

RICE UNIVERSITY



1982 Season: First Report

ARCHAEOLOGICAL EXCAVATIONS

at the

KELLUM-NOBLE HOUSE SITE

HOUSTON, TEXAS

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ARCHAEOLOGICAL EXCAVATIONS

at the

KELLUM-NOBLE HOUSE SITE

Sam Houston Park
Houston, Texas
(site 41HR425)

by members of the
Rice University, Field Methods Class
(Anthropology 362b)

edited by

Roderick J. McIntosh
Department of Anthropology, Rice University

PREFACE: Teaching Humble Archaeology (1982)

Roderick J. McIntosh, Department of Anthropology
Rice University

The excavations at the Kellum-Noble House in Sam Houston Park, downtown Houston were exploratory. Historical archaeology has recently come into its own in Texas. There is an apparent need for major excavation at historic sites, residences and industrial structures, in parts of our cities subject to urban sprawl. Unfortunately, lack of trained manpower and funds limits the amount of urban archaeology now being done.

The goals of the Rice University Field Methods class (Anthropology 362b, Spring Semester 1982) were modest: to investigate the nature of the deposits and to present in professional form the results of investigations. Recommendations for future work will be generated from discussions with members of the Texas Antiquities Committee and the Harris County Heritage Society, both of which organizations granted permission for the 1982 research and for the slightly unorthodox approach to the present report. Plans have already been made to continue excavations at the Kellum-Noble House with next year's Field Methods class.

In a sense, the 1982 excavations were doubly exploratory. Field classes are notorious for poor excavation techniques. Results of their research are seldom published properly and artifacts and field notes are eventually lost as bags crumble in storage and files are re-organized. The students in the class were asked to excavated the vicinity of the house, undertake full analysis, and

to present a professional-standard site report in the short space of one academic semester. The present site report shows their outstanding response to the challenge; it represents a real contribution to knowledge.

This report represents entirely the efforts of undergraduate students. The editorial hand was kept moderately light on substance, in part because the Rice students once again showed a keen grasp of the essential problems and were quite content to find their own way (with guidance over the rough spots) through the tangle of data. The conclusions of this report are not earth-shaking, a fact that reflects as much the philosophy of the course as the nature of the excavated materials. My principal goal for the course was to teach a proper appreciation of size and representativeness of the data, that is, broad sampling considerations. Small sample size, the possibly prejudiced sample from our two uncompleted units (small sampling fraction), and stratigraphic mixing by roots and rodents were cursed by undergraduates, who will probably never read the writings of professional archaeologists in quite the same way again. That great intangible, a professional attitude, was encouraged by asking all students to keep to the impossibly short deadline and by stressing co-operation with all other contributors.

It was a wonderful thing to watch undergraduates pitted against real data. Expectations of what could be said with the data ran high throughout the excavation period and well into the second of five weeks of laboratory analysis. Then spirits sank as students understood for the first time what is meant by suitability of sample. There were a few crises of honesty. Some were tempted to merge speculation with substantiated fact, although they knew they would be

asked to back up each conclusion with their data. The reader is forewarned that the conclusions to all sections are modest. Humble conclusions are not, however, to be confused with trivial conclusions.

I applaud the students of the 1982 Field Methods class for their professional excavation and contribution to our understanding of the changing use of the Kellum-Noble House. They have created a document which will be used heavily by scholars in the future (following Field Method classes in particular!) and which may serve as a model of what a teacher can ask of students. The enthusiasm of the students is evident throughout, as is the cheerfulness which characterized the class. They were an extra-ordinarily nice and considerate bunch of students.

Students' names are found at the beginning of their contribution. No less important are those responsible for the graphics, Vicky Wilson, and for the photography, Gaye Gilbert and Caroline Rose. None of the editorial unevenness of the report should be blamed on the excellent Teaching Assistant for the class, Roger Moore.

Our ^athanks go to Mr. Partick H. Butler III, Curator of Collections at the Harris County Heritage Society for suggesting the work at Sam Houston Park in the first instance and to Mr. Gary Schuman, Director of the Harris County Heritage Society for permission to excavate and for providing storage facilities and miscellaneous equipment. Drs. LaVerne Herrington and Curtis Tunnell, respectively Head of Resource Conservation and Executive Secretary of the Texas Antiquities Committee kindly provided research authorization (Permit no. 299). Mr. James Hart, Director, and James E. O'Rourke, Assistant Director of the Houston Parks Department also gave authorization to excavate on Parks Department lands (letter of 25th November 1981). To Carolyn Spock, Head of Records of the Texas Archaeological Research Center go thanks for assigning the site number 41HR425. The research was in large part funded by the Department of Anthropology at

Rice University, for which we thank the department chair, Professor George Marcus. Members of the Houston Archaeological Society helped in numerous ways: President Pam Wheat excavated and helped with publicity; Bill McClure took time from work to help class members with faunal identifications and with presentation of that data. Several other HAS members contributed their skills at excavating during Saturday sessions. Finally, Texas Anderson volunteered her time several Wednesday sessions to supervise and contribute her general knowledge of historic sites archaeology.

A final note; teaching a field methods course in this manner is an evolutionary proposition. This first season at the Kellum-Noble House owes much to procedures developed during a similar field class conducted at the San Marco Rancho site, near Santa Barbara, California (1978). Parts of this preface were appropriate also to the San Marcos project report and are repeated both places. Likewise, future seasons at the Kellum-Noble site will evolve from the 1982 work reported here. Next season, for example, the two excavation units begun in 1982 will be reopened and excavated to sterile soil--something we had intended to do but were prevented by the complexity of the strata. There is every reason to believe that future seasons at Sam Houston Park will be as successful as the 1982 season in teaching responsible--and humble--archaeology.

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Chapter 1

GEOGRAPHY AND SOILS

Julia Fonseca

The Kellum-Noble site is located in Sam Houston Park, Houston, Texas. Universal Transverse Mercator coordinates for the site are zone 15, easting 270620 and northing 3294220, or latitude 29° 45' 30" N and 95° 22' 30" W. Its elevation is approximately 16 meters above sea level.

The park is bounded by Buffalo Bayou at its northern margin and by downtown Houston on all other sides. The site rests on nearly level ground which slopes gently towards Buffalo Bayou, about 300 meters from the site.(see Figure 1)

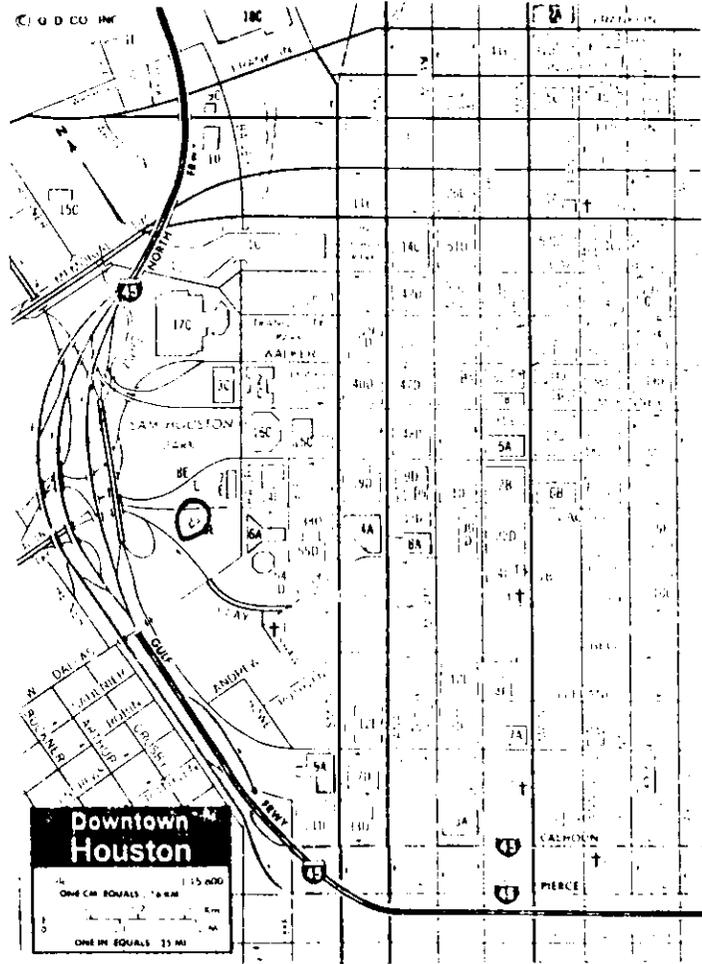
Buffalo Bayou figures prominently in the early history of Houston. The bayou drains 927 square kilometers (362 sq. mi.) of featureless coastal prairie before emptying into Galveston Bay. Settlers navigated upstream from the Port of Galveston to reach Houston; they disembarked at Allen's Landing, 1.6 kilometers downstream from the Kellum-Noble site.

Surveyor Hugh Rice described Buffalo Bayou as it was in 1867:

From Harrisburg to the City of Houston the bayou contracts its width, and its course is very circuitous. Its narrowest point is seventy feet and its shallowest depth of water is seven feet.

The water course was heavily wooded with magnolia, laurel, sweet bay, rhododendrons and water oaks which provided settlers with firewood and building material (Houston in Knapp 1977).

Houston's climate is humid sub-tropical, yet moderated by the Gulf of Mexico. Houston experiences an average of only seven days



Detail of Downtown Houston
Kellum Noble House circled in red

Figure 1

a year with a minimum temperature of 0° C. or lower. Prevailing winds are from the southeast, except during the winter when north-erlies predominate. Hurricanes occur infrequently. Between 1900 and 1972 only 27 hurricanes made landfall anywhere along the Texas coast. The heavy rainfalls and destructive windstorms frequently associated with approaching hurricanes make them a primary natural hazard for the region. According to Works Projects Administration (WPA: 1942) writers, the Kellum-Noble house was originally surrounded by fifteen mature live oaks, fourteen of which had been destroyed by hurricanes by 1942.

An annual average of 117 centimeters (46 inches) of rain falls in the Houston area. This statistic, however, belies a great variability in the amount that actually falls. For instance, 186 centimeters fell in 1900, and only 46 centimeters in 1917. While on the average, rainfall is evenly distributed throughout the seasons, up to half the average annual precipitation may fall in just two or three days.

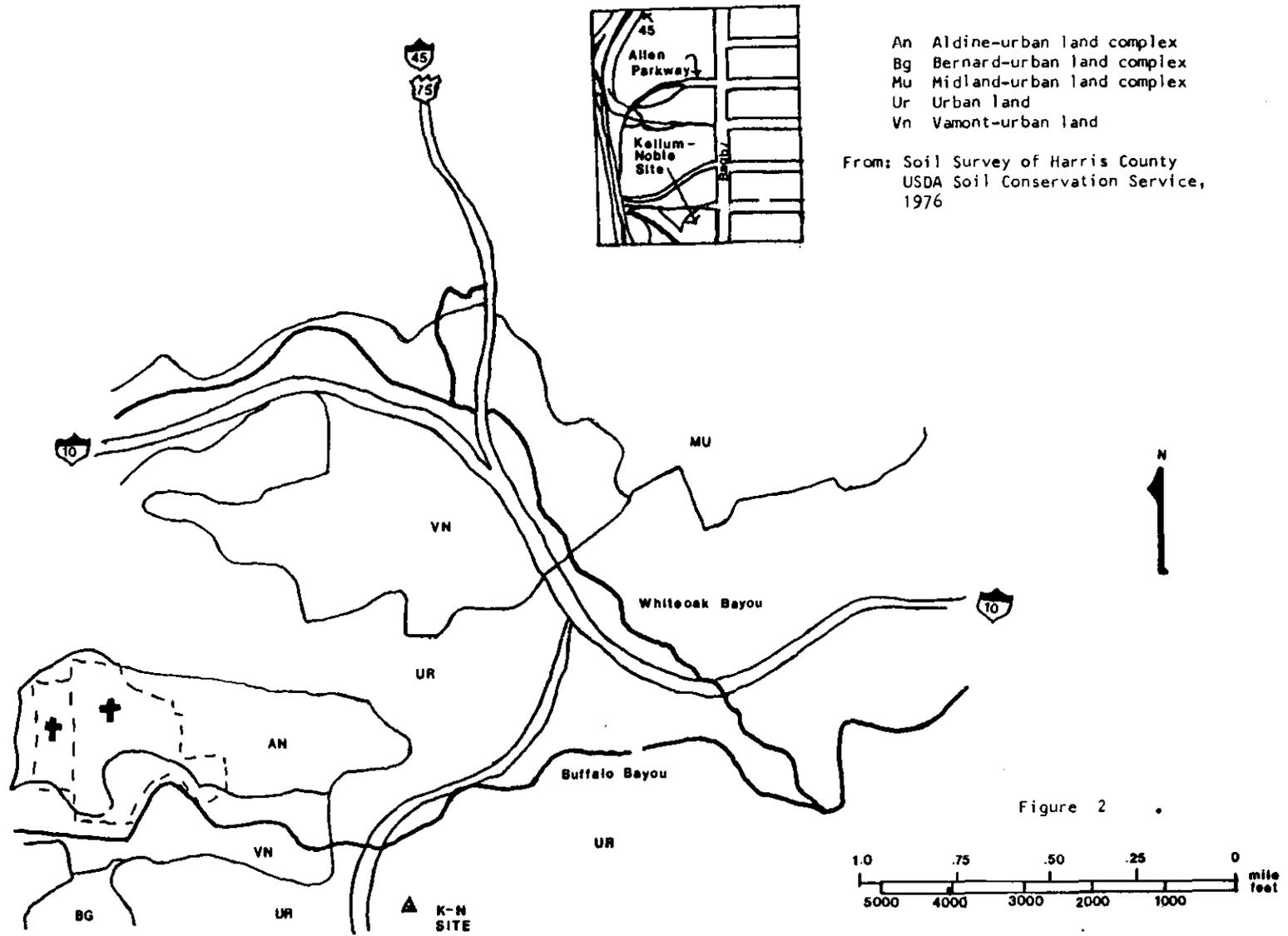
Adequate drainage and flood protection has, therefore, been a concern for Houstonians, both in the nineteenth and twentieth centuries. The mean annual flood represents bankful capacity for incised streams such as Buffalo Bayou (Van Sickle 1971). In its natural state, most runoff from thunderstorms would be confined within the channel course. The Kellum-Noble site lies within the natural 100-year floodplain and may have been subjected to floodwaters. Without exacerbating problems of urbanization, such floodwaters were probably shallow and drained off soon, leaving many standing pools of water.

Early residents feared yellow fever even more than hurricanes or flooding. They attributed the source of epidemics to standing water and to Buffalo Bayou itself (WPA 1942). During 1840,

each property holder (was) being required to build a sidewalk, and wooden gutters in front of his property, and to keep the ditches open at almost every council meeting some resident was fined for not having filled the low places on his lot, cleaned up the rubbish, or used the small cart provided to haul trash. Even the ground under buildings was inspected by (Board of Health) members.

Fear of epidemics provided the impetus to switch to groundwater use. Until a well was drilled in 1887, all drinking water came from the bayou. Those familiar with Houston's groundwater problems will be surprised to find that these first wells were artesian, i.e., they flowed to the surface without pumping. Early wells probably were drilled into the shallow Chicot Aquifer. Extensive groundwater pumping has led to a water level decline of over 30 meters in the Chicot, and has caused land-surface subsidence of more than 1.5 meters relative to mean sea level in the downtown area (Gabrysch 1980).

Soils near the site, and presumably at the site itself before twentieth century urbanization, are of the Vamont series (see soil map, Figure 2). Vamont soils are deep, acid, clayey soils which developed under forest cover. They are very slowly permeable. When dry, deep wide cracks may form on the surface. Some areas may have gilgai microbasins and microknolls, formed by constant contraction and expansion of the soil. Because of the high montmorillonitic clay content, the Vamont series has a high shrink-swell potential and low strength. The soil is highly corrosive to



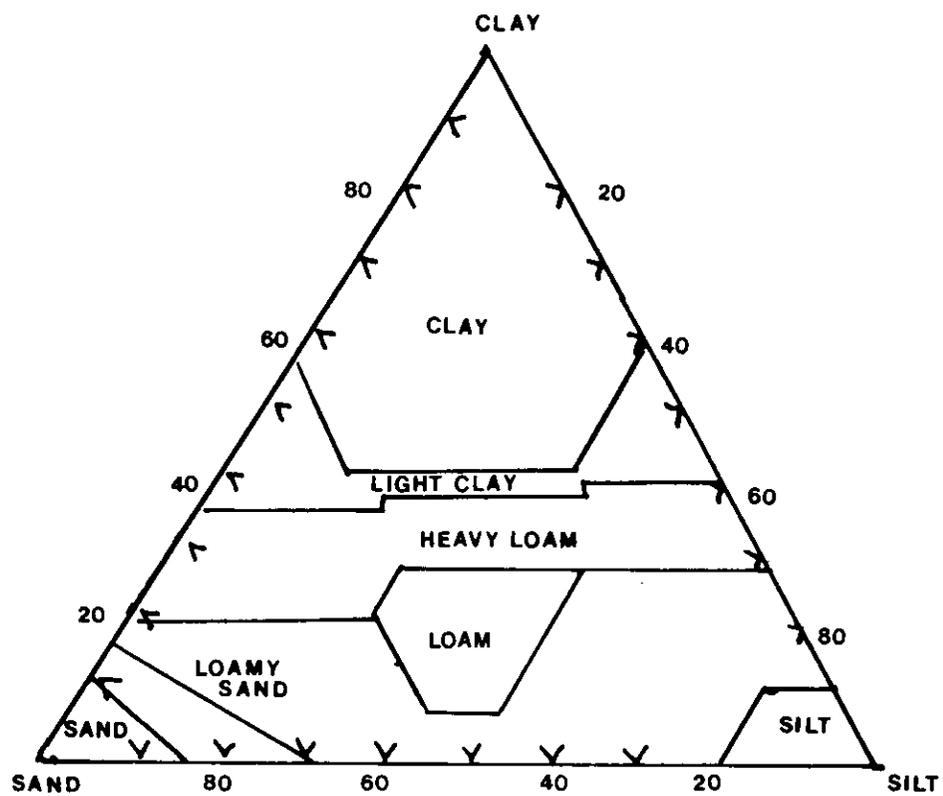
uncoated steel, as is corroborated by the poor state of iron artifacts at the site.

The upper 20 centimeters of the undisturbed mapping unit consists of firm, medium acid, very dark grayish-brown clay. The layer below that is about 41 centimeters thick, consisting of firm, strongly acid clay that is prominently mottled with gray and yellow. The next layer, 229 centimeters thick, is of very firm slightly acid gray clay.

The parent material for the soil is unconsolidated Pleistocene interdistributary and estuarine mud, deposited when sea level was higher than the present. The Brazos River once built a very extensive deltaic plain here, where it emptied into coastal bays. Presently, such streams as Cypress Creek and the tributaries of Buffalo Bayou are eroding headward through thin Holocene river alluvium, exposing the Pleistocene sediments. These muds probably provided the source of nineteenth century brick-making efforts. The material for the square brick pillars of the Kellum-Noble house was excavated from a nearby clay bank (WPA 1942). Some of the holes and gullies visible on old maps of the area may reflect where clay excavation once occurred (Hochuli 1937).

Archaeological sediments were described with the Ahn texture test and Munsell color values (see Appendix 1). The Ahn test provides a field standard for comparing soils. It relates the plasticity of moist soil to broad textural classification. The Ahn test is also valuable for determining the ease with which a soil may be cultivated. Figs. 3&4 present a diagram of the test, and the relationship of Ahn's terms to sand-silt-clay ratios.

Citation?



Suggested %'s for results of Ahn test

Figure 3

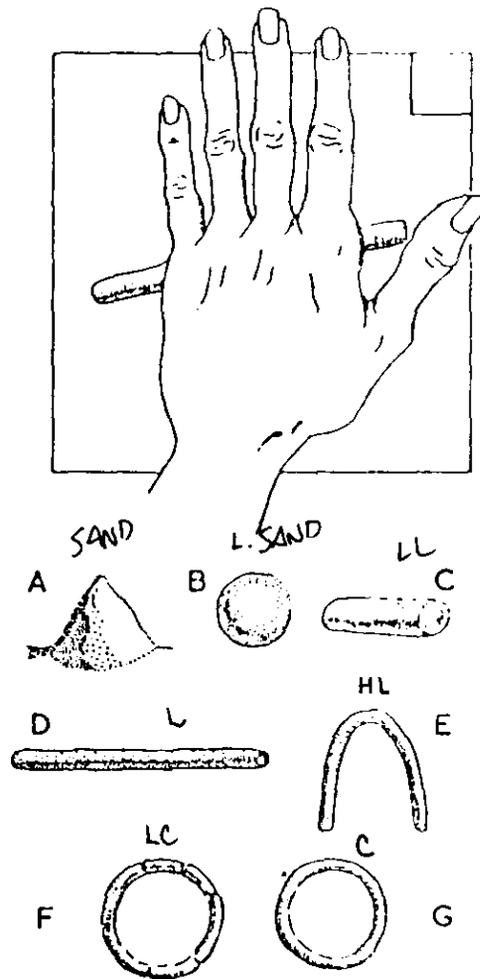


Fig. 2.1. A manipulative texture test which gives a practical indication of soil texture and consistency.

Enough fine earth is taken to make a ball of soil about 1 in across and water is dripped on to the soil until it reaches the sticky point, the point at which the soil adheres to itself but not to the hand. The extent to which the moist soil can be worked is an indication of texture. A sand can only be heaped into a pyramid A, but a loamy sand makes a ball B. If the soil can be rolled out to a short cylinder C it is a light loam. The remaining drawings indicate a loam D, a heavy loam E, a light clay, a circle with cracks F and a clay, a circle without cracks G.

The cylinder when fully rolled out, as in D, should be 6 1/2 in long. A board, shown below the hand, is marked with a 1 in square and a line 6 1/2 in long in order to standardize the test.

Figure 4

Ahn Texture Test

Two excavation sediments, found in both pits, were not described in this fashion. The first is the "pea gravel" found mostly along the drip line of the house. The gravel size averages about one centimeter in diameter. Chert, quartz, feldspar and lithic fragments (both igneous and sedimentary) are well-rounded. The Pleistocene meander scars of the Colorado River, west of Houston, provide the closest source for such material. Many commercial operations excavate the channel gravels and screen out various sizes. This gravel had probably been screened.

*Not
Gravels?*

The other sediment is a decomposed granitic gravel which formed the walkway in Level 5. The granite was particularly rich in muscovite. The closest source would be the Llano Uplift in central Texas.

Chapter 2
HISTORICAL BACKGROUND
Harini Hosain

The Kellum-Noble House has the distinction of being the only structure in downtown Houston which dates to the Republic of Texas and which still stands on its original foundation. This house is reputed to have been accompanied by many commercial and residential structures, none of which remain standing. This area can lend insight into the lifestyles of the people, the economy of the region, and the environmental factors which influenced the local industries. In effect, the Kellum-Noble House represents part of a larger early industrial complex in Houston, which, if studied, can help in understanding Houston's growth.

The land upon which the Kellum-Noble House stands has a long history. On July 20, 1824, the government of Texas gave John Austin two leagues of land (Harris County Heritage Society Archival File No. 002:002). After Austin's death, his widow, Mrs. J. F. L. Parrot, sold several tracts of the land to A. C. Allen and J. K. Allen (HCHS Archival File No. 002:002). Once the Allens obtained the land in 1836, they divided it into town lots which became Houston's core.

The Allens deeded eight acres of land to William Mock on May 3, 1837 (HCHS Archival File No. 002:002). There are indications that Mock built a house and several other structures on this property.

William Mock deeded his land and buildings to Robert P. Stewart on January 22, 1838 (HCHS Archival File No. 002:002). Stewart then sold two lots, or one-quarter of an acre, to Michael Dyer and Peter Elgart. Dyer and Elgart build a two-story wooden house on one lot, and constructed a tan yard with tan vats, lime vats, bark mills and water tirces on the second lot which was near Buffalo Bayou. These two industrialists sold their property to Thomas C. Dobbs on June 26, 1839 (HCHS Archival File No. 002:002). Since Stewart sold, but did not convey the two lots to Dyer and Elgart, he conveyed the property to Dobbs. This transaction took place on June 26, 1839 (HCHS Archival File No. 002:002). Robert P. Stewart sold three more of his eight acres to Horace Baldwin on July 14, 1839. W. Colton bought one of these three acres on August 4, 1839. Colton sold his acre to Ashbel Smith on March 7, 1842. Ashbel Smith also bought one acre of land from A. C. Allen on December 4, 1837. On February 14, 1840, Smith deeded one of his two acres to the City of Houston. It was on these eight town lots that Francis R. Lubbock built a hospital some time after August 29, 1844.

On May 14, 1839, all the sales except for that between the Allens and Mock were nullified because Mock had not finished his payments to the Allens for the eight acres (HCHS Archival File No. 002:002). For this reason, the property was seized by Magnus T. Rogers, sherrif of Harris County on March 7, 1843 and auctioned to T. M. Bagby on the same date for \$166.67.

On January 11, 1844, Nathaniel Kellum bought from Bagby the eight acres of land for \$500.00 (HCHS Archival File No. 002:002). He then bought two and one-half acres of land from H. R. Allen and S. L. Allen on February 9, 1844. Kellum also bought the hospital tract for \$150.00 on November 22, 1845. By the time Kellum bought his property, his brickyard had already been established. An advertisement in the July 1842 Morning Star (HCHS Archival File No. 002:002) placed by Kellum, indicates that his brickyard was in operation by 1842. These bricks were used in the construction of many of the commercial buildings in downtown Houston, making Kellum responsible in part for early Houston's development. Kellum built a two-story, Louisiana-style, Greek Revival house in 1847. However, in 1850, Kellum sold his land to B. A. Shepherd, Houston's first banker, and moved to Grimes^s County to open a health resort. -

Abraham W. Noble bought the Kellum place from Shepherd in 1851 (HCHS Archival File No. 002:002). He moved in with his five children, his wife, Zervia Metcalf Robinson Kelly, and her daughter, Catherine Kelly.

On February 10, 1851, Mrs. Noble announced that she and her daughter would open a school for children under age twelve. Many of these children later became Houston's leaders, among whom were Jesse Wright Miller and Hugh Roy Cullen (Houston Post, 1956). The Nobles added an ell-wing to the rear of the house in 1857 in which they housed the school. Mrs. Noble and her daughter later became influential in starting the public school system of Houston.

It should be noted that the house also served as Sam^m Houston Military Academy after the Civil War (Young, 1955).

In 1860, Catherine Kelly married Alexander Szabo by whom she had a daughter, Eloise, in 1862. Although the Szabos were supposed to have lived with the Nobles, it appears from an 1869 map that they owned two structures on a lot adjacent to the Nobles (Wood, 1869). Catherine died in 1864, leaving her mother to raise Eloise. In 1865, when the Nobles were divorced, the house was given to Mrs. Noble and part of the land which was awarded to her husband was left to her by him. Eloise, who married Otto McClellen White in 1890, like her mother and grandmother, was involved in education. She became one of Houston's first women principals in the public school system. When Zerviah Noble died in 1894, Eloise inherited the Noble property which she later sold to the City of Houston.

Mayor Sam Brashear bought the Noble property on June 23, 1899 to make into a park (S. W. Center for Urban Research and School of Architecture, Rice University, 1981). Later, this land and the adjoining area was to become the Sam Houston Park. In 1920, when the United States Government was thinning the bison herds, they donated one bison to Houston. The bison, Earl, was penned in with a wooden fence outside of the Noble House (Houston Chronicle, 1938). Some time later, a deer was added to the grounds. The Kellum-Noble House is even reputed to have housed other animals, most notably, monkeys in the ell-wing. This tiny zoo generated enough public interest that considerations for a proper zoo were

undertaken. Consequently, the animals were moved to a new zoo in Hermann Park in July of 1922 (Houston Chronicle, 1938).

After the animals were moved to Hermann Park, the house was used as a storage area and soon fell into disrepair (Houston Chronicle, 1941). A fire on March 11, 1955 damaged most of the house (Houston Chronicle, 1956). Although the roof and floors were destroyed, public outcry prevented the house from being torn down. The Harris County Heritage Society formed to buy and restore the house according to its original design.

The original house was built with bricks from Kellum's brickyard and was mortared with clay from the Bayou. The bricks extended three feet below the ground surface and spread out to form a foundation. When the house was restored, an attempt was made to use these foundation bricks in rebuilding the house. However, because the bricks were either sun-dried or poorly kiln burned, they were too soft and crumbly to be used. Instead, used bricks, matched for size and color were laid in cement mortar. No attempt was made to straighten the walls, although steel rods were added to strengthen them.

The porch framings, wood columns, and railings were replaced. The roofing was also new material consisting of West Coast fir instead of long leaf yellow pine. However, the ceilings were replaced with yellow pine instead of cypress. The upstairs floors were also redone with yellow pine.

