

US 69 Project



Oklahoma

**PITTSBURG, ATOKA
AND BRYAN COUNTIES**



**OKLAHOMA HIGHWAY ARCHAEOLOGICAL SURVEY
PAPERS IN HIGHWAY ARCHAEOLOGY NO. 2 1976**

OKLAHOMA DEPARTMENT OF HIGHWAYS

PLANNING DIVISION

AN ARCHAEOLOGICAL SURVEY OF U.S. 69
Pittsburg, Atoka and Bryan Counties, Oklahoma

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Preface and Acknowledgements

During June, 1973, the summers of 1974 and 1975, an intensive archaeological field survey was conducted in areas to be affected by the proposed construction of U.S. 69 in Pittsburg, Atoka and Bryan Counties. The purpose of this survey was to determine how the project would affect the archaeological resources of the development area.

Fifty-eight archaeological sites were recorded within or in close proximity to the alignment corridor of U.S. 69. The sites and collected cultural material infer an intermittent habitation spanning possibly the last 7,000 years. Some 10,500 artifactual specimens were recovered during the course of the survey. This material includes a great variety of tools and weapons which had once been an integral part of the daily activities and life styles of the early inhabitants of the region. These materials are presently stored at the Oklahoma Highway Department Archaeology Lab, University of Oklahoma, Norman, Oklahoma.

Over the period of investigation several persons assisted in the various stages of field reconnaissance and laboratory analysis. The authors wish to express gratitude for their aid and contributions.

Mr. James E. Cox, a summer employee of OHAS, deserves a special note of thanks for his assistance during all phases of the project. On many occasions, James walked 25 to 30 miles a day under the scorching summer sun of southeastern Oklahoma. Other field crew members who battled insects, torrential rains, swamps and otherwise lovely climatic conditions were James M. Briscoe, Kenneth D. Keith, Darrel Wheaton and Pete Colwell.

Oklahoma Department of Highways personnel in Division I, II and IX are to be thanked for their cooperation in the field and in the preparation of this report; in particular the Reproduction Branch, under the supervision of Kasey J. Petrauskas, and Gary Taylor, Current Planning Branch illustrator. Drs. Robert O. Fay and Kenneth V. Luza of the Oklahoma Geological Survey provided detailed information pertaining to lithic materials recovered from the sites, local stream gravels and natural outcrops. Dr. Charles

Mankin, Director of the Geological Survey, furnished topographic mapping for the project area. The Atoka County Soil Conservation Office supplied soil type data for Atoka County.

Last, but not least, the many landowners along the project merit a word of appreciation for permitting minor evaluative testing of sites situated within their respective areas of property.

Introduction

The Oklahoma Highway Archaeological Survey

Since the termination of the Oklahoma Highway Salvage program during the late 1950's, it has been the desire of many archaeologists in the State, especially Dr. Robert E. Bell and State Archaeologist Don G. Wyckoff, that a program of archaeological reconnaissance be reinstated by the Oklahoma Department of Highways. Because of the known destructive potential to archaeological sites by highway construction and the ever increasing depletion of our cultural resources, the Oklahoma Highway Archaeological Survey (OHAS) was established.

In July of 1972, the Regents of the University of Oklahoma and the Oklahoma Department of Highways entered into an agreement for the creation of an intra-agency program for responsible archaeological conservation. The Department, aided by Mr. Wyckoff, formulated a practical plan with two major objectives: (1) conserving the state's valuable archaeological resources and (2) providing a means of adding to existing knowledge of Oklahoma's prehistoric and historic peoples.

The program is designed to study proposed highway alignments at the earliest possible date prior to land acquisition in order to determine whether or not archaeological sites might be affected by actual highway construction. Such archaeological sites are to be located and investigated to determine their significance and, if affected, an appropriate means of mitigation. Additional information concerning the objectives and procedures of the program have been presented by Jack Hofman in his report on the Archaeology at the Easton Site (Lf-213), LeFlore County, Oklahoma (1975), and Lopez (1972).

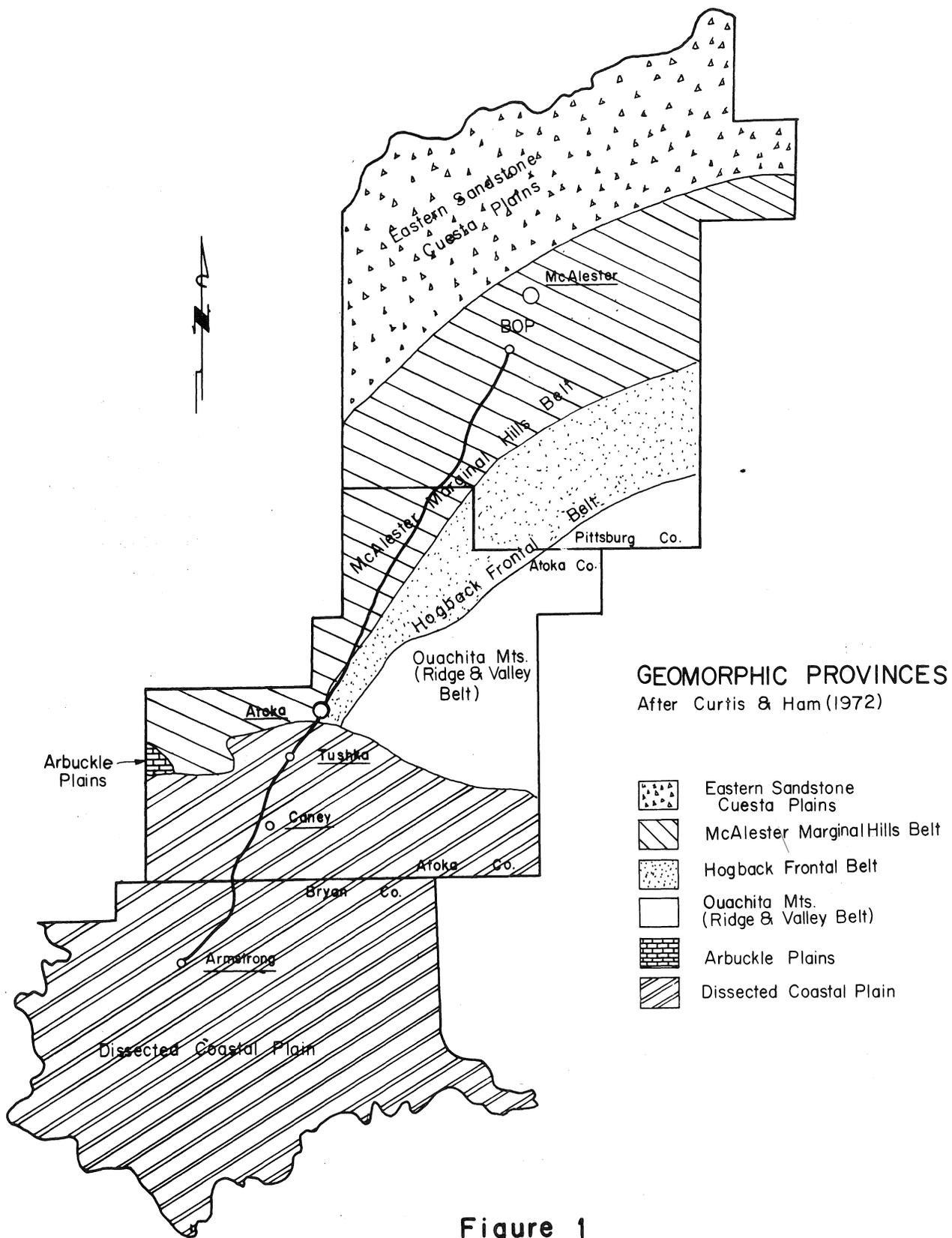


Figure 1

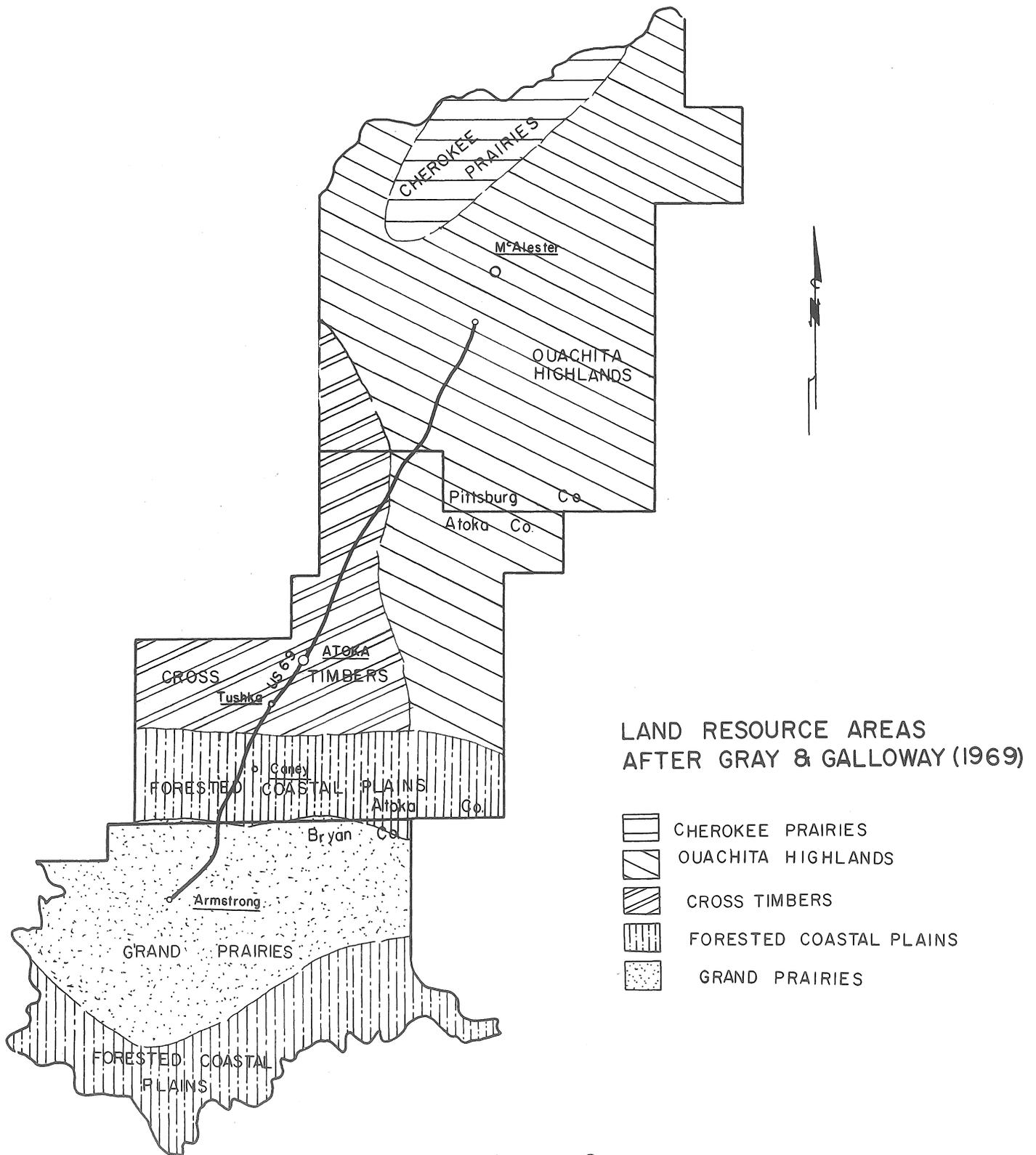


Figure 2

U.S. 69 Project

The proposed U.S. 69 project consists of the development of a modern Trunk Highway that begins at S.H. 113 north of McAlester in Pittsburg County and extends southwesterly approximately 76 miles to the existing improved U.S. 69 facility south of Armstrong in Bryan County. Field investigations began during the summer of 1973, however, because of a shift in emphasis to other projects across the state, the survey was not completed until two years later. Three separate surveys were conducted along different corridors either parallel or off-set to the present U.S. 69 alignment. Overall, some 225 miles of terrain were checked for extant archaeological resources.

The Report

This report is a brief presentation of OHAS environmental impact studies as they relate to archaeological resources within the U.S. 69 project area. The purpose of this publication is two-fold: (1) the dissemination of data to other archaeologists - this being especially important in consideration of the limited amount of research previously conducted in the region; and (2) as a means of providing information to Oklahoma Highway Department officials and employees regarding the purpose and activities of the archaeological survey.

General Physiography and Geology

This region is confined to southern Pittsburg, Atoka, and northern Bryan Counties. It is characterized by folded and faulted mountain ranges capped by resistant sandstones and limestones, alternating with valleys and undulating plains of non-resistant shales, sands and clays. The U.S. 69 corridor passes through four land resource areas (Gray and Galloway 1969:13): (1) the Ouachita Highlands (2) the Cross Timbers (3) the Forested Coastal Plains and (4) the Grand Prairie (Figure 2). Within each of these divisions the proposed alignment will intersect one or more of three geomorphic provinces designated by Curtis and Ham (1972:3) as the (a) McAlester Marginal Hills Belt (b) Hogback Frontal Belt and the (c) Dissected Coastal Plain (Figure 1).

From its origin just south of McAlester in Pittsburg County to Stringtown in Atoka County, the highway corridor follows a south-southwesterly direction through the western flanks of the Ouachita Highlands. Here, the highest elevation is nearly 1,250 feet at Pine Mountain, the ridge between McGee and North Boggy Creeks, 7 miles south of Kiowa. Average elevation is 750 feet with the lowest point being 550 feet where McGee Creek empties into the Muddy Boggy. Greatest local relief is around 550 feet in the Pine Mountain sector where prominent Pennsylvanian sandstone and limestone ridges alternate with shale valleys trending northeast to southwest. The topography is mature with good drainage, sharp ridges, and narrow valleys; 75 percent of the area has moderate to steep slopes. Coursing through the Ouachita Highlands, the first geomorphic province traversed by U.S. 69 is the McAlester Marginal Hills Belt (Figure 1), also known as the Arkoma Basin (Oklahoma Water Resources Board, Region 5, 1969:24). The area is characterized by a gently downfolded syncline of Pennsylvanian rocks with minor folding within the basin, gradating northward into a monocline of later Pennsylvanian rock dipping northward to northwestward. Topography is mainly one of sandstone escarpments and shale valleys with steep southward facing escarpments and gently southward facing slopes. The average elevation is 750 feet and local relief is from 150 to 200 feet. Broad, flat uplands occupy approximately 75 percent of the area. The second geomorphic province crossing the corridor is the northern section of the Hogback Frontal Belt. From the Stringtown locality northward, the rocks are folded and faulted in gentle arcs curving convexly to the north. This district is also characterized by thrust blocks of steeply dipping Pennsylvanian sandstones and limestones, resulting in hogback ridges 500 to 1700 feet above adjacent valleys and a long, winding mountain range of Mississippian and Pennsylvanian sandstones overlooking subparallel shale valleys.

The next major physiographic province encountered along the project rights-of-way is the Cross Timbers. Most of the region lies upon predominantly marine shale with interbedded sandstone, limestone, and coal (Branson and Johnson 1969:4). The slopes are quite steep and divides are rather narrow (Gray and Galloway 1969:30). Elevation in the southeastern part ranges from 500 to 700 feet and is distinguished by pronounced rolling relief having marked local variation. U.S. 69 is contained

within only one of the provinces described by Curtis and Ham in this area, the southern portion of the Hogback Frontal Belt in which relief is similar though not as extreme as in the northern section. The U.S. 69 highway is on an elevation ranging from 560 to 650 feet. One thrust fault has brought older Ordovician-Silurian-Devonian cherts, shales, marine limestones and dolomites to the surface along Black Knob ridge north of Atoka (Branson and Johnson 1972:4).

The corridor then continues southward into the Forested Coastal Plains, considered part of the Gulf Coastal Plain of the United States (Gray and Galloway 1969:21). It is confined on the northeast by the Ouachita Highlands, to the south by the Red River and bordered northwest by Cross Timbers. It is further restricted within the project boundaries to the lower sections of Atoka and Bryan counties where it is bisected by the Grand Prairie. This area, termed the Dissected Coastal Plain by Curtis and Ham (1972:3), is characterized by weakly consolidated sediments of Cretaceous sandstone and limestone deposited as a series of marine terraces sloping gradually southward.

The US 69 corridor crosses the low, north facing Goodland limestone escarpment as it leaves the Atoka portion of the Forested Coastal Plain and enters the Grand Prairies (Gray and Galloway 1969:22). This district is bounded to the north by the Goodland escarpment and to the south by another sandstone escarpment separating it from the Bryan County section of the Forested Coastal Plains. The Grand Prairies are comprised of Cretaceous marls, clays, and soft limestones atop undulating to sloping parts of the Coastal Plains with elevation from 550 to 900 feet (Gray and Galloway 1969:22).

Climatology

Modern Climate

The climate within the project area is ordinarily classified as a warm-temperate continental type varying from semihumid to humid depending upon specific locale and seasonal fluctuations. Weather changes of a dramatic nature frequently occur as a consequence of the interaction

between warm, moist air masses from the Gulf of Mexico and cool, drier air from the Pacific Coast or the Arctic. Thunderstorms accompanied by large amounts of precipitation are encountered most often in the late spring and early summer months. Average annual rainfall ranges from 41 to 49 inches with 60 days of measurable precipitation per year. Moisture in the form of snow only contributes 13% (6 inches) to the annual total. A snowfall of more than 10 inches is rare, occurring in one year out of six (Shingleton 1971:2).

Mean yearly temperature is 60°F (17.2°C) and monthly averages vary from 40.7°F (4.8°C) in January to 82.9°F (28.2°C) in July and August. The lowest temperature on record is -10°F (-23.3°C). July and August are normally the hottest months with daily maximums in excess of 95°F (46.6°C). Temperatures reach 100°F (37.8°C) or above 20 days each year during the period from June through September. December and January are the coldest months having average daytime highs of 55°F (12.8°C) and nightly lows near the freezing mark.

Of primary importance to the region's agriculturalists, as well as to Oklahoma's overall economy, is the length of the growing or freeze-free season. Usually this season is 200 to 220 days long; as a rule, the first killing frost takes place in mid November and the last freeze occurs in March. These dates are subject to change depending upon elevation, ground conditions, vegetation and surface air drainage.

Paleoclimate

Post-glacial climatic succession is a complex topic at best and often abstruse even to specialists. Complications arise from the fact that alterations of the atmosphere do not occur simultaneously everywhere either in a geographical or temporal sense. Therefore, caution must be exercised when attempting to deduce past climatological events in one locality from data derived in other areas.

Antevs (1948;1955) was one of the first to address the problem of climatic sequences after the Pleistocene. His model postulates a period of increasing warmth and desiccation succeeding the cooler, wetter atmospheric conditions concomitant with the Wisconsin glaciation. This epoch has been termed the Altithermal Period, also referred to as the Hypsithermal, Xerathermic Period or Climatic Optimum. The Altithermal is characterized by a gradual elevation of temperature which attains a broad, flattened peak about 7000-5000 BP and then slowly declining to the present. It has further been suggested that the Altithermal peak was attended by an interval of drought known as the Thermal Maximum (cf. Antevs 1955:328-329; Bryson et al. 1970:54-55). Termination dates for the Hypsithermal, though somewhat indefinite, cluster around the BC-AD boundary, after which time climate began to approximate modern conditions.

Considerable diversity of opinion exists as to the validity of Antevs' classificatory scheme, especially when considering specific regional environments (a more extensive discussion may be found in Baumhoff and Heizer 1965). In Oklahoma very few palynological studies directly applicable to post-Pleistocene climatology are available. Bond's (1966) thesis basically supports the model propounded by Antevs; furthermore, Thornthwaite's observations (1941:1-7) that climatic boundaries do not coincide when the appropriate soil types are taken as evidence that warmer temperatures than at the present occurred in the recent past - presumably during the Altithermal (Bond 1966: 53). Wilson (1963:18) states that with the retreat of the Wisconsin glacial ice, prairies began to enter Oklahoma from the southwest and spread northeastward until several thousand years ago just before the climate became moister and cooler. During the height of climatic temperatures (Thermal Maximum) our state was probably semidesert. With the return of more moderate temperature and greater rainfall the migration of plant and animal life reversed. These migrations are apparently continuing today and will lead to forest development as long as current climatic trends prevail.

Soils

Five major soil associations (Figure 3) were noted to occur within the project area (Gray and Galloway 1969 and Water Resource Board 1969). These associations are named for the two or three major occurring soils series which dominate and typify the landscape. More precise soil types observed at archaeological sites are presented in the site description section of this report. This information was obtained from Oklahoma Department of Highways pedological studies along the proposed highway alignment and U.S. Soil Conservation Service County soil surveys and County Conservation offices.

Dougherty-Teller-Yahola

This association exists as only a narrow band on the northern section of the project in Pittsburg County, south of McAlester (Figure 3). It is listed by Gray and Galloway (1969) as an association characteristic of the Cross Timbers. The soils are generally considered water-laid sediments that were later modified by wind action. Deposits may vary in depth from 40 to 50 feet near rivers but in other locales are less, thinning out to the residual rock. These soils are generally very low in phosphorus and nitrogen and low in potassium and calcium. Forested and grassland areas may be represented.

Hector-Pottsville

Typical of soils which are affiliated with the Ouachita Highlands, this association is mountainous in nature. Within the alignment study these soils were confined to sections of southern Pittsburg and northern Atoka Counties (Figure 3). They are Red and Yellow Podzolic soils and usually thinly developed from shales and sandstones on horizontally bedded rock (Gray and Galloway 1969:19). Like their parent materials these soils are almost always medium to strongly acidic and generally low in potassium, phosphorus and nitrogen. Generally speaking, the soils are highly productive for timber such as oak, hickory, and pine varieties, and are predominantly used for cattle grazing (Water Resource Board 1969:33).

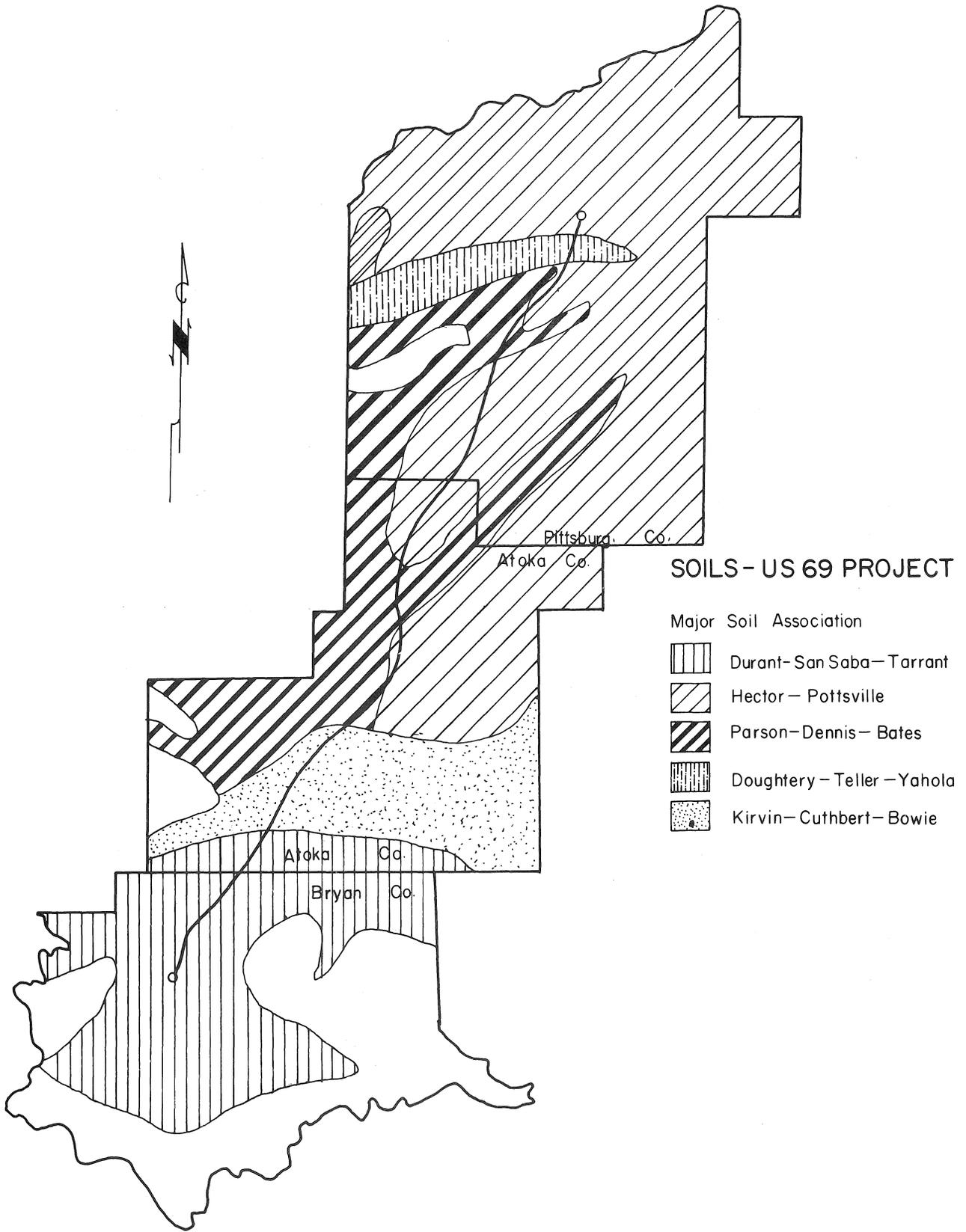


Figure 3

Parsons-Dennis-Bates

Soils of this association comprise only a small percent of the survey area in southern Pittsburg and northern Atoka Counties (Figure 3). Gray and Galloway (1969:28) associate these soils with the Cherokee Prairie and are classified as Southern Brunizems. Parsons soils are characteristically claypans of the nearly level plains and valley floors developed in acid clay shales. Dennis is the common associated soil found on gentle to moderate slopes over acid sandy shales. Deep soils on gentle slopes over sandstone and sandy shale are represented by Bates. All of these soils are only moderately dark-colored. Although these soils are suitable for agricultural purposes, a large percentage is used for pasture and native hay.

Kirvin-Cuthbert-Bowie

This association was noted only in the southern-half of Atoka County extending from south of Atoka to just north of the Bryan County line (Figure 3). This locale comprises a portion of the Forested Coastal Plains described by Gray and Galloway (1969:21). These soils are Red-Yellow Podzolics and are generally moderately to deeply leached and strongly acid. Generally, the soils have sandy loam upper horizons and clay loam to clay subsoils. Kirvin soils occur on gentle slopes and are deeply developed over reddish sandy clays, while Cuthbert is a shallow soil over gray and brown bedded sandy clays on steeper slopes. Bowie soils also develop on gentle slopes, are quite deep, but have sandier more yellowish parent materials than Kirvin. All of the soils are low or very low in phosphorus and potassium. A portion of the land is cultivated but woodland and pastured areas probably predominate.

Durant-San Saba-Tarrant

This soil association included all of the project south of the Atoka County line (Figure 3). According to Gray and Galloway (1969:22) this association is representative of the Grand Prairie but can be divided into two

general divisions (Coastal and Forested Coastal Plains) based upon the parent materials from which the soils developed. The soils are considered Southern Brunizems and are usually dark-colored, leached and acid. Durant soils have loam surfaces and heavy clay subsoils that occur on nearly level areas (often near ridge toes) and have strongly granular clayey surfaces, and thick, dark gray, limey clayey subsoils. Tarrant is a very shallow soil containing flaggy pieces of limestone detritus on the surface. Grassland and cultivated areas typify the landscape (Water Resource Board 1969:33).

Water Resources (Figure 4)

Two major riverine drainage systems are within the Pittsburg, Atoka and Bryan Counties project area. Bryan and Atoka Counties are drained by the Red River drainage system and Pittsburg County by the Canadian River system.

A majority of the larger streams in the region are mature with silted or sandy bottoms, wide flood plains, low gradients and characteristically have a dendritic drainage pattern. However, many of the small creeks, especially those originating in the uplands, are younger streams with steep walled banks, rockbottoms, steep gradients and narrow flood plains.

Red River Drainage

The Blue River crosses the surveyed route three miles north of Durant in Bryan County near the town of Armstrong. The Blue River has a gradient of approximately fifteen feet per mile and is fed by a series of generally short, deep streams with an average gradient of fifty feet per mile. Major tributaries of the Blue River located along the project area include Mineral Bayou, Thompson Creek, Harrington Creek and Caddo Creek. The Blue River empties into the Red River twenty-five miles southwest of Durant.

Clear Boggy Creek intersects the project rights-of-way just north of Caney in Atoka County. The Clear Boggy has a gradient ranging from three to five feet per mile and is fed by large, short streams having gradients of twenty to sixty feet per mile. Major tributaries of the Clear Boggy include Caney, Davis, Fronterhouse, Big Branch and Sand Creeks. Clear Boggy flows into the Red River about forty miles southeast of Caney.

Muddy Boggy Creek courses southeastward through Atoka County and marks the northern city limits of Atoka township. The Muddy Boggy has an average gradient of four feet per mile and is fed by shorter tributaries having gradients of from ten to sixty feet per mile. The two major tributaries of the Muddy Boggy are Sandy and North Boggy Creeks. The Muddy Boggy joins Clear Boggy Creek about thirty miles southeast of Atoka near the town of Farris, thereby forming the Boggy River. The confluence of the Boggy with the Red River lies about ten miles further downstream to the southeast.

North Boggy Creek parallels U.S. 69 Highway throughout much of northern Atoka County, crosses the project area one and a half miles north of Stringtown and eventually unites with Muddy Boggy Creek four miles east of Atoka. North Boggy Creek has a stream gradient of five feet per mile and is fed by a number of lesser streams having gradients of five to twenty feet per mile. Principal tributaries of the North Boggy within the project boundaries are Chickasaw and Mill Creeks.

Canadian River Drainage

The drainage divide between the Canadian and Red River systems is located in extreme southern Pittsburg County. The Canadian River, flowing eastward twenty miles north of McAlester, has a gradient of between three and ten feet per mile. Pittsburg County is primarily drained by Peaceable, Brushy and Coal Creeks. Peaceable Creek, bisecting the highway alignment five miles south of McAlester, is

the only major stream of the Canadian River system in the project area. Peaceable Creek is a mature stream with a wide flood plain, silted bottom and gradient less than ten feet per mile. The drainage pattern of Peaceable Creek is predominately dendritic except in the vicinity of McAlester where it assumes a trellis pattern around the Jack Fork hills.

Vegetation

Towards the end of the Wisconsin glacial, Oklahoma was covered by northern conifer forests such as are now found in Minnesota. As the temperature became warmer and drier the northern hardwoods, spruce and pines, receded northward and forests of oak, hickory, elm, maple and southern pines began to replace them. At the same time southwestern prairies entered the state from the south. Prairie conditions reached a climax during the Altithermal around two thousand years ago. Vegetation during the Altithermal consisted of short grasses, tall grasses and cacti. The prairies then began to retreat southward and are now being replaced by forest type vegetation (Wilson 1963:16-18). Presently there are two major biotic districts recognized by Blair and Hubbell (1938) for the area encompassing Pittsburg, Atoka and Bryan Counties (Figure 4).

The northern third of the project area, principally in Pittsburg County, and the southern half, in Bryan and southern Atoka counties, lies within the Osage Savanna Biotic District as outlined by Blair and Hubbell (1938: 433-435). The area is typically a grassland with gently rolling hills and extensive forested areas along streams. Oak-hickory dominate the forested areas with lesser amounts of dwarf sumac, redbud, juneberry, winged elm, red birch and black willow. Mesophytic shrubbery in the Osage Savanna Biotic District includes huckleberry, christmas fern, maidenhair, mockorange, strawberry bush, pink azalea, gooseberry, papaw, spice bush, bladdernut, and silverbell. Marshy areas are usually covered by a dense growth of spice bush, papaw, sassafras and sumac (Blair and Hubbell 1938: 435; Bruner 1931:142-148).

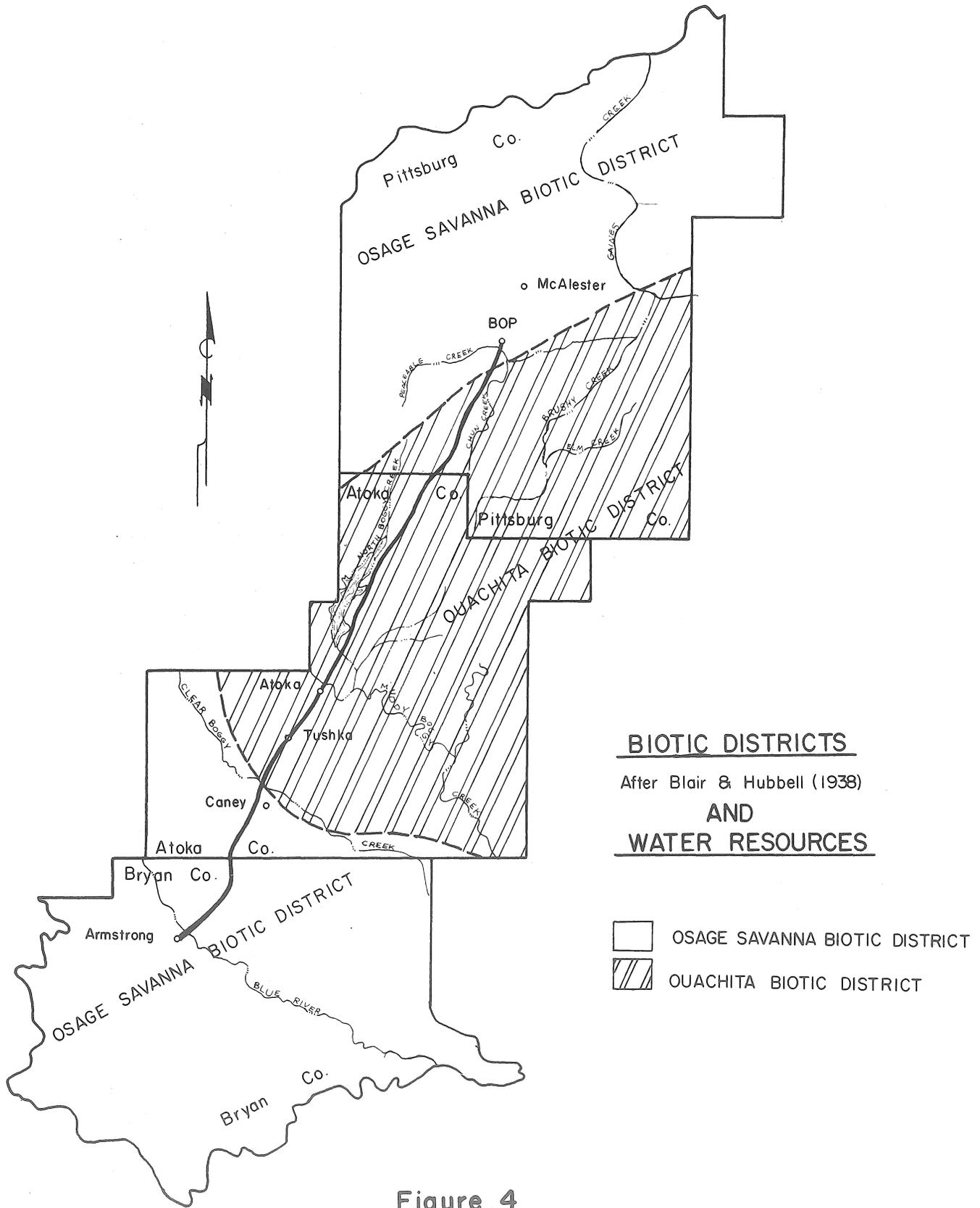


Figure 4

Native grasses such as bluestem, broadleaf uniola, Virginia wild rye, Japanese chess and others have been essentially replaced by commercial types such as alfalfa, bermuda, fescue, and broomgrass (Blair and Hubbell 1938: 434; Gray and Galloway 1969:15-17). Previously forested areas have been extensively cleared for farming and pasture. As the lands are abandoned by farm use they are taken over by numerous undesirable grasses and forbs such as nettles, milkweed, stinkgrass, gumweed, nightshades, thistles, sandburs, ragweed, ironweed, loco, hemlock, goldenrod, cockelbur and others (Phillips Petroleum Company 1956 and 1957). These areas are then slowly taken over by oaks, consequently the last fifty years or so has seen an invasion of oaks into the area (Gray and Galloway 1969:30).

