was found. A few scattered flint materials, including primary and secondary flakes and one unifacial tool, were collected on the surface of this field (Figure 2-3).

Zone III

Zone III, an agricultural property, includes an old farmstead adjacent to the south side of Wald Road. Dry Comal Creek forms the southern boundary of Zone III, and fence lines form the east and west boundaries. This field, which comprises the majority of land in the zone, is currently covered with grass except for the southern portion adjacent to the creek.

The Dry Comal Creek stream bed and its first terrace were surveyed, but only a few scattered tools were encountered. Figure 2-3 is a photograph of the most significant materials found in Zones II and III adjacent to Dry Comal Creek.

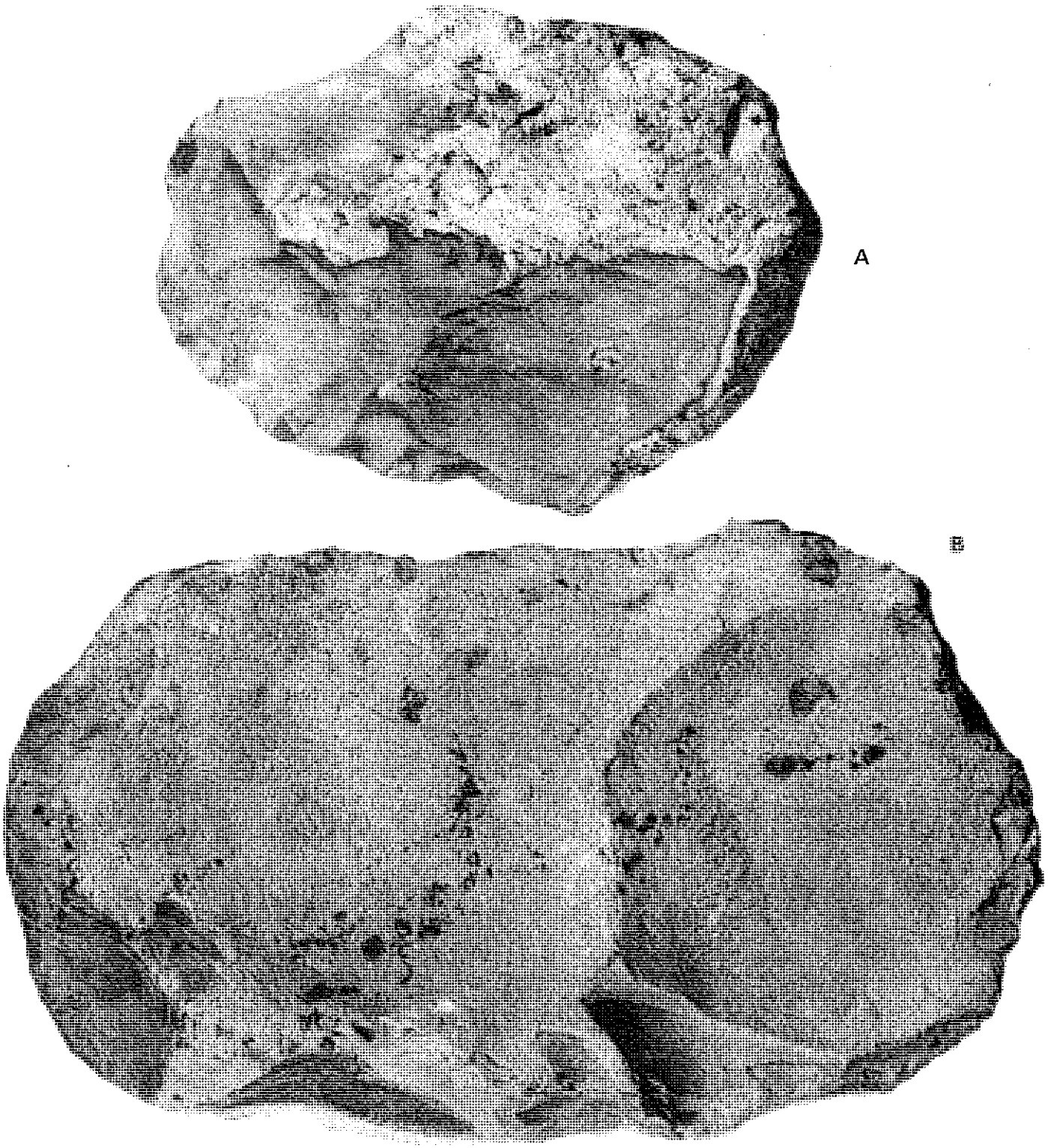


Figure 2-2 Zone I Location C, Comal County
A - Bifacial Tool
B - Bifacial Tool

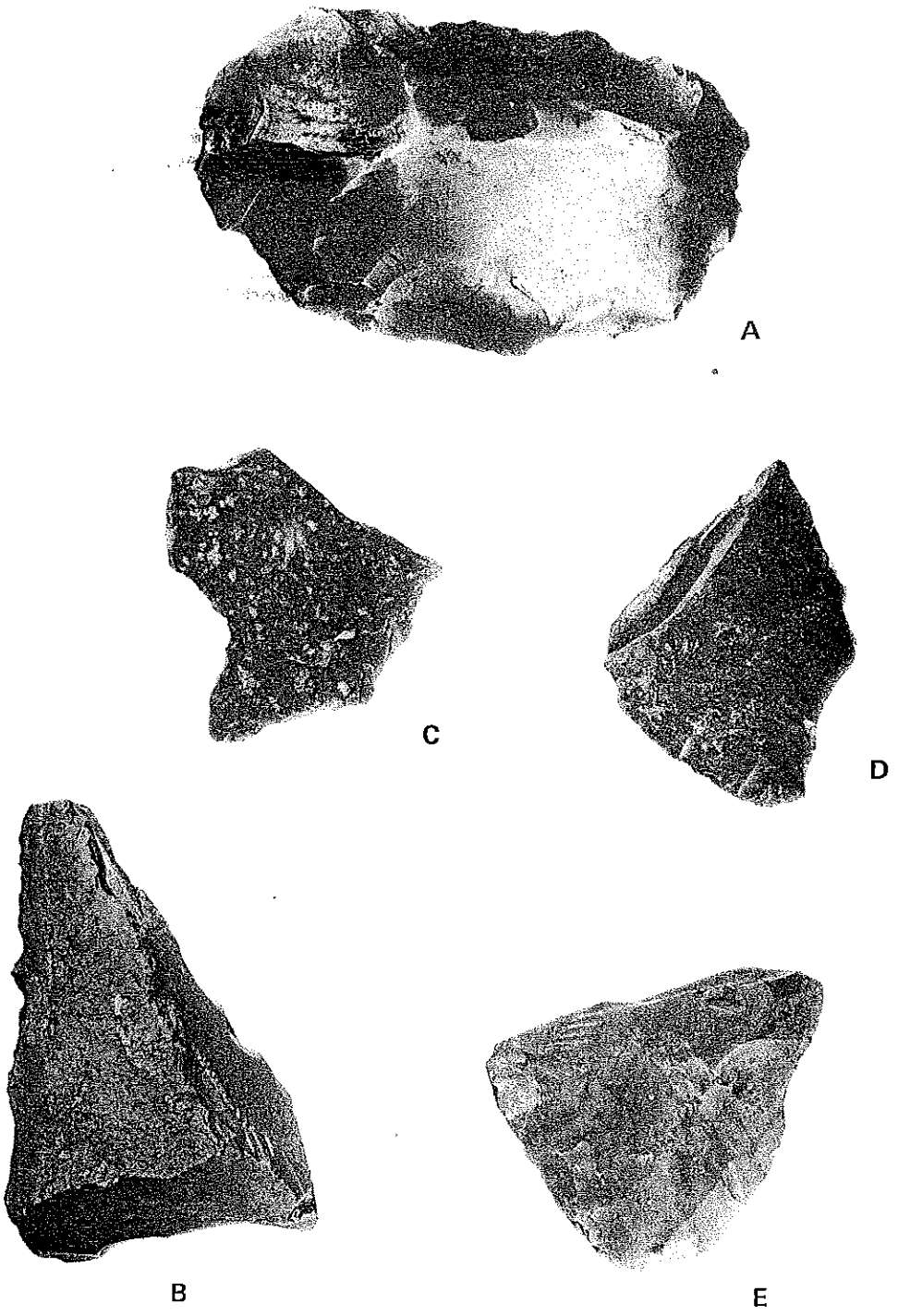


Figure 2-1 Zone I, Comal County
A - Thin Biface, Location A
B - Clear Fork Gauge, Location B
C - Pedernales Point Fragment, Open Field Southwest of A
D - Thin Biface Fragment, Open Field Southwest of A
E - Thin Biface Fragment, Open Field Southwest of A

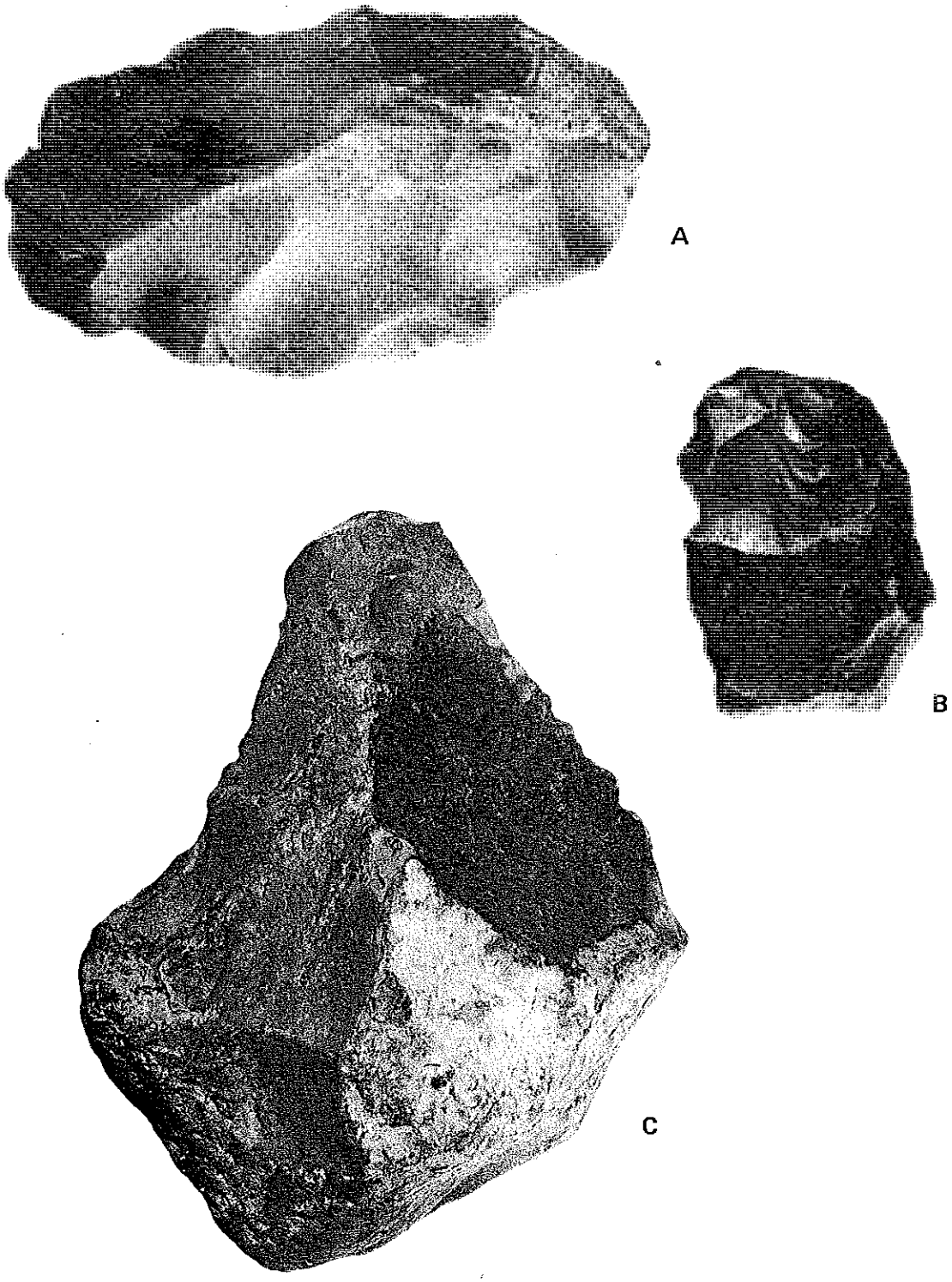


Figure 2-3 Dry Comal Creek Vicinity, Comal County
A Zone II - Bifacial Tool
B Zone III - Thin Biface Fragment
C Zone III - Bifacial Tool

2.2.2 Guadalupe County Property

Zone IV

Only a portion of the Guadalupe County site will be mined for clay. Initial mining will probably take place in the northern part of the Guadalupe County site. As such, much of the GPI site will remain unaltered and continue to be used for agricultural.

Zone IV is crossed in its northern extreme by Deadman Creek, which has a possible flood-prone area extending south to a bluff on which an old farm house is located. No materials were found near Deadman Creek in Zone IV.

South of the old farm house and along a fence line, a concentration of tools was collected in an area approximately 100 feet long and 50 feet wide (see Figure 1-5 for location of the Fence Site). These included an Archaic period point, a gauge, scrapers, bifacial tools and the bases of other tools, possibly knives. Photographs of these materials are included as Figure 2-4. Noteably, only small quantities of debris or debitage of primary or secondary flint flakes were found. No burnt rock and other cultural materials indicative of extended occupation were discovered. This area has been erodedd, exposing the stones that were included in the topsoil and a red subsoil. In summary, this shallow Fence Site appears to have been an area of only limited prehistoric activity.

South of this area, along Zone IV transects, other scattered tools were found. On the east transect, bifacial tools were collected from eroded low ridges (see Locations D and E on Figure 1-5). Upstream (south) from the earthen pond, a few additional tools were also collected. Figures 2-5, 2-6 and 2-7 are photographs of representative material found in the remainder of Zone IV.

Zone V

Zone V is a large field that was recently plowed before this field survey was undertaken. The excellent conditions for surface observation disclosed only a small amount of flint debitage or tools, except at Location F as noted in Figure 1-5, where a few scattered materials were noted.

Figure 2-4 Guadalupe County, Fence Site - Zone IV
A - Thin Biface
B - Gourge Fragment
C - Bifacial Tool

461-3

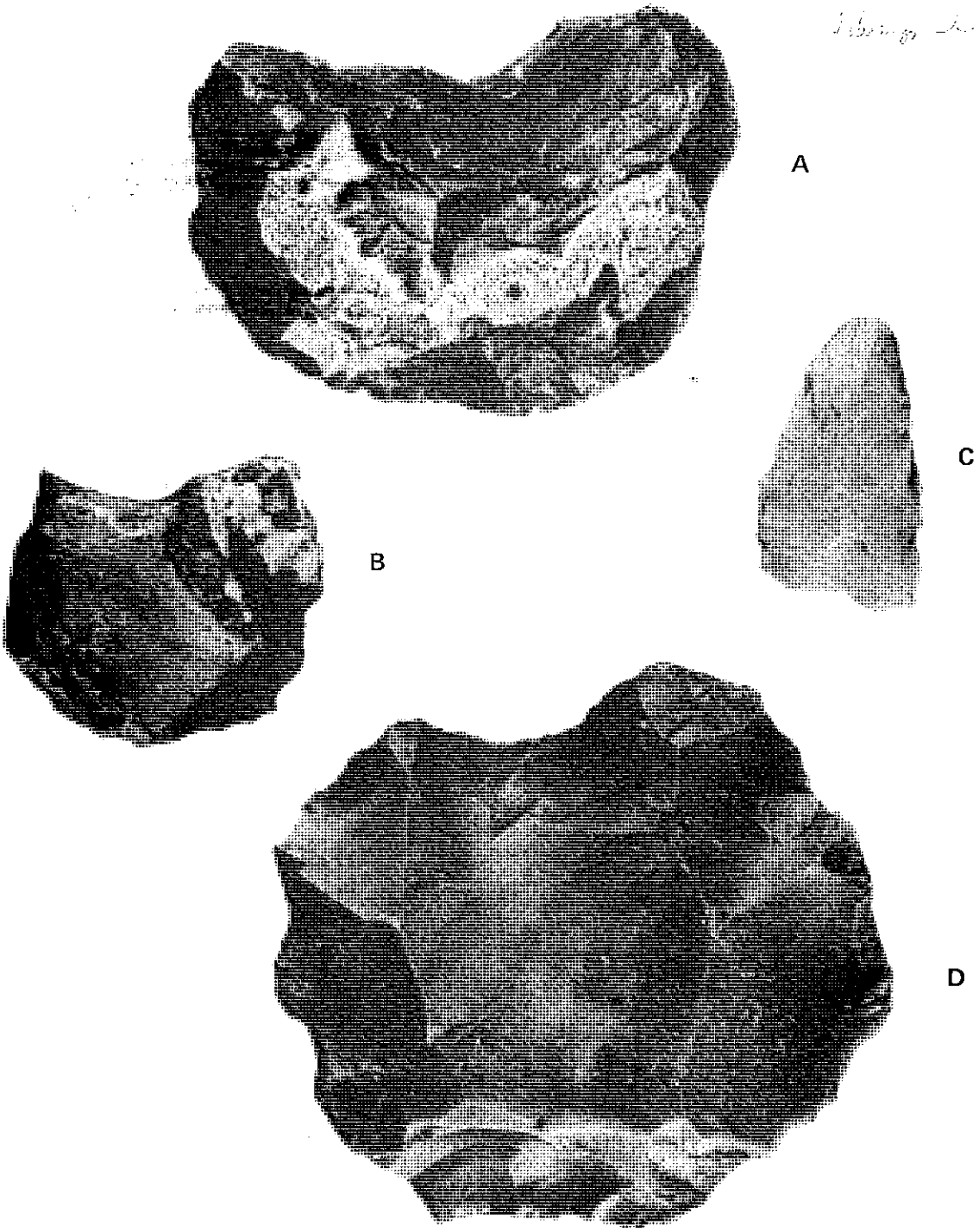


Figure 2-5 Guadalupe County, Fence Site - Zone IV
A - Thin Biface
B - Thin Biface Fragment
C - Point Tip - Archaic
D - Thin Biface

