INTRODUCTION AND STATEMENT OF PURPOSE

This report presents the results and recommendations of a preliminary cultural resource survey, including archaeological excavations, historical research, and architectural recordation at the Cantrell Warehouse/Enterprise Mill on Stein Highway in Seaford, Sussex County, Delaware (Figure 1 & Plates 1 and 2). The project was undertaken by the Delaware Department of Transportation, Division of Highways, Location and Environmental Studies office. The purpose of the research was to satisfy requirements of Section 106 of the National Historic Preservation Act. In order to accomplish this goal, the site was researched in order to determine its limits, context, and integrity. The mill structure itself was architecturally assessed to determine its structural integrity and significance on both a local and regional scale. Historical research was designed to address several previously published and unpublished appraisals of the structure and the association of the structure with persons of historical significance.

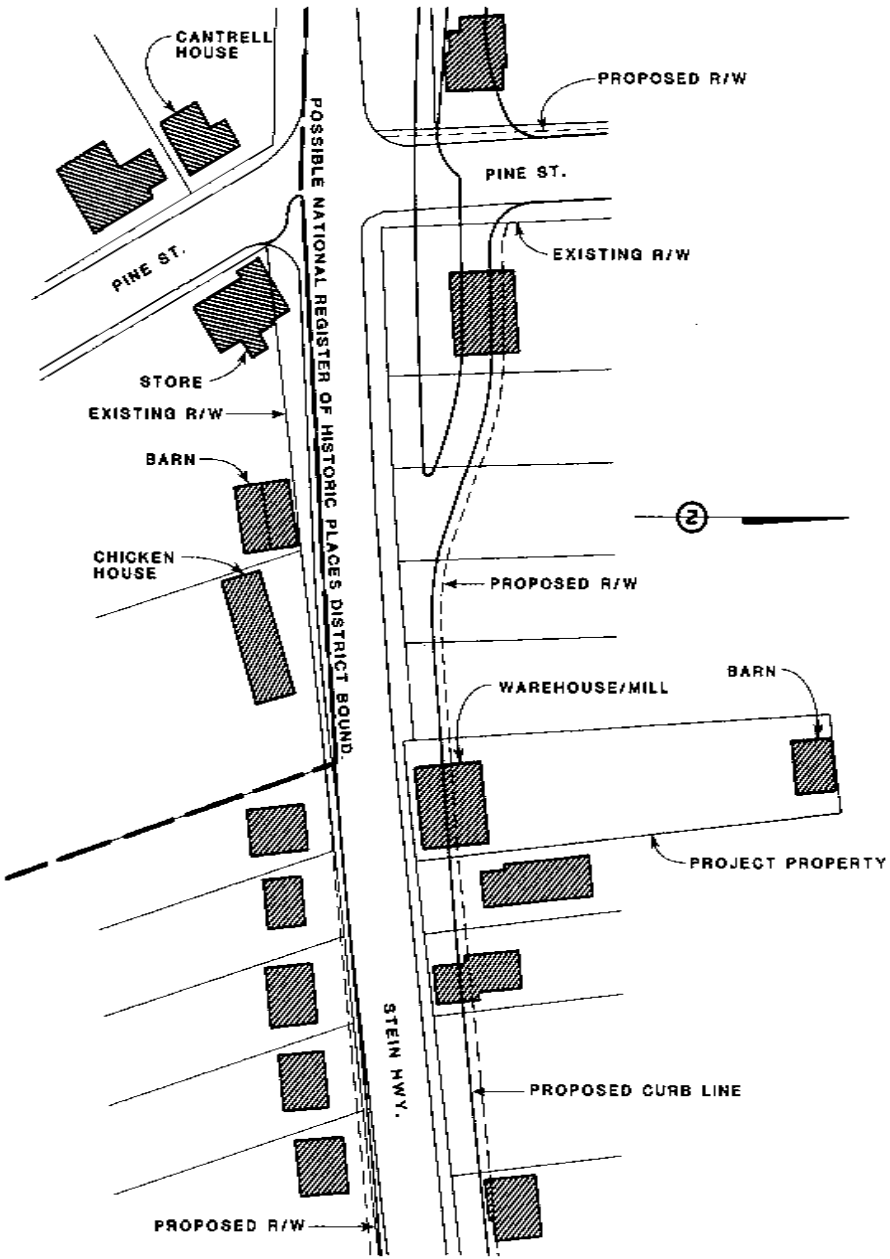
Construction was designed to provide a wider roadbed in order to accommodate existing and anticipated traffic volumes along Stein highway, the major arterial feeder to Route 13 for the town of Seaford. Proposed designs would, in the project area, widen the roadbed to provide for a total of five lanes of traffic. Based on a preliminary cultural resource analysis by the Delaware State Historic Preservation Officer and engineers of the Department of Transportation, the widening and related impact area were selected to be on the north side of the present roadbed. The reason for this decision was the presence on the south

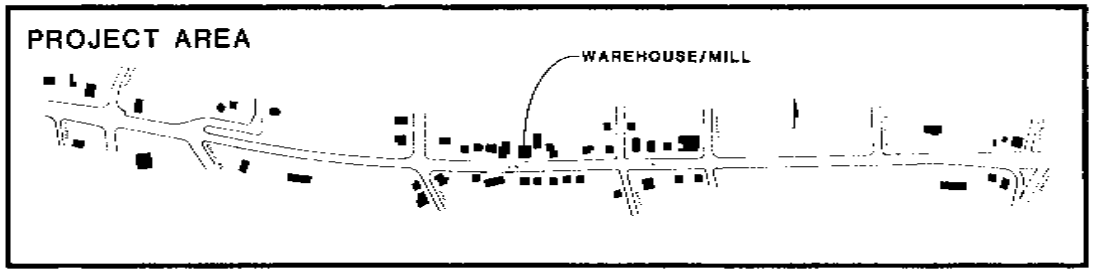
side of the roadbed of several historic structures all thought to be eligible for listing on the National Register of Historic Places (Figure 2). Also present on this side of the right of way were ten residences, all currently occupied, plus a church and graveyard. The Enterprise Mill was the only property of possible historic or architectural significance on the north side of the right of way as determined by the State Historic Preservation Officer on June 30, 1981 (Daniel R. Griffith: pers. comm.).

Preliminary research in the form of photographic recordation and informant interviewing was carried out on all historic structures on both the north and south sides of the present roadway. These structures were considered in the determination of the significance of the property under study. On the south side of the Stein Highway a National Register District has been proposed with boundaries that would roughly coincide with a late to middle 19th century residential addition to the town of Seaford, called Wright's Addition (1872). The northern boundary of this district would be located to parallel the present roadbed of Stein Highway, and would include all the structures along the south side of the road. While a preliminary architectural survey was carried out in June of 1981 by the staff of the SHPO, the surrounding properties have not been surveyed and the town of Seaford itself has not been architecturally surveyed. Within the present project area from Arch Street and Pine Street (Figure 2), ten structures were located on the north side of the highway. On the south side of the Highway between North Market Street and Arch Street three structures were located, and between Arch

FIGURE 2

PROPOSED STEIN HIGHWAY WIDENING DESIGN IN THE PROJECT AREA DELDOT CONTRACT NO. 79-021-05





Street and Pine Street eight residential or support buildings were noted (Figure 2).

The project limits were located along Stein Highway between Front Street on the east running west approximately 4,370 feet to the intersection of Cypress Street. Following the finalization of highway expansion plans in 1978, the SHPO stated that four structures S-2227 (Enterprise Mill), S-2226 (308 Stein Hwy.),S-2224 (Cantrell House), and S-2223 (House and Store Complex) were identified as meriting further research and assessment as to their National Register eligibility. In addition to these properties the DelDOT identified a mid-20th century commercial structure, formerly the Larrimore Dairy, currently B & B Electric Company and the first scientifically engineered chicken house ca. 1923 on the Delmarva, as worthy of photographic recordation. As stated the Enterprise Mill was the only possibly significant structure within the project impact area.

Fieldwork for the project was conducted by DelDOT archaeologists in the winter of 1982. The extant mill structure was measured to produce Historic American Buildings Survey (HABS) quality drawings and archaeological excavations were carried out. Artifact analysis and report preparation were performed by DelDOT Archaeologists. All recovered materials, notes, and other pertinent data resulting from this project were placed on repository with the Delaware Bureau of Archaeology and Historic Preservation at the Island Field Museum and Research Center, South Bowers, Delaware

Appreciation is extended to the following involved individuals for their support, administration, research and services.

INDIVIDUALS OF SEAFORD

Mr. Floyd S. Cantrell, Owner of project property
Mr. William R. Joline, Project property renter
Mr. Howard Larrimore, Previous dairy owner
Mr. Jacob Moore, Operator of Hearn and Rawlins Mill, Hearns Pond, Delaware
Mr. James Phillips, Owner of chicken house

DIVISION OF HIGHWAYS

Raymond M. Harbeson, Jr., Assistant Director Preconstruction
Joseph T. Wutka, Jr., Location and Environmenal Engineer
Carol L. Kates, Secretary & Word Processor
Paul H. Meleri, Draftsperson
Tim O'Brien, Photographer
Glenn B. Pusey, Assistant District Engineer, Maintenance
Ira White, Right-of-Way

FEDERAL HIGHWAY ADMINISTRATION

Manuel A. Marks, Division Administrator
A. George Ostensen, Engineer
Michael J. Otto, Area Engineer

BUREAU OF ARCHAEOLOGY AND HISTORIC PRESERVATION

Daniel R. Griffith, Bureau Chief
Faye L. Stocum, Archaeologist
Alice H. Guerrant, Archaeologist
Joan Larrivee, Historian

UNIVERSITY OF DELAWARE

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Juan Villamarin, Chairman, Department of Anthropology
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Bob Farley, Pressman
Jeff Faulkner, Pressman
Dorothy Hutchins, Machine Person
Joan Pillsbury, Machine Person
Charles Pritchard, Pressman
William Yerkes, Pressman

PHYSIOGRAPHIC SETTING

The environmental setting of the project area consisted of a moderately built up environment on the perifery of the town of Seaford. The project was located within the Lower Coastal Plain which includes most of Kent and Sussex Counties. This area is underlain by the sands of the Columbia Formation (Delaware Geological Survey 1976). Through time these sands have been extensively reworked by various geological processes and the result was a relatively flat landscape. Elevation differences range up to 40 feet and these small differences are further moderated by long gradual slopes. Seaford located on the Nanticoke River is also located within a zone classed as a Chesapeake Headwater Drainage. This zone is characterized by tidal rivers and mostly well drained areas. The town of Seaford is located on a terrace system created by the Nanticoke River. In some locations the elevation change going up the terrace is of sufficient elevational change to define the section as a hill.

PREVIOUS CULTURAL RESOURCE INVESTIGATIONS

Prior to the present research there had been no previous cultural resource studies within the town of Seaford or within the project area. There had been a previously researched historical study of the mill site by Dick Carter, Preservation Planner for Sussex County (see Appendix IV).

RESEARCH DESIGN AND METHODOLOGY

Introduction

The excavation procedures employed were designed to best accomplish the Phase I/II goals of defining the limits,

integrity, and context of the archaeological deposits to determine the eligibility of the site for listing on the National Register of Historic Places. Prior research on DelDOT archaeological projects and consultation with the SHPO had concluded that shovel/postholer tests were well suited for this type of analysis. Further testing if necessary to establish the context of the deposits, was accomplished through the excavation of small, measured test units.

Background and Archival Research

Research conducted during the Phase I background and archival work consisted of a review of historic maps, records, and literature that would be informative in placing the mill and its owners in a cultural historical context in order to ascertain the significance of the complex. The areas in which research were concentrated concerned: 1) the date of construction of the mill, 2) the former owners of the mill, and 3) the operations of the mill and the date of the end of its operation. Especially important in this research was the conducting of informant interviews with people within the area knowledgeable about mills or the actual operation of the Enterprise Mill.

Fieldwork

Fieldwork served to satisfy other research goals. One of these was the testing of a specific area within the present property boundaries to which the mill could be moved without disturbing any subsurface archaeological resources. The other goal was accomplished concomitantly with the determination of the limits of the site. Previous research designs created by the

DelDOT archaeologists has focused on the distribution of artifacts and the determination of activity and midden areas from these distributions (O'Connor et al. 1983; Coleman et al. 1983; 1984; 1985). These maps have been shown from previous results to be very effective in locating areas of high potential for buried archaeological remains. To allow for the precise plotting of the units and to allow accurate map making, a grid was created with the north-south base line placed between the northwest corner of the mill structure and the southeast corner of the barn located at the rear of the property. This base line was designated as the zero line and an arbitrary point was picked on it as the zero north point. Initially the grid was laid out at twenty foot interval, but this was later changed to ten feet to allow for a more precise definition of the site. In areas of ground disturbance, the number of shovel tests was reduced. Shovel tests were excavated to sterile subsoil in order to ensure the correct identification of buried topsoil. This was accomplished by the use of a posthole digger to excavate below the shovel tests, hence the name shovel/postholer tests. Shovel tests were excavated in natural stratigraphic levels in an attempt to discern vertical variation in artifact age and/or function.

Measured excavation units were employed to determine the construction date of the two extant structure and one suspected foundation. All these units were also excavated in natural levels.

During this fieldwork, all potentially eligible structures adjacent to the study corridor were photographically recorded for completeness of the cultural resource survey. No further work was

carried out on these structures as they were out of the project impact area (Plates 3, 4, 5, 6 & 7).

Laboratory Analysis

The laboratory analysis consisted of the washing, marking, and cataloging of the excavated artifacts in accordance with guidelines established by the staff of the Island Field Museum (State Bureau of Museums) and the staff of the Bureau of Archaeology and Historic Preservation. In order to permit the processing of artifacts from excavations prior to the completion of fieldwork, sequential catalog numbers were assigned to excavated units as they were excavated. The resultant provenience number's list is (Appendix I). This system did allow for a significant streamlining of laboratory processing of recovered artifacts. All artifacts were classified according to type, e.g. ceramics, glass, metal, and flora within each provenience. Brick, coal, and slag/ash were noted and discarded in the field. Additional analysis was carried out to identify the form, function, and age of the artifact types (Appendix II). Copies of the report were distributed to the local archaeological community, libraries, schools, and additional copies are on file at the Delaware Department of Transportation, the Island Field Museum, and the Bureau of Archaeology and Historic Preservation.

REGIONAL AND LOCAL CULTURE HISTORY

While Sussex County, specifically the Dutch settlement at Lewes in 1630 was the first in the State of Delaware, after the destruction of the post in 1631 the focus of settlement shifted to the more northern counties of New Castle and Kent. A

PLATE 3

CANTRELL RESIDENCE, SOUTHWEST CORNER OF STEIN HIGHWAY AND PINE STREET (S-2223)

PLATE 4

HOUSE, STORE, SOUTHEAST CORNER OF STEIN HIGHWAY AND PINE STREET (S-2224)

PLATE 5

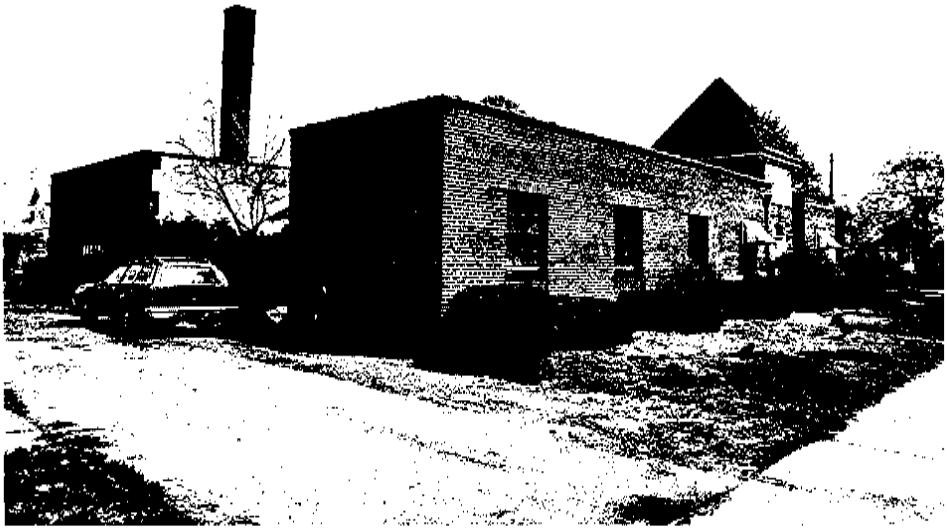
BARNS

PLATE 6

CHICKEN HOUSE

PLATE 7

LARRIMORE DAIRY



permanent settlement was estabished at Lewes (first named Zwaanendael), by Plockhoy's Mennonite colony in 1661 (State of Delaware 1976:5), by which time the settlement had been renamed "Hoerenkil", still later Whorekill. The land dispute between the Duke of York and Lord Baltimore after 1672, was accompanied by a higher degree of maurading and disturbance to settlement than was true in the more northern and less isolated counties. Because of this fear of displacement, early settlement was confined to the settlement at Lewes and to waterways in the eastern part of the county (Hancock 1976). However, following the granting to William Penn and his representatives proprietary rights in 1682 increased settlement in the county, although it remained sparsely settled throughout the late 17th and 18th centuries (Hancock 1976). For several decades after the American Revolution the rate of population growth of the county varied from slow growth to slight declines through the 19th century. The industrial revolution had little impact on the inhabitants means of making a living and continued farming as the principal source of livelihood. It was not until the last years of the 18th century with extensive land clearing and cultivation that settlement occurred in the western portion of the county (State of Delaware 1976).

By late in the 18th century, population increases in Sussex County, however small, had stimulated the growth of population clusters known as hamlets, often surrounding mill seats or at the intersection of county or state roads. Scharf (1888), describes the milling industry as one of the "important factors in the

development of the country" i.e. Sussex County as well as Seaford Hundred. This slightly increased settlement corresponded to the opening of new lands in the Central and Western section of the County for agriculture or timbering. By the early 19th century villages were scattered through the county, serving as marketing centers for the surrounding farms and providing social and educational opportunities for the inhabitants. Seaford, officially platted in 1799 was one of these towns. The general area which was to become Seaford had previously been contained in a land plat issued by Lord Calvert of Maryland to Henry Hooper in 1720 and known as "Hoopers Forest". A son of Henry Hooper was one of the most influential in the platting of the town as the Hooper estate occupied the choisest and most valuable land in the town for settlement. This area in general included the area between the Nanticoke River on the south, Herring Creek on the east, West Street on the north and Market Street on the west. The main county road ran along North Street south to Water, along Water west to the foot of what is now High Street, then south up the hill to what is now Pine Street. Thence south down Cedar Lane and along the river to Jackson's Wharf (Figure 1).

Prior to the platting of Seaford the area had been served by Hooper's landing, about 1 mile down river from Seaford. Changes in the shoaling (depth) of the Nanticoke River allowed the area of Seaford to become the head of navigation for the river. During this early period of settlement many of the residents of Seaford were engaged in the coastal trade with Baltimore and Annapolis. The Nanticoke River provided access by water to the trade of the Chesapeake Bay and beyond. The prosperity brought

by this commerce was evidenced by the tax assessment for Northwest Fork Hundred for 1816 which showed that the town of Seaford already consisted of 27 houses, 1 tavern, 3 storehouses, 3 shops, 4 granaries, and 1 tan yard.

Agriculture, the other major commercial activity in Sussex County followed the style and methods of Maryland as far as the crops grown and the methods of cultivation. In the early period of settlement, this region produced corn and tobacco as did other Maryland counties and Virginia counties in the Eastern Shore. This area of southern Delaware also was more similar to the lower Eastern Shore in the extensive use of slaves to work the agricultural fields. Within Delaware, this area was the most hostile to the emancipation of slaves and local history holds numerous anecdotal stories concerning the slave population in Sussex County. Especially before the introduction of the railroad in 1856, the southwestern section of Delaware can be more accurately described as a part of Maryland than the state of Delaware. This fact offered the Delaware Department of Transportation archaeologists an opportunity to begin to apply the research questions developed for Kent and New Castle Counties to Sussex County. The concepts of marketing strategies and their effort on both the architectural and archaeological remains can also be applied to the project area. Preliminary research has identified that the region differs from Kent and New Castle Counties in both the form of transportation employed (water) and the center of marketing (Baltimore and Norfolk). As such, this research provided the first opportunity to study this socially

and economically different section of Delaware.

By 1830 the town had shown limited growth due to agricultural production and was described in Robert Hazzard's 1899 History of Seaford as consisting, between "the country road on the north (currently Stein Highway) and the river", of about fifty dwelling houses, seven or eight stores, and tanneries. Hazzard also noted that some of the more prominent merchants were "also engaged in the boating business, building them and buying wood and corn for shipping" (Hancock, 1976:118). Seaford continued its slow but steady growth into the middle of the 19th century. By 1840 the town had increased slightly and consisted of 55 dewlling houses and 10 stores. Nearly all of the houses and stores were single-storied and the industries included two tanyards, a blacksmith shop, a tailor, a shoemaker, a carriage, harness and saddle works, and the Boston Mill. Thus by this time the town had developed commercially to act as a full fledged service center for the surrounding agricultural area.

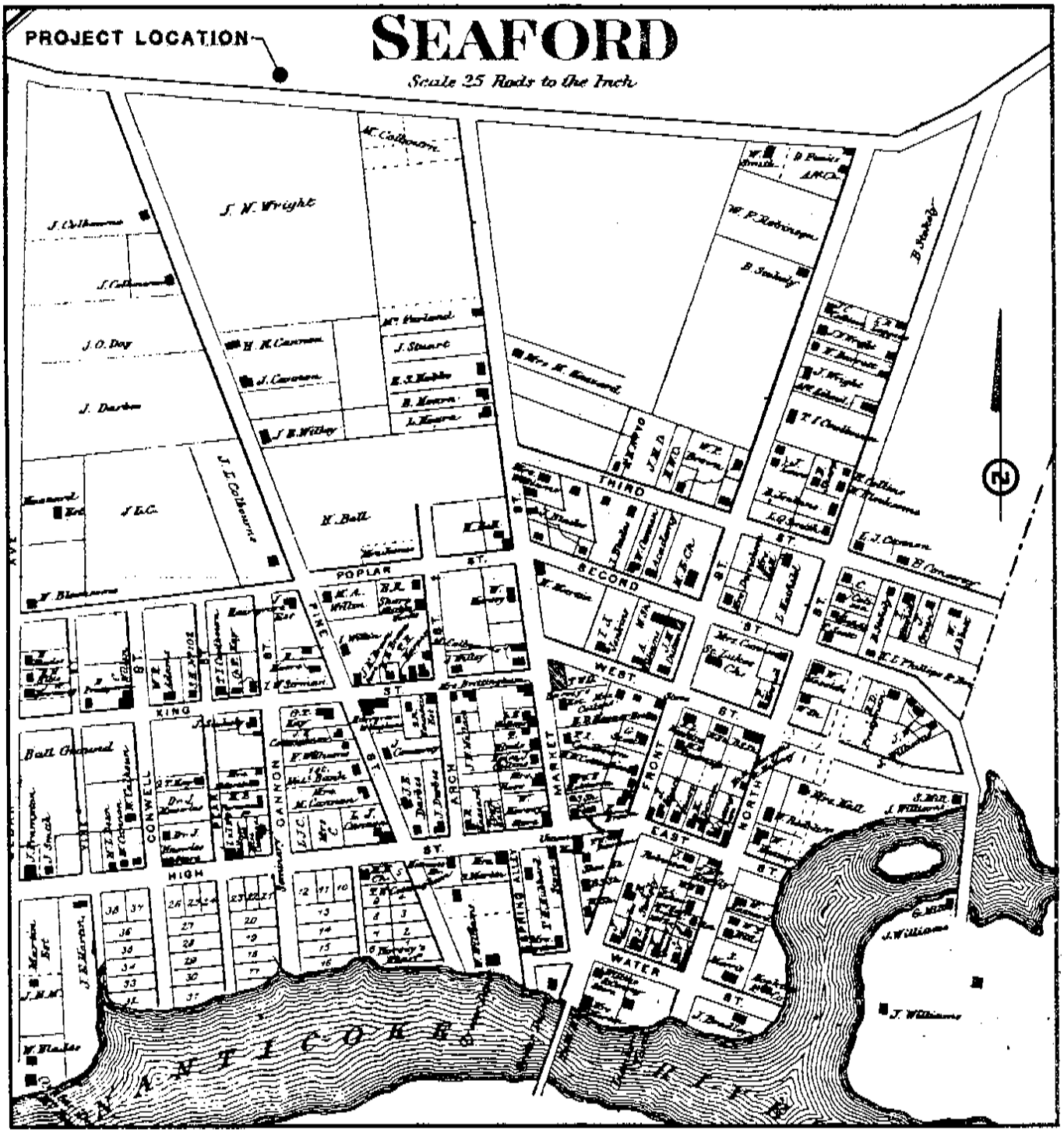
Prior to the introduction of the railroad to Seaford in 1856 the town and region was almost isolated from the rest of northern Delaware. The only form of communication with the north was the infrequent overland coaches that ran to Dona (Dover) and then by water transport to Wilmington. After the introduction of the railroad, the commerce was reoriented from a flourishing trade with Baltimore, Annapolis, and other Chesapeake Bay towns, and was focused on marketing centers along the railroad. This period of increased trade corresponded with much improved methods of agricultural production. This was made possible through scientific application of crop rotation, fertilizing, etc. to

agriculture. Before this in the early 19th century, "The land in lower Sussex was then distressingly poor, and but little more corn was raised then was needed to home consumption; but from fifteen to twenty miles around the corn was hauled to Seaford and sold to these merchants. From Marshope and around Georgetown corn growing regions the corn was hauled to Seaford" (Hazzard 1899). The same source also mentioned that there was not enough wheat grown in ten mile radius (of Seaford) to supply the citizens of Seaford. This information conflicts with some facts given in other local histories (see Hancock 1976 for example) that give the impression that the area was entirely dependant on agriculture. In fact by 1869, with the introduction of the oyster packing business by C. C. Donoho from Wicomico Co., Maryland and W. H. Stevens of Vienna, Maryland many thriving industries were started having no relation to agriculture.

The town of Seaford continued to grow by the process of additional platting of the town in 1853 and 1856 (via Cannon's Division). The incorporation of the town under the laws of the State of Delaware in 1865 gave Seaford the political and financial base for further expansion. "From 1865 to 1895 the growth of the town went steadily forward" (Robinson 1932). By 1868, as illustrated on Beer's Atlas of Delaware (Figure 3), there were at least eight sawmills and three gristmills in Northwest Fork Hundred (now Seaford Hundred) along the Nanticoke River and its tributaries. It seems that every stream, regardless of size, was dammed for water power. This Atlas also shows over 200 structures in the town of Seaford and lists twenty

FIGURE 3

BEER'S ATLAS - 1868



"Merchants" and "Manufacturers" in the Business Directory, only one of whom, Jacob Williams, is listed as a miller.

The 1890's were an especially prosperous period for the community. It was said that the railroad was principally responsible for this growth. "It has literally made the wilderness to blossom as the rose". (Hazzard 1899). During this period, shipping on the Nanticoke, while greatly reduced but still prosperous in terms of income, took backseat to the commerce centered around the railroad. And by the early 20th century Seaford had grown as an agricultural market center and by 1915 it was one of the most important railroad centers on the Delaware line.

Most of Sussex County's population remained middle class farmers into the 20th century; "industries remained closely connected with the soil and the needs of the farmers" and "businessmen in the towns depended for patronage on local residents and farmers" (Hancock, 1976:87). Since 1920 the population of the county has doubled and major industrial enterprises, such as the DuPont nylon factory, have developed. Improved transportation routes and the advent of the automobile during the 20th century have allowed people to live further away from their work and largely replaced rail and water transportation within the state. Farming remains a major source of livelihood, but today the bulk of income in that occupation comes from the broiler chicken industry which began in 1923. However, corn remains an important crop, now primarily used for poultry and hog feed, and on the whole, Sussex County remains rural.

At the initiation of the present historic research, folklore and previous studies (Appendix IV) date the construction of the mill to varying times between the 18th century and 1873. An elderly Seaford resident, now deceased, was reported to have stated that it was "common knowledge" that the mill was originally built in the 18th century (Floyd Cantrell: pers. comm., 1982). The same informant also reported that the mill had been at the site "for at least 147 years" (i.e. that it was constructed before 1835). As the following will show there was no historical evidence that either of these time periods represents the actual construction date of this or any other structure on the site.

