

**The Assessment of Archaeological Sites
in the Fort Sill Military Reservation
Potentially Affected by the Reconstruction
of State Highway 49
Comanche County, Oklahoma**

By

**John D. Hartley, Robert Bartlett,
Valli S. Powell, and Lynita Langley-Ware**



**Oklahoma Department of Transportation Project
STP-16C(280), J/P 10167(04)**

**Oklahoma Department of Transportation
Environmental Studies Branch
200 NE 21st Street, Oklahoma City**

**Miscellaneous Studies Series
March, 1999**

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John D. Hartley
Department Archaeologist
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1. The first part of the document is a letter from the Secretary of the State to the Governor, dated 10th March 1870. It contains a report on the progress of the work done during the year ending 31st December 1869. The letter is signed by the Secretary and is addressed to the Governor.

2. The second part of the document is a report on the work done during the year ending 31st December 1869. It is a detailed account of the various departments and the work done in each. It is signed by the Secretary and is addressed to the Governor.

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Figure 1

Figure 1

Figure 1

Archaeological Evaluation of Cultural Resources
in the Fort Sill Military Reservation Potentially Impacted
by the Expansion of State Highway 49
Comanche County, Oklahoma

Oklahoma Department of Transportation Project
STP-16C(280), J/P 10167(04)

I. Abstract and Management Summary

Between April 8, 1998 and May 26, 1998, the Oklahoma Department of Transportation (ODOT) conducted archaeological, cartographic, and archival research to assess the National Register of Historic Places (NRHP) significance of several archaeological resources within the Fort Sill Military Reservation. These resources are subject to potential adverse impact by the proposed expansion of SH-49

in Comanche County (Figure 1). Six sites in the impact area (34CM408, 34CM409, 34CM410, 34CM419, 34CM420, and 34CM433) had been previously recorded and subjected to preliminary investigation by Geo-Marine, Inc. of Plano, Texas, under contract to Fort Sill. Of these, one (34CM419) had previously been determined not eligible for inclusion in the NRHP by its original investigators, and was not subjected to any additional formal work in the present study. The Department conducted additional archaeological and documentary investigations at 34CM408, 34CM409, 34CM410, 34CM420, and 34CM433. During this work, three more historic sites (34CM542, 34CM543, and 34CM544) were identified, of which 34CM542 was subjected to additional NRHP-eligibility evaluation. None of the evaluated resources exhibit the integrity, content, or associations to warrant inclusion in the NRHP. No additional archaeological investigations are warranted for this project. At the suggestion of Fort Sill, ODOT archaeologists also reevaluated the location of historic archaeological site

34CM414, adjacent to the SH-49 project area, which was previously assessed by Geo-Marine as eligible for inclusion in the NRHP largely because of its believed association with the Wim-Ner-Chy Comanche allotment. Our reinvestigation shows that 34CM414 is in fact several hundred meters west of this parcel in an area platted as a typical homestead. Consequently, if the significance of 34CM414 rests primarily on its supposed association with an early Comanche allotment, a re-evaluation of this site's significance would also appear to be in order.

Pending concurrence of the Fort Sill Directorate of Environmental Quality (DEQ), cultural resources clearance for the SH-49 expansion project as proposed is recommended. If subsurface archaeological materials are exposed during construction, the Contractor and Resident Engineer shall temporarily suspend excavations in the find areas and immediately notify the ODOT Department Archaeologist. Off-site locations such as borrow pits, asphalt plants, and staging areas must be subjected to an archaeological evaluation in accordance with Section 202.02 "Archaeological and Wetland Sites" of the Standard Specifications for Highway Construction. Should any proposed borrow pits or other off-site activities be located within property owned by the Fort Sill Military Reservation, these must also be reviewed and approved by the Fort Sill DEQ.

II. Project Background

Project History

In early 1996 the Oklahoma Department of Transportation (ODOT) began planning for the expansion of SH-49 in Comanche County, Oklahoma. On March 20, 1996, a preliminary file search at the Oklahoma Archaeological Survey (OAS) was performed for this project. This review identified several historic and prehistoric archaeological sites immediately south of SH-49 in the immediate project area: 34CM408, 34CM409, 34CM410 (erroneously labeled at the time on the OAS map as "34CM400"), 34CM414, 34CM419, and 34CM420. All of these had been recorded by Geo-Marine, Inc, of Plano Texas, as part of an ongoing cultural resources survey of the Fort Sill Military Reservation (Peter *et al* 1993; Largent *et al* 1996; Largent *et al* 1997). At the time, forms and data on file at the OAS were preliminary and subject to change. Based on the preliminary data at OAS, it appeared that historic sites 34CM408 and 34CM419, together with prehistoric site 34CM420 were either eligible or potentially eligible for inclusion in the NRHP. In view of the incomplete nature of the site data available in early 1996, it was decided to wait until this information was finalized before continuing with formal cultural resource investigations on this project

On March 6, 1997, John Hartley and Robert Bartlett of the ODOT Highway Archaeological Survey program met with Louis Vogeles, Fort Sill DEQ archaeologist, to discuss the potential cultural resource impacts of the SH-49 widening project. By this time, the Geo-Marine survey data had been finalized, resulting in the identification of five potentially NRHP-eligible sites in the possible project impact area: historic sites 34CM408, 34CM409, 34CM414, and 34CM433, as well as prehistoric site 34CM420. Site 34CM414, in particular, had already been recommended for formal NRHP-nomination because of presumed associations with an early historic Comanche allotment. By this time, Geo-Marine had removed two sites (prehistoric site 34CM410 and historic site 34CM419) from the list of potentially eligible resources. During the March 6, meeting, it was decided that a formal assessment of potential project effects on these sites would have to wait until the proposed new R/W for the highway expansion was marked in the field.

On May 29, 1997, following in-field flagging of the

estimated project R/W, a preliminary investigation of the recorded sites were undertaken by Department personnel. This investigation focused primarily on determining each site's relationship to the project boundaries. During this study, several discrepancies in the data as recorded by Geo-Marine were noted, including the mis-location of 34CM408 and the presence of a hitherto unrecorded historic component on 34CM410, which had been "cleared" by the previous work. As the 34CM410 historic component included several large ruins, it was decided that further work to record this component would be necessary. As a result of this evaluation, it was determined that six sites requiring additional work or mitigation (34CM408, 34CM409, 34CM410, 34CM414, 34CM420, and 34CM433) would be impacted to some extent by highway construction and/or required relocation of Fort Sill firebreak roads adjacent to the R/W. It was originally agreed between Fort Sill and the Department that Geo-Marine would perform the required site evaluations as part of their ongoing cultural resources study of Fort Sill. This work was tentatively scheduled to commence in the fall of 1997 and be completed by early 1998. Because 34CM414 was believed eligible for inclusion in the NRHP, the Department began studying a slight redesign of the project to avoid taking any R/W from this resource, which is located at the extreme western end of the alignment.

On January 12, 1998, the Department was notified that, due to an unanticipated reduction in funding, Fort Sill was unable to contract with Geo-Marine for the required site evaluations. As a result, preparations began to perform this work in-house, using the Department's existing agreement with the University of Oklahoma/Oklahoma Archaeological Survey. An Archaeological Resources Protection Act (ARPA) permit was requested on February 25, 1998 and right-of-entry to perform the work was obtained from the United States Army Corps of Engineers on April 15, 1998.

Research Orientation

As is the case with archaeological investigations performed under Section 106 of the National Historic Preservation Act, the principal objective of the work for the SH-49 expansion project was primarily to assess the affected sites' significance and determine the extent to

which the proposed undertaking would adversely affect the qualities rendering them important. Specifically, the intent was to determine if cultural deposits eligible for inclusion in the NRHP survived within the expanded right-of-way required from Fort Sill for the widening of SH-49.

The "significance" of any archaeological site affected by Federal actions is based upon criteria outlined in the National Historic Preservation Act of 1966 and repeated below:

National Register Significance Criteria

The quality of significance in American history, architecture, archaeology, engineering, and culture is present in [resources] that possess integrity of location, design, setting, materials, workmanship, feeling, and association, and

(a) that are associated with events that have made a significant contribution to the broad pattern of our history; or

(b) that are associated with the lives of persons significant in our past; or

(c) that embody the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possess high artistic values, or that represent a significant and distinguishable entity whose components may lack individual distinction; or

(d) that have yielded, or may be likely to yield, information important in prehistory or history.

Cultural resources that possess a significant degree of integrity and which meet at least one of the above criteria can be listed in the NRHP. Archaeological sites are almost always considered "significant" only with regard to Criterion D of the above statement, although in outstanding instances some of the other criteria may apply.

Given the nature of archaeological data, an individual site's significance must be viewed within the context of current archaeological knowledge in a particular state or region. This can result in widely varied interpretations of significance for essentially the same kind of site. For example, a small, limited, or disturbed lithic scatter may not be considered of great importance if it is only one of many similar manifestations of a relatively well-documented cultural period. Conversely, the same type of site may be considered potentially quite significant if it represents a rare or unique expression of a poorly known cultural complex or an

unusual type of cultural activity.

With the exception of 34CM420, all of the affected resources are early-mid 20th century homestead expressions. In Oklahoma, there is as yet no broad consensus regarding how such common and frequently well-preserved resources should be treated or, indeed, whether archaeological techniques are even a particularly valuable means of studying the cultural and historic processes they represent

Generally speaking, the historic archaeological sites affected by the SH-49 project are characterized by a general absence of standing architectural remains and minimal surface artifact scatters. They all were homestead in the early 1900's and were abandoned in the early 1940's upon their acquisition by Fort Sill. The general absence of structural remains (framing timbers, cladding materials, roofing shingles) observed during the Geo-Marine surveys suggests that most buildings were deliberately removed, either by Fort Sill authorities or by their owners. In relatively few instances were subsurface features such as wells or cisterns noted.

Under normal circumstances, such sites would not qualify for the NRHP solely on their archaeological content or integrity, as 1900-1940 homesteads are common throughout rural Oklahoma and are often represented elsewhere by much better preserved architectural features and cultural deposits. Also, sites dating to the early 20th century frequently reflect social/historical developments which can be much more efficiently documented and interpreted through traditional archival research and ethnography - classes of data which do not depend on the physical preservation of specific sites or locales.

However, the possibility existed that some of the sites could reflect Native American, probably Comanche, occupants. Underlying this project was the presumption that many details of early 20th century Native American acculturation in southwestern Oklahoma would have been subjected to considerably less thorough contemporary documentation and historic study than Anglo-American settlement history. Therefore, in this case archaeological data could be of correspondingly greater importance.

However, to be of value, the archaeological deposits associated with any occupation must preserve a basic level of content and integrity. Without these minimal characteristics, few if any reliable cultural or temporal

interpretations are possible.

Accordingly, it was considered that the Fort Sill historic archaeological sites site could be determined "significant" if test excavations or research demonstrated the presence of the following conditions:

- (1) Unequivocal documentary evidence of Native American residency and use throughout their occupation history, and
- (2) Preservation of at least some relatively intact or *in situ* features or deposits containing domestic and personal items related to these occupations.

On the other hand, if no clear evidence regarding the ethnicity of the sites' actual inhabitants could be obtained through archival research and/or no intact archaeological deposits containing abundant domestic remains were preserved at the sites, it was believed little significant scientific or historic information regarding early 20th century settlement history in southwestern Oklahoma would be obtained by excavation and analysis of the remains. They would be ineligible for inclusion in the NRHP

Regarding the sole prehistoric site, 34CM420, previous work by Geo-Marine suggested it was relatively shallow and of uncertain temporal/cultural affiliation, although some possible Plains Woodland project point fragments were collected. Unless some definitive spatial patterning was preserved in the surface scatter, or unexpectedly deep and intact buried deposits were present, it was considered very unlikely the site would preserve sufficient intact or *in situ* remains to warrant inclusion in the NRHP. As a result, investigation at this site would focus on a controlled surface evaluation and limited test excavations to assess its depth and subsurface content.

The initial ARPA work plan featured limited test excavation and surface collections at 34CM408, 34CM409, 34CM410, 34CM420, and 34CM433. As documented in the preceding and following sections, initial field investigations brought into question some of the Geo-Marine data regarding these sites, which affected the basic assumptions underlying our original work plan. As a result the general scope and intensity of archaeological testing was reduced and the list of sites to be evaluated was modified through the addition of several newly recorded resources and elimination of others.

III. Preliminary Field Investigations

Under a verbal agreement with Fort Sill, the Department began formal field investigations on April 8, 1998. Work was conducted intermittently between April 8 and May 26, 1998 and can be divided into two overlapping stages.

Detailed Surface Survey and Reassessment

Initial work focused on an accurate delineation of the boundaries and locations of all recorded sites in the project area. This effort was most thorough between Geo-Marine sites 34CM419 and 34CM420. As a first step, a detailed survey was made of all observable historic features within a densely occupied 1/4 mile section of the project area including 34CM419, 34CM409, and 34CM408. During this study, 34CM542, an historic site previously unrecorded by Geo-Marine, was identified. As this site contained an intact mortar-lined cistern /well and other features, it was added to the sites requiring further evaluation. The resurvey revealed that both 34CM409 and 34CM408 were considerably more disturbed by clearing and later military activities than initially thought, rendering the excavation of shovel tests and test pits of little use in their assessment. As later verified by cartographic and archival research, it also became apparent that 34CM408 actually contained two separate homesteads with different property histories. Although best considered two separate sites, the original Geo-Marine site number was retained, with each complex differentiated by a letter suffix.

Continuation of the survey between 34CM408 and 34CM420 resulted in the identification of two additional previously unrecorded historic sites (34CM543 and 34CM544). Finally, at the suggestion of Fort Sill, 34CM414 was revisited, showing that it is in fact located approximately 1/4 mile west of the location plotted by Geo-Marine. As discussed elsewhere in this report this has a major impact on the site's possible significance. Figure shows the accurate locations of all known cultural resources within the project area, based on our investigations.

Site Evaluation/Reevaluation

The significant discrepancies observed in the

preliminary mapping phase of this study, coupled with those noted during the initial site visit on May 29, 1997, brought into question many of the assumptions underlying the initial testing plan. As a result, Department archaeologists met with the Fort Sill archaeologist on April 23, 1996 to discuss the situation. After a field visit to 34CM408, 34CM409, 34CM410, 34CM433, 34CM542, 34CM543, and 34CM544, it was agreed to drastically reduce the scope of the subsequent site testing operations. The revised evaluation of site potential and evaluation plan is summarized below:

- (1) ***Sites requiring no further evaluation*** Based on the extent of observed disturbance, minimal content, and questionable context, the following sites in the project impact area were assessed as not-eligible for inclusion in the NRHP and required no further work of any kind: 34CM419 (already cleared by Geo-Marine), 34CM408b, 34CM409, 34CM543, and 34CM544.
- (2) ***Sites not requiring formal test excavations*** Because of evidence for extensive disturbance from site clearing in the 1940's and subsequent military use by heavy tracked vehicles and campsites, it was decided that surface collections and excavation of formal shovel tests or test units at 34CM408a, 34CM410, and 34CM542 would be unproductive of meaningful contextual data. However, 34CM408a and 34CM542 preserved cisterns and other possible features which could be efficiently evaluated by backhoe trenches, and the architectural features associated with all three sites could be mapped. Other than this work, it was agreed that evaluation of these sites would be completed by an archival/cartographic study.
- (3) ***Sites requiring formal testing/surface documentation and mapping*** Only one historic site, 34CM433, apparently retained the integrity to warrant full treatment as proposed in the Department's initial work plan. This work would involve excavation of a 2x2 meter test unit (or equivalent), a pattern

of screened shovel tests, and preparation of a site plan. The single prehistoric site involved in the study (34CM420) would be subjected to a

controlled surface evaluation and limited test excavations, as previously proposed.