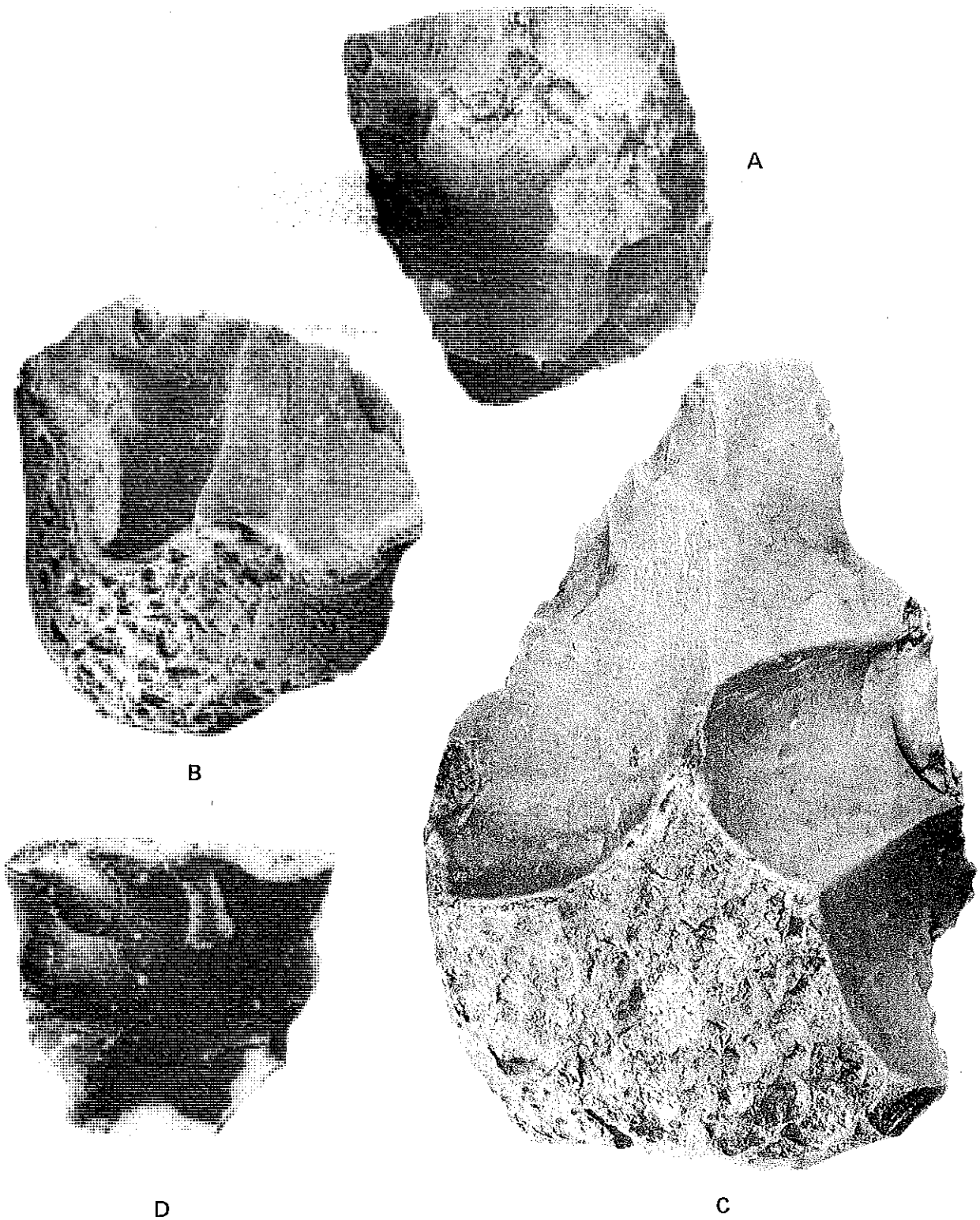


Figure 2-6 Guadalupe County Property
A - Thin Biface Zone IV, Near Pond
B - Thick Bifacial Tool Zone IV, Near Pond
C - Thick Bifacial Tool Zone IV, Location E
D - Thin Biface Zone V, Location F

461-5

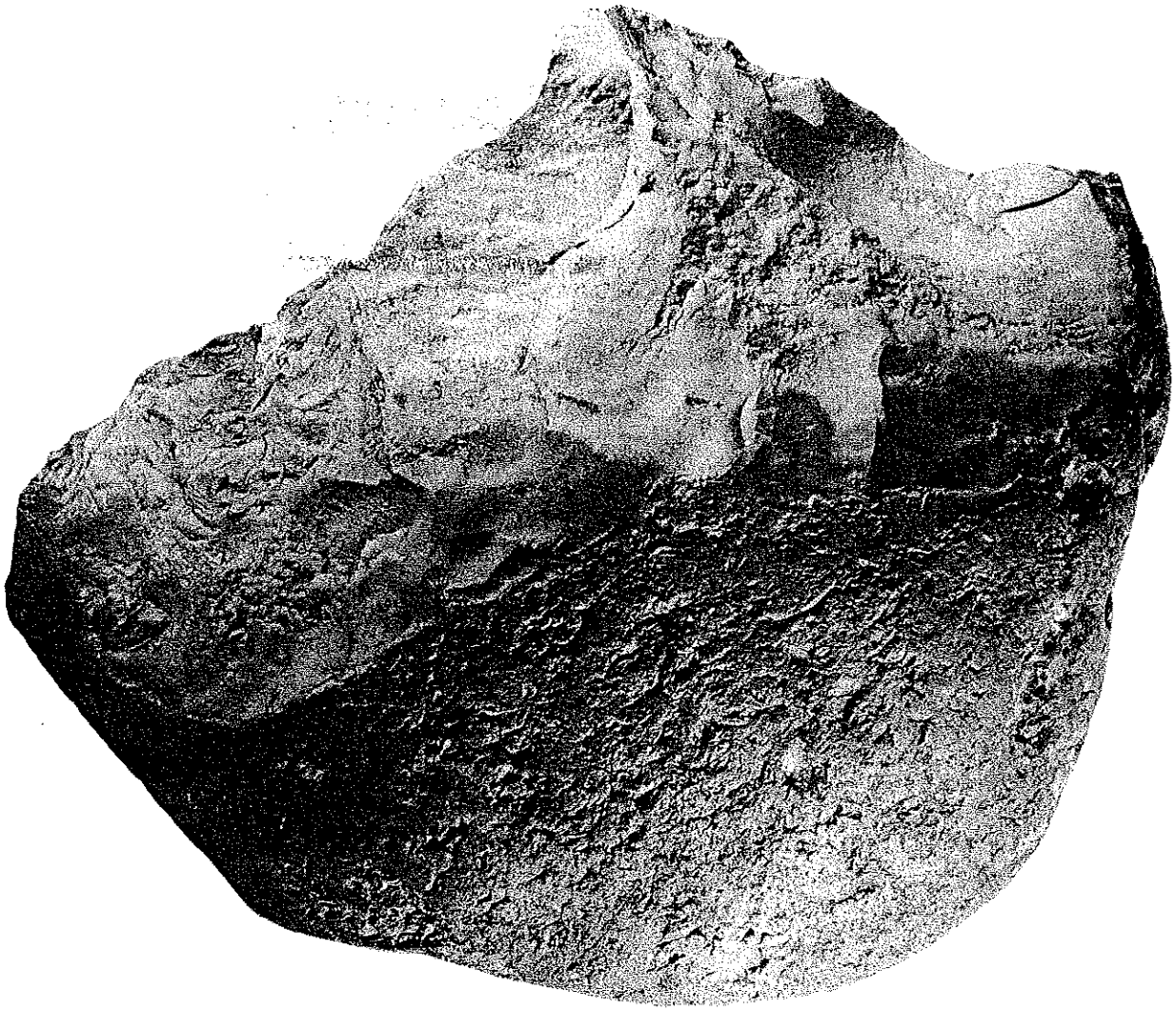


Figure 2-7 Guadalupe County Property
Bifacial Chopper - Zone IV, Location D

Zone VI

Zone VI includes a farm whose surrounding fields have undergone extensive contour plowing. A minimal amount of material was found in Zone VI. A very few bifacial tools and cores or blanks were found at Locations G and H as noted in Figure 1-5.

Zone VII

Zone VII is another farm area currently used for grazing and undergoing final clearing of a few remaining trees. No artifacts were recovered in Zone VII.

Zone VIII

Zone VIII is a large field used for grazing, the surface of which is covered with a dense grass. This zone is not currently anticipated to be developed as part of the clay pit.

2.3 Summary and Conclusions Concerning Prehistoric Resources

Prehistoric materials recovered from GPI properties in Comal and Guadalupe Counties indicate that prehistoric inhabitants used certain restricted areas within both sites. The materials further indicate that such selected use occurred during what is regionally recognized as the Archaic Period, from 6000 BC to 1000 AD. The few diagnostic artifacts that were found suggest a middle or late Archaic occupation of the area (4000 BC to 1000 AD). At no location on either GPI properties were prehistoric materials found either in sufficient density and variety or in stratigraphic deposits to suggest extended occupation. The distribution and location of materials near seasonal water sources indicate that certain areas were probably the focus of only temporary hunting activities and camps.

Since the majority of both GPI sites have in the past undergone land clearing, cultivation and extensive contouring, the potential for undisturbed prehistoric sites to exist is considered low. Prehistoric occupation may have occurred at early periods along the Dry Comal Creek,

but would have been subsequently covered by the creek's alluvium deposits. However, careful examination of the creek's erosional profile revealed no evidence of occupation.

2.4 Impacts and Recommendations for Prehistoric Archeological Resources

No significant adverse impact on archeological resources is anticipated to result from developing the GPI properties, as indicated by the present fieldwork. The absence of defined prehistoric sites on the Comal County property and the equally light scatter of materials in the Guadalupe County property, with the exception of the Fence Site do not represent significant prehistoric resources. However, because materials that indicate prehistoric use of the GPI properties were recovered, the following recommendations are made:

- GPI should undertake additional field work to cover 100% of the Comal and Guadalupe County properties to locate any as yet unidentified prehistoric sites or indications of prehistoric use. This information should be provided to supplement the data presented in this report.

- collected artifacts should be donated to the Center for Archaeological Research, University of Texas, San Antonio, since this institution has conducted other surveys in Dry Comal Creek area and recovered materials might supplement their present collections and

- An archeologist from the Texas Historical Commission should be allowed to observe the site clearing and be permitted to collect any cultural materials that may be unearthed during the plant site development.

3. HISTORIC PROPERTIES AND STRUCTURES

3.1 Comal County

3.1.1 History of Settlement in New Braunfels and Comal County

The European colonization of Comal County is marked by the settlement of New Braunfels by German immigrants in 1845. Under the direction of Prince Carl de Solms Braunfels, land was purchased at the junction of the Comal and Guadalupe River. The original site of the city consisted of 1,100 acres, with a league of land (4,428.4 acres) eventually constituting the grant. By the end of 1845 more than 980 German immigrants had traveled inland from Matagorda Bay and begun settling in New Braunfels (Haas 1961).

Each settler was provided with a plot of land "in-town" as well as 10 to 15 acres of farm land on the outlying territory. Original house constructions were log cabins made of cedar, with plastered walls and shingle roofs. Comanche Indians lived in the region during this settlement period. However, a peace agreement, which allowed the settlers to remain, was soon made with the council of all Comanche tribes. This treaty encouraged continued immigration of more settlers to the region so that by 1850 New Braunfels was the fourth largest city in Texas.

The available water power on the Guadalupe River encouraged several mills and related industries to be established by the 1860s. Landa Industries, Dittlinger Flour Mills, a woolen textile mill and a brewery were the earliest of these industries. In 1881 the railroad reached New Braunfels, and the Comal and Guadalupe Rivers were crossed by bridges (Rawson 1932).

3.1.2 Historic Structures on the Comal County Properties

The area west of New Braunfels, the site of the GPI property, was used for agriculture throughout the nineteenth century. In 1907, H. Dittlinger constructed a lime kiln on the land adjacent to the Missouri-Pacific Railroad (northeast of the GPI site) utilizing deposits

in the Balcones fault. A rock crushing plant was later added to supply road construction materials. A company town, Dittlinger, was established adjacent to the plant site. Low-income housing and a school were built for employees of this plant, who numbered 25 in 1940. Previously, in 1934, the entire facility was sold to the U.S. Gypsum Company (The Handbook of Texas 1952). The location of the former town of Dittlinger is indicated in Figure 3-1A. All housing as indicated on this figure has since been removed with only house foundations remaining.

Existing structures along Wald Road include the Needmore Farm, a nineteenth to twentieth century cluster of structures including a farmhouse and outbuildings (east portion of Zone I). Other, more recently constructed, residences exist further west on Wald Road. A photographic inventory of selected structures on both GPI sites is included in Appendix A. Photographs of buildings along Wald Road are also included in this Appendix.

Along the south side of Wald Road, on the property previously designated as Zone III, is a cluster of four buildings that constitute the remains of the Kasper Feick homestead (1) main house, (2) garage/shed, (3) two-story barn and corn crib, and (4) workshop. Kasper Feick was one of the original settlers of New Braunfels in 1845 and received an initial grant of 15 acres, which is included in the present GPI property. Later, in the 1870s, he purchased additional land to bring his total to approximately 43 acres. Mr. Felix Kneuper, the most recent owner of this property, possesses ownership documents including the original land grant deeds. A copy of this information is included in a separate appendix. Figure 3-1B is a schematic plan indicating the location of existing buildings on the Feick Homestead.

The oldest building formerly existing at the homestead, a one-room log cabin, was probably built at the time of the original land grant. This structure, which was located between the main house and the workshop (see Figure 31B), was recently removed from the property by the former owner to be moved to another site in the nearby Solms for reconstruction and restoration (see Figure 1-2 and Figure 4 in Appendix A).

Within a few years of the original cabin's construction, a larger main house was built. This house forms a portion of the present structure that stands nearest Wald Road. Figure 3-2A is a photograph of the main

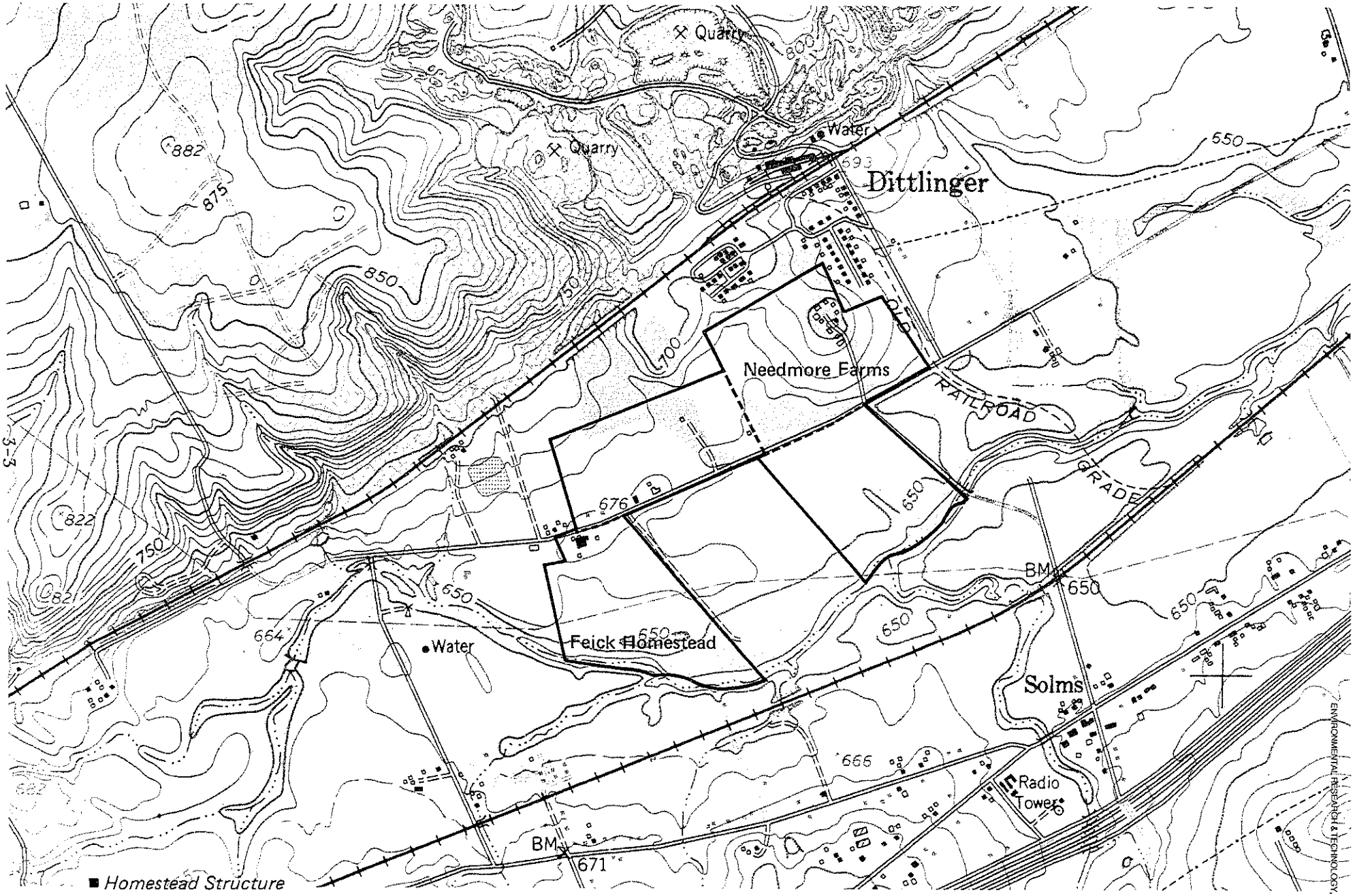


Figure 3-1a Homesteads -- Comal County

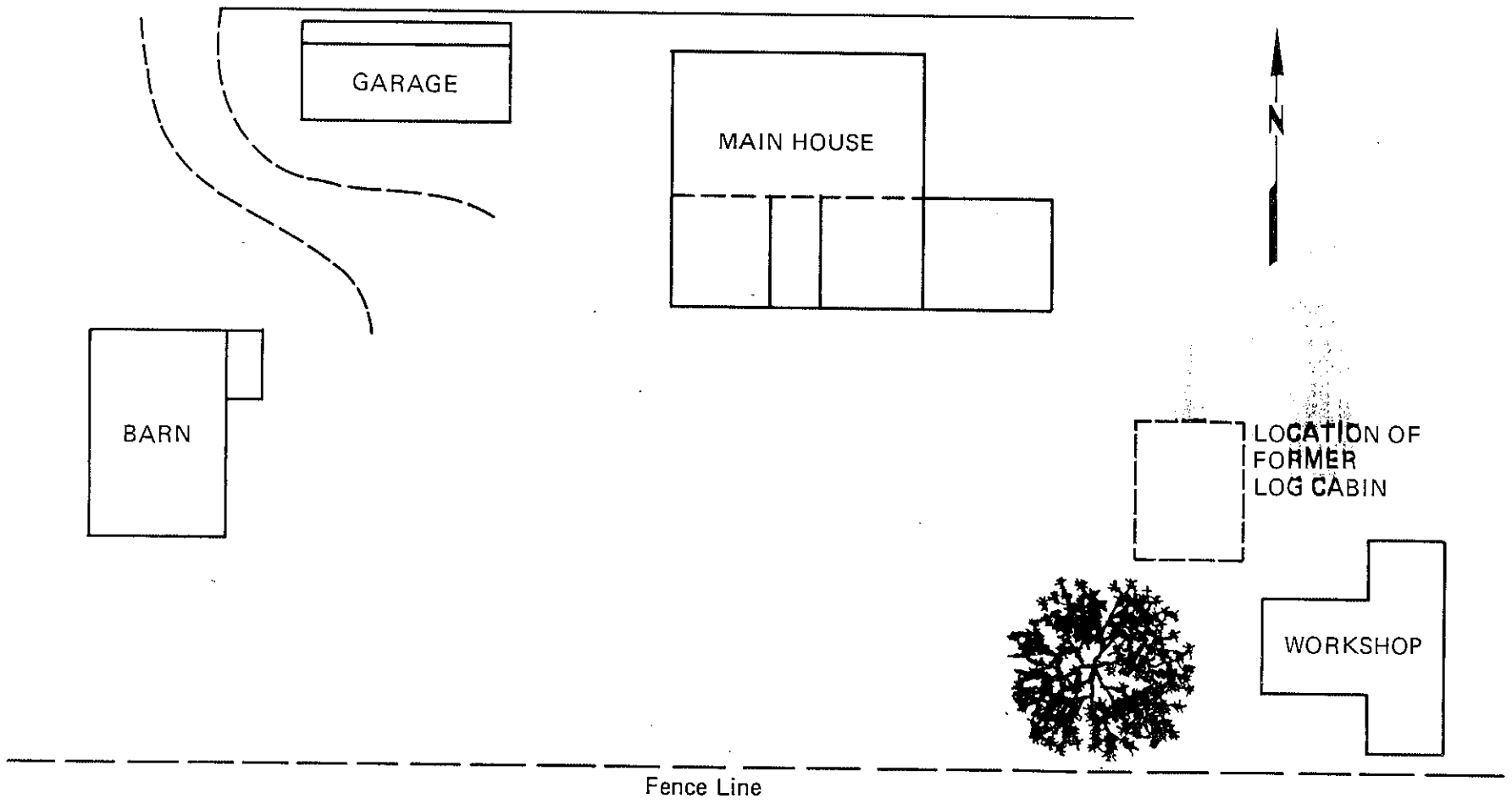


Figure 3-1B Feick Homestead (figure not to scale)

(a) Street View

(b) West View Showing Additions

(c) South View Showing Additions

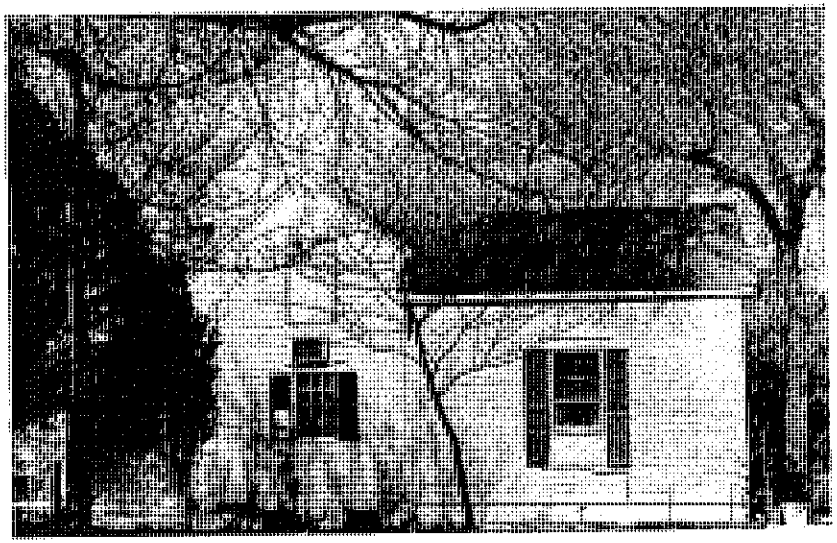


Figure 3-2 Feick Homestead -- Main House

house from Wald Road. This side of the building, according to the present owner, was originally the back of the house, as the "front" faced the interior yard. The street-facing entrance previously had a double door. The original house portion rests on a stone foundation to create a full cellar. Cedar beams with peg-framing define the walls, which are constructed of sun-dried brick. This construction technique, labeled "fachwerk," is characteristic of the area. The original house previously had a complete chimney of the same brick materials and a central stairway.

