

# RICE UNIVERSITY



1984 Season: Third Report

ARCHAEOLOGICAL EXCAVATIONS

IN THE AREA OF THE

LONG ROW BUILDING

Sam Houston Park

Houston, Harris County, Texas

Site 41HR425

Texas Antiquities Permit No. 402

by members of the

Rice University Field Methods Class, 1984

(Anthropology 362b)

edited by

Helen W. Haskell (Teaching Assistant)

HOUSTON, TEXAS

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Department of Anthropology, Rice University

1985

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**PREFACE: Long Row excavations, 1984  
Roderick J. McIntosh**

At the 1973 annual meeting of the Society for American Archaeology, Clement Meighan presented a paper entitled "Research vs. pedagogy in archaeological field schools" (Meighan 1973). Like many of his peers, he had found it difficult in field training to find a happy compromise between the obligations of research and those of teaching. Any site excavated is a unique resource. The obligation to excavate that site to the highest professional standard is, therefore, absolute. However, the beginning and less-skilled participants in field training exercises also deserve the special consideration that cannot be satisfied by throwing them, uninitiated, into a pure research situation. Indeed, Meighan remarks on the damage that can be done: "At its worst, such research-oriented programs are often perceived by the students themselves as exploitations of their labor rather than as honest attempts to provide them with teaching and training" (Meighan 1973: 5-6).

The conflict between research and pedagogical requirements is often made worse by onerous teaching, research, and publishing responsibilities of the teacher. The results are familiar to anyone who has had the uncomfortable experience of returning to a site once excavated by a field training class: site reports are never completed or are postponed until artifacts and records are misplaced or until the original supervisory personnel are no longer available; records are kept in an unprofessional manner; teaching devolves upon non-research oriented staff, who view excavation as pedagogy only. The last is as great a problem in 1984 as when Meighan warned: "Indeed, the number of phony field classes in archaeology is so great as to be a major scandal to professional archaeology" (Meighan 1973: 4).

Meighan recognizes that the training of students is inefficient research. Researchers wish to recover the maximum of information pertaining to a specific objective with a minimum of time and money expenditure. Teaching at its best gives all students a maximum of "hands-on" time and exposure to a maximum number of skills and tasks. We have now had three seasons of excavations at Sam Houston Park to

refine a compromise program of field training. The present site report, I believe, proves that good research can be done in a professional manner by a small but highly motivated undergraduate crew. The solution to the dilemma of research vs. pedagogy requires innovation. Our particular solution could not be attempted with every field class and is peculiar to the high quality of the average student at Rice.

Our solution comprises four elements that must be considered carefully before beginning excavation:

1) Site selection: The historic period dwellings of the Long Row (and the Kellum-Noble house of the 1982 and 1983 seasons) provide enormous numbers of artifacts in great diversity and reveal a rich but relatively straightforward stratigraphy. Sterile soil can be reached by the end of the quite short excavation period of each semester.

2) Close supervision: In addition to the Director and at least two highly experienced site supervisors (usually graduate students in the Rice Anthropology Department), students may repeat the course as many times as they wish. These repeating students then take on increasing responsibility for record maintenance and supervision.

3) Assignment of tasks: At the beginning of the course, each student volunteers for a specific assignment (e.g., ceramics, stratigraphy, drafting, photography). That assignment is that student's responsibility through the analysis phase to the writing of the appropriate chapter of the site report. Therefore, the student participates in the excavation of his or her artifact or feature, takes over the analysis after cataloguing, and does original research on that item. The student is responsible in the site report for a *professional-standard interpretation*. That standard is maintained by supervision of analysis by the Director, by multiple editing of the report chapter and, ultimately, by the assessment process after submission to the Texas Antiquities Committee. The inevitable weakness of this system is that, while the student understands intimately archaeological analysis and the publishing process in general, and that single artifact class in particular, she or he has less exposure to other tasks.

4) Peer cooperation: This works at two levels. Generally, tasks are shared by two or more students. Far more collaboration occurs amongst students with different task assignments than might immediately be apparent in the site report. Secondly, many students return to the course. They then are assigned a new task, but help the students doing their former assignment. The return student, as mentioned above, enjoys a moderate supervisory position, which tends to foster an even greater sense of responsibility.

The Rice students taking this course (Anthropology 362b) have been superb. I have no doubt that the high standard we have maintained is due to their motivation. They are a self-selecting group, the size of which is kept small (<25) purposefully. There are, of course, some variations in the quality of work produced, which underscores the position of the Director as teacher, editor, final arbiter of standards, and role model.

I am able to write glowingly of the Director of the 1984 Long Row season, because that position was filled by Helen Haskell, graduate student in the Rice Anthropology Department. I traded places to become one of the site supervisors. Helen was the author of a proposal for a ten-season archaeological research program at the Park, a proposal accepted by the Texas Antiquity Committee in 1984. The Long Row research was the first season. Helen planned the specific research design, directed the excavation and laboratory work, and assiduously put the student chapters through multiple editing. In my opinion, the 1984 Long Row report is far superior to the prior reports emanating from our research at Sam Houston Park.

Praise is well deserved by all student members of the Field Methods course. Several names do not appear in the table of contents; their contributions are significant, nevertheless. Cindy Buxton and Jack Coleman were responsible for photography. The drafting was directed by graduate student Patty Bass. Draftspersons were Jim Murray, Dave Park, and Ann Viereck. The computer graphics were provided by Eric Salituro. No less thanks go to graduate student Roger Moore, who assisted with the teaching and supervision of the field sessions.

Once again, our thanks go to Mr. Patrick Butler, III, of the Harris County Heritage Society, for originally suggesting this research and for his continued interest in and support of this work. The Director of the Harris County Heritage Society, Dr. William C. Griggs, gave permission for the excavations and provided storage facilities in the Park. The Texas Antiquities Committee kindly provided research authorization (Permit No. 402). Messrs. Don Olson and James E. O'Rourke of the Houston Parks Department also gave authorization. Thanks go to the Head of Records of the Texas Archaeological Research Lab, Ms. Carolyn Spock, for assigning the site number (41HR425) for archaeological work at the Park. The research was in large part funded by the Department of Anthropology at Rice University, for which we thank the department head, Professor George Marcus.

Members of the Houston Archaeological Society have helped in numerous ways during our three seasons of excavations at Sam Houston Park. In particular, we should like to thank Bill McClure, who took time from work to help with faunal identification and with the presentation of those data. Various others helped with the identification of specific items: Camilo Meza (T. L. Walker Bearing Co.) concerning automobile bearings; the Consumer Affairs Department of the Miller Brewery, Milwaukee, concerning twist-off crown caps; R. M. Shapiro concerning car parts; P. Butler of the H.C.H.S. concerning coal use; and Joanne Newman (Coca-Cola Co.), Margie Spurlock (Royal Crown Co.), Valerie Kienzle (7-Up Co.), and Harold Ellis (Dr. Pepper Co.) concerning the dating of bottles.

I applaud the members of the 1984 Field Methods class for their contribution to our knowledge of the changing use of the Long Row area. They provide a model of what a teacher can ask of students.

### Reference

MEIGHAN, Clement W.

- 1973 "Research vs. pedagogy in archaeological field schools."  
Paper presented at the annual meeting of the Society for  
American Archaeology. San Francisco, May 3-5, 1973.

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## Abstract

This report concerns the Spring, 1984 excavations by the Rice University Archaeological Field Techniques course at Sam Houston Park in downtown Houston. This year's excavations have been shifted entirely to the Long Row section of the park. The Texas registry number of the site is 41 HR 425, and excavations were conducted under Texas Antiquities Permit no. 402.

The proposed construction of a historical museum on the Long Row site heavily influenced our strategy for this year's excavations - our goal is to work intensely in this area over the next few years in order to integrate the archival and archaeological data for this site. This year we opened five 1 x 1 meter sample units to the north and west of the Long Row building and two 2 x 2 meter units in the same area. Excavations exposed clear stratigraphic levels in all of the units as well as an abundance of nineteenth and twentieth century artifacts. The upper topsoil and clay levels appear to represent fill associated with landscaping and other aspects of the modern park occupation. The lower levels appear to be relatively undisturbed and probably correspond to historic phases of occupation, demolition, and construction extending from the mid-nineteenth century through the 1950's.

## Chapter 1

### PHYSIOGRAPHIC SETTING

by

Michael J. Scott

The Long Row is located in Sam Houston Park. The Park is in downtown Houston and is bounded on three sides by towering skyscrapers and on the fourth side by Buffalo Bayou and Interstate 45 (Figure 1). Universal Transverse Mercator coordinates for the site are zone 15, easting 270620 and northing 3294220, or latitude  $29^{\circ} 45' 30''$ N and longitude  $95^{\circ} 22' 20''$ W. It is elevated approximately 16 meters above sea level. The site rests on nearly level ground which slopes gently towards the bayou, which is located about 300 meters from the site (Figure 2).

Buffalo Bayou figures prominently in the early history of Houston. The bayou drains  $927 \text{ km}^2$  (362 square miles) of featureless coastal prairie before emptying into Galveston Bay. Settlers navigated upstream from the port of Galveston to reach the city; they disembarked at Allen's Landing, 1.6 km downstream from the Long Row site.

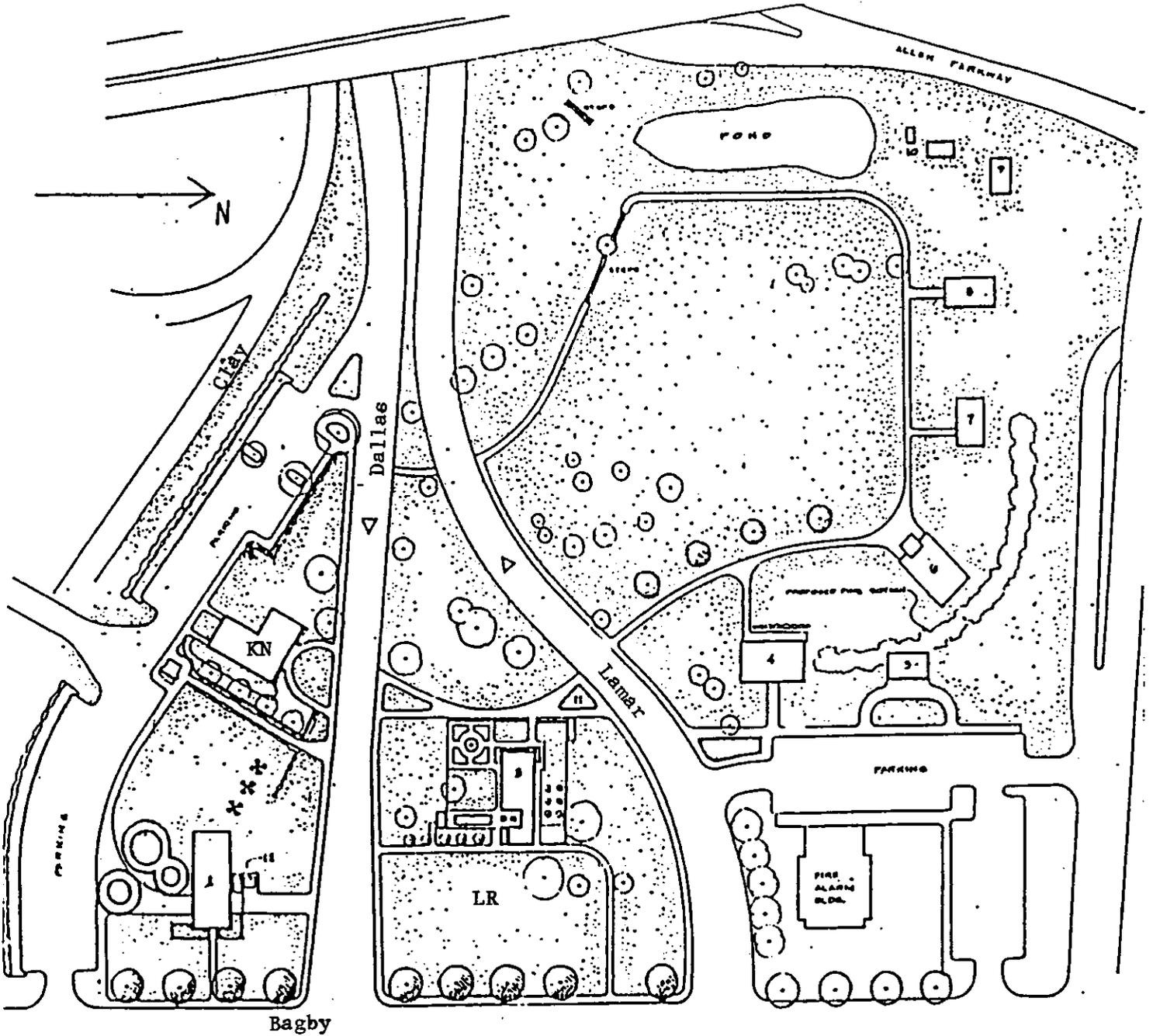
Surveyor Hugh Rice described Buffalo Bayou as it was in 1867:

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 subtropical, yet is moderated by the Gulf of Mexico. It has an average temperature of  $20^{\circ} \text{ C}$  ( $68^{\circ} \text{ F}$ ) and experiences an average of only seven days a year with a minimum temperature of  $0^{\circ} \text{ C}$  ( $32^{\circ} \text{ F}$ ) or lower. Prevailing winds are from the southeast, except during the winter when northerlies predominate. Hurricanes occur rather infrequently. Between 1900 and 1972 only 27 hurricanes made landfall anywhere along the Texas coast, yet in the summer of 1983, the Houston area was hit by Hurricane Alicia and her accompanying thunderstorms and tornadoes.

An annual average of 117 cm (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 cm fell in 1900, while only 46 cm



Detail of Sam Houston Park

LR=Long Row  
KN=Kellum Noble

Figure 1

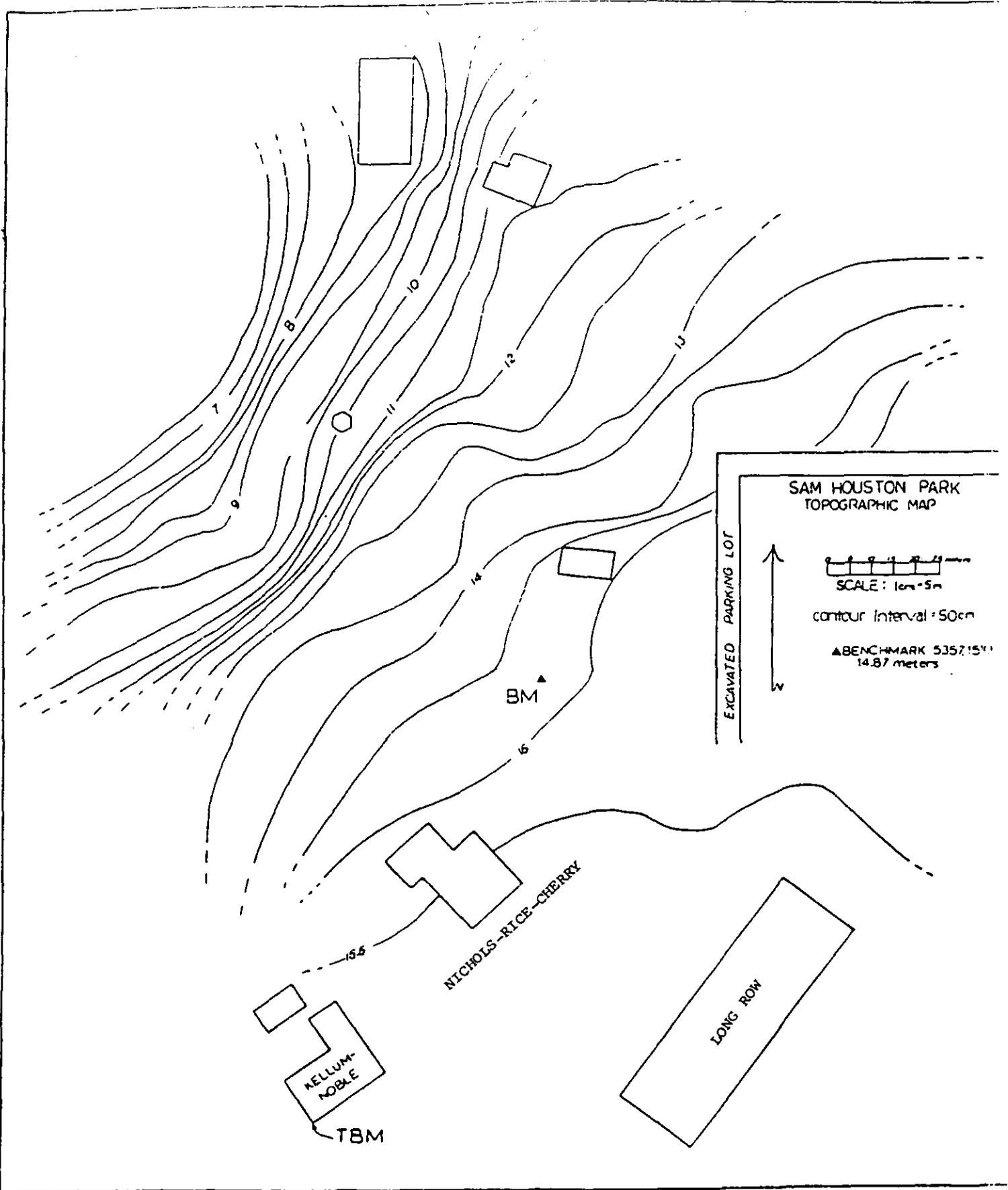


FIGURE 2. TOPOGRAPHIC MAP OF SAM HOUSTON PARK

fell in 1917. Rainfall is usually evenly distributed throughout the seasons, but half the average annual precipitation may fall in just two or three days (McIntosh, ed., 1982:3).

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 Long Row site lies within the natural 100-year flood plain and may have been subjected to floodwaters; however, such floodwaters were probably shallow and drained quickly. Flooding of Buffalo Bayou has become a problem in recent years due to the rapid urbanization of the land upstream.

All drinking water for the city came from the bayou until a well was drilled in 1887. Fear of epidemics provided the impetus to switch to groundwater use. Modern extensive groundwater pumping has led to a water level decline of over 30 meters in the shallow Chicot Aquifer, and caused land-surface subsidence of more than 1.5 meters relative to mean sea level in the downtown area (Gabrysch 1980).

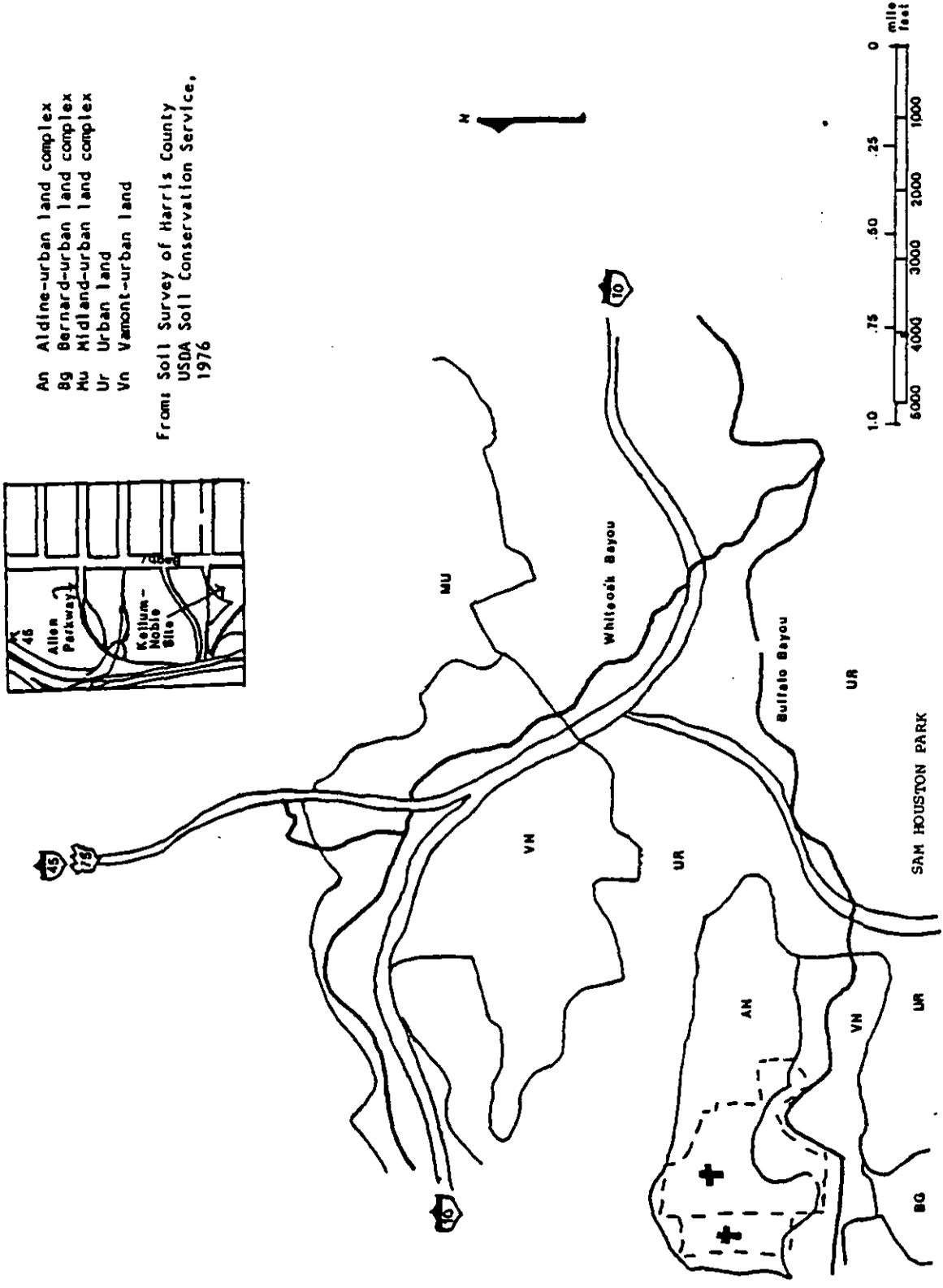
The Long Row site sits on what are presently classified as Urban soils (Figure 3). Soils near the site, and presumably at the site before urbanization, are of two classifications. Bernard soils or Vamont soils (Wheeler 1976, cited in McIntosh and Moore, eds., 1983:4). The Bernard Series consists of deep neutral loamy soils while the Vamont Series consists of deep acidic clayey soils. Both these soils share common properties in that they are somewhat poorly drained and have a high montmorillonite content. Due to the latter factor, these soils have a high shrink-swell potential and low strength which makes them poor foundation for buildings. The Nichols-Rice-Cherry House in the park was moved after 20 years at one location because of these factors. Both of these soils are also highly corrosive as can be shown by the poor condition of iron artifacts at the site.

The parent material for the soil is unconsolidated Pleistocene inter-distributary and estuarine mud, deposited when the 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 (McIntosh and Moore, eds., 1983:4). These muds probably provided the source of nineteenth century brick-making efforts. The material for the square brick pillars of Kellum-Noble House, built and still remaining in the park, was excavated from a nearly clay bank (WPA 1942). Some of the holes and gullies on old maps of the area may reflect where clay excavation once occurred (Figure 9).

Archaeological sediments in the Long Row excavation were described with the Ahn texture text and Munsell color values. The Ahn test provides a field standard for comparing soils. It relates the plasticity of moist soils to broad textural classification. The Ahn test is also valuable for determining the ease with which a soil may be cultivated (McIntosh, ed., 1982:6). Figures 4 and 5 present a diagram of the test and the relationship of Ahn's terms to sand-silt-clay ratios.

Figure 3

Soil Map of Surrounding Area



## AHN TEXTURE TEST

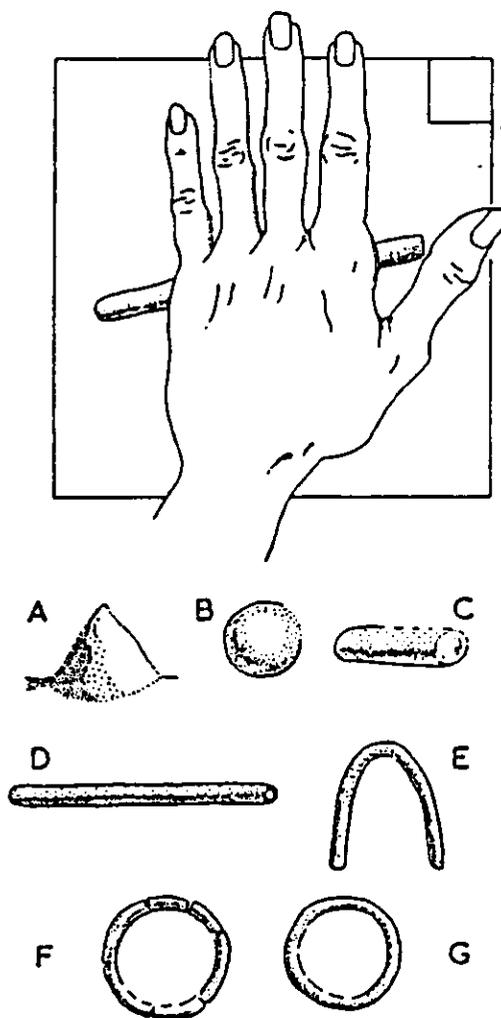
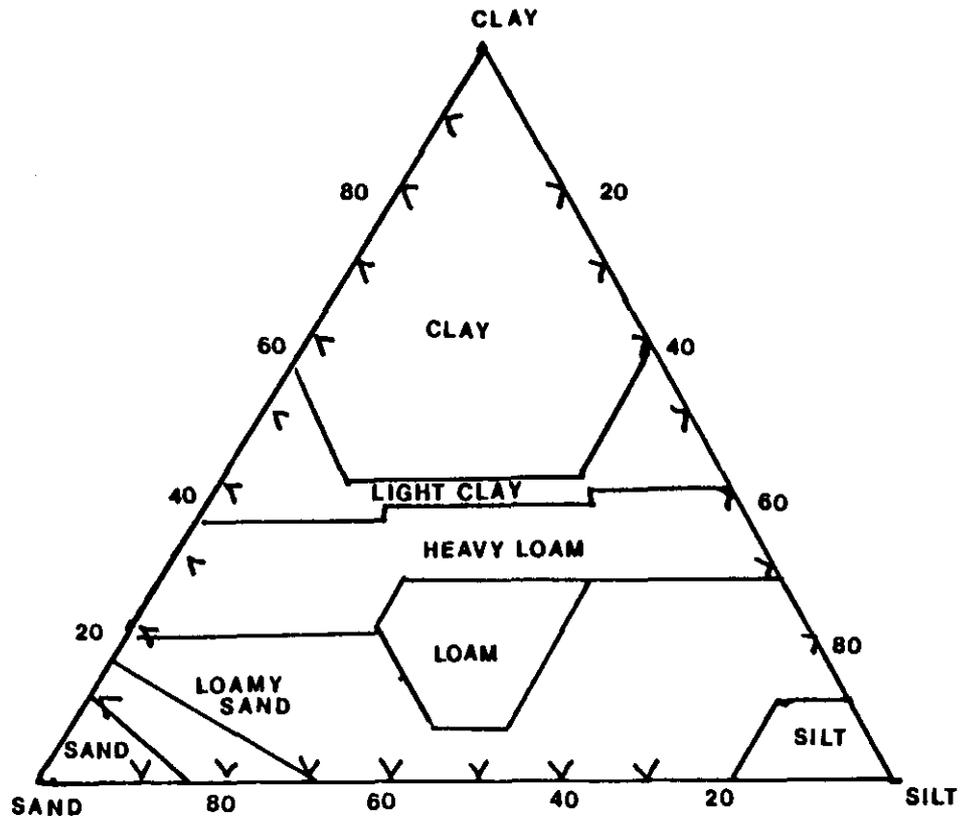


Fig. 2.1. A manipulative texture test which gives a practical indication of soil texture and consistency.

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  $6\frac{1}{2}$  in long. A board, shown below the hand, is marked with a 1 in square and a line  $6\frac{1}{2}$  in long in order to standardize the test.



Suggested Percentages for Results of Ahn Test

Figure 5

## Chapter 2

### HISTORY OF SAM HOUSTON PARK

by

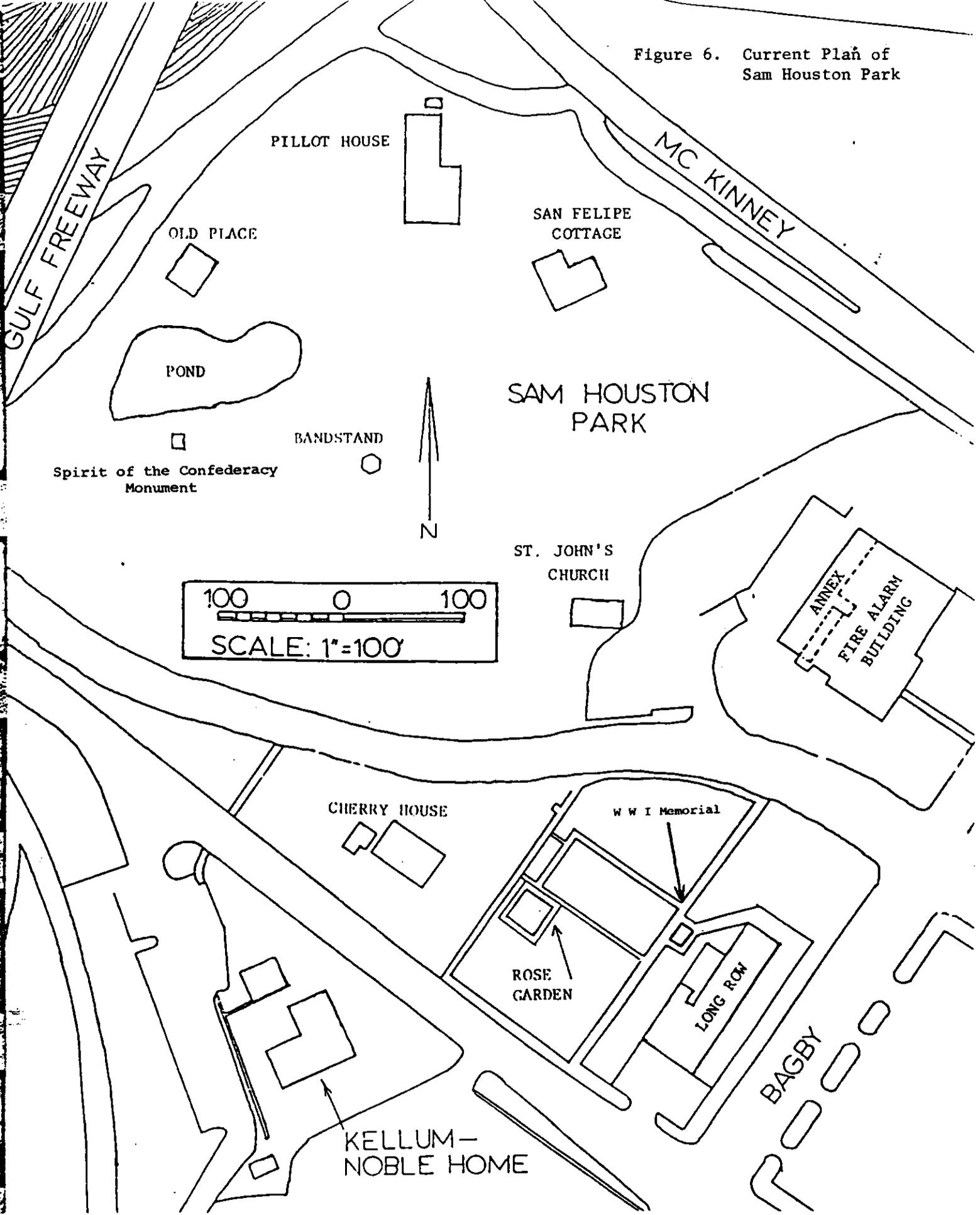
Michael J. Scott

Sam Houston Park, Houston's first municipal park, was established in 1899 during the administration of Mayor Sam Brashear. Sixteen acres were acquired by the city in June 1899. This acquisition consisted of three tracts: 4.52 acres of the old Samuel W. Young brickyard on the north bank of Buffalo Bayou; 6.20 acres of Mrs. Zerviah M. Noble's house and grounds (deeded to the city by Otto and Eloise Witte, Mrs. Noble's granddaughter, for \$14,000); and the adjoining nursery (5.28 acres for \$9,250) of George A. and Sarah Byers on the south bank, just southwest of the Episcopal and Masonic Cemeteries (Southwest Center for Urban Research, 1981:1274, hereafter known as SWCUR; Bonewitz 1957). John W. Maxcey, the City Engineer, prepared plans for improving both the northern and southern sectors of the park (SWCUR: 1274). His prints, dated September 1899, show each segment cut by a series of curvilinear drives and a network of curvilinear paths. On the south segment, the Noble house with its approach shaded by a stand of live oaks was retained as the park shelter. New improvements near the bayou included a small lake with a conservatory nearby, a bandstand in the center of the park, a pavilion and an arbor. The lake was located approximately 100 feet south of the present pond. The bandstand stood just west of the present Long Row building, approximately on the site of which is now the park rose garden. A 3/4 - scale replica of this bandstand, dedicated in 1975, now stands near the site of the original lake (Figure 6).

A wooden bridge connected the southern park drive to a drive on the north bank which was an extension of Young Avenue. The T-shaped north tract was also to receive its complement of widening paths. Sam Houston Park was dedicated on September 29, 1899. However, not all of Maxcey's improvements were carried out. The annual reports of the City of Houston through the early 1900's frequently made reference to the need to improve the north bank acreage (SWCUR:1274).

Sam Houston Park, or as it was frequently called, City Park (it remained Houston's only city park until 1911), was quite popular, both as a place for adult resort and children's recreation. A zoological collection begun about 1900 was kept in and about the Noble house. Patriotic societies erected a number of monuments in the park. The bell of the Harriet Lane, a Union gunboat sunk during the Battle of Galveston in 1863, was presented by the local chapter of the United Daughters of the Confederacy, and was hung in a brick

Figure 6. Current Plan of Sam Houston Park



bellcote in front of the Noble house in 1903. In 1906, the Daughters commissioned Louis Amateis, a noted Washington sculptor, to model "The Spirit of the Confederacy." This was a winged bronze figure standing on a stone pylon. The Spirit of the Confederacy was dedicated in January 1908 and was set near the bayou on the bank of a newly created pond, which like Maxcey's "lake" (which had taken the shape of a heart and consequently was designated Valentine Lake) had been made by damming a ravine and filling it with water. At the same time, the Civic Club of Houston placed the bronze Brownie Fountain Glen in Valentine Lake (Brownie has since been moved to the Children's Zoo in Hermann Park) (SWCUR:1274).

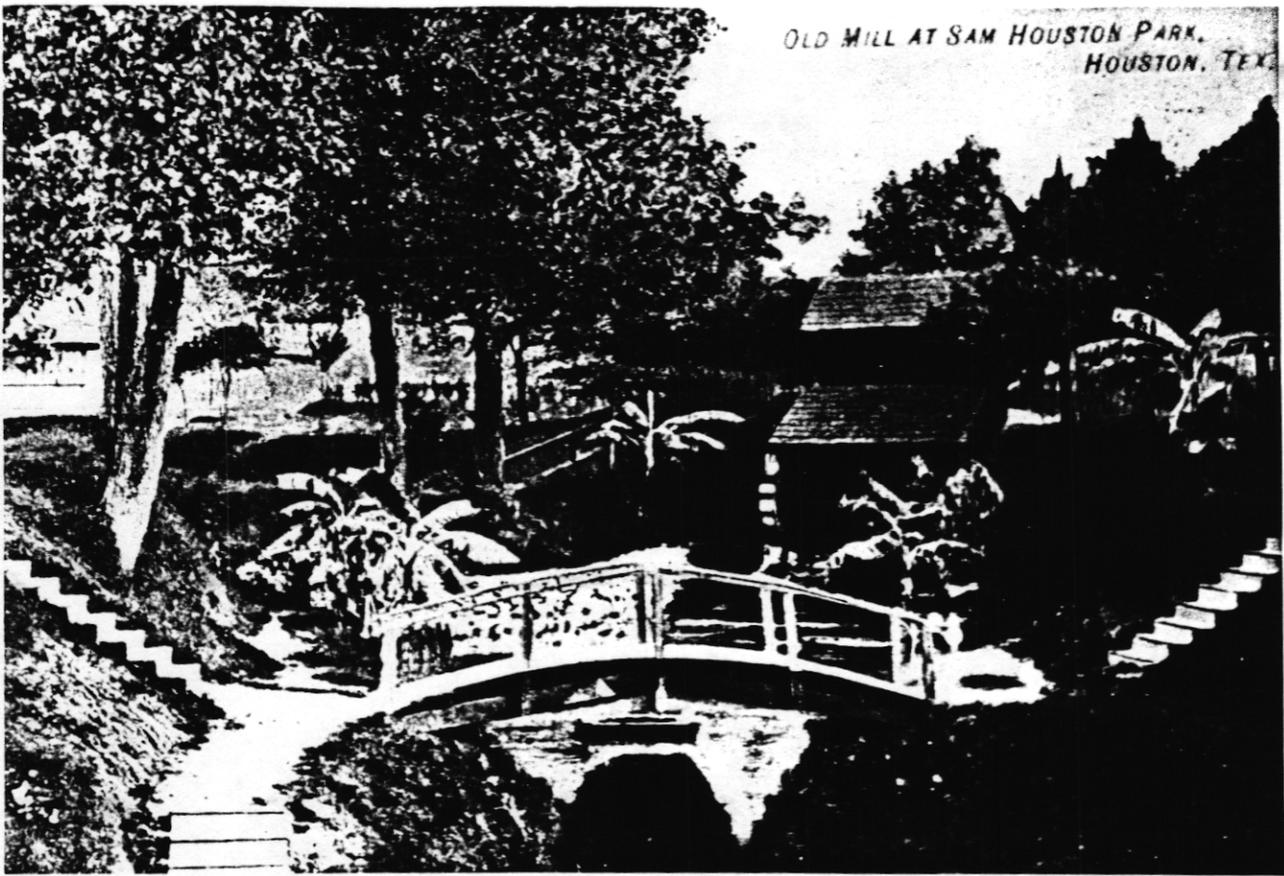
Because of the intensive use to which Sam Houston Park was subjected, maintenance seems to have been a problem. In the summer of 1906, a major remodeling of the park began in order to improve its facilities. The zoological collection was dispersed and more lagoon-like ponds were created, with a water-mill and rustic bridge included to enhance the picturesque effect (SWCUR:1274; Figure 8). The children's playground, located to the west of Valentine Lake, was also refurbished. This facility was one of the most important elements of the park, for it was considered that poor children would be attracted to a healthier open-air environment where their physical well-being might be improved, rather than menaced by the foul conditions prevailing in the neighborhoods of the poor. By the early 1900's, such neighborhoods had drawn more closely about the park, as the town continued to grow. O. H. Noland, the park's superintendent, noted in his report for 1903 that "throughout the year multitudes of people pass through (the park) on their way to and from work" (SWCUR:1274). Figures 7 and 8 are postcards of the park from the 1900's which show the park as it was (Harris County Heritage Society file 008:002, hereafter known as HCHS).

Additional tracts of land were added to the park in 1913 and 1914. Table 1 is a complete list of deed acquisitions by the city. The city purchased three tracts at a cost of \$45,675 from Charles F. Byers (brother of George), Florence P. Cushing and Casper DeGeorge.

In 1917 a formal garden was landscaped at the main entrance of the park (Figures 9 and 10). Figure 10 shows the details of the garden, with four lily ponds, a mall, and a series of radiating walkways built around the 1899 bandstand. The formal garden was carried out to coincide with the meeting of the Society of American Florists and Ornamental Horticulturalists in Houston, and therefore was referred to as the Convention Garden (SWCUR:1279).

The city zoo was founded again in 1923 but it did not open in the park officially until December 1, 1924 because of a quarantine against a widespread epidemic of hoof and mouth disease. The zoo, once opened, only remained in the park for one year before it was moved to its present day location in Hermann Park (Houston Chronicle 1938).

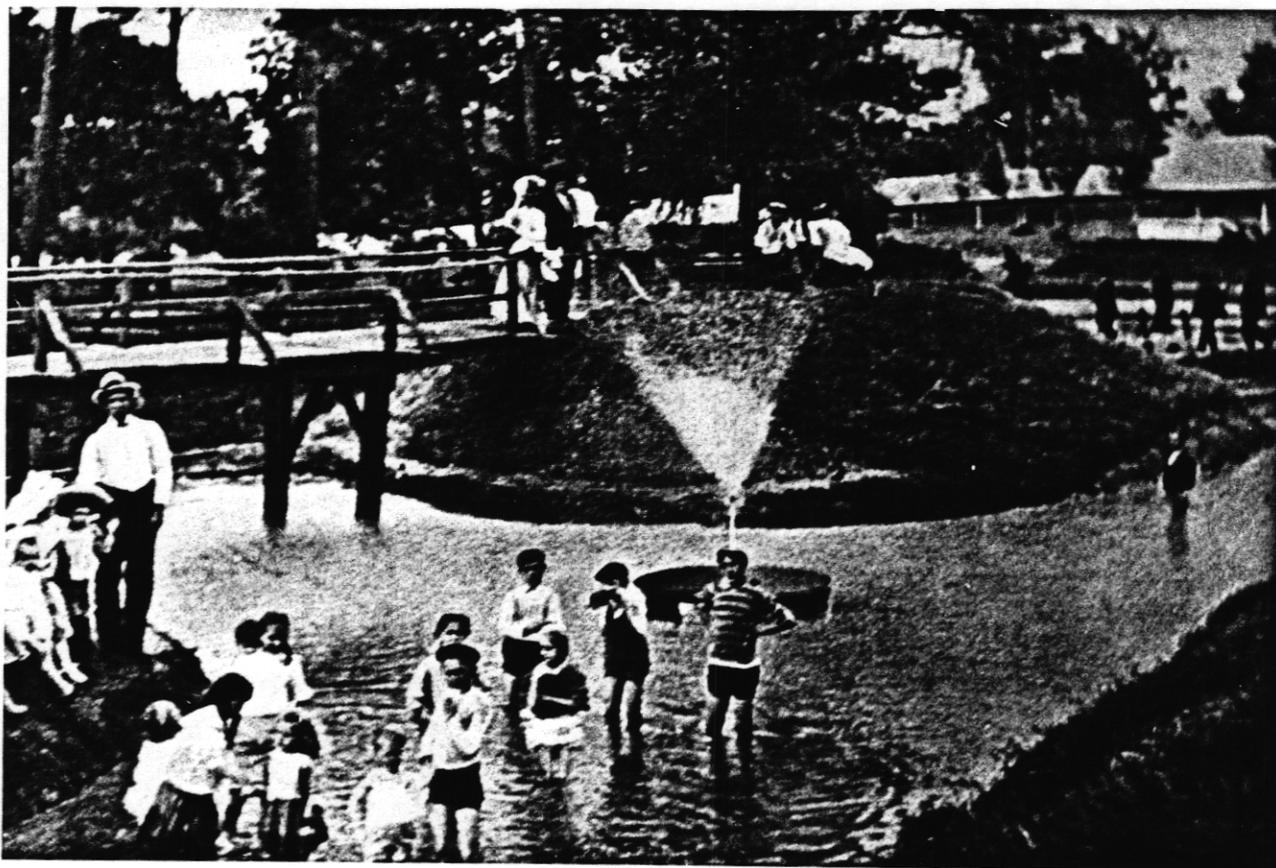
The next major change for the park was the result of the City Planning Commission's 1924 Plan for a Civic Center (Hare and Hare 1924; Figure 11). The Civic Center was to have been located around the new Houston Public Library which was under construction between 1924 and 1926. It was to adjoin



Texas. House and Bell - Sam Houston Park.

Figure 7

Top: Postcard of the Old Mill at Sam Houston Park. Postmarked 1908.  
 Bottom: Postcard of Kellum Noble House and the Bell of the Harriet Lane.  
 Postmarked 1907. (HCHS 008:002)



Childrens' Play Ground, Sam Houston Park,  
Houston, Texas.

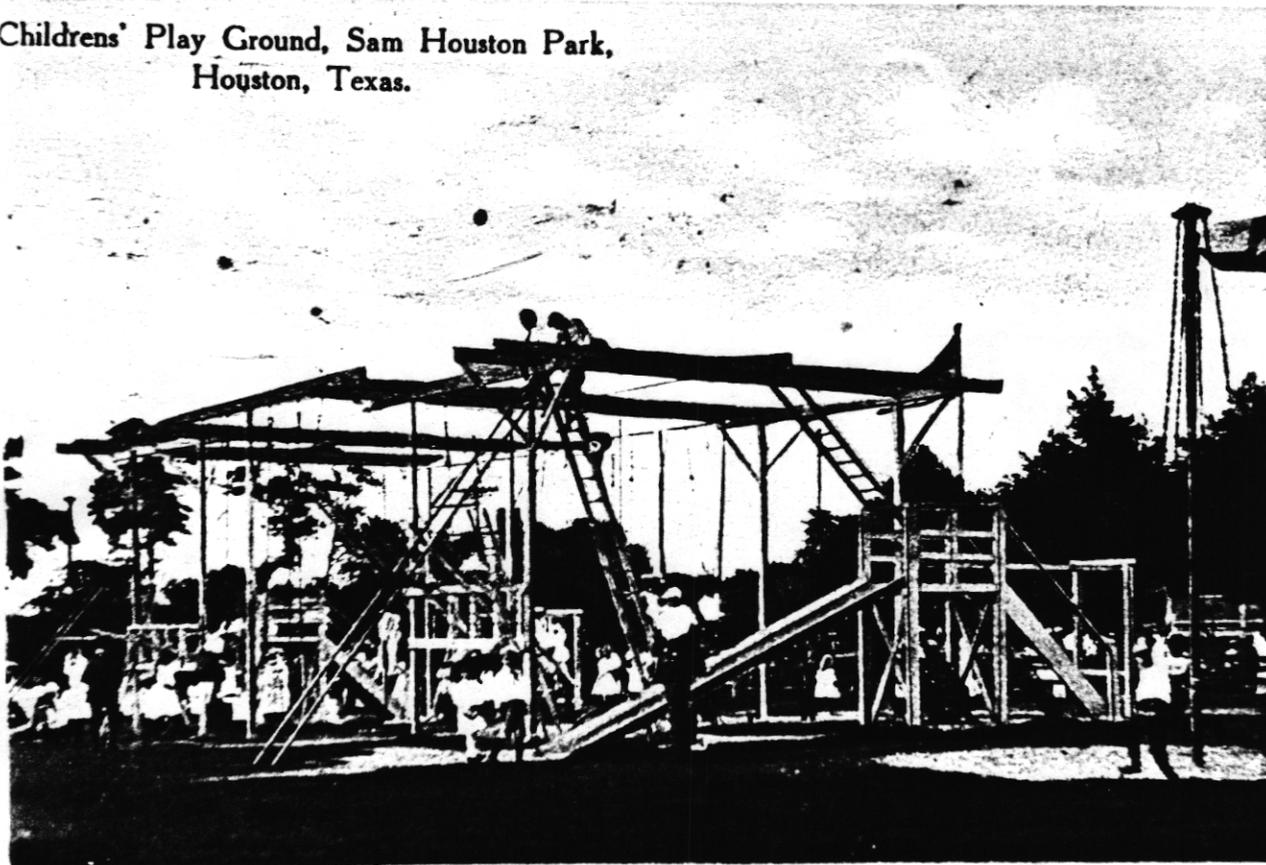


Figure 8

Top: Postcard of Wading Pool in Sam Houston Park. Postmarked 1907.  
Bottom: Postcard of Childrens' Playground. Postmarked 1909. (HCHS 008:002)

TABLE 1  
HISTORY OF SAM HOUSTON PARK LAND ACQUISITION

Date	Owner	Amount
June 21, 1899	George A. Byers <sup>1</sup>	5.28 acres
June 29, 1899	Otto & Eloise Witte <sup>1</sup>	6.20 acres
June, 1899	Samuel M. Young <sup>2</sup>	4.52 acres
January, 1913	Charles F. Byers <sup>3</sup>	??
March 12, 1913	Florence P. Cushing <sup>3</sup>	??
August 4, 1914	Casper DeGeorge <sup>3</sup>	??
November 29, 1948	Christ Church <sup>1</sup>	Cemetery
1959	DeGeorge Estate <sup>3</sup>	??
September 23, 1960	Masonic Bldg. Assoc. <sup>1</sup>	Cemetery
April, 1961	J. R. Neal, Jr. <sup>3</sup>	5819 sq. ft.
April 27, 1961	Joe Moscarelli et al. <sup>3</sup>	6369 sq. ft.
July 28, 1961	Lena Moscarelli <sup>3</sup>	6562 sq. ft.

#### References

1. Harris County Heritage Society Archives Files
2. Southwest Center for Urban Research 1981
3. City of Houston Parks Department Files

Sam Houston Park, the Episcopal and Masonic Cemeteries and the old Houston Waterworks site (located four blocks downstream from the park), all of which would form a continuous park stretching downstream to the four-block site of a proposed new city market. The scheme, documented by a site plan and an aerial perspective (SWCUR:1282), called for Hermann Square to be extended westward for another block. These two blocks would form a mall within which a long reflecting basin was set. At the head of the mall was to be a city-county administration building. Flanking the mall, a series of public buildings were indicated. Architecturally, all were to employ the same Plateresque detail used in the design of the Public Library. Sam Houston Park was to be greatly remodeled. This seems to have been the one segment of the plan immediately carried out (SWCUR:1282).

The pattern of drives which penetrated the park was simplified, primarily, it would seem, to facilitate the flow of automobile traffic. The loop which circled northward from Dallas and Lamar Streets was straightened and retained, but a series of winding drives in the bayou area were apparently eliminated. Although the existing monuments and the Noble house were retained, the character of the park was modified. For it was no longer to serve as an intensive recreation area, although the surrounding district was just beginning to change from residential to non-residential uses. Instead, the Civic Center proposal drawings depict it as a heavily landscaped greenspace, providing a romantic and informal counterpart to the formal landscape treatment accorded the central mall and the blocks which were to flank it.

Sam Houston Park was also planned to mark the easternmost point of the Buffalo Bayou parkway, which was projected to run all the way west to Memorial Park. Curving drives would border each side of the parkway (currently Memorial Drive and Allen Parkway), conveying traffic from the west to the business district. The southern bayou drive, then known as Buffalo Drive, was constructed in 1925-1926. This drive passed through the northern part of the park, linking downtown Houston directly to River Oaks and providing the first long distance parkway drive in the city (Figure 10).

Politics and the Great Depression killed most of the Civic Center plans (SWCUR:1283-87). The next addition to the park property was the Fire Alarm Building (Figure 6). It was constructed at the entrance to Sam Houston Park between 1938 and 1940. The Dick Dowling Monument and the (First World) War Memorial Cenotaph were moved from the site of the old city hall property to the park where they were located so as to be viewed by the public and properly landscaped (1939 Annual Report City of Houston Park Department). The Dowling statue was placed west of the Noble house but was later moved to Hermann Park, where it stands today. The cenotaph is presently located behind the Long Row (Figure 6). Another development plan was drawn up in 1939 by the City Planning Commission (Figure 12). It included plans that a fieldhouse be built next to the play ground and Valentine Lake be partially filled with soil. A grass stage would be built on the west side of the lake and an amphitheatre located across the water. Also the plan called for concreting the bottom of the rectangular lily pond in the Convention Garden, to make it usable and to add to the landscape value of the park (City Planning Commission 1939). These plans were forgotten also due to the United States' entry into World War II at the end of 1941.

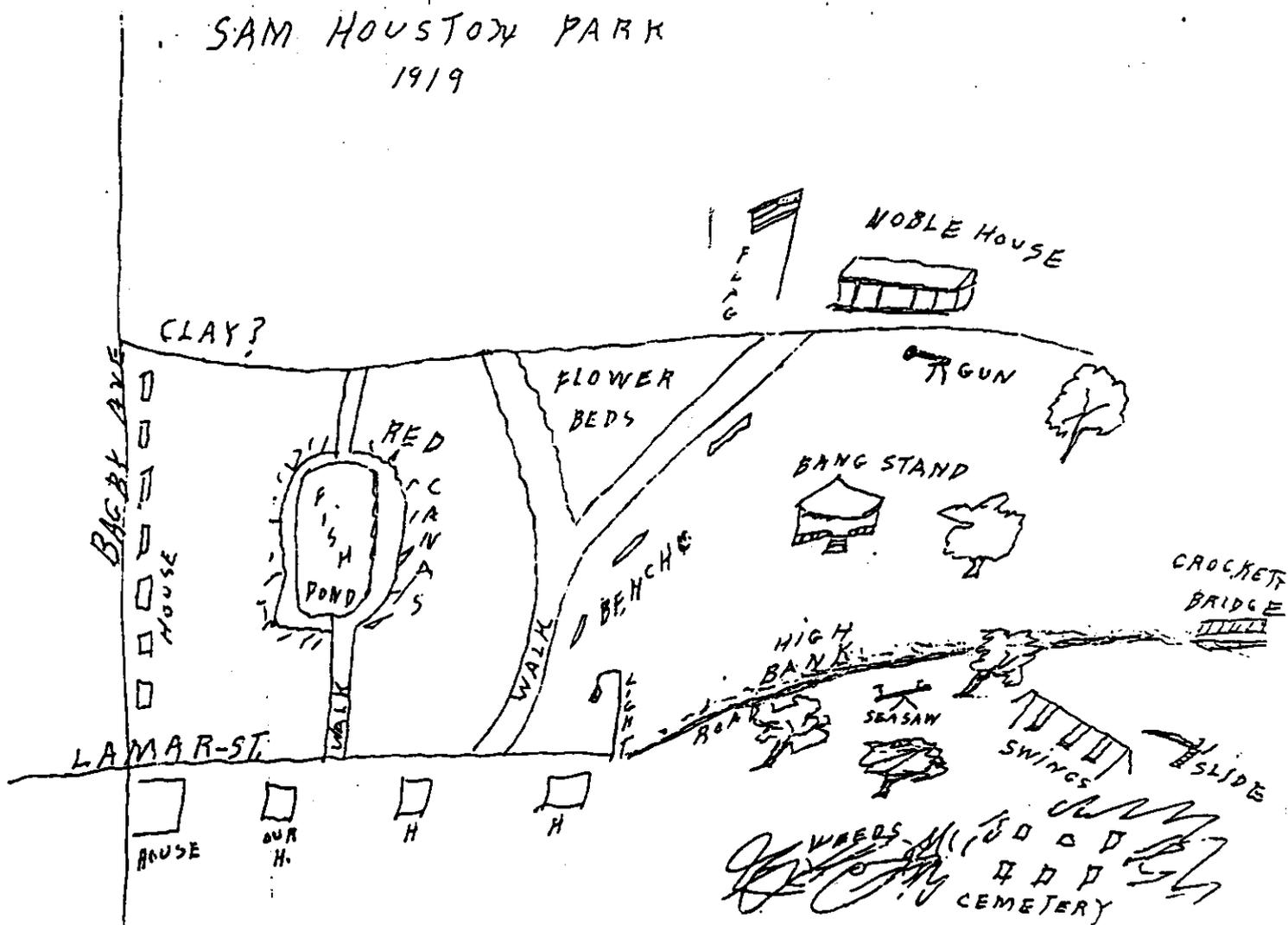


Figure 9

Sketch by Anonymous Artist Showing Park As It Appeared in 1919. Artist lived in second home on Lamar. (HCHS 008:002)



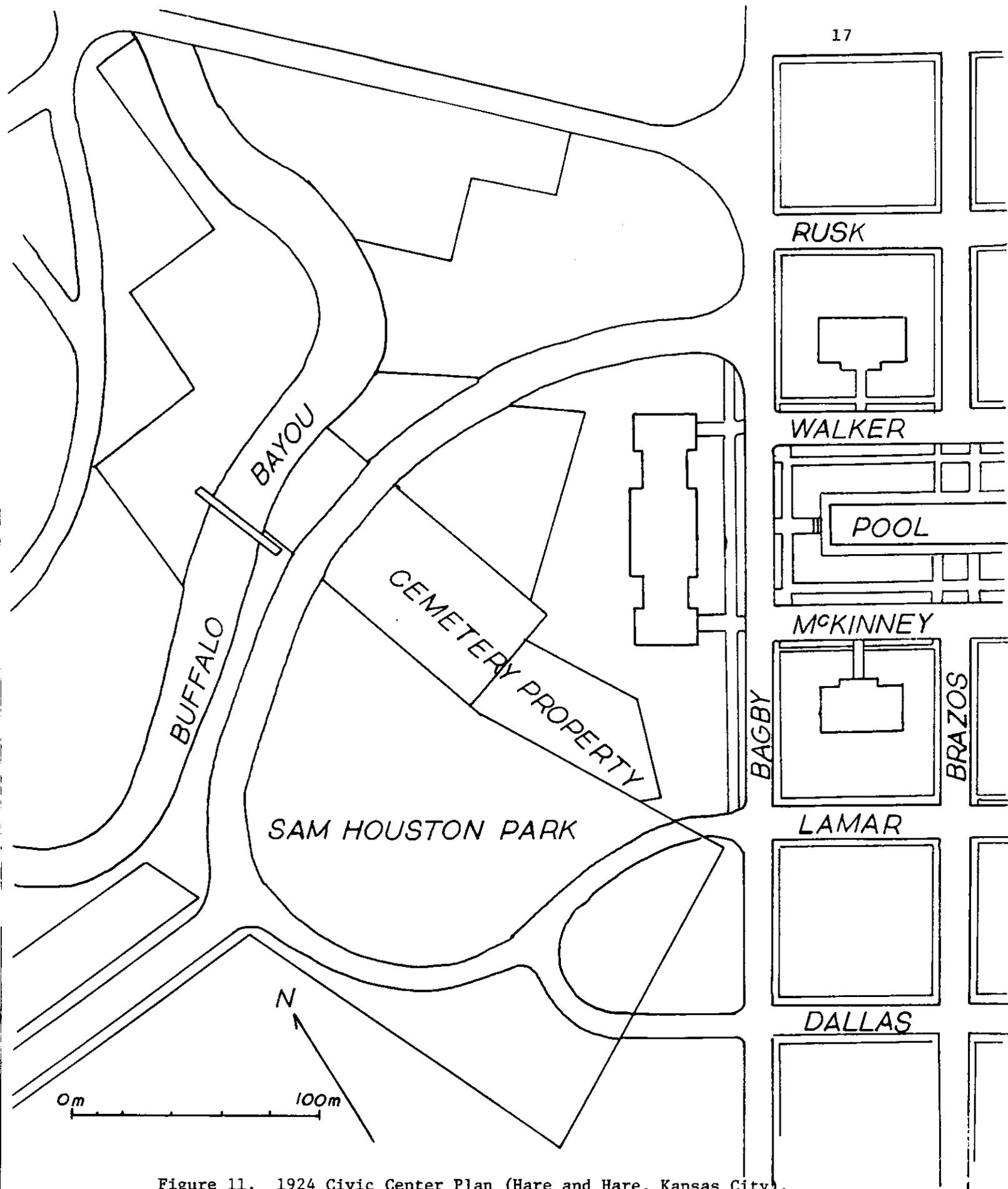
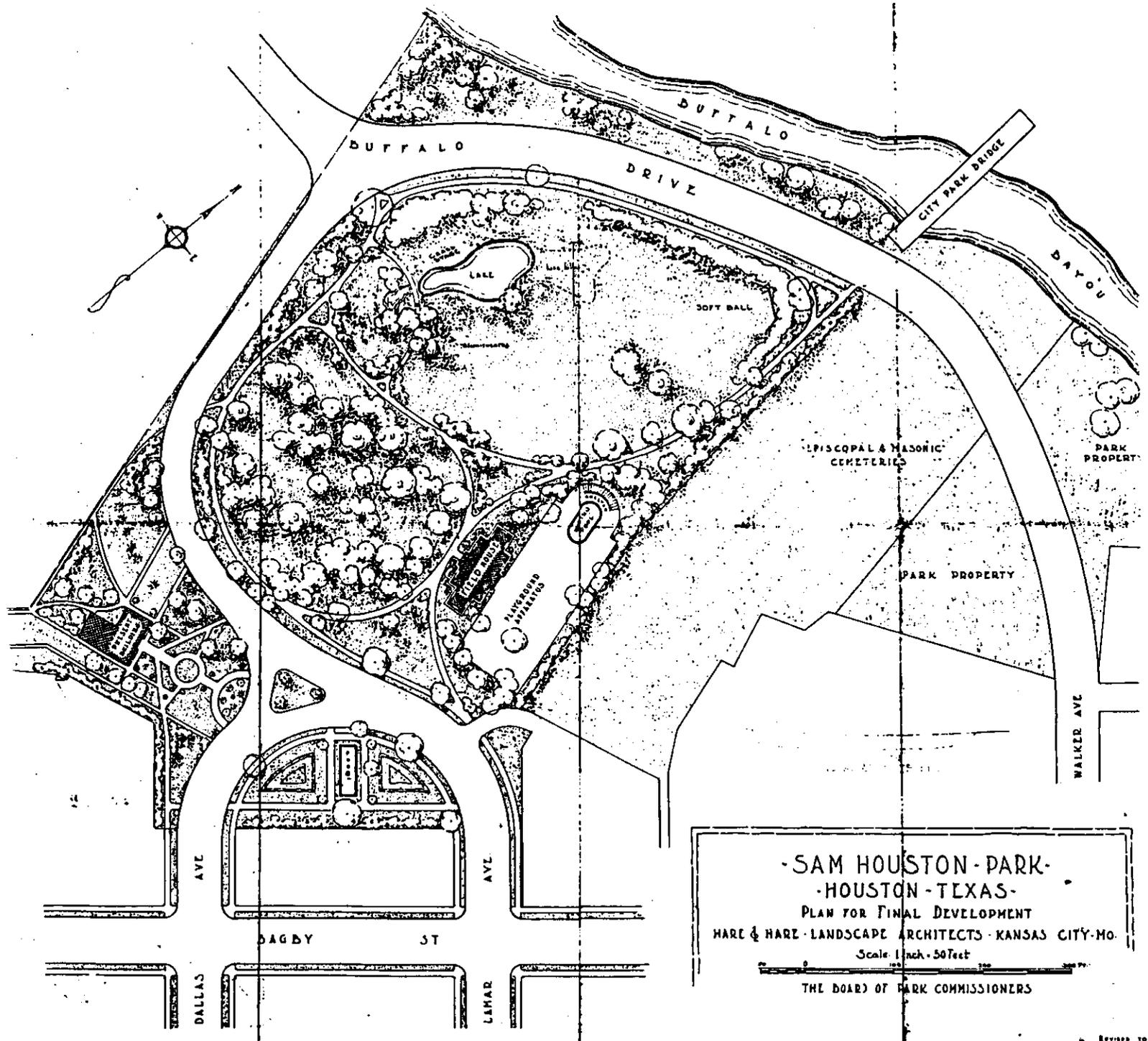


Figure 11. 1924 Civic Center Plan (Hare and Hare, Kansas City).



-SAM HOUSTON PARK-  
 HOUSTON TEXAS-  
 PLAN FOR FINAL DEVELOPMENT  
 HARE & HARE LANDSCAPE ARCHITECTS KANSAS CITY MO.  
 Scale 1 inch = 50 feet  
 THE BOARD OF PARK COMMISSIONERS

Figure 12. 1939 Civic Center Plan.

Between 1945 and 1951, Buffalo Drive (which was redesignated Allen Parkway in 1961) was rebuilt as a limited access, multi-lane thoroughfare. This included the widening of both Dallas and Lamar Streets in the park and re-aligning them as they are currently situated (Figure 13). This took place at the end of the project in 1951 (SWCUR:1288).

The city obtained the tract of the Episcopal Cemetery in November 1948 and incorporated it into the park (HCHS 008:001). As the freeway system was being built in 1955-56, the park lost four acres near the bayou to exit and access ramps. A parking lot on the corner of McKinney and Bagby was purchased from the DeGeorge Estate by the city in 1959 (Harris County Deed Records 1959). In September 1960 the Masonic Cemetery was sold to the City of Houston (HCHS 008:001) and in the summer of 1961 the city bought the street front lots on Bagby between Lamar and Dallas, the site of the present Long Row (Harris County Deed Records 1961). This property was a shell parking lot before the purchase and continued to be one afterwards. These acquisitions brought the park to its present day size of 20.7 acres.

In 1954 after fire damaged the Noble house, the city decided to condemn and demolish the house. In response to this, the Harris County Heritage Society was organized to raise funds for its preservation and restoration (SWCUR:1292). Two years later the City Council designated Sam Houston Park as the site for an outdoor historic buildings museum to be maintained and operated by the Harris County Heritage Society (Houston Post 1956). The Kellum-Noble House opened to the public in 1958 and was joined by the Nichols-Rice-Cherry House of c. 1850 in 1959. A 1962 plan by the Harris County Heritage Society called for the addition of several old buildings as well as a museum and administration building (Houston Post 1962; Figure 14). Eventually the Pillot House of 1868, San Felipe Cottage of 1868, the Old Place Log Cabin of c. 1825 and St. John's Evangelical Church of 1891 were moved to the park from various parts of Houston and Harris County, restored, and furnished with appropriate nineteenth century appointments (SWCUR:1292). The Heritage Society also built the Long Row, a hypothetical reconstruction of Houston's first business block. The Long Row was originally built by the Allen brothers on Main Street between Congress and Preston but was destroyed by fire in 1859. The new Long Row was constructed as a meeting and retail facility in 1968 on Bagby between Lamar and Dallas (Houston Post 1968; Figure 15). Brownie Fountain Glen, the Bell of the Harriet Lane (now located on the Battleship U.S.S. Texas), and the Spirit of the Confederacy remained in the park, but their surroundings were vastly altered, not only by the imposition of the freeway and its ramps, but by the loss of much of the foliage (due to hurricanes and other storms) which in the early part of the century had been such a distinctive feature of Sam Houston Park (SWCUR:1292).

In 1976, the Heritage Society took over the Fire Alarm Building for use as administrative offices. In 1977 the greenspace of the park was increased as the parking lot north of the Long Row and the parking lot north of the Fire Alarm Building were closed and covered with grass and trees. A patio and a sundial were also placed on the north side of the Fire Alarm Building (Houston Chronicle 1977).

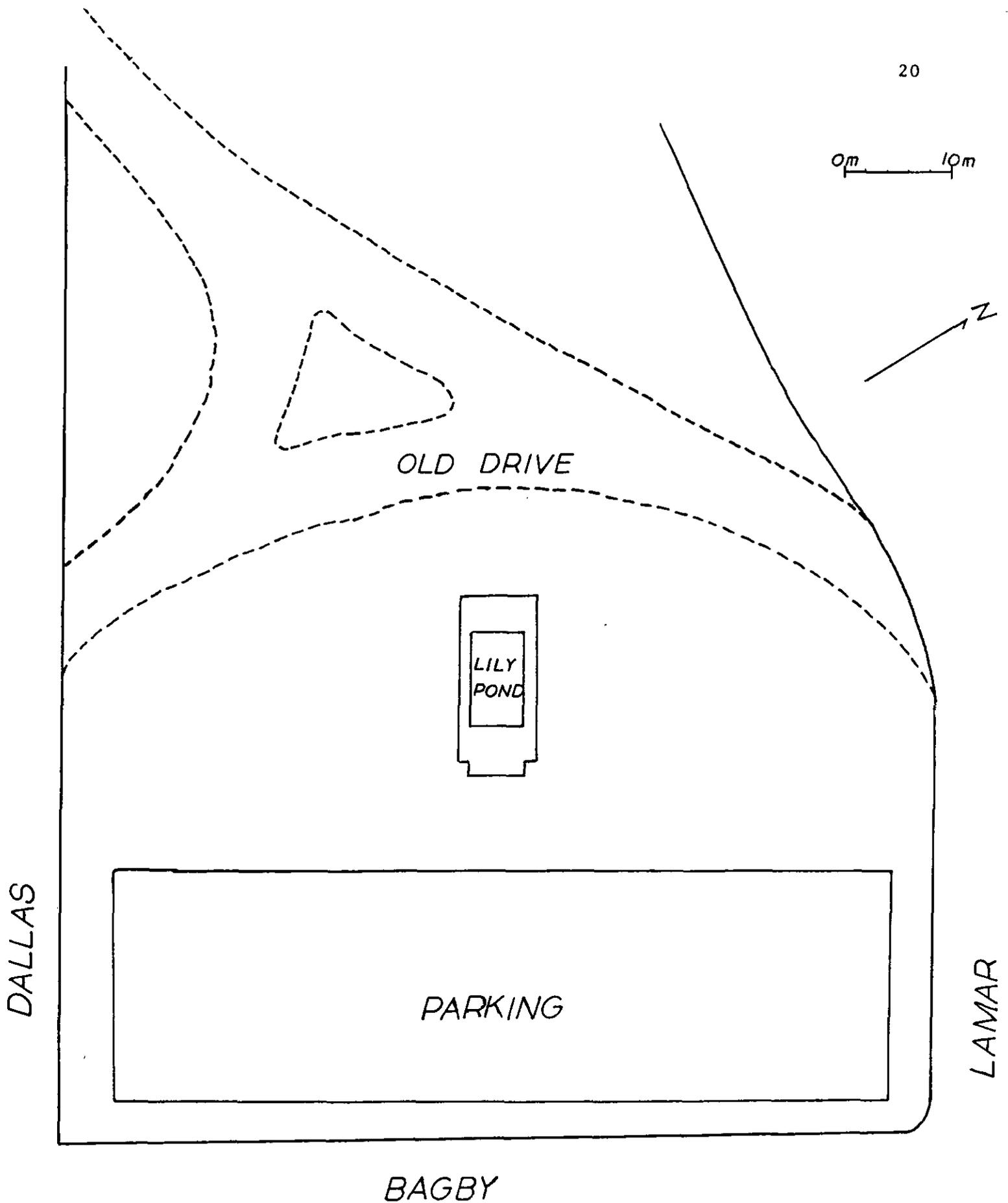
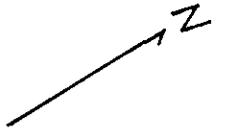
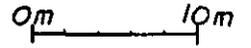


Figure 13. 1951 Map Showing Road Changes in the Park (Houston Parks and Recreation Department).

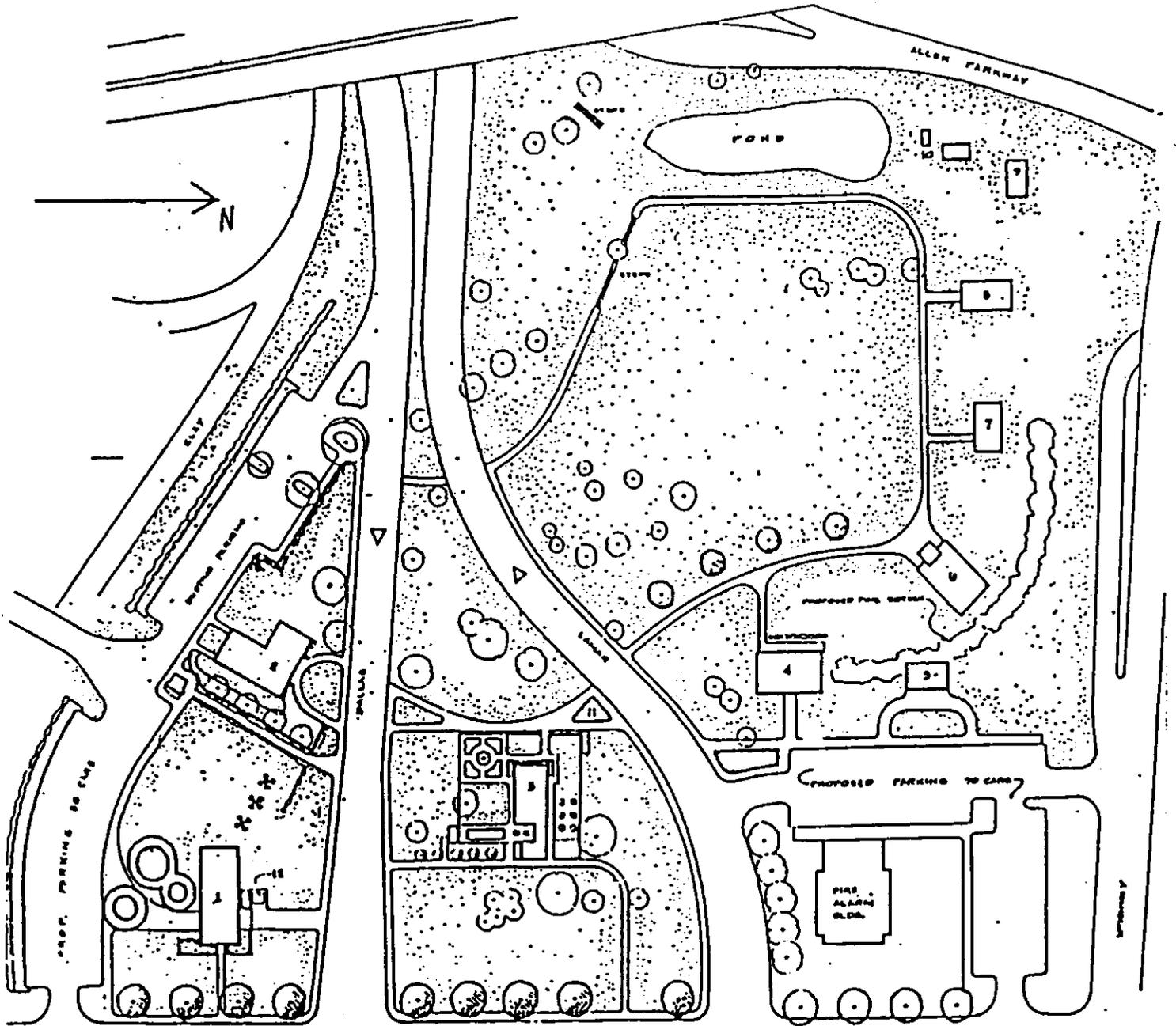


Figure 14. Proposed Changes to Park, 1962 (Harris County Heritage Society).

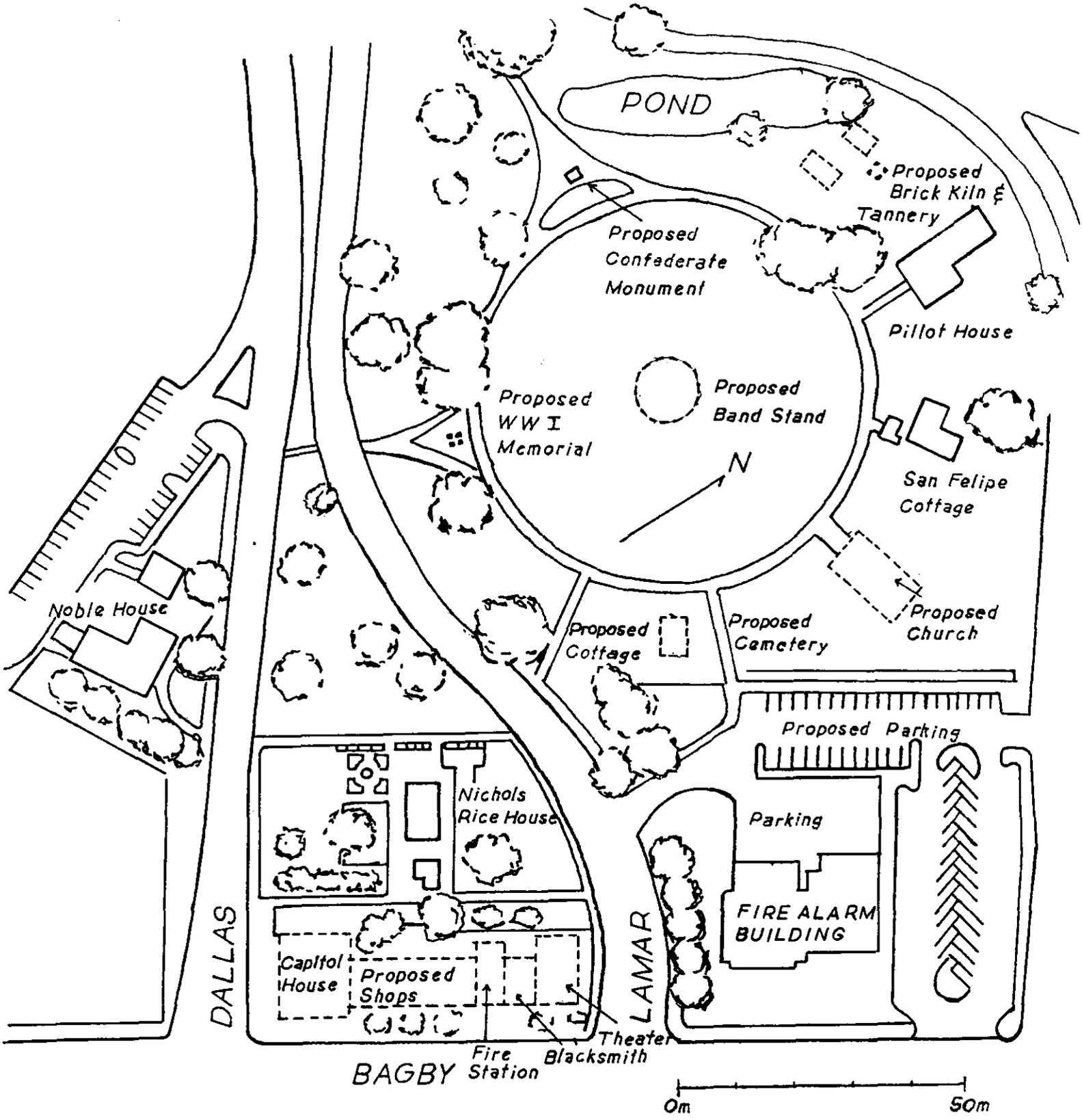


Figure 15. 1967 Harris County Heritage Society Plan for Sam Houston Park Showing Position of the Long Row Building and Nichols-Rice-Cherry House between Dallas and Lamar Streets.



Figure 16. Aerial View of Sam Houston Park as it appeared during th Spring, 1984, Houston Festival. In the foreground are the Nichols-Rice-Cherry House and the Rose Garden.

To avoid further damage from shifting subsurface soil, the Nichols-Rice-Cherry House was moved in 1980 about 75 ft. west of its original location behind the Long Row. Newspaper accounts at the time stated that the house had been seated on top of a landfill, once a ravine, which was filled in when the site became a park (Houston Chronicle 1980). Figure 16 is a view of the current state of the park.

This is the history of Houston's first public park. The Heritage Society conducts guided tours of the houses throughout the year and the park is the site of many activities, the biggest of which is the Houston Festival which occurs every spring.

### Chapter 3

#### HISTORY OF THE LONG ROW AREA

by

Kristin A. Merrigon and Roberto Meza

The history of the area bordered by Bagby, Dallas, and Lamar Streets and Buffalo Bayou can be traced to 1824, when the government of the newly established colony of Texas granted two leagues of land to settler John Austin (Haskell 1983: 8). On August 24, 1836 the Allen brothers acquired some of this land for the purpose of founding the city of Houston (Harris County Heritage Society file 002: 002; hereafter HCHS).

The true beginning of the history of this area, however, was in 1837, when a military hospital was erected for the Republic of Texas. The hospital was a long and narrow one-story building fronting on Bagby between the sites of the present Lamar and West Dallas Streets. This put it one and a half miles from from the 1837 city limits of Houston. The land and building that comprised the hospital were sold to the Republic by the Allen brothers for the nominal fee of one dollar during the summer of 1837 (Houston Clipping Scrapbook 29: 205).

That fall, Dr. Ashbel Smith came to Houston as the surgeon general for the Republic. On December 4, 1837 Dr. Smith paid \$1000 for the acre of land on which the hospital stood. The hospital itself remained the property of the Republic. In February, 1840 the land was bought by the Houston City Council for the same \$1000 Smith had paid. The plan was to use the area as a public hospital for the city. This plan was canceled in August, 1844 and the land was deeded to F. R. Lubbock for fees owed to him by the city of Houston (Houston Clipping Scrapbook 29: 205). It is not known whether the hospital structure was still standing at this time.