The house as it now stands has a central double door with side lights and transom and two six over six light windows flanking each side. The central hall plan is identical on the second

floor except for the elimination of side lights and transom around the central double door. Six over six light windows also flank this entrance. The low pitched hipped roof extends out over the double gallery encircling the house. The double, surrounding gallery with large columns on the first floor, slender columns on the second floor, crowned by a very simple cornice is typical of the Louisiana-type Greek Revival homes built during that period. The wooden gallery is supported by large square brick columns on the first floor and slender, square, chamfered columns on the upper gallery. Simple wooden slats form a balustrade on the second floor. The only access to the second floor gallery from the outside is an exterior stairway on the northeast portion of the ell

Both the first and second floor of the Kellum-Noble House interior plan have a central hall and one room on either side within the main rectangular portion. Each floor of the rear ell has two rooms with separate entrances opening onto the gallery. (Landon, 1974: 2).

The Kellum-Noble House has served many functions. In the beginning, its grounds held numerous industrial structures such as a tannery, a harness, boot and shoe factory, an iron foundry, and a brickyard (S.W. Center for Urban Research and School of Architecture, Rice University, 1981), all of which formed part of Houston's early industrial complex. Although there are numerous references of the industries on the Kellum place, as of this writing, no maps showing their locations have been found (maps and archival data available are listed in References). Likewise, residential houses with kitchens, slave quarters and outhouses must also have been present, but have not been included in the maps. There is also a dearth of evidence of these structures in the literature pertaining to the grounds. The house also served

as one of the first schools and its occupants were instrumental in bringing public education to Houstonians. In their commitment to education, the Nobles' school produced some of Houston's most influential men who later helped the city grow. As the first park and zoo, the site brought civic awareness to Houston's residents. Because of the initial interest in the zoo, the city was willing to spend money to make Hermann Park which remains one of Houston's few public parks. The house also made Houstonians aware of their nineteenth century heritage. The Kellum-Noble House and grounds present the different stages of growth in Houston.

Chapter 3

Ruth Mills

STRATIGRAPHY (1982)

A. Excavation and Control

The Kellum Noble House is the only house in Sam Houston Park which is still on its original foundations. Because of this and the lack of information gained through documentation, a preliminary archeological excavation was undertaken in order to help the Heritage Society have a solid source upon which to base their restoration projects. Continuing excavations near the house should provide artifacts which will enable the Heritage Society to purchase authentic pieces for the house. Also, any archeological artifacts and features found should provide the Society with helpful information for their building restoration projects. These excavations also will provide information about structures associated with the Kellum Noble house. Available documentation does not indicate the number and position of such things as privies, outdoor kitchens, servants quarters, drives and walkways. The Heritage Society would eventually like to restore the grounds to their original plan. The preliminary excavations of 1982 were intended to test excavate for associated outbuildings and other exterior features and determine what further excavations to undertake in the future.

The Kellum Noble House is located in Sam Houston Park in west downtown Houston (see Figures 1 & 5). The UTM coordinates are: Zone 15, Easting 270620; Northing 3294220. The

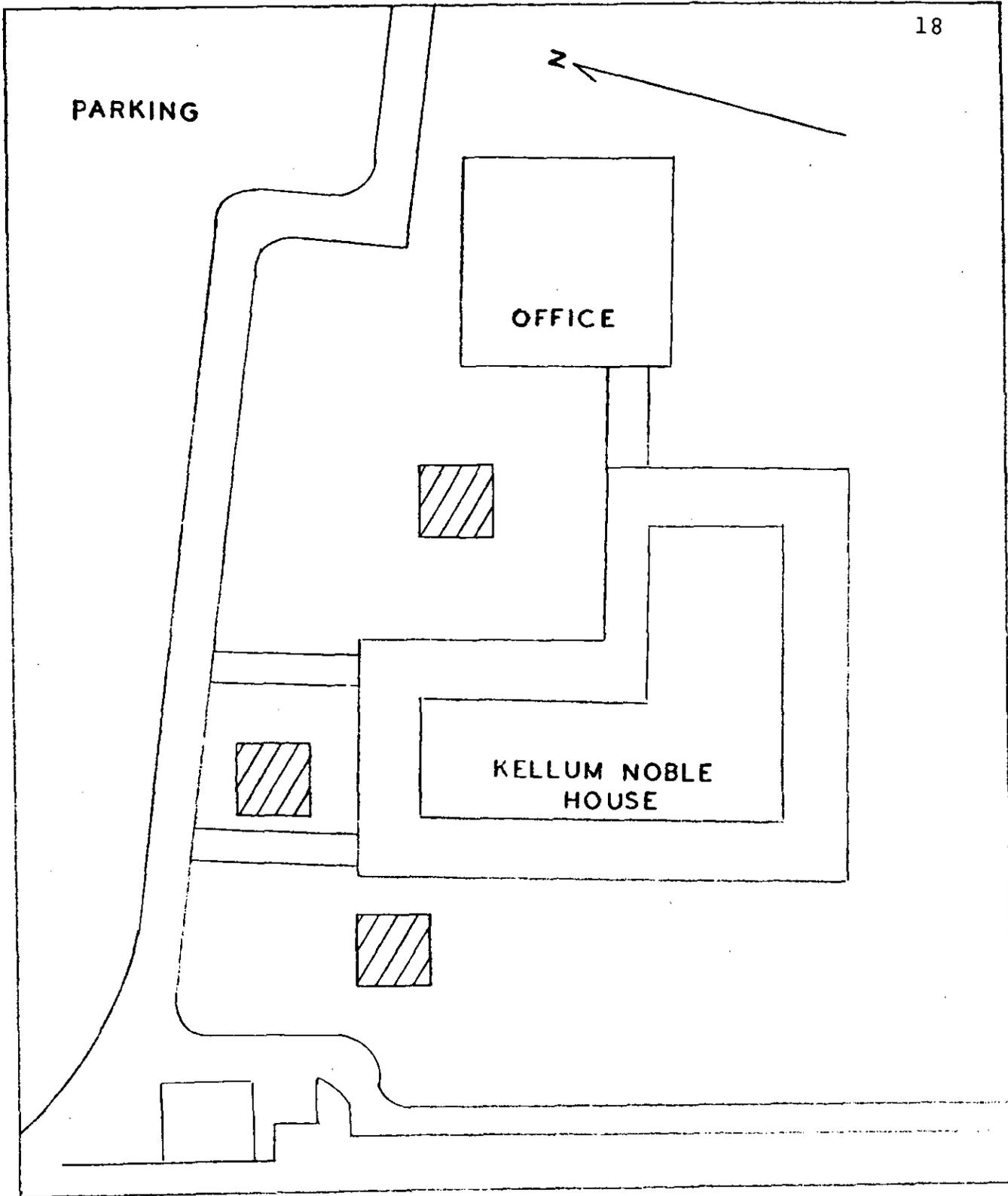
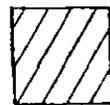
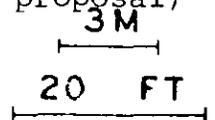


Figure 5: Plan of the Kellum-Noble House.

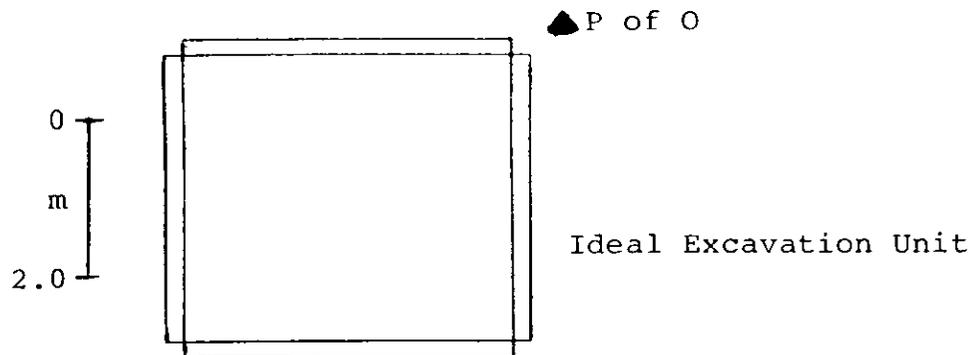


= PROPOSED 3 X 3 M. UNIT

(as proposed in original research proposal)



site is approximately at latitude $29^{\circ}45'30''$ N and $95^{\circ}22'20''$ W. The Texas State registry number for the Kellum Noble archeological site is 41HR425. It sits approximately 16 meters above sea level. Since a permanent bench mark was not located despite an extensive search of the area using all available maps, a temporary bench mark (T.B.M.) was set up at the southwestern corner of the house where the wall meets the porch. The T.B.M. was 40° E from magnetic north and 14.99 meters from our instrument station, of which there was only one. The T.B.M. was 0.800 meters below the station. Elevations within each excavation unit were taken from principal data points called Points of Origin (P.of O.). The P.of O. for each unit was a wooden stake driven into the ground approximately 20 centimeters from the Northeast corner of the unit. The P.of O. for KN-W was 176.5° E of magnetic north, 10.510 meters away from the station and 0.860 meters below the station. The P.of O. for KN-S was 65° E of magnetic north, 8.880 meters away from the station and 0.980 meters below the station. Each P.of O. stake was protected from being kicked over by a series of double strings; one defining the actual unit itself (the inside string) and a second string about 30 centimeters further out.



All measurements taken, both vertically and horizontally, were accurate to the nearest half centimeter and were recorded as part of a full meter (e.g., 0.895 m.). The level of the P. of O. was indicated by a notch cut into the stake. A string attached at the notch, a bubble level and a metric tape were used to establish the depth below the P. of O. This was recorded as supercase "x" (^x) followed by the measurement to the nearest half centimeter (e.g., ^x0.235 m.). Horizontal measurements were taken using a metric tape to form two perpendiculars from the object to be measured to the north and east balks.

All artifacts found in the excavation unit were placed in cloth artifact bags unless they were so fragile that they needed special handling. Any bone or shell was put into a "Bone Bag" and anything found in the screening was placed in the "Screen Bag". Every level had its own Level Record Form (LRF) for each day it was open. Each LRF had an artifact bag, a "Bone Bag", and a "Screen Bag" unless otherwise noted. Overall control of the excavations was by way of the Level Record Forms which were exclusively controlled by the Record Keeper (RMM). (listed Appendix 2).

On the LRF, the "pit boss" for the day (every student had a turn being "pit boss" at least once) recorded the top and bottom elevations of the level and made a thorough description of the level. He determined the soil color by using the 1954 edition of the Munsell Soil Color Charts (Munsell, 1954). The "Formal Soil Texture Description" was made using a field manipulation texture test indicating soil texture and consistency (described in Ahn, 1970:21; c.f., 19-26) (indicating position within the clay-loam-

sand spectrum; modified by "light", "medium", or "heavy"). A copy of the test results may be found in Appendix 3 .

Levels were dug using only trowels, buckets, and occasionally shovels. All earth was dry screened through a 1/4 inch screen unless otherwise indicated. Every day artifacts from the previous day were washed and taken to the Archeology lab at Rice University. After analysis, all artifacts and copies of original records, maps, and photos will be returned to the Heritage Society. All of the originals will remain at Rice University.

Periodically, photos were taken of features, levels or something special in the pit. Upon completion of the excavations, the balks and floors were prepared for final photos (taken in black and white and color) then sections and a final floor plan were drawn by students. These sections are reproduced below in the discussion of each unit. Along with the natural strata section, there is a reconstruction of the excavated level sequence using only measurements from the LRFs. This exercise was done for two purposes: 1) to show the degree to which excavators were able to distinguish natural level change, and 2) to have an idea of the range of error committed in the taking of elevations. The discontinuities can be explained by the inconsistencies in measurements due to the method (hand-held bubble level and tape) being not accurate enough and by having a different person taking bottom levels than who took the top levels on a particular day.

On most days of excavation, every Wednesday for six weeks and two Saturdays, both KN-W and KN-S were open. The director floated between the two units, but concentrated mostly on KN-W. KN-S was

under the supervision of a graduate student, Roger Moore. One student in each unit was the "pit boss". He/she was responsible for keeping the LRFs for the day. Towards the end of the season, KN-S was limited to a one meter square excavation in the SE corner. KN-S was filled with water on our last day in the field. Final plans, drawings and photos were from the previous working day. We were able to get final photos, sections and plans on the last day for KN-W. Both units were backfilled on top of plastic sheeting. We attempted to re-sod each unit with the original sod.

B. Level Information

All top and bottom elevations of each level, the Ahn, Munsell values and locations of each level and feature within the unit can be found in tables in Appendix 3. Below is a further description and following is the section drawings and level reconstruction.

Excavation Unit KN-W (see Figure 6) 3 February to 24 March 1982:

This unit was just west of the northern part of the southwest porch of the Kellum Noble House. It was a three meter square unit sitting on a N/S axis. The NE corner, where the P.of O. was located, was only 0.69 m. away from the porch. Below are elaborated soil texture descriptions, initial interpretations and any special notes. The levels are as follows (see Figures 7 to 14 also):

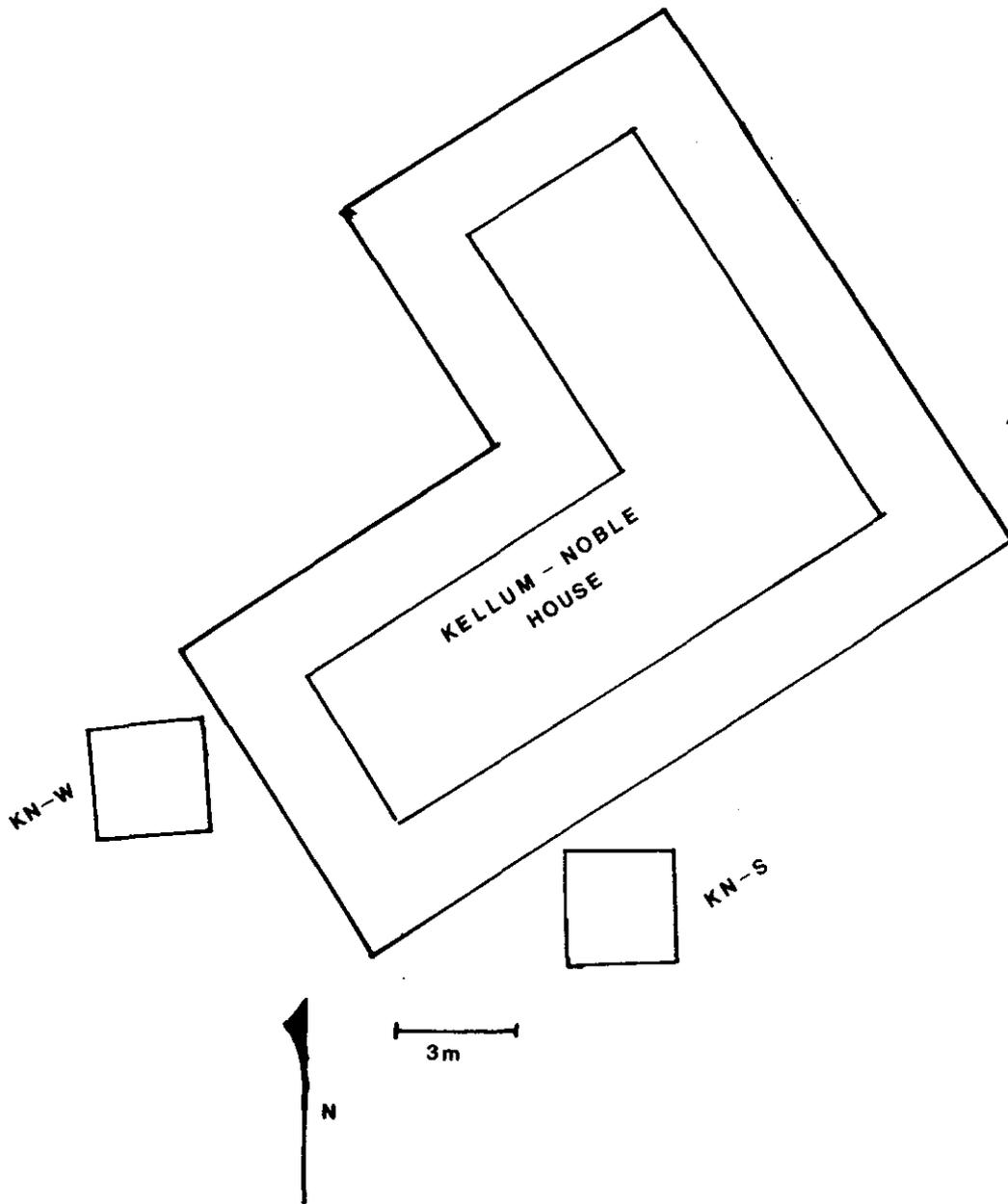
Surface/Level 1:

Being just under the sod, this level was badly disturbed by many grass roots and grub worms. The soil was very moist. The north side was more sandy, while the south side was clayey. The soil became sandier, and on the second day that Level 1 was excavated, the Ahn test read loamy sand. The soil color ranges

Figure 6

SCALE PLAN of units of EXCAVATION

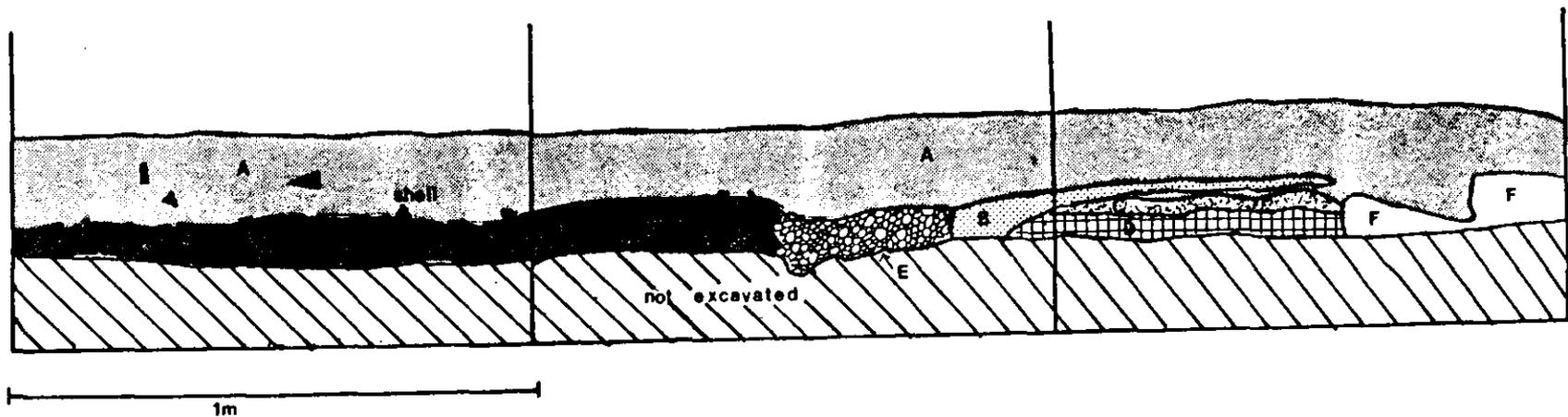
near the KELLUM - NOBLE HOUSE



KELLUM-NOBLE SITE

Unit KN-W

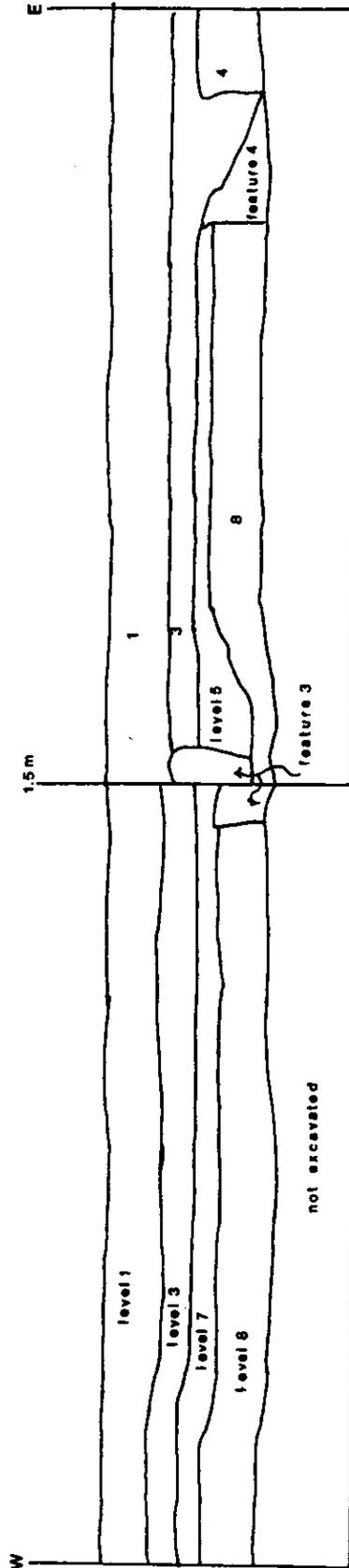
Profile of North Balk



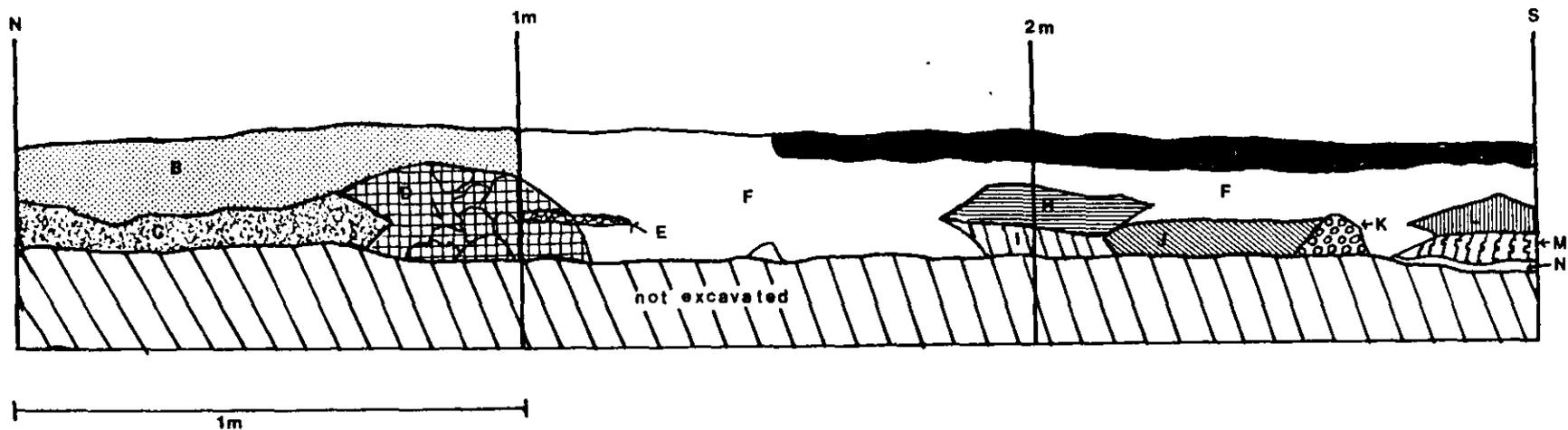
KN-W, North Face

- A Grey-brown sandy loam; 10YR4/2
- B Weathered paving granite; 10YR5/8
- C Charcoal
- D Grey-brown sandy loam with brick rubble; 10YR3/3
- E Brick and mortar
- F Pea gravel
- G Light grey-brown sandy loam with rubble; 10YR3/3

KELLUM - NOBLE Unit KN-W
Profile of North Bank



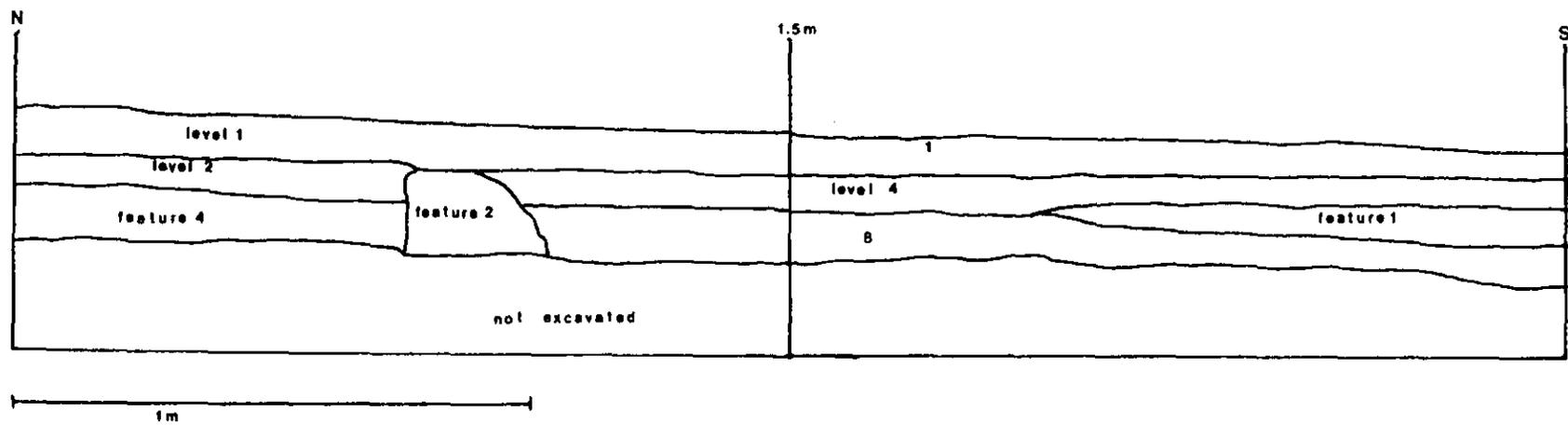
KELLUM-NOBLE SITE Unit KN-W
Profile of East Balk



KN-W, East Face

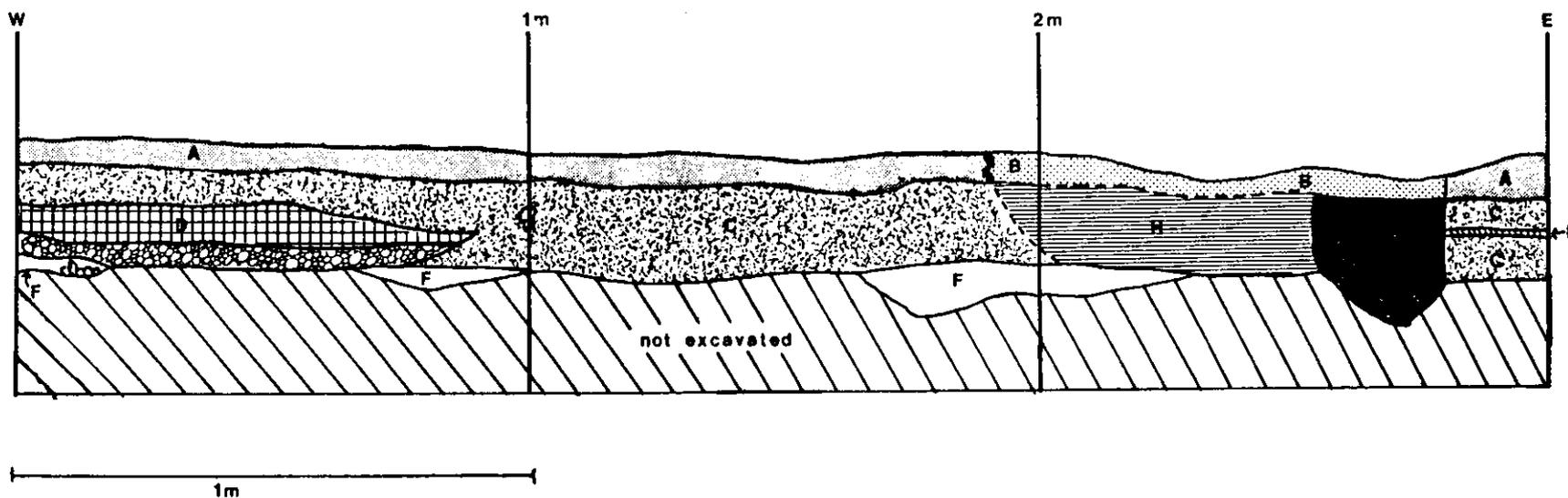
- F Clean sand; 10YR4/2
- C Gravel
- D Brick in sandy loam; 10YR3/3
- E Lense of sand; 10YR5/4
- F Grey-brown sandy loam, grading into clay-loam with brick fragments; 10YR4/2
- G Sandy loam with humus stains (grey)
- H Red and white mottled burnt clay; 10YR4/3
- I Charcoal in grey-brown clay loam; 10YR3/2
- J Grey-brown clay loam with pronounced white clay; 10YR4/2
- K Animal burrow, grey-brown clay loam; 10YR4/2
- L Red and white mottled burnt clay; 10YR4/3
- M Charcoal in grey-brown clay; 10YR4/3