Kasper Feick, builder of the two structures previously described, was succeeded by one of his sons, David. Both father and son raised cattle, as well as pursued farming. Kasper Feick's brand (KF) was registered in 1845, the seventeenth brand registered in Comal County. The brand of his son David (D-F) was recorded in 1872. David had two sons, of whom Otto was the last Feick to own the homestead and who sold it to the present owner. Otto's wife, Lotte, continued to live in the main house until 1977. Additions, which included installing clapboard siding to the new portion to conform to the older section, were probably made to the main house at the time of Otto and Lotte's marriage in 1905. This form of exterior treatment is common to many houses in the area built in the early decades of the twentieth century (Figure 3-2B and C).

Typical of early homesteads in the area, several outbuildings were built surrounding the main house. Located west of the main house is a single-story shed structure now used as a garage (Figure 3-3A). A two-story barn (Figure 3-3B), constructed at two separate stages, reveals a north construction of hand-hewn timbers joined to a southern portion by a second story. This upper portion was formerly a corn crib. Between the barn and the road, portions of an earlier barn once existed. The other remaining outbuilding is a workshop located east of the original cabin (Figure 3-4A).

A small parcel of land (1.2 acres) is adjacent to the west side of the Feick homestead. This property is not included as part of the GPI Comal County site. Two structures exist on this property, a cattle barn of relatively recent construction, and an addition to a former structure that once existed on the north side of Wald Road. This addition of Greek Revival design is currently unoccupied and is being stored on temporary foundation pilings. (Figure 3-4B)

(a) Garage

(b) Barn

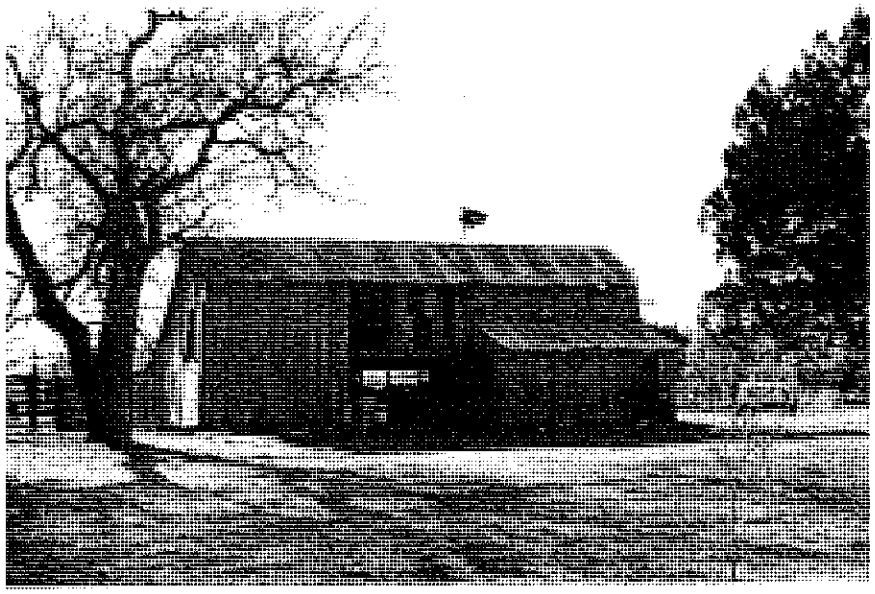


Figure 3-3 Feick Homestead Outbuildings

Figure 3-4A Feick Homestead -- Workshop

Figure 3-4B Barn and Greek Revival Structure West of Feick Homestead

Further east on Wald Road is Needmore Farms, another nineteenth century homestead, located on the eastern portion of the GPI plant site. The Heitkemp family farmed the surrounding land and continued a dairy farm operation up until the 1930s. There were two log-constructed structures on the property near the location of the most recent house. Approximately five years ago, the New Braunfels Conservation Society obtained these structures and removed them from the property. The other outbuildings, including cattle barns, are of recent construction.

3.2 Seguin and Guadalupe County

3.2.1 History of Settlement in Seguin and Guadalupe County

The history of settlement in the area now called Seguin dates back to at least the 1790s when it was a stop on the Old Spanish Trail. Settlers and commerce passed along this route as the Texan plateau regions became occupied by European immigrants moving north from the Gulf Coast plain and southern Spanish towns.

The town of Seguin was founded in 1838 as a grant to Mathew Caldwell's Gonzales Rangers at a location then named Walnut Springs. A college was founded at Seguin in 1849 as settlers arrived to farm the rich soil of the coastal plain's Blackland Prairie. The region today remains primarily agricultural.

3.2.2 Historic Properties on the Guadalupe County Property

The northernmost part of this GPI property is adjacent to Deadman Creek (previously labeled Zone IV on Figure 1-5). The only structure currently standing is a long-abandoned farmhouse overlooking this creek. The photographic inventory of structures included in Appendix A contains photographs of this building.

Two currently operating farms are located along Leissner Road, the southern boundary of the GPI property. The farms were both part of the Boecker homestead, the original land of which is located in Zones V, VI and VII. The house on the Zone VI property is the earliest. It has a cement foundation and was constructed since the turn of the century.

Its outbuildings include a stock barn, equipment shed and several smaller buildings that were probably farmhand quarters (located behind the main house - see Appendix inventory). Within the past 50 years, a decendent of the Boecker settlers subdivided the property and developed the second farm to the west (Zone VII), into which he moved, leasing or selling the original homestead.

The Boecker cemetery separates the two farms and is located along Leissner Road. The earliest burials in this cemetery date to 1892. The cemetery headstones indicate that a variety of families own plots, with both parents frequently buried together. All persons appear to be of German descent, a few having been among the early settlers to the area.

3.3 Summary and Conclusions concerning Historic Properties

3.3.1 Comal County Property

The GPI site in Comal County is located southwest (three miles) of city of New Braunfels, one of the early and largest settlements of German immigrants to Texas. A land grant to one of the settlers of New Braunfels, Kasper Feick, in 1845, and the one remaining structure he constructed for his homestead (the main house), is contained within the Comal County property of GPI. This property is considered to be of possible local historic significance and is the only historic resource meriting consideration.

GPI has offered to donate the Feick homestead main house to the New Braunfels Conservation Society. Should the society decide to accept the building, it will have the option of moving it to another site at some time in the future. The remaining three structures on the Feick homestead (barn/corn crib, garage, workship) will not be removed from the property. It is believed that these remaining outbuildings are not of particular historic significance. Their importance lies in their spatial context to the residential structure, which will probably be removed from the property. Preservation of these structures by relocation, therefore, does not appear warranted. The Feick homestead portion of the GPI site will not be disrupted, nor will it be part of the proposed construction area. By relocating the Feick homestead's principal

component (e.g., the main house), its primary local historic value will be preserved. Therefore, no direct impact on this historic resource is anticipated since structures remaining will be within a buffer zone and not be disturbed by the planned development.

3.3.2 Guadalupe County Property

The property purchased by GPI for clay mining is currently used for two types of agricultural activity, grazing and feed crop cultivation. Most of the property, under the management of two farms along Leissner Road, will be leased back to the original owners for continued agricultural use. Only the northernmost portion of property is currently planned to be used for the clay mining operation. This part of the Guadalupe County site has no historic significance. The remaining structure found in this area does not warrant historic preservation.

The Boecker Cemetery is surrounded by GPI property that will be leased for agricultural use. If, at any time in the future, mining operations are undertaken near the cemetary, a buffer zone of undisturbed land will be preserved around this cemetary. Thus no impact on the Boecker cemetary is anticipated.

No impact on historic resources is anticipated with respect to the Guadalupe County site.

3.4 Impacts and Recommendations concerning Historic Resources

3.4.1 Comal County Property

Of the potentially significant historic sites, only the Feick homestead warrants more detailed consideration. GPI plans do not currently include disruption of any of the Feick homestead structures as part of the cement plant construction or site development program. The land on which these structures are located was purchased as a "buffer area" and will remain in its present condition as open, cleared land. The main house of the Feick homestead will remain occupied with continued maintenance. Under these circumstances, no direct impact on this historic resource is anticipated.

Further, the operation of the facility would not significantly alter the physical environment, resulting in an increase in building deterioration so as to produce an indirect impact on the homestead.

Because of the Feick homestead's potential historic significance, the following recommendations are made.

- Additional information should be assembled to document the homestead's history through a limited review of: (1) available land titles and local historical records, (2) supplementary construction details of the main house and the outbuildings (both on and off the site) should be recorded and include descriptions of building materials, floor plans, foundation structures and other relevent architectual features, (3) limited subsurface testing might also include the identification and extent of homestead refuse or other utilization sites.
- Since certain remaining buildings that form the component parts of the Feick Homestead are on their original sites, it is important to record the relative locations of the buildings to one another. An accurate record of the locations of the structures currently existing and those that were removed in recent years should be undertaken, if such information is not already available, and be included as part of the historic documentation supplement.
- A copy of this report and location records should be provided to the New Braunfels Conservation Society, which has undertaken to preserve other buildings in the area. This report will provide some of the necessary documentation to enable the society or other interested persons to reconstruct the homestead, should they so desire.

Other houses and structures are located on the property owned by GPI in Comal County. However, none of these structures are of historic significance. Therefore, no action is warranted to preserve or protect them. These structures will be removed as part of present site development plans.

3.4.2 Guadalupe County Property

The mining operation planned for the Guadalupe County property will have no impact on historic resources since no significant features exist at the site. The Boecker Cemetary, which is adjacent to south side of the GPI property and more than one-half mile from the initial mining operation, would not be adversely impacted. However, GPI will take measures to provide a buffer zone around the cemetary should at some time in the future mining activities approach the Boecker Cemetary area. No measures to avoid or mitigate impacts on historic resources are necessary.

4. INTRODUCTION

4.1 Purpose and Scope of Work

General Portland Inc. (GPI) requested Environmental Research & Technology, Inc. (ERT) to perform a cultural resource survey for properties it was developing in Comal and Guadalupe Counties, Texas, as part of a cement manufacturing facility. Field work was undertaken in March 1978, and a report was prepared in April. Preliminary review of the survey work by the Texas Historical Commission resulted in recommendations to conduct further work to provide additional documentation. The field work was performed on 26 to 28 April and included both prehistoric and historic resource investigations. The Phase II prehistoric survey was conducted by Dr. Jeffrey C. Howry, Senior Archeologist for ERT and Mr. Fred Valdez of the Center for Archeological Research, University of Texas at San Antonio. In total, 100% of the GPI properties was surveyed. Assistance for the historic documentation was provided by Mr. Harvey Smith, registered architect and staff member of the Center for Archeological Research. Further work including analysis and report preparation was conducted in the weeks following the field work.

The prehistoric component of this study (Section 5) considered portions of the properties not previously surveyed. The investigations of the initial study had focused on those areas of the properties that were believed to have the highest potential for the existence of prehistoric resources. Certain of these areas did disclose limited amounts of materials, although no sites were located that contained diagnostic artifacts or undisturbed deposits. The secondary field investigations covered areas of lower resource potential and resulted in the identification of only two areas of additional prehistoric use. In total, a 100% of the site was surveyed.

The historic component of this study (Section 6) seeks to provide additional documentation on the Feick homestead, a section of property adjacent to the site chosen for the cement manufacturing facility. Included are a more detailed description of property ownership, drawings and photographs of homestead buildings and a description of their construction, a survey of building use, and intensive surface examination

with limited test excavations to determine the location of homestead refuse areas.

Conclusions and recommendations resulting from the most recent investigations are given in Section 7 of this report. The following paragraphs summarize the findings.

4.2 Summary of Findings

4.2.1 Prehistoric Resources

The second phase of field survey of the GPI properties in Comal and Guadalupe Counties disclosed only limited prehistoric material. Only on the Comal County property were additional chert tools and debris found in any quantity and within a defined area to suggest limited prehistoric use. As no diagnostic artifacts were collected in these Comal County localities, it is difficult to know the specific time period of occupation. Based on earlier survey work and examination of local collections from the area, it would appear that the artifacts reflect occupation during the Archaic period, and possibly more recently.

4.2.2 Historic Resources

Further investigation of the Feick homestead disclosed the original configuration of the buildings and a history of building construction. Detailed drawings of the main house and outbuildings enabled investigators to enumerate construction techniques and uses. Limited test excavations confirmed that the log cabin had been used both as a residence and, later, as a smokehouse. The blacksmith shop had been the focus of various metal fabrication and repair activities, and the forge was also used for shoeing farm animals.

Over the three generations of single-family ownership, various buildings that increased the homestead's self-sufficiency were added. The homestead represents the full range of activities typical of a family farm as evidenced by the structures and landscape features on the property. As the residence of one of the early German settlers to Comal County, the homestead also represents a particular style of regional adaptation to newly settled lands. However, because the homestead is not situated on land that will be used for the cement plant construction, no impacts will result from planned construction.

5. PREHISTORY

The areas surveyed in the Phase I Reconnaissance Survey and the subsequent Phase II Supplementary Survey are illustrated in Figures 5-1 and 5-2. The survey of both phases constitutes a complete coverage of all properties under consideration by GPI.

5.1 Comal County

The areas encompassed by the proposed cement plant site are Zones I, IX, and X in Figure 5-1. Materials recovered in Zone I were identified as belonging to the Archaic period and are described in Section 2. Zones IX and X, surveyed in Phase II, are similar in terrain but contain less surface water than the adjacent Zone I. Both Zones IX and X are open agricultural fields with a grass cover sparse enough to permit examination of surface conditions.

Zone IX soils contain a significant percentage of natural chert nodules on gently sloping terrain. In the southernmost section, at Location A in Figure 5-1, recognizable as a slight rise of ground level, a roughly oval area within 150 feet of Wald Road was found to contain a scatter of lithic materials that included cores, flakes, and several bifacial tools. No diagnostic artifacts were recovered, nor were indications of intensive occupation evident. However, intermittent occupation during prehistoric periods seems possible, although extensive collection over many years has reduced the number of diagnostic artifacts to be found.

Zone X, heavily contoured farm pasture, has very dense loamy soil. Surface inspection revealed little chert material of any kind on the property with only one small area, approximately 50 feet long (Location A, Zone X) where slope erosion disclosed one bifacial tool.