U.S. Highway 69 passes through the western edge of the Ouachita Highlands Biotic District in northern and central Atoka County (Figure 3). This area is characteristically a mountainous forest environ dominated by oak-pine (Blair and Hubbell 1938:428-430). The area supports large stands of yellow pine and several varieties of oak interspersed with maple, locust, hickory, and redbud. Mesophytic shrubbery of this area is found principally along broken streams and north facing slopes and is essentially the same as found in the outlying Osage Savanna Biotic District (Blair and Hubbell 1938:428-430).

Wildlife

The lush, varied habitat of Bryan, Atoka and Pittsburg Counties presently supports a wide variety of fauna including at least 36 species of amphibians, 57 species of reptiles, 58 species of mammals, 250 species of birds and 166 species of fish. Early historical accounts further noted the presence of a large number of buffalo, antelope, red wolf and mountain lion which are no longer native of Oklahoma (see McKelvey 1955 and Smith 1958).

Numerous varieties of shrew, mole, bat, rodent, and rabbit which can be found in the area include the eastern mole, swamp rabbit, cottontail, jackrabbit, silver haired bat, red bat, brown bat, western bigeared bat, hoary bat, eastern chipmunk, woodchuck, ground squirrel, prairie dog,

gray squirrel, fox squirrel, plains pocket gopher, hispid pocket mouse, beaver, rice rat, brush mouse, cotton mouse, deer mouse, wood rat and Norway rat (Risser 1974:144-145). Carnivores in southeastern Oklahoma include the coyote, swift fox, gray fox, raccoon, weasel, mink, badger, skunk, otter and bobcat. Other commonly encountered mammals are the white-tailed deer, opossum and armadillo (Risser 1974: 145).

Over 250 species of birds have been recorded for southeastern Oklahoma, all of which can be found in Pittsburg, Atoka and Bryan Counties. Among the best-represented resident species are the loons, grebes, herons, cranes, hawks, eagle, wrens, rails, dove, owls, quail, hummingbird, kingfishers, woodpeckers, and sparrow. Migratory waterfowl (geese, ducks, certain loons), and non-game birds are seen throughout the region at various times of the year (Sutton 1967).

Reptiles in the project area are comprised of at least 16 species of turtle, 10 species of lizard and 30 species of snake. Commonly found turtles are snapping, map, mud, slider, red-eared, muck, box and softshell turtles. Native lizards are the green anole, racerunner, collared, skinks, slender glass and eastern fence species. Snakes are represented by 3 venomous species - 4 varieties of rattlesnake, western cottonmouth or water moccasin, and copperhead - and 24 non-poisonous species including worm snakes, racers, ringnecks, black rat snakes, western mud snakes, hognose, kingsnakes, milk snakes, ground snakes, brown snakes, flat-headed snakes, ribbon and earth snakes (Risser 1974:108-9). An infrequent visitor to southeastern Oklahoma is the American alligator which makes its way inland along the Red and Arkansas River systems from the Gulf Coastal Plains of Louisiana and Texas.

Amphibians are represented by 18 species of salamanders and 17 species of frogs and toads. Salamanders are the ringed, spotted marbled, mole, tiger, mudpuppy, dwarf, red-backed, zigzag, slimy, central newt and lesser siren varieties. Frogs and toads include the American toad, Texas toad, Woodhouse's toad, cricket frog, green tree frog, spring peeper, gray tree frog, chorus frogs, Hurter's spadefoot, crawfish frog, bull frog, green frog, and leopard frog (Risser 1974:104-5).

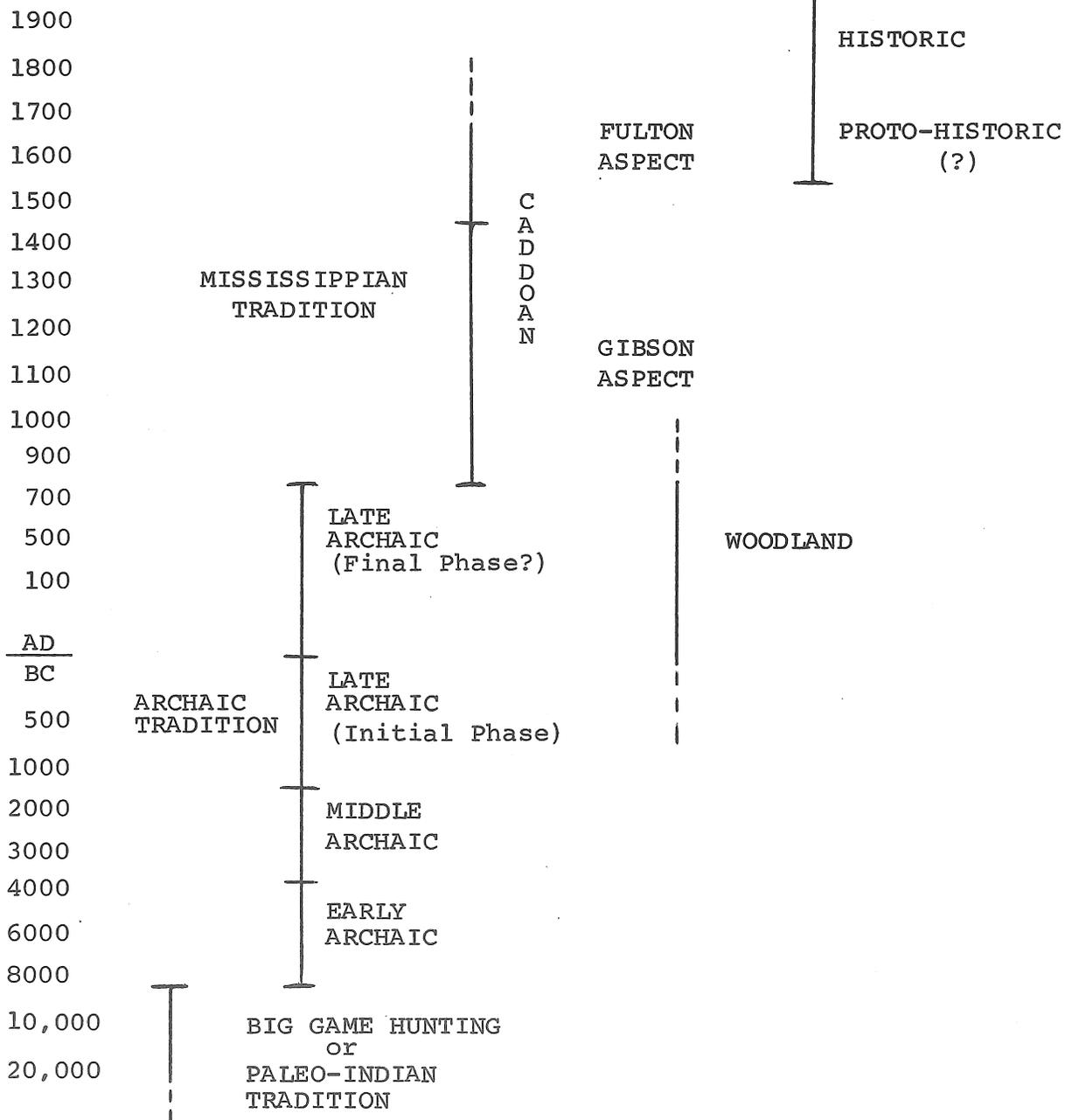
At least 166 species of fish have been identified in Oklahoma. All, or nearly all, of these can be found in southeastern Oklahoma (Risser 1974:119-126). Several species of exotic game fish including varieties of pickerells, pike, bass and perch are recent imports while most other species are indigenous. Among these are eel, paddlefish, gar, shad, trout, minnow, shiners, suckers, catfish, perch, sunfish, bass, crappie, darters, drum, silverside and mullet. For detailed information on Oklahoma fish see Risser (1974), Bennett (1970), Miller and Robinson (1973) and Huffman and others (1963).

Archaeological Background

Previous archaeological investigations within the confines of the project area have been severely limited and, thus, prevents a clear assessment of the extant cultural resources. Even a tentative chronological outline or prehistory must be drawn from sources of archaeological data peripheral to the project locale. Most of this information is derived from archaeological surveys and salvage operations conducted at major reservoirs in southeastern Oklahoma (Bastian 1968; Burton 1970; Davis 1970 ed.; Lawton 1960; Lewis 1973; Rohrbaugh 1968, 1972, and 1973; Rohrbaugh and others 1971; and Wyckoff 1961, 1963, 1964, 1965, 1967a, 1967b, 1967c, 1967d and 1968; Wallis personal communication).

Utilizing a general chronological framework (Figure 5) discussed by Wyckoff (1970) the earliest cultural expression recognized is the Paleo-Indian or Big-Game Hunting Tradition 11,000 B.C. - 8,000 B.C. Since existing knowledge of this manifestation in southeastern Oklahoma is extremely scanty, very little can be said without hesitation. From archaeological data collected at various excavated sites in the Great Plains and Eastern Woodlands it is almost certain that these ancient nomadic peoples based their economy around the hunting of now extinct megafauna (i.e. mammoth, mastodon, *Bison antiquus*, etc.) and the gathering of edible plants and fruits. A hallmark of this culture is the presence of certain diagnostic types of projectile points, which are typically fluted lanceolate forms.

GENERALIZED CHRONOLOGY CHART
SOUTHEASTERN OKLAHOMA*



*After Wyckoff 1970 & Rohrbaugh 1973

FIGURE 5

Sequential to the Paleo-Indian Period is the Archaic Tradition which extended possibly from around 8,000 B.C. to A.D. 1. This period is characterized by cultural manifestations which represent a specialized hunting and gathering economy for small social units, who exploited their environment to a far greater extent than their predecessors. Through time, distinctive differences developed reflecting not only regional adaptation to varying ecological settings but gradual changes in the material cultures of the peoples. Three developmental stages of the Archaic are presently recognized in southeastern Oklahoma: Early, Middle (Intermediate), and Late.

The Early Archaic stage (Circa 8,000 B.C.) is characterized by the introduction of distinctive tool forms which include hafted drills, spurred end scrapers, flake scrapers, and choppers. Projectile points commonly associated with both the Plains (Plainview, Meserve and Scottsbluff) and the eastern Woodlands (Dalton, Kirk, Big Sandy, Palmer and San Patrice) are represented. The cultural inventory of the Middle stage (Circa 4,000 B.C.) suggests a more specialized type of subsistence. Bifacial knives, scrapers, drills, notched cobble weights, pitted stones and grinding stones indicate a greater emphasis on plant utilization. This stage is also distinguished by an increased variety of projectile points such as Marcos, Edgewood, Ensor, Gary, etc. (Rohrbaugh 1972:105-108).

The Late Archaic is the most complex stage of the Archaic tradition in Southeastern Oklahoma in that it has two distinct phases. During the initial phase of the Late Archaic, from about 1,500 B.C. until around A.D. 1, only minimal changes from earlier manifestations in the area occurred. This phase is represented by the Lamas Branch complex which was defined from a series of sites in the Broken Bow Reservoir area. The complex is characterized by stemmed hoes, gorgets, grinding stones and a variety of other foraging related tools. The predominate style of dart point is Gary forms, however, Marcos, Marshal, Ellis, Edgewood and other types are also represented.

The second phase of the Late Archaic, from around A.D. 1 up to possibly A.D. 700, is marked by the appearance of pottery and limited evidence of horticulture. This period corresponds temporally to the Woodland period of the Eastern United States, however, this phase more closely relates culturally to the Archaic. In the Eastern United States the Woodland is a formative or transitional period which follows the Archaic cultural tradition and is viewed as post-Archaic and pre-Mississippian. In southeastern Oklahoma, however, the Woodland formative period is not well understood. The addition of pottery and gradual shift in economy towards partial horticulture of an otherwise Archaic lifestyle is the only evidence to indicate influence of this Cultural Period in southeastern Oklahoma.

Succeeding the formative Woodland and, in some cases, the late Archaic, is the Mississippian Tradition dating approximately from A.D. 700 to A.D. 1500. This tradition is characterized by an intensification of agricultural activities and its increased economic importance. Also associated with this period are temple mound centers, more sophisticated ceramic inventories, and a distinctive societal organization. Southeastern Oklahoma lies within the sphere of Mississippian influences which is locally manifest in the Caddoan tradition. Originally, two cultural stages were recognized (see Krieger 1946) the Gibson (A.D. 700? - A.D. 1300?) and the Fulton (A.D. 1300? - A.D. 1700) aspects. The former is distinguished by a stratified social structure, specialization in arts and crafts, complex ceremonial centers, and participation in widespread religious and exchange systems (Wyckoff 1970:103). The Fulton aspect is recognized as a time of decline in cultural complexity and ceremonially-related endeavors as well as a contraction of the Caddoan region. This two-fold Gibson-Fulton framework, though commonly used, is being supplanted by a five-part sequence (Caddo I-V) which many researchers believe more accurately reflects historical reality (Davis 1970:40).

Several Caddoan manifestations to the south and east of the project boundaries have been defined. Evidence for both Gibson and Fulton Aspect occupations have been acquired as a result of salvage excavations in the vicinity of the Glover River, Broken Bow and Pine Creek Reservoirs (McCurtain County). The Early Caddoan Hochatown Complex (A.D. 1000-1300?) sites are typically one or two structure sedentary hamlets lacking ceremonial centers. A variety of plain and decorated utilitarian vessels have been found which suggest a blend of traits derived from the Alto and Sanders foci in Texas. The later McCurtain focus (A.D. 1400-1700) of the Fulton Aspect is characterized by small villages consisting of one to three oval or circular houses and a small truncated mound. Pottery, tool assemblage and burial pattern all show marked differences between the two aspects. The Mountain Fork Complex, as defined by Wyckoff (1967), appears to be an earlier localized manifestation of the McCurtain focus in the Broken Bow region.

The Nelson focus, Choctaw County, and the Bryan focus (A.D. 1000-1400) from Marshall and Bryan Counties, are affiliated with the Gibson Aspect. Showing a majority of its traits with such Gibson cultural units as the Sanders, Spiro and Alto foci aligns the Nelson focus with the early stage of Caddoan development (Wyckoff 1970:113). In fact, much of the artifactual assemblage is directly comparable to the Hochatown Complex in the Ouachitas. The Bryan focus, constructed from villages excavated along Lake Texoma, contains Caddoan materials obtained through contact and trade. However, this manifestation has been considered peripheral to the Caddoan tradition area and more like the cultures in the Southern Plains.

Historical Background

From 1541 to 1820 Oklahoma was an international borderland in the contest between Spain, France and later the United States, for control of the Southwest (Gibson 1972:11). The earliest explorers were the Spanish Conquistadores anxious for riches and adventure. Coronado's expedition (1540-1542) from Compostela, Mexico across western Oklahoma to Quivira in central Kansas was a failure from a monetary viewpoint but was significant in that a European had visited the state for the first time, claiming the territory a part of the Spanish empire. Explorations by De Soto (1539-1542) and Juan de Onata (1601)

strengthened Spain's right to dominion over the lands north of Mexico. The Spanish, having difficulties with administering their vast New World empire, were unable to show more than token interest in the northern frontier; thus, Oklahoma figured as little more than a highway for wide-ranging exploratory parties. It was not long before the enterprising French challenged Spain by carving out the new province of Louisiana (named for King Louis XIV) from the neglected northern wilderness (Gibson 1965:31).

Robert Cavelier, Sieur de la Salle, led an expedition from Illinois along the Mississippi River to the Gulf of Mexico in 1682 declaring all the territory drained by the Mississippi property of France. The French colonial managers were primarily concerned with developing Louisiana's resources by establishing an extensive commercial empire based on the fur trade. This plan resulted in a mass exodus of trappers and traders from the permanent French settlement at Biloxi to Oklahoma and peripheral areas. In 1718, Bernard de la Harpe received a land grant above Natchitoches on Red River for the purpose of opening trade with resident Indian tribes (Morris and McReynolds 1971:9). He traveled through western Arkansas and eastern Oklahoma, including the northeastern tip of Pittsburg County. St. Denis, possibly the first Frenchman to see the state (1714), the Mallet brothers, and Fabry de la Bruyere were other notable French explorers who traversed Oklahoma in the vicinity of the project area. Principal settlements during this era were Ferdinandian (near present-day Newkirk) and Twin Villages on Red River in Jefferson County. Exportation of furs continued at a brisk pace as a consequence of European demand until the end of the French and Indian War (Seven Years' War) in 1763. The Treaty of Paris returned jurisdiction of Louisiana Territory to Spain, Spanish possession was short-lived, however, and the land reverted to French ownership in 1800 according to the terms of the Treaty of San Ildefonso. France, busy with their European wars, was too preoccupied to reestablish itself in Louisiana, therefore, in 1803, American commissioners in Paris negotiated for the purchase of Louisiana by the United States.

Acquisition of Louisiana provided the impetus for several American reconnaissance expeditions, the earliest of these being led by Captain Richard Sparks (June of 1806) and later that year by Lt. James Wilkinson, having been commanded by Zebulon Pike to descend the Arkansas River to its mouth. Although none of the major explorers, except Randolph Marcy, entered those sections of Oklahoma of concern in this report, the region became well-known to travelers using two historically important trails. The Texas Road, which followed the Grand (Neosho) River valley, intersected the Arkansas close to Fort Gibson then continued southwest across Pittsburg and Atoka Counties to Fort Washita then south to Texas, was an essential artery of commerce between the settlements of Kansas and Missouri and the Red River. The Butterfield Overland Mail and Stage route provided mail and passenger service from St. Louis and Memphis to California. This road, originating at Fort Smith and running 192 miles to Colbert's Ferry on the Red River, had twelve way stations including those at Atoka and Boggy Depot.

With the rapid expansion of white colonization throughout the United States a number of serious conflicts arose with the indigenous aboriginal population. Georgia, Mississippi and Alabama were particularly hostile toward Indian tribes in their borders. Responding to public demands, the federal government pressured eastern tribal groups into surrendering their native homelands and relocating in the newly established (1825) Indian Territory. Of course, Oklahoma was already the home of seasonal hunting grounds of other tribes. Among these, the Quapaws (Arkansas), Wichita, Caddo, and Choctaw roamed the project area locale. Forced removal of the "Five Civilized Tribes" began with the Choctaw treaties in 1816, 1820 and 1825. The Choctaw Indians, constituting the most numerous branch of the Muskogean linguistic stock are closely related to the Chickasaws, who speak a different dialect of the same language. At the beginning of the historic period they occupied the central and southern part of Mississippi and a sizable tract in southwestern Alabama (Debo 1967:1). By the Treaty of Dancing Rabbit Creek (1830), the Choctaws relinquished all holdings east of the Mississippi River in exchange for an estate bounded on the north by the Canadian and Arkansas Rivers and

on the south by the Red. The southern one-half of Oklahoma became the Choctaw Nation until 1837, when the Chickasaws acquired a large parcel of land (Treaty of Doaksville) off the western boundary of Choctaw territory. The treaty further afforded the Chickasaws most of the privileges of citizenship in the Choctaw tribe (Foreman 1966:17). The political relationship between the two tribes was less than ideal, however, and eventually resulted in a new agreement (1855) which created an independent Chickasaw state located west of the Choctaw Nation. The Chickasaw western boundary was the 98th Meridian from the Red to Canadian Rivers; eastern limits followed Island Bayou from its mouth to its easternmost branch, then north to the Canadian. Oklahoma Highway Department Division 2, encompassing the surveyed alignment from McAlester to Armstrong, is basically the extent of the Choctaw Nation after 1855. The Choctaws divided their lands into three districts, each represented in a general council by a chief and ten councillors elected by qualified voters. The U.S. 69 project lies mainly within the Pushmataha District which had settlements spread along the Texas Trail from Perryville (about 7 miles southwest of McAlester) to the Red River. Boggy Depot on Clear Boggy Creek, once serving as national capital, was a prominent trade center as was the town of Atoka where the MK&T Railroad and the Butterfield stage line converged. There are many sites of historical significance neighboring the project area. Of these, the Charles LeFlore Home and family cemetery were encountered during field investigations. LeFlore was an eminent Choctaw tribal leader and captain of the Lighthorse. His home, northwest of Limestone Gap, was a showplace in the post-Civil War cultural and political life of the Choctaw Nation. According to the State Historical Society (Oklahoma State-wide Historic Sites Survey and Preservation Plan 1970:42), the site will be purchased, house renovated and restored to its original grandeur. Implementation of this plan has evidently been delayed since the structure had not been modified and was in a state of obvious deterioration when inspected by OHAS. No historic resources will be adversely affected by improvements or realignment of the existing highway as presently designed.

Survey and Laboratory Methods

Field and laboratory techniques or methods utilized in this survey and all archaeological investigations performed by OHAS have been developed by people working within the Department of Highways and Oklahoma Archaeological Survey. Although the ideologies and methodologies of individual archaeologists may vary in the field and laboratory, the program established by the Department has proven an effective and pragmatic means of preserving a portion of Oklahoma's past.

Once OHAS has been notified that a proposed project requires an archaeological survey, the highway department's archaeologist and crew begin their preparation for the field by following certain standard procedures. These consist of obtaining Oklahoma Department of Highways aerial photographs, if available, and U.S. Geological Survey topographic mapping for the entire route. After this initial phase, a search of the state archaeological resource files is conducted to determine whether or not any sites have been previously recorded with the right-of-way boundaries or immediate vicinity. Additional sources, e.g. published and preliminary site reports or environmental impact statements from other state agencies, may be consulted when more detailed information is desired.

It is believed that specific pieces of equipment are indispensable to the field investigator in determining various aspects of an occupation (i.e. stratigraphic sequence, thickness of cultural mantle) when the surface collection fails to produce sufficient, informative data. As a matter of practice the items listed below normally accompany the survey team: notebooks, several printed forms, pens and markers, vials, sacks, trowels, shovels, core auger, posthole digger, a small portable screen with $\frac{1}{4}$ " mesh, tape measures, camera and the booklet "Archaeology and Archaeological Resources" to be dispensed to landowners or other interested persons. This list may be augmented by surveying and mapping instrumentation as well as heavy earth-moving machinery.

Actual field reconnaissance involves walking over the project rights-of-way 150-300 feet either side of the centerline (or along a corridor when final alignment has not been established) noting the presence of locations of archaeological interest. Indications of historic or pre-historic sites may include surface materials composed of lithic and faunal debitage in addition to tools manufactured of stone and metal, occupational features (viz. mounds, hearths, house structures, etc.) and human interments.

Upon discovery of a site the survey crew initiates a search of the general region, collecting artifacts in the process. The type of surface collection technique employed depends upon areal site extent, ground conditions, quantity of cultural material and observable features. A "Random Surface Collection" is one in which the field party scans the known site boundaries, retrieving all exposed habitation remains. The horizontal distribution of recovered artifacts will then allow the investigator to better delineate the occupation's dimensions. The random technique is used on small sites exhibiting a sparse and scattered cultural deposit.

A second method, the "Controlled Surface Collection" is applied when large areas exhibiting an abundance of materials (or if considerable diversity exists) are involved. Site extent is first estimated by observed horizontal distribution of cultural remains; then subdivided into arbitrary quadrants for closer examination. This serves a two-fold purpose: (1) it facilitates the task of collection and (2) it is often helpful in defining activity (specialized use) areas or, in some instances, determining the occupational loci of multicomponent sites. Once again, an effort is made to recover all artifacts.

If the amount of material is too great or time limited, a "Controlled Random Surface Collection" is performed. In this technique only a small percentage of extant debris is picked up in a random fashion; thus, a representative sample is obtained.

The accumulated remains are placed in labeled field bags on which are written pertinent information including: project and site designations, the day's date, topographic coordinates, location of nearest water supply, vegetation on and surrounding site, degree of erosion or state of preservation, existing land-use, provenience data and so forth. Landowners having site collections are contacted and their artifacts photographed.

When an occupation is within the proposed right-of-way or if a nearby site may be adversely affected as a consequence of construction activities (as in the case of a borrow pit) more extensive archaeological research is occasionally warranted. Density, vertical and horizontal distribution of material, features, midden areas and natural stratigraphy are checked by using a posthole digger in conjunction with a soil auger. The number of tests necessary is a function of the size and complexity of each individual site. In accordance with highway department guidelines, no tests of any sort can be conducted without the landowner's permission - unless the land has already been acquired by the state. Information derived from the minor tests are reported on standard OHAS Site Evaluation Forms. These forms serve as the basis of future site evaluations and recommendations published in departmental EIS.

As previously stated, the principal goal of the Oklahoma Department of Highways is the preservation of pre-historic sites. Naturally, the preferred means of mitigation is highway realignment; whenever this is not feasible, it becomes the responsibility of OHAS to execute full-scale salvage operations.

Once an archaeological site has been located and a surface collection and/or minimal evaluative testing completed, the materials are brought into the Oklahoma Highway Archaeological Survey laboratory at the University of Oklahoma in Norman for processing. Laboratory operations encompass washing, cataloging, identifying and analyzing the recovered cultural debris. Detailed notes made in

the field are transferred to standard archaeological site forms used by the state and special Highway Department surface collection data sheets. Exact locations for each site are taken from U.S.G.S. topographic maps, highway construction plans and/or photographic maps to be checked against legal descriptions of sites currently on file with the Oklahoma Archaeological Survey. The sites are then assigned a coded designation according to the binomial system used by the state (the first two digits designate the county and are followed by the site number). This data is then transferred to the standard state archaeological site forms along with a list of the recovered artifacts. However, since these survey forms are not definitive site reports, information pertaining to temporal-cultural relationships even if known is not included.

The artifacts from the sites are cataloged with the appropriate site and provenience designations prior to identification and study. The materials are then categorized by type of material, morphological and utilization characteristics on special Highway Department data sheets to be assessed later in the writing of the project impact statement. After the materials have been carefully studied and all site information pertinent to the department has been formulated, the artifacts are turned over to the Stovall Museum archaeological repository at the University of Oklahoma for additional research, storage, and possible exhibiting.

Recorded Archaeological Sites

The archaeological data presented herein is chiefly drawn from environmental impact statement prepared by the Oklahoma Highway Archaeological Survey. For more detailed information concerning the archaeological sites inquiries should be made to the Planning Engineer, Oklahoma Department of Highways, 200 N. E. 21 Street, Oklahoma City, Oklahoma, or State Archaeologist, Oklahoma Archaeological Survey, 1335 S. Asp, Norman, Oklahoma.

PITTSBURG COUNTY - DIVISION I

Survey Limits: U.S. 69 Corridor, junction Indian Nation Turnpike south approximately 16 miles to the Atoka County line.

Ps-81

Site Classification: Open site; camp/workshop.

Land Resource Area and Biotic District: Ouachita Highlands/
Osage Savanna-Ouachita ecotone.

Soil Type: Verdigris silt loam.

Land-use: Horticulture and pasture.

Recovered Materials: Arrowpoints - 1; knives -1; modified flakes - 4; unmodified flakes - 25 (see Figure 6).

Represented Lithic Types: Zipper flint 3.2%/ unidentified quartzites 19.4%; unidentified cherts and flints 77.4%.

Site Evaluation and Recommendations: Cultural debris was found scattered over an area of one acre. Occupational deposit appears shallow and confined to the surface or directly below. Erosion is slight but agricultural disturbances may have affected site integrity. Since the site lies outside the proposed rights-of-way, only a surface collection was performed. In accordance with highway guidelines additional research by OHAS is not recommended.

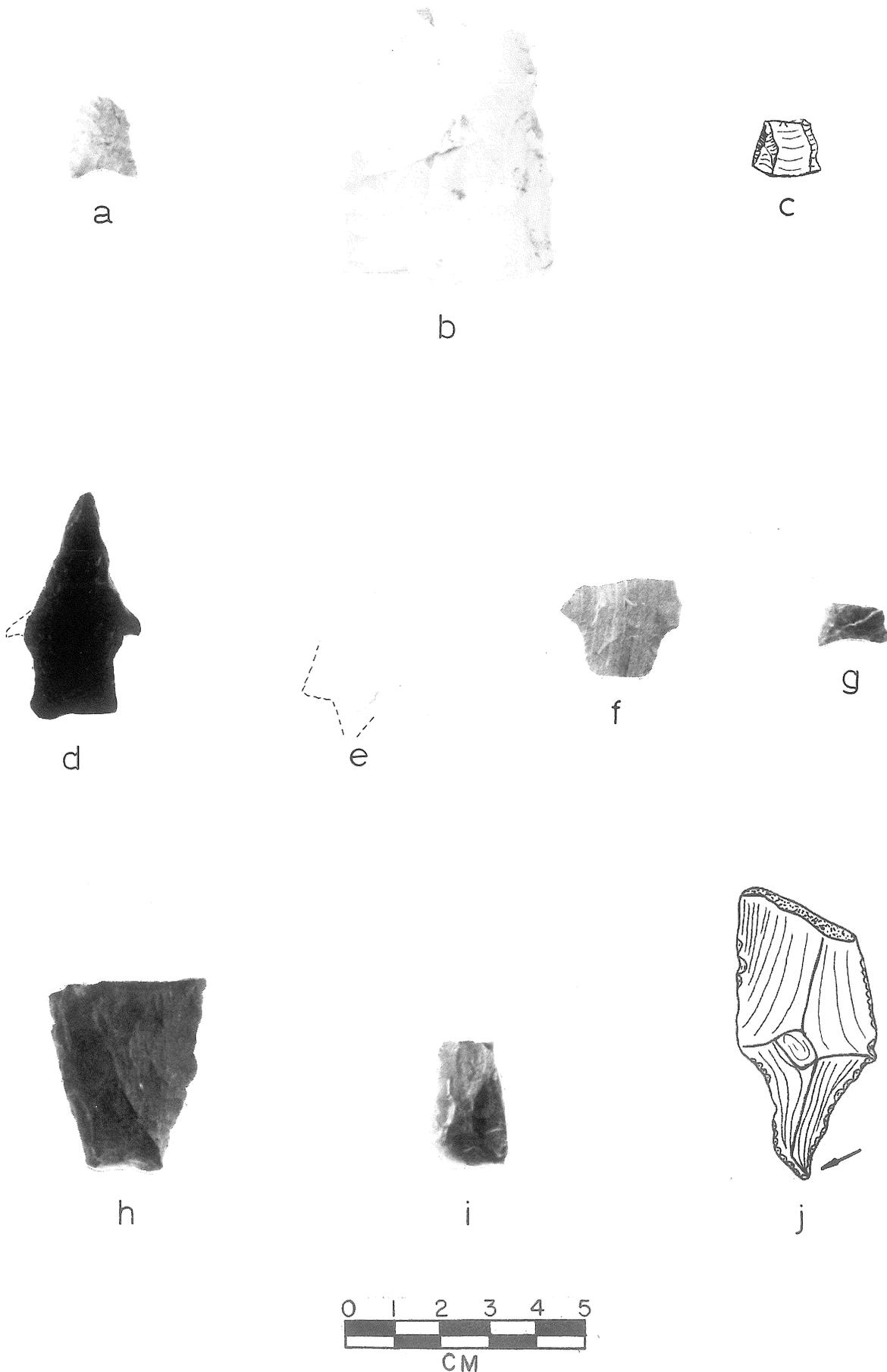


Figure 6. Ps-81(a-c), Ps-82(d-f), Ps-83(g) and Ps-85(h-j) Artifacts: a, d, and e, projectile points (a, Fresno; d, Bulverde-like, reworked; e, Gary?); b, knife fragment; c, modified flake; f and g, projectile point bases; h, preform; i, biface fragment (knife?); j, graver. Arrow indicates graver tip.

Temporal-Cultural Relationships: The presence of a Fresno-like arrowpoint probably indicates that a late pre-historic manifestation is represented. The lack of more definitive artifacts makes further cultural assessments more than tenuous in nature.

Ps-82

Site Classification: Fairly large open camp with possible multiple activity areas.

Land Resource Area and Biotic District: Ouachita Highlands/Osage Savanna-Ouachita ecotone.

Soil Type: Stidham loamy fine sand.

Land-use: Residential and horticultural.

Recovered Materials: Dart points - 2; dart point fragments - 2; preforms - 1; unidentified biface fragments - 1; metate fragments - 1; core fragments - 1; modified flakes - 15; unmodified flakes - 93; misc. debris - 3 (see Figure 6).

Represented Lithic Types: Woodford-like chert 20.1%; Bigfork chert 3.3%; novaculite 7.5%; unidentified cherts and flints 54.6%; unidentified quartzites 11.7%; misc. materials - 1%.

Site Evaluation and Recommendations: Artifacts collected from a two acre area surrounding landowner's house which appears to have been built near center of site (Figure 8). Erosion is severe along the southwestern ridge flank; this region has also been disturbed by grading activities. This occupation will not be affected by future U.S. 69 construction and, therefore,

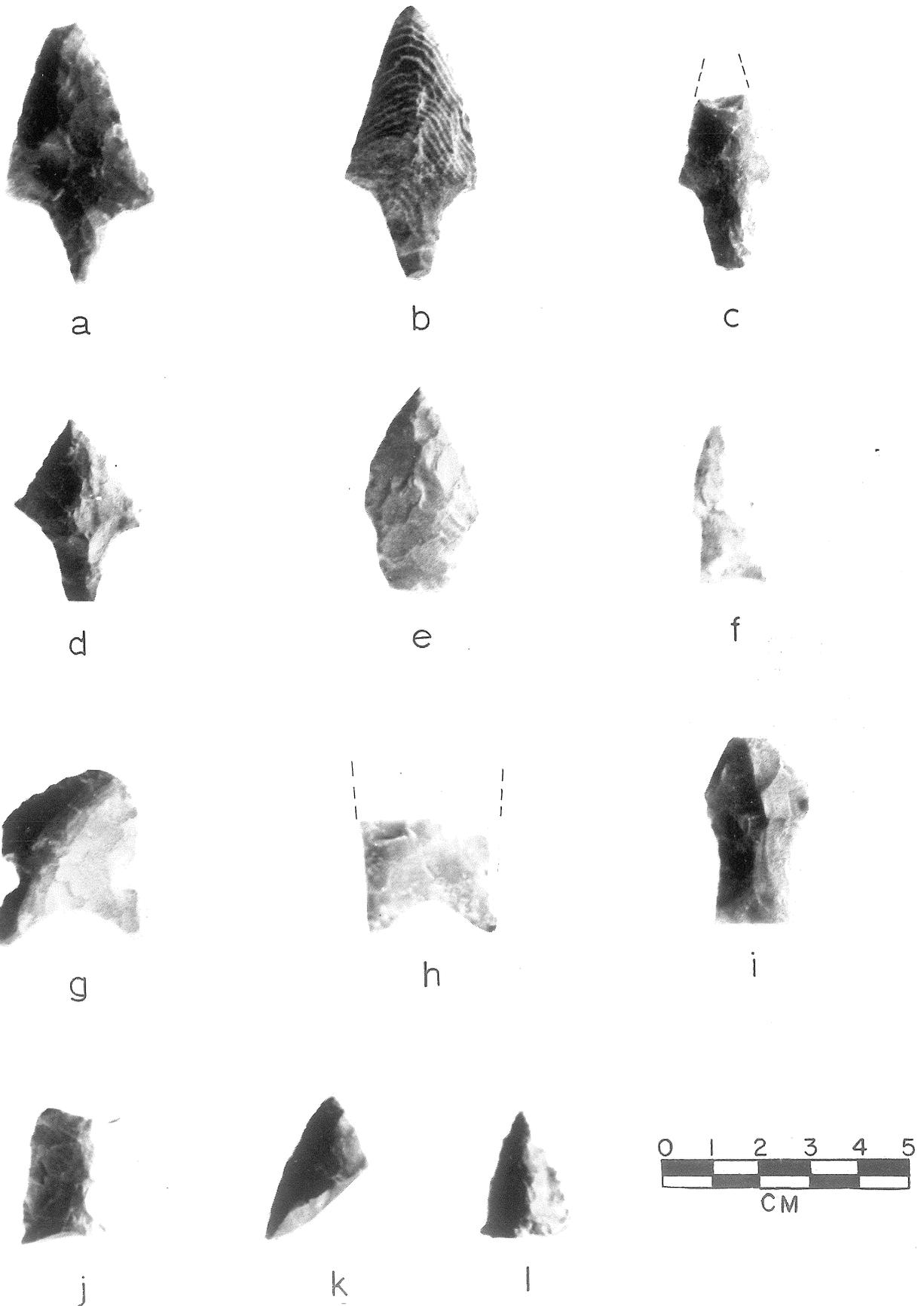


Figure 7. Ps-82, Berry Collection, Artifacts: a-1, projectile points and fragments (a-d, Gary; e, broad contracting-stemmed point, Gary?; f, Kent/Yarbrough variant; g, Frio, reworked into end scraper; h, Plainview base; i, Carrollton-like, reworked; j, midsection; k and l, tips).

cannot be investigated further by this agency. However, it is recommended that the Oklahoma Archaeological Survey conduct more extensive tests to obtain additional data pertaining to the preservation and extent of this prehistoric habitation.