IV. Archival and Cartographic Review

Archival research for this project began on April 20, 1998, and continued intermittently for several weeks. A major purpose of this work was accurately delineating pre-acquisition property boundaries with respect to the recorded historic-era cultural resources, and deriving property histories and descriptions for these parcels. Most of this work was performed at the Fort Sill Real Property Office and the Comanche County Courthouse. No evidence was obtained that any of the studied sites reflected Native American allotments or occupants. Other than legal descriptions and individual owners, little is contained in available records. The only detailed description involves 34CM419, which is identified as the former location of the Carter Store, described in 1929 as a "cobblestone store building, a well, and outbuildings." This site was not a focus of the present study, as it had previously been determined ineligible for inclusion in the NRHP by Geo-Marine. It appears that all of the sites studied were simple individual farmsteads with no outstanding or unique improvements.

Cartographic Review

A review of available maps at the Oklahoma Archaeological Survey was conducted to correlate the recorded resources with mapped features. Of particular interest is a 1942 aerial photograph (USDA 1942) clearly showing driveways, clearings, and possible other features associated with 34CM408a, 34CM408b, 34CM409, 34CM410, 34CM419, 34CM433, 34CM542, 34CM543, and 34CM544 (Figure 2). Although insufficiently clear to show many specific details, this photograph was extremely useful in verifying the location and separate identity of these sites. An undated 1:25,000 Topographic Quadrangle, labeled *Mount Scott-Fort Sill Oklahoma*, believed to have been compiled on the basis of late 1940's-early 1950's data, shows "ruins" of four buildings at 34CM410 and those of one building at 34CM419 (Figure 3). Another 1:25,000 quadrangle, *Fort Sill Oklahoma*, including data compiled during the same general period and field checked in 1954, shows only 1 ruined structure at 34CM410 and none at 34CM419.

As expected, the 1874 General Land Office map of the area shows no structures in the project area. Acquisition Tract Register maps on file at the Fort Sill Real Property Office were overlaid against the quadrangle maps with plotted site locations (Figure 1) and aerial photo data to verify accurate association of the archaeological sites to the appropriate the plats and property histories. Since the actual location of several sites differ significantly from those used in the earlier Geo-Marine property history studies, the accurate new information is provided below.

Property Histories

34CM408a, 34CM408b, 34CM409, 34CM419, 34CM542, and 34CM543 are all located in within the a 160 acre quarter-section parcel initially granted by the Federal Government to Clarence Metcalf in 1906 for \$200. In 1912 Metcalf sold the E1/2 of the quarter section containing the location of 34CM543 to CP Proudfoot for \$900. Proudfoot held the property until its transfer to the United States Army in 1942 for \$600. In 1920 Metcalf sold the remainder of his holdings to I.E. Carter for \$2,600 and the assumption of a \$600 mortgage. In 1925 Carter transferred a 5 acre tract containing 34CM408a to Dora Bishop for \$300 and in 1929 he sold an adjacent 5 acre parcel containing 34CM408b to L.F. Bishop for \$180. In 1930 Carter transferred a 3.25 acre tract containing 34CM542 to R.F. Davidson for \$1.00. In 1929, Carter also sold a 2 acre tract containing 34CM419 (also known as "the Carter Store") to John D. Burlison. From this point on, the histories of these properties diverge. Since 34CM419 and 34CM409 have already been assessed not eligible for inclusion in the NRHP, and are not a focus of this study, the following discussion deals only with 34CM408a, 34CM408b, and 34CM542.

At some point between 1925 and 1938, Dora and L.F. Bishop entered into joint ownership of 34CM408a, while L.F. Bishop apparently retained sole deed to 34CM408b. Whether L.F. and Dora were a married couple or blood relatives cannot be determined from available deed and title records. In 1937, L.F. Bishop

Figure 2. Portion of 1942 aerial photograph showing historic properties prior to demolition by Fort Sill

sold the tract containing 34CM408b to Arthur Berger for "\$1.00 and other valuable considerations", who retained ownership of the property until its acquisition by the United States Army in 1942 for \$375. In 1938, Dora and L.F. Bishop deeded the 5 acre tract containing 34CM408a to Clara Carver for \$1.00, who retained possession of the property until its acquisition by the Army in 1942 for \$700.

R. F. Davidson retained possession of the 3.25 tract containing 34CM542 for only 2 years, transferring it for \$1.00 to Roy Carder in 1932. Carder then sold the property to \$1.00 to R.E. Penick in 1937. Penick apparently resisted sale of the property to the Army, eventually losing it through a condemnation judgement

34CM544 is located in a 160 acre tract initially purchased from the Federal Government in 1908 by John Reinwald. Although undergoing several changes of ownership through sale and transfer, the property remained a 160 acre parcel from 1909 until 1933 when Mamie Holman sold the 5 acre tract containing 34CM544 to Mrs. F. Kleeman for \$1.00 and "other valuable considerations." In 1940 Mrs. F. Kleeman sold the parcel to Guy Kleeman for \$250. Guy Kleeman retained ownership of the tract until a 1942

"declaration of taking" by the United States Army and a payment of \$950.

34CM410 shares much of its property history with 34CM544, being on the same 160 quarter section tract initially purchased from the Federal Government by John Reinwald in 1908, and retained intact except for the transfer of the tract containing 34CM544 to F. Kleeman in 1933. In 1942, Mamie Holman sold the remaining 155 acres, including the location the structural ruins at 34CM410 to the United States Army for \$3,400.

34CM433 is located in a 160 acre quarter section initially sold to Max Strubelt in 1903 by the Federal Government and patented by Strubelt in 1905. In 1915, Max Strubelt sold the quarter section to Arthur Strubelt for \$25 "plus considerations", and barely 3 months later, also in 1915, Strubelt sold the 160 acres to R.M. Reinwald for \$3,000. In 1921 Reinwald granted an oil/gas lease on the property to J.W. Head for \$1.00 plus a 1/8th share of the production proceeds. In 1930, the 10 acre tract containing 34CM433 was sold to Lola McDaniel for \$600. In 1942, the McDaniels sold the property to the United States Army for \$1,825.

Figure 3. Section of undated late 1940's quadrangle
showing "ruins" in vicinity of 34CM419 and 34CM410

V. Results of the Study

What follows is a discussion and assessment of each site within the project area and evaluated during the present study. Brief discussions of previously assessed resources are provided as well as more lengthy descriptions of sites formally investigated as part of this study. Controlled artifact recovery was only undertaken at 34CM420 and 34CM433 and all artifact descriptions are contained within the respective site discussions.

34CM408a

As discussed earlier in this report the site originally recorded by Geo-Marine as "34CM408" is actually two separate resources with differing, although related, ownership histories after 1929. Further, since this site was mis-located by the initial investigators, the property history of both areas is different from that described in Peter *et al* 1993. However, to avoid confusion, the original site number has been retained for both resources, with each identified by a letter suffix. Based on the extent and preservation of architectural and landscape features, 34CM408a is easily the more interesting component.

As documented in 1998, 34CM408a is the remains of a large and rather substantial homestead (Figure 4). The most noteworthy surviving features are several landscaping retaining walls and terraces constructed of unmortared granite cobbles, a long raised cobble-lined driveway, an above-ground concrete windmill-fed cistern, a subsurface concrete-lined well or cistern, several rock dams in the adjacent creek, and a nearly intact concrete structure (possibly of post-occupation military origin). Virtually no evidence for the former dwelling survives, but a small L-shaped stone and mortar wall north of the subsurface cistern is believed to be part of the house foundation. Most of the site lies outside the proposed SH-49 R/W, and except in the immediate vicinity of the terraces and structural features, the site has been extensively disturbed by tracked vehicles and other military use.

As agreed between the Fort Sill DEQ and ODOT on April 23, 1998, archaeological investigations at 34CM408a centered on the machine excavation of the most noteworthy subsurface feature associated with the site, a concrete lined well or cistern identified as "J21" during the initial site mapping. As initially exposed by

manual scraping and cleaning), this feature appeared as a rock-lined circular depression measuring almost 3 meters in diameter, containing a dense deposit of granite boulders and cobbles (Figure 5). Subsequent machine trenching revealed it to be a cylindrical hand-dug pit lined with granite boulders at the top with only a relatively thin 5-10cm thick veneer of concrete forming the subsurface walls (Figure 6). The backhoe was used to remove the rocky fill to a depth of approximately 1.75 meter, below which further excavation was rendered impossible by unstable feature walls and standing water collected in the feature. The bottom of the pit was not reached. However, in view of the shallow and rocky soil in the site area, it is doubted that it was originally very deep. The excavated fill appears to relate entirely to post-occupational clearing of the site by military authorities. No household artifacts were recovered. The granite boulders lack any adhering mortar whatsoever, suggesting that they do not represent rubble from nearby structures. Almost certainly the stone in this feature is a result of deliberate filling by the Army, presumably to ensure against injury to personnel and animals.

As the excavated cistern at 34CM408a apparently contains no artifacts and debris relating to the historic occupation and use of the site, and this was the only area believed likely to contain any significant intact subsurface archaeological materials, it is believed that 34CM408a does not preserve sufficient depositional integrity to warrant inclusion in the NRHP. No further archaeological evaluation beyond the mapping of surface features and archival investigations performed during this study is warranted.

34CM408b

This site consists of the remains of a small concrete foundation and associated stone and/or mortar wall north and west of 34CM408a (Figure 7). There is an existing stock tank in the site area which appears to have been present in the 1942 aerial photograph of the site (USDA 1942) The remaining structural features have been largely destroyed by heavy vehicles and the surrounding area has been extensively disturbed by numerous deeply rutted turning circles produced by heavy tracked vehicles and other military equipment. Although this disturbance renders the site ineligible for

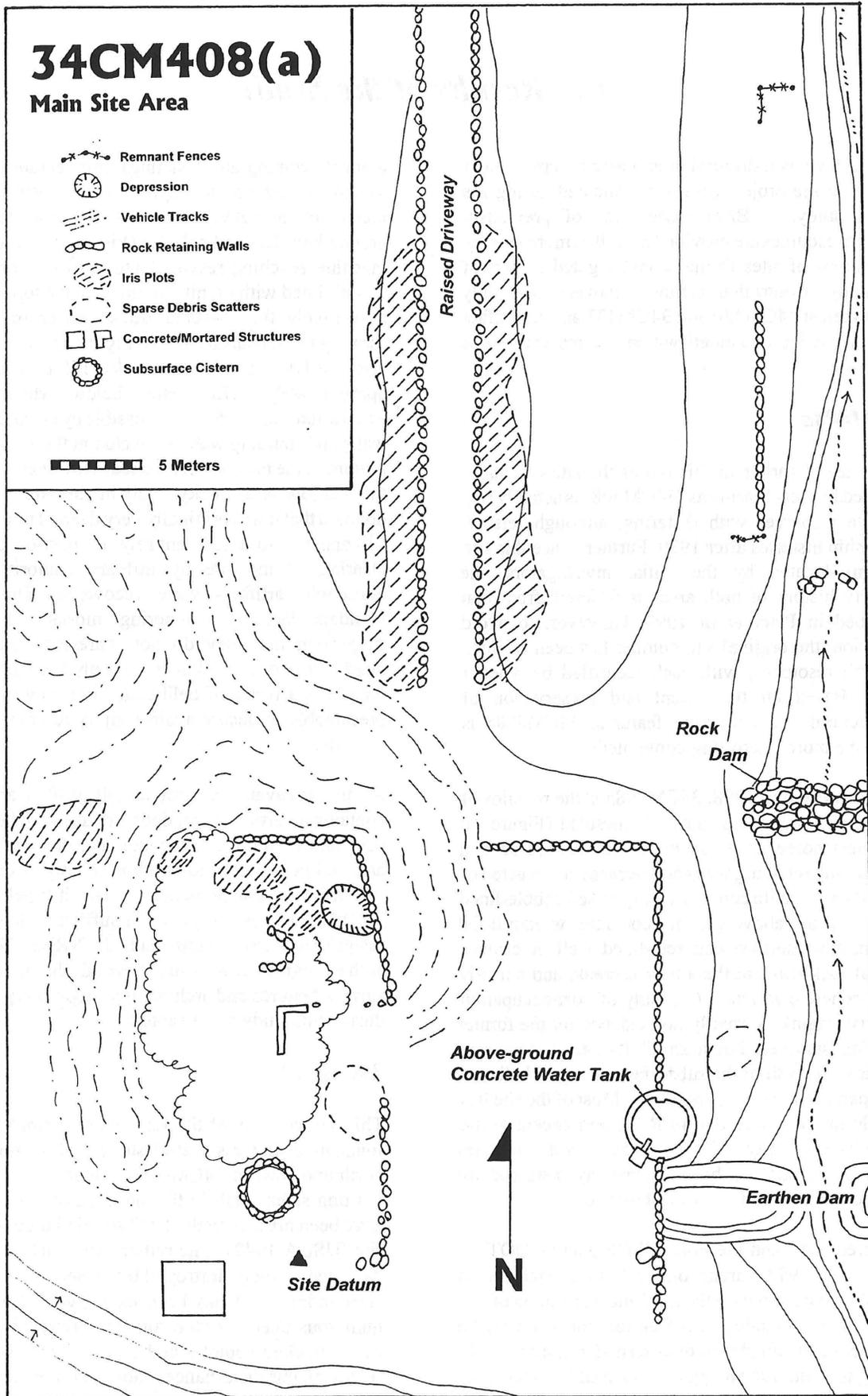
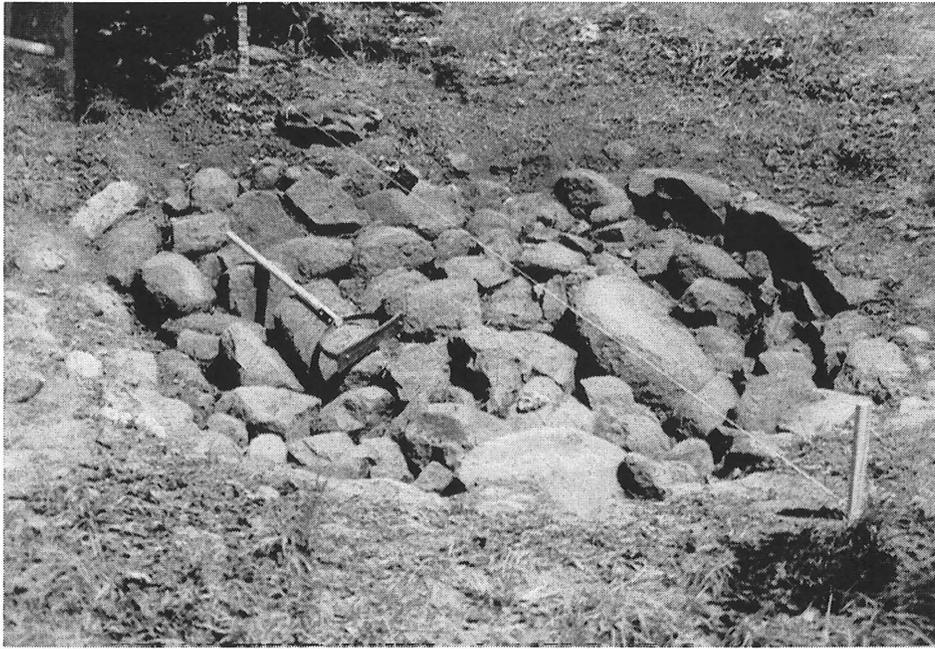


