

Delaware Agricultural Museum

"A Place in Time : Continuity and Change in
Mid-Nineteenth Century Delaware

Paula S. Holloway
Bernard L. Herman
H. John Michel

DELAWARE AGRICULTURAL MUSEUM

PAULA S. HOLLOWAY, PROJECT DIRECTOR

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SUMMARY

The exhibit "A Place in Time" is a dynamic portrayal of the social world of Delaware agriculture in the years about the middle of the nineteenth century.

These were years of transforming change in American agriculture as farming moved uncertainly toward the modern industrial world. The exhibit presents several aspects of the rural life of one place at about 1850. Among other things, it presents differences and changes: in men and women's social roles; in the lives of laboring Delawarians; in the class and wealth structure of rural society; in cropping practices; in the rearing and breeding of livestock; in housing, and farm buildings. It seeks to illumine and convey an immediate sense of the tension between the rural world that was passing and that which was coming into being. In sum: the exhibit seeks to describe and illustrate the emergence in the first half of the nineteenth century of the social and economic forces that have led to the present.

The exhibit achieves this objective by examining in detail the culture of one rural place. The exhibit is a product of collaboration between the researchers at the University of Delaware and the staff of the Delaware Agricultural Museum ("DAM"). It is based upon more than 20,000 hours of research (conducted over more than a decade) into the culture of nineteenth century rural Delaware. It draws upon one of the largest computerized data bases ever assembled for a single nineteenth century American rural locale. It provides a comprehensive cross-section of the culture of an American rural place at a

particular moment in time.

The exhibit is intended to be visually innovative. Like more conventional exhibits, "A Place in Time" uses surviving artifacts and period graphics. This exhibit, however, also relies heavily upon state-of-the-art contemporary graphic and photographic techniques to recreate parts of the past of which we have no visual record. Additionally, the exhibit visually integrates the past and present landscapes and material cultures of rural Delaware. In so doing, it seeks to use historical materials to sensitize viewers to historical-preservation and agricultural-ecological issues in contemporary American rural society.

The exhibit report is presented in four parts. This, Part I, summarizes the purposes of the exhibit and the exhibit planning process. Part II presents the exhibit script. Part III presents the objects and graphics which will be used in the exhibit. Part IV presents the exhibit design.

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I. BACKGROUND

NEH Grant Number GM-21896-84 was awarded to the DAM to plan a museum exhibit on the topic of rural life in nineteenth century Delaware. The planning of the exhibit was to be a collaborative effort between researchers at the University of Delaware and the DAM staff. The exhibit was to draw upon advanced techniques in historical scholarship and the graphic arts in order to present a visually exciting, detailed analysis of the social and economic forces which have transformed America from a rural to an urban, industrial nation as those forces manifested themselves in the social and economic life of mid-nineteenth century Delaware. What follows summarizes the museum-related and other purposes of the exhibit, its substantive themes, and the scholarly bases for its presentation.

A. Principal Purposes

The exhibit has three principal purposes:

1. It is immediately intended to provide an interpretive context for the Delaware Agricultural Museum's exhibits and educational programs. The stated purpose of the DAM is to preserve Delaware's agricultural heritage from early settlement through World War II. The museum consists of a 39,000 square foot main exhibit building, which contains small "in-house" exhibits that present the development of cultivating, planting, harvesting and processing equipment, the evolution of the poultry and dairy industries, and the evolution of the tractor and other farm-related vehicles. Objects on display were either made or

used in Delaware.

In addition to the main building, the museum property contains eight regional historic structures: a ca. 1860 one-room schoolhouse, a reconstruction of a ca. 1865 combination grist and sawmill, a ca. 1850 blacksmith/wheelwright shop, a ca. 1890 farmhouse, a ca. 1890-1910 horse barn, a ca. 1885 wagon shed, a ca. 1900-1910 granary, and a late eighteenth or early nineteenth century meathouse.

Currently, the indoor exhibits and the historic structures are not linked thematically or comparatively. Each stands as a separate entity. In addition, most of the exhibits are presently interpreted only in the general context of American agriculture, and are not specifically related to their place in Delaware's past. The exhibit, "A Place in Time," besides provides new and valuable historical information that will serve as a strong interpretive foundation for the museum's collections. Although the exhibit concentrates on Delaware agriculture in the mid-nineteenth century, it also explains what farm life was like prior to and after this period; therefore, the museum's collections, objects, and historic structures, will be linked thematically and comparatively to the exhibit.

2. The exhibit is intended to be educational--to tell a part of the American historical story as accurately and fairly as possible. In particular:

(a) The exhibit refutes a set of stereotypes: that most farmers did well in the past; that farm life was homogeneous;

that most farms were worked by their owners; that farms in the past did not change; that women were economically unimportant to the historical farm. It presents the agricultural life of a single state in its full economic and social context. It tells the stories of the people who worked the land, as well as the story of an abstract entity, "the farm." In telling these stories, the exhibit focuses on the depiction of the economic and social structure of a particular time and place. Its overarching theme is partly dynamic--a story of change over time--and partly structural--a story of the economic and social structure which change produced at a particular moment in time.

(b) By isolating for consideration selected critical areas of social life such as "mechanization," "labor" and "gender roles," the exhibit seeks to identify certain crucial dimensions of long-term social change not merely in rural Delaware, or in agriculture, but in America generally. Thus, while the exhibit is superficially particularized, its deep structure is based on a few elementary economic and social principles. As an educational tool, it is thus designed to permit students and other viewers to deduce the operation of general principles from a confrontation with particular instantiations of the operation of those principles.

Additionally, the exhibit is intended to accomplish several broader educational purposes. In particular:

(c) By presenting the manifestation of change in a moment in time and by simultaneously relating that moment to both the

earlier preceding past and the present, the exhibit seeks to present the viewer with a visual and written example of the historical contingency of human affairs. An overriding theme of the exhibit is that all cultures (including our own) exist but momentarily in time.

(d) By using photographs of existing buildings, graphs, charts, facsimile and actual documents in addition to museum artifacts, the exhibit seeks to acquaint the viewer with the intellectual process of doing history. By so doing, it seeks to inform the viewer that what we consider history is very much an artifact of the present, of its preoccupations, prejudices, and preferences: that is, that history, properly understood, is not something which existed in the past, but something which is made in the present.

(e) Finally, by virtue of its subject, organization and themes, the exhibit places contemporary agricultural and ecological problems in historical context, and argues that these problems arise from historical processes and can be dealt with in part by understanding these processes.

3. The exhibit design is intended to be practical for a small, young history museum. The main components of the exhibit system are composed of modules. Because the DAM requires a large portion of its floor space during its four major annual special events, the modular system will enable the museum staff to relocate the exhibit without undue cost or labor. The modular system also gives the DAM staff the ability to change or update

the exhibit without excessive cost for new components. As the museum grows, the exhibit will grow.

In addition, the modular panels combine varied visual experiences. They will be used to display flat graphics, photographs, and charts as well as three dimensional artifacts.

B. Substantive Themes: Narrative Presentation

In the first half of the nineteenth century American agriculture was subtly but significantly transformed as farmers responded to a growing market, high labor costs, exhausted soil and falling prices by adopting horse-drawn machinery, increasing the intensity of their farm operations, and fertilizing more scientifically and heavily than before. In the non-agricultural sector, growing cities provided a ready market for produce. Improvements in financing and the beginnings of a national transportation system accelerated the pace of change in the countryside. These changes were individually small, but they summed to America's first agricultural revolution. In 1800 farming looked much as it had for centuries; by 1850, the rural landscape was beginning to assume the form it would retain until the coming of the gasoline tractor, three-quarters of a century later.

In some ways, change was most extreme in the longer settled regions of the country such as Delaware where a century or more of neglectful agriculture had seriously depleted soils, where land was relatively expensive, and where markets were most easily accessible. This exhibit portrays rural Delaware in the middle

years of the nineteenth century in order to examine these large changes by examining their manifestations in a single locality. The exhibit is organized about a set of contrasts between the rural world which preceded the first forms of industrialization and that which would follow these early stages of industrialization. These contrasts are expressed in the organizing sub-theme of the exhibit, "Continuity and Change."

1. Modern and Old Fashioned Farms, 1850

By the middle of the nineteenth century truly modern farms were operating in a small region of Delaware in southern New Castle County. The scale of their output made these farms among the largest of their day. Such farms were heavily dependent upon wage labor. They were highly mechanized. Their profits were considerable. In this region of Delaware, traditional rural culture was disintegrating rapidly as change rent the social and economic homogeneity of the countryside. Here, the largest farmers owned nearly all of the land. Here, nearly two-thirds of all farms were tenant operated; and nearly three-quarters of the rural population worked for that quarter who owned land. The owners of these largest farms were truly "modern" farmers. In the societies which they formed to promote scientific agriculture, in the houses which they built, as well as in their farms, we glimpse portents of the agriculture of the American future.

But the pace of change in the countryside was still slow. Farmers on poor lands, farmers who were far from markets, and farmers who lacked capital or were unable to obtain credit

continued on as they had for years: to cultivate relatively small acreages with a family work force; to live in traditional farm housing; to work with old tools and old methods. If the slaves were largely freed by 1850, almost all blacks were still farm laborers. If women in cities and on modern farms were slowly being relegated to their "separate sphere," most farm women continued to perform hard physical work and to remain an integral part of the farm economy. If more work than before was done by machine, most was still done by hand.

This contrast between the monumental, looming world of the past, exemplified in the life of the average farmer, and the changing, emerging world of the family farm cum businessman forms the first set of dynamic contrasts around which the exhibit is built. On the one hand, the exhibit portrays the deep and profound structural changes in the countryside. On the other hand, continuity looms as large in the exhibit as it did in the past.

2. The Role of the Land

The second dynamic that organizes the exhibit is that between geographic regions, and in particular between northern and southern Delaware. These contrasts existed along two slightly different axes. First, as the market came increasingly to organize the farm economy, farm regions became increasingly specialized as the farmers sought to adapt their practices to the opportunity which topography and transportation provided. Delaware's varied geography produced surprisingly varied rural

economies and cultures. Second, Delaware was a border state, by tradition, half slave, half free. Most slaves were freed between 1790 and 1830, but cultural differences persisted. Northern Delaware, never a slave culture, moved aggressively into a modern world of wage labor and agricultural capitalism. In southern Delaware, life remained pre-capitalist, organized more about the exigencies of nature than the opportunities of the market, more about continuity than about change. These contrasts, between regions and between a modern, capitalist culture and a pre-capitalist culture, form the second dynamic of the exhibit.

3. Wealth and Class

The third dynamic which the exhibit portrays is that created by the interaction of social groupings. Life in the past was no more unitary than life in the present. Rural society was composed of very different kinds of people. Some were farmers; as many were farm laborers. Some were rich or becoming so; as many were poor; and more were "middling." Some farmers--about half--owned the land they worked; the remainder were tenants. Some tenants were rich, indistinguishable from their owner-neighbors. Others were poor. These divergent groups formed the human landscape of agriculture; their interactions--benign or brutal--resulted from and caused the course of the evolution of rural culture and history.

Finally, and most importantly, then, the exhibit seeks to portray effectively this richly diverse economic and social structure--to depict accurately the rural sociology of a lost

time, and to remind forcefully the viewer that those whose causes were ultimately lost--the agricultural laborer, the small traditional farmer--that those for whom the past was more trial and tribulation than experimentation, expansion and progress were no less a part of that past than their more fortunate and remembered neighbors.

In the background of the exhibit then is a long-term process of social and economic change in America, and, more narrowly, in Delaware agriculture. In the foreground is the economic and social structure which that process produced at a particular moment and in a particular place. At bottom, of course, the change and structure are one. Economies and societies exist only momentarily, only in time, and only in the midst of change.

The years about the middle of the nineteenth century were chosen for the exhibit for several reasons. They are far enough in the past that they elude modern folk memories. They are close enough to the present that their people are recognizable. They were a time when old ways continued on, but also a time in which new ways were being born. In these years, the modern landscape of rural Delaware was formed. But that landscape was made from unfamiliar materials. In short, during these years the evolution of American agriculture was in mid-passage.

C. Organization of the Exhibit

The several themes of the exhibit are presented in nine substantive sections. Each section provides a detailed description of one area of rural Delaware life. Each is

organized about the large theme of continuity and change and illustrates how the rural world of about 1850 had developed from the past and presaged the future. Each minor theme of the exhibit is also contained in each section, although the relative importance of the minor themes varies from section to section depending upon the relative suitability of the subject matter and the visual character and nature and quality of the available data, artifacts, photographs and graphics. The substantive sections and their principles purposes are:

Section II. Farm Regions. This section is intended to show the interaction between topography, soil fertility, and technology which produced regional varieties in agricultural ecosystems. The section, with the section on Social Structure, provides a context for the other sections. It refutes the notion that all farms in the past were alike. It provides a microcosmic model of the historical process of regional differentiation in agriculture, which is directly applicable to the understanding of the regional organization of modern American agriculture.

Section III. Agricultural Buildings. This section is intended to show how farming practices and differences in those practices between regions and among wealth groups manifested themselves in agricultural buildings, and how, as agriculture changed over time, buildings changed. The section picks up the idea of the modern farm as a factory in the fields from the preceding section and shows how

buildings became like factories. The section is intended to be the visual centerpiece of the exhibit and will use a sequence of barn photographs to capture the look of the land in the past.

Section IV. Crops and Livestock. Crops and Livestock serves two basic purposes. First, the section is intended to be informational. It provides the viewer with the basic information regarding the farm products of mid-nineteenth century Delaware without which the other sections would be incomprehensible or misleading, or both. Second, the section implicitly contrasts farming of the past with that of the present. Together with changes in technique, the changes in crop and livestock yields are the most striking changes in agriculture during the past 100 years. By focusing on the scale of crops and livestock production, the section attempts to portray the differences in scale between the historical and the modern farm. In so doing, it reminds the viewer that even those parts of life which we frequently take to be biological givens are the product of particular historical and social forces. It is anticipated that a substantial proportion of the exhibit's viewers will be farmers or persons with a farm background.

Section V. Social Structure. With the section on Regionalism, this section is one of the organizing sections of the exhibit. It introduces the idea that rural wealth was distributed unequally and that, in consequence, rural

life was varigated between wealth groupings. The section uses artifacts, principally houses, and graphics to provide a glimpse of the complexity of the rural social landscape: of the broad differences between the rich and the poor, landowners and tenants, farmers and laborers. These differences are related backward to the section on Regionalism and are subsequently explored in detail in the sections on Housing and Labor.

Section VI. Housing. This section directly complements the section on Social Structure. Photographs and drawings of mid-nineteenth century houses and their architectural details are used to further examine the social and economic class distinctions existent in the rural community. At the same time, the building design and fabric of the houses serve to emphasize the regional and local variation within the state. In the mid-nineteenth century, Delaware was composed of a number of radically different architectural landscapes. The architectural usages of the houses also reflect the images of domestic life in each area.

Section VII. Labor. The organizing principle of the transformation of American agriculture since 1800 has been the substitution of capital for labor in agricultural production. About the middle of the nineteenth century, most farm work was still hand work, although farming was in the first throws of mechanization. Nearly a third of the rural population were laborers. The character of the work

and lives of these laborers has been almost totally ignored by American historians. This section presents (in as much detail as possible) laboring work and laboring life. It illustrates the most significant division in rural Delaware: that between laborers and farmers.

Section VII. Mechanization. Historians have tended to ignore the substantial changes in farm techniques which occurred in the first half of the nineteenth century in favor of the more spectacular changes of the last twenty years of that century. Yet, the roots of agricultural modernity are clearly discernible in the early years of the nineteenth century. This section presents on the one hand, the major early nineteenth century innovations, and, on the other, the small scale of these changes when compared to the technology of the present. The section presents mechanical change but in the context of broad developments in American society, such as particularly industrialization and urbanization and in the narrow context of the regional and social aspects of nineteenth century rural Delaware. In its presentation, therefore, the section argues that mechanical innovation is not inevitable but a highly specific historical process and that change which seems beneficial from one point of view may seem disastrous from another.

Section IX. Other Work. This section weaves together several contrasts heretofore implicit in the exhibit. Much of the focus of the exhibit has been on the increasing

specialization of agriculture and on the tension between change and tradition. In this section tradition is made explicit and that tension is explored more fully in several contexts. The section focuses on women's work and on small farmers, especially those in the southern part of the state. On the one hand it shows that women were critically important to the economic success of the farm and in parts of the state were in the vanguard of agricultural change. On the other hand, it shows how craft activities permitted traditional small farms to survive in the face of unfavorable economic change. By focusing on these frequently ignored dimensions of rural life, the section provides a fuller portrait of rural society than otherwise would be possible and permits the viewer to gain a sense of the way change has affected all dimensions of rural life, including gender and age roles, and of the complexity of the process of historical change.

Section X. Domestic Outbuildings. The mid-nineteenth century farm was composed of constellations of activities. Each constellation defined the separations and unities which made the farm a working whole. The house, the farm buildings, the fields, etc. each had separate gender-based, occupational, seasonal, social, hierarchical and racial characteristics. The role of the domestic outbuildings can be viewed as auxillary to the day to day workings of the dwellings. Such buildings contained functions which were

associated with the house but still kept separate for a variety of reasons.

D. Research Prior to or Independent of the Grant

The exhibit script draws upon 20,000 or more hours of research conducted between 1974 and 1985 by individuals at the University of Delaware, the Delaware Agricultural Museum and the Division of Historical and Cultural Affairs of the State of Delaware.

1. Research at the University of Delaware

(a) American Studies Program in Rural Culture. In 1974, the American Studies Program at the University of Delaware began a program in rural culture. In 1976, this program was broadened to include rural material culture. In 1977, the program was awarded a University of Delaware Research Grant. The proceeds of this grant were used to expand the program. Student research assistants were trained. These students collected and processed comprehensive data sets regarding different aspects of nineteenth century rural Delaware life. Public service and course development adjunct programs were instituted.

In 1982, the DAM Exhibit-Project was developed by participants in the rural culture project and the DAM staff to broaden the University's public service programs by assisting the museum in developing its presentation and to disseminate to the public the data collected by the rural culture project. The AMS Program has provided matching funds, office space, research assistants, data and advice to the DAM throughout the term of the NEH Grant. Data

collected by program participants appears throughout the exhibit and, in particular, in sections II, V, VII, and IX.

(b) Division of Historical and Cultural Affairs. Between 1976 and 1982 a series of collaborative research ventures were undertaken between the American Studies Program and the Division of Historical and Cultural Affairs using state and federal grant monies. Each year summer research assistants were hired and trained by the University to record every standing building in Delaware outside of cities built before 1945. These data are the basis for section VI of the exhibit.

(c) College of Urban Affairs and Public Policy. In 1981, the College of Urban Affairs and Public Policy at the University of Delaware began a program in historic architecture focusing principally upon rural architecture. Using monies from state, federal and University grants, the College continued the collaborative venture in recording all historic dwellings initiated by the American Studies Program and broadened this research to include the production of drawings for the Historic American Buildings Survey. These data are the basis for sections III, VI, and X.

E. Data Sources.

The exhibit is built from one of the most intensive investigations yet conducted in the United States into the economy and sociology of a rural locality. The data sources for the exhibit include:

1. A comprehensive architectural survey of all currently standing buildings built before 1945 in the state.
2. A 100% sample of Orphans' Court Records from the years 1780-1830. (Containing descriptions of more than 1,000 now-vanished farm structures as well as other information about farming practices.)
3. A twenty-five percent (25%) sample of the Federal Agricultural Censuses for 1850 and 1870. (Containing together information on the production of 40 farm products for 4,000 nineteenth century Delaware farms.)
4. Ten percent (10%) samples of the Federal Population Census for 1850 and 1870. (Containing together information on 25 family and demographic characteristics for 3,000 rural Delaware families.)
5. Samples of tax lists for selected areas of the state for 1803/04, 1816/17, and 1852/53. (Containing information on economic activities and the wealth of 1,200 rural residents.)
6. All surviving rural Delaware accounts books, diaries and day-books for the years 1830-1870, as well as selected documents from other years.
7. Selected national publications and relevant government documents for the years 1840-1860 containing information about Delaware agriculture.
8. Selected probate, land, and civil-court records for the years 1800-1870.
9. A survey of collections of agricultural implements.

10. A survey of monographic and journal literature relating to nineteenth century American agriculture and rural life.

Quantifiable data were randomly sampled without replacement. The "hundred," the smallest political unit in Delaware, was the sampling unit. Data which were not susceptible to sampling were reviewed in their entirety, and then indexed. These indexes, in turn, were used to direct selective readings of the non-quantitative data. All quantitative data were mechanically processed using the University of Delaware's Burroughs B-7700, Dec-10, and IBM 3081 computer systems.

11. PROJECT ACTIVITIES

As detailed above, the exhibit script draws upon ongoing research from several institutional settings, some of which was conducted prior to or concurrently with, but independently of, the NEH Grant. For the planning of the exhibit, additional specific research was conducted, data were analyzed, existing research was organized and integrated, the exhibit script was written, and the exhibit designed. What follows is a brief description of the most important of these project activities.