Temporal-Cultural Relationships: This site appears to be a multicomponent site probably representing several stages of the Archaic Tradition. This conclusion is based upon materials recovered by OHAS as well as an evaluation of the landowner's personal collection. These materials include a variety of dart points such as Plainview, Dalton-like, Godley, Ellis-stemmed, Frio, and Gary (Figure 7).

Ps-83

Site Classification: Open site; camp and/or workshop area(?)

Land Resource Area and Biotic District: Ouachita Highlands/Osage Savanna-Ouachita ecotone.

Soil Type: Dougherty loamy fine sand.

Land-use: Pasture.

Recovered Materials: Dart point bases -1; core fragments -1; modified flakes - 8; unmodified flakes - 87; misc. debris - 2 (see Figure 6).

Represented Lithic Types: Zipper-like flint 3%; unidentified quartzite 5.1%; unidentified cherts and flints 91.9%.

Site Evaluation and Recommendations: Core auger tests and soil profiles indicated that the cultural deposit extended from just below the surface to a depth of about 10". However, this evaluation was made from limited testing and may not be representative of the overall site content. Habitational material was distributed over 1½ acres but appears concentrated near toe of ridge close to a runoff tributary. This site will not be affected by the present design features of the project. Therefore, in accordance with OHAS guidelines, no further archaeological investigation is recommended.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite relationships or affiliations can be assigned to this site. However, the presence of a contracting stem, straight base dart point indicates a possible relationship to an Archaic assemblage.

Ps-84 (Figure 8)

Site Classification: Open site; camp and/or workshop.

Land Resource Area and Biotic District: Ouachita Highlands/Osage Savanna-Ouachita ecotone.

Soil Type: Dougherty loamy fine sand and Guin gravelly sandy loam.

Land-use: Pasture.

Recovered Materials: Biface fragments - 1; modified flakes - 7; unmodified flakes - 133.



a



b

Figure 8. Views of Archaeological Sites: a, Ps-82, looking northwest, landowner's home at far right; b, Ps-84, looking southeast toward Peaceable Creek.

Represented Lithic Types: Bigfork-like chert 2.1%; Zipper-like flint -1%; quartzites (incl. Ogallala) 29.8%; unidentified cherts and flints 67.3%.

Site Evaluation and Recommendations: Horizontal distribution of cultural remains indicates a site extent of several acres. Depth and nature of occupational deposit was not evaluated. Ps-84 lies outside the project corridor and will not be affected by proposed construction. No further work is recommended.

Temporal - Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited materials recovered from the site.

Ps-85

Site Classification: Open site; camp and/or workshop (?).

Land Resource Area and Biotic District: Ouachita Highlands/ Osage Savanna-Ouachita ecotone.

Soil Type: Stidham loamy fine sand and Konawa soils.

Land-use: Agricultural and borrow fill area.

Recovered Materials: Preforms -1; unidentified biface fragments -2; (possible knife section -1); flake graters - 1; unmodified flakes - 6; misc. debris -1 (see Figure 6).

Represented Lithic Types: Bigfork-like chert 27.3%; unidentified quartzites 9.1%; unidentified cherts and flints 63.6%.

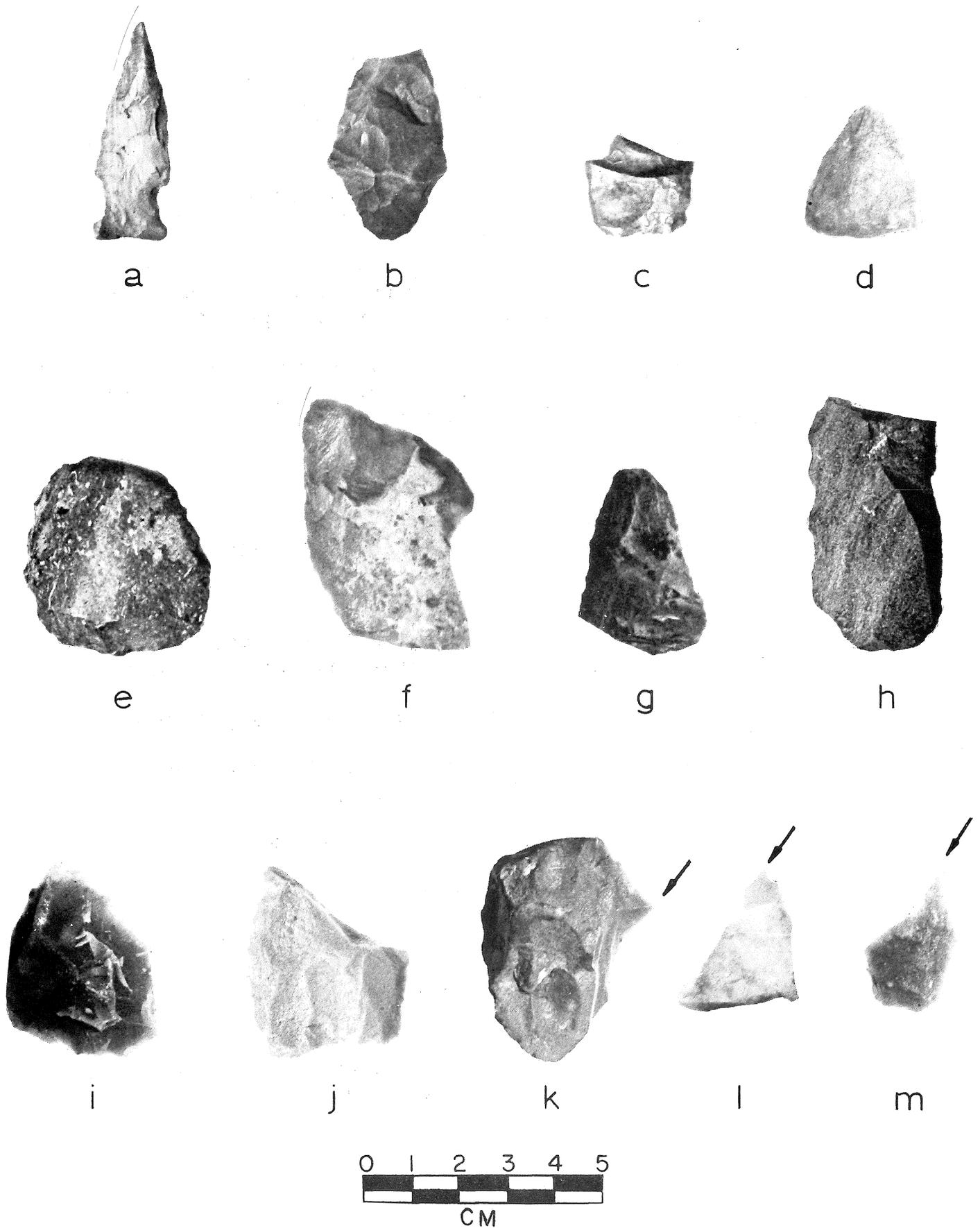


Figure 9. At-24 Artifacts: a and b, projectile points (a, Ensor-like; b, Gary); c, projectile point base; d, gouge; e-g, scraper (e, end; f and g, side); h-j, preforms; k-m, gravers. Arrows indicate graver tips.

Site Evaluation and Recommendations: Ps-85 has undergone extensive disturbance by borrow pit and agricultural activities. The cultural deposit is apparently shallow and sparsely distributed over an area in excess of one acre. This site will not be affected by the present design features of the U.S. 69 project and, therefore, no further archaeological investigations are merited.

Temporal-Cultural Relationships: As regards cultural affinities, nothing can be inferred from the undiagnostic materials collected from the site.

ATOKA COUNTY - DIVISION II

Survey Limits: U.S. 69 Corridor A, B and C. Pittsburg-Atoka County line southwesterly approximately 43 miles to Atoka-Bryan County line.

At-24

Site Classification: Open site; camp/workshop activities.

Land Resource Area and Biotic District: Cross Timbers/Osage Savanna.

Soil Type: Bernow soils; fine sandy loam (1-3% slopes).

Land-use: Agricultural

Recovered Materials: Dart points - 2; projectile point fragments - 1; preforms - 6; unidentified bifaces - 1; scrapers - 4; graters - 3; gouges - 1; hammerstones - 3; modified flakes - 24; cores and fragments - 2; modified cobbles - 1; unmodified flakes - 151; misc. debris - 17 (see Figure 9 and 11).

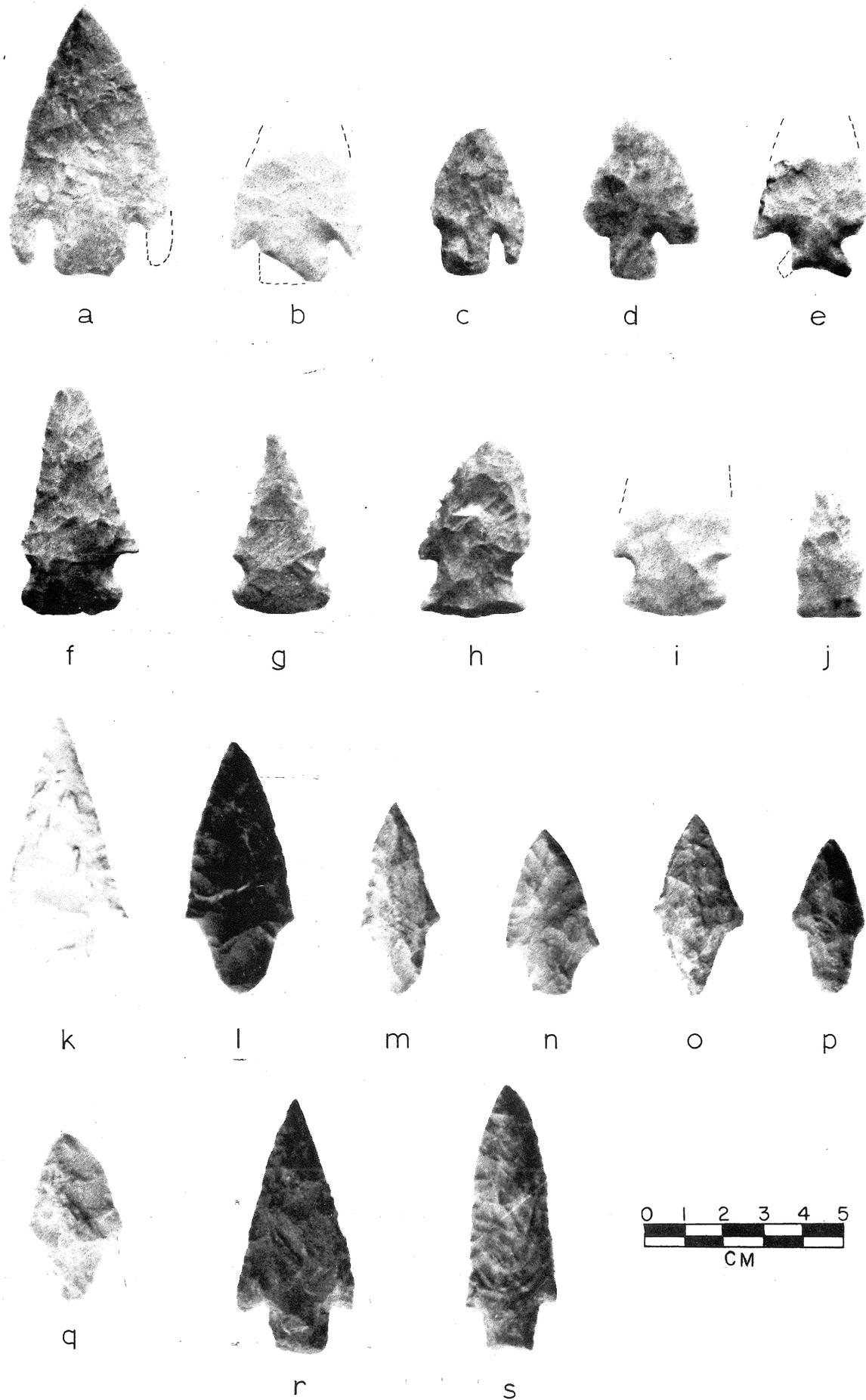


Figure 10. At-24 (a-j) and At-51 (k-s), Charles Pruitt Collection, Artifacts: a-s, projectile points (a-c, Marshall-like; d, Marcos-like; e, Frio-like; f and g, Godley-like; h, Ensor-like; i, Williams; j, unidentified parallel-stemmed; k-p, Gary; q, projectile preform - Gary?; r and s, unidentified contracting-stem - Gary/Langtry variant?).

Represented Lithic Types: Frisco-like flint 6.1%; Zipper flint -1%; novaculite 10.4%; jasper-like -1%; unidentified quartzites 50.7%; unidentified cherts and flints 32%.

Site Evaluation and Recommendations: Cultural material recovered from 10 acre area along crest of ridge. Evaluation of vertical context was not made since site lies outside project rights-of-way. In accordance with highway guidelines additional research is not recommended.

Temporal-Cultural Relationships: Site appears to be represented by an Archaic assemblage. This conclusion is based upon materials collected by OHAS as well as an evaluation of the landowner's personal collection of dart points (Figure 10).

At-32 (Figure 19)

Site Classification: Open site; camp/workshop (?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam and Ender-Hector complex.

Land-use: Pasture

Recovered Materials: Dart points - 1; preforms - 2; modified flakes - 5; hammerstone fragments - 1(?); cores and fragments - 4; unmodified flakes - 87; misc. debris - 7 (see Figure 11).

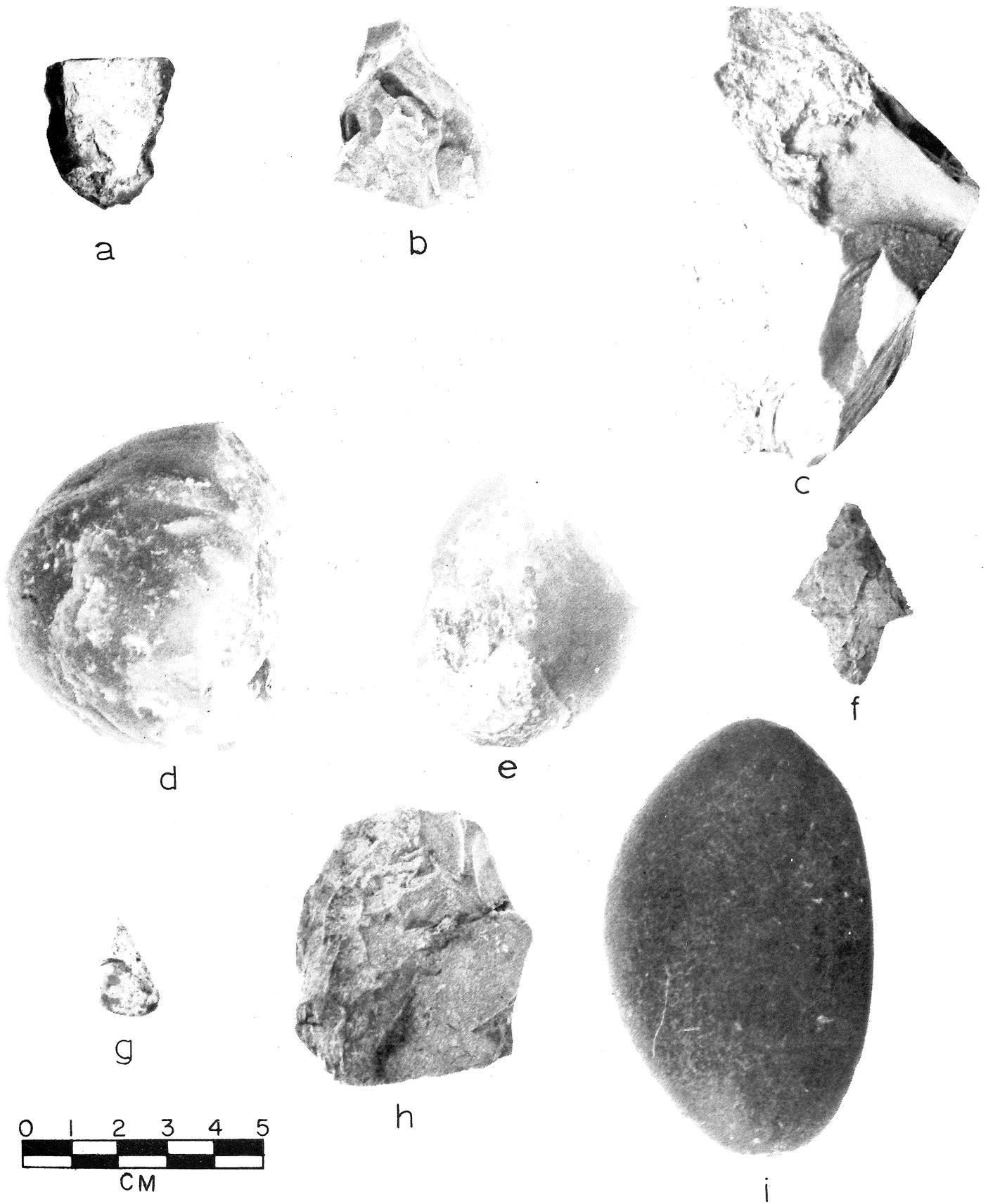


Figure 11. At-24 (a-e) and At-32 (f-i) Artifacts: a, modified flake; b, c, h, cores (b, expended; c and b, multifaceted); d, e, i, hammerstones; f, projectile point (Gary); g, projectile point preform (Fresno-like).

Represented Lithic Types: Novaculite 8.2%; Frisco-like flint 1.7%; hematite -1%; sandstone 1%; unidentified quartzites 23.7%; unidentified cherts and flints 64.5%.

Site Evaluation and Recommendations: Cultural debris found scattered over an area not exceeding 3 acres. Posthole tests suggest that occupational deposit is confined to surface or just below. Although At-32 will be affected by the U.S. 69 project, the limited nature of collected materials precludes additional archaeological investigations.

Temporal-Cultural Relationships: A possible late Archaic manifestation is represented. Further assessment based upon the sparse amount of cultural remains recovered would not be feasible.

At-33

Site Classification: Open site; camp/workshop.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Larton loamy fine sand and Bernow soils.

Land-use: Pasture

Recovered Materials: Arrowpoints - 1; preforms -2; unidentified biface fragments - 1; gouges - 1; modified flakes - 4; cores and fragments - 6; unmodified flakes - 82; misc. debris - 7 (see Figure 12).

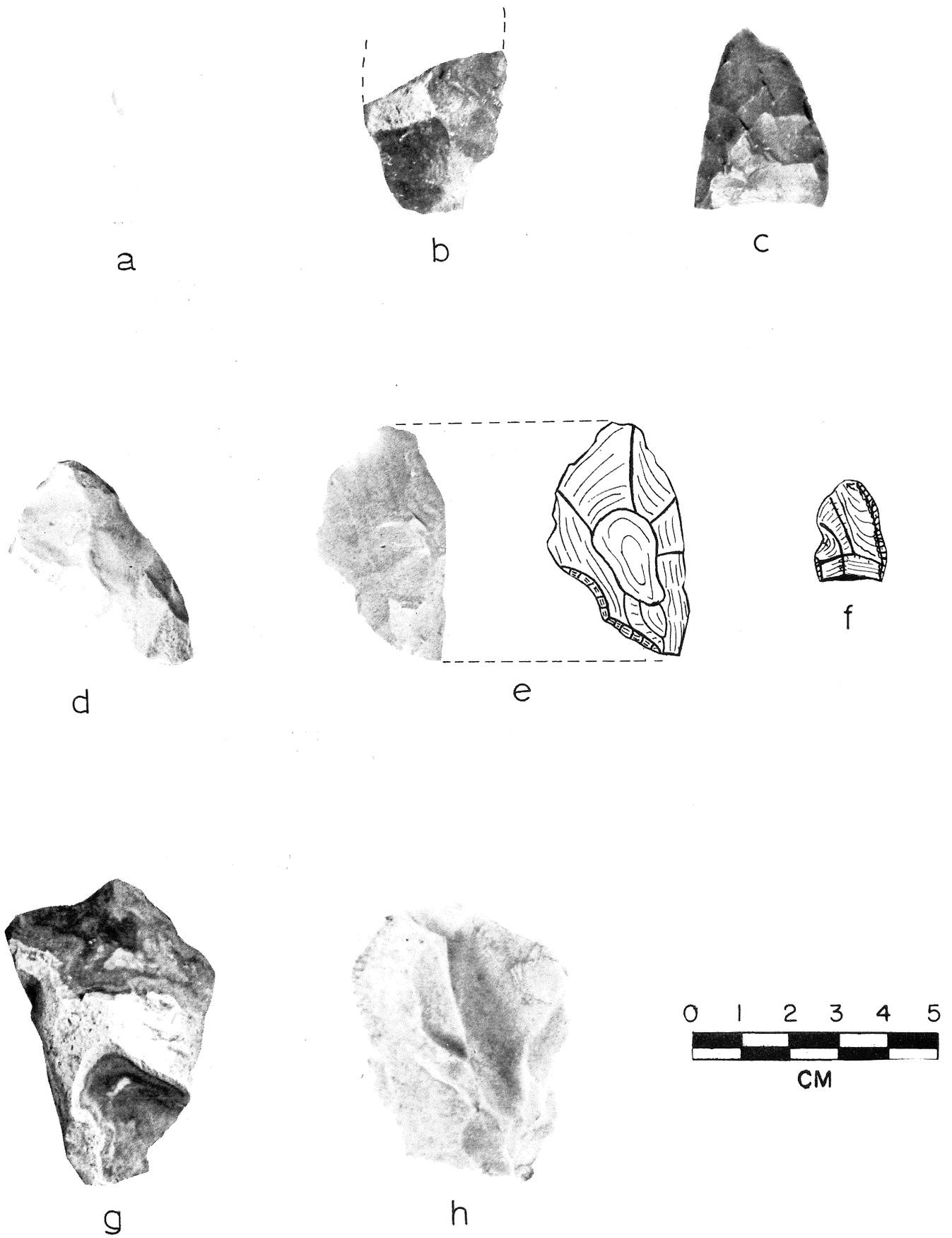


Figure 12. At-33 Artifacts: a, projectile point (Scallorn); b, projectile point preform; c, gouge; d, preform fragment; e and f, modified flakes; g, core/preform; h, multifaceted core.

Represented Lithic Types: Frisco-like flint 10%; novaculite 2.4%; quartzites (inc. Ogallala) 32.8%; unidentified cherts and flints 54%; misc. materials -1%.

Site Evaluation and Recommendations: Areal site extent was originally believed to be about two acres; however, the recovery of artifacts in the area between At-33 and At-34 may indicate that the two sites are contiguous. At-33 has undergone severe disturbance by both natural erosion and pond construction. Soil profiles reveal an upper horizon of 8" of fine sandy loam containing small chert, quartzite and sandstone gravels underlain by 5-10" of clayey loam. Observed cultural debris tended to be thinly distributed and located near or on present ground surface. Although At-33 will be affected by future highway construction, further research is not warranted due to the disturbed nature of the site and insufficient cultural density.

Temporal-Cultural Relationships: Analysis of material and evaluation of landowner's personal collection suggests a multicomponent (Archaic and late pre-historic) occupation.

At-34

Site Classification: Open site; camp and/or workshop.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam and Bernow soils (2-8% slopes, severely eroded).

Land-use: Pasture and horticulture.

TUSHKA BYPASS
U.S.69 PROJECT
RF-219(63)
ATOKA COUNTY
OKLAHOMA



LEGEND:

- New Alignment (A)
- - - Parallel Alignment (B)
-  Archaeological Site



Figure 13

Recovered Materials: Arrowpoints - 1; preforms -2; modified flakes - 11; cores and fragments - 4; unmodified flakes - 99; misc. debris - 16 (see Figure 14).

Represented Lithic Types: Frisco-like flint 2.5%; novaculite 16.6%; Zipper flint - 1%; quartzite (inc. Ogallala) 41%; unidentified cherts and flints 38.3%.

Site Evaluation and Recommendations: Areal site extent although indefinite, is probably 3-4 acres with main occupation situated on sloping terrace flanks. The cultural deposit lies in the sandy "A" horizon from 6-18 inches deep. However, plowing and deflation along the sloping terrace edge has disturbed the upper 6-12" of natural stratigraphy consequently destroying the site's cultural integrity in the region. Posthole tests indicate 7-12" of light tan to brown sandy loam underlain by yellow or reddish tan sandy clayey loam containing chert, sandstone, and hematite gravels. Even though no evidence of intense occupation or concentration of materials were observed during testing, it is recommended that several 5'x5' squares be dug in undisturbed portions of the site since At-34 will be directly affected by the northbound lane of the Tushka Rest Area, Alignment A (see Figure 13).

Temporal-Cultural Relationships: The artifacts recovered by the landowner and OHAS suggest a multicomponent Archaic and later prehistoric occupation similar to that of At-33. As previously mentioned, At-33 and At-34 may actually be one continuous site. However, this relationship cannot be definitely demonstrated with the information presently available.

At-35

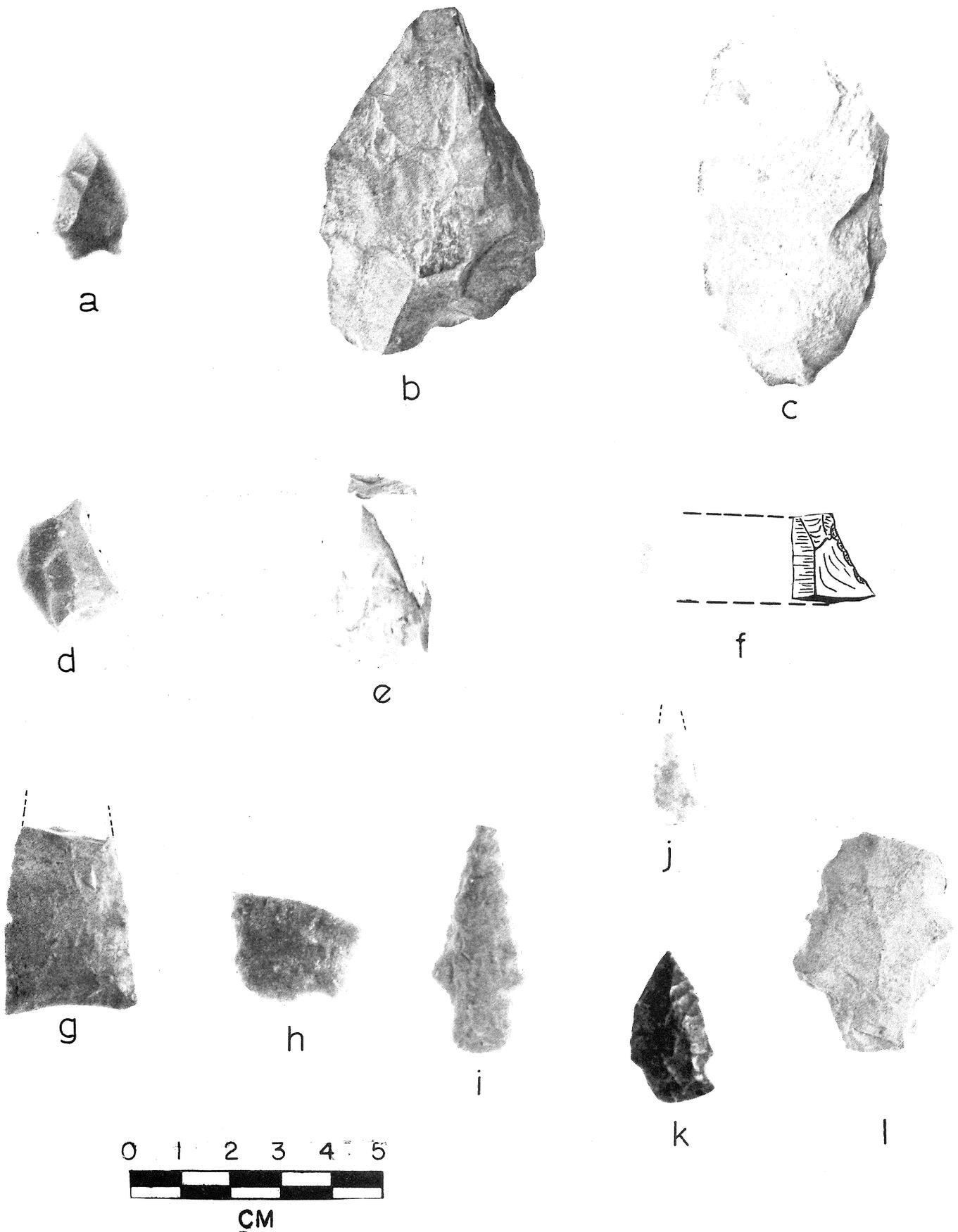


Figure 14. At-34 (a-f) and At-36 (g-l) Artifacts: a, arrowpoint, minimal modification; b and c, preforms; d and e, expended cores; f, modified flake; g-k, projectile points (g, Plainview-like; h, Catan/Abasolo-like; i, corner-notched, slightly expending stemmed, convex base; j, Scallorn-like?; k, Ellis-like); l, projectile point preform.

Site Classification: Open site; camp/workshop activities (?)

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils 2 to 8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Dart point fragments - 1(?); unmodified
flakes - 21.

Represented Lithic Types: Unidentified quartzites 50%;
unidentified cherts and flints 50%.

Site Evaluation and Recommendations: The surface of this site has been severely eroded by sheet erosion and massive runoff gullies. Horizontal distribution of cultural remains indicates a site extent of several acres. Exploratory tests revealed that the occupational deposit is extremely scattered and confined to the surface or just below. At-35 will be affected by the southbound lane of a Rest and Parking facility along Alignment A (Figure 13). However, in consideration of the extremely limited and disturbed nature of the occupational mantle, no further archaeological investigations are warranted.

Temporal-Cultural Relationships: The general paucity and undiagnostic nature of recovered materials preclude a cultural assessment. The proximity of this site to At-33 and At-34 may indicate an associated activity area.

At-36

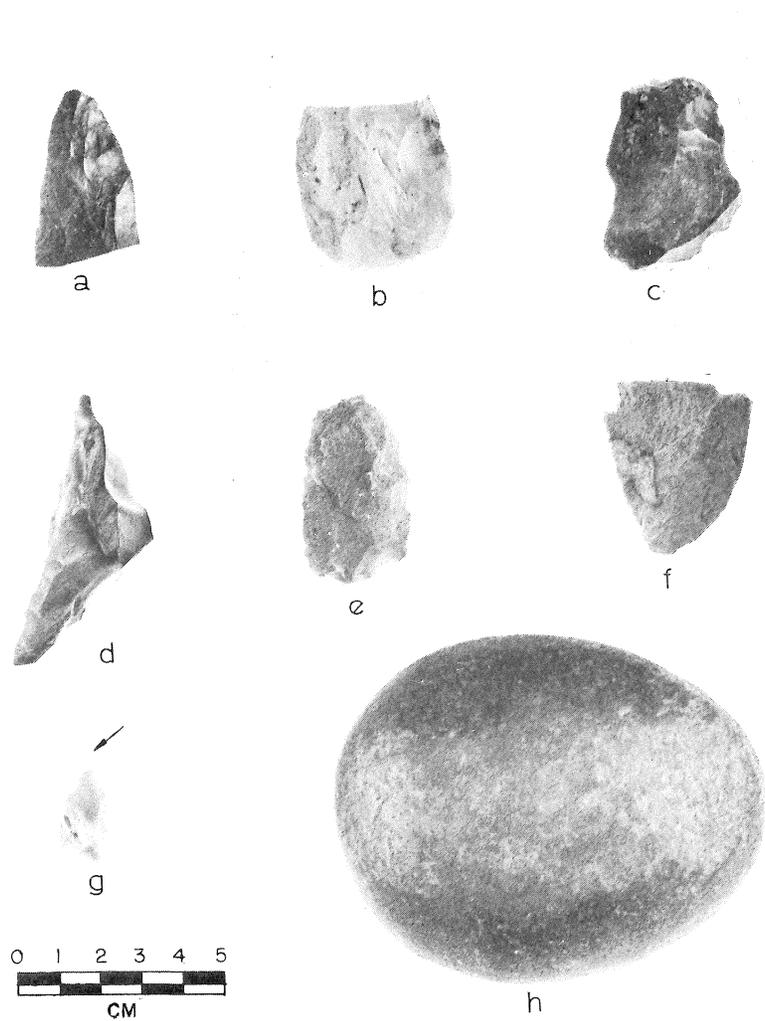


Figure 15. At-36 Artifacts: a and b, knife fragments; c and d, scrapers (c, end; d, side); e and f, preforms; g, graver; h, hammerstone. Arrow indicates graver tip.

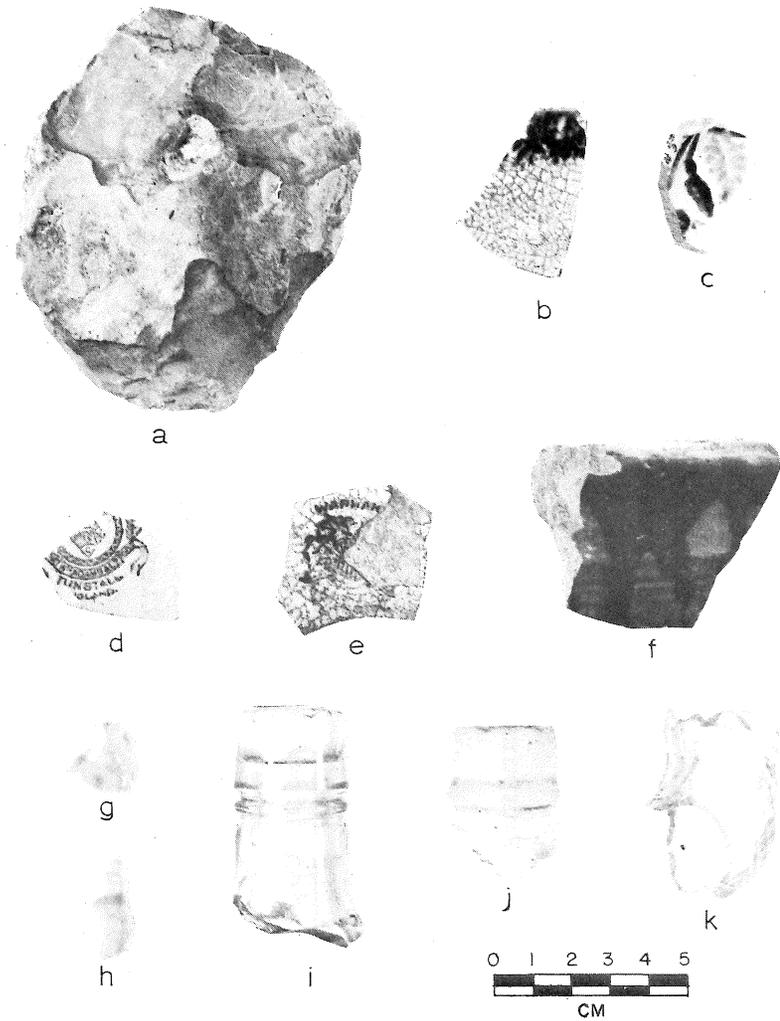


Figure 16. At-36 Artifacts: a, core/preform; b, unidentified blue decorated edged ware; c, handpainted floral polychrome ware; d and e, undecorated white ironstone plate (?) base with transfer-printed potter's marks (d, "WM. ADAMS & CO./TUNSTALL/ENGLAND", manufactured after 1896; e, ((WARRAN(TED)))"); f, salt glazed stoneware; g and h, ceramic doll parts; i and j, bottle necks (i, pale purple machine-made?; j, aquamarine blown in mold); k, clear glass toy pistol fragment.

Site Classification: Open site; large prehistoric camp and workshop area and historic homestead.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils (2-8% slopes, severely eroded).