Figure 4. 34CM408a site plan



34CM408a - View to the northeast of cistern/well after surface cleaning showing rock fill. String line marks true north



34CM408a - View to northeast after partial removal of rock fill. Groundwater is at approximately 1 meter bgs. Note thin concrete lining the feature interior

Figure 5. 34CM408a - photographs of excavated cistern/well feature

34CM408(a)

Cistern Plan and Profile

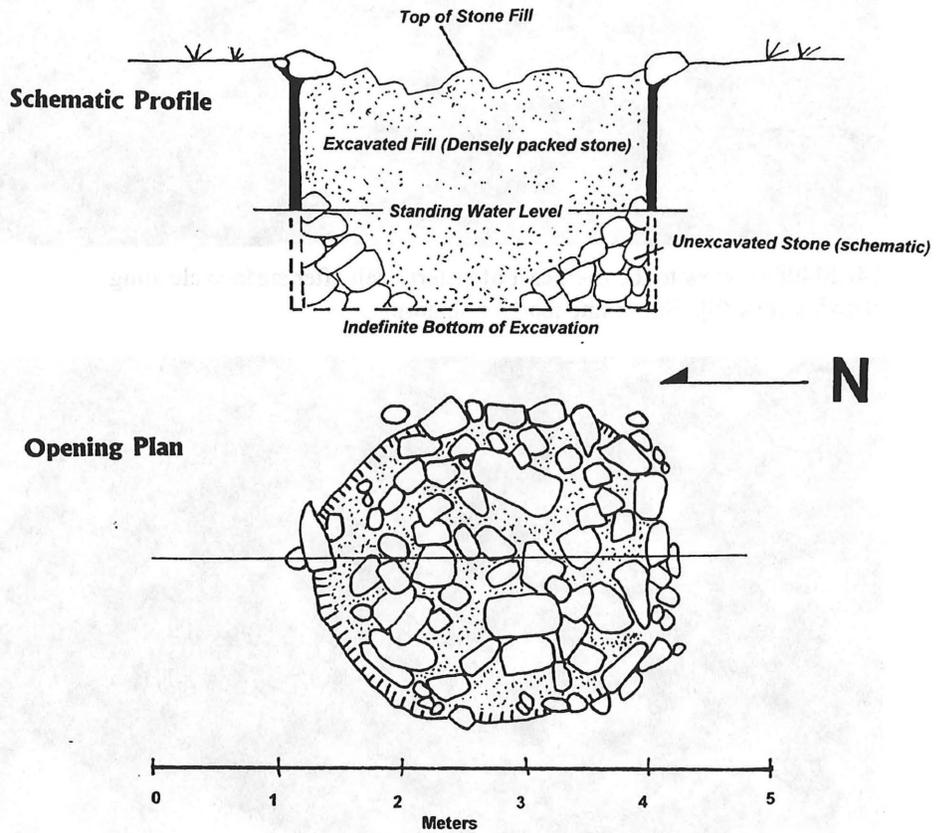


Figure 6. 34CM408a - Plan and profile of tested cistern/well

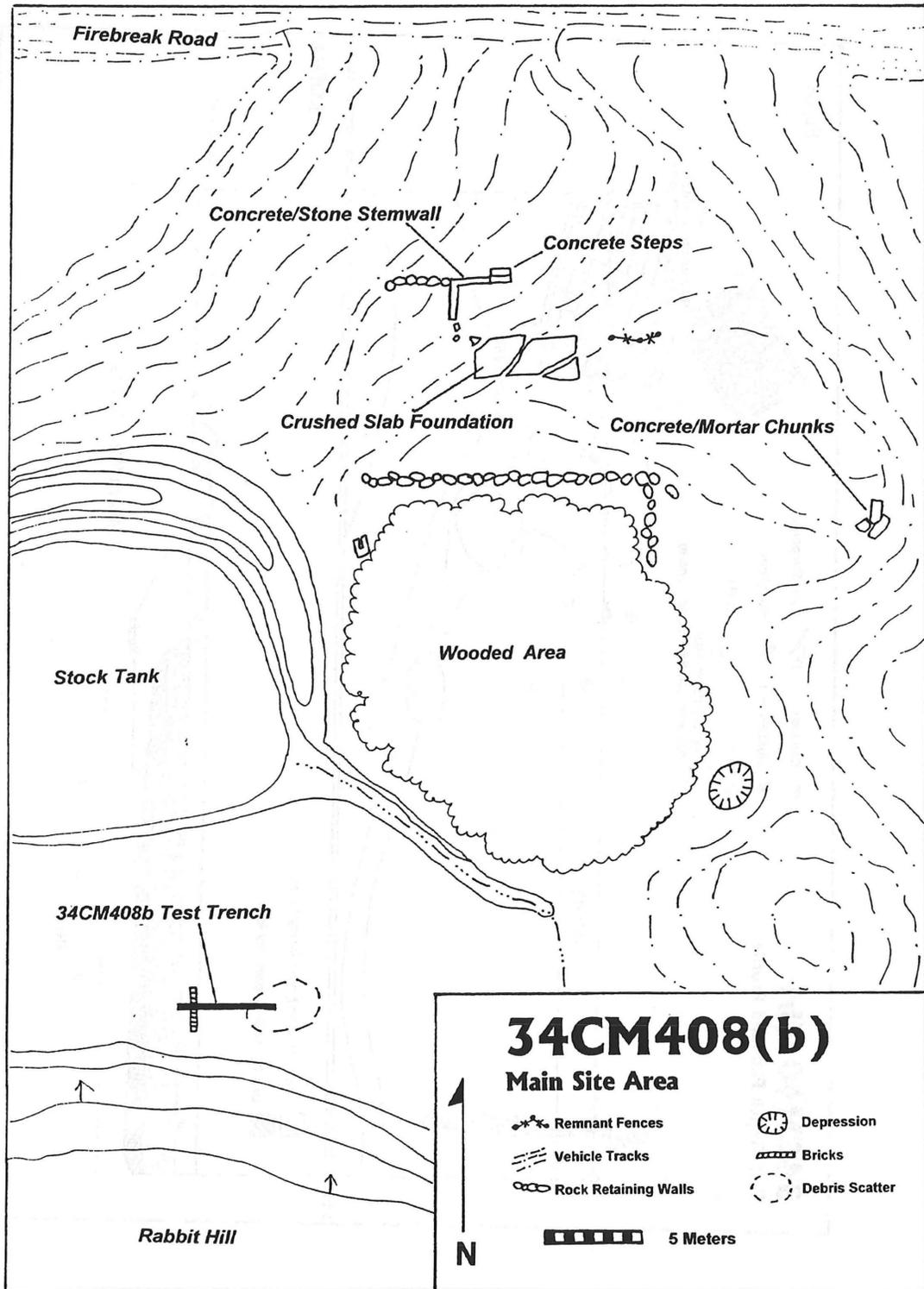
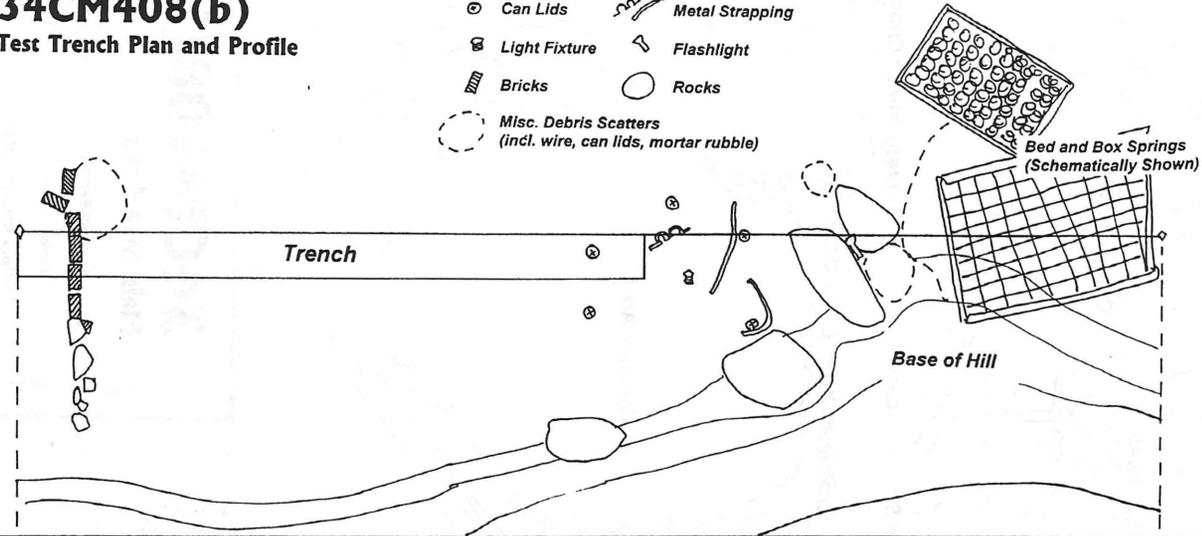


Figure 7. 34CM408b - Site plan

34CM408(b)
Test Trench Plan and Profile

- ⊙ Can Lids
- ☒ Light Fixture
- ▤ Bricks
- Misc. Debris Scatters
(incl. wire, can lids, mortar rubble)
- ⤵ Metal Strapping
- ⚡ Flashlight
- Rocks

PLAN



PROFILE

- ▤ Unit 1 Medum brown loamy humus
- ▤ Unit 2 Yellow-brown clay loam

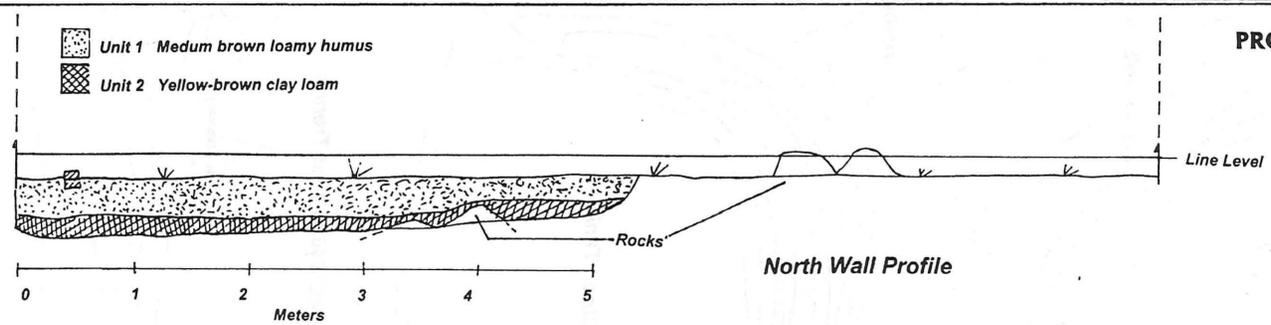


Figure 8. 34CM408b - Plan and profile of trench area

inclusion in the NRHP, it was agreed between the Fort Sill DEQ and ODOT that a small backhoe trench would be excavated in a possible midden area south of the feature complex near the boulder-strewn base of Rabbit Hill. While it is uncertain if this small area actually related to the historic occupation of 34CM408b, it does fall within the mapped parcel containing this site, hence its description here, rather than with 408a or 34CM542.

This investigation involved preparation of a plan showing the location of surface artifacts in the suspected midden area and machine excavation of a 5m long trench (Figure 8). The surface assemblage contained numerous rusted metal straps and can lids, together with an odd mix of household trash including a set of bed springs and box springs, bailing wire, an electrical fixture, and a rusted flashlight body. The backhoe trench was aligned E/W and extended west from the main surface scatter across a small brick wall. This trench uncovered no subsurface cultural material, and exposed a very shallow soil profile consisting of a 10-30 cm thick dark brown loamy humus overlying yellowish-brown loamy clay subsoil to approximately 50-60cm. At this depth, several very large boulders were encountered which could not be removed without causing substantial damage to 18-inch wide trench. As the artifacts appeared to be limited to the surface and upper 5-cm the deposit, it was decided to suspend further trench excavation at this point. The small brick alignment was found to extend only one course below the present surface and lacked any association with more substantive foundation remains. Its function or age is unknown.

Based upon this work, it is believed this area of 34CM408b contains only a light surface scatter of historic debris. Given the widespread evidence for massive bulldozing and mixing of surface deposits in the project area, and heavy evidence for subsequent military camping, it cannot be determined with any certainty to which of the several nearby sites this deposit may relate. In any case, no further work at 34CM408b is warranted.

34CM409

Based upon detailed surface documentation, it was determined that this site had been much more thoroughly disturbed by clearing activities than initially thought. No subsurface features (cisterns/wells) are present, and any associated artifact assemblage, if present, has probably been displaced significantly by

bulldozing of the remains into several long debris piles identified along the southern margins of the site. On April 23, 1998, ODOT and the Fort Sill DEQ agreed that 34CM409 did not retain sufficient integrity to warrant additional evaluation.

34CM410

This site was initially recorded by Geo-Marine as a sparse prehistoric lithic scatter and assessed as not eligible for inclusion in the NRHP. However, ODOT's re-investigation of the project area also documented a rather substantial historic component at 34CM410, including two stone and mortar foundations and the partially standing ruins of two other concrete buildings. These ruins are easily visible from the existing Fort boundary road and are also shown on several 1940's era Quadrangle maps and aerial photographs. On April 23, 1998, it was agreed between the Fort Sill DEQ and ODOT that a detailed plan of 34CM410 would be made, showing the historic structures.