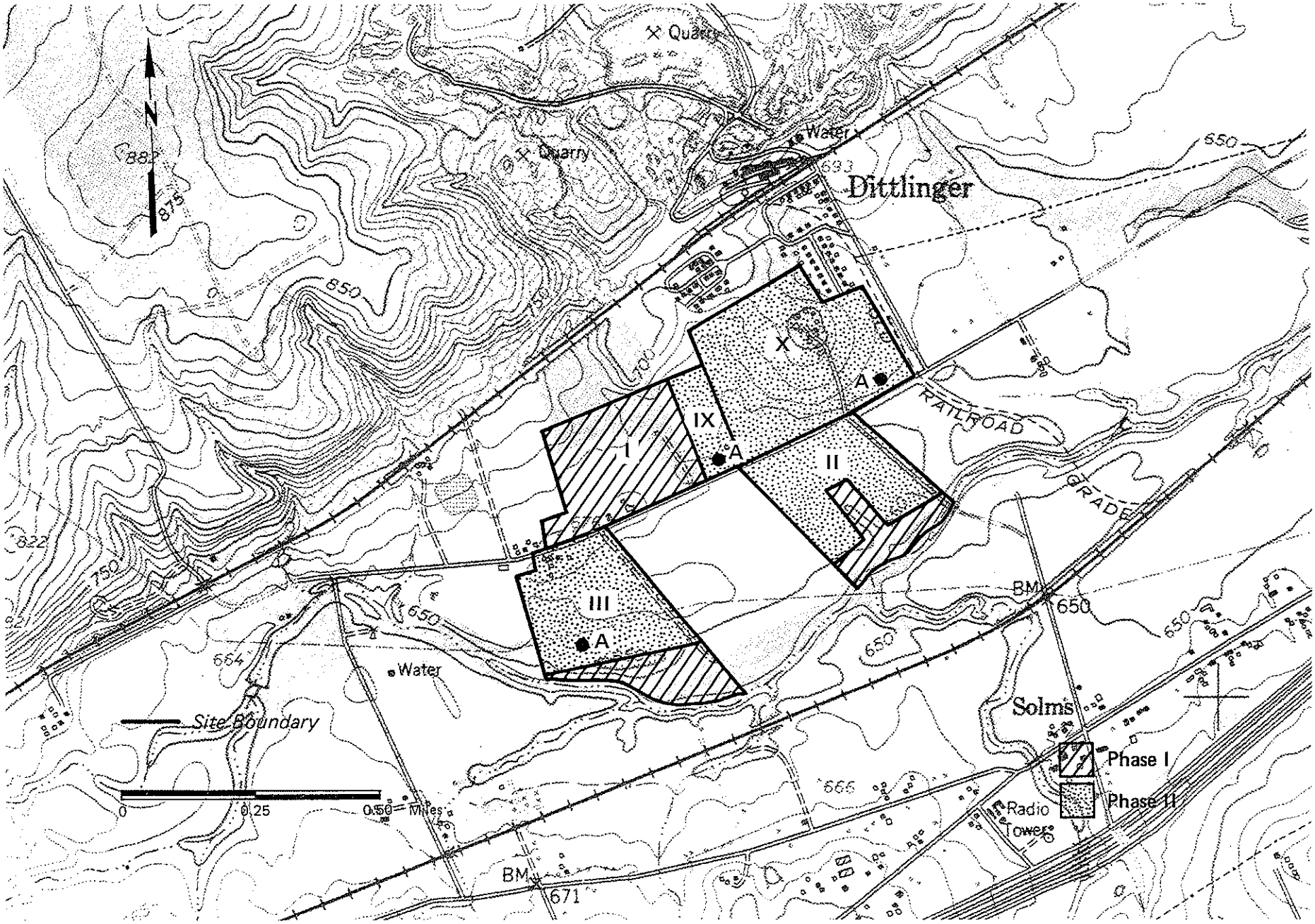


Figure 5-1 Zones Surveyed in Comal County

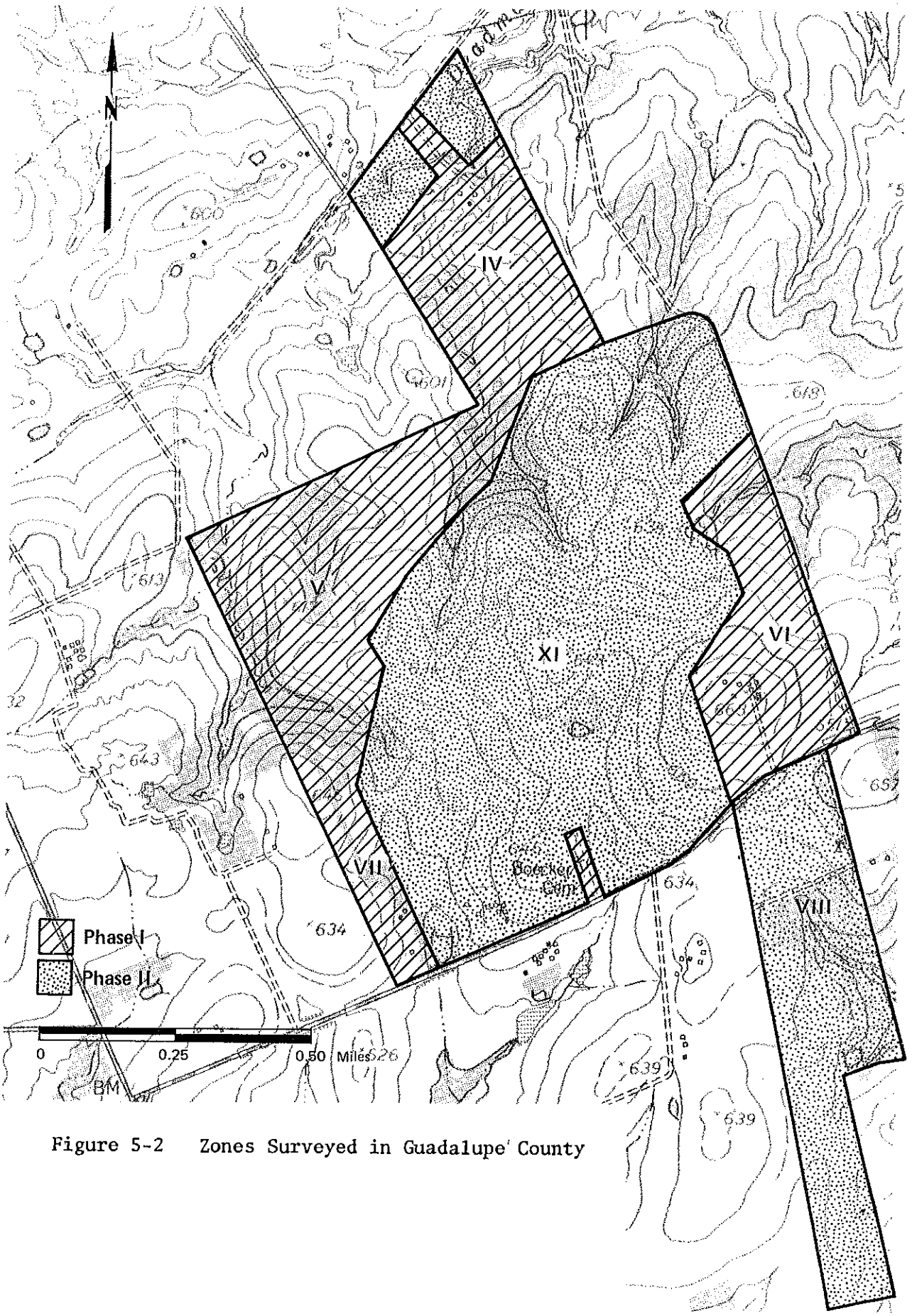


Figure 5-2 Zones Surveyed in Guadalupe County

Zone II, the designated area for a cooling and settling pond, was re-examined with particular attention to the upland areas north of Dry Comal Creek. Although the areas were covered with grasses, a moderate amount of natural chert material was discovered. Only in the southeasternmost corner was a single, large secondary flake encountered.

Zone III encompasses the properties of the Feick homestead. A recent harvest of oats on the fields south of Wald Road clearly exposed most of the zone's surface, a small area approximately 100 to 150 feet in circumference located about 400 feet north of Dry Comal Creek. Within this limited radius of 50 yards, cores, secondary flakes, bifacial tools, and a fragment of shell/fiber-tempered pottery were recovered. Conversation with owners of the property disclosed that this area's artifacts had been extensively collected over several decades during plowing and cultivation. The collection reflects use of the area from the Archaic period until recent times (see Appendix D). Oral history records that there was once a crossing of Dry Comal Creek in that vicinity and that Indians may have temporarily camped at this location in the period of early European settlement. Therefore, the area of surface scatter may be the remains of previous temporary encampment.

5.2 Guadalupe County

The areas designated as Zones V, VI, VII, VIII, and XI constitute the total properties considered part of the GPI mining plans. A portion of Zones IV, V, VI; and XI will be used in developing an open pit clay mine. Previous field investigations had disclosed limited lithic surface scatter at specific locations in Zones IV and V. Subsequent field work examined the areas in Zones IV and XI that were believed to have a low potential for the existence of prehistoric materials.

The flood plain of Deadman Creek in the northern portion of Zone IV is overgrown pasture. The ground surface exposes natural chert cobbles at certain locations. However, no prehistoric lithic materials were encountered at any point on either side of the creek.

Zone VIII is open grazing area with a variety of ground cover, ranging from sparse to dense, the latter occurring along a small surface drainage. A thorough surface inspection disclosed no artifacts of any kind.

The central portion of the Guadalupe County property is identified as Zone XI. This is the driest portion of terrain that could potentially be affected (see Figure 5-2). Nearly all of the zone has been cleared of vegetation and affords good ground surveillance. The drainage in the northeast corner of Zone XI has been cleared of vegetation and contained considerable amounts of eroded chert cobble material. One small core was recovered. The highest portion of the property, surrounding the 649-foot contour is largely overgrown pasture. Two widely disparate cores were found on this high area. The survey in the southerly section of Zone XI, covered currently cultivated fields that lacked any chert material. No further evidences of prehistoric use were encountered.

6. HISTORY

To evaluate the significance of the Feick homestead more fully, further documentation of selected aspects of the property was undertaken. Supplementary data included a review of land title as it relates to family history and a detailed analysis of the buildings that constitute the homestead. In addition, limited test excavations were made to confirm the use of certain structures. The results of these investigations are discussed below.

6.1 Family History and Land Title

A memorial to the original settlers of New Braunfels, situated in Landa Park on the Comal River, New Braunfels, lists Kasper Feick among the area's first residents. The earliest deed records a transfer of 15 acres to him in 1853 by the German Emigration Company. Whether Feick moved in before or after the legal settlement of the land cannot be confirmed. However, the single room log structure that was part of the homestead presumably served as the first residence of Kasper Feick until he constructed the four-room structure that formed the nucleus of the main house. This log building was subsequently used as a smokehouse by those on the homestead. (Today this structure is located in the town of Solms.)

Kasper Feick married a woman identified as Anna, and they had two sons. David Feick is the son to whom, in 1884, Kasper and Anna Feick deeded the original 15 acres plus another 50 acres of land acquired in the decades subsequent to settlement. David continued to run the farm, probably with the assistance of his father, who died in December 1894, and mother, who died in September 1900. David apparently divorced his first wife, Caroline, in 1887, as it was then that she deeded to him the sole title to lands acquired three years earlier from his parents. David remarried a younger woman, identified as Augusta, by whom he had two sons, Karl and Otto. Although David Feick died in 1922, Augusta was widowed for the remaining 25 years of her life. However, it was only nine years after her husband's death, in 1931, that she and her son Carl deeded all the family land to Otto, under the condition that she could continue to live at the homestead.

This pattern of providing a life estate to residents following transfer of the property was repeated in 1960, when Otto and his wife, Charlotte, sold the homestead to their neighbor Arthur Kneuper. Otto Feick died two months before the final transfer of property, but Charlotte continued to live in the main house until 1976.

The property has been since sold to Arthur Kneuper's son, Felix. It was Felix Kneuper who agreed to sell the property to GPI on condition that he could remove the log cabin structure (smokehouse) from the property. The main house is currently occupied by tenants and will continue to be a residence under ownership by GPI.

6.2 Homestead Plan and Use

Homestead Activities

Like other homesteaders of the area, the Feicks grew a variety of crops, raised swine and cattle, used horses for farming, and engaged in a number of light industrial activities to make their farm as self-supporting as possible. Figure 6-1 is a plan of the Feick homestead, including both existing structures and the approximate locations of former buildings. Much useful information was provided by Felix Kneuper, who grew up across the street from the homestead and knew both Otto and Charlotte, and by his wife, Linda Kneuper, who was a close friend of Charlotte during her last years.

The homestead has not been moved since it was originally constructed, but because the roads have changed, the orientation of the house has been reversed. The earlier orientation was toward the south, as a road from the nearby community of Solms ran in front of the homestead. The Kneupers possess a watercolor of the homestead painted in 1883 showing that this small lane originally ran south of the building cluster, roughly parallel to the barn and workshop, in an east-west direction. The blacksmith shop stood at a point where the lane turned southeast to traverse the Feick property. The lane continued along the east fence line to a point near the Dry Comal Creek where several large oaks now

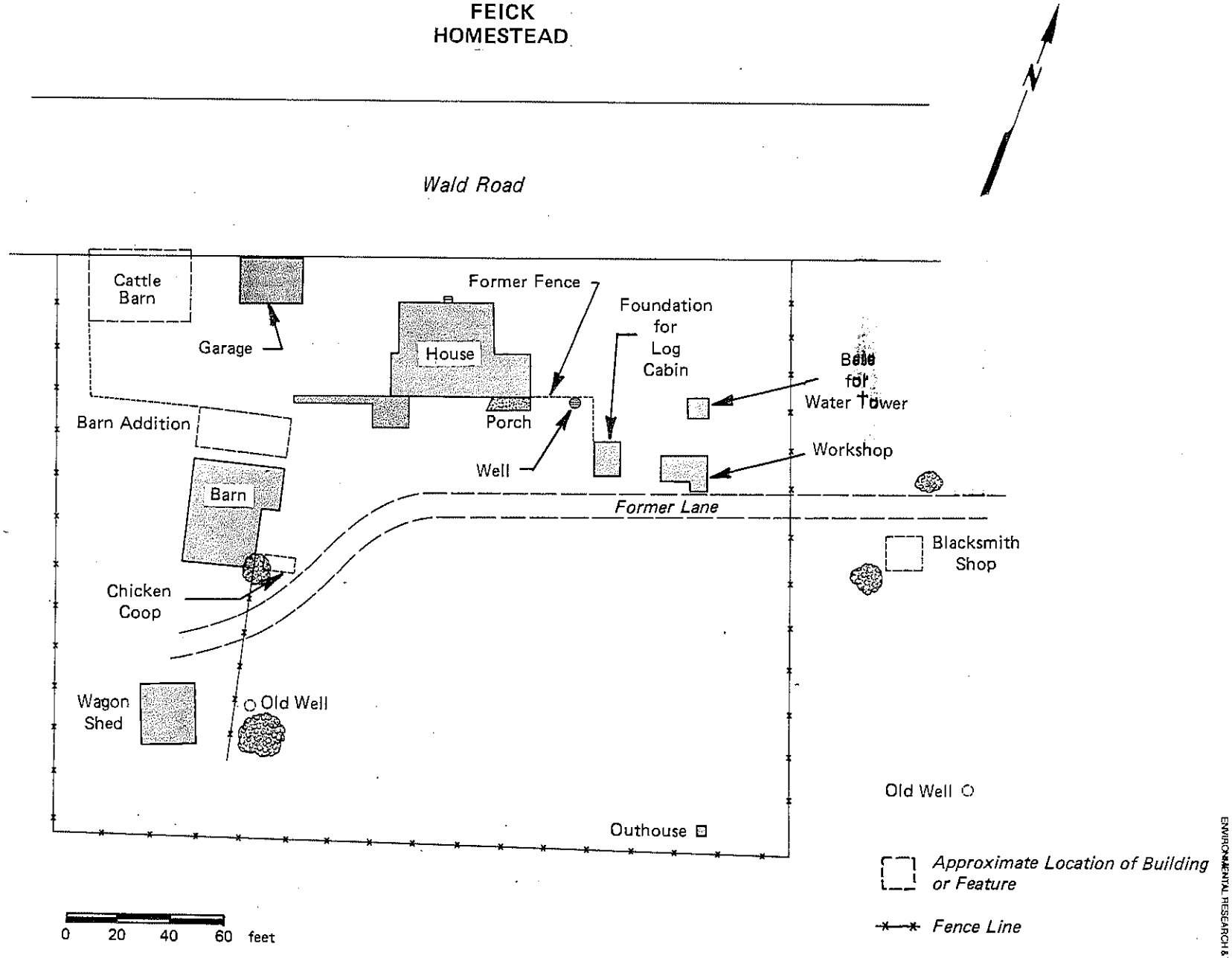


Figure 6-1 Plan of Feick Homestead

stand. It is believed the creek was forded at this point, where the road continued on into Solms. The construction of Wald Road now requires that the property be entered from its northernmost boundary.

The Feicks grew corn for the livestock and, to a limited extent, for food. A small amount of native sugar cane was grown and processed at a shared sugar cane press a few hundred feet west of the homestead along Wald Road. Neighbors helped cultivate and harvest oats. Small amounts of cotton were raised for bedding and pillows, and tobacco, which was cured in the attic of the main house, was also grown. Meat and sausages were preserved by smoking, and vegetables were pickled in crockery and kept in the cellar of the main house.

Main House Structural Features

The homestead's main house at first consisted of a four-room structure framed by hand-hewn cedar timbers with walls made of a double row of sun-dried bricks faced with plaster (Figure 6-2). This construction technique is locally recognized as "fachwerk" and was typical of early German architecture in Texas settlements. Figure 6-3 is a plan of the main house, including later additions. A dry stone cellar exists only under one west room of the original structure (see Figure 6-4) and its access is by the central stairs. Originally, a doorway on the south face of the house opened onto the homestead front yard from the center hallway, known as a "dog run" (Figure 6-5). The rear doorway (Wald Road) apparently had double doors; the door frame is original but the doors have been replaced (Figure 6-5a). The house was later expanded by the addition of several rooms onto the front of the structure, including a small kitchen with a porch. This kitchen contains a small wood/coal-burning stove and was the means of all cooking done by Charlotte Feick until the time she left the house in 1976. This newer kitchen has no plumbing, but is nearer the stone-lined well to the east of the house. This well was probably the last of three wells that were dug on the property and is still serviceable. The cedar-post foundation of a former water tank stands east of the well and behind the workshop. This tank may have been supplied by a fourth drilled well, like that now in use.