The 1890 Porter, Pollard, and Ruby insurance map of Houston shows the location of the Smith Hospital in this area (Figure 20). The hospital building had been described as near collapse by 1844, so it is unlikely that

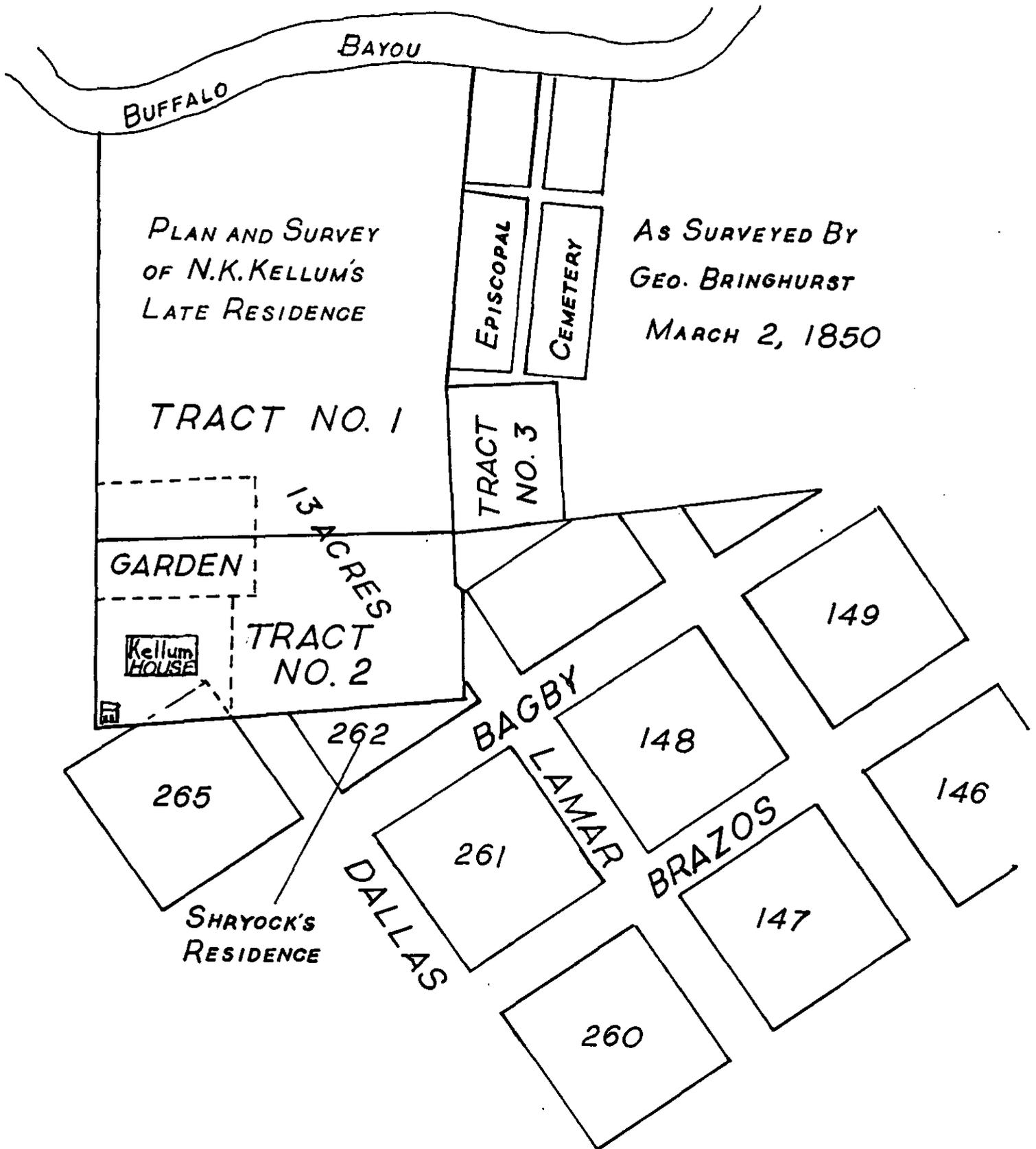


Figure 17. 1850 Survey Map of the Nathaniel Kellum holdings, showing location of the Kellum and Shryock houses (HCHS, 002:002).

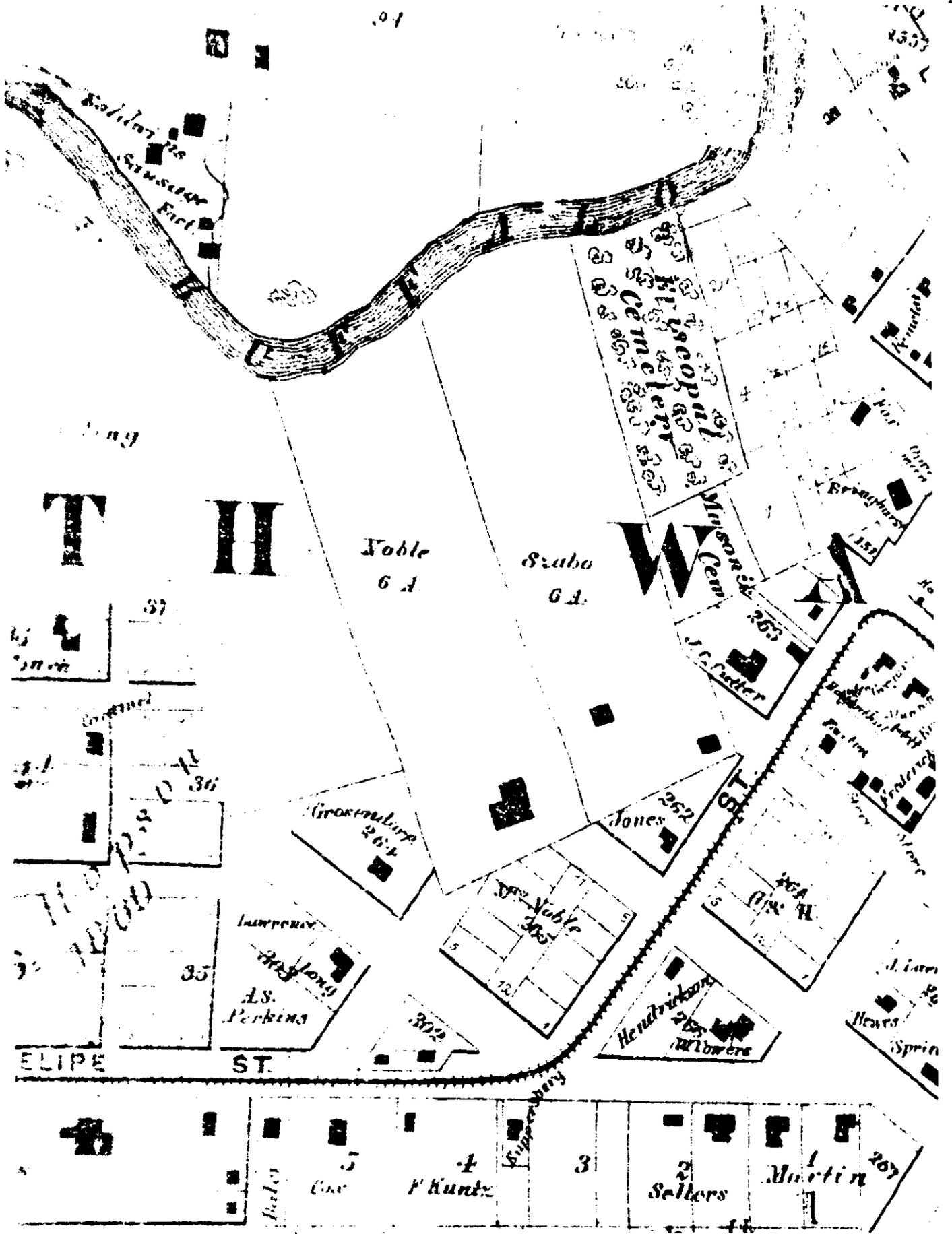


Figure 18. Enlargement of the 1869 Wood Map of Houston, showing the Shryock-Jones house and the Kellum Noble house.

this map depicts the actual building. The land where the hospital had stood was described as "the hospital lots" when the city limits expanded to incorporate the area in 1840 and it is possible that the mapmaker merely retained this designation (Houston Clipping Scrapbook 29: 205).

Concurrent with the founding of the hospital in 1837, an eight-acre tract of land was deeded to William Mock. This land, consisting of two long narrow tracts running perpendicular to Buffalo Bayou (Figure 20), was later brought by entrepreneur Nathaniel Kellum and eventually became the core of Sam Houston Park. There is evidence that Mock built a house on this site (HCHS 002: 002). He also appears to have set up a tanning operation, since he is recorded as having erected "tan vats, bark mills and water tierces and lime vats" (Bonewitz 1957). This all occurred prior to 1838 when he sold the property to Robert P. Stewart (HCHS 002: 002).

Stewart leased two lots of land to Michael Dyer and Peter Elgert who either built a house and a tannery or made use of those already constructed by Mock (HCHS 002: 002). Other lots were also sold to various owners until in 1839 the Allens reclaimed the entire eight acres as payment for debts owed by William Mock (Haskell 1983: 8). In 1843, T. M. Bagby bought the property at public auction, and sold it to Kellum the next year. In this same year, Kellum acquired the adjacent hospital lots from Lubbock (Houston Clipping Scrapbook 29: 205).

The Kellum family lived in the house that Mock had built while awaiting construction of their own house (Bonewitz 1957). In 1847, construction began on the two-story frame house which still stands as a museum for the Harris County Heritage Society. The house was situated near the bayou to facilitate drainage and was originally all wood (Houston Clipping Scrapbook 29: 151). After a time brick was added to protect it from the ravages of the weather. This house, with a garden and small outbuilding, is shown on the 1850 plan of the Kellum holdings (Figure 17).

The Kellums were wealthy slaveholders and much of the property around the house was covered with slave quarters. It is possible that some of the buildings shown on the 1873 birdseye map of Houston were these original dwellings (Figure 19). The slaves were kept busy with work

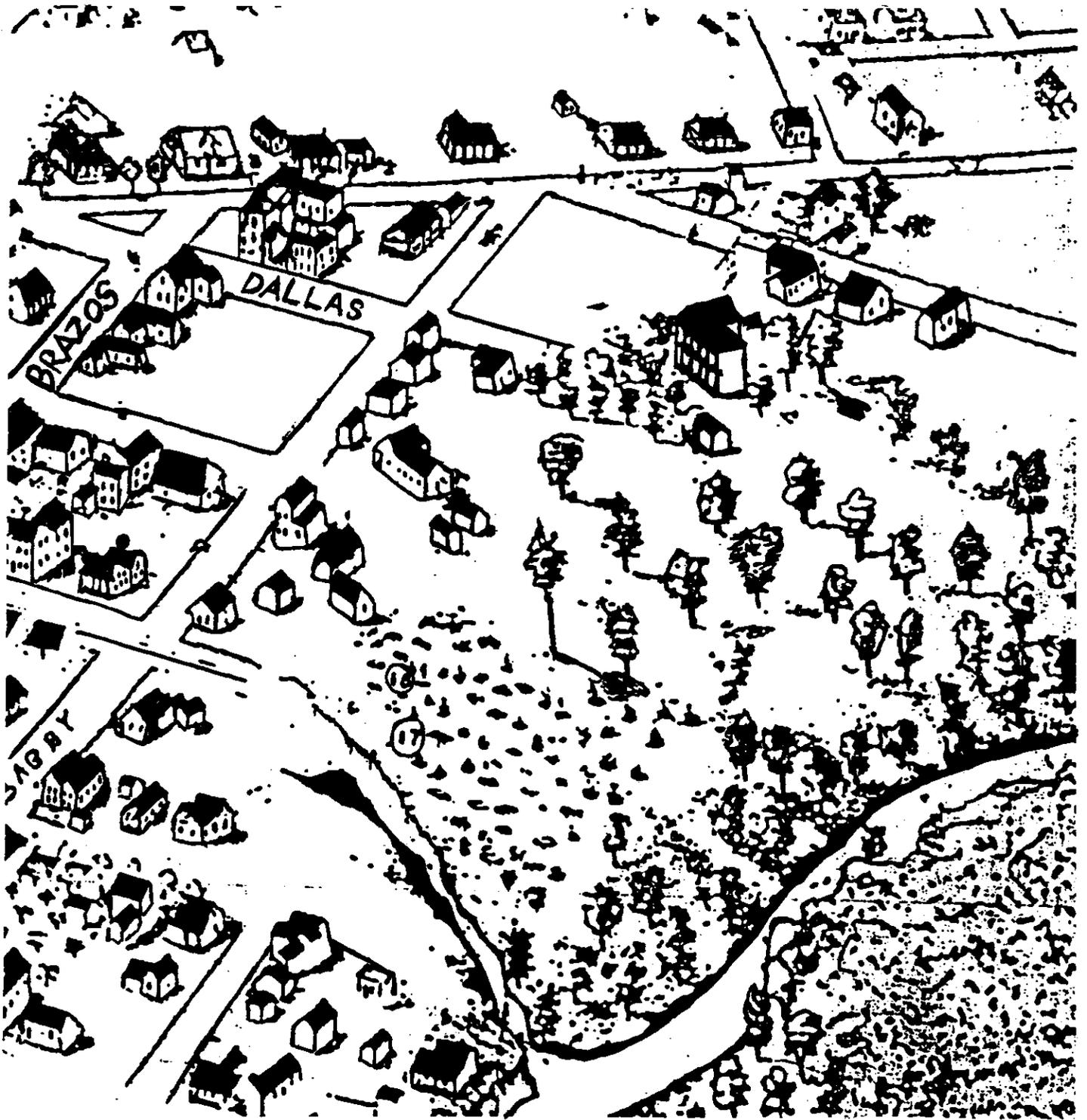


Figure 19. Portion of 1873 birdseye map of Houston, showing Byers house, Noble house, and various outbuildings which might have been slave quarters (City of Houston 1873).

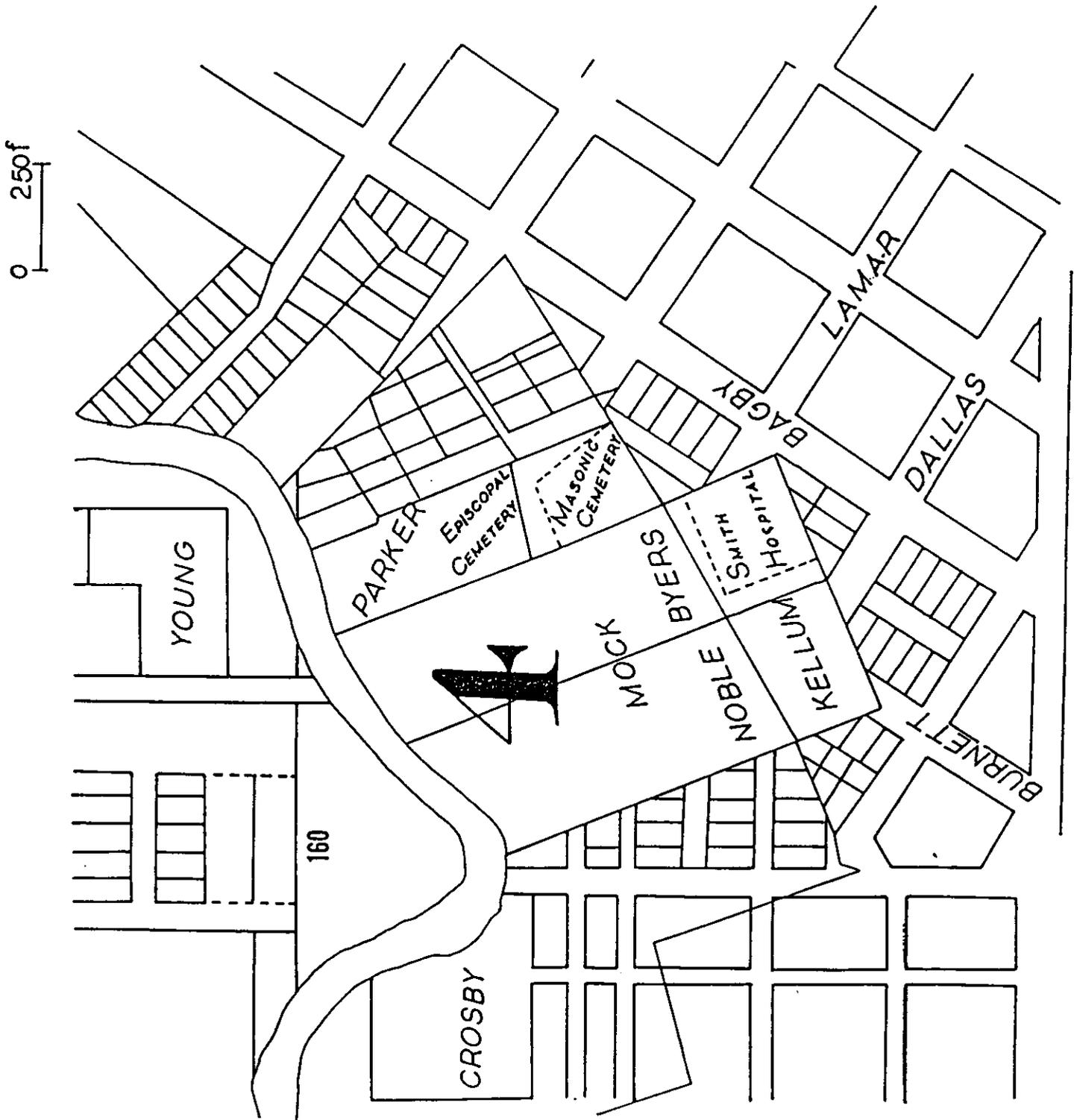


Figure 20. 1890 Porter, Pollard and Ruby insurance map, showing the location of the Smith Hospital, the Mock acreage, and the Kellum, Noble, and Byers plots.

in Kellum's tanning yard and brick kilns (Houston Clipping Scrapbook 29: 205). The Kellum property was originally much flatter than it now appears but the land between the house and the bayou was extensively excavated for clay to stock the brick kilns (Houston Clipping Scrapbook 29: 1 and 29: 151). These excavations also created a pond known as "the old cypress swimming hole" (Houston Clipping Scrapbook 29: 1). This is not the same as the present pond which was created in 1908 when the park was relandscaped (Southwest Center for Urban Research 1981: 1274; hereafter SWCUR).

In 1851, the Kellum property was transferred to the Abraham Noble family. It is maintained in one source (HCHS 007: 001) that Mrs. Zerviah Kelley Noble put up a cash payment for the property prior to her marriage to Noble. The deed appeared in Noble's name, though, because the property was not transferred until after the marriage. Property laws at that time demanded that it be listed in the name of the husband. This would account for the battle over the land after the Nobles' divorce in 1857 (HCHS 007: 001). If Mrs. Noble had paid for the property, her reluctance to give it up would naturally have been intensified.

After the Nobles' divorce, the house became the property of Mrs. Noble. She and her daughter, Katherine Kelley Szabo, and her granddaughter, Eloise Szabo Witte, served as teachers in an attached frame schoolhouse (Houston Chronicle 1929). The granddaughter was instrumental in founding the Houston public school system. According to the 1869 Wood map of Houston (Figure 18), the Szabo family already owned half of the Noble property by the 1860's. With Zerviah Noble's death in 1894, Eloise Szabo Witte inherited the remainder of the property, which she deeded to the city of Houston in 1899 for use as the city's first public park (SWCUR 1981: 1274).

Most of what is now the Long Row area, however, was not part of the Kellum-Noble tract but was subdivided into six small lots that made up Houston city block number 262, the 1100 block of Bagby Street (Figure 21). This block was first purchased from the Allen brothers by Henry F. Gillett in 1845. The first known residence on block 262 is depicted on George Brinkhurst's survey map dated March 1, 1850 (Figure 17). M. H. Shryock

had received the deed for this land in February, 1847 and built a two-story frame house straddling the property line between lots 2 and 3 (Table 2).

This house remained standing for many years. It is shown on the 1869 Wood map as "Jones," the married name of Shryock's daughter (Figure 18). J. R. Jones and Jane Shryock Jones had inherited the land sometime between 1851 and 1860 (Austin Survey 488:262). In November, 1869 the Jones sold the house and the entire Long Row block to Mary A. Powars (Table 2). Either Powars or the Jones subdivided the block and built several new houses. The Long Row area as it appeared under Powars' ownership is shown on the 1873 birdseye map of Houston, with the Shryock house only one of five buildings fronting on Bagby and Dallas Streets (Figure 19).

The Shryock house also appears on the 1896, 1907, 1919, and 1924 Sanborn insurance maps of Houston, under the address 1114 Bagby Street (Figures 22-25). Though it underwent a number of modifications, including a large addition in the early 1920's, it appears to have remained standing until 1952, when all the Long Row buildings were demolished to make way for a parking lot. From the time of its first city directory listings in the 1880's, various occupants were listed and the house appears to have been used as a rental property. In the 1940 city directories it was listed as providing furnished rooms. The final listing before demolition in 1952 was simply "furnished apartments" (Table 3; Houston City Directories 1882-1952).

Another nineteenth century building was the Byers house, 1102 Bagby, which stood at the northern end of the Long Row block. This house was built on the eastern edge of the original hospital property purchased by Kellum in 1844. It is not known exactly when the house was constructed, although it may have been one of two buildings shown on the Szabo tract in the 1869 Wood map (Figure 18). The Byers family appears to have acquired the Szabo tract sometime before 1890, since it appears under their name on the Porter, Pollard, and Ruby insurance map of that date (Figure 20). In 1891 George and Sarah Byers bought additional property on Bagby for a \$550 consideration. This property consisted of Bagby Street lots 1 and 2 and parts of 4 and 5, probably acquired as frontage for their house (Table

Table 2  
 Owners of Property in Block 262, 1841-1913\*

Original Owner	New Owner	Lot Number	Date Recorded
A. C. Allen: (owners in 1841)	Henry F. Gillett	1,2,3; part of 4,5, and 12	June 1845
H. F. Gillett	Ed Phillips	5	Apr. 1846
Ed Phillips	Wm. J. Hubbell	5	May 1846
Wm. J. Hubbell	David Harriss	5	Nov. 1846
David Harriss	M. H. Shryock	5	Feb. 1847
H. F. Gillett	M. H. Shryock	2	July 1848
J. Weitfeldt	M. H. Shryock	3	Nov. 1849
J. R. & Janes Jones (Shryock heirs)	G. S. Harcastle P/Atty.	5,2,3	July 1860
Confederate States	Will Powars	4,5	Sept. 1864
J. R. & Jane Jones	Mary A. Powars	1,2,3; part of 4,5, and 12	Nov. 1869
H. F. Gillett	Mary A. Ruby (formerly Powars)	fraction blk.262	Dec. 1890
D. C. & Mary A. Ruby	George Byers	fraction of 5,4; 1 and 2	Apr. 1891
D. C. & Mary Ruby	E. B. Cushing	part of 1 and 2	Sept. 1894
Will Powars	Mrs. Florence Cushing	fractions of 1,2,3,4,12	Aug. 1907
G. Byers	Al Metcalf	fraction of 5,4; 1 and 2	Jan. 1910
G. Byers	C. F. Byers	fraction of 5,4; 1 and 2	June 1911
C. F. Byers	G. Byers	fraction of 5,4; 1 and 2	Feb. 1912
C. F. Byers	Byers family & Homestead	fraction of 5,4; 1 and 2	Dec. 1912
G. Byers	C. F. Byers	fraction of 5,4; 1 and 2	May 1913
C. F. Byers	City of Houston	fraction of 5,4; 1 and 2	May 1913
Florence P. Cushing	City of Houston	part of lots 1,2,3,12	May 24, 1913

\*Austin Survey, South Side Buffalo Bayou, Vol. 488, Block 262. (American Title Co., Houston).

Table 3

Occupants of the 1100 Bagby Street Block as Listed in  
Houston City Directories, 1910-1952

BAGBY	1910	1920	1930	1940	1952
1102	BYERS, George A. PERKINS, Jennie	BYERS, Elizabeth	WEAVER, Mrs. Edna		
1104	L E N O I R F L A T S 1 - 6				
	JACKSON, Mrs. Carrie RIFFLE, Mrs. Blanche TELSCHOW, William				
1110	FIELD, J. Errett W.	GROWE, W. J.	CHAPMAN, G. H.	G I N G E E L A N G	
1110½	LLOYD, Louis D.	HARVEY, Mrs. Coral	McPHERSON, G. G.	A D A M S, L o u i s A.	
1112	PARKER, Albert W.	HOOKS, D. A.	CHICKENIS, George	WING, Fred	CHEWALOG, Joe
				----- 1112½ MAXFIELD, Don	----- LIM, Leo
1114	I R V I N E, J o h n F.		ROSE, Mrs. Pearl	CROSS, Ruby (furnished rooms)	FURNISHED APARTMENTS
1116	McLEOD, Elliot G. ALEXANDER, Archie	SADLIER, C. J.	PAYVLA, James ----- 1116½ Columbia Printing	MOSCARELLI, Angelo	COX, J. C.
1118	BISHOP, Mrs. Sarah	CROOK, J. S.	MOSCARELLI, Angelo (grocer)	Columbia Printing ----- Bagby Food Shop	BAGBY FOOD MARKET

2). The house definitely appears, along with two attached outbuildings, on the 1873 birdseye map of Houston, and it is also shown on the 1896 and 1907 Sanborn insurance maps (Figures 19, 22, and 23). One of the outbuildings, labeled "greenhouse" on the 1896 Sanborn, was presumably the headquarters for the nursery and florist business Mrs. Byers operated (SWCUR 1981: 1274). This business was in operation at least as early as 1884 (Houston City Directory 1884). A third small building which stood at the corner of Bagby and Lamar Streets in 1873 may have been demolished by the Byers after their acquisition of the Bagby Street frontage in 1891 (Figure 19).

In 1899, the Byers sold 5.28 acres of their land for inclusion in the city park (SWCUR 1981: 1274; Bonewitz 1957). The area sold to the city included Mrs. Byers' nursery but apparently not the house or the Bagby Street lots. Members of the Byers family continued to live in the house until about 1920 and were known to take in an occasional boarder (Houston City Directories 1900-1920). The actual date they vacated is not clear. The city directories have them at 1102 Bagby until at least the 1920-1921 edition. The 1919 update of the 1907 Sanborn no longer shows their house, however (Figure 24). There is a dwelling at 1102 Bagby but this building is flush with the street whereas the Byers' residence had been one lot removed from the street. This second building was also on Byers property and it seems likely that the Byers family moved into it after they disposed of additional property, which may have included the site of their original house, in 1913 (Austin Survey 488: 262).

Other buildings that first appeared on the Long Row block prior to 1873 are evidenced by the birdseye map of that year (Figure 19). These were mainly single family dwellings until the early part of this century. One of these houses appears at 311 Dallas. This building is also shown on the 1896 Sanborn (Figure 22) but before the 1907 Sanborn was drawn, that building had either been moved to the western corner of its lot, or torn down and replaced by two new buildings (Figure 23). One of these buildings, marked "flats" on the Sanborn map, was a rooming house which consisted of three distinct apartments in a two-story frame building (Houston City Directories 1910-1911). The other was a dwelling that appears on the 1907 map but nowhere else. This house had been torn down





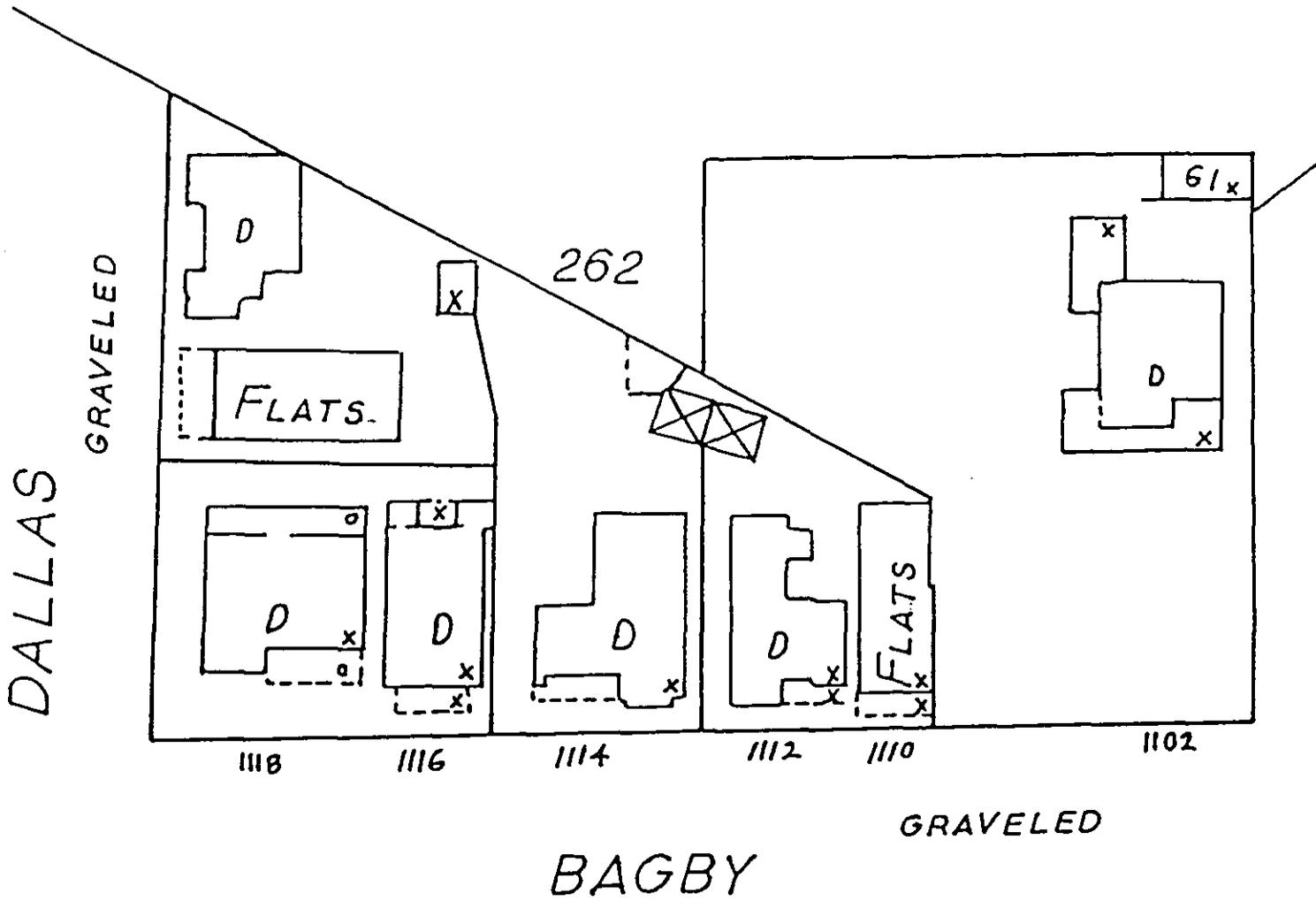
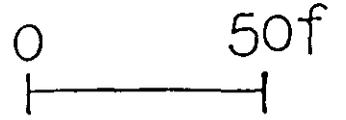


Figure 23. 1907 Sanborn insurance map of the Long Row area.



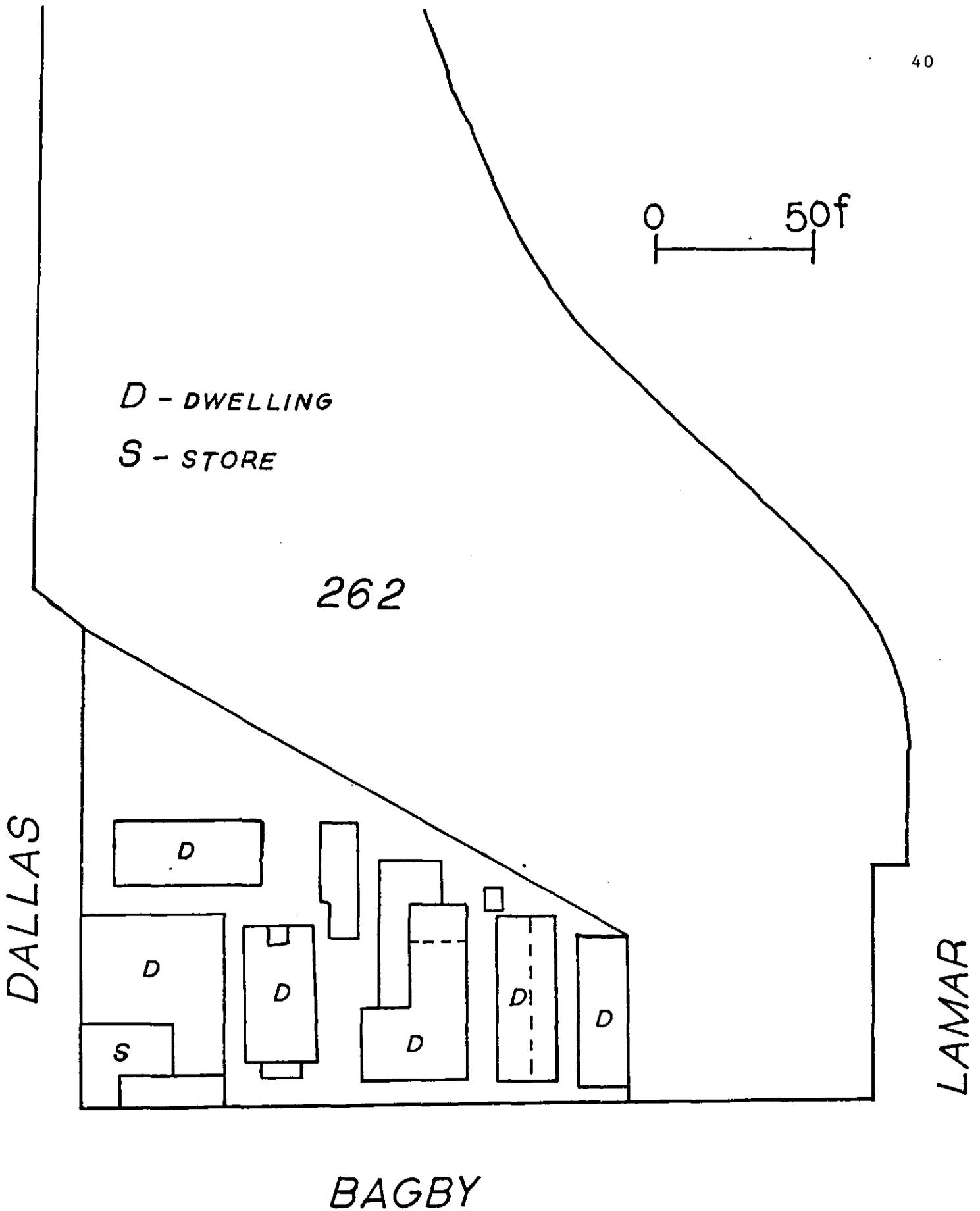


Figure 25. 1924 Sanborn showing buildings which were later torn down to make parking lots.

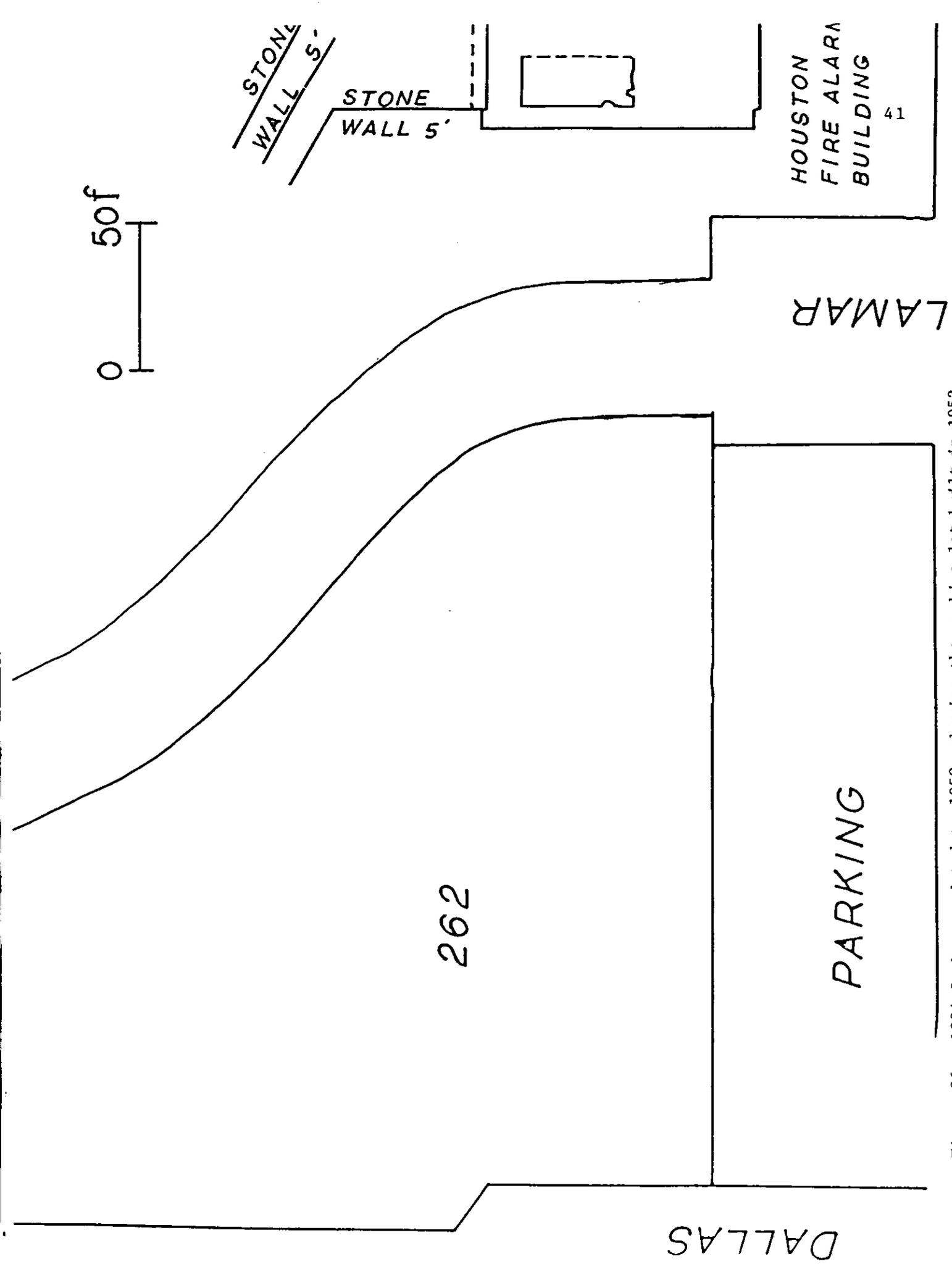


Figure 26. 1924 Sanborn updated to 1958, showing the parking lot built in 1952.

by the time of the 1919 Sanborn update, but the rooming house appears to have remained standing until 1952 (Figures 23-25; Houston City Directories 1922-1952).

Another pre-twentieth century building was located at 1112 Bagby. This building, a narrow L-shaped structure, also first appeared on the 1873 birdseye map and remained standing with little modification from 1896 until at least 1919 (Figures 22-24). Between 1919 and 1924 it was either drastically restructured or replaced with a new, rectangular building which apparently stood until the general demolition of the Bagby Street buildings in 1952 (Figure 25). Like the adjacent Shryock house, 1112 Bagby was a rental property with many different occupants. By 1940 it had been divided into two apartments, one of which was listed as 1112-1/2 Bagby (Table 3; Houston City Directories 1882-1952).

A house at 1118 Bagby first appears in the 1896 Sanborn map. This house, a large one-story frame structure, appears to have replaced a smaller building shown on the same site in the 1873 map (Figures 19 and 22). The 1118 Bagby dwelling typically housed married couples and their families, although in the 1913 city directory it too was listed as providing furnished rooms (Houston City Directories 1882-1952). In 1922 Angelo Moscarelli took possession of this lot and building and opened a grocery store. It is probable that he made the addition to the front of the building shown in the 1924 Sanborn map (Figure 25). The Moscarelli store opened in the addition but the rear of the building remained a family dwelling. By 1940, however, the Moscarellis had moved to the house next door, 1116 Bagby, and the store was renamed the Bagby Food Shop. The Columbia Printing Company, which had been at 1116-1/2, moved in with the grocery store (Table 3). By 1952, the last city directory listing for the 1100 Bagby Street block, the printing shop was gone and the store had been renamed the Bagby Food Market (Houston City Directories 1922-1952).

At the turn of the century the Long Row block was filled in by rooming houses. Most of these buildings first appear on the 1907 Sanborn map. In addition to the flats on Dallas Street, another pre-1907 apartment was constructed at 1110 Bagby, and the rental unit later occupied by the Moscarellis was built at 1116 Bagby (Figure 23). The Lenoir Flats, at 1104

(later 1106) Bagby, were established in 1911 (Houston City Directories 1911-1912). Both the Lenoir apartments and the adjacent dwelling/rooming house at 1102 Bagby appeared sometime between the drawing of the 1907 Sanborn and the 1919 update (Figure 24).

From the city directory listings, Lenoir Flats was the only boarding house on the block that actually housed more than three people. Neither the Lenoir Flats nor the 1102 Bagby house appear on the updates for the 1924 Sanborn, and they ceased to have city directory listings prior to 1940 (Figure 25; Houston City Directories 1911-1940). The flats at 1110 Bagby and the dwelling at 1116 Bagby both appear to have survived until the parking lot was put in in 1952 (Figure 25).

The city purchased most of the property in the area on June 21, 1899 including 4.52 acres of the old Samuel W. Young brickyard on the north bank of Buffalo Bayou; 6.20 acres of Mrs. Zerviah M. Noble's house and grounds; and the adjoining nursery of George and Sarah Byers on the south bank of the bayou. This was to be the first city park. A five-acre portion of land was sold to Charles F. Byers in 1906 (Austin Survey 488:262). This land passed through many hands of the Byers family from 1906 until it was finally delivered to the city of Houston in May, 1913 for a \$6,500 consideration (Table 2). The property sold to the city in 1913 appears to have included the original site of the Byers house (Austin Survey 488:262). It seems likely that the house, which was gone by 1919, was demolished at this time.

By 1913, Houston controlled all the land from Dallas to Lamar except for the strip of dwellings and boarding houses in the present Long Row block. These buildings passed through the hands of various owners until, by 1952 at the latest, all the Bagby Street frontage but lot 5 and part of lot 4 was owned by the Moscarelli family (Houston Parks and Recreation Department files). In that year the last of the Bagby Street buildings, all of which stood on Moscarelli property, were torn down and the entire 1100 block was turned into a parking lot (Figures 25 and 26). The property was still owned by Angelo Moscarelli's heirs in 1961, when the city purchased it for inclusion in Sam Houston Park (Figure 27).

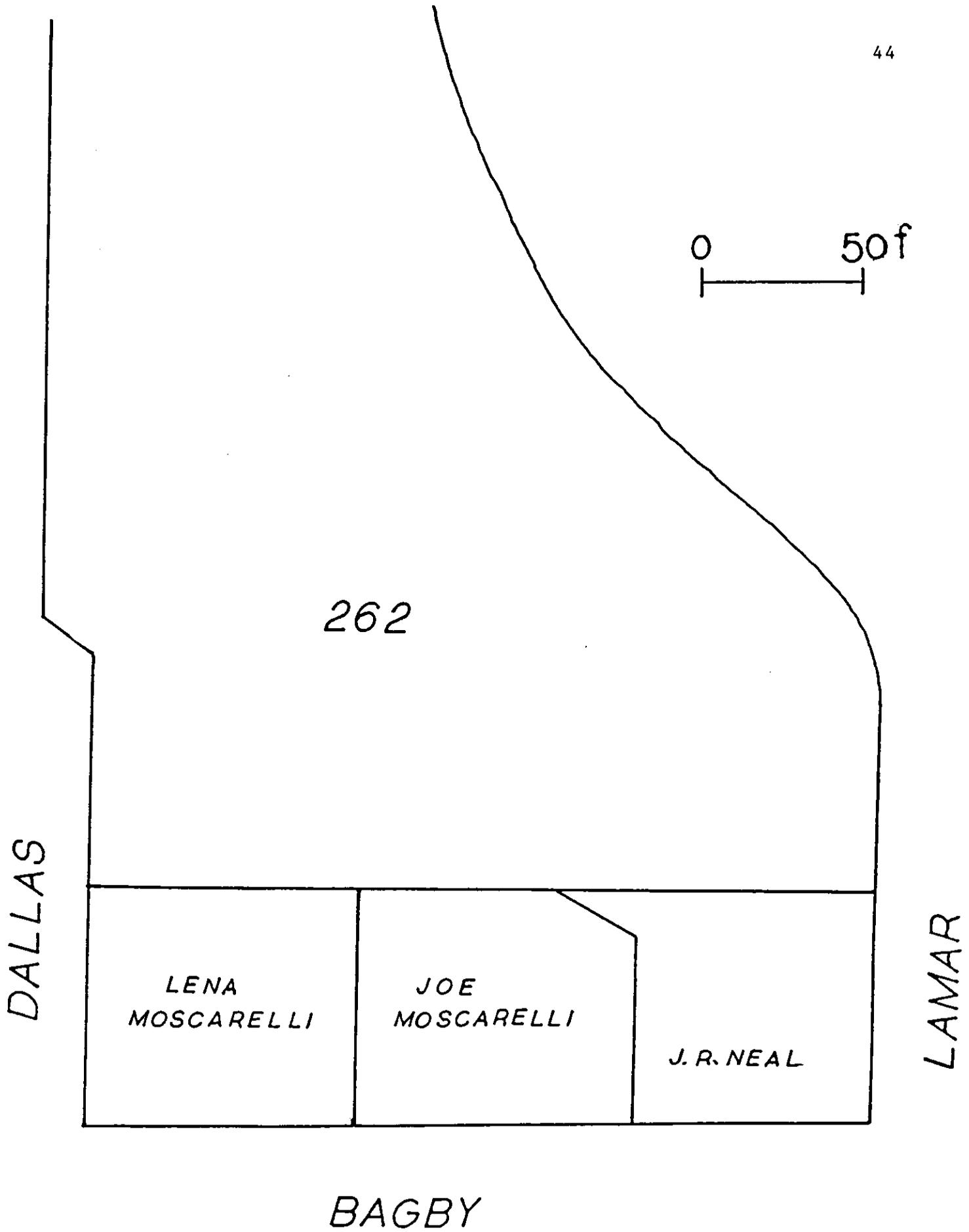


Figure 27. 1961 blueprint, showing the Moscarelli family's holdings at the time of purchase by the City of Houston (Houston Parks and Recreation Department).



## BAGBY

Figure 28. 1977 plan of the Long Row area, showing Long Row building, pre-1980 Cherry House site, and 1968-1977 location of parking lots (Houston Parks and Recreation Department).

In 1968, the Harris County Heritage Society built a reconstruction of Houston's original business district on the parking lot site. The original "Long Row," built in 1837 by the Allens, had been located on Main between Preston and Congress. It had been meant to serve as a temporary headquarters for the Republic of Texas but the actual capitol building was finished so that it did not need to be used for its intended purpose. It consisted of a series of ten connected buildings which housed the lending library, druggist, tailor, forwarding house and other various services for the community. In 1859, a fire broke out in a restaurant which occupied one of the rooms. All of the wooden structure was destroyed and never restored (HCHS 007: 001).

The 1968 reconstruction of the Long Row building in Sam Houston Park originally served as offices for the Harris County Heritage Society. In 1975, the offices were moved across the street to the Fire Alarm building annex (Figure 6), and the Long Row building became the Heritage Society's gift shop and tea room. Parking lots were located on either side of the Long Row until 1977, when the parking lot on the Lamar Street side of the building was grassed over (Figure 28; Houston Chronicle 1977).

## Chapter 4

### ARCHAEOLOGICAL BACKGROUND AND METHODOLOGY

by  
Ann Viereck

Excavation by students of the Rice University Archaeological Field Methods course began in Sam Houston Park in 1982. The following chapters discuss the results of the third season of archaeological investigations at Sam Houston Park.

Although 1984 was the third year of excavation at Sam Houston Park, it was the first season of a proposed ten-year project of historical and archaeological research in the park area. Preliminary excavations in 1982 and 1983 were intended to determine the nature of the archaeological deposits and to lay the foundations for future research in the park. The ten-year project, based in part on findings from these excavations, is a program of sampling and excavation designed eventually to cover the entire park. For purposes of this research the 20.7 acre park site has been divided into five major research areas (Figure 29). The northernmost area of the park, the Main Park area, is the site of the nineteenth century Episcopal and Masonic cemeteries and the lakes and other landscape features created from borrow pits associated with Nathaniel Kellum's brick factory. The southernmost area, the Kellum Noble area, is the site of the 1847 Kellum Noble House, which still stands on its original site (Figure 6).

The middle part of the park has been subdivided into three areas: the Cherry House area, presently containing the Nichols-Rice-Cherry House but originally part of the Kellum residential complex; the Rose Garden area, which contained the Smith Hospital in the early nineteenth century, the Byers House in the late nineteenth century, and the ornamental gardens and lily ponds of the early twentieth century park; and the Long Row area, which contained numerous residences and boarding houses from the 1840's until the construction of the Bagby Street parking lot in 1952.

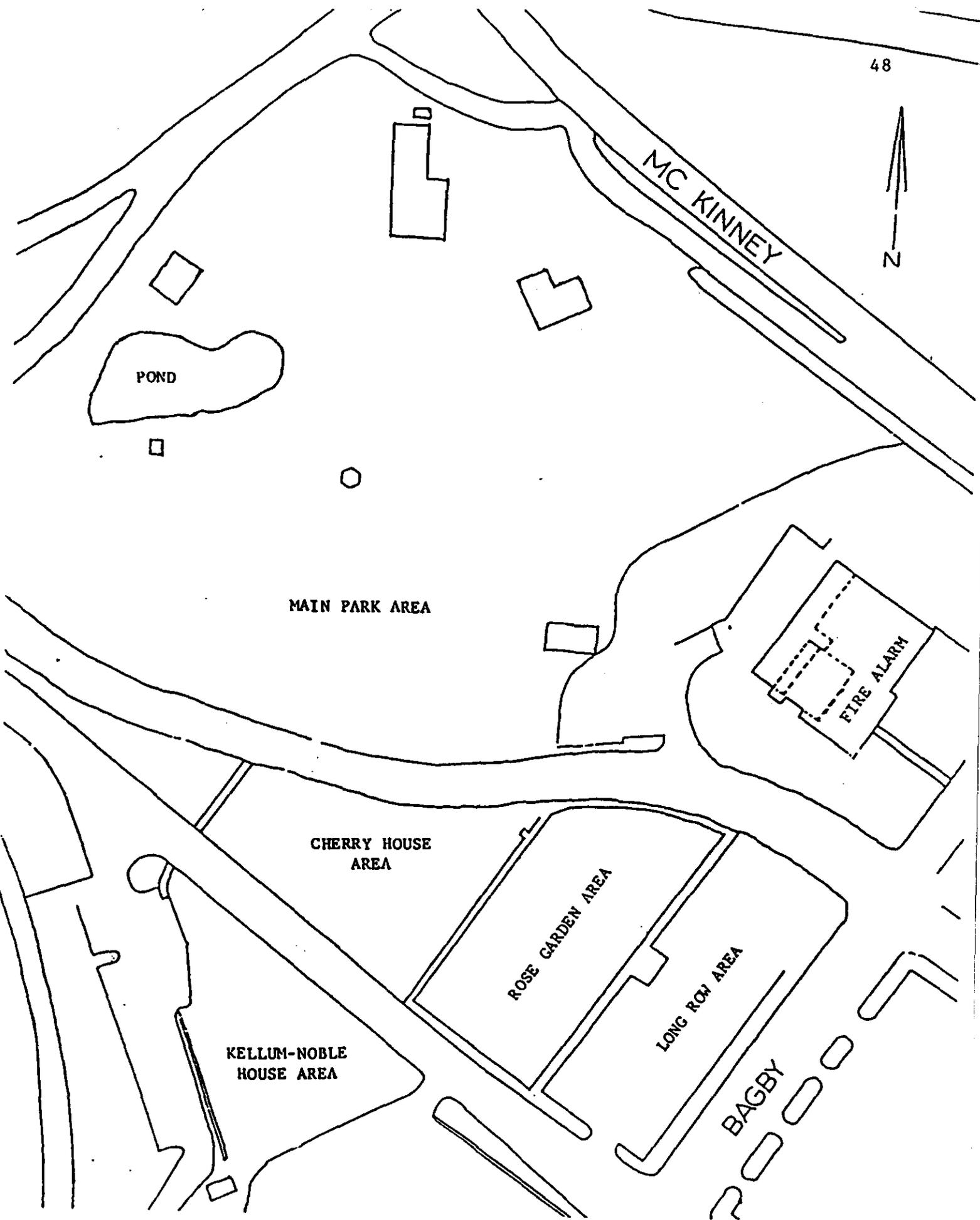


Figure 29. Research areas in the Sam Houston Park project.

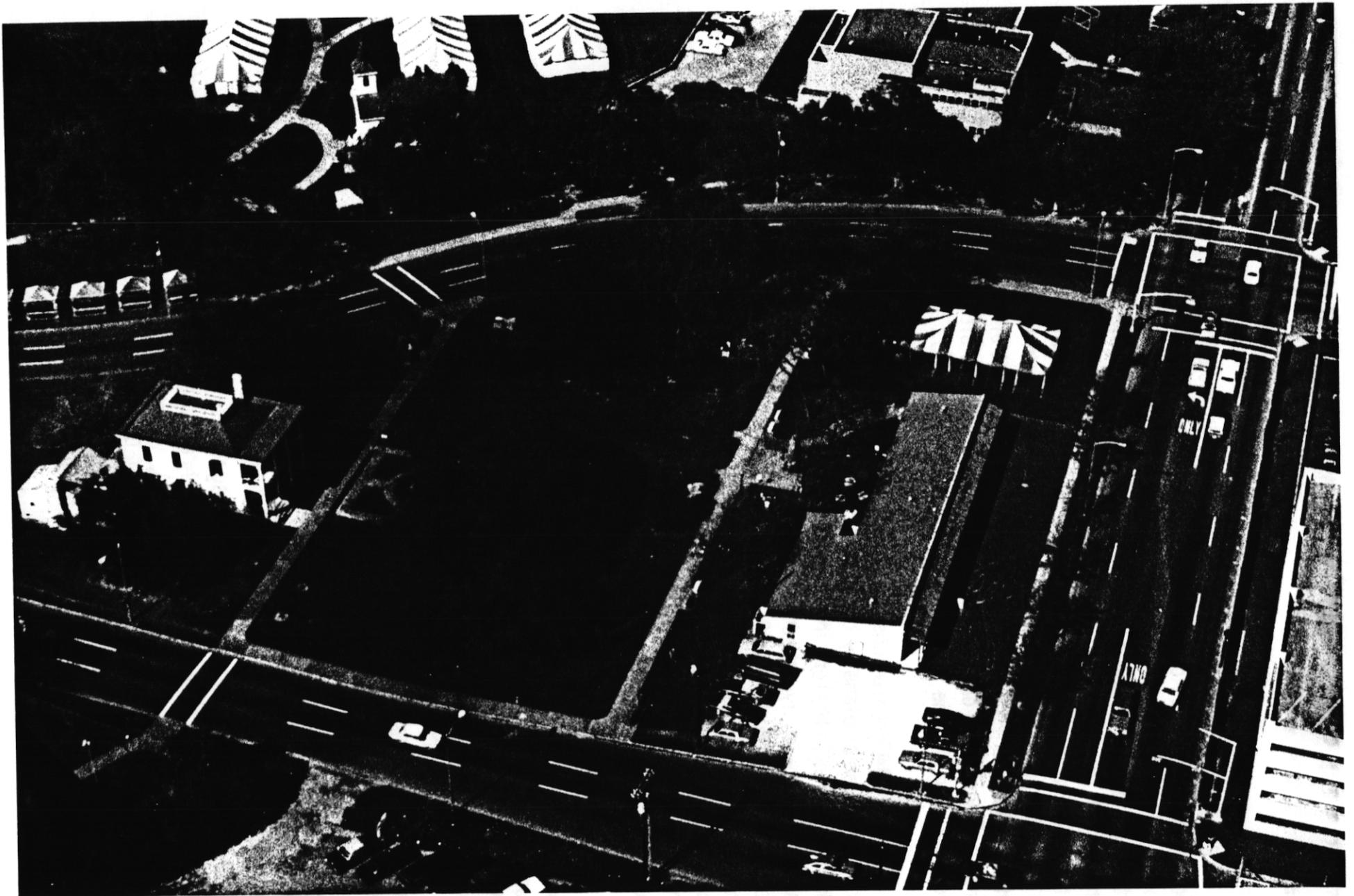


Figure 30. Cherry House, Rose Garden, and Long Row areas as viewed from the south, with Long Row building and parking lot at far right.

Excavations are presently concentrated in the Long Row area and the northern part of the Rose Garden area, although they will eventually be extended to all five of the research areas. Figure 30 shows an aerial view of the Long Row/Rose Garden part of the park. In the far left of the photograph is the Cherry House area (not excavated in the 1984 season). The Rose Garden area, presently containing only a small formal rose garden (Figure 31), occupies the area east of the sidewalk in front of the Nichols-Rice-Cherry House. The Long Row area, east of the Rose Garden area and bordering on Bagby Street, is presently the site of the 1968 Long Row building and the World War I memorial (Figures 32 and 33).

The 1984 excavations were focused on the Long Row and Rose Garden areas because of plans by the Harris County Heritage Society to build a Museum of Texas History in this section of the park. Construction of the museum is presently scheduled to begin in late 1986 or 1987, with opening tentatively slated for 1990. Because of the historical and archaeological importance of this section of the park, which appears to have been the most intensively occupied part of the park area, excavations will continue in the Long Row/Rose Garden area until construction of the museum building begins.

Archaeological research preceding the 1984 excavations consisted of two seasons of test excavation in the Kellum Noble area and a preliminary survey of the northern part of the Long Row area. Excavations began in 1982 with two 3x3 meter test units on the grounds of the Kellum Noble House. Excavation of these units in 1982 and 1983 established a well-defined stratigraphic sequence dating back to the construction and initial occupation of the Kellum House. The southwestern unit (KN-W) was excavated to sterile soil at a depth of 0.46 meter. This unit contained 12 natural levels corresponding to five major periods in the history of the house. These periods are: the early nineteenth century construction of the house; the late nineteenth century domestic occupation; the early twentieth century park occupation; the mid twentieth century restoration of the house by the Harris County Heritage Society; and the late twentieth century park occupation. The three latest phases were also identified in the southeastern unit (KN-S), which was closed at a depth of 0.23 meter without striking sterile soil (McIntosh, ed., 1982; McIntosh

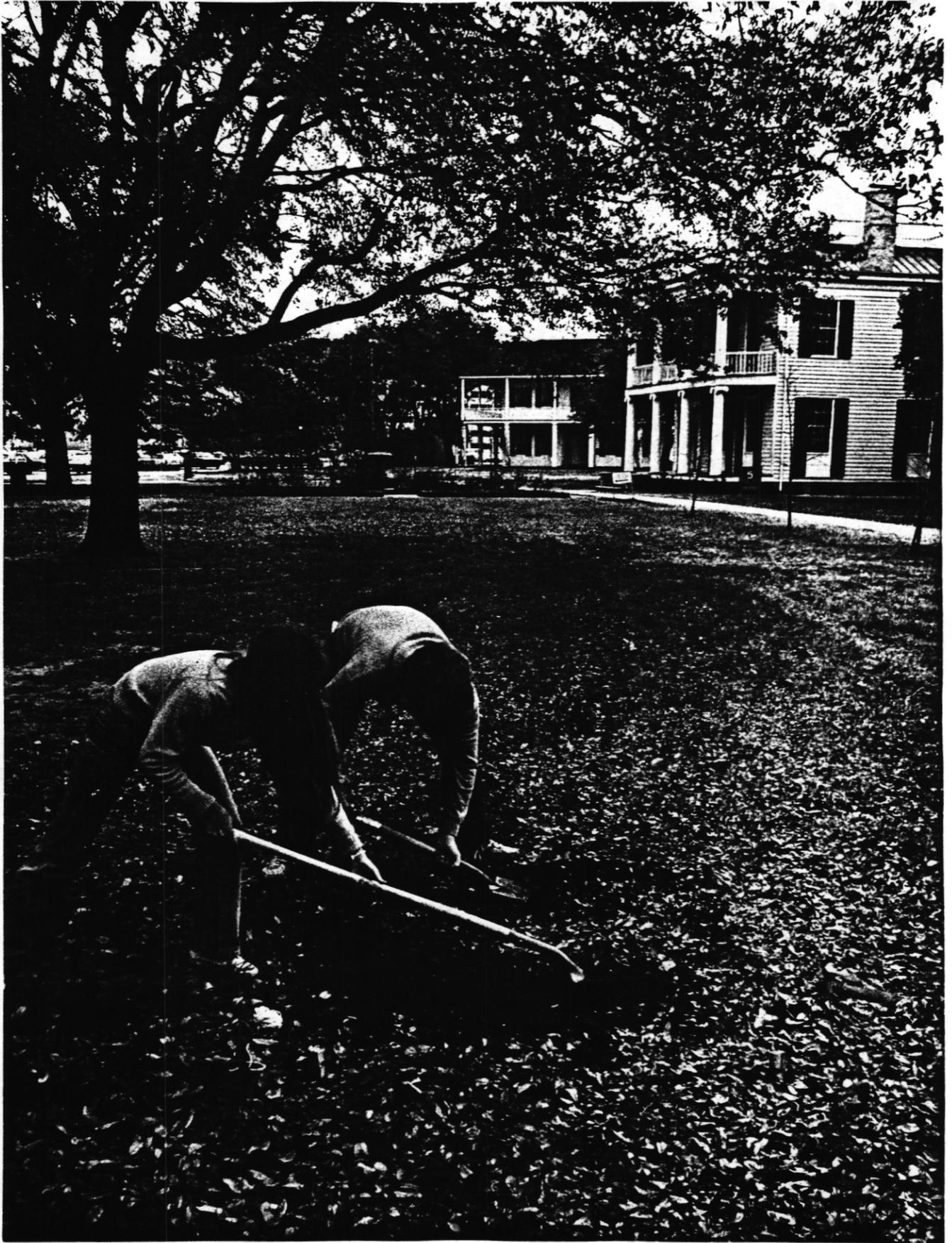


Figure 31. Removing sod from unit 6N 57W in the Rose Garden area. In the background can be seen the rose garden, the Kellum-Noble House, and the Nichols-Rice-Cherry House.



Figure 32. World War I memorial and eastern face of the Long Row building, as seen from the area of unit 4N 38W.



Figure 33. The Long Row building viewed from the north.

and Moore, eds., 1983).

The Kellum-Noble House has been placed on the National Register of Historic Places (Register No. PH0038938). It has also been registered as state archaeological site 41HR425. Excavations are conducted in compliance with Section 191.092 of the Antiquities Code of Texas; the site should be considered by the Texas Antiquities Committee for status as a State Archaeological Landmark.

In addition to the Kellum Noble excavations, a preliminary archaeological survey of the Long Row area was conducted in 1983 (McIntosh and Moore, eds., 1983). This survey, undertaken in anticipation of the removal of excavations to this area, was intended to define areas best suited for excavation in 1984 and succeeding seasons. A random stratified sample of seven 50 cm test squares was excavated in a 1050 square meter area to the north of the Long Row building (Figure 34). For this sample, the survey area was gridded into 42 5-meter square strata, seven of which were selected for investigation using a table of random numbers. Test squares were placed at the northeast corners of the selected strata. All units were excavated in arbitrary 20 cm levels to an average depth of 50-60 cm. All soil was screened through 1/4 inch hardware mesh for 100 per cent artifact retrieval, and artifact findings were compared across the site.

The survey uncovered several apparent archaeological trends which aided the placement of units in the 1984 season. The four units located in the western part of the survey area, to the northwest of the Long Row building, yielded abundant late nineteenth and twentieth century domestic refuse, an indication that this part of the site was in the back yards of the historic buildings known to have been located here. The three units in the eastern part of the survey area contained little cultural debris other than shell from the 1952-1977 parking lot, suggesting that this area may have been beneath any buildings located here and could be expected to yield little of archaeological significance. Because of these findings, excavations in the 1984 season were focused on areas west and northwest of the Long Row building. One unit, 10N23W, was placed on the site of the 1983 Test Pit B, near a cobbled walkway and a brick building foundation

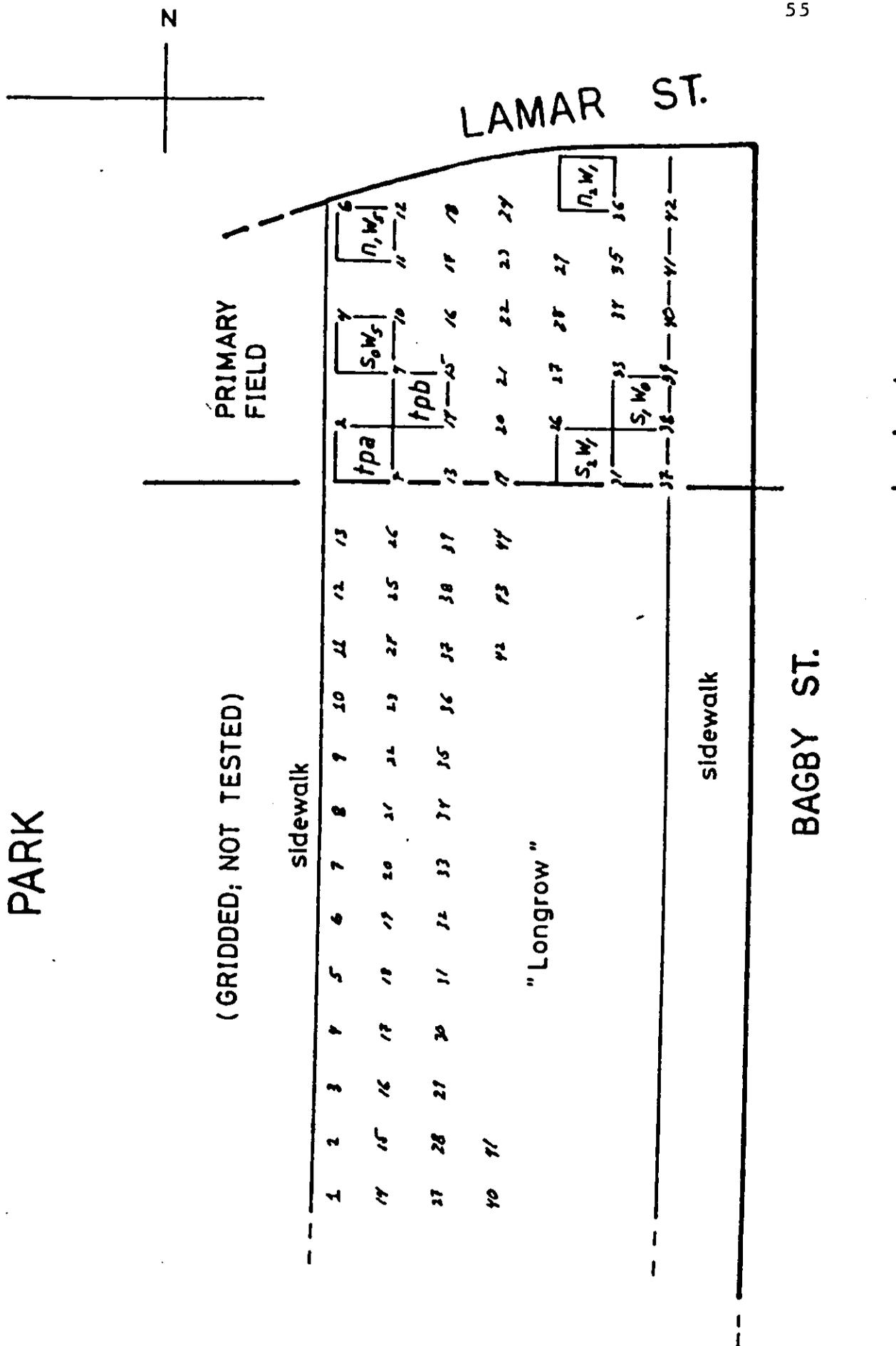


Figure 34. Location of test units in the 1983 Long Row survey.

unearthed in the 1983 survey (McIntosh and Moore, eds. 1983).

The 1984 excavation of the Long Row/Rose Garden area was conducted from February 8 to March 21. Fieldwork during this period consisted of six Wednesday afternoon sessions and two Saturday sessions. Excavations were conducted as a stratified sample of an L-shaped area covering 1575 square meters in the western Long Row area and the northern Rose Garden area (Figure 35). The stratified sample was used in order to gain the largest possible amount of archaeological information over the broadest possible area and as a means of determining the most suitable areas for expanded excavations in coming seasons. All units were laid out according to the 5-meter grid system established for the 1983 survey, with each unit designated by the grid coordinates of its northeast corner. For the 1984 excavations, the grid was divided into seven 15-meter strata, each containing one sample unit. To simplify the surveying process and coordinate the orientation of the excavation units with that of the historical buildings, the grid system in both the 1983 and 1984 seasons was based on a false north aligned with the streets and sidewalks rather than along true north-south east-west axes. "North" for this grid system is therefore actually northeast rather than magnetic north. All directional references in this report refer to these designated orientations rather than to true cardinal directions. Figure 36 shows the orientation of the 15-meter grid system and the placement of the archaeological units.

As indicated by the topographic map of the area (Figure 2), the entire Long Row/Rose Garden area is extremely flat, suggesting that it has been bulldozed or otherwise landscaped in recent times. Because of this, placement of excavation units within the 15-meter confines of each stratum could not be guided by the appearance of surface features or obvious geological variation. Wherever possible, units were placed according to available historical data and information from the 1983 survey. Different conditions in the Rose Garden and Long Row areas, however, necessitated different criteria for placement of excavation units in the two parts of the site. Most of the Long Row area is occupied by the Long Row building and adjacent parking lot, the sidewalk bordering the building, and the World War I monument (Figure 30). In this area, therefore, excavation units were judgmentally placed to avoid

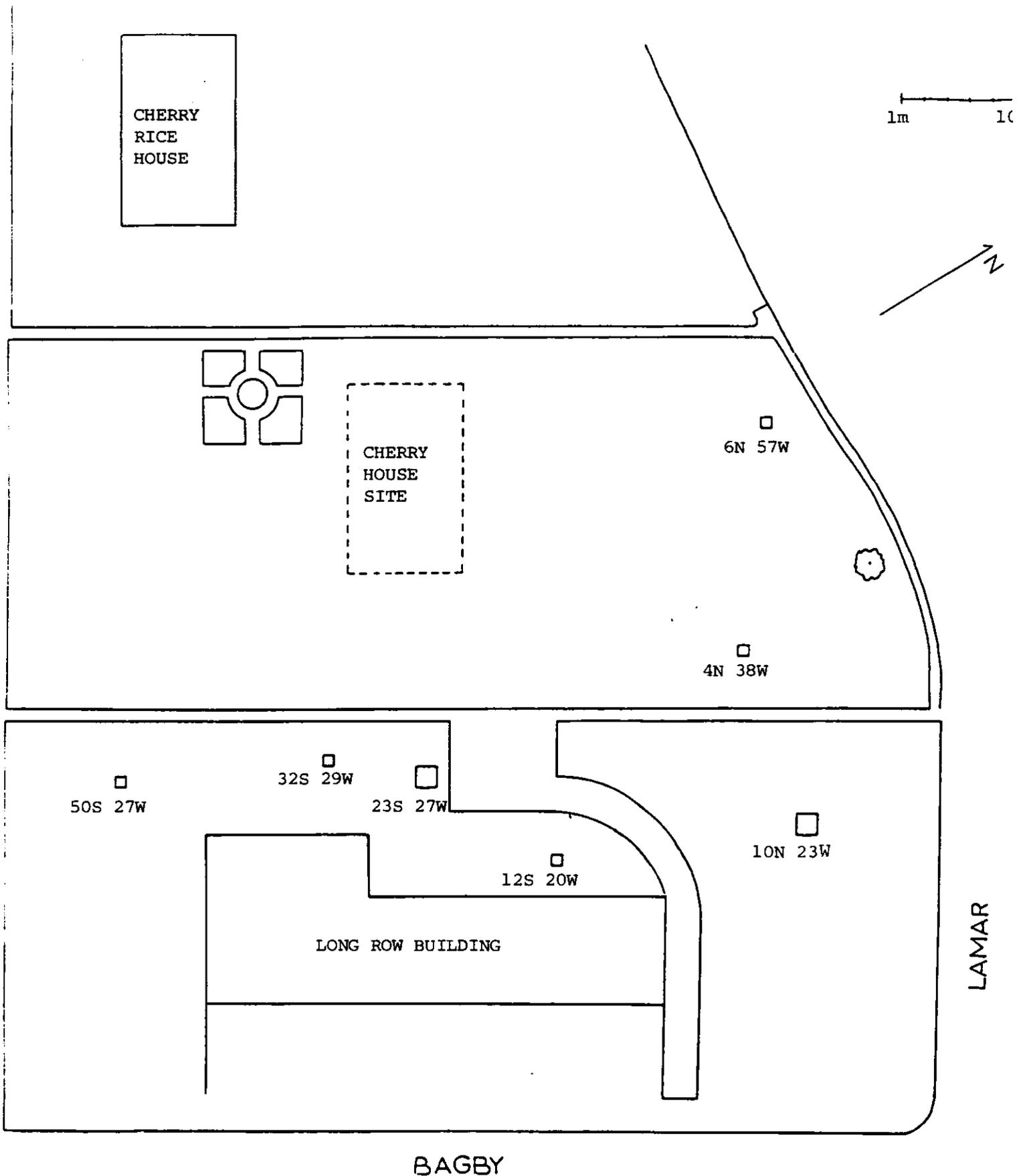


Figure 35. Location of sample units in the 1984 Long Row/Rose Garden excavations.

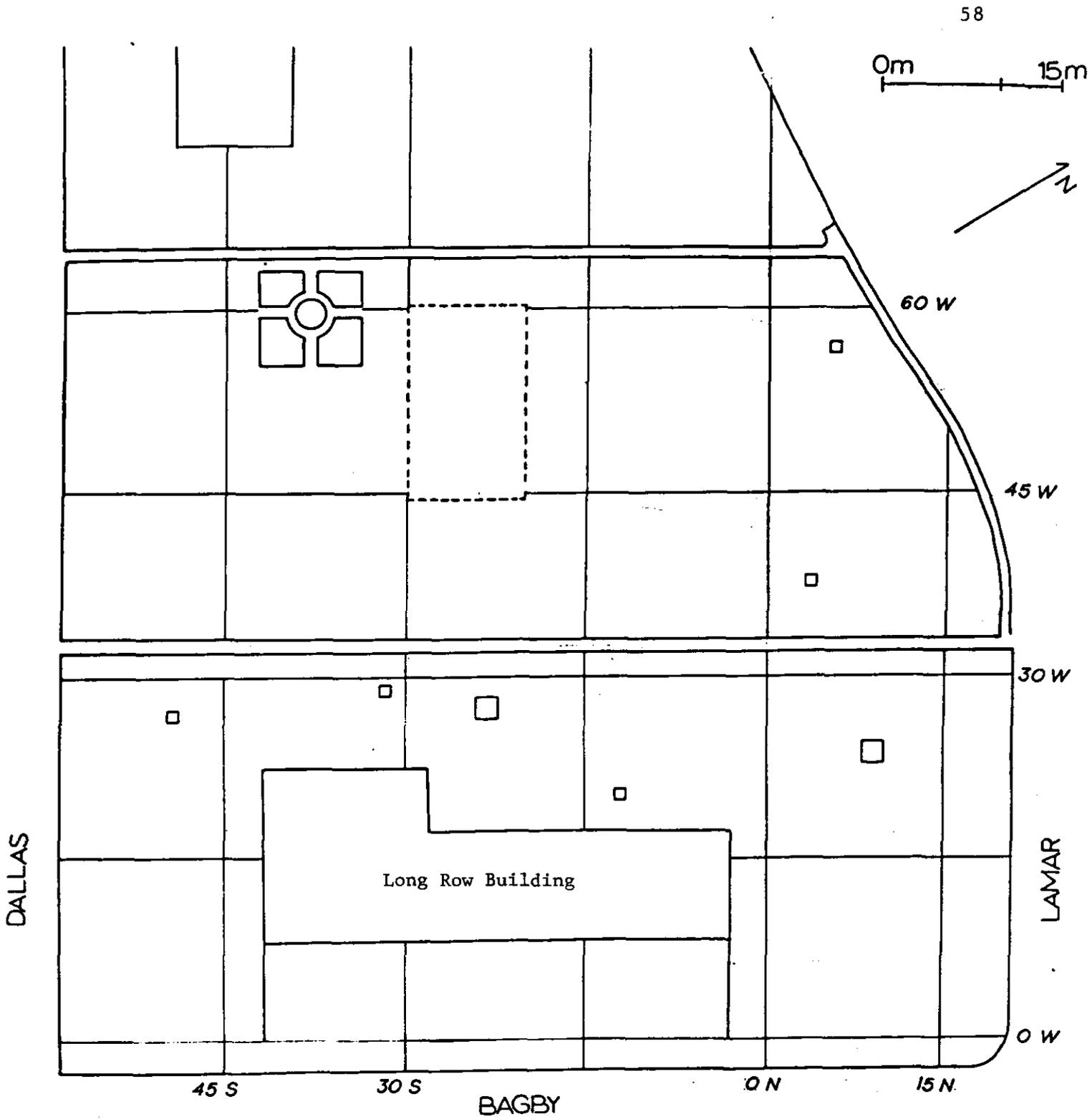


Figure 36. Map of excavation area, showing placement of sample units within the 15-meter grid system.

architectural and other obstacles (which included trees, sidewalks, and a large sump in the southern part of the site) and to correspond to favorable locations suggested by the 1983 survey and by historical maps. All five units in this part of the site were placed several meters west of the Long Row building, in an area which the 1983 survey had indicated would be archaeologically productive and which the 1907 and 1924 Sanborn maps indicated would be just to the rear of known historical buildings. These were units 10N23W, 12S20W, 23S27W, 32S29W, and 50S27W.

The Rose Garden area contains only trees, walkways, and a small rose garden in its southern (unexcavated) sector. Because there were no major geographical obstacles and because little precise historical information was then available for this section of the park, units in this part of the site were randomly placed by selecting coordinate numbers from a table of random numbers. The two units in the Rose Garden area were 4N38W and 6N57W.

These seven units provided a .83 per cent sample of the gridded area, although the percentage of the accessible area sampled was actually much higher since much of the site is covered by the Long Row building. Two sizes of excavation units were used. Two of the units (10N23W and 23S27W) were excavated as 2x2 meter units, to provide a more detailed view of horizontal strata of the area than 1x1 meter units would. The remaining five units were laid out as 1 meter squares, in order to permit sampling of the broadest possible area in the available time. Since the 1983 survey had shown that 50 cm squares were too small for the depth of the archaeological deposits, 1 meter squares were considered the smallest feasible excavation units for this site.

All units were excavated by natural stratigraphic levels. All units were double-strung using a system of eight stakes which permits definition of the unit perimeter by strings alone, with stakes placed 10 or more centimeters from the unit wall (Figure 37). Shovels were used in the smaller units and trowels in the larger units, although features and complex strata were trowel-excavated in all seven excavation squares. All soil was screened through 1/4 inch hardware mesh and all artifacts were kept. Artifacts were bagged and removed to the Rice University



Figure 37. Southwest corner of unit 10N 23W, showing the double series of strings used to delineate the excavation units.

Archaeology Laboratory for analysis at the end of each working day. At the end of the excavation season the units were lined with plastic cloth and backfilled so they could easily be reopened for the 1985 field season. Only one excavation unit, unit 4N38W, was excavated to sterile soil.

Soils were described using the Ahn texture test and the Munsell color values described in Chapter 1. A new level was declared as soon as a difference in soil color, consistency, or artifacts appeared, or if a feature was encountered. Vertical and horizontal measurements were taken at the beginning and end of each level and at the beginning and end of each excavation day. All measurements were taken to the nearest half centimeter using a point of origin established in the northeast corner of each unit. Appendix 2a gives the elevation of the points of origin in relation to a temporary bench mark established in the center of the Long Row/Rose Garden site. Measurements, pedological and stratigraphic information and other pertinent data were recorded on Level Record Forms (LRFs), which were kept as a permanent record of excavation data. This information, compiled by archaeological level, appears in Appendix 2b. A new LRF was filled out for each unit on every new day of excavation and whenever a stratum change occurred. Artifacts from each level were bagged and catalogued according to both LRF number and archaeological level. Appendix 1 gives a correlation of excavated strata with Level Record Form numbers. All excavation records and artifacts from the 1984 excavations are presently stored at the Rice University Archaeology Laboratory.

The following chapters discuss the stratigraphy and artifact analysis for all seven of the 1984 excavation units. Analysis of artifacts and field data took place from March 21 to May 4, 1984. Each artifact class was analysed by a separate investigator, who conducted cross-unit analyses based on artifact quantity and typological variation. The stratigraphic and artifact analyses are discussed in Chapters 5 through 12. Chapter 13 reviews the archaeological findings in light of historical evidence for the Long Row/Rose Garden area, and gives an overall interpretation of the site. Complete catalogues of all artifact classes are given in Appendices 3 through 9.

## Chapter 5

### STRATIGRAPHY

by

Ann Viereck, Aniko Kiraly, and Howard Shapiro

This chapter discusses the stratigraphic sequences for each unit excavated in the 1984 project. The strata across the site were relatively straightforward in nature, and corresponded fairly closely to each other.

Work in these units was determined by soil texture and consistency, and by features. Features were generally excavated as soon as they appeared. All but one, feature 1 of unit 10N23W, were given level numbers rather than separate feature designations. Because of the variation in the number and complexity of features, work proceeded more quickly in some units than in others. For this reason, some units contain more stratigraphic levels than others. Only one unit, 4N38W, was excavated to sterile soil. Other units reached the level of either late nineteenth or twentieth century deposits.

Level profiles and section drawings for each unit are presented with the unit descriptions. The profile drawings show the levels as excavated, while the sections depict the stratigraphy as seen in the unit walls after excavation. All top and bottom elevations for each level, the Ahn and Munsell values, and locations of each level and feature within the unit can be found in Appendix 2b. Section drawings were done for all units except 50S27W, because this unit was backfilled before accurate section drawings could be done. All vertical measurements were taken from an arbitrary point of origin established in the northeastern corner of each unit. In a short field survey, the point of origin of each unit was shot in on a temporary bench mark. This temporary bench mark (TBM) is a small aluminum plaque set into the cement walk between the park benches north of the World War I monument. Appendix 2a contains the elevations for each point of origin. The TBM will be shot in next year on a permanent bench mark whose location has not yet been determined.