KELLUM - NOBLE Unit KN - W
Profile of East Balk



KELLUM-NOBLE SITE Unit KN-W

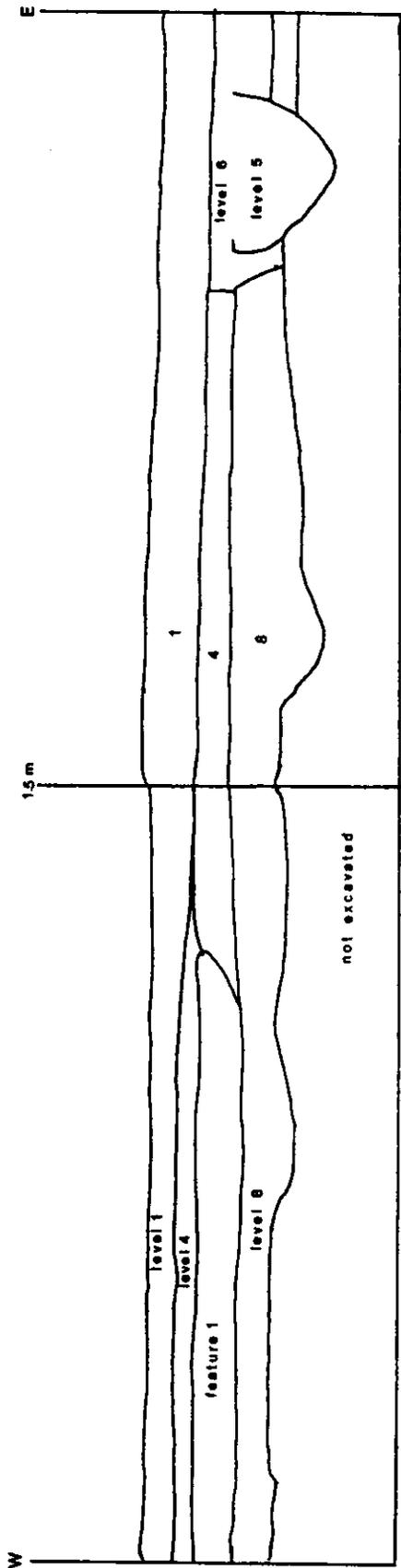
Profile of South Balk



KN-W, South Face

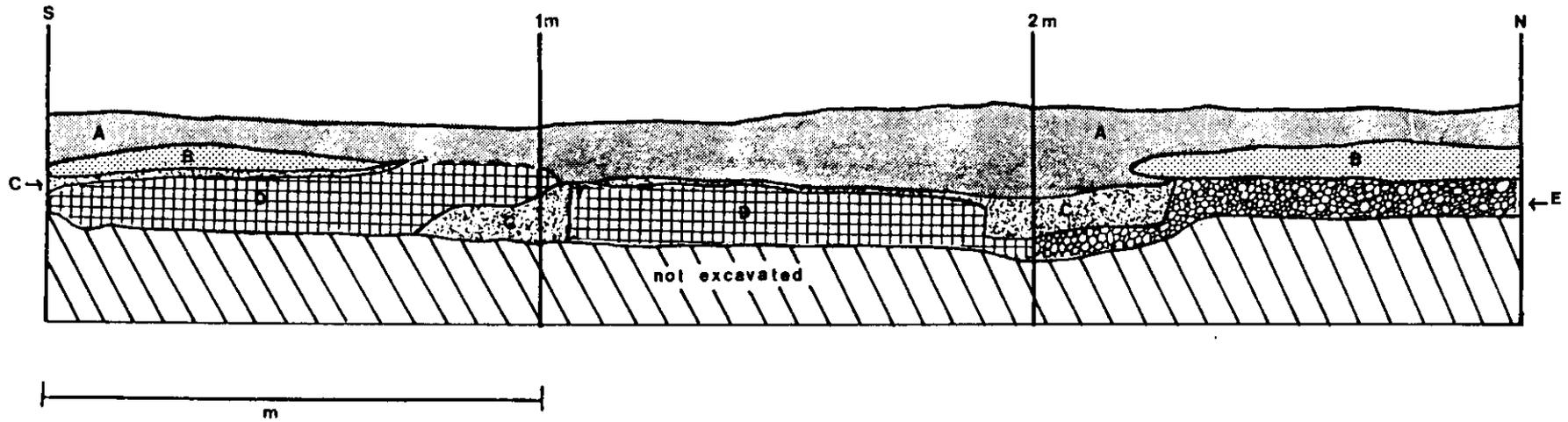
- A Grey-brown clean sandy loam; 10YR3/2
- B Ill defined grey-brown sandy loam
- C Grey-brown sandy loam with brick and charcoal flakes; 10YR3/2
- D Mottled orange/yellow clay and light brown loam; 10YR3/3
- E Charcoal; 10YR3/1
- F Clay; 10YR4/2
- G Mottled clay trench disturbance; 10YR4/2
- H Identical with C, contains fragments of brick and mottled with clay; 10YR3/2
- I Weathered paving granite; 10YR5/R

KELLUM - NOBLE Unit KN-W
Profile of South Balk



KELLUM-NOBLE SITE Unit KN-W

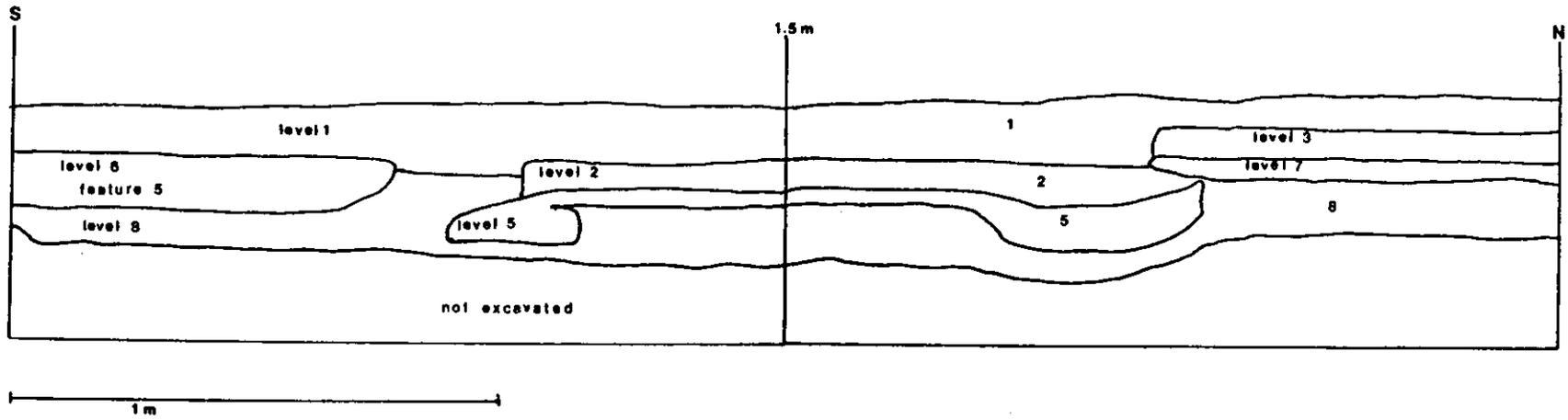
Profile of West Balk



KN-W, West Face

- A Sandy loam; 10YR3/1
- B Gravely medium loam; 10YR4/2
- C Weathered paving granite; 10YR5/8
- D Medium sandy loam; 10YR3/2
- E Heavy loam; 10YR3/3

KELLUM-NOBLE Unit KN-W
Profile of West Balk



from a reddish tint to a grayish tint. There was gravel spread throughout, but towards the bottom, more and more brick fragments began to show up in the southern half of the unit. Overall, the level seemed fairly homogeneous. Most likely, this was soil brought in for preparation for the present-day lawn.

Level 2:

While there are a number of grass roots and grubs, still the soil is sandy and fairly sterile. There are a few brick fragments showing up in the NE corner. Level 2 was not completely dug-- the top of Level 5 was more sterile (remains of Level 2) before getting into its true matrix.

Level 3:

This level is full of rubble and gravel. There are a lot of roots and grubs also. The soil is loamy sand. Many small artifacts show up. This level could be related to Level 4. We arbitrarily closed Level 3 upon reaching the bottom of Level 2.

Level 4:

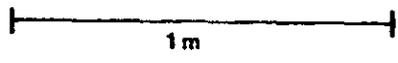
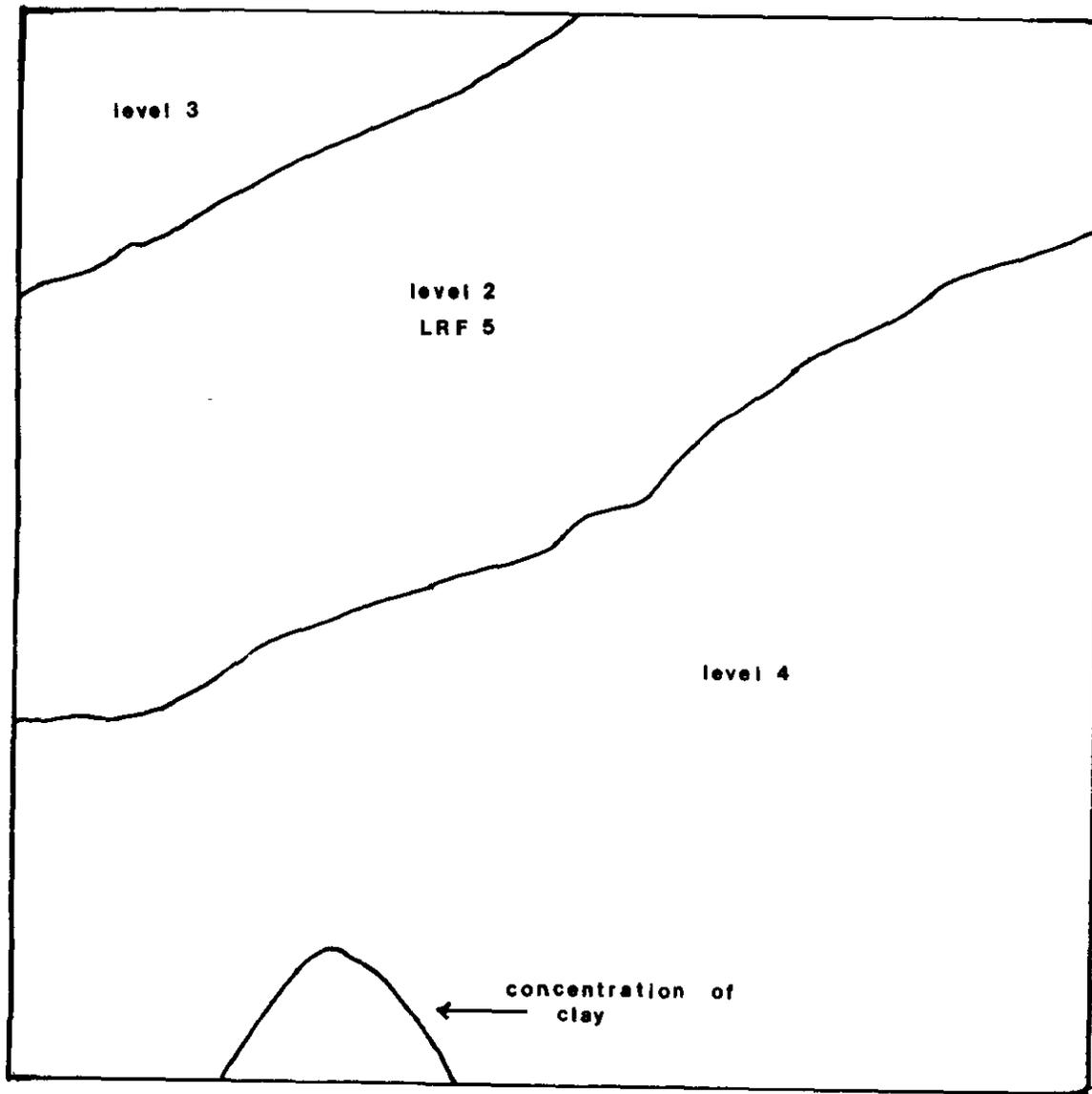
The soil was moist. It ranged from a light loam to loamy sand with lumps of clay found throughout the level. There was a heavy concentration of clay in the SW corner which we decided not to excavate as part of Level 4. There was a high amount of brick rubble indicating that this might be trash reconstruction. It seems as if Level 2 traverses through levels 3 and 4. (see Figs 15 & 16).

Level 5:

There was a thin layer of homogeneous loamy sand (the remainder of Level 2) on top of a weathered granite which seems to have been used as paving material. This is also homogeneous with no

Figure 15

KN-W



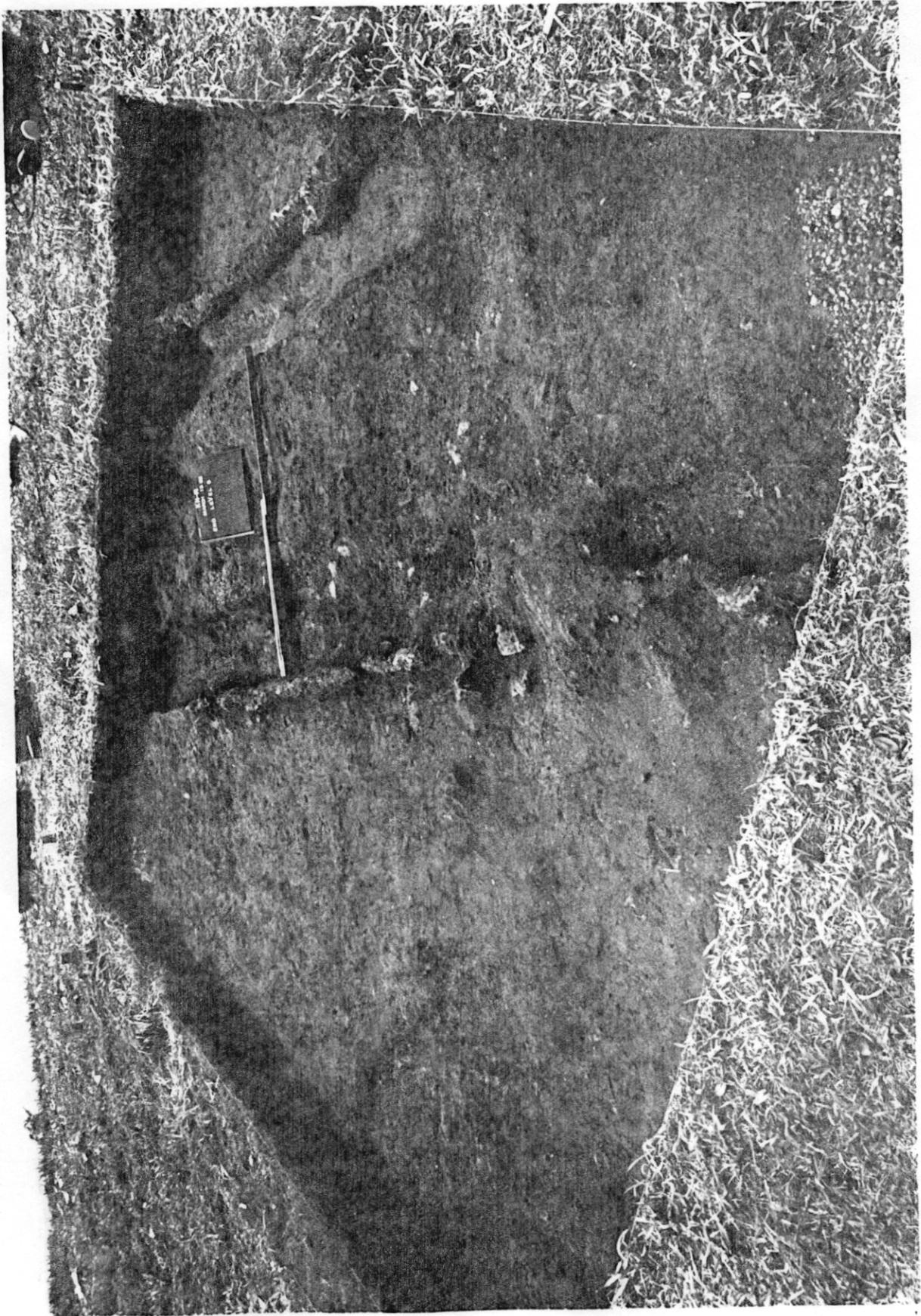


Figure 16: KN-W after Level 5 removed (facing west)

apparent intrusions. There are deep trenches along the side-- maybe for the purpose of water drainage. Level 5 looks to be a walkway put in over a rubble layer (see Figures 17 & 18).

Level 6:

This is a very disturbed clayey area with a lot of gravel and glass. We dug Level 6 in order to define the heavy clay deposit which seems to be an extension of a trench coming into the unit from the south. Feature 5 was eventually defined and excavated. Level 6 seems to be made up of the surrounding levels (Levels 4 and 8).

Level 7:

This level is a loamy sand filled with brick fragments and clay patches. It may be a continuation of Level 3, although not as many artifacts were found. Also, the Munsell values are inconsistent, so Level 7 may be part of another phase or a continuation of Level 8.

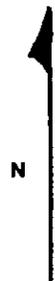
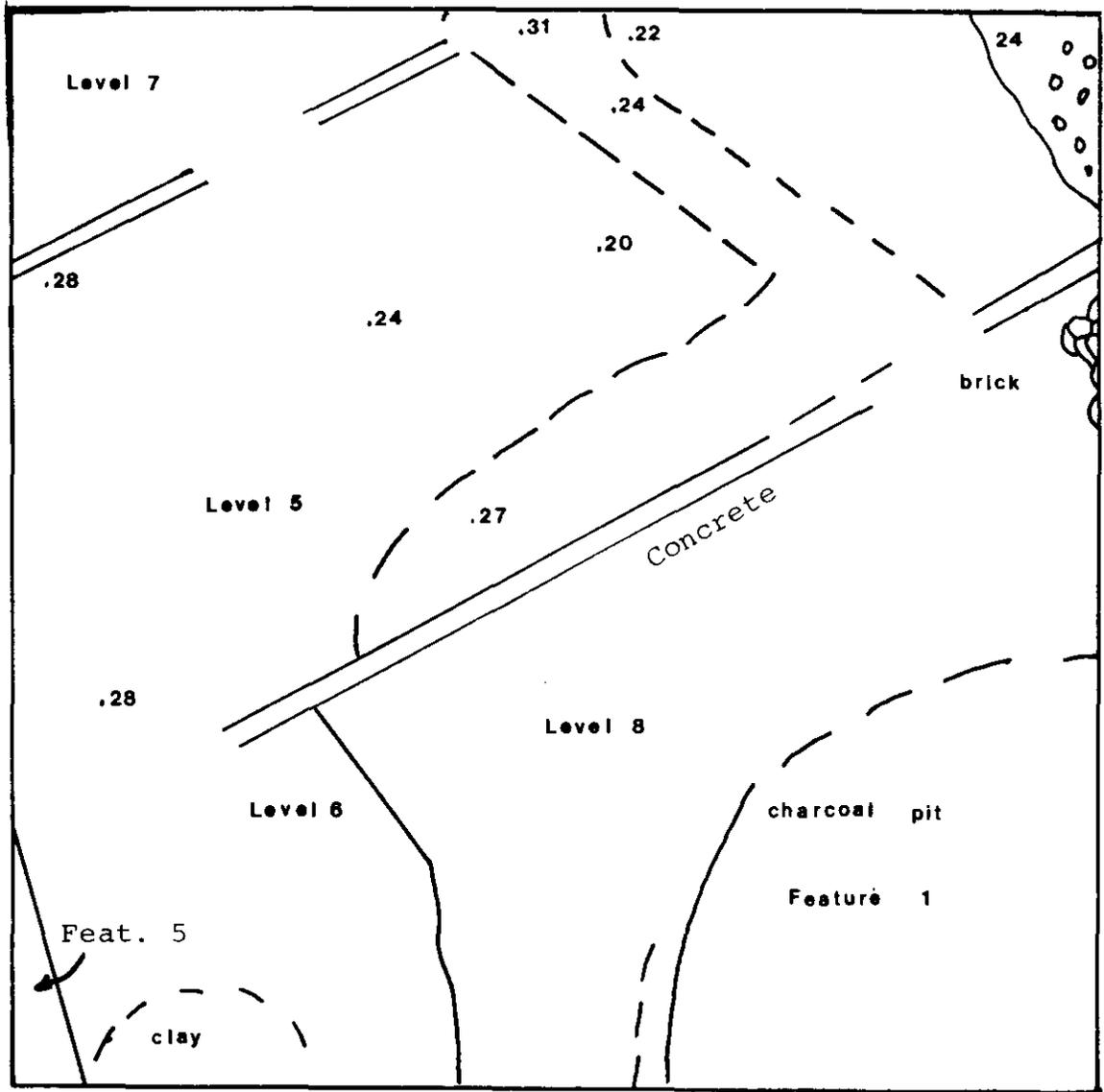
Level 8:

This level eventually covered the entire unit except for Feature 5 in the SW corner and Feature 4 in the NE corner. The soil was a light loam with a moderate amount of artifacts. We found patches of yellow/white clay interspersed in the southern half of the level and charcoal spots in the NE and SE corners. A lot of bone, nails, ceramics, glass, etc., showed up. (See Figure 19).

Excavation Unit KN-S (See Figure 6) 3 February to 24 March 1982:

This unit was just south of the southwestern porch of the Kellum Noble House. It was a three meter square unit sitting on a N/S axis. The NW corner was only 0.580 m. from the porch. Be-

Figure 17
KN-W LRF-15

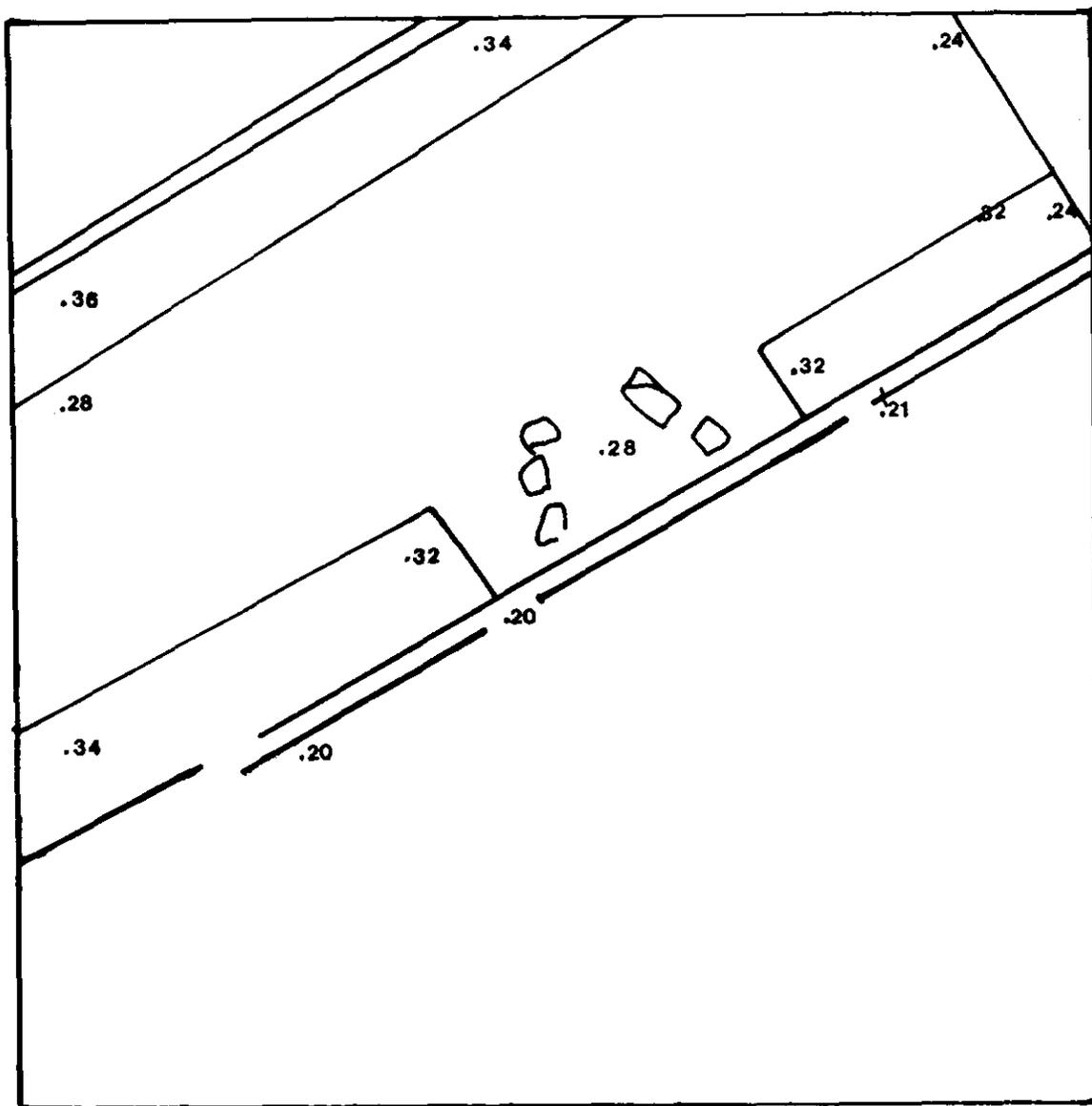


1m

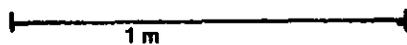
.00= depth in mm. below P of O

Figure 18

KN - W

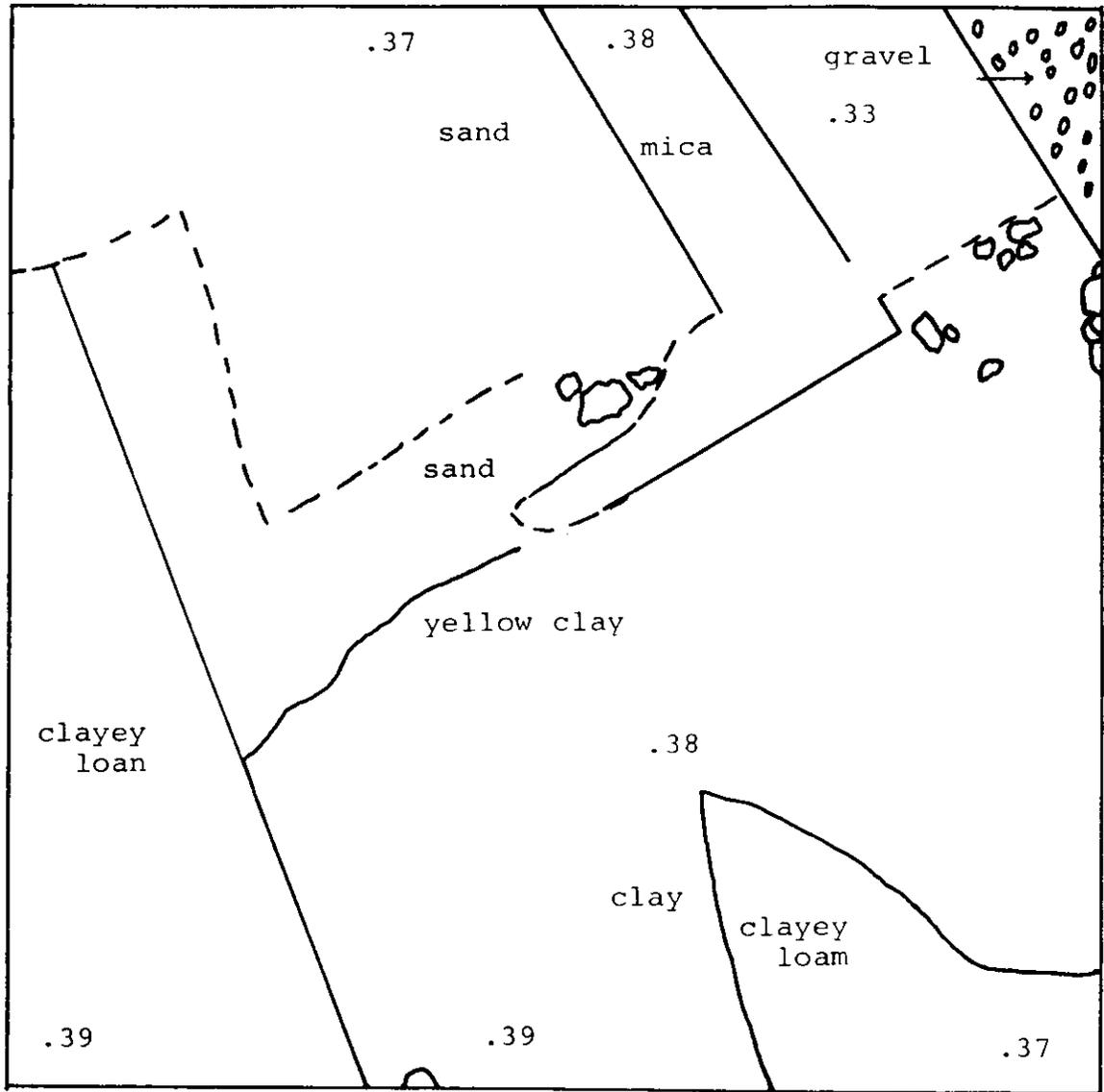


Base of Level 5

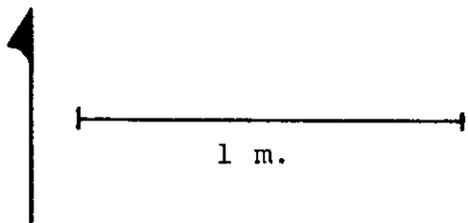


.00= depth in mm. below P of O

Figure 19
KN-W (LRF 22)



Bottom of Level 8
Situation at End of 1982 Season



.00= depth in mm. below P of O

low are elaborated soil texture descriptions, initial interpretations and any special notes. The levels are as follows (See Figures 20 to 23):

Surface/Level 1:

We took off a layer of gravel and light grass cover before designating what we found below as Level 1. The loamy sand seemed to be fairly well distributed throughout the unit. The NW corner was sandier than the rest of the pit and a good amount of lumps of clay came up in the screening. This gravel and clay was concentrated in the northern half of the unit. The south side retained a darker-loamier character. There is a substantial tree root in the center on the east side. We also uncovered the top to a sprinkler system in the SE corner. (see Figure 24)

Level 2:

There were problems in defining Level 2. In the north part, it is a light brown to tan loamy sand. It was mottled, but clearly distinguishable in the northern 1/3 of the unit. Moving southward, the matrix became progressively darker. As excavations of Level 2 continued, a redefinition was necessary. The stratigraphy strongly indicates that Level 2 was a thin layer of sand (equal to or less than 2 cm.) which integrated and thinned out as one moved south. Therefore, the "true" Level 2 (a sand lense) has been lost by screening it with the stratigraphically lower level exposed at the base of Level 1 in the center of the unit (see Figure 24).