34CM410 is somewhat unusual among the historic resources investigated during this study in that a large amount of above-ground architecture remains, albeit in collapsed form (Figures 9-13). Four main structures are present at the site. The main surviving feature, Structure 1, consists of a large rectangular concrete stem wall foundation with a full-width concrete pad porch along the east wall. The entire ruin measures approximately 15x13 meters. Several freestanding concrete wall sections remain in place to a height of approximately 1.5 meters, together with a large pile of rubble from other collapsed walls. Lying immediately east of the building are four molded concrete Craftsman-style porch supports, and lying along the west wall is a fallen section of concrete chimney. Structures 2 and 3 are considerably smaller and are much less well-preserved. Structure 4, also represented by several free-standing concrete walls, is located well south of the other three buildings. Apparently, for whatever reason, these buildings were not completely bulldozed to the ground as is the case at the other sites purchased by Fort Sill in the 1940's. However, there are several large bulldozer piles of construction debris scattered throughout the site area indicating at least some significant disturbance to the surficial deposits. No evidence for a subsurface well or cistern was noted. There are also several light scatters of historic artifacts in the site area. Most of this material consists of non-diagnostic metal scraps, cans, and window glass intermixed with modern military debris. No collections

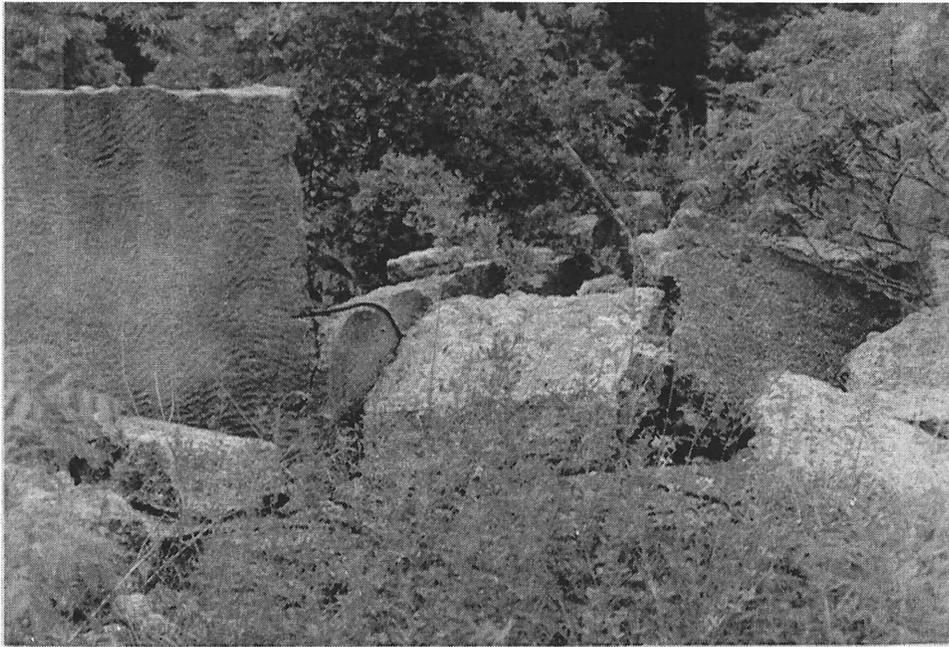


Figure 9 - 34CM410, Structure 1 looking west at northeast corner and collapsed north wall



Figure 10 - 34CM410, Structure 1 concrete chimney along collapsed west wall



Figure 11 - 34CM410, Structure 1 dislodged concrete columns along east side of ruin



Figure 12 - 34CM410, Structure 4 looking to the west

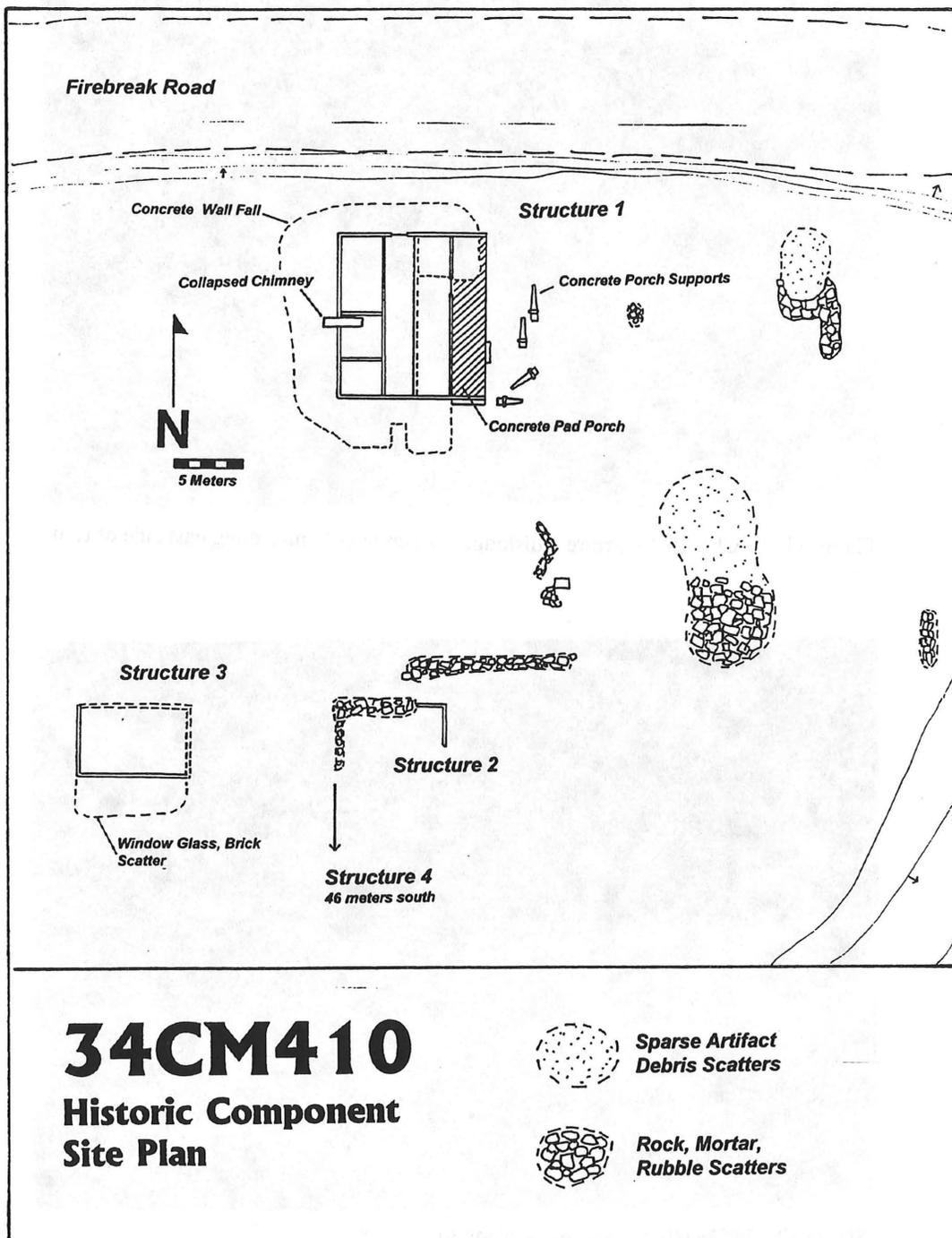


Figure 13 - 34CM410, plan of main site area

were made. The few potentially diagnostic items (Mason jar lids, whiteware, bottle glass, etc.) would appear to reflect a generalized domestic occupation in the early and mid-20th century. As 34CM410 appears to lack any significant buried artifact assemblage and archival work failed to indicate any noteworthy historic, economic, or social associations, it is not considered eligible for inclusion in the NRHP. No further work beyond that completed as part of the present study is warranted.

34CM414

This site is located at the extreme western edge of the proposed project and will not be effected by the proposed R/W take. Therefore, it was not scheduled for any formal reinvestigation as part of this study. Based on a presumed association with the Wim-Ner-Chy Comanche allotment, Geo-Marine has assessed this site as eligible for inclusion in the NRHP. At the suggestion of Fort Sill DEQ, we revisited the site to verify its location and compare this with available property maps. Our revisit clearly showed the site to be located almost 1/4 mile west of its originally plotted location, outside of the Comanche Allotment, in land taken from either R.B. Henson or Maggie Penick. In addition several features associated with the site and apparently intact when it was recorded by Geo-Marine have been severely damaged by heavy tracked vehicles. Although a reassessment of 34CM414 was not planned as part of the present study, we now believe that its NRHP-eligibility should be re-evaluated by Fort Sill.

34CM419

This site, identified through archival records as the location of the Carter Store, has been formally assessed as not-eligible for inclusion in the NRHP. It was not subjected to any detailed field investigations during this study and, based upon ODOT's own research and preliminary surface study, no further work is warranted.

34CM420

Prehistoric site 34CM420 was recorded during the 1990-1991 survey of selected parcels of Fort Sill by Geo-Marine (Peter and Weston 1993:196-199). The site, covered in a mixture of grasses and post oak timber, is located on the lower slopes of Rabbit Hill about 750 km west of Ketch Creek. Much of the site area is severely eroded with very little soil remaining.

In addition to the east/west fire break road which crosses the north end of the site, an old two track road crosses over the site north to south.

The initial investigation of 34CM420 by Geo-Marine resulted in the observation of at least 130 flakes and other knapping debris on the surface. Ten items from the surface as well a flake from 1 of the 8 shovel tests excavated on the site were recovered (Peter and Weston 1993:196-199). Among the artifacts collected by Geo-Marine are 1 mostly complete corner-notched biface, 1 stem of a corner-notched biface, biface fragments, unifaces, and one graver. The Geo-Marine investigators also noted a possible hearth on the western portion of the site. Although the site is described as heavily eroded, further testing to evaluate the site's integrity and potential eligibility for inclusion in the NRHP was recommended (*ibid*).

This is the only prehistoric site within the project area initially recommended for further study. ODOT's investigation consisted of controlled collection of surface artifacts within a 2500 square meter area divided into 5x5 meter collection/analysis units (Figure 14). It appears that the initial Geo-Marine survey may have exaggerated the extent of this site somewhat, as few artifacts were noted outside this area. At most, the site covers approximately 5000 square meters.

An intensive effort was made to locate the possible "hearth" reported by Geo-Marine. Using the original site map as a basis, we eventually located a roughly circular mounded deposit of soil and rock, surrounded by several irregular ashy stains located in the extreme SW of the collection grid. As this feature was the only area observed to contain ashy material and its location roughly matched that shown on the original form, we decided it was probably the "hearth".

A 25 square meter area surrounding this feature was shovel skimmed to remove recent washed deposits and delineate any features which might require further evaluation (Figure 14) The ashy soil was generally limited to the upper 2-5 cm and consists of relatively recent soil washed over very compact and blocky silty clay beneath. One possibly deeper stain was profiled, showing an extension of this material to approximately 10 cm. Skimming of the mounded area itself revealed that it contains a very mixed deposit of soil, ashy material, and stone, which appears to be relatively recently formed. Based on this work, we believe that this feature probably represent the remains of modern

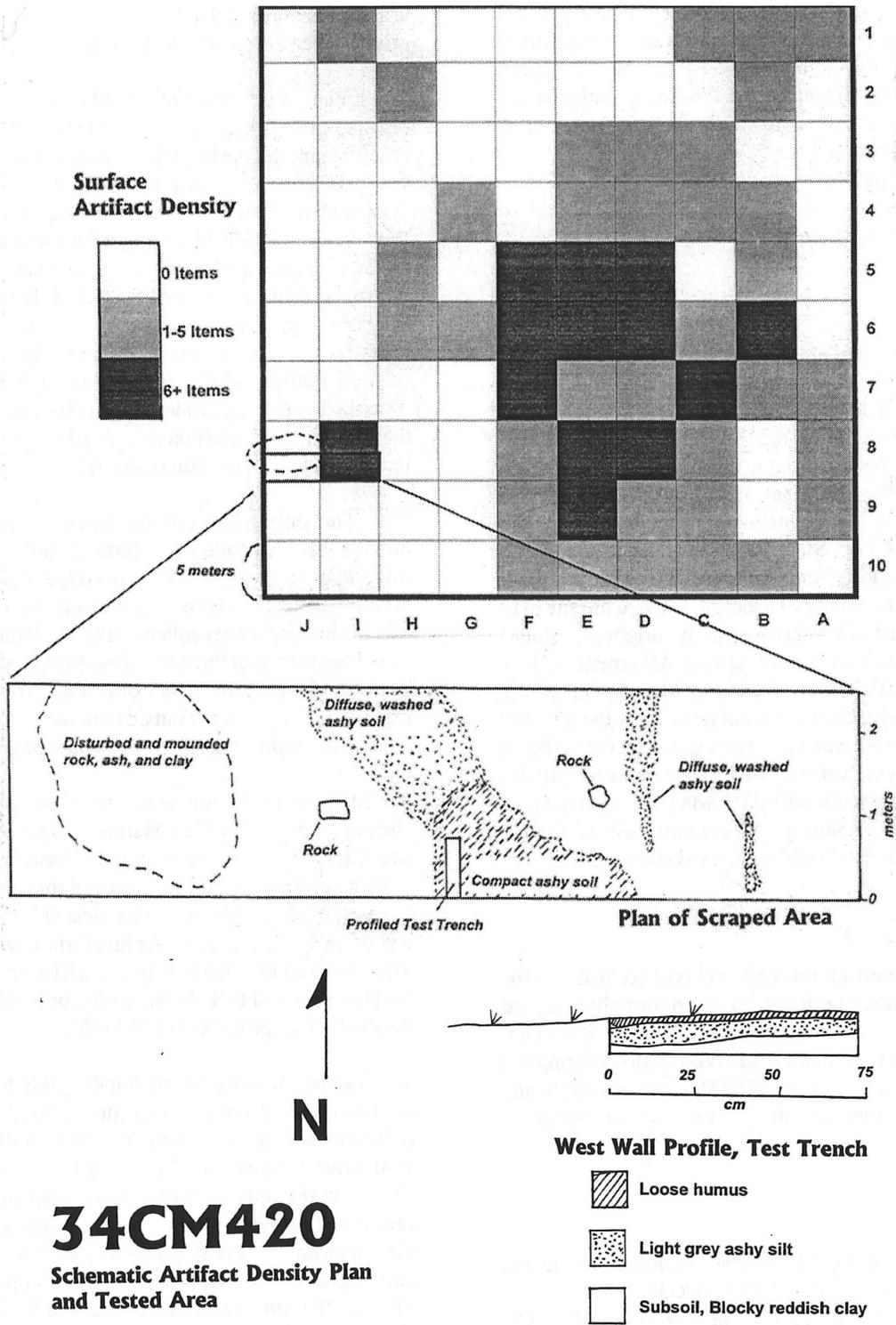


Figure 14 - 34CM420, schematic surface artifact density map with insert showing plan and profile of tested "hearth" area

burning episodes, rather than prehistoric hearth activities. No prehistoric artifacts were recovered in association with the feature.

Field analysis of the surface collection data appears to show a relatively dense scatter near the center of the grid, with artifact densities trailing off toward the site margins. Not surprisingly, artifact density was greatest in grid units exhibiting the best surface visibility and deflated soils. Predominant lithic materials are Ogallala quartzite and an unidentified chert similar in appearance to Edwards. Other lithic materials include Alibates, rhyolite, crystal quartz, and a few pieces of obsidian. A few biface tips and other tools were collected, but no diagnostics were found.

Although containing a relatively dense artifact scatter in deflated and washed areas, 34CM420 is very shallow and lacks any evidence for intact prehistoric features. It has no potential for any significant subsurface deposits, and the surface assemblage has clearly been deflated to a considerable extent. As such this site is not considered eligible for inclusion in the NRHP and no further work is warranted.

Description of Recovered Artifacts

A total of 184 lithic artifacts was collected within the 50 x 50 m surface collection grid placed over a portion of 34CM420. Among the items are 171 pieces of knapping debitage, 8 lithic tools or items exhibiting evidence of use and 3 pieces of fire fractured rock. In addition to the items in the grid, 2 other artifacts, a unifacial tool and a flake of Edwards chert (Georgetown variety), were collected from the surface outside the grid because of the additional information about the site they may provide. A wide variety of lithic materials are present in the assemblage reflecting use of locally available materials as well those from distant sources. Appendix 1 presents the results of the lithic analysis of recovered lithic artifacts and Appendix 2 is a provenience table.