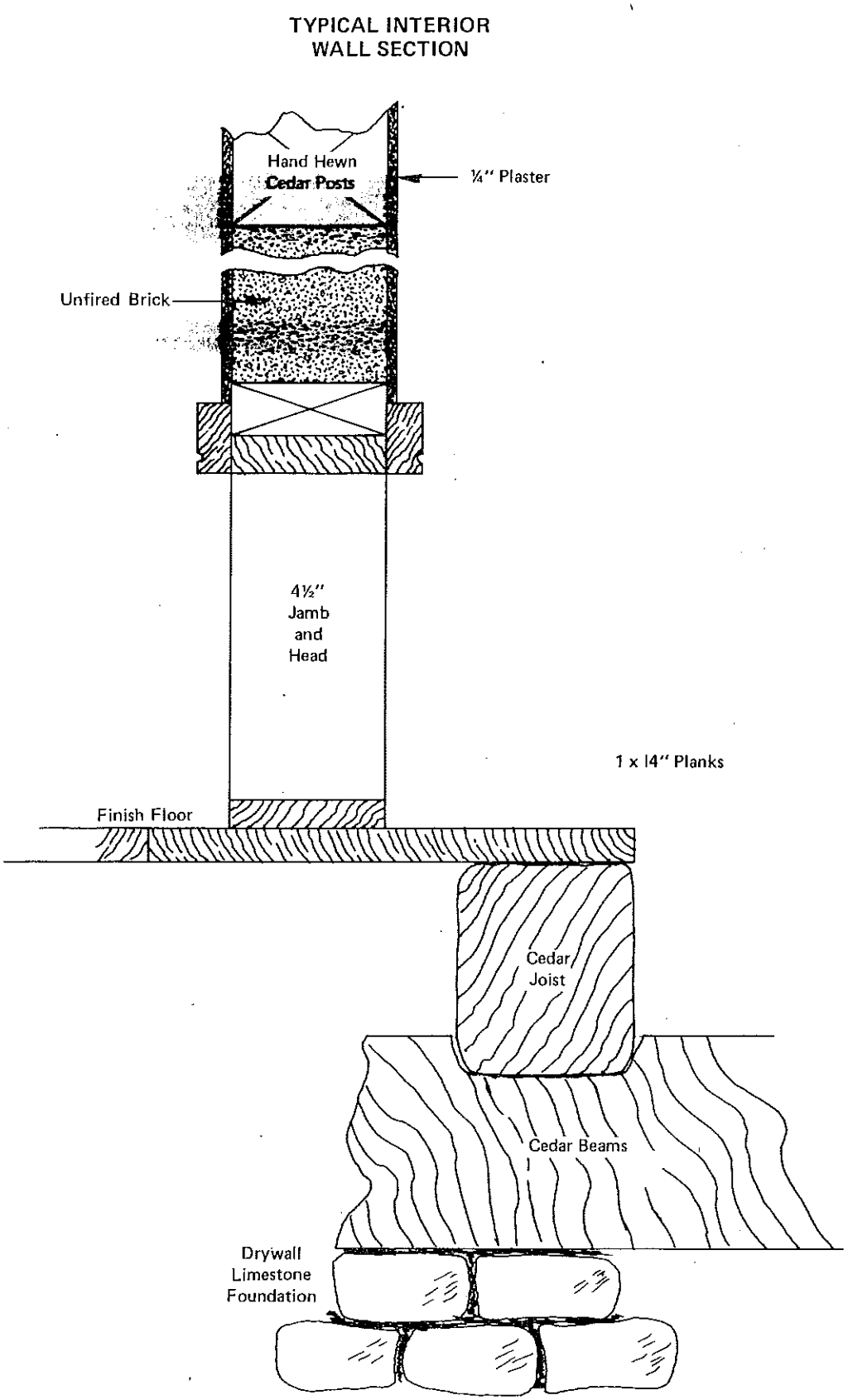


Figure 6-2 Interior Construction of Main House

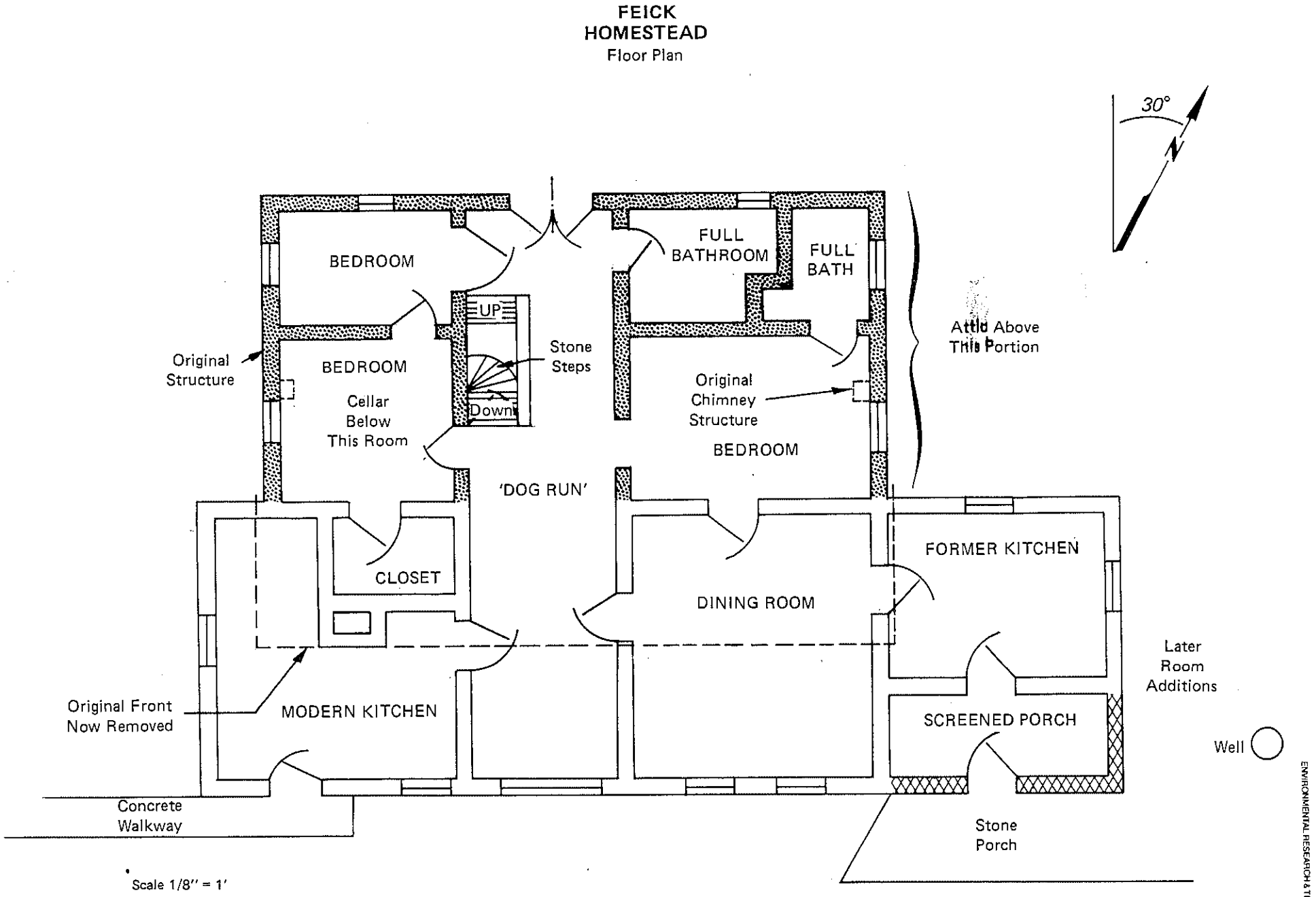
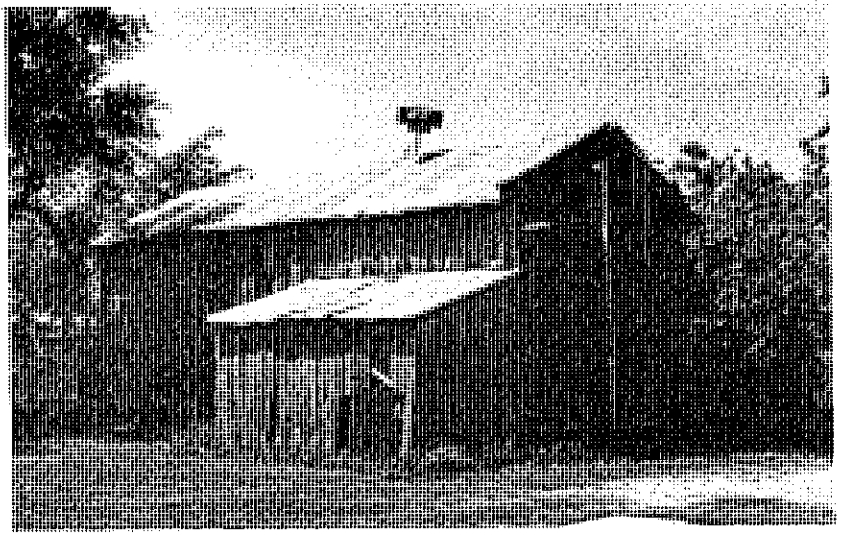
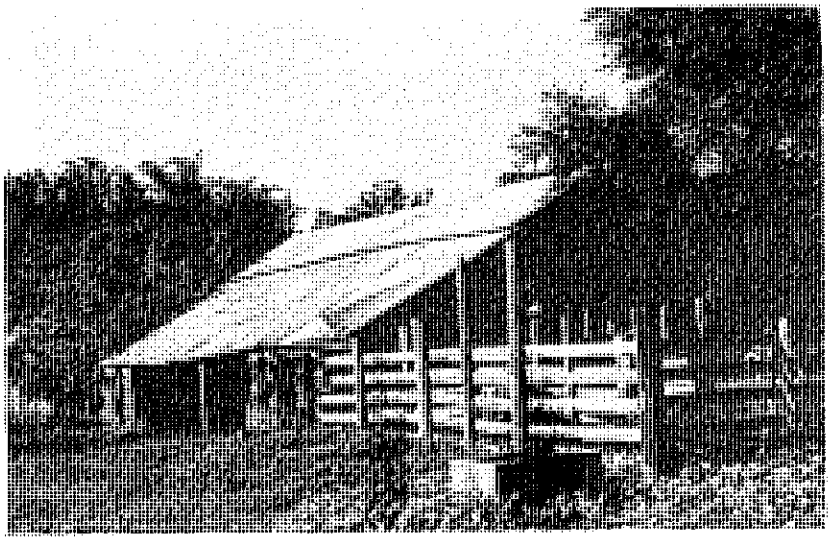


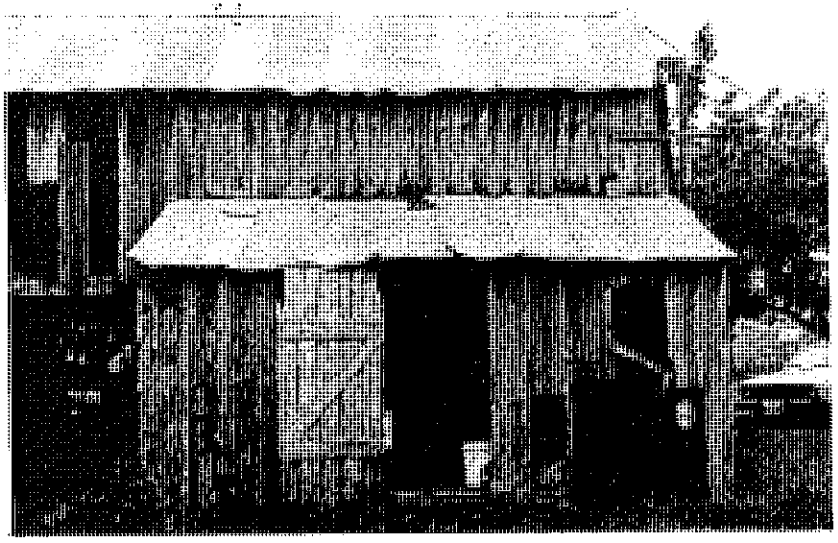
Figure 6-3 Floor Plan of Main House



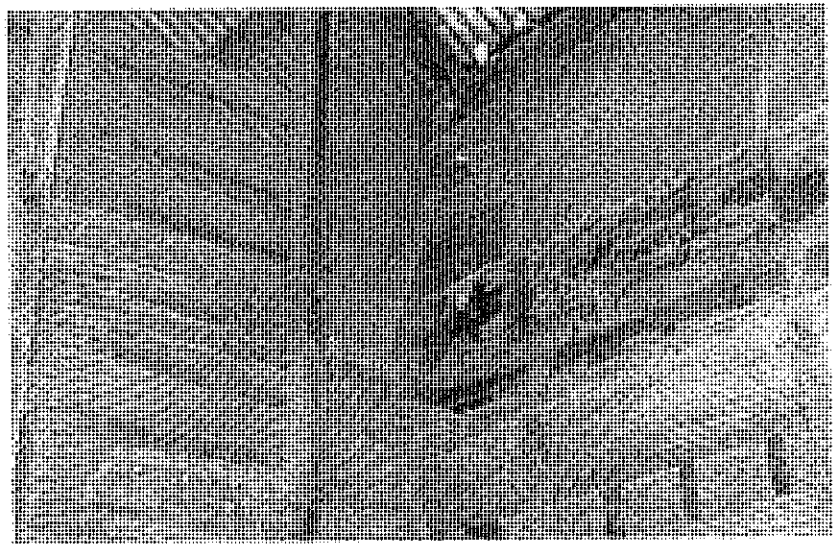
(a) North View



(b) South View



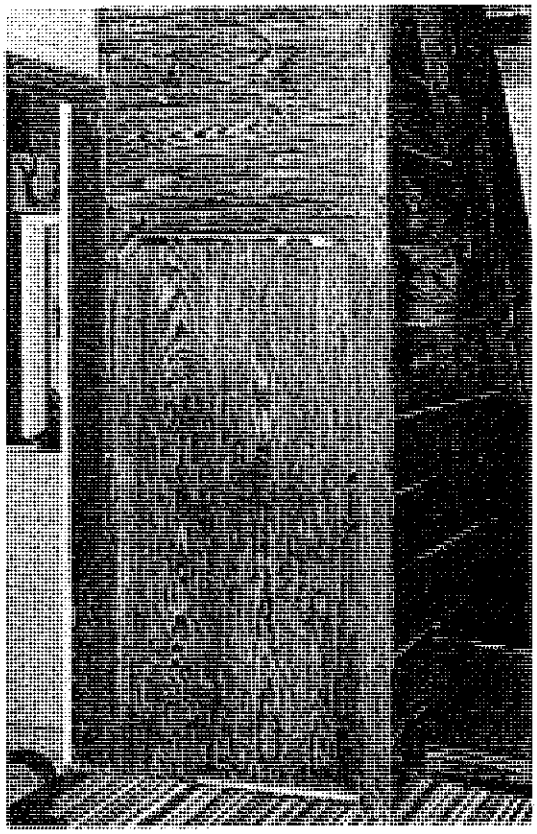
(c) Addition to Corncrib



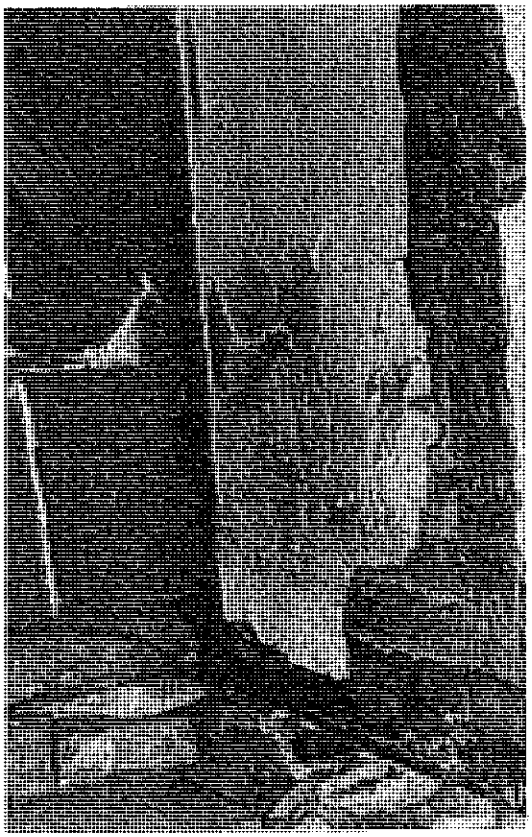
(d) Interior of Corncrib

Figure 6-7 Views of Barn

(a) Main Hallway (Dog Run)



(b) Center Stairway



(c) Original Fachwerk

Figure 6-5 Views of Interior of Main House

between the tank foundation and workshop. Two other wells existed south of the barn, near the wagon shed and south of the blacksmith shop (see Figure 6-1). Both were filled in, the latter about ten years ago.

As the main house grew, several exteriors were added. The original fachwerk section had a plaster exterior. To this exterior was added vertical board and batten (1- by 11-inch boards), which are still in place. With the addition of rooms to the original home, horizontal clapboard siding became the final surface. It is worth noting that different clapboard siding exists on the original portion of the house from that on the additions.

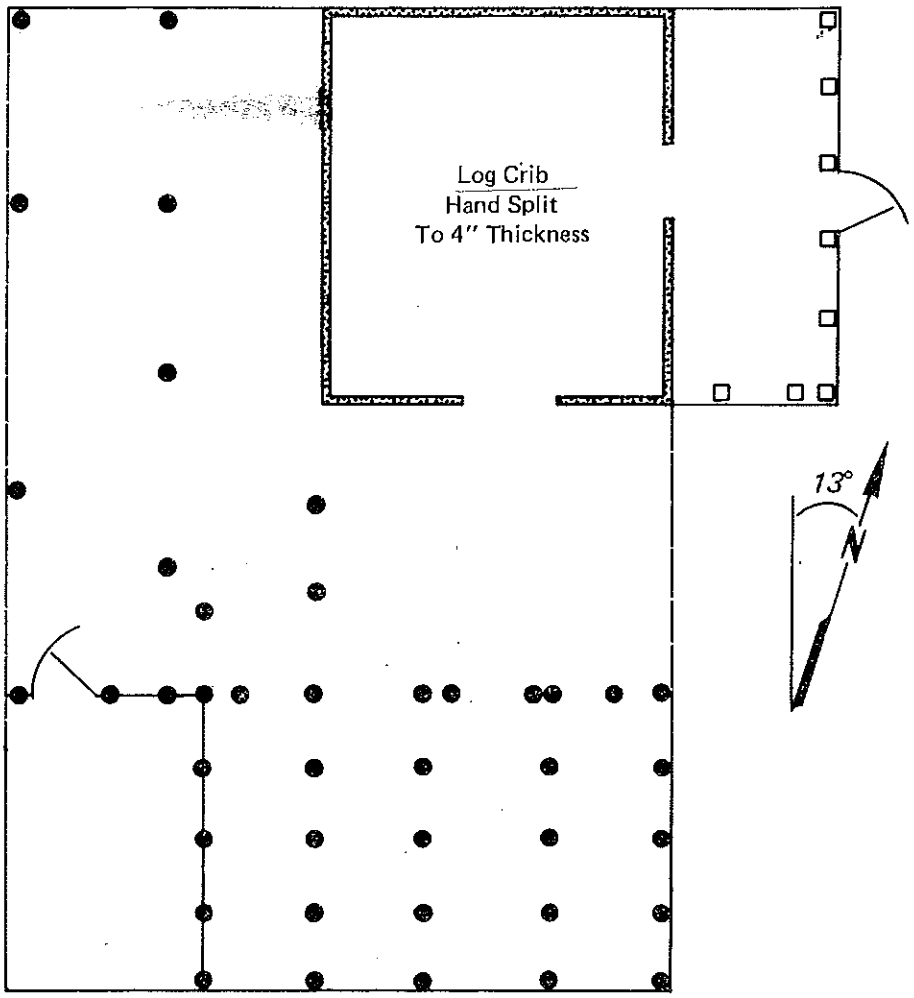
Outbuildings and their Features

Over a period of approximately 75 years, the homestead developed with the addition of several important outbuildings. These structures include a barn (with corncrib), cattle shed, workshop, blacksmith/farrier shop, garage, and wagon shed. Some buildings were converted to other uses, while others were removed by the owners.

Perhaps the most important outbuilding to the homestead was the barn. The oldest portion is constructed of handsplit logs to form a corncrib (see Figure 6-6). Numerous additions were made to this structure using simple pole construction techniques. Western and subsequent southern additions were made to provide cattle and horse stalls. A shed was added to the eastern wall to provide storage space (Figure 6-7). The barn had been extended to the north in a section separated from the log wall by a narrow walkway. This extension was removed in the past decade because it was in poor condition.

North of the barn addition was a small cattle pen with an attached shed that directly abutted the northern property line. The expansion of Wald Road, necessitated the removal of this structure because it was too close to the new right-of-way (see Figure 6-1). An easement given to the Comal Power Company in 1926 by Augusta Feick for a power line on the north edge of the property may indicate the approximate time of road expansion and development.

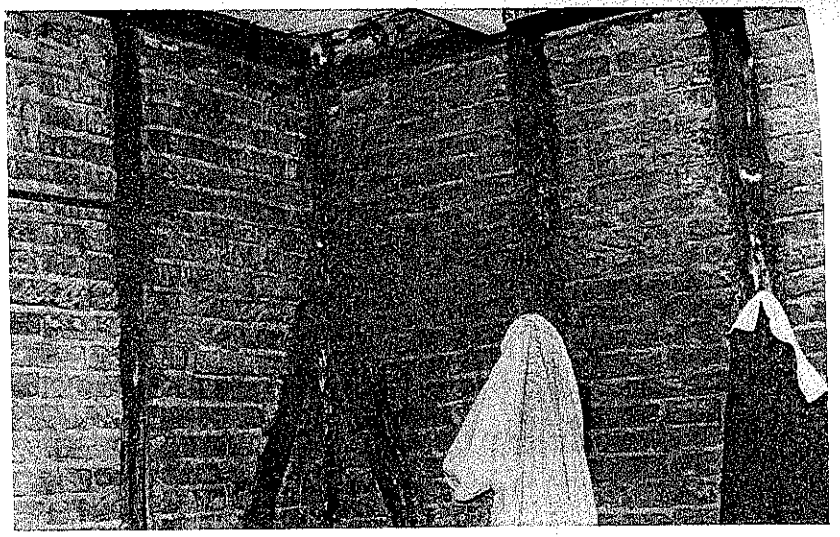
BARN



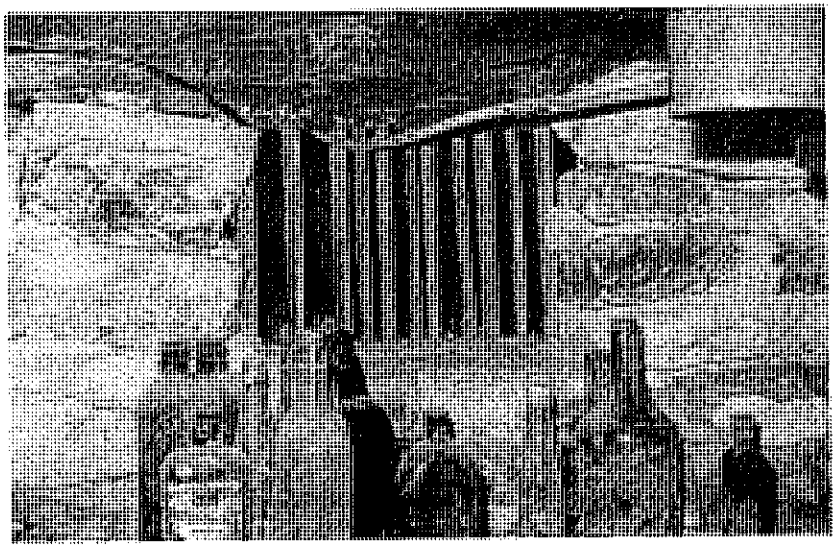
Scale 1/4" = 1'

Figure 6-6 Floor Plan of Barn

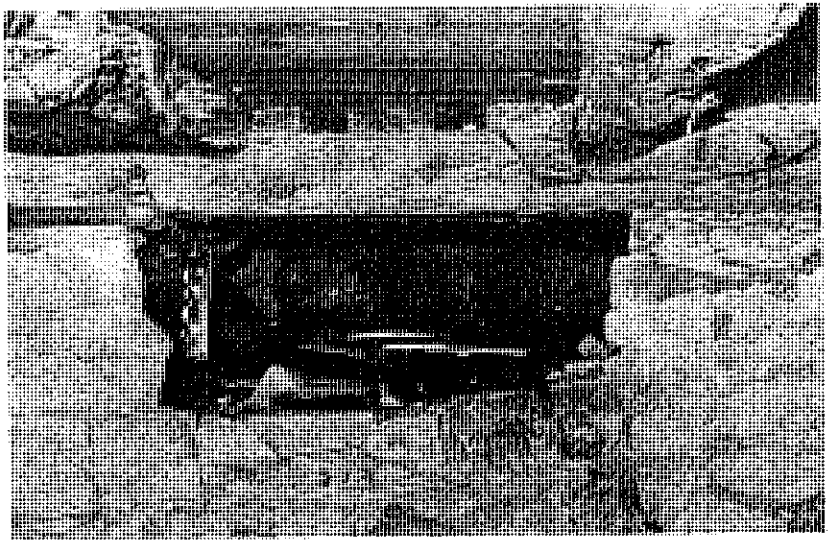
(a) Floor and Foundation



(b) Original Walls Without Plaster



(c) Cellar Wall - South View



(d) Cellar - North Wall Area of Preserved Food Storage

Figure 6-4 Views of Interior Construction of Main House

Some time after the road was moved north to the present Wald Road alignment, a wagon shed was built south of the barn. The materials for this building were taken from older structures and include posts sawn on an up-and-down lumber mill. The shed had a double set of doors that faced east and opened into the homestead yard. A partial storage area existed above the main section, but lower sections stood to the right and left of the central entrance (see Figures 6-8 and 6-9).