Level 3:

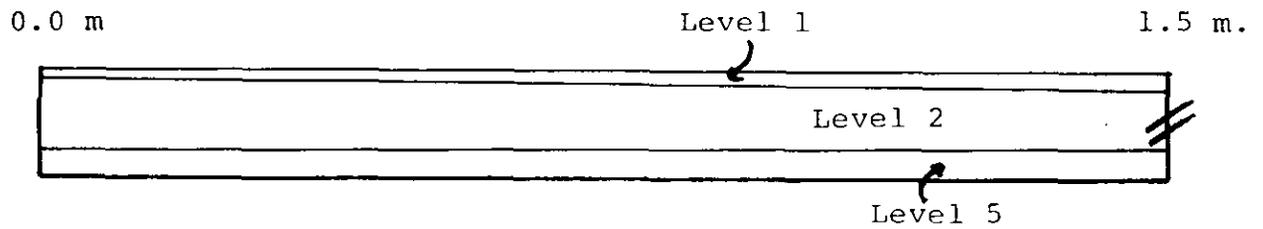
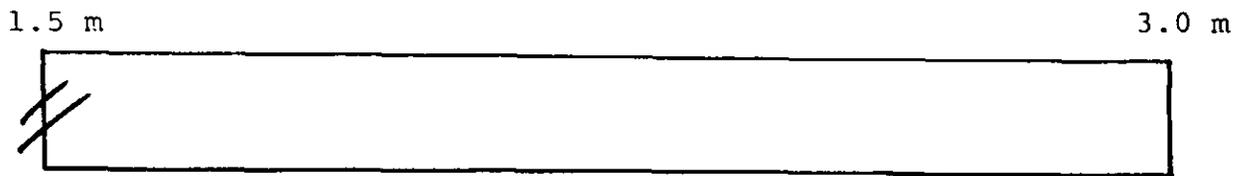
The soil is fairly loamy and homogeneous although brick fragments are found interspersed throughout. There are many small

Figure 20

KN-S North Face



PROFILE (natural strata)



Excavation Levels

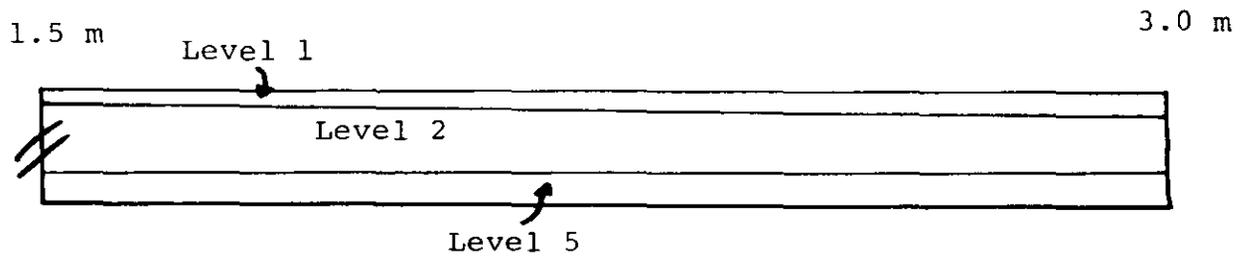
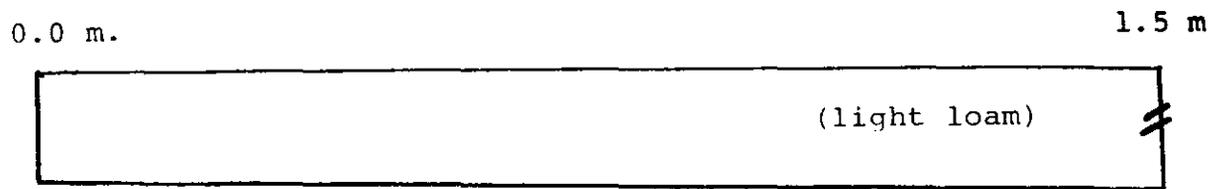
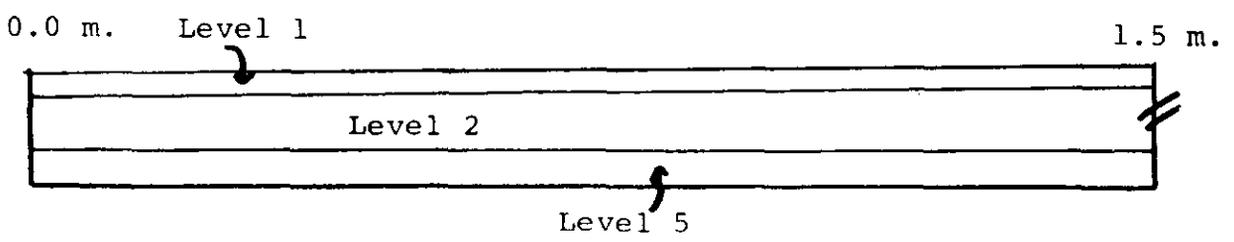
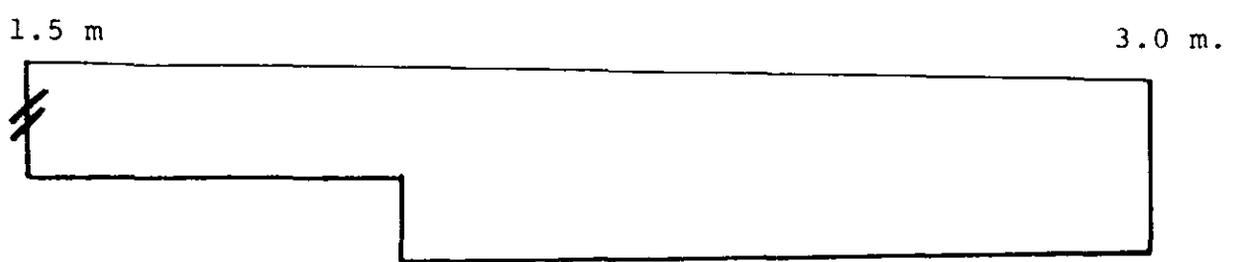


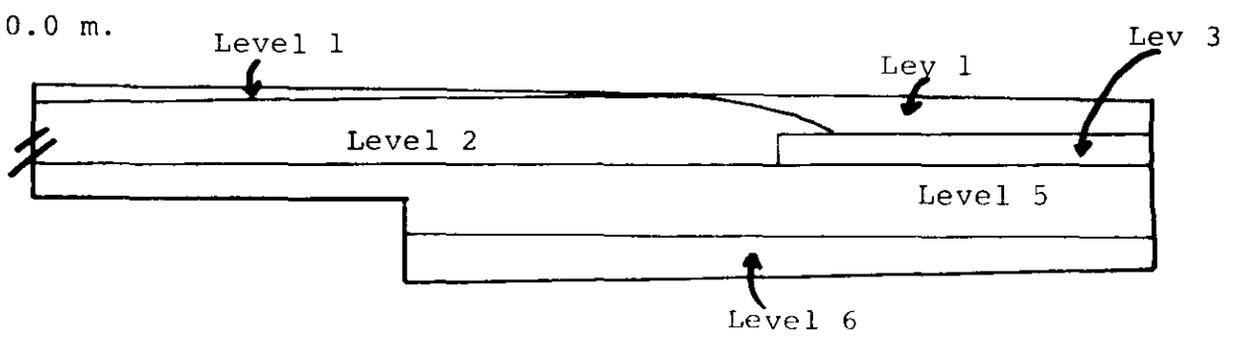
Figure 21



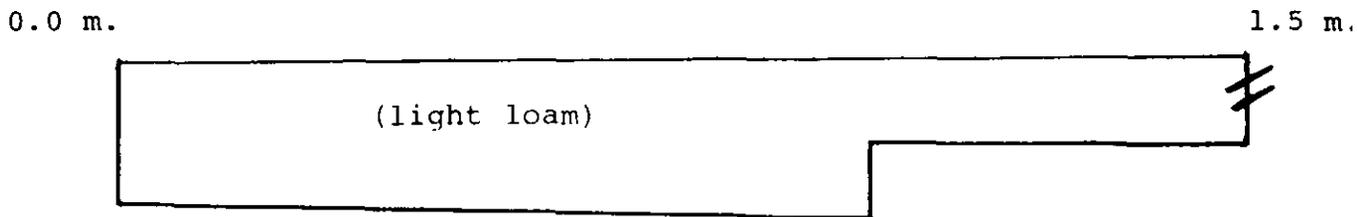
PROFILE (natural strata)



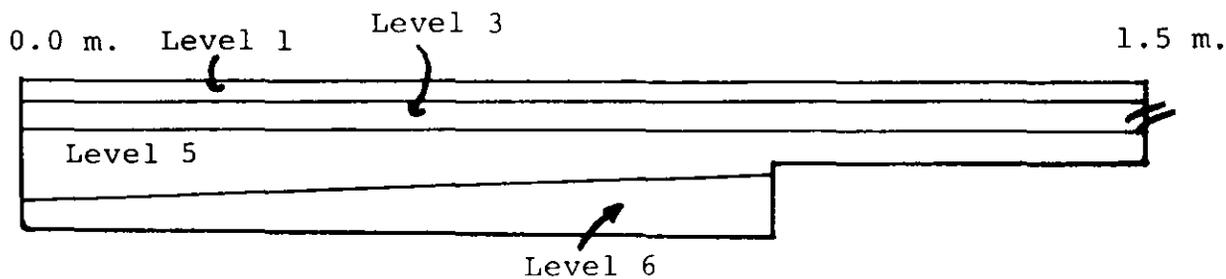
EXCAVATION LEVELS



KN-S FAST FACE



PROFILE (natural strata)



EXCAVATION LEVELS

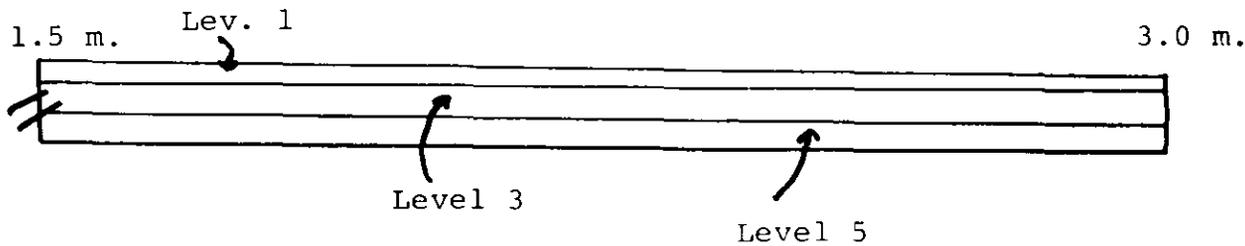
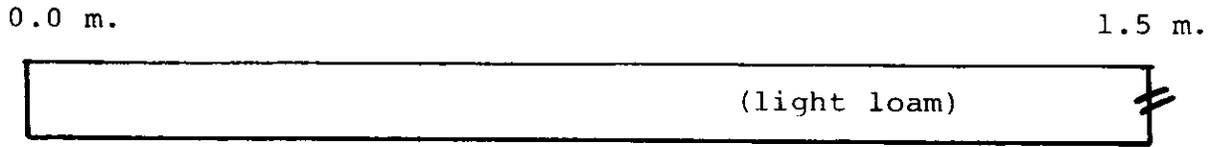
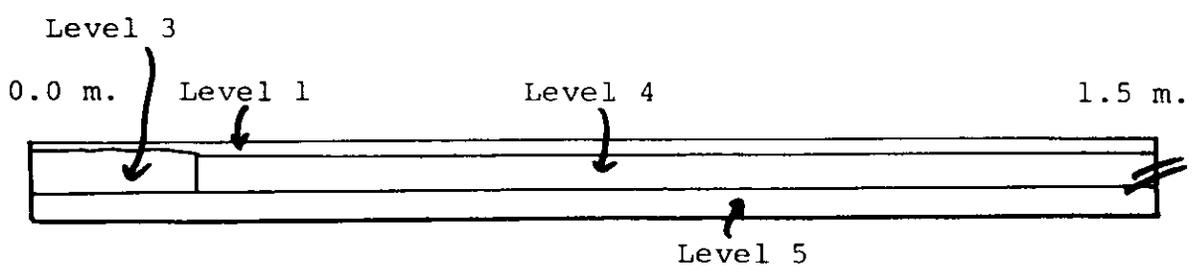


Figure 22

KN-S SOUTH FACE



PROFILE (natural strata)



EXCAVATION LEVELS

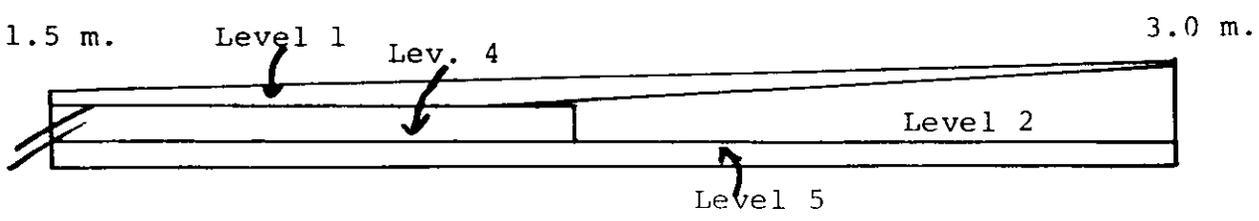
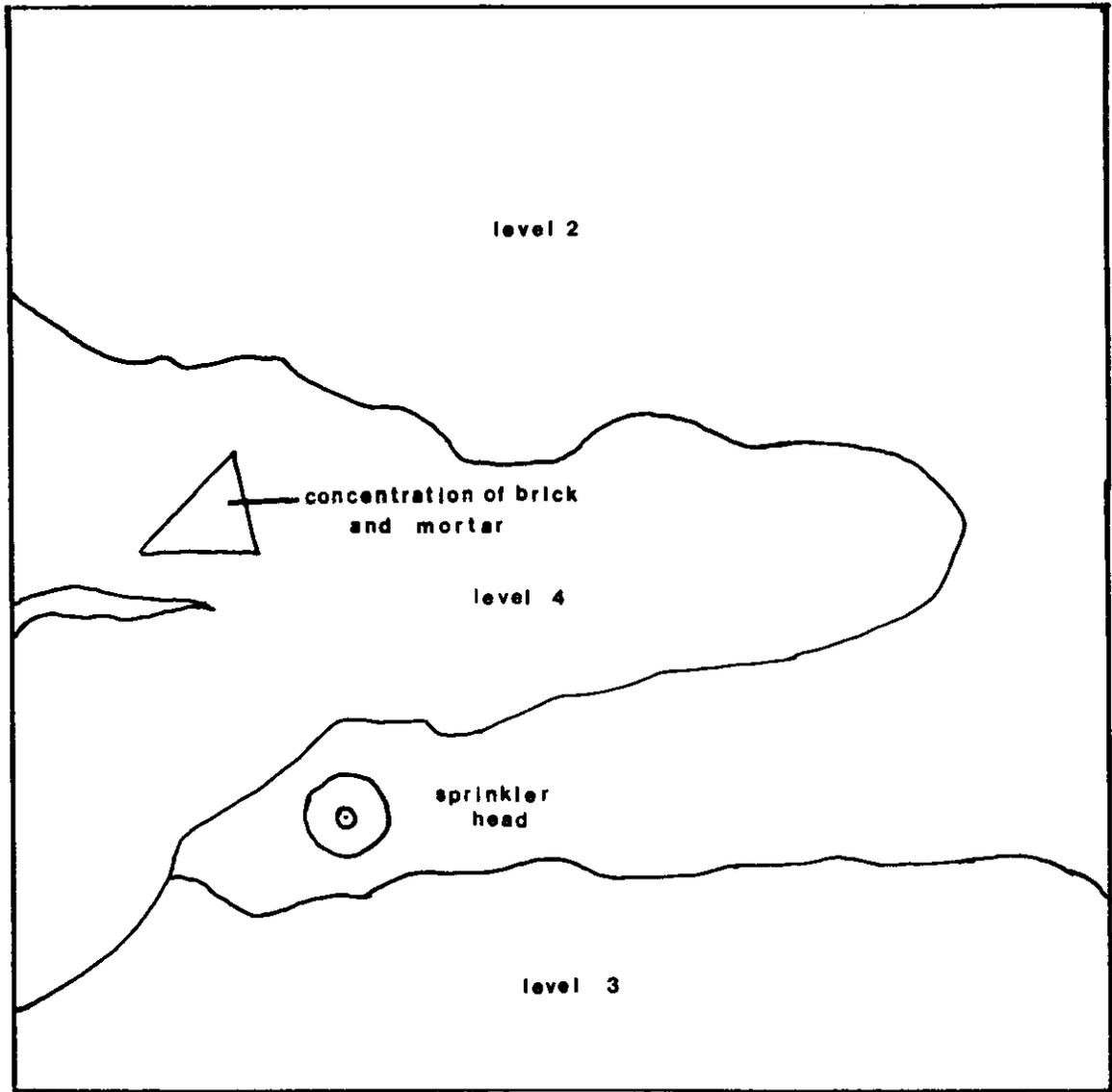


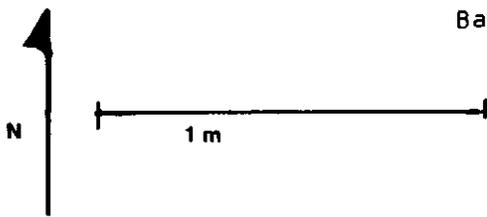
Figure 23

KN-S WEST FACE

Figure 24
KN-S LRF 4



Base of Level 1



grass roots and one medium sized tree root. The darker color at this level lead to difficulties when trying to distinguish its northern boundary from Level 2.

Level 4: (see Figure 25)

This level is a dark gray-brown heavy loam interspersed with clay patches. The purer clay seems to be confined to "patches" with varying degrees of clay mixed in with loamy matrix. This seems to be a backfilling of a disturbed area. There is a fairly high artifact concentration--brick, mortar, and a glazed ceramic pipe.

Level 5:

This level is light loam mixed with a darker clay and mottled with a light tan clay. There was a lot of rubble found in Level 5--maybe due to reconstruction. After excavating Level 4, Level 5 could be defined across the whole pit. There appears to be a pipe trench that traverses west to east through Level 5, though left unexcavated (no level or feature number was assigned to it).

KN-S(a):

Due to the lack of time, ^{further} excavation of unit KN-S was limited — to only a one meter square in the SE corner (see Figures 26 & 27).

Level 5:

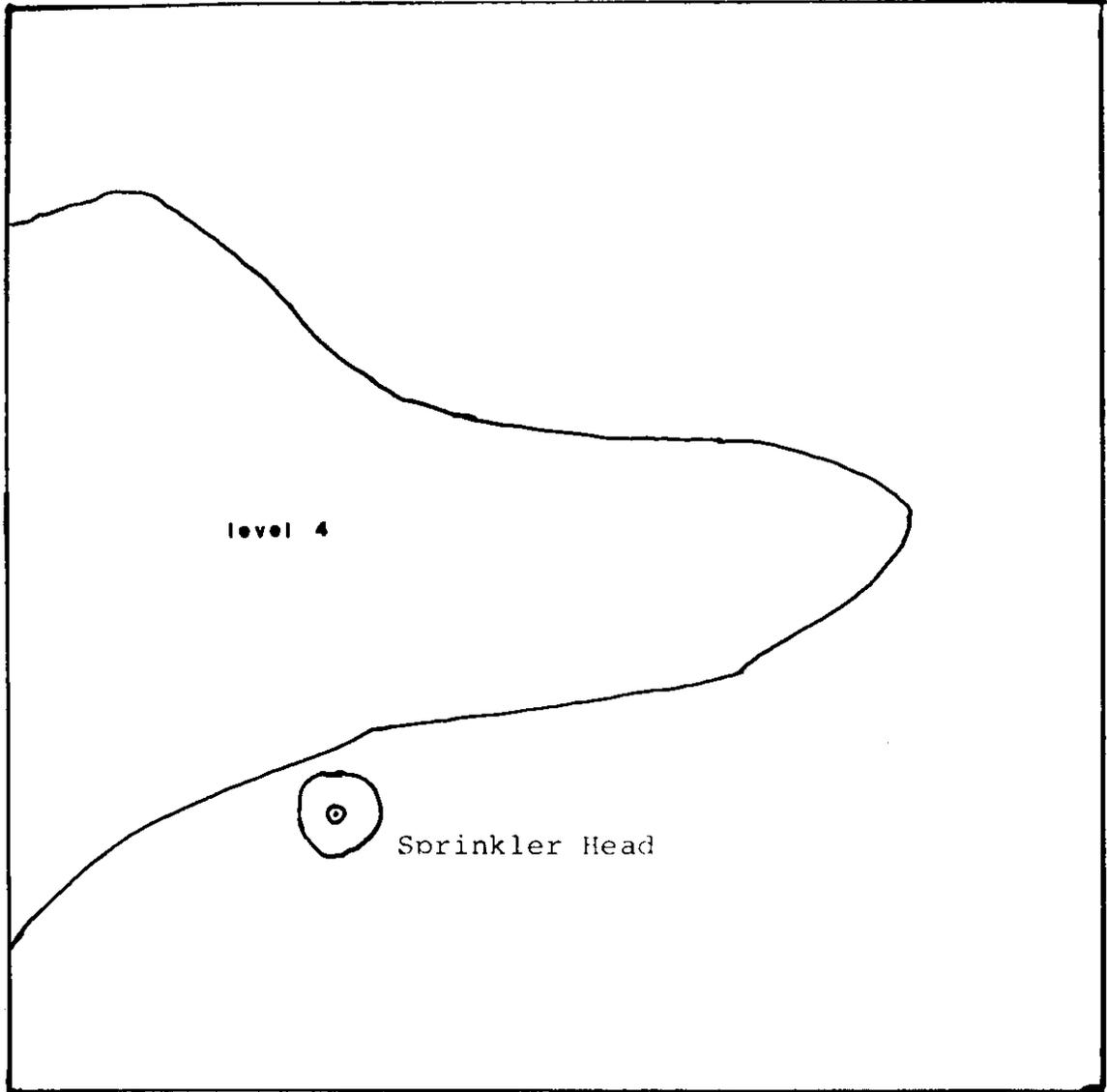
This level is a continuation of KN-S Level 5 (see above). It terminates with the end of the loam with the tan clay mottling. It did continue the rubble concentration--especially the brick fragments.

Level 6:

This level commenced with a thin layer of decomposed granite-- maybe the same paving material found in Level 5 of KN-W. A dark

Figure 25

KN-S LRF 11



Redefinition of Level 4

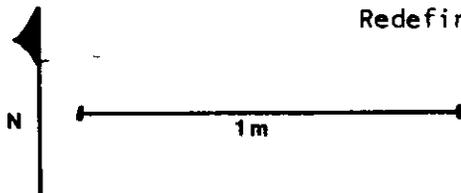
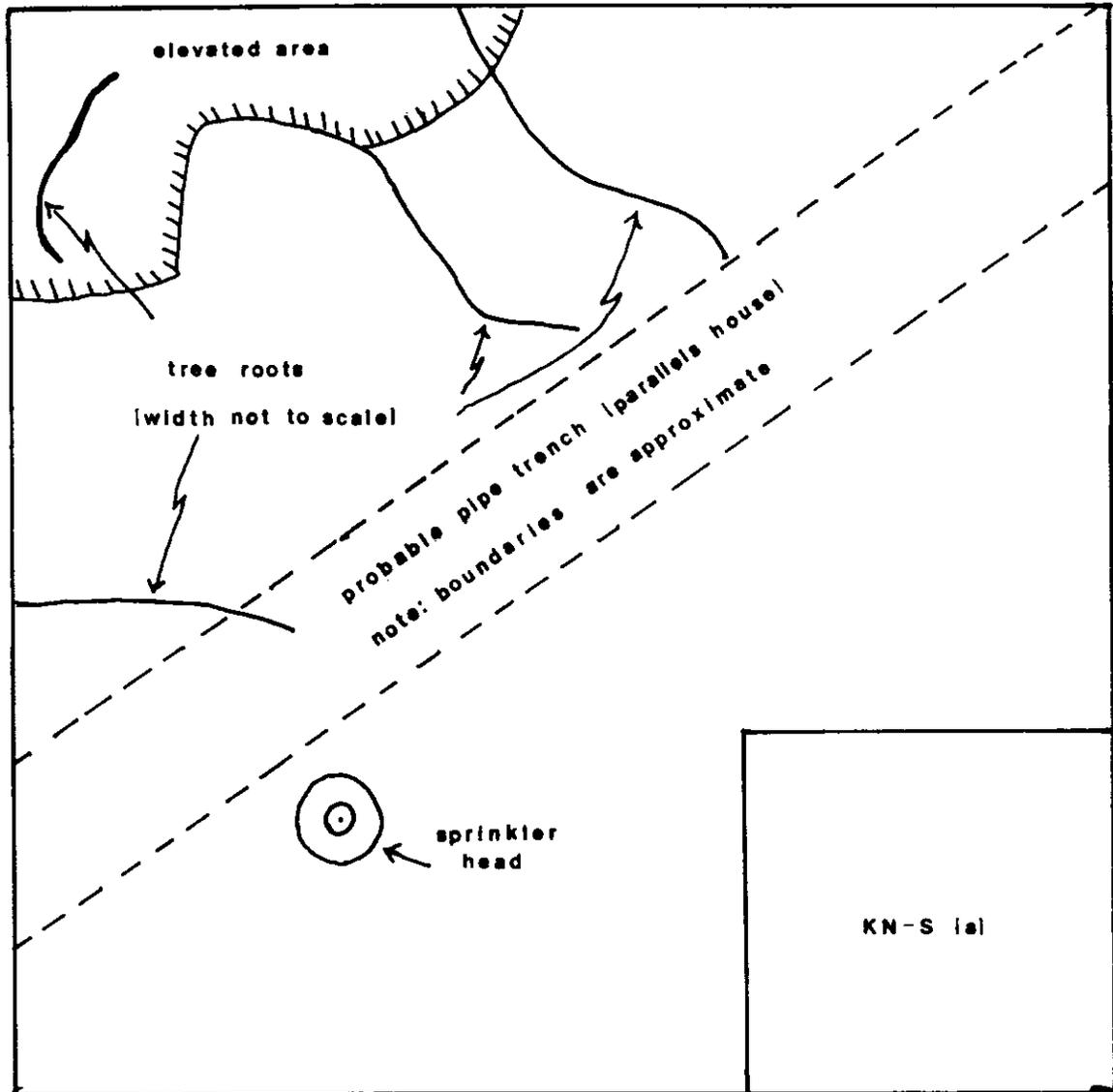
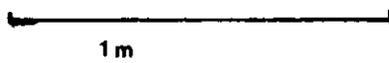
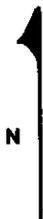


Figure 26

KN-S



Situation at End of Season



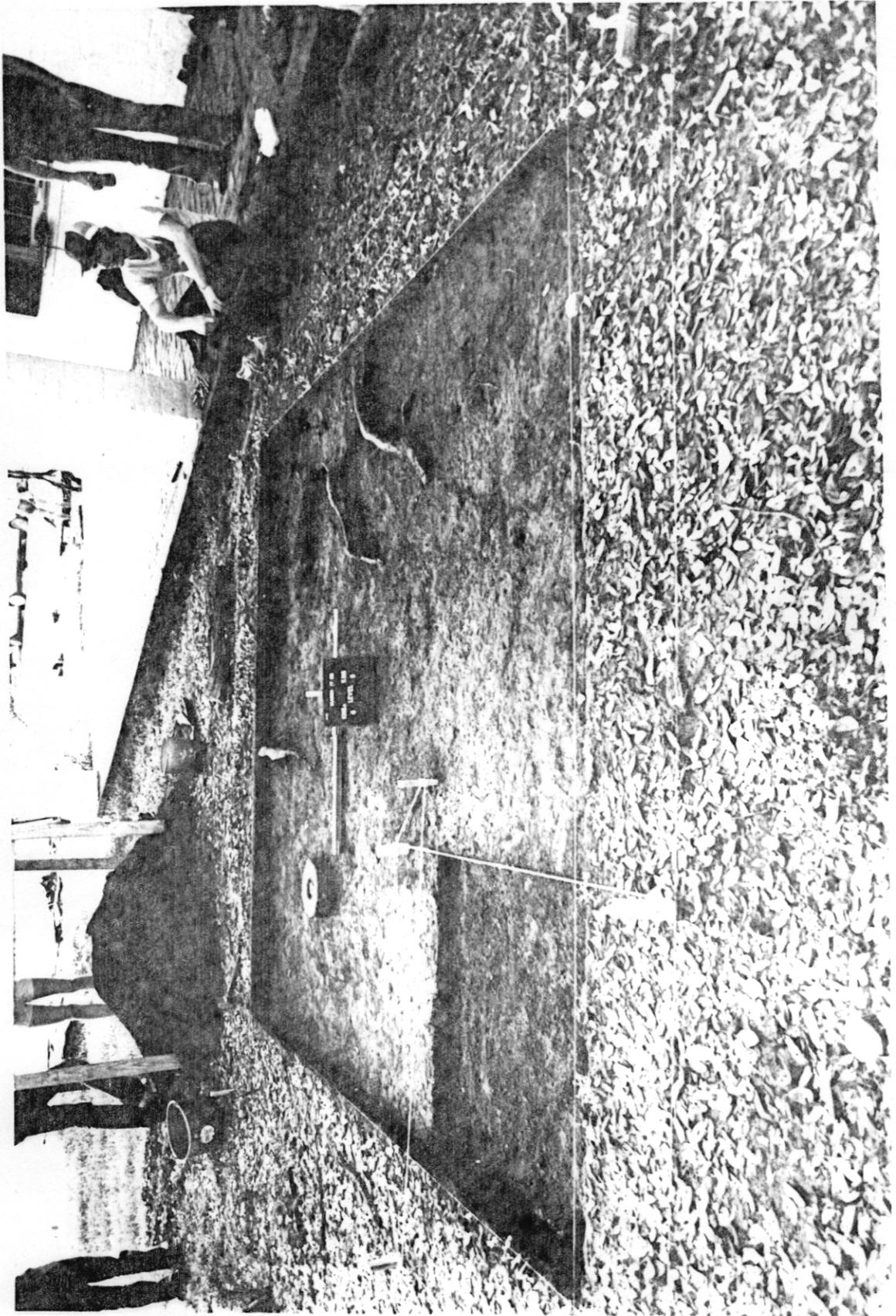


Figure 27: KN-S reduced to KN-Sa (facing west)

gray-brown loamy sand then appeared. There was a good concentration of artifacts--glass, ceramics and nails. This level was arbitrarily stopped.