Land-use: Agricultural

Recovered Materials: Dart points -3; dart point fragments - 1; arrowpoints - 1; knives - 2; preforms -4; unidentified biface fragments - 4; scrapers - 4; graters - 1; grinding stone fragments - 1; hammerstones and fragments -5; modified cobbles - 2; modified flakes - 23; cores and fragments - 19; unmodified flakes - 262; misc. debris - 60 (see Figure 14-16).
Historic materials: flow blue - 1; handpainted wares - 2; transferwares - 4; misc. decorated edged wares -1; undecorated white ironstone - 6; misc. blue decorated wares - 3; stonewares - 6; pearlwares - 2; porcelain - 1; semi-porcelain doll parts - 4; ceramic button - 1; fruit jar liners - 2; bottle bases - 1; bottle necks - 8; bottle fragment - 1; lantern globe fragments - 1; toy glass pistol fragment - 1; unidentified glass fragments - 2; metallic shotgun shell bases - 1; iron latch - 1; unidentified metal fragments - 1 (see Figure 16).

Represented Lithic Types: Novaculite 3.8%; Frisco-like flint 3.6%; Bigfork-like chert -1%; Woodford-like chert -1%; Zipper flint -1%; unidentified cherts and flints 49.9%; quartzites (inc. Ogallala) 40.5%; petrified wood -1%; misc. materials 1.5%.

Site Evaluation and Recommendations: Due to this site's size, about 5 acres, At-36 was divided into two separate areas for the purpose of surface collection. Posthole and soil auger tests in these areas suggest that the cultural deposit is shallow. Extensive agricultural activities over the years seem to have adversely affected site integrity. Since At-36 lies 120 feet west of the proposed frontage road paralleling the southbound lane, Alignment A (Figure 13),

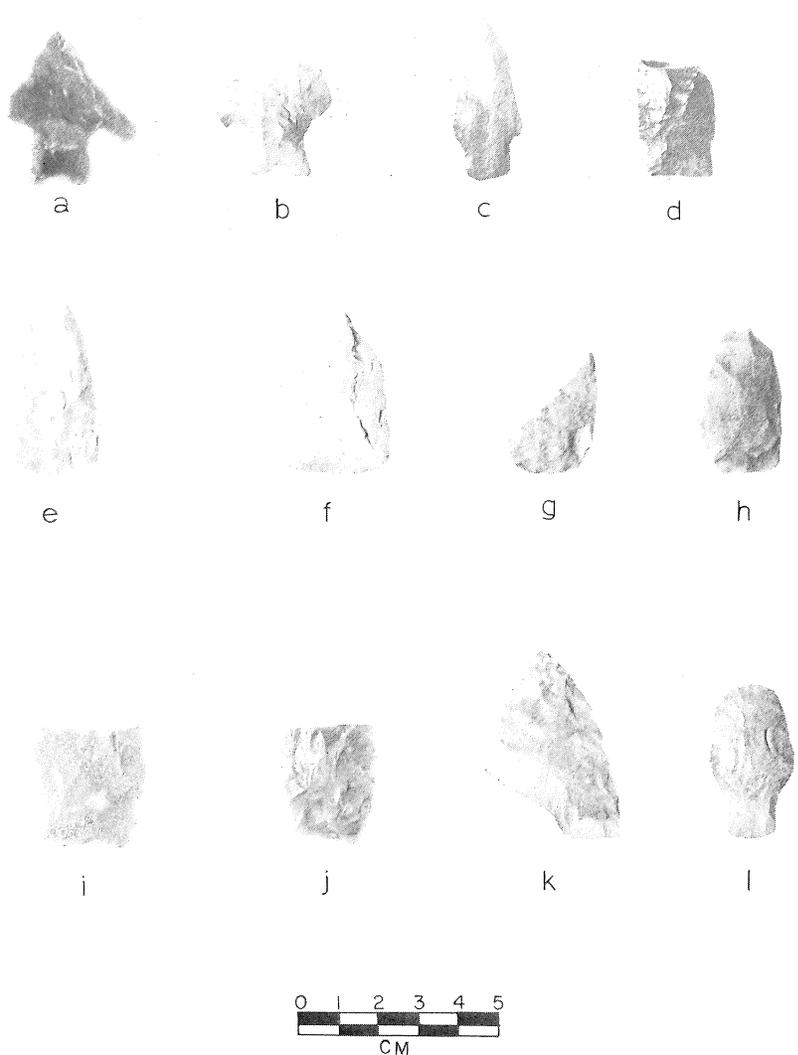


Figure 17. At-37 Artifacts: a-d, f-h, projectile points (a, Calf Creek; b, Montell-like; c, parallel-stemmed, slightly convex base; d, Scottsbluff-like; f, Abasolo-like, possible knife; g and h, Abasolo/Catan variant); e, projectile point midsection (Meserve-like?); i and j, unidentified biface fragments with basal and lateral grinding; k, knife fragment; l, end scraper (reworked dart point).

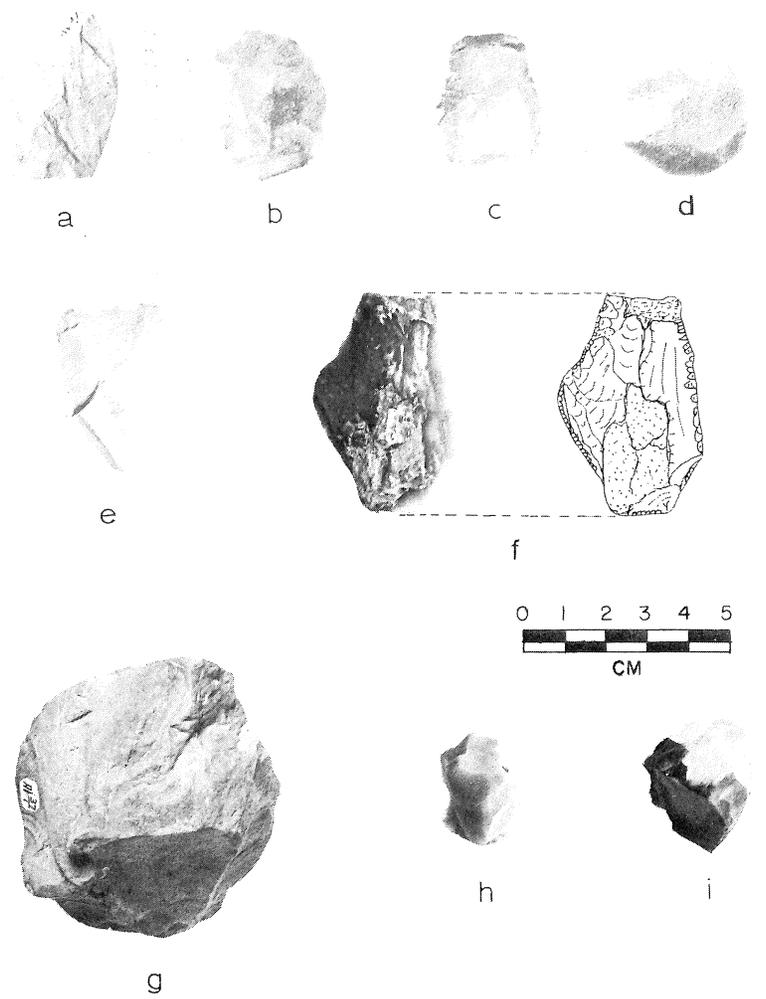


Figure 18. At-37 Artifacts: a and b, preforms; c-e, scrapers (c, hafted end; d end/side; e, concave side), f, modified flake; g-i, cores (g, multi-faceted; h, bipolar; i, expended).

further controlled work by OHAS is not recommended. However, peripheral areas should be monitored during construction by the contractor under Standard Specifications Section 202.04(a) and (b).

Temporal-Cultural Relationships: Artifacts collected from the surface indicate a multicomponent occupation(s): Archaic, late prehistoric, and historic. The majority of lithic specimens infer that the Archaic assemblage is the best represented component. As regards the historic occupation, recovered debris would point to a late 19th century habitation of unknown cultural affiliation.

At-37

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils 2-8% slopes, severely eroded; and Larton loamy fine sand.

Land-use: Sandy quarry and pasture.

Recovered Materials: Dart points - 8; knives - 4; preforms- 7; unidentified biface fragments - 3; scrapers - 4; cores and fragments - 40; modified flakes - 41; unmodified flakes - 279; faunal debris - 9; misc. debris - 62 (see Figures 17 and 18).



a



b

Figure 19. Views of Archaeological Sites: a, At-32, facing north toward ridge line; b, At-38, looking southwest across cultivated peanut field.

Represented Lithic Types: Frisco-like flint 2.2%; Bigfork-like chert -1%; Zipper-like flint -1%; Woodford-like chert 2.2%; unidentified cherts and flints 49.7%; unidentified quartzites 41.7%; petrified wood 1.1%; misc. debris 1.6%.

Site Evaluation and Recommendations: In 1973 it was observed that this site had undergone severe disturbances by earthmoving (sand quarry) activities and subsequent runoff erosion (Figure 21). Horizontal distribution of exposed artifacts indicate a 3 to 4 acre site extent. Most posthole tests of the undisturbed western section reveal that the cultural deposit is probably confined to the upper 12-18" of topsoil. This occupational mantle may have been considerably deeper in the quarry area at one time. At-37 will be affected by Alignment A and possibly by Alignment B (Figure 13); therefore, further evaluative testing is recommended to determine site extent and nature of occupational deposit(s), if any.

Temporal-Cultural Relationships: Artifact analysis suggests an Archaic manifestation. Unfortunately, very little archaeological field work has been done in this region of southeastern Oklahoma, thus making a more definitive statement regarding cultural affiliations impossible. Known Archaic-style projectile points, however, do indicate an approximate age of 2000 B.C. to A.D. 1000.

At-38

Site Classification: Open site; camp/workshop (?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

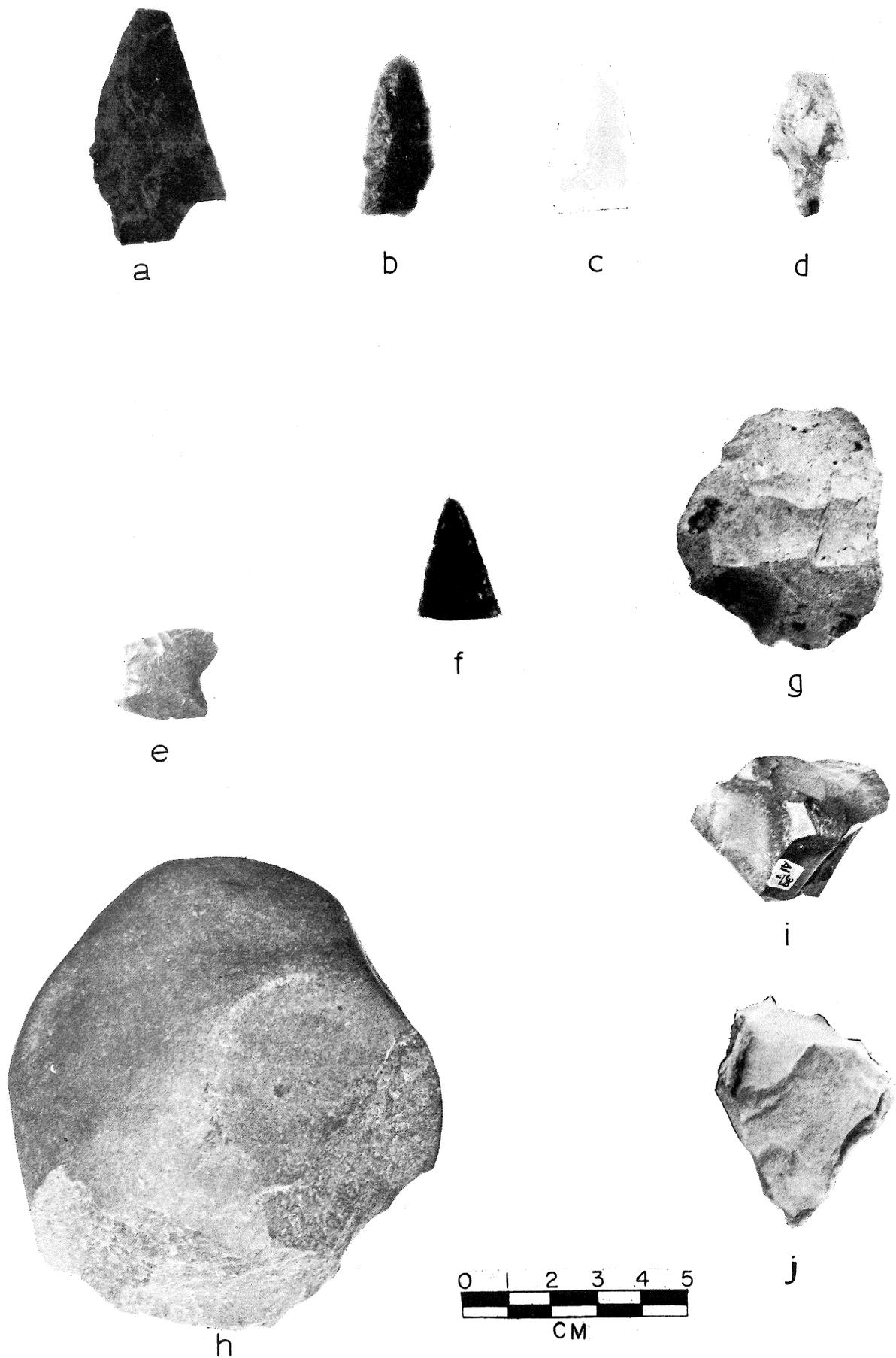


Figure 20. At-38(a-c) and At-39(d-j) Artifacts: a-f, projectile points and fragments (a and d, Gary-like; b, Duncan/Darl variant; c, point midsection; e, base, Godley/Ellis-like; f, point tip, possibly utilized as knife); g, preform; h, cobble chopper; i and j, multifaceted cores.



a



b

Figure 21. Views of Archaeological Sites: a, At-37, view to west-note disturbances by sand quarry activity and runoff erosion; b, At-40, facing northeast toward ridge toe which has been partially destroyed by quarrying.

Soil Type: Bernow fine sandy loam, 1-5% slopes, eroded.

Land-use: Agricultural

Recovered Materials: Dart points - 2; dart point fragments - 1; modified flakes - 1; cores and fragments - 4; misc. debris - 23 (see Figure 20).

Represented Lithic Types: Novaculite 18.4%; quartzites (inc. Ogallala) 60.2%; unidentified cherts and flints 21.4%.

Site Evaluation and Recommendations: Site situated in a large cultivated peanut field and has been greatly affected by heavy agricultural practices and gullying (Figure 19). Sparsely scattered lithic material was recovered from a 2-3 acre area. Vertical distribution of the cultural deposit is apparently quite thin, being confined to the surface or just below. At-38 is not within the proposed construction corridor (Figure 13), thereby precluding additional OHAS involvement.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite relationships can be assigned to this site. Nevertheless, the presence of certain projectile points indicates a possible Archaic manifestation.

At-39

Site Classification: Open site; camp/workshop (?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

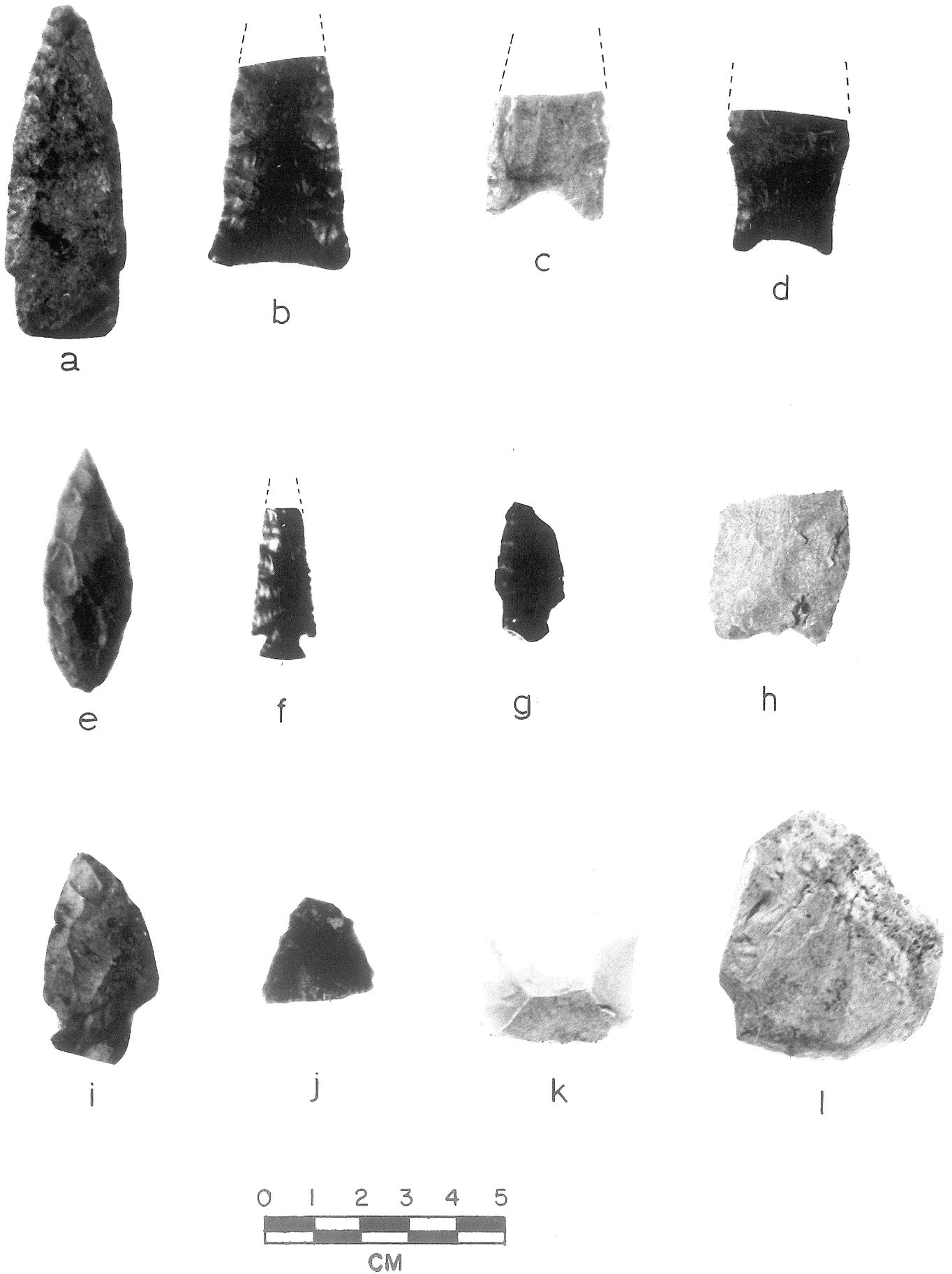


Figure 22. At-40 Artifacts: a-g, projectile points (a, Scottsbluff; b, Dalton/Greenbriar-like; c, Meserve; d, Meserve/Dalton variant?; e, Nodena; f, Scallorn; g, unidentified expanding stem, convex base); h and i, projectile point preforms; j, gouge; k and l, end scrapers.

Soil Type: Bernow fine sandy loam, 1-5% slopes, eroded.

Land-use: Agricultural

Recovered Materials: Dart points - 2; dart point fragments - 2; choppers - 2; modified flakes - 2; cores and fragments - 18; modified cobbles - 2; preforms - 2; unmodified flakes - 64; misc. debris - 33 (see Figure 20).

Represented Lithic Types: Novaculite -1%; unidentified cherts and flints 60.5%; unidentified quartzites 38.7%.

Site Evaluation and Recommendations: This site is located in a cultivated peanut field and has been affected by agricultural disturbance. Although not tested, the cultural deposit appears to be shallow (surface or just below) and distributed over a 1 to 2 acre area. At-39 is situated outside the proposed U.S. 69 rights-of-way (Figure 13). In accordance with OHAS guidelines, additional field work is not recommended.

Temporal-Cultural Relationships: As regards cultural identity, a precise assignment is not possible. The presence of a Gary projectile point and one other dart point base is probably indicative of an Archaic assemblage.

At-40

Site Classification: Open site; camp and workshop.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

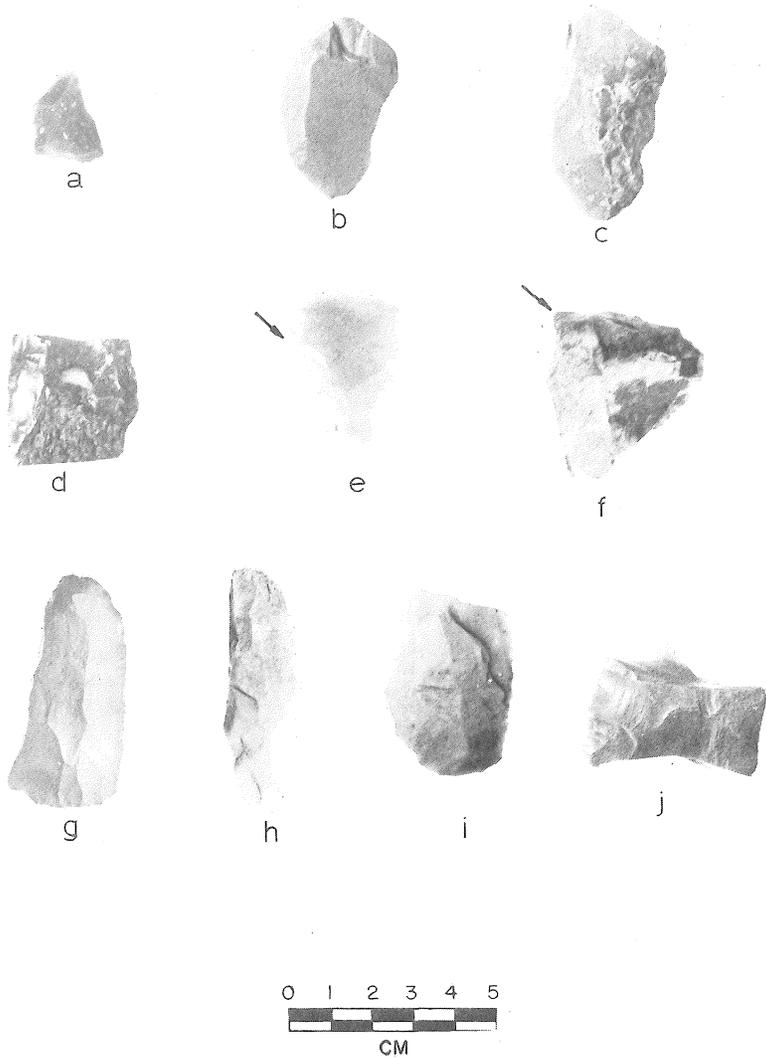


Figure 23. At-40 Artifacts: a-c, scrapers (a, end; b and c, side); d, knife fragment; e and f, graters; g-i, preforms, j, biface fragment. Arrows indicate graver tips.

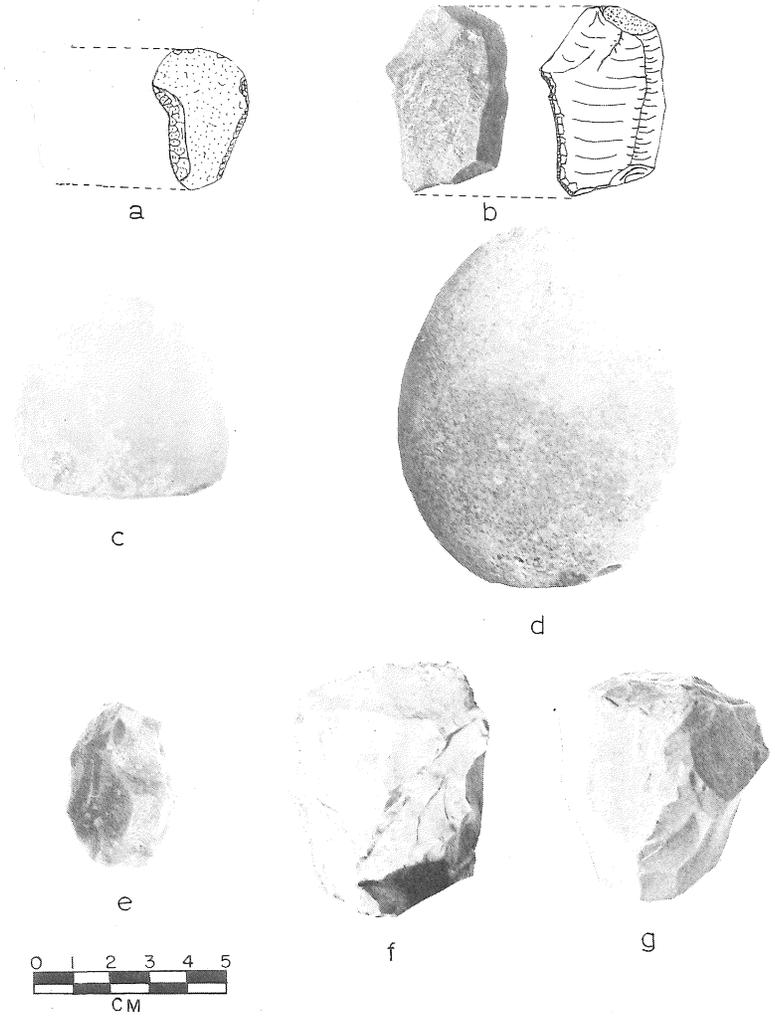


Figure 24. At-40 Artifacts: a and b, modified flakes; c and d, hammerstones; e-g, multifaceted cores.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Sand quarry and pasture.

Recovered Materials: Dart points - 8; dart point fragments - 4; arrowpoints - 1; knives - 2; preforms - 18; unidentified biface fragments - 6; scrapers - 6; gravers - 41; cupstones - 1; hammerstones - 4; cores and fragments - 74; modified flakes - 45; gouges - 1; unmodified flakes - 565; misc. debris - 49 (see Figures 22-25).

Represented Lithic Types: Novaculite 2.43%; jasper -1%; Alibates flints -1%; Frisco-like flint 6.83%; Bigfork chert -1%; Zipper flint -1%; unidentified cherts and flints 52.76%; unidentified quartzites 37%; misc. materials -1%.

Site Evaluation and Recommendations: This site has been utilized as a sand quarry and, as a consequence, been severely disturbed. Habitational debris was recovered over a 3-4 acre area with the greatest concentration of material occurring along the ridge toe where most of the quarry activities had taken place (Figure 21). Since At-40 lies outside the proposed highway rights-of-way (Figure 13), no tests were conducted to determine vertical cultural stratigraphy. One has the impression, however, that the ridge toe was the very center of the prehistoric occupation which has been effectively destroyed by quarry operations. In accordance with OHAS guidelines, future archaeological investigations are not recommended.

Temporal-Cultural Relationships: With regard to cultural affiliations, three separate assemblages are probably represented: Late Paleo-Early Archaic, Middle-Late Archaic and late prehistoric. This conclusion is based upon both OHAS surface collections, as well as the landowner's personal collection which includes Dalton, Plainview, and Calf Creek dart point styles as well as small arrowpoints of the Scallorn type. Interpretation of data is difficult at best due to the degree of stratigraphic disturbance and subsequent admixture of artifacts.

At-41 (Figure 34)

Site Classification: Open site; Workshop/activity area.

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Dart points - 1; cores - 6; modified
flakes - 1; modified cobbles - 2; unmodified flakes -35;
misc. debris - 3 (see Figure 25).

Represented Lithic Types: Unidentified quartzites 39.6%;
Frisco-like flint 2.1%; novaculite 6.2%; unidentified
cherts and flints 52.1%.

Site Evaluation and Recommendations: At-41 is almost due
east and upland from At-40 and northwest and downhill
from At-38. This convenient location may indicate
that At-41 was utilized as a workshop area for either
or both nearby occupations. A very small quantity
of lithic debris was recovered from a 2-3 acre area.
This cultural deposit is apparently shallow and near
the current ground surface. Disturbances which have
affected site preservation include pond construction
and severe gullyng. Even though the site will be
affected by Alignment A (Figure 13), no further archaeo-
logical investigations are merited in light of the
amount of destruction present and insufficient cultural
density.



a



b



c



d



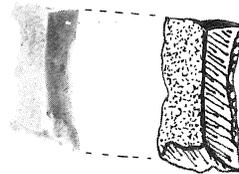
e



f



g



h

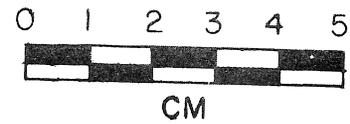


Figure 25. At-40(a), At-41(b and c) and At-42(d-h) Artifacts: a, cupstone; b, d and e, projectile points (b, Gary; d, Gary-like; e, unidentified reworked point); c, multifaceted cores; f, graver; g, concave side scraper; h, modified flake.

Temporal-Cultural Relationships: An Archaic occupation may be inferred from the presence of a finely-made contracting-stem dart point. The lack of additional diagnostic traits precludes further cultural assessments.

At-42

two intermittent tributaries
of Fronterhouse Creek.

Site Classification: Open site; camp/workshop area (?).

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture and agricultural.

Recovered Materials: Dart points - 2; unidentified bifaces fragments - 1; scrapers - 1; graters - 2; cores and fragments - 5; modified flakes - 6; modified cobbles - 1; misc. debris - 54 (see Figure 25).

Represented Lithic Types: Novaculite 16.7%; jasper-like 4.2%; Frisco-like flint 9.7%; unidentified cherts and flints 34.7%; unidentified quartzites 33.3%.

Site Evaluation and Recommendations: The actual size of At-42 is unknown, although it is certainly several acres in extent. Cultural debris is sparse and confined to the upper 5-9" of natural stratigraphy. Site integrity has suffered as a result of runoff erosion and previous agricultural practices. Alignment A of the proposed U.S. 69 project will affect At-42 (Figure 13); however, additional controlled work by OHAS is not recommended due to the disturbed, limited nature of the site. Should Alignment A be

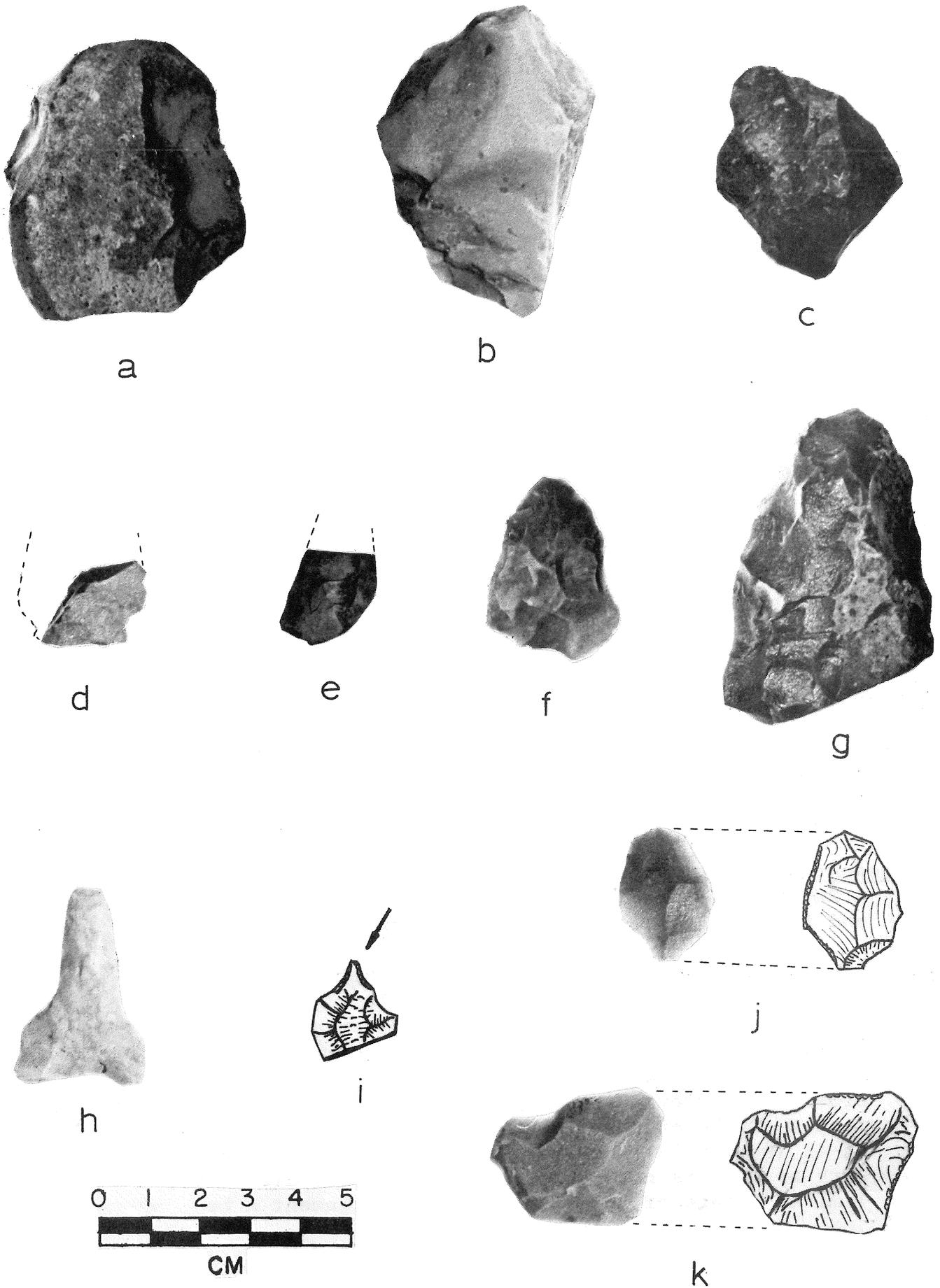


Figure 26. At-42(a-c), At-44(d-g) and At-45(h-k) Artifacts: a, core/preform; b and c, multifaceted cores; d and e, projectile point midsections; f and g, preforms; h, drill (reworked Meserve-like projectile point); i, graver; j and k, modified flakes. Arrow indicates graver tip.

selected as the final corridor it is suggested that the site area be monitored for subsurface features in accordance with Standard Specifications Section 202.04(a) and (b).

Temporal-Cultural Relationships: The site appears to be affiliated with the Archaic period, although a more precise assessment of cultural affinities cannot be made in view of the limited artifact inventory recovered.

At-43

Site Classification: Open site; possible camp/workshop area (?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Modified flakes - 2; unmodified flakes - 34.

Represented Lithic Types: Unidentified quartzites 27.8%; unidentified cherts and flints 72.2%.

Site Evaluation and Recommendations: Cultural material was sparsely scattered over a limited area of less than one acre and was apparently confined to the surface and immediate subsurface. At-43 is located outside of the proposed U.S. 69 rights-of-way and does not merit further research (Figure 13).

U.S. 69 PROJECT
R.F. 219(63)
ATOKA COUNTY
OKLAHOMA



LEGEND:

-  New Alignment (A)
-  Parallel Alignment (B)
-  Archaeological Site



Figure 27

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials collected at this site.

At-44

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded; and Bernow fine sandy loam, 5-8% slopes.

Land-use: Pasture, residential and existing U.S. 69 facility.

Recovered Materials: Dart point fragment - 1; preforms - 3; unidentified biface fragments - 1; cores and fragments - 1; modified flakes - 2; unmodified flakes - 34; misc. debris - 9 (see Figure 26).

Represented Lithic Types: Novaculite 3.9%; unidentified cherts and flints 45.1%; unidentified quartzites 51%.