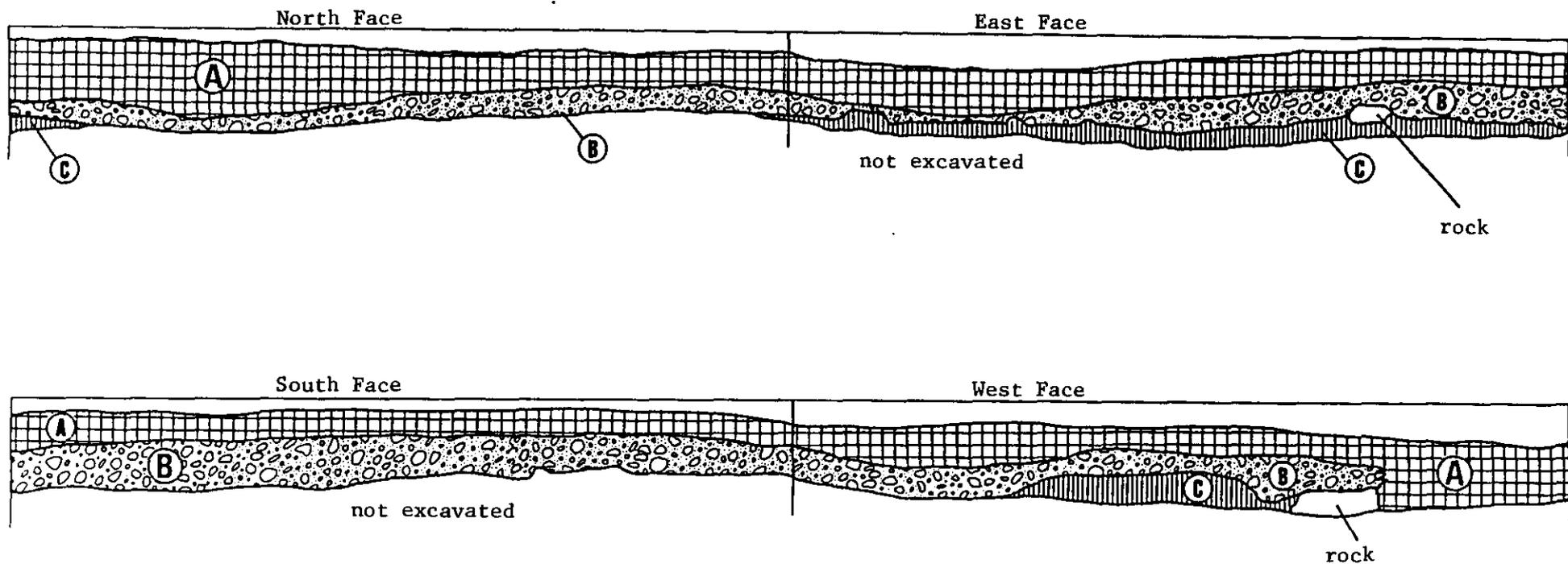
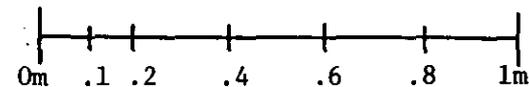
### Excavation unit 10N23W

Excavation in this 2 meter unit began this year as a result of findings of the 1983 survey of the northern Long Row area (McIntosh and Moore, eds. 1983: 79). The survey found that the area of the 1983 TPB unit, which lies in the south wall of 10N23W (Figure 40), contained large amounts of building rubble and household debris, as well as what appeared to be the remains of a shell parking lot. The 10N23W unit was 9.85 meters from the sidewalk which runs the length of the Long Row area (parallel to Bagby Street) and 15.5 meters south of Lamar Street (Figure 35). Three levels were dug in this unit. Level 1 contained large quantities of shell fragments from the parking lot, and levels 2 and 3 were characterized by dump and demolition rubble. One feature, perhaps a test core for a telephone pole, appeared at the surface of level 2. Except for the soil in this feature, which was a coarse sand, the soil deposits throughout the unit were a loamy sand. The unit was an average of 0.23 meter deep, except for the feature which was excavated to a depth of 0.98 meter. The stratigraphic section and profile for this unit are shown in Figures 38 and 39, and a plan of the unit after excavation appears in Figure 40.

#### Level 1

This level covered the entire unit and was excavated to an average of 0.12 meter below the point of origin. The soil was a loamy sand, gray brown in color, with some clay intrusions. There were several small root intrusions and one large root (0.85 meter in length) running southwest to northeast through the western part of the unit. This root extended through all three excavated levels (Figure 40). Some ceramic, glass, and metal artifacts, including pull tabs, a penny, and aluminum foil, were found in this level, in addition to many plastic artifacts which correlated with similar artifacts in level 2. This unit contained little building material, but did contain extremely high concentrations of compacted oyster shell. The presence of such a large quantity of shell indicated that this level was part of the shell parking lot located in this area from 1952 through 1977.

Unit 10N 23W



- |    |            |            |                               |
|----|------------|------------|-------------------------------|
| A. | Sandy loam | 10 yr. 3/2 | very dark grey brown          |
| B. | Loamy sand | 10 yr. 3/1 | very dark grey                |
| C. | Loamy sand | 10 yr. 3/2 | very dark grey brown w/gravel |

Figure 38. Section of Unit 10N 23W.

Unit 10N 23W

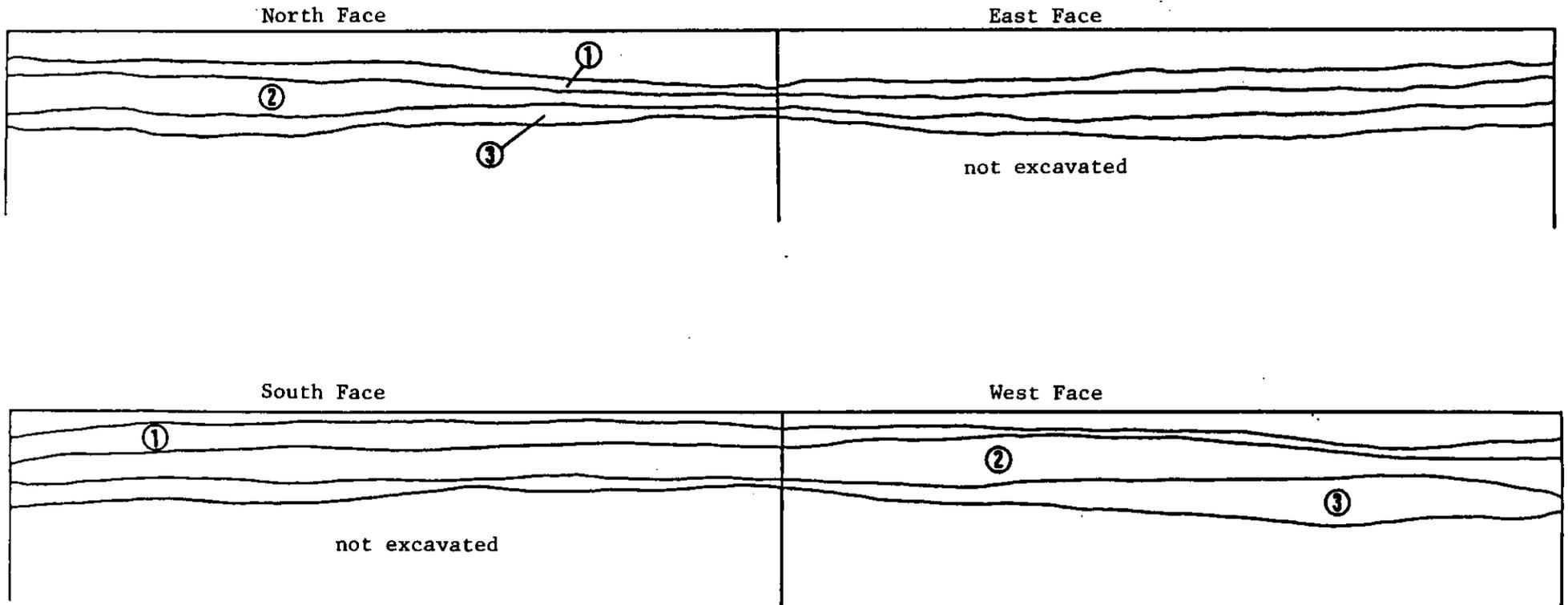
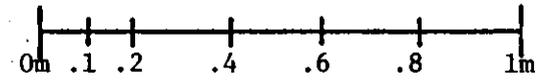
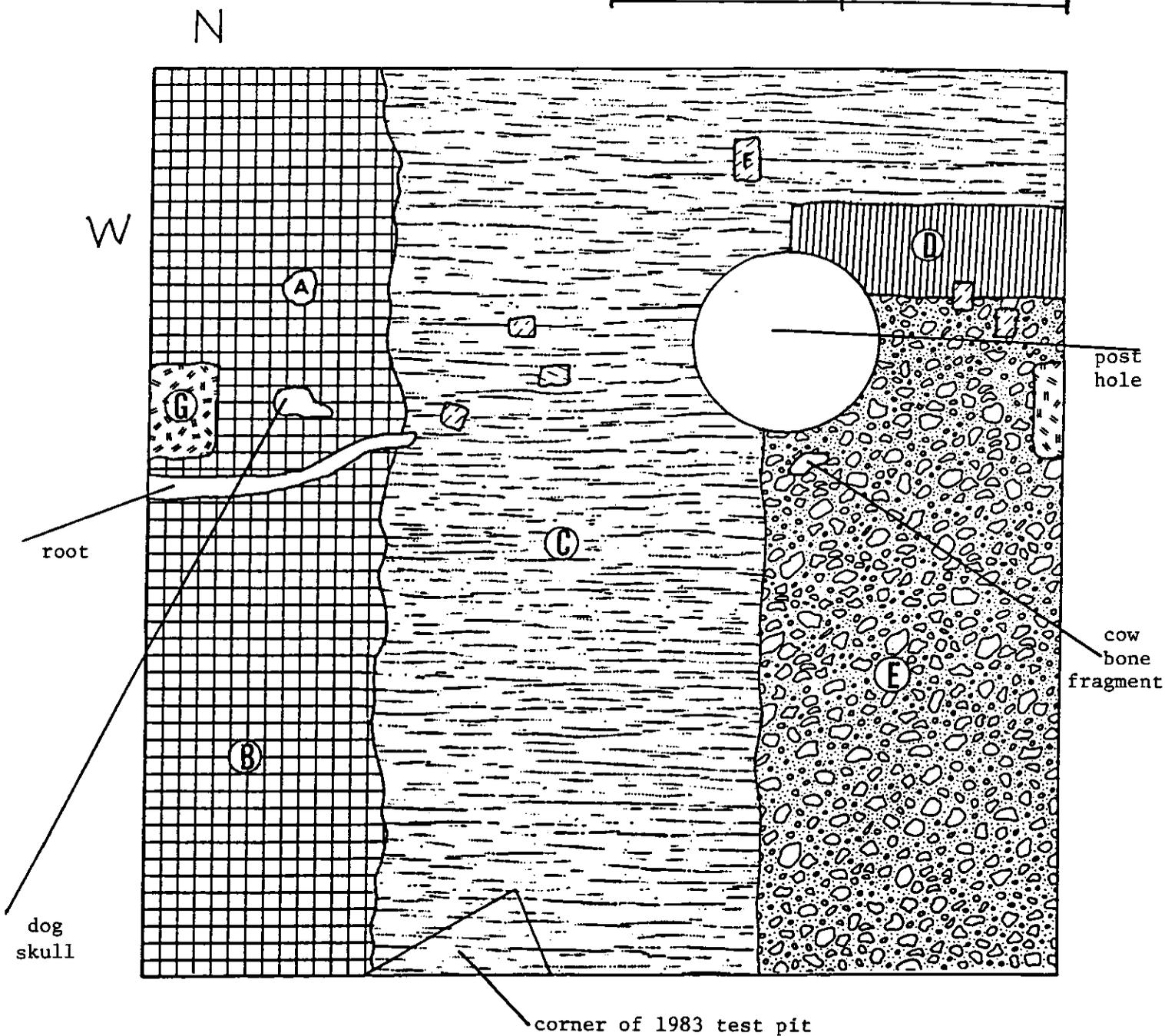


Figure 39. Level Profile of Unit 10N 23W.



- A. yellowish clay
- B. light brown sandy loam
- C. red clay
- D. reddish sand
- E. light sandy loam with mortar fragments
- F. brick fragments
- G. mortar fragments

Figure 40

Plan Drawing, Floor of Level 3, Unit 10N 23W

### Feature 1

Feature 1 first appeared at the bottom of level 1. This feature was a perfectly round 14-inch (0.35 meter) diameter hole cutting more than 0.98 meter into the ground. The feature was located in the northeastern part of the unit approximately 0.42 meter from the east wall, and 0.63 meter from the north wall (Figures 40 and 41). Possibly, this feature was a test core for a telephone pole, made by using a mechanical soil auger. No indication was found that it had ever contained a post. The exact depth of Feature 1 is unknown, since it was excavated to a depth of 0.98 meter without finding the bottom (Figure 42). The feature had an ashy fill containing a few granite, glass, and metal artifacts in the top 20 cm, with the remaining depth filled with clean, dark gray brown beach sand containing many small shell fragments.

### Level 2

Level 2 of this unit extended to an average depth of 0.20 meter below datum. This level also covered the entire unit. The soil was uniformly sandy loam and contained sparse clay inclusions like level 1, but was very dark gray in color. Shell quantities were slightly less than level 1, but otherwise this level had the highest artifact count on the site. There was clearly a functional difference between levels 1 and 2. The largest amounts of glass, including window glass, ceramic, and metal artifacts of all kinds, both wire and machine cut nails, were found in this level. Moderate amounts of faunal material and large quantities of coal were also found, in addition to more than 10 kilograms of brick and mortar. This building material weight was much higher than that of level 1, but it was considerably less than that of level 3. The main function of this level appears to have been as a dump.

### Level 3

Level 3 was excavated an average depth of 0.23 meter across the entire unit. The soil, a grayish brown sandy loam, was identical in

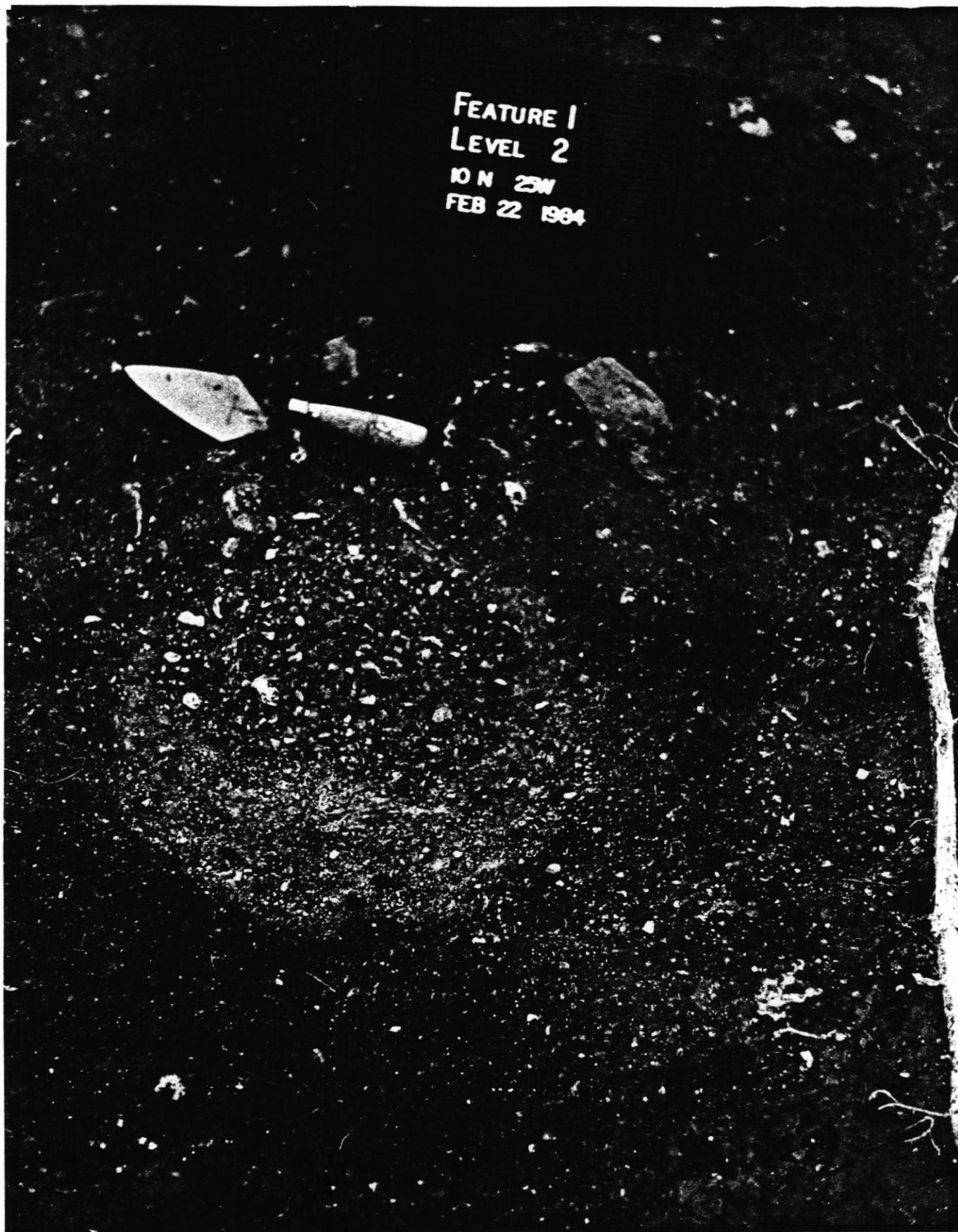


Figure 41. Feature 1 before excavation.

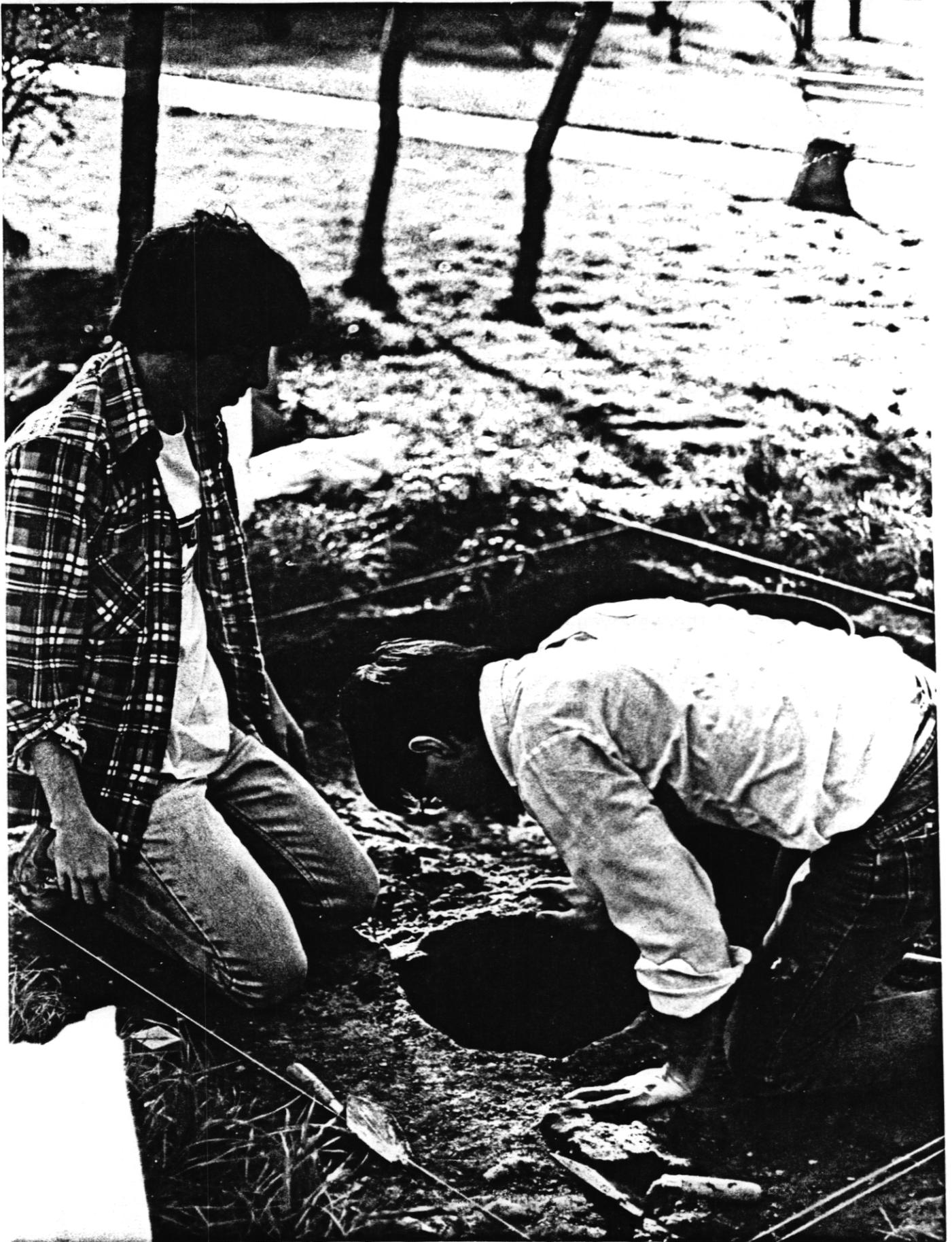


Figure 42. Feature 1 after excavation.

consistency to levels 1 and 2, but contained large patches of reddish clay (Figure 40). The amount of machine cut nails, wire nails, and ceramics compared closely to level 2, although metal artifacts decreased in general and the quantity of both bottle glass and window glass dropped considerably. Faunal artifacts showed a marked decrease when compared to level 2. Quantities of shell also decreased from level 2, while coal quantity differed only slightly. However, this level was differentiated from levels 1 and 2 on the basis of its enormous quantities of building material. Mortar with brick fragments was interspersed throughout the level, and in places the soil matrix was dominated by nearly solid mortar. The profusion of building material and nails indicated that this level was probably a demolition level.

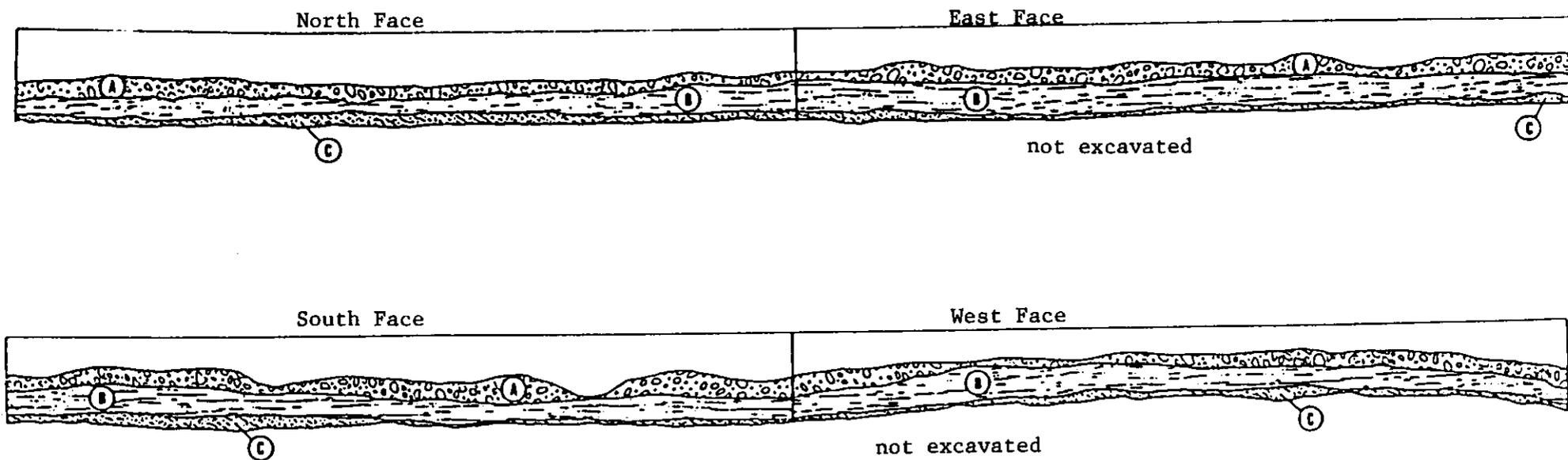
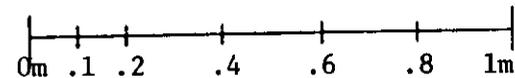
#### Excavation unit 23S27W

The second of the 2 meter units excavated this season was 23S27W. This unit was 9.5 meters west of the Long Row building, 1.6 meters south of the concrete walkway surrounding the World War I monument, and 6.1 meters east of the walkway running the length of the Long Row building (Figure 35). Unit 23S27W contained two stratigraphic layers which covered the entire unit, and three separate levels within a circular feature in the center of the unit (Figure 45). Most of the artifacts found in this unit were faunal material (primarily in levels 3 and 5) and building rubble, mostly mortar and brick in both fragments and large chunks. The greatest quantity of these artifacts was found in the circular feature. The soil matrix varied in this unit, starting with a loamy sand, but becoming more clayey in subsequent levels. The soil colors also varied: upper levels were dominated by very dark brown and very dark gray brown, but the pit feature contained levels of reddish and yellowish clay. The unit overall was an average of 0.22 meter deep, and the feature was excavated to a depth of 0.62 meter. Stratigraphic sections of this unit are shown in Figures 43 and 44, and plans and stratigraphy of the pit feature appear in Figures 45-47.

#### Level 1

Level 1 extended across the entire unit and was excavated to an

Unit 23S 27W



- A. loamy sand 10 yr. 2/2 very dark brown
- B. light clay 10 yr. 4/2 dark greyish brown
- C. heavy loam

Figure 43. Section of Unit 23S 27W

Unit 23S 27W

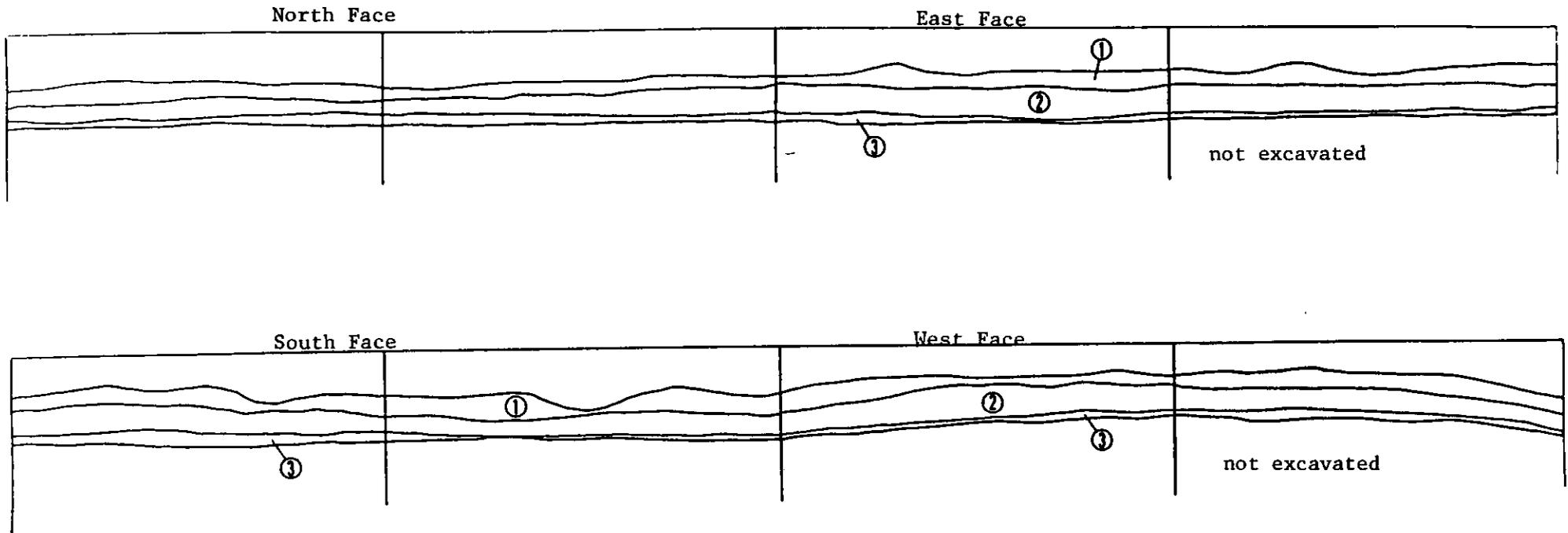
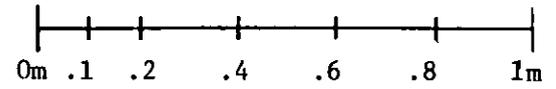


Figure 44. Level Profile of Unit 23S 27W

average depth of 0.15 meter below the point of origin. The soil was a very dark brown loamy sand. A small contraction of brick fragments was found along the north and west balks. Relatively high quantities of ceramics were found, consisting mainly of tableware and flowerpot fragments. A moderate quantity of nails, mostly wire nails, was found in this level, similar to the amounts found in other units in this general area of the site. Moderate quantities of glass fragments were also recovered, along with small amounts of bone. The amount of shell, probably from the parking lot, was substantial. Several miscellaneous artifacts, mainly plastics, were also uncovered in this level.

### Level 2

Except for some minor differences in artifact counts, level 2 was very similar to level 1. The level covered the entire unit and was excavated to an average depth of 0.22 meter. The soil was dark grayish brown in color and a sandy loam in texture. A few areas near the north and west walls contained concentrations of hard packed clay. Level 2 contained much more clay than level 1. The quantity of ceramic material was much lower than in level 1, and consisted entirely of tableware fragments. Nail quantities, consisting mostly of wire nails, were substantially higher than level 1. Glass quantity and type was about the same as in level 1, while faunal artifacts showed a marked decrease. Small amounts of building materials as well as shell and coal were also uncovered. Shell quantities were much lower than in level 1.

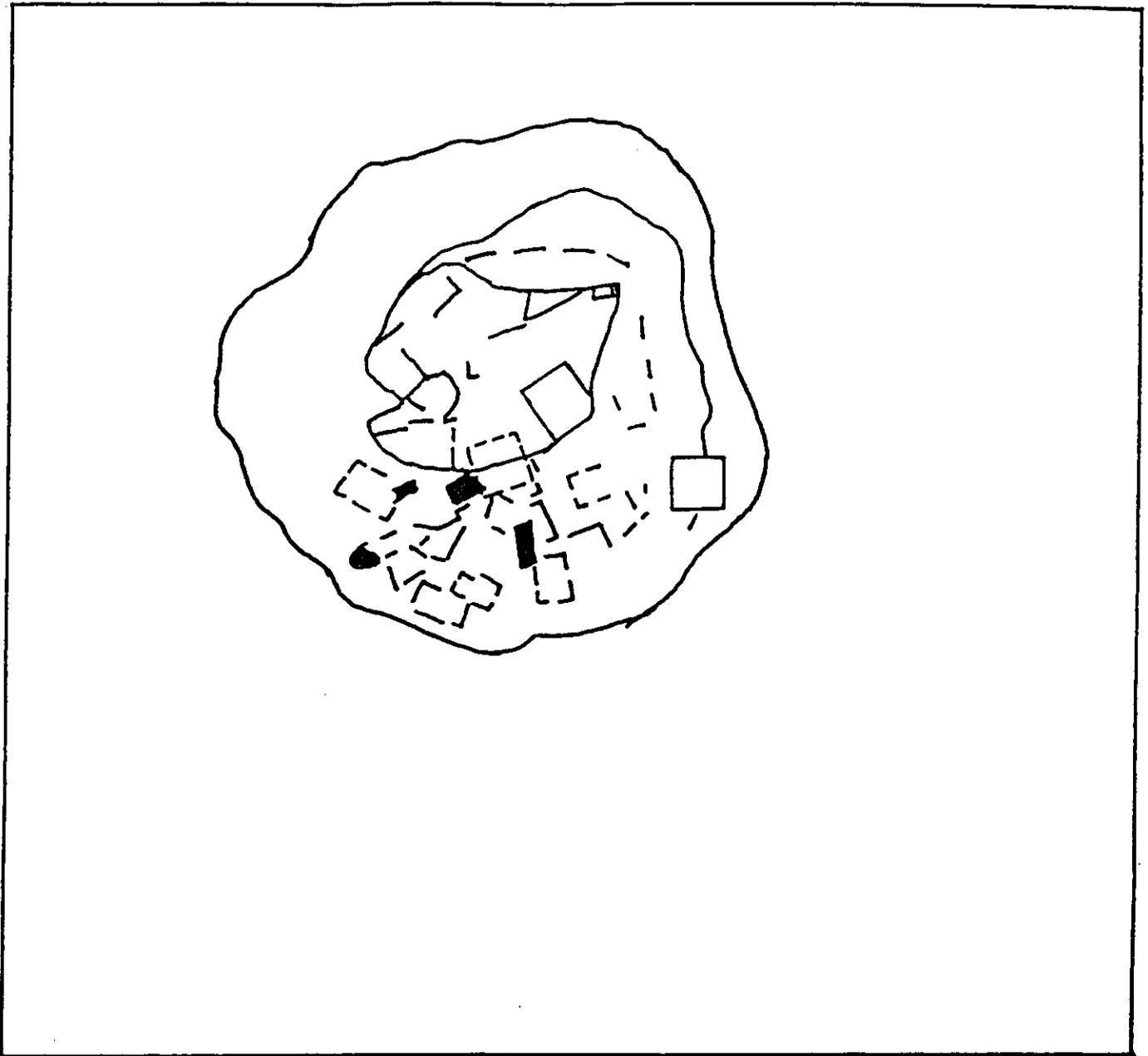
### Level 3

Level 3 of this unit was the top level of an irregular circular feature located approximately in the center of the unit and measuring approximately 0.9 meter in diameter (Figure 45). This feature underlay level 1 and was cut into level 2, making it intermediate in age or possibly contemporary with level 1. Level 3 was underlain by two other stratigraphic levels designated part of the same feature. Stratigraphy of the three levels of the feature, and horizontal measurements after excavation are shown in Figure 46 and 47.

N



W



E

S

Figure 45. Plan of Pit Feature, Unit 23S 27W, Showing Position of Bricks in Level 3

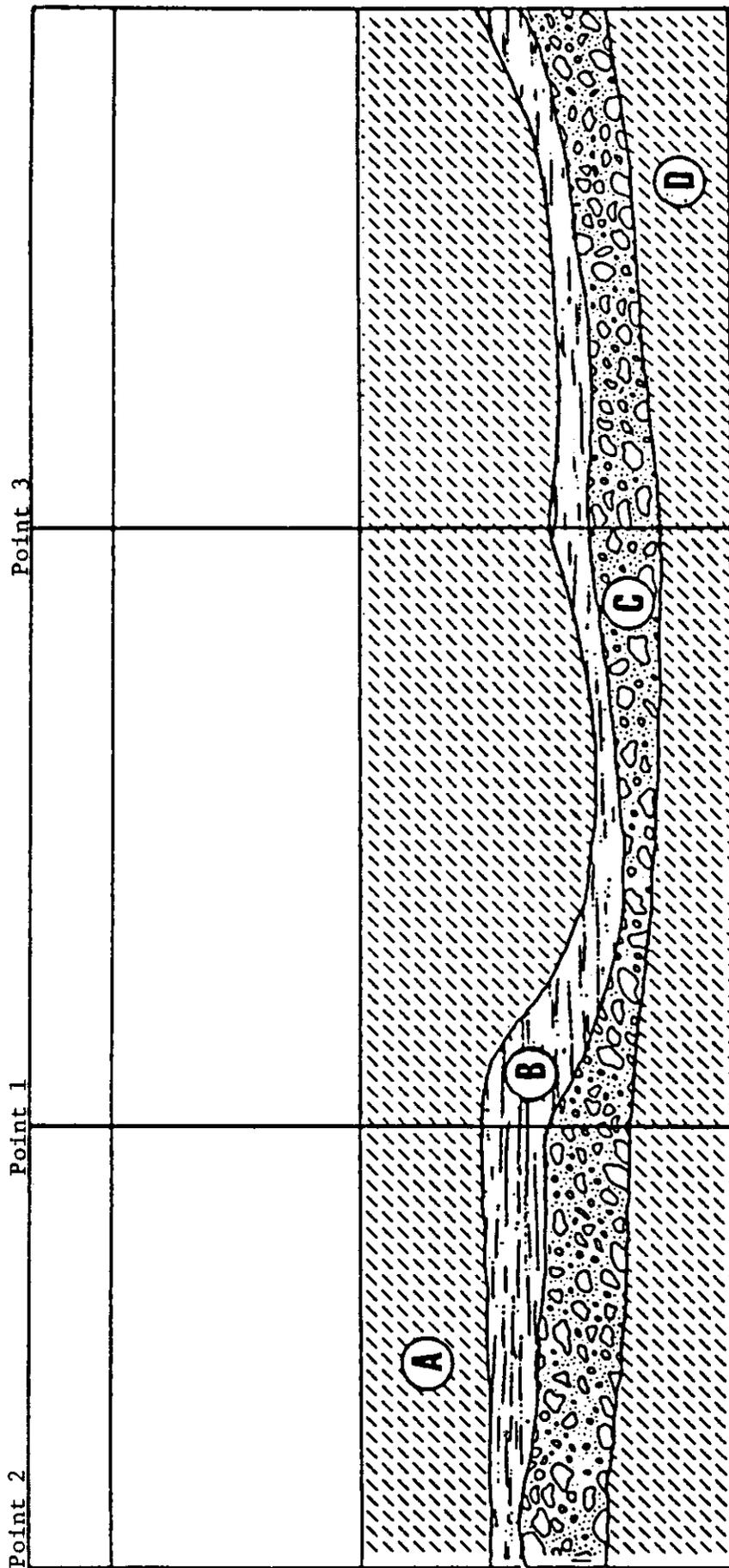
Level 3 was dug to an average depth of 0.38 meter. Fill consisted of a dark gray brown sandy clay interspersed with flecks of lime. This level contained large amounts of building rubble: modern hard brick in many large fragments, nearly whole bricks, and one large agglomerate of brick and mortar. Many of the bricks and brick fragments were also mortared. At the bottom of the level was a level of clean sand and unconsolidated lime containing a cotton builder's apron. This evidence suggests that level 3 contained debris from modern construction and mortar manufacture. The mortared bricks suggest that the level also contained demolition debris, either from building repair or destruction. Window glass, as well as other glass types, decreased from quantities in levels 1 and 2. Nail counts decreased as a whole, although the number of identified wire nails remained about the same as level 2. Shell increased considerably when compared to amounts in level 2, while coal weights remained approximately the same. The quantity of faunal material also greatly increased, further suggesting that this level was dump/debris related. Ceramic tableware was similar in type and quantity to that found in level 2, but a large number of flowerpot fragments was also found. Two plastic buttons dated level 3 to the 1940's or later.

#### Level 4

Level 4 was defined as the second level of the feature (Figure 46). This level extended down about 0.49 meter on the southeastern wall, and 0.52 meter on the northwestern wall. The soil matrix was a reddish yellow clay on the top and yellowish brown clay on the bottom, and was covered with white particles, probably seepage from the lime in level 3. This level contained many fewer hard brick fragments, and more medium and soft-fired brick fragments scattered throughout the soil. Ceramic material decreased slightly from level 3 and consisted entirely of tableware. Amounts of bottle glass, window glass and faunal material also decreased in this level. Machine cut nails dominated metal artifacts in this level, yet nail quantities overall remained constant with those in level 3. Coal quantities also remained about the same, while shell quantities decreased significantly. One piece of plastic was also recovered from this level.

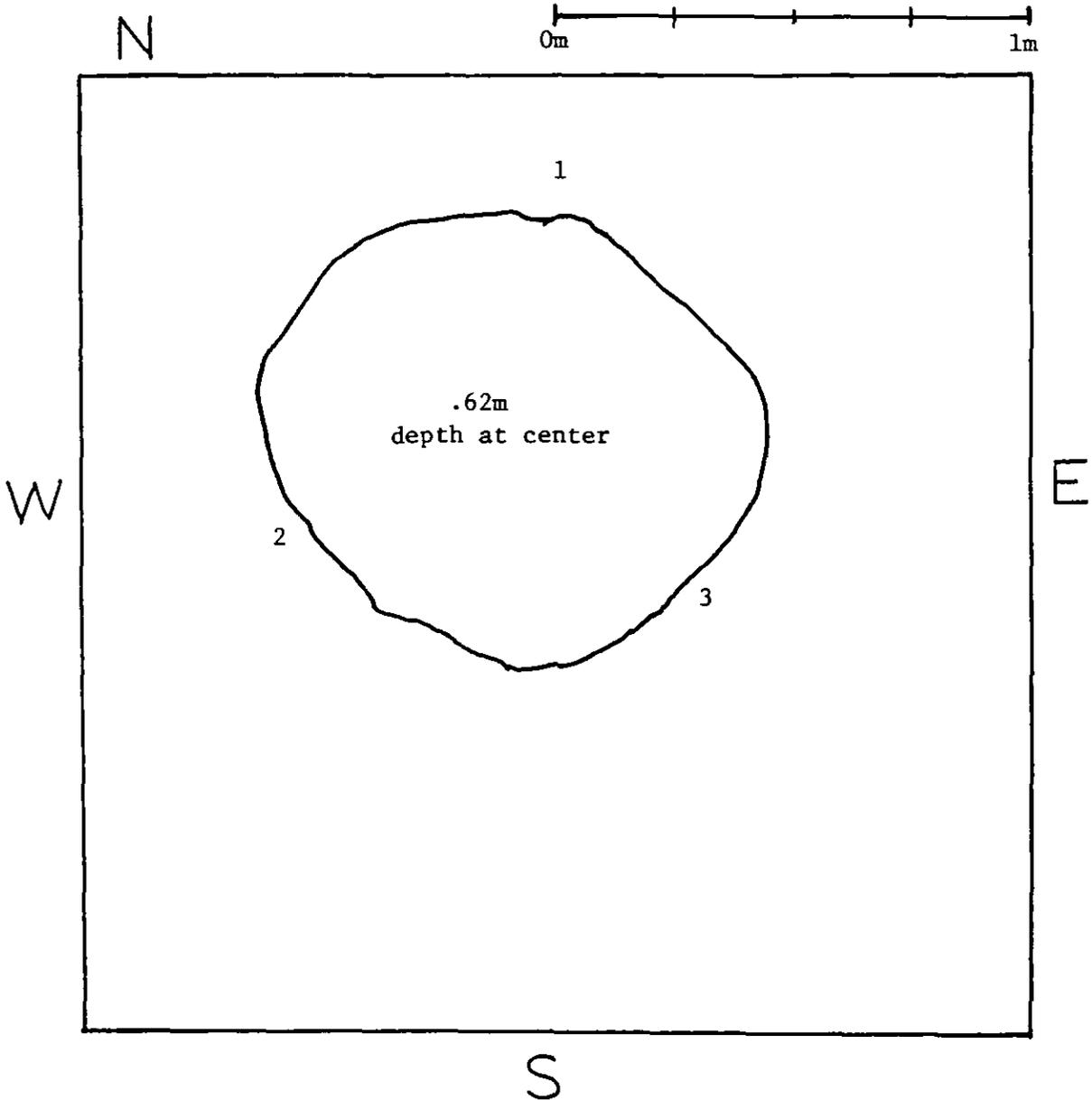
Unit 23S 27W

0m 1m



- A. Level 3: Loamy soil 10 yr. 3/2 very dark greyish brown
- B. Level 4: Reddish yellow clay 7.5 yr. 6/6
- C. Level 4: Yellowish brown clay 10 yr. 7/8
- D. Level 5: Loamy sand 10 yr. 3/2

Figure 46  
Unit 23S 27W  
Stratigraphy of Pit Feature  
Levels 3, 4, 5



- Point 1: 0.27m south of north wall of unit  
0.92m east of west wall
- Point 2: 0.93m south of north wall  
0.47m east of west wall
- Point 3: 0.85m north of south wall  
0.80m west of east wall

Figure 47. Final Surface Measurement of Pit Feature, Showing Points at Which Depth Measurements Were Taken.

### Level 5

Level 5, excavated to a depth of 0.62 meter, was the bottom level of this unit's feature. The soil was a dark brown sand with flecks of lime that may have leached down from level 3. Extremely large quantities of faunal material, primarily large butchered beef bones, were found in this bottom level, suggesting that the feature may at one time have been a household dump. There were relatively few other artifacts: the quantity of wire and machine cut nails decreased substantially, as did glass and ceramic vessel fragments. The small quantities of shell and window glass remained about the same as those in level 4, while only negligible amounts of building material and coal were uncovered. No plastics were found in this level.

The artifact analyses suggest that there was some correlation between levels 4 and 5, but also indicate that these two levels were separate and distinct from level 3. The quantities of artifacts in levels 4 and 5 decreased from amounts recovered in level 3, but 4 and 5 covered a much smaller area. There was a decrease in both levels 4 and 5 in building material (mostly soft-fired and medium-fired brick fragments were uncovered); ceramics (only tableware was found); glass vessel fragments; and nails. Machine cut nails dominated in both levels 4 and 5. Level 3, however, contained more wire nails, two plastic buttons, more ceramics, including both tableware and redware flowerpot fragments, and much higher quantities of bottle glass. The most recent artifacts seemed to be concentrated in level 3, while older artifacts dominated the subsequent levels.

The apparent functions of levels 3, 4, and 5 further differentiated them. Level 3, probably a builder's pit from the evidence of large quantities of building rubble and unmixed sand and lime, was possibly an entirely separate feature. Levels 4 and 5 appear to have been some sort of refuse dump, possibly the upper levels of a privy, although this cannot be determined from available stratigraphic and artifactual evidence.

### Excavation unit 32S29W

This 1 meter square was located behind the Long Row building 4.0 meters west of the building and 28.6 meters north of Dallas Street (Figure 35). Excavated to an average depth of 0.44 meter, this square was one of the deeper units excavated. The unit contained six horizontal levels and one feature (level 5) consisting of a modern pipe trench running northeast-southwest across the western part of the unit. Figure 50 shows the position of this trench in the unit as a whole. Soil in the upper levels consisted of heavy loams and light clays, changing to loamy sand in the last excavated level, level 7. Artifact quantities were low in levels 1, 2, and 5, which appeared to be modern. Levels 3 and 4 were dominated by landscaping materials and construction debris, while the two bottom levels yielded large amounts of apparent domestic refuse. The level profile and section for unit 32S29W appear in figures 48 and 49. Figure 50 shows the unit as it appeared during excavation.

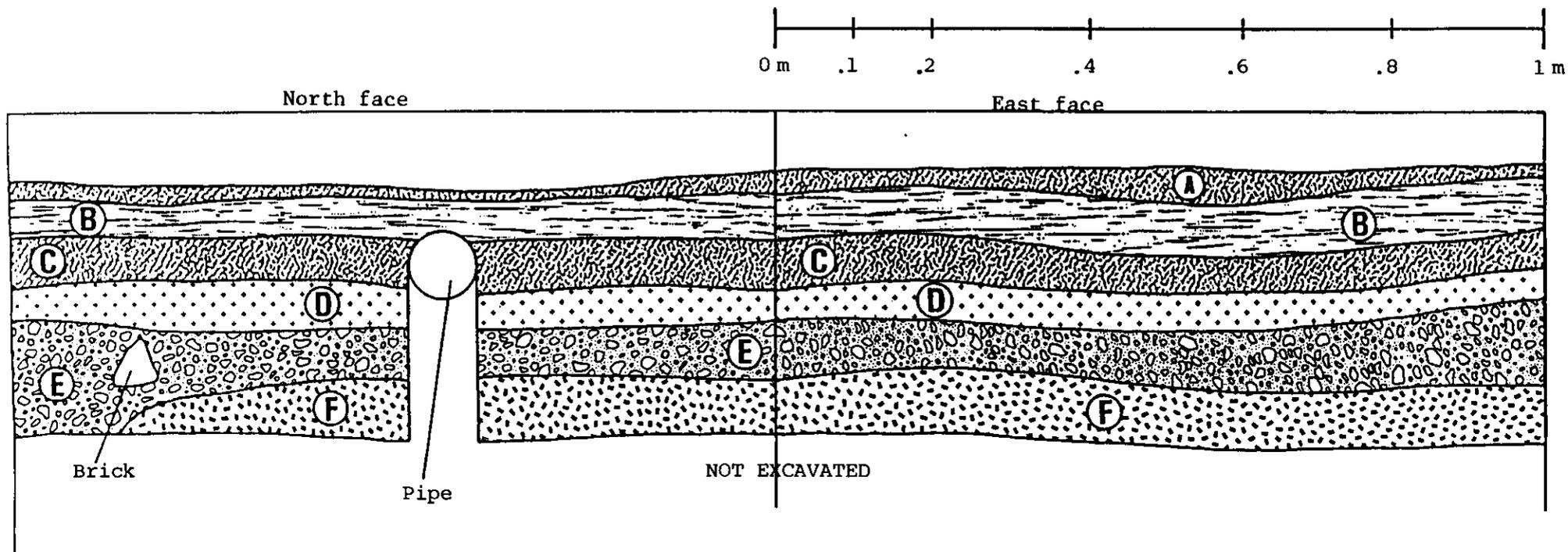
#### Level 1

Level 1, a sod and topsoil stratum, extended to an average depth of 0.135 meter below the point of origin. This level was characterized by a very dark grayish brown heavy loam with intrusion by many small roots. The artifact yield from this level was meager and testified to the modernity of the level, most notably with the presence of an aluminum pull tab. Other artifacts included a few glass and ironstone ceramic fragments, cobblestones, shell refuse, and machine cut nails. The small amount of building material consisted of mortar and a few brick fragments, a majority of which were of the modern, hard-fired variety.

#### Level 2

Level 2 was characterized by a dark grayish brown light clay with patches of yellowish brown clay interspersed. Excavated to an average depth of 0.19 meter, it was at this level that the northeast-southwest pipe trench designated level 5 was first discernable. A second, north-south trench without a pipe was also visible in the eastern part of

Unit 32S 29W



- A Heavy loam 10YR 3/2 Very dk. grey brown
- B Light clay 10YR 3/2, 5/6 Yellowish brown and very dark grey brown
- C Heavy loam 10YR 3/2 Very dark grey brown
- D Light & loamy clay 10YR 4/2 Dk. grey brown
- E Light clay 10YR 5/3 Brown
- F Light loam & clay 10YR 5/3, 3/1, 4/1 Brown, dark grey

Figure 48. Section of Unit 32S 29W

Unit 32S 29W

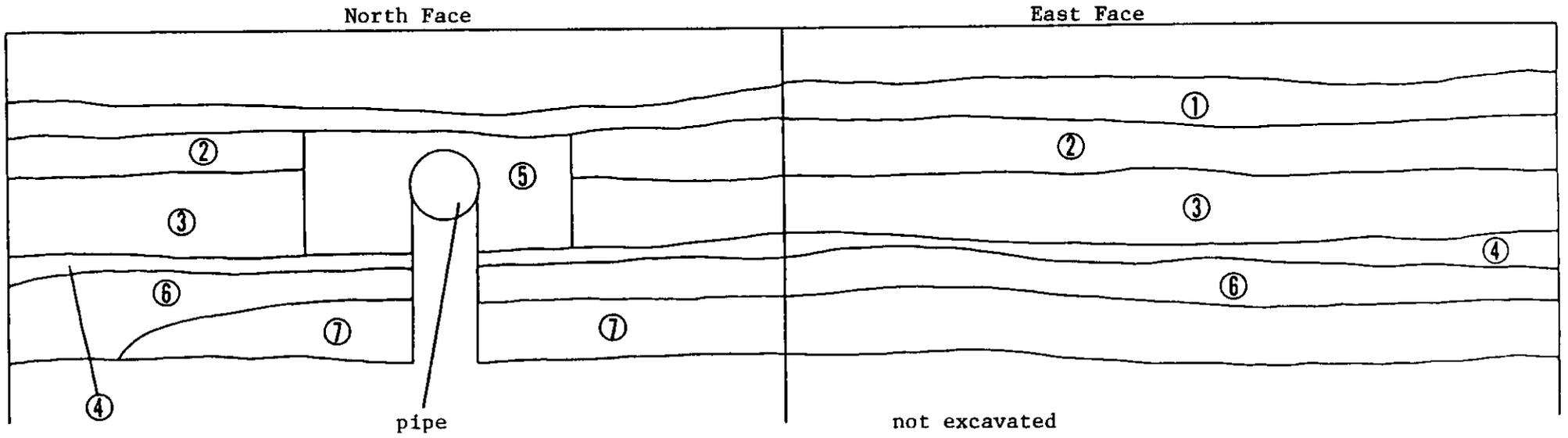


Figure 49. Level Profile of Unit 32S 29W

this level, but was not separately excavated. Artifact types and quantities were generally comparable to level 1. A variety of ceramic types (including ironstone and utility ware), glass sherds (mainly clear bottle glass), small amounts of shell, cobblestones, and a metal button were among the artifacts recovered from this level. Building material, consisting primarily of mortar, was less than half the amount found in level 1.

### Level 3

Level 3, excavated to an average depth of 0.23 meter, covered the entire unit except for the area of the level 5 pipe trench. The second trench was no longer visible in this level. Level 3 was distinguished from level 2 by a change from dark grayish brown clay to a very dark grayish brown heavy loam that graded into a lighter loam as the level deepened. A sharp increase in artifact recovery occurred at this level. Both cobblestones and shell refuse were at their heaviest concentration in this level, and coal appeared for the first time in the unit. The possibility of recent building activity was indicated by an increase in the amount of hard-fired brick, although building material quantities overall remained low. As in preceding levels, no faunal food remains were found. Metals included a relatively small number of wire nails and a crown bottle cap, which dated the level post-1892. Ceramics consisted of a few fragments of decorated and undecorated ironstone. Glass again consisted mainly of clear glass, but included one possible bitters bottle fragment.

### Level 4

Like levels 2 and 3, this level covered the entire unit except the area of the pipe trench. Characterized by a dark grayish brown loamy clay, this level was excavated to an average depth of 0.31 meter below the point of origin. Two charcoal lenses overlain with stone rubble were found at the bottom of level 4. One of these was located in the center of the unit, while the second was in the southeast edge of the southwestern quadrant of the unit and may signify the beginning of level 6. A relatively large number of nails was recovered in this level, especially in the northeastern quadrant. Three quarters of the identifiable nails were wire nails. There

was a dramatic increase in the quantity of building materials, which consisted predominantly of non-modern bricks of medium hardness. Window glass quantity was also the highest in the unit. These findings suggested that there may have been construction or demolition activity in the vicinity of level 3, an interpretation supported by the presence of a bolt and a construction staple. Nevertheless, building material quantities were not significantly high in comparison with other excavation units.

Other artifacts suggested domestic activity. Traces of faunal material appeared for the first time in the unit, and several brass buttons were also found. Glass quantity rose significantly, but consisted mainly of clear glass and bright green glass which was probably of modern manufacture. The small number of ceramics included white ironstone and European porcelain. Like level 3, level 4 contained a number of cobblestones. No shell or coal were found.

#### Level 5

The beginnings of level 5 were first noticed at the bottom of level 1 at a depth of about 0.13 meter below the point of origin. This level was a pipe trench, 0.34 meter in width, which ran northeast-southwest across the unit from a point 0.26-0.60 meter west of the northeast corner of the unit to 0.13-0.47 meter east of the southwest corner (Figure 50). Level 5 extended from the top of level 2 to the bottom of level 4, reaching an average depth of 0.27 meter. The soil of this level was composed of a dark grayish brown light clay mixed with a very dark grayish brown loam, suggesting a mixture of soil types from levels 2-4. It is likely that level 5 was dug through levels 2, 3, and 4 and the soil used to refill the trench around the pipe. Artifacts from level 5 appeared to be comparable to the artifact assemblages of levels 2 and 3. Among these artifacts were a sherd of European porcelain, two fragments of clear bottle glass, a small number of medium brick fragments, two machine cut nails, cobblestones, shell refuse, and one bone.

#### Level 6

Level 6 covered the entire unit except for a small unexcavated balk

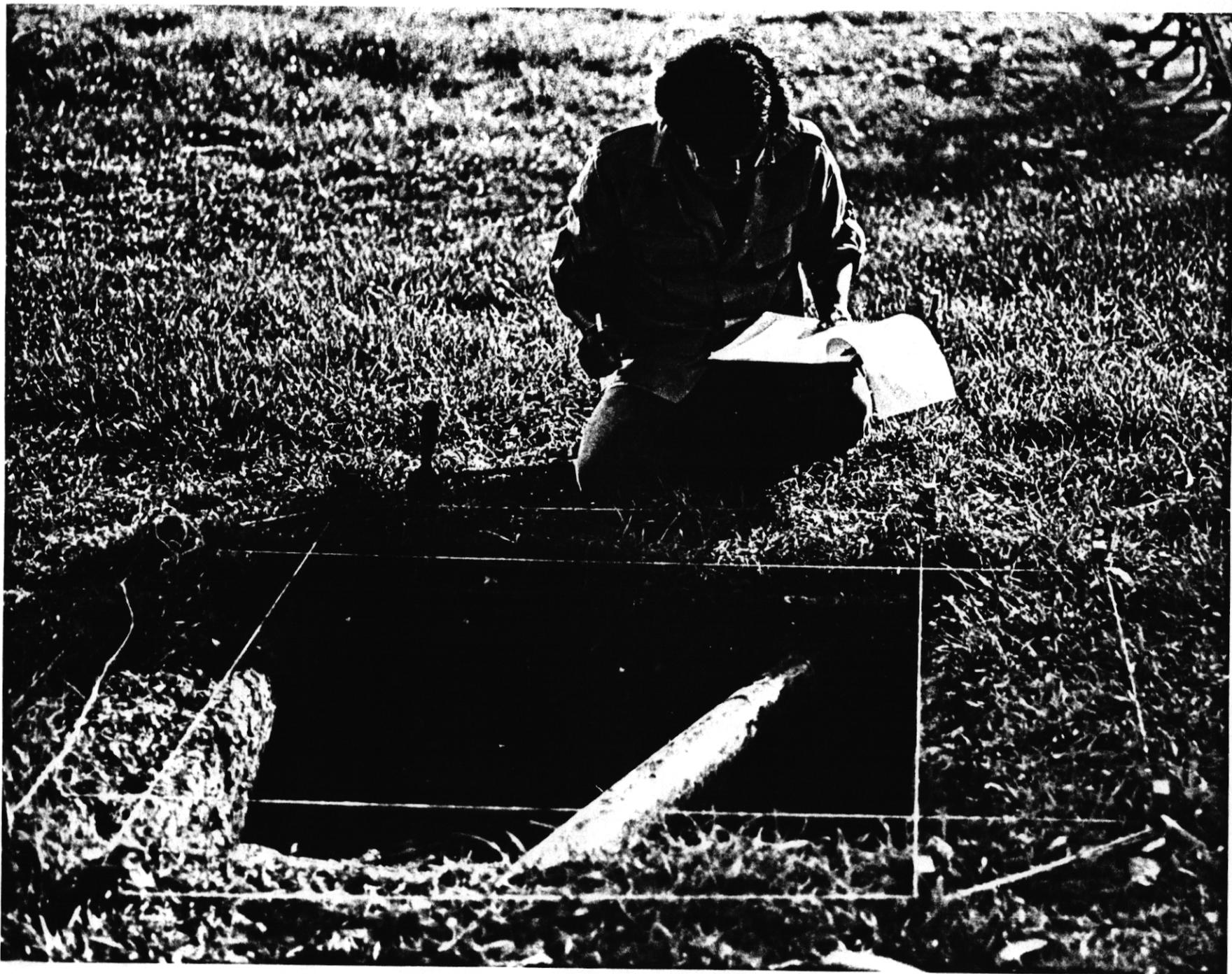


Figure 50 . Unit 32S 29W during excavation.

left beneath the level 5 pipe. This level was not completely excavated, as it seems to continue in the eastern portion of the unit beyond the depth of the present excavations (Figure 48). In the western three fourths of the unit level 6 extended to an average depth of 0.375 meter, while the eastern edge was excavated to a depth of 0.445 meter without encountering a change in soil type. The soil in level 6 was a very dark grayish brown light clay with an intrusive tree root in the southeast corner.

A notable change in the artifact record began in this level. As in level 4, no shell was recovered, while coal and coal products reappeared in quantities comparable to level 3. There was a sudden increase in faunal refuse and glass quantities, which were among the highest on the site. Nail quantities, consisting mainly of wire nails, were the highest in the unit. Ceramic quantity also increased over preceding levels. Most of the ceramics recovered were white ironstone, but English majolica, flown blue transfer print, and white and gray stoneware were also found. Glass included a number of late nineteenth century types such as dark green spirits bottles, as well as several more modern pieces. One fragment of a post-1933 liquor bottle was found. Building materials, consisting primarily of medium-fired brick, decreased slightly from level 4. An iron spike and one piece of formica, dating after 1938, were also found.

#### Level 7

Characterized by a gritty dark gray loamy sand interspersed with light brown clay, level 7 was excavated to an average depth of 0.44 meter below the point of origin. This level covered the entire unit except for the continuation of level 6 along the east wall and the unexcavated pedestal supporting the level 5 pipe. In addition, the narrow north-south pipe trench which had been visible in level 2 reappeared in this level. This trench was not detected in the wall profiles and, again, was not excavated separately.

More ceramic ware, especially ironstone, was recovered from this level than from anywhere else on the site. Glass, nails, and faunal material were found in quantities that roughly matched the quantities

found in level 6. There is a possibility that levels 6 and 7 shared remnants of several glass and ceramic vessels, although this was not conclusive. Bottle glass consisted mainly of nineteenth or early twentieth century types, while machine cut nails slightly outnumbered wire nails. Building material weight increased somewhat over level 6, and again consisted mainly of medium brick. There was three times as much coal in this level as in any other level in the unit, and four times as many ironstone sherds. These findings suggest that levels 6 and 7 may have been a single level which served as a domestic refuse area over a long period of time.

#### Excavation unit 50S27W

This 1 meter square unit was located to the south of the Long Row building, 6.3 meters east of the monument walkway and 10.6 meters north of Dallas Street (Figure 51). Soils were generally dark gray loams and clays, with one extremely thin level of reddish clay and sand found just below ground surface. The unit was excavated to an average depth of 0.40 meter. There were five stratigraphic levels: a sod level, three horizontal subsurface levels, and one trench feature (level 2) which appeared just below the sod. A profile drawing of the excavated levels appears in Figure 52. The lowest level of the unit, level 5, contained domestic artifacts and large quantities of demolition debris. The upper levels yielded surface artifacts and small amounts of domestic refuse. The possibility of shared glass and ceramic vessels suggests that most of the deposits in this unit may have been contemporary.

#### Level 1

A shallow level composed of sod and topsoil, level 1 was excavated to an average depth of 0.09 meter below the point of origin. Soil in this level was a very dark gray sandy loam. At the bottom of the level, two distinct types of soil were clearly visible: a central band of dark gray sandy loam running diagonally from the southeast to the northwest corner, and a thin layer of reddish yellow clay covering the entire unit on either side of this band. Artifacts from level 1 consisted entirely of surface artifacts, including a small amount of shell from the nearby Long Row parking lot (Figure 30), modern cigarette filters, plastic, and an aluminum pull tab.



Figure 51. Unit 50S 27W viewed from the northeast. In the background are Dallas Street and the Kellum-Noble House.

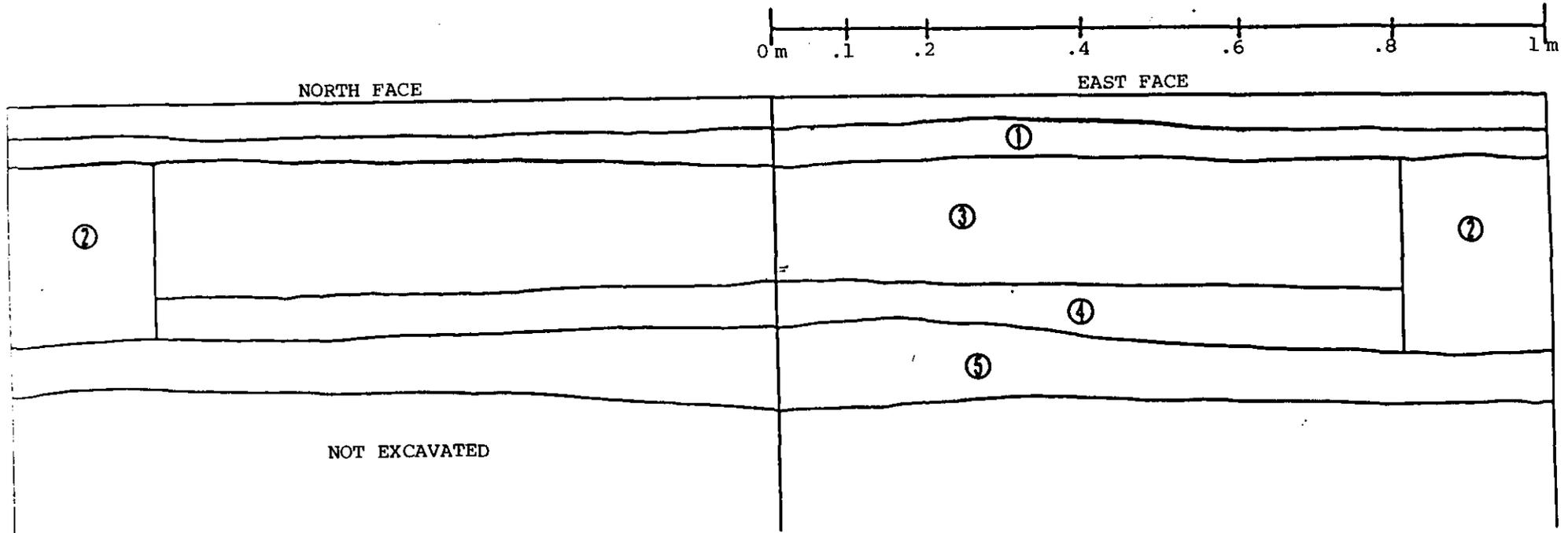
### Level 2

This level, the diagonal band of dark soil identified at the bottom of level 1, appeared to be some sort of trench. However, the trench contained no pipe and was not distinct from the surrounding soil below the bottom of level 3. Soil in level 2 was a very dark gray sandy loam. The level was 0.31 meter wide and excavated to an average depth of 0.31 meter, although it is likely that the excavators undercut the underlying level 4 by about 0.05 meter. A small number of white ironstone ceramics and a little faunal material were found in this level, as well moderately high quantities of shell and a little coal. In addition, many wire nails and a few machine cut nails were found. Small amounts of building material consisted mainly of brick fragments of medium hardness. Glass consisted mainly of clear glass, and appeared to be primarily twentieth century in origin. Two crown bottle caps dated the level after 1892.

### Level 3

The areas of the unit outside the level 2 trench were designated as level 3. These areas, the northwest and southeast corners of the unit, were excavated to an average depth of 0.26 meter. The soil consisted of a lens of reddish yellow sandy clay approximately 0.01 meter thick, underlain by a heavy dark grayish brown sandy loam mottled with light yellow clay. There was a remarkable correspondence between the type and quantity of artifacts recovered from this level and levels 2 and 4, possibly indicating that these levels were deposited contemporaneously. The glass fragments especially indicate the possibility of mixture, as all the levels except level 1 may share a vessel with preceding or succeeding levels. Wire nails and medium brick continued to dominate the metals and building materials categories, while ceramic quantities remained small. As in level 2, ironstone was the most common ceramic type. However, a piece of European porcelain was also recovered. Shell, coal, and faunal refuse were found in quantities roughly equal to those of level 2. Other artifacts included a nut, a washer, a cartridge, a shotshell, four crown bottle caps, and one piece of vulcanized rubber.

Unit 50S 27W



1. Loam 10Yr 3/1 Very dark grey
2. Light clay-sandy loam 10Yr 3/1 Very dark grey
3. Light clay-heavy loam 10Yr 4/2 Dark greyish brown
4. Loamy sand 10Yr 3/2 Very dark grey brown
5. Light clay 10Yr 3/1 Very dark grey

Figure 52. Level Profile of Unit 50S 27W.

#### Level 4

Level 4, found immediately beneath levels 2 and 3, covered the entire unit. Its soil, a very dark grayish brown loamy sand, was similar to that of level 2 but distinct from level 3. This level was excavated to an average depth of 0.31 meter. Nail quantities in this level were very nearly equal to those of levels 2 and 3, although the number of machine cut nails increased substantially. Shell was almost entirely absent in level 4, though there was a marked increase in faunal food remains. Other artifacts, including ceramics, glass, building materials, and coal, remained consistent with finds in levels 2 and 3, with white ironstone, clear glass, and medium brick dominating the collections. A plastic piece from a radio unit dated this level post-1921.

#### Level 5

This level, which also covered the entire unit, was excavated to an average depth of 0.40 meter. The soil matrix was a very dark gray clay with patches of yellowish clay throughout. Most notable in this level was the dramatic increase in construction materials. Level 5 contained six times as much brick and mortar as level 4, and twice as many nails. Mortar was the most abundant building material, while brick remains for the first time were dominated by soft-fired brick. Cut nail frequencies declined from level 4, with about half of the nails consisting of wire nails. Shell refuse reappeared in quantities approximately equivalent to levels 2 and 3. Relatively large amounts of coal were also found, around ten times the quantity recovered from previous levels. Ceramic quantity remained about the same as in level 4, although white ironstone was the only ceramic type recovered. A sherd from level 5 was from the same ironstone plate as a sherd from level 4. Glass quantities also remained about the same as level 4, with the assemblage dominated by clear and aquamarine glass. Obviously, Level 5 represents a demolition phase, although it appears to have also contained substantial components from a domestic occupation. A plastic button dated this level post-1945.

### Excavation unit 12S20W

This 1 meter square unit was located 2.5 meters west of the Long Row building and 6.8 meters east of the concrete walkway surrounding the World War I memorial (Figure 35). Excavated to an average depth of 0.31 meter, unit 12S20W contained five stratigraphic levels. The upper three levels were all characterized by dark gray loamy sand. Profile drawings did not distinguish between levels 1, 2, and 3, and it appears likely, despite slight differences in the artifact assemblages, that these three were actually all one level. Below these levels was a thin gravel layer (level 4) underlain by a stratum of dark loamy sand and clay. Nails, building materials, and ceramics all seemed to be predominantly non-modern, in spite of the unit's proximity to the modern Long Row building. Profiles and section drawings for unit 12S20W can be seen in Figures 53 and 54.

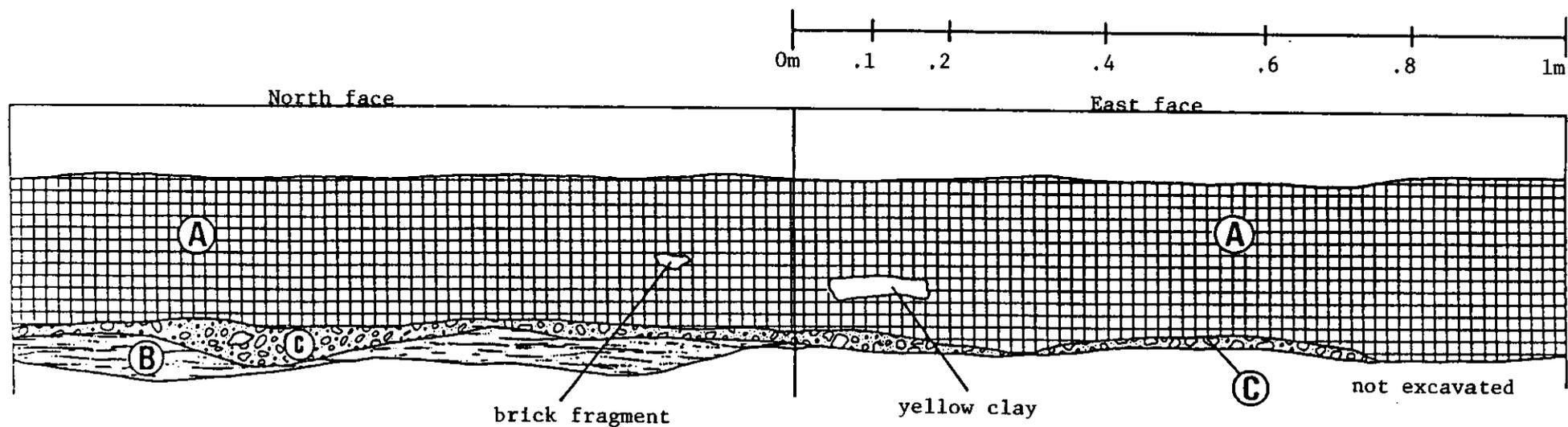
#### Level 1

A uniform very dark gray loamy sand comprised the soil matrix of this level, which was excavated to an average depth of 0.185 meter. Excavation was hampered by a profusion of roots from a nearby tree. Artifacts from level 1 included faunal material, small amounts of coal and shell, and relatively large quantities of bottle and table glass. The small amount of building material consisted mainly of brick fragments of medium hardness. No modern hard brick was found, and nails were predominantly machine cut. A relatively large number of ceramic sherds was recovered, including porcelain, white stoneware, and redware. The most common ceramic type, however, was again white ironstone. A bolt, two washers, and a crown bottle cap were also found in this level.

#### Level 2

Level 2, excavated to an average depth of 0.24 meter, also consisted of a very dark gray loamy sand. During excavation, this level was distinguished from level 1 by an increasing number of patches of yellow clay, although wall profiles suggest this difference was not significant. The artifact assemblage was very similar to that of level 1. Glass

Unit 12S 20W



- A. Sandy loam 10Yr 3/1 Very dark grey
- B. Gravel and oyster shell layer
- C. Mottled yellow clay. 2.5Yr 6/2, 10Yr 3/2 Very dark greyish brown

Figure 53. Section of Unit 12S 20W.

Unit 12S 20W



North face

East face

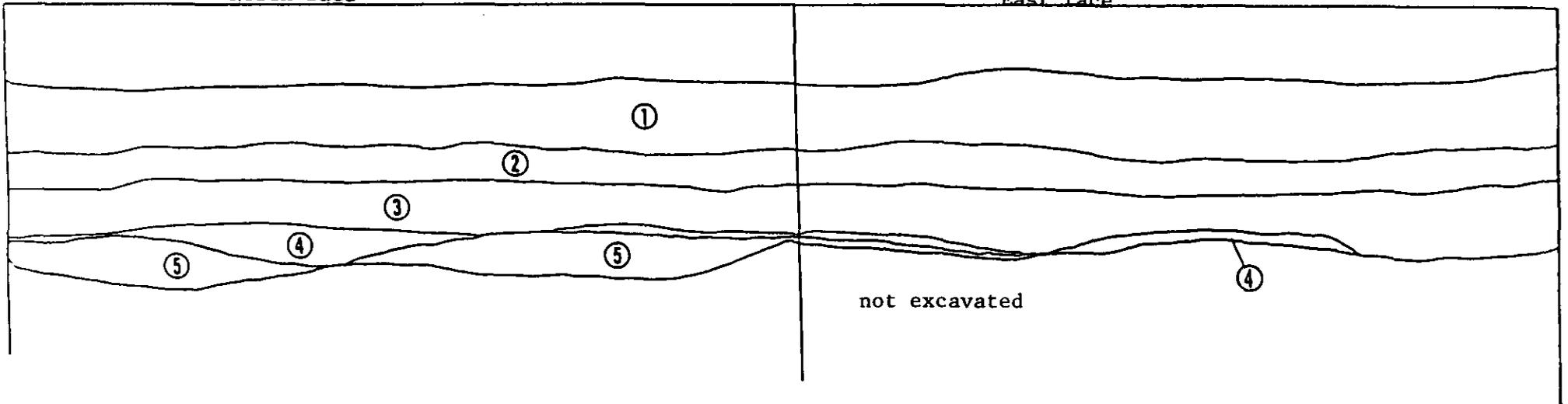


Figure 54. Level Profile of Unit 12S 20W.

quantities decreased slightly from level 1, but clear glass predominated in quantities comparable to those of the preceding level. White ironstone and other ceramics were found in similar quantities to level 1, and two porcelain fragments appear to be from the same vessel as the porcelain in level 1. Quantities of shell and coal were not significantly different from level 1, and faunal material increased only slightly. Nail quantities also rose slightly, but machine cut nails again predominated. Like level 1, this level also produced a metal bolt. Brick weights were almost identical to those of level 1, and quantities of non-modern soft and medium brick fragments remained the same. As in level 1, no hard brick was found. The one significant change in artifact content was in mortar weight, which increased about tenfold over level 1.

### Level 3

Level 3 was excavated to an average depth of 0.285 meter. As the amount of clay in level 2 began to decrease, level 3 was distinguished as a phase of loamy sand, again very dark grayish brown in color and sparsely mottled with yellow clay. The artifact assemblage in this level differed in several respects from that of levels 1 and 2. Toward the bottom of the level a small amount of oyster shell, similar to the quantities found in levels 1 and 2, was recovered. Glass, coal, and faunal remains also remained consistent with quantities found in levels 1 and 2. There was, however, a significant increase in building material and nails. Although mortar quantity declined sharply, the amount of brick increased more than fivefold. Over two thirds of this brick was soft-fired, in contrast to the medium bricks of levels 1 and 2. Again, no hard brick was found. Nail quantities also increased, with cut and wire nails found in roughly equal numbers. There were fewer ceramic sherds than in previous levels, with ceramics consisting only of several sherds of white ironstone. Two metal spikes were also found in this level.

### Level 4

Level 4 was a thin, irregular lens of gravel ranging from 1 to 3 cm in thickness. This level covered the entire unit, reaching an average depth of about 0.305 meter below the point of origin. There were no artifacts

recovered from this level. The gravel resembled debris often associated with modern construction sites, and may have been associated with the construction of the Long Row building. If so, the upper three levels of this unit would have been fill deposited after 1968.

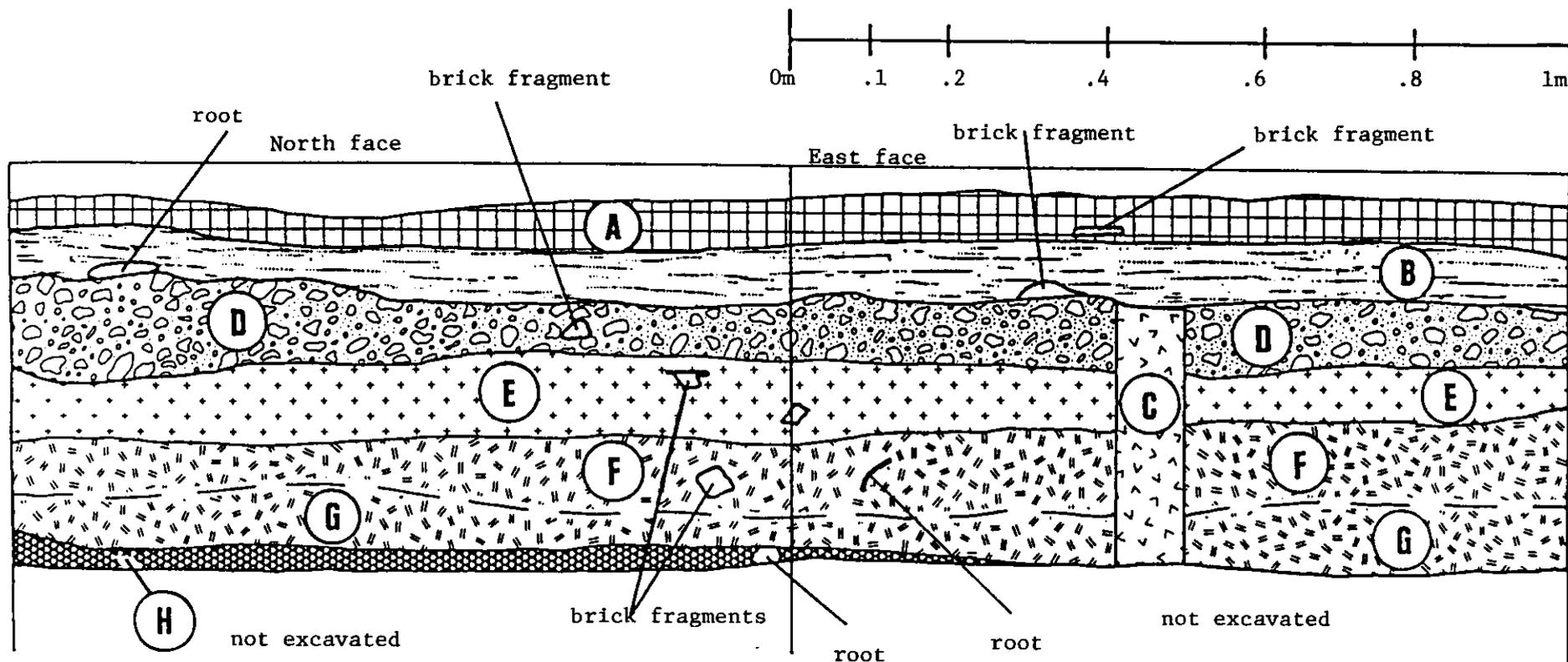
### Level 5

The soil in level 5 was described as a very dark brown loamy sand very heavily mottled with yellowish clay. This level covered the entire unit. Excavation proceeded to an average depth of 0.315 meter, although only a small part of the level was excavated. The artifact yield from this smaller level was markedly less than in levels 1-3. Only three fragments of ceramic were found, and none of these were white ironstone. Glass consisted of six fragments of clear and aquamarine bottle glass. A small amount of building material was found. Interestingly, the brick ratios were reversed from level 3, as level 5 contained twice as many medium bricks as soft. Few nails were recovered, with those that were found equally divided between machine cut and wire nails. A crown bottle cap dated level 5 after 1892.

### Excavation unit 4N38W

This 1 meter unit was the easternmost of the two excavation units located in the northern part of the Rose Garden area (Figure 35). It was located 5.5 meters west of the sidewalk running between the Long Row and Rose Garden areas, and 15.4 meters south of Lamar Street. Excavated to an average depth of 0.52 meter, 4N38W was the only unit excavated to sterile soil in the 1984 season. Soils in this unit were generally dark brown and grayish brown sandy loams. Over the course of the excavations, six natural levels and one modern trench feature were encountered. Several possible features also appeared in the subsoil at the base of level 6 (Figure 57). In general, this unit showed a lack of faunal material relative to the other units, containing primarily construction-related metal artifacts (nails and wire) and large amounts of fragmentary, scattered building materials. Levels 4 and 5 produced a relative abundance of glass and ceramic fragments which were probably related to an occupational phase. Profiles and section drawings for unit 4N38W appear in Figures 55

Unit 4N 38W



- |   |  |
|---|--|
| A. Sandy loam to clay 10Yr 3/2 Very dark greyish brown        | E. 10Yr 3/1, 4/1 Dark grey to very dark grey             |
| B. Loamy sand and light loam 10Yr 3/2 Very dark greyish brown | F. Heavy loam w/ many brick fragments                    |
| C. Loamy sand 2.5Yr 4/2 Dark grey brown                       | 10Yr 3/1, 4/1 Dark grey                                  |
| D. Dark loamy sand 10Yr 2/2, 3/2 Dark grey brown              | G. Heavy loam w/ very few brick fragments                |
|   | 10Yr 3/1, 4/1 Dark grey                                  |
|   | H. Heavy loam with clay 10Yr 3/2 Very dark greyish brown |

Note: dotted line signifies beginning of few brick fragments.