A. Additional Data Collection.

A full-time research assistant was hired from February 1, 1984 until September 1, 1984. The work of the research assistant included:

1. To broaden the analysis of the sample tax list, agricultural and population census data described above, additional authoritative data were collected. Four "hundreds,"

each representing a different type of agricultural ecosystem were chosen for more detailed analysis than that permitted by the samples described above in Part 1 (E). These hundreds were: Broad Creek Hundred in Sussex County; St. George's Hundred in New Castle County; Mill Creek Hundred in New Castle County; and Duck Creek-Little Creek Hundred in Kent County. The hundreds were chosen because analysis of earlier collected data showed them to be paradigmatic of regional differences in agriculture.

To broaden the analysis provided by the sample data described in Part 1 (E), the sample size was doubled for each of these hundreds, respectively, from twenty five percent (25%) to fifty percent (50%) for the agricultural census and from ten percent (10%) to twenty percent (20%) for the population census. Additionally, the population and agricultural census samples were cross-tabulated with each other. Pertinent demographic variables were collected for each farm on the agricultural census.

Pertinent economic variables were collected for each household on the population census. These data were processed and analyzed in order to provide greater detail than otherwise would have been possible. Approximately 200 hours were spent in the collecting, recording, and analyzing of these data.

2. All surviving account, day, and letter-books by or of surviving farmers of rural Delaware for the years 1830-1870 in the University of Delaware Library Collections, the State Archives, Delaware Historical Society, or at the Hagley Museum in Wilmington, Delaware were investigated and summarized. Accounts,

letter-books or other works deemed most relevant to the project were read. All data obtained therefrom pertaining to farming practices, farm labor or farm machinery, (and selected data on other topics) were collected. This research required approximately 300 hours and is used throughout the exhibit particularly in sections VII and VIII.

3. In order to provide greater details on the kinds of machinery, livestock, buildings, furnishings, and other tools and artifacts owned by rural Delawarians, a sample of 150 randomly-chosen probate inventories, (50 from each of the states' three counties), were read, transcribed and analyzed. This process required approximately eighty hours. The data from this analysis are the basis for section VIII.

4. The Kent County Mutual Assurance Company records were read in their entirety. These records contain descriptions of more than 200 houses built in Kent County between 1840 and 1860. They represent an unparalleled record of the kinds of styles which were common in that region at that time. All descriptions of buildings were transcribed and analyzed. This research required about thirty hours.

5. The United States Patent Office Reports for the years 1825-1870 were read in their entirety and all references to agriculture or rural life were transcribed. This research required forty hours and appears in sections IV and VII.

6. To investigate the problem of farm tenancy, the land owning status of 1200 of the 1600 farms on the 25% sample of the 1850 agricultural census was determined by cross-tabulating that census with the population census for the same year. This required approximately 180 hours and is summarized in section V.

7. A thorough survey of machinery and implement catalogues published in the eastern United States between 1830 and 1870 was conducted. This survey was cross-referenced with the data collected from the probate inventory sample described above. This cross-referencing permitted an accurate reconstruction of the tools and implements which Delawarians in different regions and of different wealths were likely to have owned. Furthermore, by cross-tabulating data from the agricultural census regarding the value of machinery owned by more than 1600 farmers with the detailed portraits of the kind of machinery which differing farmers owned and the machine and implement catalogues an extremely precise picture of the distribution of machines was obtained. Collectively, these several sources serve as the basis for the text and labels in section VIII.

B. Data Analysis.

1. Descriptive Statistics. Basic descriptive statistics (frequencies, distributions, mean, median, mode standard deviation) were computed for each variable on the agricultural population census and tax list samples described in Part 1 above. These statistics were computed for each hundred, for the state and for each county on both a per farm and on a per

acre basis.

Similar statistics were computed for additional variables including animal units, total grain production and income. The results of these several sets of computations were mapped using the hundred as a base unit and prepared also in table form on the same basis. These are the data which support the conclusions, generalizations and arguments presented in the exhibit.

2. Analytic Statistics. All statistics were computed using "canned" computer packages, principally the Statistical Program for the Social Sciences and the Statistical Analysis System.

Like most sets of historical data, those employed in the exhibit are characterized by large variances. To analyze the components of these variances, detailed analytic statistics were performed using the approximately twenty-five variables deemed most important. The most important of these operations were:

(a) A set of analyses of variance were performed using different groups of hundreds in order to create the typology employed in section II.

(b) A similar set of analyses were performed using multiple wealth groupings to create the wealth classifications used to control for wealth in performing the analyses of regional farming practices described above in 2 (a) and to create the wealth

classification system which underlies the presentation in section V of the exhibit and is employed throughout the exhibit.

(c) Regression Analysis was used to form the picture of farming patterns employed through the exhibit.

(d) Discriminant Analysis was used to isolate and study tenants and laborers.

C. Exhibit Script and Design Preparation.

The majority of the research and data analysis was completed during the first year of the grant period; therefore, most of the second year was spent preparing the exhibit storyline, script, and the design plans. The preparation of the script and the design became an ongoing process of organizing the historical data into a clear and concise story.

1. Topic Identification and the Development of the Storyline. When the planning grant was written, it was anticipated that the exhibit could be organized along the lines of seasonal farm work. Thus the exhibit was originally titled "Rhythms of Delaware's Farm Life and Farm Culture--1850." As the data were analyzed, it became evident that to have organized the research seasonally would have confused the viewer. Fragments of information dealing with specific topics would have been scattered through the exhibit, forcing the visitor to integrate the information. In September and November, 1984, it was decided to divide the research into four parts. Each of the parts would deal with a different geographical area in the state. Each area had some unique characteristics. However, by February, 1985, it had become clear that this approach had as many problems as the first.

In February, 1985, it was decided to organize the exhibit around the three major themes described above in section I (B).

Topics were selected which illustrated the operation of these themes. The following topics were discussed: regional organization, rich and poor, crops, livestock, labor, machinery, gender, secondary occupations, farm housing and outbuildings. Between February and June, 1985, storylines for each of these topics were written. In June, some of the topics were dropped or combined and terminology was changed. At the same time, the topics were placed in subject order. The following order was agreed upon: farm regions, agricultural buildings, crops and livestock, social structure, housing, labor, farm machinery, other work, and domestic outbuildings. In July and August, 1985, the storylines for the topics were reviewed and discussed at length to ensure that they reflected the exhibit's major themes. In addition, the title of the exhibit was changed to reflect the themes. The project staff agreed to call the exhibit "A Place in Time: Change and Continuity in Mid-Nineteenth Century Delaware."

2. Writing the Script. The individual topics or sections were scripted from the storylines in a series of eight meetings held among the project staff in September and October, 1985, as well as about 120 hours of additional matching time by project personnel. (see Part II)

3. Exhibit Object and Graphic Notebook. The development of exhibit object and graphic notebook occurred throughout the grant period. Since the majority of the DAM's collection had not been catalogued, it needed to be inventoried and searched to determine exactly what could be used in the

exhibit. After assessing their collection, the museum actively began to seek items that it needed for the exhibit. A part-time research assistant was hired from November 1, 1984 until September 25, 1985 to assist the museum in these endeavors.

The DAM staff traveled to New Brunswick, New Jersey to review the collection of agricultural equipment at Cook College, and to discuss the possibility of an object exchange program. Also, the Delaware State Museum in Dover allowed the DAM staff to borrow items from their agricultural collection. The State Museum is now considering the possibility of deaccessioning their agricultural-related items and donating them permanently to the DAM. A long time friend of the DAM also allowed the museum staff to view his collection with the intent of giving the DAM any of the items needed for the exhibit. Other individuals responded to the museum's inquiries. In 1984 and 1985, a ca. 1830 groundhog thresher made in Mermaid, Delaware, a mid-nineteenth century spike tooth drag harrow, an 1852 improved power cornsheller, woodworking tools, a ca. 1850 horse-drawn cultivator, eighteenth and nineteenth century moulding planes, a nineteenth century shaying horse, and a ca. 1850 grain cradle were all donated to the museum. All of these items are included in the exhibit. They have measurably enhanced the Delaware Agricultural Museum's permanent collection.

In addition to objects, the DAM staff began to locate suitable graphics for the exhibit. The staff visited the Library of Congress, the Historical Society of Delaware, the Delaware

State Archives, the Hagley Library in Wilmington, Delaware, Morris Library at the University of Delaware, and the Corbit-Calloway Memorial Library in Odessa, Delaware. In addition, the Delaware Art Museum and the New York Botanical Garden assisted the DAM staff. Approximately 500 graphics were collected for possible use.

When the topics for the exhibit were determined in February, 1985, the objects and graphics were organized accordingly. In October, after the script was completed, objects and graphics were then carefully selected from those collected for each topic. Each object and graphic was then given a number in order to identify its location within the script. The completed object and graphic notebook was then sent to the exhibit designer. (see Part III)

4. Producing the Design. From January, 1984 to May, 1985, the DAM contracted with the design firm, Design & Production, Inc., to produce the exhibit design and to serve as a consultant in the exhibit planning process. In May, 1984, a representative of the firm met with the project staff to explain the steps that needed to be taken in the planning process. Since the first year was spent collecting and processing data, D&P did not actively begin to participate again in the project until February, 1985. A D&P representative who had worked with the project staff had left the firm. In essence, discussions between D&P and the project staff dealing with the exhibit had to start anew. By May, 1985, after meeting with the staff of D&P in Alexandria, VA

and after many telephone conversations with the Director of the Museum Services Division of D&P, the project staff decided that it could no longer work with the firm. D&P had preconceived notions about the content and design of the exhibit and refused to compromise with the project staff. On June 15, 1985, the museum formally terminated its relationship with D&P due to creative differences.

Root & Company of Washington, D.C. anxiously agreed to take over the project. David Root, the head of the firm, took a more personal interest in the project. He met with the project staff four times between June and August, 1985, at the museum in Dover. He was particularly sensitive to the needs of the DAM and the desires of the researchers involved. He was anxious to please everyone involved and still have a quality product. Mr. Root clarified topics and subject order, and brought an overall focus to the exhibit. Two meetings were spent drawing charts, graphs and perspective drawings to be used in the exhibit. From August to October, Mr. Root kept in constant contact with the Project Director. After the script was completed in October, it was sent to Root & Company along with the object and graphic notebook. Root & Company provided the DAM with an exhibit design and accompanying projected budget by November 31, 1985. (see Part IV)

RESULTS

The two-year planning grant resulted in a complete exhibit plan, including exhibit script, an object and graphic notebook, a

design plan, and a proposed exhibit budget, all of which are attached to this report. See Section 1 (B) of Part I for the three major themes which were derived from the intensive research and which are emphasized throughout the exhibit.

The exhibit is intended to further the national interest in strengthening the humanities in numerous ways. Like any piece of history, the exhibit is grounded in the belief that without understanding of the past, we are lost in the present. By focusing on the human dimensions of agriculture, the exhibit presents what was the most common form of American life for almost three quarters of our history. More generally:

a. "A Place in Time" is the museum's and the state's first major exhibit to accurately portray any aspect of Delaware's farm life and farm culture. Agriculture has been important throughout the state's history and today it is the state's largest industry. A major goal of the exhibit is to stimulate interest in Delaware's past farm life and material culture so that visitors can better appreciate the basic but often misunderstood farm life and culture of both the present and the future.

b. By presenting the social and economic structure of a particular place and moment in time as humanly produced, the exhibit reminds viewers that societies and economies are not objective "facts" but historically specific conditions. The exhibit, like the humanities generally, seeks to expand human capacity to understand and thereby to control the economic and social environments.

c. By presenting in detail rural culture at a moment in the past and showing how forces which originated in that past have led to the present, the exhibit, like history generally, seeks to make the viewer aware of the ways in which superficially minute changes become over time revolutionary transformations of society.

d. By presenting in great detail the lives of groups and individuals from a part of the American rural past, the exhibit, like many other humanistic exercises, seeks to acquaint the viewer with a part of the diversity of human experiences and to familiarize him or her with a culture quite unlike that of the present.

e. By using state of the art photographic and graphic techniques, the exhibit seeks to awaken in the viewer a sense of the beauty of everyday objects, and particularly the beauty of objects associated with work.

IV. STATUS

Because the DAM has an exhibit script, exhibit design and proposed budget, the institution intends to move ahead with the implementation phase of the exhibit. In the near future, the DAM will apply to the National Endowment for the Humanities for an implementation grant. At the same time, the museum will pursue other areas of funding.

V. ADDITIONAL INFORMATION

Research conducted during the preparation of the exhibit has had already several benefits including:

EXHIBIT SCRIPT: A PLACE IN TIME:
CONTINUITY AND CHANGE IN
MID-NINETEENTH CENTURY DELAWARE

1. The Training of Research Assistants. During the course of the exhibit planning process, two research assistants received extensive training in historical archival work. In addition, one research assistant was trained in statistical data analysis and computer assisted data processing methods. One of the project research assistants is presently on the staff of the National Park Service at Independence Hall National Park. The other is pursuing further education.

2. Integration Into Courses at the University of Delaware. Data collected during the course of planning the exhibit have been integrated with data collected at the University of Delaware in several courses, including courses in Statistical Methods for Humanities Students and Historic American Architecture. It is contemplated that as the exhibit is implemented, data collected for the planning of the exhibit will be used in other courses. It is hoped the exhibit will provide a context for the introduction of a course in agricultural history into the university curriculum.

3. Additional Integration with University Programs. As described in detail herein, the exhibit is a collaborative effort between University of Delaware researchers and the DAM staff. In consequence, information gained during the collecting and processing of data for the exhibit will be used in varied contexts, including the development of historic preservation plans for the state and future research into Delaware's rural past.

Introduction to Part II

A. Background to Part II

As detailed more particularly in the Introduction to Part I, the proposed exhibit, "A Place in Time Continuity and Change in Mid-Nineteenth Century Rural Delaware," consists of nine substantive sections, an introduction and a conclusion. In order, the sections are:

- Introduction
- Regions
- Agricultural Buildings
- Crops and Livestock
- Social Structure
- Housing
- Labor
- Machinery
- Other Work
- Domestic Outbuildings
- Conclusion

These sections are divided into three groups according to their relative thematic importance to themes in the exhibit:

- 1) Four groups are of primary importance,
 - Regions
 - Agricultural Buildings
 - Labor
 - Machinery
- 2) Three groups are of secondary importance,
 - Housing
 - Social Structure
 - Other Work
- 3) Four groups are of tertiary importance,
 - Introduction
 - Crops and Livestock
 - Domestic Outbuildings
 - Conclusion

Organization of the exhibit script

The exhibit script consists of two parts: 1) text and references to the objects and graphics listed in Part III, Objects and Graphic Notebook. The text is further subdivided into three types:

1. Main Text: appears on the lead panel of each section; conveys principal idea and theme of section.

2. Paragraph Labels: text of more than fifty words associated with an object or graphic, or a group of objects and/or graphics.
3. Object labels: text of less than 50 words associated with single object or graphic.

In accordance with convention, no object labels are herein provided. Also in accordance with convention, all main text is provided, and sample paragraph labels, intended, in the aggregate, to show the range of paragraph labels that will be used and with respect to individual sections to suggest the principal section themes, are provided. Additionally, a list of all other final paragraph labels is provided.

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ARTIFACT AND GRAPHIC LIST, SECTION I: INTRODUCTION

- 1.01 Engraving of Workers in Fields
- 1.02 National Map of Railroads, 1860
- 1.03A Colonial View, Wilmington
- 1.03B Nineteenth Century View, Wilmington
- 1.04 Engraving of Horse Pulling Plow
- 1.05 Block print of Manuring
- 1.06A Plow
- 1.06B Plow
- 1.07 Photograph of Richard Mansfield's House
- 1.08 Farm Wagon
- 1.09 Model Ox-Cart
- 1.10A Hoe Head
- 1.10B Sickle
- 1.10C Engraving of Man Hoeing
- 1.11A Photograph of Small Mid-Nineteenth Century Delaware Farmhouse
- 1.11B Photograph of Seventeenth Century English House

MAIN TEXT, SECTION I: INTRODUCTION

Object/Graphic

- 1.01 Once most Delawareans lived on the land. Most were farmers or farm laborers who worked with their hands.
- The New Nation
- The Years between the American Revolution and the Civil War were years of dramatic change. Thirteen colonies huddled east of the Appalachians became thirty-four states stretching to the Rockies and beyond. Three million people became thirty-one million. The country began to industrialize. Colonial towns became cities. As the nation grew, an expanding network of canals and railroads knit its economy and peoples closer together. This growth was built upon the spectacular productivity of the American soil. Whereas only one in seven Americans was employed outside agriculture in 1800, by 1860 almost half no longer worked on farms. Farmers fed the new industrial order. As the country grew and American farmers fanned out across the midwest, 50 million bushels of wheat became 100 million; 100 million bushels of corn became 592 million.
- 1.02
- Delaware Farmers in the New Nation
- 1.03A For Delaware's farmers, the new century brought both promises and problems. Nearby cities -
1.03B Wilmington, Philadelphia, and Baltimore - grew steadily, providing an expanding market for farm produce. But cheap wheat, corn and meat from the newly settled midwest kept prices down. Delaware's soils were exhausted, gullied and barren, from a hundred years of wasteful agriculture. In northern Delaware growing industries along the creeks and rivers raised the prices of land and labor even as they provided a market for farm produce. In the south, farmers remained far from markets.

Change: Our First Agricultural Revolution

- 1.04 During the first half of the nineteenth century
1.05 Delaware agriculture, like that of the rest of
the country, was subtly but significantly
transformed. To repair worn lands, farmers
1.06A began for the first time to fertilize
1.06B systematically and to cultivate new crops such
as clover and timothy. To reduce high
1.07 labor and land costs, they increased
the intensity of their farm operations, and
developed, adopted and improved horse-drawn
1.08 machinery. Individually these changes were
small. Collectively they made up our first
revolution in agriculture.

Continuity: The Hand of the Past

- 1.09 Even as the world of the Delaware farmer
began to change in the years after 1800, much
stayed the same. By modern standards, the
rate of change was very slow. Throughout the
1.10A nineteenth century most farm work was still
1.10B hand work - done with hoes, grubbing axes,
1.10C sickles and cradles, forks and rakes. By 1850
fewer than half of all Delaware farmers had a
barn, owned a wagon, kept more than two
1.11A milk cows, or tilled more than thirty acres.
Only a few farmers could afford new
1.11B iron plows; and only the very wealthiest could
purchase more elaborate equipment such as
threshers or seed drills. Most rural people
still lived as they had a century before: in
story and a half Hall-Parlor houses with two
rooms and possibly a kitchen on the ground
floor. In short, in the midst of change,
Delaware farms were still much as they had been
since 1700: small in scale, worked largely by
hand by the farmer, his family, and a single
hired laborer.

PARAGRAPH LABELS, SECTION I: INTRODUCTION

Horse-drawn Machines (1.04)

In the forty years following 1820, the technology of agriculture was revolutionized by the successful application of horsepower to every critical task in growing crops. The horse-powered seed drills, rakes, threshers, reapers, and mowers were the more important developments of the half-century. The application of horsepower to planting, cultivating, and harvesting tasks was an important factor in increasing the productivity of the mid-nineteenth century farm.

Plows (1.06 A & B)

Mid-nineteenth century farmers witnessed the transformation of the plow from a primitive wooden implement of limited effectiveness to a modern iron or steel device available in a wide-variety of special purpose forms, capable of much better work with half the effort. The application of cast iron to plows lay not only in the use of more resistant material but also in its permitting plow design to be duplicated and standardized. The period from 1830 to 1850 witnessed the gradual adoption of the implement by a large group of farmers in the Mid-Atlantic states, though there were still users of the old wooden implement in the 1860s.

Richard Mansfield's House (1.07)

By 1850 modern farms were operating in southern New Castle County. These farms were among the largest of their day. They depended heavily upon wage labor. They used the new machines as quickly as they were invented. Their profits were considerable.

From these profits a few farmers became wealthy. With this wealth they built a new way of life. Vastly larger than their predecessors, based upon new, urban rather than traditional designs, these houses, like that built by Richard Mansfield, dominated the landscape telling all who passed by their doors of the wealth and power which their owners had amassed from change.

Model Ox Cart (1.09)

This model ox cart was made in Sussex County, Delaware reportedly by a freed slave in the last years of the nineteenth century. It is one of the few reminders we now have of how important this ancient way of transporting people and produce was only a short time ago.

Hoe, Delaware, Circa 1840 (1.10A, 1.10B)
Sickle, Delaware, 1840-1860

Throughout the nineteenth century most farm work was done with tools which seem incredibly small to modern eyes. Hoes such as this one were used by farmers, their children and laborers to keep twenty or thirty acres of corn clear from weeds. Sickles like this were used in Delaware to cut ten or fifteen acres of grain.