Site Evaluation and Recommendations: The present U.S. 69 alignment dissects the toe of the ridge and has essentially disturbed or destroyed a large section of the site. Occupational debris was scanty and recovered from an area of approximately 3/4 acres. It was noted that this cultural material occurred within the uppermost soil horizon (6-8" in depth). The only remaining undisturbed portion of At-44 is probably the ridge crest west of the present U.S. 69 facility. This site will be affected by both Alignments A and B of the proposed U.S 69 project (Figure 27). In consideration of the disturbed nature of the occupation and lack of adequate cultural deposition,

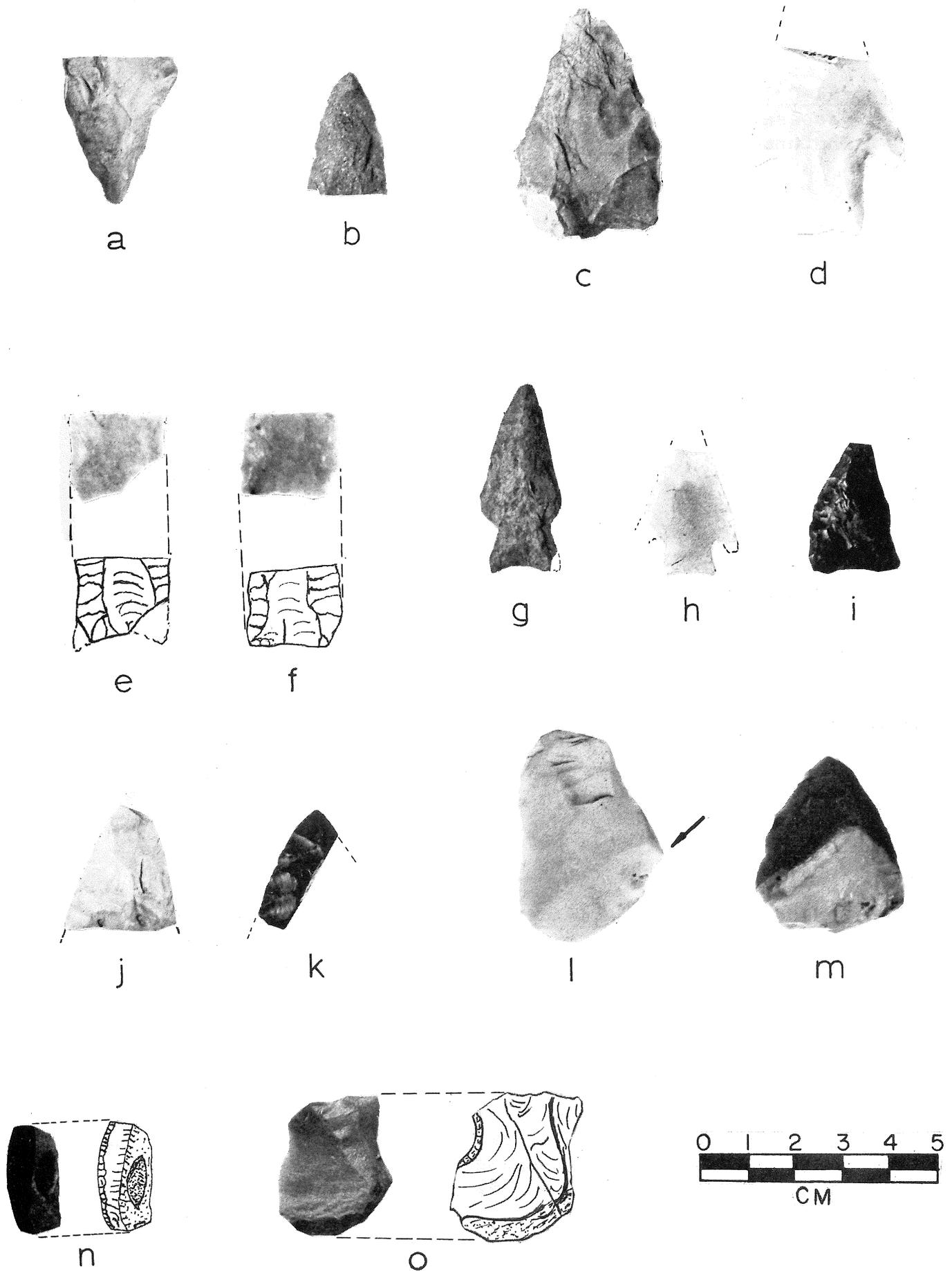


Figure 28. At-46(a-c) and At-47(d-o) Artifacts: a and b, projectile point fragments (a, base, Gary?; b, tip); c, preform, d-k, projectile points and fragments (d, Calf Creek; e and f, Calf Creek bases?; g, Darl-like; h, Edgewood-like; i, reworked Tortugas?; j and k, tip fragments); l and m, end scrapers (l, with graver spur); n and o, modified flakes. Arrow indicates graver tip.

extensive salvage excavations would be inappropriate. However, since At-44 will be totally destroyed by construction activities, limited exploratory testing may contribute to a deeper understanding of this site.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite affiliation can be inferred. The presence of a dart point fragment, however, possibly indicates an Archaic manifestation.

At-45

Site Classification: Open site; camp and workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam, 1-3% slopes and Bernow fine sandy loam, 5-8% slopes.

Land-use: Previously timbered area, recently cleared for pasture.

Recovered Materials: Preforms - 1; drills - 1; gravers - 1; modified flakes - 9; unmodified flakes - 46; misc. debris - 3 (see Figure 26).

Represented Lithic Types: Novaculite 9.8%; Frisco-like flint 1.6%; unidentified cherts and flints 31.2%; unidentified quartzites 57.4%.

Site Evaluation and Recommendations: The site has been unfavorably affected by land clearance and severe gullyng from uncontrolled rapid runoff. A small quantity of lithic debris was collected from a 4-5 acre area. The depth of the cultural deposit was

not tested but it was evident that the site's context has been adversely altered. At-45 is not within the proposed U.S. 69 boundaries (Figure 27); therefore, in accordance with OHAS guidelines, future research at this locale is not recommended.

Temporal-Cultural Relationships: The lack of diagnostic artifacts and extremely limited surface collection prevents any assessment of cultural affiliations or temporal appraisal for At-45.

At-46

Site Classification: Open site; possible camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded and Bernow fine sandy loam, 3 to 5% slopes.

Land-use: Pasture

Recovered Materials: Unidentified biface fragments - 3 (1 possible projectile point section); preforms - 1; ground sandstone - 1; modified flakes - 3; unmodified flakes - 46; misc. debris - 12 (see Figure 28).

Represented Lithic Types: Unidentified quartzites 13.4%; jasper 3%; novaculite 10.4%; siltstone 1.5%; limestone 1.5%; Bigfork chert 7.5%; unidentified cherts and flints 62.7%.

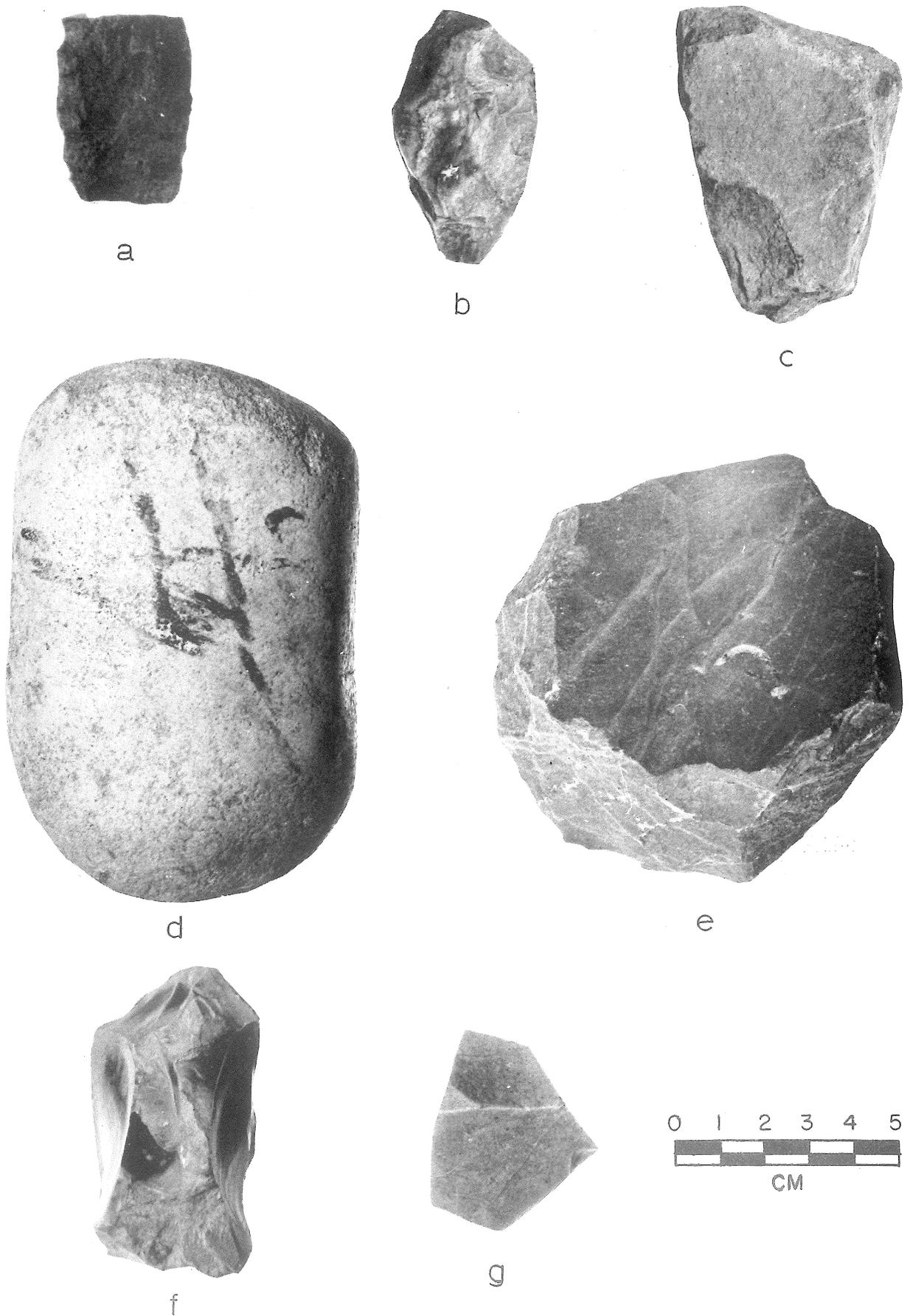


Figure 29. At-47 Artifacts: a and b, preforms (a, projectile point preform/knife); c, grinding stone fragment; d, hammer/pecking stone; e, cobble chopper; f, multifaceted core; g, core fragment.

Site Evaluation and Recommendations: At-46, though previously under cultivation, has now reverted to pasture land. Areal site extent is about ½-1 acre in size with a thin occupational deposit. Diagnostic artifacts, features or concentrations of materials were not observed. This site is located west of the new alignment rights-of-way and will not be affected by highway-related construction (Figure 27). In accordance with OHAS guidelines, additional salvage is neither merited nor recommended.

Temporal-Cultural Relationships: Very little can be inferred from the limited amount of collected occupational debris. The presence of two unidentified bifaces, possibly medium-sized dart point fragments, may be indicative of an Archaic assemblage.

At-47

Site Classification: Open site; large camp/workshop.

Land Resource Area and Biotic District: Forested Coastal Plains/Ouachita-Osage Savanna ecotone.

Soil Type: Bernow fine sandy loam, 1-3% slopes.

Land-use: Agricultural

Recovered Materials: Dart point fragments - 5; preforms - 2; choppers - 1; unidentified biface fragments - 3; scrapers - 2; grinding stones - 3; hammerstone/pecking stone - 1; cores and fragments - 32; modified flakes - 36; graters - 1; unmodified flakes - 823; misc. debris - 9 (see Figures 28 and 29).

U.S. 69 PROJECT
R.F. 219 (63)
ATOKA COUNTY
OKLAHOMA



LEGEND:

- New Alignment (A)
- - - Parallel Alignment (B)
- ▨ Archaeological Site

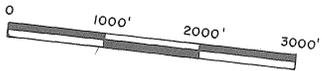


Figure 30

Represented Lithic Types: Novaculite 12.4%; Frisco-like flint 19.3%; Zipper flint -1%; petrified wood -1%; jasper -1%; unidentified cherts and flints 39.5%; unidentified quartzites 26.5%; misc. materials -1%.

Site Evaluation and Recommendations: Although exact site extent could not be determined, it is believed to be no less than 6-8 acres. At the time of OHAS survey, At-47 was under cultivation (peanuts) thus presenting ideal surface conditions. Even though occupational features were not discerned, it was observed that the main concentration of lithic debris occurred in the northeast corner of the field on a series of small knolls. Posthole tests revealed a cultural deposit extending from the surface to a depth of 26". The principal cultural deposit is believed to lie from 18" to 24" below the present ground surface. Since agricultural practices have only affected the upper 9" (plow zone) of stratigraphy, the greatest portion of site integrity is probably intact. At-47 is within the proposed rights-of-way of both Alignments A and B (Figure 30). Since the precise site area, represented occupation(s), and significance of this habitation is not clearly understood, exploratory tests are recommended for further evaluation and mitigation of possible adverse effects created by highway construction.

Temporal-Cultural Relationships: In regards to cultural evaluation, At-47 probably represents a multicomponent site having both Early-Middle and Late Archaic assemblages. Known projectile points recovered infer an age of several thousand years.

At-48

Site Classification: Open site; camp/workshop area.

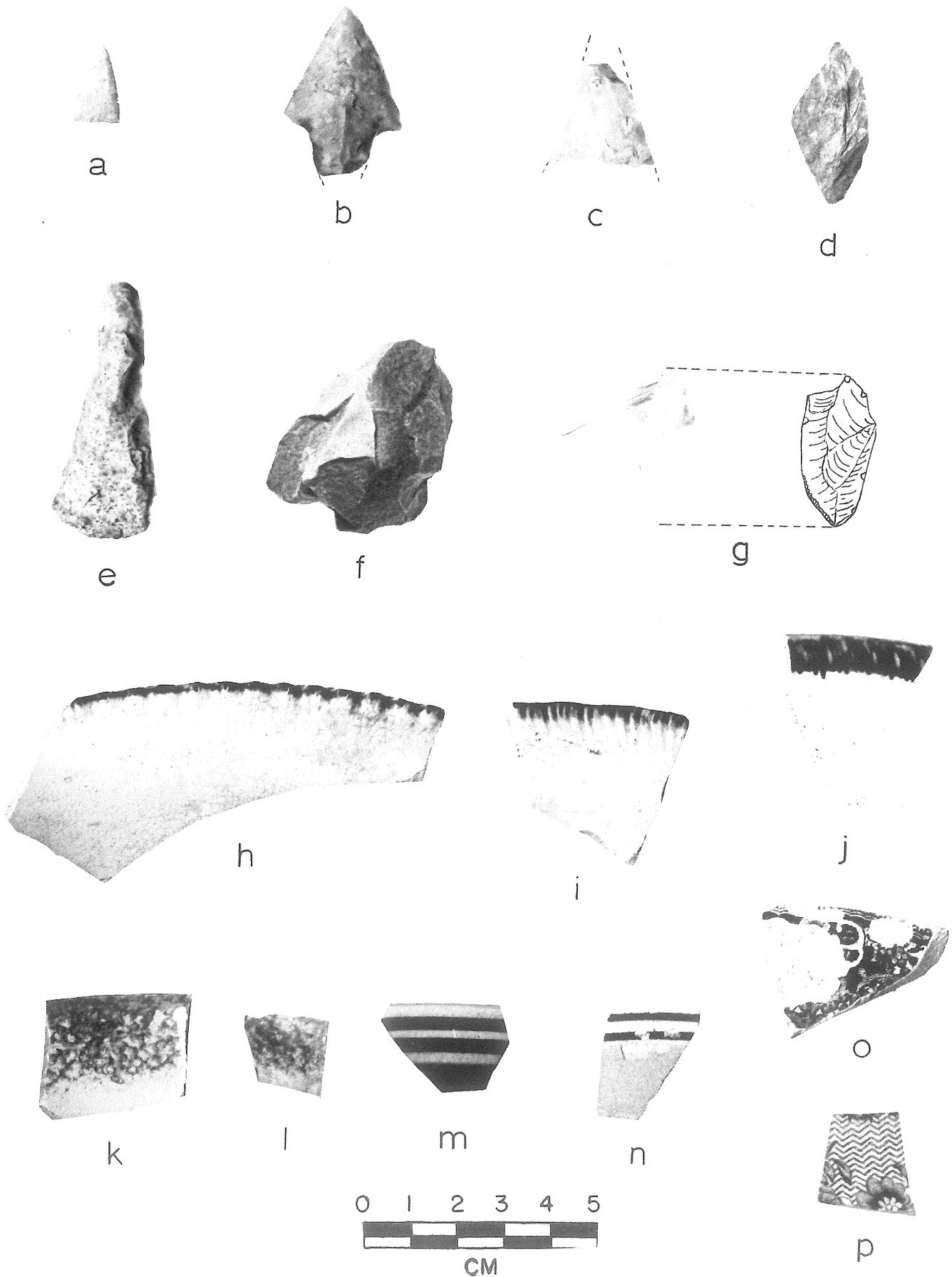


Figure 31. At-48(a), At-49(b-g) and At-50(h-p) Artifacts: a and b, projectile points (a, Fresno; b, Gary); c, projectile point midsection; d, projectile point preform (Gary?); e, drill preform(?); f, multifaceted core; g, modified flake; h-j, shell-edged wares (blue; h, beaded edge); k and l, sponged wares (k, red; l, red and blue); m and n, banded or Mocha wares; o and p, transfer-printed earthenwares (o, brown transfer; p, red transfer).

Land Resource Area and Biotic District: Forested Coastal Plains/Ouachita-Osage Savanna ecotone.

Soil Type: Bernow fine sandy loam, 1-3% slopes.

Land-use: Residential and horticultural.

Recovered Materials: Arrowpoints - 1; preforms - 1; unidentified biface fragments - 2; cores and fragments - 2; modified flakes - 4; unmodified flakes - 31; misc. debris - 4 (see Figure 31).

Represented Lithic Types: Novaculite 2.2%; unidentified cherts and flints 64.5%; unidentified quartzites 33.3%.

Site Evaluation and Recommendations: Areal extent of At-48 is probably one acre with most artifacts recovered from eroded areas surrounding the land-owner's home and along the gullied ridge slopes. Exploratory tests suggest that the cultural mantle lies within the upper 6" of natural stratigraphy. This deposit has been, for all practical purposes, destroyed by natural erosion and farmhouse/out-building construction. At-48 will not be affected by the proposed U.S. 69 alignments (Figure 30) and is not recommended for additional OHAS investigations.

Temporal-Cultural Relationships: The presence of a small arrowpoint suggests that a late prehistoric manifestation is represented at this site. In general, the collected artifacts are so limited and culturally undiagnostic that further evaluation would be highly speculative.

At-49

Site Classification: Open site; possible camp/workshop area.

Land Resource Area and Biotic District: Forested Coastal Plains/Ouachita-Osage Savanna ecotone.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Dart points - 1; dart point fragments - 1; preforms - 1; drills (preform) - 1; modified flakes - 6; cores - 1; unmodified flakes - 87; misc. debris - 1 (see Figure 31).

Represented Lithic Types: Unidentified quartzites 34.7%; jasper 2%; Frisco-like flint 15.3%; unidentified cherts and flint 48%.

Site Evaluation and Recommendations: At-49 lies 150 feet west of the centerline of the proposed Alignment A (Figure 30) and may be affected by construction. If Alignment A is selected, further testing of this site is recommended. If Alignment B is chosen as the future corridor, then At-49 will lie out of the project boundaries and no further work will be necessary.

Temporal-Cultural Relationships: Certain of the recovered materials suggest that an Archaic manifestation is represented. A contracting-stemmed dart point and drill (reworked dart point) are similar to artifacts from known Archaic sites in the area.

At-50

Site Classification: Open site; unknown (prehistoric), farmstead/refuse area (?) (historic).

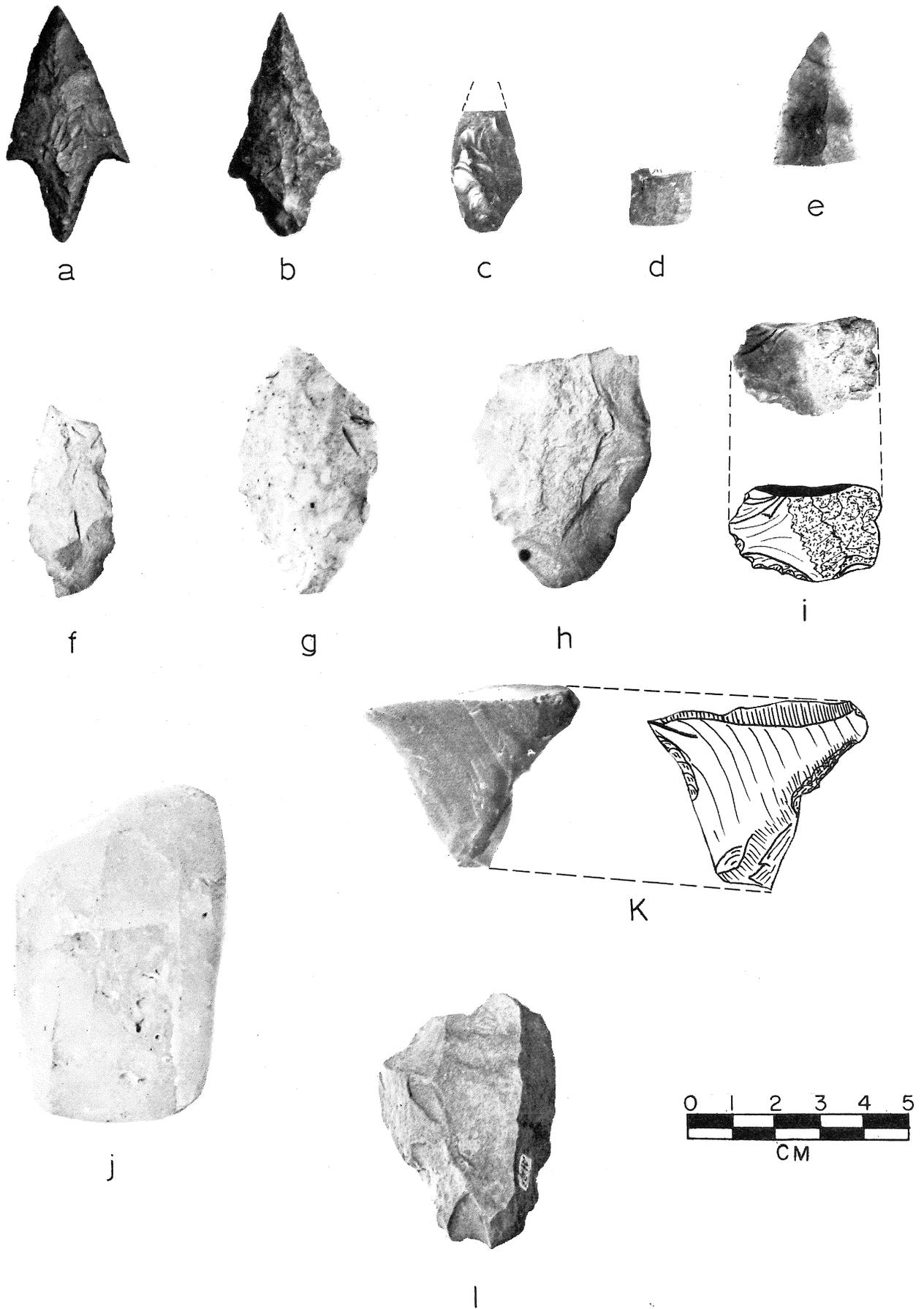


Figure 32. At-51 Artifacts: a and b, projectile points (Gary); c-e, projectile point fragments (c and d, bases; e, tip); f, projectile point preform (?); g and h, preforms; i, modified flake; j, hammer/pecking stone; k, modified core fragment; l, multifaceted core.

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Bernow fine sandy loam (0-1% slopes) and Bernow soils (2-8% slopes), severely eroded.

Land-use: Agricultural

Recovered Materials: Modified flakes - 1; hammerstone fragments - 1; unmodified flakes - 11; misc. debris - 7 (see Figure 31).

Historic Materials: Transferwares - 19; sponged wares - 20; handpainted wares - 2; Mocha or banded wares - 9; decorated edged-wares - 7; undecorated white ironstone - 82; pearlware - 2; misc. decorated wares - 1; undecorated white ironstone - 82; bottle glass fragments - 4; square nails - 1 (see Figure 31).

Represented Lithic Types: Unidentified cherts and flints 50%; unidentified quartzites 50%.

Site Evaluation and Recommendations: At-50 is situated in a large cultivated peanut field. Actual site extent is probably not more than one acre with portions of this area being affected by severe gullying. Depth of cultural mantle is apparently shallow and disrupted by agricultural activities. With regards to the historic component no evidence of a foundation or other habitational features were discerned. At-50 is located outside the construction corridor of U.S. 69 (Figure 30) and, consequently, requires no additional archaeological research.

Temporal-Cultural Relationships: The majority of collected artifacts relate to a mid-19th century (1840-1860) occupation. This assemblage is quite possibly associated with an early homestead or cabin site similar to other historic habitations in southeastern Oklahoma (Wyckoff 1967; Lewis 1971). The prehistoric assemblage is so limited and general in nature that inference as to its actual relationship to known cultural manifestations cannot be made.

At-51

Site Classification: Open site; possibly a sedentary village.

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Dela fine sandy loam.

Land-use: Agricultural

Recovered Materials: Dart points - 2; dart point fragments - 2; preforms - 7; unidentified biface fragments - 1; scrapers - 1; cupstones - 1; hammerstones - 1; cores - 4; modified core fragments - 1; modified flakes - 15; unmodified flakes - 186; misc. debris - 10 (see Figure 32).

Represented Lithic Types: Unidentified quartzites 15.2%; Frisco-like flint 1.3%; jasper 3%; novaculite 8.2%; Zipper flint 1%; unidentified cherts and flints 71.4%.

Site Evaluation and Recommendations: At-51 lies outside the limits of highway construction and should not be affected in any way. Although no further OHAS involvement is warranted, this 8 to 10 acre site is potentially significant. Therefore, additional evaluation by the Oklahoma Archaeological Survey is recommended.

Temporal-Cultural Relationships: Erosion at the site exposed a dark, deep cultural deposit. Artifacts recovered from these eroded areas and the plowed surface relate to a Late Archaic assemblage and exhibit similarities to sites in the Fourche-Maline Creek region.

Comments: The landowner has collected artifacts from At-51 for a number of years and has in his possession projectile points (about 150), knives, preforms, atlatl weights and other lithic items (Figure 10).

At-52

Site Classification: Open site; possible camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam, 3 to 5% slopes;
Bernow fine sandy loam, 8 to 12% slopes.

Land-use: Pasture; recently cleared of timber and brush.

Recovered Materials: Dart points - 1; modified flakes - 1; hammerstones - 1; cores and fragments - 2; unmodified flakes - 26; misc. debris - 4 (see Figure 33).

Represented Lithic Types: Unidentified quartzites 51.4%; novaculite 5.7%; Frisco-like flint 2.9%; unidentified cherts and flints 40%.

Site Evaluation and Recommendations: This site is characterized by a shallow and scattered cultural deposit which has been severely disturbed by land clearing and subsequent erosion. The horizontal distribution of recovered materials suggest an areal extent of about one acre. The site will be affected by Alignment A. The nature of the occupational deposit,

however, precludes additional controlled archaeological research. If sub-surface features are exposed during construction, the contractor should notify the Department Archaeologist in accordance with Standard Specifications 202.04(a) and (b).

Temporal-Cultural Relationships: In terms of cultural assessment, little can be inferred from the material recovered at At-52. The presence of a contracting-stem dart point, however, may relate to an Archaic assemblage.

At-53

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam, 5-8% slopes.

Land-use: Residential and horticultural.

Recovered Materials: A small quantity of unmodified waste flakes was observed by the field crew. However, these specimens were not returned to the laboratory since a detailed analysis would have been unproductive.

Site Evaluation and Recommendations: Sparse lithic debris was present in eroded areas near the landowner's home and in his garden. The size of At-53 is unknown but is believed to be small (less than one acre). Obvious site destruction has resulted from house construction and the levelling and filling of the surrounding yard. A cultural deposit is apparently

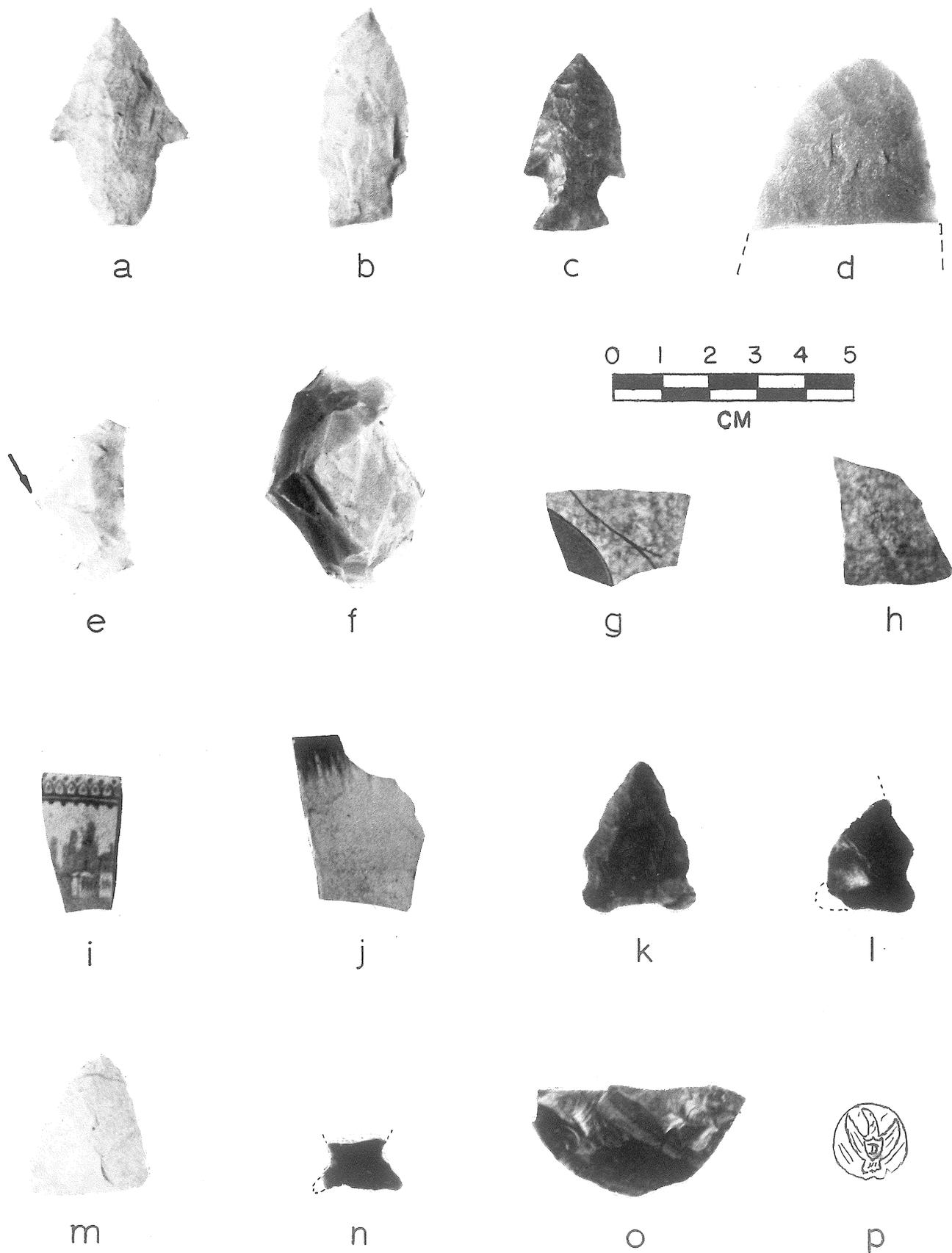


Figure 33. At-52(a), At-55(b-f), At-56(g-j) and At-95(k-p) Artifacts: a-c, projectile points (a, Gary; b, parallel-stemmed, straight base; c, expanding-stemmed, convex base); d, knife fragment; e, graver; f, bipolar core; g and h, sponged wares (g, green with handpainted polychrome design; h, blue); i, blue transfer-printed earthenware; j, blue shell-edged ware; k, reworked projectile point; l-n, projectile point fragments (l and n, bases; m, tip); o, unidentified biface fragment; p, brass military button (Dragoons, pre-Civil War era). Arrow indicates graver tip.

nonexistent, habitational remains being only surficial. Even though At-53 will be affected by Alignment A of the U.S. 69 project, it is thought that significant data would not be gained by further controlled investigations. If subsurface features are exposed during highway construction, the contractor, under Standard Specifications Section 202.04(a) and (b) should notify the Department Archaeologist.

Temporal-Cultural Relationships: The limited nature of material collected from this site precluded any cultural interpretation.

At-54

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: A small quantity of unmodified waste flakes. These items were not returned to the laboratory since further analysis would have been unproductive.

Site Evaluation and Recommendations: Heavy erosion at At-54 has resulted in the formation of runoff gullies along the site's northern boundary, as well as around the farm pond further north. Occupational features or significant concentrations of lithic debris were not observed. From all indications, the cultural deposit, if present, is quite shallow and disturbed.

This site will not be affected by future U.S. 69 construction and is not recommended for additional research.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials recovered from At-54.

At-55

Site Classification: Open camp/ possible camp/workshop area.

Land Resource Area and Biotic District: Forested Coastal Plains/Ouachita-Osage Savanna ecotone.

Soil Type: Bernow soils, 2-8% slopes, severely eroded; Bosville fine sandy loam, 5-8% slopes.

Land-use: Pasture

Recovered Materials: Dart points - 2; knives - 1; preforms - 1; unidentified biface fragments - 1; graters - 1; cores - 1; modified flakes - 3; unmodified flakes - 27; misc. debris - 6 (see Figure 33).

Represented Lithic Types: Unidentified quartzites 18.6%; Bigfork cherts 2.3%; unidentified cherts and flints 58.2%.

Site Evaluation and Recommendations: Cultural material was collected over an area of about 3 to 5 acres bounded by two recently built farm ponds (on the north and south). This site lies to the east of the proposed rights-of-way and will not be disturbed by highway construction. Although no further OHAS work is required, this site merits additional investigations by the Oklahoma Archaeological Survey.

Temporal-Cultural Relationships: The recovered materials indicate a relationship to a Middle or Late Archaic assemblage. Several lanceolate points in the private collection of Thomas Merritt are of the Meserve and Dalton varieties and possibly relate to a late Paleo or Early Archaic assemblage.

Comments: Thomas Merritt, who farmed the site area until around 1971, has a collection of nearly 100 projectile points from At-55. Photographs of these artifacts are on file at the Oklahoma Highway Archaeological Survey office.

At-56

Site Classification: Open site; camp(?) (prehistoric), farmstead/refuse area(?) (historic).

Land Resource Area and Biotic District: Forested Coastal Plains/Ouachita.

Soil Type: Bernow fine sandy loam, 1 to 3% slopes, Bernow fine sandy loam, 5 to 8% slopes and Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Pasture; recently cleared of timber and brush.

Recovered Materials: Unmodified flakes - 9. Historic materials: Transferwares - 2; sponged wares - 2; shell-edged wares - 1; handpainted wares - 5; undecorated white ironstone - 8 (see Figure 33).

Represented Lithic Types: Unidentified quartzites 44.4%; Frisco-like flint 33.3%; unidentified cherts and flints 22.3%.

Site Evaluation and Recommendations: Cultural debris was collected from eroded crest and slopes of spur over an area of about 3/4 acre. The occupational deposit appeared to be quite shallow and confined to the surface or just below. Land-clearing activities have essentially destroyed the site's integrity. At-56 lies outside of the proposed U.S. 69 corridor and, therefore, will not be adversely affected. No further investigations are warranted.

Temporal-Cultural Relationships: The majority of materials collected relate to a historic assemblage. These items are similar to historic artifacts recovered from At-50 and probably date from the mid-19th century. The debris from the assumed prehistoric component is so limited and general in nature that no inference can be made to its cultural relationships.

At-93

Site Classification: Open site; workshop(?)

Land Resource Area and Biotic District: Cross Timbers/
Ouachita

Soil Type: Dennis loam, 2 to 5% slopes, eroded; Enders-Hector complex, 2 to 5% slopes.

Land-use: Pasture

Recovered Materials: Hammerstones - 1; modified flakes - 7; unmodified flakes - 17; misc. debris - 1.

Represented Lithic Types: Unidentified quartzites 15.4%; novaculite 2.8%; unidentified cherts and flints 80.8%.

Site Evaluation and Recommendations: Cultural debris was sparsely scattered over a limited area (less than 1 acre). Occupational deposit is believed to be situated on the surface and just below. The site is located east of the proposed U.S. 69 alignment and consequently will not be affected by construction. No further archaeological research is warranted.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials recovered at At-93.