Figure 55. Section of Unit 4N 38W.

Unit 4N 38W

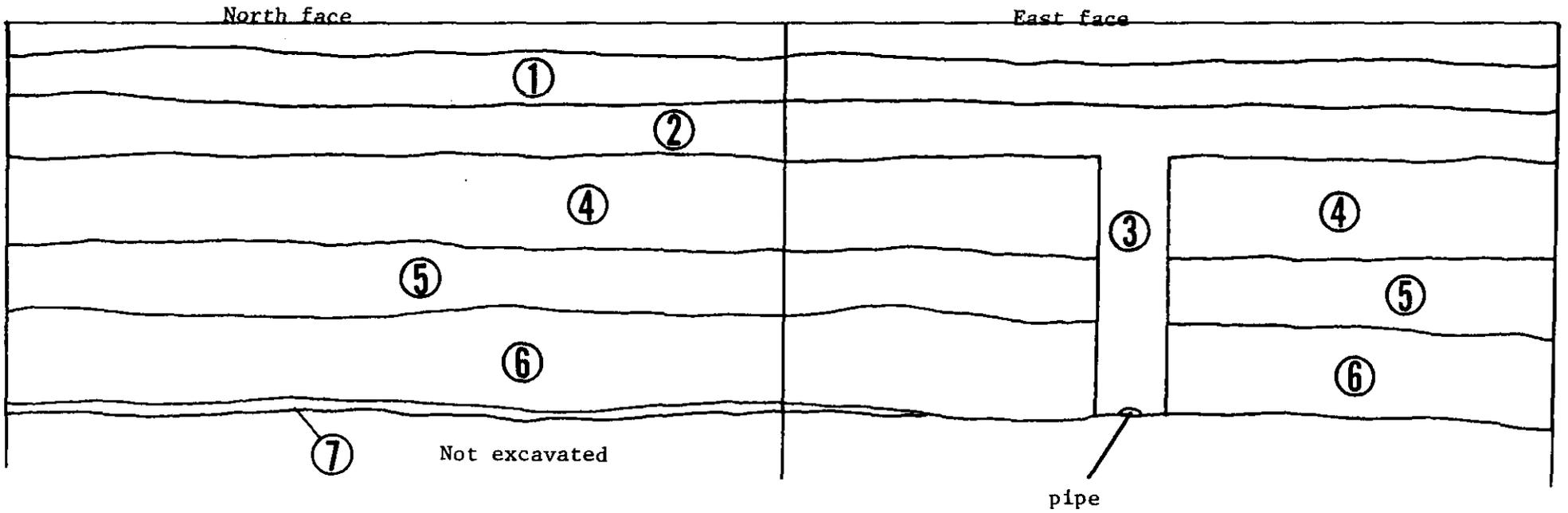


Figure 56. Level Profile of Unit 4N 38W.

and 56.

### Level 1

Level 1, the topsoil layer, was excavated to an average depth of 0.11 meter and was composed of very dark grayish brown loamy sand and clay. This level covered the entire unit. There were relatively few artifacts, consisting mainly of a scatter of brick fragments, machine cut nails, small amounts of coal and shell, and a few fragments of clear, amber, and white milk glass. Ceramics consisted of one flowerpot fragment.

### Level 2

Level 2, excavated to an average depth of 0.185 meter, was composed of light loam and loamy sand but had an increasing clay density with increasing depth. The soil color was again very dark grayish brown, with a large number of pebbles and rocks. Very little coal or faunal material was found. Building material increased slightly in this level, and the number of nails was double that of level 1. Again, machine cut nails were the predominant nail type. Glass quantity also increased, and included clear glass, milk glass, amber glass, and aquamarine glass. Ceramics consisted of small amounts of ironstone, porcelain, and flowerpot, while a piece of a black plastic trash bag dated the level to the 1960's or later. A marked increase in shell in this level compared to level 1 and underlying levels suggests that level 2 may have corresponded to the 1952-1977 lifespan of the shell parking lot located in the vicinity of unit 10N23W.

### Level 3

This level, cross-designated as feature 2, was a trench 11 cm wide traversing the center of the unit along the east-west axis. This feature extended from the top of level 2 to the bottom of level 6, but was only excavated separately in levels 4-6 (Figures 55 and 56). At a depth of 0.53 meter a 2.5 cm pipe was encountered (Figure 57). Clearly this feature was a modern trench resulting from the pipelaying which occurred before the deposition of level 1. The soil in the feature was a weak red loamy sand with patches of clay and silt, and contained very few artifacts. Artifacts

from level 3 included small amounts of brick, mortar, coal, and shell, two flowerpot fragments, two nails, and a large butchered cow bone.

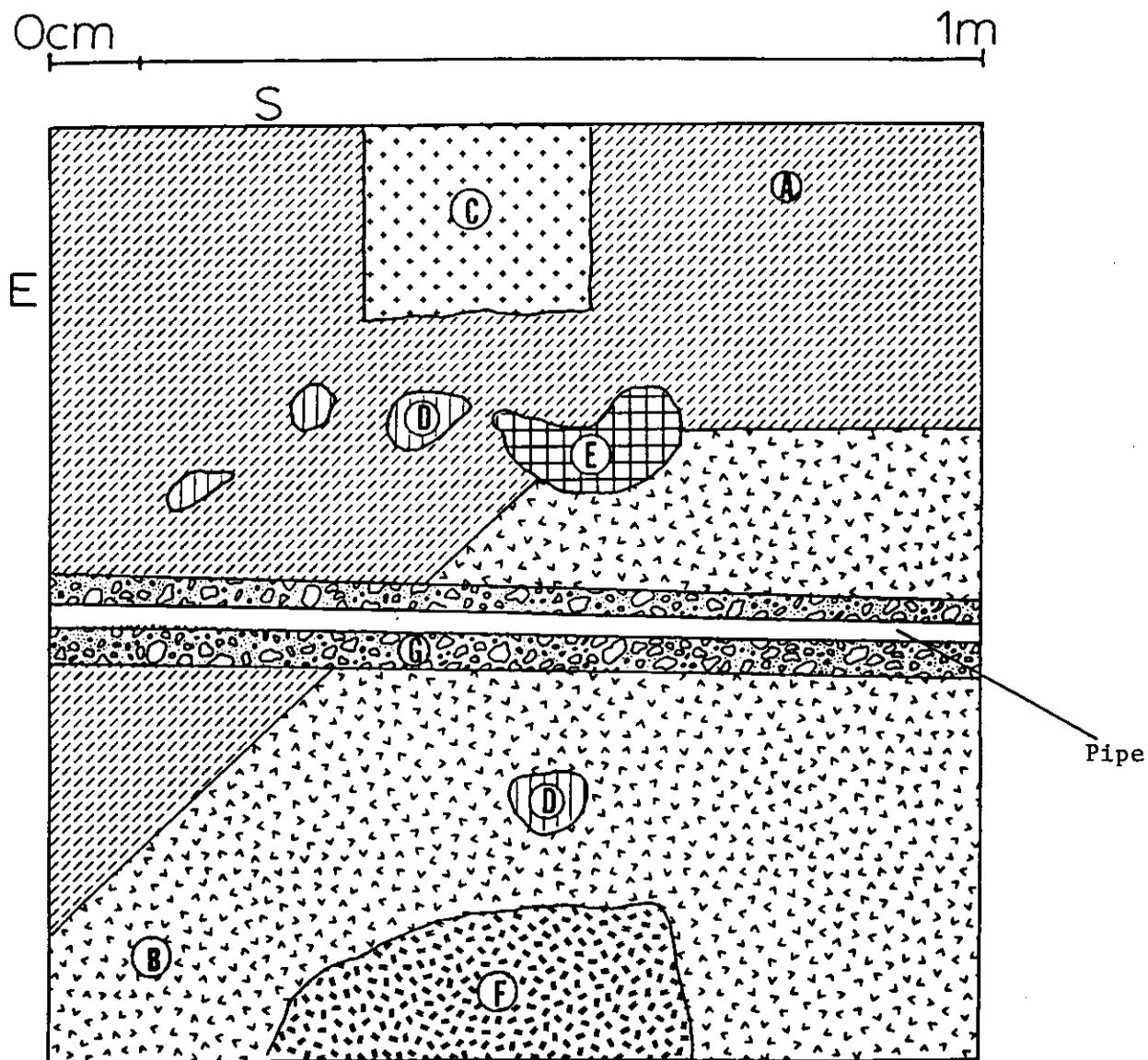
#### Level 4

Level 4 was excavated to an average depth of 0.30 meter. In this level we see a fundamental change from the loam and clay mixture of previous levels to a more consistent, very dark brown loamy sand. There was a significant increase in artifact quantity in this level. Faunal material weights were much higher than in level 2, although roughly equal to level 3. Shell weights were significantly lower than in level 2, and very little coal was found. However, large amounts of window glass, wire nails, and medium-fired brick were recovered. Ceramics increased in both quantity and variety, and included a number of fragments of late nineteenth/early twentieth century porcelain. Bottle glass and table glass quantities were also the highest in the unit. Especially interesting was a plastic button, post-dating the 1940's. These artifact finds suggest that level 4 may have been associated with both a demolitional and an occupational phase, and that it was associated with some twentieth century activity.

#### Level 5

Excavated to an average depth of 0.39 meter, level 5 was characterized by a lighter soil of similar sandy consistency to level 4. The level was opened because of a gradual change in soil color and a decrease in the number of brick fragments. Artifacts in this level were similar in many respects to those in level 4, although there was generally less evidence of demolition or construction activity. Building material and window glass quantities decreased somewhat from level 4, while both machine cut and wire nails occurred in roughly similar quantities. Coal quantities increased slightly, but very little faunal or shell material was found. Glass quantities were less than half those of level 4, and consisted almost entirely of clear and amber glass. Ceramic quantity increased slightly, with the assemblage overwhelmingly dominated by flowerpot sherds, which had been relatively rare in level 4. Several pieces of porcelain like that in level 4 were also found, and one piece of bisque porcelain appeared to match a fragment from level 4. Level 5 also yielded

## Unit 4N 38W



- A. Heavy loam 10Yr 3/2 Very dark greyish brown
- B. Clay 10Yr 2/2 Very dark brown
- C. Clayish soil 10Yr 4/1 Dark grey
- D. Whitish clay
- E. Reddish clay
- F. Red-grey clay
- G. Pipe trench

Figure 57. Plan Drawing, Floor of Level 6, Unit 4N 38W.

a plastic artifact, a piece of simulated-wood furniture molding which post-dated the 1920's.

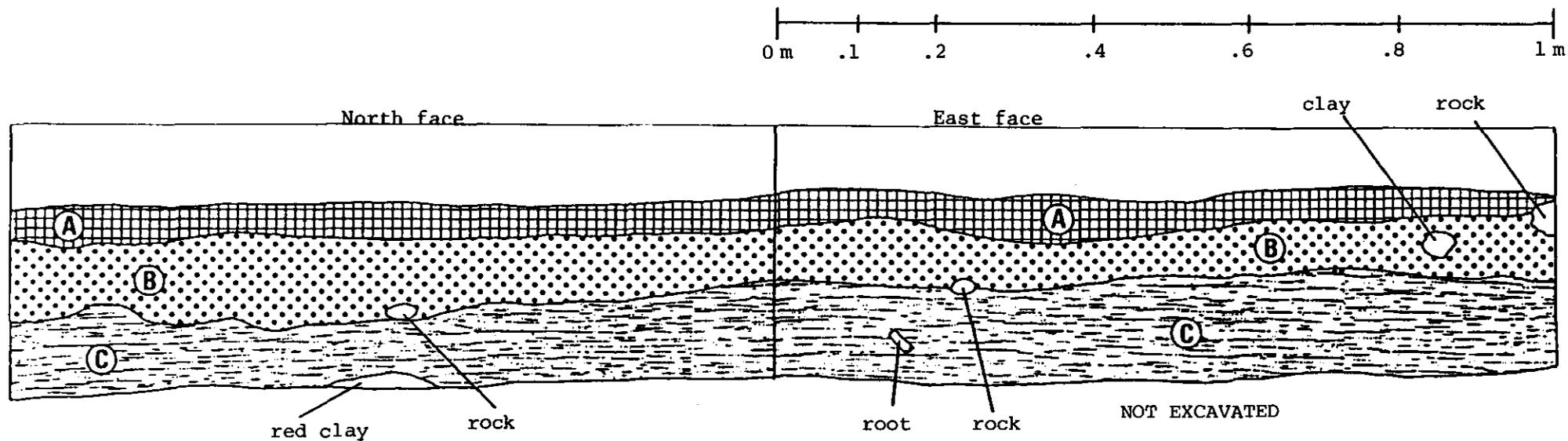
### Level 6

Excavated to an overall depth of 0.52 meter, level 6 was characterized by a dark yellowish brown heavy loam which became more silty with increasing depth. Few artifacts were found in this level. There were almost no nails, coal, shell, brick, or faunal material. Ceramics consisted of a few flowerpot fragments and one sherd of white stoneware. Glass quantity, however, was only slightly less than in level 5 and included amber, dark green, aquamarine, and clear bottle glass. Only a few sherds of window glass were found. The marked paucity of artifacts suggests that level 6 was largely below the occupational deposits reflected in levels 4 and 5. The soil below level 6 was a very dark grayish brown heavy loam, which appeared to contain no artifacts. This apparent subsoil level was mottled with spots of reddish and whitish clay and large patches of very dark brown and dark gray light clay, which may have been archaeological features such as foundation traces (Figure 57). Due to lack of time, these features were not excavated.

### Excavation unit 6N57W

This 1 meter square unit, located in the northwestern Rose Garden area, was the farthest unit from the Long Row building. It was located on a gently sloping surface 5.4 meters south of Lamar Street and 8.0 meters east of the sidewalk separating the Rose Garden and Cherry House areas (Figure 35). The unit was excavated to an average depth of 0.33 meter. Over the course of excavations, four natural levels and no features were encountered. All were characterized by dark brown and gray clays and loams. The outstanding characteristic of this unit was its lack of artifacts. There were no ceramics unearthed at all, and only a handful of very fragmentary faunal remains. With the exception of brick and mortar fragments, artifact quantities in every category were significantly lower than in all other units, suggesting that this unit has been the site of little occupational activity. Profile and section drawings for unit 6N57W appear in Figures 58 and 59.

Unit 6N 57W



- A Light sandy loam 10 YR 2/2 Very dk brown
- B Heavy drk loam 10 YR 8/2 w/ 10 YR 3/2 White w/ dk. grey brown
- C Heavy loam/light clay 10 YR 3/2, 3/3 dk grey brown to dk brown

Figure 58. Section of Unit 6N 57W

Unit 6N 57W

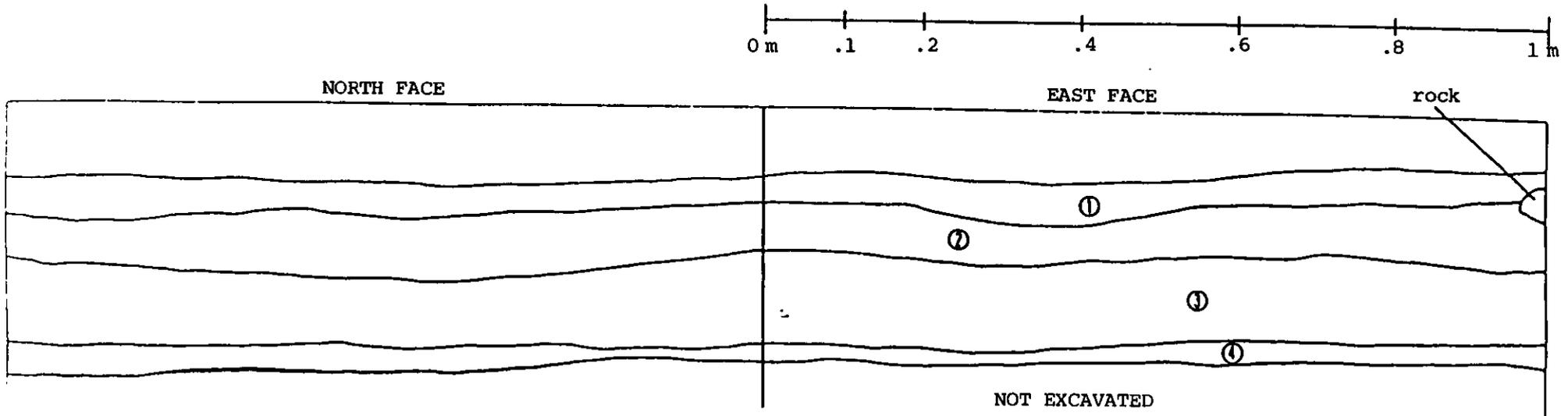


Figure 59. Level Profile of Unit 6N 57W.

### Level 1

Level 1 was excavated to an average depth of 0.125 meter below the point of origin. The soil in this level was a very dark brown sandy loam. Artifacts consisted of a few fragments of bottle glass, window glass, and oyster shell, and one crushed styrofoam cup. These appeared to be primarily surface artifacts.

### Level 2

Level 2, characterized by soil of a very dark grayish brown heavy loam, heavily mottled with light and dark clay, was excavated to an average depth of 0.19 meter. This level was also characterized by an abundance of pebbles and rocks and small root intrusions. Artifacts were still few, but the increase over level 1 was marked. Larger amounts of building material, shell, and glass were found in this level, along with small amounts of bone and coal, and a number of asphalt pieces possibly from the 1951 construction of the nearby Lamar Street extension. Building material consisted mainly of small, scattered fragments of modern hard brick. Nails, absent from level 1, consisted almost entirely of wire nails.

### Level 3

Level 3, excavated to an average depth of 0.295 meter, contained considerably less clay than level 2. The soil was a very dark gray/grayish brown heavy loam with relatively few pebbles or root intrusions. Artifacts were generally comparable to level 2 except for the building material category, which increased more than seven times. Large quantities of mortar accounted for most of this increase. Brick fragments were mainly of the non-modern soft-fired variety. Metals consisted of a handful of wire nails and a piece of iron reinforcement bar. Very small amounts of shell, coal, glass, and faunal material were found.

#### Level 4

This level, although readily apparent to the excavators, was not observed in the wall section and may have been part of the same deposit as level 3 (Figure 5B). Level 4 was closed on the last day of excavation at an average depth of 0.33 meter, without reaching the bottom of the level. The soil was a dark grayish brown heavy loam, heavily mottled with light and dark clay similar to that found in level 2. Quantities of shell, bone, glass, and coal remained very small, and metals consisted of a single wire nail. Brick weight rose substantially from level 3, with almost all the brick consisting of small fragments of medium-fired brick. Unlike level 3, this level yielded very little mortar. A large section of hexagonal tile flooring was found just at the floor of the unit in the southeast corner. Like level 2, level 4 contained many pieces of asphalt and asphalted gravel which may have been from recent road-building activity.

## Chapter 6

### CERAMICS

by

Holly Knudsen and Bill Vogelwohl

#### Introduction

Two hundred seventy ceramic sherds were recovered in the 1984 Long Row excavations. These ceramics represented a variety of small sherds, only two bearing potters' marks. None of the pieces could be fitted together to form an entire vessel, although in level 7 of unit 32S29W, several vessels were partially reconstructed. The aim of the analysis of these fragmentary artifacts was twofold: to provide general dates of occupation and deposition for archaeological levels and units; and to provide information on the activities that may have occurred in different parts of the Long Row site.

It must be pointed out that precise dating of the ceramics from the Long Row site was not always possible, for several reasons. The most important of these was the fragmentary condition of the ceramic assemblage, which could prevent partially decorated vessels from being properly identified. A second was the longevity of many important ceramic types such as white ironstone and redware flowerpots, which made beginning and terminal dates difficult to assign. A third problem, common to all historical sites, is that ceramics can be kept and used by their owners for many years after they are no longer commercially available. Like any other artifacts, they can also be deposited in areas having little to do with their original context, and, particularly on a heavily occupied site like the Long Row, they may also be moved around and redeposited even after they have entered the archaeological record.

In spite of these difficulties, we attempted to use the distribution of different ceramic types to determine as much as possible about the historic occupation of the Long Row/Rose Garden site. Date ranges were assigned to different levels based on the earliest known manufacturing

dates of the ceramics they contained and on the dates of the periods in which the ceramics were known to have been most widely used. To avoid the problem presented by possible redeposition of early materials at a later date, most levels were assigned a broad occupation range based on general ceramic dates as well as a possible deposition date based on the date of their most recent artifact. For lack of specific evidence to the contrary, it was also assumed that ceramic remains reflected activities within the general area in which they were found. Large numbers of recognized household ceramics were considered to suggest association with a domestic residence, while concentrations of functionally specialized ceramics were considered an indication of the location of other specialized activities. From these general guidelines we were able to draw a number of probable interpretations on the dates and functions of different areas, and of the site as a whole. Although only one very large concentration of domestic ceramics was found (unit 32S29W), other areas suggested varying degrees of domestic activity. The specialized ceramics on this site were flowerpot fragments, whose distribution suggested association with an early nursery located on the premises.

The following report is divided into two sections. The first describes the specific ceramic types recovered and discusses how they were used in analyses of the different excavation units and of the site as a whole. The second section gives the ceramic chronology and possible functional interpretation of each archaeological unit. Photographs of representative ceramic artifacts are shown in Figures 60-63, and the distribution of different ceramic groups is shown in Figure 64. A catalogue of all ceramic finds by type and provenance appears in Appendix 3.

### Analysis by ceramic type

The Long Row ceramic assemblage overall was relatively small compared to other artifact classes such as metal and bottle glass (Chapters 7 and 9). One unit, unit 6N57W, contained no ceramics at all. Since the great majority of ceramics are used in a domestic context, this suggested that many of the excavated levels may have been characterized by non-domestic uses. To provide general functional categories for analysis, ceramics from the 1984 Long Row/Rose Garden excavations were

grouped into four major classifications: tableware, flowerpot fragments, utility ware, and a category of miscellaneous non-vessel objects. This section of the report discusses the definition and relative size of each of these categories and the ceramic types included in each.

### Tableware

Tableware was by far the largest of the ceramic groups, with 193 sherds accounting for 71 per cent of all ceramics that were found. Tableware ceramics consisted of plates, cups, pitchers, bowls, or any other items that might have been used for preparing or serving food. Because of their greater temporal sensitivity as well as their greater frequency of occurrence, tablewares were the main ceramic group used in dating, and the relative density of different tableware types was used to suggest dates and locations of possible domestic occupation.

A variety of tablewares were identified at the Long Row site, but the assemblage was overwhelmingly dominated by plain white ironstone, which with 135 fragments comprised 70 per cent of the tableware collection and half of all ceramic finds. Although the white ironstone body was invented around 1810, this heavy undecorated form of the ware was only produced after about 1840, and was the most common of all types of tableware in the second half of the nineteenth century. Until about 1870 it was usually decorated with molded embossing around the rim of the vessel, but after that date it was often produced with no molded decoration of any kind (Wetherbee 1980: 18). Almost all of the identified rims from the Long Row/Rose Garden collection had no embossed decoration, suggesting that they were from the late nineteenth century or later (Appendix 3). A number of pieces appeared to be hotel ware, a particularly thick and sturdy type of white ironstone which is still used in many restaurants today (Figure 60). Since all heavy undecorated white tablewares, regardless of their ceramic composition, were usually sold as ironstone or one of its many variants (Lewis and Haskell 1981: 122), all such wares on the Long Row site were identified as ironstone even if they had relatively permeable ceramic bodies. Only one fragment of whiteware, a thinner, generally earlier ware, was found on this site.

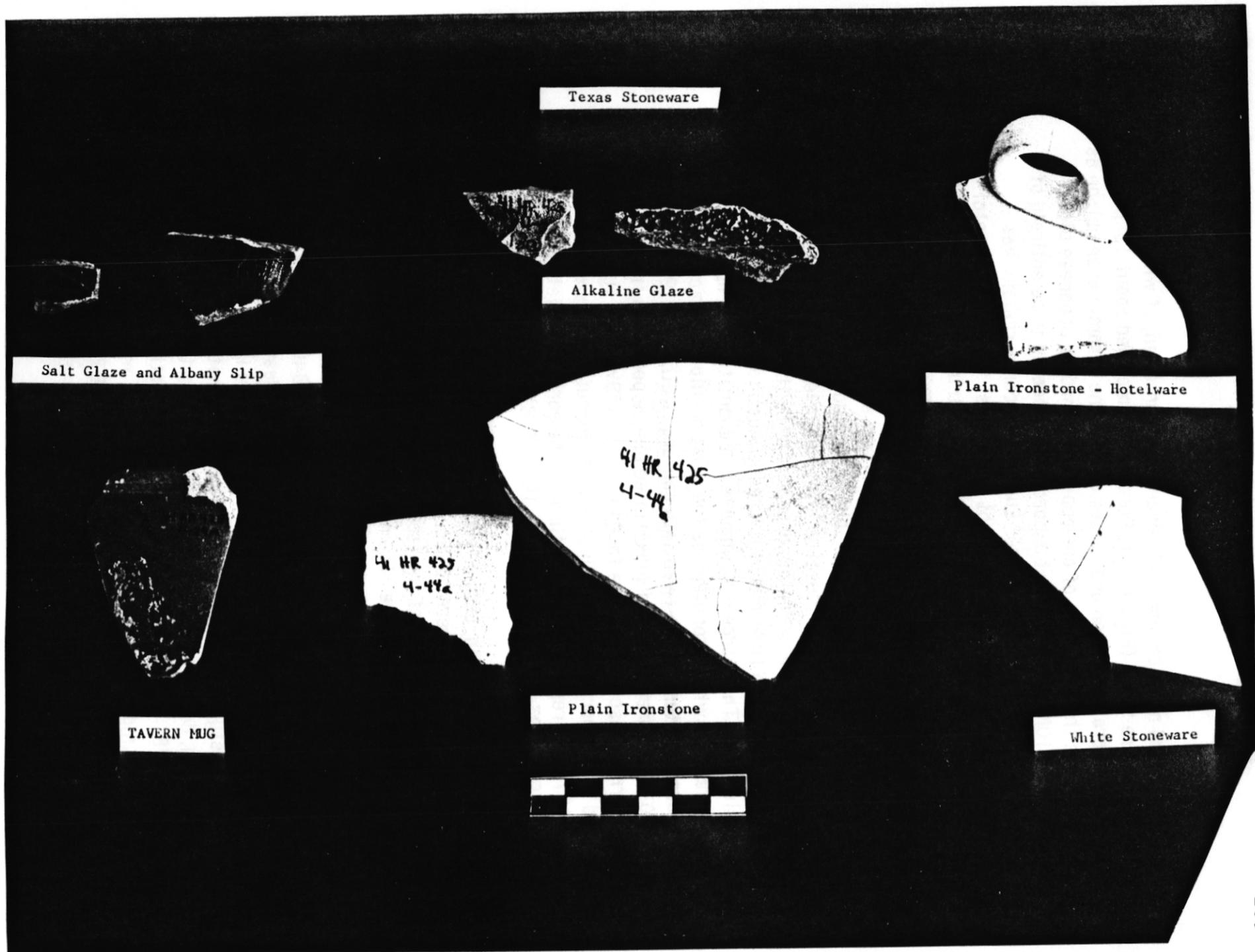


Figure 60. White Ironstone and Stoneware Ceramics from the Long Row/Rose Garden Excavations.

The second most common tableware was porcelain, of which 26 fragments were found (Figure 61). Porcelain comprised about 13 per cent of the tableware collection and 10 per cent of the ceramic assemblage as a whole. With the exception of one apparently modern Japanese plate found in unit 10N23W, identifiable porcelain appeared to be entirely of European or American manufacture. Euro-American porcelain was identified by the absence of the slight bluish cast typical of Oriental porcelain, by the method of wiping (rather than trimming) the glaze at the base of the vessel, and by the use of decorative motifs which are seldom found on Oriental porcelain (Lewis and Haskell 1981: 136-145). Most of the porcelain fragments found in the Long Row excavations were plain white porcelain with a clear glaze, but decorated specimens included sherds with molded, gilded, decal-printed, and overglaze floral polychrome decoration. Much of the porcelain appeared to be the type of thin, nearly translucent porcelain first manufactured in Austria, Germany, and Czechoslovakia. This porcelain, imported in quantity after about 1875, began to replace white ironstone as the most popular American serving ware around the turn of the twentieth century (Wetherbee 1980:19; Cox 1979: 1016). Three pieces of pink-tinted bisque porcelain from a vessel with a German inscription were found in unit 4N38W. This type of unglazed tinted porcelain, clearly of German manufacture, was introduced around 1870 and remained popular through the early twentieth century (Collard 1967: 193-194; I. Noël Hume 1978: 318).

Aside from porcelain, only a few pieces of decorated tableware were found (Figure 62). There were 16 pieces altogether of these ceramics, comprising only 8 per cent of the tableware collection. These consisted mainly of decorated ironstone. The most common were transfer-printed wares, most popular in the first half of the nineteenth century but widely manufactured through the first half of the twentieth century; and "flown blue," a kind of transfer-printed ware common c. 1840-1870, in which the color was allowed to blur around the edges of the design (Bartovics 1978: 203-205; Collard 1967: 114-118). Other decorated ironstones included edged ware, a style of nearly plain white ceramic with molded and painted rim decoration, dating from about 1820 to 1880 (Bartovics 1978:198; I. Noël Hume 1978: 131); banded ware, a late nineteenth century descendant of the original machine-turned annular and "mocha" wares, characterized

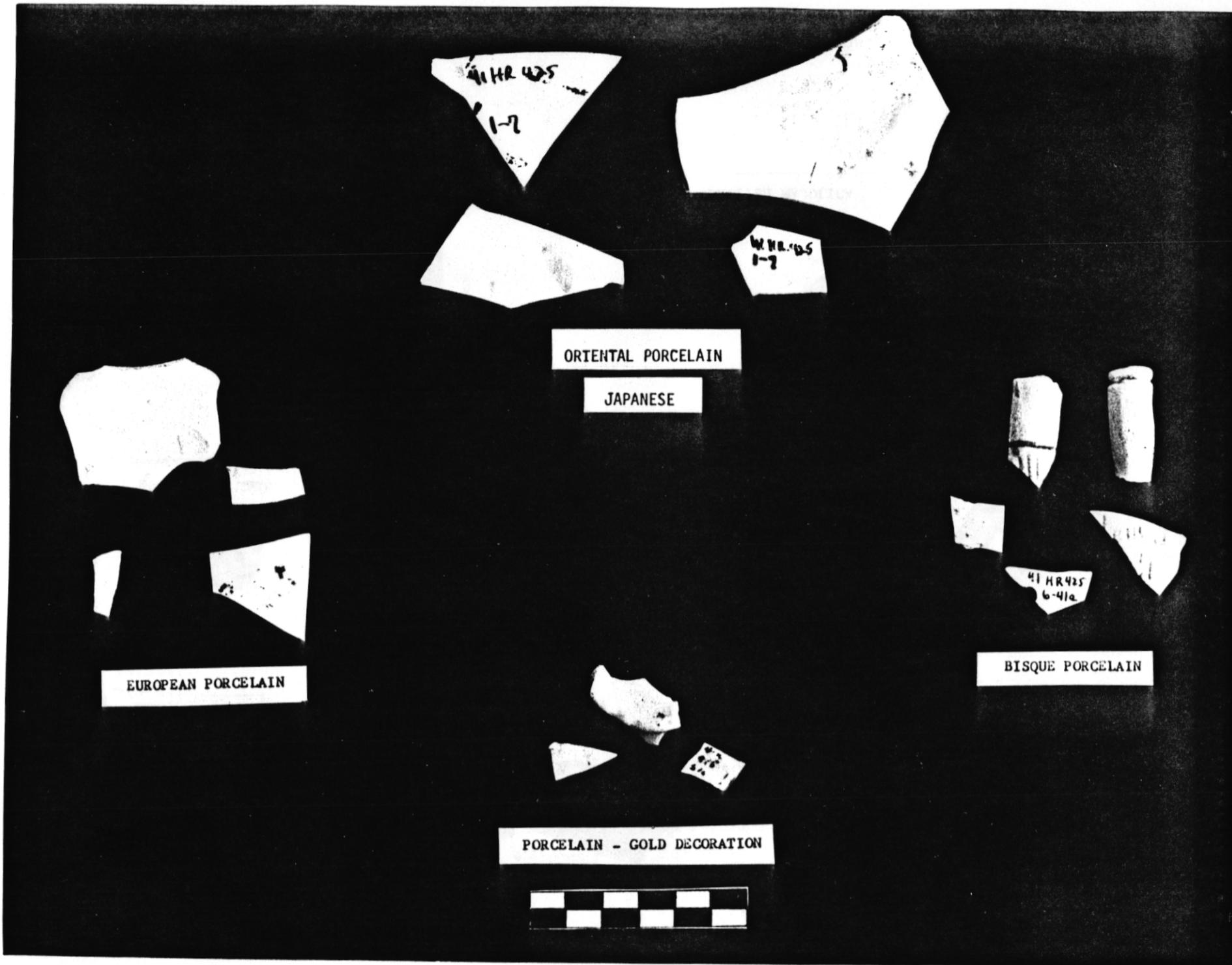
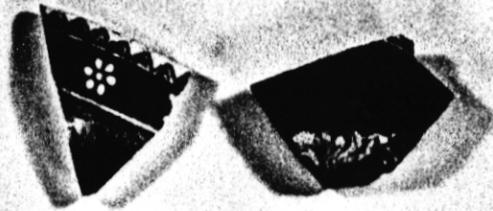


Figure 61. Porcelain from the 1984 Excavations.



BANDED WARE



TRANSFER PRINT



FLOWN BLUE



ROCKINGHAM WARE



EDGED WARE



DECAL



SIMULATED ROCKINGHAM WARE



BRITISH MAJOLICA

Figure 62. Decorated Ceramics from the 1984 Excavations.

by pale blue bands of slip on a white or yellow background (Bartovics 1978: 190-191; I. Noël Hume 1978: 131); and decal-printed ware, a style in which paper decals, often with extremely complex designs, are applied under the glaze. Decal-printing became common in the United States around the turn of the twentieth century, and is still the most common means of decorating pottery (McKee 1966: 11-12; Lehner 1980: 13; Lewis and Haskell 1981: 141).

Decorated ceramics other than ironstone included two fragments of English majolica, a brightly colored molded earthenware dating c. 1851-1910 (Lewis and Haskell 1981: 135; Godden 1972: 120); and one piece of a Rockingham or Bennington pitcher spout, with hard yellow body and mottled brown glaze. This ware, most often used for pitchers and teapots, was an eighteenth century British ceramic style that was mass-produced in Bennington, Vermont, and other American cities from 1831 through the early twentieth century (Bartovics 1978: 191; Cox 1970: 99; I. Noël Hume 1978: 101). These ceramics are shown in Figure 62. Undecorated tablewares other than ironstone and porcelain included only white stoneware, distinguished from ironstone by its extremely hard paste, thin glaze, and striations from wheel-turning. Ironstone, being molded, has no such striations. The nine fragments of white stoneware recovered all seemed to be from such items as small milk pitchers, mugs, or bowls.

### Flowerpots

Flowerpots, with 56 sherds, made up the second largest of the major ceramic groups, comprising 21 per cent of the overall assemblage. These ceramics were given a category of their own both because of their relative frequency of occurrence and because of their possible association with the nursery and florist's shop once located in the northern part of the site. This nursery, run by Sarah Byers, co-owner of the northern tract of the original Kellum property, was in operation from at least 1884 to 1899, and possibly for many years after that (Chapter 3). Most of the flowerpots were made of a medium to dark red unglazed earthenware, but colors ranged from light yellow to dark red, and ceramic pastes ranged from friable to relatively hard-fired. All unglazed redware found on the site

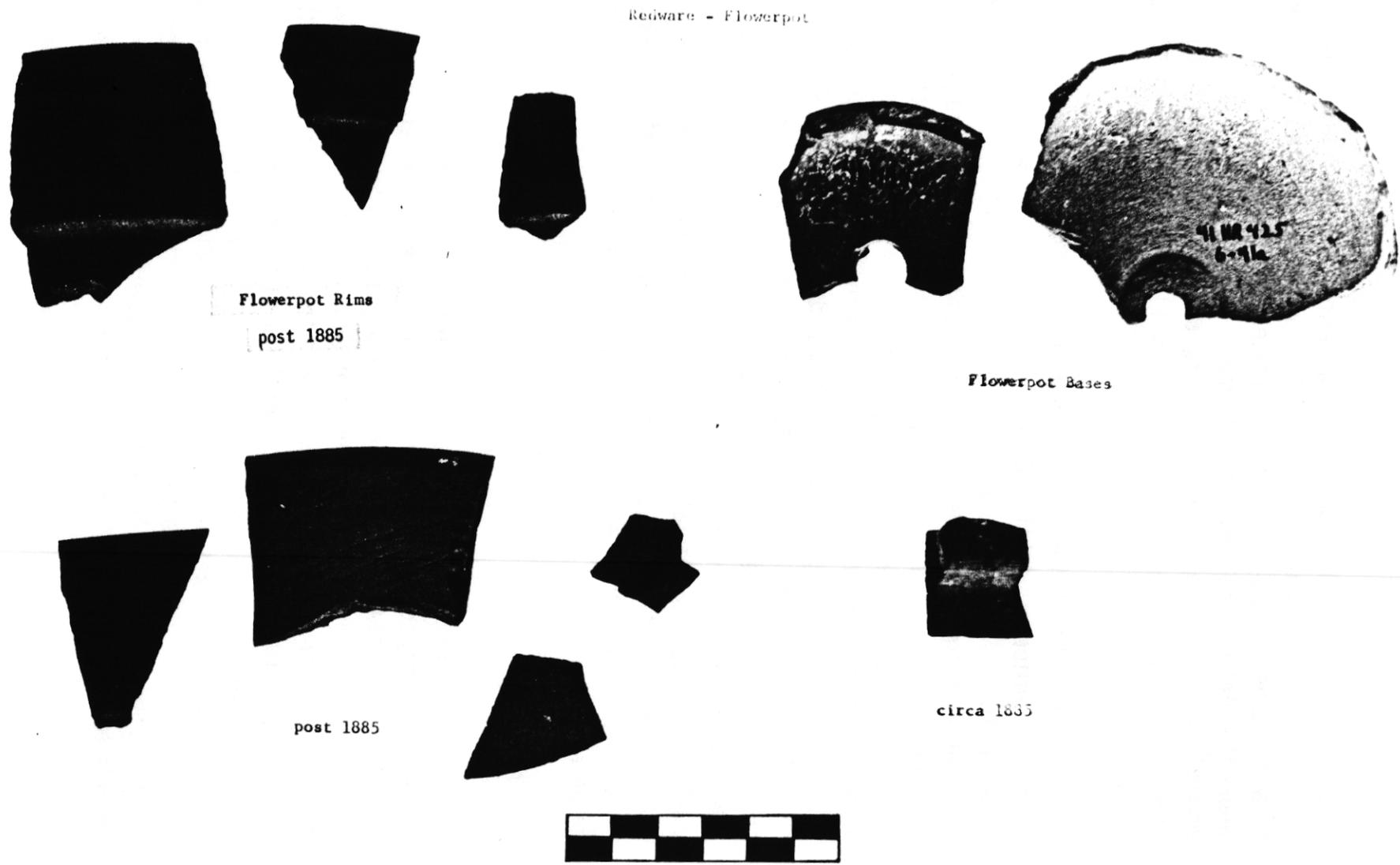


Figure 63. Flowerpot Fragments from the 1984 Excavations.

was clearly from flowerpots. Most of this material was not datable, but several rims were of a type that Audrey Noël Hume (1978: 44) has dated to a context of c. 1885. Most identified rims, however, were characterized by the broad, slightly flared collar typical of modern flowerpots (Figure 63). The beginning date for this type of rim is not known, though it was presumably after 1885 when rounded rims were still more common (A. Noël Hume 1978: 44). The assemblage also included several undated yellow ware flowerpots with molded decoration.

### Utility ware

Utility ware was the smallest of the three major categories, with only 16 sherds comprising 6 per cent of the total assemblage. Utility ware types can be seen in Figure 60. This group consisted mainly of heavy dark stonewares assumed to have come from large utilitarian vessels such as storage jars. While most of these items would have probably been used in a domestic context, they were analyzed separately from tablewares in order to make sure that there were no geographical trends or concentrations suggesting possible specialized usage.

Utility ware ceramic types included unglazed gray stoneware, salt glazed gray, brown, and red stoneware, alkaline glazed stoneware, and Albany slipped stoneware. Most of these items had very long date ranges. Salt glaze, the "orange peel" effect obtained by throwing common salt into the kiln during firing, is a centuries-old technique, popular throughout the eighteenth and nineteenth centuries and found on American sites of all periods (I. Noël Hume 1978: 112; Stewart and Cosentino 1977: 18). Albany slipped ware, made by coating the interior of the vessel with a dark slip originally obtained from clays near Albany, New York, was used on many utilitarian items from about 1800 on (Stewart and Cosentino 1977: 20). One Albany slipped vessel from the Long Row site was coated on the exterior with a thick brown glaze apparently intended to resemble the popular mid nineteenth century Rockingham/Bennington glaze (I. Noël Hume 1978:123).

Another nineteenth century type was the greenish translucent alkaline glaze, which began as a pre-Civil War tradition of the southeastern United

States (Stewart and Cosentino 1977: 20; Greer 1980: 64). Some of the salt glazed and alkaline glazed stoneware from the Long Row site appeared to be identifiable as Texas stoneware, produced by local potteries from the mid nineteenth century through about the 1920's (Stewart and Cosentino 1977: 18). This gray or red-bodied pottery, made using techniques brought from South Carolina, Georgia, or Ohio, also often had dark slip-glazed linings (Brackner 1983: 41; Greer 1980: 65).

### Miscellaneous

By far the smallest of the ceramic groupings was the miscellaneous category, which contained only five artifacts making up 2 per cent of the assemblage. These items were mainly building materials such as tiles, pipe fittings, and wire casings, and were included in a separate category only because they did not fit any of the other categories. Because of their small number, they were not generally considered as significant in the ceramic analysis. The only items of general interest in the miscellaneous category were an undated glazed tile from a floor or fireplace, and two dolls' legs made of bisque porcelain, dating c. 1880-1930 (Prichett and Plastron 1983: 326). These artifacts are discussed at greater length in the unit analyses below.

### Unit analyses

In this section of the report, ceramics from the Long Row site are analyzed by excavated level and by archaeological unit using the four major ceramic groupings and ceramic types described above. All levels and units were examined for indications of both date and function. Dates were assigned on the basis of the criteria outlined in the introduction, with each level assigned a general date range based on its overall ceramic collection, as well as a possible deposition date indicated by the most recent artifact found. Attributions of function were made on the basis of both quantity of ceramics and the relative quantities of each of the four major ceramic groups. At the end of the report, archaeological units are compared according to the area of the site in which they were located, and general functional and chronological trends are noted across the site.

50S27W

Level 1, a sod level, contained no ceramic artifacts.

Level 2 contained only five fragments of white ironstone. These consisted of two undecorated rim fragments, a bowl base fragment, and a plate base fragment. This material all dates after about the 1840's, when inexpensive white ironstones were introduced. The two rim fragments may date after c. 1870, when unembossed ironstone first became popular (Wetherbee 1980:18).

Level 3 contained two pieces of white ironstone, one fragment of a heavy white porcelain plate, one piece of a white stoneware mug or pitcher, and one redware flowerpot fragment. The white ironstone, again, dates to the mid nineteenth century or later. None of the other material could be assigned specific date ranges. However, heavy undecorated porcelain, often of French manufacture, was generally popular in the late nineteenth century as a more sophisticated version of white ironstone (Collard 1967: 189).

Level 4 contained five pieces of white ironstone. Three of these were wall fragments from bowls or globular pitchers, while the remaining two fit together to form the base of a small plate. Other ceramics consisted of one flowerpot base fragment; one small sherd of undecorated porcelain of the same type as that found in level 3; one fragment of a Rockingham pitcher spout; and a piece of dark, low-fired earthenware which appears to have been a wire casing. The presence of white ironstone again suggests a post-1840's date. This date is supported by the fragment of Rockingham ware, which was most popular in the mid to late nineteenth century (Bartovics 1978: 191).

Ceramics from level 5 consisted entirely of white ironstone. This material included two beveled, unembossed plate rims which appeared to have been burnt; a third unembossed rim from a second plate; a base fragment which fit together with the plate base found in level 4; and six other saucer or plate fragments. The white ironstone once more suggests a date range of the mid nineteenth century to the present, with the

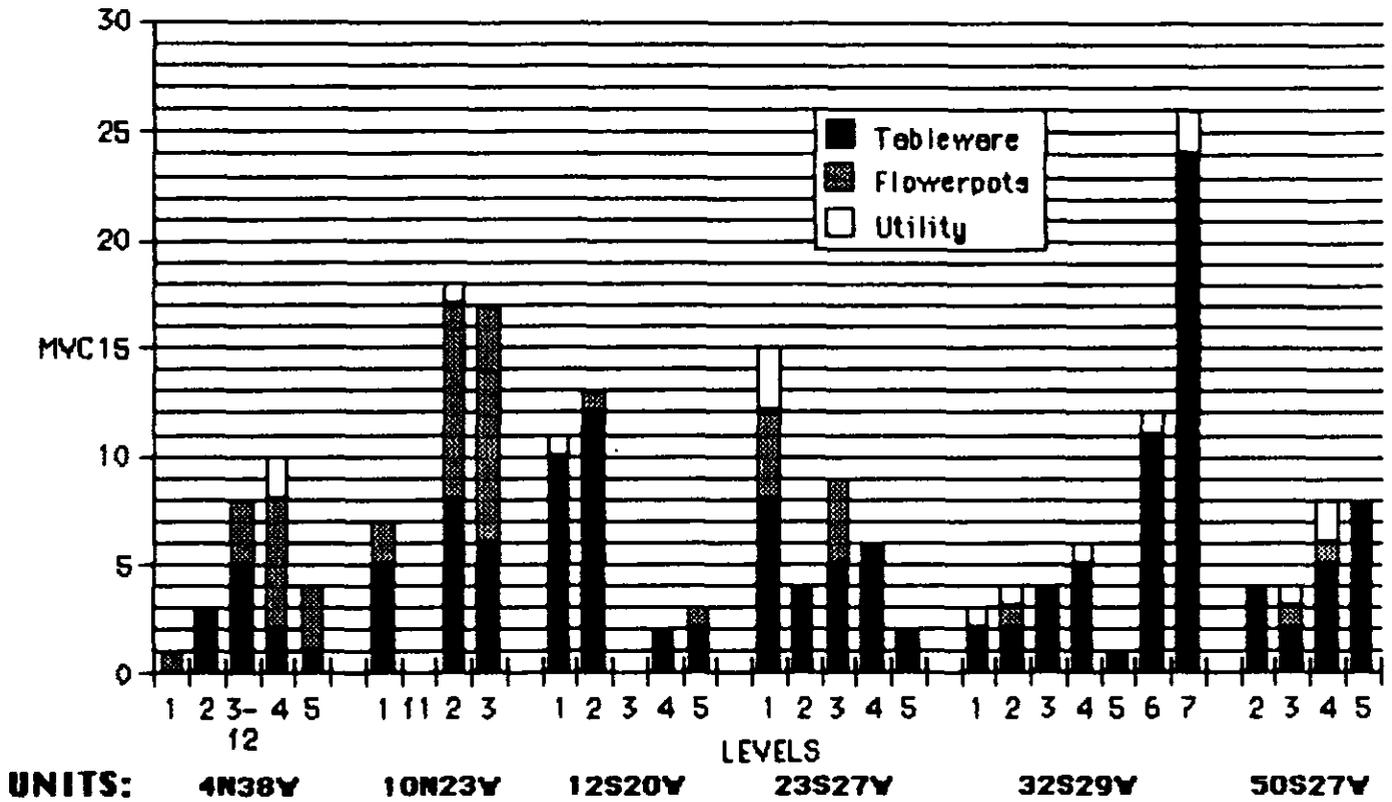
unembossed rims probably dating post-1870.

The predominance of white ironstone in every level gives this unit a possible occupation range from the mid nineteenth century to the present, and suggests that occupation in this area was primarily domestic. This unit, however, had the lowest number of ceramics for any unit in which ceramics were found (Figure 64), suggesting either that the actual occupation was far from this unit or that the excavated levels were above the main occupational levels. The relative uniformity of the assemblage suggests that all levels of this unit may contain material from the same household or occupation, while a common vessel indicates that levels 4 and 5 may have been deposited contemporaneously. The unembossed ironstone rims in levels 2 and 5 appear to date deposition of all excavated levels to the 1870's or later.

#### 10N23W

Level 1 of this unit contained four white ironstone fragments; one redware flowerpot fragment; one unglazed fragment of molded yellow earthenware, possibly from an ornamental flowerpot; and two pieces of a heavy white porcelain plate with blue overglaze decoration (Figure 61, top). This plate bore a maker's mark with a symbol of two "T's" in linked diamonds and the words "Hand Paint Made in Japan." The "Made in Japan" inscription shows that this vessel postdates the McKinley Tariff Act of 1891, which required that all imported items be marked with their country of origin (Godden 1964: 11; Lewis and Hoskell 1981: 125). However, the crudity of the porcelain and the thick glaze, as well as the use of the English "T" symbol in the maker's mark, suggest that it is much later, possibly from the late post-World War II period when inexpensive Japanese items flooded this country. This vessel thus may date deposition of level 1 to sometime after the 1940's, while the white ironstone suggests that it could contain material ranging in date from the mid nineteenth century to the present (Wetherbee 1980: 18). The small amount of ceramic material overall suggests that this level was not directly associated with domestic occupation.

Level 2 contained 20 ceramic sherds, more than twice the amount



**Note: No ceramic artifacts were found in unit 6N57W.**

Figure 64. Distribution of Ceramic Types by Function.

found in level 1. Tableware and flowerpot remains were found in exactly equal quantities, with nine sherds each, while miscellaneous ceramics accounted for the remaining two fragments (Figure 64). Tablewares included two fragments from the same Japanese vessel found in level 1, and one fragment of crazed white ironstone which appeared to be from a second vessel also represented in level 1. There were also two unembossed rim fragments from white ironstone bowls or serving dishes, and one wall fragment from a white ironstone bowl or pitcher. The unembossed rims probably date to the 1870's or later (Wetherbee 1980: 18). Level 2 also produced three fragments of white glazed porcelain, one of which was decorated with the edge of a molded geometric design. All three porcelain sherds were extremely thin and delicate, in the style of the German and Austrian porcelains popular through about the 1930's. Like the unembossed ironstone rims, the porcelain fragments date after about the 1870's, when this type of porcelain was first imported in quantity. However, since these wares were most common in the early decades of the twentieth century, it is probable that they may date somewhat later (Collard 1967: 193; Wetherbee 1980: 120).

Miscellaneous ceramics from level 2 consisted of one undated fireplace or flooring tile with a mottled blue and green glaze, and one fragment of bisque porcelain which appeared to be the leg of an unjointed china doll. The leg fragment had molded parallel grooves beneath a painted blue stripe which may have been intended to represent a garter (Figure 61, right). One-piece dolls of this sort, usually of German origin, were manufactured from about the 1880's through the 1930's. They often had molded socks and painted blue or brown garters (Prichett and Plastron 1983: 326; I. Noël Hume 1978: 318). The nine flowerpot fragments from level 2 included six redware fragments from at least two vessels, and three poorly fired light yellow fragments. Two of the redware sherds were rims in the modern style which dates at least post-1885 (A. Noël Hume 1978: 44).

The tablewares, flowerpots, and doll fragments suggest a maximum possible date range for level 2 of c. 1870's or 1880's through the present, with all artifacts except the Japanese plate in use during the period 1880's through 1930's. The Japanese plate and the shared ironstone vessel

suggest that levels 1 and 2 are actually the same level, and date deposition of level 2 to the same mid twentieth century period as level 1. Although level 2 clearly contained domestic ceramic material, the extremely high proportion of non-domestic items suggest that its primary function, like that of level 1, was something other than domestic occupation or domestic refuse disposal.

Level 3 of 10N23W also contained primarily non-domestic material. Of the 16 ceramic sherds recovered from this level, 10 were flowerpot fragments, while six were tablewares of various sorts. The flowerpot fragments were all unglazed redware, with ceramic pastes ranging from dark red to orange. Five were rims in the style which Audrey Noël Hume dates after 1885 (Figure 63). A sixth rim had a somewhat rounded collar, resembling rims that Noël Hume places in a context of c. 1885 (A. Noël Hume 1978: 44).

Tableware from level 3 consisted of three pieces of ironstone and three of porcelain. The ironstone included one unembossed plate rim, one unidentified body sherd, and one piece of a small bowl decorated with bands of light blue slip (Figure 62). This decoration resembles that of the yellow ware kitchen ceramics popular from the mid nineteenth to early twentieth century (Bartovics 1978: 191; I. Noël Hume 1978: 131). However, because of the ironstone body, no definite date could be assigned to this piece, and it could quite possibly be modern. Porcelain consisted of a possible cup fragment with faint white striations under the glaze; an undecorated body sherd; and a fragment decorated with a green and blue floral design painted both under and over the glaze. All of the porcelain was again extremely thin in the late nineteenth/early twentieth century "Bavarian" style (Collard 1967: 193). Both the porcelain and the unembossed ironstone rim suggest a post-1870's date for this level, with the flowerpot rims indicating a somewhat later date. The abundance of flowerpot remains once again suggests that this was not primarily a level of domestic activity.

Overall, unit 10N23W appeared to be characterized by specialized non-domestic activity. Although a large number of ceramics was found, most of these were flowerpots. Flowerpot remains from this unit were

the highest on the site, while the number of tableware fragments was among the lowest (Figure 64). It is possible that these remains may have come from the Byers house and nursery, which were located in this area of the site (Figure 22).

Ceramics in levels 2 and 3 were very similar to each other both in type and quantity. Both levels contained predominantly flowerpot fragments, with tablewares dominated by European porcelain and unembossed white ironstone. These ceramics suggest a date range in the late nineteenth and early twentieth centuries. However, the high proportion of thin German style porcelain suggests that the deposits probably date toward the later part of this period, when this type of porcelain was most common. Level 1 also yielded a high proportion of unembossed white ironstone, but contained little flowerpot material and no European porcelain, suggesting that it may have been a topsoil level distinct from levels 2 and 3. Ceramic quantity overall was relatively small in this level, and included an apparently modern Japanese plate of which two pieces were also found in level 2. The presence of these fragments in both levels suggests that levels 1 and 2 may have been deposited after about the 1940's.

### 32S29W

Level 1 of this unit contained two pieces of white ironstone, both of which appeared to be bowl fragments. This level also yielded one piece of utility ware, a base fragment from a heavy straight-sided stoneware vessel which was Albany slipped on its interior and glazed on the exterior with a thick brown glaze resembling the mottled Rockingham glaze (Figure 62). This sherd could not be precisely dated, although the American-made Rockingham ware which it was apparently intended to imitate was most common in the mid 1800's (Collard 1967: 146-147). Because of the absence of any closely datable pieces, level 1 was dated from the 1840's, when plain white ironstone was introduced, to the present.

Level 2 contained four pieces of ceramic. Two of these were white ironstone fragments: one fragment of a plate base, and one unidentifiable body sherd. A redware flowerpot rim was similar to those Audrey Noël

Hume (1978: 44) dates after 1885, while a fragment of red-bodied alkaline glazed stoneware (Figure 60) appeared to be of a type manufactured in Texas between about 1850 and 1920 (Stewart and Cosentino 1977: 18; Greer 1983: 65). Despite its small ceramic yield, this level thus had a thorough mix of the three major ceramic categories. The flowerpot rim appeared to date level 2 from about the 1880's to the present.

Level 3 contained only three pieces of tableware. These consisted of two fragments of white ironstone plates, and one fragment of flown blue transfer-printed ware (Figure 62). Transfer-printing with flowing blue color was popular from about the 1840's to the 1870's (Collard 1967: 114-118). These dates coincide with the early period of white ironstone, and suggest a general mid nineteenth century occupation range.

Level 4 contained six ceramic fragments, all but one of which were tableware. This material included two sherds of white ironstone; one piece of plain white porcelain; one piece of flowered overglazed porcelain; and one fragment of a thin black stoneware cup decorated with an impressed design of contiguous circles. The pattern on this last piece was unidentifiable, but it may be an example of the machine-turned "basalt ware" first manufactured in the late eighteenth century (I. Noël Hume 1978: 121-122). Both pieces of porcelain were thin and nearly translucent in the late nineteenth/early twentieth century "Bavarian" style, and suggest a post-1870's deposition date. The one non-tableware artifact was a piece of clear-glazed buff-colored ceramic pipe which was placed in the miscellaneous category.

Level 5, a pipe trench, contained only one ceramic sherd. This was a fragment of porcelain with a polychrome floral overglaze design similar to that in level 4. Although this piece was a thicker-bodied ware than the porcelain fragment in level 4, the floral decoration suggests a similar European origin (Lewis and Haskell 1981: 141).

Level 6 contained 14 pieces of ceramic, a much larger number than in any preceding levels. All of these were tablewares, but the assemblage included a wide variety of ceramic types. Ten of the fragments were white ironstone, including a number of base fragments and one unembossed

plate rim which probably dates after about 1870 (Wetherbee 1980: 18). Other tablewares were a rim fragment from a flown blue transfer-printed cup or small bowl, dating c. 1840-1870 (Collard 1967: 114-118); a fragment of a white stoneware bowl or globular pitcher; a piece of a brown salt glazed gray-bodied stoneware mug; and a fragment of yellow and green glazed English majolica (Figure 62). Brightly colored English majolica of this sort was produced from about 1860 through around 1910 (Lewis and Haskell 1981: 125; Hughes 1960: 200-205); while the mug may be an example of the British salt glazed stonewares popular in the late nineteenth century (I. Noël Hume 1978: 79). The large amount of tableware suggests that level 6 was in some way associated with a domestic occupation. The general date range for this ceramic material is mid nineteenth through early twentieth century, with the unembossed ironstone rim suggesting a deposition date after c. 1870.

Level 7 yielded 48 ceramic sherds, the largest number found in any level on the site. Many of these fragments could be fitted together to form partial vessels. Except for one piece of an unglazed gray stoneware pitcher, ceramic material from this level consisted entirely of tableware. Thirty-six of the 47 pieces of tableware were white ironstone fragments comprising approximately 19 actual vessels. White ironstone included an unembossed saucer composed of at least seven fragments (Figure 60); four fragments of an unembossed cup in the heavy "hotel ware" style (Figure 60); a plate base made up of at least four fragments; a piece of a small bowl base; and 14 other fragments of unidentified vessel form. In addition, there were three other distinctive pieces of white ironstone. These were a plate base with a John Edwards maker's mark dating c. 1850-1880 (Wetherbee 1980: 28); an undecorated pitcher fragment with handle attached; and a plate rim embossed in the Edward Corn "Persia Shape," a design introduced in 1848 (Wetherbee 1980: 40).

Also in this level were an undated fragment of blue-glazed ironstone from a blue and white bowl; three white stoneware fragments from two unidentified vessels; three white porcelain fragments from a plate and two small bowls or cups; and four more pieces of the brown-glazed gray-bodied mug found in level 6 (Figure 62). Overall, ceramics from level 7 suggested a date range of mid nineteenth century to the present. The

high quantity of ceramics, as well as the large size of most of the fragments, strongly suggested that level 7 contained material from a domestic refuse heap. Again, the presence of a large number of unembossed white ironstone fragments indicated a post-1870 deposition date.

This unit thus had an overall date range of mid nineteenth century to the present, with the European porcelain and large amounts of unembossed ironstone suggesting that all levels were deposited sometime after 1870. Tableware predominated in all levels, suggesting that this was primarily an area of domestic activity. Nevertheless, levels 1 through 5 contained relatively little ceramic material, possibly an indication that these levels were deposited after the main period of domestic occupation. The extremely high quantity of ceramics in level 7 suggested that this level had served as a domestic trash area, while a shared vessel between levels 6 and 7 suggested that level 6 was probably an upper level of the same refuse deposit. Although the unembossed white ironstone present in both levels could be of more recent origin, dates from other ceramics suggested that material in these levels was probably deposited in the late nineteenth or early twentieth century.

#### 12S20W

Level 1 of this unit contained 16 ceramic fragments. Except for one redware flowerpot fragment, all of these ceramics were tableware. Twelve of the ceramic fragments were white ironstone, including three unembossed rims, seven other plate or saucer fragments, and two bowl or cup fragments. Porcelain included one scalloped, molded base fragment from a small unidentified vessel decorated with overglaze gold (Figure 61, bottom). The thin walls and elaborate molding of this vessel suggested that it may have been of late nineteenth/early twentieth century German or Austrian origin (Collard 1967: 194). Other tablewares consisted of one fragment each from a small white stoneware mug or pitcher and a white stoneware bowl. Both the porcelain and the unembossed ironstone fragments suggest a post-1870's date (Collard 1967: 194; Wetherbee 1980: 18).

Level 2 contained a similar amount of ceramics, with 15 fragments. Again, these were all tablewares except one flowerpot fragment, a yellow earthenware rim with a deep collar suggesting a date of after 1885 (A. Noël Hume 1978: 44). Ten fragments of white ironstone were found, including one small bowl base and three unembossed rim sherds probably dating after about 1870 (Wetherbee 1980: 18). Other ceramics included two gilded and molded fragments from the same porcelain vessel as that found in level 1 (Figure 61); one ironstone fragment with a polychrome decal-printed floral design; and one piece of black transfer-printed ironstone (Figure 62, right). Transfer-printing in colors other than blue was first done in the late 1820's, while decal-printed ceramics became common in the United States after around 1900. Both methods of decoration are still used today (Collard 1967: 117, 194; Lewis and Haskell 1981: 141). Although the other ceramics suggest a date range from the nineteenth century to the present, the presence of the decal-printed sherd indicates a twentieth century deposition date for this level.

Level 3 contained only three fragments of white ironstone. One of these was an unembossed rim, while the remaining two were body sherds of unidentified vessel form. This material has a date range from the mid nineteenth century to the present, with the undecorated rim suggesting deposition after about 1870. The small amount of material suggests that this level was not directly associated with a domestic occupation.

Level 4, a gravel lens, contained no ceramics.

Level 5 also contained only three pieces of ceramic, again suggesting a low level of domestic activity. These ceramics included two fragments of tableware and one probable flowerpot fragment. The tableware consisted of one fragment of a white ironstone bowl or cup and one ironstone rim fragment with a small transfer-printed blue floral design. The flowerpot sherd was low-fired yellow earthenware, with a decorative molded design on the exterior and brown slip on the interior. Blue transfer-printed tableware was most common in the United States from about 1810 to 1850. However, this piece lacks the complex design typical of that period and is probably later (Godden 1963: 113-115). The white ironstone again suggests a date of c. 1840's to the present (Wetherbee

1980: 18).

Overall, ceramics in unit 12S20W were dominated by tablewares, with non-tableware fragments consisting of only three sherds of flowerpot (Figure 64). Levels 1 and 2 contained more tableware than any other level on the site except the possible dump in unit 32S29W, suggesting that these were levels of domestic occupation. The extremely low quantities of ceramic in levels 3 and 5, however, indicate that these lower levels had little direct association with domestic activity despite the fact that they contained primarily tablewares. White ironstone predominated in all levels, suggesting a possible date range of mid/late nineteenth century to the present. A decal-printed sherd in level 2, however, indicated that the top two levels were probably deposited after the turn of the century. A shared porcelain vessel in these two levels further suggests that they may have been deposited contemporaneously.

### 23S27W

Level 1 of unit 23S27W contained 21 ceramic fragments, the highest total of any level on the site except level 7 of unit 32S29W. Only half of these were tablewares, however, with non-tablewares almost evenly divided between utility ceramics and flowerpots (Figure 64). Of the 11 tableware fragments, six were white ironstone. Five of these fragments were undecorated, and appeared to be from bowls or cups. The sixth was a rim from a plate embossed with an unidentified design. This fragment of embossed ironstone could date as early as 1840 (Wetherbee 1980: 18). The remainder of the tableware included a small whiteware cup handle with traces of yellow underglaze decoration; a fragment of English majolica, popular between about 1860 and 1910 (Lewis and Haskell 1981: 125; Hughes 1960: 200-203); a thin porcelain cup rim in the late nineteenth/early twentieth century German or Austrian style (Collard 1967: 194); and two fragments of an unidentified blue vitreous stoneware rim which might belong to a bowl.

Utility ware from level 1 consisted of four fragments of heavy gray stoneware which appeared to be all from one vessel. This vessel, salt-glazed on the exterior and Albany slipped on the interior, may have

been a locally made Texas stoneware, a ceramic type manufactured between about 1850 and 1920 (Stewart and Cosentino 1977: 18). Flowerpot material consisted of five redware fragments from at least two vessels, and one heavy yellow ware fragment. The redware included one collared rim of the type Audrey Noël Hume places in a post-1885 context (A. Noël Hume 1978: 44). The flowerpot rim, the "Bavarian" porcelain, and the English majolica all suggest a deposition date in the late nineteenth century or later, while the high proportion of non-tableware suggests that level 1 contained material reflecting several different activities or occupations.

Level 2 contained only four ceramic fragments, all of which were tableware. Three of these were white ironstone: one unidentified body sherd, one fragment with an embossed design, and one unembossed rim. This material covers the whole period of white ironstone production, from the embossed styles of the 1840's-1860's to the undecorated wares of the late nineteenth and twentieth centuries (Wetherbee 1980: 18). The fourth tableware fragment was a piece of edged whiteware or ironstone, with underglaze yellow coloring over a molded zigzag rim design (Figure 62). White-bodied edged wares of this type were manufactured between approximately 1820 and 1880 (Bartovics 1978: 198). This level therefore has a maximum date range of early nineteenth century to the present, with the unembossed ironstone rim indicating a deposition date after c. 1870. The small amount of ceramic material suggests that this level was not immediately associated with domestic activity.

Level 3 contained nine ceramic fragments, with the collection almost evenly divided between tableware and flowerpot material. Of the five tableware fragments, two were undecorated white ironstone body sherds, two were embossed white ironstone, and one was a thin porcelain cup rim, once again in the finely molded "Bavarian" style. One of the embossed ironstone pieces was a scalloped rim, and the other had what appeared to be a J. Edwards "Triple Border" design, dating it after 1848, when this design was introduced (Wetherbee 1980: 40). The four flowerpot fragments showed a range of ceramic pastes: one was a burnt orange redware, two were a paler orange, and the last was a light yellow ware, nearly tan in color. The date range overall for this level seems to be mid

nineteenth century and later, with the German style porcelain dating deposition some time after the 1870's. As in level 1, the variety of ceramic material suggests a mix of domestic and non-domestic activities.

Level 4 contained eight tableware fragments. Six of these were white ironstone and two were white stoneware. The ironstone consisted of two undecorated plate fragments, two undecorated bowl fragments, an unembossed plate rim, and an embossed saucer rim and base. The white stoneware fragments both came from a single small bowl. Because of the long use of this material, the white stoneware could not be precisely dated. The ironstone, again, dates from the 1840's to the present, with the unembossed rim suggesting a post-1870 deposition date.

Level 5 was one of the few levels on the site which contained no white ironstone. This level yielded only two ceramic sherds: a fragment of blue transfer-printed ironstone with a floral border, and a fragment of flown blue transfer-printed ironstone. Both are shown in Figure 62. Blue transfer-printed whitewares and ironstones were one of the most common American tablewares between about 1810 and 1850, and they continued to be widely manufactured well into the present century. Flown blue, a variation on the same style, was most popular from about 1840 to 1870 (Collard 1967: 114-118; Lewis and Haskell 1981: 141). The earliest possible date of deposition for this level is therefore around 1840, when both types of ware were in use.

Like most of the other units, ceramics from 23S27W were dominated by white ironstone tableware, including a number of unembossed ironstone rims. These and other late nineteenth century ceramic types provided a possible deposition date of 1870's or later for all levels except level 5, which could date as early as 1840. A distinctive feature of this unit was the presence of a relatively large number of embossed ironstone fragments, dating c. 1840's-1870's, in levels 1 through 4. These sherds suggest that in spite of the late nineteenth century terminus post quem, these levels may contain material from an earlier occupation than many of the other units. Levels 1 and 3 contained the largest number of ceramics, and were the only levels in the unit that did not contain entirely tableware. Since level 3 was the top level of a large pit feature which

directly underlay level 1, it is possible that these two levels contained material from the same deposits. The large number of flowerpots and other non-tableware items in both these levels suggest that they may have contained material from both domestic and non-domestic activities. Level 2, with only a few ceramics, was probably not associated with a domestic occupation. Levels 4 and 5, both part of the pit feature, could have been domestic levels despite the relatively small number of ceramics, since these levels covered only a small area.

#### 4N38W

Level 1 of this unit contained only one redware flowerpot fragment.

Level 2 contained five pieces of ceramic, consisting of four tableware fragments and one flowerpot fragment. The tableware included two fragments of white ironstone, one piece of undecorated porcelain, and one piece of brown transfer-printed ironstone. None of these materials could be closely dated, although the white ironstone indicates a post-1840 date. The flowerpot sherd was a modern collared rim, indicating a probable deposition date some time after 1885 (A. Noel Hume 1978: 44).

Level 3, a modern pipe trench, contained only one redware flowerpot fragment.

Level 4 contained 11 pieces of ceramic, a large increase over previous levels. Seven of these were categorized as tableware, while the remaining four included utility ware, flowerpots, and one miscellaneous item. Tablewares included one fragment of undecorated white ironstone; one piece of a reddish transfer-printed ironstone bowl with an overglaze gold rim border; one piece of undecorated porcelain; and one thin molded porcelain rim in the late nineteenth century/early twentieth century German and Austrian style. Two other porcelain fragments, from a bisque vessel tinted a pale rose and decorated with an impressed German inscription, may actually be from some sort of ornamental object (Figure 61). Tinted bisque porcelain of this sort, known as "Thuringian" porcelain, was imported from Germany from about 1870 through the early twentieth century (Collard 1967: 194; I. Noël Hume 1978: 318).

The one miscellaneous item from level 4 was also bisque porcelain, a fragment of a leg from a jointed china doll. This object was untinted, with a molded groove at the top of the leg for attachment to the body of the doll with wire or string (Figure 61). Jointed dolls of this sort, again usually of German origin, were generally manufactured from about 1880 to the 1930's (I. Noël Hume 1978: 318; Prichett and Plastron 1983: 326). Utility ware from level 4 consisted of an unidentified fragment of gray salt-glazed stoneware, and flowerpot material consisted of two redware sherds which may have been from a single vessel. The large amount of German porcelain in this level suggests a deposition date after the 1870's or 1880's, while the relatively large number of non-tableware items suggests that it contained material from both domestic household activities and other activities.

Level 5 of unit 4N38W contained 14 ceramic fragments, the largest number in the unit. However, an overwhelming proportion of these (10 fragments) were flowerpots, with only three tableware fragments and one utility ware sherd. None of the tableware was white ironstone. Tablewares included a fragment of pink-tinted bisque porcelain from the same vessel as in level 4; a piece of a molded "Bavarian" style porcelain bowl, with floral overglaze decoration; and a fragment of blued edged ironstone with molded feathered edge decoration, dating c. 1820 to 1880 (Figure 62). The painting technique on this last piece is very crude, consisting only of a broad band of dark blue paint. This suggests that the vessel was produced in the later part of the edged ware period, when the painting style of the edge decoration had begun to deteriorate (Bartovics 1978: 198; I. Noël Hume 1978: 131).

The flowerpot material from level 5 comprised a wide range of ceramic pastes, with fragments from at least five vessels. Three sherds were dark, relatively hard-fired redware; five were a lighter orange redware from two or more vessels; and two were yellow ware from two separate vessels. Four of the flowerpot fragments were rim sherds, all with the deep, straight-sided collar that A. Noël Hume (1978: 44) places in a post-1885 context. The one piece of utility ware, a fragment of brown salt glazed stoneware with Albany slipped interior (Figure 60), closely

resembled Texas stonewares manufactured in the late nineteenth and early twentieth centuries (Stewart and Cosentine 1977: 18). Thus, although the stoneware and edged ironstone could date earlier, the porcelain and flowerpots date deposition of this level some time after the 1870's or 1880's, the same period as level 4. The extremely large number of flowerpot fragments strongly suggests gardening activity in this area.

Level 6 did not contain much ceramic material. Ceramics from this level consisted of one piece of white salt-glazed stoneware and three redware flowerpot fragments. Two of the flowerpot fragments were collared rims similar to those in level 5, suggesting a deposition date in the 1880's or later. The white stoneware, a ceramic type manufactured from the eighteenth to the twentieth century, could not be dated. The near absence of tableware in this level suggests little association with domestic occupation, although the flowerpot material may indicate limited gardening activity.

Overall, this unit contained less ceramic material than most of the other units (Figure 64). Large amounts of ceramics were found only in levels 4 and 5, and a high proportion of these were non-tableware items, suggesting that this area was probably not used for domestic refuse disposal. More than half of all ceramics found were flowerpots. Flowerpots occurred in all levels, but were most common in levels 5 and 6, possibly an indication that these levels dated to the period of the 1880's-1890's nursery and greenhouse located in this area (Figure 22). Since levels 4 and 5 shared a porcelain vessel, it is possible that all three of the bottom levels of this unit reflect a single occupation. Unit 4N38W was also notable for the near absence of the white ironstone ceramics which characterized all other units on the site, and for the high proportion of German bisque porcelain and German style porcelain tableware. Both the porcelain and the flowerpot fragments indicated a deposition date of 1880's or later for the entire unit.

## Conclusions

In general, the Long Row/Rose Garden site did not produce much ceramic material this season, suggesting that many of the excavated levels may be fill containing scattered debris rather than levels of domestic occupation. Most of the ceramics found, however, were tableware. The largest quantities of tableware were found in the southern area of the site, suggesting that this was the most heavily occupied part of the site. Of the four southern units (50S27W, 32S29W, 23S27W, and 12S20W), unit 32S29W had the largest amount of tableware. Most of this material was found in levels 6 and 7. Both these levels contained large amounts of white ironstone and appeared to date to the late nineteenth century or later. The location of this unit near the back of the Bagby Street lots (Chapter 3) suggests that levels 6 and 7 may have contained a household dump dating to the historic occupation of the Long Row area.

The second largest amount of tableware on the site was found in the upper two levels of unit 12S20W. This suggested that these were also levels of domestic occupation. In this unit also, most of the ceramics could be dated to the late nineteenth century or later, with one decal-printed sherd suggesting a deposition date after 1900. Unit 23S27W also contained relatively large amounts of tableware in levels 1, 3, and 4, which also appeared to date to the late nineteenth century or later. Levels 1 and 3, however, also contained large amounts of flowerpot remains. These were the only levels in this part of the site to contain significant quantities of non-tableware ceramics. Since these two levels were adjacent to each other, it is possible that they both contained deposits from the same occupation or occupations, which appeared to be characterized by both domestic and non-domestic activity. Level 5, the bottom level of the pit feature in unit 23S27W, contained only two transfer-printed sherds and could be much earlier than the upper levels.

The southernmost excavation unit, unit 50S27W, yielded the smallest amount of ceramics in this part of the site. However, these ceramics consisted almost entirely of white ironstone tableware, suggesting that this unit was probably in the vicinity of a domestic residence. Material from this unit also could be dated to the late nineteenth century or later.

Tableware quantities were much lower in the northern part of the site. Unit 6N57W contained no ceramics at all, suggesting that this was probably a fill area. The other two units, 4N38W and 10N23W, had very similar ceramic assemblages, with large amounts of flowerpots in their lower levels. Both these units also contained large quantities of European-style porcelain, which greatly outnumbered white ironstone in unit 4N38W. This porcelain, as well as rim styles on flowerpot fragments, suggested a deposition date of around the 1880's or later. It seems likely that the ceramics in both these units were associated with the nearby Byers nursery, which operated through the 1880's and 1890's, and perhaps also with the Byers house which stood in this area until about 1913 (Chapter 3).

Overall, the maximum date range for the ceramics on the Long Row/Rose Garden site was from about 1840 to the present, aside from a few poorly represented long-lived types like whiteware and Rockingham ware, which could go back to the 1820's or earlier (Bemrose 1952: 19; Collard 1967: 194). White ironstone, accounting for half of all ceramics on the site, dominated in all four of the southern units. This ceramic type was most common from about 1840 through the end of the nineteenth century. However, the fact that the majority of the white ironstone recovered was unembossed suggests that the heaviest period of domestic occupation for this site may have been closer to 1870-1900 or even later, when undecorated white ironstone continued to be sold as an inexpensive everyday tableware (Wetherbee 1980: 18). This date range is supported by the modern collared flowerpot rims found throughout the site and apparently introduced sometime after 1885 (A. Noël Hume 1978: 44). It is also supported by the presence of thin-walled Bavarian style European porcelain, first imported in the last quarter of the nineteenth century and most common in the early decades of the twentieth century (Collard 1967: 194). On the basis of these ceramics, nearly every level on the site could be dated to the 1870's or later. The relatively high percentage of German style porcelain, especially in the northern part of the site, suggests that the period of intensive occupation probably extended through the early part of the twentieth century (Collard 1967: 194).

## Chapter 7

### GLASS

by

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#### Introduction

The glass assemblage of this first season of excavation at the Long Row is highly fragmentary, consisting mainly of bottle fragments. Analysis of these seemingly anonymous fragments yielded much information about the artifacts themselves, the date ranges of levels and units, and the occupation of each level. The predominant date range of the assemblage extends from the late nineteenth century to the present. The maximum date range extends from the beginning of the nineteenth century to the present. Analysis of the glass assemblage showed that about half the archaeological levels were related to domestic occupation, and about one sixth were related to non-domestic occupation. The remaining third could not be classified according to function.

Following is an in-depth analysis of the 1984 Long Row glass assemblage. The intent of this report is to provide the reader with as much information as possible about the collection. The report is divided into two parts, a chronological and a functional analysis. In the first section, the dates of glass artifacts from each excavation unit are analyzed to provide a general date range for different levels and areas of the site. In the second section, the distribution of all artifacts identified by function is examined in an attempt to determine what activities were conducted in different areas of the site at different times.

#### Identification and dating of glass artifacts

Function and date range of artifacts from the Long Row glass assemblage were determined by four major criteria: shape, color, identifying marks such as embossing or manufacturers' marks, and evidence of the technology used to manufacture the artifact. A fifth criterion, social factors resulting in the popularity of certain products and bottle types, was more vague and provided more general clues. An example

of this last criterion would be the popularity of bitters and patent medicines in the late nineteenth century.

The shape of a bottle is often directly related to its function. However, bottles of the same shape can be used for different purposes, and bottles used for similar purposes can vary in shape. In addition, it is often difficult to determine the exact vessel shapes from a fragmentary assemblage like the Long Row glass collection. For this reason, shape alone was seldom used as a definitive function guide in the analysis of the Long Row glass. The most common shapes of bottles of specific functions are given in Table 4.

Color is a more effective analytical tool. Appendix 4 presents a breakdown of the Long Row glass assemblage by color. Used in conjunction with shape, color can provide valuable clues to the original function or date of a glass vessel. The following colors are most abundant in the Long Row assemblage:

Clear, or colorless glass, is glass that is without or is meant to be without any color (McKearin and Wilson 1978: 512).

Aqua, or aquamarine glass, is light green or light bluish green.

Amber refers to a wide range of browns, from light golden brown to dark reddish brown.

Black is actually very dark olive green or olive-amber (McKearin and Wilson 1978: 511).

Table 4 shows the types of bottles in which these colors are most commonly used. Other colors in the Long Row glass assemblage are sun-colored amethyst, bottle green, bright green, dark green, milky green, white, cobalt blue, red, and yellow. Sun-colored amethyst is a very light pinkish-purple color. Glass of this color, originally clear, contains manganese, added as a decolorizing agent. When the manganese is originally added to the glass, the ions in it are in a reduced state. Upon exposure to the sun, the ions are oxidized, thus causing the color change

Table 4  
 Most Common Colors and Shapes for Bottles  
 of Different Functions

Shape	Color			
	Clear	Aqua	Amber	Black
Cylindrical	(bitters) food medicine	beer (bitters) food mineral water soda pop medicine	beer bitters medicine wine/spirits	wine/spirits
Oval	(bitters) medicine whiskey	(bitters) medicine	bitters medicine (whiskey)	wine/spirits
Square	(bitters) medicine	(bitters) medicine	bitters medicine	
Rectangular	(bitter) medicine whiskey	(bitters) medicine	bitters medicine (whiskey)	
Figural	(bitters)	(bitters)	bitters	

NOTE: Parenthesis indicate a somewhat less common occurrence.

(Stewart and Cosentino 1976:29-100)

(Munsey 1970: 55). Bottle green is light olive or aqua. Glass of this color is natural glass, with no colorizing or oxidizing agents added. The color is caused by impurities in the raw materials (Stewart and Cosentino 1976: 14). Bright green refers to the shade of green used by the Coca-Cola Company in Sprite soft drink bottles since 1960 (Coca-Cola Company 1984: personal communication). Dark green is more of a forest green. It is found in bitters bottles and occasionally soft drink bottles. Milky green and white refer to green milk glass and white milk glass, restricted to table glass in this assemblage. Cobalt blue, a dark blue, is restricted to medicinal bottles at this site. There is a single small piece of red glass, found in excavation unit 4N38W, level 1. It is highly deformed, as if it has been burned or crushed. The one piece of yellow glass, from unit 10N23W, level 2, is actually clear glass with a yellow backing on it. The function of this piece could not be determined.