Several local residents related that the mill had been built on the site by Governor William H. H. Ross after his term in office (1851-55). Although he did own the property, a search through available public and private papers located no reference to his constructing, owning, or operating a mill at this site. Also, it seems unlikely that Scharf (1888:1301-1315) would make specific reference to both Ross (his extensive land holdings and agricultural prominence, his mansion, and several business ventures with which he was connected) and to many mills throughout Seaford Hundred and yet not mention a mill connected with Ross at the project site. Similar negative evidence refuting an association between the former Governor and the mill occurs in McCarter and Johnson's Historical and Biographical Encyclopedia of Delaware 1882:444-443). It is possible that the incorrectly-made link derived from the fact that the present

Hearn and Rawlings Mill located about two miles north of Seaford on Herring Creek was at one time known as Ross' Mill.

A preliminary assessment of structures in the project area was prepared in May 1981 by Richard Carter, the Sussex County Historical Preservation Planner (Appendix IV). Based primarily on the variation in purchase price of the property through time as recorded in deeds, but also partially on the architectural style and method of construction, the report concludes that the mill was probably built between 1855 and 1873, either during or immediately after Governor Ross's ownership of the property.

A major difficulty in investigating purchase prices in this project as given in the chain of titles (Table 1) was that six separate and combined parcels of land were being transferred, Labeled Lots A through F (Figure 4). The mill came to be located on Lot A. Lot D was purchased in 1863 for $500.00 (Deed 80-219) and lot C (the project area property) was first purchased in 1872 for $116.00 (Deed 84-475). These two properties, A and B plus C and D, were combined (forming Lot E) in Deed 84-477, dated 1873, and purchased for $2,500.00. Mill structure construction could have accounted for the increase in purchase price (Appendix IV) of the overall property (Lot E). The construction of a structure on Lot D and shown on Gray's 1877 map (Figure 5) as the L.B. Brown property (i.e. not the project property) in the ten year span between transferrals of that property was the cause of the increase. Specifically, while no structures appear on the north side of Stein Highway on Beer's Atlas 1868 (Figure 3), one does appear on Gray's New Map of Seaford 1877 (Figure 5) at the northeast corner of Pine Street and Stein Highway (i.e. on Lot D)

TABLE 1

CANTRELL WAREHOUSE/ENTERPRISE MILL

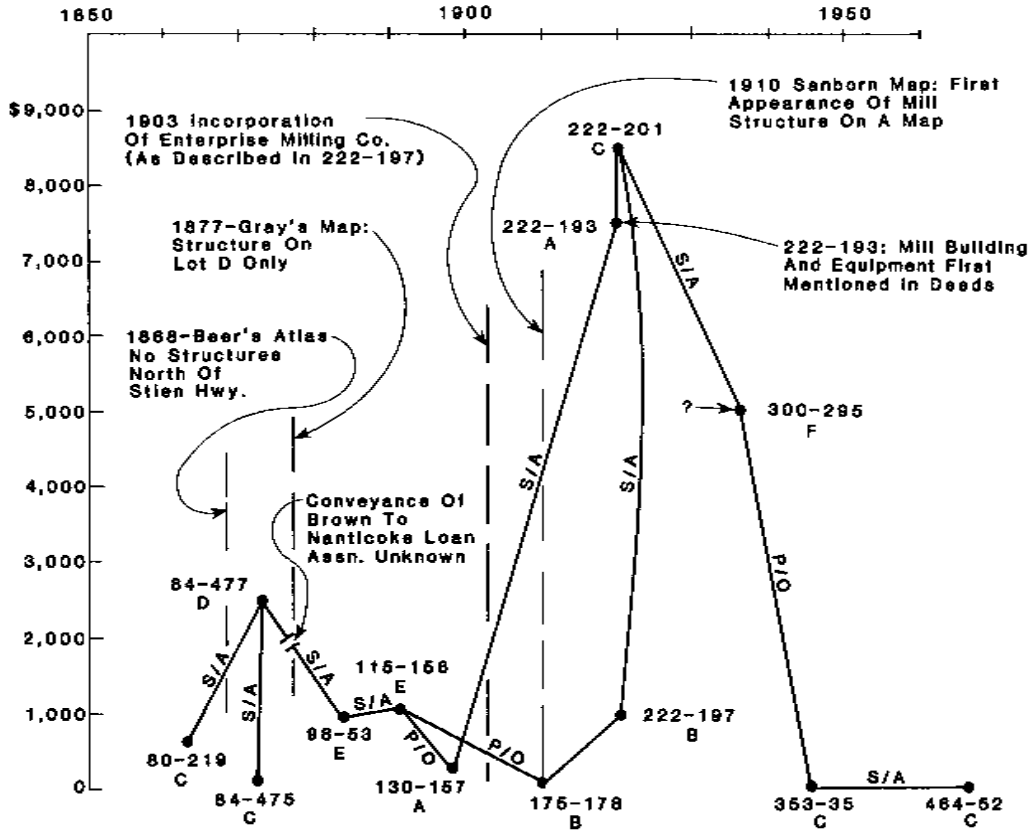
CHAIN OF TITLES

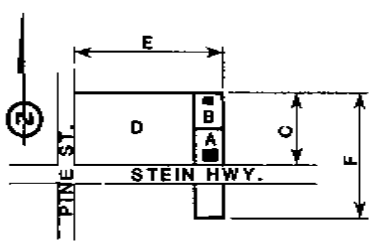
GRANTEE	GRANTOR	DEED	DATE	CONSIDERATION	LOT*	NOTES
F.S. & L.C. Cantrell	J.A. & V.A. Sigrist	464 - 52	08/17/1956	$ 1.00+	C	Current Owner
J.A. Sigrist	H.F. & E.O. Allen	353 - 35	02/02/1945	$ 10.00+	C	
H.F. Allen	Enterprise Milling Co.	300 - 295	01/18/1936	$ 5,000.00	C	
Enterprise Milling Co.	L.W. Allen, et.al.	222 - 201	06/12/1920	$ 8,500.00	F	Notes, Machinery, Grain, etc.
L.W. & H.F. Allen	M.C. Wiley, Trustee	222 - 197	04/26/1920	$ 1,000.00	B	Notes Granary
L.S. & H.F. Allen	M.C. Willey, et.al	222 - 193	04/26/1920	$ 7,500.00	A	Notes grist mill
Enterprise Milling Co.	J. & E. Milligan	175 - 178	10/21/1910	$ 75.00	B	
J.F. Willey, et.al.	J. & E. Milligan	130 - 157	11/07/1898	$ 245.00	A	
J. Milligan	J. Long	115 - 156	10/02/1891	$ 1,100.00	E	
J. Long	Nanticoke Loan Assn.	98 - 53	02/01/1883	$ 950.00	E	
Nanticoke Loan Assn.	L.B. Brown	Unknown				
L.B. Brown	B.W. & M.W. Hurley	84 - 477	10/25/1873	$ 2,500.00	E	
B.W. Hurley	W.H. & E.E. Ross	84 - 475	06/22/1872	$ 116.00	C	Project Property
B.W. Hurley	W.H. & E.E. Ross	80 - 219	03/--/1866	$ 500.00	D	Not Part of Project Property

*See Figure 4

FIGURE 4

ENTERPRISE MILL
CHAIN OF TITLES PURCHASE PRICES





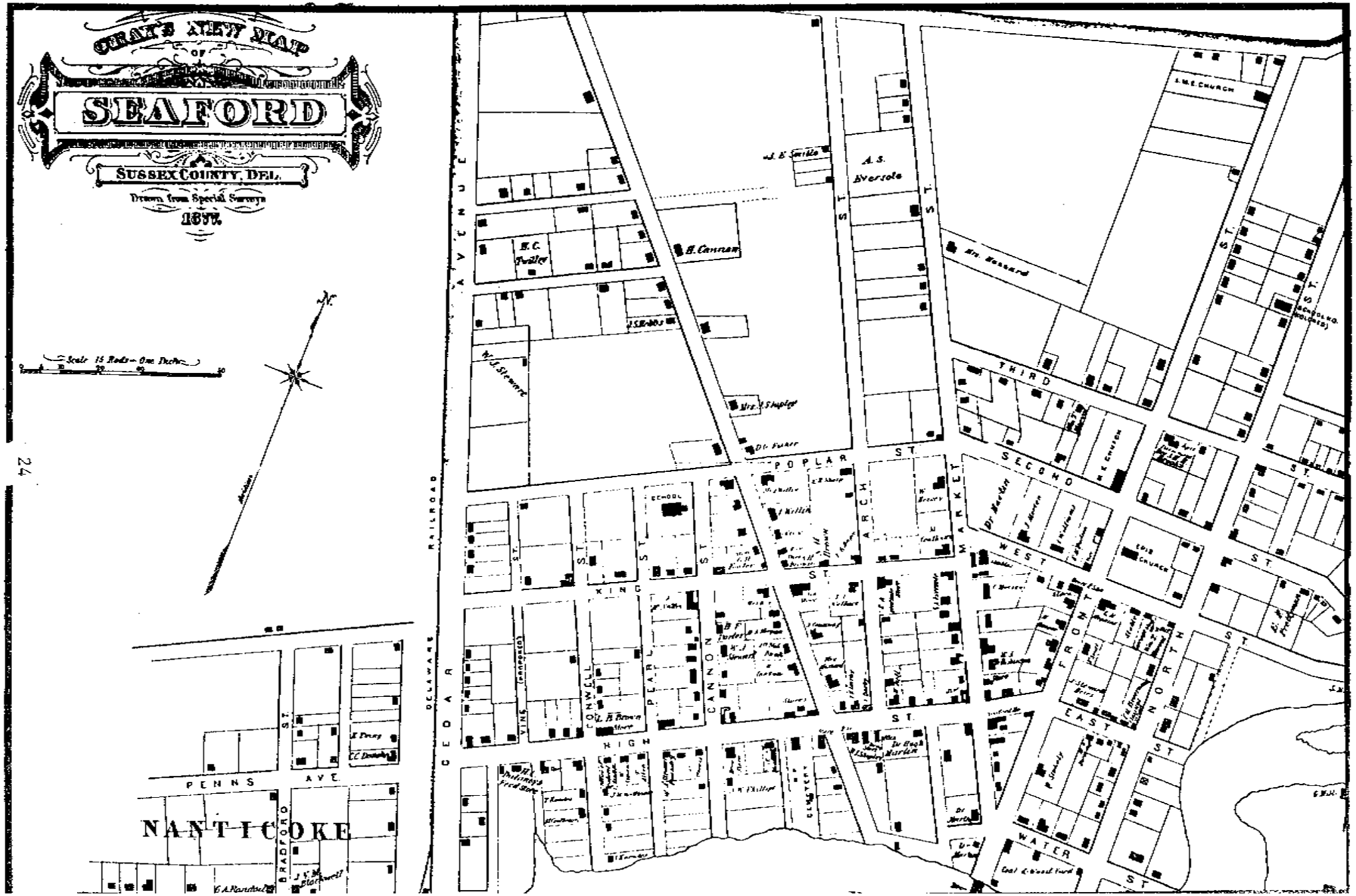
SCHEMATIC OF LOTS
No Scale

KEY

A - South Property Lot, With Mill: 11,250 sq. ft.
B - North Property Lot, With Barn: 8,775 sq. ft.
C - Project Property (A&B): 20,025 sq. ft.
D - Corner Lot, Not Part Of Project Property
E - Lots C And D
F - Lot C And Lot 4 Of Wright's 2nd Addition To Seaford
S/A - Property "Same As" That In Previous Deed
P/O - Property "Part Of" That In Previous Deed
Note - That Parcel Being Transferred Varies And That This Affects Purchase Price.

FIGURE 5

GRAY'S NEW MAP 1877



with no others east of it (i.e. none on Lot C, the project area).

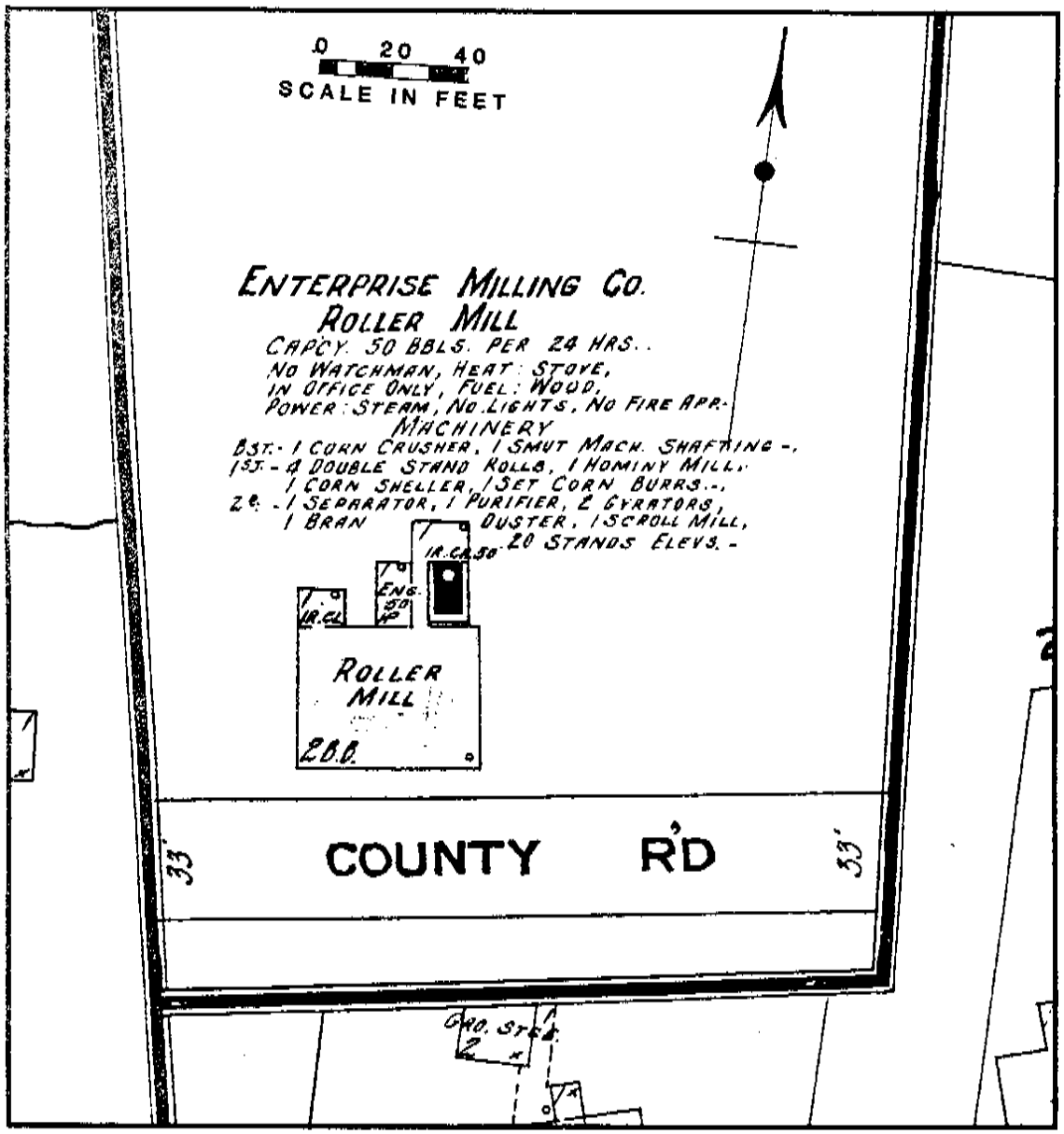
When the overall property was again divided, the cost of the portion of the project property on which the mill building now stands (Lot A) was sold for only $245.00 (1898, Deed 130-157) and the portion on which the barn now stands (Lot B) for only $75.00 (1910, Deed 175-178). The cost of Lot A rises from $245.00 in 1898 (Deed 1390-157) to $7,500.00 when it was next sold in April 1920 (Deed 222-193) and the cost of Lot B increases from $75.00 in 1910 (Deed 175-178) to $1,000.00 in April 1920 (Deed 222-197); these two lots are recombined into Lot C in June 1920 and purchased for $8,500.00 (Deed 222-201). A more likely construction date of the mill structure indicated by reviewing the chain of titles and purchase price was post 1898, i.e. after the overall parcel has been redivided.

Other than this very significant increase in purchase price there was also a wealth of other types of evidence that the mill was constructed between 1898 and 1920. The first direct mention of the mill structure in historical records occurs in tax assessments and business licenses (on file at the Hall of Records, Dover, Delaware) dated 1896-1900. Listed under Joseph Milligan for the Enterprise Milling Company was the notation "Imp. by Mill" (improved by mill) with an assessment for $40.00, the previous assessment for Joseph Milligan having been for $12.50. The Enterprise Milling Company was not legally incorporated until 1903, as described in Incorporation Record No. 1, page 239. The mill structure first appears in the maps reviewed (see Sources Consulted section of this report) on the

1910 Sanborn Map of Seaford (Figure 6). Finally, direct mention of the mill building is not made in any of the deeds until 1920 when Deed 222-193 describes "Mill building, Machinery, Boiler Engine Stock of all kinds both Manufactured and Unmanufactured, and all fixtures pertaining thereto..." The first direct statement of any improvement to the north portion of the project property is the mention of a "grainary" in Deed 222-201 (1920 also).

Other primary research sources were State business directories, Sussex County License Records, and other miscellaneous telephone and Farm Journal directories. These were extensively used in order to establish a more precisee beginning and end date of operation. This research served to support the previous findings on the ca. 1898 construction date of the mill that had been determined by research employing the fluctuation in the property values.

A search of the available busines licenses showed that the first tax paid by the milling operation at the project area was for a six month fee in 1898. The license was registered under the name of Willey and Elliot. For 1899 the registration was for Willey and Elliot for the Enterprise Milling Company with a tax paid of $10.50. The records cover the period up until 1924. During this period The Enterprise Milling Company paid a tax lower than the other two mills operating in the area, Seaford Milling Co. and M. W. Hearn. The comparison with these mills shows that the Hearn Mill paid the highest tax, $9.75, the Seaford Milling Co., $8.90, and Enterprise $8.50. The ranking of the mills held true until 1913 when Enterprise began to pay a



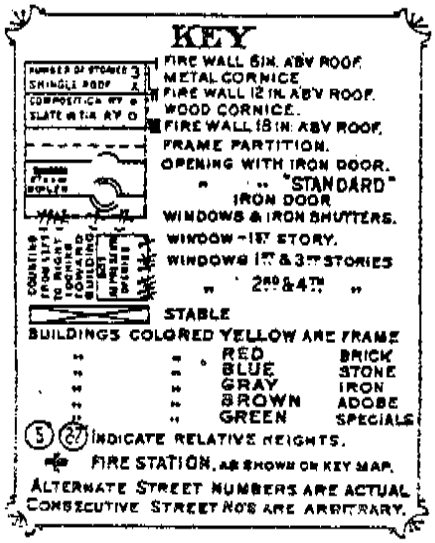


FIGURE 6

CANTRELL WAREHOUSE/ ENTERPRISE MILL 1910 SANBORN MAP COMPANY INSURANCE MAP OF SEAFORD, DELAWARE

higher rate. In conjunction with this ranking change, the rate paid by Enterprise rose significantly during this period and from the records it appears this was the period of greatest prosperity for the milling operation. Taxes were not paid for the years 1923 and 1924.

Information from the business directories provided information also when the beginning date of operation occurred. In 1868 (Figure 3) the only miller listed in Seaford was Jacob Williams, who operated a mill located to the east of the town. The 1882 State directory lists George Burton, W. W. Dulaney, John Willey, and Jacob Williams as proprietors of grist mills. The Dulaney mill was located to the west of town on Chapel Brook and had been previously called Flowers Mill. The location of the mills run by Burton and Willey are not known. In 1884 the mills listed in Seaford were run by Dulaney Bros., Marcellas Hearn, and Oliver Obier. a mill run by Norton and Cortrell in Bridgeville, was also listed and Scharf (1888) mistakenly stated that this mill was located in Seaford on the north side of the Nanticoke River. This mill, described as being built in 1885 by Cotteral, Trout and Green was a three-story frame structure with first class machinery having a Victor wheel and eight sets of rolls, making it one of the best mills in Seaford. The mill thus described was probably that rebuilt in 1884 and run by Oliver Obier. There remains a slight possibility that this mill described was the mill within the project area. However, the research through tax assessments showed that the description of the location of property did not coincide with that of the

project mill property, being described as a mill seat, thus by a water source on a previously developed parcel. The state directories for 1888 and 1891 contain the same mill names and proprietors. The state directory for 1899/1900 lists three millers in Seaford; W.E. Elliot, H. C. Dulaney, and M. W. Hearn. Also listed are the Milligan Brothers proprietors of a general store and J. F. Willey also proprietor of a general store. These three individuals, Milligan, Elliot, and Willey comprise three of the four major stockholders of the Enterprise Milling Company. The last directory searched was for the year 1908/09, in which again three mills are listed for Seaford. The Seaford Milling Company is now running the mill formerly operated by Oliver Obier and the Hearn Mill and The Enterprise Mill were the other mills in Seaford.

Information on the operation of The Enterprise Milling Company in the late 1920's until the termination of the operation were obtained from a 1936 publication, Manufacturing and Industrial Establishments of Delaware. This lists the same three mills still in operation, Enterprise, Hearn and Rawlins, and Seaford Milling. By this time the product of the Enterprise Mill had shifted from feed to the production of lumber. The 1940 and 1942 publications under this title list the same mills, with the Enterprise still producing lumber. The publication for 1948 does not list The Enterprise Milling Company nor the Seaford Milling Company, the Hearn and Rawlins mill being the only mill still in production. The termination date of between 1942 and 1948 agrees with the mid-1940 date of the end of operations given by informants.

It can be unquestionably stated that the Enterprise Mill was constructed to take advantage of the extensive grain agriculture of the surrounding area and because of the excellent transportation facilities offered by the Delaware Railroad. The late 19th century saw many rapid improvements in milling technology as a result of inventions both abroad and from the United States. The most significant advancement was the late 19th century change from the use of mill stones to the use of metal or porcelain rollers to process the grain. Another advancement just as important to the Enterprise Mill was the change in the mode of powering the mill from water to steam. The use of steam power allowed much greater freedom in the location of mills. This allowed areas where the terrain was flat and not near a water source to participate in the milling industry. In fact, it created a new type of mill of very large capacity, and had a tendency to concentrate mills at points possessing favorable transportation facilities. This certainly has applications to the operation of the Enterprise Mill in an area of no topographic relief and where the available water-powered seats had been taken by the early 19th century. The use of purifiers and rollers in the so-called New Process mills featured an operation that was both automatic and capable of a very large per day production of flour. Because of the initial complications with the automatic, all-roller, gradual reduction process, many mills combined the use of both mill stones and rollers during the late 19th century. Other problems encountered with the use of rollers was the separations of the flours during

the milling process. This problem was solved in 1882 by the invention of the gyratory sifter, called a plansifter. Other improvements included cyclone dust collector and separator in 1886. As can be seen in the Enterprise Mill Equipment description (Figure 6) all of these advancements were incorporated in the construction and furnishing of the mill.

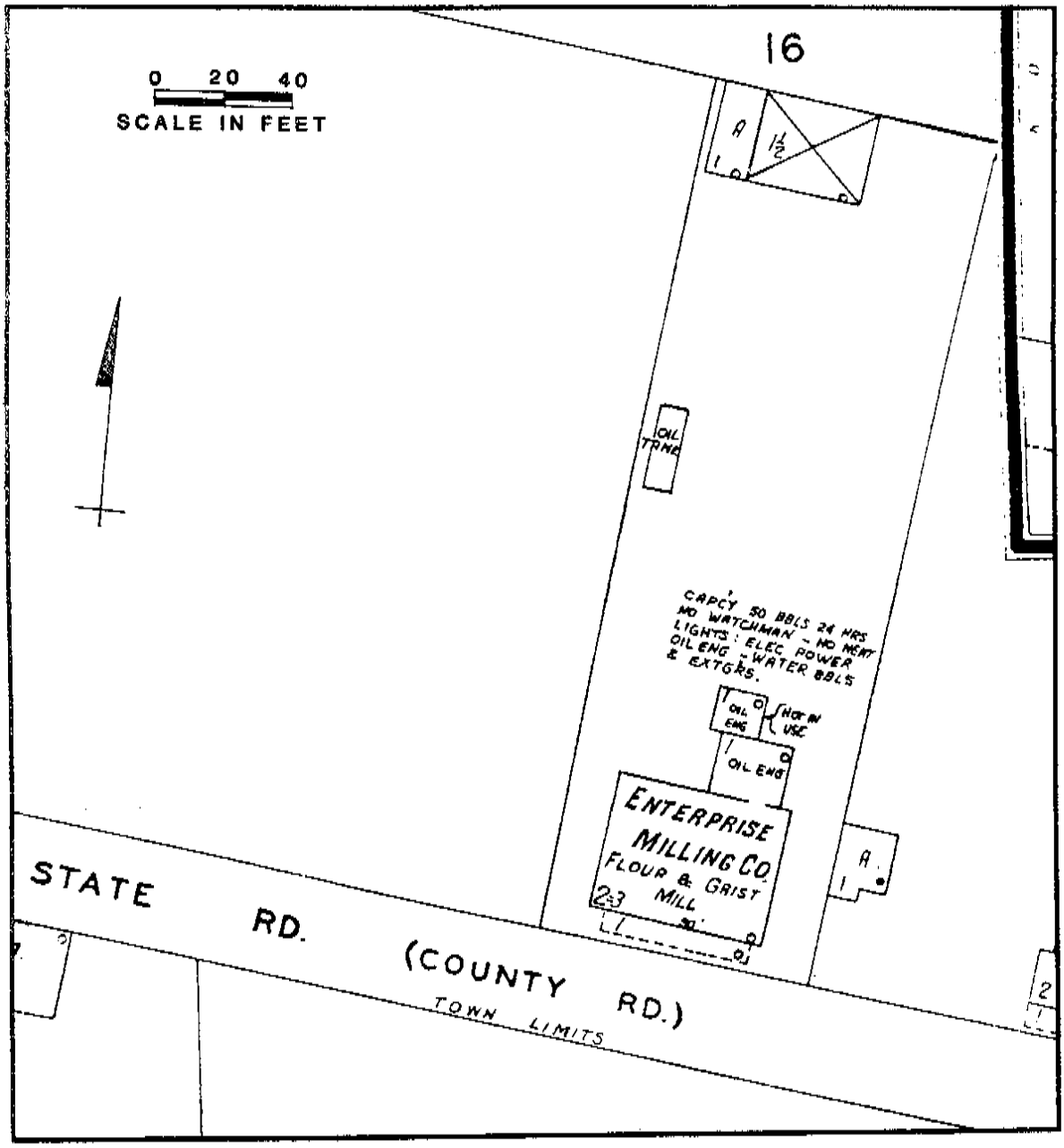
The creation of the extensive roller milling industry was not beneficial to the average small miller. "With the passing of the years more small millers were pushed to the wall than survived, as is clear from the decline in the number of small toll mills from the 23,661 enumerated in the 1840 Census to the 15,782 listed in 1900." Much of the decline took place in the last quarter of the 19th century. From 1840 to 1900 merchant mills grinding grain of all kinds for sale increased from 4,364 to 9,476. The increase in merchant mills at a time when grist mills were disappearing was due to the fact that competition, a growing factor in milling, was eliminating the weak and inefficient and favoring the well-organized economically large scale operations. However, even the large mills found it difficult to return a profit and most turned to the export or long distance transport of wheat or flour via the railroad. As the foreign market faded, and to a certain extent even before, large millers in the United States began to cultivate the home trade. The Enterprise Mill must have sold at least some of its finished product, known as "Enterprise Flour", to local stores as well as feed to nearby farmers. One informant reported that the flour was sold at the store on the southeast corner of the intersection of Stein Highway and Pine Stret one-half block west of the mill (Floyd

Cantrell: pers. comm. 1982).

In the early 20th century another phase of the growing interest of millers was the individual consumer in the growing breakfast food industry and in the home baking industry. Unfortunately for the millers, the consumption of flour by individuals decreased rapidly from 1900 to a low in 1935. In the face of this, many merchant millers went out of business entirely. After a rise to 11,691 establishments in the inventory taken in 1909, the number of merchant mills dropped until it reached a low of 1,243 in 1947, at the very peak of post-World War II production.

The demise of the Enterprise Mill as an operating business followed this trend and occurred during World War II era. The present owner of the property reported that he remembers the mill operating when he walked past it to school in 1940 (Floyd Cantrell: pers. comm., 1982). Mr. Jacob Moore, controlling owner and present operator of the nearby Hearn and Rawlins Mill, reported that the Enterprise Mill had operated much the same as his own mill, and that it went out of business "about 1940 because it didn't have enough business". It can be conjectured that the mill operation was forced to close because of a war-related oil shortage or because the cost of running the mill by oil rather than steam power was greater and therefore its product could not be competitively priced.