ADDITIONAL PARAGRAPH LABELS, SECTION I: INTRODUCTION

- 1.08 Wagon Transport (250 words)
- 1.11A-1.11B Housing in Delaware (150 words)

ARTIFACT AND GRAPHIC LIST, SECTION II: FARM REGIONS

- 2.01 - Map of Delaware, 1825
- 2.02A-D - Four color perspective drawings from each of the states' principal agricultural regions.
- 2.04 - Soil Map of Delaware
- 2.05A-C - Containers of soil samples
- 2.06A-F - Contemporary landscape photographs - showing topography of Piedmont, Levels, Southern Region, Swamp and Marshland.
- 2.07 - Overlay map showing progress of railroads and principal roads and ports in Delaware.
- 2.08 - Photograph of railroad engine
- 2.09 - Photograph of railroad station
- 2.10 - Nineteenth century engraving of plowing with oxen.
- 2.11 - Map showing regions where horses and oxen were used.
- 2.12 - Cultivator

MAIN TEXT, SECTION II: FARM REGIONS

Object/Graphic

2.01

To survive farmers must adapt to the land - to its productivity and its topography - and to market opportunities. Thus, farming differs widely from place to place. In 1850, Delaware contained no fewer than four distinctive farm regions.

PARAGRAPH LABELS, SECTION II: FARM REGIONS

The Dairy Region (2.02A)

Farmers in the northernmost part of Delaware were close to the growing Philadelphia and Wilmington markets. Their hilly land was well suited for hay and for pasture. But such farms were small because they had been divided among sons and daughters for more than a hundred years. Land prices in the region were rising in 1850, as the area industrialized.

Farmers in the region responded to the limited availability of land and their proximity to markets by cultivating their small farms intensively. Every foot was used. A woodlot supplied fuel and building and fencing materials. Level land was used to raise oats and corn for food and wheat for home use and the city markets. Uplands provided hay for winter food. Wetlands along creeks and streams provided pasture in times of summer drought. The wives and daughters of farmers here made butter for the cities and developed one of the most productive dairying industries in the nation. Although dairy herds in the region were small - averaging four or five cows a piece - they produced more than 100 pounds of butter per cow, the highest average by far in the state. Meanwhile, husbands, sons and hired men developed the beginnings of a profitable grazing industry. Steers were purchased from the west, fattened on the region's pastures, and sold in the cities. Although these farms would be unable to survive the changes in scale brought by the gasoline tractor, they were, in 1850, admirably adapted to their ecological and technological place in time.

The Grain Region (2.02B)

In 1850 farms in the Grain Region were the most productive in the state. Almost all farms here were large by the standards of the day. The average farmer tilled 150 acres, three times as much as farmers in any other region.

The land in the region was level; the soils good and well drained. Wheat yields averaged nearly twenty bushels an acre; corn thirty-five bushels an acre. From their large farms on these good lands, the typical farmer produced more than 1000 bushels of corn and 500 bushels of wheat annually. These farmers also raised more livestock than those elsewhere. With dairy herds of nine or ten milk cattle, the average farm in the region produced the most butter in the state; with herds of ten steers, these farms also produced more meat than any others.

In short, farming in the Grain Region differed dramatically in scale from that elsewhere in the state. These were the first truly modern farms in Delaware.

The Mixed Farming Region (2.02C)

In 1850, the agricultural development of this region was hampered by high transportation costs and wet soils, which had been exhausted by a century of careless agriculture.

Farmers here produced first for their families and only secondarily for urban markets. The typical farmer raised only enough wheat for his family's needs. Corn was his principal market product. Most farmers in the region sowed twenty-five or thirty acres, three-fourths of their tillage in corn, and produced enough to feed one or two cattle for the market with a surplus of 300 or so bushels.

Farms in the region were about as big as those of the Grain Region but because the condition of the soil prevented the profitable production of wheat, the state's most valuable field crop, these farmers used their lands less intensively than those in the Grain and Dairy regions. Cattle here were fed on pasture and corn rather than on oats and hay. Nearly a third of the average farm remained in woods. So, while these large holdings and inherently good soils provided a basis for future improvements and expansion, the Mixed Farming Region in 1850 was primarily a region of self-sufficient family farms, most of which produced also a modest market surplus.

The Home Manufactures Region (2.02D)

With the development of modern drainage techniques, the introduction of chemical fertilizers, and improvements in transportation, southern Delaware would become one of the state's most productive regions. In 1850, however, the area was but recently settled. Large parts of the region remained in woods. Much of the soil was swampy or sandy and in 1850 the railroad had not yet arrived.

Yields in this region averaged about eight bushels an acre, too few to support profitable commercial production. Almost everyone farmed in the region and had a cow for their family's needs. Thus, there was little market demand for dairy products. The absence of demand together with poor transportation facilities prevented the development of dairying.

To survive, the farmers of the region developed an innovative agricultural system. Most grew almost nothing but corn, which was used to feed pigs and cattle. From these animals they produced meat and hides, which could be profitably exported to

markets in Philadelphia and Baltimore. This corn-animal system of husbandry left farmers free for much of the year to exploit the region's natural advantages. Many farmers turned their hands to lumbering, and timber became the region's principal export. Others became carpenters as well as farmers. Boat building industries grew up in Lewes and along the rivers of the region. Still others were weavers as well as farmers. Some became fishermen, trappers and hunters.

Farmers in this region were known popularly as "The Foresters." The term aptly describes the way in which they farmed amidst the woods and used those woods to survive.

THE CAUSES OF REGIONALISM

Soil and Topography (2.04; 2.05A-D, 2.06 A-F)

(sub-section) Uses labels attached to artifacts, graphics and soil containers to reinforce comments on soil text.

Transportation (2.07; 2.08; 2.09)

Transportation costs were an important part of the price of agricultural products. Before the coming of the railroad, farmers far from the cities of Philadelphia and Wilmington were forced to carry their produce to market over poor roads or to ship that produce long distances by sea. Such farmers were at a disadvantage relative to those who lived close to markets. To overcome this disadvantage they produced livestock, which could walk to markets, hides which were small but valuable and cured meats which could survive the trip. As the railroad moved southward in Delaware, it brought more and more farmers into urban markets. Those who adapted to market production prospered. The railroad also brought farmers into competition with more farmers from other places. Those who could not adapt would fail.

Technology (2.10; 2.11; 2.12)

The regional structure of agriculture at any point in time is determined partly by the available technology. Most of the agricultural innovations of the early nineteenth century involved horse-drawn machinery. Most were concerned with the planting and harvesting of wheat and other small grains. The new technology benefited farmers on level light lands where wheat could be grown successfully. A half century later, the development of the gasoline tractor would radically change the regional structure of Delaware agriculture as farms in the Dairy Region would become too small to remain profitable while those in the Home Manufactures Region would become very profitable.

Photograph of Piedmont Landscape (2.06A)

The well drained gneiss and loam soils of the Piedmont were subject to severe erosion. With care, however, flatlands yielded adequate crops, and the uplands contained the state's best haylands in 1850. Farmers used these soils to produce small quantities of market wheat and large amounts of market butter and meat for the nearby Wilmington and Philadelphia markets.

Aerial Photograph of St. George's Hundred (2.06C)

The "Levels" of St. George's Hundred were the home of the Delaware's early nineteenth century agricultural revolution. From these soils, the best in the state for row crops, farmers accumulated the capital to acquire large farms and to mechanize. In so doing they became the first truly commercial farmers in the state.

Nineteenth Century Engraving: Plowing with Oxen (2.10)

Farmers with horses had considerable competitive advantages over those with oxen. Horses were almost twice as fast as oxen. But horses were expensive. A good horse cost between \$50 and \$100 whereas a team of oxen could be had for \$40. Horses were less durable than oxen. They needed to be fed oats if they were to perform efficiently. On heavy lands their speed was slowed considerably. Thus horses were useful only where the lands were light, where grains could be raised and where farm income generated enough capital to purchase them. And only some of Delaware's mid-nineteenth century farmers were able to take advantage of the horse-drawn machines of the period.

Cultivator (2.12)

Among the crops that required cultivation and weed control for success, corn was by far the most important on northern farms. Corn was traditionally cultivated by hand using a hoe. To control weeds, four hoeings were considered necessary, each involving one and a half days of labor. During this period there was a search for a device that would better substitute for the hoe. A one-horse cultivator equipped with five shovels, resembling modern duck feet was in use as early as 1820. The cultivator found some adherents as early as the middle forties. It was claimed that it reduced the labor required to one-third of the hoe's labor per acre. Still, the hoe remained the essential tool for corn cultivation at least until 1860.

ADDITIONAL PARAGRAPH LABELS, SECTION II: FARM REGIONS

- 2.04 Soil map of Delaware (150 words)
- 2.05A - 2.05C Soil Samples (100 words)
- 2.06B, E - F Landscape Photographs (50 words each photograph)
- 2.07 Railroad map of Delaware (50 words)
- 2.08 Photograph of railroad engine (25 words)
- 2.09 Photograph of railroad station (25 words)
- 2.11 Map showing regions where horses and oxen were
 used (50 words)

ARTIFACT AND GRAPHIC LIST, SECTION III: AGRICULTURAL BUILDINGS

3.01	Drawing of Smyrna Farmstead
3.02	Portrait of William Clark (Detail)
3.03	Photograph of Barn
3.04	Photograph of Cornhouse
3.05	Drawing of Granary with no crib
3.06	HABS drawing of Large Granary
3.07	Photograph of 18th Century English Barn
3.08	Photograph of 19th Century Delaware "English" Style Barn
3.09	Photograph of Early 19th Century Pennsylvania Bank Barn
3.10A	Photograph of Bank Barn, Dairy Region
3.10B	" " " " " "
3.10C	" " " " " "
3.10D	" " " " " "
3.11A	Photograph of Bank Barn, Grain Region
3.11B	" " " " " "
3.11C	" " " " " "
3.11D	" " " " " "
3.12A	Drawing of Farm Plan, St. George's Hundred
3.12B	Drawing of Farm Plan, Sussex County
3.13A	Large Stable
3.13B	Photograph of Interior View of Stable
3.14	Plan, Double Corn House
3.15	Photograph of Hay Barracks

- 3.16 Photograph of Barn, Kent County
- 3.17 Photograph of Small Stable
- 3.18 Photograph of Small Corncrib/Granary

MAIN TEXT, SECTION III: AGRICULTURAL BUILDINGS

Object/Graphic

3.01 To keep grains from weather and rodents, to keep
3.02 hay dry and to shelter their animals, farmers
needed various buildings. Modern harvesting
techniques, storage facilities and
transportation have outmoded many of these
buildings. Most have vanished from the rural
landscape, but a few remain as reminders
of the farm of the past.

3.03 Before 1800 only a few Delaware farmers raised
more than 100 bushels of wheat, 250 bushels of
corn or kept more than three or four milk
cows. Our first farm buildings were small. A
3.04 barn twenty by thirty feet was average in size;
one thirty by thirty was large; and a barn
thirty by forty feet would have dominated the
local landscape. Farmers in regions where
market production was limited continued to build
similar small buildings until 1900. In regions
where market production was expanded greatly
after 1800, and on the largest farms in all
regions, these early buildings were torn down
and abandoned between 1800 and 1850 as farmers
built larger and more specialized buildings -
granaries, bank barns and stables, among
them - to accommodate the needs of their growing
farms.

Granaries or Crib Barns

3.05 The occasional granary built before 1800 was a
simple structure, lofted over and panelled on
the interior to keep its contents
3.06 safely. After 1800 farmers built more complex
structures to house both corn and threshed
grains. By 1850 these granaries or crib barns
had become one of the most distinctive features
on the Delaware landscape.

The typical granary was a story and a half
tall. On the ground floor a central rampway
allowed the farmer or his laborers to drive
wagons through and unload grain or corn. This
rampway was flanked by two cribs for storing
corn in the ear. At the end of one crib an
enclosed stairway led to the loft. The panelled
bins were used to store shelled corn and
threshed grain.

The granary or crib barn, thus, was designed to process and store efficiently substantial quantities of grain. Such barns developed first in the Grain Region, but spread rapidly to large farms south of the Dairy Region. Like the big barn, the big granary stood out upon the landscape as a sign of its owners successful participation in the agricultural revolution of the early nineteenth century.

The Barn

At least until 1850, only about half of all Delaware farms had barns. Young farmers starting out, tenants, or farmers who had only a single cow, stabled their horses or oxen and milked their cow in simple sheds. Steers were turned loose on the pasture. Hay, if any was raised on such farms, was stored in the stack or in simple raised platforms roofed over.

- 3.07 The first Delaware barns were built of log and frame based on the "English" plan. Such barns
3.08 contained three bays: a central threshing floor flanked by two mows. Cattle, horses or oxen were stabled in sheds attached to the end of the barn. Small farmers or farmers who were not engaged in dairying continued to build these "English" barns until well into the twentieth century.

As the butter industry grew in the Dairy Region after 1790, however, farmers began to build larger and larger barns to accommodate their growing milk herd and to store increasing quantities of hay, feed grains and fodder.

- 3.09 The bank barn was the most distinctive type of these big barns. Bank barns were built on
3.10A two levels. The ground floor provided stalls
3.10B for milking and stabling. The second floor was
3.10C entered from a ramp and contained a central
3.10D threshing floor flanked by two mows. On one side, this second story projected out over the entrances to the stabling area providing shelter for animals below and a dry place for feed grains above.

For the small or middling dairy farmer who raised modest amounts of grain, the bank barn was highly efficient. Hay, straw, grain and fodder were stored in a single structure and dropped to the animals below. This arrangement

saved substantial time over the course of a year. Not surprisingly, these barns were favored by agricultural improvers who sought to make farms as businesslike as possible.

- 3.11A Like most improvements, however, the bank barn was not suited to all farms. Farmers who did not keep enough milk cows or raise enough hay to justify the costs of their construction
- 3.11B of maintenance did not erect them. For farmers with large dairy herds of fifteen, twenty or
- 3.11C thirty cows the bank barn was too small. And
- 3.11D farmers who threshed hundreds of bushels of grain needed more extensive and modern threshing and storage facilities than those provided by the bank barn. Such barns, in short, were ideally suited to the typical farmer in the Dairy Region, but not to other Delaware farm regions. Literally scores dotted the rolling hillsides of northern Delaware. A few were built in the Grain Region. Almost none were built in the Mixed Farming or Home Manufactures regions.

Farm Buildings and Farm Regions

- 3.12A The rebuilding of the farmstead after 1800 was most thoroughgoing in the Grain and Dairy regions where farmers were first and most extensively involved in market production. In the Dairy Region, the bank barn became the major building, and housed all of the farms' storing and processing needs. In the Grain Region farmyards came to look like factories as farmers built complex new barns, stables, milksheds, granaries, and threshing barns.

- 3.12B On the largest farms in the Mixed Farming and Home Manufactures regions, similar farmsteads developed. But where land was inexpensive it was more sensible for the average farmer to feed cattle, horses and swine on native pasture than to store hay. A few cows could be milked in a shed. A team required only a simple stable. Wheat for family use could be kept in the house. And the typical farm in these regions had one or two cornhouses, a small barn with a shed attached and, possibly, a piggery.

Fencing was a major concern of farmers throughout Delaware. But, the significance of fencing varied considerably from region to region. In the Home Manufactures Region, fences

seem to have been intended to keep marauding swine and other animals out of orchards and fields. Field fences here were typically of wood set up with worm (rail) or post-and-rail construction. Garden fences were generally tighter and neater in finish and were built of withes interwoven with rails, boards or slab-wood, or upright pickets. Besides fencing in the Home Manufactures Region, fields were often ditched to aid in the reclamation of marshy land. Deep ditches could be as effective as fencing in the prevention of animal incursions. The pattern of worm, post-and-rail, and garden fencing observed in the southern part of the state also was common throughout the Mixed Farming Region. In the Grain Region, a growing shortage of local timber made the practice of wooden fencing expensive and impractical. Farmers in this region were experimenting in the late 1700s with live fencing in the form of hedgerows. Some of these live fences, in particular those of Osage Orange, may still be observed along the edges of fields and back-roads. Fencing in the Grain Region during the mid 1800s served a different purpose from that in the more southerly regions. Here, farmers were concerned less with keeping animals out of the fields and more with keeping them in their paddocks, pastures, and pounds. Hedgerows marked the borders of lots or small parcels of land that could be farmed by a single laborer or a group of fieldhands. Fences in the Dairy Region served the same purpose of those in the Grain Region. Live, worm and post-and-rail, and fieldstone fencing were all employed in this region.

The Diversity of Farm Buildings

- 3.13A There were common building types in each region but each farmer adapted these types to the needs of his farm and to his personal preferences.
- 3.13B Hay might be stored above a
- 3.14 stable, a granary might be appended to a barn,
- 3.15 one large cornhouse might be built or several small ones placed in a row as production expanded, depending upon the work habits and production of the farm.

The Small Farmers and Their Buildings

As he does now, the small farmer in the nineteenth century faced the problem of adapting

- 3.16 new ways designed for large farms to his special needs. Many continued to build English style barns and traditional small log cornhouses.
- 3.17 Others, however, built scaled down versions of large farm buildings. Whether such buildings justified their cost is unknown; but it seems clear that in imitating larger farmers, these small farmers announced their aspirations to one day become big.
- 3.18

PARAGRAPH LABELS, SECTION III: AGRICULTURAL BUILDINGS

- | | | |
|-------------|--|-------------|
| 3.01 | Drawing of Smyrna Farmstead (25-50 words) | |
| 3.02 | Portrait of William Clark (Detail) (25-50 words) | |
| 3.07 & 3.08 | "English" Style Barn | |
| 3.09 | Early 19th Century Pennsylvania Bank Barn | |
| 3.10A - D | Bank Barns, Dairy Region | (300 words) |
| 3.11A - D | Bank Barns, Grain Region | - |
| 3.12A & B | Farm Plans (150 words) | - |
| 3.14 | Plan, Double Corn House (50 words) | |
| 3.15 | Hay Barracks (50 words) | |

ARTIFACT AND GRAPHIC LIST, SECTION IV: CROPS AND LIVESTOCK

- 4.01 Barnyard engraving
- 4.02 Modern photograph of crops in the field
- 4.03 Chart of farm cycles
- 4.04A State map of bushels of wheat produced per farm
- 4.04B Drawing of wheat plant
- 4.06A State map of bushels of corn produced per farm
- 4.06B Drawing of corn plant
- 4.07A State map of hay production
- 4.07B Drawing of hay plant
- 4.08A State map of oats production
- 4.08B Drawing of oats
- 4.09A State map of flax production
- 4.09B Drawing of flax
- 4.10 State map of the number of milk cows per farm
- 4.11 State map of the number of meat cattle per farm
- 4.12 Drawing of milk cows, Devon cattle and Shorthorn cattle
- 4.13 State map of the number of pigs per farm
- 4.14 Drawing of foraging swine vs. improved swine
- 4.15 State map of percentage of farmers who own sheep
- 4.16A-B Drawings of Clayton Reybold's sheep
- 4.17 Modern photograph of Merino sheep

MAIN TEXT, SECTION IV: CROPS AND LIVESTOCK

Object/Graphic

- 4.01 Farms of the past were vastly less specialized than those of the present. Most Delaware farmers in 1850 raised a bread grain - wheat or rye - kept at least one or two milk cows for their family, and raised their own beef and pork. They fed these animals with produce from the farm - chiefly with Indian corn, but in the Dairy and Grain regions also with oats and hay.
- 4.02 By 1850 this ancient pattern of self-sufficiency was beginning to break slowly down in the face of improved transportation and an expanding market. Most farmers continued to raise most of what they consumed, but farmers everywhere were becoming more specialized, concentrating in crops or stock which best suited their lands.
- 4.03 For hundreds of years, farmers had been limited by poor yields and small stock. Yields of twenty bushels of corn and ten of wheat to the acre were average. Cattle weighed but 700 pounds, oxen at 1000 pounds were considered huge. Three year old pigs were slaughtered at 250 pounds. This pattern, too, was breaking down in 1850. Farmers were fertilizing more, planting their crops more densely and cultivating more carefully. The science of soil chemistry was developing. That of agronomy was about to be born. Farmers, especially the wealthier, were also becoming increasingly conscious of the breeding of animals. Slowly Durhams, Shorthorns, Devons and even a few Holsteins were replacing the mixed breeds of cattle.
- But in crop and animal science, as in all areas of the rural life of the past, change was largely limited to the wealthiest farmers, on the best lands with the best access to markets. Some began to specialize in market crops, but most were still mixed farmers. A few began to improve their husbandry, but most continued on as they had before -- getting low yields from worn lands. A few with capital bought new breeds; most stayed with the old standard breeds.

Crops

Wheat

Wheat bread was the bread of choice of all but the poorest. The growing cities of America and Europe provided a steadily increasing demand for wheat bread in the nineteenth century. With wheat prices at or near a dollar a bushel, wheat was Delaware's most valuable crop.