The log cabin, presumably the first structure on the property, continued in use even after the main house was occupied. The condition of the structure was excellent, including the original chinking between logs (see Figure 6-10) and possibly the original rafters with cedar shingles. Figure 6-11 is a plan of the structure's dimensions, including the foundation, which was surveyed after the building was moved to an off-site location. (The log cabin was not part of the original purchase option negotiated between GPI and the owner. The cabin is now situated near Solms where it will be restored.) The structure was used principally as a smokehouse. Glass bottles were hung along the support wires of drying racks suspended from the ceiling to discourage rodents. These bottles date from the turn of the century. Former use of the structure as a residence is attested to by the clothes hooks at either end, as well as the sideboard supported by inset wall supports.

East of the log cabin is a workshop, primarily designed for woodworking (Figures 6-12 and 6-13). Its power source was a single cylinder engine located in the building's northeast corner. (This engine was also used to operate a grain elevator to load corn into the corncrib in the barn.) A belt-driven pulley system connected the engine to an overhead pulley system from which other machinery could be powered (Figure 6-14). One interesting facet of the building is the construction of small openings in the walls on opposite walls (see Figure 6-12, western section of building). This feature may indicate the placement of saws or planing equipment that would allow the working of long boards that could not fit within the building. It is possible that this building was constructed by David Feick, who may have had the single cylinder engine as part of his farm machinery before his death in 1922. The building was extensively used by his son, Otto Feick.

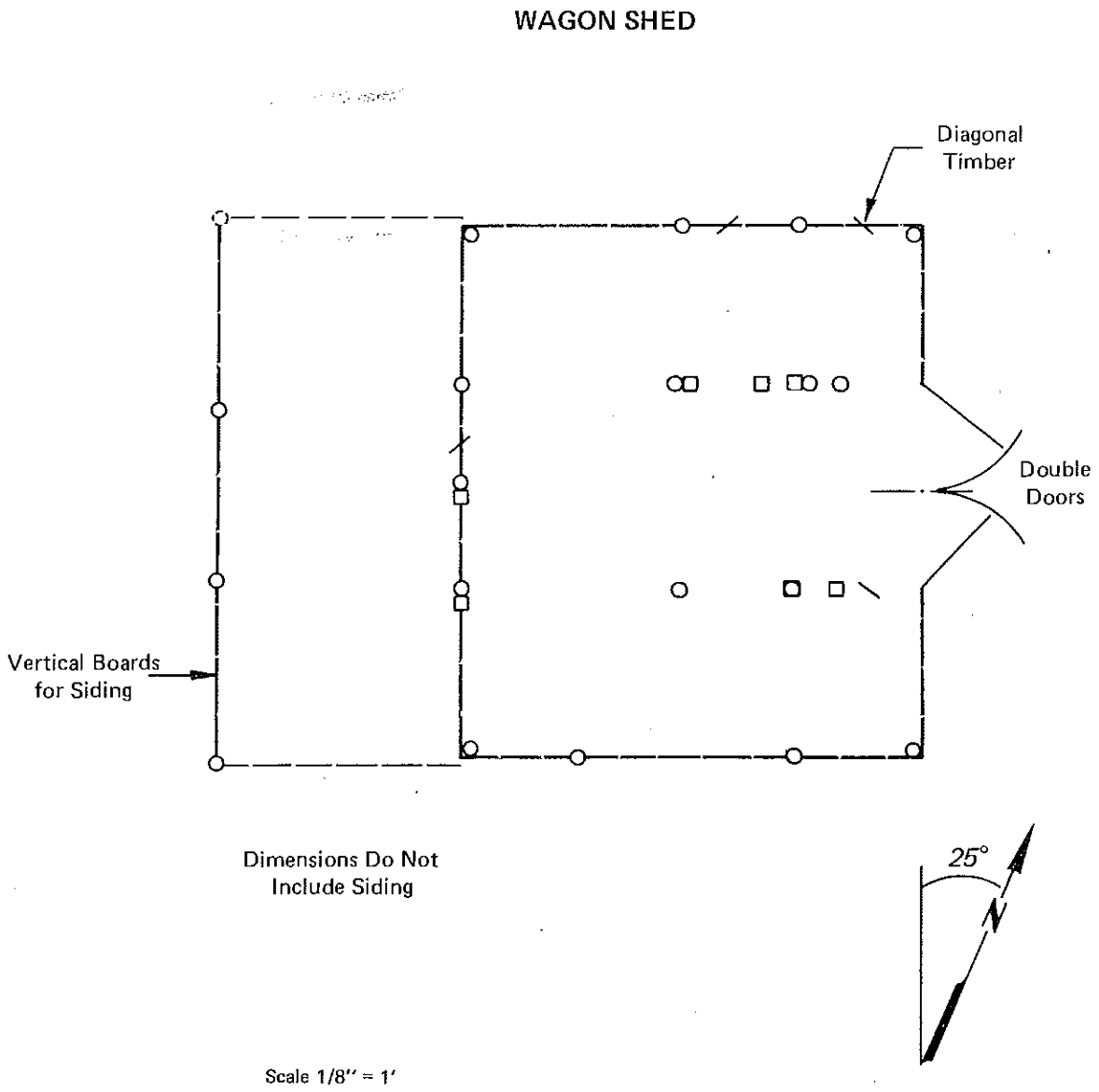
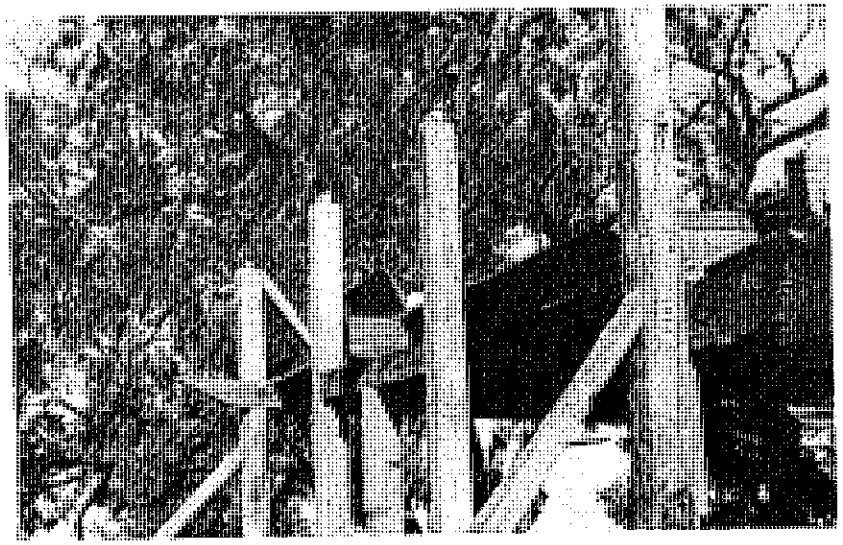
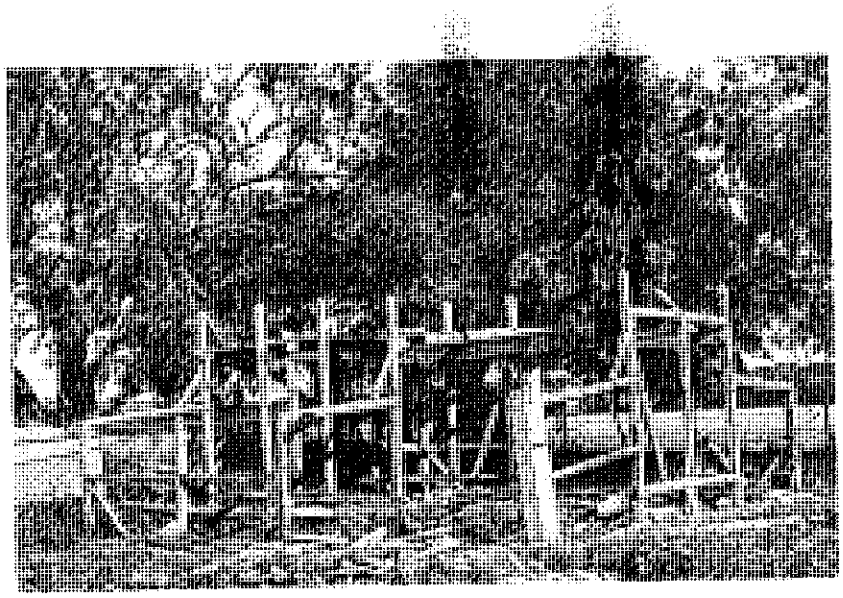


Figure 6-8 Floor Plan of Wagon Shed

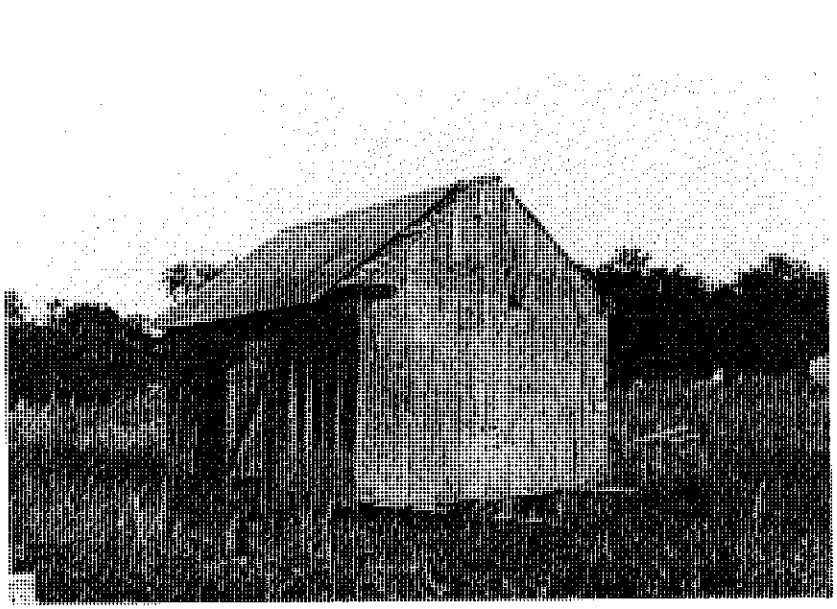


(a) Wagon Shed - Northwest View of Principal Beams

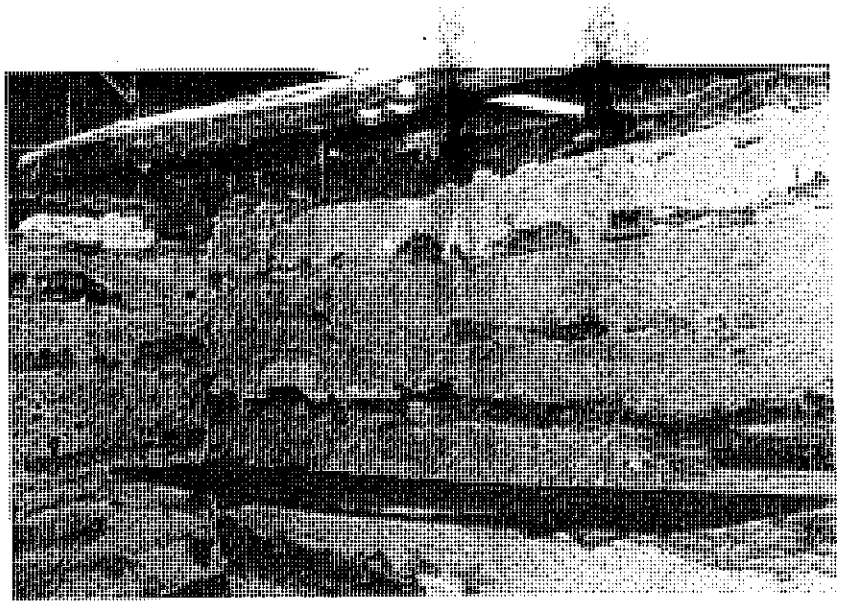


(b) Construction Detail

Figure 6-9 Views of Wagon Shed



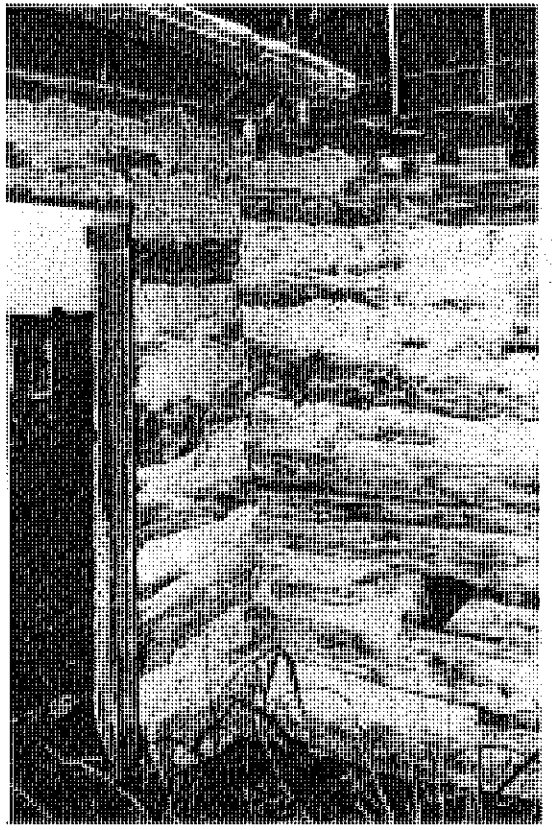
(a) Present Cabin Location



(b) Sideboard in Cabin

Figure 6-10 Views of Log Cabin

(c) Window Placement (note overhead pole for meat preservation)



(d) Door Placement

Figure 6-10 (continued)

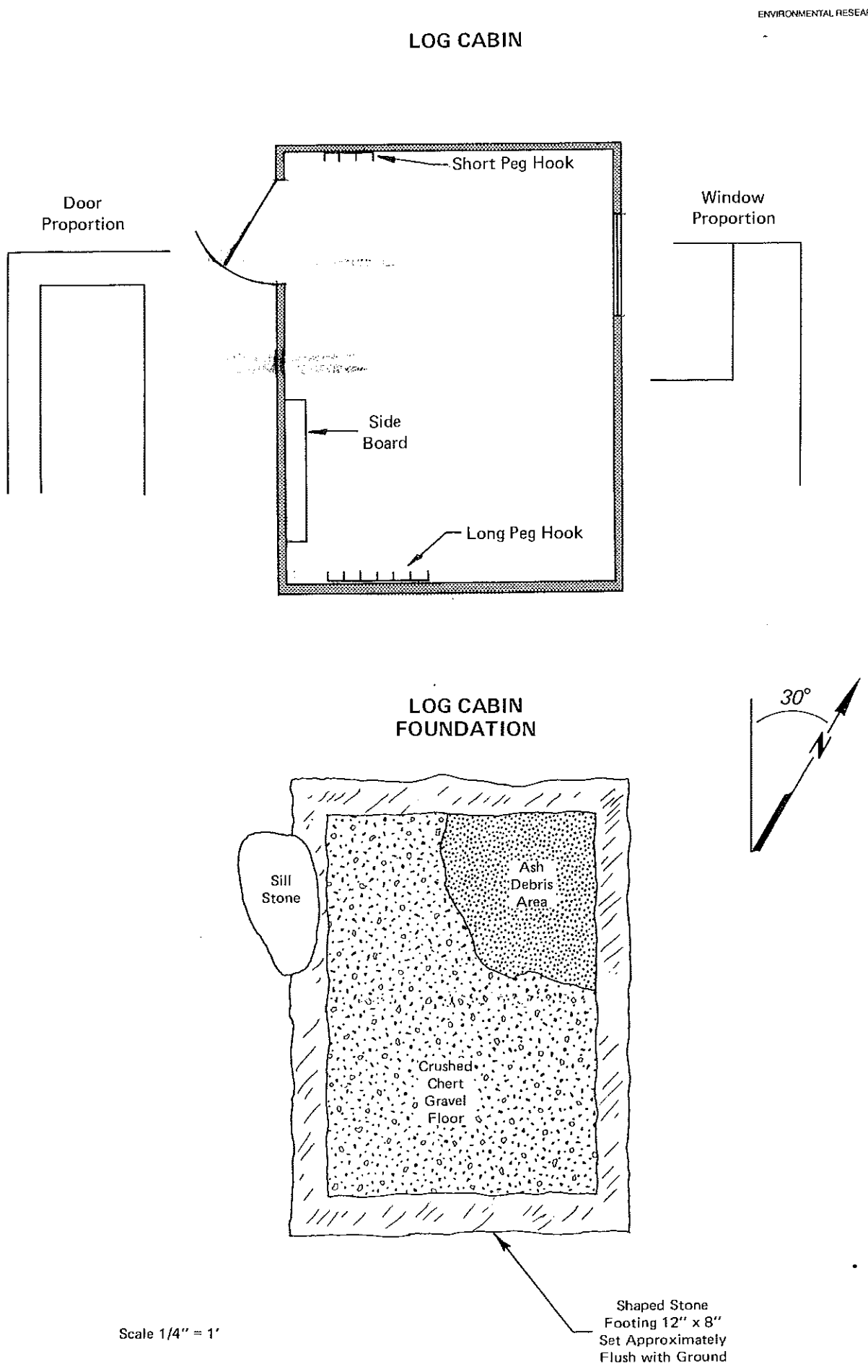
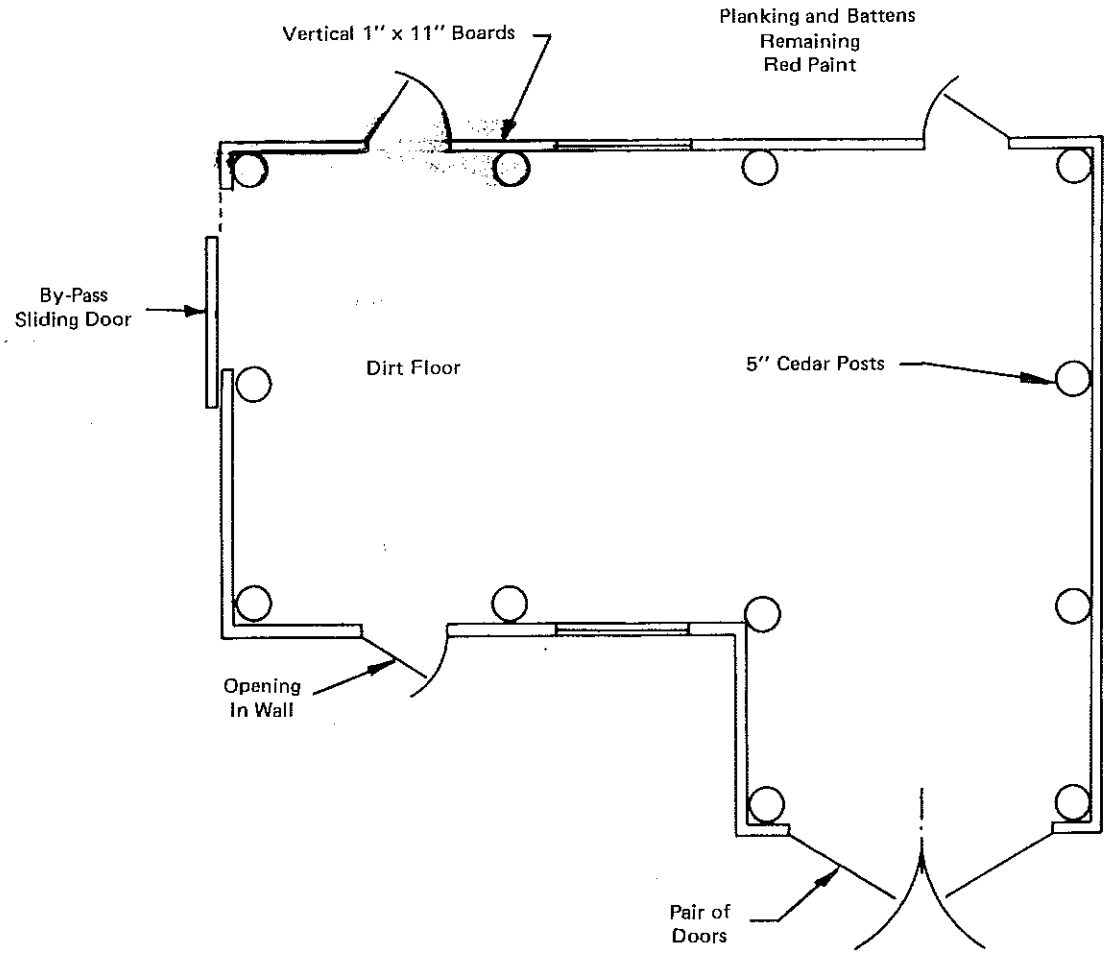
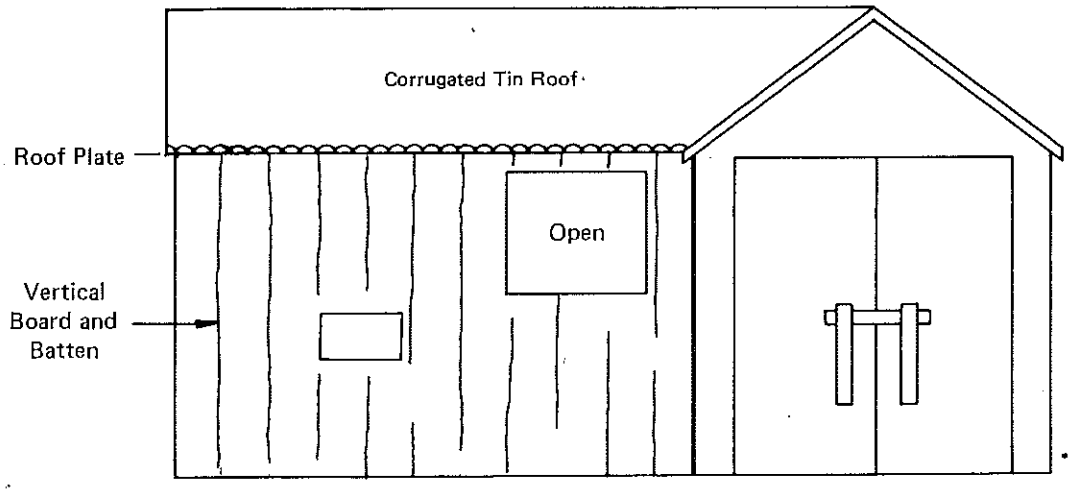