The recovered artifacts are classed into three categories of debitage, tools and utilized flakes, and fire cracked rock (see Appendix 2). Debitage is the largest category containing 173 items including 150 flakes, 1 piece of bipolar debitage and 22 pieces of blocky debris and shatter. The debitage is further divided into descriptive categories. These include primary decortication flakes exhibiting cortex over 90% or more of their dorsal face, secondary decortication flakes exhibiting less than

90% cortex on the dorsal face, tertiary flakes which exhibit no cortex and flakes derived from bifaces. Flakes exhibiting attributes including lipped, angled platforms and multiple converging dorsal flake scars are classed as biface flakes. Tertiary flakes exhibit flat low angled platforms and few dorsal flake scars. Broken flakes lacking platforms or cortex were classed as tertiary if they could not be definitely attributed to the other flake categories. Items exhibiting evidence of bipolar battering as well as angular blocky pieces and small shatter are also classed as debitage.

Tools and utilized flakes include items exhibiting modification or secondary flaking into more formal shapes. In addition, flakes exhibiting patterned flaking on one or more edges consistent with deliberate modification or use are classed as tools.

The last category (FCR) includes rock evidencing exposure to intense heat. Evidence of exposure includes multi-plane fracturing and reddening.

Debitage

Primary Flakes N=14

Primary flakes comprise 9.3% of the flake assemblage. The primary flakes include 4 of unidentified chert, 4 of Ogallala quartzite and 1 of petrified wood, all of which exhibit cortex typical of stream rolled gravel. The 3 Cool Creek chert flakes in this category exhibit a rough, patinated and sometimes oolitic cortex.

Secondary Flakes N=40 from grid; 1 general surface

Secondary flakes comprise 26.5% of the flake assemblage. The majority of flakes (77.5%) in this category are Ogallala quartzite and unidentified chert. Cortex present on the items indicate they derive from material obtained from gravel deposits. The one flake collected from the general surface is a gray chert with a white chalky cortex. The material compares very favorably with the Georgetown variety of Edwards chert.

Tertiary Flakes N=69

This category contains the largest percentage (46%) of items among the flake categories as well as the widest range of raw materials. Unidentified chert comprises about 51% of

the tertiary flakes. Although most of the unidentified chert is likely derived from pebbles and small cobbles in local gravel deposits, some may be of chert from the Cool Creek formation in the Slick Hills and others may be of Edwards chert from central Texas. The small size and heavy patination exhibited by some specimens inhibit positive identification.

Biface Flakes N=27

The 27 flakes identifiable as derived from bifaces comprise 18% of the flake assemblage. Unidentified chert dominates this category (85%) with many smaller flakes likely produced during maintenance and resharpening of bifacial tools rather than the result of biface manufacture. This category includes one of the two obsidian flakes recovered.

Bipolar Debitage N=1

One item of unidentified chert exhibits bipolar battering as evidenced by columnar and opposing flake scars as well as multiple step fractures on one end.

Blocky Debris/Shatter N=22

The items in this category are irregular pieces of lithic material not exhibiting typical flake attributes, but are typical of non-flake debris produced during the knapping of lithic material. Most are derived from local material including unidentified chert, Cool Creek chert and Ogallala quartzite.

Tools/Utilized Flakes

Tools N=3 from grid; 1 from general surface
The 4 chipped stone tools recovered from the site include two biface fragments, a graver and a scraping tool.

Bifaces N=2

The two biface fragments were collected. One is a small blade fragment of unidentified chert from Grid Unit D/3 which exhibits hinge fractures on each end and measures 15.5 mm in width and 3.4 mm in thickness. A blade tip of Tepee chert from Grid Unit F/7

exhibits a bend break on one end was also recovered. This item measures 16.9 mm at it's widest, 15.5 mm in length and 4 mm in thickness.

Graver N=1

The graver is made on a secondary flake of unidentified gray chert recovered from Grid Unit E/15. The platform is well polished cortex typical of stream gravel. The artifact exhibits secondary flaking on both lateral and distal edges resulting in steeply angled edges. A graver spur is present at the junction of one lateral and the distal edge. A similar spur may have been present on the distal edge opposite the one remaining. The item measures 13.7 mm in length, 13.6 mm in width across the distal edge and 13.9 mm at it's widest and ranges from 13.7 to 16.3 mm in thickness.

Scraping Tool N=1

This item was recovered from the general surface. The tool is made on a pebble of Ogallala quartzite which has been secondarily flaked on one face around most of it's edge resulting in a roughly ovate, "turtle back" shape. The artifact measures 48.8 x 38 mm in maximum length and width and 28.8 mm in thickness. Similar tools have been recovered from sites in western Oklahoma and may have served as pulping/planning tools used in processing vegetable fibers such as yucca (Tainter 1979).

Utilized/Modified Flakes N= 5

A total of 5 flakes exhibiting modification on one or more edges was identified in the assemblage collected from the grid. These include 1 each from Grid Units B/4, C/1 and F/7 and 2 from E/8. Modification was identified macroscopically and then further examined under 10-25x magnification. The observed modification includes deliberate secondary flaking as well as that typically resulting from use. The lithic materials include 2 of unidentified chert, 2 of Cool Creek chert and 1 of "root beer" colored Edwards chert.

Fire Cracked Rock N=3

A total of 3 pieces of fractured material including quartz and Ogallala quartzite was

collected from the Grid. The items exhibit fracturing and reddening resulting from exposure to fire.

Discussion

Previous investigations at 34CM420 resulted in the recovery of a corner-notched biface, 1 biface stem, 4 miscellaneous biface fragments and 3 unifacially modified flakes including a graver (Peter and Weston 1993:198-199; 188). The items were interpreted to represent a Late Archaic or Woodland occupation on the site (*ibid*). Unfortunately this investigation revealed the site to be deflated, severely eroded and lacking a context from which to interpret the artifacts in relation to any particular occupation on the site. Although the investigation revealed the 34CM420 artifact assemblage of little use in studies relating to any time frame or cultural adaptation, some information regarding the general use of lithic material in the Wichita Mountain region during prehistoric times may be gleaned from the analysis.

This region of Oklahoma is noted for being poor in sources of knappable cryptocrystalline material (Banks 1990:102;114), especially material of suitable size for producing medium to large bifaces. The recovery of caches containing large flakes, cores and bifaces of quality lithic material, such as Edwards chert attest to the storage of quality knappable materia in the Wichita Mountain region for anticipated use in the production of large bifaces or tools (Button 1989; Levick 1975).

Of the 181 pieces of debitage, tools and utilized flakes recovered, 87 (48.1%) are unidentified chert. It is likely that most of this chert is derived from local gravel deposits, however, some may be from more distant sources such as the Edwards Plateau which is 400 km south of 34CM420. A total of 80 (42.5 %) of the items are derived from locally available materials including Ogallala quartzite, Cool Creek chert, rhyolite, unidentified volcanic, quartz, quartz crystal, petrified wood and Tepee chert.

A total of 7 (about 4%) lithic artifacts from 34CM420 can be attributed to sources greater than 150 km from the site. The materials include obsidian, the closest source of which is in the Jemez Mountains of New Mexico about 800 km northwest of 34CM420, Edwards chert from the Edwards Plateau of central Texas 500 km to the south and Florence A chert

available from sources in Kay County Oklahoma 300 km to the northeast. A small amount of Frisco chert is present in the assemblage, the closest known sources of which are 150 km to the east. Alibates is present, however, whether the material derives from geologic sources in the Texas Panhandle about 250 km to the northwest or from gravel sources such as those along the Canadian River about 50 km north is unknown. Although constituting a small percentage of the assemblage, these items attest to the fact that materials from wide ranging distant sources served to supplement locally available materials. Whether the material was obtained directly or indirectly is unknown.

Clearly there is evidence of a heavy use of local materials on 34CM420. Both the debitage and tool assemblage are dominated by local materials. Only about 3.4% of the debitage assemblage can be definitely attributed to sources greater than 150 km from 34CM420. One tool (12.5% of the identified tools), a modified flake, is of non-local, Edwards chert. Analysis of the assemblage reveals that although there are materials from a variety of distant sources, there is also evidence of primary reliance for production of both expedient and formal tools of local material, including chert, chalcedony, quartzite, quartz crystal and volcanic materials.

Although temporal and/or cultural affiliation with the recovered assemblage cannot be firmly established, the lack of a large number of artifacts from distant lithic sources suggests that the site was not frequented by groups reliant on such sources. Further, it may be said that although this particular region of Oklahoma is poor in sources of high quality, larger sized knappable lithic materials, the locally available materials were sufficient to supply the bulk of lithic raw material for the stone tool needs of many prehistoric people.

34CM433

Site 34CM433, just west of Ketch Creek, is the remains of a historic farmstead recorded during the 1990-1991 survey of selected parcels of Fort Sill by Geo-Marine (Peter and Weston 1993). The initial testing of the site by Geo-Marine included 6 shovel tests, 2 of which produced a total of 3 wire nails and one fence staple (Peter and Weston 1993:203-204). Based on observations indicating relatively little disturbance of the surface features, the site was

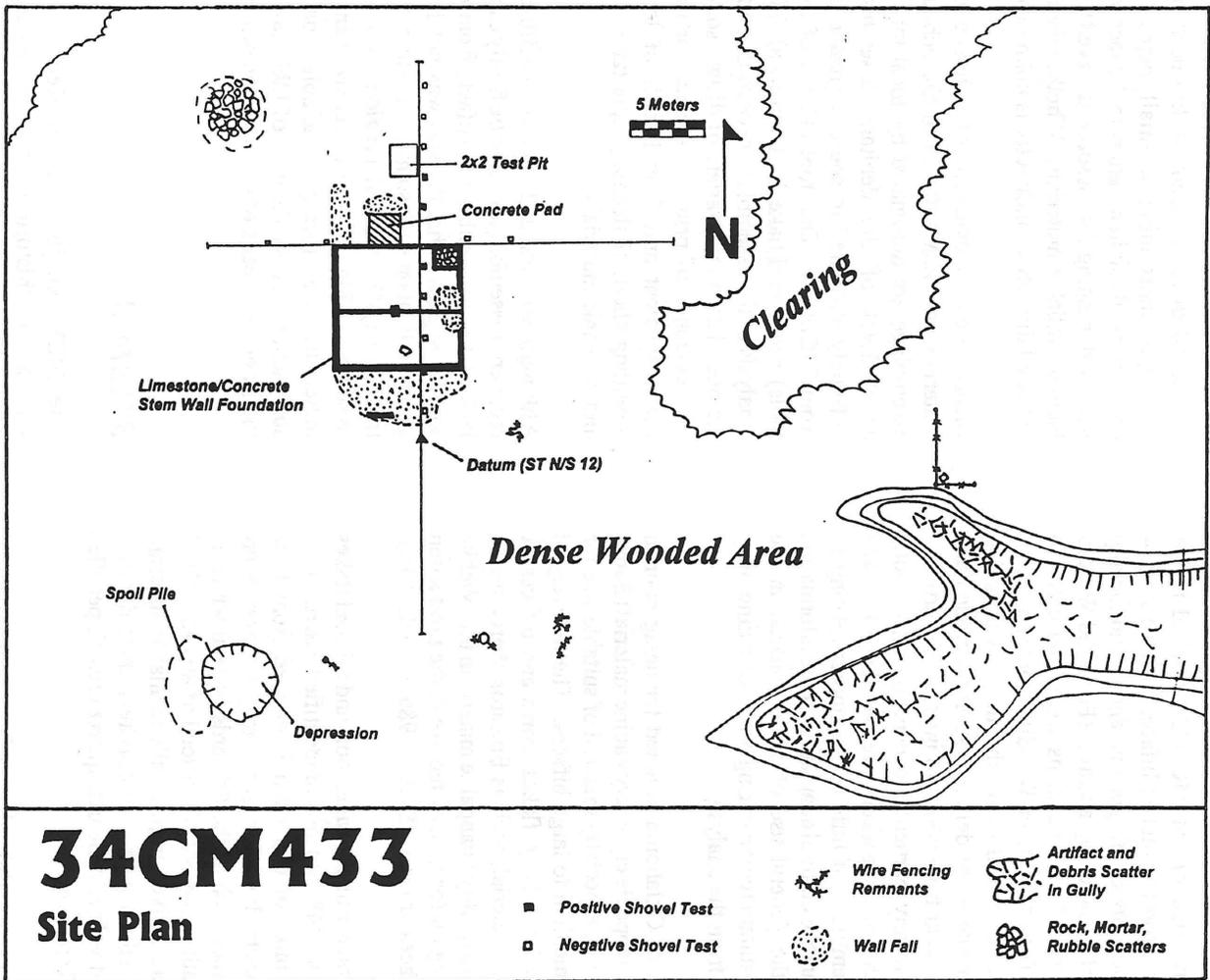


Figure 15 - 34CM433, schematic site plan showing location of test units and gully collection area

Figure 15 is a site plan of 34CM433 showing the location of remnant foundations and other ground level features. No standing architecture remains. Alone among the historic resources investigated during this study, this site appeared to preserve sufficient depositional integrity to warrant the excavation of formal shovel probes and test pits. The location of these units is also shown on Figure 15. Unfortunately, the excavations were relatively unproductive of useful data. Initially, sixteen (16) screened shovel tests were excavated in a cruciform pattern centered on the foundation. Based upon on the observed artifact densities in the shovel tests, one 2x2 meter test pit was excavated approximately six meters north of the house foundation. The test pit yielded a many heavily rusted nails, several pieces of charred wood, and a few fragments of bottle/jar glass. Four of the shovel tests also yielded a few rusted nails and one fragment of mammal bone. The other probes contained no cultural material. For the most part, the excavated materials appear to reflect burned debris from the former structure. No evidence for a household sheet midden of other material clearly relating the historic occupants of the site was identified in the excavations.

There is a relatively expansive dump of historic materials located in a gully approximately 30 meters south and east of the structure remains. An uncontrolled surface sample was collected from this area, including complete and fragmentary beverage and condiment bottles, tableware, granite wear, mason jars, and other materials.

Excavation Methodology

Shovel Tests

North/south (N/S) and east/west (E/W) lines were established over the site with the E/W line placed along the north foundation wall and the N/S line bisecting the foundation (Figure). A total of 4 shovel tests was excavated on the E/W line and 12 on the N/S line. Of the 16 total shovel tests, 4 on the N/S line were positive. With the exception of a fragment of mammal bone from N/S 7, all the items recovered were wire nails.

Test Unit

A 2x2 m test unit was excavated north of the farmhouse foundation in the vicinity of two positive N/S shovel tests. The unit was placed off the west side of the N/S line (Figure). Several wire nails were recovered and an area of burned material was revealed

also. This area of burned wood, mortar and ash yielding several nails was encountered in Level 1 over the west half of the unit and continued into Level 2. The burned area and artifacts begin to diminish near the base of Level 2. Excavation ceased after 2 levels (20CM) as it became apparent that the artifacts were limited in nature and confined to the upper portion of the soil.

Surface Collection

A large gully southeast of the foundation contained numerous items thought to relate to the occupation and abandonment of 34CM433. An uncontrolled sample of gully items was collected, including complete and fragmentary bottles, whiteware and other cultural materials.