At-94

Site Classification: Open site; workshop (?)

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Rexor silt loam.

Land-use: Pasture

Recovered Materials: Modified flakes - 3; cores and fragments - 1; unmodified flakes - 6.

Represented Lithic Types: Zipper flint 10%; unidentified cherts and flints 90%.

Site Evaluation and Recommendations: Lithic debitage was recovered along the crest and flanks of the knoll and terrace over an area of one acre or less. The cultural deposit, if at all present, is evidently thin and scattered. At-94 is situated east of the proposed U.S. 69 alignment corridors; thus, in accordance with OHAS guidelines, no future investigations by this agency are necessary.

Cultural-Temporal Relationships: As regards cultural assessment, nothing can be determined from the limited undiagnostic materials recovered from the site.

At-95

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Dennis loam, 2 to 5% slopes, eroded.

Land-use: Pasture and borrow pit area.

Recovered Materials: Dart points - 1; projectile point fragments - 4; preforms - 1; unidentified biface fragments - 3; modified flakes - 57; unmodified flakes - 159; misc. debris - 12 (see Figure 33).
Historic materials: Military button - 1 (see Figure 33).

Represented Lithic Types: Unidentified quartzites 7.9%; Zipper-like flint 1.5%; Frisco-like flint - 1%; Bigfork-like chert - 1%; novaculite-like 4.2%; Woodford-like chert 12.8%; unidentified cherts and flints 71.9%.

Site Evaluation and Recommendations: Cultural debris was previously found along the eroded slopes of old borrow pit bordering the stream channel over an area approximately 1½ acres in extent. Posthole tests of lesser disturbed areas of the site revealed that the occupational deposit was quite thin and situated on the surface to a depth probably not exceeding 12 inches. This site will be affected by the proposed U.S. 69 alignment. In consideration of the disturbed nature of the occupation extensive salvage excavations would be inappropriate. However,

since At-95 will be totally destroyed by construction, limited exploratory testing may contribute to a better understanding of the site.

Temporal-Cultural Relationships: Based upon the projectile points recovered, an Archaic manifestation can be inferred for At-95. More definite conclusions about cultural affiliations would be highly tenuous.

At-96

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Dennis loam, 2-5% slopes, eroded.

Land-use: Pasture

Recovered Materials: Unidentified biface fragments - 1; modified flakes - 1; unmodified flakes - 6.

Represented Lithic Types: Woodford-like chert 75%; unidentified cherts and flints 25%.

Site Evaluation and Recommendations: Lithic debris was collected from a small portion of the eroded cattle trail running along the site's eastern boundary. The occupational deposit, if present, is apparently very shallow and highly localized. The utilization of At-96 as a borrow area in the past has obviously contributed to site destruction. Although this site will be affected by Alignment A of the proposed U.S. 69 project, additional controlled investigations by OHAS



a



b

Figure 34. Views of Archaeological Sites: a, At-41, looking east toward eroded ridge flank; b, At-97, facing west across pasture - galleria forest borders Muddy Boggy Creek and intermittent tributary.

are not recommended. If subsurface features are encountered during highway construction, the contractor (under Standard Specifications Section 202.04(a) and (b) should contact the Highway Archaeologist.

Temporal-Cultural Relationships: In regard to the assessment of cultural affinities, nothing can be inferred from the limited, undiagnostic artifacts recovered from At-96.

At-97 (Figure 34)

Site Classification: Open site; heavily occupied camp/workshop.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow fine sandy loam, 3-5% slopes and Dela fine sandy loam.

Land-use: Pasture

Recovered Materials: Arrowpoints - 1; preforms - 2; scrapers - 1; modified flakes - 8; cores and fragments - 3; unmodified flakes - 194; misc. debris - 49 (see Figure 35).

Represented Lithic Types: Bigfork-like chert 2.8%; Frisco-like flint 1.1%; novaculite 13.4%; unidentified quartzites 26.2%; unidentified cherts and flints 56.5%.

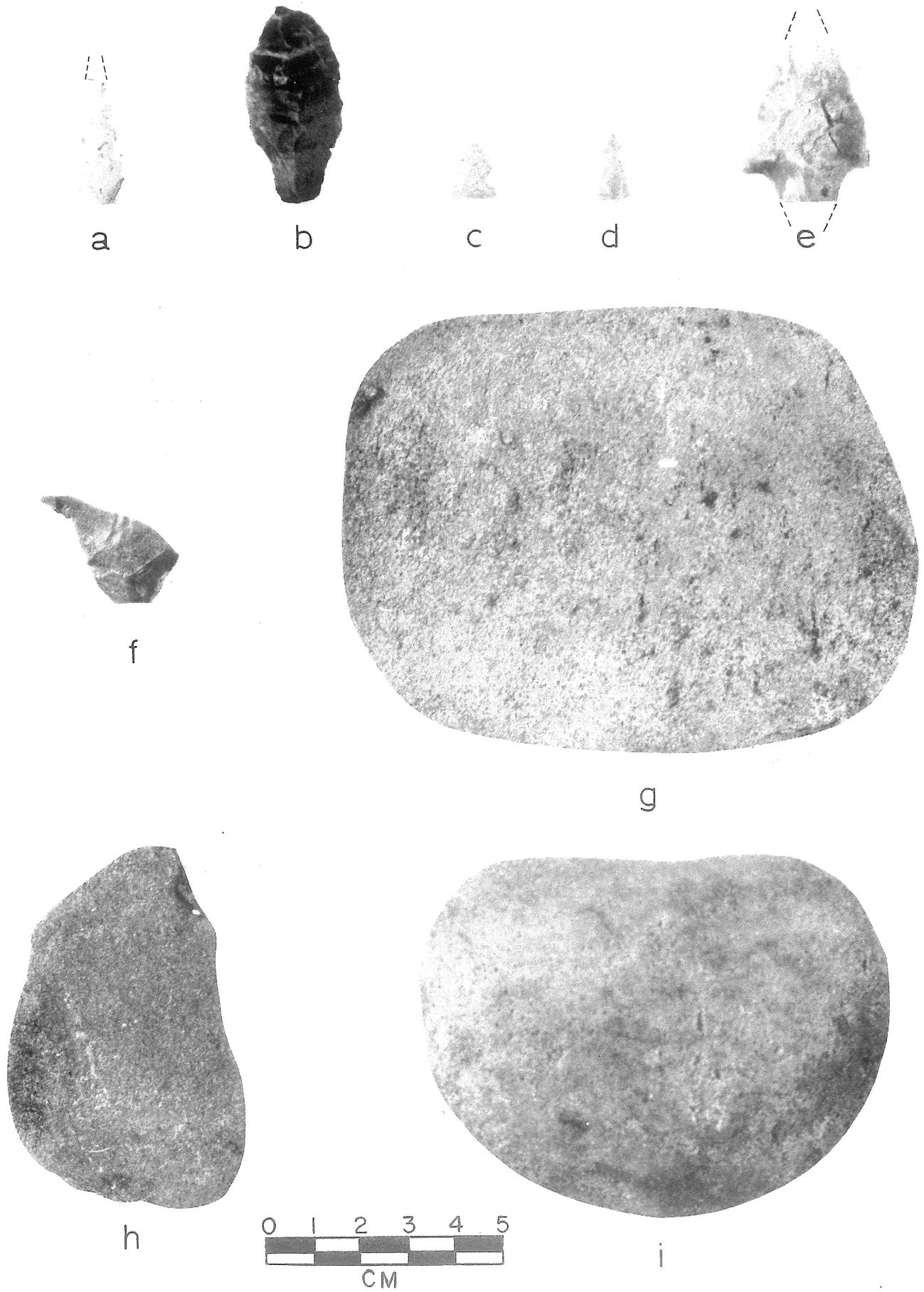


Figure 35. At-97(a and b) and At-99(c-i) Artifacts: a, c, and e, projectile points (a, Scallorn-like; c, Washita-like; e, Gary); b, projectile point preform; d and f, projectile point fragments (d, tip; f, contracting-stemmed base); g and h, grinding stones; i, hammerstone.

Site Evaluation and Recommendations: Horizontal distribution of recovered materials suggest an extent of approximately one acre. However, due to dense vegetation, precise site boundaries could not be determined. Posthole tests of the stratigraphy revealed a fairly concentrated cultural deposit which extended from the ground surface to a depth of at least 30". The most dense occupational zone was encountered at Level 3 (18"). Although the site has apparently been plowed in the past, it is believed that the site's integrity is intact. At-97 lies within a broad alignment corridor of the Atoka Bypass (see Figure 36). Presently, the exact construction alignment is not known. If the site is to be affected upon determination of final rights-of-way, it is recommended that exploratory testing and possible salvage be initiated.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite affiliation can be inferred. The presence of a Scallorn-like arrowpoint, however, does suggest a probable late prehistoric manifestation (Caddoan?)

At-98

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bosville fine sandy loam, 3-5% slopes and Guyton silt loam.

Land-use: Pasture

Recovered Materials: Modified cobbles - 1; unmodified flakes - 7.

Represented Lithic Types: Unidentified quartzites 25%; unidentified cherts and flints 75%.

Site Evaluation and Recommendations: Cultural debris collected from gullied areas bordering small farm pond of approximately $\frac{1}{2}$ acre in extent. The vertical deposit was not tested, however, it appeared to be sparse and confined to the surface or just below. At-98 lies outside the proposed U.S. 69 rights-of-way (Figure 36) and will not be affected by construction activities.

Temporal-Cultural Relationships: In terms of cultural identity, nothing can be inferred from the limited and undiagnostic material recovered from this site.

At-99

Site Classification: Open site; large camp or village(?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Rexor silt loam and Dela fine sandy loam.

Land-use: Pasture

Recovered Materials: Arrowpoints - 1; arrowpoint fragments - 1; dart point fragments - 1; unidentified biface fragments - 2; grinding stones - 2; hammerstones - 1; modified flakes - 5; cores and fragments - 1; unmodified flakes - 153; misc. debris - 10 (see Figure 35).

U.S. 69 PROJECT
ATOKA BYPASS
ATOKA COUNTY
OKLAHOMA



LEGEND:

— Alignment A
- - - - - Proposed Atoka Bypass
Corridor

 Archaeological Site

0 1000' 2000' 3000'



Figure 36

Represented Lithic Types: Novaculite 5%; unidentified quartzites 29%; unidentified cherts and flints 65%; sandstone 1%.

Site Evaluation and Recommendations: Occupational material was recovered over a 3-4 acre area. Tests of vertical stratigraphy indicated that the cultural deposit varied from near the surface in some sections to a depth of 24" in others. Both severe gullying and stream erosion have affected site preservation. The occupational deposit has also been disturbed by previous agricultural activities. Although At-99 is not within the new U.S. 69 right-of-way (Figure 36), further investigations by the Oklahoma Archaeological Survey is recommended in order to evaluate the site's significance.

Temporal-Cultural Relationships: Artifact analysis suggests that a late Archaic and/or formative late prehistoric (Caddoan?) occupation is possibly represented. A more definitive statement regarding cultural affinities is not possible at this time due to the limited nature of recovered materials.

At-100

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2 to 8% slopes, severely eroded.

Land-use: Pasture

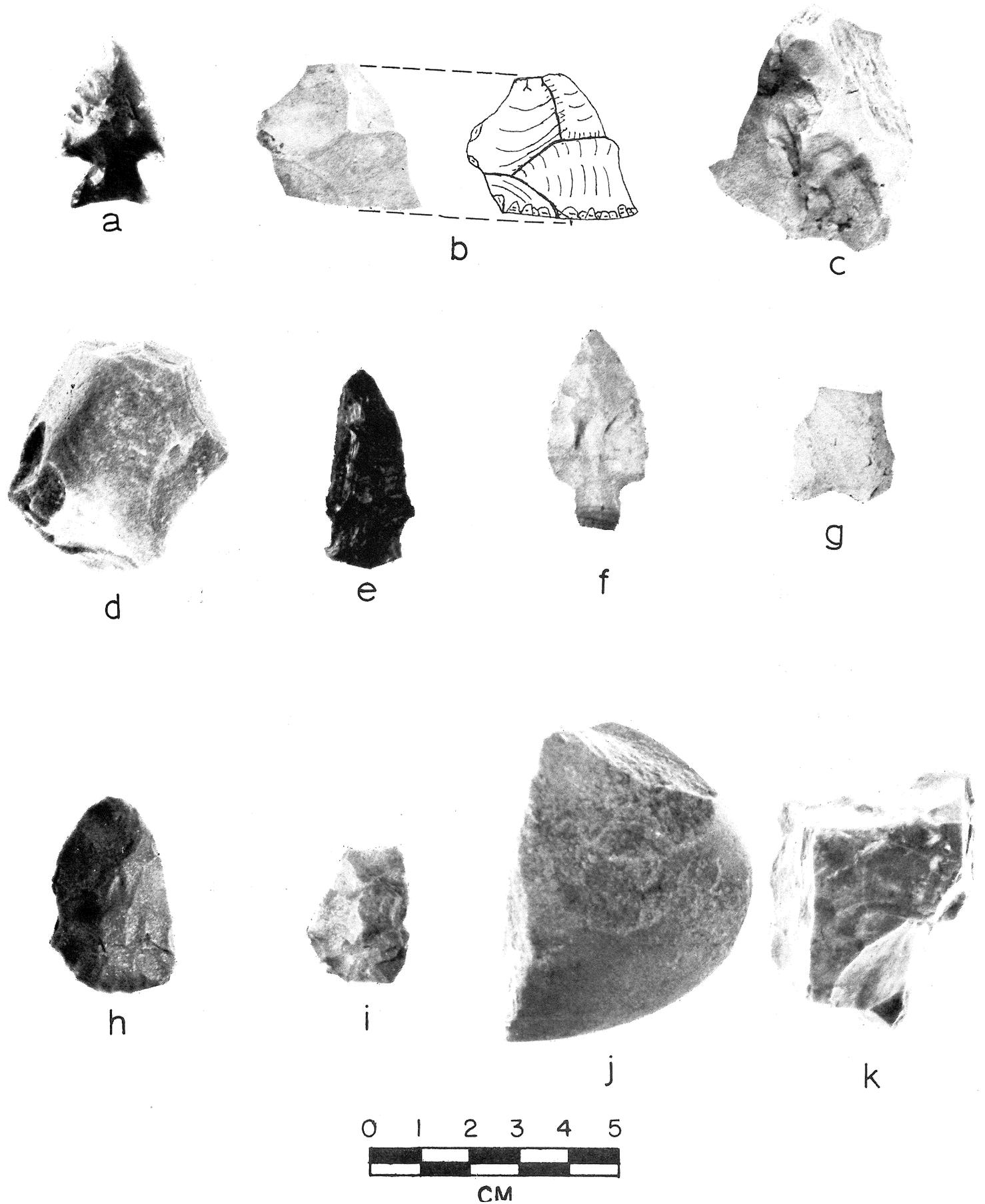


Figure 37. At-100(a-d) and At-101(e-k) Artifacts: a, projectile point (Edgewood); b, modified flakes; c and d, multifaceted cores; e-h, projectile points (e, Kent-like; f, Gary-like; g, Meserve-like; h, Abasolo/Catan-like); i, preform; j, hammerstone fragment; k, multifaceted core.

Recovered Materials: Dart points - 1; unidentified biface fragments - 2; modified flakes - 3; ground sandstone - 1; cores - 3; unmodified flakes - 42; misc. debris - 3 (see Figure 37).

Represented Lithic Types: Unidentified quartzites 45%; sandstone 1.7%; novaculite 3.3%; Frisco-like flint 1.7%; unidentified cherts and flints 48.3%.

Site Evaluation and Recommendations: Posthole testing indicated that the cultural deposit on this site was confined to the surface and just below. The site covers an area of more than an acre and is located approximately 100 feet east of the future centerline of the northbound lane, Alignment A (Figure 36). This site will be affected by construction, however, no further controlled OHAS activities on this site are recommended. If subsurface features are discerned during construction, the contractor, under Standard Specification Section 202.04(a) and (b) should notify the Department Archaeologist.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite relationships or affiliations can be assigned to this site. However, the presence of the corner-notched dart point indicates a possible relationship to an Archaic assemblage.

At-101 (Figure 38)

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.



a

Figure 38. Views of Archaeological Sites: a, At-101, view to east; b, At-148, facing south across cultivated field.



b

Land-use: Pasture

Recovered Materials: Dart points - 3; preforms - 2;
unidentified biface fragments - 3; cores - 6;
hammerstones - 1; modified flakes - 22; unmodified
flakes - 193; misc. debris - 12 (see Figure 37).

Represented Lithic Types: Unidentified quartzites 39.3%;
quartz 1.2%; Frisco-like flint 5.8%; Zipper-like
flint -1%; novaculite 2.9%; Woodford chert 1.6%;
shale -1%; unidentified cherts and flints 48.1%.

Site Evaluation and Recommendations: This site is situ-
ated just east of At-100 and will not be affected
by highway construction. Posthole tests indicated
a similar stratigraphy to that of At-100 and surface
debris covered an area of about 2 acres. Since
At-101 will not be affected by the new alignment
(Figure 13), no further OHAS activity on the site is
warranted.

Temporal-Cultural Relationships: Certain of the collected
surface specimens suggest that an Archaic manifesta-
tion is represented at the site. One of the dart
points is commonly associated with the Early Archaic;
the two other specimens, however, are more commonly
associated with later Archaic assemblages.

At-102

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded;
Bernow fine sandy loam.

Land-use: Pasture

Recovered Materials: Modified flakes - 2; unmodified
flakes - 5.

Represented Lithic Types: Unidentified quartzites 57%;
novaculite 14.3%; unidentified cherts and flints
28.7%.

Site Evaluation and Recommendations: Cultural material
was sparsely scattered over an area of less than
one acre and apparently confined to the surface.
At-102 is located east of the project corridor and
will not be affected. No further OHAS involvement
on this site is recommended.

Temporal-Cultural Relationships: In terms of cultural
assessment, nothing can be inferred from the limited
and undiagnostic material collected at this site.

At-103

Site Classification: Open site; camp/workshop area (?).

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Modified flakes - 1; cores - 3;
unmodified flakes - 12; misc. debris - 2 (see
Figure 46).

Represented Lithic Types: Unidentified quartzites 35%; unidentified cherts and flints 65%.

Site Evaluation and Recommendations: The surface of this site has been badly disturbed by sheet erosion and the construction of a farm pond. Cultural material, which was sparsely scattered over several acres, was collected mainly from the heavily eroded area. The site lies outside of the construction corridor and does not merit further action by OHAS.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic material collected at this site.

At-145

Site Classification: Open site; camp/workshop area (pre-historic) and homestead (historic).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2-8% slopes, eroded.

Land-use: Pasture

Recovered Materials: Dart points - 1; preforms - 1; cores and fragments - 1; modified flakes - 12; unmodified flakes - 42; miscellaneous debris - 10 (see Figures 39 and 46). Historic materials: Clay pipe fragments - 1; stoneware - 3; undecorated white ironstone - 13; pearlware - 3; blue transferwares - 3; glass bottle fragments - 5; milk glass - 2; broadaxe - 1; harness clip - 1; wire bolt - 1; metal wedge - 1 (see Figures 39 and 46).

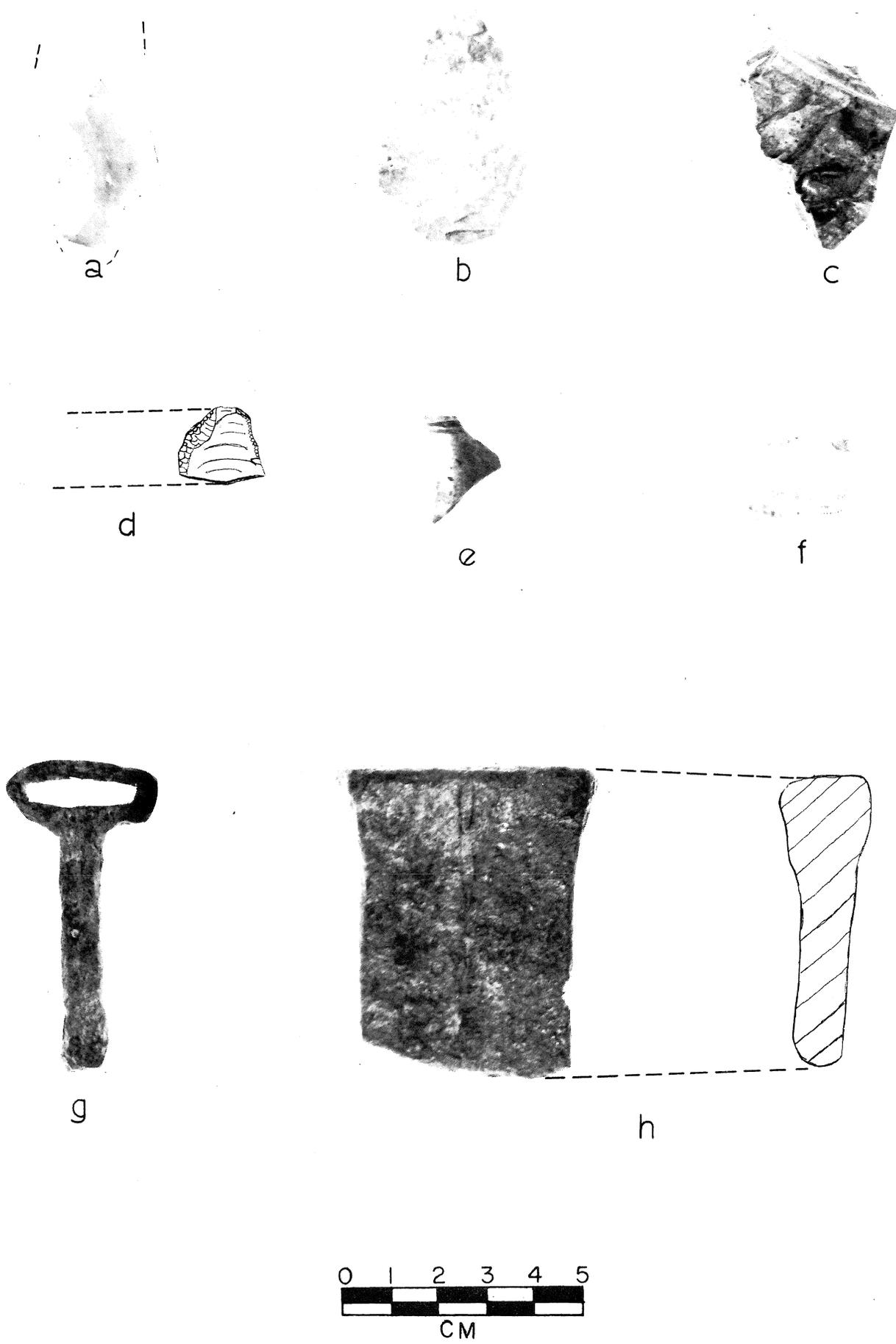


Figure 39. At-145 Artifacts: a, projectile point (contracting-stemmed, convex base); b, preform; c, expended core; d, modified flake; e, tobacco pipe fragment (clay bowl); f, blue transfer-printed (?) earthenware; g, harness clip; h, iron wedge.

Represented Lithic Types: Unidentified cherts and flints 47.7%; unidentified quartzites 40.3%; novaculite 6%; Zipper-like flint 3%; Frisco-like flint 1.5%; hematite 1.5%.

Site Evaluation and Recommendations: This site is located in the path of the proposed Alignment A and will be affected by construction (Figure 13). The potential significance of this site indicates a need for additional exploratory testing.

Temporal-Cultural Relationships: There appears to have been two separate populations or assemblages present at the site. Certain of the lithic materials are similar to and probably associated with an Archaic manifestation. The Pamplin clay pipe fragment and certain other of the historic artifacts are typical of nineteenth century sites such as Fort Washita (Lewis and others 1975) and may possible relate to an early Choctaw homestead.

At-146

Site Classification: Open site; camp/workshop(?).

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna-Ouachita ecotone.

Soil Type: Bernow soils, 2-8% slopes, severely eroded; Bernow fine sandy loam, 3-5% slopes.

Land-use: Pasture

Recovered Materials: Modified flakes - 2; cores - 3; unmodified flakes - 18; misc. debris - 17; faunal debris - 1.

Represented Lithic Types: Unidentified quartzites 17.5%; novaculite 15%; Frisco-like flint 2.5%; unidentified cherts and flints 62.5%.

Site Evaluation and Recommendations: The limited amount of cultural debris from this site was collected over small heavily eroded areas and cattle trails. The material was distributed over about 2 acres of land west of the proposed project corridor. The site will not be affected by the present alignment plans (Figure 30) and no further work is recommended for this site.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic material collected at this site.

At-147

Site Classification: Open site; camp/workshop area (?) (prehistoric) and farmstead (historic).

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Bernow fine sandy loam, 1-3% slopes, eroded.

Land-use: Agricultural

Recovered Materials: Modified flakes - 2; grinding stone fragments - 1; cup/anvil stone - 1; cores - 3; unmodified flakes - 17; misc. debris - 5; bone - 1. Historic materials: Porcelain - 2; glazed stoneware - 9; pearlware - 1; undecorated white ironstone - 36; bottle glass fragments - 1; unidentified glass - 15; lock plates - 1; coffee grinder wheel - 1; cut nails - 1; center-fire cartridge - 1; unidentified metal fragments - 2 (see Figure 40).

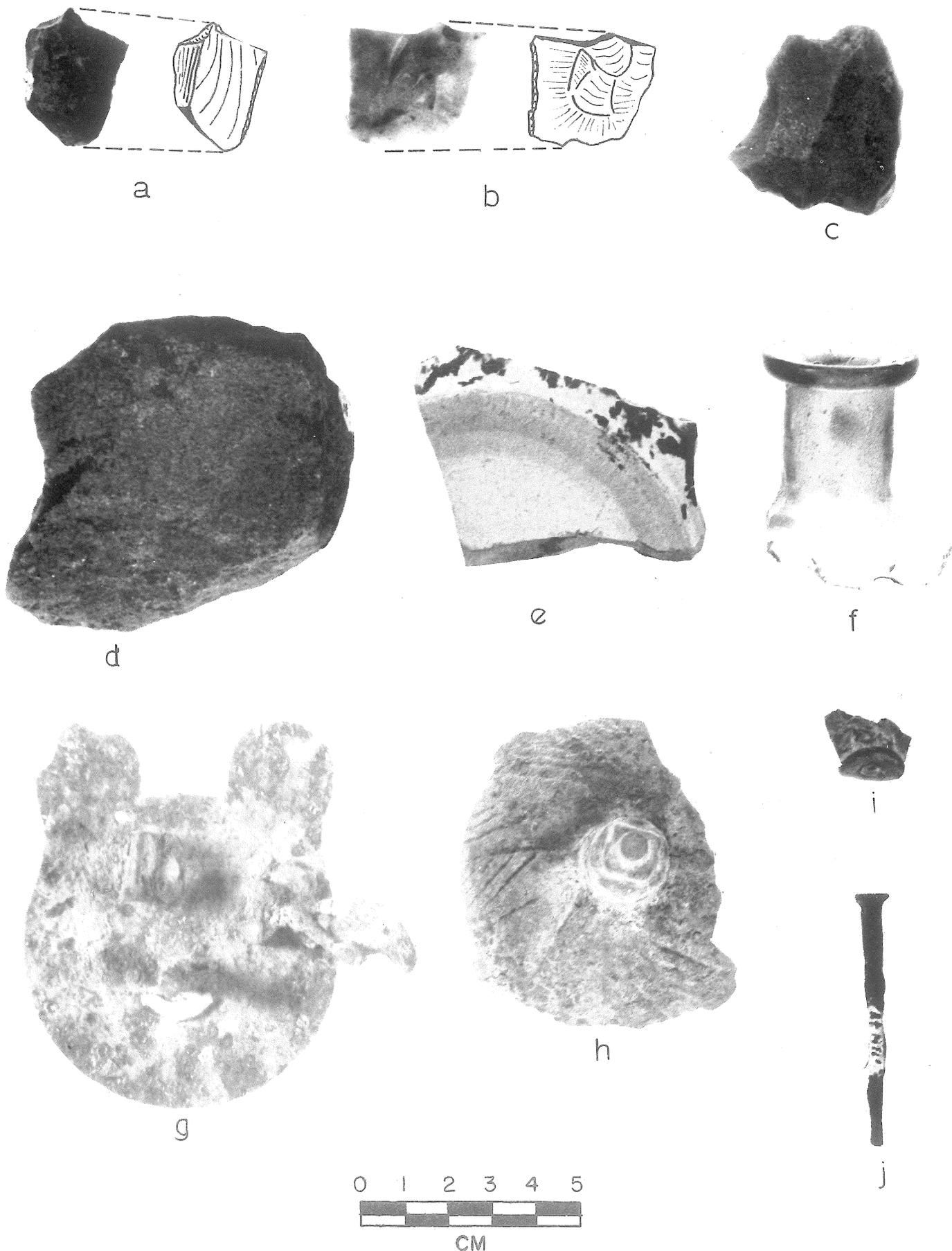


Figure 40. At-147 Artifacts: a and b, modified flake; c, multifaceted core; d, grinding stone fragment; e, glazed stoneware (polychrome mottled or splatter ware); f, blown in mold bottle neck (pale purple glass); g, padlock plate; h, coffee grinder wheel; i, brass center-fire cartridge (approx. .45 caliber); j, common cut square nail.

Represented Lithic Types: Unidentified quartzites 37.9%; novaculite - 13.8%; sandstone 3.4%; unidentified cherts and flints 44.8%.

Site Evaluation and Recommendations: This site is situated west of the project area and will not be affected by construction. Although no additional work on this site by OHAS is warranted, the site is potentially significant and future research there by another agency may add to our understanding of Oklahoma's past.

Temporal-Cultural Relationships: There appears to have been two separate populations or assemblages present. The lithic materials suggest a prehistoric occupation, however, these artifacts are undiagnostic and cannot be assigned to any particular cultural affiliations. Certain of the historic materials are typical of the last half of the nineteenth century and possibly relate to an early homestead. Similar ceramics and metal artifacts were recovered at Forts Washita (Lewis 1975) and Towson (Lewis 1972).

At-148

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Larton loamy fine sand, 0-3% slopes.

Land-use: Agricultural

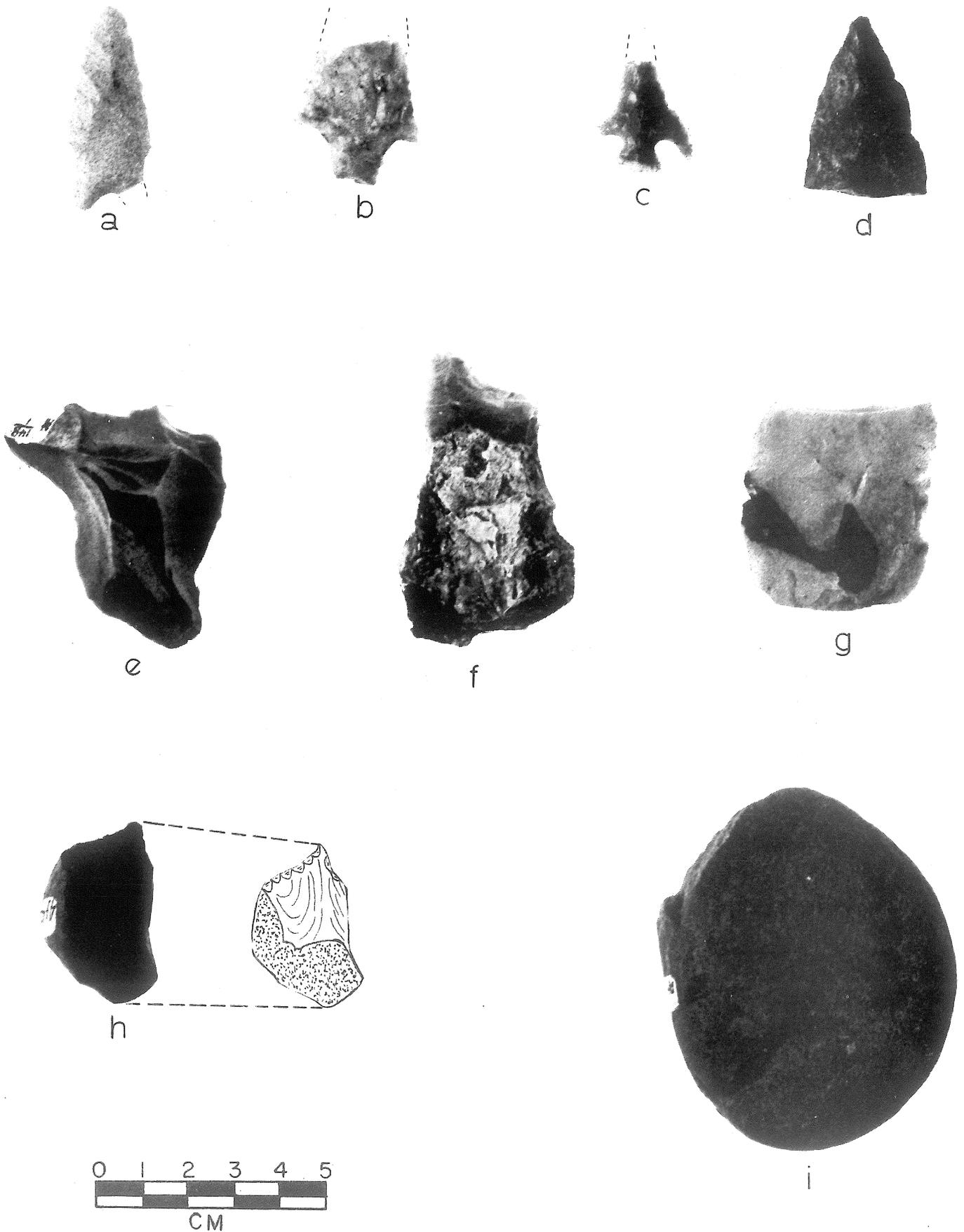


Figure 41. At-148 Artifacts: a-c, projectile points (a, Hanna-like; b, Gary; c, Scallorn, Brangus variety); d, unidentified biface fragment; e and f, multifaceted cores; g and h, modified flakes; i, hammerstone.

Recovered Materials: Dart points - 2; arrowpoints - 1; unidentified biface fragments - 1; modified flakes - 16; hammerstones - 4; cores - 6; unmodified flakes - 54; misc. debris - 6; bone - 1 (see Figure 41).

Represented Lithic Types: Unidentified quartzites 45.7%; Frisco flint 6.4%; Zipper-like flint 3.2%; Bigfork chert 1.1%; novaculite 1.1%; unidentified cherts and flints 42.5%.

Site Evaluation and Recommendations: Cultural debris from this site was confined to a small area of less than one acre. The site is located a short distance west of the new alignment and should not be affected by highway construction. However, the potential significance of this site indicates the need for future research and investigations by another agency.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite relationships or affiliations can be assigned to this site. However, the presence of a Scallorn arrowpoint, Brangus variety, may indicate a Gibson manifestation. This type of point is common on Gibson component sites along the Red River in both Oklahoma and Texas (Burton 1970). The Hanna-like dart point is similar to specimens found in the Hugo Reservoir area. Rohrbaugh (1972:103-105) assigned these ground stemmed points to the Stage I, phase 2 of the Early Archaic. As previously stated, the small amount of material limits what can be said about cultural manifestations at At-148.

At-149

Site Classification: Open site; workshop(?).

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Unidentified biface fragments - 1; modified flakes - 3; cores - 1; unmodified flakes - 9; misc. debris - 2 (see Figure 46).

Represented Lithic Types: Frisco flint 17.6%; unidentified quartzites 47.1%; unidentified cherts and flints 35.3%.

Site Evaluation and Recommendations: At-149 is characterized by a thin cultural deposit distributed over a one acre area. This site is located to the west of the project corridor and will not be affected by construction. Very little information could be gained from additional research and no further investigation is deemed necessary.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials collected at this site.

At-150

Site Classification: Open site; activity unknown. workshop(?).

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Bosville fine sandy loam, 3-5% slopes.