Fire insurance maps made by the Sanborn Map Company (under several names) dated 1910 (Figure 6) and 1931 (Figure 7) provide information on the production capacity, machinery, and history of



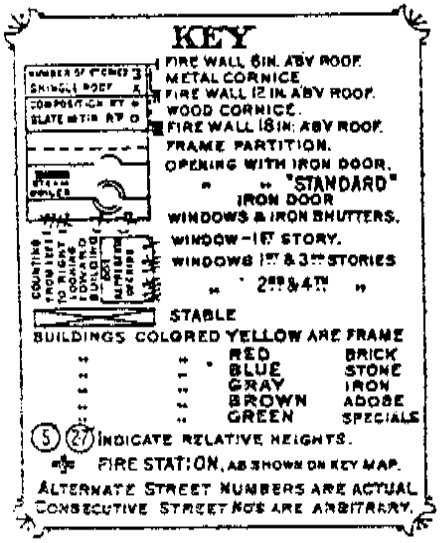


FIGURE 7

CANTRELL WAREHOUSE/ ENTERPRISE MILL
1931 SANBORN MAP COMPANY INSURANCE MAP OF SEAFORD, DELAWARE

the mill operation. The 1910 map shows a capacity of 50 barrels (one barrel equalling 200 pounds of finished product) per day by a steam powered roller mill fronting on the 33 feet wide "County Road" (Stein Highway). It is shown as a frame structure with three one story sheds attached to the rear of the main structure which house a 50 horsepower engine, a steam boiler, and other equipment. All portions of the structure have "slate or tin roofing". Only the office is shown as being heated, with a wood stove, and there are neither lights nor fire protection apparatus. It also lists the machinery contained in the mill by floor; because of similarity of the machinery listed here and that of the still operating Dayett mill near Newark, Delaware, it can be assumed that the operating procedures were much the same. Therefore, Section 3.2 of Mill on the Christina (Demars and Richards: 1980) is reproduced as Appendix V of this report as an example of how the Enterprise Mill probably operated.

Several changes had been made at the site by 1931 (Figure 7). A "stable" (designated "Barn" in this report) had been added at the rear of the lot, and an oil tank is shown approximately halfway back on the lot near the western property boundary. Production capacity remained the same, but the mill had been converted to oil engines (two are shown in two one-story sheds attached to the rear of the mill, one of which is labeled "not in use"). One informant reported that as late as 1940 a wood frame, corrugated tin structure enclosed the oil engine, and that the structure "stood back from" the eastern end of the mill structure as "fire protection" (Floyd Cantell, pers. comm.: 1982). Another informant reported that the mill had been run using a

Fairbank and Morris engine, but it has since been sold (Jacob Moore, pers. comm.; 1982). Electric lights had been added, although there was still "no heat". A frame addition had been added to the front of the building, probably a roof over two loading docks reported by an informant (Floyd Cantrell: pers. comm., 1982). The entire structure continued to be roofed in "slate or tin". The State Road (County Road) on which the mill fronts had been reduced to 30 feet in width, probably as a result of its being macadamed in the previous decade.

The use of the structure as a warehouse began with the 1956 purchase of the property by Mr. Floyd Cantrell. Much of the machinery was sold, although a large amount of chuting, grain elevators, and wooden equipment is still stored in the barn at the back of the property. The original mill stones are reported to be currently used as lawn ornaments at a home between Bridgeville and Federalsburg (William Joline: pers. comm., 1982), although they were not located. Soon after purchasing the property, Mr. Cantrell had the roof replaced, had a cement floor poured in the basement, had that portion of the lot immediately behind the structure "smoothed" by a bulldozer, and had the stone driveway placed on the property (Floyd Cantrell: pers. comm., 1982). Sometime thereafter a rear door was placed in the basement and a ramp leading down to it was excavated. The structure is presently used for storage, and by Joline Enterprises for piano and antique restoration, and the lot immediately behind the structure is currently used for discarding of refuse.

CURRENT RESEARCH

Introduction

The goal of the present research at the Cantrell Warehouse/Enterprise Mill was to gather sufficient data to determine the eligibility of the site for nomination to the National Register of Historic Places. Research was thus directed to defining the limits of the site and to the determination of the contextural integrity of the site. In order to satisfy these Phase II requirements, archaeological testing was accomplished through: 1) a systematic sampling scheme utilizing shovel/postholer test units excavated at 10 foot intervals, 2) excavation of text units in areas suspected to contain features, and 3) the complete excavation of features located by the shovel/postholer tests by measured units. Additionally, a complete architectural and photographic recordation was completed for the extant mill structure to determine the architectural integrity of the structure.

This section of the report will detail the results of the archaeological excavations and architectural recordation at the Cantrell Warehouses/Enterprise Mill site. Prior to the presentation of these results and their interpretation, general comments will be made concerning the site description, site content, and site structure.

Site Description and Structure

The boundaries of the Cantrell Warehouse/Enterprise Mill were completely defined by the present research. The southern boundary was represented by a sidewalk parallel to Stein Highway,

the western, eastern, and northern by concrete property markers and the surveyed property lines running between them. The total area within the site was 20,025 square feet. Approximately 30% of the proposed Cantrell site will be affected by the presently planned road widening. Within the site area, the limits and contents of the site were extensively tested by a total of 95 shovel/postholer tests and 4 excavation units.

At the time of the initiation of the research, the site was completely covered by grass, trees, or shrubs precluding surface reconnaissance for the determination of artifact distribution.

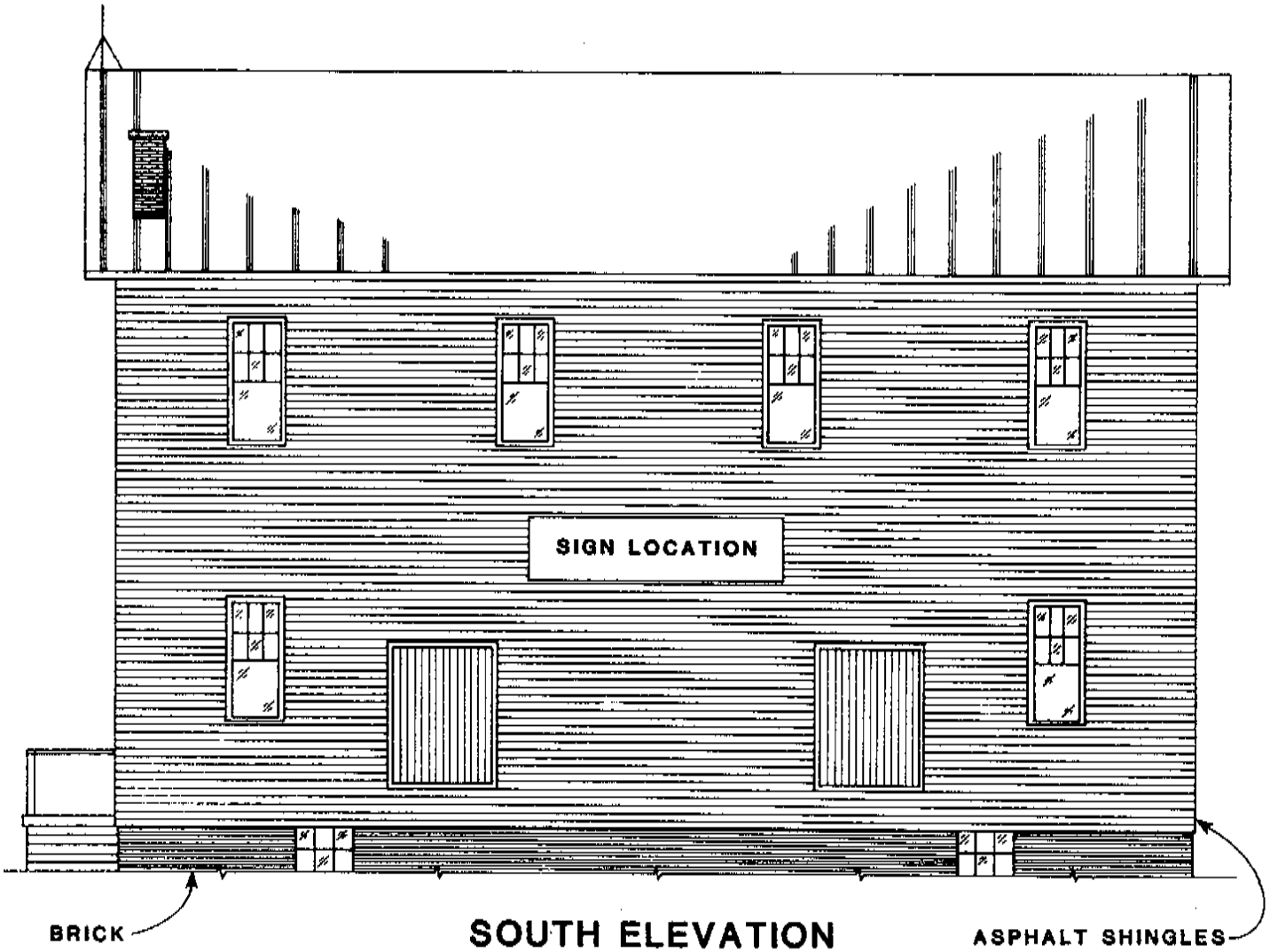
Architectural Recordation

The extant structure is a rectangular (50' 6" x 40' 6"), two story, four bay wide by three bay deep wooden building with a full basement (Plates 1, 2, Figures 8, 9, 10). A common-bond brick foundation supports the oak members of the mortise-and-tenon, braced-frame structure. The beaded tin gable roof has projecting eaves with a plan fascia and exposed rafters on the side walls, and a plain bargeboard (with molded decoration) at the end walls.

The building has been slightly altered from its original appearance. The changes are in the floor plans and exterior appearance (as detailed below) not in structural aspects of the building. The original, circular-saw cuts indicate post-1860 construction; (Mack: 1981). Oak structural members are visible in the interior. The pine clapboarding remains and is visible from the inside, but green asphalt shingle siding has been placed on the outside covering all windows on the east and north sides of the building, first and second floors. Overall the building

FIGURE 8

ELEVATION AND DETAIL



SOUTH ELEVATION
SCALE: 1/8" = 1'-0"

NOTES:

1. Exterior Roof Inaccessible, So Sizes Are Estimated

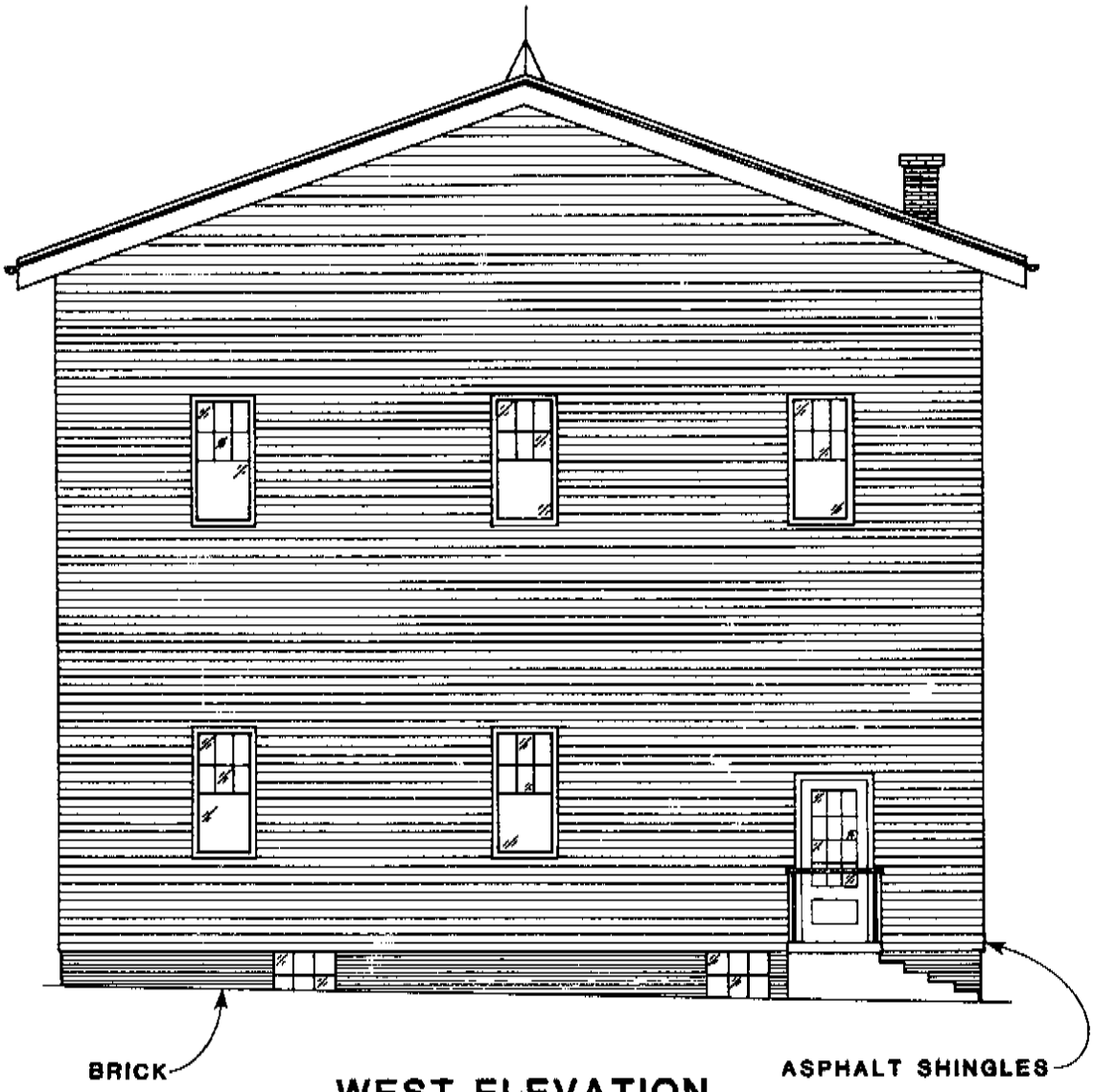
2. Sign Colors
   Background-White
   Joline-Red
   Enterprises-Black

MATERIALS
FOUNDATION: BRICK
WALLS: ASPHALT SHINGLE SIDING
ROOF: BEADED TIN

SIGN DETAIL
SCALE: 1/4" = 1'-0"

FIGURE 9

ELEVATION



WEST ELEVATION
SCALE: 1" = 1'-0"

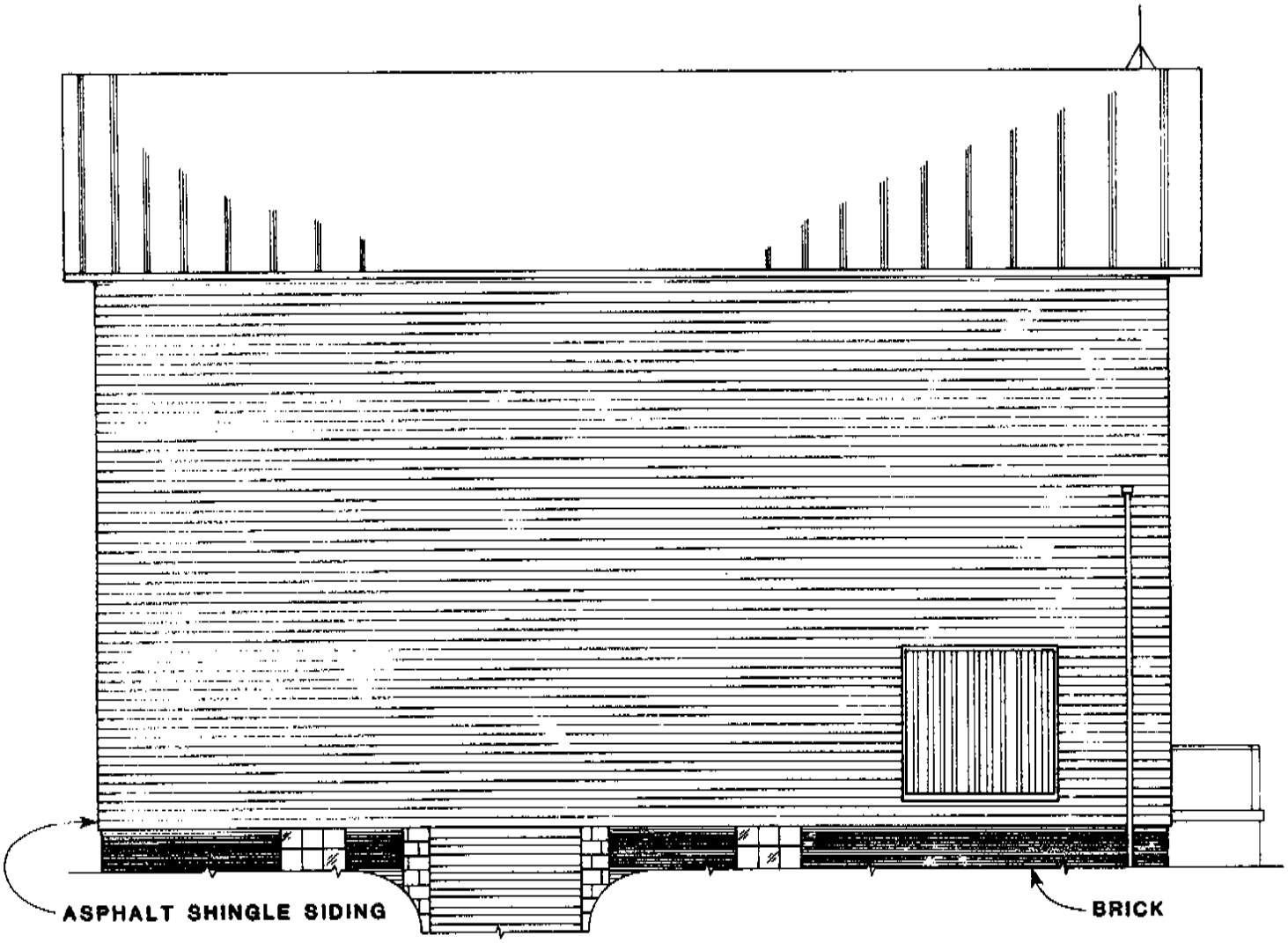
MATERIALS
- FOUNDATION: BRICK
- WALLS: ASPHALT SHINGLES
- ROOF: BEADED TIN
- PORCH: CEMENT WITH CONCRETE BLOCK STEPS

NOTE:

Exterior Roof Inaccessible, So Sizes Are Estimated

FIGURE 10

ELEVATION



NORTH ELEVATION
SCALE: 1/8" = 1'-0"

MATERIALS
- FOUNDATION: BRICK
- WALLS: ASPHALT SHINGLE SIDING
- ROOF: BEADED TIN

NOTE:

1. Exterior Roof Inaccesible, So Sizes Are Estimated

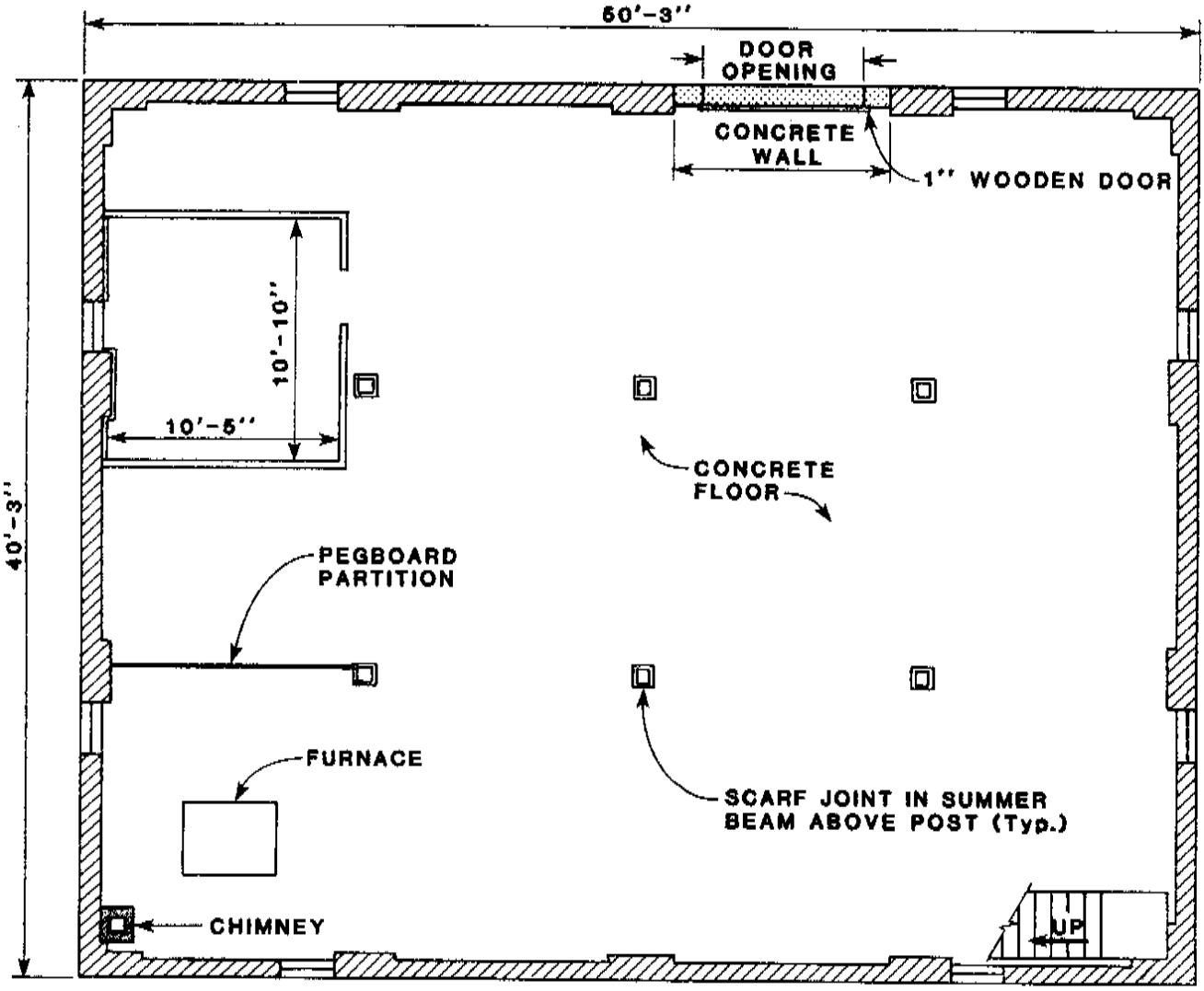
is structurally sound although some of the visible wood shows signs of partial rotting. Vandalism has been limited to broken windows. In response to this, many of the remaining windows not covered by siding have been covered with plywood or corrugated tin (Plates 1, 2).

The basic floor plan of all three floors is an open rectangle four bays wide and three bays deep formed by the framing of the building (Figures 11, 12, 13, 14, 15, 16). The twelve bays per floor are created by the repetition four times front to back of five vertical support members. Along the walls, brick buttresses form these supports in the basement and 8" x 8" posts form them on the first and second floors. The six interior vertical supports are free-standing posts on each floor, 9-3/4" x 9-3/4" (on brick footings) in the basement and 8" x 8" on the first and second floors. Horizontal framing is by 10" x 10" sills, 8" x 8" girts and plates, and summer beams (9-3/4" x 9-3/4" above the basement, 8" x 10" above the first floor and 8" x 8" above the second floor) which parallel the end walls. The summer beams have scarf joints centered over interior posts so that in each case there is a two bay long summer beam connected by a scarf joint to another, one bay long, the location of these joints varies from bay to bay and floor to floor (Figures 10, 11, 12, 15).

Two methods of detail in framing provide support in the structure's construction - bracing along the walls, and beam seats in the interior. Along the walls of the first and second floors 5" x 4" bracing is mortised-and-tenoned into the posts and

FIGURE 11

PLAN AND DETAIL

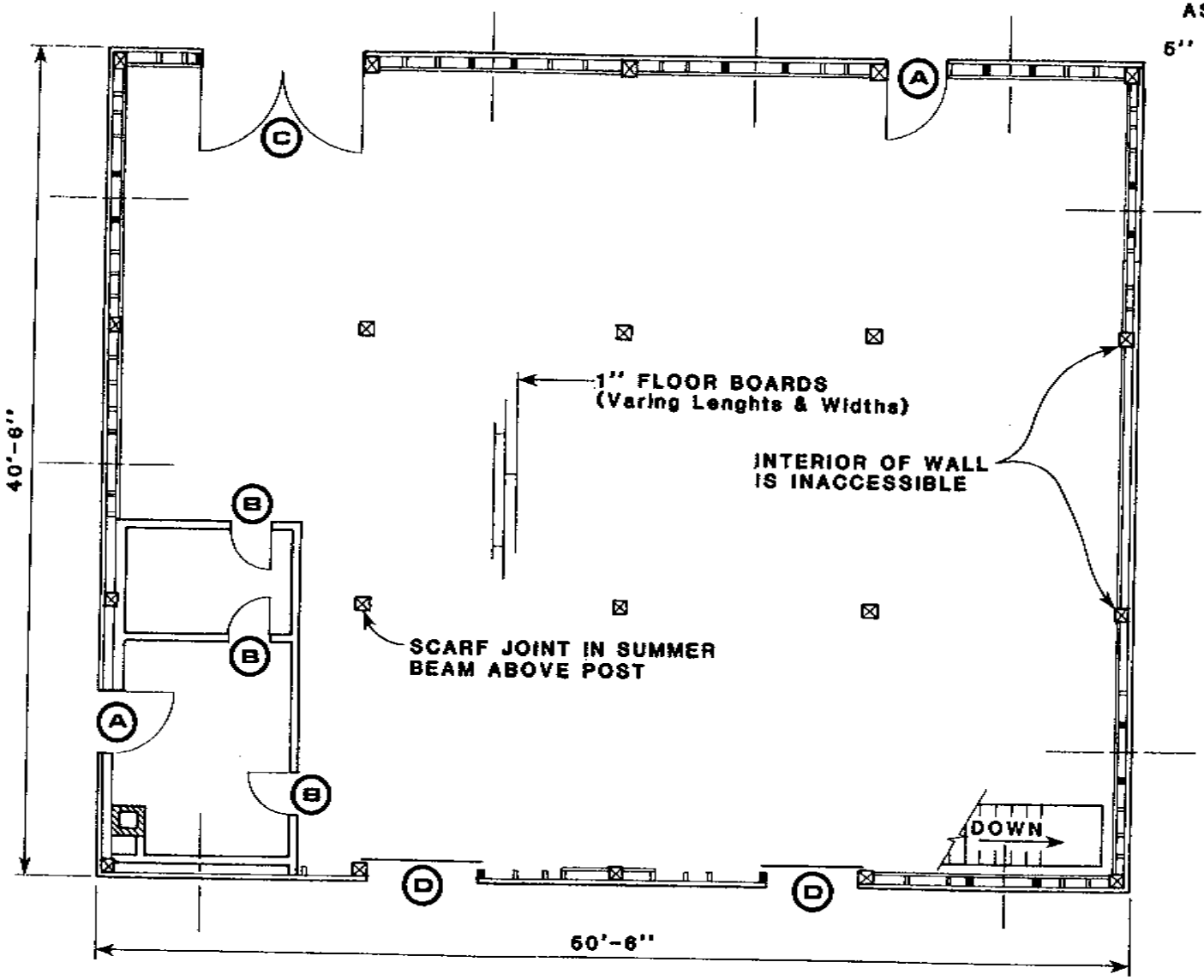


BASEMENT PLAN
SCALE: 1/8" = 1'-0"

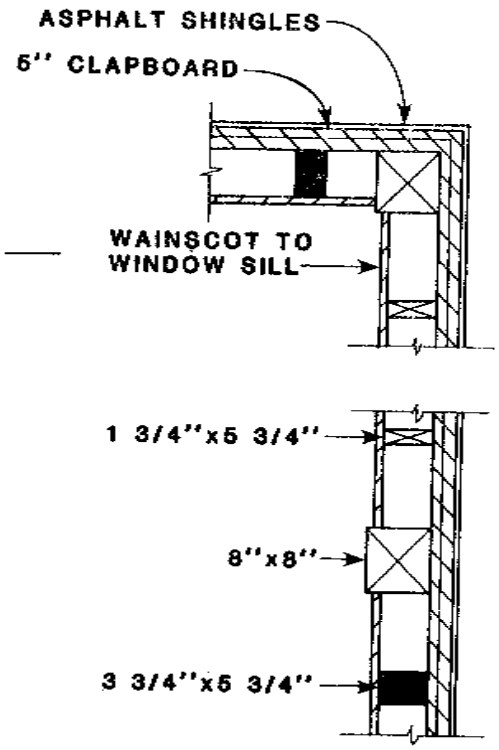
DETAIL OF PILASTERS
SCALE: 3/8" = 1'-0"

FIGURE 12

FLOOR PLAN AND DETAIL



FIRST FLOOR PLAN
SCALE: 1/8" = 1'-0"