Description of Recovered Artifacts

The following section contains detailed description of artifacts and debris recovered from the test units and surface collection at 34CM433. A complete listing of recovered items is contained in Appendix 3

Metal Items

A total of 187 metal artifacts are described below. Most of the artifacts are rusted, but not so deteriorated that functional identification was obscured. Many of the nails, however, are fragile from oxidation and tended to break into fragments during analysis. All of the artifacts have functions that could tie them to activities at the farmstead.

Construction Related Items (n=179)

All but 8 of the metal construction related items are nails that were retrieved from Test Unit A and from shovel tests.

***Spring* (n=1)**

One heavy, rusted spring, about 4 cm in length coiled, came from the gully. It has "C" hooks at each end. This spring may have been part of an agricultural implement or part of a mechanism for hanging and/or weighing objects associated with farm work.

***Round Wire Nails* (n=171)**

Test Unit A, Level 1 yielded a total of 66 round wire nails, most of which are rusted.

Four are 10.0 cm in length with flat heads; 12 are 6.5 cm in length with flat heads; 26 are 6.0 cm in length with flat heads; 3, one of which is not rusted, are 6.0 cm in length with no head; and, 21, two of which are not rusted, are 3.0 cm in length with flat heads. Level 2 of Test Unit A yielded 92 round wire nails, and like Level 1 most are rusted. From Level 2, two nails are 10.0 cm in length with flat heads; 36 are 6.5 cm in length with flat heads; 5 are 6.0 cm in length with flat heads; 1 is 6.0 cm in length with no head; and 48 are 3.0 cm in length with flat heads (4 are not rusted). In the Shovel Test N/S 4, 1 rusted, bent flat head, round wire nail 3.0 cm in length was found. Shovel Test N/S 5 had 6 rusted, 3.0 cm in length, flat head, round wire nails. Shovel Test N/S 10 produced 2 flat head rusted, round wire nails which are 10.0 cm in length; 1 rusted, round wire nail with no head which is 6.0 cm in length; and 3 flat head, rusted, round wire nails 5.0 cm in length. The various types of nails represented in this sample probably reflect different aspects of house, barn, or other farmstead related construction and/or repair.

Flashing

Seven rusted, flat metal fragments, one of which exhibits small nail holes were recovered from Test Unit A, Level 1. The items appear to be metal flashing.

Food Related Containers (n=2)

Can One rusted tin can, probably a can for condensed milk, was retrieved from the gully. It has soldered end seams and "PUNCH HERE" imprinted in two places near the edge of the top end.

Coffee Pot Another item found in the gully is a metal coffee pot, 16.0 cm in height with gray enamel finish, although much of the finish has rusted off. The remains of sealed cans for prepared foods and coffee pot are

probably associated with daily domestic activities on the farmstead.

Stove Parts and Related Items (n=1)

One partial metal disk, probably part of a burner cover for a wood burning stove was found in the gully. On one side of the disk "922 PAT. JULY STOVER" is visible in raised letters, and on the other side is "FREEPORT ILL U.S.A." written on a slant to form a "V" and there is a large "V" design between Freeport and Ill with the number "6" within the "V." This stove part likely represents a wood burning stove used for daily food preparation or heating at the farmstead.

Personal Items (n=4)

Also found in the gully was a metal lipstick case, 2" in length and 1/2" in diameter. The bottom half of the metal case retains some orange-red paint on it; the cap is gold color metal. The bottom end piece is octagonal in shape with "ELIZABETH ARDEN NEW YORK" stamped onto it, while the cap is rounded with an eagle with a star between its legs stamped on the end. Some lipstick remains inside the case. The word "CHARIOT" near the base likely denotes the color.

A metal back for a decorative lapel pin was recovered in Test Unit A, Level 1. The metal disk pin backing has a hole in the center with a pressure mechanism for holding the frontpiece pin post. This item is likely of military origin.

Two metal buckle-type clothes strap fastener fragments were also retrieved from the same provenience as the pin back. The fasteners are most likely associated with overall style work clothes often worn for farm work and could be from any time in this century. The rusted condition of the buckle fragments suggests they are at least 5-10 years old.

Miscellaneous Metal Items (n=1)

One tobacco can with a flip top, soldered side seams, flat on two sides and curved on the narrow sides was found in the gully. This type of tobacco can with a hinged top was first produced in 1905 (Rock 1987), and is still made. Its rusted condition may place it within the active farmstead time frame.

Unidentified Metal Items (n=2)

One rusted, solid metal object, possibly some sort of weight was retrieved from the gully. It is approximately rectangular and about 6 cm in length, 4 cm in width, and varies from 2-5 cm in thickness. The

function of this object is unknown; it may be a dumbweight or balance associated with some type of machinery.

One blue enameled metal disk-type tag with a twisted wire hanger attached through a hole in the disk was found in Test Unit A, Level 1. It has "US LC" stamped into the metal. The function of this item is unknown but may be an electric meter tag or relate to military activity.

Glass Artifacts

Thirty-five glass artifacts including a minimum of 28 identifiable objects were recovered. Thirty-three are from the gully while 2 are from Test Unit A, Level 1. These artifacts are divided into categories based on their original function. The categories refer to containers such as food, soft drink, liquor, medicine, tableware, miscellaneous, and unidentifiable. The greatest number of glass artifacts are of clear glass and are bottles and jars. A number of the jars and bottles have maker's marks on the bottoms.

Containers (n=19)

Included in this category are 19 identifiable bottles and jars which originally served as containers for various substances such as medicine, perfume, condiments, beverages, and foods.

Medicine Bottles (n=4; 2 complete, 2 fragments) Two items recovered from the gully tests are identified as patent medicine or bitters containers. No remaining attributes of the artifacts suggest what their specific contents were. One fragment of a patent medicine bottle, oval in shape, is made of clear glass which has become frosted from weathering. "PINKHAM'S MEDICINE" is printed on the side of the bottle, and "MADE IN U.S.A." is on the bottom. The Owens-Illinois Glass Company propeller mark is also on the base. The Pinkham family began marketing Lydia Pinkham's vegetable compound for female weaknesses in 1873. Around 1900 the embossed lettering on the bottle was aqua; this subsequently changed to clear lettering, but information is not available as to when this occurred. A medicine bottle with embossed lettering containing Lydia Pinkham's compound was still available in

1970. The lettering on the Pinkham bottle collected from the gully has clear lettering, and thus it could be from any of several decades from the early part of the 20th century and into the 1970s (Toulouse 1971).

A small complete medicine bottle still has the metal screw-on cap present. A "3iv" is embossed on one side of the bottle. It has a propeller symbol and "OWENS 3" on the bottom indicating manufacture by Owens Illinois Glass Co. between 1929 and 1954.

Another apparent medicine container is a complete, clear bottle, is cylindrical shaped, 7 cm in radius with a narrow, screw spout that is a little over 3 cm in length and has no decoration. The maker's mark on the bottom appears to be the Owens-Illinois stylized propeller, and as well "7 DES.PAT" "2 94824" are on the bottom.

Another partial medicine bottle consists of a heel and part of the sides. It is made of thick glass with the numbers "6" and "8" plus the Owens-Illinois Glass Company propeller type mark on the bottom.

Toiletry/Perfume Bottles (n=2; 1 complete, 1 fragment) Two toiletry/perfume bottles were found in the gully. One possible shampoo bottle is about 12-14 ounce size with flat front and back, concave sides and raised, pressed decorative lines down the sides. It is of clear glass and has a Knox Glass Company mark (1924-1968) on the base.

Three cobalt blue bottle fragments, likely from the same bottle, have a pressed, raised honey-comb design on medium thick glass. No maker's mark or other aid in determining the manufacturer are present.

Liquor Bottles (n=3; 1 complete, 2 fragments) Three liquor bottles were collected from the gully. Two are clear glass and one is of green glass. The green bottle fragment, probably a beer bottle, is made of thick glass and has a maker's mark on the bottom which is a triangle with an "R" in the middle. This mark was used by the Reed Glass Company from 1927-1956 (Toulouse 1971:432). Also present on the base are "X D 7 120." One of the clear glass bottles which consists of three

refit fragments is a pint bottle. The maker's mark on the bottom is "0-334" "67 41" with the post 1938 Anchor-Hocking anchor symbol between the "67" and "41". On one side near the bottom the words "ONE PINT" are impressed and near the top on the side is "FEDERAL LAW FORBIDS SALE OR RE-USE OF THIS BOTTLE". Another thick, clear glass liquor bottle is represented by a base with "PINT" impressed on the side and "-2 40-41" on the bottom.

Soft Drink Bottles (n=3 complete) Three soft drink bottles were retrieved from the gully sample. Two are complete Coca-Cola bottles, each with "LAWTON OKLA" on the bottom. One has the Owens Illinois Glass Company propeller and a date of 1941 on the bottom. The other Coca-Cola bottle has a circle with a "C" in the middle indicating that this bottle was made by the Chattanooga Bottle and Glass Company. This mark was used by the company after 1927, and this particular glass plant was located in Waco, Texas. Another bottle is a complete Dr. Pepper 6.5 ounce bottle with "COMANCHE OKLA" on the bottom. This bottle was made by the Sapulpa Bottle Company of Oklahoma. The Liberty Glass Company's "L G" mark appears to have no periods between the letters which would place the bottle post-1954, but the pre-1950 bottle style and stamped 1936 date contradict this (Munsey 1970).

Food/Condiment Containers (n=7; 1 complete, 6 fragments) One complete condiment and fragments of one condiment and five food jars are present among the sample of items from the gully. The complete condiment bottle is of clear glass with flat sides and raised, pressed decorative lines down the sides. An Owens-Illinois Glass Company propeller mark is present on the base. Another clear glass condiment container consists of the rim with screw threads and shoulders only. There are pressed, raised designs on the shoulders. This may be part of a prepared mustard jar as it closely resembles "French's" mustard jars

from the 1970s-1990s (personal observation).

Fragments of five food jars were also retrieved from the gully. Two are partially reconstructed canning jars. One has "Ball [in script]" and "PERFECT MA SON" on the body. The other has "PRES..." SUPREM MASO" on its body on one side and on the other side is "MANUFACTURED BY OWENS-ILLINOIS GLASS COMPANY". This particular jar is apparently a portion of a "PRESTO SUPREME MASON" jar manufactured between 1925 and 1946 (Munsey 1970:148). One complete neck with screw threads and partial shoulders is probably part of the "PRESTO SUPREME MASON" partially reconstructed jar as it is of similar size and thickness of glass. Two other jars fragments probably had prepared foods in them. Each has a maker's mark on the bottom. One is "626" "3 RIVERS*" "9", and the other is "3 RIVERS*" "555". The Three Rivers Company used this mark from 1925 to 1937 (Toulouse 1971:494). One partial, clear glass canning jar bottom with "4" on the bottom was also recovered.

Unidentified Jar/Bottle Glass (n=8 fragments) A total of eight jar/bottle fragments could not be assigned to a functional category due to the fragmentary nature of the artifacts. All but two of these came from the gully. One is a clear glass bottle fragment with a raised, pressed linear design on it. The bottom is complete and has a maker's mark of "DESIGN PATENT" "7 6" with the Owens-Illinois Glass propeller symbol between the "7" and "6", and "0-86565". One clear glass shard probably is part of a large jar shoulder. Another clear glass fragment is a bottle neck with screw threads and raised lettering of "DO E" "C" enclosed on each side with large parentheses. This bottle may be a soft drink or condiment bottle; the neck opening would have been 3 cm in radius. There is one thin, clear glass shard with raised, parallel lines on one area. One clear body shard has a raised scallop design on it and the glass has become slightly iridescent from weathering and/or age. One clear glass shard that consists of part of the screw top was found in Test Unit A, Level 1 and may be part of another canning

jar. One heel fragment of a small bottle was also found in Test Unit A, Level 1. It was probably clear glass, but now is frosty with a green tinge probably from age and/or weathering.

Tableware (n=6) Two tumbler fragments were found in the gully. One is a 6 ounce size clear green tumbler with a 1/2" undecorated rim. The body has raised, pressed lines about 3/4" apart and is 8cm in radius. This partial tumbler is made of green Depression glass. The other tumbler fragment is clear with a complete base, and retaining a small amount of aqua and red paint flecks on the body as well as a identifiable flower design. One clear glass bowl fragment with a rolled rim was found in the gully. It has a pressed design with parallel, upraised stripes or lines on the exterior, a 1/2" rim, and a 20 cm in radius; no base was present. Two pieces of pink Depression glass were found in the gully. One is part of a footed, parfait glass with pressed, raised design of radiating lines on the body and floral decorations near the rim. The other is a possible bowl fragment of which part is undecorated and part has radiating, raised lines. The Depression glass represented in the sample is a type of glassware made during the 1930s; however, it has been a collector's item for many years and, therefore, these artifacts may or may not have been used at the farmstead during the 1930s. One fragment of a white milkglass plate was retrieved from the gully. It has a rim band with a raised decoration and the edges of the rim are scalloped.

Ceramic Artifacts

Seven pieces of ceramics were collected from the gully. Among the items are two pieces of utilitarian stoneware, four whiteware and one porcelain. The latter five represent the same style of ware, but display certain variations associated with situational use.

Bristol Glaze Ware (n=2) Two pieces of Bristol glaze stoneware were found in the

gully. One is a large sherd of a bowl or crock and is off-white-on-off-white. The other is a bowl fragment with part of the rim. It also is off-white both on the exterior and interior with a wide rim band (ca. 1 1/4") that is thicker than the body of the bowl and has raised off-white decorations on it. Below the rim band, on the body is a pink painted band about 1/4" wide and about 1/4" below that is a 1" blue, painted band. The bowl circumference was 20" before it was broken.

Salt glazed wares, first developed in the 15th century in Germany, were replaced by Albany and Bristol glazes as a preferred table and utilitarian ware in the latter part of the 19th century in the United States. The salt glaze method involves throwing salt into a very hot kiln, usually several times during firing. The salt vaporizes and elements combine with the silica in the liquified surface of the pot. This forms a completely vitrified surface on the vessel and after cooling yields a strong, truly glazed vessel. This technique was first used in North America in the mid-19th century, and was a popular method for manufacturing everyday tableware and utility vessels with strength and the ability to hold liquids. The use of salt for glazing utilitarian-stonewares was discontinued in the latter half of the 20th century due to the noxious vapors of chlorine and hydrochloric acid that are released when the sodium combines with the silica in the clay surface of the vessel (Greer 1981).

Bristol glaze was developed in England during the 18th century. This smooth, white glaze was made from clay chemicals and sold commercially. The clean, off-white vessel produced was in opposition to earlier brown, or iron-colored, finishes. It was quite popular, and soon replaced the older salt methods of glazing. Bristol glaze was introduced into North America in 1884 and quickly spread to all areas of the continental United States and its possessions. Before the 1920s, Bristol glaze was often combined with a brown Albany glaze applied in bands or the upper and lower one-thirds of vessels as a decorative technique. After the second decade of the 20th century, this was replaced by the addition of cobalt to some of the

Bristol glaze and thinner bands, especially near the upper portions of the vessels, were used for decoration. The glaze is made of kaolin, feldspars (or other pure chemicals used in porcelains), and zinc oxide. The resulting glaze is a opaque, shiny white. The Bristol utilitarian wares continue to be manufactured and used today (Greer 1981).