C. Feature Descriptions

Unit KN-W:

Feature 1: (see Figure 17)

This feature was a shallow pit--alternating shallow layers of loamy sand with charcoal. One of the layers contained the weathered paving of Level 5. This may have been a charcoal pit. Originally, we thought it was bounded by oxidized clay bricks yet those never matriculated.³

Feature 2:

This was a concrete line traversing from center-west to the NE corner. It was bordered by Level 5 on the north and Level 8 on the south. It was broken up in the middle and not present near the west balk (see Figure 17). It may have been a border to a walkway (Level 5). There is a similar concrete line (Feature 3) running parallel to Feature 2 about one meter north of it.

Feature 3:

This feature is similar to Feature 2. It is bounded by Level 5 on the south and Level 3 on the north. There was a deposit of decomposed charcoal in small pockets at the north end near the north balk. On the north balk, the feature was either broken or did not extend into the balk.

Feature 4:

This is a deposit of builder's pea gravel (see geological

description, Chapter 1). It was dug into Levels 5 and 8 and meets Feature 2 at the east balk. It seems to be fill for a builder's trench dug for the construction of the back porch of the Kellum Noble House.

Feature 5:

This trench of heavy clay seems to be a recent deposit from a drainage ditch which comes into the unit from the south (see Figure 17). It was arbitrarily stopped due to lack of time. The trench does not seem to continue through the pit. There were only a few artifacts found.

Chapter 4

CERAMICS

Kenneth David Tyssen

The ceramics recovered from the Kellum-Noble site present a somewhat disappointing miscellany. We unearthed only about five hundred sherds in all. None of the sherds were of any appreciable size, for the most part being smaller than two or three centimeters, and few of which could be combined to make anything approaching a complete vessel. In addition, none of the fragments possessed even the smallest part of a potter's mark, precluding any sure identification. Nevertheless, the sample does include a wide variety of decorative and paste classes which in some cases permit at least broad time placement. (see Figures 28 to 30)

As was, I believe, the case with most of the types of artifacts from this site, by far the more productive excavation unit was the west, KN-W. This was especially the case in its lowest levels. Level eight, the last to be dug in that unit, yielded more sherds than all the other levels from both units combined. This indicates that we had just reached a depth of early occupancy, only to be forced to stop through lack of time. Presumably, it is safe to say that above level eight the house had ceased to be used as a residence, later, as we know, to be used as a zoo and a park office.

To optimally simplify my work, I found it best to classify the pottery into seven major categories:

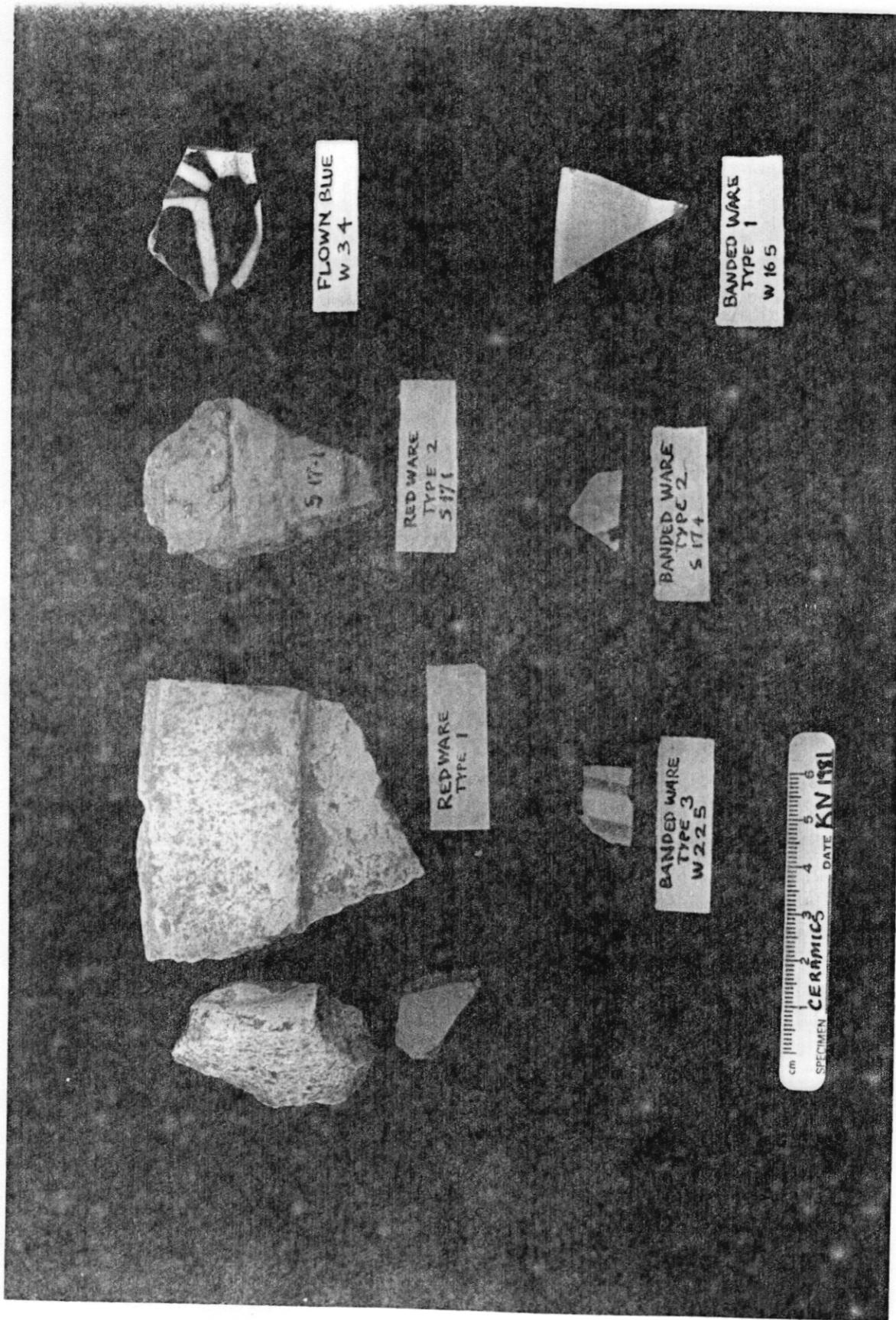


Figure 28

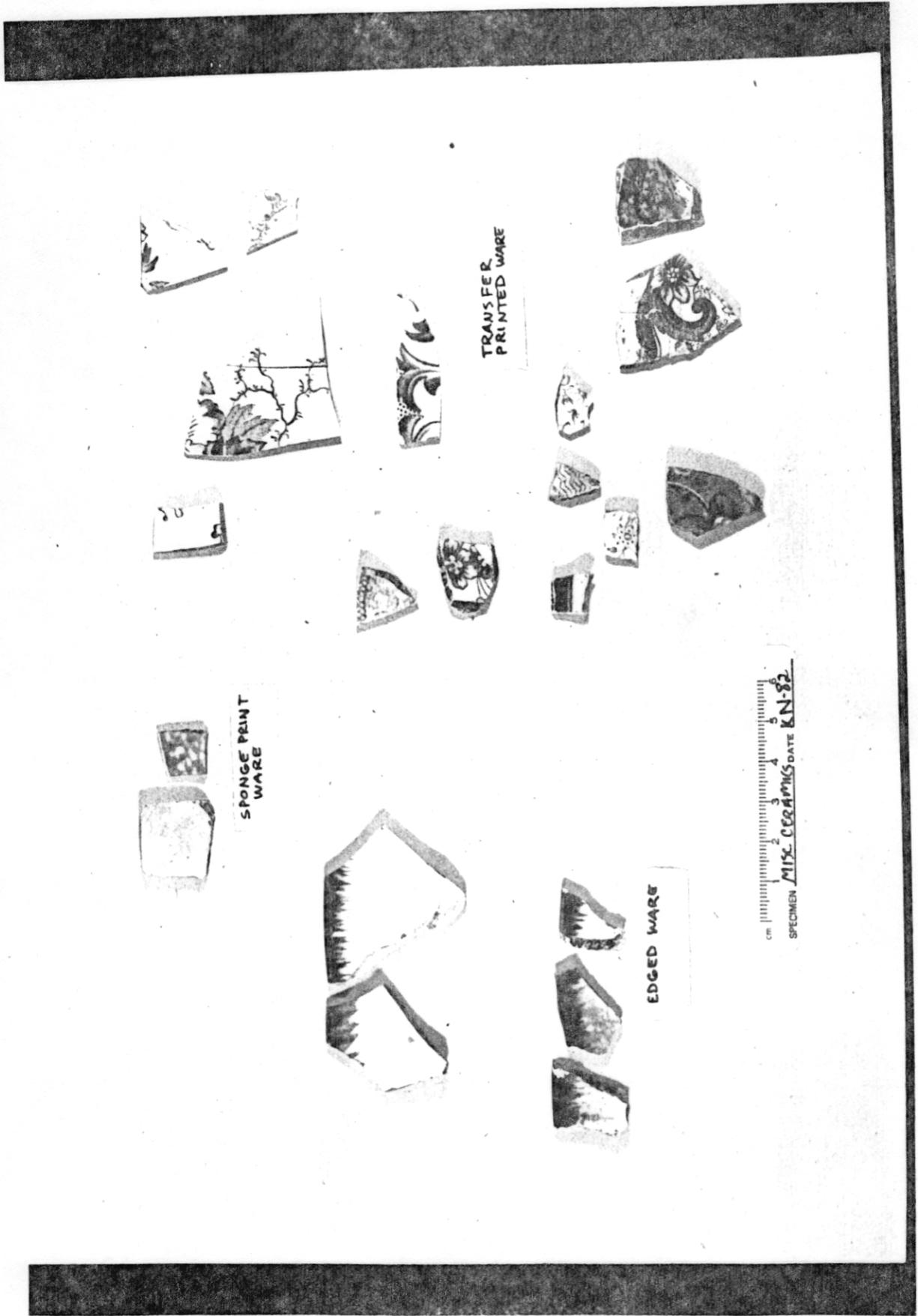


Figure 29

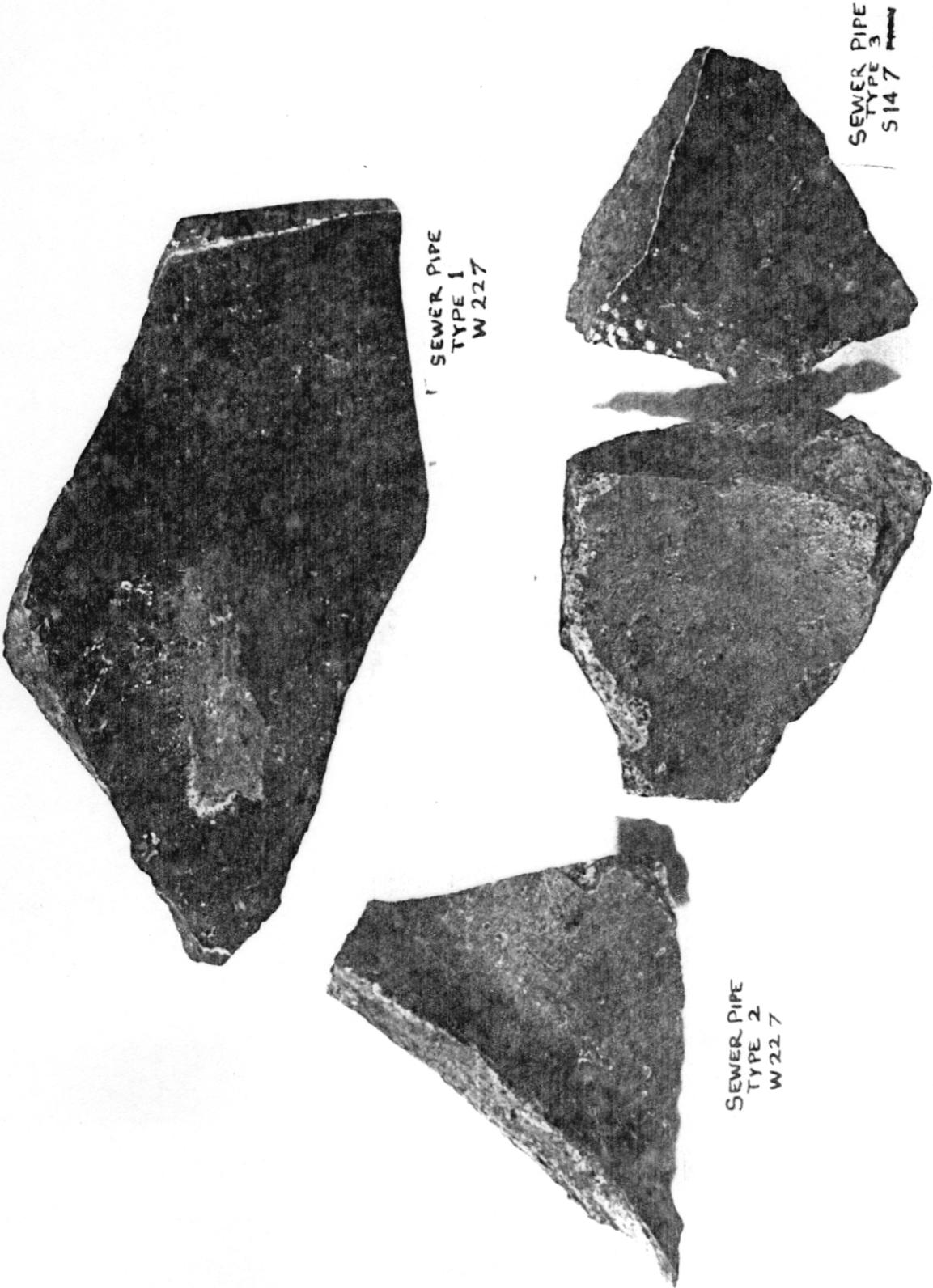


Figure 30

1. sewer pipe
2. redware
3. yellowware
4. stoneware
5. hexagonal floor tile
6. ironstone
7. porcelain.

In addition, some of these classes are further subdivided. Appendix is a chart of the different ware types and different levels. Here I will try to describe each class as well as possible.

Sewer pipe: We found in both units several large sherds of sewer or drain pipe. These are the only pieces which violate the general small size range already mentioned. The largest fragment is about twelve centimeters long. The pipe is of three distinct types. Type one has a lustrous silvery-brown glaze both inside and out, and a grey paste. Type two has a dull reddish-brown glaze on the outer surface and no inner glaze, and a shabby yellow paste. Both of these types were found only in the lowest level of the west unit. Type three has a shiny brown orange-peel textured outer glaze (salt glaze) and a dull silvery-brown inner, and an orange colored paste. Type three was found in almost all the levels of the south unit.

Redware: Redware is primarily what we think of as common flower-pot ware. The majority of these sherds were of this type, in a range of color from yellow through reddish-brown. Also included here are two pieces of a heavy redware tile.

Yellowware: Yellowware was a type of simple kitchen and tableware having a dull buff-colored paste upon which a clear glaze, which intensifies the buff to a brighter yellow, was applied. Produced industrially in the United States, it is common after 1830 (Boger, 1971). We found only two very small examples of this ware.

Stoneware: Stoneware was commonly used for very heavy utility containers in the nineteenth century. It is a thick, hard, non-porous salt-glazed pottery manufactured widely throughout the United States well into the twentieth century (Stewart, 1977). The piece of stoneware we had large enough to identify is part of the base of a machine-made bottle, of a sort mass-produced extensively from about 1850 to 1910 (Stewart, 1977: 93-105).

Hexagonal floor tile: These tiles are white, semi-porcelain, six-sided tiles of the sort that one easily can find even today in houses. We found them in almost every level of the south unit, but found none in the west.

Ironstone: This is by far the most useful of all the ceramic categories we found in the Kellum-Noble site. Though ironstone is a common term for this ware, it is in fact often difficult to distinguish true ironstone from other similar wares. It is a very hard paste whiteware that came into common use after about 1830, replacing the older, softer varieties such as pearlware and creamware, of which no examples were found at Kellum-Noble. Probably all of the ironstone found at the site was imported from Great Britain. The number of kinds of decorative techniques used on ironstone requires the class to be broken into subcategories:

1. Flown blue: Flown blue came into common use after about 1840. It possesses blue printed decorations in which the color has bled, or flown, into the surrounding glaze, causing fuzzy, blended edges (Price, 1981: 38, 41). The largest specimen of this type is of a floral pattern commonly manufactured in the last third of the nineteenth century (Williams, 1971: 84-139). That sherd came from the very top of the west unit.

2. Transfer printed: After 1825, transfer printing in a variety of colors was a very typical ironstone decoration. It is accomplished by transferring a pattern via paper from a copper engraving to the ceramic vessel (Price, 1981: 36). It was done in scenic, floral and geometric designs; floral and geometric patterns in blue, black, green, red, and brown occurred throughout the levels but were heavily concentrated in level eight of the west unit. This class of ceramics may possibly be what one would expect of Kellum's or Nobel's social and economic status.

3. Sponged: An inked sponge applied to the ceramic surface creates a mottled, sponge-like pattern. This was a frequent ironstone pattern after about 1835. We recovered a moderate number of mostly very small sherds of this type, again primarily from KN-W level eight.

4. Annular: Annular decoration on ironstone became common after 1830. It has different colored concentric banding around the vessel, and often some other painted design as well, though no such design shows on the fragments from this site. Only four sherds of this type were found.

5. Edged: A colored rim around the edge of a vessel, often on top of a molded feathery design (called shell-edge) was yet another ironstone pattern after 1830 (Price, 1981: 33). Several sherds of this type, both with and without shell-edged molding and all done in blue, were uncovered.

6. Flint enamel: This is an uncertain category, in which I placed two sherds, based on an example in a collection of identificatory pottery put together by Anne Fox. It consists of a heavy brown and yellow glaze, with the brown blended through the yellow in a runny sort of way.

7. Hand-painted: A few sherds had decorations that had been painted on by hand. All were very small and of little use in dating.

8. Undecorated: This is the catch-all category for all sherds that did not possess a colored design. These sherds may have been either from undecorated pieces or from undecorated areas of decorated pieces. Again, these were heavily concentrated in KN-W level eight.

Porcelain: Porcelain is a very fine ceramic which is translucent to light (Dillon, 1904: 3). I divided the selection of porcelain into three categories: 1) undecorated, 2) gilded, and 3) paint decorated. The sherds from dishes were all too small to be of any use in dating, but some other sherds were more interesting. Two pieces were from china dolls, one from KN-W level five, the other from KN-W level eight. More important are what appear to be two different kinds of electrical insulators, one from the lowest level when presumably electricity was not common. This

could indicate that some mixing of the levels has occurred.

Though no sherds could be reassembled to form a whole vessel, some idea of the original forms is apparent by extrapolating from the rim and base sherds. The following is a list by level of the easily distinguished vessel shapes.

KN-W Level One: one edged ironstone serving platter; one porcelain saucer; one undecorated ironstone heavy cup.

KN-W Level Three: one sponged ironstone cup.

KN-W Level Four: one undecorated ironstone cup; one undecorated ironstone plate; one porcelain electrical insulator.

KN-W Level Five: one undecorated ironstone crock; one porcelain plate; one porcelain doll (foot).

KN-W Level Six: One annular ironstone cup; one undecorated ironstone cup; one undecorated ironstone plate.

KN-W Level Eight: one undecorated ironstone plate; one undecorated ironstone cup; one undecorated ironstone soup bowl; two undecorated ironstone pitchers or teapots; one transfer printed ironstone cup; one transfer printed ironstone plate; four edged ironstone plates; one machine-produced stoneware bottle; one undecorated porcelain cup; one undecorated porcelain soup bowl; one porcelain doll (lower arm or leg); one porcelain electrical insulator.

KN-S Level One: one undecorated ironstone soup bowl; one undecorated porcelain soup bowl; one undecorated porcelain cup.

KN-S Level Five: one porcelain cup.

KN-S Level Six: three redware flower pots.

One must keep in mind that the evidence here is highly fragmentary and subject to interpretation.

This covers the full array of ceramics from the Kellum-Noble site as of the Spring of 1982. Unfortunately, the types represented were all of such a broad spectrum as to prevent any definite dating. The only conclusions we might safely reach are that, with the abundance of KN-W level eight, we had reached some part of the Kellum-Noble occupation - just when, will require further seasons to determine.

Chapter 5

GLASS

Chris Wagner

The glass collection from this first season at the Kellum-Noble site is fragmentary at best. There is a wide range of forms represented in the assemblage, most of whose function I was able to determine from the color and shape of the fragments. A classification system by function would have provided the most information about the deposits and lifestyle of the site's inhabitants. I could determine the function from the more substantial fragments, but for the major part of the sample such a determination was impossible. Consequently, I chose to use a system based on color (with the exception of windowpane). The categories are as follows (see Appendix 5 for data in tabular form):

1. Windowpane
2. Decorative glass - impressed or painted
3. Dark green or brown glass
4. Blue-green glass
5. Clear glass
6. All other (see Figures 31 and 32)

Windowpane is easily determined by the size and shape of the fragments. Counts of windowpane pieces can aid in the determination of the levels of major breakages; increases in thickness, in dating levels. A category for decorated glass is helpful because such pieces frequently represent luxury items which are less likely to be dropped or cast aside than bottles and jars. These pieces

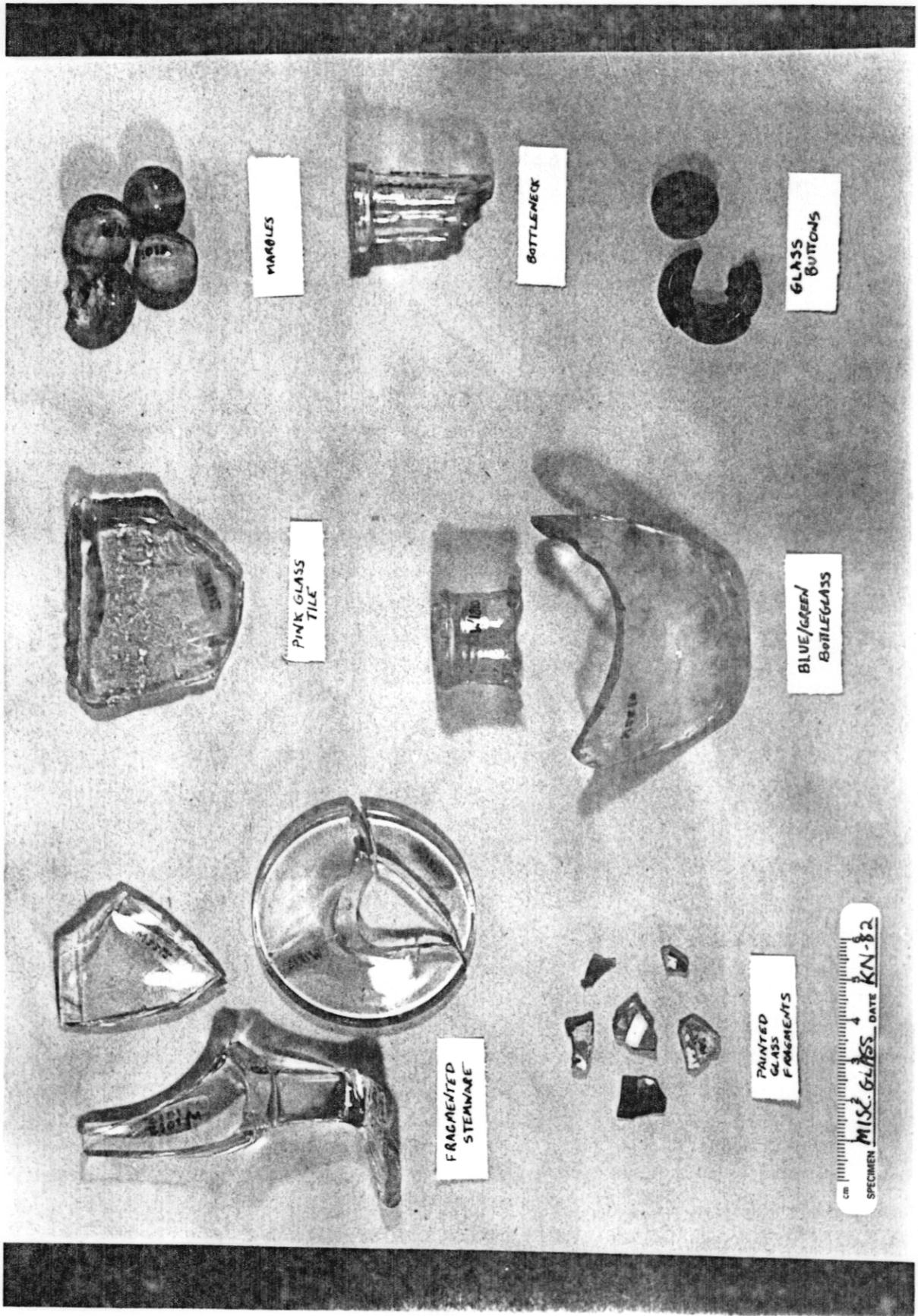


Figure 31

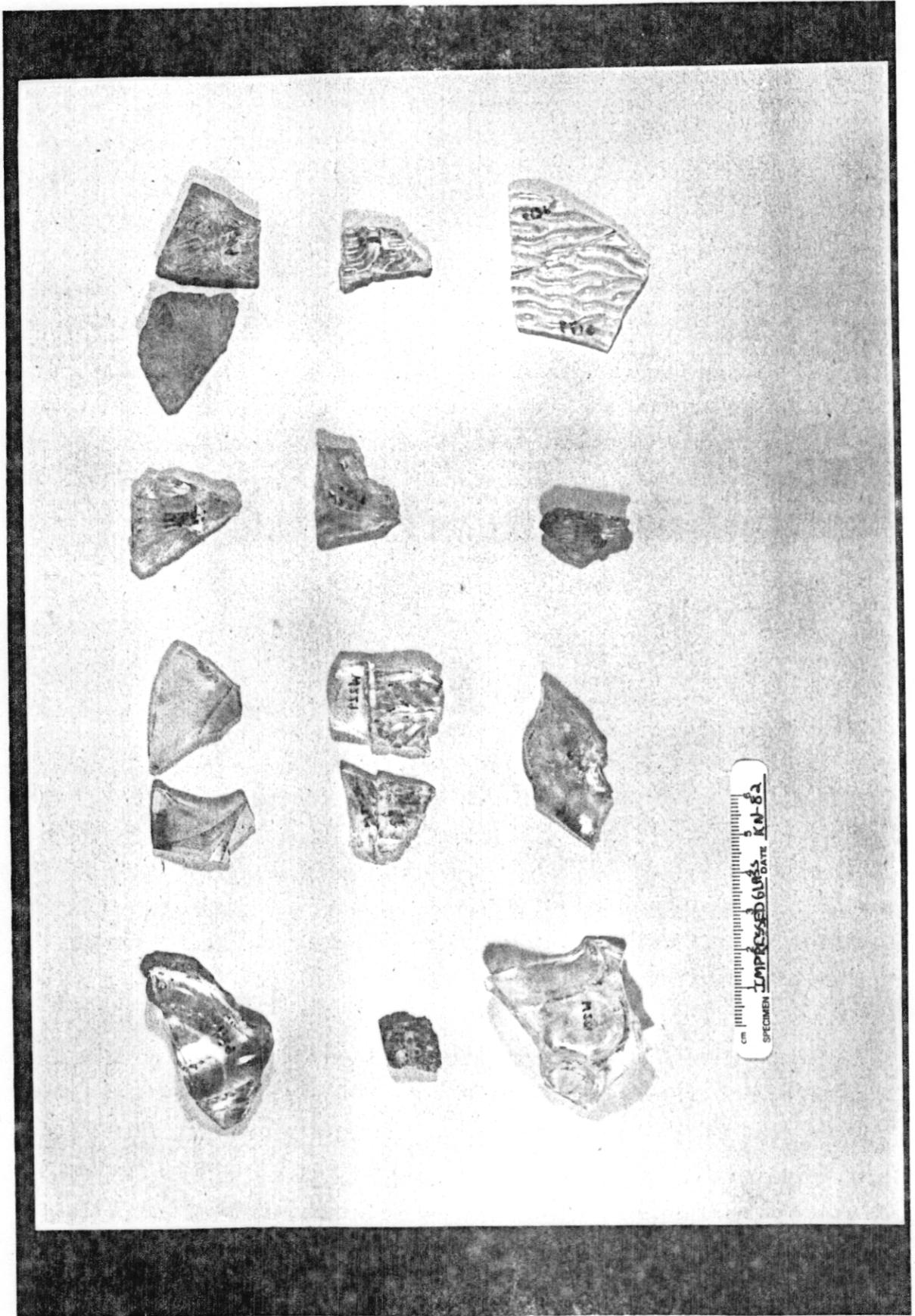


Figure 32

are also easily identified and dated by individuals who are acquainted with the decorative patterns. Unfortunately, time did not permit me to execute such an analysis. Green and brown glass are usually beer or wine bottles. Blue-green glass is often older soda pop, milk, or medicine bottles. The rest of the fragments were then placed into the remaining two categories: clear and other. The other category mainly contains colors of glass not previously mentioned.