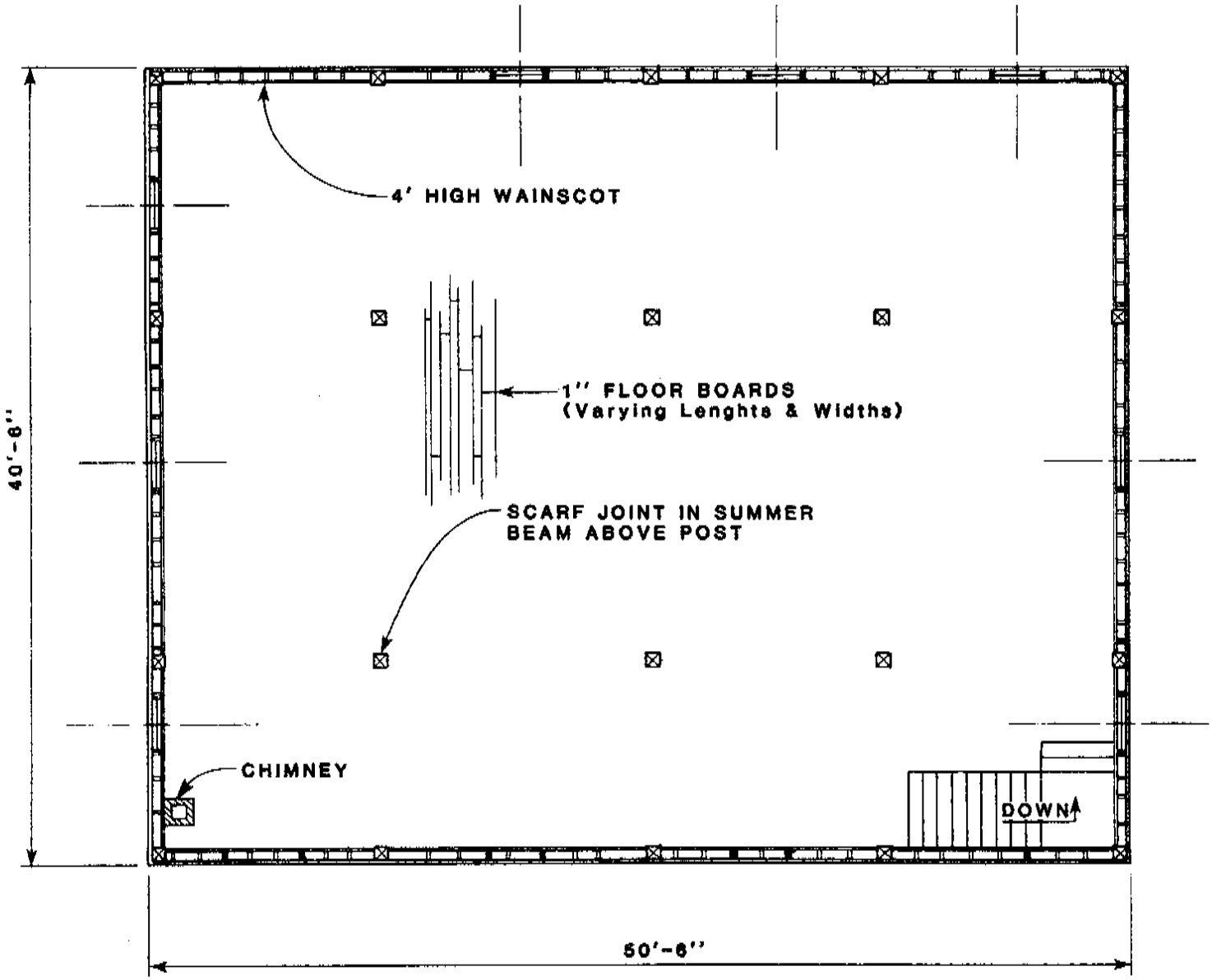
WALL DETAIL
SCALE: 1/2" = 1'-0"

KEY:

- (A) - 3'-0" Single
- (B) - 2'-0" Single
- (C) - 4'-0" Double
- (D) - 5'-0" Sliding

FIGURE 13

FLOOR PLAN



SECOND FLOOR PLAN

SCALE: 1/8'' =1'-0''

KEY:

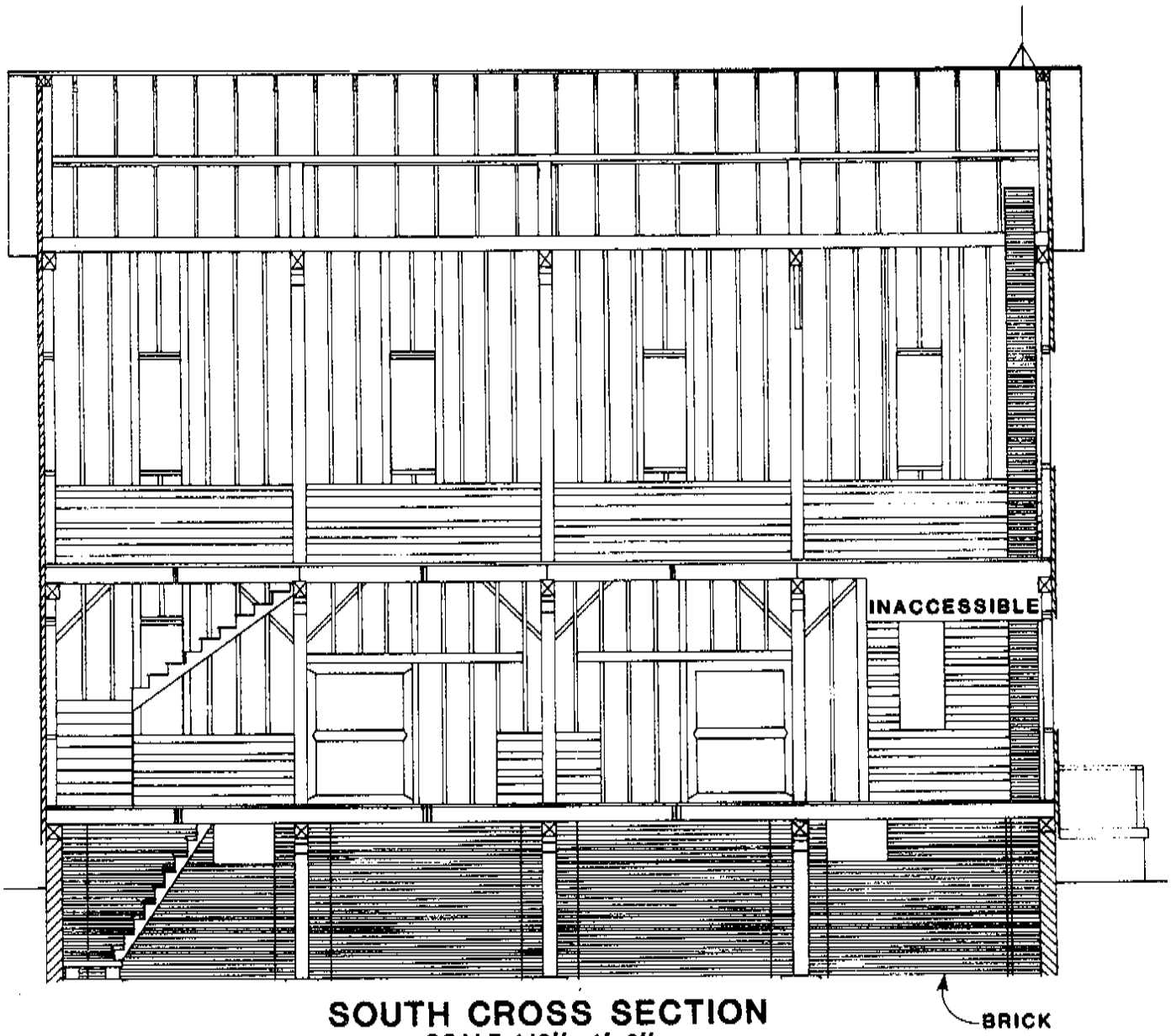
1 3/4''x5 3/4''

3 3/4''x5 3/4''

8''x8''

FIGURE 14

CROSS SECTION



SOUTH CROSS SECTION
SCALE: 1/8" = 1'-0"

NOTES:

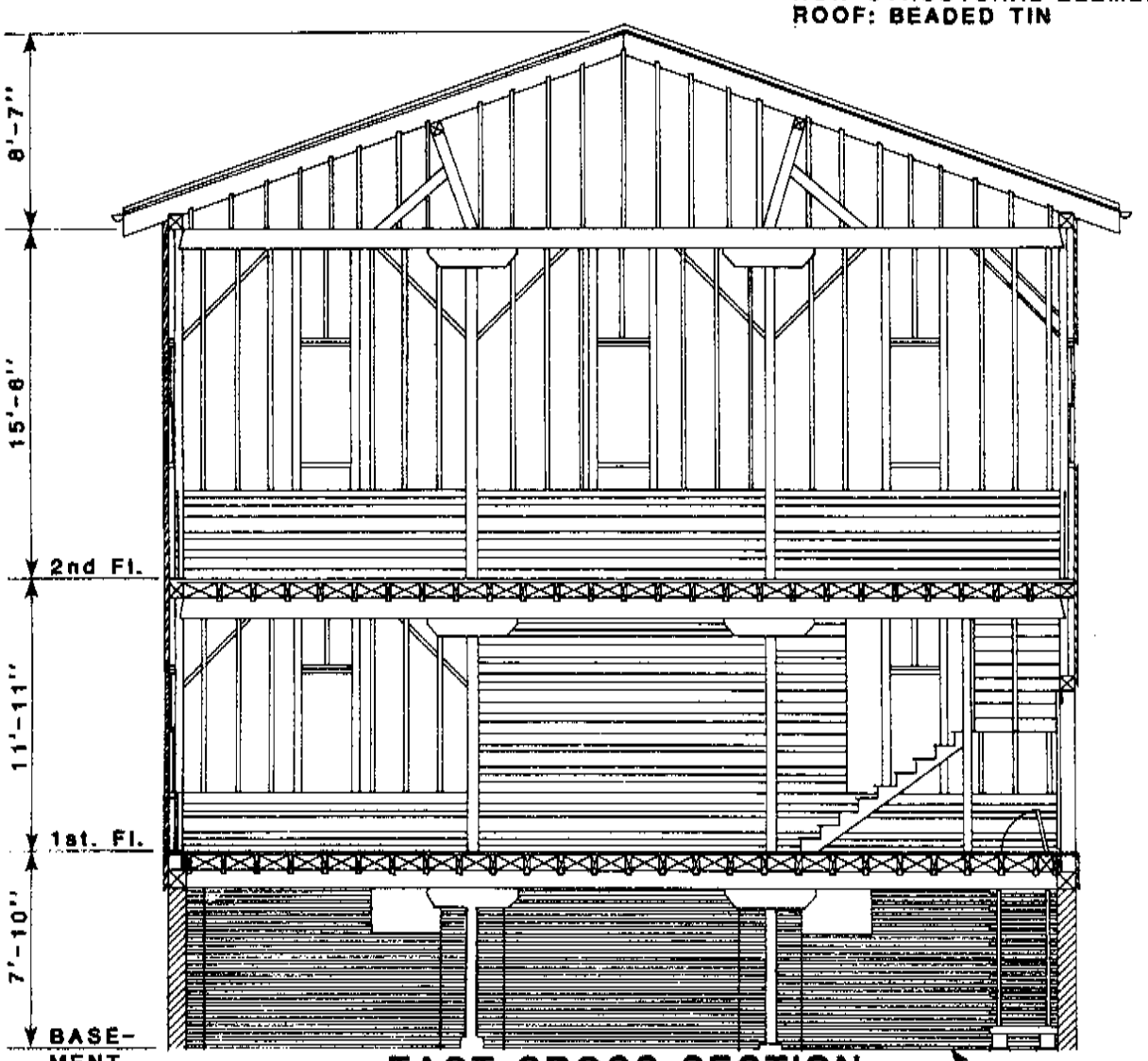
1. Exterior Clapboard Siding, Visible Between Studs, And Roof Boards, Visible Between Rafters, Omitted For Clarity
2. For Machine Bracing Above Second Floor, See Fig. 22
3. Basement Windows Boarded Up On Interior
4. Rafter Spacing And Exterior Roof Inaccessible, So Sizes Are Estimated

MATERIALS
- FOUNDATION: BRICK
- STRUCTURAL SUPPORT: OAK
- NON-STRUCTURAL ELEMENTS: PINE
- ROOF: BEADED TIN

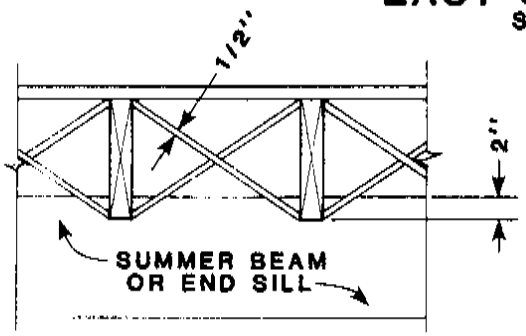
FIGURE 15

CROSS SECTION AND DETAIL

MATERIALS
FOUNDATION: BRICK
STRUCTURAL SUPPORT: OAK
NON-STRUCTURAL ELEMENTS: PINE
ROOF: BEADED TIN



EAST CROSS SECTION
SCALE: 1/8" = 1'-0"



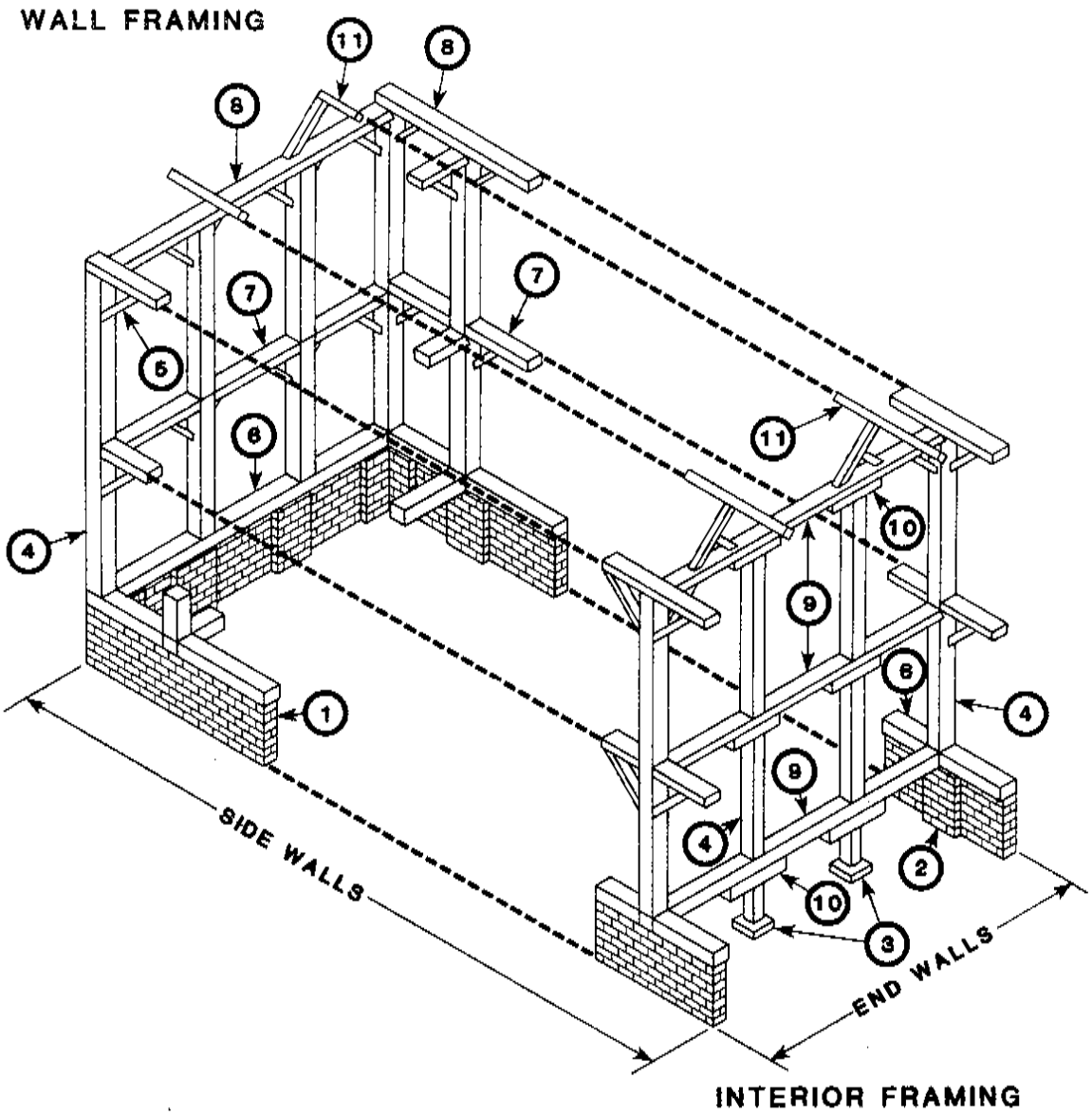
DETAIL OF FLOOR JOIST CROSS BRACING
SCALE: 3/4" = 1'-0"

NOTES:

1. For Machinery Bracing Above Second Floor, See Fig. 22
2. Basement Windows Boarded Up On Interior, 1st. & 2nd Floor Windows Covered By Exterior Shingle Siding
3. Exterior Roof Inaccesible, So Sizes Are Estimated

FIGURE 16

FRAMING DIAGRAM



KEY:

1–FOUNDATION WALL
2–PILASTER
3–POST FOOTING (Interior Only)
4–POST
5–BRACING
6–SILL
7–GIRT
8–PLATE
9–SUMMER BEAM
10–BEAM SEAT
11–PURLIN

PLATE 8

DETAIL OF POST AND GIRTS,
MORTISED AND TENONED BRACING

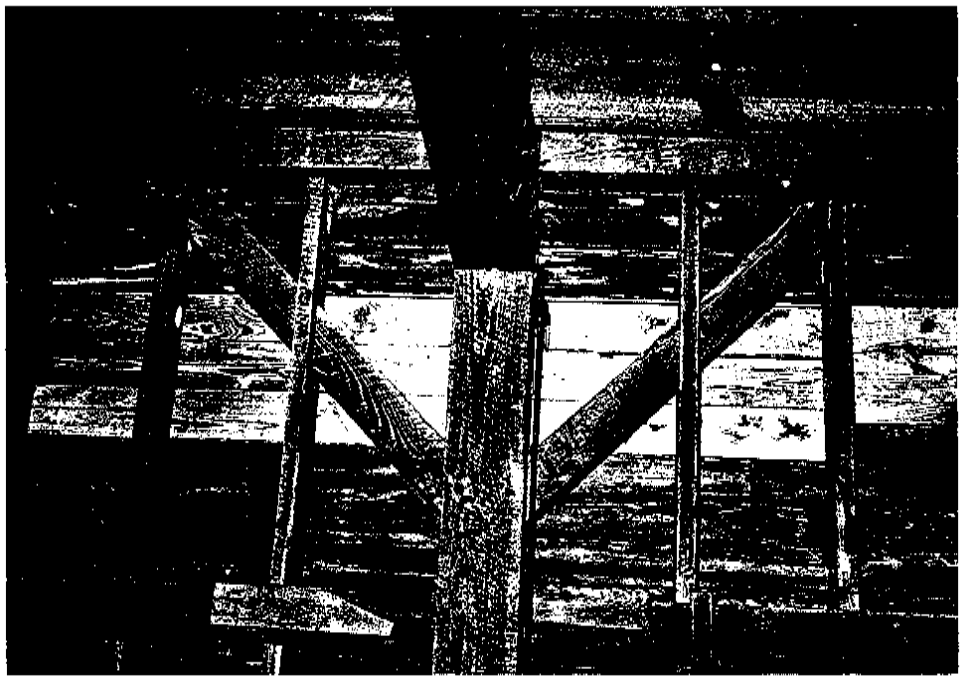


PLATE 9

DETAIL OF POST AND BEAM SEAT
OF SCARF JOINT

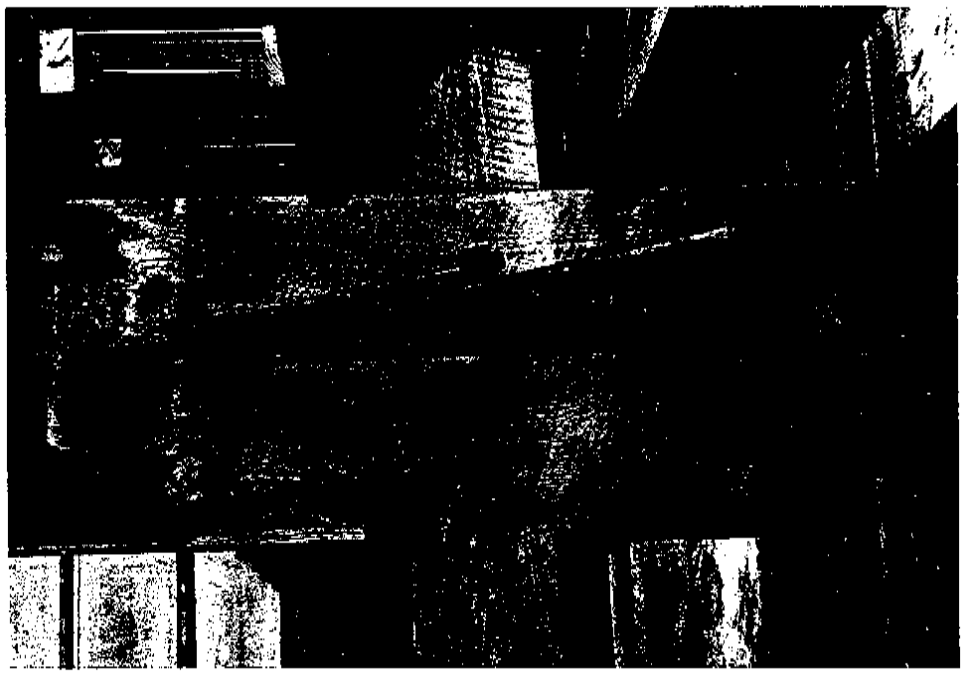
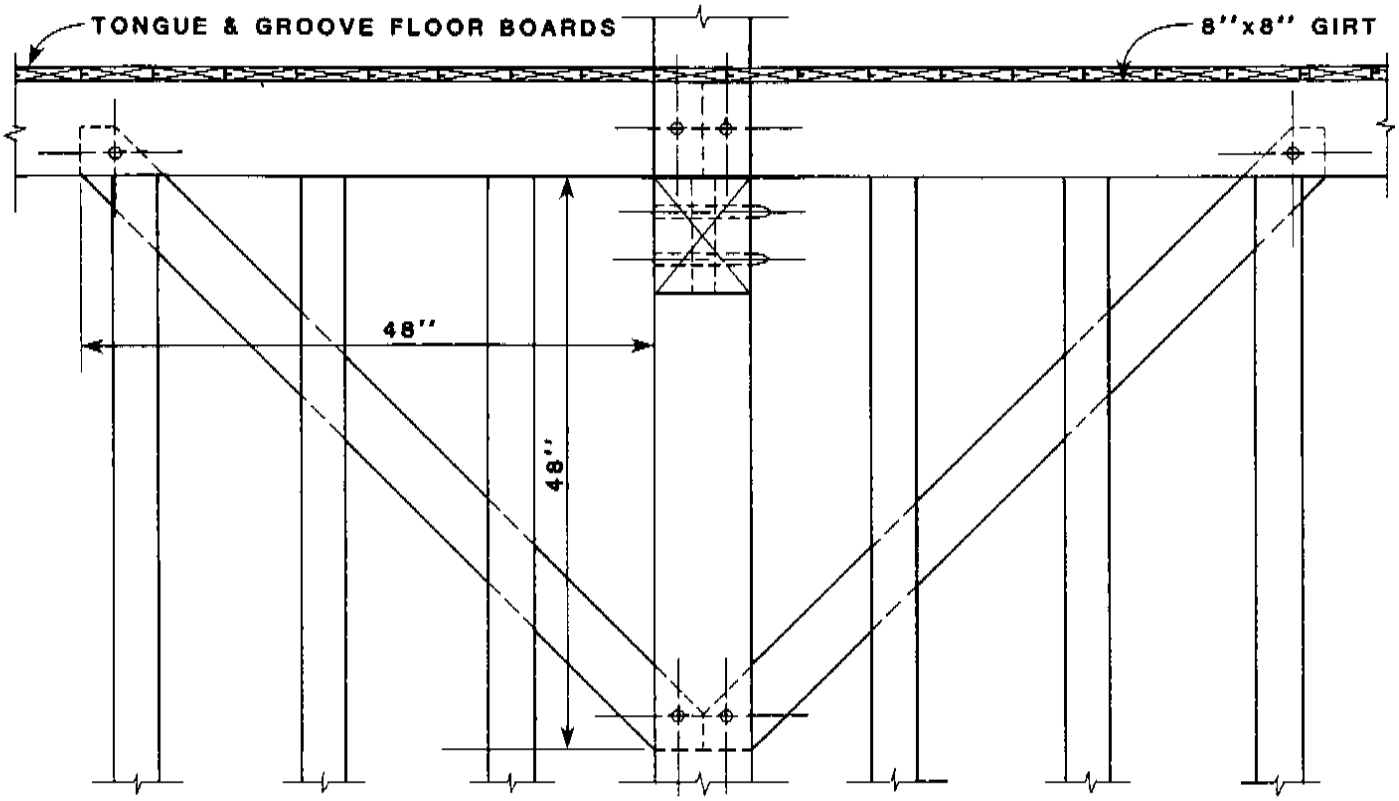
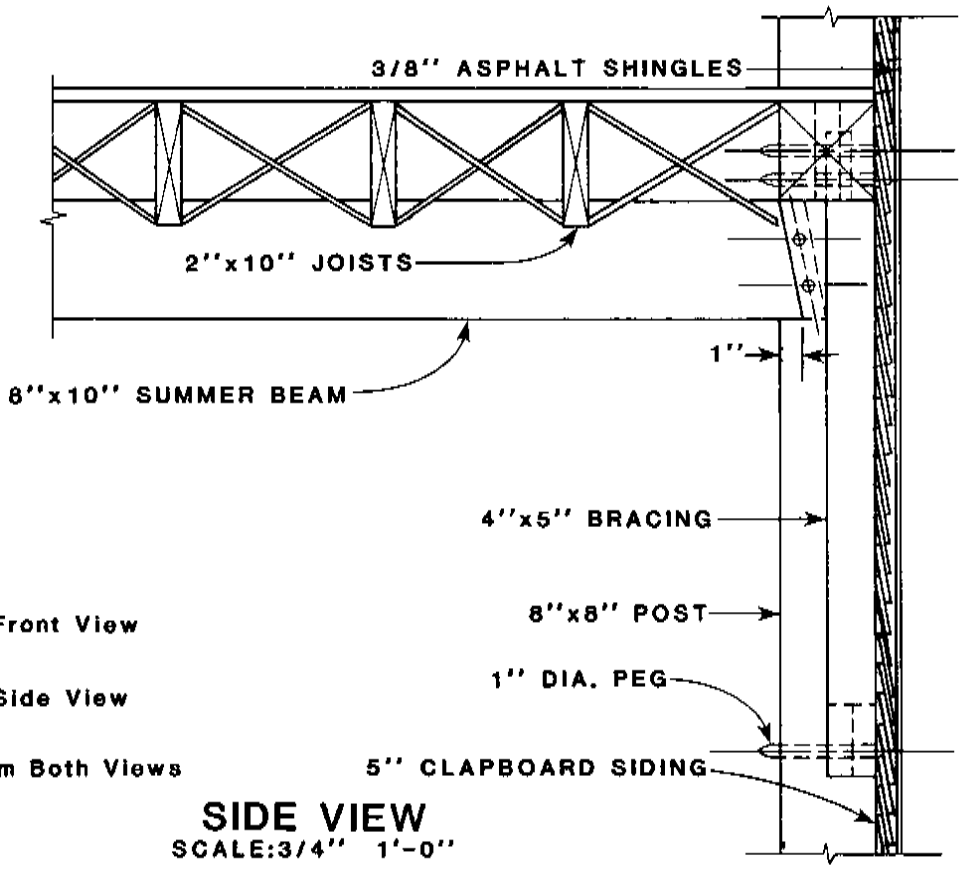


FIGURE 17

WALL BRACING DETAIL



FRONT VIEW
SCALE:3/4'' 1'-0''