4.04A

But wheat was risky and expensive to produce. It could be grown successfully only upon relatively fertile and well drained lands. The crop was subject to attack by rust, rot and insects. The planting, cutting, binding, threshing, and transporting of wheat required more labor than any other crop. Unlike corn, which could be picked over a long period of time, wheat had to be harvested immediately when ripe. As a result, although farmers in all regions and on farms of all sizes produced some wheat for home use, only relatively rich farmers could afford to take the risks of growing market wheat and only relatively large farmers could muster the capital and human resources necessary to produce wheat.

4.04B

Almost all of Delaware's wheat was winter wheat, usually a hard red "Mediterranean wheat." Wheat was planted in the fall between the last week of August and the third week of September, usually on a field which had been fallowed or planted in clover the previous year. Wheat drills were coming slowly into use by the middle of the nineteenth century and were preferred by the largest and wealthiest farmers, but most Delawareans continued to broadcast their wheat and to seed at the traditional rate of two bushels an acre.

In the eighteenth century northern Delaware had been one of the world's premier wheat growing regions. Fertile soils, largely uncultivated in human history, yielded richly - as much as thirty bushels an acre by some enthusiastic reports. By 1800, however, a century of cultivation without fertilizers and without care to prevent erosion had exhausted the land. Wheat yields fell to less than ten bushels per acre throughout the state.

If they were to survive, Delaware farmers had to improve their productivity. This they did. In the first half of the nineteenth century, guano, lime and marle were hoed and plowed into the soil, rejuvenating it slowly. Cover crops of clover were used to fix nitrogen. Seed drills allowed more even seeding. The scythe and thresher replaced the sickle and flail. And by 1850, on the best lands of southern New Castle county, wheat yields passed fifteen and approached twenty bushels an acre.

Indian Corn

- 4.06A Indian corn, the only major native North American crop, was the major source of food and fodder for Delaware's livestock. It was grown by almost every farmer in every region. In the two southern regions, it was the only commercial grain crop on most farms.
- 4.06B

Indian corn was planted in the spring - in April in the southernmost parts of the state; in May in the north. As it had been for a century or more, corn was grown in squares by most farmers throughout the state. After plowing, the fields were laid off or "checkered" by running strings three and one half or four feet apart the length and breadth of the field. At the intersections of these strings, three or four grains of corn were planted.

When the corn was up, it was thinned to two stalks in each hill in most cases, and occasionally on poor land, to a single stalk. Until the corn had outgrown the weeds, it had to be continuously cultivated. And cultivation was the most laborious and time consuming task in the growing of corn. Farmers on lighter lands used the newly developed corn cultivator for this purpose, but many farmers, especially those on heavy soils, continued to plow between the hills to cultivate their corn. As they had from time immemorial, the poorest farmers hoed their corn, a back breaking task that occupied almost all of the time of all of the family for the two or three months between the time corn was planted and the time it outgrew the weeds.

When the corn had tasseled and the grains set, farmers and laborers took again to the fields, to remove the tops and foliage from the corn plants. Then when the ears had dried on the

stalk, in October or early November, they were picked and carried to the crib or corn house where they were stored until needed by stock in the winter months.

Hay

4.07A
4.07B

Oats

4.08A
4.08B

Flax

4.09A
4.09B

Livestock

Cattle

4.10
4.11

Cattle have a history of their own but no one knows for certain where the first Delaware cattle came from. Swedish settlers had them as early as 1640 - a white, now vanished breed of all purpose cattle. Others were undoubtedly brought by English settlers - ancestors of modern Jerseys, Holsteins and Angus. But in the New World, where land was cheap and labor dear, these breeds were allowed to run free, fenced out of cropland rather than into pastures, to forage at will in woods and on marshes.

4.12

By 1800 it was impossible to tell what stock made up Delaware cattle. Some were red, suggesting they came from Devon. Others were white and red. Still others were all white. Others still were all black, or white and black. These all purpose cattle were small but hardy. They could forage when necessary and survive on weakened natural grasses.

Beginning in the early 1800's, Delaware farmers increasingly began to replace native cattle with imported, specialized breeds. Early examples of Shorthorns arrived in Baltimore in 1783. The ancestors of the modern Jersey landed in Baltimore about 1820. And by 1850, a few of the wealthiest farmers were milking pure Holsteins. The new breeds yielded heavily - 120 pounds of

butter a year - and weighed 1000 pounds on the hoof when fattened. But they were expensive, beyond the reach of many farmers. And they lacked the versatility of the older breeds. A Holstein did not make much of an ox. They could not survive as could the common cattle on woods and natural grasses, but needed oats and hay. In turn, oats and hay required capital and labor, commodities in short supply among the average farmers of the state. Thus, the old cattle lingered on, and of the new, the Devon, still one of the most efficient converters of feed into milk and meat, became the cow of choice of the average Delaware farmer.

Swine

4.13

Nearly every Delaware farmer raised some pigs. In the Dairy Region, however, pigs were kept almost exclusively for home use. Only about 15% of the farmers in this region raised commercial numbers of swine (more than eight), and the average farmer had only between five and seven swine. Similarly in the Grain Region, farmers invested a relatively low proportion of their assets in pigs. In St. George's Hundred, for example, some 20% of the farmers produced ten or more pigs; but the average size of the swine herd was a relatively modest eight.

As one moved southward, and particularly when one crossed the Murderkill-Milford line, the density of swine per acre and the average number of swine per farm noticeably increased. In the central and southern hundreds, 40% of all farmers kept more than ten pigs. Something like 15% of the farmers in these hundreds owned more than fifteen swine; and in every hundred one encountered an occasional large pig operation with thirty, fifty, or even sixty swine.

4.14

In the Home Manufactures Region the density of pigs reached its greatest level. We know little about the characteristics of animals in the past. But the pig today is the most efficient producer of meat per unit of feed. The pig does particularly well on corn. If necessary, however, the pig can forage for itself, unattended, in woods and marshes. He was, therefore, easily the best suited animal for the intensive corn regions of the south, where drought threatened, and large acreages of wood and marshland were unimproved. A hog

slaughtered at 130 pounds could yield a gross income of \$8. Southern farmers survived by aggregating such small sums -- from home manufactures, lumbering, the sale of occasional surplus corn and the like. The importance of the pig to the small farmer cannot be overestimated.

Sheep

4.15

Sheep, like pigs, were inexpensive. A small pig could be had for \$.40, a sow for \$2 or \$3, and a sheep for \$1. Not surprisingly, a higher proportion of farmers south of Appoquinimink than in the north owned sheep. But sheep require more care than pigs. They need minimally adequate forage to produce well. They have never been especially suited to the Delaware climate. And sheep raising has always been a highly specialized farm activity with its own traditions and skills. Sheep, in consequence, were kept by fewer Delaware farmers than any other form of stock. Farmers in these Mixed Farming and Home Manufactures regions, who had sheep, had modest flocks of between eight and twelve sheep. Few farmers in these regions kept more than fifteen sheep. None kept more than twenty-five. Farmers who kept sheep, then, did so as a supplemental farm activity, to make use of land not suited for cultivation or cattle, and to insure some income in lambing and shearing times in which farm finances are at their most precarious.

Fewer farmers, generally less than 10% in the Dairy Region, kept sheep. Those who did have sheep had them for the same reasons as the farmers in the southern two regions. The northern sheep farmer kept only a small flock of ten or fewer sheep. Alert to the possibilities of income, however, a quarter or so of the farmers in the Grain Region were captured by the sheep craze of mid-century. Then, as now, sheep were the particularly favored animal of agricultural improvers. And farmers in the Grain Region who went in for sheep, did so enthusiastically, and built the largest flocks in the state of 30, 50, or, in individual cases, 200 or more sheep.

4.16A

4.16B

4.17

PARAGRAPH LABELS, SECTION IV: CROPS AND LIVESTOCK

- 4.07A State map hay production (50 words)
- 4.07B Drawing of hay production (50 words)
- 4.08A State map of oats production (50 words)
- 4.08B Drawing of oats (50 words)
- 4.09A State map of flax production (50 words)
- 4.09B Drawing of flax (50 words)

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4.16A

4.16B

4.17

ARTIFACT AND GRAPHIC LIST, SECTION V: SOCIAL STRUCTURE

- | | |
|-------|---|
| 5.01 | Photograph of large mid-19th century farmhouse |
| 5.02 | Photograph of mid-19th century tenant house |
| 5.04 | Chart of farm size by region |
| 5.05 | Chart comparing large farm statistics vs. small farm statistics |
| 5.06A | Pie chart showing percentage of tenant farms |
| 5.06B | Map showing tenancy by region |
| 5.07A | Photograph of Tenant farmhouse |
| 5.07B | Photograph of Tenant farmhouse |
| 5.08A | Photograph of Large farmhouse, Dairy Region |
| 5.08B | Photograph of Small farmhouse, Dairy Region |
| 5.09A | Photograph of Large farmhouse, Grain Region |
| 5.09B | Photograph of Small farmhouse, Grain Region |
| 5.10A | Photograph of Large farmhouse, Mixed Farming Region |
| 5.10B | Photograph of Small farmhouse, Mixed Farming Region |

MAIN TEXT, SECTION V: SOCIAL STRUCTURE

Object/Graphic

- 5.01 Many people think of the world of the rural past as a simple world in which there were few differences between people. According to this
- 5.02 view, most people were farmers, most owned their own land, and most lived comfortably. Few were rich. Fewer were poor.

This idealized view distorts the truth. In Delaware, in 1850 there were substantial differences between people. Only about one-third of all those who lived in the countryside were farmers. The rest of the population lived off the land and worked as laborers, blacksmiths, carpenters, boatbuilders, fishermen, trappers, lumberjacks, wagonmakers, millwrights, brickmakers, bricklayers, surveyors, teachers, ministers, storekeepers, or merchants, among other things.

- 5.04 Of those who farmed, only about half owned their farms. The rest were tenants. There were large differences between landowners. Some owned three, four or even five hundred acres. Others struggled to hold on to twenty-five. A few harvested a thousand bushels of wheat and two thousand of corn each year with the help of six or eight laborers. Others harvested less
- 5.05 than thirty bushels of wheat and one hundred of corn with the help only of old, simple tools: a "sorry worn out plow," a "broke grubbing hoe," a shovel, a dung fork, and a cart. A few milked huge herds of sixty Holsteins. Most had but a single "milch" cow to meet their families' dairy needs.

- 5.06 From the profits of their big farms, a few farmers were beginning in 1850 to live lives that were surprisingly affluent. Such farmers built big houses of six, eight or ten rooms modeled in design upon urban houses. Most continued to live as farmers had for centuries - in small two or three room houses, crowded with children, tools, grains, looms, and spinning wheels.

- 5.07A & B So, even if the rural world of the past was simple compared to the present, it was nonetheless a complex world in which some were

5.08A & B rich and some poor - a world in which
5.09A & B substantial, if not vast differences, divided
5.10A & B farmers and farm families from each other.

PARAGRAPH LABELS, SECTION V: SOCIAL STRUCTURE

5.01 & 5.02	Large farmhouse and tenant house (75 words)
5.05	Chart of big farm statistics vs. small farm statistics (250 words)
5.08A & B	Large farmhouses vs. small farmhouses all three regions (100 words)
5.09A & B	
5.10A & B	

ARTIFACT AND GRAPHIC LIST, SECTION VI: HOUSING

- 5.01A Photograph of large farmhouse, Grain Region
- 5.01B House plan of large farmhouse, Grain Region
- 5.02A Photograph of farmhouse, Home Manufactures
Region
- 5.02B House plan of farmhouse, Home Manufactures
Region
- 5.03A Photograph of farmhouse, Dairy Region
- 5.03B House plan of farmhouse, Dairy Region
- 5.04A Photograph of farmhouse, Mixed Farming Region
- 5.04B House plan of farmhouse, Mixed Farming Region
- 5.05A - C Three photographs of farmhouses in Grain Region
- 5.06A - C Three photographs of farmhouses in Home
Manufactures Region
- 5.07 Photograph of parlor in large farmhouse
- 5.08 Photograph of front door of large farmhouse

MAIN TEXT, SECTION VI: HOUSING

Object/Graphic

Housing

Farmers in Delaware's different farming regions lived in very different kinds of houses. These differences were a part of the regions' different cultures, economies, and building traditions.

House Form

6.01A

The types of Delaware farmhouse at mid-century were many and varied. Most striking were those in the large farm belt of the Grain Region. Here the houses of farm owners changed dramatically between 1800 and 1850. The houses contained improvements reflecting an intensive period of architectural renewal. In these years, some old houses were remodeled extensively. Others were demolished and replaced. Some farmers built new houses on previously occupied sites. The new and remodeled houses typically used a symmetrical "Georgian" plan with attached service wings containing kitchens, dining rooms, pantries and sleeping chambers for servants. Their exteriors were graced with Italianate, Gothic, late Federal and some Greek Revival detailing. The most important aspects of the Grain Region house plans were the continued use of consolidated domestic arrangements joining service with formal sitting rooms and parlors.

6.01B

6.02A

The opposite of the large rambling house plans of the Grain Region were those of the Home Manufactures Region where as many as three in four families occupied houses of less than 450 square feet. These smaller houses were characterized by a plan where a single room served a wide range of social and domestic functions. Usually only one room was heated; the loft and an occasional parlor or downstairs sleeping chamber most often contained no fireplace or provision for a wood stove. Crowded into the main room was an average of four beds, two tables, one or two blanket chests, corner cupboard, eight or nine chairs, one desk and an average family of six or seven people. Where there was no separate kitchen, the main living space also held a loom and two spinning wheels.

6.02B

6.03A & B

6.04A & B

Domestic life in these one-room plan houses was crowded and privacy was a luxury. In comparing the house plans of the Grain Region to the Home Manufactures Region, we should remember that the large dwellings in the north could be measured in terms of rooms per person -- in the south the measurement would be in the square feet per occupant. House types in the Dairy and Mixed Farming regions were smaller than those in the Grain Region and larger than those in the Home Manufactures Region. Houses in these regions were equipped with service wings, but these wings were much smaller than those in the Grain Region. The Mixed Farming Region dwellings at mid-century were composed of one-room deep center-passage or hall-parlor plans with a gable end kitchen; Dairy Region residences were more often side-passage double-pile or cross-passage plans with service rooms either appended to or incorporated into the plan at the main block.

House Construction

Wood was the most common building material throughout the state. The way in which timber was shaped for construction purposes included hewn and sawn framing, round or hewn log, and sawn plank. In the southern regions, wood was cut and prepared locally, but in the northern regions where land had been cleared a century before, building timber was imported by local lumber merchants. Locally available materials included stone quarried in the Piedmont region and wood, such as cypress and pine, cut in the southern Delaware swamps. Brick was used everywhere -- but, due to its cost, very selectively. The landscape most characterized by brick buildings was the wealthy Grain Region.

House construction in all regions required skilled labor. In the Home Manufactures Region almost every farm inventory contained many carpenter's tools. Here local builders were also farmers with secondary skills. They would come together with professional builders to undertake a specific project. The northernmost regions' construction craftsmen, by contrast, were highly skilled professionals who bid on local jobs in a manner similar to modern contractors. In the Mixed Farming Region, builders were of both types.

House Decoration

- 6.05A - C Stylishness in architecture took on regional characteristics paralleling developments in house plans. In the Grain Region, ornament reflects a pervasive acceptance of nationally popular designs, using motifs associated with styles as diverse as Egyptian Revival and Gothic Revival. Often individual houses are eclectic assemblages of multiple aesthetic concerns. Much of the ornament used in the visual enhancement of dwellings was purchased through catalogs from architectural element factories in nearby cities. In the Dairy and Mixed Farming regions, nationally popular styles were creatively melded with established local tastes. In the Home Manufactures Region, most architectural ornamentation continued a design tradition where Federal-period decorative motifs were interpreted in novel and exciting ways.
- 6.06A - C

- 6.07 In the Grain Region, public and formal rooms at the front of the house were more intensively ornamented than back rooms. The greatest amount of attention was focused on the points of access into the house. Front doors were finished with elaborate surrounds and extensive porches, while
- 6.08 secondary and tertiary entries were left spare. Ornament thus served to screen the occupants of the house from the visitors.

Summary

The dwellings of Delaware built and remodeled in the middle decades of the 1800s enable us to visualize the textures of Delaware farm life in a distant time. In the planning, construction, and ornamentation of rural housing we find parallel expressions to the pattern of continuity and change in agriculture. Houses in the Grain Region are complex in plan, large in scale, and self-conscious in their stylishness. They are mansion houses appropriate to a modern class of agricultural innovators and reformers. Dwellings in the Home Manufactures Region are statements about the perpetuation of older patterns of domestic life and rural work. Residences in the Dairy and Mixed Farming regions occupy a middle ground where established patterns of living are subtly wed to new notions of design.

ARTIFACT AND GRAPHIC LIST, SECTION VII: LABOR

- 7.01 Photograph of worker coming in from field
- 7.02 Pie Chart, Rural Occupations
- 7.03 Map, Percentage of labor by Region
- 7.05 Facsimile contract between Farmer and Laborer
- 7.06 Facsimile of Account book entries for May-August
- 7.07A - I Harvesting Equipment
- 7.13A - Q Objects Related to Rest of the Year Tasks
- 7.14 Drawing of Harvesting Corn
- 7.16 Drawing of Planting Wheat or Oats
- 7.17 Drawing of Harrowing
- 7.18 Drawing of Hog Slaughtering
- 7.19 Drawing of Fencing
- 7.20 Drawing of Manuring
- 7.21 Drawing of Planting Corn
- 7.22 Facsimile of Account Book Entries for September
 through April
- 7.23 Pie Chart, Laborers by Race
- 7.24 Facsimile copy of Laborer's Earnings from
 Account Book
- 7.25 Pie Chart, Laborers owning land
- 7.26 Log Cabin in Main Exhibit Building

MAIN TEXT, SECTION VII: LABOR

Object/Graphic

The Number of Laborers

- 7.01 We think of the countryside of the past as a
countryside of family farms - farms worked by
7.02 a man, his wife, and children. But in 1850
almost one-third of all rural Delawareans were
farm laborers - men, women and children who
worked the fields of others for pay.

Without hired labor the earnings of farm families were limited by time and technology. It took thirty to thirty-five man-hours to produce an acre of wheat and fifty to sixty man-hours to produce an acre of corn in 1850. Working together, a man and his son could plow, harrow, seed, or harvest but two acres a day. Without help, the farmer could raise but twenty or twenty-five acres of corn and ten of wheat. And without help, the farm wife could handle only four milkcows. To grow, to take advantage of the opportunities which an expanding market, improved soil management and cropping practices offered, farmers needed labor.

- 7.03 Much of the prosperity of the state, and particularly that of big farms in the Grain Region, was built upon the work of hired laborers. Laborers hauled the marl from pits along the Chesapeake and Delaware Canal and spread the manure to revitalize worn fields. Laborers made possible the planting of broadening reaches of grain. Dairy maids produced unprecedented quantities of butter.
7.05 Little children, often orphans, guided corn planters, plows, and harrows across the fields.

The Harvest

- 7.06 Harvest-time is the critical time of the farm year. Hay must be cut before it spoils, raked, dried and carried to cover before it rains.
7.07A - I Wheat ripens quickly in the June sun and passes its time as quickly in early July, leaving a bare two weeks to cut, bind and carry it to the granary or barn. Beginning with the first cutting of hay in mid-May or early June, laborers took to the fields with scythes and

rakes. When the wheat harvest arrived, their numbers grew, augmented by day workers from towns and other parts of the state. Wages almost doubled from \$.65 a day to \$1.25 for men and from \$.40 a day to \$.60 for women. Wives and daughters joined husbands and fathers in the fields to shock and stack the wheat, to rake the straw and glean the stubble. When wheat was done, oats were ready. Then, the small grain harvest finished, the population of the fields subsided as suddenly as it had grown. Women returned to the dairy or the loom; occasional laborers went home to find work as they might. Some stayed on to thresh, but each year as farmers bought threshing machines, their number was less.

As August arrived and farmers began to make fodder, to sow clover on fallowed fields, or to plow for next year's wheat and oats, they were aided by their usual number of laborers - a hired man or two supplemented with an occasional day laborer for large jobs, making fodder or picking corn.

The Rest of the Year

7.13A - Q The harvest over, laborers and laboring families faced the problem of surviving for the rest of the year. Some found their way back to town or city, to take work as they could, sometimes to winter in the poorhouse, only to return again to the countryside when spring plowing promised work.

7.14 Those who had contracts with the farmer for
7.16-7.21 the year turned their hands to his business: to plowing, harrowing and sowing in September and October; to making fodder and picking corn as November approached; to ditching in November and
7.22 early December; to slaughtering animals, repairing buildings and cutting wood in the winter; to fencing and manuring as winter began to break; and then again to plowing, sowing, and hoeing corn as the ground warmed and the hay began to ripen.