Figure 6-11 Floor Plan of Log Cabin

WORKSHOP





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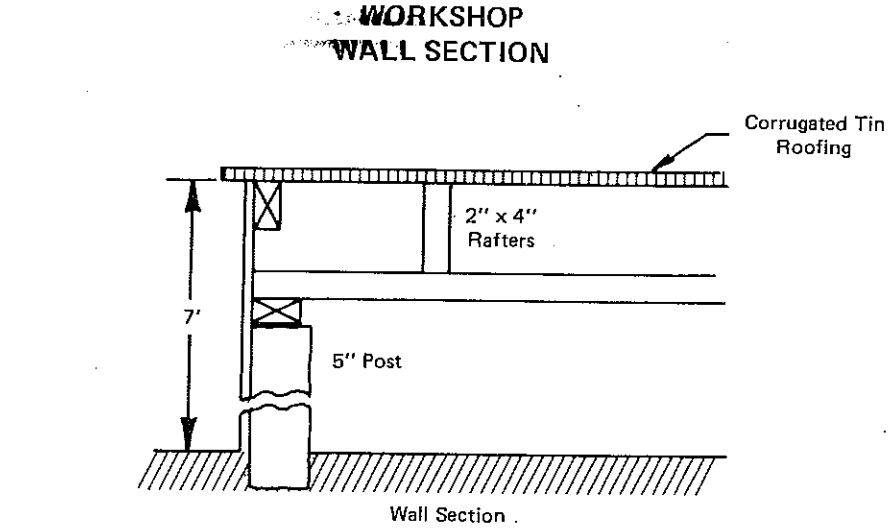
SOUTH ELEVATION

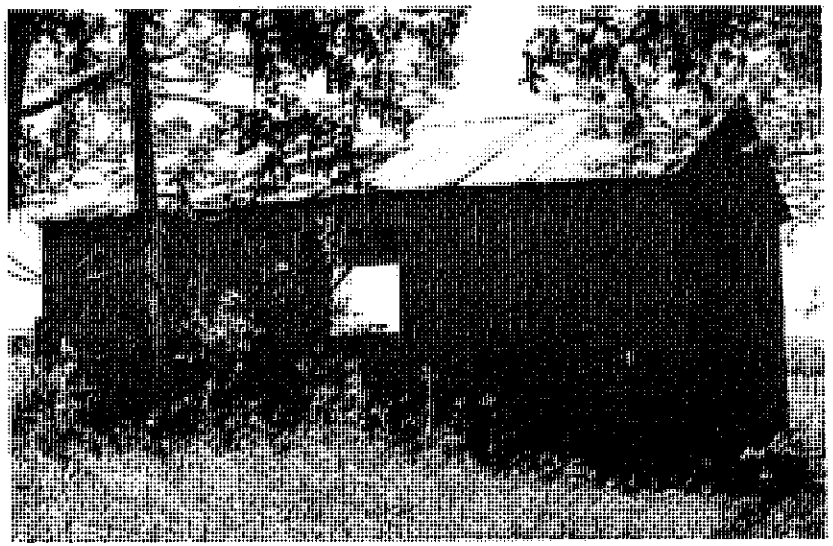
Scale 1/4" = 1'

Figure 6-12 Floor Plan and Elevation of Workshop

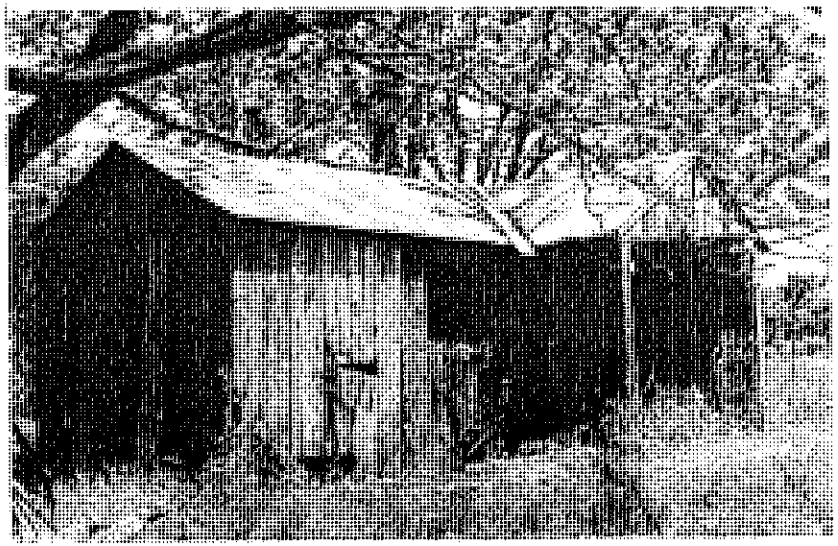


Scale 1/4" = 4"

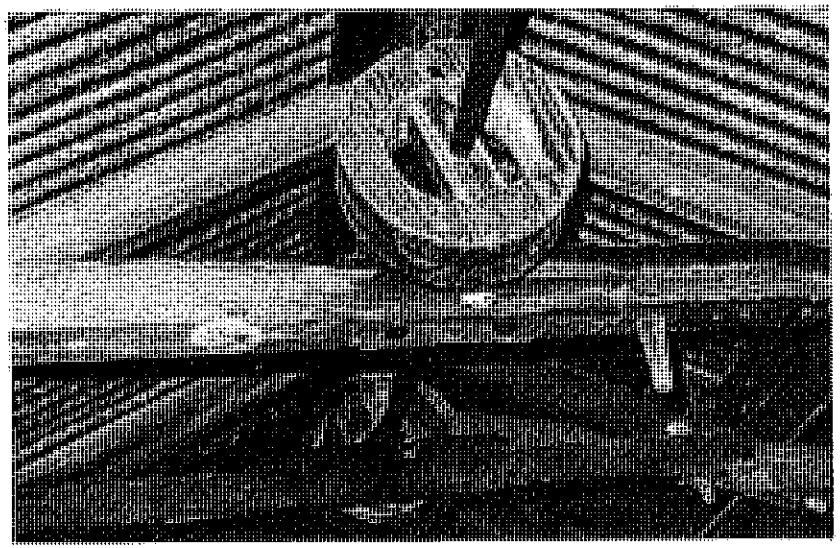
Figure 6-13 Interior Construction of Workshop



(a) North View



(b) South View



(c) Belt/Pulley System

Figure 6-14 Views of Workshop

Farther east, beyond the workshop and immediate homestead building cluster, a blacksmith shop was constructed. Here utilitarian hardware was made, farm machinery repaired, and farm animals shod. On the east wall, a forge was built, formed primarily of sun-dried bricks, except for those directly lining the fire-box and chimney, and framed with wood beams. South of the blacksmith shop was a stone-lined well, which has since been filled, but not before the stones were removed.

The only other outbuilding on the property is a three-stall garage of pole construction with a corrugated metal roof. This structure was built subsequent to the development of Wald Road and is adjacent to the new driveway entrance of the homestead.

Test Excavations at the Homestead

Two locations within the homestead were chosen for limited test excavations with the intent of clarifying the use or function of particular structures. The first location was adjacent to the log cabin, the second within the blacksmith shop.

In an area adjacent to the window of the log cabin, a test pit was excavated. An extremely hard, packed humus existed over the entire one-meter square. Only troweling was possible, and this was limited to a depth of five centimeters. Below this level, cultural materials diminished significantly. The most diagnostic artifacts included stoneware from household china, bone sections, bottle fragments, both cut and wire nails, and many fragments of window glass. These materials indicate the customary activities associated with a household. There is also the suggestion of the smokehouse function from the distribution of ash on the house floor (Figure 6-11). It is also interesting to note that chert was brought in for the log cabin floor. This material must have been derived from an Indian quarry area, as it contains several pieces of flint from tool production efforts. (A list of materials recovered is included in Appendix B).

The blacksmith shop was the second area investigated (see Figures 6-15 and 6-16). A surface collection was made of the immediate area surrounding the test pit. The test pit was located next to a board still in place in the ground, which later analysis disclosed was part of the

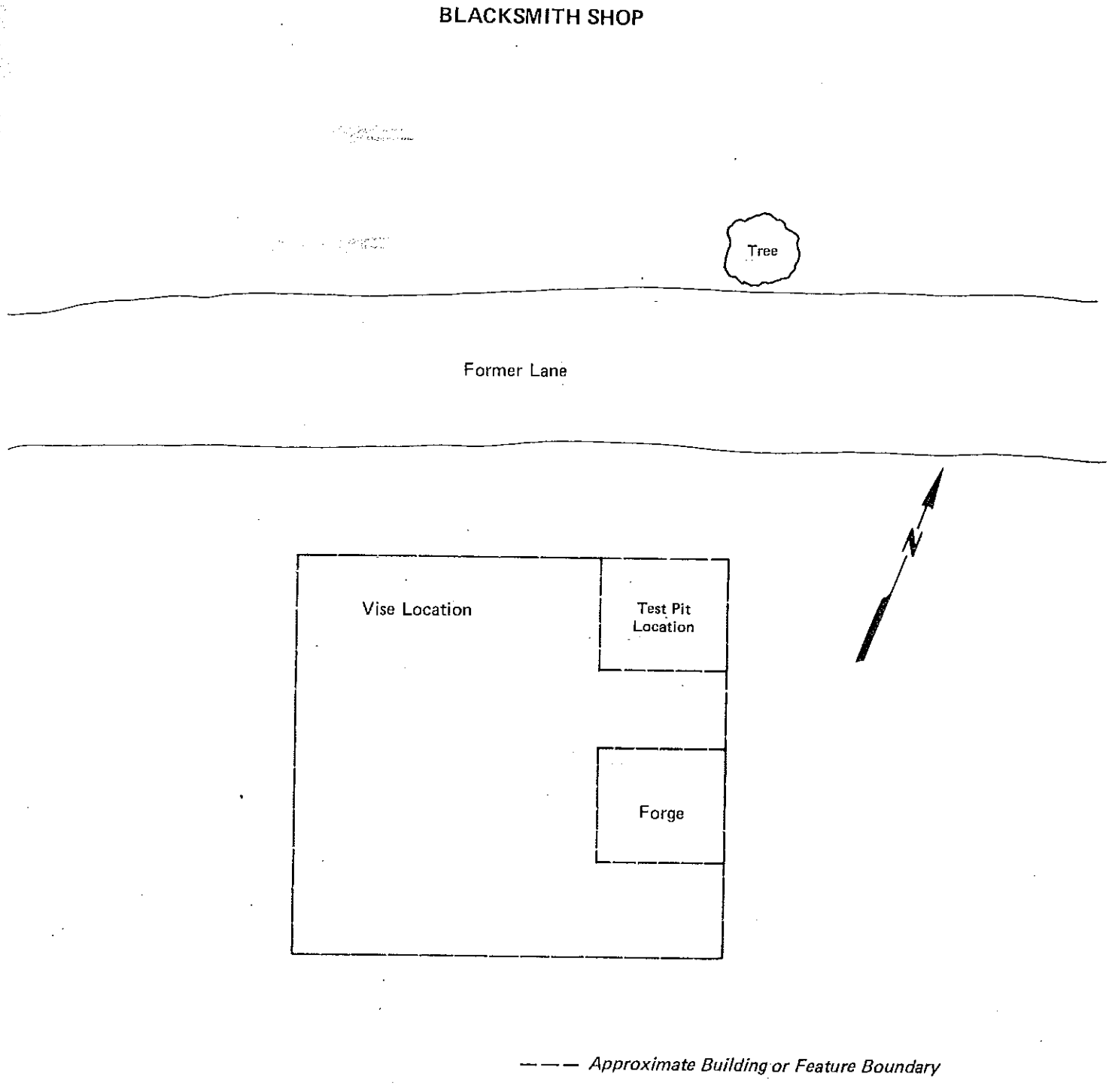
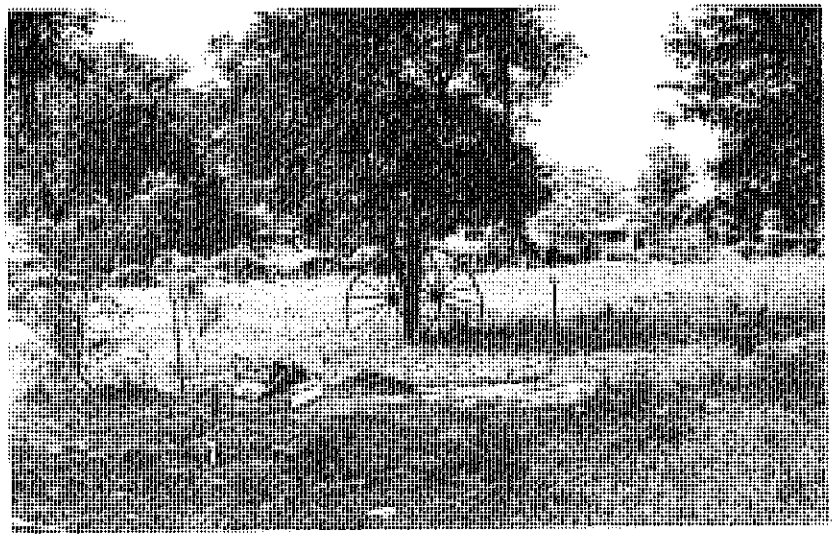
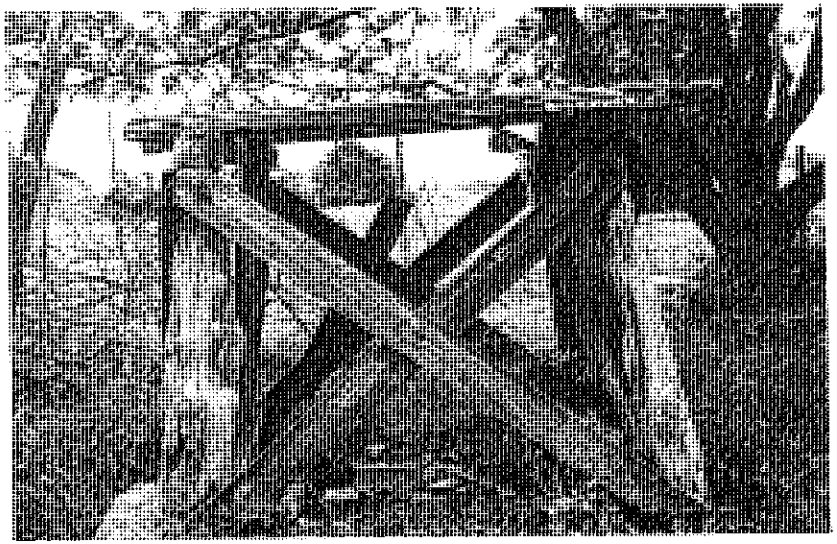


Figure 6-15 Approximate Plan of Blacksmith Shop

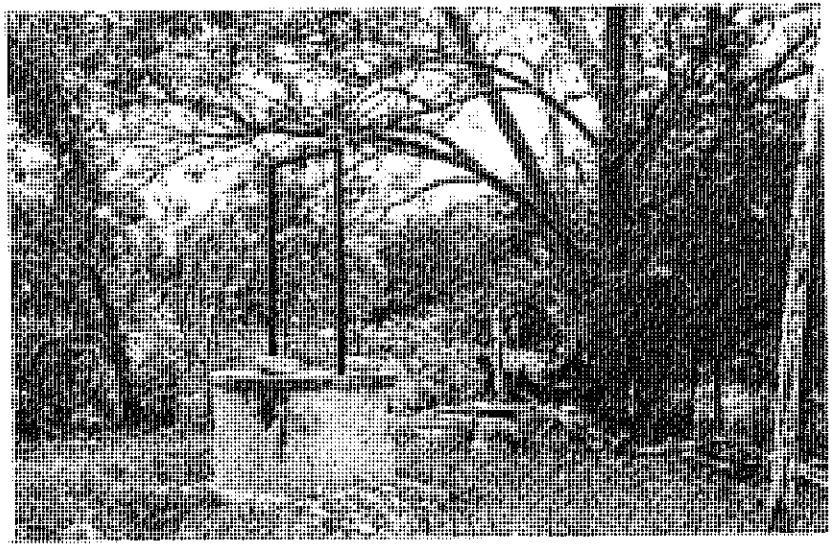


(a) South View - Blacksmith Shop Location

(b) East View Down Former Lane Past Blacksmith Shop



(c) Water Tank Foundation



(d) Well East of Main House

Figure 6-16 Views of Blacksmith Shop

forge. The soil here was almost as compacted as that in the test pit previously dug, but contained many fragments of coal - total depth did not exceed eight centimeters. Both machine-made and handmade items were found. Portions of iron bar stock (up to six inches in length) were found on the surface and included fragments of iron tools produced by machine. Small items like rings and hinges were found both on and below the surface; these items were hand wrought. Mixed with the hand wrought material were more common industrial items, such as washers, wire, rivets, and bolts. As for farrier activities, it appears that both horses and ponies received new shoes at the shop. Thus, the blacksmith shop appears to have been a multifaceted work location where all types of metal repair were performed.

7. CONCLUSIONS AND RECOMMENDATIONS

7.1 Prehistoric Resources

7.1.1 Comal County

Two additional areas on the Comal County property were identified as containing limited amounts of prehistoric material. One of these areas, Location A, Zone IX, is on a section of the property that will be developed for the cement plant. The other area, Location A, Zone III, is situated on a lower section of the Feick homestead that is a buffer zone property for the plant site.