The most reliable method of determining the function of a bottle, however, is to find identifying marks on the specimen. These marks consist of embossed decoration, product names, or manufacturers' names or symbols. Such marks can be compared to bottles or pictures of bottles of known identity, in hopes of finding a perfect match. This method is also one of the best ways of determining the date range of a glass artifact. The style of these marks changes periodically, thus providing well-defined date ranges. Stylistic changes in embossing on soft drink bottles provided some of the best date ranges for this assemblage.

More general date ranges can be ascertained by examining the method of manufacture of artifacts. These dates are commonly related to technological advances such as the use of different mold types or the introduction of machine manufacture in the early twentieth century. Knowledge of social changes that affect the dates of manufacture of certain product types can provide similar broad date ranges. Table 5 summarizes the stylistic, social, and technological changes used to date the Long Row assemblage. When considering these dates, it is important to remember that an artifact can be used and deposited at any time after its date of manufacture. All dates given in Table 5 are dates of production or invention, and are not necessarily, although they may be, dates of most common occurrence.

Table 5

Stylistic, Social, and Technological Changes  
Affecting the Long Row Glass Assemblage

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Molds begin to be extensively used in America	1800	(Munsey 1970:38)
First side-lever glass press	1827	(Lee 1960:5)
Introduction of jawed lipping tool for finishing bottles	by 1840	(McKearin and Wilson 1978:217)
Lewis R. Boyd patents opal glass liners for zinc screw caps	1869	(Stewart and Cosentine 1976:55)
Three piece dip mold enjoys maximum popularity	1870-1910	(Munsey 1970:39)
Turn molded bottles popular in America	1870s-1920s	(Toulouse 1969:532)
Black glass rarely found in abundance	1880	(Lewis and Haskell 1981:51)
after this point		
Phillip Arbogast patents the press-and-blow semiautomatic machine for wide-mouthed bottles	1881	(McKearin and Wilson 1978:255)
Manganese is most widely used decolorizing agent for American glass	1880-1915	(Munsey 1970:55)
First wide-mouthed bottles made on semiautomatic machine	1893	(Lewis and Haskell 1981:50)
William Painter patents the crown bottle cap	1892	(Stewart and Cosentino 1976:25)
Bitters-taking very popular in America	last half of 19th century	(McKearin and Wilson 1978:300)
Etching enjoys great popularity	late 19th century	(Munsey 1970:51)
Owens automatic bottling machine patented	1904	(Toulouse 1967:45)
Passage of Pure Food and Drug Act leads to decline in popularity of bitters	1906	(Watson 1965:14)

Table 5 (Cont.)

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Owens Bottle Company used <u>o</u> in square as maker's mark	1911- 1929	(Toulouse 1971:393)
Beaded modern screw top intro- duced	1915	(Toulouse 1977:106)
Coca-Cola introduces the hobbleskirt bottle	1916	(Coca-Cola Company 1984: personal communication)
bottle green		
Hand blowing practically ceased	1925	(Lewis and Haskell 1901:58)
Nehi bottle patented	March 3, 1925	(Royal Crown Bottling Company 1984: personal communication)
Seven-up starts using dark green bottle	1928	(Seven-up Company 1984: personal communication)
Dr. Pepper uses 10-2-4 bottle	1925- 1940	(Dr. Pepper Bottling Company 1984: personal communication)
Prohibition repealed	1933	(Krout and Rice 1977:150-151)
Government regulation requires liquor bottles to be embossed "Federal law forbids sale or re-use of this bottle"	1933- 1964	(Munsey 1970:126)
Individual bottle is the standard method of packaging beer	by 1940	(Lewis and Haskell 1981:59)
Owens Illinois Glass Company uses <u>I</u> inside oval as maker's mark	1954- present	(Toulouse 1971:403)
Coca-Cola changes from embossed to painted logo	1958	(Coca-Cola Company 1984: personal communication)
Introduction of bright green Sprite bottle	1960	(Coca-Cola Company 1984: personal communication)
Coca-Cola 75th anniversary bottle	1976	(Coca-Cola Company 1984: personal communication)

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### Chronological analysis

One of the main objectives of this analysis was to determine an approximate date range for each stratigraphic level of the various excavation units. Using the criteria listed in Table 5, date ranges were established for as many artifacts as possible within each level of each unit. The entire range of dated artifacts was used to establish a maximum use range for the material in each level, while the earliest manufacture date of the most recent artifact was considered to indicate the terminus post quem, or earliest possible date of deposition, for that level. It must be remembered, however, that the terminus post quem is only the earliest date at which the level could have been deposited, and not necessarily the date at which deposition actually occurred. Because many of the glass artifacts could not be dated, it is possible that the termini post quem for many levels are much earlier than their actual deposition dates.

Glass artifacts were also compared and cross-mended between levels in an effort to determine whether archaeological levels within the same unit could be combined. A high incidence of matching fragments, and of fragments which could not be pieced together but which may have come from the same vessel, suggested that a number of the excavated levels were either contemporary or had witnessed some degree of disturbance. Following is a unit-by-unit, level-by-level description of datable glass artifacts. Table 6 presents an approximate date range for each level of each unit, extrapolated from this information.

#### 10N23W

Possibly the oldest artifact from level 1 of excavation unit 10N23W is a tool-finished mold-blown bottle neck, dating from about the 1840's to 1925 (McKearin and Wilson 1978: 217; Lewis and Haskell 1981: 51). The exact function of this artifact (Figure 65b) is not known, although it may be part of a clear medicine bottle. Other medicinal items from this unit are also pictured in Figures 65a, c, and e.

"Mold-blown," or "hand-blown," refers to bottles made by the process

Table 6

Approximate Date Ranges of Glass Artifacts  
from Each Archaeological Level

Unit	Level	Date Range	
		From	To
10N 23W	1	early/mid 20th century	present
	2	early/mid 20th century	present
	3	late 19th century	early/mid 20th century
	F-1	early/mid 20th century	present
23S 27W	1	late 19th century	present
	2	late 19th century	present
	3	early 20th century	present*
	4	early 20th century	present*
	5	unknown	unknown
12S 20W	1	late 19th century	present
	2	late 19th century	present
	3	late 19th century	present
	4	no artifacts	
	5	early 20th century	mid 20th century*
32S 29W	1	unknown	unknown
	2	late 19th century	present
	3	late 19th century	early 20th century*
	4	late 19th century	early 20th century*
	5	unknown	unknown
	6	mid 19th century	mid 20th century
	7	mid 19th century	mid 20th century
50S 27W	1	no artifacts	
	2	late 19th century	present
	3	late 19th century	present
	4	unknown	present
	5	late 19th century	present
4N 38W	1	unknown	unknown
	2	late 19th century	present
	3	no artifacts	
	4	late 19th century	present
	5	late 19th century	present
	6	unknown	late 19th century
6N 57W	1	unknown	unknown
	2	late 19th century	early 20th century
	3	unknown	unknown
	4	unknown	unknown

NOTE: These date ranges are not definitive date ranges for the stratigraphic levels. They are merely dates of production of the datable vessels within each level. Undated artifacts may have manufacture dates which fall outside these ranges.

\*Dates based on only one artifact.

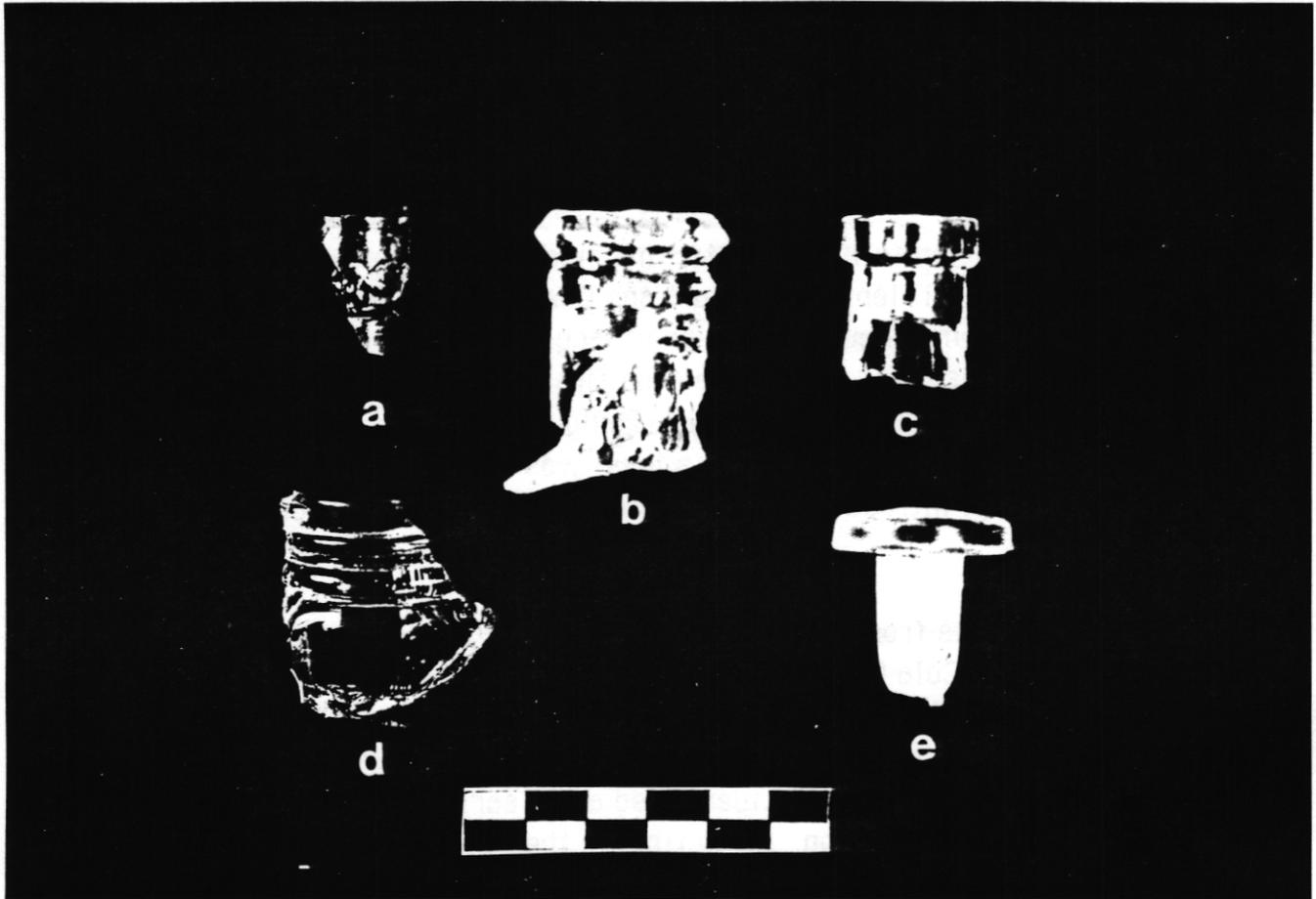


Figure 65. Medicine Related Glass Artifacts. A. Tool-finished cobalt blue bottle neck, possibly medicine bottle. B. Tool-finished clear glass neck, probably pharmacy bottle. C. Aquamarine machine-made pharmacy bottle neck. D. Light cobalt blue probably ointment jar. E. Clear glass stopper.

in which human lungs inflate the glass into the mold, and human hands manipulate the shaping tools (Toulouse 1967: 42). A mold-blown bottle is generally characterized by side seams that do not extend to the top of the bottle. The top of the bottle had to be finished by hand, thereby obliterating the mold seams near the mouth of the vessel. On bottles finished with a jawed lipping tool, as this one was, the top of the neck is marked by faint horizontal striations where the tool has been rotated to form the mouth and lip (McKearin and Wilson 1978: 217).

Vessels made on fully automatic machines are likely to have seams that extend their full length (Stewart and Cosentino 1976: 27). Figure 65c shows a machine-made aquamarine pharmacy bottle neck from level 1. This artifact dates after 1904, when the first machine-made narrow-necked bottles were produced (Toulouse 1967: 45; Lewis and Haskell 1981: 51). Also found in this level was a clear machine-made beaded screw top, introduced in 1915 and still in use today (Toulouse 1977: 106).

Other artifacts from level 1 yielded narrower date ranges. A bluish-aqua Coca-Cola bottle fragment (Figure 67d) dates from 1916 to 1930. This fragment is from one of the first Coca-Cola bottles of the "hobbleskirt" design (Figure 68d). Although the hobbleskirt design is still in use today, this bottle can be identified as an early hobbleskirt by its aqua color and its embossing. Some time in the 1920's Coca-Cola began using a very light green bottle, which they still use today. In 1958 they changed from embossing to painting the logo on their bottles (Coca-Cola Company 1984: personal communication).

A second Coca-Cola specimen consists of fragments from level 1 and level 2. These fragments (Figure 67c) glued together to form the crown top of a 75th anniversary Coca-Cola bottle, manufactured in 1976 (Figure 68c). Also common to levels 1 and 2 were several bright green glass fragments, possibly fragments of one or more Sprite bottles. The Sprite soft drink and the bright green Sprite bottle were introduced in 1960 (Coca-Cola Company 1984: personal communication).

Levels 1 and 2 also shared fragments from the base of an amber



Figure 66. Modern Beer Bottle Fragments. A. Amber glass threaded necks, probably for twist-off crown caps. B. Amber machine-made base with Illinois Glass Co. maker's mark.



Figure 67. Soft Drink Bottle Fragments. A. 10 2-4 Dr. Pepper bottle, clear glass. B. Clear Nehi bottle with rope embossing. C. Clear bottle neck from Coca-Cola 75th anniversary bottle. D. Coca-Cola bottle early hobbleskirt design, aquamarine. E. Light green Coca-Cola bottle.



Figure 68. Soft Drink Bottles. A. Dr. Pepper bottle. B. Nehi bottle. C. 75th anniversary Coca-Cola bottle. D. Hobbleskirt Coca-Cola bottle (not to scale). Note: these bottles are not from the Long Row assemblage

bottle, presumably a modern beer bottle (Figure 66b), bearing the maker's mark used by the Owens Illinois Glass Company from 1954 to the present (Toulouse 1971: 403). This mark consists of an embossed "I" inside an oval. Levels 1 and 2 shared four other vessels, including the machine-made amber necks in Figure 66a. The threaded finish on these bottle necks was probably meant to accommodate a twist-off crown cap, a type of bottle cap which was introduced around 1964 (Miller Brewing Company 1984: personal communication). The terminus post quem for level 1 is thus 1976, unless the 75th anniversary Coca-Cola bottle is a post-depositional surface artifact. The maximum use range of all the dated artifacts extends from the mid nineteenth century, the earliest possible date for the mold-blown bottle, to the present. However, almost all the other datable artifacts in this level can be dated to some time in the twentieth century.

Level 2 of unit 10N23W, like level 1, contained some easily identifiable soft drink bottle fragments. These included a modern light green Coca-Cola bottle fragment, with a date range from 1930 to the present (Coca-Cola Company 1984: personal communication), and a clear Dr. Pepper bottle fragment. This fragment is of the "10-2-4" style which was produced from 1925 to 1940 (Figures 67a and 68a). Because of the color of this artifact, however, its terminal date is somewhat earlier. Some time in the 1930's, the Dr. Pepper Company changed the color of their bottle from clear to what they refer to as "Georgia green," a pale bottle green. This color change was made because the product was transported in open trucks, and was thus subject to long hours in the sun, which altered the flavor of the beverage (Dr. Pepper Bottling Company 1984: personal communication).

Another narrow date range for level 2 was yielded by a medicine bottle bearing the maker's mark used by the Owens Bottle Company from 1911 to 1929: a square with an Q inscribed in it (Toulouse 1971: 393). This bottle, shown in Figure 69, is embossed with the words "California Fig Syrup Co. / Calific." No information could be obtained on this company.

An embossed liquor bottle fragment like those in Figure 71c provided the final narrow date range for level 2. With the repeal of Prohibition in



Figure 69. California Fig Syrup Co. Bottle.

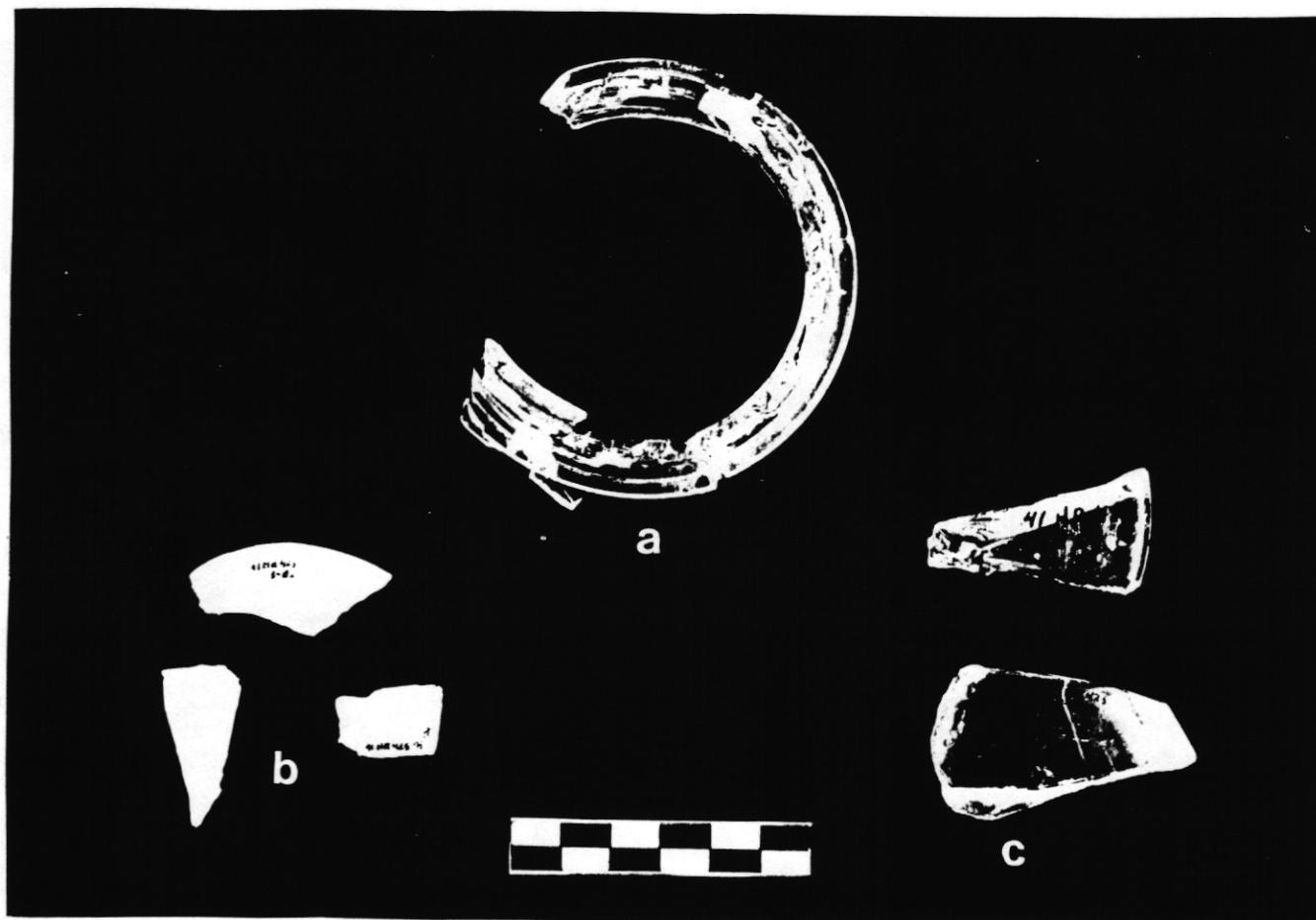


Figure 70. Food related Glass Artifacts. A, Threaded fruit jar finish, clear. B. Milk glass liners for fruit jar lids. C. Clear glass fruit jar lids.

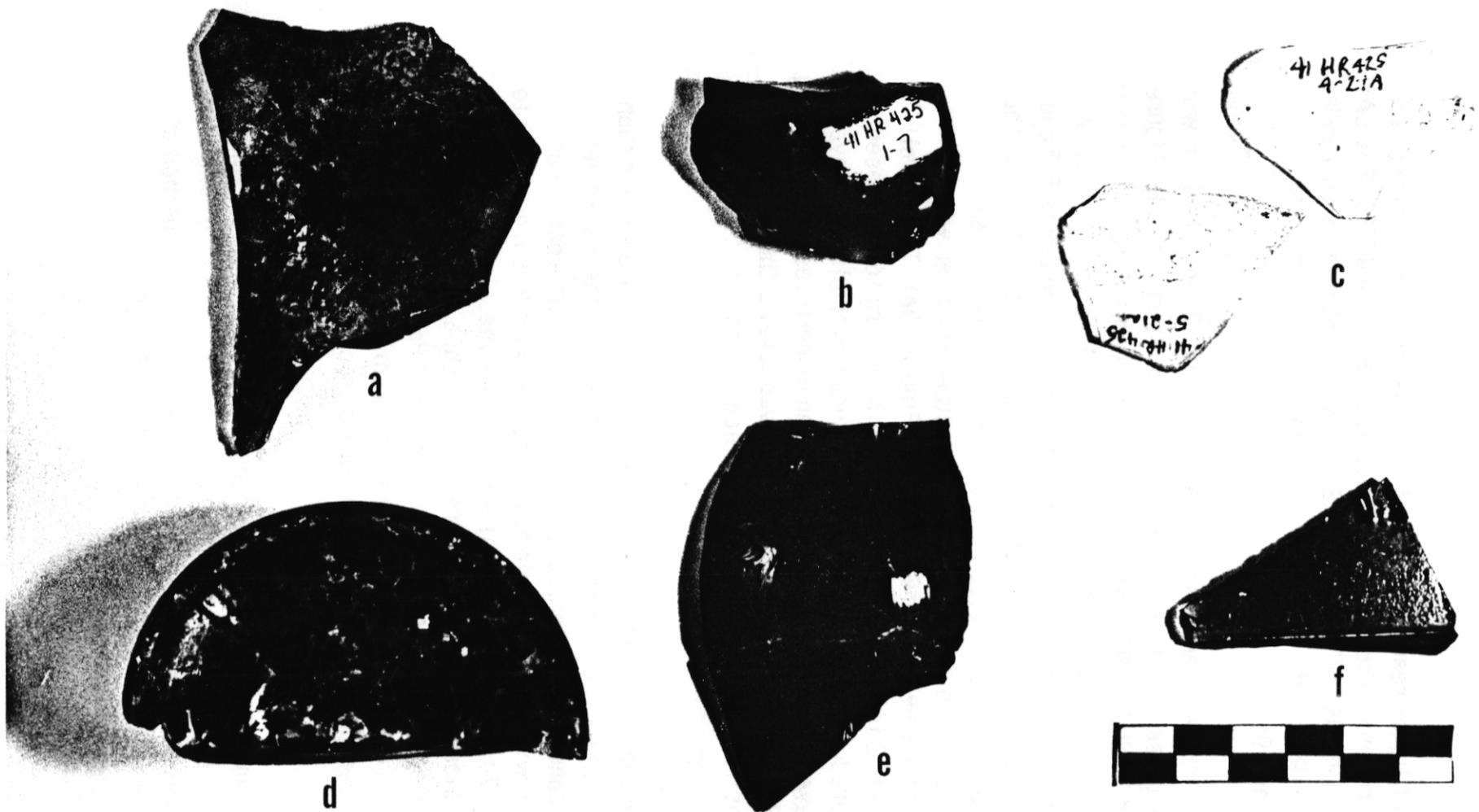


Figure 71. Alcohol Bottle Fragments. A. Dark green wine bottle fragment. B. Dark green wine bottle base, possibly empantiled. C. Clear glass liquor bottle fragments, embossed "Federal law forbids sale or reuse of this bottle." D. Amber glass probably beer bottle base, blown in post mold. E. Shoulder of dark green spirits bottle, blown in three-piece mold. F. Forest green embossed bitters bottle fragment.

1933, the sale of liquor resumed under strict government regulation. One such regulation required that all liquor bottles be embossed "FEDERAL LAW FORBIDS SALE OR RE-USE OF THIS BOTTLE." This regulation was suspended in 1964 (Munsey 1970: 126). The level 2 fragment therefore dates between 1933 and 1964.

Broader date ranges were also available for level 2, one of which was given by a black glass base fragment from a wine or spirits bottle (Figure 71b). Lewis and Haskell (1981: 51) note that black glass is rarely found in abundance after about 1880. A fragment of a milk glass fruit jar screw top liner was also found (Figure 70b). Invented in 1869 by Lewis R. Boyd, the milk or "opal" glass liner was designed to protect the contents of the fruit jar from coming into contact with the zinc lid (Stewart and Cosentine 1976: 55). Fragments of a wide-mouthed fruit jar with a post-1915 beaded screw top were also found (Figure 70a). The overall date range of level 2 is thus from the nineteenth century to the present, with the same predominance of twentieth century materials as in level 1. The fact that levels 1 and 2 share at least seven modern vessels, including the Coca-Cola 75th anniversary bottle neck, gives level 2 the same post-1976 deposition date as level 1, and indicates that the two levels were probably deposited at the same time.

The date ranges of the artifacts in level 3 are generally earlier than those of levels 1 and 2. For example, a sun-colored amethyst fragment was found. Manganese, which produces the amethyst color upon exposure to the sun, was a widely used decolorizing agent in America from 1880 to 1915 (Munsey 1970: 55). Other identifiable datable vessels in level 3 were a piece of black glass, probably pre-1880's, and a fragment of a mold-blown bottle, probably pre-1920's (Lewis and Haskell 1981: 51-58). This level therefore has a maximum date range from the nineteenth to the early twentieth century, with deposition possibly occurring as early as 1880.

Feature 1 of unit 10N23W contained one datable artifact, a fragment which appeared to be from a modern amber beer bottle. First widely used in the 1870's, the individual beer bottle became the standard method of packaging beer by the 1940's (Lewis and Haskell 1981: 59).

23S27W

The only datable artifacts from level 1 of this unit are five pieces of bright green glass, possibly from a Sprite bottle. These artifacts provide a possible terminus post quem of 1960. Levels 1 and 2 may share two datable vessels: a sun-colored amethyst vessel, dating c. 1880-1915 (Munsey 1970: 55), and a modern amber beer bottle. They also have in common two cut glass chandelier prisms of unknown date (Figure 73c). These artifacts give both levels a maximum date range from the 1880's to the present.

Other glass from level 2 includes a dark green fragment, identical in color to the dark green that the Seven-Up Company has used for its bottles since 1920 (Seven-Up Company 1984: personal communication). This fragment provides level 2 with a possible deposition date of 1920 or later. There is also one fragment from level 2 characterized by a ghost seam, a faint, irregular seam line that strays from the main seam line. Ghost seams first appeared in 1881 with the invention of the Argobast press-and-blow semiautomatic machine for wide-mouthed jars (McKearin and Wilson 1978: 255). The Argobast process, first put into production in 1893, used a blank mold to marver the glass and shape the neck and lip. The unfinished vessel (called a "blank") was then transferred to the finishing mold for completion. The ghost seams, which were made by the blank mold, occurred because the blank mold seams did not line up with the seams of the finishing mold (Toulouse 1969: 586).

Ghost seams are also found on bottles made by the later semiautomatic and automatic "blow-and-blow" process, which permitted the first machine production of narrow-necked bottles. Production of narrow-necked wares by the blow-and-blow process began with the introduction of the Owens automatic bottle machine in 1904, and was extended to semiautomatic machines several years later (Lewis and Haskell 1981: 50). Because this piece appears to be from a narrow-necked bottle rather than a jar, it must be dated to 1904 or later.

The only datable artifact from level 3 of unit 23S27W is a fragment marked by a ghost seam. This fragment also appears to date after 1904.

Level 4 also contained one datable artifact, a fragment of an embossed Nehi soft drink bottle (Figures 67b and 68b). Royal Crown began bottling Nehi in this type of bottle on March 3, 1925, and the rope motif embossing design is still used today (Royal Crown Company 1984: personal communication).

Level 5 of this unit contained no definitely datable artifacts.

#### 12S20W

Unique to level 1 of this unit is a fragment of a dark green turn-molded vessel. Turn-molded vessels are characterized by faint horizontal striations over the entire body, and an absence of mold seams. Both these characteristics are products of the process of turning the vessel in the mold while it is being made. Turn-molded bottles, commonly used for wine or spirits, were most popular in the United States from the 1870's to the 1920's (Toulouse 1969: 532). Also found in level 1 were two fragments of milk glass screw top liners, datable after 1869; a fragment of a sun-colored amethyst vessel, dating c. 1880-1915; a bright green fragment, possibly part of a Sprite bottle; and a modern amber beer bottle fragment. Level 1 therefore has a maximum date range of c. 1870 to the present, with a possible terminus post quem of 1960, when the Sprite bottle was introduced.

Datable artifacts from level 2 include two fragments of a modern beaded screw top, and several fragments of a sun-colored amethyst vessel. The beaded seal dates deposition of this level some time after 1915, even though the sun-colored glass could date as early as 1880 (Munsey 1970: 55; Toulouse 1977: 106).

Level 3 contained, along with clear and cobalt glass, two bright green glass fragments that may have been from soft drink bottles; one sun-colored amethyst fragment; a fragment of pressed milk glass; and two other pressed glass fragments. Pressed glass, still produced today, was first made in 1827 with the invention of the side-lever glass press. Its greatest popularity was in the second half of the nineteenth century,

when it was widely used for tableware and when milk glass and other colors also became common (Lee 1960: 3-5). Although it is possible that these pressed glass fragments could date to the early nineteenth century, they give the level a probable date range of late nineteenth century to the present. Like level 1, this level has a possible post-1960 deposition date based on the fragments of bright green glass.

No glass artifacts were found in level 4.

The only datable vessel from level 5 is a greenish-aqua Coca-Cola bottle fragment (Figure 67e). Like the bluish-aqua fragment found in level 1 of excavation unit 10N23W, this fragment is a piece of one of the first hobbleskirt bottles, and dates from sometime between 1916 and 1930 (Coca-Cola Company 1984: personal communication). This artifact shows that level 5, and therefore the entire unit, was deposited some time after 1916.

#### 32S29W

Level 1 of unit 32S29W did not contain any datable glass artifacts.

Level 2 contained a fragment of pressed milk glass, again probably dating from the mid 1800's or later.

A fragment of a probable bitters bottle (Figure 71f) was the one datable artifact from level 3. Bitters-taking was very popular during the second half of the nineteenth century (McKearin and Wilson 1978: 300), but began to decline in popularity in 1906 due to the passage of the Pure Food and Drug Act (Watson 1965: 14). Bitters enjoyed a brief revival of popularity during Prohibition, from 1919 to 1933 (Krout and Rice 1977: 150-151).

Only one artifact from level 4, a fragment of a sun-colored amethyst vessel, was datable. This artifact dates c. 1880-1915.

Level 5 contained no datable artifacts.

Glass from level 6 included a sun-colored amethyst fragment (c. 1880-1915); a bottle fragment marked by a ghost seam (post-1904); a fragment of pressed milk glass (probably late nineteenth through twentieth century); and a fragment of a 1933-1964 liquor bottle embossed "FEDERAL LAW PROHIBITS SALE OR RE-USE OF THIS BOTTLE." In addition, this level yielded two amber bottle base fragments blown in a two-piece post mold, a mold type used from about the 1850's through the 1920's (Toulouse 1969: 581-583). Fragments of an olive-green bottle, the most common nineteenth century container for wine and spirits, were common to levels 6 and 7 (Figure 71a). This level thus has a terminus post quem of 1933, with a maximum date range extending from the mid nineteenth century to the present.

Unique to level 7 of unit 32S29W were fragments of a dark olive spirits vessel with seam lines indicative of a three-piece dip mold (Figure 71e). The three-piece dip mold consisted of a one-piece body mold and a two-piece shoulder and neck mold. Identifying characteristics are a seam encircling the vessel at its widest point, and two seams, on opposite sides of the bottle, rising vertically from this seam. This mold was most popular in the United States from about 1870 to 1910 (Toulouse 1969: 578). Other datable fragments from level 7 were a fragment of an amber bottle blown in a post mold, a piece of a black glass bottle base, and part of a milk glass fruit jar screw top liner. These artifacts give level 7 a terminus post quem of about 1870, and a date range extending from the mid nineteenth century through the early twentieth century.

#### 50S27W

No glass was found in level 1 of this unit.

Artifacts found in level 2 include a fragment marked by a ghost seam, and a piece of sun-colored amethyst glass. The amethyst glass has a date range of c. 1880-1915, while the ghost seam provides a terminus post quem of 1904.

Level 3 contained a sun-colored amethyst fragment, but it is not from the same vessel as the fragment in level 2. Also in level 3 were several

bright green fragments and a piece from an embossed post-Prohibition liquor bottle (Figure 71c). This level thus has a possible date range of c. 1880 to the present. Deposition can definitely be dated to after 1933, when the embossed liquor bottle was introduced, and possibly to after 1960, if the green fragments are from a Sprite bottle.

Datable vessels from level 4 are a piece of black bottle glass, and a clear fragment that has a design etched into it. The black glass was probably manufactured before about 1890. Etching, the process of decorating glass by applying hydrochloric acid to parts of it, was most popular in America in the late nineteenth century, but is still done today (Munsey 1970: 51).

Level 5 contained one datable artifact, a fragment of pressed milk glass. This artifact provides a probable date range of late nineteenth or twentieth century.

#### 4N38W

No dates could be determined for level 1 of unit 4N38W.

Level 2 contained only two datable artifacts, fragments of a clear pressed glass tumbler which can definitely be dated after the introduction of the side-lever glass press in 1827. However, this object was probably made in the late nineteenth or twentieth century, when pressed glass tableware was more common (Lee 1960: 3-5). In addition, this level contained several fragments of burnt or melted glass.

No glass was found in level 3, a narrow pipe trench.

Level 4 yielded a piece of the same clear glass tumbler as level 2, providing the same nineteenth century terminus post quem as that level. Also found were two fragments of dark green glass of the type used for wine and spirits bottles through at least the 1880's, and eight fragments of burnt glass. The pressed glass tumbler and the burnt glass indicate that levels 2 and 4 may have actually been a single level.

Level 5 contained one fragment of clear pressed glass and one piece of a dark green spirits bottle, giving it the same dates as the preceding levels.

Level 6 yielded four fragments of a dark green spirits bottle. These fragments probably date sometime before the late 1880's.

#### 6N57W

This unit contained only one datable artifact, a base fragment from a clear glass post-molded bottle, found in level 2. This artifact is datable from about the 1850's to the 1920's (Toulouse 1969: 581-583). However, several fragments of clear glass with no visible signs of wear or aging were found in levels 1 and 3. Although these fragments bear no identifiable or datable marks, they may be very modern.

#### Conclusions

In general, glass artifacts seemed to indicate a date range of late nineteenth through early twentieth century for most excavated levels. Most levels had deposition dates that were definitely after the beginning of the twentieth century. Only two levels with significant numbers of glass artifacts, level 7 of excavation unit 32S29W and level 3 of unit 10N23W, had possible deposition dates before the turn of the century. The largest number of definitely nineteenth century glass artifacts was found in level 7 of unit 32S29W, and the largest number of modern artifacts was found in levels 1 and 2 of unit 10N23W. Date ranges for all levels of the site are summarized in Table 6. In the following section of the report, the functional analysis, these date ranges are used to help determine the activities conducted on different parts of the site at different times in its history.

### Functional analysis

The purpose of the functional analysis was to determine relative abundances of artifact types in order to relate functional distribution and date ranges to historical information about the site, and to determine the possible locations of domestic residences and other occupational areas. To do this the assemblage was divided into six major functional categories whose distribution was examined across the site. These categories were based on a verifiable minimum vessel count, or VMVC, which was extrapolated from the minimum vessel count for the entire glass assemblage.

The minimum vessel count, or MVC, is the least possible number of vessels which can be comprised by all the fragments in the assemblage. Figure 72 shows the distribution of the minimum vessel count of bottles and other glass artifacts from the Long Row site. The VMVC consists of all the vessels in the minimum vessel count which can be identified by function. At the Long Row site, the verifiable minimum vessel count comprised approximately 32 per cent of all the vessels in the assemblage. Table 7 shows the percentage of the minimum vessel count included in the VMVC for each archaeological unit from the 1984 excavations.

The following conditions necessitated using the VMVC: (1) Examining distribution using every single artifact is not effective; in order to determine relative abundance of artifact types, one must know the total number of vessels in the sample; (2) Using the MVC as a whole is not effective because one must also be able to categorize each vessel by function; this is not possible using the minimum vessel count alone.

In regard to the representativity of the VMVC, there is no reason to think that it is misrepresentative of the assemblage except in units where only a very small percentage of the MVC is identifiable. For a sample to be representative of a larger population, it is required that this sample be unbiased. In this case, this means that each vessel must have an equal chance of being identified. This seems to hold true for our sample. First, chances are equal that given glass fragments can be categorized on the

Table 7

Percentage of the Minimum Glass Vessel  
Count Identifiable by Function

Unit	Minimum Number of Identified Vessels (MVC)	Number of Vessels Identified by Function (VMVC)	Percentage Minimum Vessel Count Verifiable by Function
10N 23W	57	25	43.86
23N 27W	36	12	33.33
12S 20W	32	18	56.25
32S 29W	53	13	24.53
50S 27W	29	6	20.69
4N 38W	36	6	16.67
6N 57W	10	1	10.00
<b>Total</b>	<b>253</b>	<b>81</b>	

Overall site percentage = 32,02%

Mean unit percentage = 29,33

# GLASS ARTIFACTS

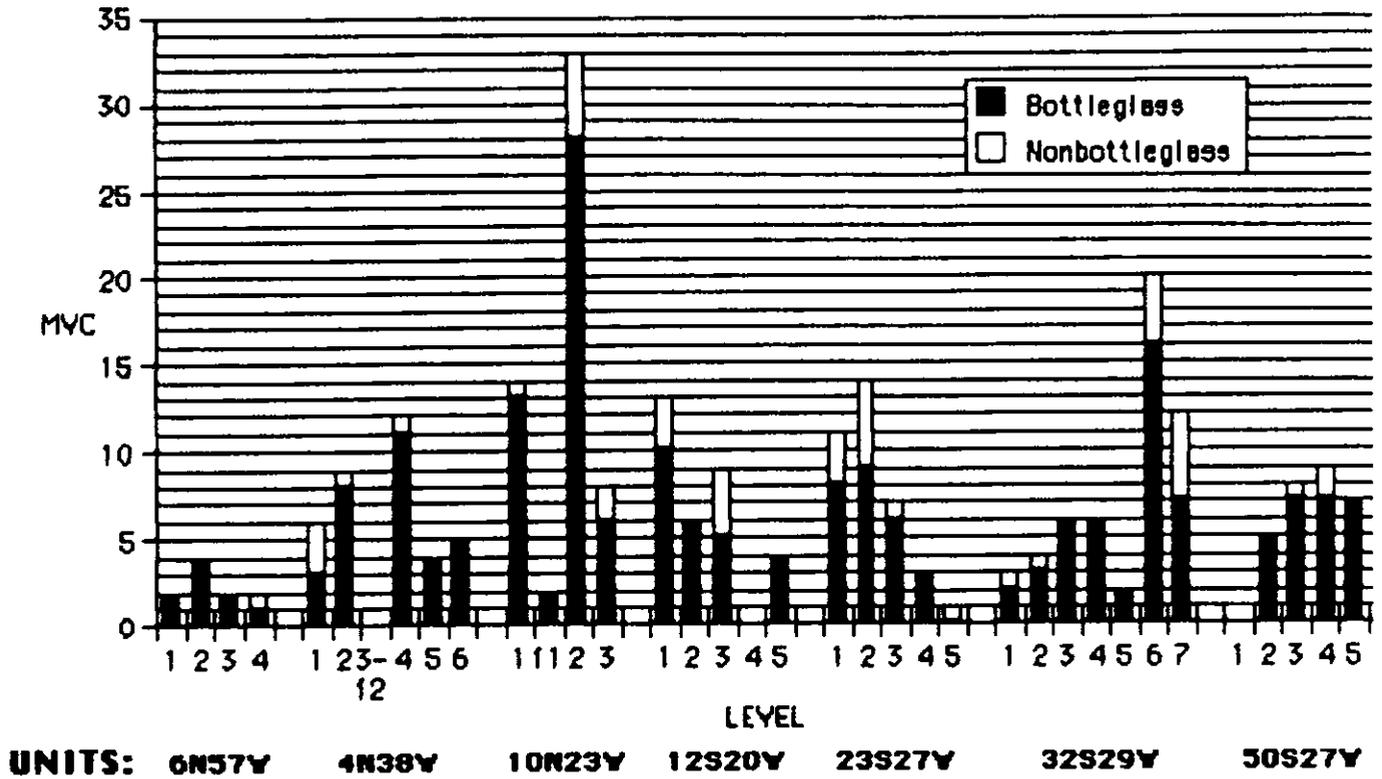


Figure 72. Minimum Vessel Count of Bottle Glass and Table Glass from the Long Row Site.

basis of color and shape, because chances are equal that glass fragments will be a specific color and shape. Second, glass breaks in a random fashion. Thus chances are equal for pieces of a vessel to have identifying marks, such as embossing and makers' marks. Third, sources consulted in the identification process were not biased toward or away from any given vessel type. Lastly, equal effort was put into identifying each artifact.

To examine functional distribution, verifiable vessels from the Long Row site were categorized as being from one of the following groups: nonalcoholic beverage vessels, alcoholic beverage vessels, medicinal vessels, food-related vessels, table glass vessels, or lighting accessories. Nonalcoholic beverage vessels include soft drink bottles, mineral water bottles, and milk bottles. However, verifiable vessels for this category from the Long Row assemblage were all soft drink bottles (Figure 67). The alcoholic beverage vessel category includes all types of spirits bottles. Artifacts in this category from the Long Row site included beer bottles, wine bottles, and whiskey bottles (Figures 66 and 71). Figure 74 shows aquamarine fragments that are probably either from mineral water bottles or beer bottles. Since these artifacts could not be positively identified, they were not included in the VMVC.

The medicinal vessel category includes patent medicine bottles (Figure 69), bitters bottles (Figure 71f), pharmacy bottles (Figure 75), and other medicine-related artifacts (Figure 65). The food-related vessel category includes any items that food was stored in. Long Row representatives of this category were pickle jars, fruit jars, fruit jar liners, and fruit jar lids (Figure 70). Table glass at this site was represented by tumblers and other items for which a specific function could not be discerned (Figure 76). The lighting accessories category included three chandelier prisms, numerous apparent light bulb fragments, and two fragments of a pressed lamp globe that may have been from an old street light (Figure 73). Fragments from an identical globe were found at the Kellum-Noble site in 1983 (McIntosh and Moore, eds., 1983: Figure 20).

Because most of the artifacts found on the Long Row site could have been used in a variety of contexts, the functional analysis was limited to a broad distinction between domestic and non-domestic areas. Generally, an

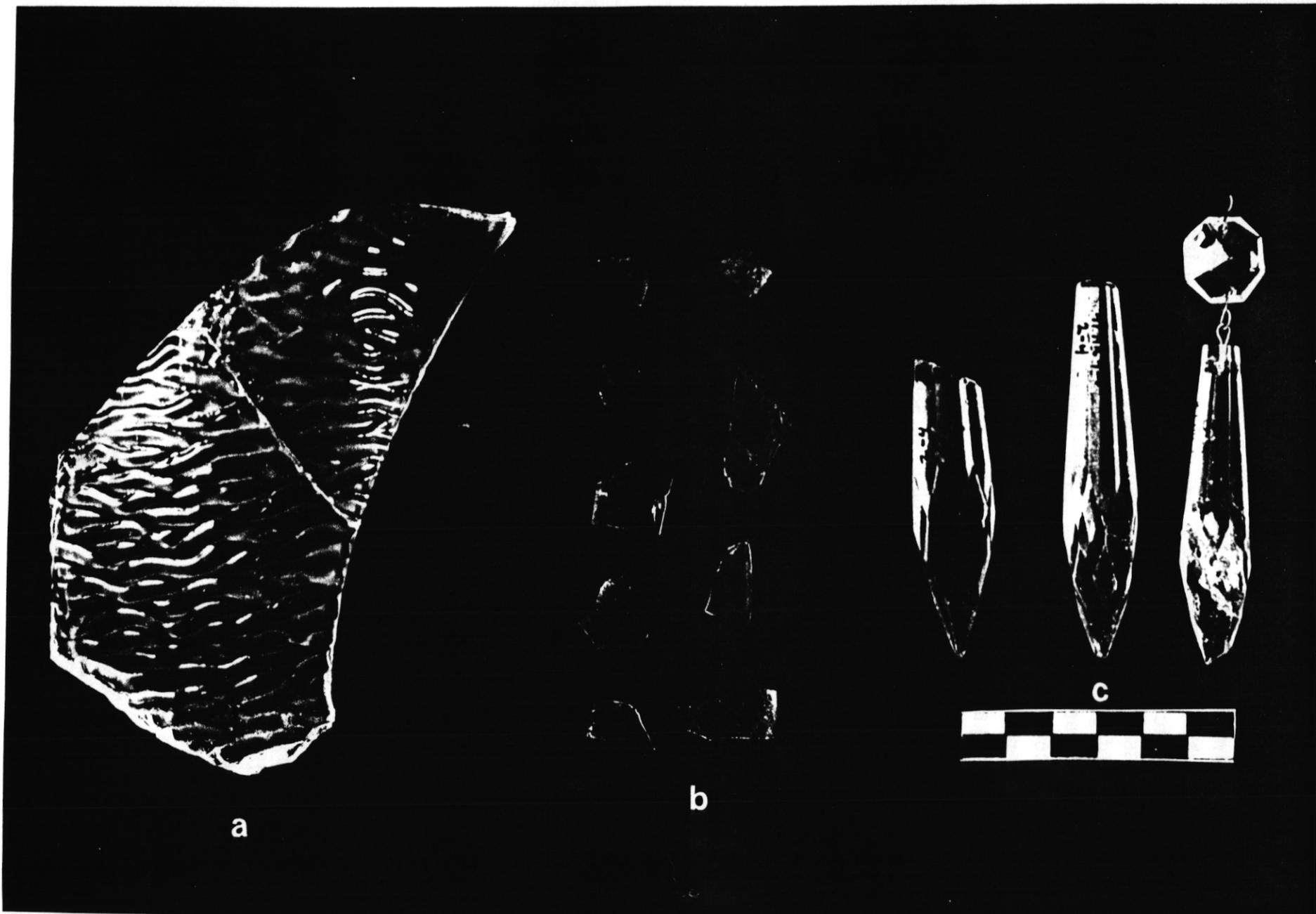


Figure 73. Glass Lighting Accessories. A. Clear lamp globe. B. Light bulb glass. C. Chandelier prisms.

extremely low number of glass artifacts of all kinds was considered to indicate an absence of domestic activity. The presence of table glass was considered indicative of domestic activity. Food-related vessels and medicine vessels were also considered to be related to domestic activity, but to a slightly lesser degree than table glass, since these items are more likely to be transported to areas outside their original domestic context. Nonalcoholic beverage vessels and alcoholic beverage vessels were considered to be characteristic of both domestic and non-domestic sites. Lighting accessories can also be found at both domestic and non-domestic sites, although the specific kind of these artifacts may vary between different kinds of sites. Table 8 presents a breakdown, by number and percentage, of the functional vessel types present in each unit and level. The remainder of this report analyzes the functional distribution of the Long Row glass assemblage based on these findings and on the historical information available for the area.

There are two points to bear in mind in the interpretation of these figures. First, because the use of glass artifacts is often ambiguous, with similar artifacts used in different contexts, functional interpretations cannot be either definitive or precise. They must consist of assumptions based only on the most probable use of the glass assemblage from each level. Second, and more important, is the problem of possible mixing and redeposition of artifacts of different ages. Dates and functions for most levels at the Long Row site were based on the entire range of identifiable artifacts, in the assumption that these artifacts reflected the dates and uses of the material in the level. This does not mean that these materials reflect the period in which the levels were deposited, or that the artifacts necessarily originated in the area in which they were found: artifacts can be moved around by landscaping, demolition, or other activities, sometimes many years after they are originally used and discarded. It is also possible, especially on a site with as many phases of occupation and demolition as the Long Row area, that some levels may contain materials from more than one area or occupation. Since this sort of disturbance is not discernable from the glass assemblage, interpretation of these artifacts could show a much broader range of dates or occupational functions than was actually the case.

Table 8

## Functional Distribution of Glass Vessel Types by Level and Unit

Unit	Level	Nonalcoholic Beverage		Alcoholic Beverage		Medicinal		Food-related		Table Glass		Lighting Accessories		Level Total	
		No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
10N 23W	1	1	(33.33)	-	-	1	(33.33)	-	-	-	-	1	(33.33)	3	(100)
	1&2	2	(40.00)	2	(40.00)	1	(20.00)	-	-	-	-	-	-	5	(100)
	2	2	(14.29)	4	(28.56)	3	(21.43)	3	(21.43)	2	(14.29)	-	-	14	(100)
	F1	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
	Subtotal	5	(21.74)	7	(30.43)	5	(21.74)	3	(13.04)	2	(8.70)	1	(4.35)	23	(100)
	3	-	-	1	(50.00)	1	(50.00)	-	-	-	-	-	-	2	(100)
Unit Total	5	(20.00)	8	(32.00)	6	(24.00)	3	(12.00)	2	(8.00)	1	(4.00)	25	(100)	
23S 27W	1	1	(20.00)	1	(20.00)	1	(20.00)	1	(20.00)	-	-	1	(20.00)	5	(100)
	1&2	-	-	-	-	-	-	-	-	-	-	1	(100.00)	1	(100)
	2	-	-	1	(33.33)	-	-	-	-	1	(33.33)	1	(33.33)	3	(100)
	3	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
	Subtotal	1	(10.00)	3	(30.00)	1	(10.00)	1	(10.00)	1	(10.00)	3	(30.00)	10	(100)
	4	1	(100.00)	-	-	-	-	-	-	-	-	-	-	1	(100)
5	-	-	-	-	-	-	1	(100.00)	-	-	-	-	1	(100)	
Unit Total	2	(16.67)	3	(25.00)	1	(8.33)	2	(16.67)	1	(8.33)	3	(25.00)	12	(100)	
12S 20W	1	1	(11.11)	4	(44.44)	1	(11.11)	2	(22.22)	-	-	1	(11.11)	9	(100)
	2	-	-	2	(100.00)	-	-	-	-	-	-	-	-	2	(100)
	3	1	(16.66)	-	-	1	(16.66)	-	-	4	(66.66)	-	-	6	(100)
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	1	(100.00)	-	-	-	-	-	-	-	-	-	-	1	(100)
	Unit Total	3	(16.67)	6	(33.33)	2	(11.11)	2	(11.11)	4	(22.22)	1	(5.56)	18	(100)
32S 29W	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	1	(100.00)	-	-	1	(100)
	3	-	-	-	-	1	(100.00)	-	-	-	-	-	-	1	(100)
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	6	-	-	3	(60.00)	1	(20.00)	-	-	1	(20.00)	-	-	5	(100)
	6&7	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
	7	-	-	3	(60.00)	-	-	1	(20.00)	1	(20.00)	-	-	5	(100)
Subtotal (6&7)	-	-	7	(63.64)	1	(9.09)	1	(9.09)	2	(18.18)	-	-	11	(100)	
Unit Total	-	-	7	(53.85)	2	(15.38)	1	(7.69)	3	(23.08)	-	-	13	(100)	

Table 8 (Cont.)

Unit	Level	Nonalcoholic Beverage		Alcoholic Beverage		Medicinal		Food-related		Table Class		Lighting Accessories		Level Total	
		No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
50S 27W	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	1	(100.0)	-	-	-	-	-	-	1	(100)
	3	-	-	2	(50.00)	-	-	-	-	2	(50.00)	-	-	4	(100)
	4	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
	5	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unit Total		-	-	3	(50.00)	1	(16.67)	-	-	2	(33.33)	-	-	6	(100)
4N 38W	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	2	(50.00)	2	(50.00)	-	-	-	-	4	(100)
	5	-	-	-	-	1	(100.00)	-	-	-	-	-	-	1	(100)
	6	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
Unit Total		-	-	1	(16.67)	3	(50.00)	2	(33.33)	-	-	-	-	6	(100)
6N 57W	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	2	-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)
	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Unit Total		-	-	1	(100.00)	-	-	-	-	-	-	-	-	1	(100)



Figure 74. Embossed Beer or Mineral Water Bottle Fragments, light aqua.

### 10N23W

As established in the preceding section of this report, levels 1 and 2 and feature 1 of unit 10N23W were probably contemporaneous, dating from the early to mid twentieth century to the present (Table 6). The relatively large amounts of medicinal vessels, food-related vessels, and table glass shown by the figures in Table 8 suggest that these levels were probably related, at least in part, to domestic activity. This distribution of artifacts is predictable, given the historic information on the area. From the late nineteenth to the early twentieth century, this area was the site of the Byers house, a domestic residence. From about 1913 to 1952 it was part of the back yard of homes and rooming houses whose residents may have disposed of domestic trash in this area. From 1952 to 1977 there was a parking lot directly at or near the location of this unit. This information is supported, or at least not refuted, by the large percentage of modern nonalcoholic and alcoholic beverage bottles, which can occur at both domestic sites and non-domestic sites such as parking lots.

The functional distribution of artifacts in level 3 is not clearly indicative of either a domestic or a non-domestic site. The presence of a medicine bottle suggests that this level was related to domestic activity, but the small number of artifacts overall suggests that it was not. This level, which dates from the late nineteenth century to the early/mid twentieth century, may be related to the demolition of the Byers residence toward the beginning of the century.

### 23S27W

Datable glass artifacts indicate that the first three levels of this unit were also contemporaneous, dating from the late nineteenth or very early twentieth century to the present. The artifact distribution of these levels suggests that they were related to domestic activity. The 1925 terminus post quem of level 4 indicates that levels 1, 2, and 3 must also have been deposited after this date. In this case, levels 1, 2, and 3 may have been in part related to mid-twentieth century domestic activity which preceded the installation of the 1952 parking lot, although they could also contain redeposited artifacts from an earlier domestic occupation.

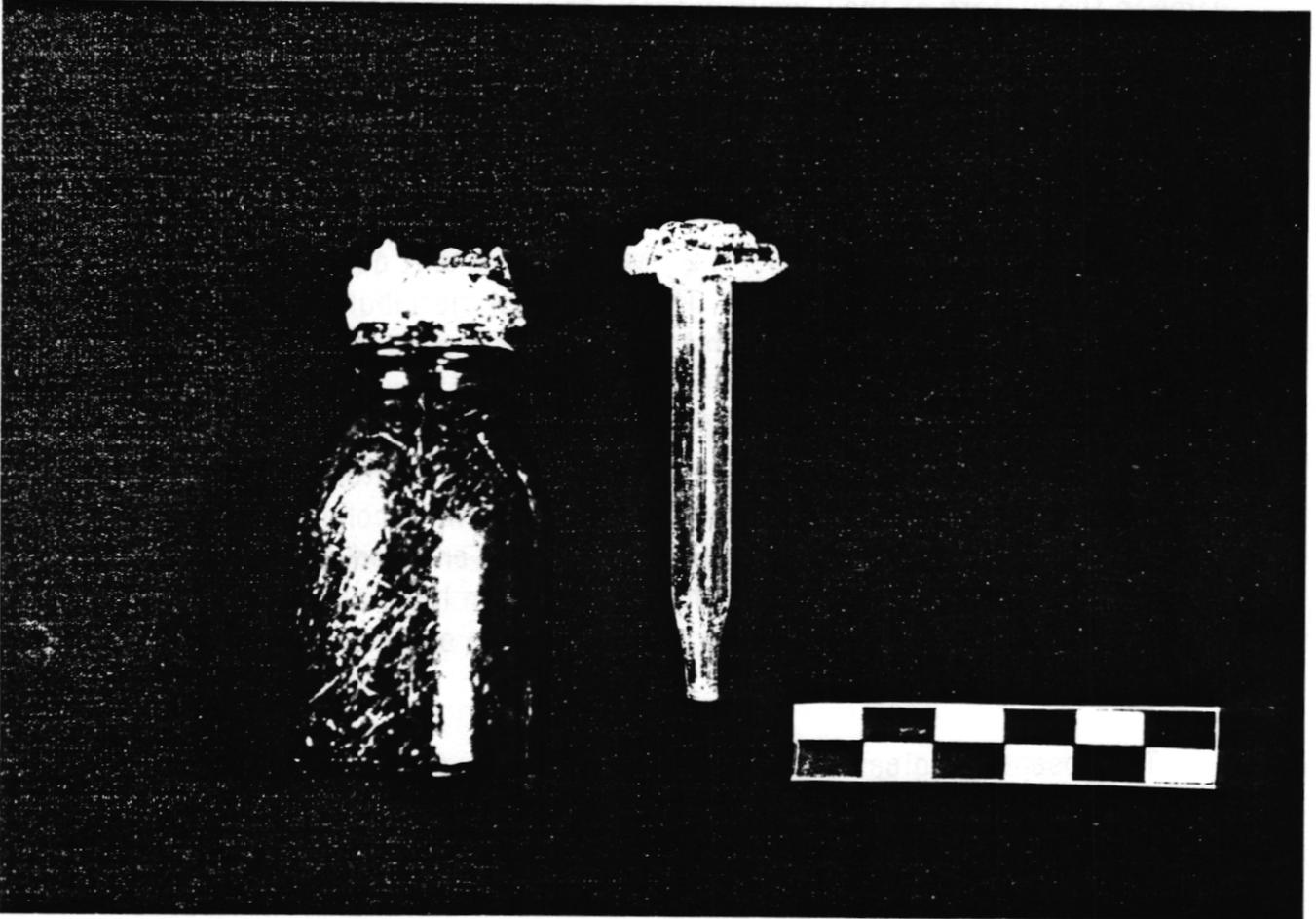


Figure 75. Machine-made Amber Medicine Bottle, with Screw Top and Dropper. Embossed "vatranol" on base.

The functional distribution of level 4 indicates that this level may be related to either domestic or non-domestic activity. Since only one artifact from this level was datable, this activity could have occurred any time in the history of the Long Row area. The presence of a food-related vessel in level 5 suggests that this level was probably related to domestic activity. However, there were no reliable dates for this level.

#### 12S20W

Glass artifacts from levels 1, 2, and 3 of this unit date from the late nineteenth century to the present. The functional distribution of level 1 indicates domestic activity, which the historical record indicates could have been any time between the late 1800's and 1952, when houses in this area were demolished to make way for the Bagby Street parking lot. The type of activity characterizing level 2 could not be ascertained, as verifiable vessels from this level consist only of two alcoholic beverage containers, which could be from either a domestic or a non-domestic context. The functional distribution of artifacts in level 3 suggests that level 3, like level 1, was related to late nineteenth or early twentieth century domestic activity.

The absence of glass in level 4 suggests that activity during its period of deposition was non-domestic.

Level 5, with only one verifiable vessel, could not be definitively classified as either domestic or non-domestic on the basis of functional distribution. Only one artifact from this level was datable, dating from the early to the mid twentieth century. If this time range is an accurate representation of the time range of the level, then the artifacts from this level may be associated with the early twentieth century domestic occupation in this area.

#### 32S29W

Neither date range nor function could be ascertained for any artifacts from level 1 of this unit. The functional distribution of level 2, with a



Figure 76. Table Glass. A. Pressed milk glass. B. Pressed green glass. C. Clear drinking glass fragments (rims and bases).

date range from the late nineteenth century to the present, is indicative of domestic activity. Level 3 artifacts also appear to be related to domestic activity. The date range for this level is late nineteenth through early twentieth century, suggesting that it may have been related to the turn of the century domestic occupation of the area.

The type of occupation in level 4 could not be determined from the glass artifacts. However, this level, like level 3, also contained late nineteenth/early twentieth century artifacts, and may be related to the domestic occupation of that period.

Neither function nor date could be determined from the glass artifacts in level 5. Thus, the type of occupation could not be ascertained. Levels 6 and 7, which date from the mid nineteenth to the mid twentieth century, shared several vessels. Functional distribution of artifacts from these levels indicates domestic occupation. Based on the time range of these artifacts, this domestic activity could be from the late nineteenth century, the early to mid twentieth century, or from both.

#### 50S27W

The absence of artifacts in level 1 of this unit is indicative of non-domestic activity. From the date range of the artifacts in level 2 we can extrapolate a date range for level 1. Level 2 has a terminus post quem of 1904, indicating that level 1 must have been deposited after this date. Two periods of non-domestic activity occurred in this part of the site after 1904. The area has been non-domestic since the establishment of the Bagby Street parking lot in 1952, and an earlier period of demolition and rebuilding occurred when an apartment building was constructed in the early part of the twentieth century.

Levels 2 and 3, dating from the late nineteenth century to the present, were apparently related to domestic activity, either from the late 1800's or the early/mid twentieth century. Functional distribution could not be determined for levels 4 and 5.

#### 4N38W

Levels 4 and 5 of this unit were the only levels for which the type of occupation could be inferred. The functional distributions for both these levels suggest domestic occupation. Since the date range for these levels is late nineteenth century to the present, artifacts from levels 4 and 5 could be associated with the late nineteenth/early twentieth century Byers house, with the early to mid twentieth century boarding houses in this part of Bagby Street, or with both.

#### 6N57W

The relatively low number of glass artifacts in this unit suggests non-domestic activity. This interpretation is supported by historical information, which shows no houses or other buildings in this area.

#### Conclusions

The functional distribution patterns of this site indicate two broad activity classes, domestic and non-domestic. Unfortunately, there has been more than one period of each of these activities at the Long Row site, and the date ranges yielded by the artifacts for most of the levels are not narrow enough to pinpoint the exact period of activity. Table 9 shows the functions and general date ranges of all units as inferred from the glass assemblage. Because of the broad date ranges and the possibility of stratigraphic mixing of artifacts from different periods, these conclusions are necessarily very general. They are also tentative, since it is possible, as mentioned in the introduction to this section, that some of the levels may have contained material which was originally deposited elsewhere, and also that other artifacts found along with the glass assemblage may yield more precise functional information.

As Table 9 shows, the levels suggesting recent domestic activity, probably dating to the mid twentieth century occupation of the Long Row area, are the upper levels of units 10N23W and 23S27W. Indications of earlier domestic activity were found in the upper three levels of 12S20W, and in the middle and lower levels of all other units except 6N57W. These

levels may all date to the late nineteenth or early twentieth century domestic occupation of the Long Row site. Non-domestic activities, identified by the scarcity or absence of glass artifacts, were associated with level 4 of 12S20W, level 1 of 50S27W, and all of 6N57W. These levels could have been construction or demolition levels, fill levels associated with the modern park occupation, or, as in the case of unit 6N57W, areas which witnessed very little occupational activity of any kind.

Finally, one or more levels in almost every unit could not be characterized according to function. These levels, which generally contained functionally ambiguous artifact types like alcoholic and nonalcoholic beverage bottles, may also have been demolition or construction areas, or they may have been domestic areas which recieved little identifiable domestic debris. It is hoped that by correlation of these results with the results of analyses of other artifact classes, more definitive information can be obtained on the function and chronology of archaeological levels across the site.

Table 9

Dates and Functions of Archaeological Units  
as Determined from Glass Artifacts

	Recent Domestic	Early or Recent Domestic	Nondomestic	Unknown
10N 23W	Levels 1,2 Feature 1	None	None	Level 3
23S 27W	Levels 1,2,3	Level 5	None	Level 4
12S 20W	None	Levels 1,2,3	Level 4	Level 5
32S 29W	None	Levels 2,3,4,6,7	None	Levels 1,5
50S 27W	None	Levels 2,3	Level 1	Levels 4,5
4N 38W	None	Levels 4,5	None	Levels 1,2,3,6
6N 57W	None	None	Levels 1,2,3,4	None

## Chapter 8

### WINDOW GLASS

by  
Lydia Temonia

#### Introduction

The primary purpose of this analysis is to aid in formulating dates and locations of occupation, construction, and demolition of buildings, and to correlate these events with stratigraphic levels at the Long Row site. The two main sources used for the window glass analysis are John W. Walker's Excavation of the Arkansas Post Bank (1971) and Karl G. Roenke's Flat glass: its use as a dating tool for nineteenth century archaeological sites in the Pacific Northwest and elsewhere (1978). Since Roenke's report is the more detailed of the two, it will be relied upon most heavily for the methodology of this analysis.

Roenke's basic hypothesis is that windowpanes in the Pacific Northwest increased in thickness through time during the nineteenth century and that major and minor modal distributions of thickness can indicate additions to a structure and/or the existence of a number of structures on a site through time (Roenke 1978: 43). His findings, based on a study of glass from 15 sites in the northwestern United States and Canada, are that window glass increased gradually from a modal thickness of 0.055 inch in 1810 to a mode of 0.105 inch in 1915 (Roenke 1978: 116). Table 10 presents the chronological scheme used by Roenke.

Roenke's is primarily a regional study, and he emphasizes that such factors as point of origin and mode of transportation can affect the sequence of window glass thickness in different parts of the country. However, the trend to greater thickness with increasing modernity has been noted at a number of sites across the country (Roenke 1978: 98-106), and Roenke's dates are generally compatible with broad trends inferred by Walker (1971:76-78) from sites in Arkansas and elsewhere. In spite of the possibility of regional variation, therefore, Roenke's chronology is

used on the assumption that even if specific dates are slightly off, general chronological trends will still be apparent. These trends can be checked by reference to chronological trends developed in the course of other artifact analyses. At the present stage of research, however, all specific dates can only be regarded as tentative since the chronology is otherwise untested for the Houston area.

### Methodology

Window glass thickness was measured using a Hi Pact Model 60 sliding caliper. Each piece of glass was measured twice for accuracy. The units of measurement were in increments of 1/64 inch since the initial comparison, before Roenke's chronology became available, was to have been with Walker's much less thorough chronology. Walker measured in inches because the window glass was measured in inches when it was made. Roenke also measures in inches, but uses thousandths rather than sixty-fourths as the unit of measure. Table 10 shows Roenke's chronology in both thousandths and 1/64 inch increments. Table 11 gives Walker's findings from the Arkansas Post Bank and other sites in the southeastern and midwestern United States.

For analysis, window glass thicknesses from each unit and from the site as a whole were graphed in order to locate modes of thickness which in turn were considered indications of construction, maintenance, and additions to structures on the Long Row site. The primary mode, or measurement at which the greatest number of fragments occurred, was assumed to reflect the major period of construction in each area. Secondary and tertiary modes were considered to represent secondary building episodes or periods of maintenance and additions. Mean and median thicknesses were also used as a control in cases where the mode was quite different from the mean due to renovations and upkeep after the initial building period (Roenke 1978: 49). In these cases the primary mode should be thinner than the mean and median, being of earlier glass.

Due to the small number of fragments found in most of the archaeological levels, glass thickness was analyzed by excavation unit rather than by individual stratigraphic level. The data thus collapsed

Table 10

## Suggested Age Ranges for Primary Modes of Window Glass Thickness

Dates (ca.)	Approx. Primary Mode in Use (in.)	
1810-1825	0.055	(@ 3/64")
1820-1835	0.055	(@ 3/64")
1830-1840	0.045	(@ 3/64")
1835-1845	0.045 - 0.055	(@ 3/64")
1845-1855	0.065	(@ 4/64")
1850-1865	0.075	(@ 5/64")
1855-1885	0.085	(@ 5/64")
1870-1900	0.095	(@ 6/64")
1900-1915	0.105	(@ 7/64")

(Roenke 1978:116)

Table 11

Window Glass Chronology Based on Data from the Arkansas  
Post Branch Bank and Other Nineteenth Century Sites

---

- (1) Glass of  $2/64$ " (0.031 in.) thickness occurs only at sites occupied by 1820 and no longer occupied by 1840.
  - (2) Glass of  $3/64$ " (0.047 in.) thickness occurs only on sites built, or occupied, prior to 1845.
  - (3) With rare exceptions, no glass thinner than  $4/64$ " (0.063 in.) in thickness is found on sites dating after 1845.
- 

(Walker 1971:78)

# TOTAL WINDOW GLASS

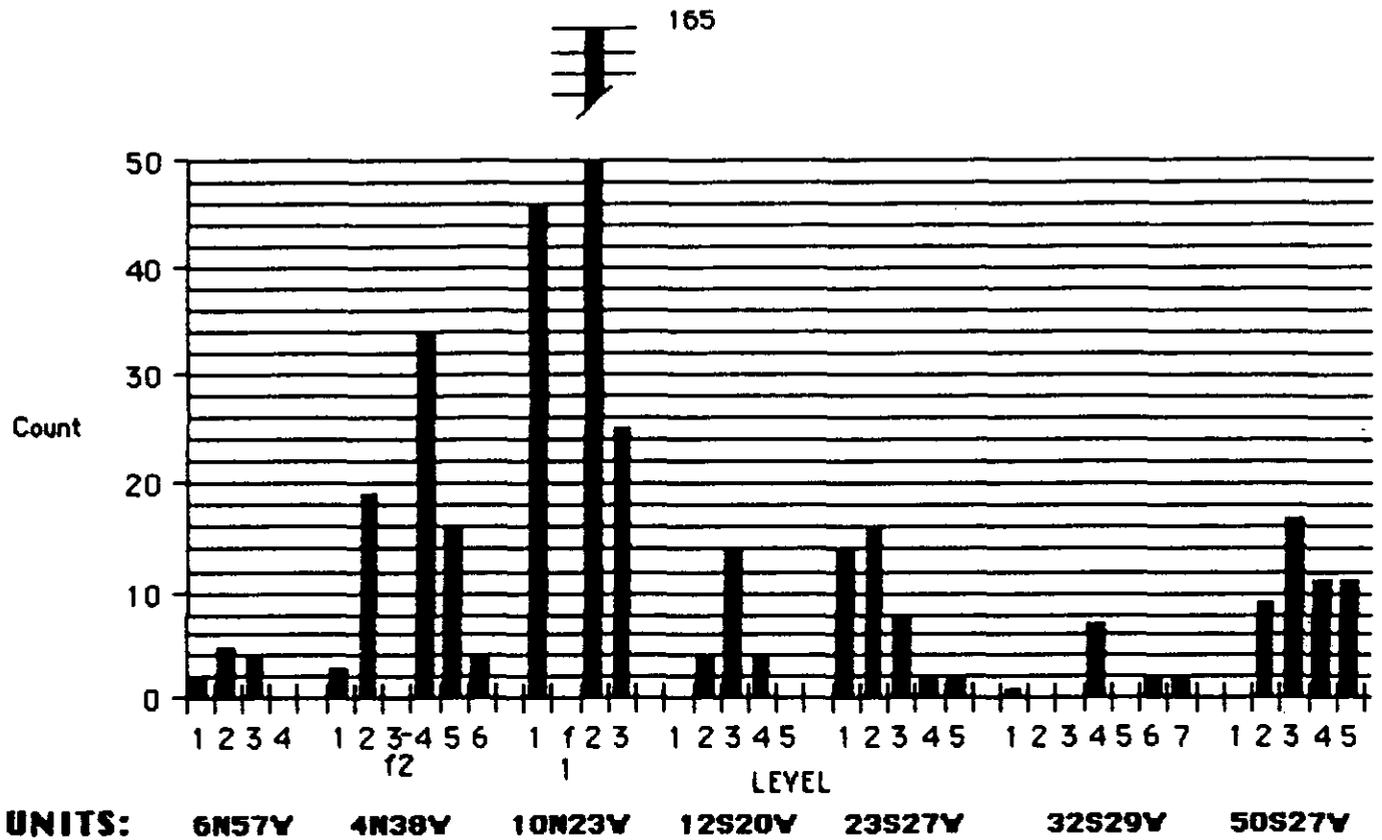


Figure 77. Window Glass Quantities by Unit and Level.

provided workable samples for analysis and permitted derivation of gross chronologies for different parts of the site. Figure 77 shows the number of fragments found in each level of the various excavation units. Appendix 5 gives a breakdown of window glass thickness by archaeological level.

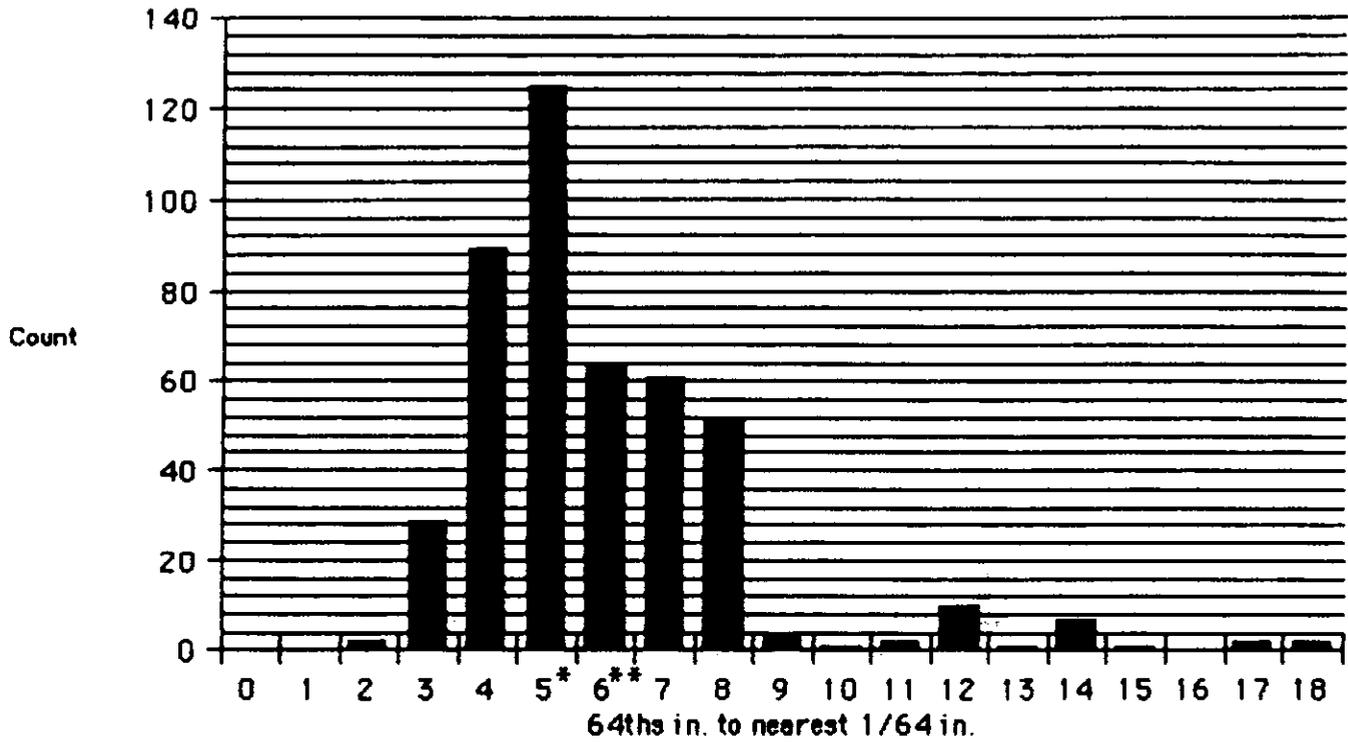
### Analysis

The Long Row excavations produced a total of 449 window glass fragments. None of the fragments showed any bubbles or striations, which would have indicated hand-manufactured glass (Roenke 1978: 7). All excavated fragments were made from flat sheet glass, and ranged from 2/64 to 18/64 inch in thickness. Twenty-five fragments, or five per cent of the collection, were between 10/64 and 18/64 inch thick. These fragments appeared to be some sort of specialty glass, since they were too small in concentration and too thick in size to have been used as windowpane glass. The two 18/64 inch fragments, found in level 4 of unit 32S29W, were decorated with an impressed pattern and embossed with the name "Nat'l Glass Co." The decoration suggests that these pieces were probably from ornamental door panels or windows at the entryway of a building (Walker 1971: 78). The function of other unusually thick pieces was not determined. No large concentrations were found in the area of the 1896 greenhouse (Figure 22), where specialized glass might have been expected.

Figure 78 shows the frequency of thicknesses for the window glass assemblage from the entire site. The primary mode is 5/64 inch while the secondary and tertiary modes are 4/64 and 6/64 inch respectively. According to Roenke's chronology, this puts the most concentrated period of construction or window glass replacement between 1850 and 1885, with periods of lesser activity occurring between 1845 and 1855, and between 1870 and 1900. A fourth concentration, nearly as high as the tertiary mode, appears at 7/64 inch, which Roenke dates c. 1900-1915.

These dates appear to coincide with documented periods of building activity in the Long Row area. Nineteenth and early twentieth century maps indicate that the earliest buildings in the Bagby Street block went up before the 1850's, with the two heaviest periods of construction occurring

# WINDOW GLASS THICKNESS, ENTIRE SITE



\* Median value

\*\* Mean value

Total fragment count= 449

Figure 78. Frequencies of Window Glass Thickness for Entire Long Row Site.

between about 1850 and 1873 and between about 1896 and 1919 (Chapter 3). The median of 5/64 inch corresponds to the primary mode in this assemblage, while the mean, falling at the tertiary mode of 6/64 inch, probably reflects the high concentrations of thicker twentieth century glass.

Figure 79 presents the modes, means, and medians for all seven of the individual excavation units. From these figures as well as building material and construction hardware counts (Chapters 9 and 10), certain tentative conclusions can be made. Unit 10N23W produced 237 fragments of window glass, more than half the total from the entire site. This supports findings from other artifact analyses that this area contained demolition debris from one or more buildings. The peak period of construction reflected by the material from this unit was between about 1850 and 1885 according to the primary mode, which falls at 5/64 inch.

However, when looking at the difference between mean and mode for unit 10N23W, it becomes obvious that other buildings also occupied this site at later dates. The mean of 6/64 inch reflects the strongly bimodal tendency of glass thicknesses in this unit, with values clustering at 4/64 and 5/64 inch on the one hand (c. 1845-1885 according to Roenke) and at 7/64 and 8/64 inch on the other hand. Roenke considers 7/64 the most likely primary mode for the period 1900-1915, while Walker cites 8/64 inch as a standard thickness for modern window glass, which is regulated by standards adopted by the Federal Specifications Board in 1924 (Walker 1978: 38; Roenke 1978: 38). This second peak therefore probably reflects buildings constructed in the twentieth century, with the mean falling midway between the nineteenth and twentieth century periods of construction.

The majority of fragments in unit 10N23W came from level 2, suggesting that both the nineteenth and twentieth century glass were deposited in a single depositional episode. However, a wide range of thicknesses was found in all three excavated levels, with no clear chronological distinctions apparent between the levels (Figure 77; Appendix 5). The median thickness for this unit corresponds to the

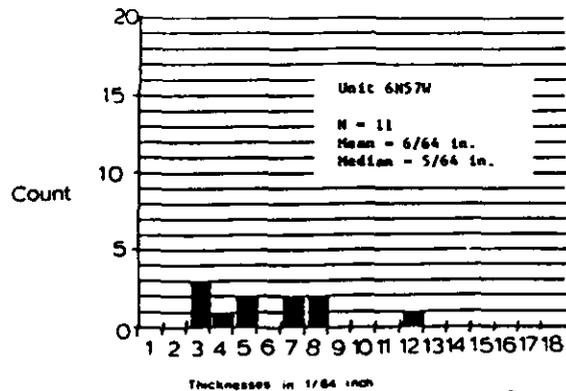
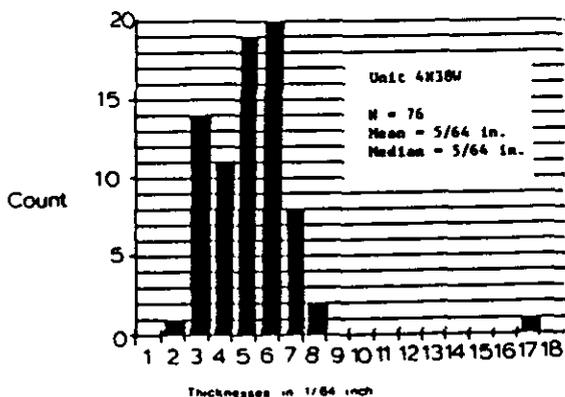
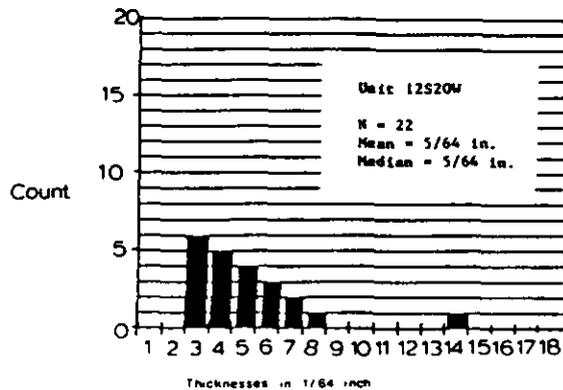
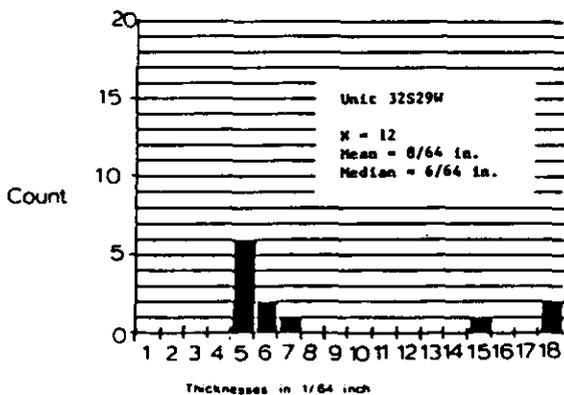
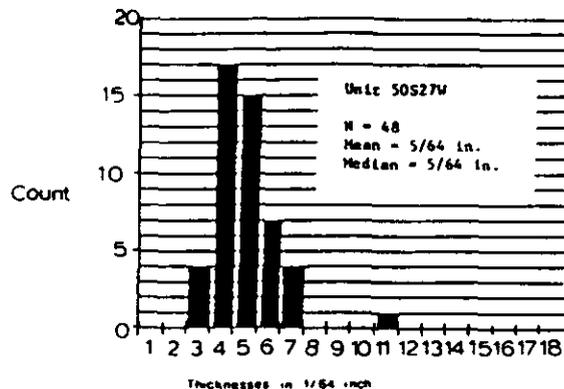
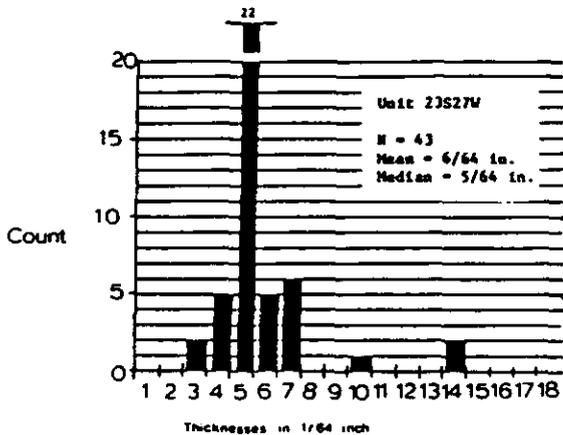
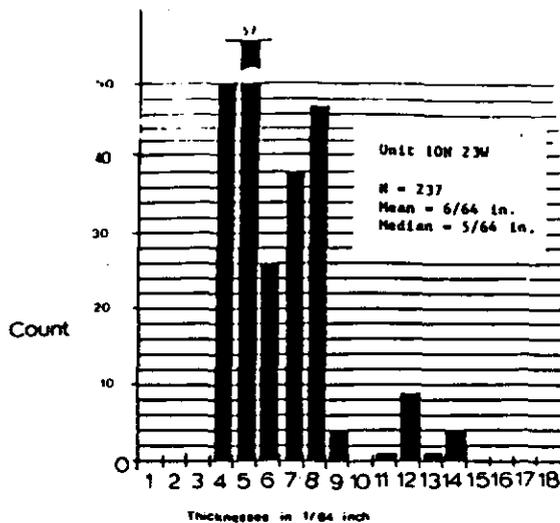


Figure 79. Window Glass Thickness by Excavation Unit.

primary mode of 5/64 inch, indicating a greater intensity of construction activity in the earlier period. A third small cluster of fragments at 12/64 inch is made up almost entirely of glass from level 1, and suggests limited use of specialty glass in the later period of occupation in this area.