Laborers who had acquired their own houses and lived off the farm found work as they could when farm jobs were too big for the live-in laborers, on farms that used only occasional labor, or at occasional work - wood cutting, well digging, trapping, fishing and hunting.

Many of these laborers specialized in one or another kind of work - carpentry, fencing, broom or basket making. Wives and children wove for farmers and merchants or hired themselves out by the day.

Laboring Lives

- 7.23 Even in an era of rising wages, rural laborers
7.24 earned hard and meager livings. Few acquired
7.25 the \$100 or \$200 needed to build a small house.
7.26 Even fewer saved \$500 or \$1000 to buy a small
farm of five, ten, or fifteen acres. If they
were single and young, laborers boarded with the
farm family. As they grew older they lived in
small one or two room houses, sparsely furnished
but still crowded with two or three children,
the laborer and his wife. Those few who did
acquire a place of their own lived in similar
houses, usually built of logs or planks, poorly
constructed and sparsely furnished. These
laborers are truly a lost part of our rural
past. With the coming of the next wave of
mechanization after 1865, they began to
disappear from the countryside. With the
arrival of the tractor in the first decades
of the twentieth century, they vanished
altogether. Their houses were torn down.
Today, almost no trace of them survives on the
Delaware landscape.

7.27

PARAGRAPH LABELS, SECTION VII: LABOR

- 7.02 Pie Chart, Rural Occupations (50 words)
- 7.05 Facsimile contract between Farmer & Laborer (50 words)
- 7.06 Facsimile of Account Book, May - August (100 words)
- 7.22 Facsimile of Account Book, September - April (100 words)
- 7.26 Log Cabin (250 words)
- 7.27 Short Biography of Laborer (250 words)

ARTIFACT AND GRAPHIC LIST: SECTION VIII: FARM MACHINERY

3.01	Engraving of Horse Pulling Plow
3.02A	Sickle
3.02B	Cradle
3.03A	Winnowing Basket
3.03B	Grain Fan
3.04	Flail
3.05	Thresher
3.06	Cultivator
3.07A	Cornsheller
3.07B	Cornsheller
3.08A	Hand Rake
3.08B	Revolving Horse-Drawn Rake
3.09A - H	Drawings of Objects from Machinery Catalogues
3.10A - C	Collage of Plows
3.11	Chart, Plow Cuts
3.13	Map, Distribution of Machinery in State
3.15	Drawing of Farmer

MAIN TEXT, SECTION VIII: FARM MACHINERY

Object/Graphic

The New Machines

3.01

Delaware farmers entered the machine age in the first half of the nineteenth century. The iron plow, the horse-drawn hay rake, the seed drill, the corn cultivator, and the first threshers, among other things, all appeared in the state between 1820 and 1860.

The impetus for this first wave of farm mechanization was the high cost of labor. As factories first appeared in northern Delaware and adjacent Pennsylvania in the years after the American Revolution, wages began to rise. Workers began to leave the countryside. At the same time, the opening of fertile lands to the west kept prices down. Caught in the squeeze between rising costs and stable or falling prices, farmers turned to machines to try to make each hour of labor more productive.

By modern standards the new machines of the years after 1820 seem small and insignificant. Yet they began the transformation of farm life from a life of hand work to one of machine work which has led eventually to the present. Between 1840 and 1860 the time it took to produce a bushel of wheat or corn was cut by a third. More could be produced in the same time, with the same labor and at lower per unit costs. And with the profits of this new production, farmers bought more land, and more machines to produce even more crops; built new houses and barns; sent daughters to school and brought wives in from the fields.

Yet at the same time, an ancient way of life began to die. Fewer farmers than before were needed as the historic limits on hand production were broken. The number of Delaware farmers remained constant, but the urban population began to grow faster and faster. Many farmers could not afford the new machines. Only those on better lands and with larger farms could recoup their cost. Slowly the gap between rich and poor widened. There was less work for laborers, particularly in the winter months, and the ancient social fabric, which had woven

together rich and poor, laborer and farmer, tenant and owner, began to come apart.

Grain Technology

- 8.02A - Small grains were Delaware's most valuable
8.05 crops. Not surprisingly, most of the new machines of the early nineteenth century were machines for harvesting and processing grains.

Corn Technology

- 8.06 - Changes in corn technology were less dramatic
8.07B than were the changes in grain technology. Corn could be picked over a longer period than grain. Thus time was less important and labor less necessary. Many farmers in Delaware continued to cultivate corn as they had for centuries: with ox, plow and hoe. Still, several important changes swept over the culture of corn in the years about the middle of the nineteenth century.

Other Changes [No Main Text]

- 8.08A - B
8.09A - H
8.10A - C
8.11

The Continuing Sameness of Farm Work

- 8.13 In spite of the many changes which began to
8.15 transform Delaware agriculture in the years just before 1850, most farm work was still hand work. Fencing, grubbing, ditching, plowing, scything, loading, hauling, stacking straw, not to mention building, were all difficult, back-breaking tasks performed by hand.

PARAGRAPH LABELS, SECTION VIII: FARM MACHINERY

Sickle and cradle (8.02A, 8.02B)

From Roman times, the sickle was the basic tool of the harvest. Working alone with a sickle, a man and his wife could harvest but an acre a day. To overcome the limits which the sickle placed on production, much labor was needed. When rye, wheat, or oats ripened, armies of men, women and children took to the fields. Two abreast the men moved through the grain, one cutting to the right, the other to the left. Behind them, women and children bound the grain into sheaves and stacked it to dry.

Scythes, an invention of the Dutch, first appeared in Delaware about 1750. With a scythe and cradle a man could cut two acres a day, allowing him to grow twice as much. Scythes were not expensive. In 1850 a good used one could be bought for \$1.50; a new one of the best manufacture might cost \$3. A farmer who grew even five acres of small grains could recoup the cost of a scythe and cradle in a year. By 1850, almost every Delaware farmer who raised grain had at least one scythe and cradle; and the sickle had almost passed from the harvest scene.

Winnowing Basket and Fanning Mill (8.03A & B)

The earliest and crudest method for separating grain from the chaff, after it had been threshed, was to toss it up in the air on a windy day. Yet, it was not until the early 1840s that fanning mills began to replace this activity. Three hands could winnow and sack thirty-seven to forty-five bushels of wheat in a ten hour day. In contrast, with a fanning mill, 400 to 600 bushels could be cleaned and sacked by three men in the same amount of time.

Flail and Thresher (8.04, 8.05)

Traditionally grain was threshed inside the barn with a flail. The farmer or laborer would beat the grain with the flail. One bundle at a time - at the rate of eight or ten bushels a day - the kernels were separated from the husks. Then the straw was forked off into piles and the grain and chaff stored in bins until it could be winnowed.

Flailing grain was adequate for small crops for home use and occasional market sale. As farmers began to raise more grain, however, the labor costs of flailing became prohibitive and flailing proved too slow to ready the grain for market. Farmers found that by treading grain with horses, they could increase both speed and the volume of the threshing process. Bundles of oats, rye or wheat were spread in a circle and horses were led round to tread apart the husks. Working together, a man, a boy and three horses might tread as much as 100 bushels a day.

As farmers sought to increase their profits by participating more actively in growing markets and to cut their costs by using less labor, the first threshers came into being. By the mid-1830's more than 700 threshers had been patented. These first threshers merely threshed. Grain was fed to them by hand, and someone still had to separate the chaff from the grain and to pile the straw. But even the simplest of these threshers could handle 200 bushels of grain daily with two men working it - a tenfold increase in labor productivity.

In 1850, all three methods of threshing grain were used in Delaware. To tread grain a farmer needed two or three horses and a capital investment of \$75 or \$100. Only farmers with enough land to justify such large investments could afford this method. A thresher cost an additional \$50. At prevailing wage and interest rates only farmers who produced 400 or more bushels, or about twenty-five acres, of grain could afford a thresher. Only 1% of all Delaware farmers raised this much grain.

Cultivator (8.06)

Keeping corn free of weeds was one of the hardest tasks on the farm. Day after day, one acre a day, farmers plowed between the hills, while their children hoed to keep the small plants from being overtopped by weeds.

The corn cultivator began to change all this. Drawn by horses, cultivators were nearly twice as fast as plows. Vastly more maneuverable than the plow, the cultivator permitted the farmer to space his rows closer together and increase his plant density. Cultivators were cheap. A good one might cost as little as \$10, and farmers in every region had them.

Corn Shellers (8.07A - 8.07B)

By hand a good worker could shell twenty-five bushels of corn a day. The sheller vastly increased productivity, allowing many farmers to shell their corn without hired labor. Shellers came in varied sizes and prices, suited to farmers of different means and farms of different sizes. A good, small one-hole sheller cost \$5 and cleaned 100 bushels a day. A farmer who grew ten acres of corn, thus could shell his whole crop in two days. Larger two-hole shellers cost between \$10 and \$20 and could handle 250 bushels a day. Thus, work that would take a laborer ten days and cost \$6.25 could be done in one day and the sheller would pay for itself in two years time. Finally, giant shellers capable of handling 1000 bushels a day could be bought in 1850 for \$35. Such shellers were suited only to the largest farmers: those few who could afford to pay \$35 for a machine and those few who raised 1000 or more bushels of corn annually.

Hand Rake and Revolving Horse Rake (8.08A & B)

The first important success in applying horse-power to the tasks of farming was in the gathering of mown grass. Under favorable conditions, the cost of securing an acre of hay was about one day's labor for cutting and a half a day for hand raking into windrows. By 1850, the revolving horse rake had become a standard implement among those progressive and cost-conscious farmers who raised substantial quantities of hay. The device was simple--merely two rows of wooden teeth set opposite on a beam to which were attached a shaft and handle in such a manner that the beam could be tripped to slide over a load of accumulated hay, bringing the second set of teeth into position to commence a new windrow. With the revolver, one man could accomplish work equivalent to that of five to ten men with hand rakes.

ADDITIONAL PARAGRAPH LABELS, SECTION VIII: FARM MACHINERY

- 8.10 Plow Collage (100 words)
- 8.11 Plow Cuts (30 words)
- 8.13 Map of Machinery (50 words)

ARTIFACT AND GRAPHIC LIST: SECTION IX: OTHER WORK

9.01B - C	Woodcuts of Occupational Images
9.02A - C	Drawings of Dairy Activity
9.03	Map, Butter Production
9.04	Springhouse (Reconstruction)
9.05-9.16	Dairying Equipment, collection of objects for interior of Springhouse
9.17	Loom
9.18	Woodcut of Weaving
9.19	Map, Distribution of Home Manufactures
9.20A - B	Broad Axes
9.21A	Drawing of Lumbering
9.21B	Drawing of Shingle Making
9.22 - 9.48	Carpenters Tools, collection of objects

MAIN TEXT, SECTION IX: OTHER WORK

Object/Graphic

The American farm has always been less specialized than other workplaces. Compared to the factory worker or the urban professional, the farmer performs much of his work himself: he repairs machines, transports his own produce and does his own accounting. Gender and age differences are less significant on the farm than elsewhere in society. Farm women work in the fields when necessary, and manage the farm accounts; children are still essential to the success of the farm.

- 9.01B - C The farm of the past was even more diversified than that of today. Until about 1800, most farmers practiced several occupations at once; they were as much blacksmiths, masons, carpenters, or cabinet-makers as they were farmers. Women were major economic contributors to the farm. They worked the fields at harvest time and made butter - next to wheat, Delaware's most valuable agricultural product. They spun, wove, cut wood and worked the garden.

- By 1850, this historical pattern of work was breaking down in Delaware under the pressure of the expanding market economy. In the Grain and Dairy regions farmers were becoming specialists. Here, too, the lives of farm women were changing. As the dairy industry grew, they ceased to spin and became full-time butter makers. Wealthy women were increasingly relegated to the household, and their daughters went off to boarding school.
- 9.02A - C
- 9.03
- 9.04 - 9.16

- On poor farms, or on poor lands, however, the old patterns persisted from necessity. The whole family still worked at the task of garnering a meagre living from poor land and day wages. Laborers and small farmers had to do several things to survive. Laboring men still hunted, fished and trapped for a part of their livings. Women and children still spun and wove and sold their produce to wealthier farmers or to local merchants.
- 9.17
- 9.18

- The old patterns also persisted in the Home Manufactures Region, not as much from necessity as from choice. Here, where land was relatively inexpensive, where there was as yet little
- 9.19

9.20A & B pressure from manufacturing, and where forests,
9.21A & B swamps and rivers still yielded abundantly, the
9.22 - 9.48 traditional farm family could stay together on
the land if everyone worked at it. By combining
farming with lumbering, boat building, trapping,
hunting and fishing, small farmers could survive
here even in the face of changes wrought by the
market.

PARAGRAPH LABELS, SECTION IX: OTHER WORK

Dairying (9.02A-9.02C)

During most of the period 1800-1850, butter brought \$.30 a pound. The best cows produced more than 100 pounds of butter a year, or a gross income of \$30. Dairying was one of the two most profitable farm activities. A few farmers operated large dairies with fifteen, twenty or even fifty cows. More commonly, however, the mid-nineteenth century dairy herd ranged between five and ten head. Dairying required substantial capital. Good milk cows purchased in the spring with calf cost between \$15 and \$20. To yield well, they needed good pasture in the spring and fall and good hay in the winter. Dairying also required cooling and transportation facilities.

Map of Butter Production (9.03)

Dairying was one of the most regionally concentrated of farm activities. This concentration was largely a function of proximity to urban markets. It was only in the regions close to Philadelphia and Wilmington that more than an occasional farmer had more than two milk cows. In these regions, however, dairying boomed in the first half of the nineteenth century. Milk yields in Christiana, Brandywine and Mill Creek Hundreds exceeded 100 pounds of butter per cow, the highest in the state. Farmers in these hundreds were the first to develop new breeds of milk cows and the first to improve their pastures. As the railroad stretched southward into New Castle County in the years between 1820 and 1850, farmers in the Grain Region increasingly complemented their cropping incomes with dairying. By 1850 their yields were nearly as good as those in the Dairy Region. South of St. George's Hundred, however, commercial dairying fell off dramatically. These farms were simply too far from market. Few kept more than two cows, and yields per cow seldom exceeded fifty pounds.

Loom (9.05)

Weaving is one of the most misunderstood of early farm activities. Many people think that farm families wove solely to produce cloth for their use. In fact, for hundreds of years weaving was the lifeline of the poor farmers and laborers. Women, children, servants and slaves, if any, were pressed to the loom for survival was at stake. By working long hours at the loom, a poor farm or a laboring family could earn enough from the sale of cheap coarse cloth to survive on the land. The rise of cloth manufacturing in the early nineteenth century increasingly took away this source of income from the rural poor and drove them to the cities. By 1850, only farm families in the Home Manufactures Region still wove in significant numbers; elsewhere such farmers had abandoned the land to become laborers or urban workers.

Lumbering (9.21), Shingle Making (9.21B)

Farmers in the Home Manufactures Region were known as the "foresters." Here, much land was still uncleared. Cypress, pine and oak dominated. These forests gave the region its distinctive character of forbidding woods and swamps interlaced with hidden paths, punctuated by occasional, recently cleared farms. These forests provided the principal products of the region: timber for houses in Wilmington, Philadelphia and Baltimore; firewood for the residents of these cities; shingles and boats.

ADDITIONAL PARAGRAPH LABELS: SECTION IX: OTHER WORK

9.02A - C	Drawings of Dairy Activities (200 words)
9.04	Springhouse (100 words)
9.19	Map, Home Manufactures (50 words)

ARTIFACT AND GRAPHIC LIST, SECTION X: DOMESTIC OUTBUILDINGS

- | | |
|-------|---|
| 10.01 | Plans of farmhouse, Dairy Region |
| 10.02 | Plans of farmhouse, Grain Region |
| 10.03 | Plans of farmhouse, Mixed Farming Region |
| 10.04 | Photograph of an open hearth |
| 10.06 | Photograph of Smokehouse, Home Manufactures
Region |
| 10.07 | Photograph of combination structure, Grain
Region |
| 10.08 | Photograph of springhouse, Dairy Region |
| 10.09 | Photograph of dairy, Grain Region |
| 10.10 | Photograph of dairy, Mixed Farming Region |
| 10.11 | Photograph of dairy, Home Manufactures Region |
| 10.12 | Photograph of icehouse, Grain Region |
| 10.13 | Photograph of carriage house, Grain Region |

MAIN TEXT, SECTION X: DOMESTIC OUTBUILDINGS

Object/Graphic

Associated with the Delaware farmhouse of the mid 1800s were a variety of domestic support buildings including smokehouses, dairies, woodsheds, privies, and kitchens. The appearance and significance of household outbuildings varied considerably with the regional organization of domestic life and rural work patterns. In the Home Manufactures Region outbuildings were few and their functions kept separate; in the Grain Region domestic support structures were greater in number and their plans often incorporated multiple storage and processing spaces. In all regions the outbuildings extended the house plan into separate buildings previously devoted to food processing, storage and home manufactures.

Kitchens

- 10.01 All houses incorporated cooking activities - but, depending on the region, the spaces allocated for food processing assumed varied appearance. In the Dairy Region kitchens had been incorporated as wings into the overall house plan by the late 1700s. The kitchen wing could be an earlier dwelling downgraded through the addition of larger and newer living spaces, or an addition to an existing house which had formerly possessed a cellar or outkitchen, or originally incorporated into the overall plan of the house. The same pattern of cooking
- 10.02 activities assimilated into the overall plan of the house became popular in the early 1800s in the Grain Region and in the mid 1800s in the
- 10.03 Mixed Farming Region. Kitchen wings in all of these regions were attached to the main dwelling as a gable-end wing or rear ell of the dining room of the main block. Downstairs was a
- 10.04 sparsely furnished cooking room with an open hearth or built in metal and masonry range. Some buildings also incorporated built in pantries, butteries and kitchen cupboards. Over the kitchen were sleeping chambers for servants, farmhands or children. Kitchens in the Home Manufactures Region typically remained detached from the house or were simply incorporated into the multifunctional common room around which most domestic activity centered. Here kitchens doubled as the space set aside for textile

production integral to a local system of home manufactures.

Smoke and Meathouses

- 10.06 The most common outbuilding type was composed of meat and smokehouses. While both types are unified in their use as structures designed for the preservation of bacon, ham, sausage, and cuts of beef, they describe two different processes. Meathouses contained work benches and barrells for curing meats in salt; smokehouses employed salt for preservation but also used wood smoke for curing. In the Home Manufactures Region, where swine were left to feed in the woods, smoke and meathouses were small buildings usually not greater than twelve foot square and of frame or log construction. In contrast to these small eighteenth century, like outbuildings, many smoke and meat houses in the Grain Region were parts of combination structures such as a smokehouse/root cellar,
- 10.07 smokehouse/dairy or smokehouse/woodhouse/privy. Consolidated functions were also characteristic of the Dairy Region, but to a lesser degree.

Dairies and Springhouses

- 10.08 Dairies completed the complement of basic household support buildings but their appearance and design ranged widely between the varying regions. In the Dairy Region springhouses were built of stone or log over naturally occurring springs. Because such buildings relied on the native topography, they often have the appearance of being randomly sited, sometimes at a significant distance from the house. Inside the structure, the spring circulated through troughs or channels in which were set earthenware bowls of milk. Some springhouses had ceiled lofts for more general storage or cheese making. Dairies in the Grain and Mixed
- 10.09 Farming regions were typically brick or frame structures less than twelve foot square and
- 1.10 fitted out with louvered vents. Their interiors were boarded or plastered, fitted out with shelves and whitewashed. Mid-nineteenth century dairies in the Grain Region frequently were joined to other spaces, especially meathouses. The Home Manufactures Region's dairies fell into
- 10.11 two categories: small (averaging two foot square) boxes set on posts against the north wall of the house, and brick and frame

structures similar to those in more northern regions. The larger dairies possessed louvered vents, small storage lofts and sometimes were excavated three to four feet below grade.

Other Outbuildings

- 10.12 Kitchens, smoke and meathouses, and dairies and springhouses were the most common household support buildings, but it should be remembered there were many other outbuilding types. In prosperous Grain Region, farms may have had icehouses consisting of brick lined pits excavated ten or more feet below grade and capped with gable roofs. Privies, including examples with octagonal plans and bracketed trim were a common amenity. In the Dairy and Grain
- 10.13 regions carriage homes - the forerunners of the modern garage - were erected with stables for riding horses, carriage bays, tack rooms, feed cribs and hay lofts. Although similar buildings could be found in the two southern regions, they were more exceptional. In the mid 1800s in the Home Manufactures Region there were other outbuilding types specific to home manufactures. Still houses for distilled spirits, loom houses for textile production and shops for various wood working trades stood with a sizeable number of farms.