During the reconaissance and intensive surveys, several areas on the Comal County property were found to contain certain prehistoric materials. These recovered materials indicate periodic use of specific localities as sites of tool manufacture and possible transient occupation. Since the density of materials on the section of the property that would experience direct impact by the cement plant construction do not constitute long-term occupation or extensive use of local resources, the following recommendation is made.

The Texas Historical Commission should be informed of the construction schedule and be offered the opportunity to observe the site preparation activities. The Commission should be allowed to collect any additional materials that may be uncovered by construction.

7.1.2 Guadalupe County

No further prehistoric resources were located by the intensive survey in Guadalupe County. Since the earlier work disclosed limited materials that warranted no further recovery work, there will therefore be no direct or indirect impacts on prehistoric resources on the GPI properties in Guadalupe County.

7.2 Historic Resources

7.2.1 Comal County

The supplementary research on the Feick homestead examined the family history of ownership and provided detailed description of the homestead's structures, including their uses. As the homestead of an early settler to the area, the Feick property documents the development of a family farm typical of the New Braunfels region. The homestead is located on a portion of the GPI properties that will not be developed but will be part of a buffer zone area. The main house will continue to be maintained, and therefore neither the house nor the rest of the property will be affected by the development of the cement plant on other GPI property in Comal County.

7.2.2 Guadalupe County

The supplementary survey disclosed no further historic resources on the GPI Guadalupe County property. Because the initial survey work similarly found no historic resources in this area, no impacts on historic resources will result from the development of mining operations in Guadalupe County.

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APPENDIX A

PHOTOGRAPHIC INVENTORY OF GENERAL PORTLAND PROPERTIES IN COMAL AND GUADALUPE COUNTIES

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Trailer Opposite Feick Homestead

East View from Feick Homestead

Needmore Farms

Figure 1 Wald Road Residences (Comal County)

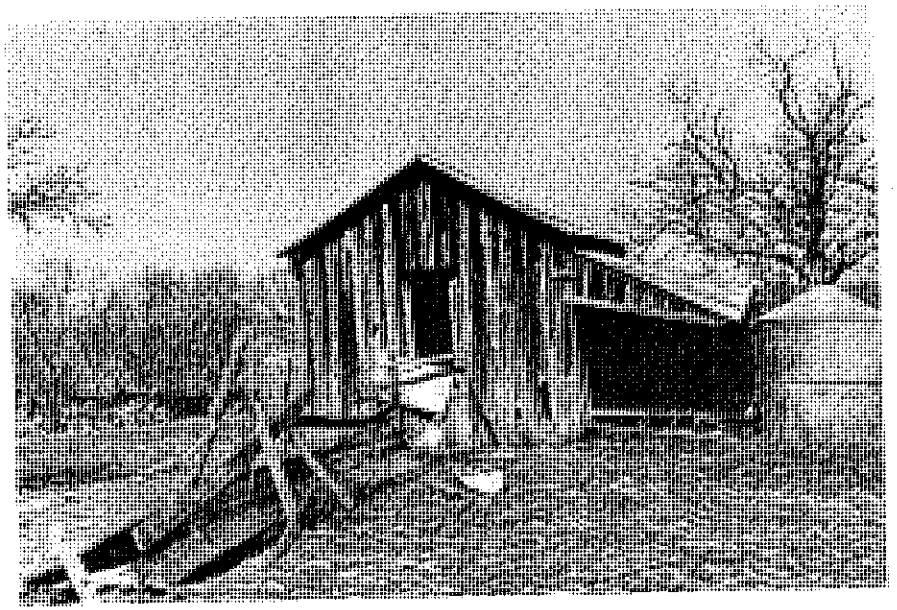
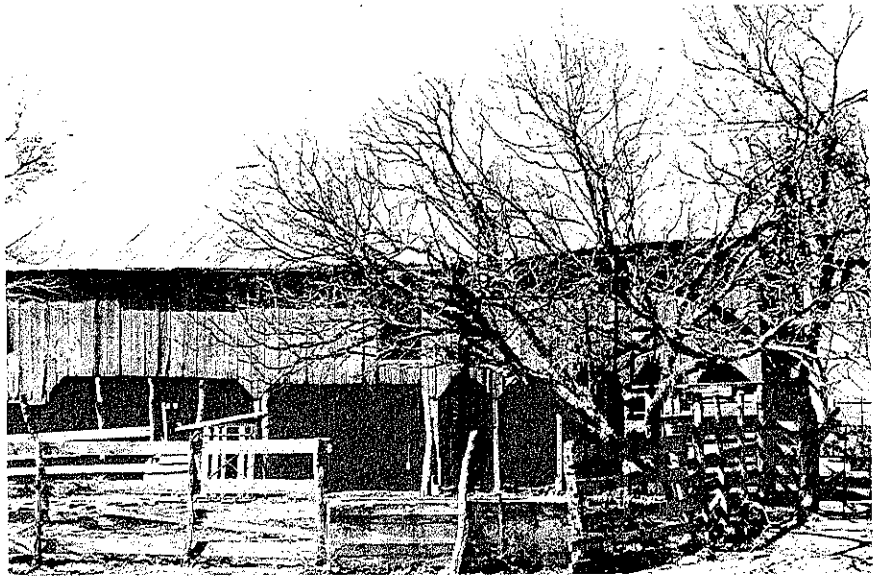


Figure 2A Abandoned Farmhouse (Guadalupe County)

Figure 2B Boecker Cemetery (Guadalupe County)



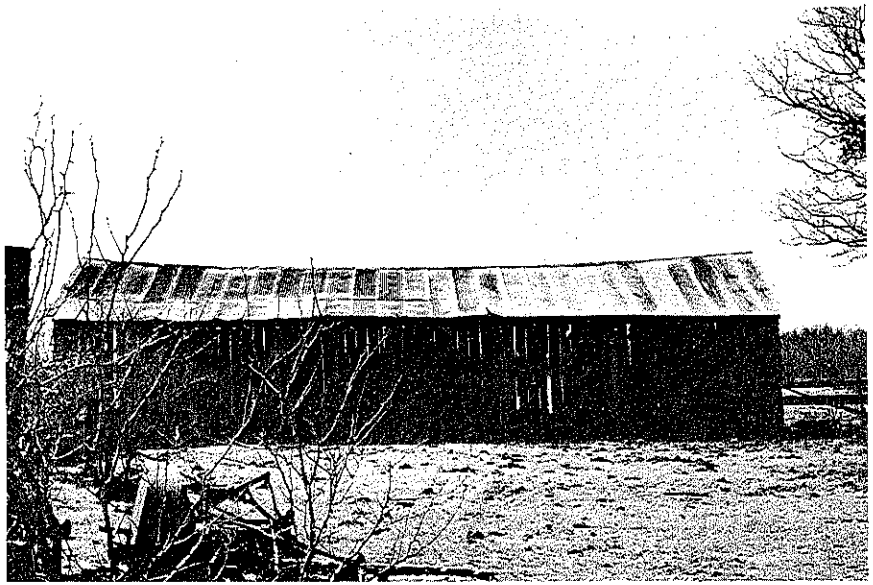
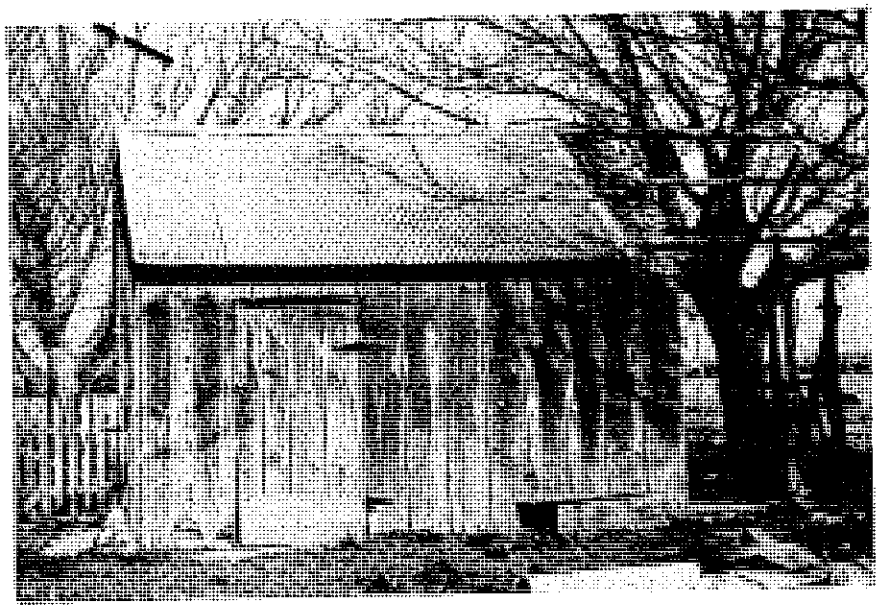


Figure 3 Boecker Homestead (Guadalupe County)



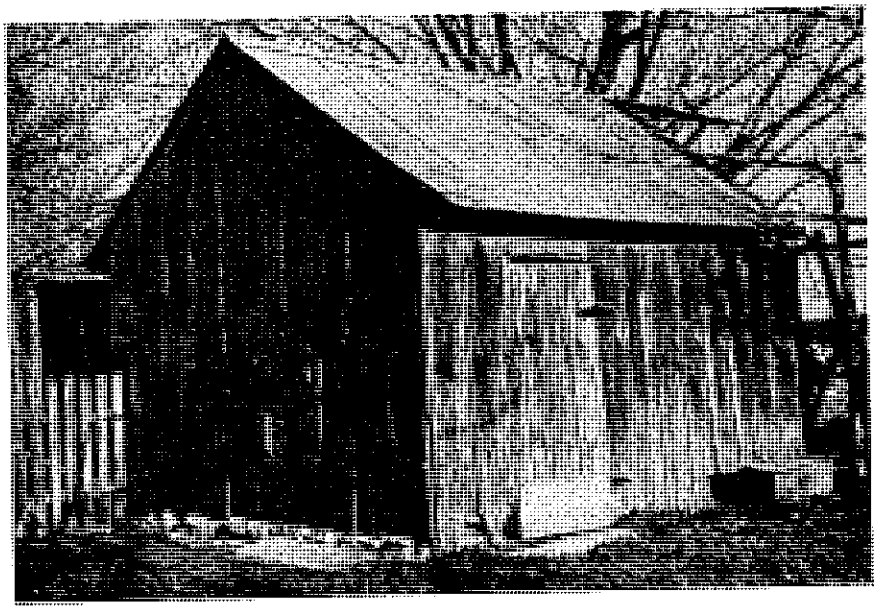


Figure 4 Original Feick House

APPENDIX B

INVENTORY OF ARTIFACTS FROM ARCHEOLOGICAL SURVEY IN COMAL AND GUADALUPE COUNTIES

APPENDIX B

INVENTORY OF ARTIFACTS ON GPI PROPERTY - COMAL AND GUADALUPE COUNTY

This appendix lists by zone the types and quantity of materials found on the GPI properties in Comal and Guadalupe Counties

Zone I

Location A

- Primary Flakes - 2
- Secondary Flakes - 18
- Thin Biface - 2
- Core - 1
- Gauge - 1 (Clear Fork)
- Core (Blanks - 5)

Location B

- Primary Flakes - 2
- Secondary Flakes - 3

Location C

- Large Bifaces - 2*
- Cores - 2*

Open Field Southwest of Location A

- Secondary Flakes - 7
- Thick Biface - 5
- Thin Biface - 4
- Core - 2
- Pedernales Point fragment

*One not in collection

Zone II

Thick Biface - 2
Primary Flakes - 1
Secondary Flakes - 4
Thin Biface - 1

Zone III

Secondary Flakes - 5
Thin Biface - 1
Thick Biface - 1

Guadalupe County

Zone IV

Primary Flakes - 1
Secondary Flakes - 9
Thick Biface - 5
Thin Biface - 4
Gouge - fragment
Core - 1
Archaic Point - fragment

Zone IV - Other Locations

East Fence Line

Secondary Flakes - 1
Thick Bifaces - 3

Location D

Secondary Flakes - 3
Thick Bifaces - 2
Bifacial Chopper - 1

Location E

Secondary Flakes - 7
Thick Biface - 1

Location F

Primary Flakes - 1
Secondary Flakes - 5
Thin Biface - 1
Core - 1

Zone VI

Location G

Core - 1
Thick Biface - 2

Location H

Thick Bifaces - 2

Zone VII

Thick Biface - 1

APPENDIX B

PHASE II SURVEY ARTIFACTS

Prehistoric Resources

Zone IX - North of Wald Road

8	cores
2	primary flakes
16	secondary flakes
8	small bifacial tools (1 of limestone)
1*	large bifacial tool
1	sherd stoneware pottery

Zone IX/Zone I Border

4	secondary flakes
1	small bifacial tool

Zone II

1	large secondary flake (from lower portion of field near creek)

Zone III - Lower Feick Field

2	cores
22	secondary flakes
3	small bifacial tools
1	shell (fiber tempered pottery fragment)

Zone X

1	small bifacial tool fragment

Zone XI

3	cores

Note: All materials are of chert unless otherwise indicated.

*Two large cores and one large biface not in collection.

Historic Resources

Feick Homestead - Log Cabin Test Pit

4	chert flakes (3 primary, 1 secondary)
1	fire-cracked rock fragment
3	flat iron fragments
2	bone fragments
3	fragments white glazed stoneware, hand painted
1	fragment yellow stoneware
3	fragments bottle glass
1	snail shell
5	cut nails (four 1-1/2", one 2")
2	wire nails (one soft iron)
35	fragments window glass
	iron carriage pole connector (hand wrought)
	miscellaneous limestone fragments

Feick Homestead - Log Cabin Surface Collection of Foundation

3	stoneware sherds (burnt), one yellow lead glaze, one grey salt glazed, one buff
1	fragment white glass
1	"22-long" caliber shell

Feick Homestead - Blacksmith Shop Surface Collection

1	plow scrapper (hand wrought)
5	fragments of hinges or clasps (hand wrought)
1	iron carriage pole connector (hand wrought)
1	pony shoe (2-1/2" width)
	miscellaneous fragments of bar iron parts

Feick Homestead - Blacksmith Shop Test Pit

1	horseshoe - 7" width
1	pony shoe - 2-1/2" width
1	straight razor blade

4 hooks/latches - various diameters

5 rings or strap guides

1 ring and loop connecter

9 fragments of flat and round iron stock

4 machine-made bolts

1 fragment brown glass

miscellaneous contemporary metal fragments including washers, wire, rivets, pulley, screw, bolts

wood fragments

coal fragments

APPENDIX C

COPY OF DEED TO FEICK LAND GRANT

NO. 55992 - WARRANTY DEED. GERMAN EMIGRATION COMPANY TO CASPAR FEICK.

The State of Texas
County Comal

Know all men by these presents that I, Herman Spiess acting as trustee of the German Emigration Company for and in consideration that Mr Caspar Feick is an emigrant under contract of the Company aforesaid and for the Grant on the waters of the Llano and San Saba have granted, bargained, sold released and conveyed and by these presents do grant, bargain, sell, release and convey unto him Mr Caspar Feick his heirs and assigns all and singular the right, title interest, claim and demand of the German Emigration Company in and to all that certain lot or parcel of land, situated, lying and being near the city of New Braunfels County Comal and designated in the map of said city of New Braunfels according to the list of the outlots as No one hundred and thirty eight (138 containing about fifteen acres (15 acres) of land and bounded as follows: Beginning at a stake at the left bank of Comal Creek from which an Elmtree 12" diam mkd I bears S21°E 7 yards dist. and another Elmtree 24" diam mkd K bears N51°E 7 yards dist. thence S17°45 W 1134' to a stake from which an Elm bears S10 W 4 1/2'; thence N88°E 586' to a stake from which an Elmtree mkd K bears N25°40'E 44'; thence S 17°45 'E 1134 to a stake on the Comal Creek thence up said Creek with its meanders to the place of beginning." as is will more fully appear by reference to the plot hereby annexed, together with all and singular the rights, members hereditaments and appurtenances to the same

belonging

belonging, to have and to hold all and singular the said lot ~~or parcel~~ of land and premises unto him the said Mr Caspar Feick his heirs and assigns forever.

And I the said Hermann Spiess acting as trustee of the German Emigration Company bind myself my successors and constituents to warrant and forever defend all and singular the said lot or parcel of land and premises unto him the said Mr Caspar Feick, his heirs and assigns against the claim or claims of all and every person or persons whomsoever claiming or to claim the same or any part thereof by through or under me my successors and constituents

In witness whereof I have hereunto set my hand and official seal this the 16th day of April AD 1849

Signed sealed and delivered in presence of witnesses

H. Wilke

Substitute for L. Martin, trustee of the German Emigration Comp. and successor to Mr Spiess

[illegible]

[illegible]

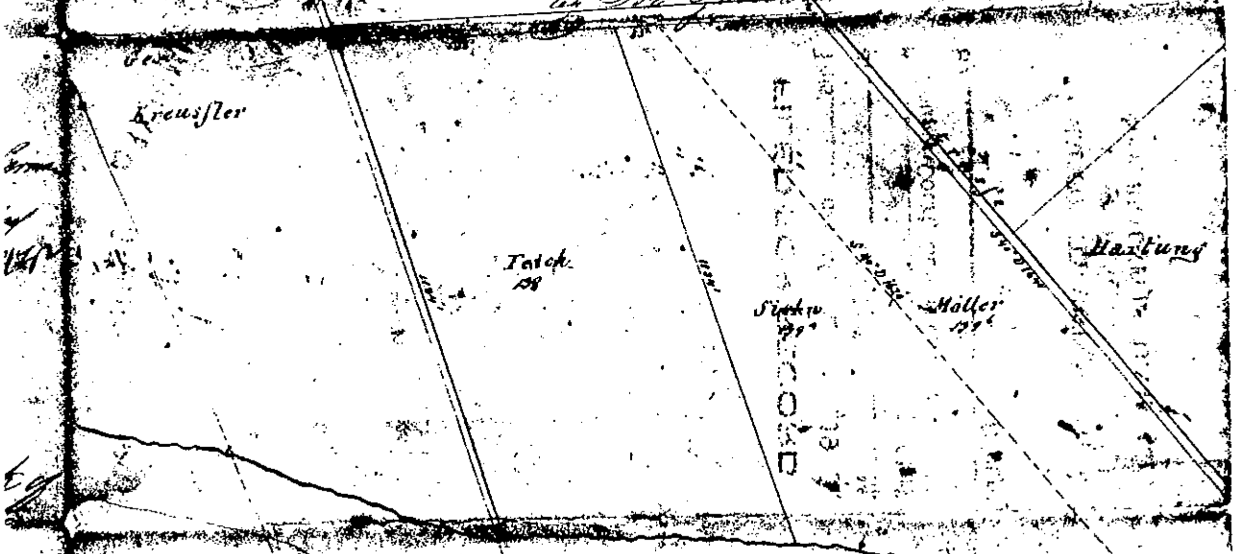
The State of Texas } Before me the undersigned Clerk of County of Comal } said County Court this day personally appeared Johann Remmler to me well known who on oath solemnly deposed and said that he was present at the signing and sealing of the foregoing and within deed and instrument of writing to C. Caspar Feick and saw Hermann Wilke substitute for L. Martin trustee of the German Emigration Company sign the same for the consideration and purposes therein set forth and that he deponent signed as one of the witnesses.

In testimony whereof I hereto set my hand and

and affix the seal of said County Court at New Braunfels November the 21st A. D. 1853.

C. Seabaugh
Clk C Court
Comal County

The State of Texas } I do hereby certify that the
County of Comal } within Instrument of writing is filed for Record on the [illegible] day of November 1853 at 12 m. and is duly recorded in the Records of said County book D Deeds page 40 & 41 the same day [illegible]
Witness my hand & the Seal of said County Court at New Braunfels Nov. 21st 1853. C. Seabaugh Clk C. C. Comal Co.
[illegible]



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APPENDIX D

LITHIC ASSEMBLAGE FROM LOCAL COLLECTION IN VICINITY OF FEICK HOMESTEAD FIELDS ALONG DRY COMAL CREEK

APPENDIX D:

Copies of References Cited

At the request of the US Environmental Protection Agency (EPA), copies of references cited in this report are provided on the CD-ROM attached to the inner back cover of this report.