Unit 23S27W shows a peak period of construction between 1850 and 1885, with a strong primary mode of 5/64 inch. The primary mode and the median correspond nicely in this unit, reflecting the extremely large number of fragments of glass of this modal thickness. A slightly higher mean of 6/64 inch is probably the result of a weak secondary mode at 7/64 inch (c. 1900-1915 according to Roenke's chronology), as well as the presence of several fragments of thick specialty glass in levels 2 and 4. The large difference in quantity between the primary and secondary modes suggests that the twentieth century 7/64 inch glass is probably an indication of later additions or renovations rather than a second period of building construction.

Tertiary modes of 4/64 and 6/64 inch indicate that unit 23S27W contained some debris from construction and maintenance throughout the mid and late nineteenth century. This unit also yielded two fragments of 3/64 inch glass, which both Roenke and Walker date before 1845. These fragments may have been part of a scatter from distant early nineteenth century construction. Interestingly, the two lower levels of the unit contained only twentieth century 7/64 inch glass, while all the thinner nineteenth century glass was concentrated in the more modern upper levels. This may have been a result of demolition of nineteenth century buildings following a prolonged period of maintenance.

The graph for unit 12S20W shows a steady decline in window glass quantity from 3/64 inch through 8/64 inch, with one piece of 14/64 inch specialty glass also found in level 2 (Appendix 5). Modal frequencies for this unit are therefore 3/64 inch, 4/64 inch, and 5/64 inch, in descending order. Mean and median thicknesses are both 5/64 inch, the intermediate value for the unit. These figures indicate initial construction predating 1845, with steady upkeep throughout the nineteenth and early twentieth centuries. The number of window glass fragments found in this unit was extremely small, however, suggesting that they may have come from a

building some distance away. Nearly two thirds of the glass (14 of 22 fragments) was found in level 3, which also contained the widest range of thicknesses. This level may correspond to demolition levels elsewhere on the site.

Unit 32S29W shows us a pattern similar to that of unit 23S27W. There is a strong primary mode at  $5/64$  inch, with a disproportionately high mean and median ( $8/64$  inch and  $6/64$  inch) due to the presence of extremely thick specialty glass. The peak dates of construction, as indicated by the primary mode, were between 1850 and 1885, with a weak secondary mode of  $6/64$  inch suggesting some upkeep through the end of the nineteenth century. A single fragment of  $7/64$  inch glass is the only indication of twentieth century activity. The total number of fragments was again extremely small, suggesting that there was little construction in the immediate area of this unit. The three pieces of specialty glass, which made up one fourth of the sample, consisted of a fragment of plate glass from level 1 and two pieces of a decorated embossed glass, probably from a door panel, found in level 4. Aside from the one piece of plate glass in level 1, all window glass fragments from this unit were found in levels 4, 6, and 7, the three lowest levels of the unit. These levels probably correspond to the occupation and demolition of the buildings reflected by the sample.

Unit 50S27W shows a strong primary mode at  $4/64$  inch, with a fairly steady decline in quantity as thickness increases. Aside from one piece of specialty glass, no glass thicker than  $7/64$  inch was found, indicating that there was no construction in this area after the adoption of the  $8/64$  inch standard in 1924 (Roenke 1978: 38). According to Roenke's chronology, these figures suggest a period of peak construction between 1845 and 1855, with probable maintenance or renovation through the late nineteenth and early twentieth centuries. Mean and median both fall at  $5/64$  inch, datable to the earlier decades of the late nineteenth century. This unit yielded a fairly high total of 48 fragments. Most of the glass was concentrated in levels 2-4, suggesting that these may have been demolition levels. Four pieces of pre-1845  $3/64$  inch glass, found in levels 2 and 3, may indicate a scatter of debris from the demolition of early nineteenth century buildings.

Unit 4N38W, with 76 fragments altogether, yielded the largest quantity of window glass found outside unit 10N23W. This seems to be a strong indication that 4N38W was on or very near a construction site. The main question here is: How many buildings occupied the site of this unit? Like 10N23W, unit 4N38W exhibited a bimodal curve of window glass thickness. Judging from a strong peak in glass thickness at 5/64 and 6/64 inch, it appears to have had a peak period of construction between about 1850 and 1900, with a pronounced smaller cluster of fragments at 3/64 inch suggesting a second building phase sometime before 1845.

The primary mode for unit 4N38W was 6/64 inch, a thickness Roenke dates c. 1870-1900. This was the only unit on the site to show a strong modal tendency at this thickness, although the secondary mode of 5/64 inch (c. 1850-1885) was nearly as large and could be a reflection of the same construction event. The tertiary mode of 3/64 inch, with a total of 14 fragments, was also the largest concentration on the site of early nineteenth century glass. The fact that the mean and median thicknesses, both 5/64 inch, fall below the 6/64 inch primary mode suggests that unit 4N38W probably contained debris from two buildings built at different times, rather than from repair and maintenance of a single building. Small amounts of 7/64 and 8/64 glass suggest some maintenance of those buildings through at least the early twentieth century. There was no apparent correlation between glass thickness and stratigraphic depth in this unit, with glass of all thicknesses concentrated in levels 2, 4, and 5. Nearly half the glass came from level 4, suggesting that this level may have corresponded to a period of demolition.

Unit 6N57W had only 11 window glass fragments, with thicknesses ranging from 3/64 through 12/64. Glass thicknesses from this unit formed no recognizable curve. The primary mode was 3/64 inch, indicating construction before 1845. However, the wide variation between the mode, the mean (6/64 inch), and the median (5/64 inch), as well as the small size of the mode (three sherds), suggest that no reliable trends can be determined for this unit. In addition, nails from this unit, which should be contemporary with the primary mode if from the same building, are mainly late nineteenth/early twentieth century wire nails. All of these

discrepancies suggest that unit 6N57W contained only stray fragments of window glass from buildings constructed at various periods.

### Conclusions

Both quantity and thickness of window glass varied considerably throughout the excavated area. By far the largest amounts of window glass (237 sherds) were found in unit 10N23W, which from the evidence of other artifacts contained a twentieth century dump in level 2 underlain by a demolition level in level 3. Since most of the window glass from this unit was found in level 2 rather than level 3, it seems likely that the two strata were associated. A strongly bimodal curve of glass thickness suggested that this unit contained material from two distinct construction phases, which Roenke's chronology would place in the mid nineteenth/late nineteenth century and the early to mid twentieth century.

Other excavation units showing evidence of nearby construction or demolition were units 23S27W, 50S27W, and 4N38W. Of these, unit 4N38W contained the largest amount of glass, with 76 sherds. This unit also had a bimodal thickness curve, with construction phases apparently dating before 1845 and between about 1850 and 1900. Unit 23S27W exhibited a less pronounced binary curve, suggesting an initial construction period between 1850 and 1885 and secondary construction or window glass replacement in the early twentieth century. Unit 50S27W had a single peak indicating mid nineteenth century construction, with a smooth drop-off suggesting maintenance, but no major construction events, through about the second decade of the twentieth century.

As a whole, the site showed strong evidence of construction c. 1845-1885, with construction or maintenance continuing steadily through at least the early twentieth century. Evidence for earlier building came primarily from unit 4N38W, which produced nearly half the site total of pre-1845 3/64 inch glass. This glass may be from the construction of the 1837 Smith Hospital, which was situated in this general area of the site. Scattered fragments of similar early glass in units 12S20W and 50S27W may have come from the 1840's Shryock-Jones house, located in the middle of the Long Row block (Figure 18).

Most of the twentieth century glass came from unit 10N23W. Modern 8/64 inch glass was extremely rare outside this unit, while 7/64 inch glass, dated c. 1900-1915 by Roenke, was found in other units only in small quantities. It is possible that the large quantities of this thicker glass in unit 10N23W came from the nearby Lenoir Apartments, apparently built around 1910 and demolished sometime before 1940. The modal quantities of 4/64 and 5/64 inch glass in this unit may be from the Byers house, which stood on this site from before 1869 until its destruction sometime in the early twentieth century (Chapter 3). The large quantities of mid to late nineteenth century glass in unit 4N38W may also be from the Byers house or from one of the outbuildings or additions associated with this house.

Mid to late nineteenth century glass from other units is less easily correlated with the historical data. Unit 23S27W was located near no known buildings except three small outbuildings which stood from before 1896 until the 1920's (Figures 22-25). The size and location of these buildings, however, suggest that they served as garages or privies, which presumably had few windows. It therefore seems likely that much of the glass from this unit was brought into the area during later leveling or landscaping operations. The c. 1845-1915 time span of window glass from unit 50S27W fits well with the known history of one nearby building, which stood from before 1873 until sometime before 1907. But this chronology gives no evidence of a second building which occupied the same site from around the turn of the century until 1952 (Figures 23-25).

A major aim of the window glass analysis was to test the applicability of Roenke's dates and methodology to the Houston area. Overall, Roenke's thickness chronology seems to correlate well with historical data available for the Long Row site, and it seems likely that the discrepancies outlined above arise from gaps in the historical record rather than from faults in the window glass chronology. These discrepancies do point out, however, that while Roenke's chronology fits the broad outline of events in the Long Row block, it may require further testing and refinement before it can be used as an independent dating tool for sites on the Texas coast.

## Chapter 9

### METALS

by  
Heather Miller

#### Introduction

A wide variety of metal objects was recovered this season, many of which were suitable for dating. Metal objects usually present a problem in identification, as they are often corroded beyond recognition. Also, since there are so many widely differing types of things made out of metal, especially iron, there are no neat categories for identification. Many metal objects from the 1984 Long Row excavations were identified through comparison with pictures in such sources as Sears and Roebuck catalogues, and with photographs of objects excavated at other historical sites. Where manufacturers' markings were clearly visible, as was the case with several objects, information was solicited from the corporation which produced them.

Our goal was the identification and dating of as many items as possible, in the hope of determining what sort of activities took place in the Long Row/Rose Garden area at different times in its history. Accordingly, artifacts were analyzed by excavated level within each archaeological unit, in order to determine the unit's dates and functions and thus to obtain an idea of activities on various parts of the site over a broad time span.

A summary of all metal artifacts can be found in Appendix 6b. Nail counts and percentages from different levels of the archaeological units are presented in Appendix 6a, and the frequency distribution of different nail types is shown in Figure 80. Identifiable metal artifacts included construction hardware; household and personal items such as bottle caps and jewelry; and miscellaneous other items like automobile parts and horseshoes.

# Nails

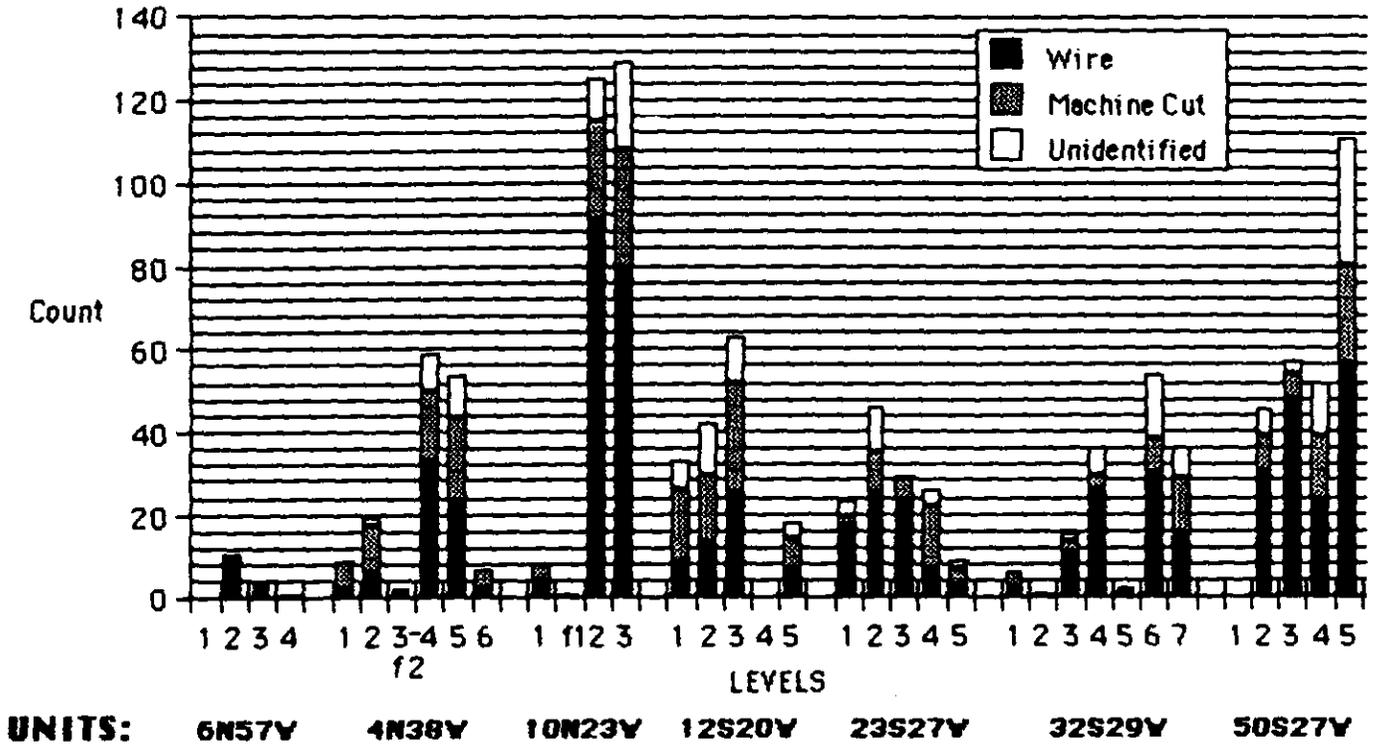


Figure 80. Distribution of Nail Types at the Long Row Site.

By far the largest class of items excavated was nails (1133 specimens). These included both machine cut and wire nails of several varieties (Figures 81 and 82). No hand-wrought nails were found. All identifiable machine cut nails appeared to be of the post-1830 type, with burrs on adjacent corners of the nail shank (Figure 81a). These nails were produced using an adjustable cutting blade which sheared the plate from which the nails were cut on only one side. This method of manufacture was a great improvement over previous techniques, in which the plate had to be turned after each cut, producing burrs on opposite sides of the shank (Shepard 1981: 81).

Twice as many wire nails as cut nails were found (Appendix 6a). These nails, first manufactured in the United States around 1855 (Walker 1971: 74), became dominant over cut nails by the 1890's. By 1895 they comprised 75 per cent of the total nail output for the United States (Shepard 1981: 82), even though machine cut nails are occasionally still used today.

Nails are therefore an important analytical tool in that they are a common, fairly datable artifact, which can be used as evidence of construction or demolition of buildings. In our analysis, percentages and counts of machine cut, wire, and unidentified nails were compared both within and between units to determine rough dates and evidence of building activity. Other rarer artifacts were used to confirm dates obtained from nail data and to indicate other activities which might have been conducted in the area.

There are several complicating factors in the use of nails for dating. Houston, as a port city, presumably had immediate access to the latest technological innovations, and it is possible that wire nails were in common use in this area before the 1890's date we have assigned them. More important is the fact that the Long Row appears to have been the site of a great deal of building activity throughout both the nineteenth and twentieth centuries, resulting in a mixture of nail types in the archaeological record. This mixture can be the result of several processes: the destruction of long-lived buildings, especially ones with many modern additions; simultaneous destruction of a number of buildings

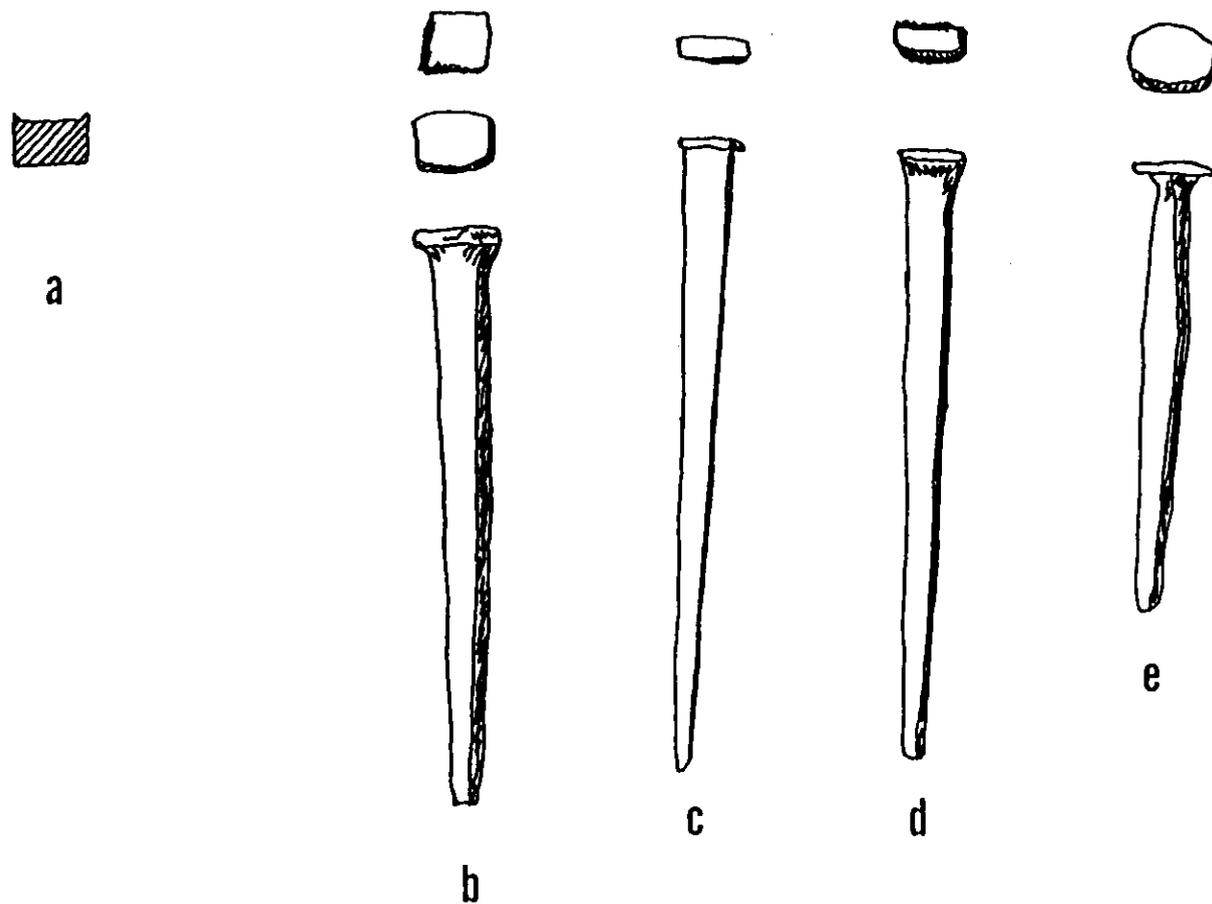


Figure 81. Types of Machine Cut Nails Found in the 1984 Excavations. A. Cross section showing parallel burrs produced by adjustable cutting blade. B. Common nail - rectangular and square heads. C. Finishing nail. D. Masonry nail. E. Clinch nail.

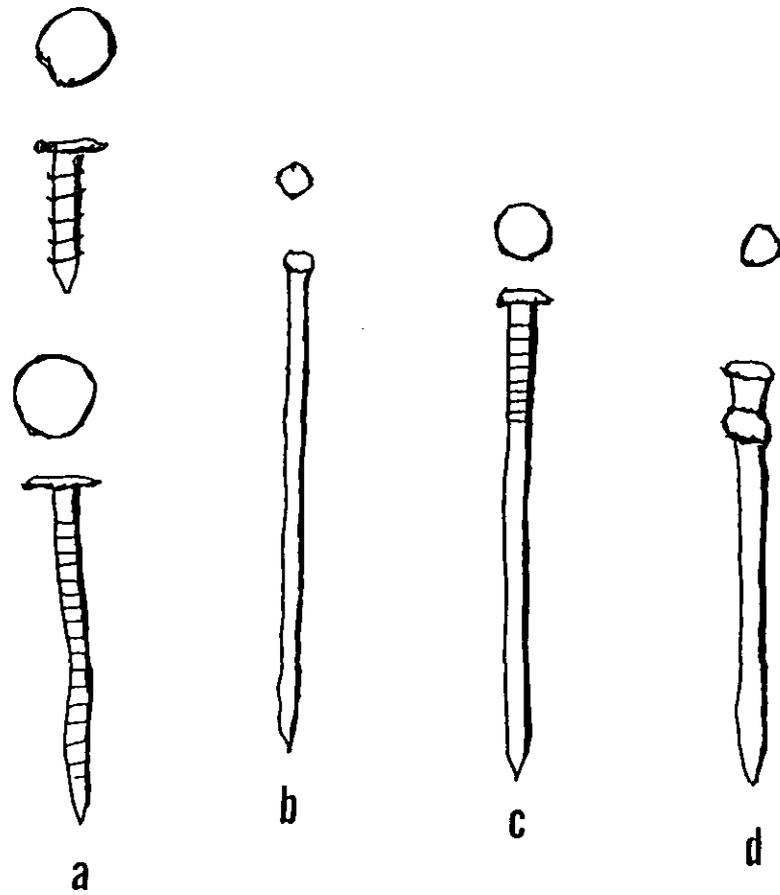


Figure 82. Types of Wire Nails Found in the 1984 Excavations. A. Roofing nails. B. Finishing nail. C. Common nail. D. Temporary nail.

of different ages; landscaping activities bringing in new fill or transferring debris from one part of the site to another; or local disturbance of the archaeological deposits. For simplicity's sake, therefore, it was assumed that levels with a majority of machine cut nails held buildings of mostly nineteenth century construction, that those with mostly wire nails held a preponderance of late nineteenth or twentieth century materials, and that borderline levels had some mixture of deposits. Nevertheless, it should be kept in mind while reading the following analysis that nails and other artifacts did not necessarily originate in or even near the archaeological level in which they were found, and that artifacts found together in a single deposit could have originally come from entirely different parts of the site.

### Unit evaluations

#### 10N23W

Level 1: Level 1 of 10N23W contained only eight nails, suggesting that it was deposited separately from the levels of building debris which underlay it. Four of these nails were wire nails and four were machine cut. Most of the metal objects from this level, however, appeared to be recently deposited surface artifacts. Pull tabs from soft drink cans, first used in 1962, were the most numerous artifact type, with 12 found (Lewis 1979: 38). Five crown bottle caps, a closure type patented in 1892, were also recovered (Lewis 1979: 38). Of these, at least two were twist-off caps marked with the insignia of the Miller Brewing Company (Figure 85a). This type of closure has been in use since at least the early 1970's and possibly since as early as 1964 (Miller Brewing Co., 1984: personal communication). Other metal artifacts consisted of one nickel-plated eraser casing, an item in use since at least 1900 (Sears and Roebuck, Spring 1900); one bobbypin, a hairstyling accessory first advertised in the Sears Fall 1930 catalogue for use with the 1920's style of "bobbed" hair; one pull strip from an aluminum can; and a bolt and washer made from an unknown non-ferrous alloy.

Level 2: This level, which appears to have been used as a dump, contained a profusion of artifacts of various kinds. Level 2 had a total

nail count of 125, the highest of any level on the site except level 3 of this unit. Seventy-three per cent, or 91 of the nails, were wire nails. This would indicate that the majority of nails were from construction after the late nineteenth century. Eight pull tabs and six crown bottle caps, including several Miller twist-off caps, were also found, along with a threaded cap for a narrow-necked screwtop bottle. This cap probably postdates 1904, when development of the Owens bottle machine made possible the first narrow-necked continuous-thread bottles (Lewis and Haskell 1981: 57).

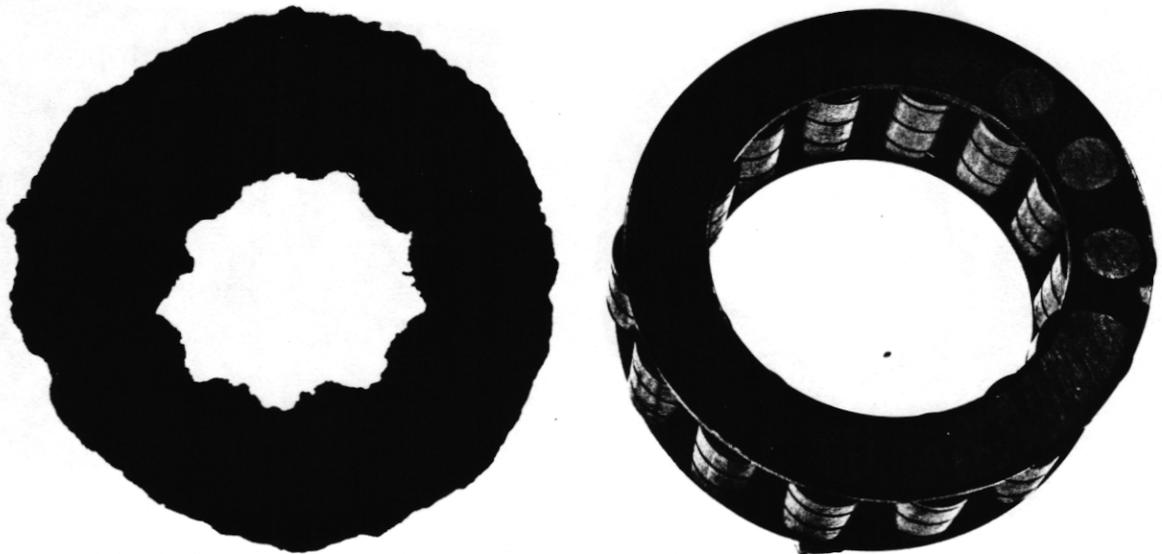
Undatable objects from level 2 included a square, black-painted doorknob plate with a medium-sized skeleton keyhole (Figure 83b); an iron cutlery handle, probably from a knife (Figure 83e); and an object tentatively identified as a gas stove or lamp lighter. Gas, a common urban energy source after c. 1840, was a major lighting source until the first few decades of the twentieth century, when it was gradually replaced by electricity (Caldwell 1930: 30). It is still used for cooking today.

Level 2 also produced the front half of a tin toy truck, painted red, which appeared to date from the 1920's or later (Figure 85d; Sears and Roebuck, Fall 1919, Fall 1926, Fall 1930). A flat impressed copper bar, silver-plated and gilded, was possibly a metal barrette of a type first advertised in the Sears and Roebuck Fall 1930 catalogue (Figure 85c). Like the bobbypin, the barrette was a new accouterment for bobbed hairstyles. The Long Row artifact, however, also resembled bar pin brooches first advertised in the same Fall 1930 catalogue. This was the first issue in which Sears advertised such "costume" jewelry, which appears to have fallen out of fashion by Fall, 1940.

A horseshoe and a possible harness part were found, perhaps reminders of the stable that was once in the area (Figure 22). The horseshoe could not be dated, but the harness part, a D-shaped iron ring, may have been a breast snap of a type dating back to at least 1900 (Figure 83c; Sears and Roebuck, Fall 1900). More modern transportation-related items included two automobile parts: a "wounded" roller bearing of a type manufactured for the rear wheels of the first Fords, c. 1904-1940 (C. Meza 1984: personal communication); and a casing for an external car light (Figures



Figure 83. Metal Artifacts. A. D ring. B. Doorknob plate. C. Harness snap. D. Stave cover lifter. E. Cutlery handle. F. Door button. G. Bell shaped aluminum ring. H. Hinge/furniture fitting. I. Bolt threaded with hexagonal nut; wood screws.



a



b



Figure 84. Metal Automobile Parts. A. "Wounded" roller bearing and similar modern roller bearing. B. Auto tail light casing.

84a and 84b). Judging from its small inside diameter (5.7 cm), this last item probably housed an automobile tail light rather than a head lamp (Sears and Roebuck, Spring 1920, Fall 1930).

At least 47 pieces of a circular iron grate, originally 0.55 meter in diameter, were found at the lower boundary of level 2. This grate was pierced across its surface with evenly spaced small holes, 1.2 cm in diameter, and had a crimped rim which suggested it was a snap-on lid of some sort, perhaps for a large drum or canister. Other artifacts included one pencil eraser casing like that found in level 1; two pointed screws of the type in use since 1846 (Mercer 1923: 24); two bolts, one with an attached hexagonal nut; five pieces of aluminum foil; two pieces of lead pipe or tubing; a piece of sheet iron; an unidentified lead fragment; and 12 pieces of wire.

Feature 1: This feature, the modern auger-drilled posthole discovered at the top of level 2, contained artifacts only in the ashy soil in the top of the feature. Metal artifacts from feature 1 consisted of one machine cut nail, one aluminum washer, and two unidentified iron fragments.

Level 3: Level 3 of 10N23W was a layer of heavy rubble, apparently containing debris from the destruction of one or more buildings. This level contained 129 nails, the highest nail count on the site. Sixty-one per cent, or 79, of these nails were wire nails, a slight drop from the wire nail frequencies of level 2 (Figure 80). The percentage of unidentified nails, however, was relatively high (16 per cent, or 21 specimens). Cut nail frequencies, at 22 per cent of the total, remained roughly the same as in level 2. This suggested that, as in level 2, the majority of the nails were from buildings constructed in the late nineteenth or twentieth century.

This level also contained a construction staple, two crown bottle caps, a screw top for a narrow-necked bottle, and at least 81 more pieces of the grate described in level 2. A suspender buckle was also found (Figure 85b). This item, stamped with the patent date "July 15, 1890," closely resembled buckles shown in the Sears and Roebuck, Spring 1900 catalogue. Suspenders were a popular mail order item until about 1930, by which time Sears had largely phased them out in favor of belts (Sears and



Figure 85. Metal Artifacts. A. Miller Beer twist-off crown caps. B. Suspender buckle with 1890 patent date. C. Copper bar pin or barrette. D. Tin toy truck. E. Ammunition. Clockwise from upper left: 12-gauge shotshell base; .22 caliber cartridge; 10-gauge shotshell base; .38 caliber cartridge. F. 1904 Barber dime.

Roebuck, Spring 1900, Spring 1910, Fall 1919, Fall 1930). Other items included a clothespin spring of the standard type which has been in use since at least 1900 (Sears and Roebuck, Spring 1900); one iron bolt; one undated shotshell base; one wire bucket handle; and a number of unidentified fragments.

Discussion: Level 1 appeared to be a modern deposit, containing primarily surface artifacts with little indication of construction or habitation debris. With the exception of four machine cut nails, virtually all the artifacts from this level are items still in use today, and most can be dated to the early 1960's or later. This suggested that level 1 was datable to the modern park occupation, perhaps as a fill layer brought in for landscaping purposes.

The outstanding characteristic of level 2 was the large number and variety of metal artifacts. Bits of charcoal were found adhering to several items, strongly suggesting that this level was a dump containing burnt objects, perhaps from a refuse fire. Level 2 quite possibly dated from around 1925 to 1940. This level definitely dated sometime after 1920 and most of the artifacts seemed to be from around the 1930's, excluding the pull tabs and Miller twist-off caps, which may have resulted from disturbance of the level as they were also found in level 1. Aside from these items, artifacts gave no definite indication of deposition after the 1940's, although the artifacts were not tightly datable and could be from a later date. The large amounts of wire nails and other construction hardware suggested that this level also contained debris from twentieth century building demolition.

Feature 1, which was stratigraphically contemporary with level 1, contained no clearly datable artifacts except one cut nail, possibly derived from the surrounding deposits and obviously much older than the feature itself. Level 3, containing large amounts of construction material, appeared to be a demolition level. This level contained many fewer artifacts than level 2, with no obviously modern artifacts and none that could definitely be dated to the post World War I period of level 2. Two crown caps, a post-1890 suspender buckle, and a post-1904 bottle cap dated its deposition to around the turn of the century or later. The

similarity of nail counts and percentages from levels 2 and 3, however, suggested that these levels may have experienced some mixing or may have contained material from the same demolitional episode.

Overall, this unit thus seems to have been the site of at least two major activities: a dump in level 2 and demolition activities in level 3, which may have extended to level 2 as well. The demolition work may have involved several buildings as the quantity of nails found was so very large.

### 23S27W

Level 1: This level contained a total of 23 nails. Seventeen, or 74 per cent of these were identified as wire nails, again suggesting a predominance of post-1890 construction. Only two definite cut nails were recovered (Appendix 6a). In addition to nails, a number of other construction-related artifacts were found in this level. These included two pointed wood screws, an artifact type dating from 1846 to the present (Mercer 1923: 24); a bolt and three nuts (Figure 83i); and a 4-1/2 inch spike. Obvious surface artifacts from this level included five pull tabs, eight crown bottle caps, and a 1982 Denver mint penny. Other metal artifacts were one small D-ring, one piece of aluminum foil, one piece of wire, and 13 unidentified iron and aluminum fragments.

Level 2: A total of 46 nails was unearthed in level 2. Wire nails, with 25 specimens, made up 55 per cent of the total, with the remaining number evenly divided between cut nails (10 specimens) and unidentified nails (11 specimens). The high proportion of unidentified nails made it difficult to assign date ranges on the basis of nail frequencies, although the level clearly contained some remains from both nineteenth century and twentieth century buildings. Also found in this level were 10 pieces of a foil and paper wrapping, possibly from a modern cream cheese package; a copper .38 caliber cartridge; a 12-gauge shotshell base stamped "U.M.C. Co. NEW CLUB" (Figure 85e); a packing staple; three pieces of molten lead, possibly solder; and 60 unidentified fragments and objects. .38 cartridges have been in use at least since 1866, and the No. 12 New Club shotgun shell, made by Union Metallic Cartridge Company, was introduced

sometime after 1891 (Herskovitz 1978: 49-51). This level was thus deposited in the 1890's at the earliest, although the paper and foil packaging strongly suggests a later date.

Level 3: Level 3 of this unit was a large circular pit which from stratigraphic evidence was later than level 2 and probably contemporary with level 1. Nail data from this level were very similar to those of level 1. A total of 29 nails were found, of which 23, or 79 per cent, were wire nails. Only five cut nails and one unidentified nail were recovered. Like level 1, this level thus appeared to contain building remains which were mostly from twentieth century construction. Also found in this level were an undatable iron washer, a post-1846 pointed wood screw, and an iron object which may have been a cover lifter for a gas, coal, or wood-burning cooking stove (Figure 83d). These stoves appeared in Sears and Roebuck catalogues at least as far back as 1899 and were sold until the 1960's. Level 3 also contained a threaded bottle cap with the remains of a plastic seal, which would appear to date deposition of the level to after the introduction of modern plastics in the 1940's.

Level 4: Level 4 was also designated as part of the pit feature first excavated in level 3. Nail frequencies, however, suggested that this level was probably deposited separately from level 3. Level 4 had a total nail count of 26, with 58 per cent, or 15, identified as cut nails. The remaining 11 specimens included seven wire nails and four unidentified nails. The majority of this material thus appeared to come from buildings constructed in the nineteenth century, and may imply that level 4 was a significantly older deposit than level 3. Other metal artifacts from this level were undatable, but seemed to consist primarily of construction hardware. These included an iron bolt, an iron hook with two attached bolts, and eight unidentified fragments.

Level 5: Like level 4, level 5 was excavated as part of the pit feature in 23S27W. This level also contained a slight majority of machine cut nails. Because only a small part of level 5 was excavated, however, the number of nails and other metal artifacts was extremely low, making it difficult to draw any reliable conclusions about either dating or function. Nails consisted of three wire nails, four cut nails, and two unidentified

nails. Other artifacts from level 5 were one piece of wire and five fragments of unidentified iron.

Discussion: Level 1 appeared to be a fairly recent level, especially considering such surface finds as the post-1962 pull tabs and the 1982 penny. Artifacts from this level divided fairly evenly into recent surface artifacts and construction-related items, with the high percentage of wire nails and extremely low percentage of cut nails suggesting association with twentieth century building activity of some sort. Level 2 yielded the largest number of nails in the unit and appeared to contain the remains of both nineteenth and twentieth century buildings, perhaps due to demolition of buildings of different ages or early buildings with later additions. This level also yielded apparently modern artifacts, although it could not definitely be dated after the 1890's. It is possible that level 2 contained mixed deposits of material from several different periods, perhaps deposited as recent landscaping fill.

Levels 3, 4, and 5 were all designated part of the pit feature in the floor of 23S27W. However, level 3 appeared to be much later than levels 4 and 5. Nail ratios and counts as well as the presence of modern twentieth century artifacts suggested that level 3 was probably contemporary with level 1, whereas levels 4 and 5 contained a majority of cut nails and no obviously modern artifacts. These findings indicated that this was not a single feature, but rather two or more separate deposits of pit fill. Although nail quantities overall were only moderate in comparison to other excavation units (Figure 80), a preponderance of construction-related articles throughout all levels suggested that this area may have been the site of both twentieth century and nineteenth century building activity.

#### 6N57W

There were very few metal artifacts found in this unit, suggesting that it was not located in a major area of occupation. No metal artifacts at all were recovered from level 1. Level 2, with the highest artifact yield in the unit, contained one machine cut nail, 10 wire nails, a construction staple, and a piece of iron reinforcement bar. Both these

artifacts were probably modern, judging from their largely uncorroded condition. Level 3 contained four wire nails and a piece of unidentified iron. Level 4 contained one wire nail. All artifacts recovered were thus construction-related, but their sparsity does not suggest a high level of construction activity. From the overwhelming predominance of wire nails and the uncorroded condition of the artifacts, all levels of this unit appear to be twentieth century deposits.

#### 4N38W

Level 1: Level 1, a topsoil layer, contained only nine nails and four pieces of unidentified iron. Seven of the nails were machine cut and two were wire nails.

Level 2: Nineteen nails were recovered from level 2. More than half of these nails (11, or 58 per cent) were machine cut, with only six wire nails and two unidentified nails. Level 1 and level 2 thus both appeared to contain debris from nineteenth century buildings, although the small numbers of nails did not suggest significant building or demolition activity. Other artifacts from level 2 included three pieces of wire and 28 pieces of unidentified iron. A terminus post quem for this level was provided by a 1904 Barber or "Liberty head" dime, found in reasonably unworn condition (Figure 85f). Liberty head dimes, designed by chief mint engraver Charles E. Barber, were minted between 1892 and 1916 (Yeoman 1967: 109) and presumably remained in circulation for some time after that. Thus, although this level contained remains of buildings constructed in the 1890's or earlier, it was clearly not deposited until the early twentieth century or later.

Level 3: Level 3, a modern pipe trench, contained only one cut nail, one unidentified nail, and 11 iron fragments.

Level 4: Level 4 had 59 nails, a much higher total than any of the previous levels. Thirty-three of these (56 per cent) were identified as wire nails, an indication of predominantly twentieth century construction. Seventeen, or 29 per cent, were cut nails, while nine remained unidentified. These percentages were an almost exact reversal of the

percentages from level 2, suggesting that the two levels probably contained remains from different building episodes. Since both levels 2 and 4 appear to have been deposited some time in the twentieth century, it is possible that the nineteenth century construction materials in level 2 were brought in as fill from elsewhere on the site. The quantity of metal artifacts in general was also much higher in level 4 than in previous levels, although almost all the artifacts except nails were too incomplete for identification. Non-nail artifacts from level 4 consisted of one piece of wire, one iron bar, and 57 unidentified fragments.

Level 5: The number of nails in level 5 was almost the same as in level 4, with a total of 54. The ratio of wire nails (23, or 43 per cent) to cut nails (20, or 37 per cent) was very close in this level, although a high proportion of unidentified nails (20 per cent) meant that either type could have actually been predominant. These frequencies may indicate that level 5 contained remains from a relatively long period which witnessed both nineteenth and twentieth century construction and demolition. This level contained the largest number of metal artifacts in the unit, though again most of these were not identifiable. Non-nail artifacts included an iron bar, an iron disc, an unidentified rectangular object, and 117 unidentified fragments. One shotshell base, a Union Metallic Cartridge Company No. 10 New Club (Figure 85e), dated the closing of level 5 no earlier than 1891 (Herskovitz 1978: 51).

Level 6: Level 6, the bottom level of the unit, contained very few artifacts and appeared to be near subsoil. This level yielded five machine cut nails, two wire nails, and eight pieces of unidentified iron. The presence of wire nails suggested that even this deep and nearly sterile level may have witnessed some post-1890 activity. Nevertheless, in the absence of more conclusive information on the introduction of wire nails to the Houston area, the terminus post quem for this level would have to be 1855, the date wire nails were invented.

Discussion: Overall, the number of nails from unit 4N38W was moderate in comparison to other units (Figure 80). Nails from the unit as a whole were nearly evenly divided between wire and cut nails (44 and 41 per cent respectively), with 15 per cent of the collection unidentified

(Appendix 6a). Both cut and wire nails were found in all levels, but the varying frequencies in which they were found suggested that they reflected at least three separate construction or demolition events. Levels 1 and 2, both with a small number of artifacts and a predominance of cut nails, may have represented a single demolitional episode. In spite of the nineteenth century construction remains, these levels were both twentieth century deposits and may have been modern fill. The largest numbers of nails and other metal remains were found in levels 4 and 5, which appeared to be the primary occupation levels of the unit. Level 4 contained a majority of wire nails, while percentages of cut and wire nails were about equal in level 5. These findings suggested the possibility of two major construction events, possibly some time apart. In spite of the differences in nail frequencies, the artifact assemblages from levels 4 and 5 were very similar, suggesting that these two levels may represent a single occupational phase extending from the late nineteenth through the twentieth century. Judging from the presence of two wire nails in level 6, all levels of the unit can be dated after 1855 at the earliest.

#### 50S27W

Level 1: Level 1, a topsoil layer, contained only a pull tab.

Level 2: Level 2 yielded 45 nails, of which 30, or 67 per cent, were wire nails. Only nine nails were machine cut, and six were unidentified. This indicated that the majority of nails were used in late nineteenth or twentieth century construction. Aside from 10 unidentified fragments, the only other artifacts in level 2 were two crown bottle cap fragments, dating from 1892 to the present (Lewis 1979: 38).

Level 3: Fifty-seven nails were unearthed in level 3, with 48 specimens, or 84 per cent, consisting of wire nails. Six of the remaining nails were cut nails, and three were unidentified. This large wire nail percentage again implied twentieth century building activity. This level also contained several crown bottle cap fragments, as well as a copper .22 caliber cartridge, a bullet type first manufactured in 1887 (Figure 85e; Lewis 1979: 38). Other artifacts included an iron nut; a washer; 16 unidentified fragments; and a flat rectangular strip made of lead and

antimony. This last object, whose composition was determined by means of a scanning electron microscope, may have been part of an automobile battery, where the lead-antimony alloy is commonly employed (R. Shapiro 1984: personal communication). This use would presumably give it a mid to late twentieth century date. Results of the "Kevex" analysis of this artifact are shown in Figure 86.

Level 4: Level 4, with 52 nails, had a total nail count similar to those of levels 2 and 3. However, the percentage of wire nails in this level (44 per cent, or 23 specimens) dropped to about half that of level 3, while the number of cut nails (16, or 31 per cent) nearly tripled. This suggested building activity involving both nineteenth and twentieth century structures, although the actual percentages may have been skewed by the high number of unidentified nails, which at 13 specimens accounted for 25 per cent of the collection. Other artifacts included one broken iron bolt, 11 pieces of wire, and 32 small scraps of iron.

Level 5: Level 5 contained a very large number of nails, with a total count of 111. This nail count was one of the highest on the site, and suggested that this level was the scene of heavy construction or demolition activity. Percentages of wire, cut, and unidentified nails remained roughly the same as in level 4, with a wire nail percentage of 50 per cent (56 specimens), a cut nail percentage of 22 per cent (24 specimens), and a high unidentified percentage of 28 per cent (31 specimens). This suggested that level 5 may also have contained remains from two or more buildings of different ages, possibly the same buildings as those represented in level 4. Other artifacts from this level were two unidentified iron objects and 68 unidentified fragments.

Discussion: This unit produced a majority of construction materials, with more nails than any other unit. In all, 265 nails were found, of which 157, nearly 60 per cent, were wire nails (Appendix 6a). Large quantities of nails were found throughout all levels except the thin topsoil stratum of level 1, indicating that the entire unit was the site of construction or demolition activities. The high percentages of wire nails suggested that most of the nails came from buildings of post-1890 construction, although relatively large proportions of cut nails in levels 4 and 5 indicated that

these levels contained debris from earlier structures as well. A handful of bottle caps and other personal or household items were found in levels 1- 3, but almost all other artifacts appeared to be construction-related. Aside from nails, the artifacts produced few informative dates, although a possible car battery part in level 3 may indicate that the top three levels were relatively recent deposits.

### 32S29W

Level 1: Level 1 of this unit contained only six nails and an aluminum pull tab. Two of the nails were wire nails and four were machine cut.

Level 2: Level 2 contained only a single wire nail.

Level 3: Level 3 held 15 nails, one crown bottle cap, and two pieces of unidentified metal. Eleven of the nails were wire nails, with only two cut nails and two unidentified nails. Despite the small sample size, this appeared to be a strong indication of twentieth century building activity.

Level 4: This level contained many more artifacts, both construction- and habitation-related, than the previous three levels. Nail frequencies were similar to those from level 2, but were a stronger case since this level held 36 nails. Twenty-six, or 72 per cent, of the nails were wire nails, while only three nails were machine cut and seven were unidentified. This again was a strong indication of twentieth century building. Also found in this level were a bolt; a construction staple; a threaded cap for a broad-mouthed bottle; 11 unidentified fragments and objects; and a pair of undated copper clock hands with simple rounded arrow and ball ends.

Level 5: Level 5, a modern pipe trench, also contained very few artifacts. These included two cut nails, a piece of twisted wire, and one unidentified iron fragment.

Level 6: Level 6 had 54 nails, the most of any level in this unit. Again, a clear majority (54 per cent, or 29 specimens) were wire nails.

Only nine cut nails were identified in this level, but a high proportion of the collection (16 nails, or 30 per cent) was unidentified. Other artifacts were one round-shanked spike, one piece of corrugated iron, and 18 unidentified fragments.

Level 7: Level 7, with 36 nails, contained almost equal numbers of wire and machine cut nails. Fifteen wire nails and 13 cut nails were found, comprising 36 and 42 per cent of the collection respectively, although again the high number of unidentified nails (eight, or 22 per cent) may have distorted the ratio. Even so, this level yielded the highest number of cut nails found in the unit. It also yielded the largest number of metal artifacts overall. Among these was a large iron D-ring, 5.1 cm in diameter, which resembled those first used for attaching the quarterstraps of the 1855 Campbell saddles employed by United States cavalry units (Figure 83a). Later modifications of the saddle took place in 1874, and an army purchase order for that year specified that the quarterstrap D-rings were to be made of iron and japanned black (Steffen 1973: 52, 89). This artifact thus could date at least as early as 1874, and possibly much earlier. Other artifacts from this level included a possible milk bottle cap, 65 unidentified fragments, and a bell-shaped aluminum ring of a type often used on canvas awnings (Figure 83g). Since aluminum was little used before World War I, the presence of this item suggested that level 7 could be dated after 1918. It is possible, however, that there was some disturbance in this and all levels of the unit, since a second intrusive pipe trench, which was not separately excavated, extended at least to this depth.

Discussion: On the whole, nail levels in unit 32S29W were only moderate, with almost all nails found in the bottom three levels of the unit (Appendix 6a). Slightly more than half the nails from this unit were wire nails (56 per cent), with the remainder equally divided between cut nails and unidentified nails. Artifact density was extremely low in the upper three levels of the unit, suggesting that these levels probably post-dated the the nineteenth and early twentieth century occupation of the Long Row area. Extremely high wire nail percentages in levels 3 and 4, however, indicated that these levels were in some way associated with twentieth century building activity, possibly the construction of the

nearby Long Row building in 1968. Higher percentages of machine cut nails indicated that levels 6 and 7 contained remains from earlier construction, while larger artifact yields overall suggested that levels 4-7 may have all contained material from early domestic occupations. Despite the high percentages of cut nails, an aluminum owning ring from level 7 appeared to date this level, and therefore the entire unit, to 1918 or later.

### 12S20W

Level 1: Level 1 contained a total of 33 nails, 18 (55 per cent) of which were machine cut. Only eight wire nails and seven unidentified nails were found. These proportions indicated a predominance of nineteenth century construction. Level 1 also produced two steel washers, of a sort which did not appear in Sears and Roebuck catalogues until 1919 (Sears and Roebuck, Fall 1919); and a threaded cap for a narrow-necked bottle, datable after 1904 (Lewis and Haskell 1981: 57). Also found were an iron door button of a type used at least as early as 1900 (Figure 83f; Sears and Roebuck, Spring 1900); a bolt fragment; and three pieces of unidentified iron.

Level 2: Level 2, with 42 nails, had a slight majority of machine cut nails (16, or 38 per cent), again suggesting nineteenth century building activity. Wire nails and unidentified nails, however, with 13 specimens each, were found in quantities nearly as high, raising the possibility that wire nails could in actuality have outnumbered cut nails. An aluminum or chrome-plated hinge or furniture fitting, drilled for two wood screws, was also recovered from level 2 (Figure 83h), as were one large bolt or spike, one pencil eraser casing, and four pieces of unidentified iron.

Level 3: Nail quantities from level 3 were the highest in the unit, with a total of 63 specimens. The numbers of cut and wire nails were almost equal in this level (27 and 25 specimens respectively), with a large enough number of unidentified nails (11 specimens, or 17 per cent) to have tipped the balance in either direction. Other artifacts included one large round-shanked spike and four unidentified pieces of iron. Level 3 also yielded a small (4-1/2 inch) railroad spike, perhaps a remnant of the old Bagby Street trolley shown on the 1869 Wood map of Houston (Figure 18).

This trolley does not appear on later maps, and seems to have been gone by 1873 (Figure 19).

Level 4: Level 4, a thin gravel layer, contained no metal artifacts.

Level 5: Artifact quantity was low in level 5, of which only a small part was excavated. Level 5 had the same number of machine cut nails as wire nails, but produced only 18 nails altogether. There were seven wire nails, seven cut nails, and four unidentified nails from this level. It also contained a crown bottle cap, a wire bucket handle, and an unidentified iron piece. The crown bottle cap provided a terminus post quem of 1892.

Discussion: This unit had uniformly high levels of unidentified nails, so that any analysis of the distribution of nail types is not entirely trustworthy. All of the archaeological levels contained large percentages of machine cut nails, ranging from 38 to 55 per cent. Except for level 1, however, in which cut nails formed a clear majority, wire and machine cut nails occurred in almost equal quantities in every level. Nevertheless, the unit as a whole yielded the highest percentage of identified cut nails (44 per cent) and the lowest percentage of identified wire nails on the site (34 per cent), an indication that it may have contained more material from nineteenth century buildings than from twentieth century buildings (Appendix 6a). The low wire nail frequencies were puzzling in light of this unit's location just behind the modern Long Row building, and raised the possibility that excavated levels may have been landscaping fill brought in after the 1968 construction of that building. The fact that levels 1-3 were stratigraphically nearly indistinguishable (Chapter 5) suggested that at least the upper levels of the unit may have been deposited contemporaneously, perhaps lending some support to this hypothesis. Nail quantities overall were moderate in this unit, while the quantity of other artifacts was unusually low, consisting of small numbers of construction-related items and occupational or personal remains. The twentieth century washers and bottle cap in level 1 indicated that level 1 was probably deposited after World War I, while a crown bottle cap in level 5 dated deposition of the entire unit to after 1892.

## Conclusions

Overall, the high quantities of nails and other metal artifacts demonstrate that the Long Row area has had a very active history, with many apparent phases of construction and occupation. The site as a whole yielded far more wire nails than cut nails, with 55 per cent of the assemblage composed of wire nails, 28 per cent made up of cut nails, and 17 per cent unidentified. Nails were fairly evenly dispersed across the site, with no one excavation unit or area unduly influencing the frequency of any specific nail type (Appendix 6a). If we are correct in assigning an 1890's beginning date for the widespread use of wire nails in Houston, these figures suggest that building activity in most of the Long Row site was much heavier in the twentieth century than in the nineteenth century, although it must be kept in mind that the 1984 excavations were largely confined to the more modern upper levels of the site. Nevertheless, this finding receives some support from historical records, which show many new buildings going up shortly after the turn of the century, with a mass demolition of all buildings around 1952 (Chapter 3). The relatively small numbers of nails found in the upper levels of all but two of the units--23S27W and 12S20W--may be an indication that much of the site was covered with clean landscaping fill following this final demolition.

Every excavation unit except 4N38W and 12S20W produced a majority of wire nails. Machine cut nails, however, were found in association with wire nails in almost every level, possibly an indication either of long-term exposure of occupational levels or of ongoing demolition throughout the major periods of occupation. Nail quantities were highest in units 10N23W and 50S27W, which each yielded approximately 265 nails. Large amounts of brick and mortar rubble found in conjunction with the nails suggested that this was demolition rather than construction debris, while the predominance of wire nails indicated a twentieth century date. It is possible that both these areas contained remains from the 1952 destruction of the Bagby Street buildings, although in 10N23W the largest deposits of construction materials were overlain by a dump level

containing material which may have been slightly earlier than the 1950's. This level, which yielded the vast majority of metal artifacts found on the Long Row site, appeared to have a terminus post quem of about 1930, with most identified artifacts having a primary use range of c. 1920's-1940's.

Units 4N38W, 23S27W, 32S29W, and 12S20W all contained roughly half the number of nails retrieved from 10N23W and 50S27W, suggesting that material in these units may have come from areas near but not actually on construction or demolition sites. Wire nails predominated in units 23S27W and 32S29W, but in 4N38W and 12S20W wire nail frequencies were well below 50 per cent. Both these units had cut nail percentages of over 40 per cent, the highest on the site. This suggests heavier nineteenth century building activity in these areas, although the possibility is also strong that the deposits in 12S20W, and perhaps also the upper levels of 4N38W, were fill transported to those areas for landscaping purposes.

The only unit on the site that appeared to have no association with heavy construction or demolition activity was 6N57W, which contained only 15 wire nails and one cut nail. This unit was the northwesternmost on the site (Figure 35) and appears to have been out of the range of the occupational activities of the Bagby Street buildings. The amount of construction remains in every unit thus seems to have increased or decreased in direct proportion to its distance from those buildings. Heavy demolition debris was found in the northernmost and southernmost sectors of the site, in the two units (10N23W and 50S27W) which were located nearest the street. The four units placed along the spine of the Long Row/Rose Garden area, at some distance from the street, produced moderately high scatters of debris; while the one unit to the west of that area yielded almost no indication of historical building activity.

Aside from the dump in unit 10N23W, non-nail artifacts proved of little use in determining function or date. All units contained a majority of construction-related or other non-household items, such as bottle caps and ammunition, which could have been deposited on any exposed surface. There were no large concentrations of domestic debris, or concentrations clearly suggesting other specialized activity. Outside of 10N23W, the

only metal artifacts that provided stratigraphically useful dates were a post-1891 shotshell base in level 5 of 4N38W; a post World War I aluminum awning ring in level 7 of 32S29W; a possible twentieth century battery part in level 3 of 50S27W; and an 1892 crown cap in level 5 of 12S20W. These artifacts all provided termini post quem showing that the levels which produced them could be dated at least slightly later than the earliest dates indicated by the nails they contained.

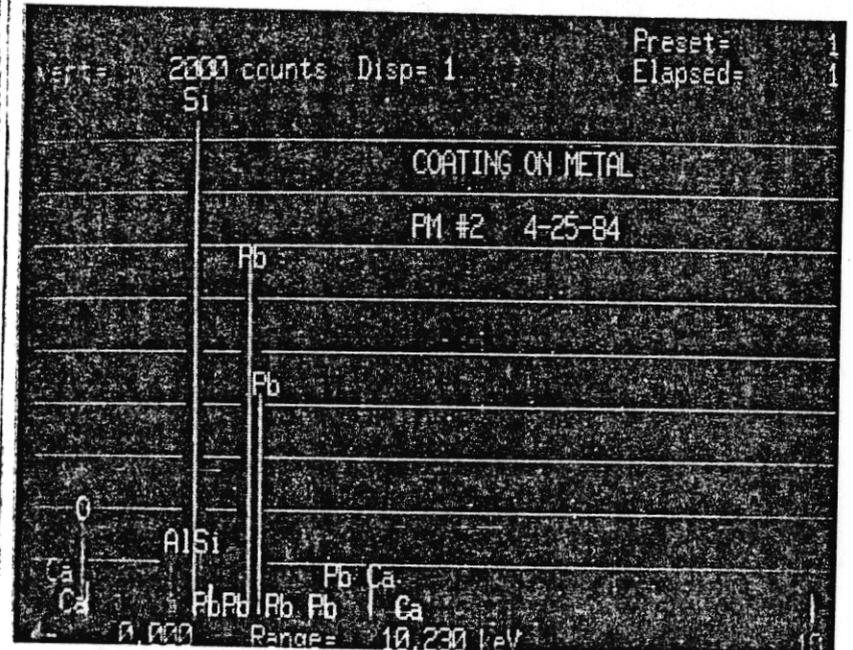
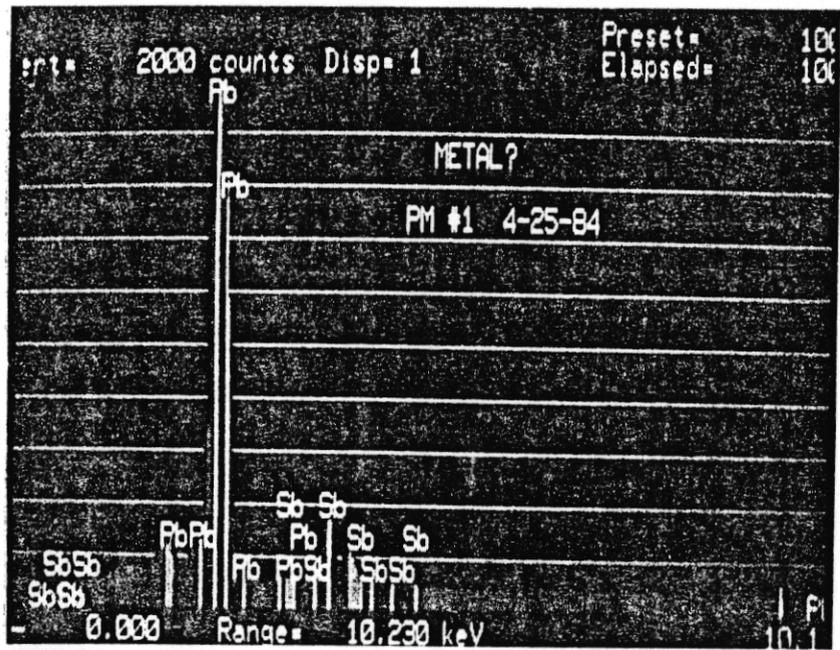
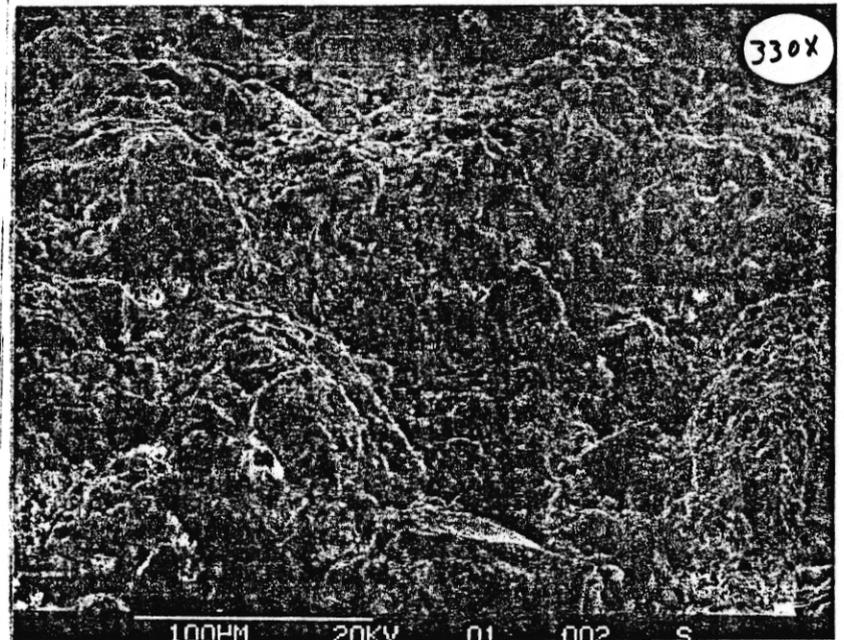
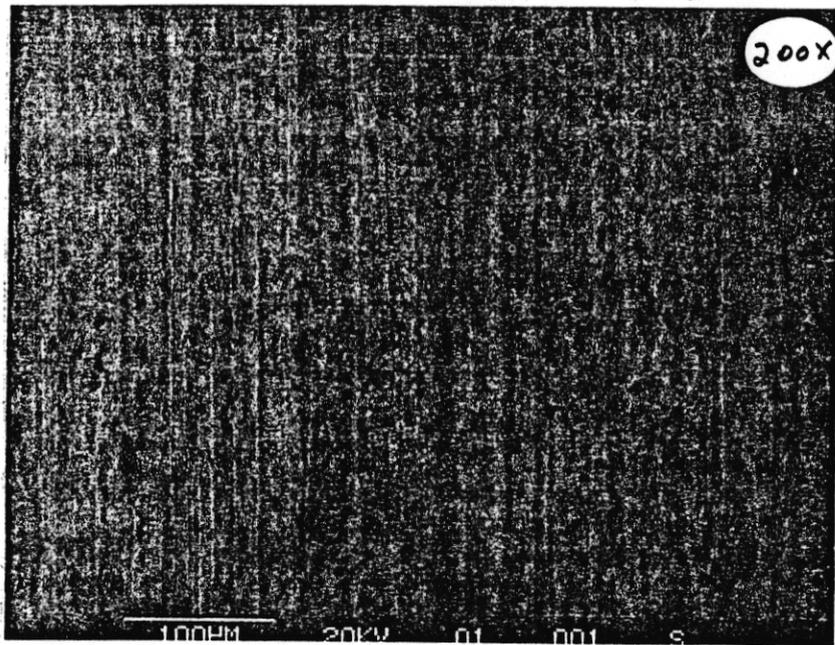


Figure 86. Results of "KeveX" Analysis of Possible Automobile Battery Part from Unit 50S 27W. Left: metal interior, showing lead and antimony composition. Right: corroded exterior, showing large amounts of CAO and silica.

## Chapter 10

## BUILDING MATERIALS

by  
Chris Hoffman

The building materials category consists of brick, mortar, and other non-metal items which can be assumed to be associated with periods of construction, demolition, or renovation. Analysis of these artifacts can help determine the extent, location, and period of such activities in the Long Row, and comparison with historical evidence of building activity should aid in the dating of levels.

The entire Long Row site has been the scene of frequent demolition and reconstruction. Therefore, building materials occur throughout the site in large numbers. In fact, they represent the most common artifact discovered during this year's excavations. In the initial stages of analysis, the collection was separated, by unit and by level, into three categories: brick, mortar, and an "other" category including such items as roofing tiles, slate fragments, and an odd assemblage of concrete agglomerates. This last category did not prove extremely useful since it contained only a few artifacts which provided little information. These items, listed in Appendix 7, will not be discussed in the present analysis.

Bricks and mortar, on the other hand, occurred frequently throughout the site. Although both can indicate much just by their presence and quantity, bricks can be further divided according to the level of craftsmanship involved in their production and are, therefore, even more useful. The bricks were divided into three groups. The first group consisted of soft "under-burned" bricks (Boyd 1929: 937). These bricks were porous, sandy, light in color (Munsell 5YR 6/8), and were discovered mainly in the form of very small fragments (2 cm diameter or less). These bricks, used in the construction of the 1847 Kellum Noble house, were assumed to be handmade and of nineteenth century origin (McIntosh and Moore, eds., 1983).

The second group of bricks appeared to represent a step up in technology. They were harder, heavier, less porous, less sandy, darker (Munsell 2.5YR 5/6, 10YR 5/3, and 2.5YR 5/4), and were usually preserved in larger fragments (2 cm diameter up to half bricks). The final group of bricks consisted of very hard "well-fired" bricks (Boyd 1929: 937). These were the densest, smoothest, and least porous bricks. They exhibited a greater range of color (Munsell 2.5YR 6/6, 2.5YR 4/8), had glazed surfaces in a number of cases, and were the largest fragments discovered (5 cm diameter up to whole bricks).

Two implications can be deduced from this brick typology. First, these different bricks can be assumed to have come from different buildings, giving an indication of the number of buildings represented by the archaeological remains. Second, these three brick technologies probably corresponded to different building periods at the site. Presumably, the soft bricks preceded the medium-fired bricks, which probably preceded the hard bricks. No fixed dates can be assigned to this sequence, although the evidence of the Kellum Noble house indicates that the soft bricks were in use in the mid nineteenth century, while the hard bricks correspond to modern bricks used in foundations and walkways at the park today. From these trends we can infer that medium-fired bricks were probably most common in the late nineteenth or early twentieth century. As a consequence, the distribution of soft, medium, and hard bricks can be used to indicate the intensity and general dates of construction and demolition events which occurred throughout the site.

Unfortunately, only the hard brick category contained any whole bricks. Therefore, the use of size differentiation for dating purposes was not very helpful. The few whole bricks discovered corresponded to the prescribed size of the standard common brick and the English statute brick. Both types have been used throughout the nineteenth and twentieth centuries (Walker 1971: 47-52). Throughout the site, excavation uncovered 9.56 kg of the soft brick, 15.80 kg of the medium brick, and 30.45 kg of the hard brick. However, 27.45 kg of the total hard brick weight was recovered from level 3 of unit 23S27W, leaving only 3.0 kg to be distributed over the remainder of the site. Total brick weight, therefore, was 55.81 kg. Total mortar weight was 130.08 kg. However,

111.52 kg of this total weight was discovered in level 3 of unit 10N23W.

The following is a brief description and discussion of the building materials recovered from each of the excavation units. Figures 87 and 88 show the distribution of total building materials and comparative brick categories throughout the site. Appendix 7 gives exact weights and counts of all building materials.

### 10N23W

Level 1: (654.3 g total building material weight) All brick fragments in this level were from either soft or medium bricks (219.1 g and 170.1 g). Hard brick was not present in any amount. Mortar weight was substantial (254.5 g).

Feature 1: (113.8 g total weight) In this feature, a modern machine-bored post hole, only small fragments of brick and mortar were discovered. Brick weights were divided fairly evenly between soft bricks (38.2 g) and medium bricks (30.5 g). Mortar weight was 45.1 g. There were no hard bricks in this level.

Level 2: (10.1 kg total weight) This level contained much more building material than the previous level and feature. Soft and medium brick were still the predominant form (1.64 kg and 2.40 kg), but hard brick also appeared in substantial quantities (718.6 g). Total mortar weight also increased considerably, to 5.0 kg.

Level 3: (119.0 kg total weight) There was an enormous amount of mortar in this level (111.52 kg), with bricks of all types composing only 6.3 per cent of the total building material weight. Soft brick (3.65 kg) and medium brick (3.76 kg) continued to dominate the brick in this level. Hard brick weight dropped to a minimal amount (30.8 g).

Discussion: Feature 1 was a modern feature having little to do with building activity. Level 1 contained a small amount of building material which may suggest light building activity or deposition of these materials for some other reason. Levels 2 and 3, however, contained extremely large

amounts of building materials, and were probably associated with periods of intense construction or demolition. These two levels may represent different events since hard bricks were present in level 2 but only minimally so in level 3. Separate events are also suggested by the fact that mortar quantities in level 3 were so much higher than those in level 2. This large amount of mortar may indicate that level 3 was used for dumping the remains from the demolition of mortared structures, perhaps masonry walls or foundations. The even distribution of medium and soft brick throughout the unit further suggests that at least two buildings were involved in this activity. This evidence probably indicates the demolition of a number of buildings at the same time. The substantial amount of hard brick in level 2 suggests a twentieth century date for that level, and may indicate the construction of a hard brick building at this time.

#### 23S27W

Level 1: (956.4 g total building material weight) Hard brick (327.0 g) dominated the brick in this level, followed by medium brick (124.7 g) and soft brick (54.5 g). Mortar weight was substantial (450.2 g).

Level 2: (2.99 kg total weight) Hard brick was again the dominant form (1158.9 g), followed by medium brick (538.9 g) and soft brick (171.9 g). Mortar weight in this level was 581.3 g.

Level 3: (34.86 kg total weight) This level was a shallow circular pit which had been filled with building debris. Hard brick made up 27.45 kg, nearly 80 per cent, of the total building material weight in this level. All fragments were large and several whole or nearly whole bricks were recovered. Soft and medium brick decreased to small amounts (43.1 g and 180.2 g). Mortar was abundant in this level (7.20 kg). Level 3 was also characterized by lenses of sand and unconsolidated lime, the ingredients of mortar, suggesting that it may have contained remains from modern mortar preparation.

Level 4: (1.57 kg total weight) This level was a layer of red and yellow clay underlying level 3. Medium bricks were the most abundant

form in this level (552.9 g), followed by a substantial amount of hard brick (442.3 g) and a smaller amount of soft brick (182.5 g). Mortar weight remained substantial (395.2 g).

Level 5: (37.0 g total weight) Only a small area was excavated in this level, which underlay level 4. Building material weights dropped considerably in this smaller level. There were 30.1 g of medium brick and 0.6 g of soft brick. Mortar weight was 6.3 g.

Discussion: Level 3 was a modern fill pit containing construction debris. This conclusion was supported by the large amounts of hard brick, mortar, and unmixed sand and lime. The location of this feature suggested that it may have been associated with the construction of the 1968 Long Row building, a possibility supported by the presence of substantial amounts of hard brick in the surrounding levels 1 and 2. However, many of the bricks from level 3 already had their mortar in place, suggesting that they were associated with demolition activity. These bricks may have come from some other park project, such as the 1980 removal of the Nichols-Rice-Cherry house, originally located to the northwest of this unit. The substantial amounts of mortar and of all three brick types in levels 1, 2, and 4 suggested a scatter of debris from activity involving several buildings, and may indicate chronological mixing of deposits in these upper levels. Although level 5 was very small, the minimal amount of building material from that level gave no indication of building activity.

#### 12S20W

Level 1: (363.1 g total building material weight) The majority of brick fragments in this level were of medium hardness (209.6 g). There was a small amount of soft brick (37.2 g) and no hard brick. Mortar weight was substantial (116.3 g).

Level 2: (2.48 kg total weight) Mortar accounted for nearly all of the building material weight in this level (2.16 kg). Medium brick weight was 257.1 g and soft brick weight was 41.7 g. Again, no hard brick was present.

Level 3: (1.59 kg total weight) Mortar weight dropped considerably in this level, to 458.6 g. Soft brick was the dominant form in this level (761.7 g), followed by medium brick (310.5 g). Again, no hard brick was found.

Level 4: This level was a thin lens of gravel in which no building materials were found.

Level 5: (526.5 g total weight) Medium brick was the predominant brick in this level (127.6 g). Soft brick weight was 64.3 g, and hard brick was once again absent. Mortar weight was relatively high in this level (334.6 g).

Discussion: The most distinguishing characteristic of this unit was the total absence of hard brick. For some reason, hard brick was not deposited in this unit, even though it was only a few meters from the Long Row building. This suggests that these levels could have been deposited before or after the building of the Long Row, but were probably not exposed at the time of its 1968 construction. The abundance of mortar in level 2 suggests the deposition of remains from the demolition of a mortared structure. Both levels 1 and 2 contained a majority of medium brick, suggesting that this mortar may have been from the demolition of a medium brick building. However, the remains of soft brick structures were also found, especially in level 3. Large amounts of both soft brick and medium brick in level 3 indicate that this level contained remains from two structures of different ages. The return to relatively high quantities of medium brick and mortar and low quantities of soft brick in level 5 suggests that this level, which was sealed beneath the gravel deposits of level 4, may have contained remains from a third building constructed or demolished at a different time.

### 32S29W

Level 1: (293.2 g total building material weight) Mortar was the dominant material in this level (243.4 g). All brick weights were minimal (soft: 3.1 g; medium: 16.7 g; hard: 30.0 g).

Level 2: (128.8 g total weight) Again, mortar was the most common material (116.1 g), and brick weights were minimal (soft: 3.0 g; medium: 7.0 g; hard: 2.7 g).

Level 3: (344.2 g total weight) Mortar was still substantial at 180.9 g. Hard brick increased significantly in this level, to 103.8 g. Soft brick (10.0 g) and medium brick (49.3 g) also increased slightly.

Level 4: (666.4 g total weight) Medium brick was the most common type in this level (559.2 g), and soft brick was present in small amounts (21.1 g). Hard brick did not appear at all in this level, and mortar weight dropped considerably (86.1 g).

Level 5: (212.0 g total weight) Medium brick was still the dominant form in this level (117.5 g), and soft brick was present in negligible quantities (4.8 g). No hard brick was found. Mortar weight was 89.7 g.

Level 6: (106.3 g total weight) Medium brick was still the most common brick type, but even this weight was very small (78.6 g). Soft brick was minimally represented (5.4 g), and hard brick did not appear at all. Mortar weight was also low (22.3 g).

Level 7: (355.9 g total weight) Medium brick again accounted for most of the brick weight, with a large increase in quantity over the preceding two levels (224.3 g). A small amount of soft brick was present (22.7 g) and hard brick was again absent. Mortar weight increased substantially (109.0 g).

Discussion: Building materials appear to have played a minimal role in the history of this unit. This suggests that this unit was separated from areas of building activity, or that such deposition was restrained for other reasons. Level 3, which contained the largest amount of hard bricks, probably reflects a period of construction or demolition of a twentieth century structure. The absence of hard brick below this level may indicate that level 3 corresponds to the introduction of hard brick in this area. In levels 4 through 7, the relatively high quantities of medium brick suggested that these levels were contemporary with activities involving

medium brick structures. The small quantities of soft brick found throughout the unit indicate that there was little or no nearby building activity involving this type of brick.

#### 4N38W

Level 1: (1.19 kg total building material weight) This level contained 740 g of mortar. The remaining materials in this level were dominated by medium brick (315.5 g), followed by soft brick (111.5 g) and a minimal amount of hard brick (6.0 g).

Level 2: (2.05 kg total weight) Again, mortar was the most common building material (1.40 kg). Medium brick again dominated the brick (378.2 g). There was also a substantial amount of soft brick (230.2 g) and a small amount of hard brick (45.5 g).

Level 3: (254.5 g total weight) This level, a modern pipe trench, contained relatively little building material. Mortar was relatively common in this level (162.7 g). Medium brick formed the majority of the brick in this level (62.8 g). There was a small amount of soft brick (29.0 g) and no hard brick.

Level 4: (3.09 kg total weight) Again, mortar was abundant (1.32 kg). Medium brick was also abundant (1.21 kg), and soft brick was present in substantial amounts (558.2 g). There was no hard brick in this level.

Level 5: (1.69 kg total weight) Mortar weight dropped considerably in this level (306.0 g). Medium brick remained abundant (1.14 kg) and soft brick weight also remained relatively high (242.8 g). No hard brick was found.

Level 6: (530.0 g total weight) Mortar weight dropped to a minimal amount in this level (33.5 g). Medium brick was again the predominant form (332.4 g), followed by soft brick (164.1 g). There was no hard brick.

Discussion: All brick fragments in this unit were small and evenly dispersed. This may indicate a scatter of demolition materials from areas

outside the unit, although the large amounts of building materials in all levels suggest that this activity was substantial. All levels of the unit were dominated by medium brick, but all also contained substantial quantities of soft brick, suggesting that this area contained remains from two or more buildings of different ages. Levels 1 through 4 were dominated by mortar and medium brick, suggesting that these levels corresponded to the demolition of a structure composed of these materials. Hard brick no longer appeared below level 2, perhaps correlating that level with the introduction of hard brick in this area. In level 5, mortar was present in much smaller amounts than in previous levels, suggesting that this level may have corresponded to a period of construction rather than demolition. Both medium and soft brick weights and mortar weights were all at their highest in level 4. This level, then, appears to represent a period of intense demolition or construction activity involving at least two buildings. Building material weights were at their smallest in level 6, which appears to have been below the main construction and demolition levels in this area.

#### 6N57W

Level 1: (4.8 g total building material weight) Building material weights were very low in this level. There were 0.6 g of soft brick, 3.1 g of medium brick, and 1.1 g of hard brick. There was no mortar in this level.

Level 2: (228.2 g total weight) Mortar dominated the building materials in this level (142.1 g). Hard brick was relatively common (52.7 g), followed by medium brick (22.4 g) and soft brick (11.0 g).

Level 3: (1.52 kg total weight) Building material weights rose considerably in this level. Mortar was again the most abundant building material (1.04 kg). Soft brick was the most common brick type (279.1 g), followed by medium brick (176.3 g) and hard brick (28.2 g).

Level 4: (1.86 kg total weight) Building material quantities remained high, but medium brick became the predominant form in this level (1.24 kg). There was a small amount of soft brick (85.6 g) and no hard brick.

Mortar weight dropped considerably (101.2). In addition to brick and mortar, one piece of tile flooring, consisting of several hexagonal tiles fixed into a concrete base, was recovered (441.0 g).

Discussion: Levels 1 and 2 of this unit yielded little evidence of building activity. Level 3 was dominated by large amounts of mortar and moderate amounts of soft and medium brick, suggesting demolition or construction involving two or more buildings of different ages. The extremely large amount of medium brick and the small amount of mortar in level 4 may be associated with earlier building activity, possibly involving a second medium brick structure. Hard brick, which was the dominant brick type in level 2, did not appear below level 3. The absence of hard brick below level 3 may indicate that this level corresponded to the introduction of hard brick in the area of this unit.

#### 50S27W

Level 1: No building materials were recovered in this level.

Level 2: (678.3 g total building material weight) Medium brick dominated the brick collection in this level (252.5 g). Soft brick was also common (143.6 g), and hard brick was present in small amounts (22.7 g). Mortar was relatively abundant (259.5 g).

Level 3: (558.0 g total weight) This level was once again dominated by medium brick (255.2 g), followed by soft brick in small amounts (37.4 g). No hard brick was recovered. Mortar was still abundant in this level (238.5 g).

Level 4: (509.4 g total weight) Mortar was the most common building material from this level (303.0 g). Medium brick was the predominant brick type (147.5 g), followed by soft brick (58.9 g). Again, there was no hard brick in this level.

Level 5: (3.46 kg total weight) Building material weights increased considerably in this level. Mortar was again very abundant (2.27 kg). Soft brick (634.7 g) dominated the brick collection, followed closely by medium

brick (551.4 g). Hard brick was again absent.

Discussion: Level 1 was a sod level which contained few artifacts of any kind. Level 2 contained moderate amounts of mortar and all three kinds of brick, an indication that this level contained remains from several different structures. Level 2 was the only level in this unit which contained hard brick, again providing a possible stratigraphic marker for the construction of modern buildings. Levels 3 and 4 were dominated by mortar, medium brick, and a small amount of soft brick, but the comparatively small quantities of all types of building materials did not suggest that these levels were directly associated with either construction or demolition activity. Level 5, however, contained a substantial amount of mortar and both medium and soft brick, correlating this level with a period of intense building activity. Furthermore, the abundance of both types of brick indicated that at least two different buildings were involved in this event.

From the analysis of the individual units, several general trends can be discerned concerning the history of the entire site. The distribution of building materials throughout the site can be helpful in identifying the correlation of levels from one unit to another. Of course, such interpretation cannot be exact due to the potential for interference between units and the possibility of contamination within the unit.

The most helpful indicator for level correspondence was the presence or absence of hard brick. Care must be taken, however, to note that the first occurrence of this brick type was often minimal and may represent something other than building activity involving hard brick. The deepest level at which hard brick occurred in unit 6N57W was level 3; in 4N38W, level 2; in 10N23W, level 3, the lowest level excavated in that unit; in 23S27W, level 4; in 32S29W, level 3; and in 50S27W, level 2. No hard brick was recovered in unit 12S20W. If these hard bricks are in fact more modern than soft or medium bricks, their appearance probably reflects relatively recent building activity, such as the construction of the Long Row or other park structures. The strata in which they first occur may

therefore correspond to the beginnings of the modern park occupation.