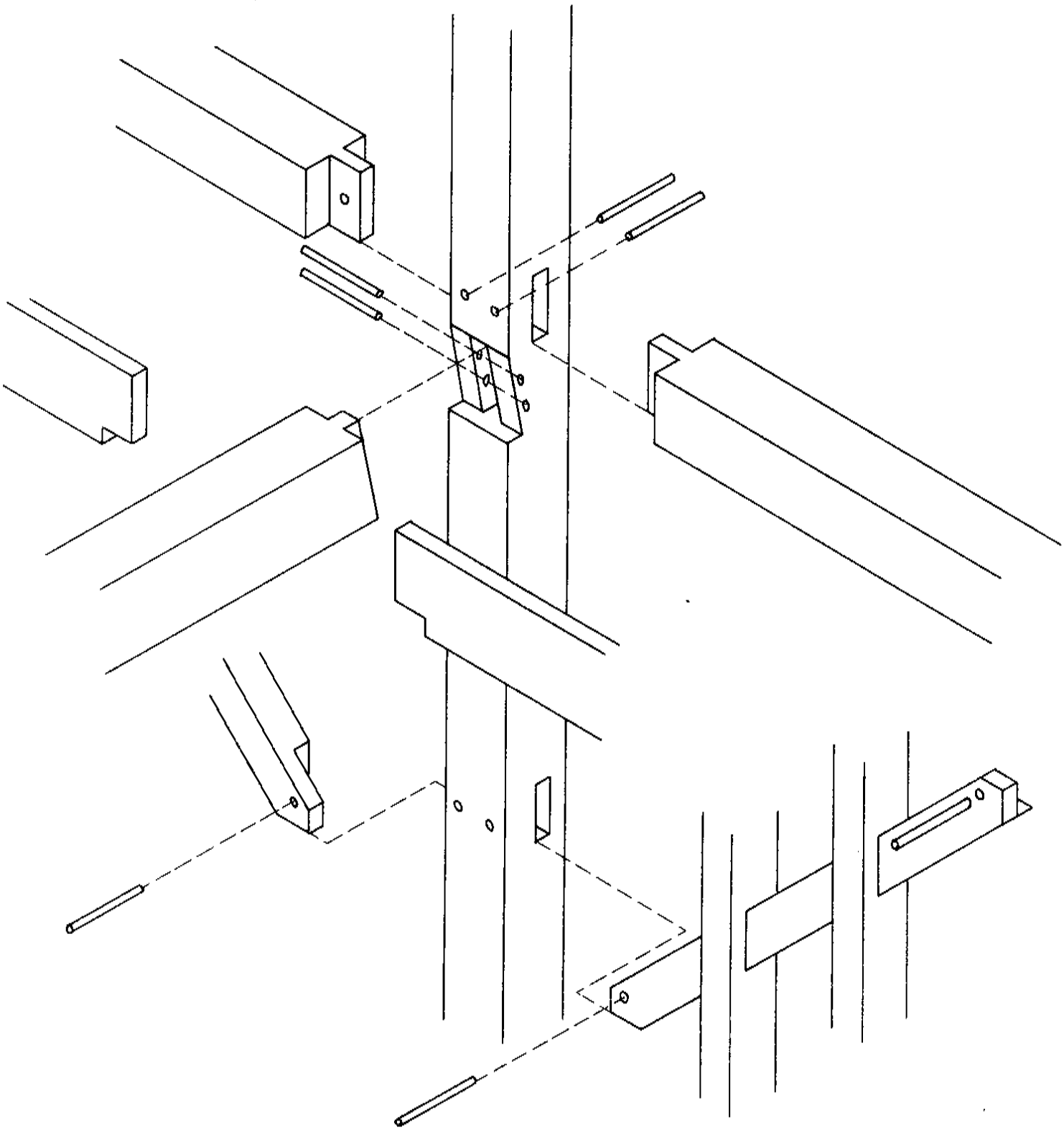
NOTES:

1. Joists Omitted From Front View
2. Studs Omitted From Side View
3. Wainscot Omitted From Both Views

SIDE VIEW
SCALE:3/4'' 1'-0''

FIGURE 18

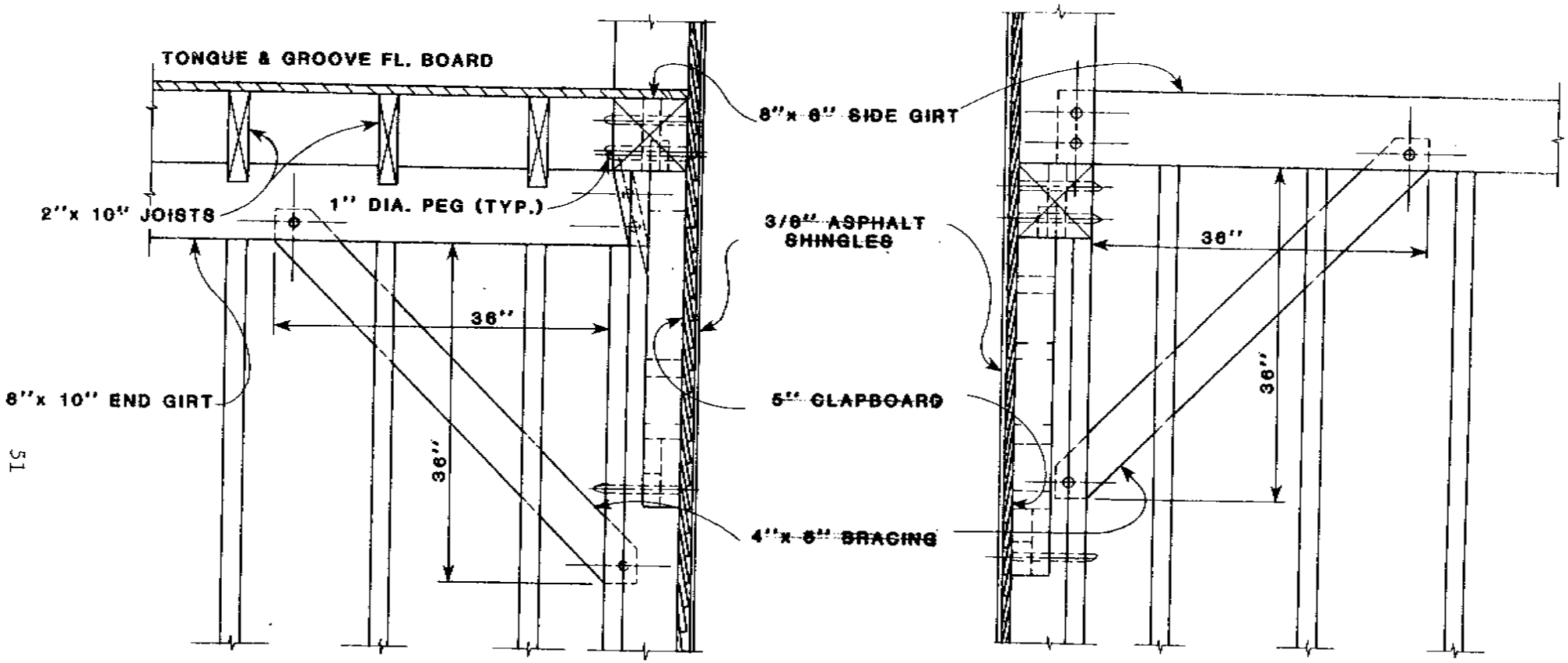
EXPLODED VIEW OF WALL BRACING DETAIL



SCALE:3/4" = 1'-0"

FIGURE 19

CORNER BRACING DETAIL



END WALL VIEW
SCALE: 3/4" 1'-0"

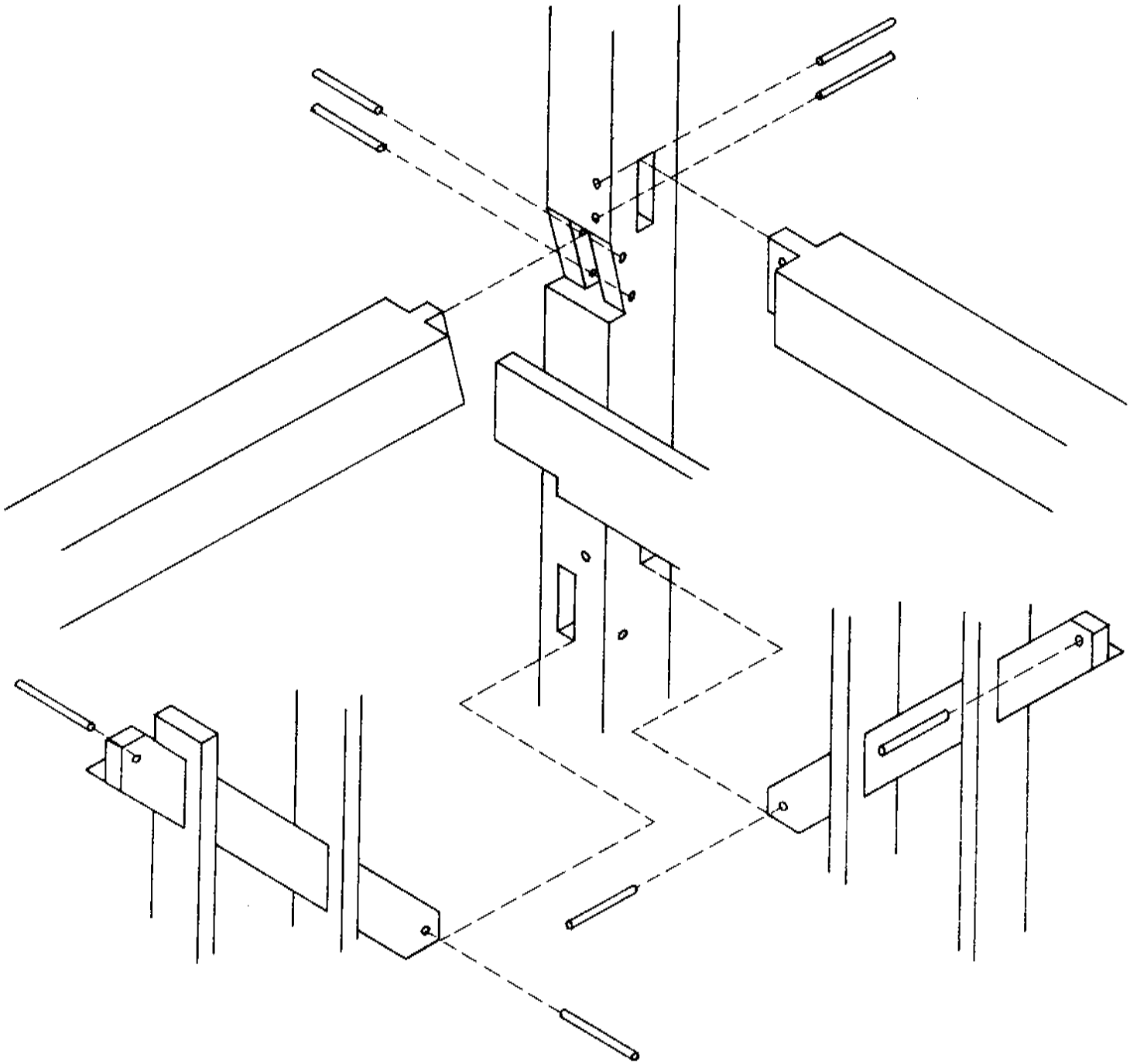
SIDE WALL VIEW
SCALE: 3/4" 1'-0"

NOTES:

1. For Clarity, Clapboarding And Studs On End, Are Shown Only In Cross Section.
2. For Clarity, Joists Are Omitted From Side Wall View And Wainscot From Both.

FIGURE 20

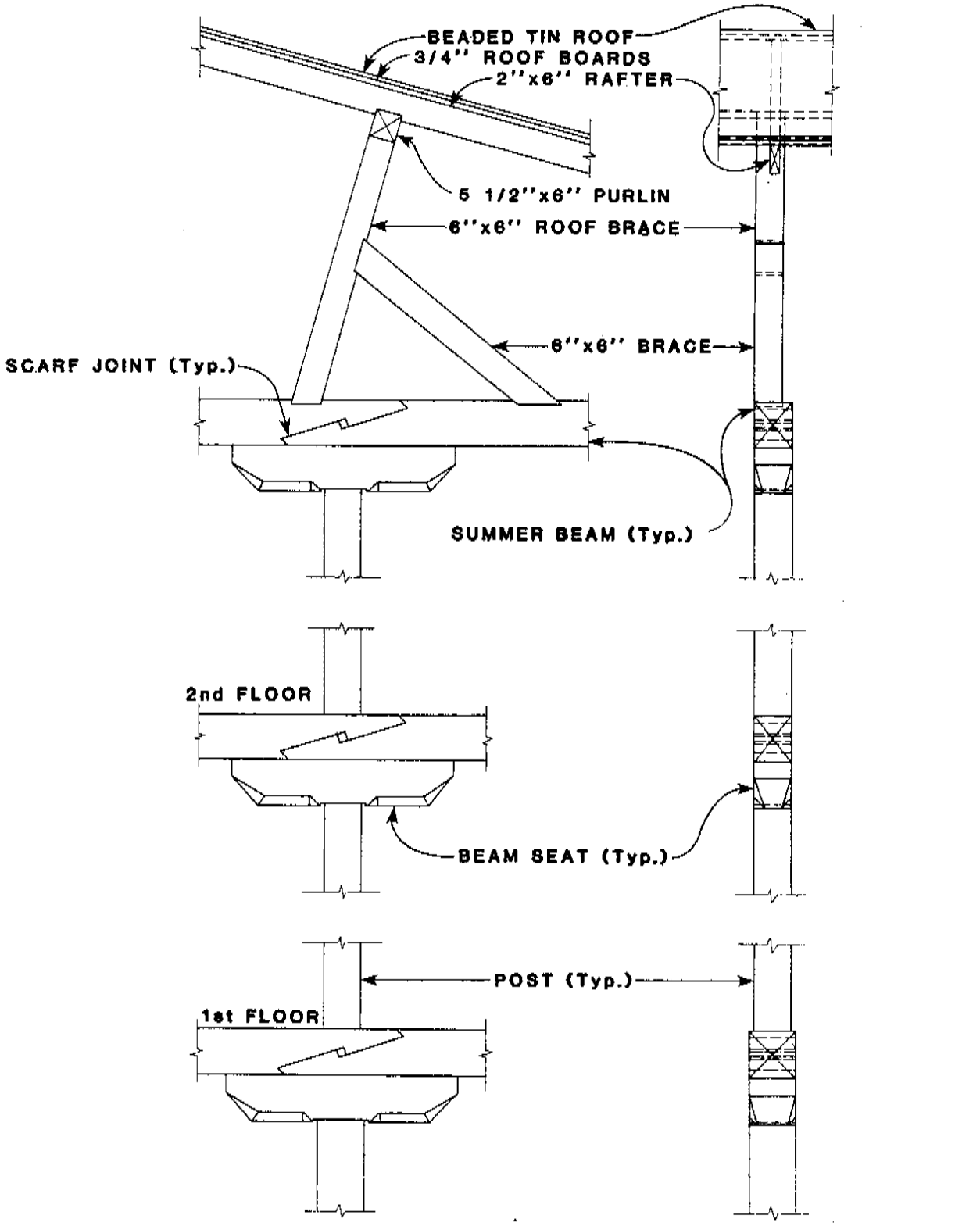
EXPLODED VIEW OF CORNER BRACING DETAIL



SCALE:3/4" = 1'-0"

FIGURE 21

DETAIL AND SECTION OF RAFTER AND BEAM SEATS



SCALE:3/8" = 1'-0"

	POST	BEAM SEAT	SUMMER BEAM
BASEMENT	10"x10"	10"x10"x60"	10"x10"
1st FLOOR	8"x8"	10"x8"x48"	10"x8"
2nd FLOOR	8"x8"	10"x8"x48"	10"x8"

girts or plates (Plate 8, Figures 17, 18, 19, 20). Additional support is provided at the east end of each side girt and side plate by a ¼" notch in the posts. Similarly, 1" notches cut into the posts along the side walls lend support for the summer beams, end girts, and end plates. Each of these connections is strengthened with one or two 1" diameter pegs. The summer beams above the second floor are further supported by a brace extending out from and set in a notch in the second floor side wall posts. Interior support for the summer beams is provided by chamferred beam seats which are notched to sit on the posts below them (Plate 9, Figure 21). Pegs 1" in diameter provide added strength to the summer beam seat connection.

Studding on the first and second floors is generally 1-3/4" x 5-3/4" from the top of the sill or girt below to the bottom of the girt or plate above. Placed among these are 3-3/4" x 5-3/4" studs and headers for added strength around doors and windows, although in some cases one 3-3/4" wide member is replaced by two 1-3/4" wide members (Figures 12, 13). When studding converges with diagonal bracing, studs are notched to permit passage of bracing through them.

Joists, 2" x 10" and one bay long, run parallel to the side walls and are notched to sit on summer beams and, where applicable, end sills or end girts (Figures 14, 15). Cross-bracing for the joists parallels the end walls at the midpoint of each bay along the length of the building. Oak floor boards 1" thick and of varying lengths and widths parallel the end walls and extend below the wainscotting to the inside of the clapboarding.

The gable roof, with a slope of 1' vertical to 2'6" horizontal, is supported by 2' x 6" rafters (Figures 14, 15). At the end walls, gable studs sit on and extend up from the plates and are notched to support the rafters. Interior support for the rafters is provided by 5-½" x 6" purlins which are in turn supported by bracing which extends up from the summer beams above the second floor (Plate 10, Figure 21). The rafters are notched and sit on the plates and purlins, and those of the front and back slopes of the roof meet directly, with no ridge pole present (Figure 14). The rafters support 7/8" thick oak roof boards of varying widths and lengths which are not covered by beaded tin roofing.

Descriptions by Floor

Two six-light, fixed sash windows (Figure 22) with plain frames and sloping sill were originally constructed into each of the four walls of the basement abutting foundation buttresses (Figure 11). One has since been covered in the interior by sheetrock as part of construction of a room along the west wall described below. A 10' high x 10' wide wooden door which swings open vertically on hinges screwed into the sill has been added to the north wall (Figures 10, 11). Around this door, between the first and second buttreses to the west of the east wall, the original brick foundation has been replaced by concrete block. This doorway, reported by an informant to have been constructed within the last 25 years (William Joline: pers. comm.: 1982) allows access for large objects directly into the basement via a ramp excavated up to ground level (Plate 2, Figure 10).

PLATE 10

INTERIOR, SECOND FLOOR,
NORTHEAST CORNER

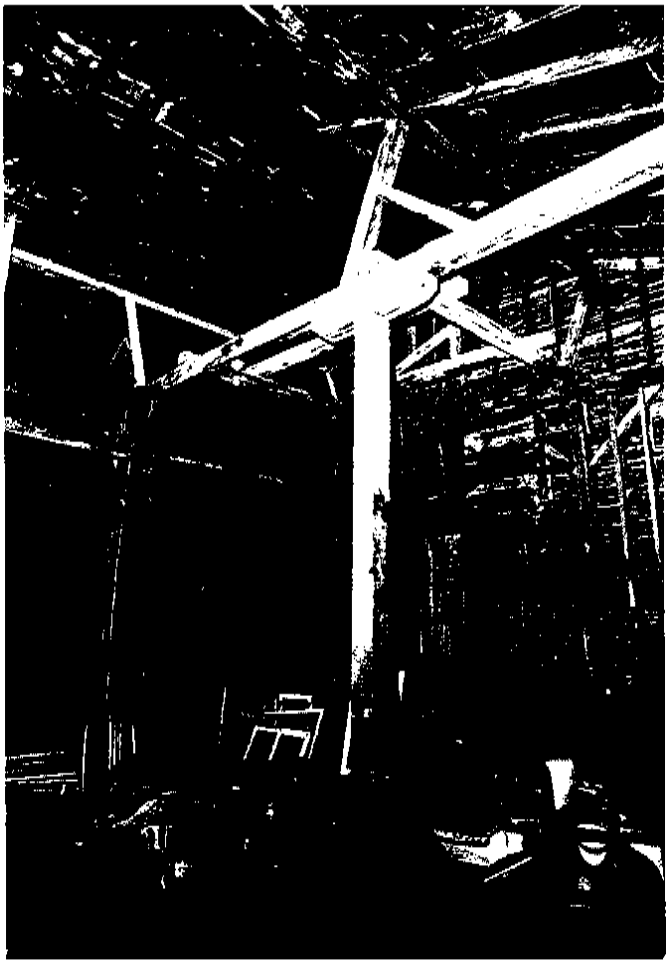
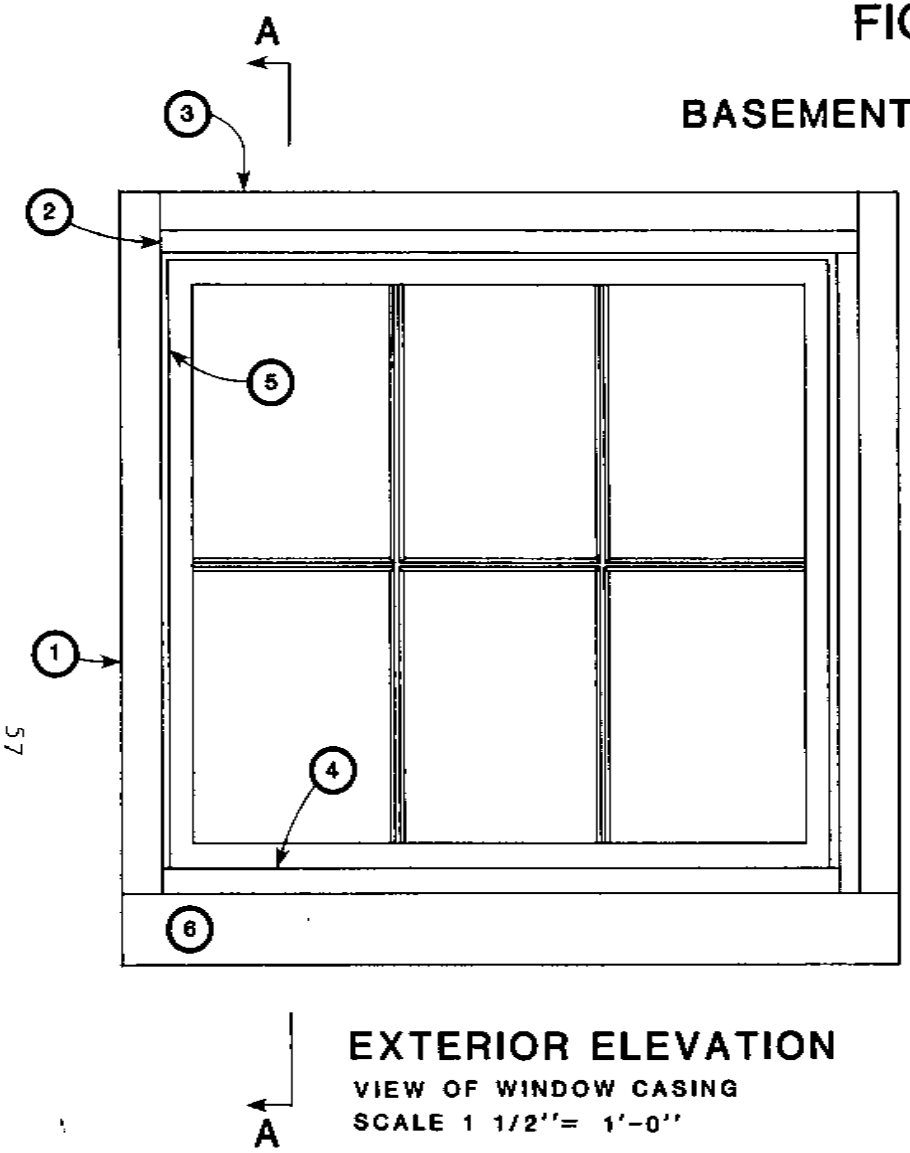


FIGURE 22

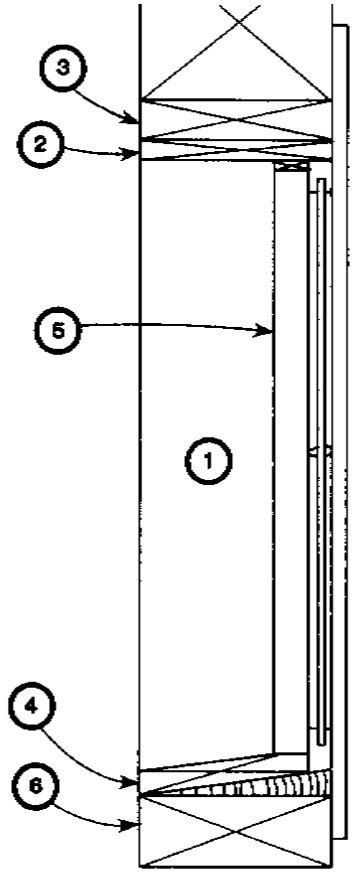
BASEMENT WINDOW DETAIL



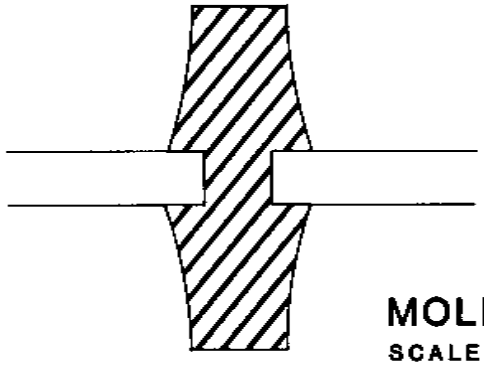
EXTERIOR ELEVATION
VIEW OF WINDOW CASING
SCALE 1 1/2"= 1'-0"

KEY

1. - 1 3/4"x 27"
2. - 7/8"x 29"
3. - 1 5/8"x 29"
4. - 1"x 28 1/8"
5. - 1/4"x 1 3/8"
6. - 3"x 32"



SECTION A-A
SCALE 1 1/2"= 1'-0"



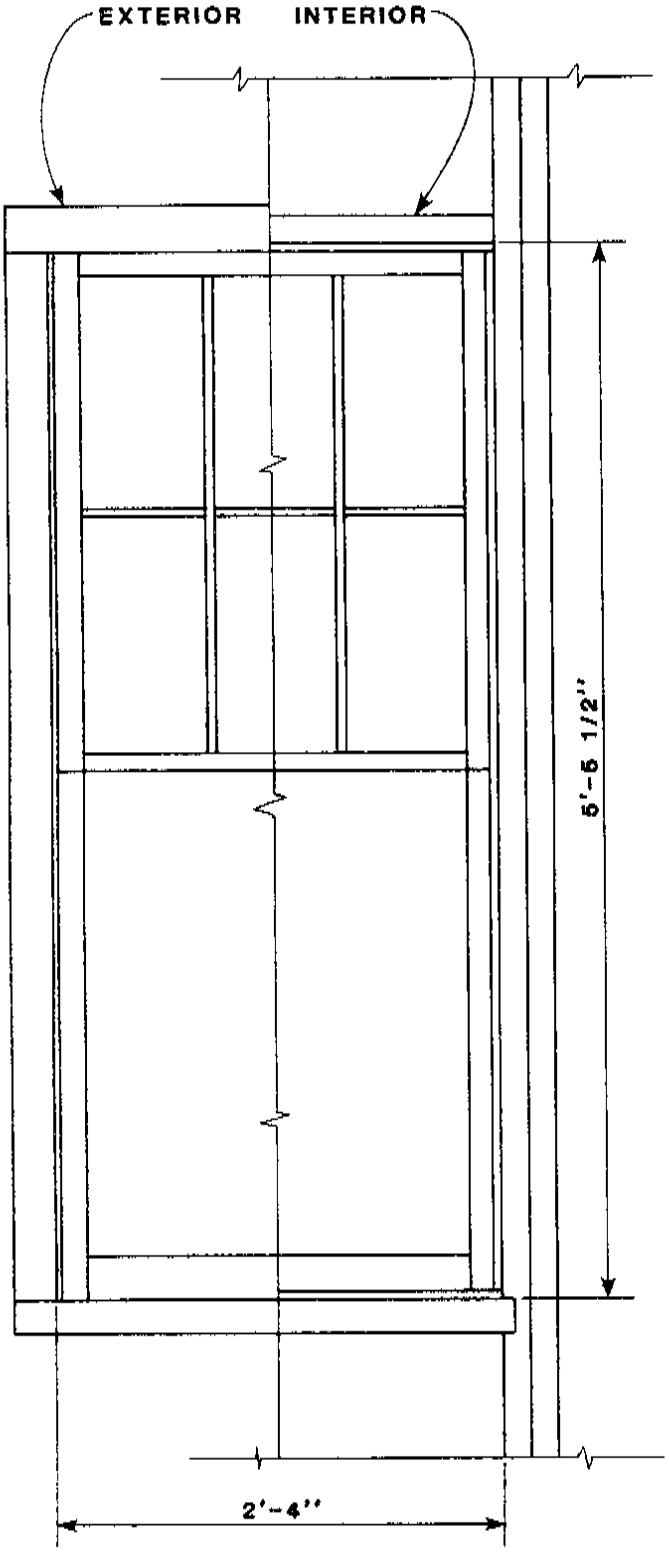
MOLDING DETAIL
SCALE 1/2"= 1/4"

The floor plan of the basement remains much as it was originally, although sheetrock and pegboard partitions have been added extending in from the west wall to form four areas one baywide and of varying depth (Figure 11). A brick chimney is against the west wall in the southernmost of these areas and a coal furnace, added later, is in front of it. Separated from this area by a pegboard partition, the area north of it is used as a shop/tool storage area. The presence of a series of cubbyholes along the western wall which may date to the original construction indicates that this area, although not always partitioned off, may always have been used similarly. North of this is a recent, uncompleted, sheetrocked room. The most northerly of these four areas is used only for storage. No other spacial separations are present in the basement, although temporary shelving has been placed in the two central bays at the east end of the building. A straight stairway leading to a trap door on the first floor is located in the southest corner of the basement (Figures 11, 14).