Regionalism, Agriculture and Household Service

Domestic outbuildings parallel larger architectural patterns identical with some buildings and dwellings. In the Home Manufactures Region, aside from the basic complements of meat or smokehouse, kitchen and sometimes dairies, outbuildings housed the business of home manufactures. Importantly, kitchens in this area reflected customary usage associated with the Chesapeake Bay county and were often separate buildings sparsely furnished and used for workers' quarters and textile production as well as food preparation. The Grain Region's outbuildings most graphically illustrate the factory-like farm containing multiple segregated functional spaces under a common roof. Kitchens were housed in ells grafted onto the main block of the house. Many possessed built in cooking ranges and all had a loft or second floor fitted out as servants or children's chambers. The Dairy Region's outbuildings adhered to a similar pattern

although the local origins for domestic consolidation date to the late eighteenth rather than the mid-nineteenth century. Terrace, custom and farm production promoted the continued use of the springhouse - a building that closely identified with cultural settlements related to southeastern Pennsylvania. Finally, the Mixed Farming Region's service buildings describe building forms more closely identified with the eighteenth century. Here smokehouses and dairies, like barns and granaries, bore closer resemblance to local antecedents than to the more northerly "modern" combination structures and the more southerly tradition of home manufactures.

ARTIFACT AND GRAPHIC LIST, SECTION XI: CONCLUSION

- 11.01 Advertisement for Silo
- 11.02 Advertisement for Cream Separator
- 11.03 Gasoline Tractor
- 11.04 Chart, Farmers vs. Acres Farmed

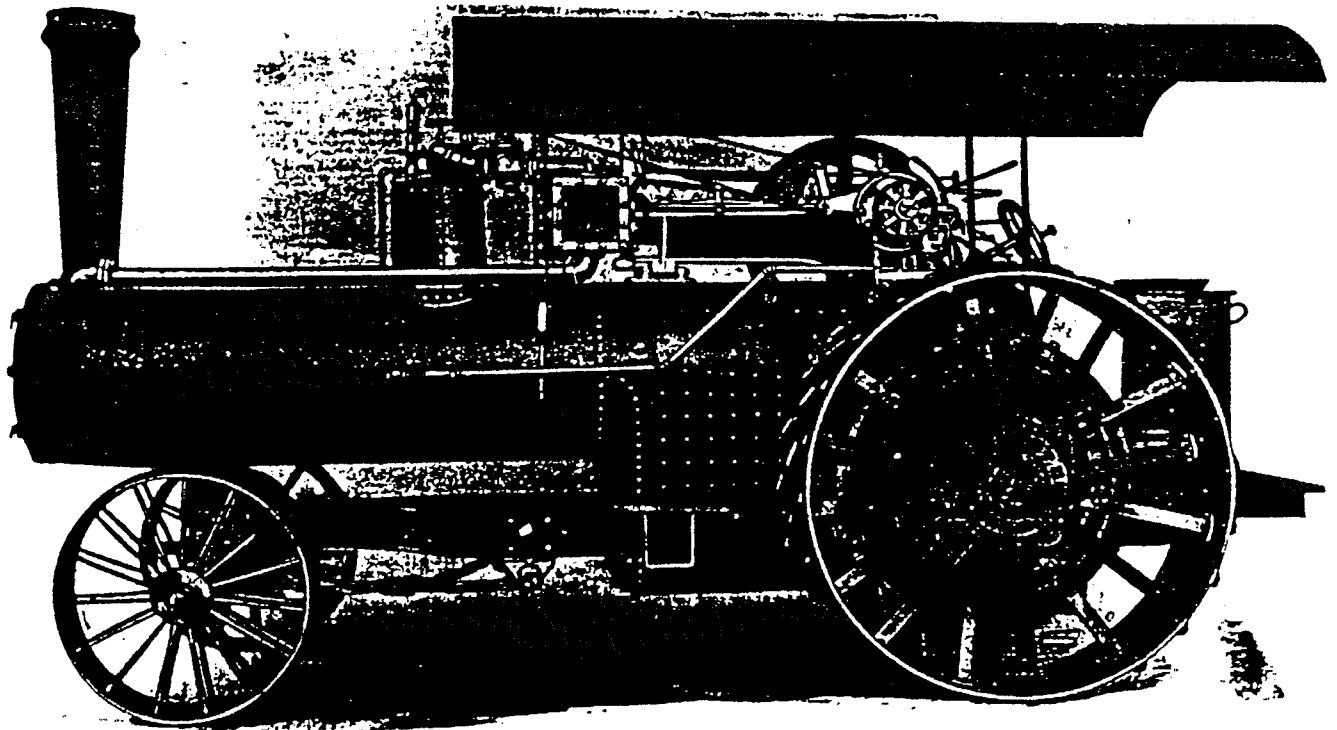
MAIN TEXT, SECTION XI: CONCLUSION

Object/Graphic

- 11.01 During the years between 1865 and 1914, agriculture continued to change dramatically. As the country's population boomed due to natural increase and immigration, cities continued to grow. Water, rail, and highway transportation, and improvements and advances in food preservation methods made national markets increasingly accessible to farmers. At the same time, the rate of technological change accelerated. The silo, barbed wire fencing, cream separators, and the gasoline tractor were among the hordes of inventions introduced.
- 11.02
- 11.03
- 11.04 In response to changes in American society, farmers continued to become more commercialized and specialized in order to survive. Improved farm machinery made it possible for fewer people to handle more land. The size of farms continued to grow but the percentage of those farming fell steadily. As farmers adopted the new machinery, the number of laborers needed on the farm continued to decline, and productivity per acre increased. Time was money and production in volume became essential. The commercial farmer's major concern was to provide food quickly, cheaper, and on a large scale.
- Yet, not all farmers changed. Some were slow to accept change. Farmers continued to use equipment and methods which dated to the mid-nineteenth century. Hand tools and horse-drawn machinery were still in use after the introduction of the gasoline tractor. Although it first appeared in the harvest of 1892, the gasoline tractor did not come into wide use until forty years later.

Delaware Agricultural Museum

Permanent Collection Exhibition Planning Report



March 1, 1986

DELAWARE AGRICULTURAL MUSEUM

EXHIBITION PLANNING GRANT

FINAL REPORT

" A Place in Time:

Continuity and Change in

Mid-Nineteenth Century Delaware"

National Endowment for the Humanities
Museums Program, Exhibition Planning Grant

Paula S. Holloway,
Director-Curator
Delaware Agricultural Museum
866 North DuPont Highway
Dover, Delaware 19901

Delaware Agricultural Museum

Exhibition Planning Report

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Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

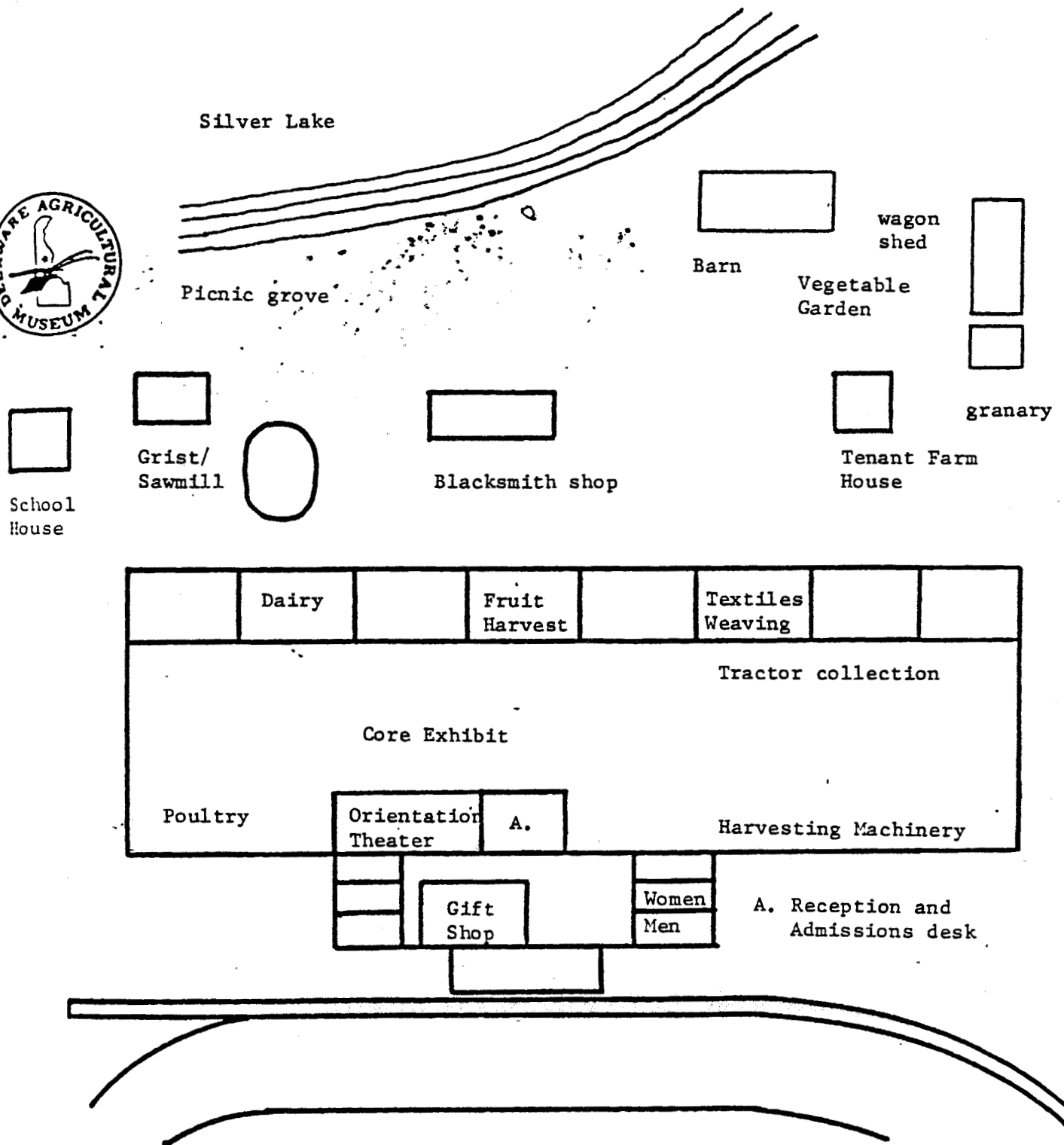
A. General Rationale
and Exhibit Methodology

BASIC RECOMMENDATIONS:

1. Develop an exhibit system that can be used throughout the museum site.
2. Develop an exhibit system that is additive and can be expanded or reduced as space and budget needs indicate.
3. Develop an exhibit system that can be used for interior and exterior applications.
4. Develop an exhibit system that can be moved or relocated without major cost or labor requirements.
5. Develop an exhibit system that can be changed and updated without major cost for new components.
6. Develop an exhibit system that can be used for display of both flat graphics, photographs, and charts as well as three-dimensional artifacts.
7. Develop an exhibit system that is very low cost and can be fabricated by local or regional crafts sources.
8. Develop an exhibit system that can be disassembled or assembled by unskilled or semi-skilled labor.
9. Co-ordinate the orientation audio-visual program with the central core exhibit and all individual object labels.
10. Co-ordinate site map with orientation program, core exhibit and object labels.
11. Develop method of surveying visitors on an ongoing basis to determine interests and future program possibilities.

Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

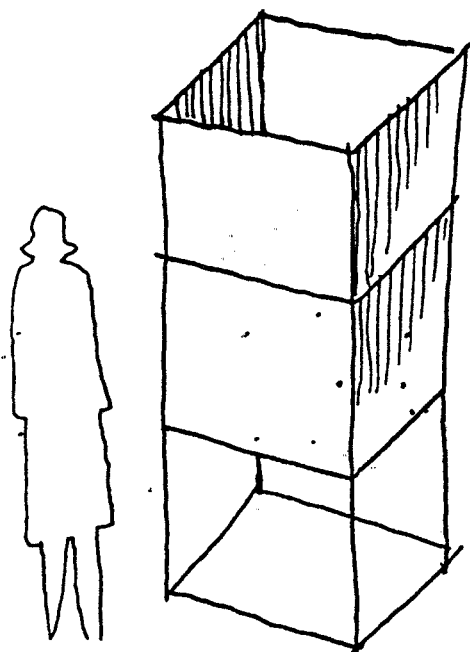
C. Orientation



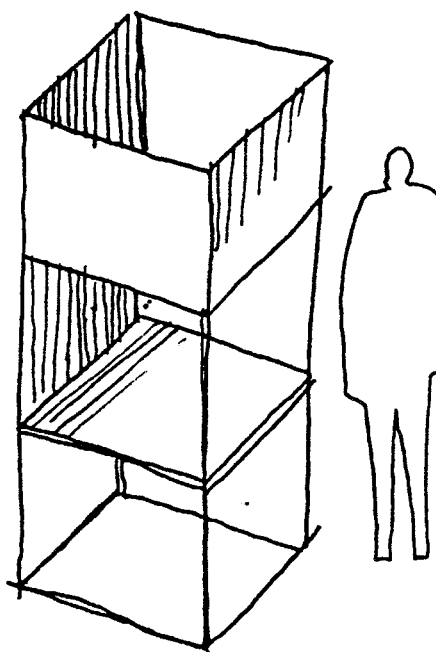
Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