Correlation of levels by means of soft and medium brick was more problematic, since the Long Row contained many different buildings constructed over the course of about a century. In general it can be said that soft brick never dominated the upper archaeological levels, and was found in quantity only in the lower levels. Soft brick appeared in quantity only in units 12S20W, 50S27W, 4N38W, and 10N23W, suggesting that these units may have been near the sites of nineteenth century buildings. Medium brick was the most common brick type in all excavation units except 23S27W, which was dominated by hard brick in both the pit feature and surrounding levels. Throughout the site, large amounts of medium brick were found above, alongside, and also below soft brick concentrations. This indicates that most Long Row buildings were constructed of this material, and also that medium brick buildings were often demolished at the same time as or before the older soft brick buildings. If this brick type is of late nineteenth or early twentieth century origin, as we have suggested, then the predominance of medium brick implies that most of the Long Row structures can be attributed to this period.

In conclusion, then, careful analysis of building materials can provide valuable information about building activity in each unit and throughout the site as well. Building materials were abundant in all parts of the site, with all units except 32S29W containing at least one level with more than 1.5 kg of brick and mortar. These levels were found at various different depths, however, suggesting that they contained remains from building or demolition episodes which took place at different times.

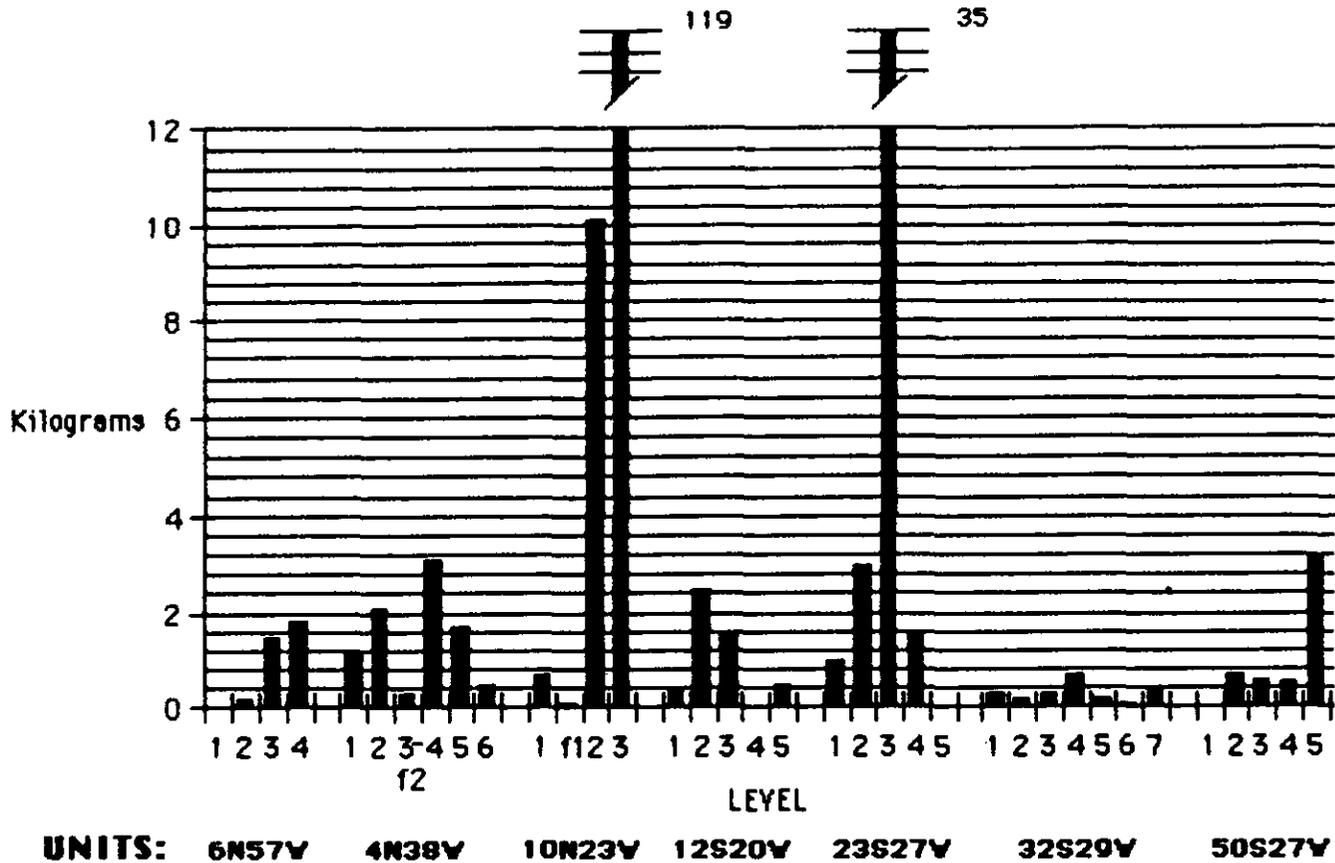
The units with the largest amounts of building material were 10N23W, 4N38W, 23S27W, and 50S27W, suggesting that these units were near sites of intense construction or demolition activity, or were major areas of deposition for debris from such activity. Unit 10N23W seems to have been involved in the dumping of large amounts of remains from the demolition of mortared structures in levels 2 and 3. However, the presence of hard brick as well as medium and soft brick suggests that this was a recent activity involving several buildings. The most important

characteristic in unit 23S27W was the builder's pit or level 3. This pit was also associated with a recent construction/demolition event judging from the abundant presence of hard brick. In unit 12S20W, the majority of the bricks were of medium hardness, except in level 3 where soft brick dominated. This pattern suggested that building activity in the area of this unit was limited to soft and medium brick structures, despite the proximity of the modern Long Row building.

Levels 1 through 3 of unit 32S29W contained some evidence of recent activity. Below that, medium brick was the dominant form, suggesting earlier building activity involving predominantly medium brick structures. Building materials peaked in level 4, suggesting that this level may correspond to the most recent known demolitional event in the area of this unit, the mid twentieth century destruction of the Bagby Street buildings. Brick and mortar quantities in all levels were low, however, suggesting that this unit was not in a major area of building activity. Unit 4N38W contained an even dispersal of small fragments, with medium bricks dominating the remains of building activity throughout the unit. The large quantities of building materials in all levels, including substantial amounts of soft brick, indicate that this unit was near the site of considerable building activity which took place over an extended period of time. Levels 2 and 3 of unit 6N57W showed some evidence of recent building activity involving all three types of bricks, and therefore, a number of different structures. Level 4 of this unit was the main level of activity and was easily dominated by activity involving medium brick structures.

Levels 2 through 4 of unit 50S27W contained moderate amounts of building materials, dominated by remains of medium brick structures. Level 5 of 50S27W contained the largest quantity of building materials in the unit and probably corresponded to the period of greatest activity. This activity involved buildings of both medium brick composition and buildings of soft brick composition, and may also be associated with the general demolition which took place in this area in 1952.

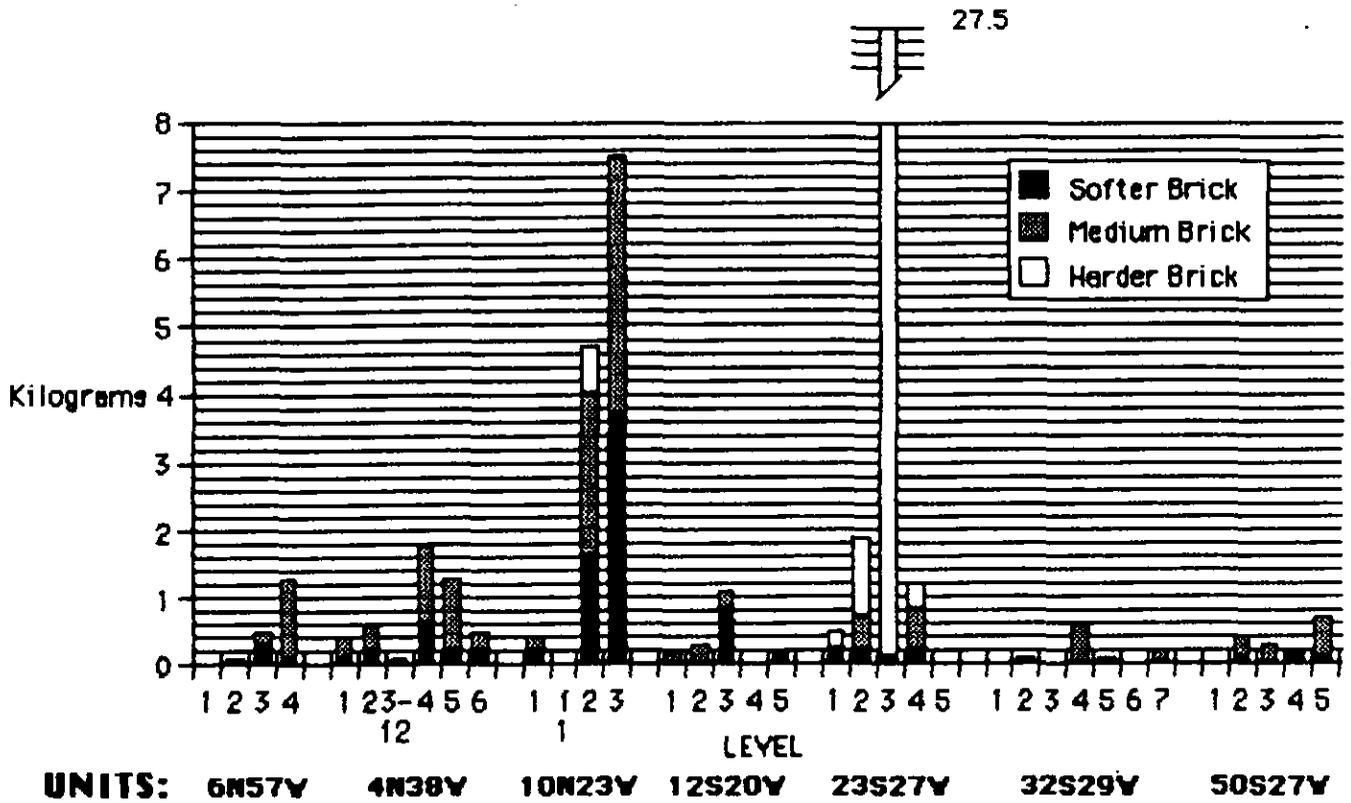
# TOTAL BUILDING MATERIAL



**Note: Quantities under 10g have been rounded to 0.**

Figure 87. Total Building Material Weights by Unit and Level.

# COMPARATIVE BRICK HARDNESSES



**Note:** Quantities under 10g have been rounded to 0g.

Figure 88. Comparative Brick Hardnesses by Unit and Level.

## Chapter 11

## MISCELLANEOUS ARTIFACTS

by  
Chris Hoffman

The miscellaneous artifact category comprises a broad range of items including coal and coal products, shell, and a variety of discarded items ranging from pieces of sewer pipe to ball point pens. For the majority of these artifacts, made of materials like plastic, rubber, or cloth, there is simply no other category into which they will fit. Several subcategories, such as buttons and marbles, include items made from glass, ceramic, or metal, but their value as groups of similar objects warrants their analysis by functional group rather than by material of manufacture. For similar reasons, oyster shell, analyzed as a faunal artifact in previous reports, is included under miscellaneous artifacts because of its common use as a paving material. All these artifacts are important for both chronostratigraphic and functional analysis of the Long Row/Rose Garden site.

Several artifacts require further introduction before the unit and level analyses. Crushed oyster shell was a fairly common artifact throughout the site (Figure 89). Many of the shells displayed traces of mortar or concrete on their surfaces. Others showed traces of tar. Although some of the shell may have been used in the manufacture of mortar, both the quantity and location of most of this shell suggested that its primary use was in walkways and parking lots. Historical evidence supported this assumption: the entire Long Row area was a parking lot between 1952 and 1968, and the northern and southern parts of the site continued to be used for this purpose for many years after that. In addition, a series of old driveways, perhaps also of shell composition, was torn up in 1924 (Figure 13). Therefore, the abundance of shell in a level, such as level 1 of unit 10N23W, was taken as an indication of the past location of shell walkways or parking lots.

Cobbles, possibly related to the construction of walkways or other stone and mortar structures, were also found in a number of units. They

# SHELL AND COAL

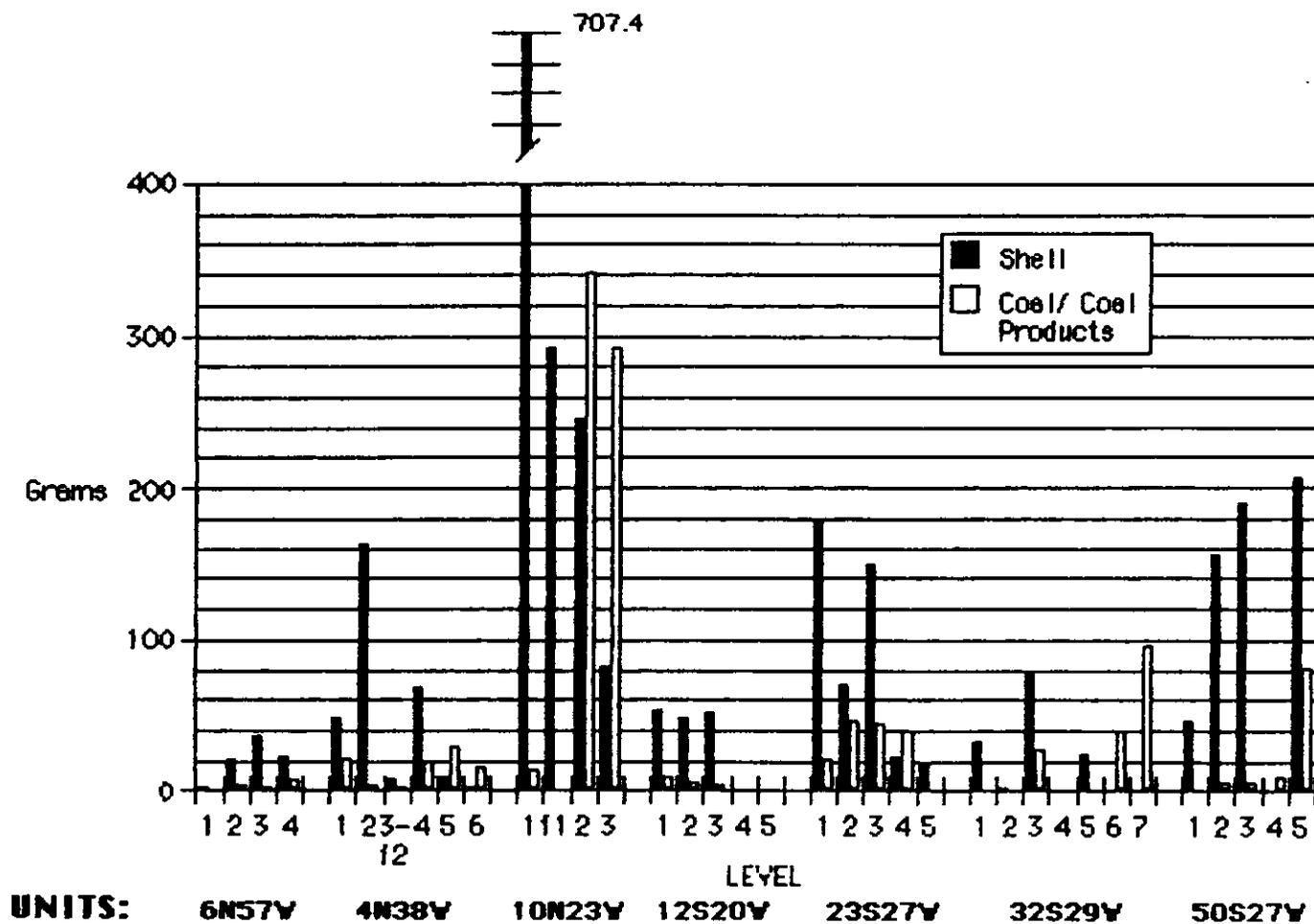


Figure 89. Shell and Coal Weights by Unit and Level.

were abundant in levels 3, 4, and 5 of unit 32S29W. Identification of areas of heavy cobble use, however, was problematic due to differential saving of these artifacts in different units. Therefore, cobbles were not considered archaeologically significant except where they occurred in abundance.

The presence of coal and coal products (referred to simply as coal in the succeeding discussion) was evidence for the use of coal as a fuel source in the Long Row/Rose Garden area. Prior to the turn of the century, coal was the dominant fuel in Houston. By 1905, however, several major oil fields, including the Humble oil fields, had been discovered in close proximity to the city. Soon, oil began competing with coal for usage. Then, in 1926, natural gas was made available to both industrial and domestic users (Dunbar and Dillard 1936: 13, 18). This virtually eliminated the use of coal on an industrial level in Houston. However, coal remained an important domestic fuel even through the years following World War II (P. Butler 1984: personal communication). Therefore, a large amount of coal in a level might indicate the early use of coal on an industrial level or the domestic use of coal before about the 1950's.

A number of miscellaneous artifacts have documented histories dating their technological and stylistic changes. Buttons, marbles, shoe parts, and plastics have all gone through a series of technological advances which make them useful artifacts for dating purposes. When interpreting these dates, however, it is important to note that the dates given for these items are termini post quem, representing the earliest possible dates for their appearance and not necessarily the date of the artifact's deposition.

For shoe parts (Figure 90a), the important date is 1874, the year of invention of the eyelet-setting machine for lace-up shoes (Wilcox 1948: 140). Prior to this date, hooks, buckles, and buttons were used as shoe fasteners. All the shoe parts found in the 1984 excavations were either eyelets, or hooks found in conjunction with eyelets, a combination popular through the early twentieth century.

One glass marble and two ceramic marbles were also found at the

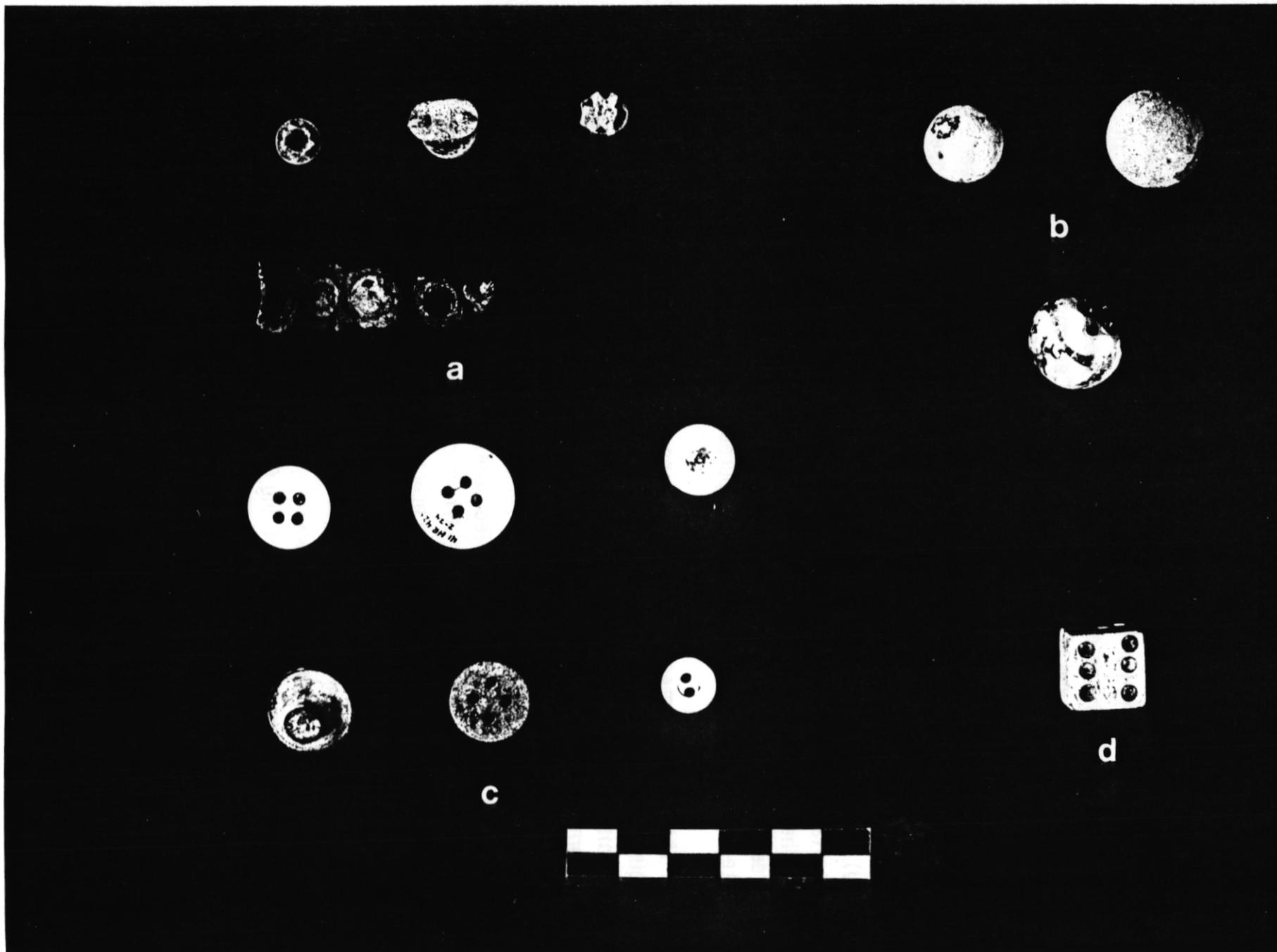


Figure 90. Miscellaneous Artifacts. A. Shoe parts: top - eyelet and two hooks; bottom - series of four eyelets set in leather. B. Marbles: top - clay marbles; bottom - glass marble. C. Buttons: top - plastic buttons; bottom - brass and shell buttons. D. Handmade bone die.

Long Row site (Figure 90b). The important date in glass marble technology is 1926, the year in which machine manufacture of glass marbles was perfected. Hand-made glass marbles and low technology machine-made glass marbles existed prior to this date, but they were often irregular in shape and had rough spots on opposite ends of the marble where excess glass had been snapped off (Randall 1971: 104). Ceramic marbles are more difficult to date. While gaming marbles made of clay were common prior to the twentieth century, such marbles were usually colored with a dark glaze (Randall 1971: 103). The ceramic marbles discovered in this year's excavations were uncolored and therefore suggested some other purpose.

Eight buttons were also recovered in the 1984 excavations (Figure 90d). Buttons have been made for centuries in a variety of styles and materials, including shell, bone, metal, and porcelain (I. Noël Hume 1974: 89; Shepard 1981: 83). All the buttons recovered from the Long Row/Rose Garden site were undecorated and made of brass, shell, or plastic, materials which are still used for this purpose.

The most important artifact for dating on this site was plastic (Figure 91e-h). The plastics industry has exploded since its small beginnings in the late 1800's, and the variety of plastics made possible by the numerous technological advancements of the last 100 years made this one of the more precisely datable miscellaneous artifacts. Briefly, crude celluloid (or natural resin) plastics were available before 1900. In 1909, a crude semi-synthetic plastic called Bakelite was developed. Bakelite was an ideal material for early electronic parts. However, both celluloid and Bakelite were limited in use and practicality. In 1927 and 1928, a number of new plastics were introduced, including cellulose acetate, urea formaldehyde, and a number of vinyl plastics. Production of these plastics established the modern plastics industry. The next large wave of innovation occurred during World War II, resulting in superior plastics which could be made into just about any form. These plastics, the basic type in use today, were distinguishable from earlier plastics by their strength, durability, and the variety of shapes and colors which the new technology allowed.

The following is a description and discussion, by unit and by level, of

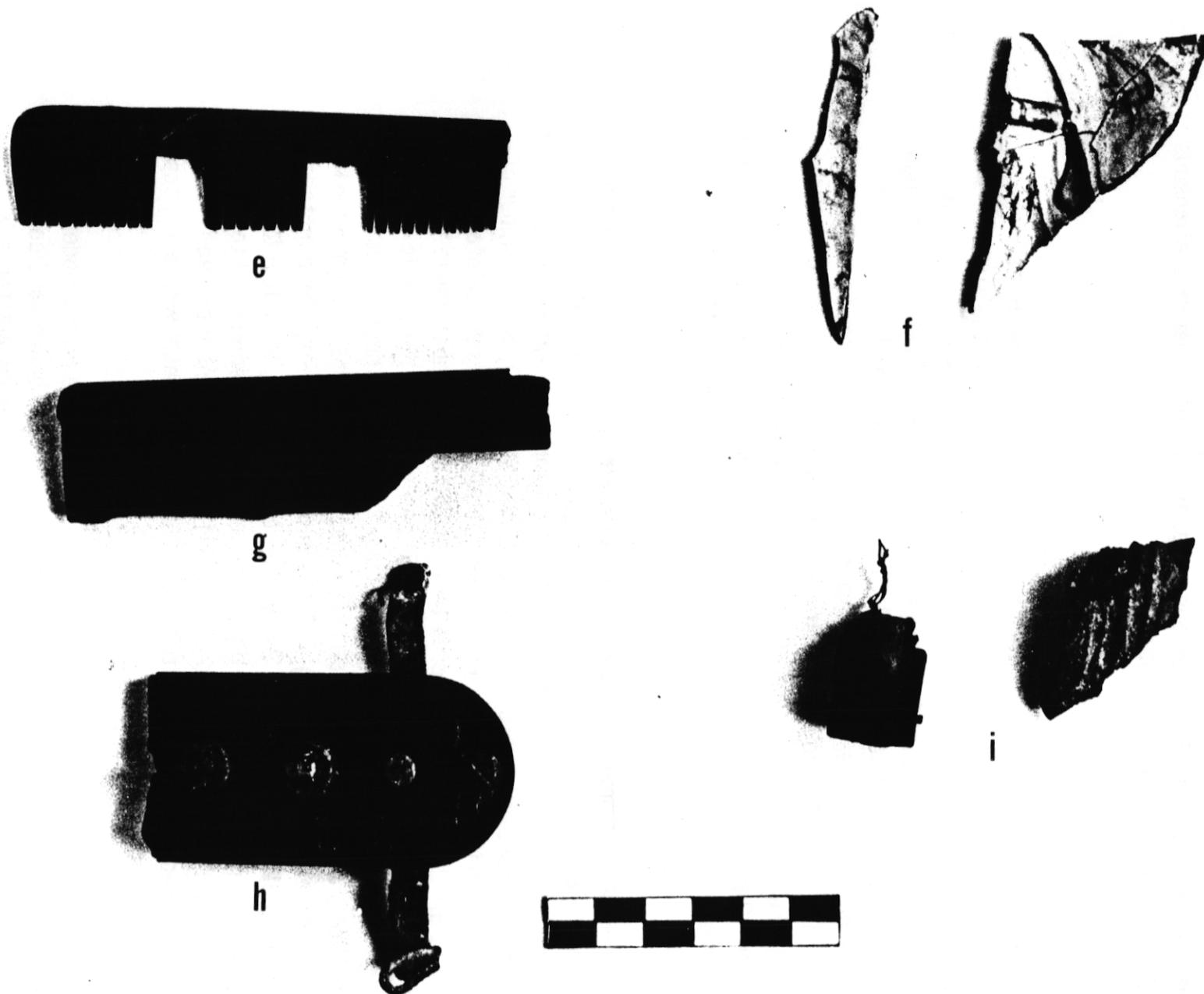


Figure 91. Miscellaneous Artifacts. E. Plastic comb (inscribed: "I.R. Comb Co's Unbreak . . ."). F. Grey and white plastic vessel fragments, possibly from a flower pot. G. Simulated wood furniture moulding. H. Possible plastic radio part, inscribed ". . .ST TAP THAT GIVES . . . OR Y OPERATION OF SET". I. Electrical light bulb bases.

the miscellaneous artifacts discovered in this year's excavations. For coal and shell weights see Figure 89 and Appendix 8a. All other miscellaneous artifacts are catalogued in Appendix 8b.

#### 10N23W

Level 1: (Coal 15.0 g; shell 707.4 g) Although coal weights were minimal in this level, shell weights were the highest on the site. This abundance of shell suggests that unit 10N23W was located within the boundaries of the parking lot that existed in this area from 1952 through 1977. In addition to coal and shell, several pieces of pink granite were recovered from this level. These fragments may have come from the 1940 relocation of the World War I memorial monument to its present position behind the Long Row building (Figure 6). Although this monument was not new in 1940, having previously stood in front of City Hall, its pink granite base may have been sculpted at the time of its removal to the park grounds.

The most common artifact in this level was plastic. An abundance of plastics was discovered, consisting of pieces of pink and yellow spoons; striped drinking straws; candy wrappers; a comb; an entire ball point pen (with the impressed words "Dixon Classical 6623 red"); and a number of hard, unidentifiable pieces. From their hardness and bright coloration, almost all these pieces appeared to be of the modern, post World War II variety. Several items, such as the ball point pen and the plastic drinking straws, were recently developed artifact types which could be dated to the 1960's or later. The one possible pre-war piece was a fragment with a gray swirled design, possibly part of a plastic flowerpot, which matched an identical piece in level 2. Several electrical parts, including two pieces of a modern screw-in light bulb base and one female end to a wire coupler, were also discovered (Figure 91i). Other items included five pieces of red flagging tape, string, carpet fuzz, aluminum wrappers, paper wrappers, and a rubber belt.

Feature 1: (Coal 0 g; shell 291.8 g) This feature was a modern machine bored post hole that had been filled in with beach sand containing many small fragments of shell. The only miscellaneous artifacts in this

feature were shell from the sand fill, and one small piece of pink granite.

Level 2: (Coal 342.0 g; shell 246.9 g) Shell quantities declined in this level but coal appeared for the first time in large amounts, suggesting that this level may have been associated with a domestic occupation from the 1940's or earlier. There was also an abundance of pink granite, which along with other shared artifact types suggested that level 1 and level 2 may have contained some contemporary deposits. Plastic was again a common artifact, though not so common as in level 1. Furthermore, these plastics seemed, for the most part, to be older than the materials in level 1. The collection consisted of one fragment of an unidentifiable red object, two pieces of a green spoon, one piece of the grey swirled vessel found in level 1, and four fragments of a second vessel of similar design and color (Figure 91f). There were no definitely post-1950's plastic objects among these artifacts, and the muted colors and cloudy design of the five plastic vessel fragments suggested that these pieces may have all been pre-World War II.

The one glass marble found in the excavations was also discovered in level 2 (Figure 90b). Although this marble was chipped in a number of places, making it difficult to determine whether or not there were rough spots, it appeared to be of the smooth modern type which has been used since 1926 (Randall 1971: 104). Other artifacts from this level included a ball of electrical tape; a conglomerate mass of plastic wrapper and paper (possibly a crumpled cigarette package); a golf ball sized sphere of unknown composition; and a piece of red carpet fuzz identical to that discovered in level 1.

Level 3: (Coal 229.7 g; shell 82.7 g) Coal weights declined slightly in this level, and shell weights fell off significantly, suggesting that level 3 was largely below the level of deposits from the 1952 parking lot. Again, pink granite was deposited in large quantities. Unlike the previous two levels, level 3 contained no plastic. Miscellaneous items included one piece of sewer pipe, one section of vulcanized rubber hose, one hand-made bone die (Figure 90d), and one two-hole shell button (Figure 90c, bottom right). These last two items suggested an older date for this level, although no certain dates could be discerned. Both shell buttons and bone

gaming pieces have been in use since at least the eighteenth century (l. Noël Hume 1974: 319; Shepard 1981: 83).

Discussion: Both coal and shell quantities from this unit were the highest on the site. Coal was distributed in minimal amounts in level 1 and in abundance in levels 2 and 3. This suggested that the two lower levels were deposited during a period of heavy coal use. Shell was distributed in large amounts in levels 1 and 2, and in much smaller quantities in level 3, suggesting that both upper levels of this unit were associated with the 1952-1977 shell parking lot, but that level 3 was largely below the disturbance caused by this feature.

Another important characteristic concerning this unit was the appearance of identical artifacts in a number of different levels. Although the majority of artifacts seemed to conform to a good descending chronology (post World War II in level 1, post-1927 and earlier post-war in level 2, and pre-plastic in level 3), the carpet fuzz and matching pieces of plastic in the first two levels suggested that these two levels might be combined. However, the very similar amounts of coal in levels 2 and 3, as well as the large amounts of building materials (Chapter 10), suggested that there might also have been an affinity between the two lower levels. This evidence, as well as the presence of pink granite in all three levels, indicated a possibly high degree of disturbance between the deposits in this unit. The many fragments of pink granite, found in especially large quantities in levels 2 and 3, may be an indication that all levels of this unit were deposited sometime after the 1940 removal of the World War I memorial to this area.

#### 23S27W

Level 1: (Coal 21.5 g; shell 179.2 g) Shell weights were high in this level and coal weights were minimal. Other artifacts all appeared to be modern, and may have been recent surface artifacts. Plastics included candy wrappers, packing foam, a crushed styrofoam cup, two fragments of a square molded object (with the following impressed words: "Houston Lighting and Power - SEALED"), two frames for cigarette filters, two pieces of plastic bandages, and a number of unidentifiable fragments,

mainly hard brightly colored pieces. All this material appeared to be of post World War II manufacture, and the presence of the low tar cigarette filter frames, developed in the early 1970's, suggested an even later origin. Other items included two twist ties, one peach pit, a strip of white cloth, a hand-made costume jewelry earring, and five pieces of insulated wire.

Level 2: (Coal 46.6 g; shell 70.8 g) A number of mortared cobbles were discovered in this level, possibly evidence for a walkway or other cobble and mortar structure in the area. Deposition of these cobbles may date from the construction of the present walkway system, which passes just east and north of this unit (Figure 35). Aside from the fairly small amounts of coal and shell, no other miscellaneous artifacts were discovered in this level.

Level 3: (Coal 45.3 g; shell 149.1 g) Shell weights in this level returned to the high quantities of level 1, while coal weights remained equivalent to those of level 2. Two plastic buttons were also recovered (Figure 90c, top right). These buttons were composed of hard white plastic, probably of recent post World War II origin. Also discovered in this level were a section of insulated wire (with the printed figures "R AWC"), one clay marble (Figure 90b), and one intact white denim carpenter's apron. This last item was found in conjunction with mortar, and lime and sand, the two basic ingredients of mortar, suggesting that the wearer of this apron was making mortar.

Level 4: (Coal 40.3 g; shell 22.7 g) Aside from the small amounts of coal and shell, the only miscellaneous artifact discovered in this level was a plastic candy or cigarette wrapper of post-1927, and probably post World War II origin.

Level 5: (Coal 0.8 g; shell 19.0 g) Extremely small amounts of coal and shell were the only miscellaneous artifacts discovered in this level.

Discussion: Coal weights were consistently small in this unit, never reaching 50 grams. These amounts indicated that the excavated levels in this area either had little connection with industrial or domestic use of

coal fuel), or were deposited after the main period of coal use. Shell was abundant in levels 1, 2, and 3, but present only in minimal amounts in levels 4 and 5. The shells in these last two levels, furthermore, showed traces of tar on their surfaces, indicating that they may have been used in an asphalt walkway or road. The large amounts of shell in the upper three levels suggested that these levels probably post-dated the 1952 construction of the Bagby Street parking lot.

The presence of the apron in conjunction with mortar, lime, and sand supported the previous identification of level 3 as a builder's pit (Chapter 10), and the recent materials in this level (post World War II plastics) further suggested its association with recent construction. Plastic artifacts in levels 1 and 4 also suggested a recent deposition date for those levels. The mortared cobbles in level 2 could not be precisely dated, but this composition is still frequently used for walkways and other outdoor structures in the Houston area. These cobbles may be associated with the construction of existing nearby walkways, which from twentieth century maps of the park appear to have been constructed in the 1950's or 1960's (Figures 14 and 15).

### 12S20W

Level 1: (Coal 8.9 g; shell 54.4 g) Both coal and shell weights were low in this level. Plastic artifacts included post World War II finds such as one piece of a yellow cup, one piece of a plastic "Ziploc" bag, one piece of an unidentified black plastic container, and one low tar cigarette filter identical to those discovered in level 1 of unit 23S27W. No other miscellaneous artifacts were found.

Level 2: (Coal 5.3 g; shell 48.4 g) In addition to the small quantities of shell and coal, two pieces of sewer pipe were discovered in this level.

Level 3: (Coal 4.1 g; shell 52.5 g) One piece of sewer pipe and one piece of brittle dark brown plastic, possibly of pre-war manufacture, were discovered in this level. Coal and shell weights remained nearly identical to those in levels 1 and 2.

Level 4: This level consisted of a thin lens of gravel which contained no miscellaneous artifacts.

Level 5: This level contained no coal or shell. Three pieces of sewer pipe and a series of four shoe eyelets set in leather were discovered (Figure 90a). These shoe parts post-date the 1874 introduction of eyelets for lace-up shoes (Wilcox 1948: 140).

Discussion: Neither shell nor coal was very important in the history of this unit. Shell and coal weights were consistently low in levels 1, 2, and 3, and absent in levels 4 and 5. This indicated that these levels were not deposited during a period of heavy coal use, or associated with the use of shell in parking lots or walkways. Few datable artifacts were recovered from this unit. Level 1 contained a variety of post-war plastics, several of which were obviously of recent manufacture. These items could all be recently deposited surface artifacts. Level 3 contained a piece of post-1927 plastic, and level 5 contained a shoe part which post-dated 1874. Sewer pipe fragments found in both levels 2 and 3 suggest that these levels may have been part of a single deposit.

### 32S29W

Level 1: (Coal 0 g; shell 32.5 g) Aside from small amounts of shell, this level yielded only a few mortared cobbles similar to those discovered in level 2 of unit 23S27W.

Level 2: (Coal 0 g; shell 3.1 g) Many mortared cobbles were discovered in this level. The only other miscellaneous artifact was a flat brass button stamped from a single piece of metal (Figure 90c, bottom center). No definite date could be assigned to this artifact, although it resembles suspender buttons issued to the U.S. army in the 1880's (Herskovitz 1978: 41).

Level 3: (Coal 28.7 g; shell 77.8 g) Coal appeared for the first time in this level, and shell weights increased significantly, suggesting that level 3 may have been contemporary with the 1952-1968 parking lot or other shell-paved features. An abundance of mortared cobbles was also

discovered, suggesting that this area may also have been the site of a walkway or other stone and mortar structure. Also, many pieces of asphalt paving were found, possibly indicating the destruction or repair of a paved asphalt road. The only other miscellaneous artifact discovered was a piece of sewer pipe.

Level 4: Several unmortared cobbles and one large molded brass button or cuff link (Figure 90c, bottom left) were the only miscellaneous artifacts from this level. No coal or shell were found.

Level 5: (Coal 0 g; shell 24.4 g) Small amounts of shell and many mortared cobbles were recovered from this level, a pipe trench cut through levels 2, 3, and 4. No other miscellaneous artifacts were found.

Level 6: (Coal 39.4 g; shell 0 g) Coal again appeared in this level while all traces of shell disappeared. Only a few cobbles were found. Other items included one ceramic marble (Figure 90b) and one piece of formica tile. Formica, a plastic used in tiles and tabletops, first entered the market as a celluloid plastic in 1913, but did not become common until 1938 when its composition was changed to that now used (Katz 1978: 69). This piece therefore probably dates after 1938.

Level 7: (Coal 95.7 g; shell 0 g) Coal quantities increased appreciably in this level, suggesting that level 7 may have been deposited during a period of heavy coal use in the Long Row area. Shell was again absent, and no other miscellaneous artifacts were discovered.

Discussion: Shell was present in small amounts in the upper three levels of this unit and in the modern pipe trench of level 5. The abundance of cobbles in levels 2, 3, and 5 indicated the construction or demolition of some structure composed of stone and mortar, such as a walkway or even a stone wall. Both shell and cobble quantities peaked in level 3, which also contained a number of asphalted paving remains. This suggests that level 3 may be datable to the 1950's or 1960's, when the entire Long Row area was a shell parking lot and when the nearby park walkway appears to have been constructed (Figures 14 and 15). This level may also correspond to level 2 of unit 23S27W, which contained a number of similar mortared

cobbles. Coal was either absent or present in very small amounts in all but level 7 of this unit, suggesting that this was the uppermost level to correspond to a period of substantial coal use. The only good datable item in this unit was a piece of formica in level 6, definitely post-dating 1913 and probably post-dating 1938. This item appears to date level 6 to the 1940's or later. Two brass buttons in levels 2 and 4 could not be dated, but they appeared to be non-modern.

#### 4N38W

Level 1: (Coal 20.9 g; shell 48.5 g) No miscellaneous artifacts other than small amounts of coal and shell were discovered in this level.

Level 2: (Coal 3.9 g; shell 162.5 g) Coal weights declined to insignificance in this level, but shell weights increased substantially, again suggesting that this level may correspond to the period of the shell parking lot, which was open from 1952 to 1977 near this unit. A piece from a black plastic bag, apparently a modern trash bag, was the only other miscellaneous artifact recovered.

Level 3: (Coal 3.2 g; shell 8.2 g) Coal and shell weights were extremely low in this level, a narrow modern pipe trench. No other miscellaneous artifacts were discovered in this level.

Level 4: (Coal 19.3 g; shell 68.7 g) In addition to the relatively small amounts of coal and shell, one plastic button, probably post-dating World War II, was discovered (Figure 90c).

Level 5: (Coal 30.7 g; shell 8.8 g) Shell weights fell to a minimum in this level. Coal was also found only in small amounts, but these amounts were the highest in the unit. Other artifacts included one piece of simulated wood furniture molding, a plastic type which originated after 1927 (Figure 91g; Katz 1978: 59); one plastic comb, also apparently made of older plastic and hand-stamped rather than injection molded (Figure 91e); one shell button; and three shoe parts. The shoe parts consisted of one eyelet and two hooks (Figure 90a, top). The presence of the eyelet dated this level after 1874. However, the presence of one of the hooks in

conjunction with the eyelet suggested that they came from the same shoe, a style which was becoming popular in 1900 (Wilcox 1948: 160).

Level 6: This level contained no miscellaneous artifacts other than small amounts of coal and shell.

Discussion: Coal weights were low throughout this unit, indicating little use of coal in this area or some other restraint to coal deposition. The peak weight of 31 grams in level 4 may indicate that this level corresponded to the heaviest period of coal use in the area. Shell was relatively common in levels 1 and 4, and abundant in level 2, suggesting that these levels may have been contemporary with the nearby Long Row parking lot. Shell weights were minimal in all other levels. All levels except 1, 3, and 6 contained plastic artifacts. Level 2 contained a piece of a plastic trash bag which probably dated to the 1960's or later. Level 4 yielded a plastic button which dated that level to the 1940's or later. Level 5 contained a number of datable items: an old plastic comb, shoe parts, and a piece of furniture molding. The comb and furniture molding appeared to date this level after 1927.

#### 6N57W

Level 1: (Coal 0 g; shell 2.9 g) Aside from the extremely small amount of shell, the only miscellaneous artifact deposited in this level was a crushed styrofoam cup, probably a recent surface artifact.

Level 2: (Coal 4.8 g; shell 21.7 g) Coal and shell were the only miscellaneous artifacts found in this and succeeding levels.

Level 3: (Coal 2.3 g; shell 35.9 g)

Level 4: (Coal 7.4 g; shell 23.7 g)

Discussion: Other than coal and shell, only one miscellaneous artifact was found in this unit. This was a modern surface artifact and gave no indication of the historical occupation of this area. Throughout the unit, coal appeared in minimal or negligible amounts. This indicated minimal

use of coal in this area. Shell weights were also low throughout the unit. Shell weight was negligible in level 1, and comparatively larger in levels 2, 3, and 4. It is possible that these small amounts of shell came from the series of driveways existing in this area until 1924 (Figure 13). However, the small amounts of all kinds of occupational debris suggest that there was little historical activity in the area of this unit.

### 50S27W

Level 1: (Coal 0 g; shell 46.4 g) Level 1 of this unit was a sod level containing no coal and only a surface scatter of shell from the present Long Row parking lot, located just a few meters away. Plastics discovered in this level included a modern drinking straw, a candy wrapper, a piece of foam packing, and three low tar cigarette filter frames. These items all appeared to be surface artifacts, with the drinking straw and filter frames probably dating to the 1970's or later. The only other miscellaneous items in this level were two pieces of chewing gum.

Level 2: (Coal 6.5 g; shell 155.8 g) Level 2 appeared to be a modern ditch cut through the center of the unit. Coal appeared in minimal amounts in this level, while shell weights rose substantially. Plastics in this level included two drinking straws identical to those in level 1, and one piece of unidentifiable plastic of the post World War II variety. Given the shallowness of level 1, these items may also be surface artifacts.

Level 3: (Coal 5.2 g; shell 189.7 g) Coal weights remained minimal and shell weights rose slightly in this level, which lay at the same depth as level 2. The only other miscellaneous items discovered in this level were one section of insulated cable and one piece of vulcanized rubber.

Level 4: (Coal 9.8 g; shell 1.4 g) Coal remained minimal and shell weights dropped to negligible amounts in this level, which underlay both levels 2 and 3. Other miscellaneous artifacts included one alligator clip, one unidentified cylindrical slate object, and one molded brown plastic plate with screw connectors, apparently for the attachment of wires (Figure 91h). This object, which had a fragmentary inscription reading

"...ST TAP THAT GIVES ...ORY OPERATION OF SET," apparently served an electrical function, perhaps as part of a radio set. At the earliest, it dates to 1921, when General Electric began using Bakelite for its electronic components (Anderson and Thompson 1950: 178).

Level 5: (Coal 80.9 g; shell 208.3 g) In this level coal rose to significant amounts for the first time, while shell weights increased above those of levels 2 and 3. One piece of sewer pipe and one plastic button, probably post-dating World War II, were also discovered in this level.

Discussion: Shell weights in this unit were the highest outside unit 10N23W. This is easily explained by the fact that the area just east of unit 50S27W has been a parking lot continuously since 1952. Although shell was inexplicably almost absent in level 4, shell quantities were moderate in level 1 and abundant in levels 2, 3, and 5. This suggests that the entire unit can be dated after the installation of the parking lot in 1952. This date range is supported by other miscellaneous artifacts. Levels 1 and 2 contained material dating them to the period since World War II, including several apparent surface artifacts probably manufactured within the past two decades. Level 3 contained two undated, but probably modern, rubber artifacts. Among the artifacts in level 4 was one datable item, an electronic plate with screw attachments, which post-dated 1921. Level 5 contained a plastic button which indicated a post World War II date for the entire unit.

Coal weights were minimal or negligible in levels 1 through 4, but abundant in level 5. This suggested that in addition to parking lot debris, level 5 contained material dating to the pre-1950's occupation of this area. This hypothesis appeared to be supported by the large amounts of building material in this level (Chapter 10), which suggested that level 5 may have been a demolition level related to the mid twentieth century razing of the buildings in this area. Level 5 therefore probably coincides both with the 1952 destruction of the Bagby Street buildings and the laying of the shell parking lot later the same year.

Overall, miscellaneous artifacts from the Long Row site proved very helpful both in the analysis of individual units and in the discernment of chronological trends across the site. The most useful artifacts for archaeological interpretation were coal, shell, and plastics. Coal indicated areas of coal use which could probably be dated to the pre-1950's domestic occupation of the Long Row/Rose Garden area. Shell suggested areas associated with recent shell parking lots and driveways. Plastics provided general dates and chronologies, and showed which areas had witnessed modern twentieth century activity.

Coal appeared in relatively small quantities throughout the site. Significantly high coal weights were recorded only for levels 2 and 3 of 10N23W, level 7 of 32S29W, and level 5 of 50S27W. These levels presumably were areas of deposition for fireplace residues from the pre-1952 Bagby and Dallas Street households. The association of large amounts of coal with what appeared to be 1952 demolition debris in unit 50S27W may be an indication that coal was used for heating until fairly late in the history of the Long Row/Rose Garden area. Coal was present in small amounts in units 4N38W and 23S27W, with peak weights found in level 5 of 4N38W and levels 2, 3, and 4 of 23S27W. These levels could represent the scattering or redeposition of coal products from areas of heavier coal use. Coal was nearly nonexistent in units 12S20W and 6N57W, suggesting that these areas had little to do with the coal-burning occupations of the Long Row/Rose Garden block.

Shell was present in all units in comparatively high quantities. In most units this shell appeared to be associated with the 1952-1968 Bagby Street parking lot, and therefore could be used as a chronological marker between units. Shell was found in especially large amounts in levels 1 and 2 of unit 10N23W, where part of the parking lot remained in operation until 1977. Large amounts were also recovered from unit 50S27W, which appeared to contain debris from the still-extant Long Row parking lot several meters to the east. Shell quantities in this unit peaked in level 5, which may mark the 1952 establishment of the parking lot. Other archaeological levels with high shell weights were level 3 of 32S29W, levels 2 and 4 of 4N38W, and levels 1 through 3 of 23S27W. All of these units were located near the 1952 parking lot, and it seems likely that the

shell in these levels came from that source. This would suggest that the levels below these break points were pre-parking lot. Relatively small amounts of shell were recovered from units 12S20W and 6N57W, again suggesting that these units were for some reason isolated from the major occupational events of the Long Row site.

Finally, plastics and other artifacts provided general termini post quem for archaeological levels throughout the site. Plastic was the most common modern artifact on the site, and was found in all but the lowest levels of almost every unit, suggesting that most of the levels excavated this season could be dated at least to the early decades of the twentieth century. Other conclusions could also be drawn from this material. For instance, a cloth carpenter's apron supported the previous identification of level 3 of unit 23S27W as a recent builder's pit, and the presence of cobbles in unit 32S29W suggested association with a nearby walkway or walkways.

Unit 10N23W contained a stratigraphic sequence of plastic artifacts consisting of post-1960's and post World War II plastics in level 1; earlier post-war and possibly pre-war plastics in level 2; and no plastic or other datable manufactured objects in level 3. This suggested that level 3 might date before 1927, when plastic was first widely used, and that this area may have been filled in with debris over a period of several decades. However, the presence of pieces of pink granite, possibly associated with the construction of the nearby World War I memorial, could date the entire unit to 1940 or later.

Post-war plastics also appeared in levels 3 and 4 of unit 23S27W, while level 2 of this unit contained mortared cobblestones which may have been associated with the construction of nearby walkways. These walkways first appear on park plans from 1962 and 1967, suggesting that this level may date to the 1950's or early 1960's. Large quantities of cobbles were also found in level 3 of unit 32S29W, perhaps correlating this level with level 2 of 23S27W. This date range is supported by the large amounts of shell and other parking lot related materials in level 3 of unit 32S29W. One piece of formica tile from level 6 of unit 32S29W may date the all but the lowest level of this unit to 1938 or later.

In unit 12S20W, one piece of possibly pre-war brown plastic was found in level 3, dating the upper three levels to 1927 or later. A piece of a modern black trash bag from level 2 of unit 4N38W appeared to date the upper two levels of that unit to the 1960's or later. Level 4 of the same unit yielded a post-1940's plastic button, while level 5 contained two post-1927 plastic objects. These two levels therefore appear, despite their depth, to have been exposed until fairly recently in the history of the Long Row area.

No dates from miscellaneous artifacts could be obtained for unit 6N57W. Unit 50S27W contained post-1960's plastic items, apparently surface artifacts, in both levels 1 and 2. Level 3 of this unit contained two apparently modern rubber artifacts, and level 4 contained a possible radio part that could be dated after 1921. Level 5 yielded a post World War II plastic button. This item, taken in conjunction with the high shell weights, suggested that all excavated levels in 50S27W dated after the demolition of the Bagby Street buildings in 1952.

## Chapter 12

### FAUNAL REMAINS

by  
Francis Cleland

The intent of the faunal analysis performed on the finds from the Long Row area of Sam Houston Park was twofold. First, we wanted information on the kinds of animals indigenous to the area. The second and more important objective was to be able to relate the finds to the diet of the people who lived there, and thus to arrive at an approximation of their economic status. One section of this report will therefore be devoted entirely to an analysis of the bones as meat cuts. There will also be a discussion of the number of species found, as well as their distribution about the site. The analysis should provide a fair idea of the diet and therefore the economic standing of the people who lived in this area.

#### I. Methods

The methods used for analysis of the faunal material were similar to those used in previous excavations of this site, with the exception that shells were classified as miscellaneous artifacts rather than faunal remains, due to their probable function as building or paving materials. The bones were bagged separately from the rest of the material found in the excavation units. They were then weighed and separated by unit and level. The identification of the bones was done primarily by comparison with the Houston Archaeological Society's comparative bone collection, housed in the Rice Archaeology Laboratory. The aid of William L. McClure of the Houston Archaeological Society was invaluable, especially in the identification of many of the more fragmentary portions of bone. A number of the bones were unidentifiable as to specific species, and were therefore classed into small, small-medium, medium, and large mammal classes. Even so, it was not possible to categorize a fair number of the

bones, which were simply labeled "unidentifiable."

Some of the cow bones found on this site had unfused epiphyses, indicating that they belonged to fairly young animals. Younger animals tend to provide more valuable meat cuts than older animals, so the relative number of young cow and older cow bones should be studied. The analysis of these bones will be done in the meat cut analysis section.

The bones were also checked for hack marks and saw marks. The types of saw marks we looked for were handsaw or bandsaw marks. Handsaw marks are characterized by regular, parallel grooves with a much deeper mark at regular intervals. Bandsaw marks lack the deeper mark. The use of bandsaws, which were available by 1850 but not common until many decades later, would indicate fairly advanced butchering techniques, as well as showing that the butchers were wealthy enough to purchase these saws. This in turn would indicate that they did a handsome trade in meat (Gust 1983: 344). However, none of the bones showed any evidence of bandsaw marks--they were either hacked with cleavers or hatchets and/or sawn with handsaws. The use of these tools does not indicate that this is a very old community--some butchers used cleavers and handsaws into the 1930's (Gust 1983: 343-344), and some undoubtedly later than that. It is, in fact, difficult to find any chronological significance in the use of handsaws, which were introduced around 1800, nearly 40 years before the first settlement in the Long Row area (Gust 1983: 344). The socioeconomic implications are that these butchers were not particularly wealthy; the use of handsaws can be used to suggest (but not prove) the idea that economically this was a fairly average community.

## II. Analysis of the bones

Five species were positively identified at the site. Of the identified bones, domestic cow (Bos taurus) predominated, with 87 bones, or 87.85 per cent by weight of the identified bones. Other species found were domestic dog (Canis familiaris), two bones accounting for 9.30 per cent of the identified bones; white-tailed deer (Odocoileus virginianus), four bones, 2.47 per cent; domestic chicken (Gallus domesticus), six bones,

Table 12

## TOTAL BONE COUNT AND WEIGHT BY SPECIES

Species	Count	Weight	Per cent by Weight of Total Faunal Material	Per cent by Weight Identified Bones
Medium mammal	160	214.15 g	12.24	--
<u>Bos taurus</u>	87	1290.00 g	73.73	87.85
Small-medium mammal	26	19.60 g	1.12	--
<u>Gallus domesticus</u>	6	5.50 g	0.31	0.37
<u>Canis familiaris</u>	2	136.50 g	7.80	9.30
<u>Odocoileus virginianus</u>	4	36.20 g	2.07	2.47
Fish	1	0.30 g	0.02	--
<u>Ostariophysi</u>	1	0.20 g	0.01	0.01
Bird	9	8.55 g	0.49	--
Small mammal	3	1.30 g	0.07	--
Unidentified	84	37.40 g	2.14	--
Totals	383	1749.7 g	100.00	100.00*

\*Note: 1468.4 g of bones were identified; this is 83.92 per cent of the total weight of bones found.

0.37 per cent; and catfish (Ostariophysi), one bone, 0.01 per cent (Table 12).

The minimum number of individuals at the site was determined by assuming that different levels with the same types of bones indicated different individuals, and that if bones with epiphyses unfused were mixed with bones which had fused epiphyses, this would constitute two individuals. From the evidence we were able to determine the existence of at least 22 Bos taurus, two Canis familiaris, one Ostariophysi, four Gallus domesticus, and three Odocoileus virginianus. I would like to point out, however, that in this case, where we are dealing with an obviously urban community (nearly all the Bos bones found were butchered--see analysis of the meat cuts), the minimum number of individuals is at best a meaningless statistic, and may in fact be misleading, since the bones probably came from a butcher and thus probably belonged to entirely different animals.

83.92 per cent by weight of the bones found were positively identified by species, while 12.24 per cent were classified as medium mammal, 1.12 per cent as small-medium mammal, and 0.07 as small mammal bones. 2.14 per cent of the bones were so fragmentary as to be unidentifiable, and 0.47 per cent belonged to unidentifiable birds. A total of 383 bones were found, weighing 1749.7 g. A complete description and catalogue of all recovered bones are given in Appendices 9a and 9b. Distribution of bones by weight and species is shown in Table 12, Figure 92, and Figure 93.

### III. Distribution of species and classes

Bones of Bos taurus were present in each excavation unit save one (6N57W, in which only three small bones were found). A small skull of Canis familiaris was found in 10N23W, one of the large excavation units, and a canine tooth was found in 4N38W. Two bones of Gallus domesticus were found in 10N23W, one in 12S20W, and two in 32S29W, as well as one in 6N57W. Three Odocoileus virginianus bones were discovered in 23S27W, and one in 50S27W. The Ostariophysi bone was found in 50S27W.

The greatest profusion of Bos bones was in unit 23S27W, level 5, which had 15 separate bones, weighing 462.9 g. This level may have been a trash pit. There were also 13 Bos bones weighing 172.2 g in 10N23W, level 3. The Bos bones in units 10N23W and 23S27W were nearly all obviously butchered, indicating that these were prepared as meat cuts. Small mammal bones were found in 23S27W, level 5, as well. Medium mammal bones were strewn about all the pits (Figure 93).

#### IV. Analysis of the meat cuts

An analysis of meat cuts is necessary because of the fact that nearly all the Bos bones that were found were butchered, and, more importantly, because these bones can give us an idea of the economic status of the people who lived at this site.

All the clearly butchered bones came from Bos taurus. The Odocoileus virginianus bones were broken, but not obviously butchered (Appendix 9a), as were the bones of Gallus domesticus. Sus scrofa, domestic pig, was not found on this dig. Beef seems to have been the primary meat of the people who lived here.

The two large excavation units, 10N23W and 23S27W, yielded the biggest number of butchered beef bones. 10N23W had bones from 11 separate meat cuts, while 23S27W had 16. 12S20W and 6N57W failed to produce any clearly identifiable beef cuts, although 12S20W had 11 bones in levels 2 and 3 that looked a good deal like Bos ribs. Both 12S20W and 6N57W produced a Gallus bone (Appendix 9a). 4N38W had bones from three butchered beef cuts, whereas 32S29W produced eight, the largest number for any of the small excavation units. 50S27W had four Bos meat cuts (Table 13).

Sherri Gust, in an article from 1983, came up with a ranking system for beef cuts around the turn of the century. This was done by checking the prices of various cuts as kept in the records, although this data was apparently rather sketchy (Gust 1983: 345-347). Her value rankings of the cuts are listed in Figure 94 along with similar rankings by a modern

packing company in 1978. A glance will show that the older rankings do not vary greatly from those of today, except for short ribs and flank steaks.

The values for each type of cut were ranked from 1 (most expensive) to 9 (least expensive) (Gust 1983: 346). When analyzed according to this system, the cuts represented by bones found in unit 10N23W generally ranked fourth or lower (Table 13). Two ribs could be ranked either second or eighth. The six leg cuts (round, hindshank, foreshank, etc.) could be ranked anywhere from fourth to ninth. The general trend is one of lower quality meat cuts. The same holds true for 23S27W, the other large excavation unit. The five neck bones are ranked ninth. There were also four ambiguous leg cuts (fourth to ninth), an arm cut, and two chuck cuts (ranked eighth and sixth, respectively). There were no short loin cuts, which would be ranked first; these would leave lumbar vertebrae, which were found nowhere on the site. 32S29W had three ribs (second or eighth, probably eighth), three round steaks (ranked fourth), and a humerus or arm cut (eighth), as well as a sirloin or rump cut (third or fifth). 50S27W had two ribs and two round steaks. 4N38W held a sirloin or rump cut bone, a round steak cut, and another ambiguous leg cut. Distribution of all meat cuts is presented in Table 13.

In 10N23W, bones from round steaks were found in the upper levels, whereas the other (generally cheaper) cuts were in level 3 (Appendix 9a). Unit 23S27W showed different tendencies--the cervical vertebrae, the cheapest cuts of all, were in levels 3 (one cut) and 4 (three fragments). The better cuts, including two ribs, a round steak, and two pelvic fragments (indicative of sirloin or rump cuts, ranked third or fifth), were in level 5. There were also more bones altogether in level 5. Nine of the 11 non-neck cuts in this unit came from level 5, as well as one cervical vertebra fragment (Appendix 9a). Level 5 may have been the site of a trash pit for a household that had higher economic status in early times than it did in later times. The drastically higher percentage of neck bones in the upper levels indicates a possible fall in economic standing, and the lower numbers of bones may indicate a general abandonment of this area as a trash pit.

Table 13

## DISTRIBUTION OF BEEF CUTS BY EXCAVATION UNIT

Cut	Value Ranking*	10N23W	23S27W	12S20W	32S29W	50S27W	4N38W	6N57W	Totals
Rib	2 or 8	2	2	0	.3	2	0	0	9
Neck	9	1	5	0	0	0	0	0	6
Sirloin or Rump	3 or 5	1	2	0	1	0	1	0	5
Chuck	6	1	2	0	0	0	0	0	3
Round	4	3	0	0	3	2	1	0	9
Foreshank, arm hindshank, or round	4, 7, 8 or 9	3	4	0	0	0	1	0	8
Arm	8	0	1	0	1	0	0	0	2
Totals		11	16	0	8	4	3	0	42

\*Value rankings taken from Gust 1983:346.

The same trend appears in 32S29W; level 6 had six Bos bones, including a round steak, two ribs, and a young calf's humerus. Level 7 had nine Bos bones, including three parts of a single round steak, two parts of a scapula (for chuck), as well as a rib and a steak bone. Levels 1 through 5 produced only four unidentifiable Bos fragments and a round steak bone. In unit 50S27W, three of the four meat cuts found were from level 4 (Appendix 9a). In general, we find that faunal remains were more abundant and of higher quality in the lower levels in most of the units that contained beef cuts. This suggests that the lower levels of the units may have been the levels of historical occupation, and that we may expect to find more bones underneath the lowest levels.

Several unfused epiphyseal fragments were found in 10N23W, level 3. Although these were not in themselves meat cuts, this does suggest that we should value the cuts in this unit a bit higher since they might have belonged to a young cow. Only one unfused epiphysis was found in 23S27W, so we do not need to weight this find quite as heavily. 32S29W had a young calf's humerus, suggesting that meat cuts in that area might have been of a higher quality than otherwise indicated. No other unfused epiphyses were found (Appendix 9a).

The butchering techniques used on all the bones were the same. All were cut with handsaws and/or cleavers. The lack of bandsaw cuts indicates that the butchers may not have been wealthy enough to purchase bandsaws (which had been available since 1850), and therefore probably did not trade with a very wealthy clientele (Gust 1983: 344). This is another piece of evidence that supports the idea that this may not have been a particularly rich community.

#### V. Conclusions

We have already reached the conclusion that this community depended almost entirely on middle-value beef cuts for their meat diet. The complete lack of Sus scrofa and the relative rarity of Gallus domesticus is remarkable and a bit surprising. Sus scrofa was evident in earlier digs.

The function of some of the areas at the site can be guessed from the abundance of bones found there. Unit 23S27W, level 5, may have been a refuse dump for a nearby domestic location, perhaps one of the houses or apartments in the Long Row area. Unit 32S29W, levels 6 and 7, and unit 10N23W, level 3, may also have been refuse disposal areas. Most of the other units had too few meat bones in them to be characterized as trash dumps.

The major point brought across by the faunal remains is that the upper levels all across the site indicate a low level of domestic occupation, whereas the lower archaeological levels have definite indications of an urban community of middle economic status.

# FAUNAL ARTIFACTS

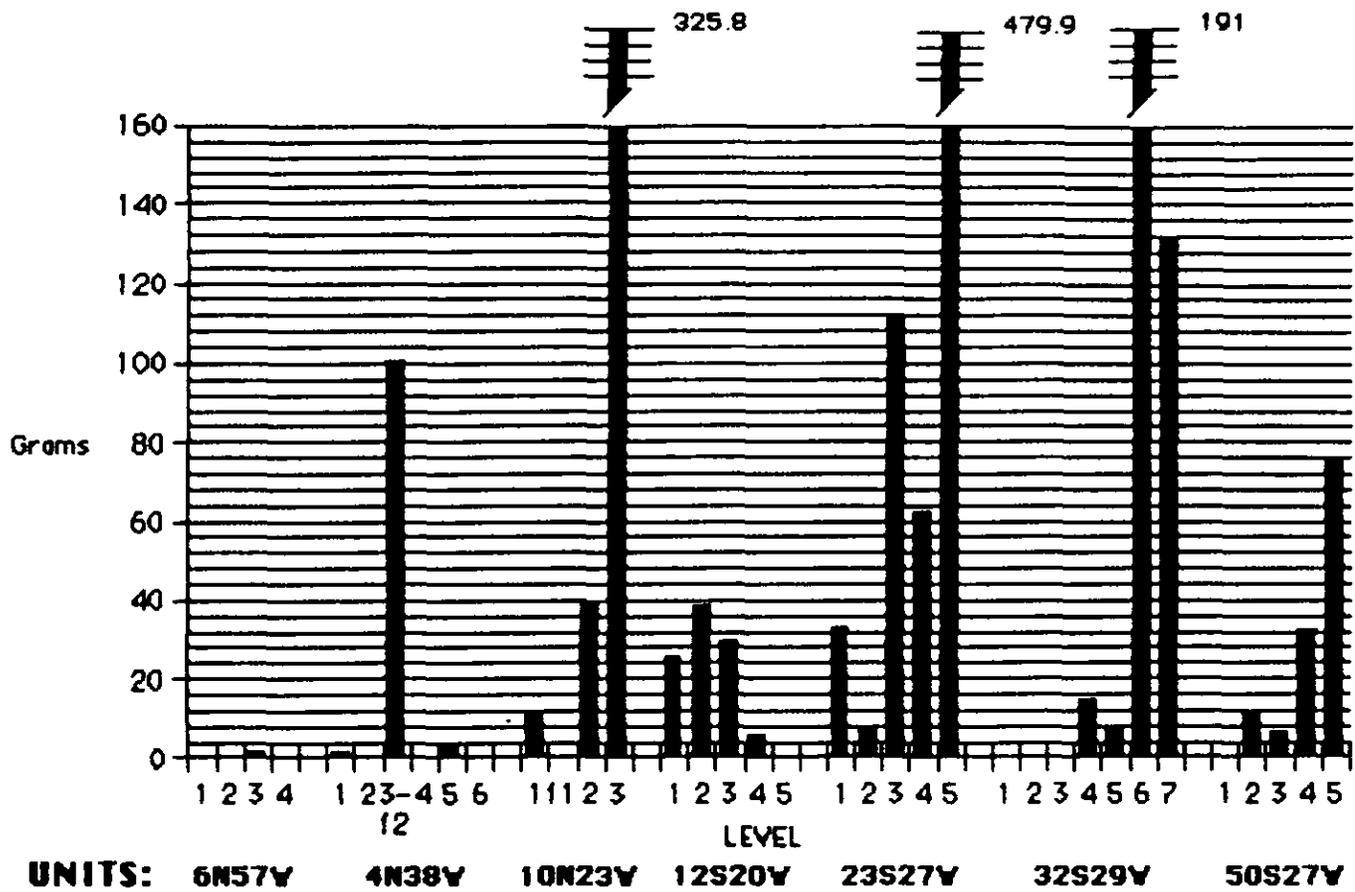
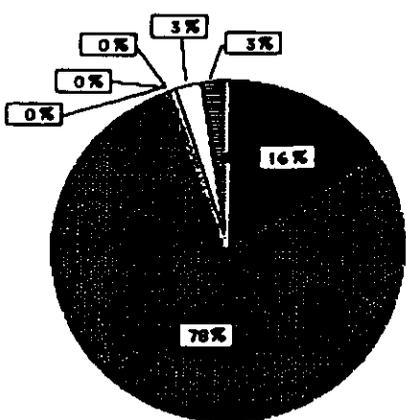
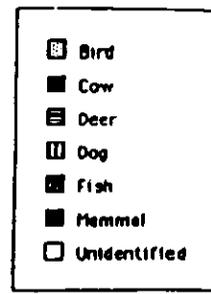


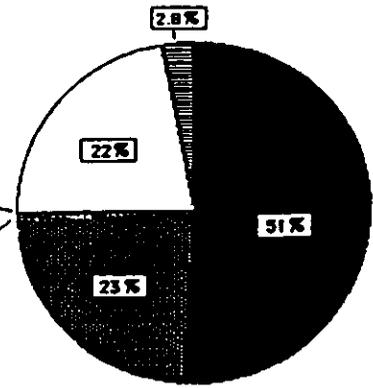
Figure 92. Distribution of Total Faunal Remains by Weight.

### Bone Ratios

Note Percentages have been adjusted to total 100  
Quantities less than 1 have been rounded to 0



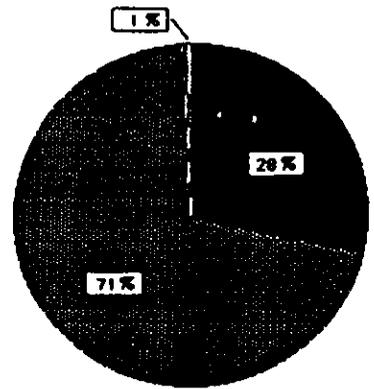
Bone Type	Quantity (g)
Mammal	63.5
Cow	29
Fish	0.3
Bird	0.7
Unidentified	27.2
Deer	3.6
Dog	0
<b>Total</b>	<b>124.3</b>



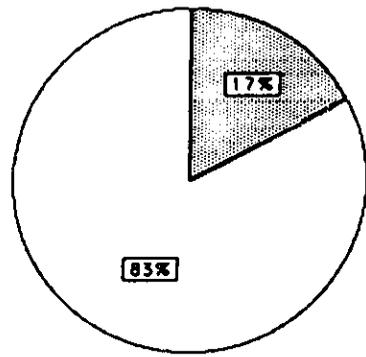
Bone Type	Quantity (g)
Mammal	28.6
Cow	70.7
Fish	0
Bird	0.6
Unidentified	0
Deer	0
Dog	0
<b>Total</b>	<b>99.9</b>

All Units

50S27W



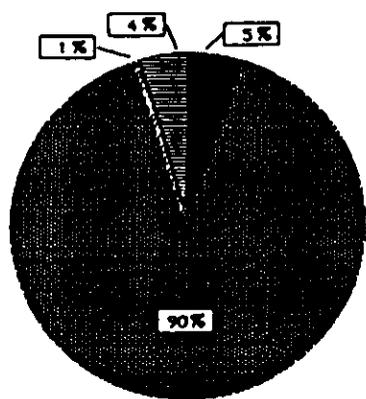
Bone Type	Quantity (g)
Mammal	0
Cow	0
Fish	0
Bird	0.4
Unidentified	1.9
Deer	0
Dog	0
<b>Total</b>	<b>2.3</b>



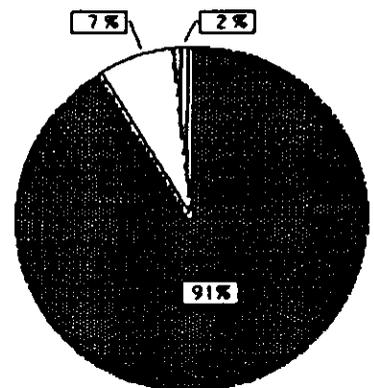
Bone Type	Quantity (g)
Mammal	35.7
Cow	625.7
Fish	0.2
Bird	0.3
Unidentified	0.9
Deer	32.6
Dog	0
<b>Total</b>	<b>695.4</b>

12S20W

6N57W



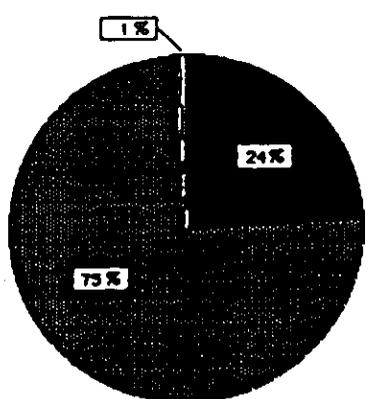
Bone Type	Quantity (g)
Mammal	0
Cow	96.3
Fish	0
Bird	0
Unidentified	7.4
Deer	0
Dog	1.9
<b>Total</b>	<b>105.6</b>



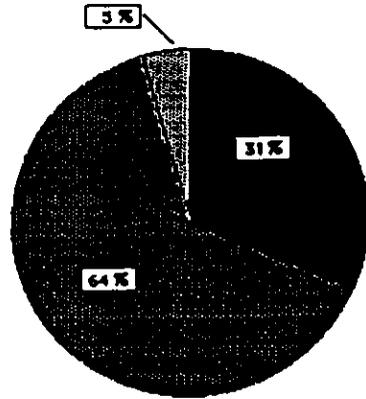
Bone Type	Quantity (g)
Mammal	83.8
Cow	258.3
Fish	0
Bird	2.8
Unidentified	0
Deer	0
Dog	0
<b>Total</b>	<b>344.9</b>

23S27W

4N38W



Bone Type	Quantity (g)
Mammal	18.7
Cow	37.8
Fish	0
Bird	2.8
Unidentified	0
Deer	0
Dog	0
<b>Total</b>	<b>59.3</b>

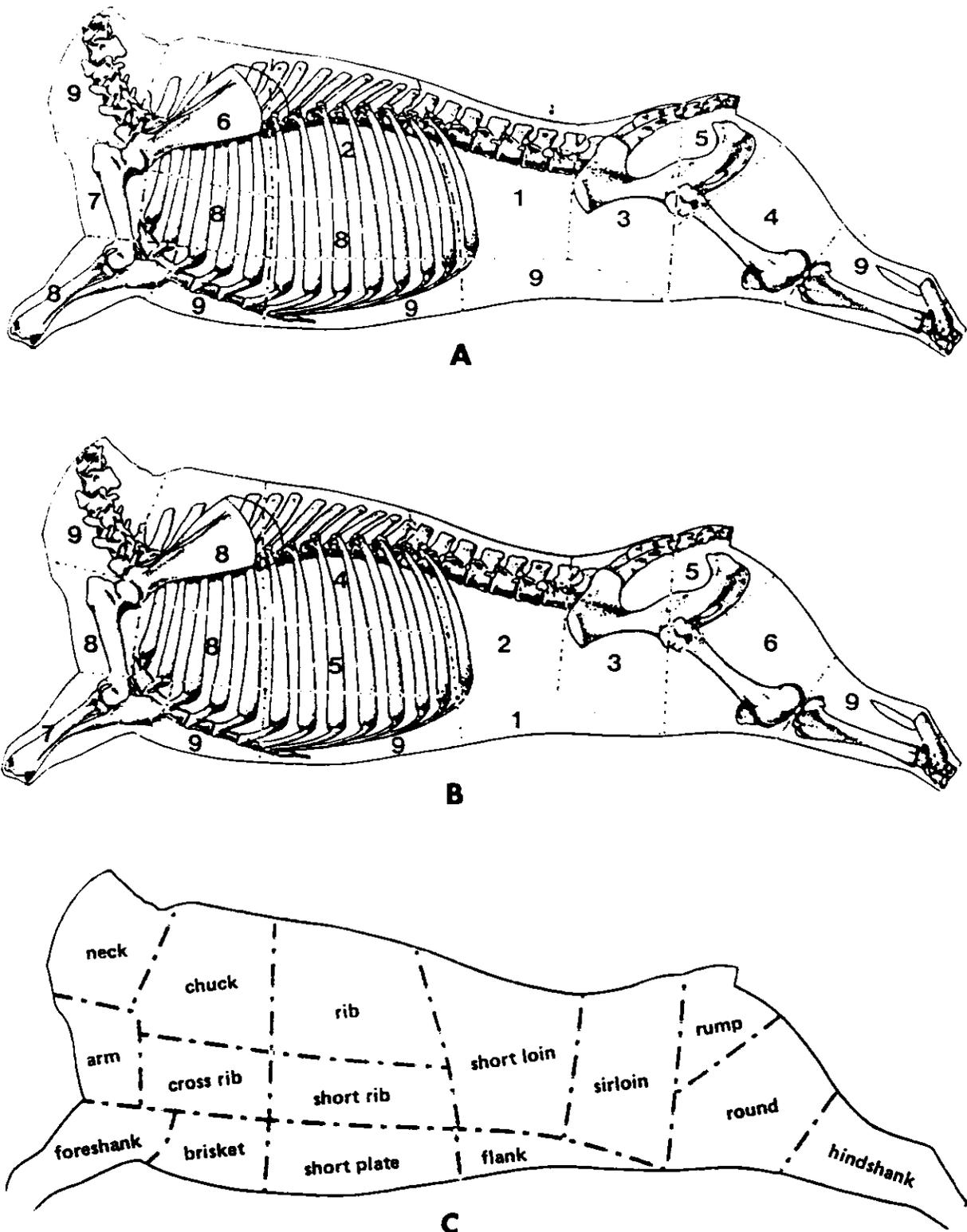


Bone Type	Quantity (g)
Mammal	0
Cow	0
Fish	0
Bird	0
Unidentified	0
Deer	0
Dog	0
<b>Total</b>	<b>0</b>

32S29W

10N25W

Figure 93. Distribution of Faunal Species by Weight.



Major secondary cuts of beef, showing approximate relative values, with the most expensive one valued at 1; a) turn-of-the-century value rankings (Manning 1905); b) 1978 rankings (Stoeven Bros. Meat Packing Co., personal communication); and c) names of particular cuts.

Figure 94. Value Rankings of Beef Cuts (from Gust 1983:346)

## Chapter 13

## INTERPRETATION

by  
Aniko Kiraly

The pace of work in the separate units across the site was largely determined by soil texture and features. Generally, the units were excavated to an average depth of  $0.4 \pm 0.1$  meter. Work in the two larger units was slowed by deep features which were separately excavated, while work in unit 6N57W was impeded by a difficult clay. In spite of this a tremendous quantity of artifacts were recovered and analyzed. In-depth archival research of the Long Row area, in conjunction with an excellent series of historical maps, ranging from 1850 to 1977, made it possible to correlate stratigraphic phases with documented historical activity and produce viable historical chronologies for some units. This chapter attempts to integrate the artifact findings and stratigraphy with known historical events on the Long Row/Rose Garden site. An attempt has also been made to provide correlations between units.

Interpretation of the 1984 excavation results has been divided into two sections: a unit-by-unit analysis and a cross-site analysis. Table 14 is a chart of the proposed chronological correlations between units and levels. A summary of level descriptions can be found in Chapter 5.

### Unit analyses

#### 10N23W

Archival data reveals that a parking lot was put on block 262, the Long Row area, in 1952. The upper level of this unit produced 707 grams of shell refuse, more than triple the amount found elsewhere on the site. Most of this shell was fragmentary, like that recovered in the 1983 survey exploration from units throughout this part of the Long Row site (McIntosh and Moore, eds., 1983). The shell refuse in unit 10N23W was concentrated in the eastern sector of level 1 of the unit, clearly implying that this unit

Table 14

Proposed Chronology for Archaeological Levels of the Long Row Site

Date	U N I T						
	50S 27W	32S 29W	23S 27W	12S 20W	6N 57W	4N 38W	10N 23W
1980	L1	L1	L1 L3	L1 L2	L1	L1 L2 L3	L1
1970			↑	↑			↑
1960	L2 L3	L2 L3 L5	L2	L3	L2 L3		F1
1950 <sup>X</sup>	L4 L5	↑ L4	↑	↑	L4	↑	L2
1940							
1930							
1920		L6					L3
1910			↑			L4 L5 L6	
1900		L7	L4 L5				
1890							
1880							

L = Level

X = 1952 demolition in Long Row area and laying of parking lot

was located on the fringes of the parking lot. Other artifacts from the upper level of this unit included both recent glass, plastics, and pull tabs from surface accumulation, as well as enough ceramic tableware to indicate the unit contained some debris from former household occupation sites.

A perfectly round 14-inch diameter feature was found associated with level 2 (Figure 42). We excavated this feature to a depth of 0.98 meter. The smooth edges and extreme depth of this feature indicate that it was made with a machine auger, perhaps as a test core for a telephone pole. The coarse sand used to fill all but the top 20 cm of this feature is not native to the Long Row area and was clearly brought to the site, possibly from the Galveston area. This sand contained virtually no artifacts other than shell fragments. The few artifacts found in the upper portion of the feature were largely undatable, and none of them were definitely modern. However, the fact that it appeared to have been mechanically drilled implied that the feature itself was probably recent.

Although the sharing of seven glass vessels between levels 1 and 2 and the presence of modern surface artifacts in level 2 indicated that there had been some mixing of the levels, level 2 nevertheless seemed to be functionally distinct from level 1. This level contained an extremely large number of artifacts, and appeared to be a dump site. Artifacts narrowed the date range for this level, which was apparently from a domestic occupation phase, to the second quarter of the twentieth century, c. 1925-1950. Interestingly, historical maps show that this unit was located squarely on the site of the late nineteenth century Byers residence and directly behind two later boarding houses at 1102 and 1104 Bagby (Figures 23 and 24). These boarding houses both appear to have been demolished before 1940 at the latest (Chapter 3). Probably the artifacts from level 2 were debris either from these buildings or from other boarding rooms and flats which continued to be occupied in the Long Row until 1952. Many of the glass artifacts from this level were produced within 10 to 15 years of 1930. Data from the large number of metal artifacts also supported this date range, as most could be dated after 1920 and before the 1950's.