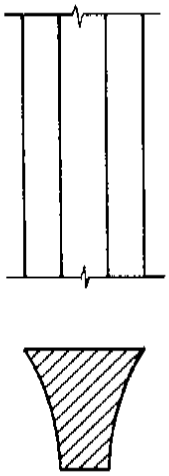
On the first floor, the south wall maintains its exterior symmetry with one 5' 2-¼" wide wooden sliding door in each of the central bays and one six over one light double sash window with plain molding and sloping sill in each of the two exterior bays (Figures 8, 12, 14). All existing first and second floor windows (and probably all original windows on these floors) are of this type (Figure 23). Wainscotting is present to the window sill level as shown on Figure 12. The sliding doors on the south wall are attached by pulley-type rollers on the top and set on a track allowing them to be opened by sliding towards the center of the

FIGURE 23

WINDOW AND MULLION DETAIL



WINDOW
SCALE: 1" = 1'-0"



MULLION
SCALE: FULL

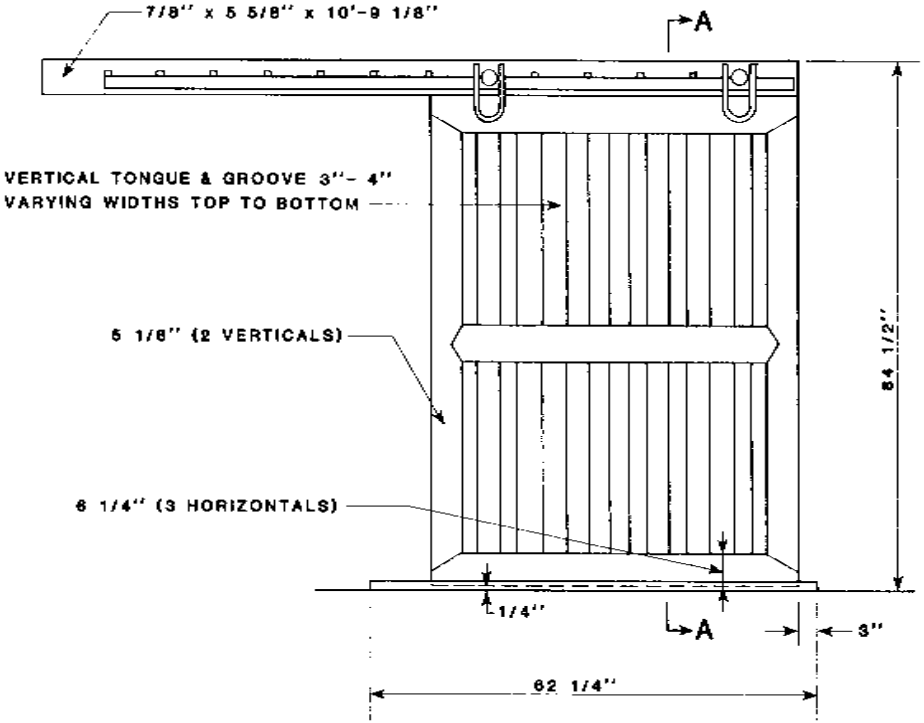
building (Figure 24). They appear to be the orignal means by which grain was brought in and finished products were removed as they are the only wide doors included in the original construction of the building. An exterior near-symmetry is created on the west wall of the first floor by a pedestrian door (Figure 25) which opens into an office in the south bay and one window in each of the central and north bays.

The asphalt shingle siding has covered all features on the exterior of the north wall of the first floor except a 6' 8" high x 7' wide double door (Figure 12). This door is not original; its construction required the destruction of all but the lintel and top portions of the frame studs of a window which would have completed an original symmetry of one window centered in each bay of the north wall. All these windows were boarded up prior to or at the time of the placement of shingle siding on the exterior of the building. At the western end of the east bay of the north wall is framing for a pedestrian door, now boarded up and covered by siding. This door appears to have been included in the original construction of the structure and probably led into the shed attachment which housed the steam boiler (Figure 6) and later oil engine (Figure 7). Two windows are visible in the interior of the east wall, although both (and probably a third now covered by tongue-and-groove boards from floor to ceiling in the center bay) were boarded up and covered with shingle siding as were those of the north wall.

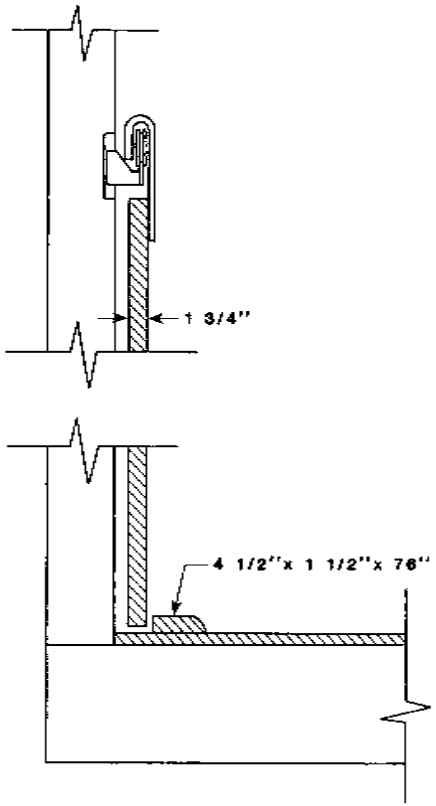
The plan of the first floor included a 10' 6" x 8' 0" room in the southwest corner (Figure 12). It appears to be original

FIGURE 24

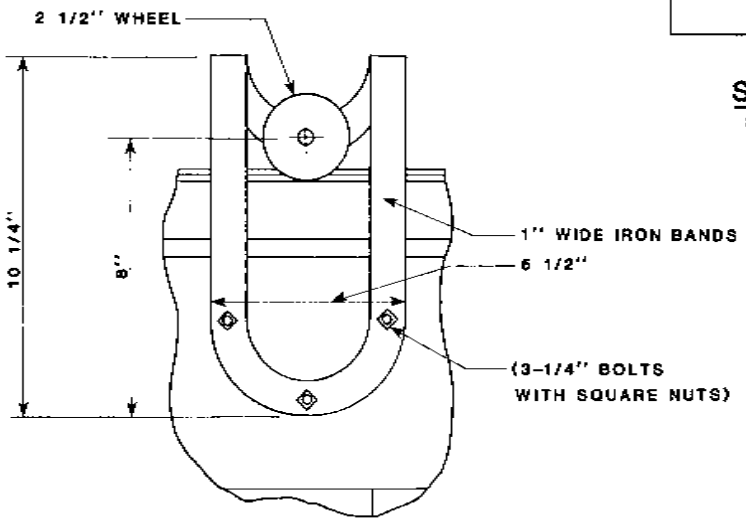
SOUTH SIDE LOADING DOORS
(EAST SIDE DOOR OPPOSITE)



ELEVATION
SCALE: 3/8" = 1'-0"



SECTION A-A
SCALE: 1" = 1'-0"



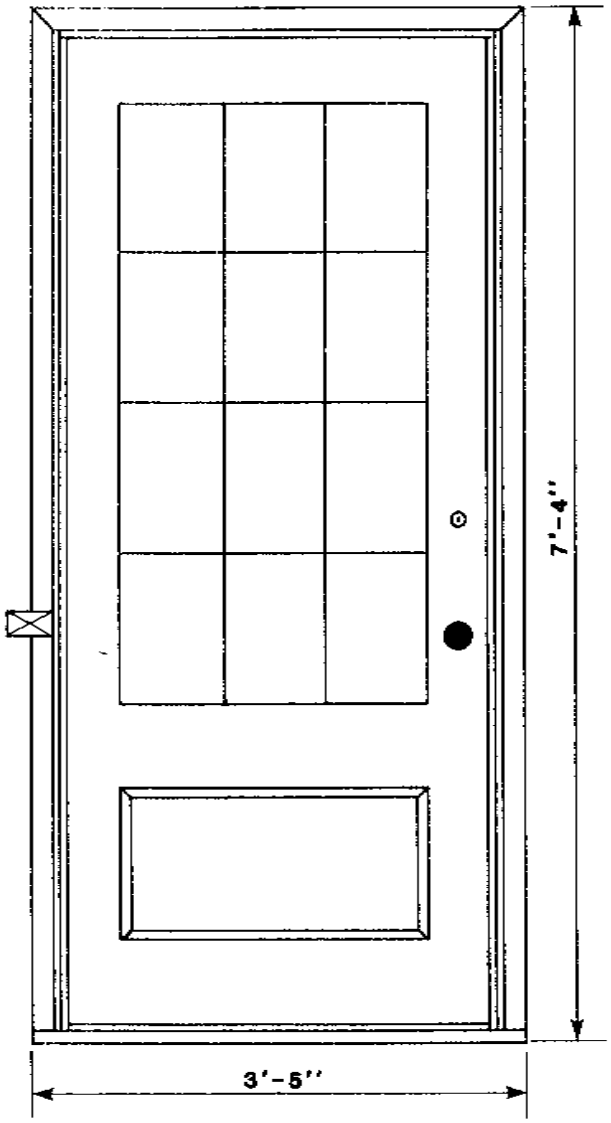
WHEEL ASSEMBLY DETAIL
SCALE: 3" = 1'-0"

and unaltered (except for the addition of a drop ceiling), and is probably the office noted on the 1910 Sanborn insurance map (Figure 6). Its walls extend vertically to the floor joists supporting the second floor, and are covered on both the interior and exterior with vertical, beaded, tongue-and-groove boarding of varying widths from 2-½" to 5". The brick chimney visible in the basement continues through the first floor and is present in the southwest corner of the office; a hole for attachment of a stove (probably the wood stove noted on Figure 6) is present but has been covered over. From a cement and concrete block stoop outside (Figure 9), the main pedestrian door for the building (Figure 25) opens into the office from the west wall. A window located in the south wall of the office completes the exterior symmetry of that wall as described above. Attached to the north wall of the office is a modern, uncompleted, lavatory, the walls of which are constructed of sheetrock and extend 8' 1-½" up from the floor (Figure 12). No other spacial divisions are present on the first floor. Steps along the east wall of the first floor lead up to a landing in the southeast corner of the building from which a right angle turn is made and steps along the southwall lead from the landing up to the second floor (Figures 12, 13, 14, 15).

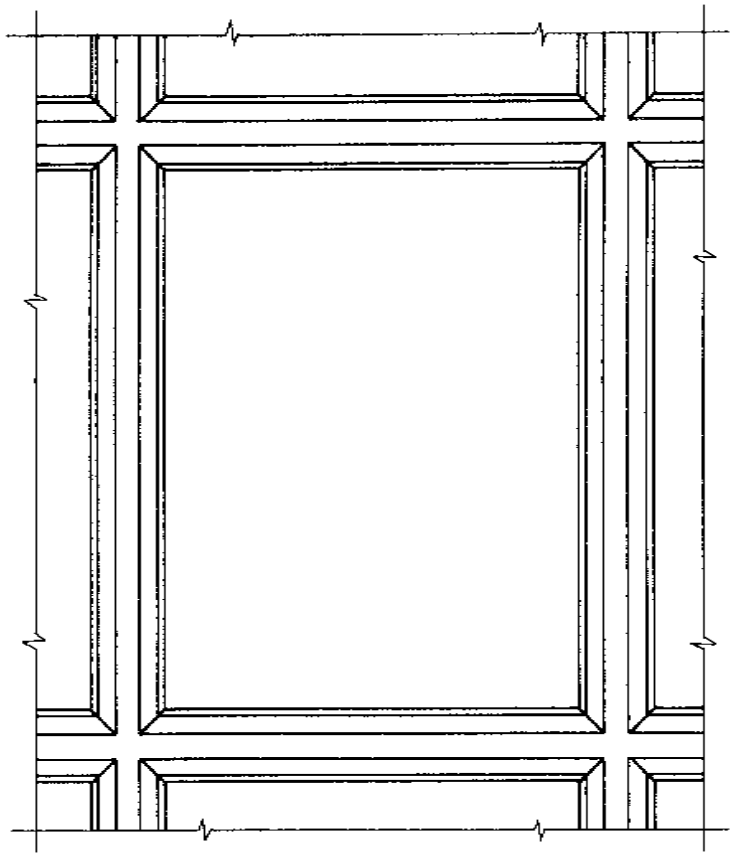
The second floor windows on the south and west sides of the building are the same type as those of the first floor and one is located in the center of each bay (Plates 1,2, Figures 8, 9, 13, 23). Those on the north and east walls have been boarded up and covered with shingle siding as were those of the first floor. There is no evidence that a window ever existed in the west bay of the north wall which would have completed the second floor

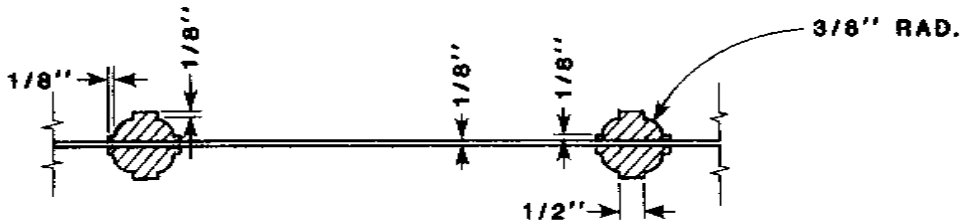
FIGURE 25

PEDESTRIAN DOOR DETAILS

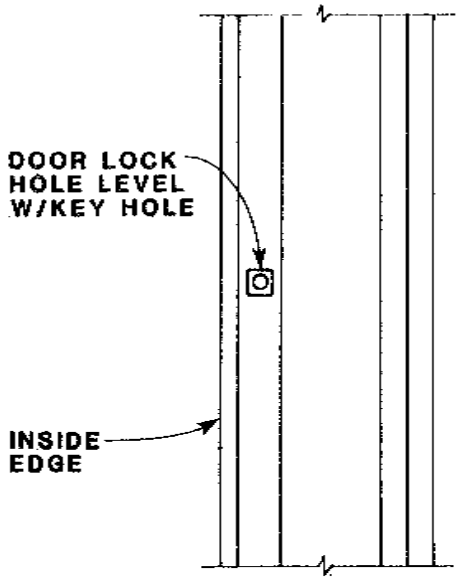


DOOR
SCALE:3" = 1'-0"





WINDOW PANE
SCALE:3/4" = 1'-0"



JAMB
SCALE:1 1/2" = 1'-0"

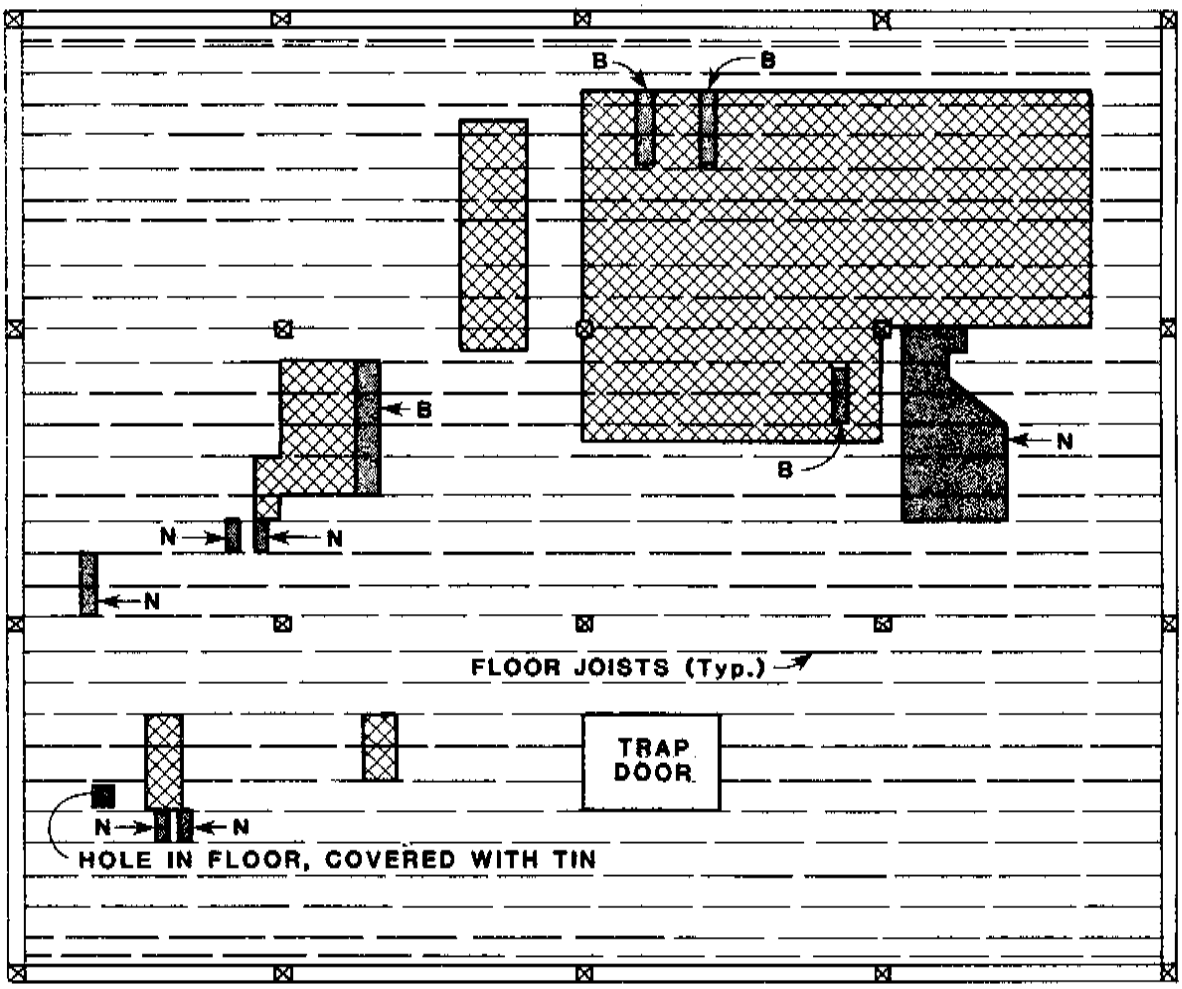
symmetry of one window centered in each bay all around. There are neither doors nor internal spacial separations on the second floor although the chimney visible on the lower floors extends up through the roof. A 2' x 2' platform has been placed on the center summer beam above the second floor from which a latter extends up to a trap door (which is currently not functional) in the roof. It was part of the original construction of the mill, and its placement and surroundings suggest no function other than allowing access to the roof for repairs.

Mill Operation Vestiges

Although it is beyond the remains of the extant structure to provide an engineering study of the mill operation, some vestiges of that operation remain. Portions of the floorboards of both the first and second floor have been replaced and holes in the floors have been patched, some of which certainly were part of the mill operation. Although materials being stored in the mill probably prevented locating all such vestiges of the operation, those visible have been mapped and are shown on Figures 26 and 27. Also to be noted on these figures are items related to the mill operation which are visible from the floor below that which the figure represents. Specifically, some remains of the top portions of gravity chutes (e.g. Plate 11) by which grain was moved from the second floor to the mill stones and/or rollers on the first floor are visible when looking up from the first floor. Similarly visible are boards which have been bolted or nailed to the joists of both the first and second floors (e.g. Plate 12). These probably served as machinery mounts. Although some of

FIGURE 26

POSSIBLE LOCATIONS OF ARCHITECTURAL VESTIGES OF THE MILLING OPERATION - FIRST FLOOR



KEY:

B - Vestiges Bolted To Floor Joists

N - Vestiges Nailed To Floor Joists

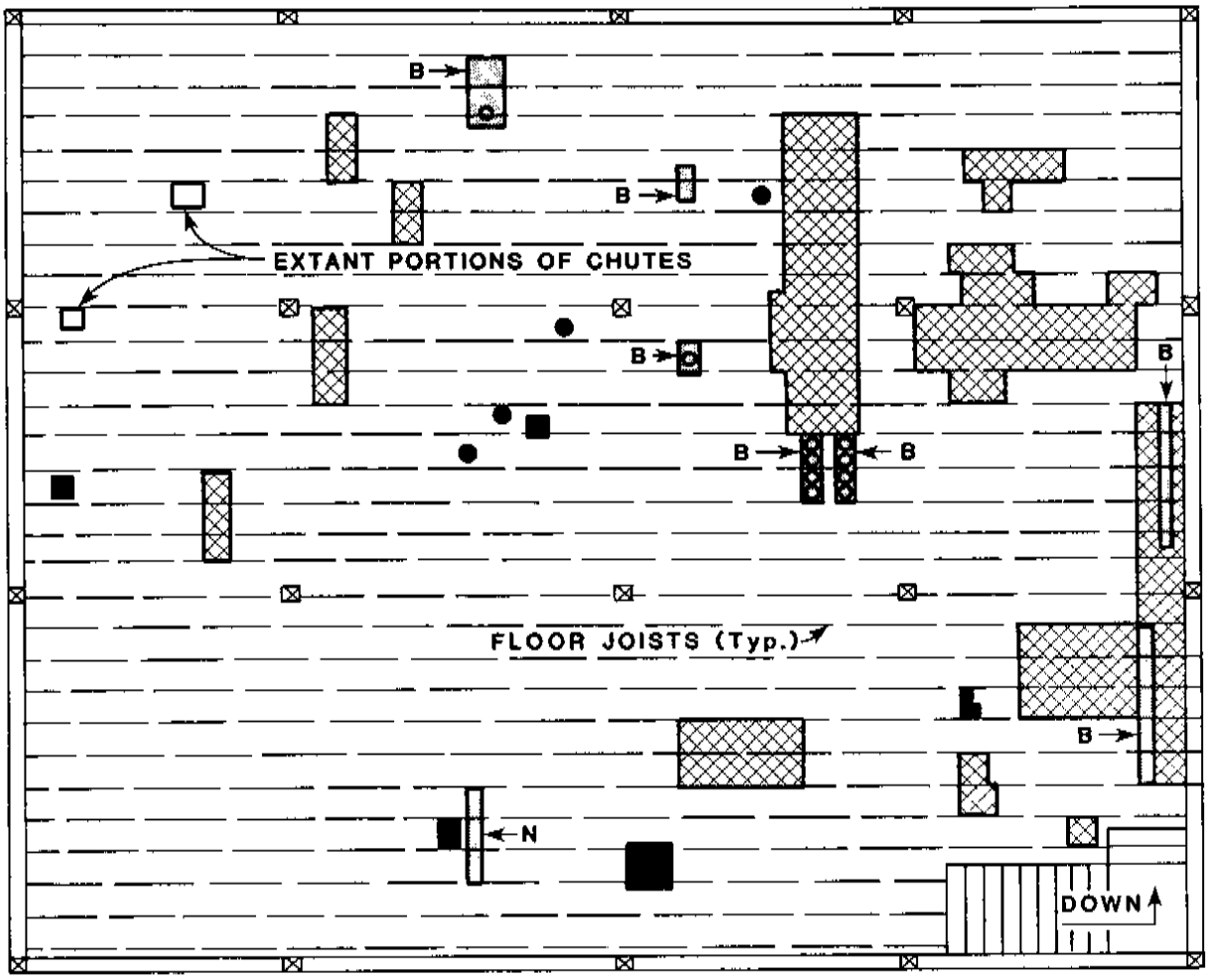
- Replaced Floor Boards

NOTES:

1. Materials Stored In The Bldg. Limited Visibility Of The Vestiges Noted
2. Location Of The Vestiges Were Made From The Basement
3. Location Was Approximated In Reference To Columns And Joists
4. Some Vestiges May Not Have Been Visible And Were Therefore Not Located

FIGURE 27

POSSIBLE LOCATIONS OF ARCHITECTURAL VESTIGES OF OF THE MILLING OPERATION - SECOND FLOOR



KEY:

B - Vestiges Bolted To Floor Joists

N - Vestiges Nailed To Floor Joists

- Replaced Floor Boards

- Holes In Floor, Covered By Tin

NOTES:

1. Materials Stored In The Bldg. Limited Visibility Of Vestiges Noted
2. Location Of The Vestiges Were Made From The First Floor
3. Location Was Approximated In Reference To Columns And Joists
4. Some Vestiges May Not Have Been Visible And Were Therefore Not Located

PLATE 11

DETAIL - REMAINS OF CHUTE

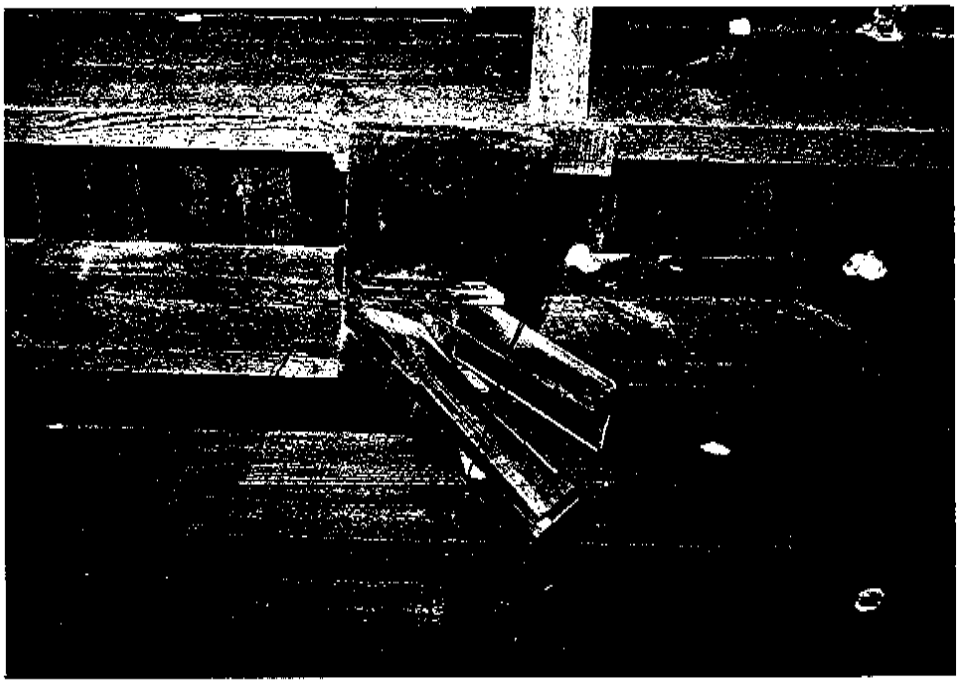
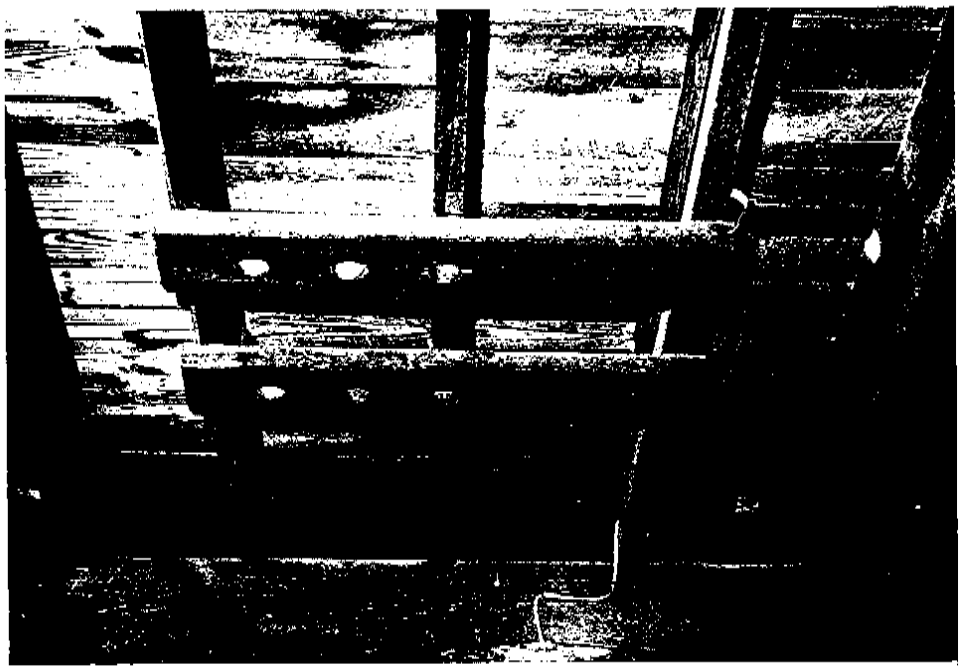


PLATE 12

DETAIL - MACHINE MOUNT



these boards are plain and probably served only as structural supports for machinery, others have holes drilled in them which possibly served as guides for turning axles.