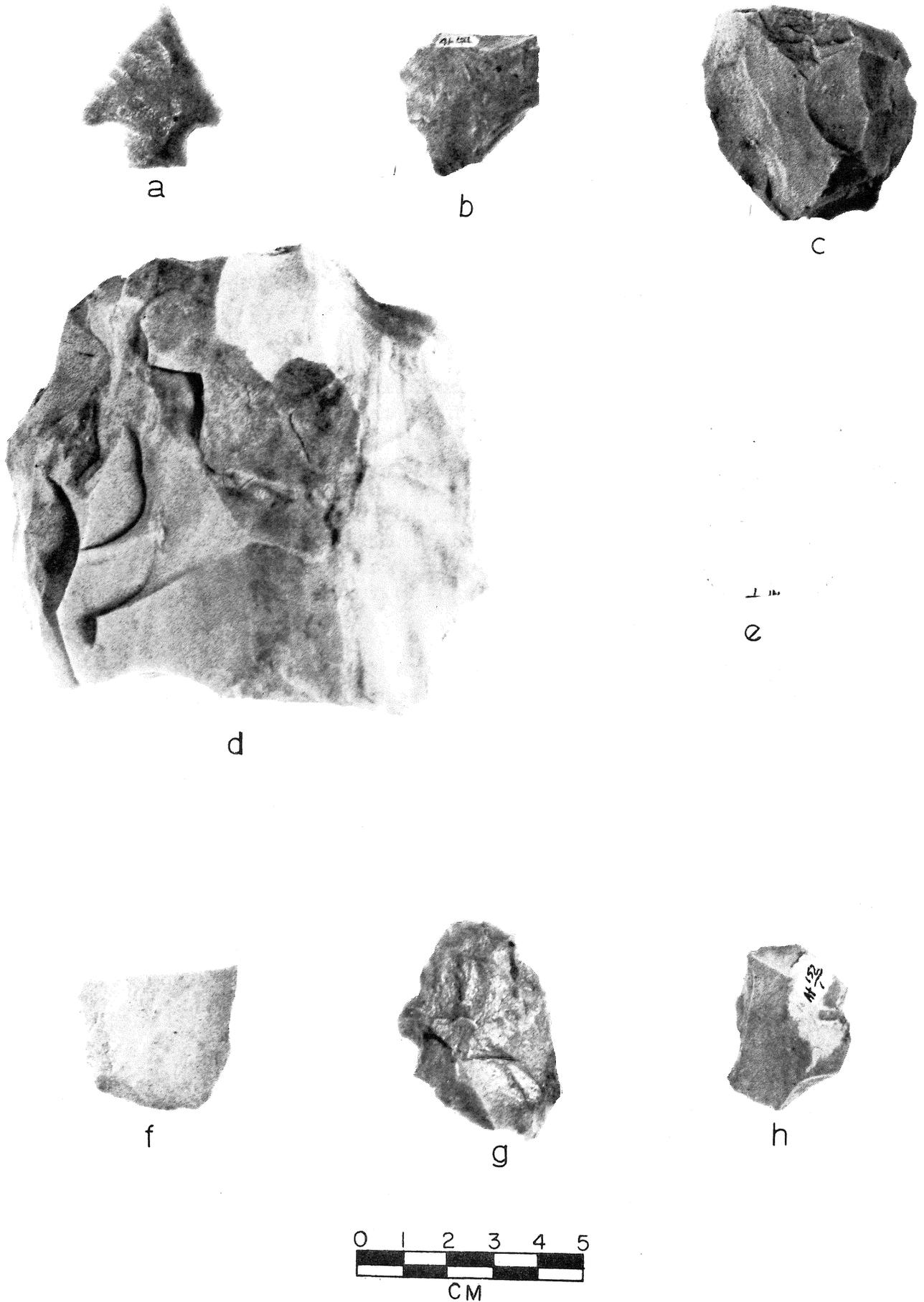


Figure 42. At-151(a-e) and At-152(f-h) Artifacts: a and b, projectile points (a, parallel-stemmed, straight base, b, reworked dart point base); c, d and h, multifaceted cores; e, milk glass fruit jar liner (“GENUINE/...”); f and g, preforms.

Land-use: Pasture

Recovered Materials: Modified cobbles - 1; unmodified flakes - 12; misc. debris - 2 (see Figure 46).

Represented Lithic Types: Unidentified quartzites 37%; unidentified cherts and flints 62.5%.

Site Evaluation and Recommendations: Cultural debris was sparsely scattered over an area of less than one acre with no apparent stratigraphic context. No subsurface testing was conducted but it is believed that the habitational mantle is confined to the surface. This site lies just west of the project corridor and will not be affected by highway construction. In accordance with OHAS guidelines, no further research is recommended.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials collected at At-150.

At-151

Site Classification: Open site; camp/workshop area(?) (prehistoric) and homestead/refuse area(?) (historic).

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Larton fine sandy loam, 0-3% slopes, Larton fine sandy loam, 3-8% slopes; Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Dart points - 2; modified flakes -5; cores - 3; unmodified flakes - 16; misc. debris - 2.
Historic Materials: undecorated white ironstone - 1; milk glass - 2; glass bottle fragments - 2 (see Figure 42).

Represented Lithic Types: Unidentified quartzites 33.3%; novaculite 7.4%; Frisco-like flint 3.7%; unidentified cherts and flints 55.6%.

Site Evaluation and Recommendations: The exact extent of this site could not be determined due to dense vegetation although material was collected over an area of more than three acres. The site lies to the west of the proposed highway alignment and does not merit additional OHAS involvement. The site's potentially significant nature does, however, warrant future research by another agency.

Temporal-Cultural Relationships: In regards to cultural affiliation, there appears to have been two separate populations or assemblages present. A corner-notched dart point and a possible reworked lanceolate projectile point base (Plainview-like?) are similar to points found on Early and Middle Archaic component sites in the Hugo Reservoir area (Rohrbaugh 1972). The historic materials are basically undiagnostic and little can be inferred about the historic occupation at At-151.

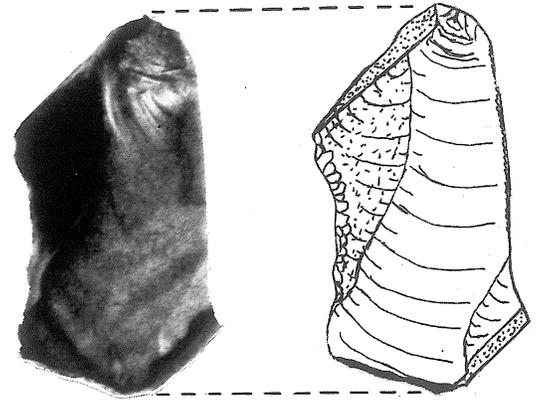
At-152

Site Classification: Open site; camp/workshop area.

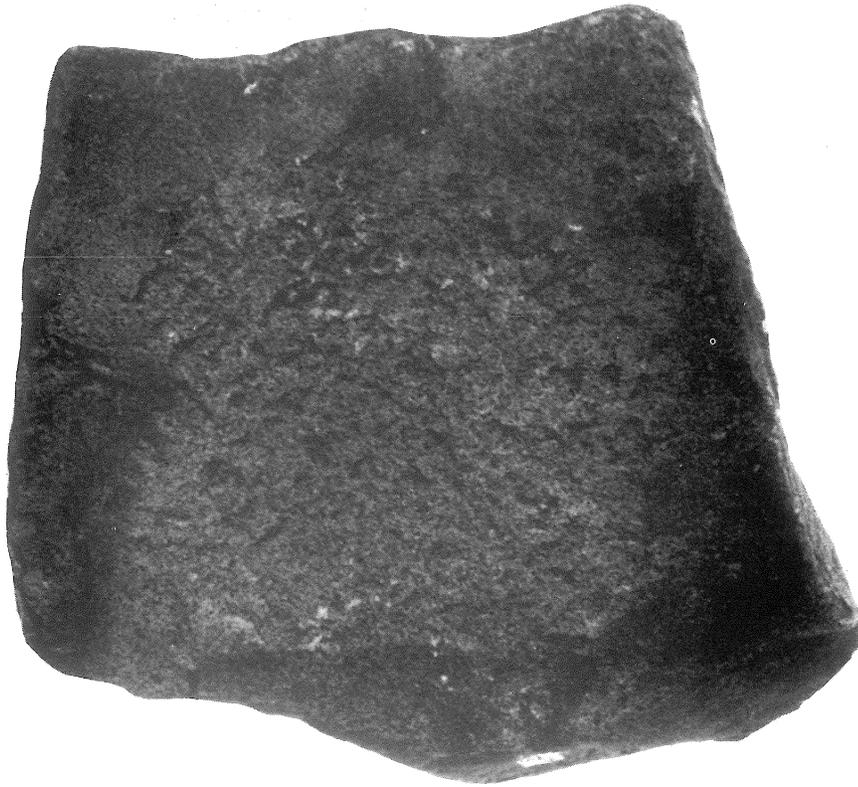
Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna-Ouachita ecotone.



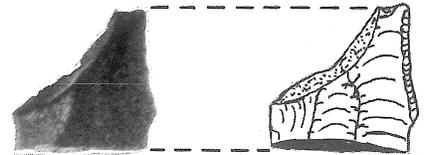
a



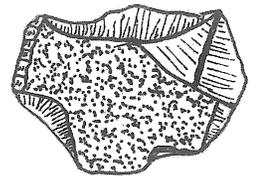
c



b



d



e

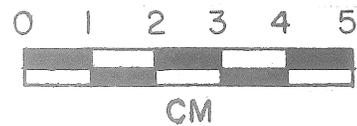


Figure 43. At-152 Artifacts: a, modified cobble; b, grinding basin; c-e, modified flakes.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Preforms - 1; unidentified biface fragments - 1; modified flakes - 4; grinding stones - 1; modified cobbles - 1; cores - 5; unmodified flakes - 73; misc. debris - 3 (see Figures 42 and 43).

Represented Lithic Types: Quartz 2.2%; unidentified quartzites 44.9%; sandstone 1.1%; novaculite 7.9%; unidentified cherts and flints 43.9%.

Site Evaluation and Recommendations: Cultural debris was sparsely scattered over three or more acres in an area recently cleared of trees and shrubbery. This site is situated west of the project corridor (Figure 30) and will not be affected in any way. Therefore, additional work on this site by OHAS is not recommended.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic materials collected at this site.

At-153

Site Classification: Open site; possible temporary camp/workshop area.

Land Resource Area and Biotic District: Forested Coastal Plains/Osage Savanna.

Soil Type: Larton loamy fine sand, 0-3% slopes; Bosville fine sandy loam, 5-12% slopes.

Land-use: Pasture

Recovered Materials: Modified flakes - 31; unmodified flakes - 107; misc. debris - 22.

Represented Lithic Types: Quartz 1.2%; unidentified quartzites 31.3%; Frisco-like flint 7.3%; novaculite 8.3%; Alibates-like flint 1%; unidentified cherts and flints 51.3%.

Site Evaluation and Recommendations: Sections of this site have been severely disturbed by the construction of a Soil Conservation pond. The horizontal distribution of recovered materials suggest an areal extent of about one acre and a relatively intense occupation. The site lies outside of the project corridor and will not be affected by construction. No further OHAS involvement is required; however, it is recommended that additional investigations by another state agency be conducted to further evaluate the site.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the undiagnostic materials collected at At-153.

Comments: The fairly large quantity of flake tools, unmodified flakes and the absence of other typical camp/workshop debris may indicate a specialized function for this site.

At-154

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Rexor silt loam.

Land-use: Pasture

Recovered Materials: Dart points - 2; modified flakes - 4;
ground sandstone - 2; hammerstones - 1; cores - 1;
unmodified flakes - 113; misc. debris 11 (see Figure 44).

Represented Lithic Types: Unidentified quartzites 26.9%;
novaculite 19.4%; sandstone 1.5%; unidentified cherts
and flints 47.1%.

Site Evaluation and Recommendations: This site has been somewhat disturbed by a runoff gully which has exposed a section of the habitational deposit. Cultural debris was recovered from the slopes of the gully and surrounding eroded areas. Although the exact area of the site could not be determined because of dense pasture grasses, it probably exceeds a half acre. From the depth of exposed material in the walls of the gully, the occupational deposit is estimated to be at least 30 inches below the surface. At-154 lies just west of a broad corridor assigned to the Atoka Bypass (Figure 36) and at present will not be affected by proposed construction. If the U.S. 69 alignment is adjusted and poses a threat to the site, it is recommended that exploratory testing and possible salvage be initiated.

Temporal-Cultural Relationships: Certain of the collected specimens infer that an Archaic manifestation is represented at the site. The contracting stemmed dart points (Gary) are the typical style of projectiles associated with late Middle and Late Archaic component sites throughout southeastern Oklahoma.

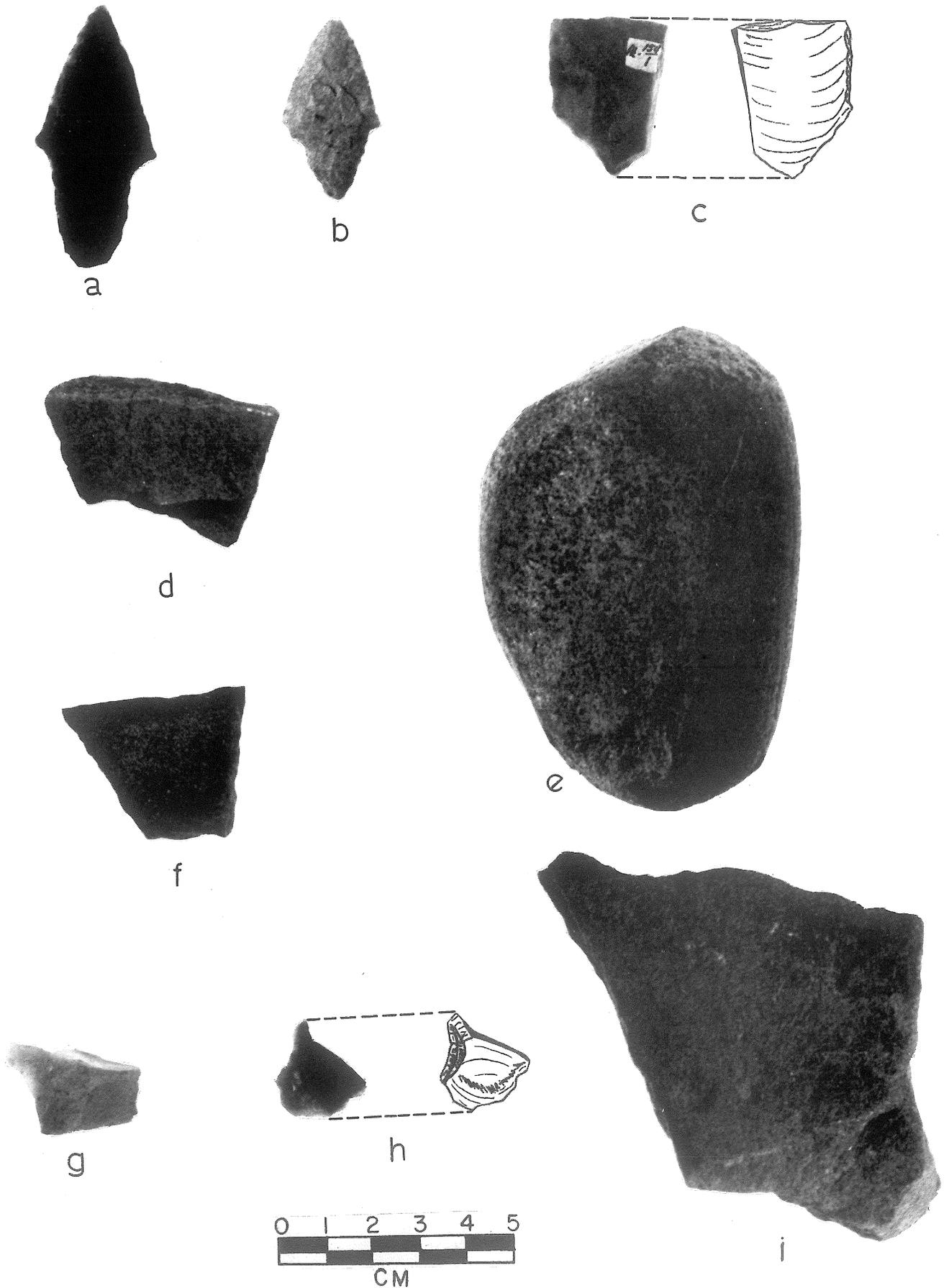


Figure 44. At-154(a-f) and At-155(g-i) Artifacts: a and b, projectile points (a and b, Gary); c, modified flake; d and e, ground sandstone fragments; f, hammerstone; g, unidentified biface fragment (projectile point preform?); h, modified flake; i, grinding stone fragment.

At-155

Site Classification: Open site; camp/workshop area.

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Bernow fine sandy loam, 5-8% slopes, Bernow
fine sandy loam, 0-1% slopes.

Land-use: Pasture

Recovered Materials: Unidentified biface fragments - 1;
preforms - 1; modified flakes - 6; grinding stones - 1;
cores - 1; unmodified flakes - 98; misc. debris - 23
(see Figure 44).

Represented Lithic Types: Unidentified quartzites 25.9%;
novaculite 22.1%; sandstone .8%; Frisco flint -1%;
Bigfork chert 2.8%; unidentified cherts and flints
47.1%.

Site Evaluation and Recommendations: Horizontal distri-
bution of recovered debris indicated an areal extent
of at least one acre. Posthole tests revealed a
cultural deposit extending from the surface to a
depth of 30 inches. At-155 lies directly in the
path of a broad corridor assigned to the Atoka Bypass
(Figure 36). At the present time, however, the
exact alignment has not been selected. If the site
will be affected upon determination of final rights-
of-way, it is recommended that further exploratory
testing be conducted.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic material collected at this site.

At-156

Site Classification: Open site; workshop(?).

Land Resource Area and Biotic District: Cross Timbers/
Ouachita.

Soil Type: Hamden fine sandy loam, 0-2% slopes.

Land-use: Pasture

Recovered Materials: Modified flakes - 3; hammerstones - 1;
unmodified flakes - 9; misc. debris - 1 (see Figure 46).

Represented Lithic Types: Unidentified quartzites 25.6%;
Frisco-like flint 42.9%; unidentified cherts and flints
21.4%; Zipper-like flint 7.1%.

Site Evaluation and Recommendations: This site is located west of a parking and rest facility along the U.S. 69 corridor (Figure 13). Posthole testing indicated that the thin cultural deposit was limited to the surface and immediate subsurface. This site appears to have little significance and no further work on the site is deemed necessary. Should the new alignment be located in this area, however, and if subsurface features are located during construction, the contractor should notify OHAS as required by Standard Specification, Section 202.04(a) and (b).

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic material collected at this site.

At-157

Site Classification: Open site; camp/workshop(?).

Land Resource Area and Biotic District: Cross Timbers/Ouachita.

Soil Type: Bernow soils, 2-8% slopes, severely eroded.

Land-use: Pasture

Recovered Materials: Unidentified biface fragments - 2; modified flakes - 4; hammerstones - 1; cores - 1; unmodified flakes - 2 (see Figure 45).

Represented Lithic Types: Unidentified quartzites 60%; petrified wood 10%; novaculite 10%; unidentified cherts and flints 20%.

Site Evaluation and Recommendations: Sparsely scattered cultural material was collected from a limited area of less than one acre. At-157 is situated to the east of the project corridor and will not be affected by construction activity (Figure 13). No further work is recommended on this site.

Temporal-Cultural Relationships: In terms of cultural assessment, nothing can be inferred from the limited and undiagnostic material collected at this site.

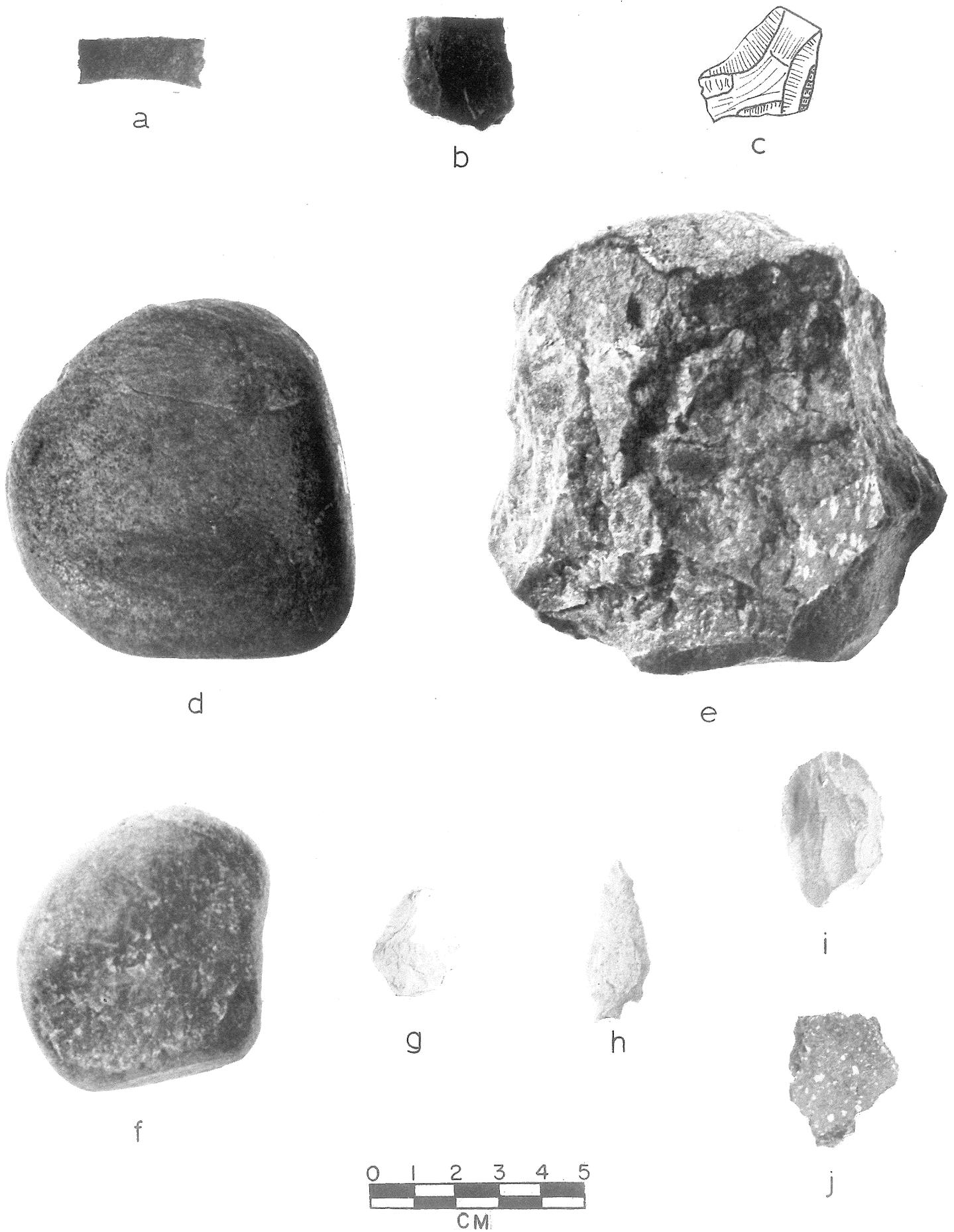


Figure 45. At-157(a-e), Br-145(g), and Br-146(f, h-j) Artifacts: a and b, unidentified biface fragments; c, modified flake; d and f, hammerstones; e, multifaceted core; g, projectile point preform; h, unidentified projectile point; i, preform; j, unidentified shell-tempered pottery (body sherd).

At-158

Site Classification: Open site; camp/workshop area (prehistoric), and farmstead (historic).

Land Resource Area and Biotic District: Cross Timbers/Osage Savanna.

Soil Type: Bernow soils, 2-8% slopes, severely eroded; Bernow soils, 3-5% slopes.

Land-use: Pasture (previously residential).

Recovered Materials: Preforms - 1; modified flakes - 8; unmodified flakes - 27; misc. debris - 4; bone fragment - 1 (see Figure 46).

Represented Lithic Types: Quartz 2.5%; unidentified quartzites 42.5%; Frisco-like flint 10%; unidentified cherts and flints 45%.

Site Evaluation and Recommendations: This site was located with the aid of a local informant and is not in the project area. This site will not be disturbed by construction and no further OHAS involvement is warranted.

Temporal-Cultural Relationships: In terms of cultural assessment, no definite relationships can be inferred. However, the presence of a contracting-stemmed dart point possibly indicates an Archaic manifestation.

BRYAN COUNTY - DIVISION II

Survey Limits: U.S. 69 Corridor, Atoka-Bryan County line southwesterly approximately 10 miles to existing four-lane facility south of Armstrong, Bryan County.

Br-145

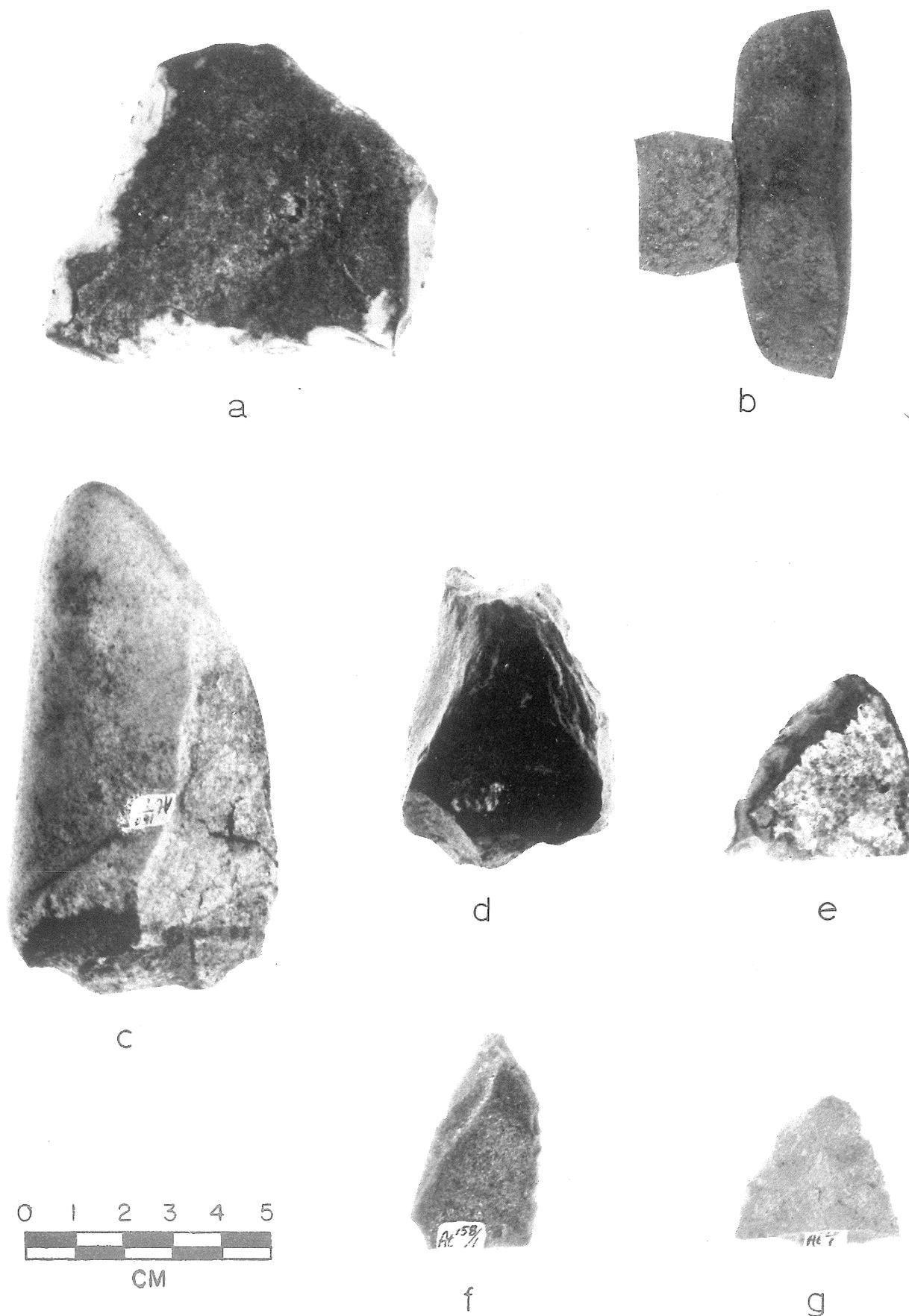


Figure 46. Miscellaneous Site Artifacts: a, modified flake (At-103); b, iron broadaxe (At-145, ¼ actual size); c, modified cobble (At-150); d, multifaceted core (At-149); e and f, modified flakes (e, At-156; f, At-158); g, preform (At-158).

Site Classification: Open site; unknown (prehistoric),
farmstead/refuse area? (historic).

Land Resource Area and Biotic District: Dissected Coastal
Plains/Osage Savanna.

Soil Type: Osage loam.

Land-use: Pasture

Recovered Materials: Preforms - 1; unmodified flakes - 16;
misc. debris - 5. Historic debris: stonewares - 1;
undecorated white ironstone - 1; Mocha or banded
wares - 1; blue shell-edge wares - 1; monochrome
striped wares - 1; blue transferwares - 1 (see
Figure 45).

Represented Lithic Types: Quartzites 22.7%; Frisco-like
flint 9.19%; novaculite-like 27.3%; unidentified
cherts and flints 40.9%.

Site Evaluation and Recommendations: A minimal amount
of cultural debris was found scattered over an area
of about one acre. Since the site lies outside the
proposed rights-of-way, only a surface collection
was performed. In accordance with highway guide-
lines additional research by OHAS is not recommended.

Temporal-Cultural Relationships: Although both a pre-
historic and historic occupancy is evident, very
little can be inferred from the limited and mostly
undiagnostic materials collected. Several of the
hardpaste earthenwares, however, relate to debris
recovered from known mid-nineteenth century sites
such as Forts Towson and Washita. Similar artifacts
have been also collected from two other sites (At-50
and At-56) in the project area.

Br-146

Site Classification: Open site; activity unknown.

Land Resource Area and Biotic District: Dissected Coastal Plains/Osage Savanna.

Soil Type: Osage loam and Trinity clay.

Land-use: Sand, gravel quarry/pasture.

Recovered Materials: Preforms - 1; cores and fragments - 2; hammerstones - 1; modified flakes - 1; unmodified flakes - 1; unmodified flakes - 6; shell-tempered ceramics - 4; misc. debris - 6 (see Figure 45).

Represented Lithic Types: Quartzites 38.9%; Bigfork-like cherts 5.6%; Zipper-like flint 5.6%; Woodford-like cherts 5.6%; unidentified cherts and flints 27.7%; hematite 11%; limestone 5.6%.

Site Evaluation and Recommendations: Cultural debris was recovered from the eroded slopes of terrace which has been used as sand/gravel quarry. Although areal extent could not be determined, it is believed to be at least 2 to 3 acres. Since the site has been severely disturbed, further controlled excavations are not recommended. If sub-surface features are exposed during construction, the contractor should notify OHAS according to Standard Specifications, Section 202.04(a) and (b).

Temporal-Cultural Relationships: Little can be inferred from the limited and undiagnostic materials from Br-146. Nevertheless, a late prehistoric occupation is suggested from the recovery of shell-tempered ceramics. These sherds bear strong resemblance to pottery wares (Leon Plain?) of Northeastern Texas, (Wyckoff, personal communication).

MITIGATION TABLE: U.S. 69 PROJECT

COUNTY	SITE	PROJECT NO.	RECOMMENDED MITIGATION*
Pittsburg	Ps-81	RF-299	A
Pittsburg	Ps-82	RF-299	C
Pittsburg	Ps-83	RF-299	A
Pittsburg	Ps-84	RF-299	A
Pittsburg	Ps-85	Misc. site	A
Atoka	At-24	Misc. site	A
Atoka	At-32	Atoka Bypass	A
Atoka	At-33	Tushka Bypass	A
Atoka	At-34	Tushka Bypass	B
Atoka	At-35	Tushka Bypass	A
Atoka	At-36	Tushka Bypass	D
Atoka	At-37	Tushka Bypass	B
Atoka	At-38	Tushka Bypass	A
Atoka	At-39	Tushka Bypass	A
Atoka	At-40	Tushka Bypass	A
Atoka	At-41	Tushka Bypass	A
Atoka	At-42	Tushka Bypass	D (?)
Atoka	At-43	Tushka Bypass	A
Atoka	At-44	RF-219 (63)	B
Atoka	At-45	RF-219 (63)	A
Atoka	At-46	RF-219 (63)	A
Atoka	At-47	RF-219 (63)	B
Atoka	At-48	RF-219 (63)	A
Atoka	At-49	RF-219 (63)	B (?)
Atoka	At-50	RF-219 (53)	A
Atoka	At-51	Misc. site	C
Atoka	At-52	Atoka Bypass	D
Atoka	At-53	Atoka Bypass	D
Atoka	At-54	Tushka Bypass	A
Atoka	At-55	Misc. site	C
Atoka	At-56	Misc. site	A
Atoka	At-93	RF-299 (45)	A
Atoka	At-94	RF-299 (45)	A
Atoka	At-95	RF-299 (45)	B
Atoka	At-96	RF-299 (45)	D
Atoka	At-97	Atoka Bypass	B
Atoka	At-98	Atoka Bypass	A
Atoka	At-99	Atoka Bypass	C
Atoka	At-100	Tushka Bypass	D
Atoka	At-101	Tushka Bypass	A
Atoka	At-102	Misc. site	A
Atoka	At-103	Misc. site	A

MITIGATION TABLE: U.S. 69 PROJECT

COUNTY	SITE	PROJECT NO.	RECOMMENDED MITIGATION*
Atoka	At-145	RF-219 (63)	B (?)
Atoka	At-146	RF-219 (63)	A
Atoka	At-147	Misc. site	C
Atoka	At-148	Misc. site	C
Atoka	At-149	Misc. site	A
Atoka	At-150	RF-219 (53)	A
Atoka	At-151	Misc. site	C
Atoka	At-152	Misc. site	A
Atoka	At-153	Misc. site	C
Atoka	At-154	Atoka Bypass	B (?)
Atoka	At-155	Atoka Bypass	B (?)
Atoka	At-156	Tushka Bypass	D
Atoka	At-157	Tushka Bypass	A
Atoka	At-158	Misc. site	A
Bryan	Br-145	RF-219 (33)	A
Bryan	Br-146	RF-219 (33)	D

KEY: A - No additional archaeological investigation recommended.
 B - Exploratory testing for further evaluation by OHAS recommended.
 C - Site not directly affected by highway project; further evaluation by State Archaeologist and/or other agencies recommended.
 D - Site monitoring during construction by contractor under Standard Specifications 202.04(a) and (b)
 (?) - Indicated mitigation dependent upon final right-of-way selection.

* Complete information pertaining to mitigation may be obtained upon written request to the Planning Engineer, Planning Division, Oklahoma Department of Highways.