Generally, the artifacts in level 3 predated those in the upper levels. Many nails were recovered, with a majority of wire nails suggesting that they were used in buildings from the late nineteenth or twentieth century. A total of 118 kilograms of brick and mortar was recovered from level 3, which was 11 times as much as was unearthed in level 2. This strongly suggested that this level represented a phase of demolition activity. The Byers residence was no longer on the maps by 1919, and archival data suggests that it may have been moved or demolished by 1913. In all likelihood level 3 corresponds to the early twentieth century demolition of this building. However, the Byers house appears to have been built some time before 1873 (Figure 19), which may be earlier than the introduction of wire nails to the Houston area. It is therefore possible that this level could also correspond to the demolition of a later building, perhaps one of the post-1910 Bagby Street boarding houses.

Broadly, this unit can be divided into three distinct stratigraphic phases: (1) the most recent phase, extending from the 1952 preparation of the parking lot to the present; (2) a dump phase belonging to the domestic occupation of the Long Row between the mid 1920's and the 1950's, when the area was converted into a parking lot; and (3) the oldest phase, corresponding either with the pre-1919 demolition of the Byers residence or the pre-1940 demolition of the twentieth century boarding houses.

### 12S20W

Tentatively, this unit may be divided into three or possibly four stratigraphic episodes. The first two excavated levels yielded very similar ceramic assemblages. Most prominent among the ceramics was tableware, especially white ironstone. In addition, pieces of the same porcelain vessel were recovered in both levels, indicating that they were deposited contemporaneously. Generally, these ceramics suggest a late nineteenth or early twentieth century occupation level. This is supported by the prevalence of nineteenth and early twentieth century domestic glass in levels 1, 2, and 3, and by the large percentages of machine cut nails, soft brick, and 3/64 inch window glass. These artifacts all indicated debris from a nineteenth century building, with the window glass suggesting building as early as the 1840's.

Historically, this unit rests between 1112 and 1114 Bagby, about midway between the pre-1850 Shryock residence and another dwelling which appears to have been built in the 1860's or early 1870's (Chapter 3). Both buildings underwent major modifications or additions in the late nineteenth and early twentieth centuries, but appear to have remained standing until the general demolition of the Bagby Street buildings in 1952. Level 3, which contained the largest amounts of brick, window glass, and wire nails, as well as the only twentieth century window glass found in the unit, could represent one of these later periods of construction or demolition. All three levels contained moderately high quantities of faunal material, suggesting that they were originally associated with a domestic occupation. However, they also contained small amounts of shell, suggesting that they may post-date the laying of the 1952 parking lot in this area. In addition, both levels 1 and 3 contained bright green glass that could have been from modern soft drink bottles, while level 3 contained a piece of early plastic dating it at least after 1927.

Despite the slight differences in artifact finds, levels 1, 2, and 3 were stratigraphically nearly indistinguishable, and could all be from a single depositional phase. If so, they probably represent twentieth century landscaping fill from an area containing debris from turn of the century occupation and earlier structures.

Below level 3, the shell refuse disappeared, perhaps an indication that the lower levels pre-dated the 1952 parking lot. Interestingly, a thin lens of gravel devoid of any artifacts separated levels 3 and 5. This level, level 4, may correspond to some parking lot related activity, as it seems to be the demarcation line between the presence and the absence of shell. It is also possible, however, that this level was associated with the construction of the 1968 Long Row building, and that the upper levels were landscaping fill deposited after that event. This interpretation could receive some support from the near absence of twentieth century building debris in the upper three levels, in spite of the proximity of the unit to the Long Row building. However, the absence of shell below level 4 appears to be a strong argument in favor of a c. 1952 date for this level.

The fifth level in this unit, of which only the top part was excavated, exhibited a marked decrease in artifacts of all categories, probably because of its small size. The paucity of artifacts made it difficult to date this level, but a post-1892 crown bottle cap and a post-1874 shoe part indicated that it was deposited in the late nineteenth century at the earliest. It seems likely that this level will prove to be related to the pre-demolition occupation in the Long Row.

### 32S29W

This unit yielded the least building materials of any on the site. It seems reasonable to state that this unit was not closely associated with any demolition or construction activity, and that any construction-related artifacts recovered must have been incidental debris. Archival data indicates that unit 32S29W was located in the back yard of the Shryock residence at 1114 Bagby. Above level 6, there was little indication of any specific functional activity that could be related to known historical phases in the Long Row area. Most of the artifacts recovered appeared to be occupation-related, although quantities were meager in the top five levels.

Roughly four phases could be construed from the artifacts in this unit: (1) a phase of recent surface accumulations associated with the topsoil and recent fill, comprising levels 1 through 3; (2) a spatially broad phase in level 4 which offers evidence of domestic debris and some demolition activity; (3) a modern pipe trench in level 5 containing artifacts apparently derived from the surrounding levels 2 through 4; and (4) a phase during which the unit appears to have been used as a refuse site, probably by the residents of the Shryock house. This phase was most clearly seen in level 7, which contained large quantities of domestic debris, but it appeared to extend to a lesser degree to level 6 as well.

Levels 1, 2, and 3 contained few datable artifacts aside from a pull tab in level 1. Artifact quantity was extremely low in all three of these levels, although level 3 had a large enough number of wire nails to suggest some association with recent construction activity. These levels all also

contained shell refuse and cobblestones which may have been associated with post-1952 parking lot and walkway construction. No shell was found below level 3, suggesting that levels 4, 6, and 7 were probably deposited before 1952.

The largest amounts of construction material of all sorts were found in level 4. These materials included wire nails, medium-hard brick, and 5/64 inch window glass, all of which could have come from buildings constructed in the late nineteenth century. Faunal remains appeared for the first time in this unit, and glass and ceramic artifacts, generally datable to the late nineteenth or early twentieth century, also increased. These artifacts all suggest that level 4 may have contained a scatter of demolition and occupational debris from the buildings destroyed in 1952, and may be contemporary with that demolition.

Generally, the artifacts in level 6 seemed to predate those in previous levels. Some changes in the artifact record implied that the onset of a new phase had been reached. Faunal remains, coal, ceramic, and glass recovery all showed a marked increase, a trend that continued through level 7, which contained the largest number of ceramic artifacts on the site. Despite the difference in artifact quantity, level 6 and level 7 shared both glass and ceramic vessels, suggesting that they may have actually been a single deposit. Glass and ceramics from both levels were generally datable to the late nineteenth or early twentieth century, but a 1933-1964 liquor bottle fragment and a piece of formica in level 6, and an aluminum awning ring in level 7, indicated that both levels had some twentieth century deposition. This information indicated that levels 6 and 7 may have been a refuse dump which was primarily used around the turn of the century but continued to receive some debris through at least the 1930's. Overlays and archival maps show that unit 32S29W was located on the back edge of the lots in block 262, where the Long Row properties bordered the park. It seems likely that the area running parallel to the fence which lined this border was used as a refuse dump. Levels 6 and 7 therefore probably represent the pre-parking lot phase of domestic occupation, during which the area of this unit was used as a refuse dump by residents of the Shryock house or other Long Row structures.

50S27W

Immediately on beginning excavation in this unit a distinct difference in soil types on the upper surface seemed to indicate the presence of a pipe trench diagonally crossing the unit. No pipe was found in this trench, however, and artifact concentrations showed no significant functional differences between the trench and the surrounding levels 3 and 4. This unit can therefore be identified as having three major stratigraphic phases.

The first phase was associated with level 1. This level lacked any artifacts other than those that could be attributed to recent surface accumulation. Only cigarette filters, plastics, and candy wrappers were recovered, clearly indicating that level 1 belonged to a phase related to current surface deposition.

Evidence strongly suggests that the trench level 2 and the adjacent level 3 were contemporary deposits. While there were no glass vessels shared by these levels, the same types of glass (mainly clear, sun-colored amethyst, and amber glass) were recovered in each. In addition, faunal, shell, and ceramic accumulations remained constant through levels 2 and 3. The quantity and quality of nails and building materials roughly corresponded, with a preponderance of wire nails and medium-fired brick. These levels also both contained relatively large quantities of window glass, with a wide range of thicknesses suggesting occupation throughout the nineteenth century. Plastic and other modern artifacts, however, suggested that these two levels were affiliated with twentieth century activities. Although large numbers of nails were found, the small amounts of brick and mortar did not indicate construction or demolition involving brick buildings.

Except for an increase in faunal remains, the artifacts from level 4 did not differ significantly from those in levels 2 and 3. This suggests that level 4 may have belonged to the same chronological phase as levels 2 and 3. This phase probably coincided with bulldozing, leveling, and filling activity in the Long Row area after 1952.

Level 5 certainly belonged to a demolition phase. Although the amount of brick and mortar (3.46 kilograms) was not great in comparison to several of the other units, it was a significant increase from previous levels. The number of nails in this level was extremely high, with a total of over 100. These artifact findings suggest that level 5 probably contained debris from the demolition of frame buildings with brick foundations or chimneys. Most of the nails were wire nails, probably used in buildings constructed at the end of the nineteenth century or later. However, a significant number of machine cut nails may have come from earlier buildings. This level also contained the largest amounts of ceramics, coal, and faunal refuse found in this unit, indicating some association with a domestic occupation.

Unit 50S27W was located in the area of two frame buildings which lined the Dallas Street side of the Long Row (Figure 23). The last of these structures was razed in 1952. Undoubtedly, this activity corresponds to level 5, with the ceramic and coal remains reflecting debris from the pre-demolition domestic occupation of those buildings. It appears improbable that this unit could date any further back than the 1950's, as quite modern artifacts were found in all levels. A probable car battery part was recovered in level 3, a post-1921 plastic radio part in level 4, and a post-1945 plastic button in level 5. In addition, all levels except level 4 contained significant quantities of shell which undoubtedly came from the parking lot that was put in during 1952. The largest amounts of shell were found in level 5, supporting the idea that this level may have been deposited around the time of the initial laying of the parking lot.

### 23S27W

Artifacts from this unit suggested two distinct historical phases and possibly three different depositional episodes. Levels 1 and 2 seemed to contain a chronologically mixed accumulation of artifacts from recent twentieth century activities and the demolition of both nineteenth and twentieth century structures in the Long Row area. It seems likely that these levels contained material both from modern park landscaping activities and from the 1952 demolition of the Shryock and other Long Row buildings that were razed in order to make room for the parking lot.

Bulldozing to level the area, as well as the varying ages of structures in the vicinity, correlate well with the variety of artifacts recovered in levels 1 and 2. Large amounts of wire nails, both medium and hard-fired brick, and 5/64 inch window glass were found in these levels. The hard brick and wire nails suggested recent building activity, possibly associated with the nearby Long Row building, while the window glass and the softer brick appeared to indicate remains from late nineteenth century or earlier structures. These levels also both contained moderate amounts of faunal and coal remains and large quantities of glass and ceramic artifacts, all suggesting substantial domestic occupation. Most of the ceramics and glass seemed to date to the late nineteenth or early twentieth century. However, a modern deposition date for these levels is supported by the large amounts of shell, probably associated with the 1952-1968 parking lot; by plastic and other recent artifacts in level 1; and by cobblestones in level 2 which may be associated with the post-1952 construction of park walkways.

During excavation an irregularly circular pit was found and excavated as levels 3, 4, and 5. The most marked characteristic of this feature was the concentration of building materials in level 3, which directly underlay level 1 and intruded into level 2. Level 3 contained more than 27 kilograms of brick, four times as much as any other level on the site. Most of this brick consisted of large fragments and brickbats. More notably, almost all of it was hard-fired brick, a type not found in quantity anywhere else on the site except in level 2 of unit 10N23W. Level 3 also contained lenses of sand and lime and a cloth carpenter's apron, suggesting that it may have been a builder's pit associated with recent construction and mortar preparation. A recent date for this level was supported by the presence of two plastic buttons, a piece of modern insulated wire, and a bottle cap with a plastic seal. Aside from the large quantity of brick, the artifact assemblage from level 3 was very similar to that of level 1, suggesting that these two levels may have been deposited at the same time.

Level 4 was composed of overlying strata of red and yellow clay which were quite distinct from the loamy sand of level 3. Artifact assemblages from both level 4 and level 5 were also very different from

that of level 3. Ceramics, shell, and building material quantities were much lower than in level 3, and building material consisted mainly of non-modern medium and soft-fired brick, suggesting an earlier date. In addition, these levels contained more machine cut than wire nails, an indication of nineteenth century construction. Several modern artifacts, including a post-1925 Nehi bottle fragment, a plastic button, and small amounts of hard brick, seemed to date level 4 to the mid-twentieth century. However, pieces of the same bone found in levels 3 and 5 suggested that there had been some mixing of the artifacts from the different levels of the pit feature, and ceramics from this level indicate a late nineteenth or early twentieth century range. Faunal material, high in all three levels of the pit, was highest in level 5, which contained the largest concentration of Bos bones on the site. This level, which from ceramic dates could be as early as the 1840's, appears to have been part of a domestic refuse dump.

Historic maps of the Long Row area from 1896 to 1919 indicate the presence of an unidentified structure located in the back yards of the residences at 1112 and 1114 Bagby in the area of this unit (Figures 22-24). These houses both date to the third quarter of the nineteenth century at the latest, and the unidentified outbuilding could also have been built much earlier than 1896. Speculation that this structure could have been a privy may be supported by the evidence from the levels 4 and 5 of the pit feature. These two levels both appear to be functionally and chronologically distinct from the modern builder's pit in level 3. Level 5, and possibly also level 4, clearly represents a household refuse dump which could have been the upper levels of a privy filled in during the early twentieth century.

#### 4N38W

Archival evidence indicates four possible periods of occupation in the area of this unit: the early nineteenth century Smith Hospital, whose exact location is unknown but appears to have been in this part of the park; the late nineteenth century Byers nursery and residence, occupied from at least the 1880's to c. 1913; the early twentieth century park occupation, between about 1913 and 1952; and the later park occupation dating from

the mid twentieth century to the present. Historic maps show that unit 4N38W was situated just outside the back door of the Byers house, about midway between that building and the nursery greenhouse which existed during the 1890's (Figure 22).

In spite of the fact that the unit was excavated to sterile soil, artifacts yielded no clear evidence of the early hospital occupation, although large quantities of extremely thin window glass indicated that an early nineteenth century building may have been located nearby. Overall, two major historical phases were apparent in this unit: a phase associated with the modern park occupation in levels 1-3, and a phase apparently associated with the Byers occupation in levels 4-6. The most common artifact in level 1 was crushed oyster shell, presumably associated with the 1952-1977 parking lot in the area of unit 10N23W. Level 2, which yielded a much higher quantity of artifacts, appeared to date to the same period, since it also contained large quantities of shell as well as a piece of a plastic trash bag which could be dated after about 1960. Both levels 1 and 2, however, contained moderately high quantities of medium-fired brick, and more machine cut nails than wire nails, even though lower levels all contained predominantly wire nails. This chronological reversal suggested that levels 1 and 2 may have been recent deposits of landscaping fill, possibly brought to the area from another area containing nineteenth century debris.

Level 3, a modern pipe trench, contained very few artifacts and appeared from stratigraphic evidence to be contemporary with level 1. Levels 4 and 5 seemed to be the main occupational levels of this unit, with artifacts suggesting a date range from the late nineteenth through the mid twentieth century. Both levels contained significant amounts of building material, nails, and window glass. Quantities of all these artifacts were higher in level 4, an indication that this may have been a demolition level corresponding to the early twentieth century removal of the Byers house. In both levels nails and building materials consisted mainly of wire nails and medium-fired brick, suggesting buildings of late nineteenth or early twentieth century construction. However, relatively large percentages of machine cut nails and soft-fired brick also gave evidence of earlier construction, while window glass thicknesses suggested two peaks of

construction, in the early and the late nineteenth century. These early remains may have been from the 1837 Smith Hospital. However, it is also possible that they were from the initial construction of the Byers house, which appears to have been built before the 1860's and modified later in the century (Figures 18 and 22).

Ceramics and glass from levels 4 and 5 appeared to date primarily to the late nineteenth or early twentieth century, with a large number of flowerpot fragments suggesting some association with the nursery and florist business which the Byers operated through the 1880's and 1890's. However, a stamp-molded plastic comb and a piece of simulated wood furniture molding indicated that level 5 was open at least as late as 1927, while a white plastic button and a relatively high proportion of shell appeared to date level 4 to around the 1950's or later. This mix of artifacts suggested that levels 4 and 5 had witnessed some mid twentieth century disturbance, possibly at the time of the 1952 Bagby Street demolition. Most of the material, however, seemed clearly to be associated with the late nineteenth/early twentieth century domestic occupation of this area. Level 6, the lowest level of the unit, yielded few artifacts and appeared to be just above sterile soil. Artifacts from this level included flowerpot fragments, wire nails, and nineteenth century glass, again suggesting late nineteenth and twentieth century occupation.

#### 6N57W

A paucity of artifacts severely limited interpretation of this unit. An abundance of asphalt in level 4, and small brick fragments in levels 3 and 4 were the only notable features of this unit. No ceramics and very few faunal artifacts or other domestic remains were found. These findings concur with evidence from historical sources, which indicate that this area has been devoid of occupational activity.

Situated far away from the Long Row dwellings, unit 6N57W lay very close to the Lamar Street extension of Allen Parkway. This street was created in 1951, when the original Lamar Street was realigned to its present position. The asphalt and asphalted pebbles in level 4 probably coincide with this event. The building materials in levels 3 and 4

consisted primarily of medium-fired brick, suggesting demolition debris from late nineteenth or early twentieth century buildings. However, nails and other metal artifacts all appeared to be modern, while the small amounts of window glass included a wide range of thicknesses indicating no single major period of construction. This chronological mixture suggested that levels 2 and 3 of this unit were fill levels deposited after the 1951 Lamar Street realignment. Level 1 appears to represent a phase of recent surface accumulations, with no artifacts found other than twentieth century miscellany.

### Cross-site interpretation

Change has characterized the appearance of the Long Row/Rose Garden site over the last 100 years. Beginning with the mid nineteenth century occupation of the site, activity in the forms of construction, occupation, demolition, and landscaping has repeatedly redone the area between Lamar and Dallas Streets. The archaeological record we have disclosed in our excavations during the 1984 season has produced much evidence testifying to the degree and type of historical activity the site has seen.

On a preliminary level, the Long Row/Rose Garden area can be divided into two readily discernible phases: the post-1952 phase, after the demolition of the residential structures and the laying of the parking lot in the Bagby Street area; and the pre-1952 period, during which occupation and construction were the principal activities. As the parking lot was paved with crushed oyster shell, breaks in shell deposition proved an excellent temporal marker across the site, with the varying depths at which shell was found indicating that the area was once characterized by much more topographical variability than is now the case. A decline in the quantity of shell recovered from one level to the next indicates that level 1 of unit 10N23W, levels 1-3 of units 12S20W, 23S27W, 32S29W, and 4N38W, and levels 1-5 of unit 50S27W were all deposited during the post-1952 time period. Also contemporaneous was unit 6N57W, which contained shell in all four levels, as well as asphalt which was probably associated with the 1951 realignment of Lamar Street.

Generally, the levels predating 1952 contained an assemblage of artifacts from the demolition of residential dwellings in the Long Row block. Although these levels appeared to have undergone some disturbance from the leveling and filling done to make the park aesthetically appealing, the contents of the deposits yielded valuable information about the age and use of the demolished structures. Except for the hard brick used to fill the modern pit in unit 23S27W, the virtual absence of modern brick throughout the site and the preponderance of non-modern medium-fired brick suggest that most of the structures in question were built in the late nineteenth or early twentieth century. This evidence correlated with information from window glass thicknesses, which suggested that the heaviest construction in the area occurred between c. 1850 and 1885, with very little construction or repair after the 1920's. Nails were predominantly wire nails, indicating that most buildings were either late nineteenth or twentieth century in origin, although a significant number of machine cut nails, especially in units 12S20W and 4N38W, indicated the demolition of earlier structures as well.

These findings all seem to correspond with historical data, which shows the first major period of building to have been around the 1860's or early 1870's, with a second period of activity around the turn of the century, when the area was filled in with apartments and rooming houses. Historical maps indicate that unit 10N23W sits on the site of the former Byers residence, which was apparently built sometime before 1869 and destroyed before 1919. Our findings support this information, with large amounts of construction debris indicating the demolition of a building in this spot some time in the early twentieth century. Unit 4N38W, also located in the vicinity of the Byers house, yielded evidence of both the occupation and demolition of this structure. No definite evidence was found of the site's earliest recorded building, the 1837 Smith Hospital, thought to have also been located somewhere in the area of this unit.

Another area which yielded evidence of a recorded building was unit 50S27W, located on the edge of Dallas Street approximately on the site of a frame building which stood from about 1900 to 1952. Archaeological evidence strongly suggested that all excavated levels in this unit contained remains dating to the 1952 demolition of this building or later.

In addition, analyses of window glass, nails, and brick types all also indicated the presence of an earlier structure which stood on the same site from about the 1860's to the turn of the twentieth century. Unit 12S20W, which contained large amounts of soft-fired brick, machine cut nails, and extremely thin window glass, may have contained remains from the c. 1850 Shryock house, the earliest known residential structure on the site. Excavated levels in unit 23S27W, located on the western edge of the same Bagby Street lot, contained a chronological mix of construction materials, probably derived from the various structures built in this area between the 1850's and the 1960's. The large amounts of modern hard brick found in level 3 of this unit appeared to be datable to the modern park period, and may be associated with the construction of the 1968 Long Row building or other recent park structures. Unit 32S29W, located near the fence bordering the back of the Bagby Street lots, was the only unit to yield little evidence of construction activity at all, although a scatter of window glass and brick in level 4 may correspond to the 1952 demolition of the Bagby Street buildings.

Archaeological evidence has thoroughly validated the claim that the Long Row structures were dwellings. Non-demolition related artifacts consisted overwhelmingly of domestic artifacts, most of which were concentrated in the southern part of the site near the sites of the Long Row buildings. Outside of unit 10N23W, which contained a large number of modern soft drink bottles related to the use of that area as a parking lot, the glass assemblage consisted of a variety of bottle glass and table glass types common to late nineteenth and twentieth century households. In addition, the large quantities of ceramic tableware are strong evidence of the domestic character of the Long Row area, with the predominance of white ironstone and German style porcelains suggesting that this occupation was most intensive in the late nineteenth and early twentieth centuries.

Large amounts of butchered food bones found in various parts of the site also gave evidence of the domestic nature of the historical occupation. Analysis of both ceramic types and faunal remains suggested that most of the site was occupied by people of middle to low income, although larger quantities of porcelain recovered from the northern part of

the site, in units 10N23W and 4N38W, may be an indication that the Byers family enjoyed a somewhat higher economic standing. Units 10N23W and 4N38W also yielded large numbers of flowerpot fragments which may have been associated with the nursery operated by the Byers in the late nineteenth and early twentieth centuries.

Excavations exposed three apparent refuse disposal sites associated with the historic occupation. These were a c. 1920's-1940's dump in level 2 of unit 10N23W, and two apparent late nineteenth/early twentieth century household trash sites in levels 4 and 5 of unit 23S27W and levels 6 and 7 of unit 32S29W. All three of these areas contained large quantities of butchered bone. The dump in unit 10N23W also yielded large numbers of glass and metal artifacts of various kinds, and proportionally few household ceramics, suggesting that it was a general dumping area as well as a household trash site. It seems probable that both the domestic and the non-domestic material in this level were deposited by the residents of the early twentieth century boarding houses which lined this part of Bagby Street.

Units 32S29W and 23S27W were both located near the back of the lots holding the Bagby Street dwellings, and it is likely that the refuse levels of these units contained debris thrown away by the inhabitants of those residences. The dump in levels 6 and 7 of unit 32S29W consisted mainly of glass and ceramic artifacts found in large fragments. These artifacts could generally be dated to the late nineteenth or early twentieth century, although several more recent artifacts indicated that some deposition may have continued as late as the mid twentieth century. This decline in deposition probably reflects the dwindling number of occupants of the Long Row area after the early decades of the twentieth century.

The refuse deposits in unit 23S27W consisted of extremely large amounts of butchered bone, found in the lower levels of a circular pit whose top level had been filled with modern building debris. Ceramics from these levels also suggested a nineteenth or early twentieth century date range, with the possibility that the lowest level could date as early as the 1840's. The location of this unit suggests that it may have been associated with an unidentified outbuilding located in the back yards of

the houses at 1112 and 1114 Bagby. It is possible that this structure was an outdoor privy which was filled in with domestic garbage, perhaps at the time indoor plumbing was installed. If so, the refuse levels in unit 23S27W may represent the upper levels of a privy deposit. However, further excavation is required to determine the exact nature of the deposits in this area.

## CONCLUSIONS AND RECOMMENDATIONS

Helen Haskell

This report represents the first fruits of an ambitious undertaking. For 21 young people, most with no previous knowledge of archaeology, successfully to bring a research-oriented archaeological project to its conclusion has required a tremendous outlay of energy and creativity. Most of the students in this year's class of Anthropology 362b have had to learn their subjects (or their crafts) as they worked on the Long Row project. They have cheerfully suffered through long Wednesdays and Saturdays in the field, hours in the library, laboratory, and darkroom, and days or weeks spent in the composition of two to four draft copies of almost every chapter. The results of their labors speak for themselves. Most of these student researchers have acquired a knowledge of their research topics equivalent to that of many professionals. Several of the specialized analyses have made use of innovative comparative methodology which will be continued in future seasons and whose results should be of interest to historical archaeologists throughout the area.

As documentation of one of a handful of intensively excavated sites in downtown Houston, the Long Row report represents a significant contribution to the archaeology of Houston and Harris County. This contribution is made all the more significant by the Harris County Heritage Society's proposal to develop the site as a museum and grounds within the upcoming decade. The Long Row/Rose Garden area of Sam Houston Park is one of the few sites within the city confines which both has been continuously occupied since the city's founding and remains accessible to long-term archaeological investigation. The prospective loss of this archaeological resource demands that excavations be conducted as a professionally executed program of salvage archaeology, in addition to meeting the university's goals of student training. The 1984 excavations appear to have made a successful compromise between these two goals. With remarkably little formal instruction, the students of Anthropology 362b have quickly acquired the rudiments of archaeological methodology and produced an detailed technical report on a comparatively complex archaeological site.

1984 was the pilot season of a program of archaeological research designed to cover the entire area of Sam Houston Park over the next ten years. Because of the threat to its substantial archaeological remains, the Long Row has been scheduled as the site of excavations for the first three or more years. The lion's share of work in the Long Row project has fallen to this first class of students, who have had the task of surveying and gridding the site, conducting the basic historical research, setting up artifact typologies, and working through the initial bugs in the structure of both fieldwork and analysis. Along the way they have photographed and drafted an excellent series of scale maps extending from the 1850's to the 1970's, taken the first steps toward computerization of the archaeological data, and enriched our knowledge of the original Kellum occupation and the history of surrounding areas. Not least, they have also begun the process of establishing a general stratigraphy of the area, and have made a significant dent in archival research on the history of the park as a whole.

The Long Row excavations were first proposed in 1983 as an integrated program of archival research, sampling, and full excavation. Historical research begun in 1984 was to be carried over into subsequent seasons, and initial sampling in 1984 was to be followed in 1985 by extended sampling in the southern Rose Garden area and by expanded excavation of designated areas behind the Long Row building. The completion of the first year's work in this area has now put us in a position to make a preliminary assessment of the methodology, scheduling, and initial results of this project, and to suggest directions that future research in Sam Houston Park should take.

1) Historical research. Due to the rapid and thorough work of our library crew, archival research in the 1984 season has proceeded much more quickly than anticipated. The archival search is now at a stage in which it can focus on selected areas of interest within the framework of existing documentation. We now have a solidly documented history, extending from c. 1830 to the present, for the Long Row site in specific and the park area in general. Nevertheless, several important questions remain. The exact location and demolition date of the 1837 Smith Hospital, the earliest building on the site, is a matter of obvious interest,

as are the locations of other early structures such as the 1837 Mock house and tannery and the Kellum brickyard. This last may prove to be the same establishment as the late nineteenth century Young brickyard located on the northern bank of the bayou (Figure 20). In addition, the construction, occupation, and demolition dates of the Byers house in the northern part of the site remain uncertain. City directories have presently been examined by ten-year intervals. A complete search of selected narrower periods should narrow the dates for the Byers house and other Bagby Street structures for which broad occupation ranges are now available.

2) Archaeological sample. Our original intention for the 1984 season was to open five 1 meter and 2 meter excavation squares. All of these were to be de facto sample units, with the 2 meter units intended primarily as a means of acquainting students with the excavation of comparatively large uninterrupted areas of terrain. During the actual excavation season the field area was expanded to seven units, bringing the sampled area to 1575 square meters, or slightly more than a third of the entire Long Row/Rose Garden site. Within this area, only a .83 per cent of the sample area was taken. However, the richness and diversity of the archaeological information obtained, and the comparative ease with which it was interpreted, suggests that this sample was adequate for the site. These encouraging results were made possible by the few historical maps available before the beginning of the 1984 season, which permitted judicious placement of the archaeological units to the rear of known historical buildings. In areas where excavation sites were randomly chosen (i.e., the northern Rose Garden area), archaeological findings were much less informative. However, the complete series of maps now available should permit placement of future archaeological units precisely on the sites of structures or other areas of interest.

Our initial and undoubtedly overoptimistic goal of striking subsoil in every unit was not accomplished, but with the larger number of units a wider area was excavated in greater detail than had been projected. Excavations reached an average depth of 0.4 meter, with the overall depth of the individual units ranging from about 20 cm in the larger squares to over half a meter in the deepest of the 1 meter units. Roughly the top 20 cm of almost every unit appeared to be composed of mixed deposits from

recent park landscaping, underlain by demolition levels or disturbed occupational levels. Although many of the lower deposits contained nineteenth century material, sometimes in great abundance, none of the units can definitely be said to have reached areas untouched by twentieth century disturbance or occupation. In unit 4N38W, the one unit excavated to sterile soil, twentieth century material was found in all but the lowest level, which was nearly devoid of cultural material of any sort. Most of the other excavation squares contained abundant debris from the early twentieth century residences in the Long Row area, or from the demolition of those structures.

At present we do not know the exact depth of archaeological deposits in most of the Long Row/Rose Garden site, or if undisturbed nineteenth century levels underlie the excavated twentieth century deposits. The primary objective of the 1985 excavations, therefore, will be the excavation to sterile soil of existing sample units rather than extension of the archaeological sample into the southern Rose Garden area as originally proposed. Continued excavation of the present units will provide a complete sample of archaeological materials for a large area of the site, and will permit a more definitive correlation of both stratigraphic and artifactual evidence across the site. Once this additional information is available, analysis can be focused on combining the data from the 1984 and 1985 seasons to produce a synthesis of archaeological results for the entire sampled area and to identify areas which warrant further investigation.

In the 1982 and 1983 Kellum Noble House excavations, student excavation was largely confined to two 3x3 meter squares. This format had the advantage of providing close supervision to a large number of students, and of familiarizing all students with the archaeological context of the material they subsequently analyze. In the 1984 season we traded these advantages for the equally pressing one of covering a large area relatively quickly, with a large number of squares excavated by two to five students per unit. This format also appears to have worked well, both as a training technique and as a professional research design. Much more earth was moved in the 1984 excavations than in previous seasons, and many times the number of artifacts was recovered and analyzed. The

disadvantage of this strategy was the large number of artifacts that had to be analyzed within the short (six-week) laboratory period. It now seems clear that if cultural material continues to be recovered in present quantities, the number of excavation units needs to be limited to four or five in future seasons.

In line with these constraints, two of the 1984 sample units are not recommended for further excavation. These are units 6N57W and 4N38W, both located in the northern Rose Garden area. Unit 6N57W appears to have been placed in an area of modern clay fill associated with the recent re-routing of the Lamar Street extension. The depth of this fill is unknown, but it could be considerable given the extent of recent topographic changes in the park. In addition, the historical record shows no evidence of structures or other significant occupational activity in this part of the site. It is therefore likely that even if the the historical ground surface were encountered, little information of archaeological significance would be obtained from continued excavation of this unit. Unit 4N38W, apparently associated with the late nineteenth/early twentieth century Byers occupation, was excavated to nearly sterile deposits at a depth of 0.53 m. At the bottom of the excavated levels, variations in soil color and texture were encountered which could be foundation traces or other architectural remains. Although future work in this area may clarify the nature of these deposits, their present investigation does not appear to justify the removal of more than 50 cm of backfill.

3) Expanded excavation. The sampling scheme in the Long Row area was undertaken in the assumption that selected sample units would be replaced by expanded excavation squares in areas deemed of especial archaeological interest. However, although almost all the 1984 excavation units produced abundant artifactual remains, findings in none of these areas presently appear to warrant horizontal expansion of existing units. The archaeological productivity of the sample scheme, furthermore, suggests that investigations in 1985 and future seasons might be more profitably focused on continued sampling rather than large-scale excavation. Therefore, unless building remains or other extensive features are encountered, it is recommended that expanded excavation in 1986 and

future seasons take the form of a small number of discontinuous 1 or 2 meter sample units in parts of the site which have not been previously excavated. On the basis of present knowledge, areas recommended for future investigation are the unsampled central part of the northern Long Row area, which should contain remains from both nineteenth and twentieth century Bagby Street structures; and the southern Rose Garden area, which includes the site of an early twentieth century Dallas Street dwelling, the mall and formal gardens of the early twentieth century park, and possibly also nineteenth century outbuildings from the Kellum-Noble occupation. Where possible, sample units in both these areas should be placed on the sites or in the vicinity of known historical structures, although a randomized sample may be necessary in the southern part of the site to increase the probability of locating evidence of undocumented structures.

In addition, findings from future excavations may indicate the desirability of intensification of the sample within strata that have already been sampled. At present, the only area recommended for intensified sampling is the northern Rose Garden area, where archival evidence indicates the presence of several structures of which little or no evidence was found in the 1984 sample. These include the 1837 Smith Hospital and the 1890's Byers greenhouse, which historical maps indicate was located approximately halfway between the two 1984 units in this area. Although intensified sampling remains a low priority at this stage of the project, we suggest intensification of the sample in the northern Rose Garden area at some point in the future, with a third unit to be opened on the recorded greenhouse site.

In conclusion, then, we can report the success of the first season's research in the Long Row area and recommend continuation of the archaeological sample with only slight modifications to its present form. This first attempt at a large-scale teaching and research project has been a learning experience for all of us, and has served to point out both the advantages and the limitations of our original sampling strategy. The 1984 students of Anthropology 362b have made an auspicious beginning to the Sam Houston Park project, and their accomplishments have established

a solid basis from which future student excavators can work. Nevertheless, the overwhelming amount of material with which they have had to deal has more than adequately demonstrated the need to curtail excavation size in future seasons. With the completed excavation of six of the seven excavation squares in 1985, therefore, research and analysis in the 1985 season will be focused on synthesizing archaeological information from existing sample units, with limited sampling to be extended to other parts of the site in subsequent seasons.

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## APPENDIX 1

## LEVEL RECORD FORM INDEX

<u>Unit and Level</u>	<u>LRF</u>
<u>4N 38W</u>	
Level 1 . . . . .	5a, 10a
2 . . . . .	12a, 17a, 19a
3 . . . . .	Feature 2, 46a
4 . . . . .	23a, 33a
5 . . . . .	41a
6 . . . . .	43a, 45a
<u>6N 57W</u>	
Level 1 . . . . .	4a
2 . . . . .	7a, 16a
3 . . . . .	27a, 32a
4 . . . . .	39a
<u>50S 27W</u>	
Level 1 . . . . .	6a
2 . . . . .	9a, 14a
3 . . . . .	21a, 25a, 30a
4 . . . . .	34a
5 . . . . .	37a
<u>23S 27W</u>	
Level 1 . . . . .	1, 2, 4
2 . . . . .	6, 14, 18, 20, 22

APPENDIX 1 (cont.)

Unit and Level

LRF

23S 27W (cont.)

Level 3 . . . . .	8, 10, 12, 16, 24
4 . . . . .	26
5 . . . . .	27

10N 23W

Level 1 . . . . .	3, 5
2 . . . . .	7, 9
3 . . . . .	11, 13, 25
Feature 1 . . . . .	F. 1

12S 20W

Level 1 . . . . .	3a, 8a, 15a
2 . . . . .	18a, 26a, 31a
3 . . . . .	36a, 40a
4 . . . . .	no level on LRF's
5 . . . . .	42a

32S 29W

Level 1 . . . . .	1a, 11a
2 . . . . .	13a
3 . . . . .	20a
4 . . . . .	24a
5 . . . . .	22a, 28a
6 . . . . .	29a, 35a, 38a
7 . . . . .	44a

## Appendix 2a

## ELEVATION OF POINTS OF ORIGIN

All vertical measurements in the 1984 excavations were taken from points of origin established by notching wooden stakes driven into the northeastern corner of each excavation unit. Elevation of the points of origin was taken from a temporary bench mark (TBM) consisting of a small aluminum plaque set into the cement walkway between the park benches north of the World War I monument. The inscription reads:

In honor of

Mr. and Mrs.

William Franklin Cleveland

The temporary bench mark will be shot in next year on a permanent bench mark. The following measurements are elevations of the notched stakes above and below the TBM.

<u>Excavation Unit (NE coordinates)</u>	<u>Elevation of Point of Origin</u>
6N57W	- 0.11 meter
4N38W	- 0.07 meter
10N23W	+ 0.17 meter
12S20W	+ 0.25 meter
23S27W	+ 0.20 meter
32S29W	+ 0.35 meter
50S27W	- 0.16 meter

## APPENDIX 2b

## LEVEL INFORMATION TABLE

Level	Measurements (in meters)				NE SE	Ahn Texture	Munsell Value	Section of Unit
	NW SW	Top	NE SE	NW SW				
10N 23W								
1	0.083 0.058		0.154 0.085	0.105 0.090	0.174 0.140	Loamy sand	10yr 3/2 very dark grayish brown	whole unit
2	0.101 0.101		0.170 0.150	0.215 0.170	0.205 0.190	Loamy sand	10yr 3/1 very dark gray	whole unit
3	0.210 0.170		0.210 0.200	0.250 0.180	0.230 0.250	Loamy sand	10yr 3/2 very dark grayish brown	western three-fourths of unit
Feature 1 upper level		center 0.190			center 0.390	Loamy sand with ash	2.5yr 5/0 gray	modern post hole
Feature 1 lower level		center 0.390			center 0.980	Coarse sand	10yr 6/3 pale brown	modern post hole
23S 27W								
1	0.103 0.121		0.120 0.150	0.130 0.140	0.155 0.190	Loamy sand	10yr 2/2 very dark brown	whole unit
2	0.150 0.140		0.220 0.190	0.210 0.220	0.230 0.220	Loamy sand- light clay	10yr 4/2 dark grayish brown	whole unit
3	0.174 0.164		-- 0.145	0.380 0.450	-- 0.385	Loamy sand	10yr 3/2 very dark grayish brown	first level of circular feature below level 1

APPENDIX 2b; LEVEL INFORMATION TABLE (cont.)

Level	Measurements (in meters)				NE SE	Ahn Texture	Munsell Value	Section of Unit
	NW SW	Top	NE SE	NW SW				
4	0.380 0.450		-- 0.385	0.520 0.530	-- 0.495	Clay	7.5yr 6/6 10yr 7/8 reddish yellow yellowish brown	second level of pit feature
5	0.520 0.530		-- 0.495		center 0.620	Loamy sand	10yr 3/2 very dark grayish brown	bottom level of pit feature
4N 38W								
1	0.043 0.028		0.056 0.049	0.106 0.114	0.112 0.109	Loamy sand	10yr 3/2 very dark grayish brown	whole unit
2	0.106 0.114		0.112 0.109	0.180 0.185	0.185 0.181	Sand	10yr 3/2 very dark grayish brown	whole unit
3		center 0.184			center 0.530	Loamy sand	2.5yr 4/2 weak red	modern pipe trench
4	0.182 0.185		0.187 0.181	0.300 0.300	0.305 0.300	Loamy sand	10yr 2/2 very dark brown	whole unit
5	0.300 0.300		0.305 0.300	0.385 0.390	0.390 0.405	--	--	whole unit
6	0.385 0.390		0.390 0.405	0.520 --	0.510 0.522	Heavy loam	10yr 3/4 dark yellow- ish brown	whole unit

APPENDIX 2b: LEVEL INFORMATION TABLE (cont.)

Level	Measurements (in meters)				NE SE	Ahn Texture	Munsell Value	Section of Unit
	NW SW	Top	NE SE	NW SW				
32S 29W								
1	0.050 0.070		0.060 0.030	0.135 0.140	0.130 0.125	Heavy loam	10yr 3/2 very dark grayish brown	whole unit
2	0.130 0.140		0.130 0.135	0.185 0.195	0.190 0.195	Light clay	10yr 3/2 10yr 5/6 very dark grayish brown, yellowish brown	whole unit
3	0.185 0.190		0.185 0.190	0.280 0.281	0.255 0.266	Heavy loam	10yr 3/2 very dark grayish brown	whole unit
4	0.280 0.281		0.258 0.266	0.315 0.316	0.290 0.316	Loamy clay	10yr 4/2 dark grayish brown	whole unit
5	0.230 0.242		0.212 0.213	0.300 0.316	0.300 0.295	Light clay	10yr 3/2 w/ 10yr 4/2 very dark grayish brown, dark grayish brown	modern pipe trench
6	0.313 0.312		0.288 0.318	0.450 0.454	-- --	Light clay	10yr 3/2 very dark grayish brown	whole unit

APPENDIX 2b: LEVEL INFORMATION TABLE (cont.)

Level	Measurements (in meters)				NE SE	Ahn Texture	Munsell Value	Section of Unit
	NW SW	Top	NE SE	NW SW				
7	0.377 0.395		0.370 0.442	0.450 0.454	0.438 0.457	Loamy sand w/ light clay	10yr 5/3 10yr 4/1 brown, dark gray	Eastern three-fourths of unit
6N 57W								
1	0.100 0.090		0.090 0.070	0.130 0.110	0.120 0.100	Sandy loam	10yr 2/2 very dark brown	whole unit
2	0.140 0.140		0.130 0.100	0.180 0.200	0.180 0.200	Heavy loam	10yr 3/2 w/ 10yr 8/2 very dark grayish brown white	whole unit
3	0.190 0.190		0.180 0.200	0.310 0.290	0.300 0.250	Heavy loam/ light clay	10yr 3/2-3 very dark gray/ very dark grayish brown	whole unit
4	0.310 0.280		0.290 0.290	0.350 0.320	0.330 0.330	Heavy loam	10yr 4/2 10yr 3/3 dark grayish brown, dark brown	whole unit
50S 27W								
1	0.040 0.065		0.045 0.065	0.069 0.091	0.090 0.091	Sandy loam	10yr 3/1 very dark gray	whole unit

APPENDIX 2b: LEVEL INFORMATION TABLE (cont.)

Level	Measurements (in meters)				Ahn Texture	Munsell Value	Section of Unit
	NW SW	NE SE	NW SW	NE SE			
2	0.078	0.077	0.315 --	-- 0.324	Sandy loam	10yr 3/1 very dark gray	trench running from NW to SE corner
3	-- 0.104	0.096 --	0.299 0.225	0.247 0.275	Light clay/ heavy loam	10yr 4/2 w/ 7.5yr 6/6 dark gray- ish brown, reddish yellow	NE and SW sections of unit
4	0.257 0.225	0.247 0.275	0.290 0.310	0.300 0.333	Loamy sand	10yr 3/2 very dark grayish brown	whole unit
5	0.323 0.305	0.301 0.335	0.386 0.414	0.414 0.420	Clay	10yr 3/1 very dark gray	whole unit
12S 20W							
1	0.085 0.049	0.101 0.032	0.190 0.165	0.198 0.180	Loamy sand	10yr 3/1 very dark gray	whole unit
2	0.190 0.165	0.198 0.180	0.241 0.249	0.240 0.239	Loamy sand	10yr 3/1 very dark gray	whole unit

APPENDIX 2b: LEVEL INFORMATION TABLE (cont.)

Level	Measurements (in meters)				Bottom	Ahn Texture	Munsell Value	Section of Unit
	NW SW	Top	NE SE	NW SW				
3	0.218 0.215		0.218 0.225	0.285 0.259		Loamy sand	10yr 3/1 very dark gray	whole unit
4	0.285 0.259		0.293 0.290	0.322 0.290		Pea gravel	--	whole unit
5	0.322 0.290		0.312 0.288	0.335 0.290		Loamy sand w/ clay	10yr 3/2 w/ 2.5yr 6/2 very dark grayish brown, pale red	whole unit

APPENDIX 3: CATALOGUE OF CERAMIC ARTIFACTS BY FRAGMENT

Ceramic Type	Level and Unit*																					Total												
	4N 38W						10N 23W			23S 27W					50S 27W					12S 20W					32S 29W									
	1	2	3	4	5	6	1	2	3	1	2	3	4	5	1	2	3	4	5	1	2		3	4	5	1	2	3	4	5	6	7		
Tableware	0	4	0	7	3	1	6	9	6	11	4	6	8	2	0	5	3	7	10	14	13	3	0	2	2	2	4	5	1	13	43	193		
Whiteware										1																						1		
Embossed White Ironstone										1	1	2	1									1								2	8			
Unembossed White Ironstone		2		1			4	4	2	5	2	2	5		5	2	5	10	12	10	3						2	2	3	2		10	34	127
Blue-Painted Ironstone																														1	1			
Transfer-Print													1					1													2			
Flown Blue													1													1			1		3			
Edged Ware					1						1																				2			
Banded Ware									1																						1			
Europ. or Amer. Porcelain		1		2	1			3	3	1	1				1	1			1	1						2	1		1		20			
Oriental Porcelain							2	2																					2		6			
Bisque Porcelain				2	1																										3			

APPENDIX 3: CATALOGUE OF CERAMIC ARTIFACTS BY FRAGMENT (cont.)

Ceramic Type	Level and Unit*																					Total											
	4N 38W						10N 23W			23S 27W					50S 27W					12S 20W					32S 29W								
	1	2	3	4	5	6	1	2	3	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7		
Decal Print		1		1																		1						1					4
Rockingham Ware														1																		1	
English Majolica										1																				1		2	
White Stoneware				1		1							2							1										1	3	9	
Other Tableware										2																			1			3	
Utility Ware	0	0	0	1	1	0	0	0	0	4	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	0	0	0	1	5	16
Texas Stoneware					1					1												1										3	
Stoneware-Large Crockery										3																						3	
Stoneware-Small Crockery				1													1			1									1	5	9		
Rockingham-Styled Ware																											1					1	

APPENDIX 3: CATALOGUE OF CERAMIC ARTIFACTS BY FRAGMENT (cont.)

Ceramic Type	Level and Unit*																					Total										
	4N 38W						10N 23W			23S 27W					50S 27W					12S 20W					32S 29W							
	1	2	3	4	5	6	1	2	3	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	6	7	
Flowerpot	1	1	2	2	10	3	2	9	10	6	0	4	0	0	0	0	1	1	0	1	1	0	0	1	0	1	0	0	0	0	0	56
Other	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	5
Doll Fragments (Bisque Porc.)				1				1																								2
Electrical Casing																		1														1
Miscellaneous								1																				1				2
Unit Totals	1	5	2	11	14	4	8	20	16	21	4	9	8	8	2	0	5	5	9	10	16	14	3	0	3	3	4	6	1	14	48	270

\*No ceramics were recovered from unit 6N 57W.

APPENDIX 4: CATALOGUE OF GLASS ARTIFACTS BY FRAGMENT

Level	<u>Clear</u>							Sun-colored Amethyst	<u>Aqua</u>				<u>Bright Green</u>		<u>Dark Green</u>		<u>Amber</u>				<u>Black/Olive Green</u>		Cobalt Blue	<u>White Milk Glass</u>				Level and Unit Totals	
	plain	machine-molded	embossed	pressed	blown-molded	etched	seam unidentifiable		plain	machine-molded	embossed	seam unidentifiable	Bottle Green	plain	machine-molded	plain	embossed	plain	machine-molded	embossed	blown-molded	plain		blown-molded	plain	machine-molded	embossed		pressed
10N 23W																													
1	105	22	11	-	-	-	-	-	2	1	-	1	3	-	-	-	137	33	6 <sup>d</sup>	-	-	-	-	-	-	-	-	-	321
2	149	40 <sup>a</sup>	21	2	-	-	-	-	-	-	-	4	2	2	-	-	44	7	6 <sup>d</sup>	1	2	-	-	-	-	-	-	-	291
3	22	2	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	28	
F1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	2	
Sub-totals	276	64	32	2	-	-	-	1	6	2	1	5	5	2	-	-	183	40	12	1	3	-	1	5	-	-	-	1	642
23S 27W																													
1	13	3	3	2 <sup>b</sup>	-	-	-	3	1	-	1	1	5	-	-	-	9	1	-	-	-	-	1	-	-	-	-	-	43
2	29	6	5	3 <sup>c</sup>	-	-	-	1	2	-	-	12	2	-	-	-	3	-	-	-	-	-	-	5	-	-	-	-	68
3	12	1	2	-	-	-	-	1	3	-	1	-	-	-	-	-	-	1	-	-	-	-	-	3	-	-	-	-	24
4	3	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	6
5	1	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	2
Sub-totals	58	11	12	5	-	-	-	5	6	-	2	13	7	-	-	-	12	2	-	-	1	-	1	8	-	-	-	-	143

APPENDIX 4: CATALOGUE OF GLASS ARTIFACTS BY FRAGMENT (cont.)

Level	Clear	Sun-colored Amethyst	Aqua	Bottle Green	Bright Green	Dark Green	Amber	Black/Olive Green	Cobalt Blue	White Milk Glass	Green Milk Glass	Red	Yellow	Level and Unit Totals
12S 20W														
1	30	1	1	2	1	-	5	2	1	1	-	-	-	54
2	29	1	-	-	-	-	1	2	-	1	-	-	-	39
3	7	1	1	1	2	-	1	-	2	-	1	-	-	18
4	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5	1	-	2	-	-	-	-	-	-	-	-	-	-	6
Sub-totals	67	3	4	2	3	-	7	4	3	1	1	-	-	117
32S 29W														
1	5	-	1	-	-	-	-	-	-	-	-	-	-	7
2	5	-	-	-	-	-	1	-	-	-	1	-	-	7
3	10	-	-	1	-	1	-	1	-	-	-	-	-	18
4	23	2	2	1	4	-	3	-	-	-	-	-	-	41
5	2	-	2	-	-	-	-	-	-	-	-	-	-	2
6	18	2	2	-	-	-	3	4	-	2	-	-	-	47
7	9	-	10	-	-	-	5	10	-	3	-	-	-	44
Sub-totals	72	3	15	1	4	1	13	15	-	5	-	-	-	166



APPENDIX 4: CATALOGUE OF GLASS ARTIFACTS BY FRAGMENT (cont.)

Level	<u>Clear</u>							<u>Aqua</u>				<u>Bright Green</u>	<u>Dark Green</u>	<u>Amber</u>			<u>Black/Olive Green</u>	Cobalt Blue	<u>White Milk Glass</u>			Level and Unit Totals									
	plain	machine-molded	embossed	pressed	blown-molded	etched	seam unidentifiable	Sun-colored Amethyst	plain	machine molded	embossed	seam unidentifiable	Bottle Green	plain	machine-molded	plain	embossed		plain	blown-molded	plain		machine-molded	embossed	pressed	Green Milk Glass	Red	Yellow			
6N 57W																															
1	11	-	1	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	12				
2	1	-	1	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	-	-	-	-	-	9				
3	2	-	-	-	-	-	-	2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	4				
4	3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1	-	-	-	-	-	4				
Sub-totals	17	-	2	-	-	-	-	2	-	-	-	-	-	-	1	-	-	-	-	-	1	-	-	-	-	-	29				
COLOR TOTALS			814					14		67		27		22		3				311		29		9		33		1	1	1	1332

- a. Includes one clear stopper and one clear dropper. The dropper goes with the amber bottle cited in note 'd'.
- b. Both are chandelier prisms.
- c. Includes one chandelier prism.
- d. Includes one whole bottle.

## APPENDIX 5

CALIBRATIONS OF WINDOW GLASS FRAGMENTS BY  
UNIT AND LEVEL TO NEAREST 1/64 INCH

10N 23W	Level 1	4/64"	5		
		5/64"	13		
		6/64"	6		
		7/64"	9		
		8/64"	5		
		12/64"	<u>8</u>		
		Total		46	
	Level 2	4/64"	38		
		5/64"	35		
		6/64"	17		
		7/64"	26		
		8/64"	38		
		9/64"	4		
		11/64"	1		
		12/64"	1		
		13/64"	1		
		14/64"	<u>4</u>		
			Total		165
		Level 3	4/64"	7	
	5/64"		9		
	6/64"		3		
	7/64"		3		
8/64"	<u>3</u>				
	Total		25		
Feature	8/64"	1	<u>1</u>		
	Unit Total		237		
23S 27W	Level 1	4/64"	3		
		5/64"	9		
		6/64"	1		
		7/64"	<u>1</u>		
		Total		14	
	Level 2	3/64"	1		
		4/64"	2		
		5/64"	8		
		6/64"	3		
		14/64"	<u>2</u>		
		Total		16	

## APPENDIX 5 (cont.)

	Level 3	3/64"	1	
		5/64"	5	
		6/64"	1	
		10/64"	1	
		17/64"	<u>1</u>	
	Total			9
	Level 4	7/64"	2	2
	Level 5	7/64"	2	<u>2</u>
	Unit Total			43
12S 20W	Level 2	3/64"	3	
		14/64"	<u>1</u>	
	Total			4
	Level 3	3/64"	3	
		4/64"	5	
		5/64"	2	
		6/64"	1	
		7/64"	2	
		8/64"	<u>1</u>	
	Total			14
	Level 5	5/64"	2	
		6/64"	<u>2</u>	
	Total			<u>4</u>
	Unit Total			22
32S 29W	Level 1	15/64"	1	1
	Level 4	5/64"	4	
		6/64"	1	
		* 18/64"	<u>2</u>	
	Total			7
	Level 6	5/64"	1	
		6/64"	<u>1</u>	
	Total			2
	Level 7	5/64"	1	
		7/64"	<u>1</u>	
	Total			<u>2</u>
	Unit Total			12

## APPENDIX 5 (cont.)

50S 27W	Level 2	3/64"	2	
		4/64"	2	
		5/64"	2	
		6/64"	2	
		11/64"	<u>1</u>	
		Total		9
	Level 3	3/64"	2	
		4/64"	6	
		5/64"	7	
		6/64"	<u>2</u>	
		Total		17
	Level 4	4/64"	6	
		5/64"	3	
		7/64"	<u>2</u>	
		Total		11
	Level 5	4/64"	3	
		5/64"	3	
		6/64"	3	
		7/64"	<u>2</u>	
		Total		<u>11</u>
Unit Total				48
4N 38W	Level 1	3/64"	1	
		5/64"	<u>2</u>	
		Total		3
	Level 2	3/64"	2	
		4/64"	2	
		5/64"	5	
		6/64"	6	
		7/64"	<u>4</u>	
		Total		19
	Level 4	3/64"	6	
		4/64"	6	
		5/64"	10	
		6/64"	6	
		7/64"	3	
8/64"		2		
17/64"		<u>1</u>		
Total			34	

## APPENDIX 5 (cont.)

	Level 5	3/64"	5	
		4/64"	2	
		5/64"	2	
		6/64"	6	
		7/64"	<u>1</u>	
	Total			16
	Level 6	2/64"	1	
		4/64"	1	
		6/64"	<u>2</u>	
	Total			<u>4</u>
	Unit Total			76
6N 57W	Level 1	5/64"	1	
		12/64"	<u>1</u>	
	Total			2
	Level 2	3/64"	3	
		4/64"	1	
		5/64"	<u>1</u>	
	Total			5
	Level 3	7/64"	2	
		8/64"	<u>2</u>	
	Total			<u>4</u>
	Unit Total			11

\* embossed "Nat'l Glass Co."

## APPENDIX 6a

## NAIL FREQUENCIES BY TYPE

	No. Machine Cut Nails	% Machine Cut Nails	No. Wire Nails	% Wire Nails	No. Uniden. Nails	% Uniden. Nails	Total
10N 23W							
Feature 1	1	100	--	0	--	0	1
Level 1	4	50	4	50	--	0	8
Level 2	24	19	91	73	10	8	125
Level 3	29	22	79	61	21	16	129
Pit Total	58	22	174	66	31	12	263
23S 27W							
Level 1	2	9	17	74	4	17	23
Level 2	10	22	25	54	11	24	46
Level 3	5	17	23	79	1	3	29
Level 4	15	58	7	27	4	15	26
Level 5	4	44	3	33	2	22	9
Pit Total	36	27	75	56	22	17	133
6N 57W							
Level 1	--	0	--	0	--	0	0
Level 2	1	9	10	91	--	0	11
Level 3	--	0	4	100	--	0	4
Level 4	--	0	1	100	--	0	1
Pit Total	1	6	15	94	--	0	16
4N 38W							
Level 1	7	78	2	22	--	0	9
Level 2	11	58	6	32	2	11	19
Level 3	1	50	--	0	1	50	2
Level 4	17	29	33	59	9	15	59
Level 5	20	37	23	43	11	20	54
Level 6	5	71	2	29	--	0	7
Pit Total	61	41	66	44	23	15	150
50S 27W							
Level 1	--	0	--	0	--	0	0
Level 2	9	20	30	67	6	13	45
Level 3	6	11	48	84	3	5	57
Level 4	16	31	23	44	13	25	52
Level 5	24	22	56	50	31	28	111
Pit Total	55	21	157	59	53	20	265

## APPENDIX 6a (cont.)

	No. Machine Cut Nails	% Machine Cut Nails	No. Wire Nails	% Wire Nails	No. Uniden. Nails	% Uniden. Nails	Total
32S 29W							
Level 1	4	67	2	33	1	0	6
Level 2	1	0	1	100	1	0	1
Level 3	2	13	11	73	2	13	15
Level 4	3	8	26	72	7	19	36
Level 5	2	100	1	0	1	0	2
Level 6	9	17	29	54	16	30	54
Level 7	13	36	15	42	8	22	36
Pit Total	33	22	84	56	33	22	150
12S 20W							
Level 1	18	55	8	24	7	21	33
Level 2	16	38	13	31	13	31	42
Level 3	27	43	25	40	11	17	63
Level 5	7	39	7	39	4	22	18
Pit Total	68	44	53	34	35	22	156
TOTALS	312	28	624	55	197	17	1133

APPENDIX 6b

CATALOGUE OF METAL ARTIFACTS

	Machine Cut Nails	Wire Nails	Uniden. Nails	Screws	Bolts	Nuts	Washers	Wire	Construction Staples	Spikes	Pulltabs	Crown Bottlecaps	Screw Bottlecaps	Foil	Pencil Eraser Casings	Cartridges and Shotshells	Bucket Handles	Uniden: Circular	Uniden: Rectangular	Uniden: Triangular	Uniden: Corrugated	Uniden: Molded	Uniden: Iron Scraps	Uniden: Non-Iron	Miscellaneous
<b>10N 23W</b>																									
Feature 1	1	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	2	--	--
Level 1	4	4	--	--	1	--	1	--	--	--	12	5	--	--	1	--	--	--	--	--	2	1	--	--	--
Level 2	24	91	10	2	2	1	--	12	--	--	8	6	1	5	1	--	1	--	1	--	3	1	183	1(Pb)	--
Level 3	29	79	21	--	1	--	--	--	1	--	--	2	1	--	--	1	1	2	--	--	1	--	33	--	--
<b>23S 27W</b>																									
Level 1	2	17	4	2	1	3	--	1	--	1	5	2	--	1	--	--	--	1	3(1A1)	--	--	--	9	--	--
Level 2	10	25	11	--	--	--	--	--	--	--	--	--	--	10	--	2	--	--	--	--	1	59	3(monten Pb)	--	--
Level 3	5	23	1	1	--	--	1	--	--	--	--	--	2	--	--	--	--	--	--	1	--	4	--	--	
Level 4	15	7	4	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	
Level 5	4	3	2	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	5	--	--	
<b>6N 57W</b>																									
Level 1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level 2	1	10	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Level 3	--	4	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--
Level 4	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
<b>4N 38W</b>																									
Level 1	7	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4	--	--
Level 2	11	6	2	--	--	--	--	3	--	--	--	--	--	--	--	--	--	--	--	--	--	--	28	--	--
Level 3	1	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	11	--	--
Level 4	17	33	9	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	57	--	--
Level 5	20	23	11	--	--	--	--	--	--	--	--	--	--	--	--	1	--	1	1(Cu)	--	--	1	117	--	--
Level 6	5	2	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	8	--	--	--

APPENDIX 6b: CATALOGUE OF METAL ARTIFACTS (cont.)

	Machine Cut Nails	Wire Nails	Uniden, Nails	Screws	Bolts	Nuts	Washers	Wire	Construction Staples	Spikes	Pulltabs	Crown Bottlecaps	Screw Bottlecaps	Foil	Pencil Eraser Casings	Cartridges and Shotshells	Bucket Handles	Uniden: Circular	Uniden: Rectangular	Uniden: Triangular	Uniden: Corrugated	Uniden: Molded	Uniden: Iron Scraps	Uniden: Non-Iron	Miscellaneous	
50S 27W																										
Level 1	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	10	1	1
Level 2	9	30	6	--	--	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--	--	--	--	16	1	1
Level 3	6	48	3	--	--	1	1	--	--	--	--	4	--	--	--	--	--	--	--	--	--	--	--	32	1	1
Level 4	16	23	13	--	1	--	--	11	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	58	1	1
Level 5	24	56	31	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	1	1	1
32S 29W																										
Level 1	4	2	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1
Level 2	--	1	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	1	1
Level 3	2	11	2	--	--	--	--	--	--	--	--	1	--	--	--	--	--	1 (Cu)	--	--	--	--	--	1	1	1
Level 4	3	26	7	--	1	--	--	1	--	--	--	1	--	--	--	--	--	1	--	--	--	--	10	1	1	
Level 5	2	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	--	1	--	--	--	1	1	1	
Level 6	9	29	16	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	1	--	--	--	18	1	1	
Level 7	13	15	8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	1	--	--	--	--	65	1	1	
																									D ring, possibly from saddle; Al. bell shaped ring, frm canvas awning	
12S 20W																										
Level 1	18	8	7	--	1	--	2	--	--	--	--	1	--	--	--	--	--	--	--	--	--	--	--	3	1	1
Level 2	16	13	13	--	1	--	--	--	--	--	--	--	--	--	1	--	--	--	--	--	--	--	--	4	1	1
Level 3	27	25	11	--	--	--	--	--	--	2	--	--	--	--	--	--	--	--	1	--	--	--	3	1	1	
Level 5	7	7	4	--	--	--	--	--	--	--	--	1	--	--	--	--	1	--	1	--	--	--	1	1	1	
																									door button Al. alloy decorative fitting or furniture hinge	

\* auto signal lamp casing; horseshoe; door knobplate; cutlery handle; harness snap/D clip/bottlecap opener; front half of toy truck (tin); bar pin/barette (silver plated, gilded copper); fragment gas stove lighter

APPENDIX 7

BUILDING MATERIAL WEIGHTS (IN GRAMS UNLESS OTHERWISE INDICATED)

Unit Level/Feature	Brick				Other				Total Building Material
	Soft	Medium	Hard	Brick Total	Mortar	Cement Conglom- erate	Tile	Slate	
<u>10N 23W</u>									
Level 1	219.1	170.1	0	389.2	254.5	10.6	--	--	654.3
Feature 1	38.2	30.5	0	68.7	45.1	--	--	--	113.8
Level 2	1636.7	2403.6	718.6	4758.9	4973.9	344.4	23.2	--	10.10 Kg
Level 3	3653.1	3764.8	30.8	7448.7	111.52 Kg	--	--	--	118.97 Kg
<u>23S 27W</u>									
Level 1	54.5	124.7	327.0	506.2	450.2	--	--	2.9	959.3
Level 2	171.9	538.9	1158.9	1869.7	581.3	--	--	--	2451.0
Level 3	43.1	180.2	27.45 Kg	27.67 Kg	7.2 Kg	--	--	--	34.86 Kg
Level 4	182.5	552.9	442.3	1177.7	395.2	--	--	--	1572.9
Level 5	0.6	30.1	0	30.7	6.3	--	--	--	37.0
<u>12S 20W</u>									
Level 1	37.2	209.6	0	246.8	116.3	--	--	--	363.1
Level 2	41.7	257.1	0	298.8	2155.2	--	28.0	--	2482.0
Level 3	761.7	310.5	0	1072.2	458.6	--	60.6	--	1591.4
Level 4	0	0	0	0	--	--	--	--	0
Level 5	64.3	127.6	0	191.9	334.6	--	--	--	526.5
<u>32S 29W</u>									
Level 1	3.1	16.7	30.0	49.8	243.4	--	--	--	293.2
Level 2	3.0	7.0	2.7	12.7	116.1	--	--	--	128.8
Level 3	10.0	49.3	103.8	163.1	180.9	--	--	--	344.0

APPENDIX 7 (cont.)

Level/Feature	Brick			Brick Total	Mortar	Other			Total Building Material
	Soft	Medium	Hard			Cement Conglom- erate	Tile	Slate	
Level 4	21.1	559.2	0	580.3	86.1	--	--	--	666.4
Level 5	4.8	117.5	0	122.3	89.7	--	--	--	212.0
Level 6	5.4	78.6	0	84.0	22.3	--	--	--	106.3
Level 7	22.7	224.2	0	246.9	109.0	--	--	--	355.9
<u>4N 38W</u>									
Level 1	111.5	315.5	6.0	433.0	737.5	22.4	--	--	1192.9
Level 2	230.2	378.2	45.5	653.9	1399.14	--	--	--	2053.3
Level 3	29.0	62.8	0	91.8	162.7	--	--	--	254.5
Level 4	558.2	1208.8	0	1767.0	1323.5	--	--	--	3090.5
Level 5	242.8	1140.2	0	1383.0	306.0	--	--	--	1689.0
Level 6	164.1	332.4	0	496.5	33.5	--	--	--	530.0
<u>6N 57W</u>									
Level 1	0.6	3.1	1.1	4.8	0	--	--	--	4.8
Level 2	11.0	22.4	52.7	86.1	142.1	--	--	--	228.2
Level 3	279.1	176.3	28.2	483.6	1035.2	--	1.3	--	1520.1
Level 4	85.6	1237.0	0	1322.6	101.2	--	441.0	--	1864.8
<u>50S 27W</u>									
Level 1	0	0	0	0	0	--	--	--	0
Level 2	143.6	252.5	22.7	418.8	259.5	--	--	--	678.3
Level 3	37.4	255.2	0	292.6	264.0	--	1.4	--	558.0
Level 4	58.9	147.5	0	206.4	303.0	--	--	--	509.4
Level 5	634.7	551.4	0	1186.1	2273.9	--	--	--	3463.3

## APPENDIX 8a

## WEIGHTS AND DISTRIBUTION OF COAL/COAL PRODUCTS AND OYSTER SHELL

Unit Level/Feature	Coal/Coal Products (grams)	Shell (grams)
<u>10N 23W</u>		
Level 1	15.0	707.4
Feature 1	--	291.8
Level 2	342.0	246.9
Level 3	292.7	82.7
<u>23S 27W</u>		
Level 1	21.5	179.2
Level 2	46.6	70.8
Level 3	45.3	149.1
Level 4	40.3	22.7
Level 5	0.8	19.0
<u>12S 20W</u>		
Level 1	8.9	54.4
Level 2	5.3	48.4
Level 3	4.1	52.5
Level 4	--	--
Level 5	--	--
<u>32S 29W</u>		
Level 1	--	32.5
Level 2	--	3.1
Level 3	28.7	77.8
Level 4	--	--
Level 5	--	24.4
Level 6	39.4	--
Level 7	95.7	--
<u>4N 38W</u>		
Level 1	20.9	48.5
Level 2	3.9	162.5
Level 3	3.2	8.2
Level 4	19.3	68.7
Level 5	30.7	8.8
Level 6	16.5	2.6

## APPENDIX 8a (cont.)

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Unit Level/Feature	Coal/Coal Products (grams)	Shell (grams)
<u>6N 57W</u>		
Level 1	--	2.9
Level 2	4.8	21.7
Level 3	2.3	35.9
Level 4	7.4	23.7
<hr/>		
<u>50S 27W</u>		
Level 1	--	46.4
Level 2	6.5	155.8
Level 3	5.2	189.7
Level 4	9.8	1.4
Level 5	80.9	208.3

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## APPENDIX 8b

## CATALOGUE OF MISCELLANEOUS ARTIFACTS

	<u>Count</u>	<u>Description</u>	
<u>10N 23W</u>			
Level 1:			
Plastic	3	drinking straw	
	5	styrofoam	
	2	pink spoon	
	2	yellow spoon	
	3	red ballpoint pen ("Dixon Classical 6623 red")	
	1	pen? (with part of address "3704...Hou...")	
	1	black comb	
	3	thin wrapping film	
	8	wrappers (i.e. candy)	
	7	red string (chewing gum packaging?)	
	5	red flagging tape	
	2	hard, clear, unidentifiable	
	1	orange reflector (?)	
	1	red reflector (?)	
	1	clear, circular, unidentifiable	
	1	curved, white and grey swirled (matches piece in level 2)	
	Electrical	2	screw-in light bulbs base
		1	female part wire coupler
	Other	1	string
2		paper wrappers	
1		red carpet fuzz	
2		aluminum wrappers/packaging	
1		rubber belt	
5		pink granite	
Feature 1:			
Other	1	pink granite	
Level 2:			
Plastic	1	curved, white and grey swirled (matches piece in level 1)	
	4	curved, white and grey swirled with green tint	
	1	red, unidentifiable	
	2	green spoon	
Other	1	mass of black tape	
	1	string	

## APPENDIX 8b (cont.)

	<u>Count</u>	<u>Description</u>
	2	red carpet fuzz (matches piece in level 1)
	1	mass - plastic wrapper and paper (cigarette package?)
	1	glass marble, swirled colors
	1	ceramic or vulcanized rubber sphere (golf-ball sized)
	many	pink granite
Level 3:		
Other	1	sewer pipe
	1	vulcanized rubber hose
	many	pink granite
	1	hand-made bone die
	1	shell button
<u>23S 27W</u>		
Level 1:		
Plastic	2	crushed styrofoam cup
	2	cigarette filter frame
	3	packing foam
	2	bandage strips
	1	plastic tube or pipe
	2	square (or rectangular) with impressed ridges and words ("Houston Lighting and Power - SEALED")
	5	thin wrappers (i.e. candy)
	6	hard, brightly colored, unidentifiable
Other	2	twist ties
	1	peach pit
	1	strip white cloth
	1	sewer pipe
	1	hand-made costume jewelry earring
	5	thin green insulated wire
Level 2:		
Other	2	nutshell
	many	cobbles with mortar
Level 3:		
Plastic	2	buttons

## APPENDIX 8b (cont.)

	<u>Count</u>	<u>Description</u>
Other	1	clay marble
	1	insulated wire
	1	intact white apron
Level 4:		
Plastic	1	thin wrapper
Level 5:	--	--
<u>12S 20W</u>		
Level 1:		
Plastic	1	cigarette filter frame
	1	"ziploc" baggy
	1	curved yellow, cup
	1	curved black, unidentifiable
Level 2:		
Other	2	sewer pipe
Level 3:		
Plastic	1	brown, hard, unidentifiable
Other	1	sewer pipe
Level 4:	--	--
Level 5:		
Other	3	sewer pipe
	1	shoe part - series of 4 eyelets set in leather
<u>32S 29W</u>		
Level 1:		
Other	several	cobbles with mortar
Level 2:		
Other	1	flat metal button
	several	cobbles with mortar

## APPENDIX 8b (cont.)

	<u>Count</u>	<u>Description</u>
Level 3:		
Other	many many 1	mortared cobbles asphalt pavement sewer pipe
Level 4:		
Other	several 1	mortared cobbles brass button
Level 5:		
Other	many	mortared cobbles
Level 6:		
Plastic	1	formica tile
Other	1 several	ceramic marble mortared cobbles
Level 7:	--	--
<u>4N 38W</u>		
Level 1:	--	--
Level 2:		
Plastic	1	black plastic film, garbage bag
Level 3:	--	--
Level 4:		
Plastic	1	button
Level 5:		
Plastic	1 1	simulated wood furniture moulding comb ("I. R. Comb Co.'s Unbreak...")
Other	1 1 2	shell button shoe eyelet shoe hooks
Level 6:	--	--

## APPENDIX 8b (cont.)

	<u>Count</u>	<u>Description</u>
<u>6N 57W</u>		
Level 1:		
Plastic	1	crushed styrofoam cup
Level 2:	--	--
Level 3:	--	--
Level 4:	--	--
<u>50S 27W</u>		
Level 1:		
Plastic	1	drinking straw
	3	cigarette filter frames
	1	foam packing
	2	thin wrappers
Other	2	chewing gum
Level 2:		
Plastic	2	drinking straw
	1	unidentifiable
Level 3:		
Other	1	section insulated cable
	1	vulcanized rubber
Level 4:		
Other	1	alligator clip
	1	cylindrical slate object, unidentifiable
	1	plastic plate with metal screw connectors, probably for attaching wires
Level 5:		
Plastic	1	button
Other	1	sewer pipe

## APPENDIX 9a

## CATALOGUE OF FAUNAL REMAINS

## 10N 23W

- Level 1: 1 cow, probable epiphysis of vertebra - broken  
 1 cow, round steak bone, 14 mm thick - handsawn  
 1 medium mammal, unidentified
- Level 2: 1 cow, phalanx, broken  
 1 cow, round steak (probably tibia), 7.5 mm thick, handsawn  
 1 cow, round steak, 6.5 mm thick, handsawn  
 1 cow, rib fragment, cleaver chopped  
 2 cow, unidentifiable fragments  
 8 small-medium mammal, unidentifiable  
 2 chicken, unidentifiable  
 1 medium mammal, vertebral fragment, saw cut
- Level 3: 1 cow, proximal end tibia, epiphysis unfused; handsawn,  
 knife cuts on side  
 1 cow, leg bone fragment with chop marks (hatchet, cleaver)  
 1 cow, epiphysis of trocator of femur  
 1 cow, epiphysis of legbone  
 1 cow, femur fragment  
 1 cow, probable scapula socket  
 1 cow, steak bone (T-bone), 17 mm thick, handsawn  
 1 cow (young), leg bone  
 4 cow, unidentifiable (1 cut with knife)  
 1 cow, rib fragment, hatchet cut  
 1 medium dog, skull  
 18 small-medium mammal, unidentifiable  
 5 bird, unidentifiable  
 1 bird, leg bone

## 23S 27W

- Level 1: 1 unidentified  
 8 medium mammal, unidentified  
 2 white-tailed deer, humerus fragments, distal end
- Level 2: 1 bird bone, unidentified  
 6 medium mammal, unidentified
- Level 3: 1 cow, cervical vertebra, epiphysis unfused, sawed longitudinally  
 1 cow, probably young, ulna, handsawn  
 1 white-tailed deer, ulna, proximal end  
 5 medium mammal, unidentified

## APPENDIX 9a (cont.)

- Level 4: 1 cow, radius (proximal end), handsawn and broken  
3 cow, vertebral fragments, 2 cut w/ saw
- Level 5: 1 cow, pelvic fragment, 91 mm long, handsawn  
1 cow, pelvic fragment, handsawn  
1 cow, scapula fragment, handsawn broken off on 3 sides  
with axe or cleaver  
1 cow, rib, hatchet chopped  
1 cow, round steak, 10 mm thick, handsawn  
2 cow, unidentifiable  
3 cow, fragments of humerus (make up one piece), near  
proximal end, 60 mm long, handsawn  
1 cow, vertebra fragment handsawn  
1 cow, femur fragment (distal), epiphysis broken  
1 cow, epiphysis of head of femur  
1 cow, rib fragment, 78 mm, chopped at each end  
1 cow, fragment scapula, 15 mm long, handsawn  
1 fish, unidentifiable  
3 small mammal, unidentifiable  
5 medium mammal, unidentifiable

## 12S 20W

- Level 1: 2 cow, unidentifiable  
5 medium mammal, unidentifiable
- Level 2: 4 cow, split, unidentifiable (ribs?)  
1 chicken, leg bone  
12 medium mammal
- Level 3: 7 cow, split, unidentifiable - 1 handsawn (ribs?)  
3 medium mammal
- Level 4: 1 cow, unidentifiable  
4 medium mammal

## 32S 29W

- Level 4: 3 cow, unidentifiable
- Level 5: 1 cow, round steak bone, 9 mm thick - handsawn
- Level 6: 1 cow, astragalus (quite large)  
1 cow, patella, broken  
1 cow, rib, 63 mm long, handsawn  
1 cow, rib, handsawn  
1 cow, round steak bone, 16 mm thick, handsawn

## APPENDIX 9a (cont.)

1 cow (young), humerus, 12 mm, handsawn  
 2 chicken, ulna fragments (make a whole)  
 1 bird, unidentifiable  
 18 medium mammal

Level 7: 3 cow, unidentifiable  
 3 cow, parts of round steak (make a whole), 14 mm thick, handsawn  
 2 cow, scapula parts (make a whole), handsawn  
 1 cow, steak bone, from scapula or pelvis, handsawn  
 1 cow, rib  
 1 medium mammal, head of femur, epiphysis  
 1 medium mammal, rib  
 1 medium mammal, vertebra fragment  
 26 medium mammal, unidentifiable

## 50S 27W

Level 2: 1 cow, rib fragment, broken  
 4 medium mammal, unidentifiable

Level 3: 5 medium mammal, unidentifiable  
 1 bird, unidentifiable

Level 4: 1 cow, steak bone, 16 mm thick, handsawn  
 1 cow, rib  
 2 cow, unidentifiable  
 1 white-tailed deer, centroquartal bone  
 1 catfish, trunk vertebra  
 66 unidentifiable fragments - 5 burned

Level 5: 54 medium mammal, unidentifiable  
 2 cow, unidentifiable  
 1 calf, round steak, 10 mm, handsawn

## 4N 38W

Level 1: 1 cow, steak bone, handsawn  
 1 unidentifiable

Level 2: 4 unidentifiable fragments

Level 3: 1 dog, tooth  
 1 cow, pelvic fragment, cut w/ hatchet on 3 sides,  
 probable stew bone

Level 4: 1 cow, leg bone, hack marks  
 6 unidentifiable

## APPENDIX 9a (cont.)

Level 6: 1 unidentifiable

6N 57W

Level 3: 1 chicken, coracoid  
1 unidentifiable

Level 4: 1 unidentifiable

## APPENDIX 9b

## TOTAL COUNTS AND WEIGHTS OF FAUNAL REMAINS BY SPECIES

Excavation Unit	Level	Bone Type	Number of Bones	Total Weight (grams)
10N 23W	1	medium mammal	1	1.3
10N 23W	1	cow	2	9.9
10N 23W	2	cow	6	27.9
10N 23W	2	small-medium mammal	8	7.1
10N 23W	2	medium mammal	1	1.65
10N 23W	2	chicken	2	2.8
10N 23W	3	cow	13	172.2
10N 23W	3	dog	1	134.6
10N 23W	3	small medium mammal	18	12.5
10N 23W	3	bird	6	6.5
Unit Total			58	376.45
23S 27W	1	unidentified	1	0.4
23S 27W	1	medium mammal	8	5.6
23S 27W	1	white-tailed deer	2	26.8
23S 27W	2	bird	1	0.25
23S 27W	2	medium mammal	6	6.7
23S 27W	3	medium mammal	5	5.7
23S 27W	3	unidentified	3	0.5
23S 27W	3	cow	2	100.1
23S 27W	3	white-tailed deer	1	5.8
23S 27W	4	cow	4	62.7
23S 27W	5	small mammal	3	1.3

## APPENDIX 9b (cont.)

Excavation Unit	Level	Bone Type	Number of Bones	Total Weight (grams)
23S 27W	5	fish	1	0.2
23S 27W	5	cow	15	462.9
23S 27W	5	medium mammal	5	15.5
Unit Total			57	694.45
12S 20W	1	medium mammal	5	4.6
12S 20W	1	cow	2	21.1
12S 20W	2	medium mammal	5	15.5
12S 20W	2	chicken	1	0.6
12S 20W	2	cow	4	22.6
12S 20W	3	medium mammal	3	4.8
12S 20W	3	cow	7	24.8
12S 20W	4	medium mammal	4	3.7
12S 20W	4	cow	1	2.2
Unit Total			32	99.9
32S 29W	4	cow	3	14.7
32S 29W	5	cow	1	6.9
32S 29W	6	chicken	2	1.7
32S 29W	6	bird	1	1.1
32S 29W	6	medium mammal	18	28.5
32S 29W	6	cow	6	159.7
32S 29W	7	medium mammal	29	55.3
32S 29W	7	cow	10	77.0
Unit Total			70	344.9

## APPENDIX 9b (cont.)

Excavation Unit	Level	Bone Type	Number of Bones	Total Weight (grams)
50S 27W	2	medium mammal	4	3.1
50S 27W	2	cow	1	8.4
50S 27W	3	bird	1	0.7
50S 27W	3	medium mammal	5	5.7
50S 27W	4	white-tailed deer	1	3.6
50S 27W	4	cow	4	1.2
50S 27W	4	unidentified	66	27.2
50S 27W	4	catfish	1	0.3
50S 27W	5	medium mammal	54	56.5
50S 27W	5	cow	3	19.4
Unit Total			140	126.1
4N 38W	1	cow	1	1.5
4N 38W	1	unidentified	1	0.3
4N 38W	2	unidentified	4	0.5
4N 38W	3	dog	1	1.9
4N 38W	3	cow	1	45.0
4N 38W	4	unidentified	6	3.8
4N 38W	4	cow	1	49.8
4N 38W	6	unidentified	1	2.8
Unit Total			16	105.6
6N 57W	3	unidentified	1	1.6
6N 57W	3	chicken	1	0.4

## APPENDIX 9b (cont.)

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Excavation Unit	Level	Bone Type	Number of Bones	Total Weight (grams)
6N 57W	4	unidentified	1	0.3
Unit Total			3	2.3
SITE TOTALS			376	1749.7

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