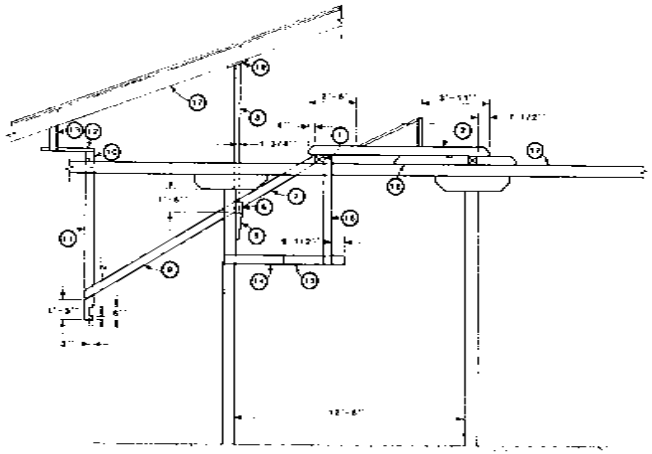
Above the second floor, supported by the main structural members of the building, is framework for equipment related to the operation of the mill (Figure 28). Although the specific function of this woodwork remains undetermined, the presence of large bolts at the center of circular grease stains indicates that it at least partially was used as support for a pulley and belt system. This suggests that the framework probably functioned as the uppermost support for the overall power transmission system in the mill and/or was the uppermost bracing of the belt elevator system which carried grain and partially processed materials to the second floor for further processing. However, portions of this framework do not seem to have served this function, and hence the utility of the entire framework is only partially suggested here.

Barn

Although the barn located at the rear of the project property (Figure 29) was not recorded architecturally, it was investigated and photographed (Plates 13, 14). The braced frame barn is a one-and-one-half story structure, suggesting that the second story was used for storage and that it therefore might be the "grainary" mentioned in a 1920 deed (222-201). Although the second story of the barn is vacant, the first floor and the attached lean-to shed are used as storage space for parts of the original mill workings (e.g. Plate 15) primarily those made of wood. These include a vat which enclosed a millstone, an

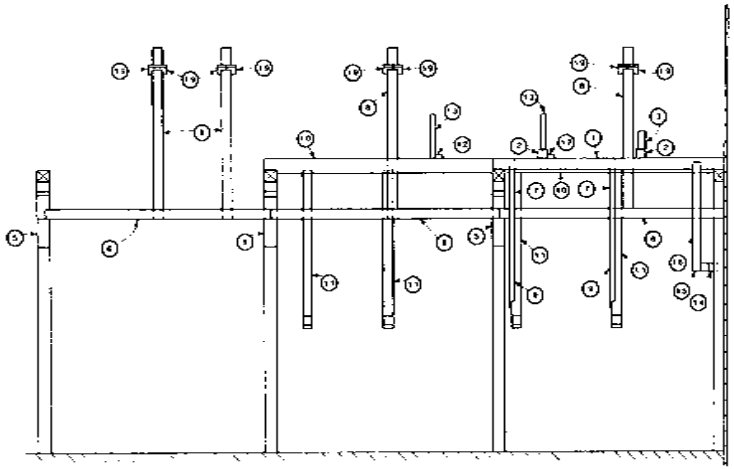
FIGURE 28

MACHINERY BRACING DETAIL



WEST ELEVATION

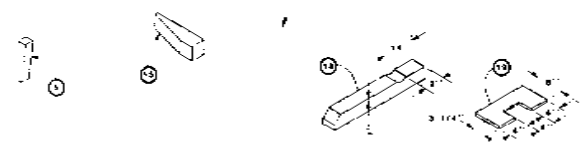
SCALE: 1/8" 1'-0"



SOUTH ELEVATION

SCALE: 1/8" 1'-0"

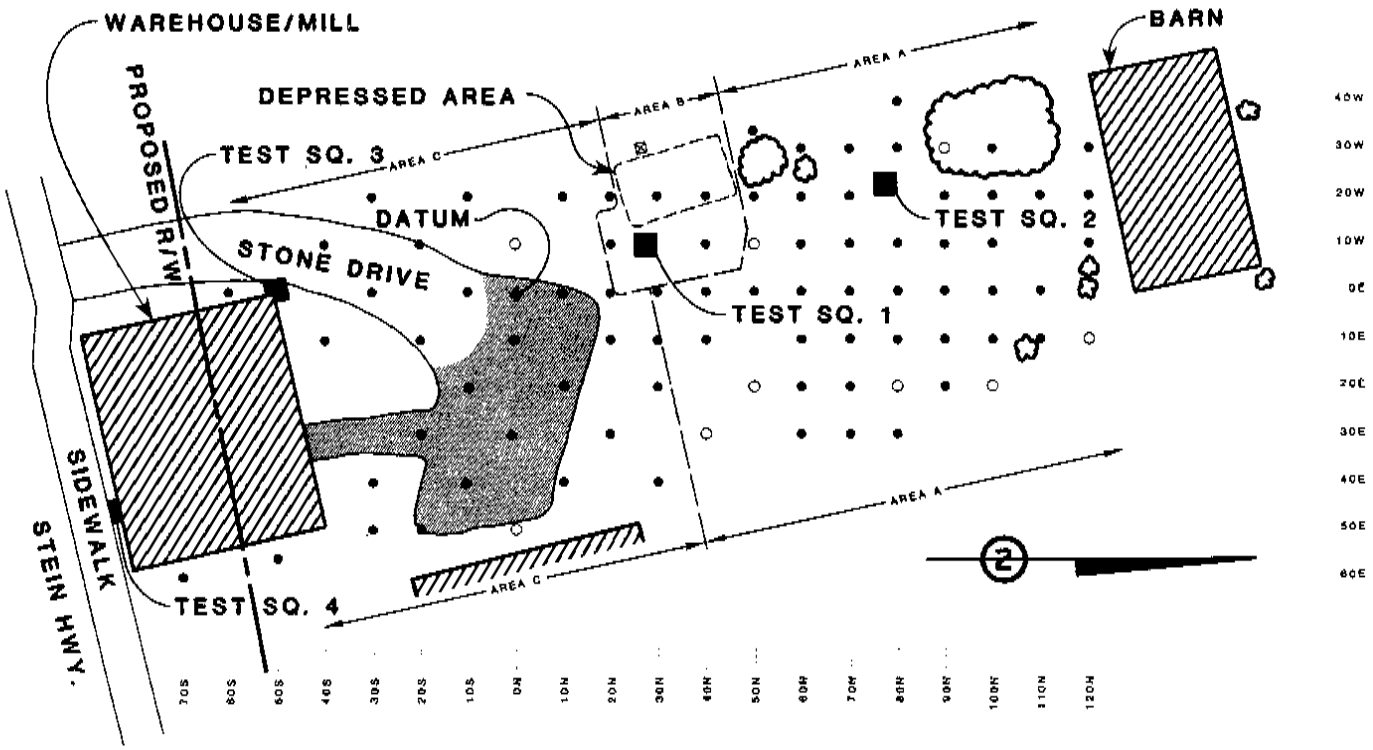
NO	VERTICAL	NORTH/SOUTH	EAST/WEST	QUANTITY
1	6 5/8"	6 5/8"	12'-10"	2
2	5 5/8"		5 5/8"	2
3	18"	3"	5"	1
4	2"	ANGLED, SEE DRAWING	5"	1
5	1'-6"	4" TOP 1 1/2" BOTTOM	7 1/2"	3
6	7"	3 3/4"	12'-6"	3
7	10' 1 TO TOP 5	5 1/4"	3"	2
8	8'-3" TO TOP 17	3 3/4"	4 1/2"	2
9	5 3/4"	N SIDE 4 TO M. SIDE 13	1 3/4"	2
10	7"	3 3/4"	12'-10"	2
11	4'-0"	6"	8"	4
12	2"	2'-11"	5 3/4"	2
13	BOTTOM 12 TO ROOF BOARDS	4"	2"	2
14	5 1/2"	5'-10 3/4"	5 1/2"	1
15	5 1/2"	2'-0"	4"	1
16	8'-0"	5 1/2"	5 1/2"	1
17	5 3/8"	2'-0"	8"	1
18	5 3/8"	4'-0"	8"	1
19	1/2"	12"	8"	4



BRACING DIMENSIONS

FIGURE 29

1982 ARCHAEOLOGICAL TESTING



60 0 60 120

SCALE IN FEET

KEY:

- ■ Test Square Excavations
- • Shovel Test Excavations (Artifacts Recovered)
- ○ Shovel Test Excavations (No Artifacts Recovered)
- ⊠ Cement Property Corner Markers
- Trees & Bushes
- Surface Disturbed

PLATE 13

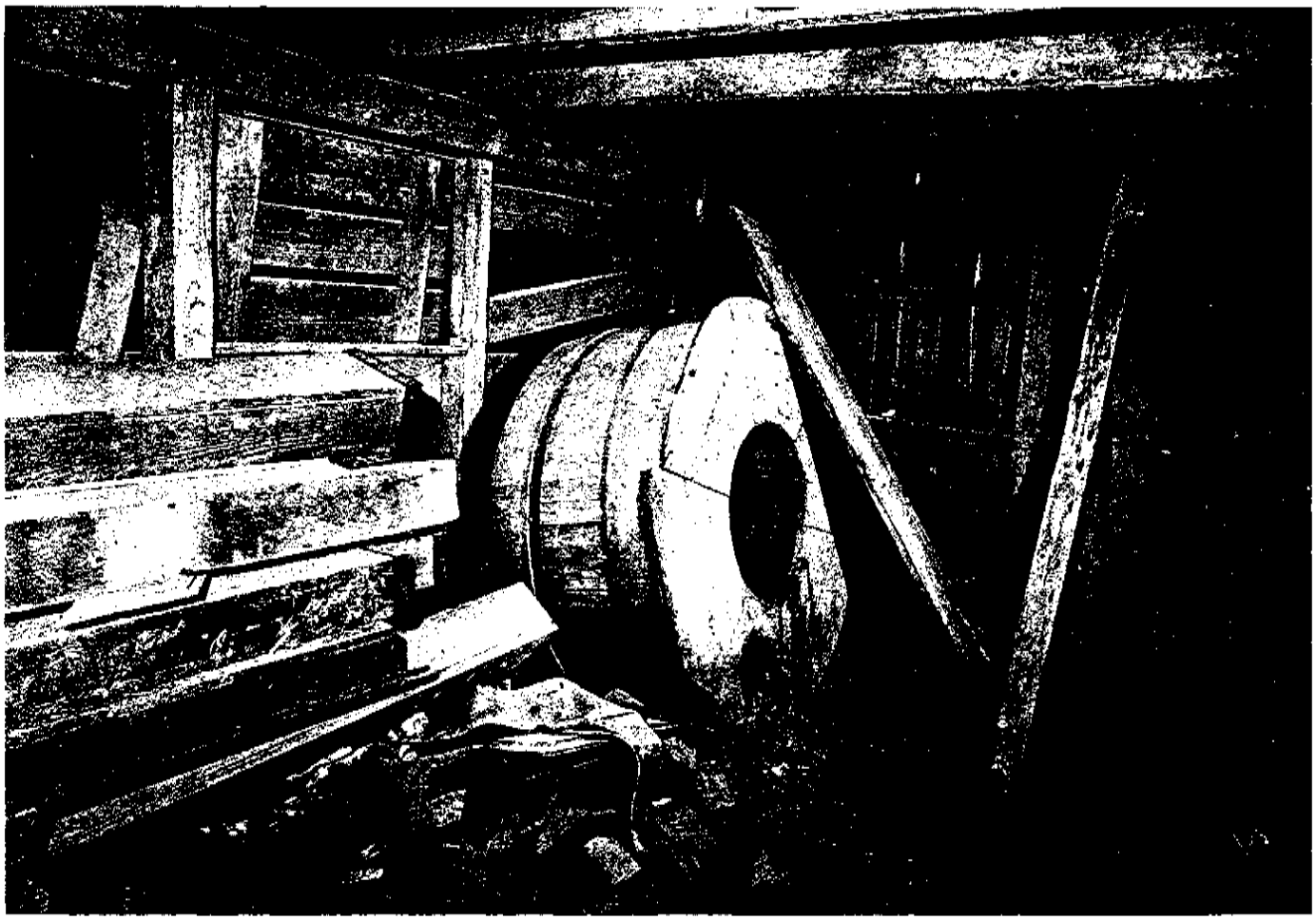
BARN,
SOUTHWEST CORNER ELEVATION

PLATE 14

BARN INTERIOR, SECOND FLOOR,
CENTER BAY

PLATE 15

MILL OPERATION
EQUIPMENT REMAINS



extensive amount of wooden chuting, a hopper, a probable flour dresser, fabric belt and metal cup grain elevators, wooden pulleys, portions of large tenoned beams, and several pieces of metal machinery. The workings listed all appear to be in excellent condition and others lie buried between them and the dirt floor of the barn.

Excavation Description and Interpretation

Prior to the 1982 DelDOT cultural resource survey, no archaeological research had been conducted at the Cantrell Warehouse/Enterprise Mill site nor at any location within the town of Seaford. This fact combined with the preliminary nature of the present research, directed the excavations to an extensive versus intensive nature. Also the main goal of the research, the National Register determination of the property, structured the research to the coverage of the entire site, focusing intensive excavation only on areas thought to contain features or other significant deposits. The following discussion will discuss the cultural resources encountered according to defined areas of the site (Figure 29). The ground surface configuration was the main attribute used in the pre-excavation division of the project area. Discussion of each area will begin with defining the soil stratigraphy, followed by an analysis and interpretation of the artifacts recovered. The interpretations presented will integrate the known historic information with that obtained archaeologically. A graphic representation of the interrelationship of the soil profiles along the north-south base line (i.e. the zero east line) of the shovel tests is presented as Figure

30. Appendix I lists the excavation location by provenience number and complete artifact counts for each provenience according to type categories appear in Appendix II.

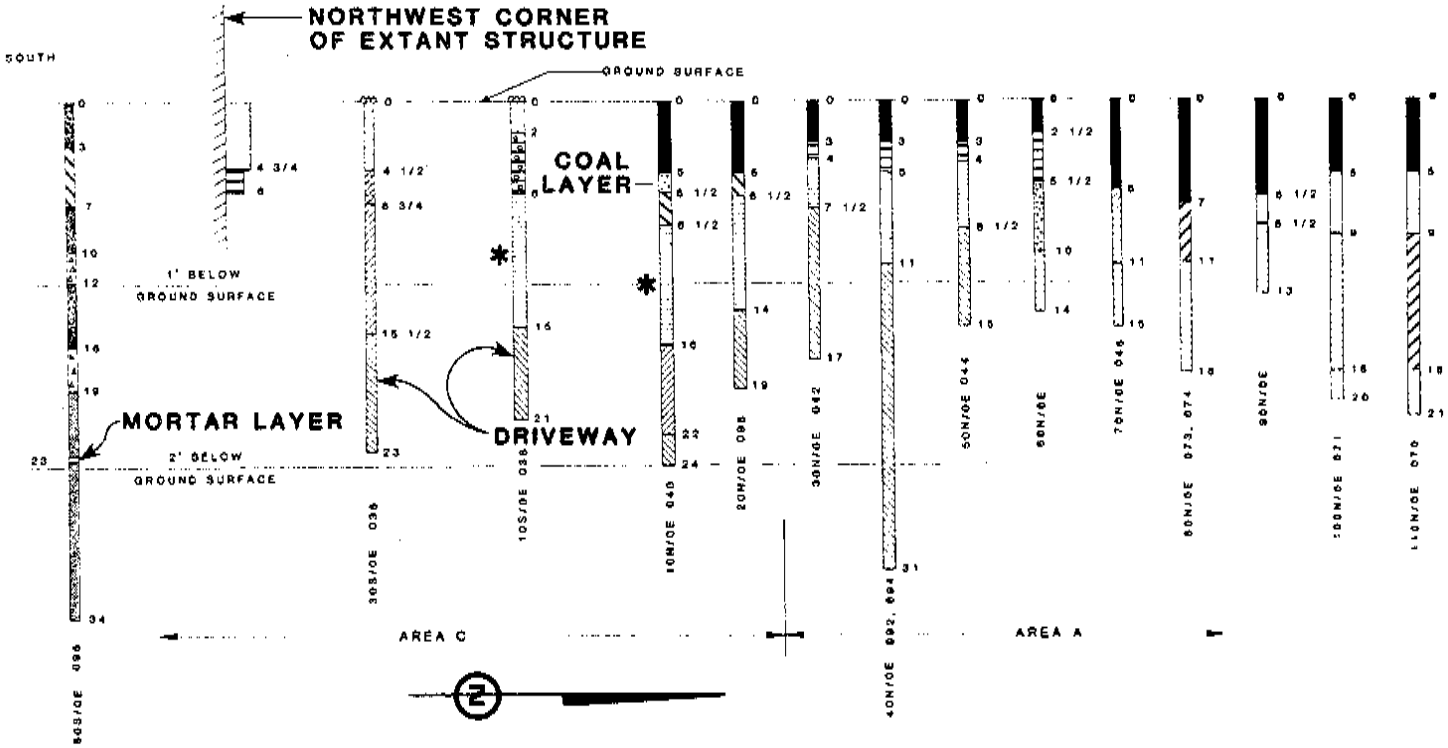
Area A

This area extends approximately 100' south from the south side of the barn at the north end of the property (Figure 29). It was characterized on the surface by a thick grass cover. Shovel/postholer tests revealed that stratigraphy consisted of a sandy silt topsoil 4' to 8" thick and was underlain by sterile sand or sandy clay subsoil. In some instances a transition zone of intermixed humus and sand was noted to a depth of 10" to 15" (Figure 30). At the extreme north end of this area, i.e. within 5' of the south side of the barn, the topsoil extended deeper (to approximately 9" below the ground surface), with a transition zone to 14' to 16" in depth and sterile subsoil beneath it.

The artifacts recoverd in this Area were few in number and not significant in regards to dating or explicitly identifying the utilization of the property, or for determining any spatial or functional variation. In total, from the 51 shovel tests excavated (consisting of 59 proveniences) only 254 artifacts were recovered excluding the brick, coal, and slag fragments which were noted and discarded (See Appendix II). Eight of the shovel test units contained no artifacts. All of these units were located near the east or west property line with the exception of 50N/10W which was near the center of the property. In general, artifacts were recovered only from the top 6" of excavation. Of the 42 shovel tests from which artifacts were recovered, only 5

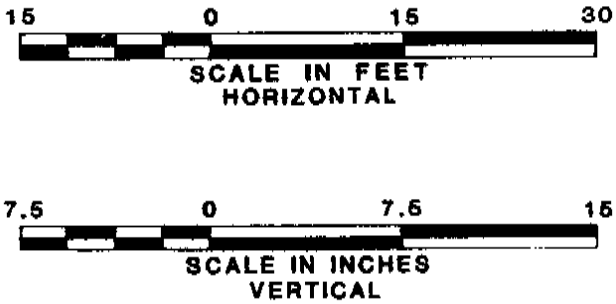
FIGURE 30

SOIL PROFILES ON NORTH/SOUTH BASELINE OF EXCAVATION
(Shown by Location on Grid and Provenience Number)



KEY:

- Black Sandy Silt/Loam
- Orange/Yellow Sandy Clay Fill
- Dark Brown Sandy Silt
- Brown Sandy Clay
- Yellow Sand/Sandy Clay
- Grey Sandy Clay
- Tan/Light Brown Sandy Clay (Sterile Subsoil)
- Mottled Sand/Sandy Clay
- Transition Layer
- Ash Present
- Coal Present
- Stones/Gravel Present
- Layer Noted As Containing Many Artifacts

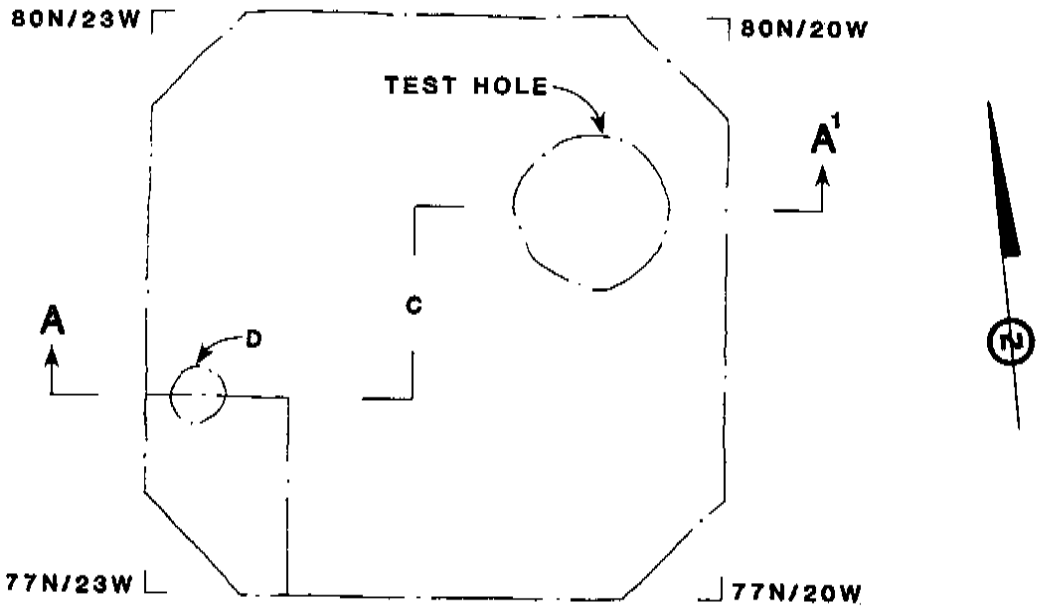


contained more than 9 artifacts, i.e. had high artifact counts relative to the other shovel tests in the Area. The relatively high count of artifacts (25) in 80N/0E in the center of Area A consisted of 7 clear bottle glass fragments (probably all from a single bottle), 7 nails (6 modern wire nails and 1 post 1830 cut nail), and 4 pieces of wire (probably from a single strand). However, because the stratigraphy of this shovel test did not significantly differ from other shovel tests, the relatively high count of artifacts appears to be a random artifact cluster within the general yard scatter of artifacts throughout this Area. The other four shovel tests in Area A with relatively high counts of artifacts are near Areas B and C, and the increased number of artifacts in these shovel tests resulted from recent surface and subsurface disturbances in these areas. The high desnsities in 50N/30W and 50N/20W were caused by the 1981 demolition of a house on the lot immediately west of the project property, and the high density in 40N/10E and 30N/0E from the house demolition or the placement of the driveway in Area C. The small amount of identifiable metal recovered in Area A was rather evenly distributed, although artifacts identified as machinery parts do occur primarily in the southern half of this Area (i.e. closer to the mill structure). Brick, coal, and slag occur primarily in the northern two-thirds of Area A, a result of either intentional deposition or accidental deposition during transit to a location somewhere at the rear of or behind the property.

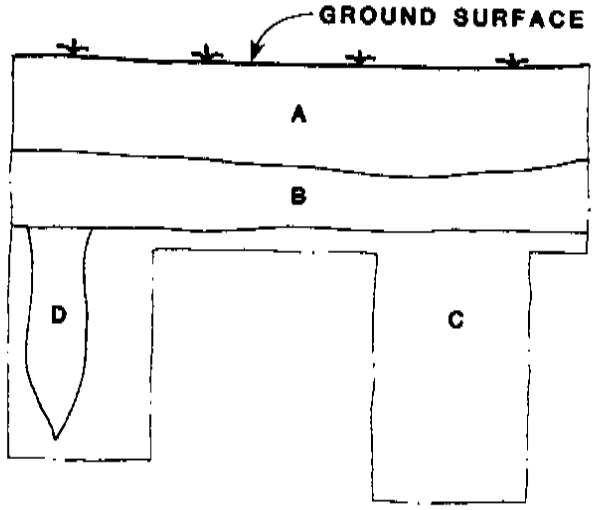
Square 2 (3' x 3') was placed at 80N/20W (Figure 31) in order to verify the stratigraphy of Area A previously determined by shovel testing and to further identify the context and

FIGURE 31

PLAN AND PROFILE OF SQUARE 2/AREA A



PLAN



SECTION A–A1

KEY:

A – Black Sandy Loam With Artifacts (Level 1, 82/1-051)

B – Transition Zone With Artifacts (Level 1, 82/1-052)

C – Brown Sand, No Artifacts Recovered, Subsoil

D – Very Dark Brown Post Mold With Wood Fragments

integrity by a more controlled artifact sampling. The profile (Figure 31) appears much the same as that of the shovel tests. Increased horizontal exposure provided little change in the quantity or quality of artifacts recovered. Excavation of Square 2 to 11" below ground surface recovered only 19 artifacts (excluding brick fragments), a sample insufficient to make reliable interpretations. Of note in this square was the presence of the remains of a 2" diameter post, pointed on the bottom, which appeared at the top and extended 13" into the sterile subsoil (Figure 31). The post appeared to have functioned in a small fence system indicative of a subdivision of property, although no association of it with any mill function could be demonstrated.

Interpretation of Area A

The stratigraphy of Area A consisted of a topsoil, transition zone, and subsoil. The presence of homogeneous density of artifacts throughout both the upper layers indicates that they are part of a deposit formed continuously through cultural scatter which developed during the historic utilization of the site. Unfortunately both the artifacts recovered and the stratigraphic relationships were quite undiagnostic. Dating cannot be more precise than to bracket the deposits to the late 19th century into the 20th century. Functional interpretations of the artifacts suggests only that industrial activity occurred during the period of deposition.

Area B

This area consisted of two surface configurations, a

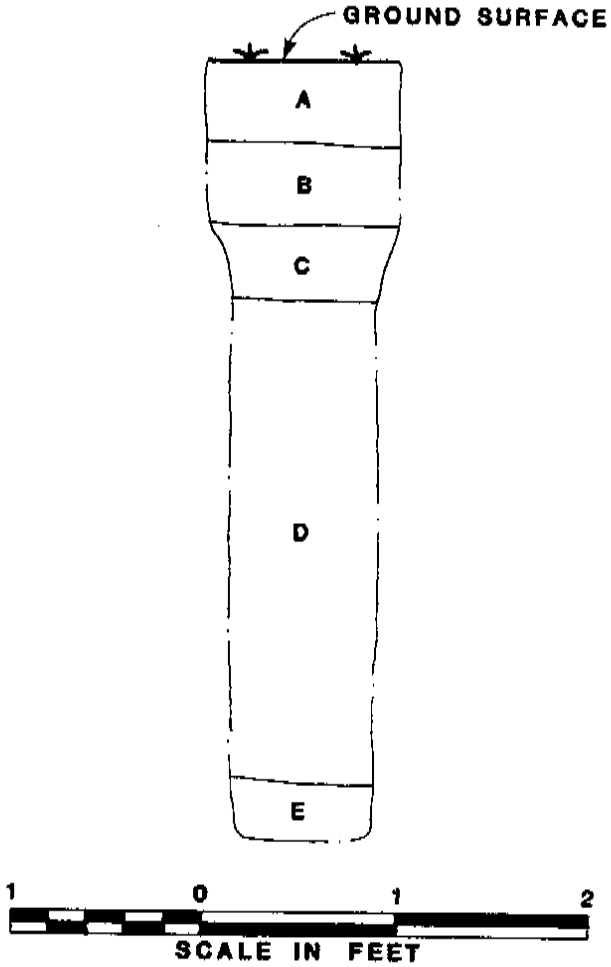
depressed area and an area interpreted as being functionally associated with it. On the surface Area B was partially covered with modern trash which appears to have been pushed there during the 1981 demolition of a dwelling on the adjacent property. The stratigraphy of the depressed area (Figure 32) is 4" to 6" of topsoil (Level A) over a very hard, mottled layer of sandy clay 2" to 9" thick (Level B) underlain by coal lens (Level C), which in turn was underlain by a 30" thick layer of fill (Level D) resting on the subsoil (Level E). During excavation it was noted that the deeper layers exuded an oil or gasoline odor. The stratigraphy of the remainder of Area B was of a topsoil (Level A) above a very dark brown sandy silt layer containing brick, gravel, slag, and coal (Level B) to a depth of approximately 12". Below this was a gray clayey sand (Level C) varying in thickness from 2" to 10" underlain by a brown clay-sand level (Level D) which extended to 16" to 24" below the ground surface to the top of the natural subsoil.