Whiteware (n=4) Two plate fragments and two bowl fragments of whiteware were retrieved from the gully. The plate fragments are heavy and thick with red-brown bands on the interior near the rim. The outer band is about 1/4" thick and the inner one is thinner. A maker's mark on the bottom of one of the large plate pieces is painted in green and reads "JACKSON CHINA 1928". The company, located in Falls Creek Pennsylvania, was established in 1917 and as of 1985 was entirely devoted to production of institutional china (Lehner 1988:225). Although the number 1928, likely represents the date of manufacture, the company's records only retain marks back to 1951, all others have been destroyed. One bowl fragment is 14" in circumference and has the same two red-brown bands as the plates, but on the exterior near the rim. The other bowl fragment has the same style 2-band decoration, but it is rose-red and there is a partial seal in the same rose-red on the exterior that is ovoid with "UNITED STAT." This is likely the portion of an emblem of the United States Army or Armed forces. It provides evidence that the bowl as well as the other ware with similar banded markings derive from military issue.

Porcelain (n=1) One part of a thin porcelain cup or possibly small bowl was recovered from the gully. It has the same style 2-band decoration near the rim as the whiteware. However, the red-brown bands are thinner. The entire fragment has a raised, over-lapping scallop design. Its diameter is 9cm.

Discussion

None of the metal items recovered by the investigation

are particularly diagnostic or provide useful information regarding date of occupation beyond being from the first half of the twentieth century. It may be noted that most (nails) relate to construction, and the others reflect typical domestic activities. Items related to agriculture or tending livestock are notably absent from the sample suggesting the structure served more as a homestead rather than a farmstead.

Five of the ceramic artifacts are white with reddish bands typical of institutional styles and probably represent military issue tableware. Two thick plates and 2 thick bowl fragments are for everyday use, especially in heavy-use areas such as a mess or cafeteria. The porcelain cup fragment is also military style, but thin with an overall scallop design and likely was associated with more formal functions, such as teas or receptions. The 2 stoneware pieces represent the preparation of food, or kitchen ware, not tableware. All of the ceramics were likely used for domestic activities at the homestead and the military style of all of the ceramic tableware represented in the 34CM433 sample suggests that the residents were associated with Ft. Sill at least during part of the farmstead's use-life. An equally plausible explanation for these items is that they represent the result of military dumping or use of the site after its abandonment by its private owners and acquisition by the Army.

A total of 14 of the 19 identifiable jars and bottles and 1 of the unidentified jar/bottles have maker's marks on the bottoms allowing a temporal assessment of the occupation of 34CM433. One pint liquor bottle has a mark that is an anchor with a superimposed "H"-like symbol; this is the mark of the Anchor-Hocking Company. This symbol has been used by the company since 1938. Two have the "3 Rivers" mark on them. The company headquarters were in Three Rivers, Texas, from 1925-1937; they usually produced beverage jars, but some milk jars were part of the operation. In 1930 there were plants both at Three Rivers and Bastrop, Louisiana. In 1937 the company was bought by Ball Brothers who ran it for 10 years after which this glass manufacturing plant was closed.

One liquor bottle has the Reed Glass Company mark on the bottom in use between 1927 and 1956 (Toulouse 1971:432). This plant was located in Rochester, New York, from 1927 until 1956. One condiment jar has the keystone symbol of the Knox Glass Company on it; this mark was used between 1924 and 1968 (Toulouse 1971:293).

A total of 5 of the jars and bottles have the Owens Illinois Glass symbol, a propeller in use from 1929-1954, on them, and some have a number to the left of the symbol which identifies the plant number where they were produced. For example "7" is the identifying number for the Alton, Illinois, plant which was in operation from 1930-1970 (Toulouse 1971:403).

There are also fragments of Mason canning jars in the collection. John Landes Mason held a 1858 patent for a fruit jar bearing his name for which he sold the rights in 1876. After this, the new company enclosed the name "Mason Fruit Jar" in quotation marks. This company closed in 1907 and another opened in Coffeyville, Kansas, using the name Mason Fruit Jar Co. It was bought by Ball Brother in 1909, but only survived until 1912. The name Mason was used for all types of canning jars by consumers even during the life of the patent. At least 50 companies copied the jar after the patent expired, using the entire Mason title; after 1900/1912, the logo "Mason's," or "Mason Jar," or "Mason" was the common generic identifier (Toulouse 1971). The "PRESTO SUPREME MASON" jar fragment recovered was manufactured by Owens Illinois Glass Co. between 1929 and 1946 (Munsey 1970:140;Toulouse 1971:425).

Two of the soft drink bottles exhibit stamped dates of 1936 to 1941. One was manufactured by the Chattanooga Glass Company after 1927.

In addition to the glass containers discussed above, One of the whiteware plates was manufactured by Jackson China and exhibits 1928 on the bottom. This likely the date of manufacture.

All the glass and ceramic items reflect domestic activity and like the metal items suggest that 34CM433 functioned more as a homestead rather than a farmstead. Of the 16 dateable items mentioned above, none were manufactured prior to 1924 and 8 (50%) could not have were manufactured prior to 1927 and 6 are post 1929 (37.5%). Since the homestead was taken by Fort Sill in 1942, it is likely the items reflect occupation circa 1930 to 1942.

As revealed in the 1998 test excavations, 34CM433 appears to lack any significant subsurface archaeological deposits or subsurface features warranting additional investigation. Although the nearby dump contains a large amount of debris probably relating to the site's early 20th century

occupation, the possibility exists that some of the items recovered could relate to other nearby properties or post-abandonment military used of the area.

Based on the absence of any noteworthy features or intact archaeological subsurface deposits, together with archival data suggesting the site represents an unexceptional 20th century Euroamerican farmstead, it is not believed that 34CM433 preserves sufficient substantive information to warrant NRHP eligibility. No further work at this site is recommended.

34CM542

This historic site was recorded by ODOT during initial mapping of the project area. It is located between 34CM408b and 34CM409, and based on archival review occupies a different parcel from the two adjacent sites. It is in an area which has been heavily disturbed by recent military activity. Two principal features were noted: a partial mortar and stone stem-wall foundation and a nearby rock and mortar lined cistern or well (Figure 16). This cistern was apparently filled with soil up to a point approximately 75cm below the present bladed ground surface. An expansive scatter of glass, metal scraps, and ceramics was noted on the surface, but most of this material was observed in areas heavily disturbed by heavy tracked vehicles. Since this disturbance continues throughout the area containing 34CM408, 34CM409, and 34CM542 it would be impossible to determine with any certainty the original site provenience of much of this material. Because of this disturbance, no formalized collection of surface artifacts was undertaken.

However, during the initial recording of the site, 4 artifacts were collected from the north/south two track road on the site. The items include 3 coins and 1 marble.

The 3 coins recovered are all US pennies. One is an Indian Head penny minted in 1890. It is in generally poor condition with most detail worn away. The remaining 2 pennies are Wheat pennies. One was minted in 1918, the other in 1920. Both are in relatively poor condition with the 1918 penny being in slightly better condition. Although exposure and oxidation account for some of the poor condition, all exhibit obvious wear from use. This wear is an indication that the items were in circulation for at least a few years prior to their deposition on the site.

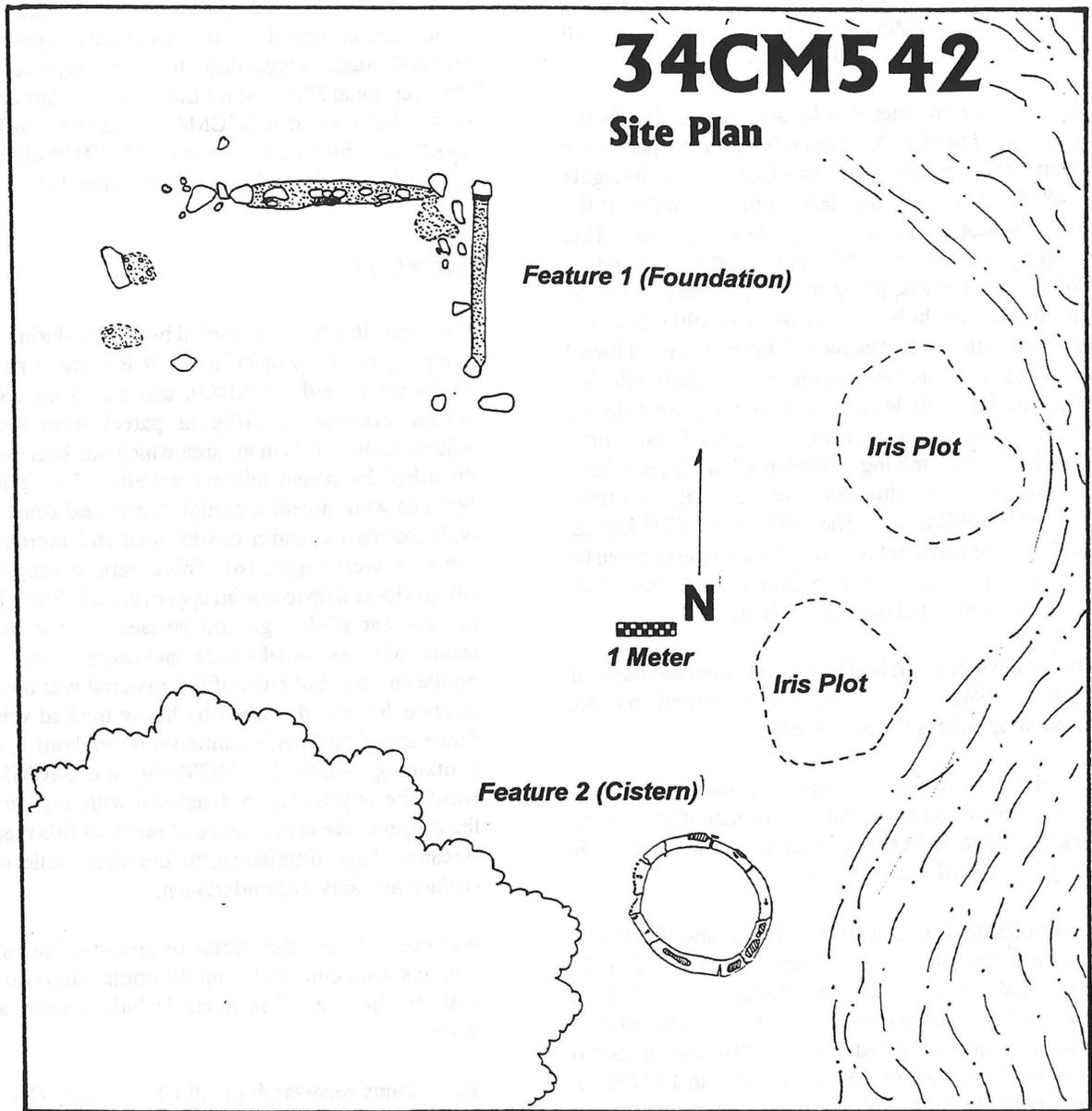


Figure 16 - 34CM542, schematic site plan showing location of structure foundation and tested cistern

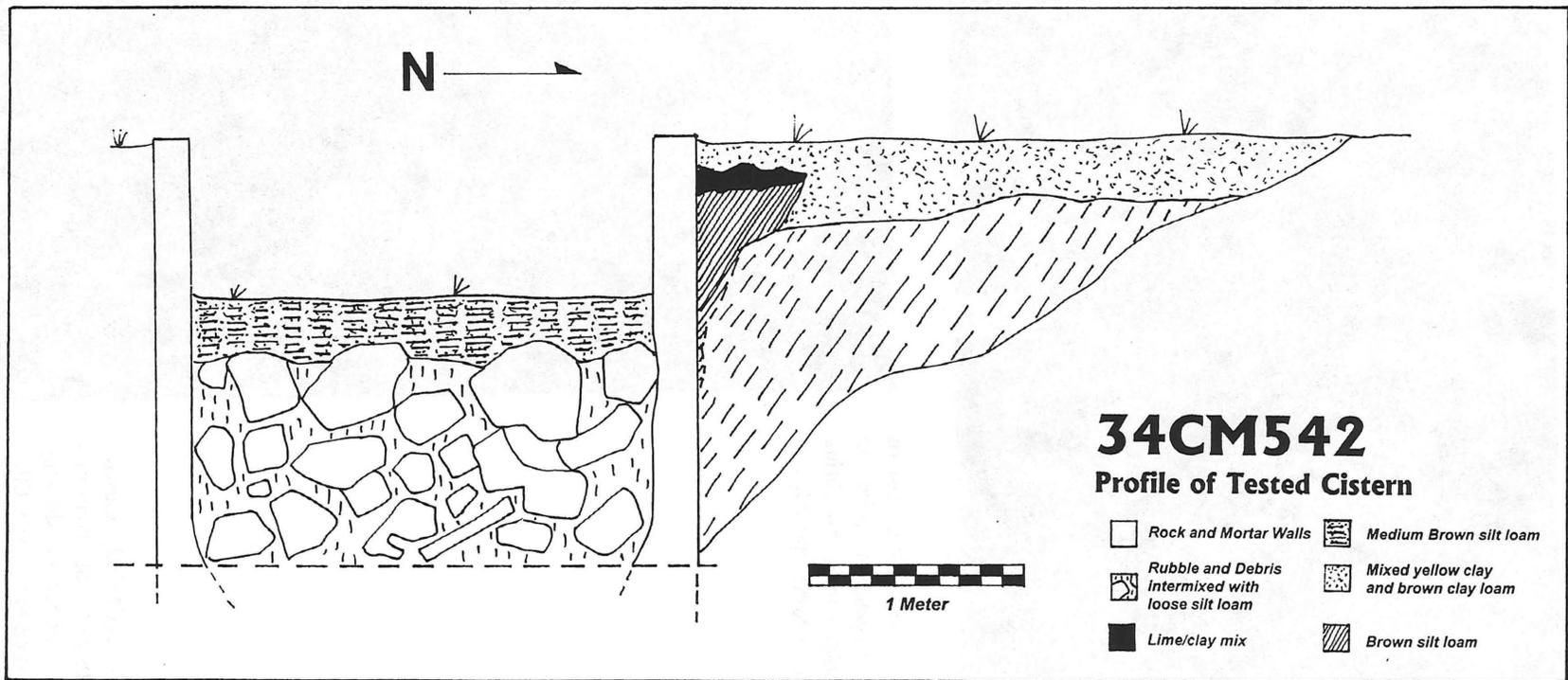


Figure 17 - 34CM542, profile of tested cistern



Figure 18 - 34CM542, cistern cleared of vegetation prior to trenching, looking northwest. String line marks true north and edge of trench.



Figure 19 - 34CM542, closeup looking northwest of excavated trench at edge of feature showing loosely packed earth and rock fill.

The glass marble recovered from the site is white with orange swirls. It is about 12 mm in diameter. Factory-made marbles of this type were produced after 1925 (Bauman 1970; Randall and Webb 1988).

Although the general site deposits at 34CM542 are extensively reworked by bulldozing of all above-ground features and long term military use, it was believed that the below-ground cistern might preserve artifacts and other debris in a more intact context. Accordingly, ODOT and the Fort Sill DEQ agreed that excavations would focus on a backhoe trench in this feature.