D. Core Exhibit system

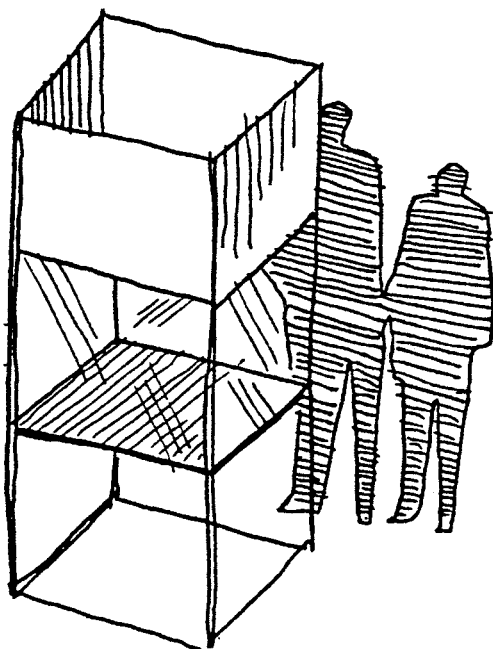
BASIC MODULAR UNIT



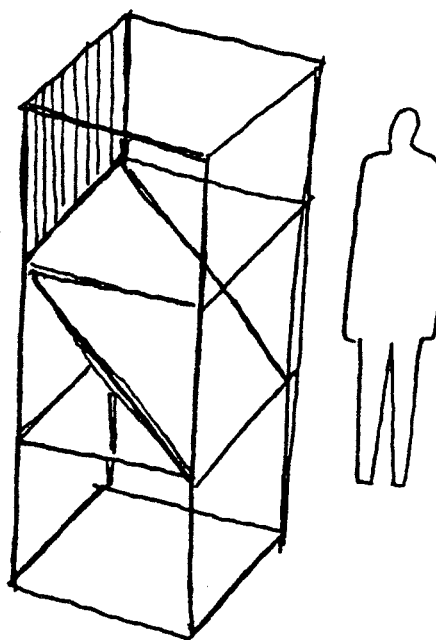
Basic Kiosk Unit



Kiosk with shelf



Kiosk unit with plexiglas
display case

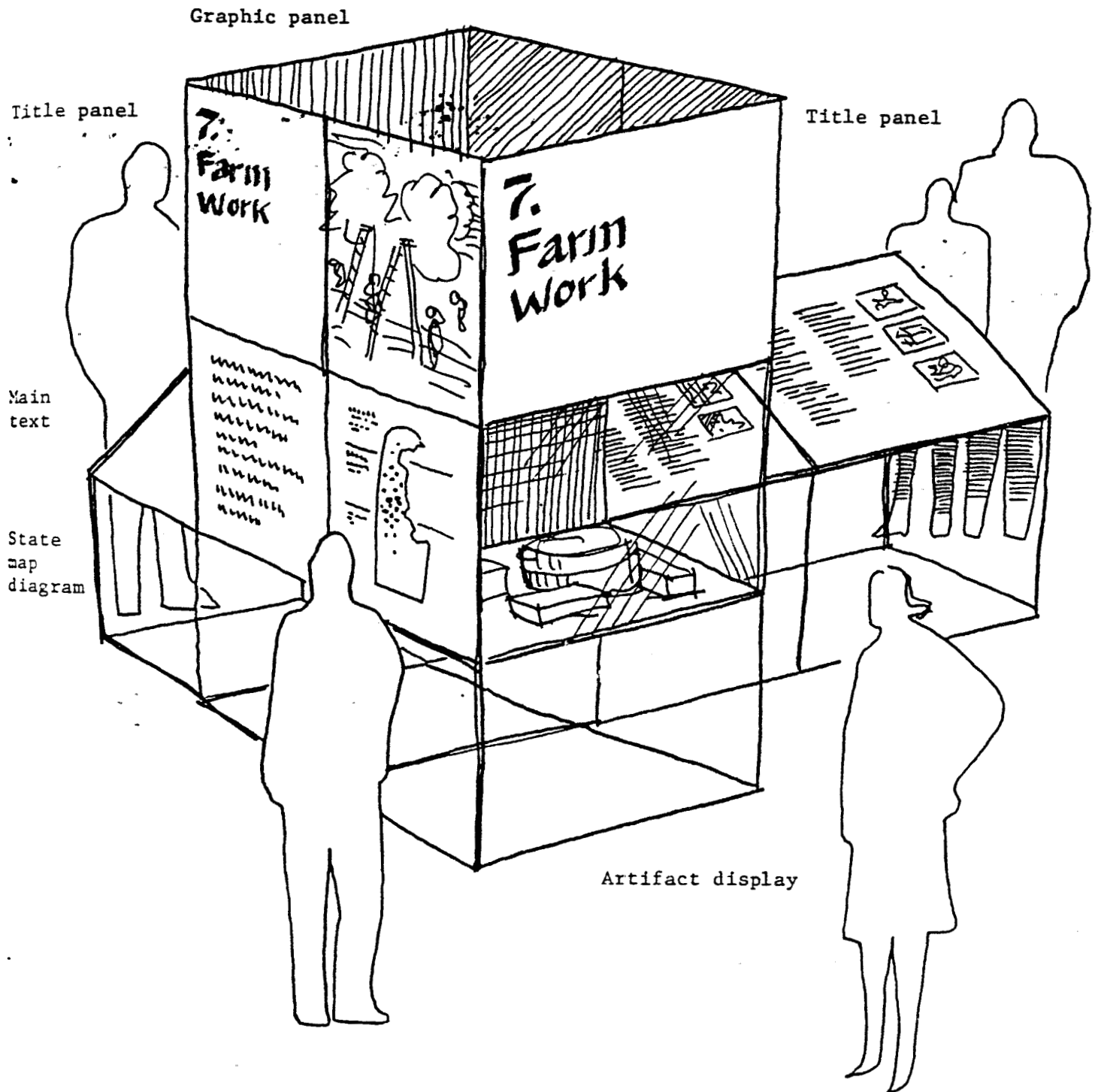


Kiosk structure with
diagonal panel

Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

D. Core Exhibit system

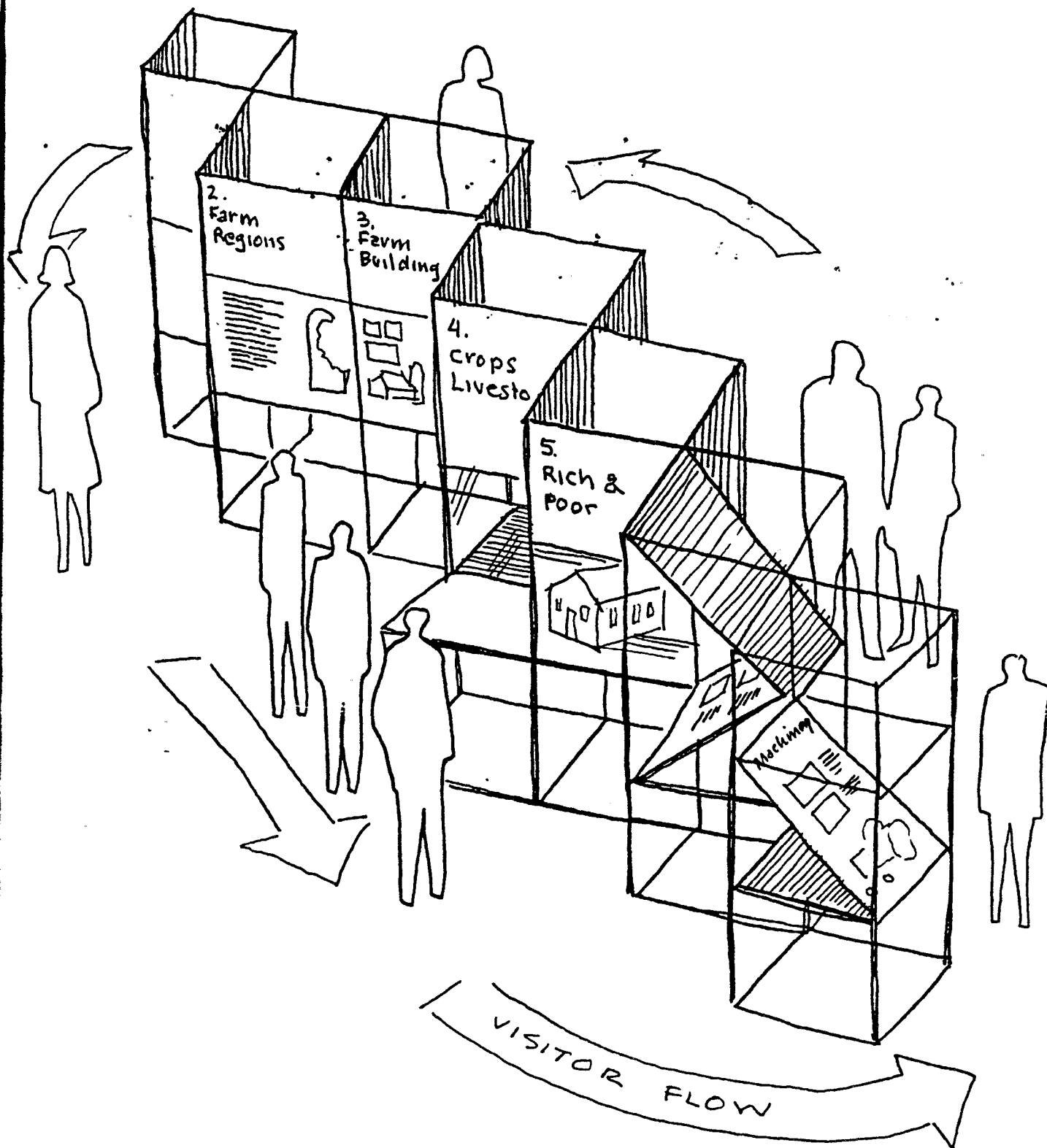
EXHIBIT SECTION



Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

D. Core Exhibit system

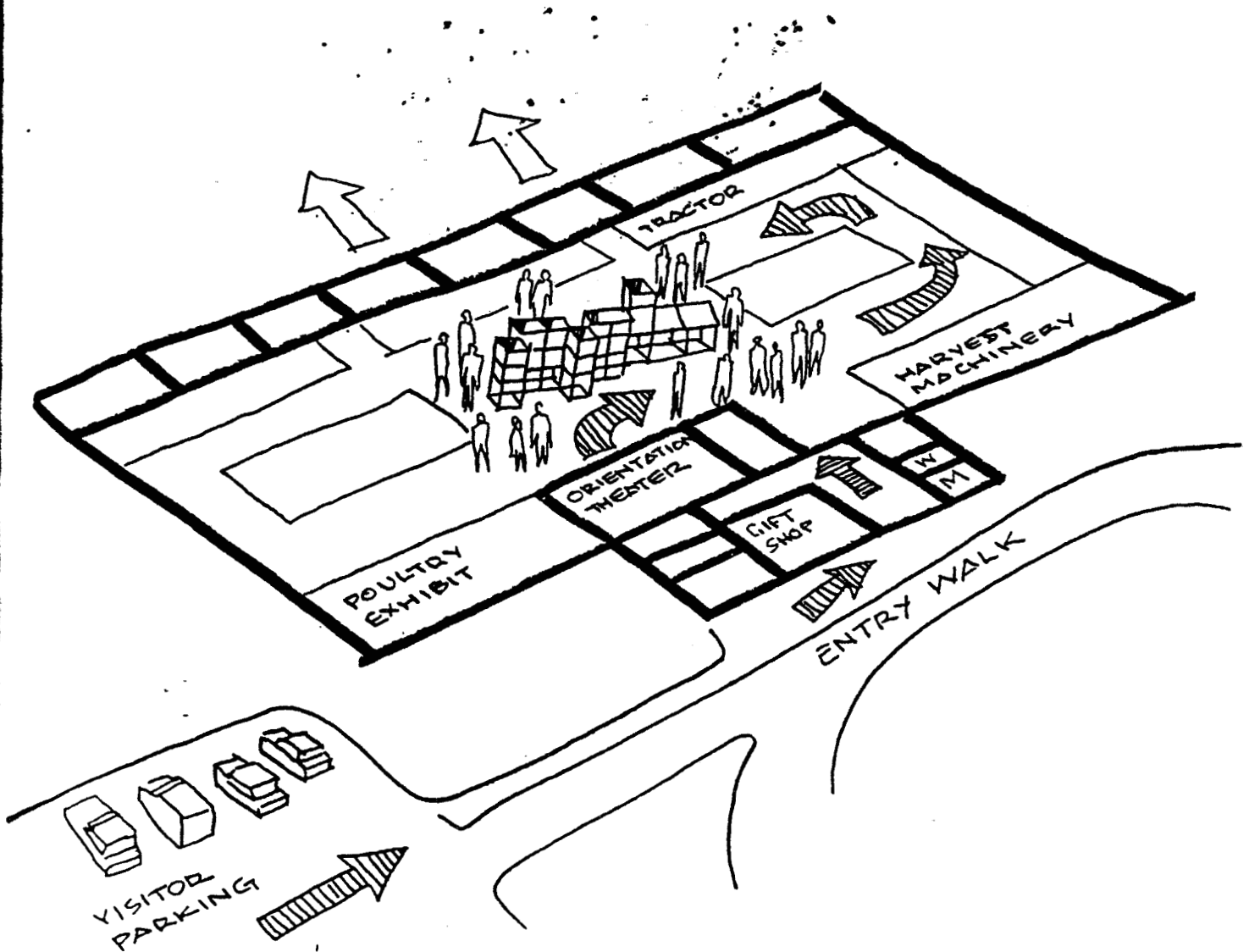
OVERVIEW



Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

D. Core Exhibit system

OVERVIEW OF CORE EXHIBIT



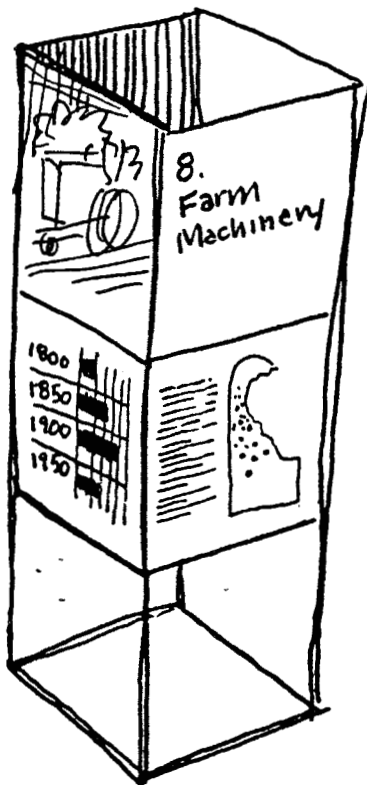
Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

D. Core Exhibit system

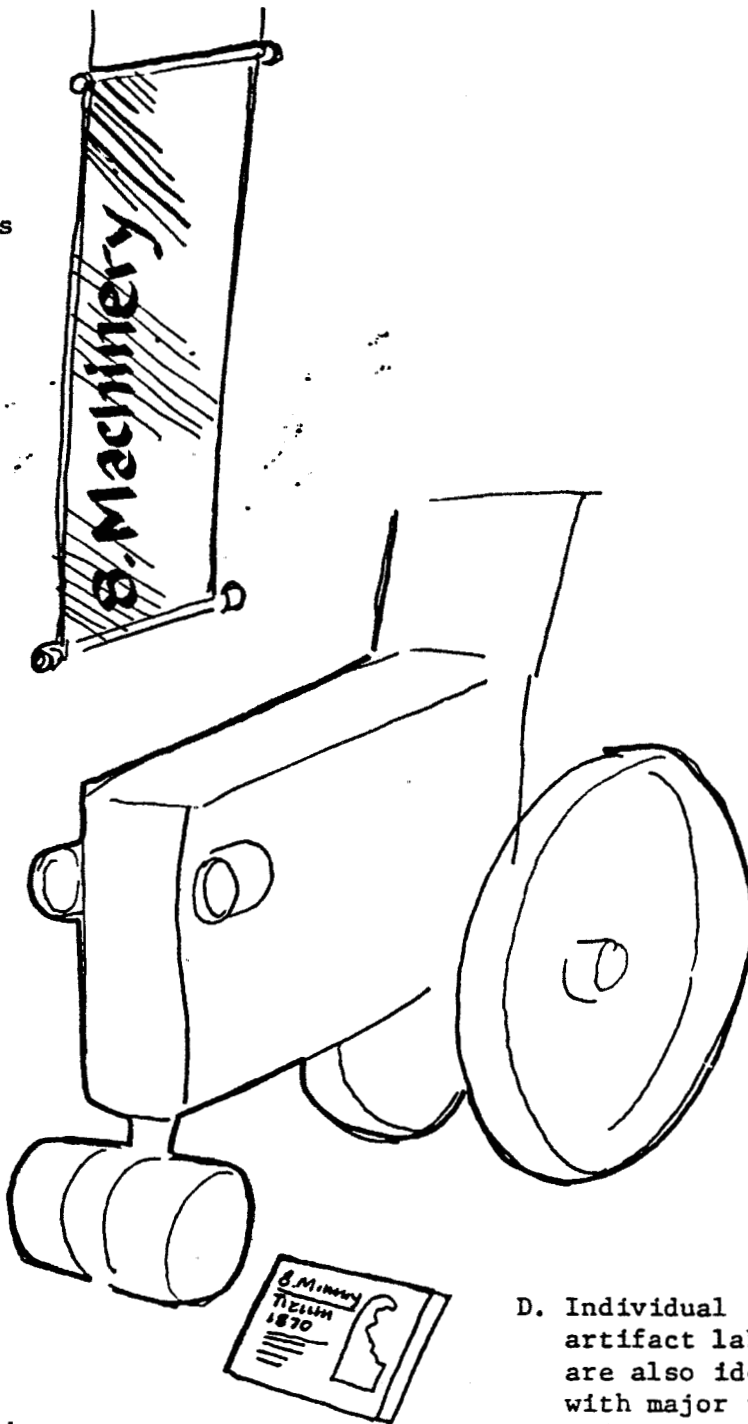
MESSAGE REINFORCEMENT

- A. Overhead hanging
Banner labels
major exhibit topics

- B. Main topic is also
listed on each
modular unit



- C. General trends
are displayed on the
exhibit kiosk for
each major topic



- D. Individual
artifact labels
are also identified
with major topic title
and number

Delaware Agricultural Museum
N.E.H. Exhibit Planning Grant

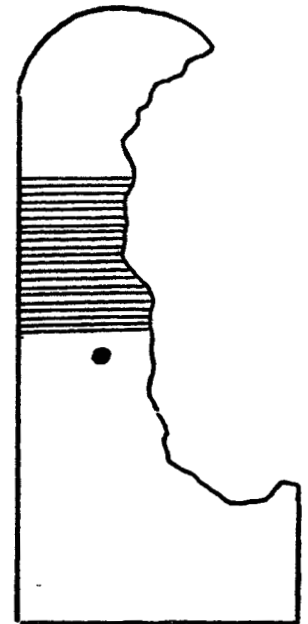
Major topic title pre-printed on each label
topic number also pre-printed.

5, Rich & Poor

Tenant Farm House

1870's

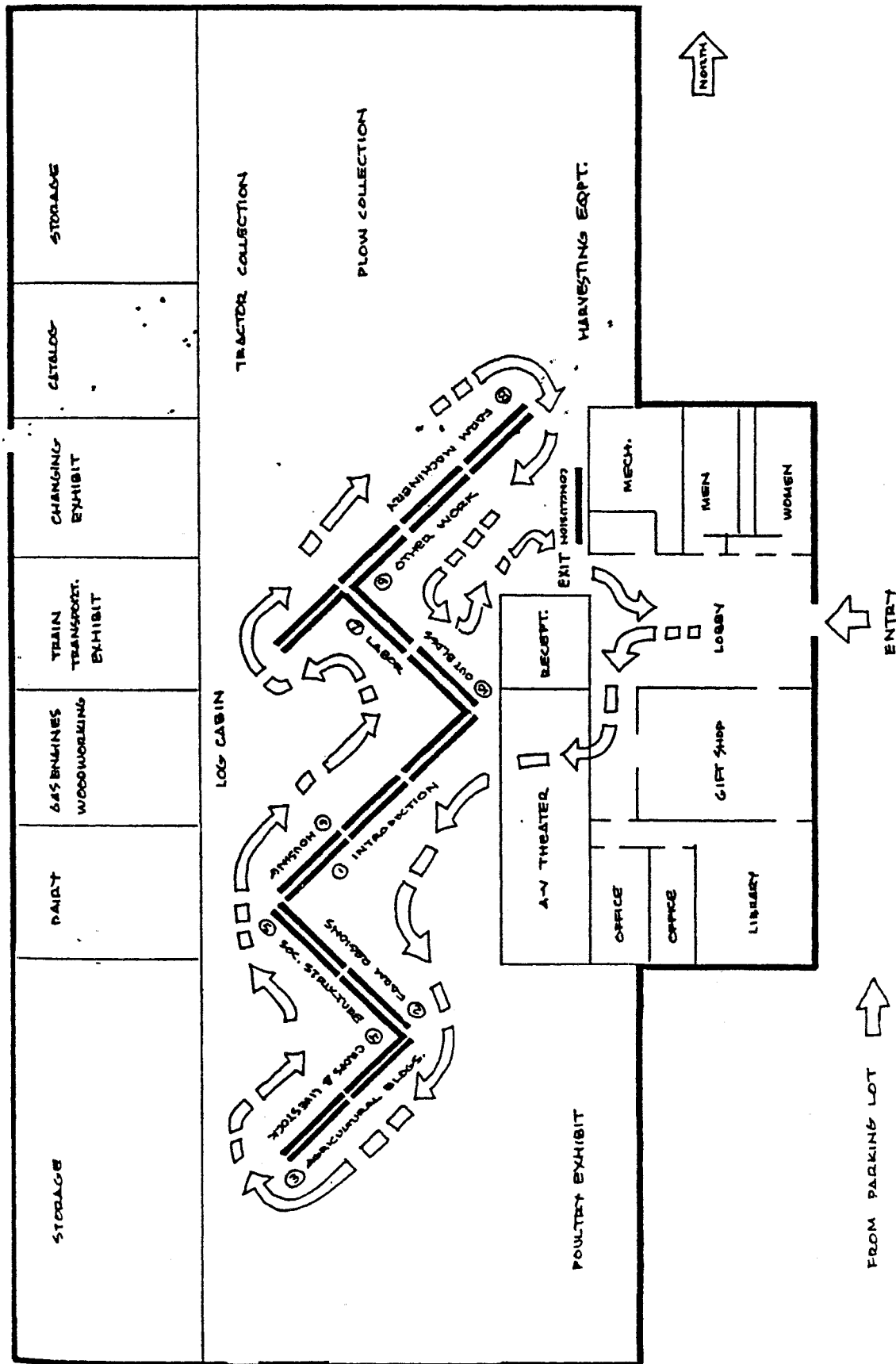
Tasdf zxcv cvbnm xcvbnm zxcvb xcvbn xcvbn b x
ASDFGH zxc asdfghj zxcv zxcvbn zxcvbnm sdfgh
Awerty zxcvbn cvbnm s zxcvbn zxc zxcv
Wwertyuv zxcvb cve erty wert qwert xcv xcv as
Tertyu rtyui sdfghj xcvbnwerty xcvbe cxc zx
Ywerty asd axcvbne e zxcvb wt zxcvb asd.



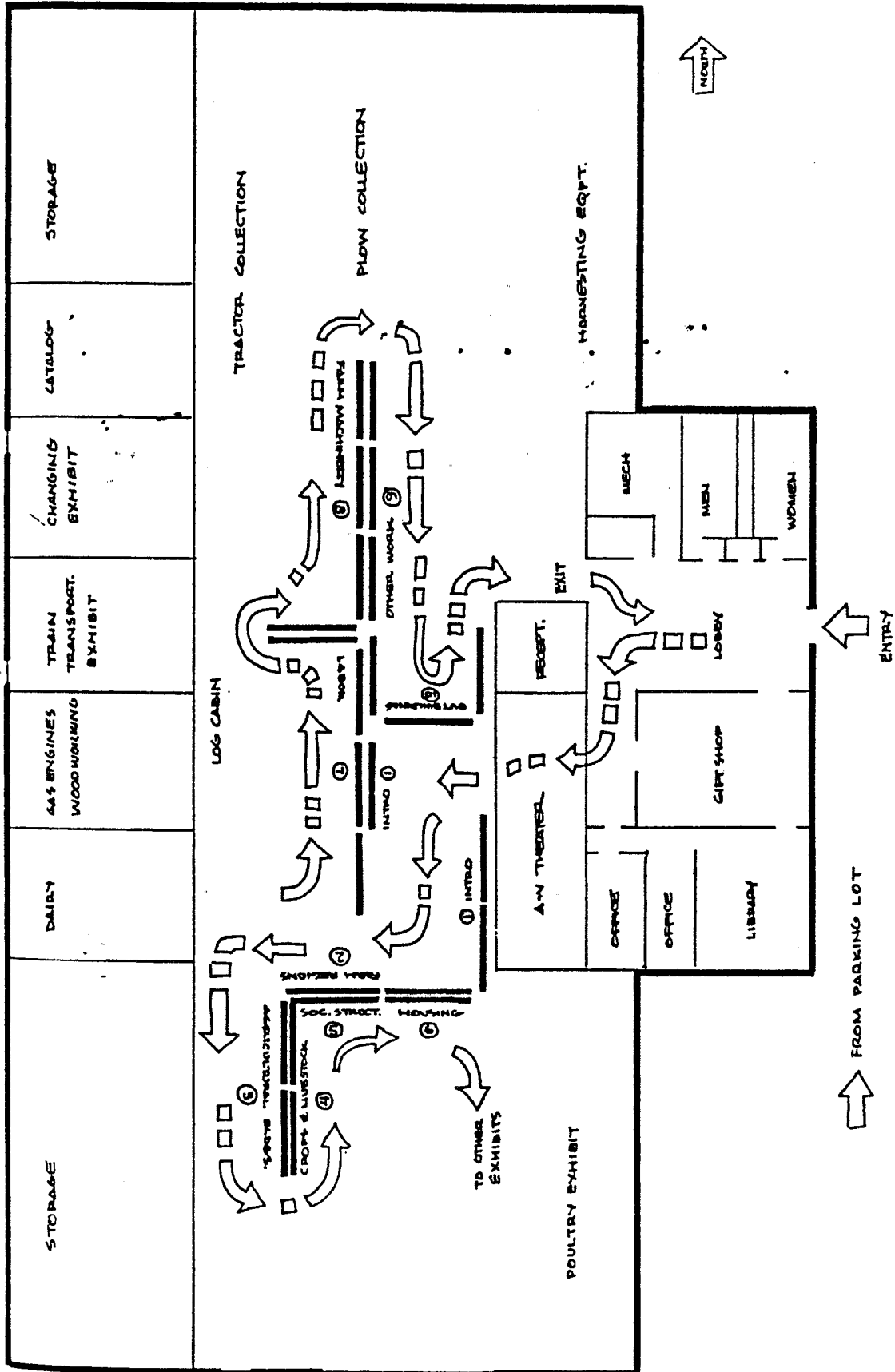
Artifact description typed onto
pre-printed labels with standard office
typewriter.

Standard outline map
pre-printed on all
labels

Coding colors, scree
patterns, etc. are
added separately
for each label



Delaware Agricultural Museum - Exhibition planning / example layout A



Delaware Agricultural Museum - Exhibition planning / example layout B

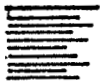
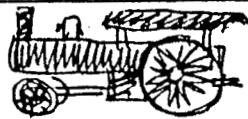
<p>8 SECTION TITLE PANEL</p>		<p>Photo "header" Panel</p>		
<p>iine julla unura autend inanc: lusque in ipsinuria detriment e ne iustitlal dem rect quis di m diliget et carum esse iucund on ob ea solu incommo quae t etiam mag quod cuis. Guae etend quam nostras expetere t tamet eum locum seque facil um est, sic amicitiaand neg pos cis insidar et metus plena sit,</p>	<p>Introduction</p>		<p>Primary artifact display area</p>	
<p>↑ 36" ↓</p>	<p>← 36" →</p>			
		<p>Exhibit platform</p>		

Unit: TYPICAL SECTION

Delaware Agricultural Museum - Exhibit planning elevation

Section:

I Once most Delawareans lived on the land. Most were farmers or farm laborers who worked with their hands...