The artifacts recovered from the 2 shovel tests in the depressed area were located in the soil above the deep fill, Level D. They were few in number (27 total) and not significantly diagnostic (See Appendix II). The artifacts recovered from the 2 shovel tests within Area B located outside the depressed area were similar (24 total).

Square 1 (5' x 5'), was excavated at 30N/8W (Figure 29) in order to better define a layer of bricks exposed in the shovel postholer test (Figure 33 & Plate 16). Within the first twelve inches from the ground surface at the approximate top of the bricks, (Level 1) 110 out of the total of 176 artifacts found in

FIGURE 32

EXAMPLE OF SOIL PROFILE OF "DEPRESSED AREA" AREA B



KEY:

A – Dark Brown Sandy Clay

B – Very Mottled Sandy Clay (Yellow, Gray, Black)

C – Black Coal/Charcoal

D – Brown Sandy Loam, Fill

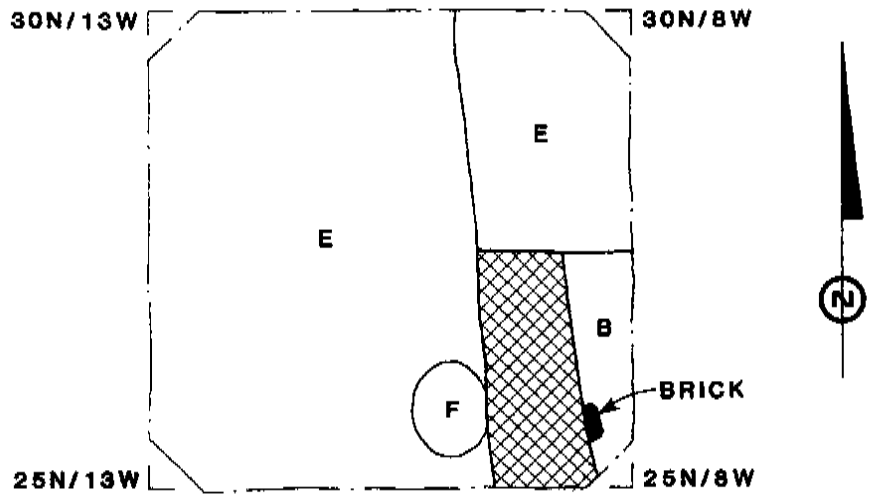
E – Light Brown Sandy Clay (Yellow, Gray, Black)

NOTE:

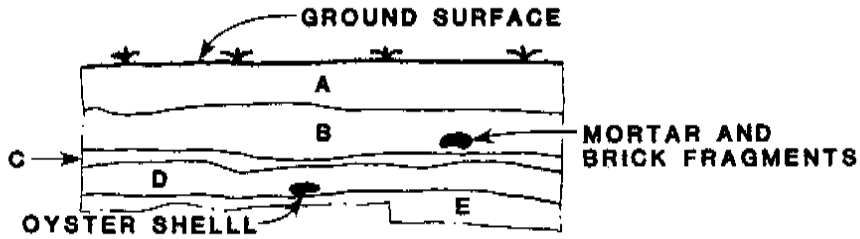
All Artifacts Recovered In Layers A, B, And C

FIGURE 33

PLAN AND PROFILE OF SQUARE 1/AREA B



PLAN



NORTH WALL SECTON

KEY:

▨ – Mortar And Loose Brick Excavated To Approximatley 1.0' Below Ground Surface (Southeast Corner)

A – Dark Brown Sandy Silt

B – Very Dark Brown Sand Silt Containing Alot Of, Gravel, Slag, Coal, Some Mortar And Loose Brick

C – Gray Brown Clayey Sand

D – Brown Clayey Sand

E – Light Brown Sandy Clay, Subsoil

F – Gray Brown Sandy Clay Root Mold

PLATE 16

SQUARE 1 - PLAN VIEW OF
BOTTOM OF LEVEL 1

Area B were recovered (Figure 33). These included whiteware, clear bottle glass, nails, crown-top bottle caps, aluminum can fragments, metal wire, cement, coal, slag, brick, leather, and clam and oyster shell fragments. Below this level only 17 artifacts were recovered. No variation was discerned in either soil stratigraphy or artifact content between the east and west side of the line of bricks.

Interpretation of Area B

The soil stratigraphy of the depressed area was novel primarily because of the very thick (31") layer of fill devoid of cultural material. Because this area extends so deep into the natural subsoil, it must intentionally have been dug to house, or most probably to serve as a drain for, the oil tank shown on the

1931 Sanborn Insurance Map (Figure 7). The pit was then later filled with soil devoid of cultural materials. Less than 10' east and on the outer edge of the depressed area and just below the topsoil was located a line of unmortered bricks not intentionally laid or placed, but lying in a random fashion paralleling the east edge of the depressed area. Because the line of bricks and the soil stratigraphy were neither regular nor substantial enough to have comprised a foundation or walkway they are interpreted as being representative of additional fill containing building rubble deposited adjacent to or abutting the oil tank.

Area C

This area extends from the southern termini of Areas A and B southward to Stein Highway and contains not only the extant mill structure but also the driveway and other areas adjacent to the building (Figure 29). The stratigraphy of this area contains much internal variation and is differnt from the rest of the property (Areas A and B). The stratigraphy was much more complex and disturbed than were Areas A and B. Shovel test 20N/0E (see Figure 30) can be used as an example of the stratigraphy at the northern end of this area. Below 5" of topsoil (Level A) is 1½" of fill with gravel (Level B) thrown out from the driveway, under which was approximately 7" of mottled light brown clay sand (Level C) over the natural subsoil, Level D. Typical of the driveway area was 10S/0E with gravel on the surface over a hard, orange sand fill 2" thick (Level A). Below this is approximately 4" of mottled sandy clay with gravel (Level B) over a 9" thick layer of dark brown sandy sile (Level C) and below this was the

subsoil (Level D) devoid of cultural remains. The results of shovel test 60S/0E (see Figure 30) indicated the extreme complexity of the stratigraphy adjacent to the standing structure. Here excavations revealed a 3" of humus over a mottled sandy clay layer (Level A), underlain by a 3" and 4" layer of black sandy silt (Levels B and D) separated by a 2" coal and ash layer (Level C). Below this was a 3" grey sandy clay layer containing coal and ash (Level E) and a grey brown sandy clay layer (Level F) that extended to 34" below the ground surface containing a lense of mortar 23" below the surface. These different layers represent different episodes of deposition of cultural fill with the deepest layers probably being placed at or near the time of the original construction of the building and other layers being deposited during the 20th century. Within Area C, for the stone driveway and ramp to the basement, the stratigraphy and artifact deposits were created during the utilization of the structure as a mill (Floyd Cantrell: pers. comm.: 1982).

The 35 shovel/postholer test units provided artifacts similar in type and time to those in the other Area. Three of the shovel tests contained no artifacts. Throughout Area C the artifacts recovered (see Appendix II) were modern, dating no earlier than the turn of the 20th century. As elsewhere at the site, very few ceramics were recovered, and the small amount of glass was predominantly 20th century bottle gas (mostly from soft drink and milk bottles), and window glass fragments. Of the identifiable metal which was recovered, wire nails (post 1880)

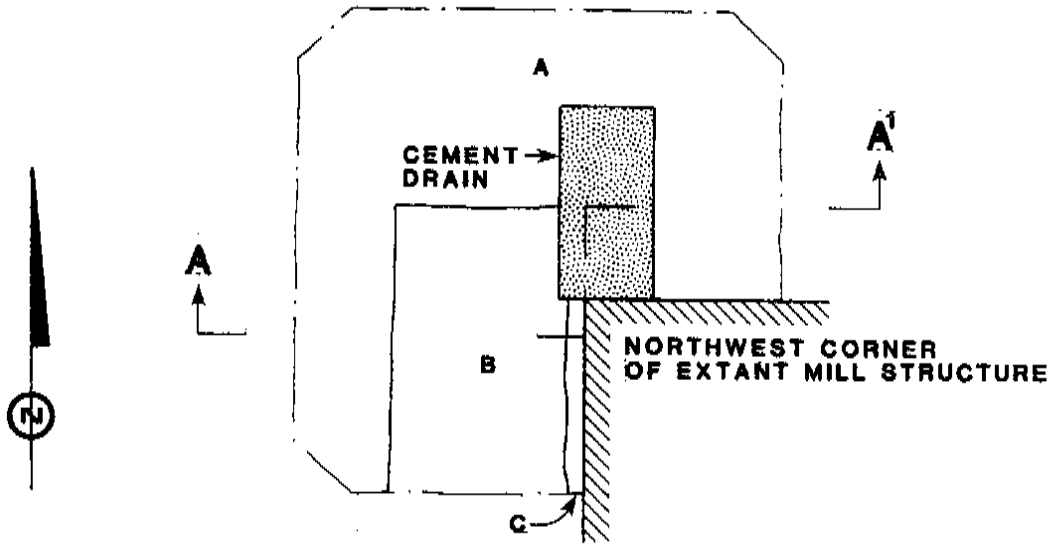
predominate and no nails date to earlier than the mid-19th century. Other metal artifacts were primarily architectural or household items (e.g. nuts and bolts, electrical wire, small hinges), and tools or machinery parts. Several crown top bottle caps were also recovered. Several bone fragments were recovered, primarily north of the driveway and a few oyster and clam shells were recovered, especially in the immediate vicinity of the extant mill structure. Brick, coal, and slag as well as other miscellaneous items (primarily plastic and rubber scatter) were also recovered throughout Area C but in increasing quantities nearer the north and west sides of the structure.

North of the eastern end of the building, Shovel/Postholer Test 20S/40E, reached an impervious layer of concrete approximately 20" below the ground surface. Above that was a complex stratigraphy similar to elsewhere near the standing structure, but no artifacts were recovered from this unit. East of the mill, Shovel Test 50S/55E demonstrated the undisturbed stratigraphy of that side of the building with a 6" deposit of fill over a transition zone to clayey sand subsoil at 13" below the surface. This shovel test contained 1 porcelain fragment, 4 window pane fragments, 2 metal tubes, 1 iron valve, 1 iron clutch plate, 5 unidentifiable metal fragments, and an electrical fuse.

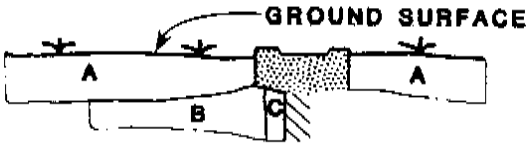
Square 3 (Figure 34), placed adjacent to the northwest corner of the extant building, and Square 4 (Figure 35), placed adjacent to the south side of the building contained artifacts similar in type and age to those recovered elsewhere within Area C, although in much greater quantities. The greater quantities of artifacts appear to be directly related to the proximity of

FIGURE 34

PLAN AND PROFILE OF SQUARE 3/AREA C



PLAN



SECTION A-A¹

KEY:

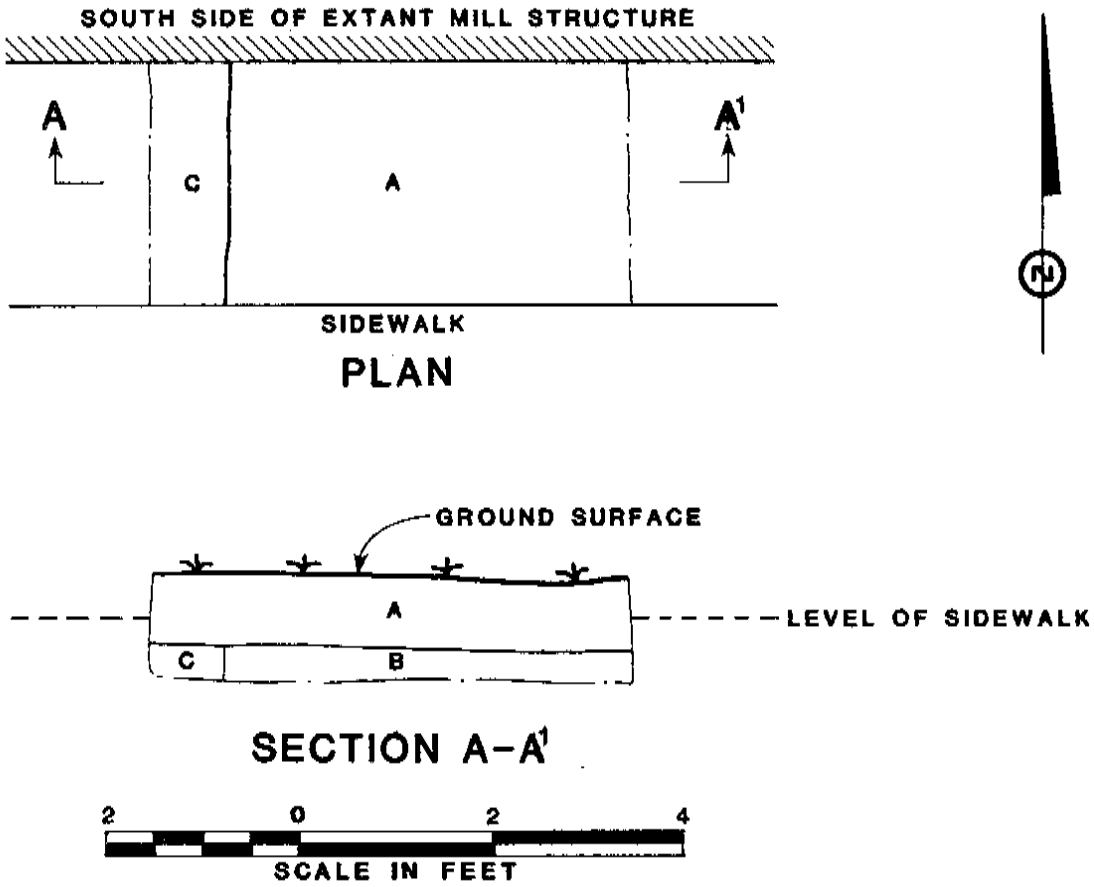
A – Modern Trash Scatter (Nails, Glass, Gravel, Mortar)

B – Dark Brown Mottled Sandy Clay

C – Brown Sand Clay (Possible Builder's Trench)

FIGURE 35

PLAN AND PROFILE OF SQUARE 4/AREA C



KEY:

A – Modern Trash Scatter (Glass, Plastic, Metal)

B – Dark Brown Sandy Loam

C – Brown Mottled Sandy Loam

these squares to the building rather than as a result of the larger size of these units compared to shovel postholer tests.

Interpretation of Area C

The stratigraphy of this area indicates a series of depositional episodes, resulting from both intentional discarding and unintentional loss of materials. Industrial scatter, primarily slag, coal, and machine parts or tools, was present throughout Area C but in greater amounts nearer the northwest corner of the standing structure (Shovel/Postholer Test 40S/10E and Square 3). The artifacts recovered do not provide good data for the precise dating of the site occupation or for building construction periods. The series of layers of cultural deposits combined with the large number of artifacts recovered suggests that this area has been used for the intentional discarding of industrial refuse, just as the entire area immediately behind the building is today used as a refuse discard area. The cement at the bottom of Shovel Test 20S/40E is probably a foundation for the steam boiler (Figure 6), and/or later (Figure 7) oil engine, which powered the mill. The large concentration of modern bottle glass and other debris south of the mill in Square 4 is indicative of roadside scatter; the 58 nails recovered may indicate the deposition during demolition of a loading dock shown as a "frame partition" on Figure 6 and reported by an informant (Floyd Cantrell: pers. comm.: 1982). Thus, the distributional patterning of the cultural materials recovered are interpreted as of 20th century origin with the following causes of depositon: a) roadside scatter to the south (front) of the mill building; b)

intentional discarding of industrial materials north (behind) and west of the structure (including the sheds shown on Figures 6 and 7), now partially disturbed by bulldozing and construction within this area of the property as reported by the current owner; and c) intermittant use and artifact deposition on the east side of the structure.

In spite of the disturbances to the existing cultural deposits, the excavations were able to identify that there was a patterning of the deposits at the site with a concentration of artifacts surrounding the mill structure and a corresponding decrease in artifact frequency in test units at increasing distance from the structure. The high density of artifacts immediately surrounding the structure identifies it as the source of the artifacts and the distributional patterning was similar to that identified at other historic residential sites in Delaware. Separated from the structure were located several features interpreted to represent activity areas associated with the mid-20th century operation of the mill. However, all the artifacts excavated and the features defined relate to a site occupation dating exclusively to the 20th century and the nature of the deposits was not informative as to furthering the knowledge of the site's operation or technology and providing any insight of the worker's lifestyle or other characteristics.

CONCLUSIONS

The 1982 cultural resource investigations resolved the discrepancy between the local folklore, concerning the architectural style of the structure, which suggest its

construction to the mid-19th century, the historic documentation which dates its construction to the end of the 19th Century (ca. 1898). However, no specific records could be located concerning the operation of the mill. Therefore neither its overall economic trade network nor its influence on the local, let alone regional or national, area could be determined. However, both the competition from several other nearby mills and the testimony of one knowledgeable informant suggest that the business may have failed in the mid-20th century (ca. 1943) because it could not obtain enough business to support its operation.

The architectural recordation of the extant mill structure verified that the brace and frame superstructure remains today largely unaltered and structurally sound. The original mill works have not survived and several interior additions have occurred since the termination of the milling operation. The recent addition of asphalt siding to the exterior of the structure has significantly altered its exterior appearance. Unfortunately, the components of the power source and the milling machinery have been removed. Thus little survives which could yield information on the day to day operation of the mill. Inside the mill structure the location of milling machinery bracing and the openings in the floorboards was suggestive of a segment of the mill operation. Stored in the barn at the rear of the property are some of the mill works such as pulleys and belts but which do not add any additional information to the mill operation.

The archaeological materials recovered were obtained from cultural contexts which allowed for the effective delineation of

both the site limits and the determination of the function of the property area and activity areas. Area A, which roughly comprised the northern half of the project property, contained an undisturbed soil stratigraphy and a low artifact content interpreted as a scatter of artifacts deposited over a 100 year time period. Area B, a small portion of the project area near the center of the western property line was found to contain a large, deep feature devoid of cultural material and interpreted as representing the space formerly occupied by a large oil tank ca. 1931. This tank was removed after the failure of the mill in 1947 and the void filled initially with sterile soil and later with miscellaneous trash and building debris. These deposits represented the highest concentration of artifacts recovered at the site, but all dated to the early to mid 20th century. The third area, Area C, comprised the southern half of the property and included the mill structure and the immediate surrounding area. The stratigraphy of this area was much more complex than in the other two areas. In contrast, there were as many as seven different periods of deposition represented. Although these levels were very distinct, the artifact content was low in number and not diagnostic as to the date of manufacture and too fragmentary to allow the determination of form or function. The analysis of the distributional patterning of the artifact indicated that there was a high density of artifacts deposited adjacent to the structure with a corresponding decrease in frequency as distance from the source of the artifacts (the mill) increased. From the excavations it was determined that Area A

had functioned as an active midden area for the deposition of coal ash produced by the steam-powered operation, from 1898 to ca. 1931 and for the intentional disposal of industrial and domestic refuse produced during the everyday operation of the mill.

In sum the archaeological deposits at the Cantrell Warehouse/Enterprise Mill relate to the different spatially separated uses of the project property area. However most of the archaeological levels were found to be too young to warrant the determination of the site eligible for listing on the National Register of Historic Places. This status was also concluded because the site did not yield data significant as far as the chronology of the site, the mill technology, or the lifestyle of the occupants and workers at the mill. The archaeological testing thus found that there was little potential of the site to yield further information important to the history of the site or to the surrounding area of Sussex County.

The architectural significance of the Cantrell Warehouse/Enterprise Mill site has been compromised by a loss of integrity through the removal of the mill machinery and power source and through the alteration of the interior and exterior fabric as a result of the conversion from a mill to a warehouse. Historical research associated with the project concluded that the structure did not contain distinctive architectural characteristics of a late 19th century industrial mill structure, and that there are still many surviving structures from this period that exist in the area (Plates 17 and 18) and region. Also the method of construction of the mill, braced frame, was

PLATE 17

HEARN AND RAWLINS MILL,
SOUTHWEST CORNER ELEVATION

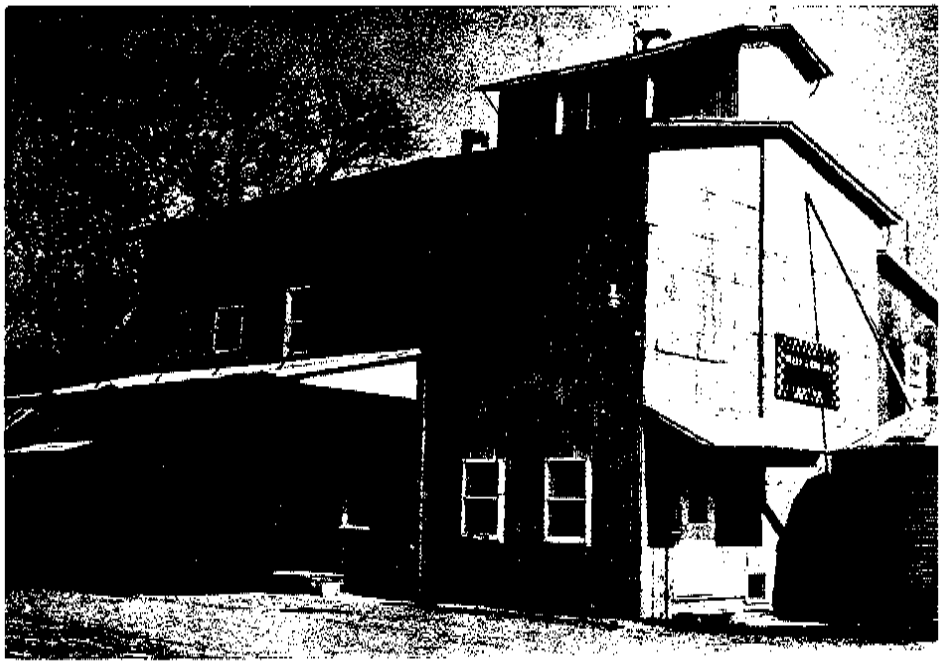
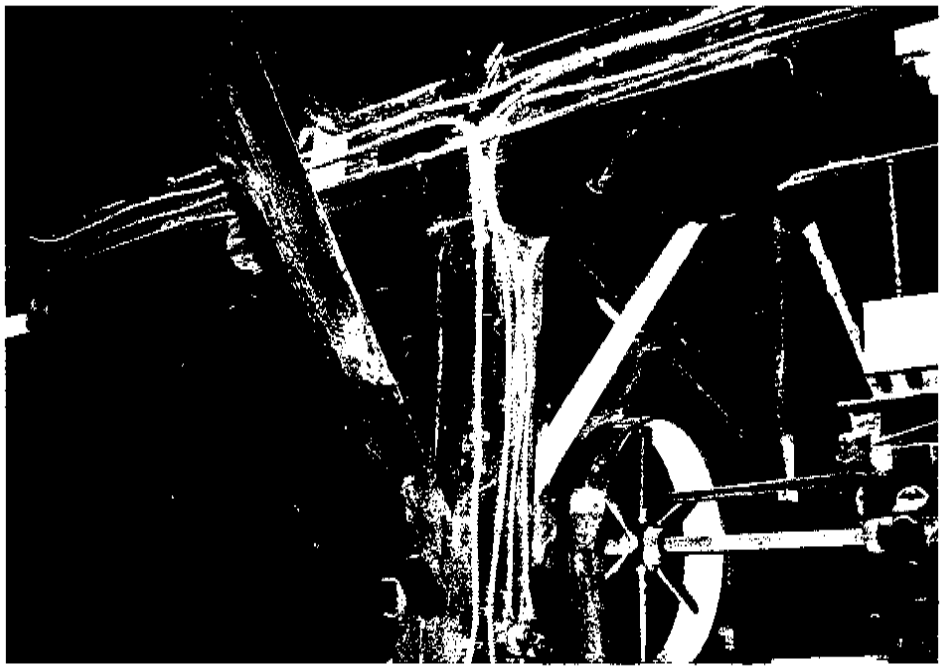


PLATE 18

HEARN AND RAWLINS MILL,
INTERIOR DETAIL



found not to be distinctive to the function of the structure or when viewed in a local or regional context.

Based on the architectural and archaeological evidence, it was concluded that the complex was not significant in light of established National Register criteria and thus not eligible for inclusion on the National Register of Historic Places.

RECOMMENDATIONS

Although the Cantrell Warehouse/Enterprise Mill complex was concluded to lack outstanding or unique features or historical events or archaeological remains and was determined not to be eligible for inclusion on the National Register, the research and documentation assembled by the present research will be valuable to historians and preservationists as a source of comparable information.

It is the final recommendation of this research that neither data recovery nor further research is necessary regarding this property and that construction proceed.

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State of Delaware, Division of Historical and Cultural Affairs, Bureau of Archives and Records; Dover, Delaware

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Ms. Joan Larrivee, Historian, Bureau of Archaeology and Historic Preservation
Mr. Floyd S. Cantrell, Seaford resident and current owner of project property
Mr. Dick Carter, Sussex County Historical Presevation Planner
Mr. Edward F. Heite, Professional Archaeologist
Ms. Madeline Hite, Archivist, Bureau of Archives and Records
Mr. William R. Joline, Seaford resident and current project property renter
Mr. Howard Larrimore, Seaford resident & previous dairy owner
Mr. Jacob Moore, operator of Hearn and Rawlins Mill, Hearns Pond, Delaware
Mr. James Phillips, Seaford resident & owner of chicken house

Maps

1780 A Map of the Delaware and Chesapeake Bays with the Peninsula Between Them; copied by Andrew Skinner (SCML)
1796 Delaware, "from the Best Authorities" (SCML)
1801 A Map of the State of Delaware and the Eastern Shore of Maryland (SCML)
1857 Nanticoke City, Southern Terminus of the Delaware Railroad; surveyed by John Dale, Civil Engineer (BAR)

PERSONNEL

Kevin W. Cunningham, DelDOT Archaeologist and Project Coordinator BA in Education, Marshall University, M.A. Candidate in Anthropology/Archaeology from the Catholic University of America, with over nine years of experience in West Virginia, Virginia, Maryland, Pennsylvania, Washington, D.C., and Delaware.

Jim O'Connor, Archaeological Supervisor, B.A. in Anthropology, University of Maryland, MA Candidate in American Civilization at the University of Pennsylvania, with seven years of archaeological experience in Maryland, Virginia, Pennsylvania, Utah, Illinois, and Delaware.

Ellis C. Coleman, BA in Geology/Anthropology, Washington and Lee University; MA in Anthropology/Archaeology, University of Georgia. Eight years experience in historic and prehistoric archaeological research in Virginia, Washington, D.C., Georgia, Missouri, New Mexico, Delaware, and France.

Thomas W. Brockenbrough, Jr., Project Engineer, Location and Environmental Studies Office, two years; B.S. Civil Engineering, University of Virginia.

Charles H. Fithian, Archaeological Assistant, B.A. in History from Salisbury State College, with 13 years of archaeological experience in Maryland, Virginia, Pennsylvania, and Delaware.

Janet E. Belser, Lab and Field Crew, B.A. in Anthropology from the Catholic University of America, with two years of archaeological experience in Virginia, Washington, D.C., Georgia, Arizona, and Delaware.

Kelly T. Blough, Lab and Field Crew, Senior in Anthropology at the University of Delaware, with one year of archaeological experience in Delaware.

Leah B. King, Lab and Field Crew, B.A. in Anthropology from the University of Delaware, with over one year of archaeological experience in Delaware.

Lauralee Rappleye, Field Crew, B.A. in Anthropology, University of Delaware, MA Candidate in Anthropology/Archaeology at the Catholic University of America, with over six years of archaeological experience in Virginia, Maryland, Pennsylvania, North and South Carolina, Georgia, and Delaware.

Tony A. Vachelli, Lab and Field Crew, Location and Environmental Studies Office with one year of archaeological experience in Delaware.

Lori Ann Frye, Archaeologist, Location and Environmental Studies Office; BA in Anthropology from the University of Pittsburgh, MA in Folk Studies/Historic Preservation with over six years of archaeological and historic preservation experience in Pennsylvania, Tennessee, the Netherlands, New Jersey, Ohio, Kentucky and Delaware.

Jack Kochis, Field Crew, Highway Engineer Technician, Materials and Research Lab, twelve years with the Department of Transportation, Division of Highways.

Daniel Schur, Field Crew, Highway Engineer Technician, Materials and Research Lab, eleven years with the Department of Transportation, Division of Highways.

Terry Porter, Field Crew, Highway Engineer Technician, Materials and Research Lab, nine years with the Department of Transportation, Division of Highways.