This work was performed on May 11, 1998. A 5 meter long trench was excavated which began in the cistern and extended through the wall to form a sloped ramp beginning 3 meters north of the feature. This was done both to facilitate access to the interior of the feature and provide a profile of the cistern as well as general site deposits outside the cistern.

The cistern is a cylindrical pit roughly 2.5 meters in diameter. The walls are approximately 20-25 cm thick and composed of rough stone lined with concrete. As can be deduced from impressions left on the interior walls, the concrete was apparently poured into a form made of 8-inch milled vertical boards. Disturbed soil containing a lime and clay mix and yellow clay extending approximately 50 cm outside of the feature probably represents the original excavated pit within which the cistern was constructed (Figure 17).

Except for a 25cm thick upper humus layer, the cistern fill contained massive quantities of stone, mortar, concrete, plumbing fixtures, metal pipe, and other construction debris, intermixed with a small volume of loose, earthy fill (Figures 18-19). These materials are presumed to represent debris from the adjacent house which was bulldozed and dumped in the cistern. As it was impossible to maintain a straight and stable trench wall within this deposit, and the cistern wall itself was highly unstable, excavation was suspended at a depth of approximately 2 meters below the present ground surface. Although the actual bottom of the feature was not found, it is considered unlikely that deeper deposits contain materials significantly different than those exposed in the trench.

Based on the evidence for disturbance throughout the site area and the absence of any significant historic domestic materials in the cistern, it is very unlikely that

34CM542 preserves substantive intact deposits which would be of value in studying the site's early 20th century history. It is therefore considered ineligible for inclusion in the NRHP and no further investigations are warranted.

34CM543

This is a scatter of historic materials (crockery, decorated tableware, glass bottle and jar fragments, metal debris, vehicle parts, and other items) discovered during ODOT's 1998 re-investigation of the project area. The scatter is located on a broad timbered area immediately south of the Fort's firebreak road and in a small adjacent gully. Most of the artifacts appear to date to the 1930's and 1940's. Small pieces of concrete and mortar were noted in berms adjoining the road, and two iris plots are located immediately north of the road. The concrete debris probably represents the remains of a former structure obliterated by the firebreak. A structure is shown on this location in a 1942 aerial photograph of the project area (USDA 1942). As 34CM543 lacks any intact features and has obviously been disturbed to a considerable extent it is considered ineligible for inclusion in the NRHP. It was agreed between ODOT and the Fort Sill DEQ that no further investigation of this site is warranted.

34CM544

This site, recorded during ODOT's 1998 resurvey of the project area, consists of a small poured concrete outbuilding foundation south of the Fort's firebreak road and the bulldozed remains of a much larger structure, now nearly completely destroyed. A small intact section of this foundation remains in place in the firebreak road cutbank, suggesting that the rest of the building was obliterated by construction of the road. Structures are shown at this site in the 1942 aerial photograph of the project area (USDA 1942). Very few historic artifacts or other related materials were observed in association with these features, which presumably represent the bulldozed and cleared remains of a small farmstead. Because the main features associated with this site have been completely destroyed and no substantive artifact assemblage remains, 34CM544 is considered ineligible for inclusion in the NRHP. It was agreed between ODOT and the Fort Sill DEQ that no further investigation of this site is warranted.

VI. Summary and Conclusions

Based on the above-described investigations, none of the archaeological sites investigated or newly recorded during this study are believed to exhibit the content, depositional integrity, or documented cultural associations to address any substantive research questions regarding prehistoric or historic cultural developments in southwestern Oklahoma. They are therefore considered ineligible for inclusion in the NRHP and no further archaeological investigations are warranted.

Pending concurrence of the Fort Sill DEQ, cultural resources clearance for the SH-49 expansion project as proposed is recommended. If subsurface archaeological materials are exposed during construction, the Contractor and Resident Engineer shall temporarily suspend excavations in the find areas and immediately notify the ODOT Department Archaeologist. Off-site locations such as borrow pits,

asphalt plants, and staging areas must be subjected to an archaeological evaluation in accordance with Section 202.02 "Archaeological and Wetland Sites" of the Standard Specifications for Highway Construction. Should any proposed borrow pits or other off-site activities be located within property owned by the Fort Sill Military Reservation, these must also be reviewed and approved by the Fort Sill DEQ.

Although not a specific element of this study, a reinvestigation of 34CM414, located just beyond the western limit of the project R/W, appears to show that this site was mis-located by its original recorders and is in fact situated several hundred meters farther west. As this places 34CM414 outside the historic Comanche allotment to which it was originally believed to be related, a re-evaluation of this site's NRHP eligibility may be appropriate.

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Appendices

Appendix 1. Lithic materials and artifact types recovered from 34CM420 surface grid.

Lithic Material*	Debitage						Tools/Utilized Flakes	FCR	Total
	P	S	T	BF	BP	BD/SH			
UC	4	13	35	23	1	7	4	---	87
OGQ	4	18	9	1	---	8	---	2	43
CCC	3	3	4	2	---	4	2	---	17
RHY	1	1	5	---	---	---	---	---	7
ALB	---	---	4	---	---	---	---	---	4
QTZ	---	3	---	---	---	1	---	1	5
UNQZTE	---	1	3	---	---	---	---	---	4
UNVOL	1	1	1	---	---	---	---	---	3
QZTCRY	---	---	2	---	---	1	---	---	3
OBS	---	---	1	1	---	---	---	---	2
FRSC	---	---	2	---	---	---	---	---	2
CHAL	---	---	1	---	---	1	---	---	2
PW	1	---	---	---	---	---	---	---	1
EDC	---	---	1	---	---	---	1	---	2
FLA	---	---	1	---	---	---	---	---	1
TPC	---	---	---	---	---	---	1	---	1
Total	14	40	69	27	1	22	8	3	184

Debitage types: P= primary; S=secondary; T= Tertiary; BF=biface; BP=bipolar; BD/SH=blocky debris/shatter; FCR= fire cracked rock

***Lithic Material Types**

UC Unidentified Chert Includes a variety of unidentifiable chert. Cortex present on some flakes suggest some of the items are derived from small cobbles or pebbles obtained from gravel sources. Gravel deposits containing chert are documented along East Cache Creek (Bastian 1966:26-28). Some of the non-cortical flakes may also derive from local gravel sources. However, many are small and patinated limiting raw material identification. Some exhibit similarity to varieties of Edwards chert, however, due to the limitations just stated, positive identification cannot be made. In addition some of the material may be derived from Arbuckle Formations in the Slick Hills just north of the Wichita Mountains (see Cool Creek Chert below), although could not be positively identified as such.

OGQ Ogallala Quartzite Includes fine and coarse grained quartzite from deposits containing gravel derived from the Ogallala Formation. The quartzite is gray to slightly reddish in color and exhibits a well polished cortex. Gravel deposits containing this material are present in southwest Oklahoma (Banks 1990:114). Gravel deposits containing this material are documented locally on the Fort Sill Military Reservation (Ferring 1978:377) as well as along East Cache Creek east of Lawton (Bastian 1965).

CCC Cool Creek Chert This material derives from the Cool Creek Formation, part of the Arbuckle Group formations exposed in the Slick Hills about 10 km northwest of 34CM420. Flinty and translucent white, pink and gray chert nodules up to 30 cm in size are present in the Cool Creek formation (Ragland and Donovan 1986:23-24). The chert is often oolitic and described as colloform or "cauliflower" chert comprised of an outer layer of chalcedony enclosing baroque dolomite and chert (Cloyd *et al* 1986:31-32). The cortex is usually rough, white to brown in color and often displaying oolites. The colloform structure of the material as well numerous flaws and fractures hinder it's feasibility in knapping larger items. Identification of this material was aided by samples collected by one of this report's authors (R. Bartlett) as well as samples housed in the Oklahoma Archeological Survey lithic comparative collection.

RHY *Rhyolite* This material is a reddish brown rhyolite. The rhyolite compares well with Carlton Rhyolite, exposures of which are common in the Wichita Mountains, including Medicine Bluffs, as well as in the Slick Hills north of the Wichita (Gilbert 1986; Donovan 1986).

ALB *Alibates Agatized Dolomite* Silicified dolomite derived from the Alibates Formation in the Texas Panhandle (Banks 1990:91-92). Bedrock sources were heavily exploited in prehistoric times. Knappable cobbles are present in terrace deposits along the Canadian River through Oklahoma (Wyckoff 1993).

QTZ *Quartz* This category includes white to pinkish quartz most likely derived from vein sources in the Wichita Mountains. The material may also be found in streams (Ferring 1978:377). Prehistoric use of vein quartz appears evident at the Job Corps Site on the Wichita Mountain Wildlife Refuge (Northcutt 1981). Quartz cobbles may also be found in terrace gravel deposits derived from Ogallala Formation.

UNQZTE *Unidentified Quartzite* This category includes coarse grained quartzite of various colors. The materials are likely from local gravel deposits.

UNVOL *Unidentified Volcanic* Items in this category are all similar and consist of a dark gray somewhat soft material. It may possibly be an andesite likely obtained in the Wichita Mountains.

QZTCRY *Quartz Crystal* This material is clear to somewhat opaque quartz most likely from quartz crystal. Clear quartz crystal can be found in the Wichita Mountains and has been used prehistorically as a tool stone in the region (Ferring 1978:377; Northcutt 1981).

OBS *Obsidian* This category includes a fairly dark obsidian and a relatively translucent obsidian. Sources are not known in the area. The closest known source is northern New Mexico.

FRSC *Frisco Chert* Coarse to fine grained chert varying in color from white to purple. Geological sources occur in the Hunton Formation in Arbuckle Mountains in Pontotoc, Coal, and Johnston counties about 160 km east of 34CM420 (Amsden 1960). No sources have been documented in the Arbuckle Formation north of the Wichita Mountains. Heat treatment enhances the materials knappability and results in reddish tint on some varieties.

CHAL *Chalcedony* Translucent cryptocrystalline material. Source is unknown, however, could be derived from Cool Creek Material discussed above.

PW *Petrified Wood* This silicified material is difficult to knap due to its structure. Pieces of petrified wood are common in gravel deposits derived from the Ogallala Formation (see OGQ discussion above).

EDC *Edwards Chert* Several varieties of this material are known from the Edwards Plateau in central Texas 400 km south of 34CM420. Two varieties are identifiable in the site assemblage including a gray chert with a white chalky cortex similar to Georgetown variety and a semi translucent "root beer" colored chert with a white cortex (Banks 1990:60). Other varieties may be present, however, due to patination and small size of the artifacts they are classed as unidentified chert.

FLA *Florence A Chert* Sources of this material are along the western edge of the flint hills 250 km northeast of 34CM420. Many sources are documented in Kay County, Oklahoma (Banks 1990:96-91). This material is often heat-treated to enhance its knappability, however, the one flake recovered here is not thermally altered.

TPC *Tepee Chert* Initially brought to the attention of archaeologists by Lawrence Levick of Blair Oklahoma, Tepee "chert" occurs in deposits in Kiowa County, Oklahoma 70 km west of 34CM420 (Banks 1990:105). The material is a knappable cryptocrystalline similar in color to Tecovas jasper. Although not described as a chert, the material is reported as a sedimentary rock reddish to pink in color with white, gray and black inclusions of calcite and zeolite (Merritt 1958:56-58). Its origin may be Permian deposits (*ibid*).

Appendix 2. Provenience of artifacts recovered from surface grid at 34CM420.

Grid Unit Provenience	Debitage						Tools/Utilized Flakes	FCR	Total
	P	S	T	BF	BP	BD/SH			
A 1	1	---	—	1	—	—	—	—	2
A 7	—	1	—	—	—	—	—	—	1
A 8	—	—	1	—	—	—	—	—	1
A 9	—	—	—	—	—	1	—	—	1
B 1	—	1	—	—	—	—	—	—	1
B 2	—	2	—	—	—	—	—	—	2
B 4	—	---	2	1	—	1	1	—	5
B 5	—	1	1	1	—	1	—	—	4
B 6	—	2	4	—	—	—	—	—	6
B 7	—	—	—	1	—	—	—	—	1
B 10	—	1	3	—	—	—	—	—	4
C 1	—	---	1	—	—	—	1	—	2
C 3	—	1	—	—	—	—	—	—	1
C 4	—	—	—	1	—	—	—	1	2
C 6	1	1	—	1	—	—	—	—	3
C 7	1	1	2	1	—	1	—	—	6
C 8	—	1	1	—	—	—	—	—	2
C 9	1	—	—	—	—	—	—	—	1
C 10	1	—	1	—	—	—	—	—	2
D 3	—	—	2	—	—	—	1	—	3
D 4	—	—	—	—	1	1	—	—	2
D 5	—	1	4	1	—	4	—	—	10
D 6	2	1	3	2	—	1	—	—	9
D 7	—	2	1	—	—	—	—	—	3
D 8	—	2	5	—	—	—	—	—	7
D 9	1	—	—	—	—	—	—	—	1
D 10	—	—	1	—	—	—	—	—	1
E 3	—	—	1	—	—	—	—	—	1
E 4	—	2	—	—	—	—	—	—	1
E 5	—	2	4	1	—	1	1	—	9
E 6	—	3	1	3	—	2	—	—	9
E 7	1	—	2	—	—	1	—	—	4
E 8	2	—	2	1	—	—	2	1	8
E 9	1	4	2	1	—	2	—	—	10
E 10	—	—	2	1	—	1	—	—	4
F 5	—	2	3	1	—	—	—	—	6
F 6	—	1	7	2	—	—	—	1	11
F 7	1	2	3	2	—	2	2	—	12
F 8	1	1	—	1	—	2	—	—	5
F 9	—	2	—	---	—	—	—	—	2
F 10	—	1	—	—	—	—	—	—	1
G 4	—	1	—	—	—	—	—	—	1
G 6	—	—	1	2	—	—	—	—	3
H 2	---	—	2	—	—	—	—	—	2
H 5	—	—	2	1	—	—	—	—	3
H 6	—	—	—	—	—	1	—	—	1
I 1	—	1	—	—	—	—	—	—	1
I 8	---	---	5	1	---	---	---	---	6
Total	14	40	69	27	1	22	8	3	184

Debitage types: P= primary; S=secondary; T= Tertiary; BF=biface; BP=bipolar; BD/SH=blocky debris/shatter;
FCR= fire cracked rock

Appendix 3. Items recovered from 34CM433.

Artifacts Recovered	Gully	Test Unit A, Level 1	Test Unit A, Level 2	N/S 4 ST	N/S 5 ST	N/S 10 ST	Total
Metal							
Tag		1					1
Spring	1						1
Round nails		66	92	1	6	6	171
Tin can	1						1
Flashing		7					7
Coffee Pot	1						1
Stove cover	1						1
Lipstick	1						1
Pin back		1					1
Fasteners		2					2
Tobacco can	1						1
Unid.cube	1						1
Glass: Bottles/Jars							
Medicine	4						4
Toiletry/ Perfume	2						2
Liquor	3						3
Soft Drink	3						3
Condiment	2						2
Food	5						5
Glass: Tableware							
Tumbler	2						2
Plate	1						1
Bowl	2						2
Vase	1						1
Glass: Unidentified							
Jars/Bottles	6	2					8
Ceramics							
Crockery	2						2
Whiteware	4						4
Porcelain	1						1
Total	45	79	92	1	6	6	229