TABLE 1

INFERRED CULTURAL AFFILIATION & CITED SOURCES

SITE	ARTIFACT(S)	INFERRED AFFILIATIONS	REFERENCE	TIME SPAN	SITE	ARTIFACT(S)	INFERRED AFFILIATIONS	REFERENCE	TIME SPAN
Ps-81	Arrowpoint: Fresno	Late Prehistoric	Bell '60 Burton '70	A.D. 800 - 1600	At-52	Dart point: Gary	Archaic ?	Wyckoff '68 Bell '58	3000 B.C. to ?
Ps-82	Dart points: Gary-like, Bulverde, Carrollton, Frio, Plainview	Early to Middle Archaic	Bell '58 & '60 Rohrbaugh '72 Johnson '61	8000 B.C. to A.D. 1000	At-53	No diagnostic materials	-	-	-
Ps-83	No diagnostic materials	-	-	-	At-54	No diagnostic materials	-	-	-
Ps-84	No diagnostic materials	-	-	-	At-55	Unidentified medium-sized dart point	Middle to Late Archaic	Burton '70 Rohrbaugh '72	4000 B.C. to ?
Ps-85	No diagnostic materials	-	-	-	At-56	Misc. historic debris	Unknown prehistoric affiliations Historic	Lewis '72 & '75	mid - 1800
At-24	Dart points: Gary and Ensor	Middle to Late Archaic	Bell '58 Rohrbaugh '72	3000 B.C. to ?	At-93	No diagnostic materials	-	-	-
At-32	Arrowpoint: Fresno Dart point: Gary	Late Archaic to Late Prehistoric ?	Bell '58 Bell '60	2000 B.C. to A.D. 1600	At-94	No diagnostic materials	-	-	-
At-33	Gouge Arrowpoint: Scallorn	Middle Archaic, Late Prehistoric	Bell '60 Rohrbaugh '72 Wyckoff '68	4000 to 2000 B.C. A.D.700-1500	At-95	Unidentified med.-sized dart point. Misc. historic debris	Archaic ? Historic	Rohrbaugh '72 Lewis '72	Early to mid - 1800
At-34	Unidentified small, minimally retouched projectile point	Late Archaic to Late Prehistoric ?	Rohrbaugh '72 Burton '70	2000 B.C. to A.D. 1600	At-96	No diagnostic materials	-	-	-
At-35	No diagnostic materials (May relate to At-34)	-	-	-	At-97	Arrowpoint: Scallorn	Probably Late Prehistoric	Burton '70 Bell '60	A.D. 700 - 1500
At-36	Dart points: Dalton/Plainview, Gary Arrowpoint: Scallorn Misc. historic debris	Early Archaic to Late Prehistoric Historic	Bell '58 & '60 Rohrbaugh '72 Lewis '75	8000 B.C. to A.D. 1600 A.D. 1850	At-98	No diagnostic materials	-	-	-
At-37	Dart points: Calf Creek, Montell, Scottsbluff-like and Abasolo	Early to Middle Archaic	Bell '58 & '60 Rohrbaugh '72	8000 to 2000 B.C.	At-99	Dart point: Gary Arrowpoint: Washita-like	Probably Late Prehistoric	Wyckoff '68 Bell '58 & '60	A.D. 700 - 1600
At-38	Dart point: Gary	Archaic ?	Bell '58 Rohrbaugh '72	3000 B.C. to ?	At-100	Dart point: Edgewood-like	Archaic to Late Prehistoric	Bell '58 Rohrbaugh '72	?
At-39	Misc. materials	Probably Archaic	-	-	At-101	Dart point: Meserve, Kent & Gary	Early to Middle Archaic	Bell '58 & '60 Rohrbaugh '72	8000 to 2000 B.C.
At-40	Dart point: Scottsbluff/Dalton Arrowpoint: Scallorn	Late Paleo/Early Archaic to Middle Archaic Late Prehistoric	Rohrbaugh '72 Bell '60	8000 B.C. to 2000 B.C. A.D.700-1500	At-102	No diagnostic materials	-	-	-
At-41	Dart point: Gary	Archaic ?	Bell '58 Burton '70	3000 B.C. to ?	At-103	No diagnostic materials	-	-	-
At-42	Reworked dart point Misc. materials	Archaic ?	-	-	At-145	Dart point: Gary Misc. historic debris	Archaic ? Historic	Bell '58 Lewis '72	3000 B.C. Mid 1800's
At-43	No diagnostic materials	-	-	-	At-146	No diagnostic materials	-	-	-
At-44	No diagnostic materials	-	-	-	At-147	Misc. historic debris	Unknown prehistoric affiliations Historic	Lewis '72 & '75	A.D. 1850 - 1900
At-45	No diagnostic materials	-	-	-	At-148	Dart points: Hanna-like and Gary Arrowpoint: Scallorn	Early to Middle Archaic Late Prehistoric	Perino '71 Bell '60 Burton '70 Rohrbaugh '72	3000 B.C. A.D.700-1500
At-46	No diagnostic materials	-	-	-	At-149	No diagnostic materials	-	-	-
At-47	Dart points: Calf Creek, Darl-like and Edgewood-like	Early to Late Archaic	Rohrbaugh '72 Bell '58 & '60	8000 to 1000 B.C.	At-150	No diagnostic materials	-	-	-
At-48	Arrowpoint: Fresno	Late Prehistoric	Bell '60 Burton '70	A.D. 800 - 1600	At-151	Dart point: corner notched Fruit jar liner	Probably Archaic Historic	Rohrbaugh '72 Lewis '75	? after 1850
At-49	Dart point: Gary	Archaic ?	Bell '58 Rohrbaugh '72	3000 B.C. to ?	At-152	No diagnostic materials	-	-	-
At-50	Misc. historic debris	Unknown prehistoric affiliations Historic	Lewis '72 & '75	mid - 1800	At-153	No diagnostic materials	-	-	-
At-51	Dart point: Gary	Archaic ?	Wyckoff '68 Bell '58	3000 B.C. to ?	At-154	Dart point: Gary	Archaic ?	Rohrbaugh '72 Bell '58	3000 B.C. to ?
					At-155	No diagnostic materials	-	-	-
					At-156	No diagnostic materials	-	-	-
					At-157	No diagnostic materials	-	-	-
					At-158	No diagnostic materials	-	-	-
					Br-145	Misc. historic debris	Unknown Prehistoric affiliations Historic	Lewis '72 & '75	? Mid 1850's
					Br-146	Shell-tempered pottery	Late Prehistoric	Ray '60 Wyckoff '68	A.D. 800 - 1600 ?

TABLE 2

Lithic Analysis and Resources

Since the majority of artifacts and debris recovered during the project reconnaissance were manufactured from stone, it was believed appropriate to gather as much data as possible concerning these lithic materials. It was hoped that this information might prove valuable in answering questions related to: (1) the identification and classification of certain flint, chert and quartzite; (2) the source of raw material utilized by the Indians, i.e., was it obtained by quarrying local geologic formations? Were stream gravels used and to what extent? Is there any indication that some rock was acquired through contact with other groups? (3) Preferential usage of particular lithic types by different peoples through time; and (4) predilection for certain materials for a specific application.

Although considerable time was spent in the field, in consultation with geologists and in literature searches, our research has only been partially successful. There are several reasons for this, among these being: (a) the general paucity of published references as a result of inadequate or nonexistent archaeological and geological investigations; and (b) confusion over the proper recognition and terminology of lithic resources - this problem is complicated by the abundant and heterogeneous nature of the material in the region. With regard to (b), it should be noted that our analyses were primarily mega- and microscopic. A complete account of a rock presumes that all its constituents can be identified; this goal is seldom attained by megascopic methods (Spock 1962:8), but depends principally upon thin-section, X-ray, and spectroscopic analytical techniques. However, to describe all the observed lithic variations and incongruities would not only be a monumental task but would probably have little, if any, real value.

Below is a listing of the categories referred to in this report. An attempt has been made to present an adequate description of each rock's physical characteristics and origin. For convenience, unidentified cherts, flints and quartzites displaying widely disparate traits are broken down into two general classes; previously established type designations are retained. Even though more detail than usual is given, this section should not be construed as an authoritative petrological treatise.

Cherts and flints (definitions): chert is the general name for chalcedonic (an aggregate of cryptocrystalline quartz) bodies in limestone. The dark variety found in chalk beds is called flint, but petrographically it is the same as cherts, so that the name just serves to designate an association with chalk. The chert in limestone is formed by replacement, a process of capillary solution and deposition by which a new mineral of partly or wholly differing chemical composition grows into the body of an old mineral. "Bedded" chert is a general term which includes firm, compacted rock primarily consisting of cryptocrystalline quartz which may be either massive and structureless or have alternating bands of color (Spock 1962:219, 224). Flints and cherts are sedimentary rock whose basic composition is SiO_2 . Prior to consolidation, the silicon dioxide was in a liquid solution or gel; the "grain" of a chert is finer if this solution was composed of clay size particles, less so if silt size and coarser still if sand size particulate matter. Coloration is a function of minerals in the original solution or entering by replacement at a later time. Common coloring agents are ferrous iron (greens), ferric iron (reds), carbon and manganese (black). A very rough rule-of-thumb often employed for classifying lithics is that chert is denser and opaque on its edges, whereas flint has subtranslucent edges; chalcedonies are translucent most of the way through. Actually, flint, chert, jasper and carnelian are structureless varieties of chalcedony.

Quartzites (definition): a granulose rock consisting essentially of quartz. "Quartzite" formerly designated a metamorphosed sandstone. Now the terms metaquartzite and orthoquartzite are used to differentiate between metamorphic and sedimentary varieties, respectively (Spock 1962:248). Quartzites occur in a broad range of colors (white, grey, reds, yellows, greens) and have coarse grain (although fine-grained types are not by any means uncommon).

Novaculite

The Arkansas Novaculite geologic unit outcrops in an extensive area in McCurtain County, the Potato Hills of southern Latimer and northern Pushmataha Counties and along the trust fault east of Stringtown and Atoka

where the unit is from 360-375 feet thick. This locality was visited by OHAS on several occasions and samples taken for analysis. Geologically, the age of this formation is Devonian and Silurian (Paleozoic). Novaculite varies in coloration, texture and transparency. Common colors are white, grey, pink, slightly blue and green. Field investigations revealed that the so-called "Kiamichi Green" chert is really a type of novaculite. Textures range from fine and somewhat waxy to granular. Basal novaculite appears chalky and highly fractured due to extensive weathering. Novaculite is often semi-translucent but may be opaque. The content of this material is both inorganic and organic. As the case with most cherts, the inorganic portion is silica; the organic component is Radiolaria-simple marine protozoans having internal siliceous skeletons. Novaculites constituted about five percent of the lithic sample recovered from all U.S. 69 sites.

Frisco Flint (Chert)

The Frisco unit is a Lower Devonian formation lying stratigraphically between the St. Clair limestone and the Sallisaw sandstone. There are no known outcrops of Frisco flint close to the project area. Source localities have been reported in Pontotoc, Coal, Johnston and Sequoyah Counties (Huffman 1958; Evans 1958; Amsden 1961). Predominant colors are oyster white, grey, pale yellow to cream and pink. Fine-grained varieties are translucent on thin flake edges ("flint"), although the opaque, quartzite-like or "sugary" type ("chert") is most frequently observed. Frisco is primarily homogeneous but often contains small black, brown or reddish spots called vugs (cavities with a mineral lining of different composition from that of the surrounding rock). Sponge spicules, foraminifera, bryozoans, and small masses of quartz crystal are occasionally present. This chert accounts for less than 4% of the total lithic inventory.

Woodford Chert

Geologically, this chert is a Late Devonian and Early Mississippian material (Fellows 1964) occurring as nodules and thin beds within the Woodford Formation. Within the

U.S. 69 project region the Hunton-Woodford unit outcrops in the Arbuckle Uplift of western Atoka County about 15 miles southwest of Atoka. Other exposures have been discovered near Hartshorne (Pittsburg County) and the Winding Stair Range of Latimer County. Woodford is a dense, opaque chert of dull to waxy texture with black, grey and blue being dominant hues. Fossiliferous inclusions have not been detected but banding and gold streaks were noted by Saunders (1974). Cortex colors tend to be brown to light grey. Megascopically it is often difficult to distinguish this chert from Bigfork (q.v.). Tentative analysis reveals that Woodford-like chert comprises slightly less than 1% of recovered specimens.

Bigfork Chert

The Bigfork-Polk Creek unit parallels the Arkansas Novaculite formation from northeast of Stringtown to just south of Atoka (other outcrops exist in central McCurtain, southern Latimer and northern Pushmataha Counties). The Bigfork unit consists of many hard dark grey to black chert beds 4" to 2' in thickness, interbedded with thin coal-black shales. The Polk Creek unit overlies the Bigfork and is composed of soft to hard black shales. These two units are Upper and Middle Ordovician in age. Exposures of Bigfork are not plentiful and most outcroppings are covered by sharp, angular chert float (pieces of rock separated from the parent strata by weathering agencies). Several locales where the chert beds have been exposed by road cuts were investigated by OHAS. Many of the lithic samples taken were highly fractured and of generally poor quality. High grade Bigfork is ordinarily an opaque, fine-grained black chert exhibiting a waxy to lustrous outer surface. The overall inferior nature of Bigfork in Atoka County may explain why this resource was not exploited to a greater extent - less than 2% of the total lithic assemblage.

Zipper Chert (Flint)

This distinctive material derives its name from the Zipper Ranch in Latimer County where it is found in abundance in river beds. Although it is possible that Zipper is a variant of Bigfork, the most probable explanation

of its origin is that it is an "exotic" Pleistocene wash-in (personal communication: Dr. Robert Fay to Roger Saunders 1974). Zipper is not associated with an recognized geologic formation but occurs as stream gravels. Sources thus far recorded include Buffalo Creek (western Pittsburg County) and Pine, Longs, and Gaines Creeks in Latimer County. Zipper is a cryptocrystalline, translucent flint ranging in color from amber to brown, blue, grey and green. Luster may be either waxy or shiny. Diagnostic are the bands of oolites or vugs within the material. These inclusions are spherical to ellipsoid and are usually white or gold in coloration. Zipper is represented to a minor degree (one-half of one percent) among artifacts and debitage from archaeological sites along U.S. 69 rights-of-way.

Unidentified Cherts and Flints

This category includes a broad spectrum of heterogeneous substances which could not be identified as to type or geologic affiliation. Colors vary from grey to green, amber to brown, buff, white and reds. A number of specimens could be accurately described as chalcedonies since they have a waxy, translucent appearance throughout and occur principally in red, yellow and amber hues. Layers contain microscopic inclusions of hematite or limonite and may be any color from yellow to light brown or deep red. Textures may either be soft and chalky or chert-like. Other cherts are opaque and range from cryptocrystalline to a quartzite-like graininess. Quartz vugs, minute fossils, "agate" or concentric banding, and mottling are often present. Unidentified flints and cherts, on an average, constitute 55% of recovered lithic specimens.

Geologic formations in the nearby vicinity which may have been the sources of collected materials are the Atoka, Jackfork, Sylvan-Viola and Wapanucka-Springer units which contain some chert nodules (Oklahoma Department of Highways 1966). However, it is thought that the preponderance of these cherts originated in the Rocky Mountains, having been washed into Oklahoma in the Pliocene and Pleistocene epochs. The term "Rocky Mountain Quartzites" is frequently used by geologists to denote redeposited gravels, whether

they be quartzites, cherts, flints, etc. The unifying characteristic of all this diverse material is a waterworn cobble cortex, the presence of which strongly argues in favor of a redeposited gravel rather than a nodular origin. Representative of these accumulations within the project area are the Gertie Sands consisting of sand, mixed gravels and clay deposits resting upon consolidated geologic materials in the form of an upland terrance across the central portion of Pittsburg County. Throughout its extent, the maximum thickness of this deposition is 50 feet. It is currently hypothesized that some ancient river system, possibly the Canadian, deposited the Gertie Sands and has since cut itself down to a lower elevation, migrating to another region as a result of stream piracy. The Canadian, North Canadian, and Cimarron Rivers were probably initiated in the Tertiary Period when the Rockies were uplifted, causing the eastward-flowing drainage pattern to develop. These incipient rivers had many tributaries reaching the Rocky Mountains. Presumably, the streams laid down the Pliocene deposits, such as the Ogallala Formation, producing large alluvial fans with a braided drainage system. As the Pleistocene rivers eroded into the underlying strata they formed valleys with each period of maximum ice melting, most likely at the beginning of glacial regression. These valleys were then filled at a time of minimum melting creating terrace levels (Fay 1964). During the Kansan, or second Pleistocene age, piracy of the Canadian took place and widespread gravel deposition ensued. Today, the gravels are not found in the major rivers for they are deeply buried under alluvium. Stratigraphic testing at several U.S. 69 sites indicated gravel lenses 2-3 feet below the upper sandy horizon (alluvial and/or eolian deposits). Research by OHAS in Carter County and western Oklahoma (e.g., Kiowa, Greer, Washita, Woods Counties) discloses an analogous situation in which extensive surface and subsurface gravel deposits can be observed where gully formations dissect the natural stratigraphy. These gravels were evidently brought in by streams during Plio-Pleistocene times and share many similarities with Pittsburg, Atoka, and Bryan Counties lithics. Furthermore, a variety of flint cobbles occurring in Murray, Love and Marshall Counties often designated by archaeologists as "Windthorst Gravels" (see Wyckoff 1973) resemble the unidentified cherts, flints and quartzites described herein.

Additional sources of these materials are extant in the beds of smaller creeks and tributaries, as well as exposed terrace outcroppings. These outcrops were undoubtedly more prominent during the prehistoric era before the terraces became markedly altered by wind-borne sedimentation, alluviation and (later) agricultural practices. The foregoing discussion as to the derivation of recovered lithic types is also applicable to the Unidentified Quartzites considered below.

Unidentified Quartzites

Approximately 34% of artifacts were manufactured from locally available quartzite cobbles. As with the unidentified cherts, variability in texture and color is conspicuous. Quartzites appear in numerous shades of grey, tans and brown, yellows, reds, and buff. Coloration may either be uniform or mottled, banded and have inclusions (commonly quartz cavities or veins and chert fragments). Textures range from extremely coarse to fine-grained, chert-like consistency. Waterworn cortex, present on many specimens, generally differs in color and texture from the cobble's interior.

This category also includes lithic examples tentatively identified as "Ogallala Quartzite". Originally designated "Ogallala Chert" by Tunnell and Hughes (1955:67), recent investigations by Lopez and Saunders (1973) have shown that it is actually a quartzite. Thin-section analysis revealed that Ogallala is a silicified siltstone (thus an ortho-quartzite) in which silt grains are cemented or, in some instances, being replaced by chert. The name Ogallala is derived from the Ogallala Formation consisting of 150-300 feet of gravels, sands, clays, and limestones of late Tertiary age (Pliocene), east of the Rocky Mountains, extending from Wyoming to Texas and from central Nebraska to western Oklahoma (Fay 1965:84). Only three types of quartzites (Ogallala, Tesesquite, Dakota), all of which are orthoquartzites, have been described in detail. Most varieties washed in from the Rockies are metaquartzites (Dr. Robert Ray, personal communication).

Miscellaneous Lithic Materials

Incorporated within this category are the sandstones, siltstones, hematite, quartz, etc. which account for less than one percent of the entire lithic sample. Sources of these materials are both natural outcroppings and redeposited gravel lenses. Limestone, siltstone and sandstone appear in considerable quantity in most local geologic units (e.g., Thurman Sandstone, Boggy Formation, Morrowan Sandstones and Shales, Atoka and Jackfork Formations) within the project area.

Limestone is essentially composed of calcite (CaCO_3) and is the most abundant of the chemically precipitated sedimentary rock. Although calcite may be precipitated directly from sea water, the majority of the limestones are a result of organic precipitation. Among the varieties of limestone is chalk, a porous, fine-grained limestone created predominantly of foraminiferal shells. When dolomite becomes an important constituent of limestone, it grades into rock dolomite. Dolomites resemble limestone to such a degree that chemical tests are necessary to distinguish between the two. Dolomite is not formed as original rock but by the alternation of limestone in which part of the calcium is replaced by magnesium (Hurlbut 1971:497). Beds of sand that have been consolidated into rock masses are termed sandstone. The component grains are usually rounded and waterworn but can be angular. The cement which binds the sand grains together may be silica, a carbonate (often calcite), iron oxide such as hematite or goethite, or cryptocrystalline argillaceous (clayey) materials. The chief mineral of sandstone is quartz; if the rock contains large amounts of feldspar it is called arkose. In the finer-grained sandstones there are sometimes considerable quantities of clay-such stone grades into shale (Hurlbut 1971:496). Siltstone is an opaque consolidated clastic rock of silt-size particles (1/16 to 1/256 mm. in diameter). It is dense, non-calcareous and may be micaceous. The designation "siltstone" is a valid one, although rocks to which it might be applied are usually known by other names.

In the McAlester Basin or northern portion of the U.S. 69 project, the stratigraphy consists principally of 13,000 feet of Pennsylvanian shales and sandstones. The southern sector is composed of nearly 12,000 feet of Mississippian-Pennsylvanian sandstones. As yet, the origin of the sandstones used for ground and pecked stone artifacts has not been pinpointed. Items commonly fashioned from sandstone which have been recovered from several sites include metates, manos, and cupstones.

Listed below are three miscellaneous rocks and minerals confronted during laboratory analysis, all of which can only be found in the U.S. 69 project locality as redeposited gravels.

Hematite/Limonite: Crystalline hematite is normally restricted to ore deposits and associations of metallic minerals. Most hematite is present as microscopic grains disseminated through other substances, deposited as a crust, or as a cementing material. Limonite is a loosely used term for all hydrated ferric oxides of which goethite is the most plentiful. It is similar to hematite in that it adds color to rocks and their alteration products. The streak of limonite may be any shade from yellow to rusty brown. Since limonite alters readily into hematite, mixtures of the two are frequent, with the resulting colors blended correspondingly (Spock 1962:15).

Petrified Wood: Known source areas of silicified and petrified wood are the Cretaceous and other deposits in Murray, Love and Marshall Counties (Wyckoff 1973:70). Specimens range in color from amber to brown, red and green with varicolored, agate-like banding. Luster is usually rather dull and thin flakes are translucent.

Quartz: Quartz may be transparent and colorless or occur in greys (smoky quartz), milky white, yellow (citrine), violet, or rose-pink. Mineral veins, bubbles, gaseous and fluid inclusions are sometime observed. The broken surface of quartz is either sharp or jagged or irregularly conchoidal; the luster varies from vitreous

to an oily dullness. Detrital fragments are often frosted by wind abrasion or occasionally coated with a thin, ferruginous veneer. Of all minerals, quartz is most nearly a pure chemical compound with constant physical properties (Spock 1962:11; Hurlbut 1971:452). Quartz has been reported in southeastern Oklahoma by Honess (1923 and 1930) and Spradlin (1959).

At the beginning of this section, four questions were posed to which we will now attempt to provide answers based upon our lithic research. With reference to (1), the identification of the different materials has been achieved to a reasonable degree. Most specimens could be readily placed within their respective categories, with the exception of the "exotic" gravels which had to be combined into two broad unidentified classes. This was naturally more expedient than listing detailed descriptions of each diverse flint or quartzite type. Concerning (2), it is easily demonstrable that the source of the vast majority of raw materials (about 90%) was washed-in gravel deposits occurring as lenses and in the beds of smaller streams throughout the region. Evidently, the various prehistoric groups moved from one locale to another exploiting whatever lithic resources were immediately available. Although many geologic formations contain flints, cherts, and novaculite, it is suggested that their overall quality was too poor to make extensive quarrying practicable. That some quarry activity did take place is undeniable; the most obvious examples are At-97 and At-155 where the "Kiamichi Green" variety of novaculite, obtained from outcrops with a $\frac{1}{4}$ -mile radius, constituted a moderately large percentage of the lithic inventory. As regards trade relationships, there is no evidence currently on hand which would indicate the existence of trade routes or inter-tribal contacts with peoples outside the project area. In consideration of question (3), examination of all site assemblages revealed that even though percentages did fluctuate somewhat from site to site, the relative proportions of each material remained fairly constant. Therefore, we have not been able to discern any preferential utilization patterns from one temporal-cultural period to another. Finally (4), our data implies that the cherts, flints and chalcedonies were preferred for finely-made artifacts such as projectile points and knives. This was especially apparent at At-47 where the Calf Creek dart

points and fragments were all manufactured from Frisco-like flint. However, quartzites were favored in the production of scrapers, graters and other hide-working implements, and as hammerstones.

Summary and Conclusions

The fifty-eight archaeological sites and related materials reported herein represent only a superficial evaluation of the more discernible cultural resources recorded during the field reconnaissance of U.S. 69. Obviously, because of various factors, sites were not observed or in certain cases could not be interpreted properly. The archaeological potential within the area is significant, however, and must be investigated further to realistically mitigate any adverse effects created by the project.

Generally speaking, two types of archaeological sites were recorded along the survey route. Both types occurred in a variety of topographic situations where sandy or silty loam soils were prevalent. Small open sites designated camp/workshops were primarily located on terrace knolls, gently sloping terrace edges, or ridge spurs above both minor intermittent and major tributaries of permanent streams. These sites appear to represent small activity areas, one acre or less in extent with thin, sparsely scattered cultural mantles. The limited vertical deposits and minimal artifact inventories infer infrequent or one short-term occupations by a very small group. Recovered artifacts indicate both Archaic and late prehistoric assemblages.

The other type of site is a larger, more intense camp/workshop situated on terrace edges, prominent ridge spurs, and floodplains adjacent to major or minor streams. These sites typically have one or more of the following characteristics: deeper cultural deposits; wider areal extents; and somewhat larger and more varied tool inventories. Several of these sites contain at least 30 inches of occupational stratigraphy which may be indicative of longer and/or more frequent habitations. Both Archaic and late prehistoric manifestation are represented.

The U.S. 69 corridor cross-cuts three distinct geomorphic/environmental zones which in the past must have afforded prehistoric populations a wide range of natural resources and ecological niches. The first zone (northernmost area), from north of McAlester southward to just south of Atoka is characterized by a rocky, brushy or forested landscape with steep gradient streams and generally hard clayey soils. Fifteen sites were recorded in this area, most of which are located on sandy ridge spurs above major streams or at the confluence of a tributary(ies). Ten of these sites are temporary camp/workshops while the remaining five suggest a more intense occupation. Due to the nature of the survey in this zone, no particular settlement or land-use pattern could be discerned. With the exception of four sites located on Muddy Boggy Creek, the majority of the sites are affiliated with various Archaic peoples and apparently functioned as foraging camps in which hunting played the primary role of subsistence. At-99 is believed to be a late prehistoric site, possibly Caddoan, and exhibits some evidence of plant utilization and a more diversified economy.

The second zone encompasses the central project area from just south of Atoka to the drainage divide between the Blue River and Clear Boggy Creek (near Caddo). This area is characterized by gently rolling terrain and grassland savanna. Streams throughout the area commonly have low to steep gradients and wide meandering paths. Soils are predominantly heavily eroded sandy/gravelly loams with clay subsoils. Over two-thirds of the recorded sites were reported from this zone.

The archaeological situation here followed a complex settlement/land-use pattern of high occupational density. The main study area was Fronterhouse and Caney Creeks, major tributaries of Clear Boggy Creek. Almost every utilizable niche was inhabited by some affiliation of prehistoric peoples. Small temporary camps were scattered upstream on ridge spurs and gently sloping terraces to the extremities of the drainage system. Larger sites (more intense activity areas), located on similar terrain, were

generally located at intervals between the smaller camps. A broad spectrum of cultural assemblages is represented although Archaic manifestations dominate. Several sites, such as At-40, At-33, and At-36, are multicomponent. Three sites (At-36, At-50, At-147) have mid-to-late nineteenth century historic occupations.

The total artifact inventory from the prehistoric sites infers that a strongly oriented hunting society is represented. Projectile points, both dart and arrow, knives, scrapers, and flake tools utilized for scraping and cutting comprise the bulk of the tool inventory. Vegetal processing implements are almost absent (less than one percent of the total recovered artifacts). Although this relationship may be a result of sampling technique, the combined surface collections from these forty-one sites should constitute an adequate sample.

The lithic industry at a majority of the sites appears to have been centered around the modification/reduction of stream cobbles into finished implements. This conclusion is based upon the large quantities of decortication flakes and primary stage tool preforms which exhibit waterworn cortex. An explanation of this technological trend may be simple, since it is believed that over 90 percent of the recovered lithics in the area were derived from locally obtainable gravel deposits. The presence of such gravels (see Lithic Resources) may have been also a deciding factor for site selection.

The third zone which includes portions of the Blue River drainage system (extreme southern project locale) is denoted by sandstone escarpments and limestone plains. Area streams are short, deep with fairly steep gradients. Soils range from silty loam to hard compact clays. The surveyed corridor crossed approximately eight miles of terrain and followed Johnson Creek, a minor tributary of the Blue River, along its entire length. Only two archaeological sites were observed, both of which were situated above the Blue River. Br-145 was located along a sandy ridge spur above the south floodplain, while Br-146 occurred on the north terrace of the river. Both sites were probably temporary camp/workshops with sparsely scattered cultural deposits.

In conclusion, several statements can be made concerning many of the archaeological sites located during the survey.

- (1) A preference for sites situated on sandy knolls and ridge spurs upstream from major water sources (intense exploitation of tributaries).
- (2) Almost total reliance on stream gravels for lithic industries.
- (3) Strong orientation toward hunting endeavors.
- (4) Cross-section of prehistoric populations possibly spanning the last 7000 years.

Taken as a whole the nature of the sites with the exception of the more intensely occupied ones suggest short-term habitations by small bands of foragers. Although several sites could be considered to have fairly deep cultural deposits, none exhibited a well-developed midden typical of sedentary populations (i.e. villages). An overall picture is one of peoples wandering upstream from major stream systems hunting and gathering as they traveled. These prehistoric peoples probably stayed at one site only long enough to exhaust the available resources and then proceeded to new areas. Whether this pattern was repeated seasonally is not presently known. It is apparent, however, that through time different cultural groupings occupied the same site locales.

Culturally, the majority of sites are believed to be Archaic and display tool assemblages which bear some resemblance to components assigned to the La Harpe Aspect (Johnson 1961) and other Archaic manifestation defined from excavations in southeastern Oklahoma (see Wyckoff 1966, 1968, 1970; Rohrbaugh 1968, 1971, 1972, 1973). The cultural identification of the late prehistoric sites is unclear because of the lack of diagnostic data. The few clues that were uncovered infer at least a possible Caddoan Tradition affiliation.

Most of the sites with historic components are believed to be associated with mid-to-late nineteenth century occupations and are possibly affiliated with the Choctaws. Albeit this assumption cannot be directly supported, it seems plausible since the project area was once part of the Old Choctaw Nation.

In all instances, further archaeological investigations must be conducted to refine and confirm these conclusions. Hopefully, the information gained through excavation of selected sites along U.S. 69 will bring us closer to understanding the early peoples who once lived in this part of southeastern Oklahoma.

SITE SUMMATION TABLE

SITE #	TOPOGRAPHIC SITUATION	LAND RESOURCE AREA	BIOTIC DIST.	WATER SOURCES	ASSOCIATED SOILS	INFERRED CULTURAL AFFILIATION *	RECOMMENDED MITIGATION **
Ps-81	Ridge Spur	Ouachita Highlands	Osage Savanna/ Ouachita Ecotone	Tributaries of Chun Creek	Silty Loam	4	A
Ps-82	Ridge Crest and Flanks	Ouachita Highlands	Osage Savanna/ Ouachita Ecotone	Peaceable Creek	Loamy Fine Sand	6-2(?)	C
Ps-83	Ridge Spur	Ouachita Highlands	Osage Savanna/ Ouachita Ecotone	Peaceable Creek	Loamy Fine Sand	2(?)	A
Ps-84	Ridge Spur	Ouachita Highlands	Osage Savanna/ Ouachita Ecotone	Peaceable Creek	Sandy Loam	7	A
Ps-85	Ridge Spur	Ouachita Highlands	Osage Savanna/ Ouachita Ecotone	Tributary of Peaceable Creek	Loamy Sand	7	A
At-24	Ridge Spur	Cross Timbers	Osage Savanna	Tributaries of Cowpen Creek	Sandy Loam	2	A
At-32	Ridge Spur	Cross Timbers	Ouachita	Sandy Creek	Fine Sandy Loam	2(?)	A
At-33	Terrace Edge	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Loamy Fine Sand	6-2 & 4(?)	A
At-34	Terrace Edge	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam	6-2 & 4(?)	B
At-35	Terrace Edge	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-36	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	6-2,4,5	D
At-37	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	2	B
At-38	Ridge Spur	Cross Timbers	Ouachita	Front-erhouse Creek	Sandy Loam, Eroded	2	A
At-39	Ridge Spur	Cross Timbers	Ouachita	Front-erhouse Creek	Sandy Loam, Eroded	2	A
At-40	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	6-1,2,4(?)	A
At-41	Ridge Flanks	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	2	A
At-42	Ridge Flanks	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	2	D(?)
At-43	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-44	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam, Eroded	2	B
At-45	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam, Eroded	7	A
At-46	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam, Eroded	2	A
At-47	Terr. Knoll & Flood Plain	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Clear Boggy Creek	Fine Sandy Loam	6-2(?)	B
At-48	Ridge Spur	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Caney Creek	Fine Sandy Loam	4(?)	A
At-49	Ridge Spur	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Caney Creek	Fine Sandy Loam, Severely Eroded	2	B(?)
At-50	Ridge Spur	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Fine Sandy Loam, Severely Eroded	6-5, (?)	A
At-51	Terrace and Flood Plain	Forested Coastal Plain	Osage Savanna	Clear Boggy Creek	Fine Sandy Loam	2	C
At-52	Terrace Edge	Cross Timbers	Ouachita	Tributary of Sandy Cr.	Fine Sandy Loam	2	D
At-53	Terrace Edge	Cross Timbers	Ouachita	Sandy Creek	Fine Sandy Loam	7	D
At-54	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-55	Ridge Spur	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Front-erhouse Creek	Sandy Loam, Severely Eroded	2	C
At-56	Ridge Spur	Forested Coastal Plain	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam	6-5, (?)	A
At-93	Terrace Knoll	Cross Timbers	Ouachita	Buck Creek	Loamy Soils, Eroded	7	A
At-94	Knoll	Cross Timbers	Ouachita	Buck Creek	Silty Loam	7	A
At-95	Terrace	Cross Timbers	Ouachita	Buck Creek	Loamy Soils, Eroded	2	B
At-96	Terrace	Cross Timbers	Ouachita	Buck Creek	Loamy Soils, Eroded	7	D
At-97	Terrace Knoll	Cross Timbers	Ouachita	Muddy Boggy Creek	Fine Sandy Loam	4	B
At-98	Terrace Knoll	Cross Timbers	Ouachita	Tributary of Muddy Boggy Creek	Fine Sandy Loam & Silt Loam	7	A
At-99	Terrace Edge	Cross Timbers	Ouachita	Muddy Boggy Creek	Silt Loam & Fine Sandy Loam	2,4	C
At-100	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	2(?)	D
At-101	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	2	A
At-102	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-103	Ridge Spur	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-145	Ridge Crest	Cross Timbers	Ouachita	Front-erhouse Creek	Sandy Loam, Eroded	6-2,5	B(?)
At-146	Ridge Crest & Flanks	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Clear Boggy Creek	Fine Sandy Loam	7	A
At-147	Ridge Spur	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Fine Sandy Loam, Eroded	6-5, (?)	C
At-148	Ridge Crest	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Loamy Pine Sand	6-2,4	C
At-149	Ridge Spur	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Sandy Loam, Severely Eroded	7	A
At-150	Ridge Toe	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Fine Sandy Loam	7	A
At-151	Ridge Crest & Flanks	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Fine Sandy Loam	6-2,5(?)	C
At-152	Ridge Spur	Forested Coastal Plain	Osage Savanna/ Ouachita Ecotone	Caney Creek	Sandy Loam, Severely Eroded	7	A
At-153	Ridge Spur	Forested Coastal Plain	Osage Savanna	Tributary of Caney Creek	Loamy Pine Sand	7	C
At-154	Flood Plain	Cross Timbers	Ouachita	Muddy Boggy Creek	Silty Loam	2	B(?)
At-155	Ridge Crest & Toe	Cross Timbers	Ouachita	Muddy Boggy Creek	Fine Sandy Loam	7	B(?)
At-156	Terrace	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Fine Sandy Loam	7	D
At-157	Ridge Toe	Cross Timbers	Ouachita	Tributary of Front- erhouse Creek	Sandy Loam, Severely Eroded	7	A
At-158	Ridge Spur	Cross Timbers	Osage Savanna	Clear Boggy Creek	Sandy Loam, Severely Eroded	2(?)	A
Br-145	Ridge Spur	Diss. Coastal Plain	Osage Savanna	Blue River	Loamy Soils	6-5, (?)	A
Br-146	Terrace	Diss. Coastal Plain	Osage Savanna	Blue River	Loamy Soils & Clay	4(?)	D

KEY: *

1-Paleo Indian
2-Archaic
3-Woodland
4-Late Prehistoric

5-Historic

6-Multicomponent
7-Unknown

KEY: **

A-No additional archaeological investigation recommended.
B-Exploratory testing for further evaluation by OHS recommended.
C-Site not directly affected by highway project; further evaluation by State Archaeologist and/or other agencies recommended.
D-Site monitoring during construction by contractor under Standard Specifications 202.04(a) and (b).
(?)-Indicated mitigation dependent upon final right-of-way selection.
COMPLETE INFORMATION PERTAINING TO MITIGATION MAY BE OBTAINED UPON WRITTEN REQUEST TO THE PLANNING ENGINEER, PLANNING DIVISION, OKLAHOMA DEPARTMENT OF HIGHWAYS.

TABLE 3

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