I had two motivations in choosing these categories. First, color often suggests vessel function. Second, I would account for even tiny fragments. The data table in the appendix is helpful in order to observe trends in the artifact record. Care should be taken, however; because of the extremely fragmentary nature of the collection, the figures may be misleading. The use of minimum number calculations would have eliminated this bias factor, but, again, the fragmentation made the determination of minimum numbers extremely time consuming, if not impossible.

The remains from KN-S are less informative than those of KN-W and apparently represent only surface deposits. The types of pieces represented include beer bottles, soda pop bottles, windowpane, screwtop food jars, some decorative pieces, and mirror fragments. Most pieces appear to be very recent. In levels two and five there is a concentration of windowpane suggesting some shattered windows. There is no significant increase in pane thickness through the levels. One anomaly is the appearance in level one of a piece of windowpane, which can be identified as older by its uneven thickness, blue-green tint, and bubbles. This could be

explained by some disturbance, but I believe it was probably laid down in proper sequence. The only date I could establish for this pit centered around a screwtop mouth from level five. Screwtops were not in general usage until after 1900, but since they are still in use today, I can only say level five cannot be earlier than 1900, a fact we already knew by the relatively modern appearance of the artifacts.

More information can be determined concerning KN-W. Among the types of vessels represented are beer bottles, wine bottles, milk bottles, soda pop bottles, medicine bottles and stoppers, food jars, stemware, black glass buttons, and milk glass. In the earlier levels there is a greater amount of glass present. This could be due to a high degree of fragmentation rather than an increased number of pieces, but I believe that more items were being deposited in these lower levels. One question which arises upon inspection of the glass collection concerns the relationship between levels four, six and eight. In particular, a certain piece of stemware, fragmented into five pieces, was recovered with parts in each of these levels. That each piece was deposited on separate occasions is dubious. The occurrence suggests three possibilities: 1) levels four, six and eight are in fact one level; 2) levels four and six were overdug into level eight; or 3) there was some stratigraphic disturbance which separated the fragments. This piece of stemware is not unique in its positioning. There were other fragments that illustrated this problem, but the definite relationships of these pieces to one another were not as obvious. The validity of

these three levels certainly needs verification.

There are three methods which one can use to date glass artifacts if somewhat loosely. One way is to analyze the shape and style of the bottle. For our sample, this was impossible because we had not complete or semi-complete pieces. Another way is to analyze the seam on the bottle neck. There are only five bottlenecks which are complete enough to use this method of analysis. Finally, a very general date can be placed by observing the color and imperfections of the piece. In level eight there are several black glass fragments. Glass of this type was used for beer and ale bottles before the turn of the century. In level four there are some green and brown fragments that are riddled with imperfections suggesting some antiquity. Also in level four are two bottlenecks. One of these from a medicine bottle was probably not made before 1903 because its seam reaches its lip. A "crown type" bottleneck, also from this level, could not have been made before 1892 when this type of bottle closure was first introduced. This level probably represents some period in the early twentieth century. A screw-top bottleneck from level three places that level definitely after 1900; a more precise date is impossible to ascertain. From level six there is a bottleneck which was made during the later portion of the nineteenth century. Of course, it may have been deposited much later; and if levels four, six and eight are actually one level, it must not have been laid down until the early twentieth century. In level eight there is a bottleneck from a medicine bottle which was probably made before 1880,

but again, manufacture date and deposition date are not necessarily the same.

Clearly, the range of pieces represent many different phases of the house's history including house restoration, city ownership, park period, and intensive occupation. The sudden accumulation of remains in the earlier levels (especially four and eight) suggests that more activity, though of an unknown character, was occurring at this time. We must have gone beyond the time in which the house was a storage area for the city, and perhaps we are near or even earlier than the zoo period of the site.

Chapter 6

METAL ARTIFACTS

Christian Jones

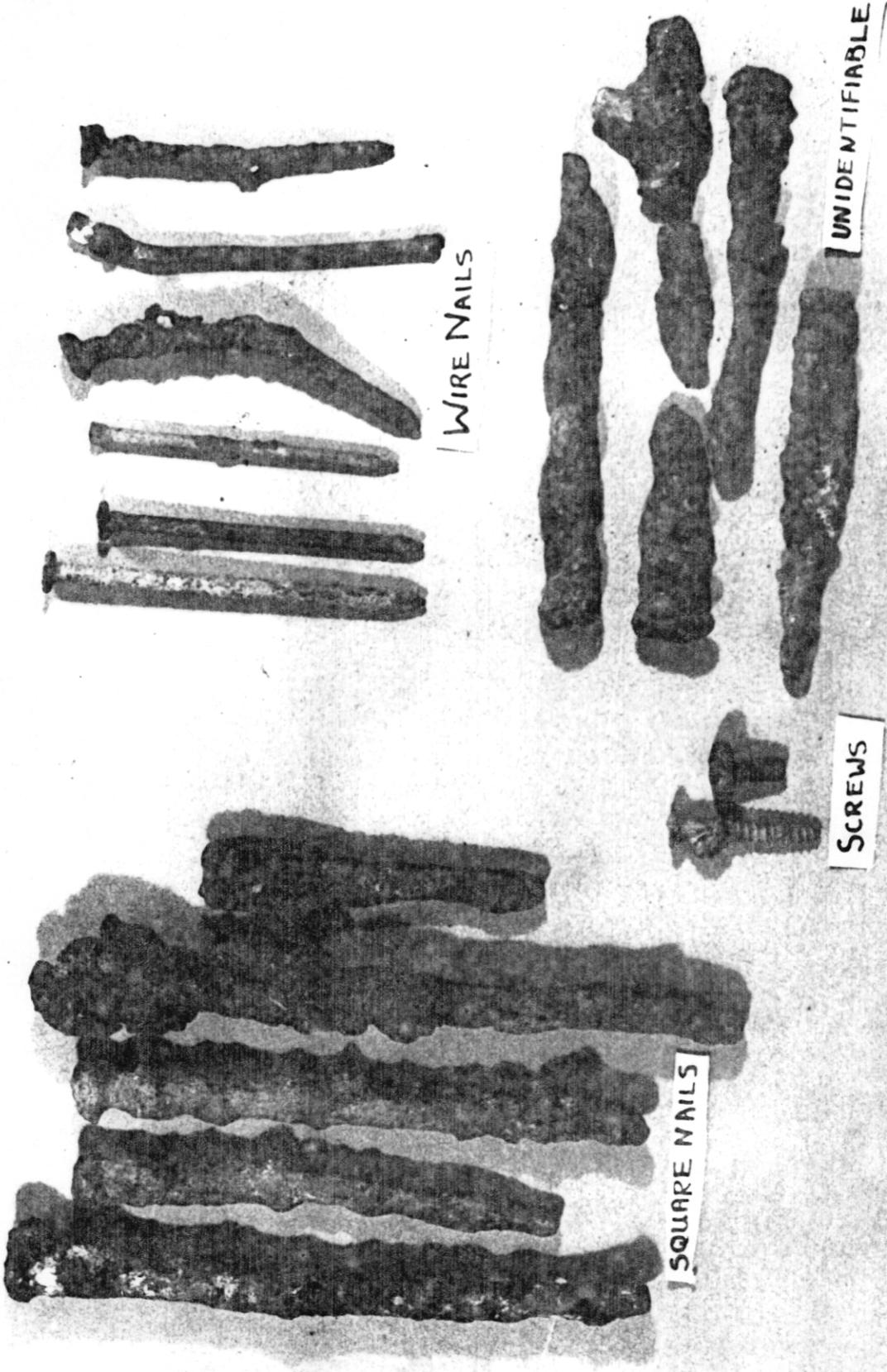
There was little information to be gleaned from the iron and other metal artifacts from the Kellum-Noble site due to the disappointingly poor state of preservation. The high acidity of Harris County soil (pH 4.5 - 7.3) contributed greatly to the highly corroded state which characterized most of the iron artifacts (Wheeler, 1976). Furthermore, the variety of identifiable non-iron artifacts was quite limited and of little value as a chronological guide. All the raw data on metal artifacts appears in Appendix 6 .

All but a few of the nails were highly corroded, thus making accurate identification by cross-section of shaft difficult at best. Only 36.5% of all nails were identifiable and were classified as either "wire nails" or "square nails". Characteristics of hand-wrought hand-cut nails (c. 1790 to 1820's on the Gulf Coast), and machine-cut nails (c. 1820's to 1850's on the Gulf Coast) were indistinguishable; hence, all nails of rectangular cross-section were treated as "square nails". These constituted 36.8% of the identifiable nails and were for the most part located in the west unit (KN-W). Modern wire nails (post-Civil War on the Gulf Coast) comprised the remaining 63.8% of the sample. A comparison between "wire nails" and "square nails" by unit and level appears in Appendix 7 .

In light of the current state of information, it appears that levels four and five in the west unit and levels five and maybe

six in the south unit reflect the restoration which immediately followed the 1955 house fire. These levels contained disproportionately large number of nails (235, 43, 33 and 18, respectively) relative to the other levels in their respective units. The same, however, can be said of levels one and eight in the west unit, yet these do not appear to be related to this restoration. Level one contains 25 pop tops. Since pop tops first came into widespread use in the 1960's, it appears that level one reflects a post-1955 period. Level eight is too far down and probably reflects a much earlier restoration. Objects such as three hooks, a pipe connector, and a doorplate in level eight lend further evidence in support of this hypothesis. All of the deductions based on metal artifacts are quite consistent with those made on the basis of building material evidence (see Chapter 7).

(illustrations of metal artifacts, see Figures 33 to 36).



SQUARE NAILS

WIRE NAILS

SCREWS

UNIDENTIFIABLE

cm 1 2 3 4 5 6
 SPECIMEN NAILS/SCREWS DATE KN 1982

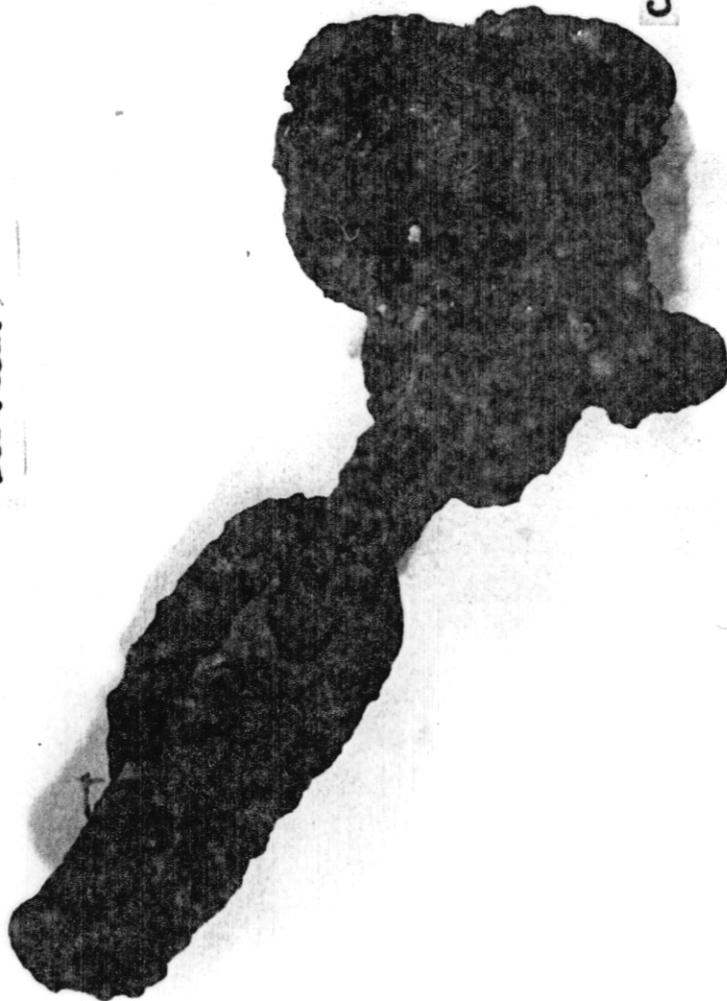
Figure 33



DOOR LOCK PLATE



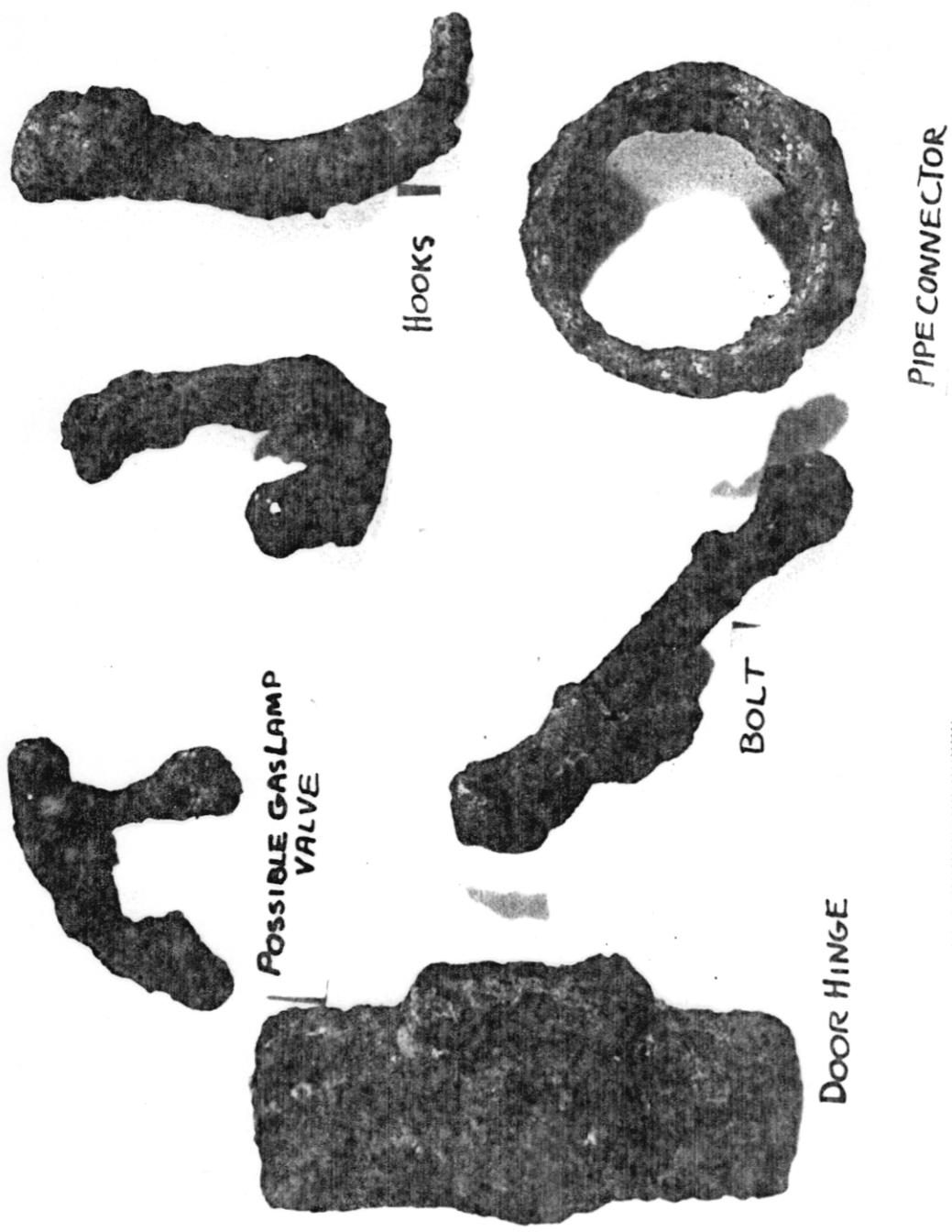
COPPER TUBING



CHAIN

cm 1 2 3 4 5 6
SPECIMEN HOUSEHOLD METALS DATE KN 1981

Figure 34



POSSIBLE GASLAMP
VALVE

hooks

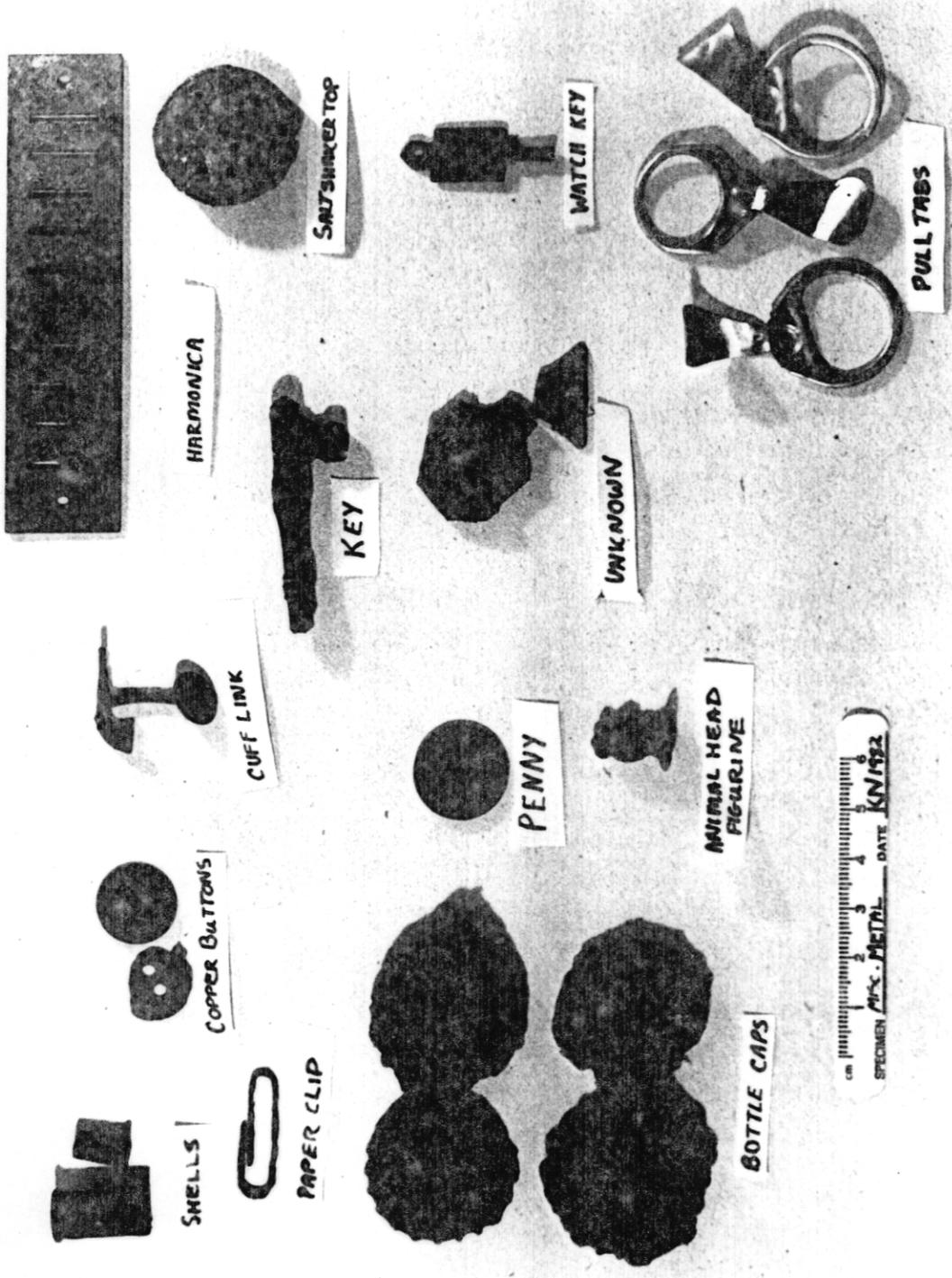
BOLT

DOOR HINGE

PIPE CONNECTOR

cm
SPECIMEN HOUSEHOLD IRON DATE KN 1981

Figure 35



cm
 SPECIMEN NO. METAL DATE KNIFE

Figure 36

Chapter 7
BUILDING MATERIAL
Christian Jones

All building material from the excavation was collected and grouped into three major categories: brick; klinkers (which may have been used for surfacing walkways); and mortar. Eleven fragments of slate were found in the west unit (KN-W), levels three and eight. However, due to the very small sample, it appears unlikely that slate was used as a building material on the Kellum-Noble house. The only evidence of plaster was associated with four small mortar fragments from the south unit (KN-S), level three. All the raw data on building material can be found in Appendix 8 .

The predominant building materials were brick and mortar. Concentration data on brick by unit and level appears in Appendix 9 . The brick fragments, ranging in size from about a centimeter in length to nearly whole bricks, were divisible into two categories, light and heavy brick. The light brick is the old, hand-formed, soft brick and generally ranges in color from 10YR 7/4-6 to 7.5YR 6/8 on the Munsell scale. This type of brick was fairly evenly distributed in the south unit; however, in the west unit, it predominated in the upper levels (levels one, three and four). In addition, a few fragments showed signs of soot on the surface. This evidence was consistent with historical data indicating a major fire which ravaged the upper portions of the house in 1955. Soon afterwards, the house was restored, hence this light brick may have been thrown into the yard by the reconstruction crew.

The total weight of light brick from both units was 3,170.2 grams. The heavy brick is machine made (post 1870 on the Gulf Coast) (McKee 1973, pp. 45-46). It is of higher specific gravity and hardness, and generally ranges in color from 10R 5/8 to 5YR 5-6/8 on the Munsell scale. The total weight of heavy brick was 16,498.0 grams while the total mortar weight was 9,454.3 grams.

Levels four and five in the west unit showed a disproportionately large total weight of brick (1936.7 grams and 567.5 grams respectively) and mortar (354.6 grams and 1109.5 grams respectively). This material may have been thrown out during the 1955 restoration. This restoration also appears to be reflected by levels four and five of the south unit, levels which contain by weight 56% of the brick and 81% of the mortar found in the south unit. Levels one and eight of the west unit likewise showed abnormally large brick and mortar concentrations; however, they are unlikely candidates for the 1955 restoration. On the basis of metal evidence (see Chapter 6), level one was quite likely deposited after 1955. Level eight was too low in the stratigraphic sequence and was probably deposited near the turn of the twentieth century. However, it contained by weight over 70% of the brick from the west unit and hence may represent an earlier restoration of the Kellum-Noble house. This deduction is corroborated by metal evidence indicating large numbers of nails and other metal artifacts in level eight.

A few of the brick fragments were found to be crudely glazed. All these were light brick but darker in color and of higher specific gravity than most light bricks. They probably reflect sand

vittrification during firing rather than intentional glazing. Several light fragments were cement rendered, and one showed evidence of a very light coat of blue paint (2.5YR 5/0 Munsell value). Whether the blue paint actually reflects the use of this color on parts of the house is unclear. The use of cement rendering does, however, seem probable.

The data on klinkers gave minimal information. By weight, level eight contained almost 80% of the klinkers from the west unit and may further reflect the pre-1955 restoration. Likewise, level five contained by weight almost 60% of the klinkers found in the south unit and thus could reflect the 1955 restoration. These final two points are subject to speculation.

Chapter 8
MISCELLANEOUS
Chris Wagner

Among the collection of artifacts that we gathered during this first exploratory season at the Kellum-Noble site is a small group which, not fitting into any other classificatory group, is placed under the heading of "Miscellaneous". This group of artifacts is quite diverse and ranges from a piece of tire tread to a bone hair comb. It is unfortunate that these pieces are not very useful in assigning dates to the levels or telling us much about the activities that were occurring around the house (Figure 37).

Plastic is present in all levels of the KN-S pit and in all ^{6?} the levels above level five in the west pit. People were losing buttons and other costume pieces around the site at the time of the lower levels, for there is a concentration of these pieces in levels four, five and eight. There is a group of six marbles localized in level four and one in level eight in the west pit. One limestone marble from level eight is separated from a matching marble in level four as well as from the crockery and agate marbles located in this level. This separation leads me to believe either that levels four and eight are the same level, or that there has been some disturbance in the stratigraphy. The size of the marble sample suggests that there was some activity at the site which included children; perhaps the zoo or the Noble school.

The insulated wire found in two levels may indicate the installation of electricity in the house. This probably did not occur

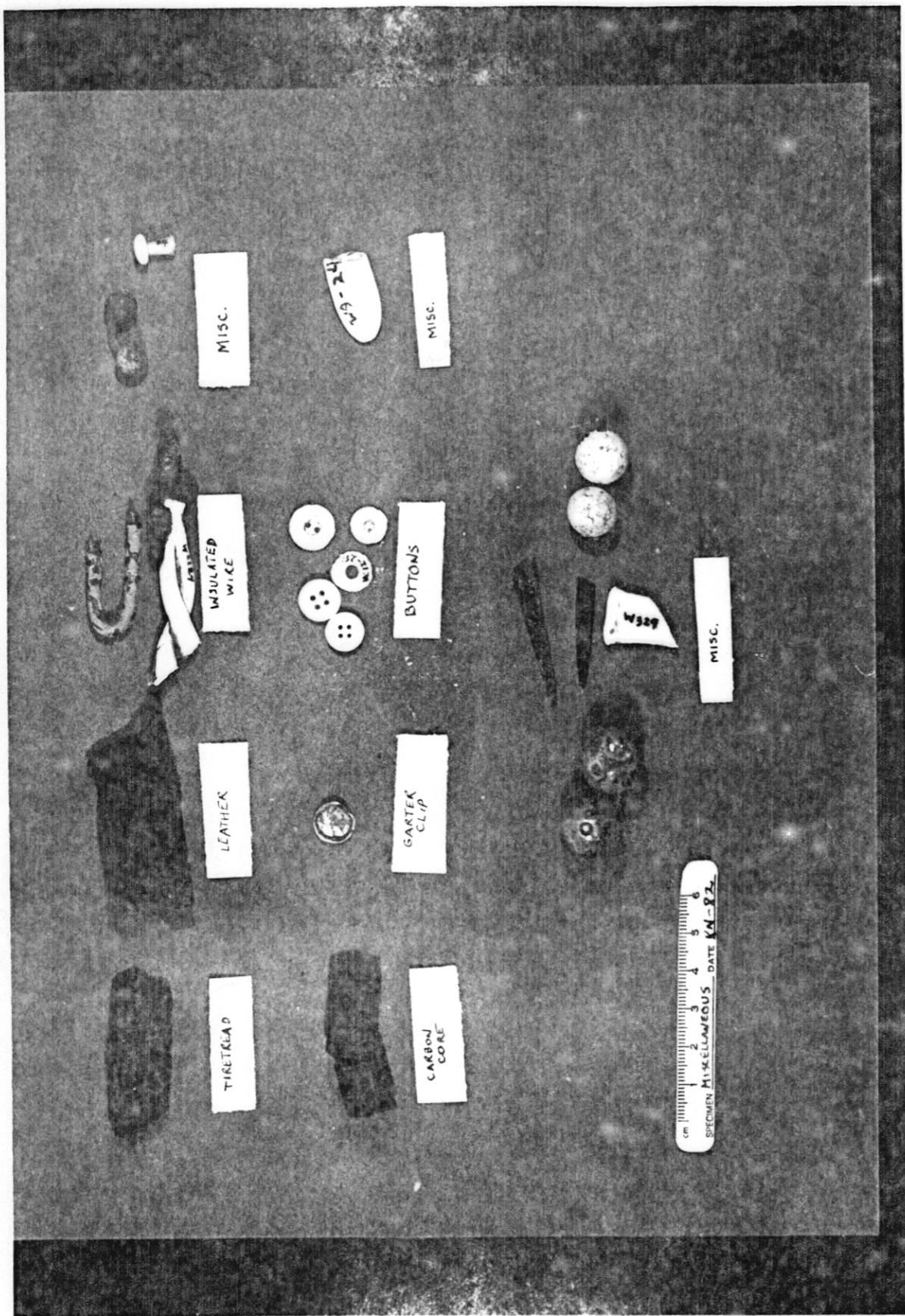


Figure 37

until after 1900 when the house was part of the city park. The Noble's financial situation would have prohibited such a luxury.

The artifacts are presented by level in the following table. The information that one can glean from these remains is limited, although a more thorough investigation of the marbles and buttons might lead to some approximate dates.

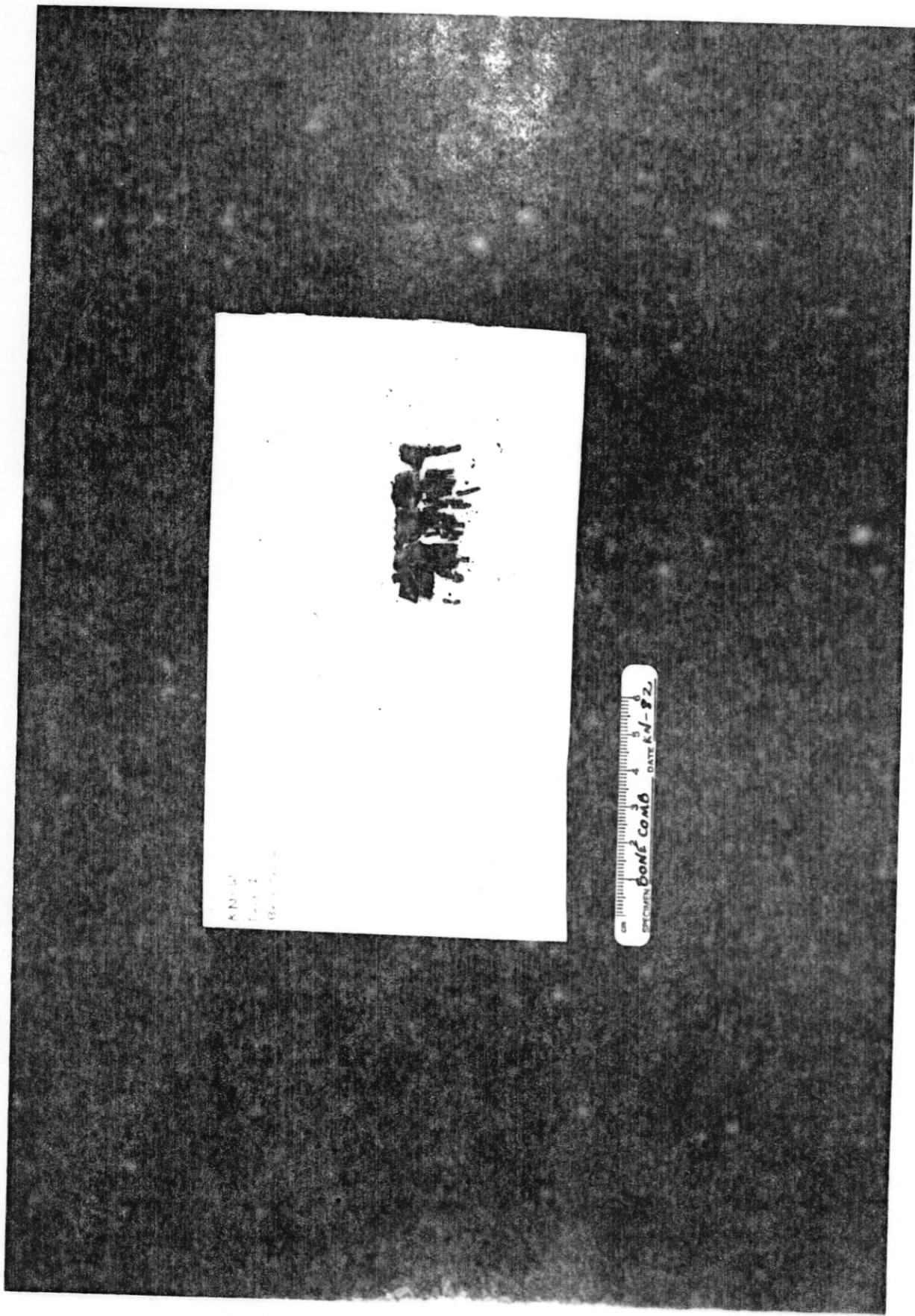
Miscellaneous Artifacts by Level:

KN-S

Level 1	one cylindrical piece of plastic tube
Level 4	one cylindrical piece of plastic tube one garter tab
Level 2	one piece of clear plastic
Level 5	two plastic screwtops one yellow glass marble one piece of red plastic

KN-W

Level 1	four thin plastic strips five cylindrical pieces of plastic tube one plastic pipe mouthpiece one piece of leather
Level 3	one brown and white swirled glass marble
Level 4	one plastic screwtop one carbon core one frog clasp one plastic tackhead two yellow and brown crockery marbles one limestone marble one clear glass marble with a purple swirl two agate marbles three mother of pearl buttons one clear glass button
Level 5	one mother of pearl button one piece of insulated wire
Feature 1	one bone comb (see Figure 38)



KN-50
Page 2
19-1-1982

cm
SPECIMEN **BONE COMB** 4 5 6
DATE **KN-82**

Figure 38

KN-W (cont.)

Level 8 two mother of pearl buttons
 two bone comb teeth
 one mother of pearl handle
 two glass buttons
 one limestone marble
 one twisted piece of insulated wire

Chapter 9

FAUNAL ANALYSIS

Mike Nicolls and Paige Pool

Compared with other aspects of culture, faunal remains are relatively tenacious. The day-to-day activities of even historic peoples like the Kellums and the Nobles do not preserve well, but bones, fortunately, do. It is through the analysis of faunal materials, then, that we can reconstruct the economic activities of the past. Through the identification of the various species present, we can assess the relative importance of particular animals to the economy of the site, while evidences of butchering and burning tell us just how those bones were used. Finally, the stratigraphic distribution of faunal remains helps indicate how economic relationships change over time.

A. Methods

Each day at the site we collected faunal materials separately from artifacts and bagged them according to unit and level. In the laboratory, we separated bone from shell and weighed each by level. Of the 1,548 elements (3,083.51 gms), 1,389 (2,136.53 gms) were of shell and 195 (946.98) were of bone. Due to the limitations of time, we analyzed only the bone further (see Appendix 10).

The aid of William L. McClure and the use of the Houston Archeological Society's comparative collections enabled us to make positive species identifications of 26% of the bone (by

weight). Twenty-nine percent could not be identified due to its fragmentary condition, while the remaining 45% which could be partially identified were assigned to size classes. Classes represented are SM (small mammal: mole, mouse, rat, etc.), MM (medium mammal: squirrel, racoon, dog, cat, pig, sheep, goat), LM (large mammal: deer, bison), and DML (domestic large mammal: mostly domestic cow). We examined bones for evidence of fire modification, intentional breakage, polishing, knife incisions, and butchering marks (including the type of saw used). We noted also such features as degree of ossification, pathology, rodent damage, and tooth wear.

B. Number of Species (see Figures 39 to 41)

We determined the minimum number of individuals at the site using the technique described in Hester, Heizer and Graham (1975: 191). Based on positive identification of species and bone element and on stratigraphic position, twelve individuals were identified representing five different species. A minimum number of three Bos taurus (domestic cow) were represented in KN-S, while KN-W yielded five Bos taurus and one each of Canis familiaris (domestic dog), Odocoileus virginianus (white-tailed deer), Sus scrofa (domestic pig) and Felis domestica (domestic cat). Bos thus accounted for 73% of the minimum number represented, with the other species accounting for 9% each. Taken as a whole, Bos accounted for 99% of the total weight of identified bone.

While only one of the fifty positively identified bones was burned, twenty-seven were butchered, all Bos taurus. Butchered

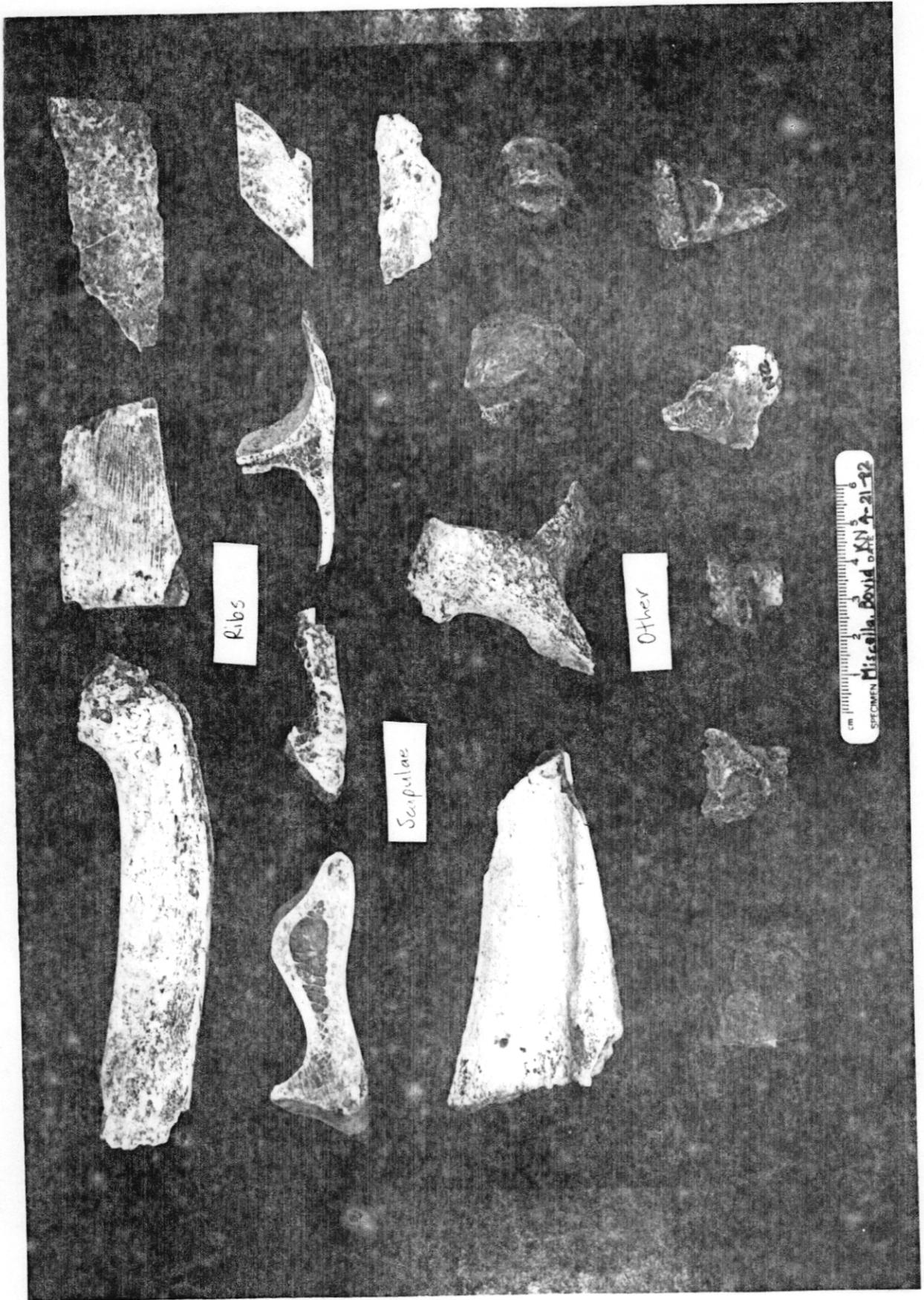


Figure 39

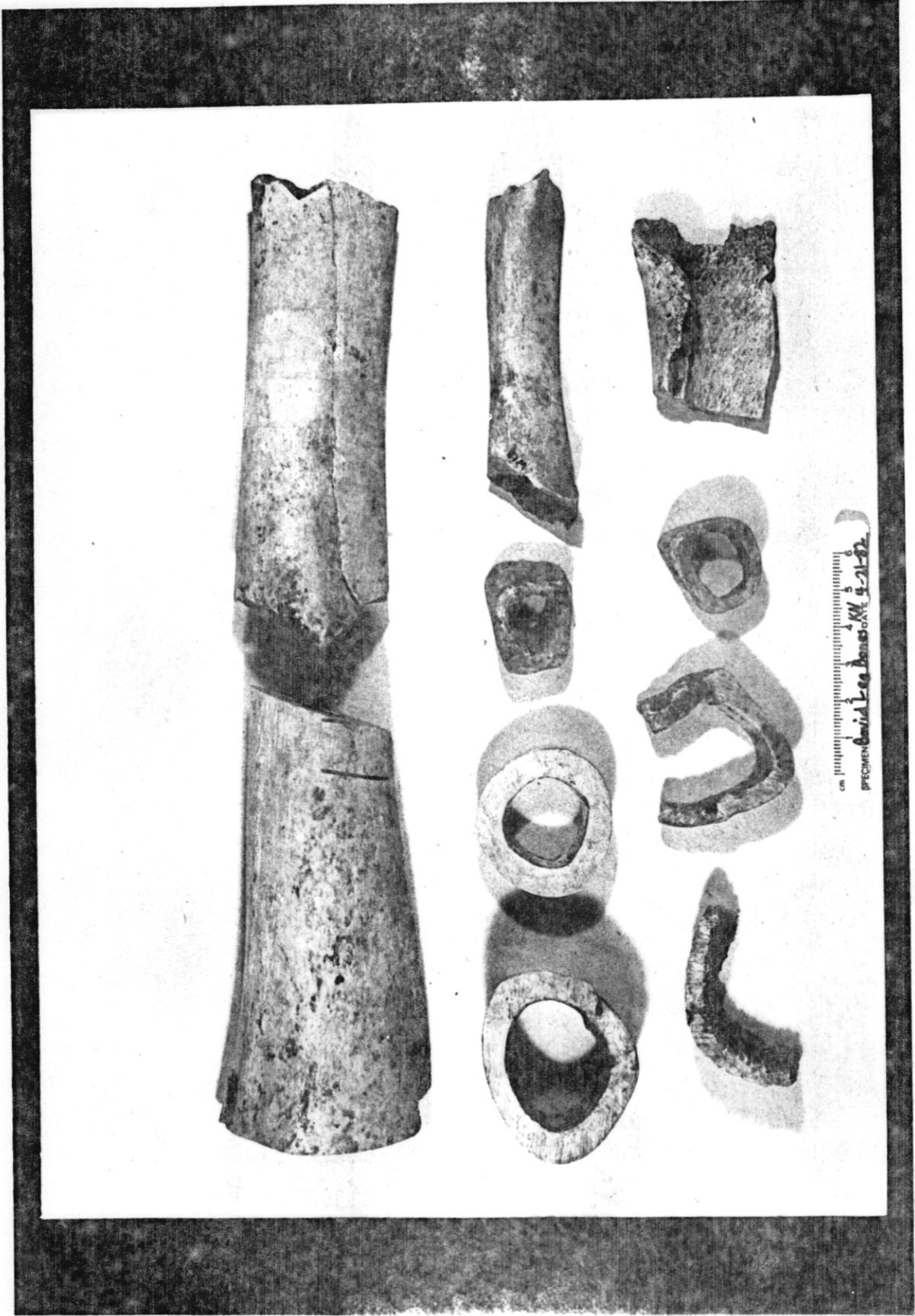
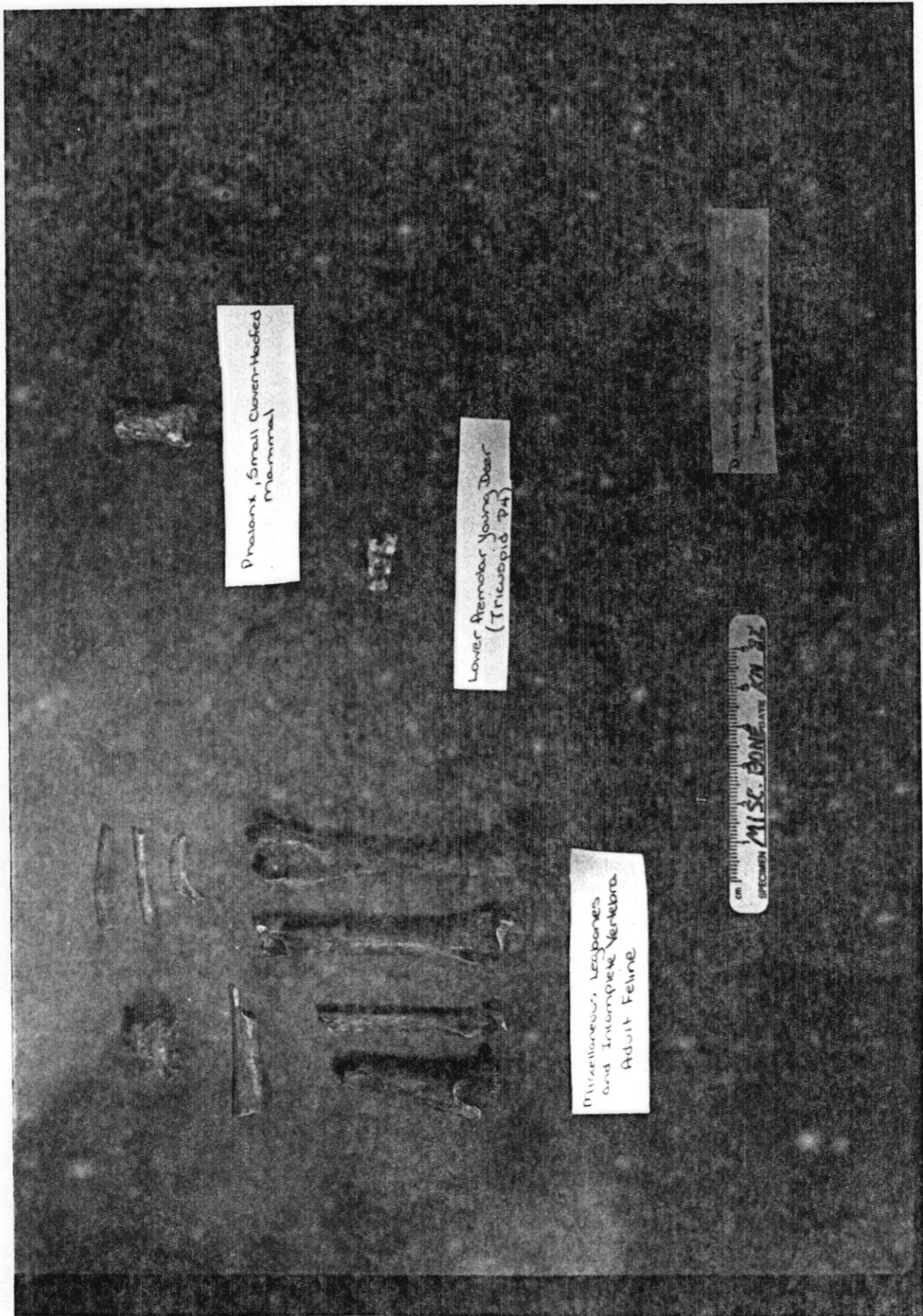


Figure 40



Prionax, Small Clavon-Hooked
Mammal

Lower Femoral Young Deer
(Tricuspis P4)

Small Clavon-Hooked
Mammal

Miscellaneous, Legbones
and Incomplete Vertebra
Adult Feline

cm
MISC. BONE
SPECIMEN

Figure 41

bones thus accounted for 50% of identified Bos in KN-W and 100% in KN-S. In general, these specimens are cross-cut sections of long bones or scapulae butchered with some type of straight saw. In some cases, knife marks near the cuts indicate that these bones were hacked prior to sawing.

Of the five species represented, only one, the Odocoileus virginianus, was wild. This individual was identified from a lower tricuspid premolar and aged 2.5 to 3 years old.

C. Distribution of Species and Classes

It is perhaps significant that 89% of the positively identified Bos bones were taken from the lower two levels (Levels 7 and 8) of KN-W. These two levels also yielded the one phlange of Sus scrofa, the Odocoileus tooth, and the seven bones of Felis domestica. In the south pit, we recovered the three positively identifiable Bos specimens from the lower three levels.

Of the classed animals, DLM had the greatest representation (38%), followed by LM (24%). In KN-S, however, DLM accounted for 71% of the sample, with the remaining 25% unidentified. Distribution in KN-W was as follows: 5% SM, 7% MM, 25% LM, 47% DLM, and 17% unidentified. Like the positively identified species, the classed specimens in KN-W were concentrated in the lower units.

D. Analysis of Shell

Although shell could not be thoroughly analyzed at this time, its overall quantity and distribution suggest avenues for future study. While the ratio of shell to bone in KN-W is

relatively even (47% to 53%), shell predominates in KN-S (98% shell to 2% bone). In addition, the average weight per piece of shell in KN-S is 3.11 gms, 267% larger than the 1.17 gm shell in KN-S. This discrepancy may be the result of differential screening practices between the two pits, or it may reflect differing functions between the two sites. While we have not completed species analysis of the shell, it appears to be predominately of a common oyster type. In addition, we have distinguished small quantities of three different types of land snail.

E. Conclusion

Although conclusions in an exploratory excavation such as this one are risky at best, several trends appear to be emerging from the data. The first, of course, is the importance of Bos taurus to the economy of the site, perhaps as a farm animal, but more particularly as an ingredient in the diet. Specific concentrations of cross-cut leg bones and scapulae would seem to suggest a preference for those cuts of meat. More significant, perhaps, are the areal and temporal distribution of the Bos bones. Their relative scarcity in KN-S would seem to indicate that KN-S and KN-W were used for different purposes. The concentration of bones in the lower levels of KN-W in turn may substantiate what we already know about the site, that while it was at first a private residence (where people would certainly be eating), it later became a zoo and a storage area and generally served less domestic functions. Significant also is the relative

scarcity of wild animals, particularly of rodents and other small mammals. This paucity, though unexpected, is born out by the corresponding infrequency of rodent burrows in the stratigraphy in the pit. Broader conclusions, of course, wait on further excavation.

Chapter 10

INTERPRETATION

Ruth Mills

The following interpretations are only preliminary. This first season was meant to be a test season with a primary purpose of looking at the processes of deposition and what was found, and then deciding how best to proceed in following seasons. Since this was our first season and we were working for a very limited time, the excavations did not reach much depth, especially in the south unit. Therefore, evidence for correlation of levels between KN-S and KN-W is fairly weak. The following chapter is an attempt to present a sequence of levels and to give dates for at least the major levels. I will end by drawing correlations between the two units.

The stratigraphic sequence upon which I base my interpretations is the following (from most recent to most ancient):

<u>KN-W</u>	<u>KN-S</u>
Feature 5, Level 6	Level 1
Level 1	Level 4
Feature 4	Level 3
Level 2	Level 2
Levels 3, 4	Level 5
Levels 2, 3	Level 6
Feature 1	
Level 7, 8	

Unit KN-W

Within unit KN-W there seem to be three major stratigraphic units which encompass all of the levels and features: 1) a more

recent phase of deposition of clay and ground preparation for the lawn since the 1955 reconstruction; 2) a phase belonging to the reconstruction of 1955; and 3) a transition from the Noble residence to public property (c. 1899). The major levels for each of these phases are Levels 1, 4 and 8, respectively.

After all analysis was done, questions had to be asked about mixing of levels, particularly difficult was the evidence from glass analysis of mixing of Levels 4, 6 and 8. The question of Level 6's integrity may be easily answered by remembering that Level 6 was dug purposely to define Feature 5 and in doing so, may have cut through Levels 4 and 8. Or Level 6 may have been backfill for a trench dug for Level 5. The fact that a few items show pieces both in Levels 4 and 8 may be due to overcutting of Level 4. The two levels are somewhat similar in composition (see level information and Appendix 3).

Using all evidence, but with a heavy emphasis on the glass dating, it would seem that our excavations in KN-W reached the turn of the century. The rubble of Level 8 with its fairly high concentration of nails and brick and other hardware may represent work done on the house in the transition from house to zoo. Also, the evidence of most levels indicates the presence of a residence as one would expect of the debris removed from a structure transformed from private (Noble) to public property. Associated with Level 8 are Levels 5 and 7 and Features 1, 2 and 3. Level 7 may be an extension of Level 8 separated only by Level 5. Level 5 appears to have been laid down about the same time that Level 8 was being deposited. The west and north profile show Level 5 on

top of Level 8, but in the west profile, part of Level 8 seems to spill over the deep trenches at Level 5. It is possible that this overlay may be part of Level 4. Features 2 and 3, the cement line, were laid down on top of Level 5. Level 5 may have been part of a series of walkways put down on the grounds during the transition period from house to zoo. The western profile shows evidence of the same material and in KN-S(a), Level 5, there seems to be a similar layer of material. An interesting feature in this phase is the "charcoal pit" (Feature 1). This pit may not have been a pit but merely a lense of charcoal or fire debris. In the north profile, another charcoal lense shows up at the same depth. It is directly under Level 5 and over Level 8.

The middle phase, encompassing Levels 3, 4 and 2 and possibly Feature 4, appears to be related to the 1955 reconstruction of the Kellum-Noble House after it was damaged by fire (see Chapter 3). Level 4 is a rubble level with a high percentage of brick and a greater proportion of modern wire nails. Level 3 also is a rubble level and Level 2 seems to have been laid down to cover Level 5. The fact that plastic was found in all of the upper Levels 1-4 but not at all below Level 4 is an indication of a more modern or recent deposition. Feature 4, the builder's pea gravel, cut through Levels 5 and 8, and seems to have also cut into Feature 2. This builder's trench may have been put in when the porch was added on-to the house, or during later improvements to the house. No records exist to clarify this point.

The top phase, dominated by Level 1, contains the most recent deposits dating since the reconstruction of 1955. It may be that

Feature 4 was laid down more recently than 1955 and just deliberately covered by Level 1. Level 1 did cover the entire unit. It appears that Level 6 and Feature 5 cut into Levels 1 and lower levels. Feature 5 may be part of a drainage system or just a topographical entity. In the latter case, Level 6 could with confidence be interpreted as an arbitrary cut through Levels 4 and 8. Level 1 contained a lot of surface debris, pop tops and other trash, which probably is accumulation from public use over the years.

Unit KN-S

Because the excavation in unit KN-S was slow and limited, not much depth was reached. All conclusions drawn are shaky and subject to reinterpretation. The area on the southern side of the house where KN-S is located is much lower in elevation. Since there was no entrance on this side of the house, the composition of this unit will be different from unit KN-W. Also, there were often problems in defining the levels and there was some definite over-digging, particularly in the case of Level 2. There seemed to be a lot more disturbance in KN-S than in KN-W. Some was due to roots from fairly large trees and there has probably been at least a few attempts at getting some grass to grow over there. Lastly, no color or texture differences appeared at all in profile to the depth dug as a 3-by-3 meter unit.

The following depositional sequence is very preliminary. No features were assigned numbers, although, after peeling back Level 1, a water sprinkler was uncovered and later a trench which might possibly be part of the watering system began to show up under Level

5. There is a strong possibility that the majority of what we excavated is from the 1955 reconstruction or just before. Level 1 is a mixture of top soil with building materials. Level 3 may be an extension of Level 1--it was sterile soil except for a few brick fragments and oyster shells. All of the lower levels that we excavated with the exception of Level 6 is strong evidence for belonging to the 1955 reconstruction and thereby correlating with the middle phase in KN-W.

Level 5 appears to be the main reconstruction level, although Levels 2 and 4 also contain a lot of brick fragments and rubble. Level 5 covered the entire unit and was probably laid down during the actual construction period in 1955. Later, a sprinkler system was put in. Level 4 looks like it may be the fill from the pit and trenches dug for the system. While removing Level 5, it was apparent that there was some sort of trench running across the unit, through Level 5. There was not time to excavate the trench, nor was it given a feature number. Level 2 may have been put down to level out the ground surface and/or raise the elevation of the surface. The high percentage of oyster shell found in Levels 5, 4, 3 and 2 may be an attempt to add fill in order to raise the ground elevation on the south side of the house. In KN-S(a), Level 5 terminated with the end of the rubble on top of a thin layer of the same weathered paving material that was found in KN-W (Level 5). The paving material was excavated with the loamy sand below as Level 6. Level 6 was ended arbitrarily at the season's end and does not contain an excessive amount of building materials or other rubble which might have indicated that it was from some

earlier building phase. In KN-S, plastic was found in all levels but Level 6, thereby suggesting that these levels can be assigned more modern dates.

Altogether, we did not get too far into the occupation of the Kellum-Noble House. At most, we reached the turn of the century, about the time the Noble residence was being transformed into a zoo. Next year, after excavation of more of KN-S, correlating the levels between units will also be easier and more exact.

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Appendix 1

<u>Pit</u>	<u>Level</u>	<u>Ahn Texture</u>	<u>Munsell Value</u>
W	1	Loam, Loamy sand	5Y3/2
W	2	Loamy sand	7.5YR 4/2
W	3	Loamy sand	7.5YR 3/2
W	4	Loamy sand	10YR 3/2 with clay at 2.5YR 4/4
W	5	Loamy sand, Decomposed gravel	10YR 3/2 and 10YR 5/8
W	6	Light clay	10YR 4/2
W	7	Loamy sand	5YR 4/1
Feature	1	Loamy sand	5YR 3/2
Feature	4	Pea gravel	
S	1	Loamy sand	Center 10YR 3/2 - 3 Northwest 10YR 5/3 - 4
S	2	Loamy sand (SE) Light loam (NW)	10YR 8/3 10YR 2/3
S	3	Loamy sand	10YR 3/2
S	4	Heavy loam	10YR 3/2 with clay at 10YR 3/1
S	5	Light loam	10YR 3/2
S	6	Light loam	10YR 3/2

PEDOLOGY OF ARCHAEOLOGICAL SEDIMENTS (1982)

Appendix 2

LEVEL RECORD AND FORM INDEX

<u>LRF</u>	<u>Unit and Level</u>	<u>LRF</u>	<u>Unit and Level</u>
1	KN-W, 1	12	KN-W, 4
2	KN-S, 1	13	KN-S, 2
3	KN-W, 1	14	KN-S, 4
4	KN-S, 1	15	KN-W, 5
5	KN-W, 2	16	KN-W, 6
6	KN-W, 3	17	KN-S, 5
7	KN-W, 4	18	KN-W, 7
8	KN-S, 2	19	KN-W, 8
9	KN-S, 3	20	KN-S, 5
10	KN-W, 4	21	KN-S, 6
11	KN-S, 2	22	KN-W, 8

APPENDIX 3

LEVEL INFORMATION TABLE

LEVEL	Measurements (in meters)		AHN*	MUNSELL**	SECTION OF PIT***
	NW (C) Center SW Top	NE (O) Other SE Bottom			
KN-W					
1	x ⁰ .105 x ⁰ .090 x ⁰ .135 x ⁰ .180 x ⁰ .100	x ⁰ .190 x ⁰ .183 x ⁰ .230 x ⁰ .179 x ⁰ .153	Loam Loamy sand	5YR 3/2 7.5YR 4/2	Total pit
2	x ⁰ .199 x ⁰ .188 NC ^x 0.220 SC ^x 0.210 x ⁰ .213	x ⁰ .266 x ⁰ .214 NC ^x 0.266 SC ^x 0.259 x ⁰ .268	Loamy sand	7.5YR 4/2	Just north of center running from west to east about 1.2 meters wide
3	x ⁰ .175 x ⁰ .203 x ⁰ .178	x ⁰ .257 x ⁰ .265 x ⁰ .264	Loamy sand	7.5YR 3/2	Northwest corner
4	x ⁰ .230 x ⁰ .169 x ⁰ .221 x ⁰ .210 x ⁰ .155	x ⁰ .235 x ⁰ .192	Light loam, Loamy sand	7.5 YR 3/2 10YR 3/2 W/2.5YR 4/4	South 1/2 of pit
5	x ⁰ .225 x ⁰ .200 C ^x 0.210 O ^x 0.254 x ⁰ .225 x ⁰ .190	see final bottom plan	Loamy sand, decomposed gravel	10YR 3/2 10YR 5/8	Just north of center running from west to east (under Level 2)
6	x ⁰ .170 x ⁰ .264 C ^x 0.200 x ⁰ .170 x ⁰ .215	x ⁰ .249 x ⁰ .280 x ⁰ .250 x ⁰ .239 x ⁰ .230	light clay	10YR 4/2	SW corner (associated with feature 5)
7	x ⁰ .220 x ⁰ .255 x ⁰ .230	x ⁰ .305 x ⁰ .325 x ⁰ .315	Loamy sand	5YR 4/1	NW corner (under Level 3)
8	x ⁰ .305 x ⁰ .236 x ⁰ .280 x ⁰ .260 x ⁰ .300	x ⁰ .370 x ⁰ .370 x ⁰ .385 x ⁰ .390 x ⁰ .370	Light loam Loamy sand	7.5YR 5/2 10YR 4/3	Total pit, except for NE corner and SW corner

LEVEL INFORMATION TABLE

LEVEL	Measurements (in meters)				AHN*	MUNSELL**	SECTION OF PIT***
	NW (C) Center SW	NE (O) Other SE	Top	Bottom			
KN-S 1	x0.045 x0.057 x0.031	x0.057 x0.040	x0.038 x0.060 x0.046	x0.081 x0.074	Loamy sand	10YR 3/2-3	Whole pit
2	x0.200 x0.020				Loamy sand Light loam	10YR 3/3 10YR 3/2	Eastern 1/2 of pit
3	x0.035	x0.045	x0.075	x0.085	Loamy sand	10YR 3/2	Southern 1/2 of pit
4	x0.086 EC x0.075 x0.074		x0.181 x0.133 x0.121		Heavy loam	10YR 3/1-2	Mid-eastern section
5	x0.110 x0.110 x0.100	x0.120 x0.120	x0.153 x0.145 x0.154	x0.146	Light loam	10YR 3/2	Southern 1/2 of pit
KN-S(a) 5	x0.144 x0.146 x0.141	x0.134 x0.146	x0.175 x0.190 x0.155	x0.185 x0.195	Light loam	10YR 3/2	SE (1 m.s.g.) corner
6	x0.175 x0.190 x0.155	x0.185 x0.195		x0.252 x0.240		10YR 3/2	SE (1 m.s.g.) corner

* See Ahn test description, Chapter
 ** See Munsell color values, below
 *** See figure drawings of levels, Chapter

Description of Munsell Values Found

<u>Value</u>	<u>Description</u>
5YR 3/2	dark reddish brown
5YR 4/1	dark gray
7.5YR 3/2	dark brown
7.5YR 4/2	brown -- dark brown
7.5YR 5/2	brown
10YR 3/1	very dark brown
10YR 3/2	very dark grayish brown
10YR 3/3	dark brown
10YR 4/2	dark grayish brown
10YR 4/3	brown -- dark brown
10YR 5/8	yellowish brown
2.5YR 4/4	reddish brown
5YR 6/4	light reddish brown

FEATURE TABLE

Feature No.	Measurements (in meters)		Ahn*	Munsell**	Section of Pit***
	NW SW Top	NE SE Bottom			
KN-W 1	^x 0.260 ^x 0.269 ^x 0.262 ^x 0.235	^x 0.284 ^x 0.329 ^x 0.325 ^x 0.300	Loamy sand	5YR 3/2	SE corner
2	^w 0.210 ^c 0.205 ^e 0.198	^w 0.245 ^c 0.255 ^e 0.295	Cement line	----	Cement line bounded by Level 5 on N and level 8 on S
3	^e 0.205 ^w 0.230		Cement line	----	NW corner -- cement line
4	ⁿ 0.240 ^s 0.230	^x 0.330	Pea gravel	----	NE corner
5	^x 0.220 ^x 0.245 ^x 0.195 ^x 0.205	ⁿ 0.280 ^c 0.320 ^x 0.240 ^x 0.245	loamy sand with layers of charcoal	5YR 6/4	SW corner of pit

APPENDIX 4

CERAMIC TYPES CORRELATED BY LEVELS

KN-W	Flown	Transfer	Sponged	IRONSTONE					Undecorated	PORCELAIN			Sewer Pipe	Redware	Yellowware	Stoneware	Floor Tile	Totals
				Annular	Edged	Flint Enamel	Hand Painted	Undecorated		Undecorated	Gilded	Painted						
1	2	1	--	--	1	1	--	9	3	--	--	--	--	--	--	--	--	17
2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
3	--	1	1	--	--	--	--	5	3	--	--	--	--	--	--	--	--	10
4	1	1	--	--	--	1	--	20	11	1	4	1	4	--	--	--	--	44
5	--	2	--	--	1	--	--	12	6	1	--	--	--	--	1	--	--	23
6	--	--	--	1	--	--	--	6	--	--	--	--	--	--	--	--	--	7
7	--	1	--	--	--	--	--	4	1	--	--	1	--	--	--	--	--	7
8	--	20	10	2	6	--	2	174	32	1	--	6	2	1	6	--	--	262
F 1	--	--	--	--	--	--	--	1	--	--	--	--	1	--	--	--	--	2
F 2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F 3	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	1
F 4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
F 5	--	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2
1	--	--	--	--	--	--	--	17	15	1	1	4	--	--	--	--	1	39
2	--	--	--	--	--	--	1	2	1	1	--	7	--	--	--	--	2	14
3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
4	--	1	--	--	--	--	--	--	1	--	--	10	--	--	--	--	2	14
5	--	1	--	1	--	--	--	8	2	--	--	3	9	1	1	4	4	30
6	--	--	--	--	--	--	--	5	--	2	--	--	8	--	--	--	5	20
Totals	3	30	11	4	8	2	3	263	76	7	5	32	24	2	8	14	14	<u>492</u>

	Windowpane	Decorated glass	Green/brown	Blue-green	Clear	Misc.	TOTAL
KN-S							
Level 1	4	2	4	1	13	4	27
Level 4	8	0	12	0	45	1	66
Level 3	2	2	8	0	14	0	26
Level 2	19	1	12	0	56	1	89
Level 5	13	6	28	0	114	5	166
Level 6	6	1	3	0	51	4	65
Total	52	12	67	1	293	14	439

KN-W							
Level 1	29	7	3	0	32	12	93
Level 6	3	1	2	3	13	0	22
Level 3	24	0	0	0	38	1	63
Level 4	60	8	9	13	71	24	185
Level 5	10	2	13	5	18	0	48
Level 1	0	1	0	0	0	1	2
Level 7	4	0	2	1	4	0	11
Level 8	177	11	29	24	85	21	347
Total	307	30	58	46	261	59	761

Appendix 5

GLASS

Appendix 6
METAL RAW DATA

UNIT/ LEVEL	TOTAL NAILS	TOTAL NAIL WEIGHT	SQUARE NAILS	WIRE NAILS	OTHER NAILS	I R O N	N O N - I R O N
W/L1	72	394.4 g	5	51	16	8; 4 bottle caps; 4 pieces of wire (2" each)	45; 25 pop tops, 2 pieces of tin foil; 11 pieces of lead foil
W/L2	--	----	--	--	--	----	----
W/L3	18	63.8 g	2	2	14	----	1; watch key
W/L4	235	1234.0 g	21	62	155	35; 4 bottle caps, 6 U tacks; 2 pieces of wire; 3 screws; 1 button	13; Cu tube (1"); 1 brass button; 1 piece lead foil; 1 .35 shell; 1 1941 penny; 1 .22 shell
W/L5	43	60.7 g	2	6	35	13 all of which unident	2; 1 tie tack; 1 zinc heart (approx. 1")
W/L6	11	51.9 g	2	--	9	----	----
W/L7	25	141.7 g	6	4	15	6; 5 screws; 1 gas lamp valve	9; 1 salt shaker top; 1 pop top
W/L8	385	1565.4 g	74	36	272	75; 3 hooks; 1 rivet; 4 pieces of wire (5" each); 5 bottle caps; 1 battery button; 1 pipe connector; 1 U tack; 6 screws; piece of chain	11; 1 safety pin; 1 (4") Cu tub- ing; 1 Cu wire (2"); 1 cuff link; 1 harmonica part; 1 Cu button; Cu doorplate; 1 brass key
W/F1	10	62.2 g	--	2	8	----	----
W/F2	--	----	--	--	--	----	----
W/F3	--	----	--	--	--	----	----
W/F5	3	31.2 g	1	2	--	----	----
TOTAL	802	3605.3 g	113	165	24	137	81

UNIT/ LEVEL	TOTAL NAILS	TOTAL NAIL WEIGHT	SQUARE NAILS	WIRE NAILS	OTHER NAILS	I R O N		N O N - I R O N	
S/L1	3	7.2 g	--	2	1	3; 1 paperclip; 2 bottle caps	4; 4 pop tops		
S/L2	15	35.1 g	1	6	8	5; 1 battery bottom	4; 1 Cu gas lamp tube (1.5"); 3 pop tops		
S/L3	4	12.6 g	--	--	4	----	1 all of which unident		
S/L4	7	45.3 g	1	3	3	1; screw	1; piece of Cu wire (10")		
S/L5	33	130.6 g	4	18	11	5; 1 piece of wire (5")	----		
S/L6	18	60.0 g	--	10	8	12, all of which unident	1; figurine		
TOTAL	80	290.8 g	6	39	35	26		11	
GRAND TOTAL (Both Units)	882	3896.1 g	119	204	559	163		92	

APPENDIX 7
NAIL ANALYSIS

UNIT/LEVEL	% SQUARE	# SQUARE	% WIRE	TOTAL # WIRE	# OF IDENTIFIABLE
S/L1	--	--	100	2	2
S/L2	14	1	86	6	7
S/L3	--	--	--	--	--
S/L4	25	1	75	3	4
S/L5	18	4	82	18	22
S/L6	--	--	100	10	10
SUBTOTAL	13	6	87	39	45
W/L1	9	5	91	51	56
W/L2	--	--	--	--	--
W/L3	50	2	50	2	4
W/L4	25	21	75	62	83
W/L5	25	2	75	6	8
W/L6	100	2	--	--	2
W/L7	60	6	40	4	10
W/L8	67	74	33	36	110
W/F1	--	--	100	2	2
W/F2	--	--	--	--	--
W/F3	--	--	--	--	--
W/F5	33	1	66	2	3
SUBTOTAL	41	113	59	165	278
TOTAL	37	119	63	204	323

Appendix 8
BUILDING MATERIAL

B R I C K					M O R T A R		K L I N K E R S		MISCELLANEOUS
UNIT/LEVEL	# OF FRAGMENTS	TOTAL WEIGHT	WEIGHT LIGHT BRICK	WEIGHT HEAVY BRICK	# OF FRAGMENTS	WEIGHT	# OF FRAGMENTS	WEIGHT	BUILDING MATERIAL
S/L1	32	86.2 g	30.3 g	55.9 g	19	70.7 g	--	--	----
S/L2	186	811.5 g	146.9 g	664.6 g	64	612.1 g	8	39.1 g	----
S/L3	48	177.5 g	19.8 g	157.7 g	34	64.7 g	3	26.6 g	----
S/L4	40	666.0 g	136.1 g	529.9 g	32	1278.0 g	--	----	----
S/L5	149	735.0 g	143.0 g	592.0 g	148	1970.0 g	43	96.4 g	----
S/L6	8	26.0 g	23.5 g	2.5 g	4	9.8 g	--	----	----
TOTALS	463	2502.2 g	499.6 g	2002.6 g	301	4005.3 g	54	162.1 g	----
W/L1	227	901.3 g	306.2 g	595.1 g	34	349.8 g	--	----	----
W/L2	5	31.0 g	----	31.0 g	3	20.0 g	--	----	25.9 g Granite
W/L3	25	92.8 g	36.8 g	56.0 g	7	42.0 g	--	----	6 slate (13.2 g)
W/L4	176	1936.7 g	453.6 g	1483.1 g	36	354.6 g	9	16.0 g	----
W/L5	81	567.5 g	34.5 g	533.0 g	103	1109.5 g	28	48.1 g	----
W/L6	2	145.7 g	----	145.7 g	1	10.4 g	--	----	----
W/L7	3	86.3 g	----	86.3 g	--	----	2	6.2 g	----
W/L8	596	9797.0 g	1834.0 g	7963.0 g	109	1315.0 g	82	350.0 g	5 slate
W/F1	7	340.2 g	5.5 g	334.7 g	--	----	2	21.8 g	----
W/F2	3	97.3 G	----	97.3 g	36	2247.7 g	--	----	----
W/F3	--	----	----	----	--	----	--	----	----
W/F5	--	----	----	----	--	----	--	----	----
TOTALS	1125	13,995.8 g	2670.6 g	11,325.2 g	329	5449.0 g	123	442.1 g	11 slate, 25.9 g of granite
GRAND TOTALS	1588	16,498.0 g	3170.2 g	13,327.8 g	630	9454.3 g	177	604.2 g	11 slate, 25.9 g of granite

APPENDIX 9

BRICK ANALYSIS

UNIT/LEVEL	% LIGHT BY WEIGHT	% HEAVY BY WEIGHT	TOTAL WEIGHT	# OF FRAGMENTS
S/L1	35	65	86.2 g	32
S/L2	18	82	811.5 g	186
S/L3	11	89	177.5 g	48
S/L4	20	80	666.0 g	40
S/L5	19	81	735.0 g	149
S/L6	90	10	26.0 g	8
SUBTOTAL	20	80	2502.2 g	146
W/L1	34	66	901.3 g	227
W/L2	--	100	31.0 g	5
W/L3	40	60	92.8 g	25
W/L4	23	77	1936.7 g	176
W/L5	6	94	567.5 g	81
W/L6	--	100	145.7 g	2
W/L7	--	100	86.3 g	3
W/L8	18	82	9797.0 g	596
W/F1	2	98	340.2 g	7
W/F2	--	100	97.3 g	3
W/F3	--	--	----	--
W/F5	--	--	----	--
SUBTOTAL	19	81	13,995.8 g	1125
TOTAL	19	81	16,498.0 g	1271

APPENDIX 10

Part 1

SPECIES REPRESENTED AT THE KELLUM-NOBLE SITE

S P E C I E S	MIN. NO.	N-B-b*	WEIGHT
<u>Bos taurus</u> , Domestic cow	8	40-1-27	617.21 g
<u>Sus Scrofa</u> , Domestic pig	1	1-0-0	1.28 g
<u>Odocoileus virginianus</u> , White-tailed deer	1	1-0-0	.78 g
<u>Canis Familiaris</u> , Domestic dog	1	1-0-0	4.92 g
<u>Felis domestica</u> , Domestic cat	1	7-0-0	13.21 g
TOTAL	12	50-1-27	637.40 g

*N -- Total number of bone

B -- Number of burnt bone

b -- Number of bone with butcher marks

Part 2a.

MINIMUM NUMBER OF SPECIES IN UNIT KN-W

LEVELS	MINIMUM NUMBER	N-B-b*	WEIGHT
Surface, Feat. 4	-----	---	---
1	1 <u>Bos taurus</u>	2-0-1	21.56 g
Feat. 5	-----	---	---
6	1 <u>Bos taurus</u>	1-0-0	1.80 g
2	-----	---	---
3,4	1 <u>Bos taurus</u>	5-0-3	16.62 g
	1 <u>Canis familiaris</u>	1-0-0	4.92 g
Feat. 2,3	-----	---	---
5	1 <u>Bos taurus</u>	1-0-0	5.36 g
7,8	1 <u>Bos taurus</u>	27-0-19	550.67 g
	1 <u>Odocoileus</u>		
	<u>virginianus</u>	1-0-0	.78 g
	1 <u>Sus scrofa</u>	1-0-0	1.28 g
	1 <u>Felis domestica</u>	7-0-0	13.21 g
Total	9 Species	46-0-23	616.20 g

*N -- Total number of bone

B -- Number of burnt bone

b -- Number of bone with butcher marks

Part 2b.

MINIMUM NUMBER OF SPECIES IN UNIT KN-S

LEVELS	MINIMUM NUMBER	N-B-b*	WEIGHT
1	-----	---	---
4	-----	---	---
3	-----	---	---
2	1 <u>Bos taurus</u>	1-0-1	5.33 g
5	1 <u>Bos taurus</u>	2-1-2	5.23 g
6	1 <u>Bos taurus</u>	1-0-1	10.64 g
<u>Total</u>	<u>3 Species</u>	<u>4-1-4</u>	<u>21.20 g</u>

*N -- Total number of bone

B -- Number of burnt bone

b -- Number of bone with butcher marks

Part 3a.

BONE UNIDENTIFIED BY SPECIES, CLASSIFIED BY SIZE AND TYPE

Levels	Class	Unit KN-W						N-B-b Total
		N-B-b* SM	N-B-b MM	N-B-b LM	N-B-b DLM	N-B-b Shell	N-B-b No. I.D.	
Surf., Feat. 4		----	----	----	----	----	----	----
1		----	1-0-0 1.37 g	1-0-0 1.54 g	1-0-1 .98 g	7-0-0 187.29 g	5-0-0 2.99 g	15-0-1 194.17 g
Feat. 5		----	----	----	----	1-0-0 3.76 g	----	1-0-0 3.76 g
6		1-0-0 .70 g	----	----	----	5-0-0 21.26 g	----	6-0-0 21.97 g
2		----	----	----	----	7-0-0 8.50 g	----	7-0-0 8.50 g
3,4		3-0-0 .34 g	2-0-0 2.70 g	----	3-0-2 22.52 g	93-0-0 226.79 g	6-0-0 4.83 g	107-0-2 257.18 g
Feat. 2,3		----	----	----	----	----	----	----
5		----	----	----	1-0-0 3.47 g	15-0-0 15.59 g	4-0-0 3.36 g	20-0-0 22.42 g
7,8		14-0-0 12.79 g	14-0-0 18.84 g	27-0-0 73.88 g	17-0-17 116.64 g	137-0-0 361.54 g	42-1-0 40.36 g	251-1-17 624.05 g
Total		18-0-0 13.83 g	17-0-0 22.91 g	28-0-0 75.42 g	22-0-20 143.61 g	265-0-0 824.73 g	57-1-0 51.54 g	407-1-20 1132.04 g

*N -- Total number of bone

B -- Number of burnt bone

b -- Number of bone with butcher marks

Part 3b.

BONE UNIDENTIFIED BY SPECIES, CLASSIFIED BY SIZE AND TYPE

Levels	Class	Unit KN-S			
		N-B-b* DLM	N-B-b Shell	N-B-b No I.D.	N-B-b Total
1		2-1-0 1.47 g	79-0-0 85.04 g	-----	81-1-0 86.51 g
4		-----	113-0-0 155.92 g	-----	113-0-0 155.92 g
3		-----	179-0-0 157.34 g	-----	179-0-0 157.34 g
2		-----	134-0-0 200.43 g	-----	134-0-0 200.43 g
5		-----	597-0-0 670.55 g	-----	597-0-0 670.55 g
6		-----	22-0-0 42.52 g	1-1-0 .80 g	23-1-0 43.32 g
Total		2-1-0 1.47 g	1124-0-0 1311.80 g	1-1-0 .80 g	1127-2-0 1314.07 g

*N -- Total number of bone

B -- Number of burnt bone

b -- Number of bone with butcher marks

Part 4

FAUNAL AND FLORAL REMAINS

Unit KN-W	Number of elements and description	Weight
Surface, Feat. 4	0 faunal remains	0
Level 1	1 long bone shaft (sawed--12mm thick), <u>Bos</u>	8.48 g
	1 skull frag., <u>Bos</u>	13.08 g
	1 flat bone frag. (sawed) (polished), DLM	.98 g
	1 long bone shaft frag. with socket, MM	1.37 g
	1 ulna frag., LM	1.54 g
	3 land snail shells (3 different genera)	3.02 g
	94 oyster shell frags.	184.27 g
	5 bone frags., no I.D.	2.99 g
	2 peach pit halves (matching)	2.04 g
Total	109	217.77 g
Feat. 5	1 oyster shell frag.	3.76 g
Total	1	3.76 g
Level 6	1 scapula frag., <u>Bos</u>	1.80 g
	1 long bone shaft frag., SM	.70 g
	5 oyster shell frags.	21.26 g
	1 piece petrified wood	4.67 g
Total	8	28.43 g
Level 2	7 oyster shell frags.	8.50 g
Total	7	8.50 g
Level 3,4	2 rib frags. (1 sawed--17mm thick), <u>Bos</u>	5.45 g
	1 long bone shaft (sawed--5mm thick), <u>Bos</u>	3.63 g
	1 long bone shaft (sawed--10mm thick) (polished), <u>Bos</u>	5.96 g
	1 metacarpal frag., <u>Bos</u>	1.58 g
	2 rib frags. (sawed) (1 with rodent gnaw marks), DLM	13.71 g
	1 scapula frag. with articular end, DLM	8.81 g
	1 distal end right femur (adult), <u>Canis</u>	4.92 g
	2 long bone shaft frags., MM	2.70 g
	3 long bone shaft frags., SM	.34 g
	6 bone frags., no I.D.	4.83 g
	93 oyster shell frags.	226.79 g
Total	113	278.72 g
Feat. 2,3	0 faunal remains	0
Level 5	1 metacarpal end frag., <u>Bos</u>	5.36 g
	1 long bone shaft frag., DLM	3.47 g
	4 bone frags., no I.D.	3.36 g
	15 oyster shell frags.	15.59 g
Total	21	27.78 g

Unit KN-W (continued)

Level 7,8	1 scapula (sawed on one side), <u>Bos</u>	10.62 g
	1 tibia (sawed both sides--11cm long), <u>Bos</u>	198.45 g
	1 tibia (partly sawed then fractured--11cm long) (3 pieces), <u>Bos</u>	106.31 g
	1 clavicle frag. (partly sawed then fractured), <u>Bos</u>	34.27 g
	1 distal end metacarpal (outer condyle missing), <u>Bos</u>	31.34
	2 articular ends of long bone shafts, <u>Bos</u>	19.86 g
	1 occipital condyle frag., <u>Bos</u>	5.41 g
	1 rib, <u>Bos</u>	25.62 g
	5 rib frags. (sawed), <u>Bos</u>	23.97 g
	2 metacarpal articular ends, <u>Bos</u>	6.03 g
	1 epiphysis of long bone (fragmentary), <u>Bos</u>	4.39 g
	9 long bone shaft (sawed--10-18mm thick), <u>Bos</u>	41.96 g
	1 long bone shaft (sawed--30mm thick), <u>Bos</u>	42.44 g
	1 lower premolar (P4) (trienspid--2.5-3 yrs. old) <u>Odocoileus</u>	.78 g
	1 phalange, <u>Sus</u>	1.28 g
	1 right femur, <u>Felis</u>	1.78 g
	1 right humerus, <u>Felis</u>	3.26 g
	1 left humerus frag., <u>Felis</u>	3.90 g
	3 articular ends long bone shafts, <u>Felis</u>	3.27 g
	1 vertebra, <u>Felis</u>	1.00 g
	1 long bone shaft frag. (sawed in three places), DLM	9.60 g
	5 cranial frags., LM	24.87 g
	5 long bone shaft frags. (sawed both sides--9-19mm thick), DLM	40.64 g
	5 long bone shaft frags. (sawed one side), DLM	17.05 g
	15 rib frags., LM	14.41 g
	6 scapula frags. (sawed two sides--6-16mm thick), DLM	49.35 g
	1 vertebra frag., LM	2.94 g
	1 pelvis frag., LM	18.74 g
	5 long bone shaft frags., LM	12.92 g
	9 long bone shaft frags., MM	3.45 g
	1 articular end long bone shaft, MM	8.48 g
	3 rib frags., MM	5.60 g
	1 vertebra frag., MM	1.31 g
	12 long bone shaft frags., SM	11.11 g
	2 articular ends long bone shafts, SM	1.68 g
	1 land snail shell	.09 g
	1 bone frag., no I.D. (burned)	7.85 g
	41 bone frags., no I.D.	32.51 g
	136 oyster shell frags.	361.45 g
Total	287	1189.99 g
TOTAL FOR UNIT	<u>546 elements</u>	<u>1754.95 g</u>

Unit KN-S

Level 1	2 flat bone frags. (one burned), DLM	1.47 g
	79 oyster shell frags.	85.04 g
Total	81	86.51 g
Level 4	113 oyster shell frags.	155.92 g
Total	113	155.92 g

Unit KN-S (continued)

Level 3	179 oyster shell frags.	<u>157.34 g</u>
Total	<u>179</u>	<u>157.34 g</u>
Level 2	1 long bone shaft frag. (sawed--25mm thick), <u>Bos</u>	5.33 g
	134 oyster shell frags.	<u>200.43</u>
Total	<u>135</u>	<u>205.76 g</u>
Level 5	2 long bone shaft frags. (sawed--17mm thick)	5.23 g
	(one burned), <u>Bos</u>	
	597 oyster shell frags.	<u>670.55 g</u>
Total	<u>599</u>	<u>675.78 g</u>
Level 6	1 long bone shaft frag. (sawed--20mm thick), <u>Bos</u>	10.64 g
	1 bone frag., no I.D. (burned)	.80 g
	22 oyster shell frags.	<u>42.52 g</u>
Total	<u>24</u>	<u>53.96 g</u>
TOTAL FOR UNIT	<u>1131 elements</u>	<u>1335.27 g</u>