A PLACE IN TIME ... CONTINUITY AND CHANGE IN MID-NINETEENTH CENTURY DELAWARE



Unit:

1.1

1.2

1.3

1.4

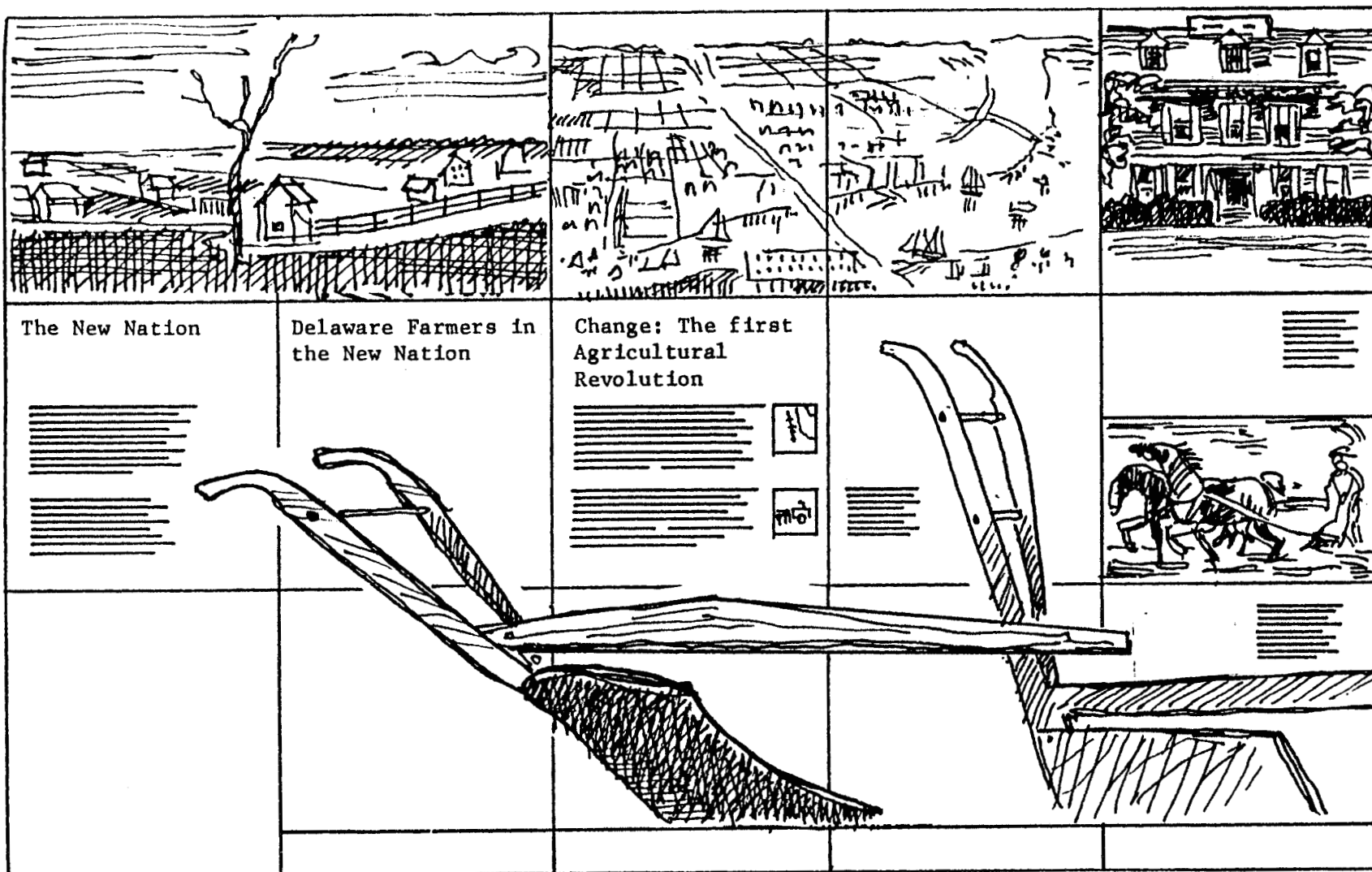
1.5

Delaware Agricultural Museum - Exhibit planning elevation

Section: INTRODUCTION

Object /
Graphic #

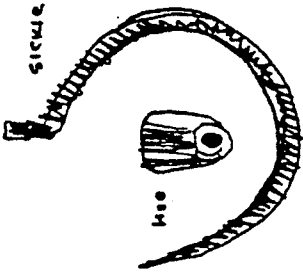

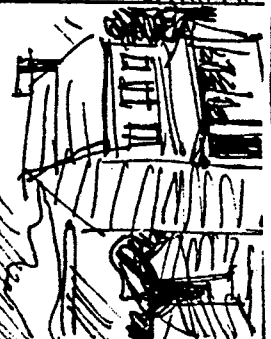
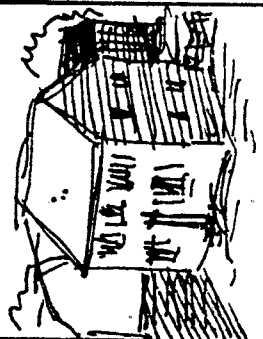

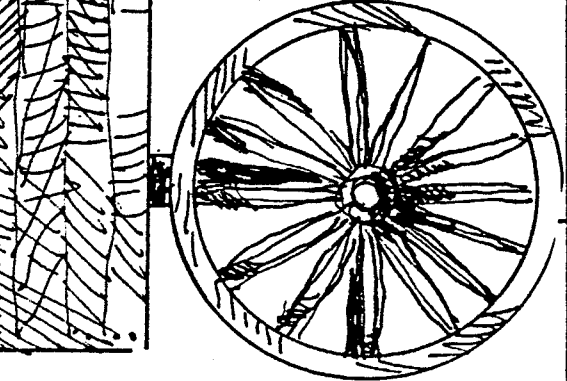
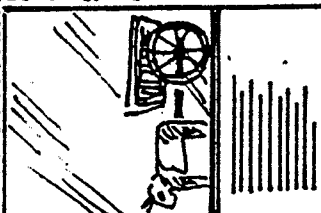
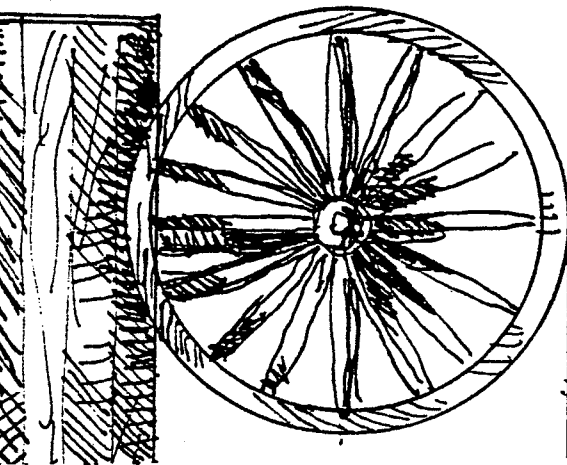
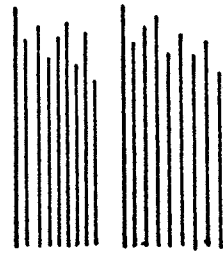
1.01 1.03A 1.03B 1.05 1.06A 1.06B 1.07 1.04



Unit: 1A 1B 1C 1D 1E

Delaware Agricultural Museum - Exhibit planning elevation





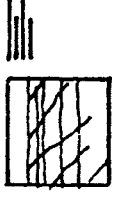








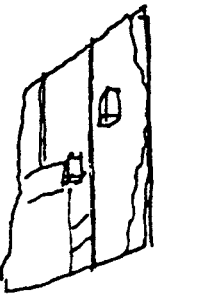


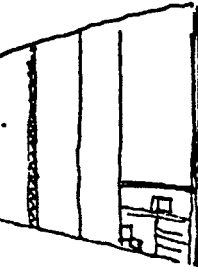


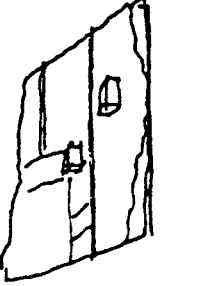


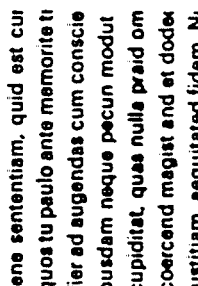


Section: INTRODUCTION

Object/ Graphic #	1.10A 1.10B	1.10C	1.09 1.08	1.11A	1.11B	Unit:	1F	1G	1H	1I	1J
											
	<p>Continuity: The Hand of the Past</p> 										

Section: INTRODUCTION

Delaware Agricultural Museum - Exhibit planning elevation

Object/ Graphic # 2.01 2.02A 2.02B 2.02C 2.02D

<p>2 FARM REGIONS</p>	<p>The Dairy Region</p>   	<p>The Grain Region</p>   	<p>The Mixed Farming Region</p>   	<p>The Home Manufactures Region</p>   
<p>tenetury sapiente delectus au tene sententiam, quid est cur quos tu paulo ante memorite ti fier ad augendas cum conscie busdam neque pecun modut cupiditat, quas nulla praid om coercend magiat and et doder iustitiam, aequitated fidem. Ni</p> 	  	  	  	  

Unit: 2A 2B 2C 2D 2E

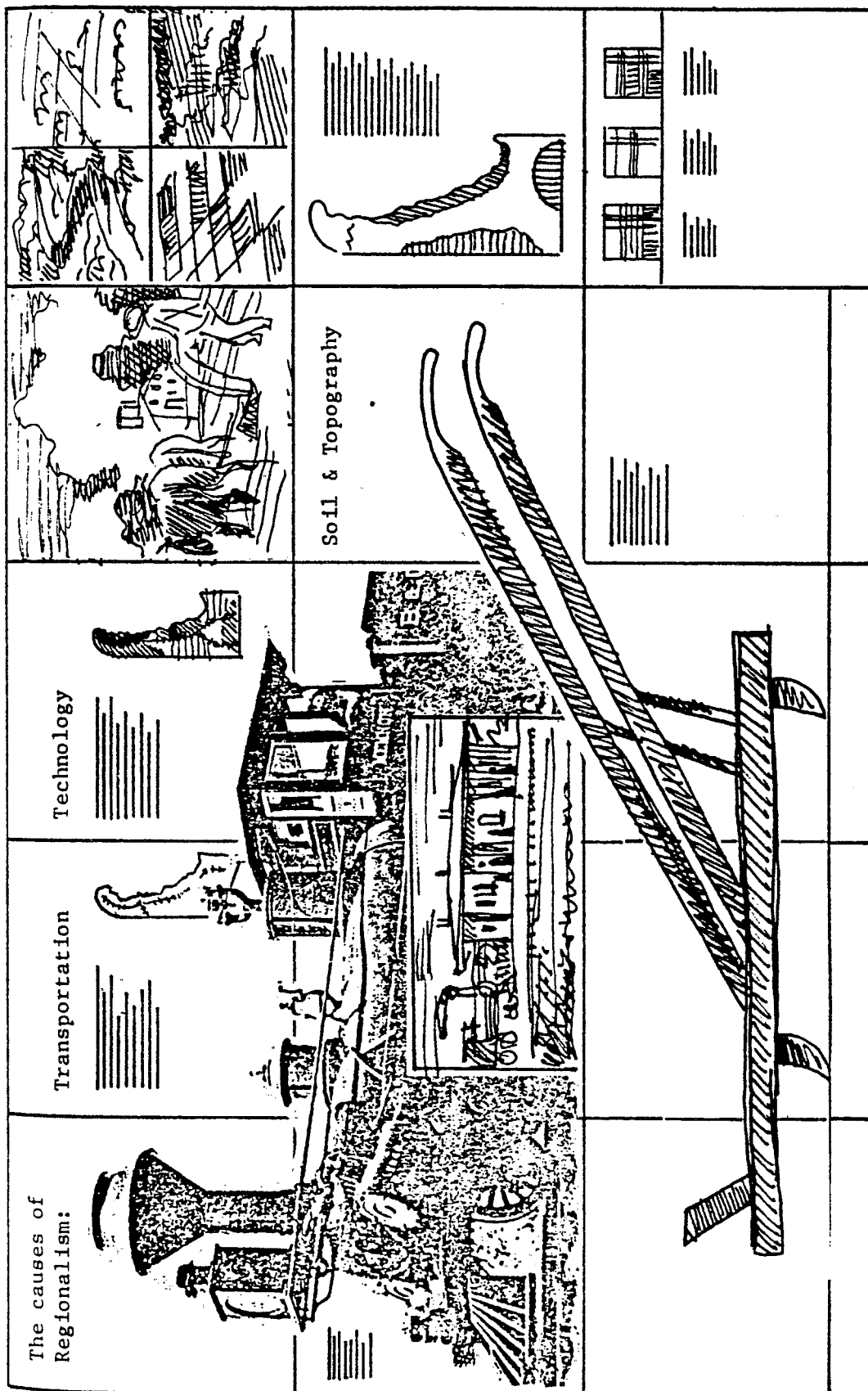
Delaware Agricultural Museum - Exhibit planning elevation Section: FARM REGIONS

2.11
2.12

2.09

2.08

Subject:
Graphic



2J

2I

2H

2G

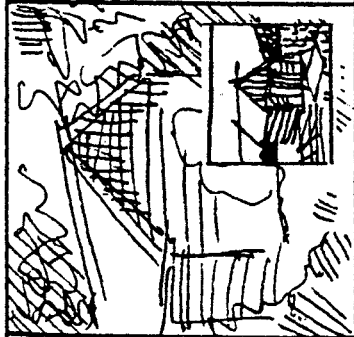
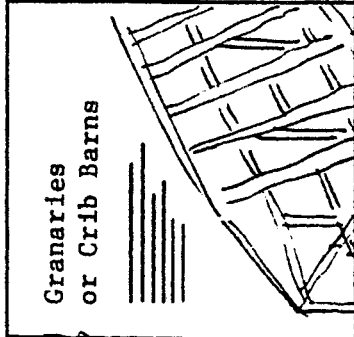
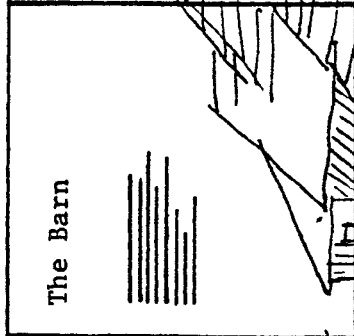
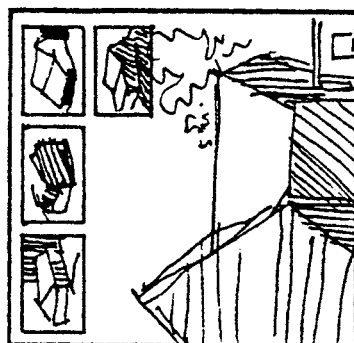
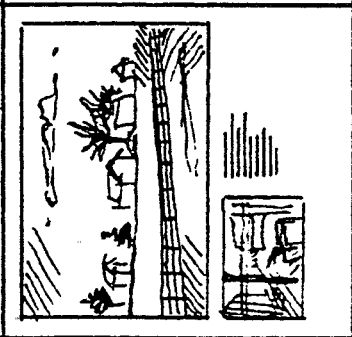
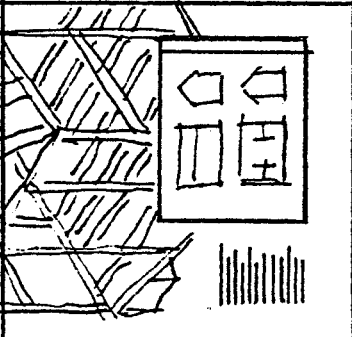
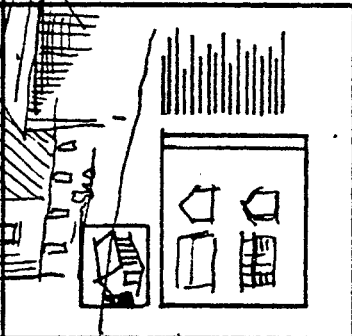
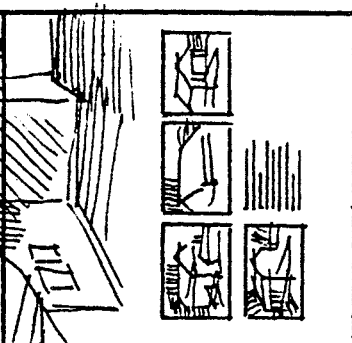
2F

Unit:

Delaware Agricultural Museum - Exhibit planning elevation

Section: FARM REGIONS

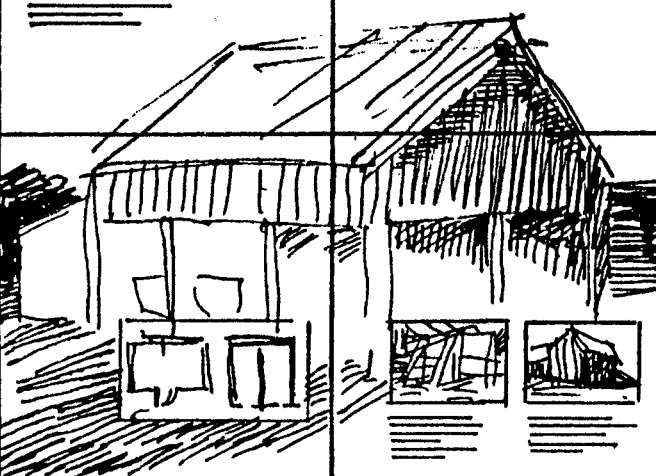
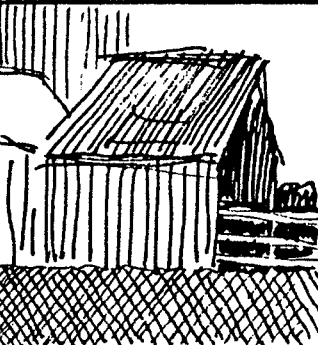


Object / Graphic # 3.01 3.03 3.05 3.07 3.10A 3.11B
3.02 3.04 3.06 3.08 3.10B 3.11C
3.11D

<p>3 Agricultural Buildings</p>		<p>Granaries or Crib Barns</p> 	<p>The Barn</p> 	
<p>commodo consequat. Duis aute esse molestiae consequat, vel accusam et iusto odio digniss et molestias excepteur sint occ qui officia deserunt mollit anim er expedit distinct. Nam liber impedit doming id quod max omnis dolor repellend. Tempo atib saepe eveniet ut er repudi</p>				

Unit: 3A 3B 3C 3D 3E

Delaware Agricultural Museum - Exhibit planning elevation Section: AGRICULTURAL BUILDINGS

Object/	3.12A	3.13A	3.14	3.16
Graphic #	3.12B	3.13B	3.15	3.17
				3.18

<p>Farm Buildings & Farm Regions</p>	<p>The Diversity of Farm Buildings</p> 	<p>Small Farmers and Their Buildings</p> 	
 			

Unit:	3F	3G	3H	3I	3J
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Delaware Agricultural Museum - Exhibit planning elevation

Section: AGRICULTURAL BUILDINGS

4.01
4.02


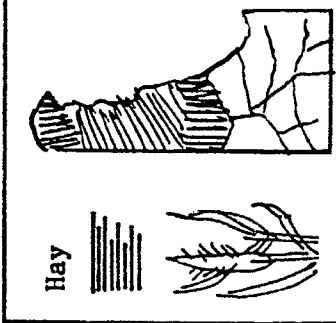
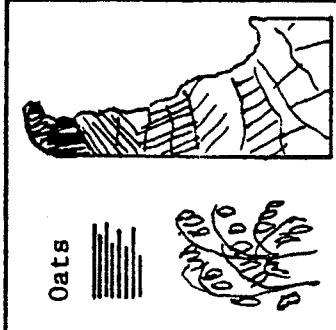
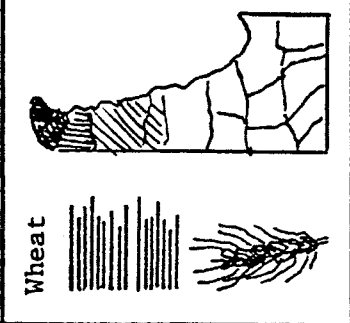
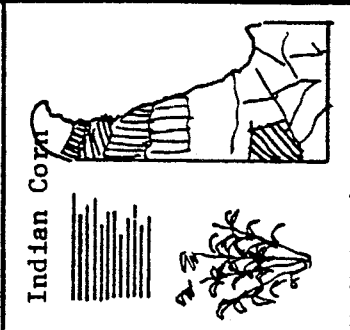
4.04A
4.04B

4.06A
4.06B

4.07A
4.07B

4.08A
4.08B

Object/
Graphic #

		4 Crops & Livestock			
<p>Atque ut odia, invid despiciat fidelissim sed al etiam effectri etiam spe erigunt consequent firma et perpetuam incandit nosmet diligam idcirco et bc laetam amico consid aequa no erit affect erg amicum quo in i Lorem ipsum dolor sit amet, tempor incididunt ut labore et veniam, quis nostrud exercita</p>					

Unit: 4A 4B 4C 4D 4E

Delaware Agricultural Museum - Exhibit planning elevation

Section: CROPS & LIVESTOCK

Object/
Graphic #

4.09A
4.09B

4.10

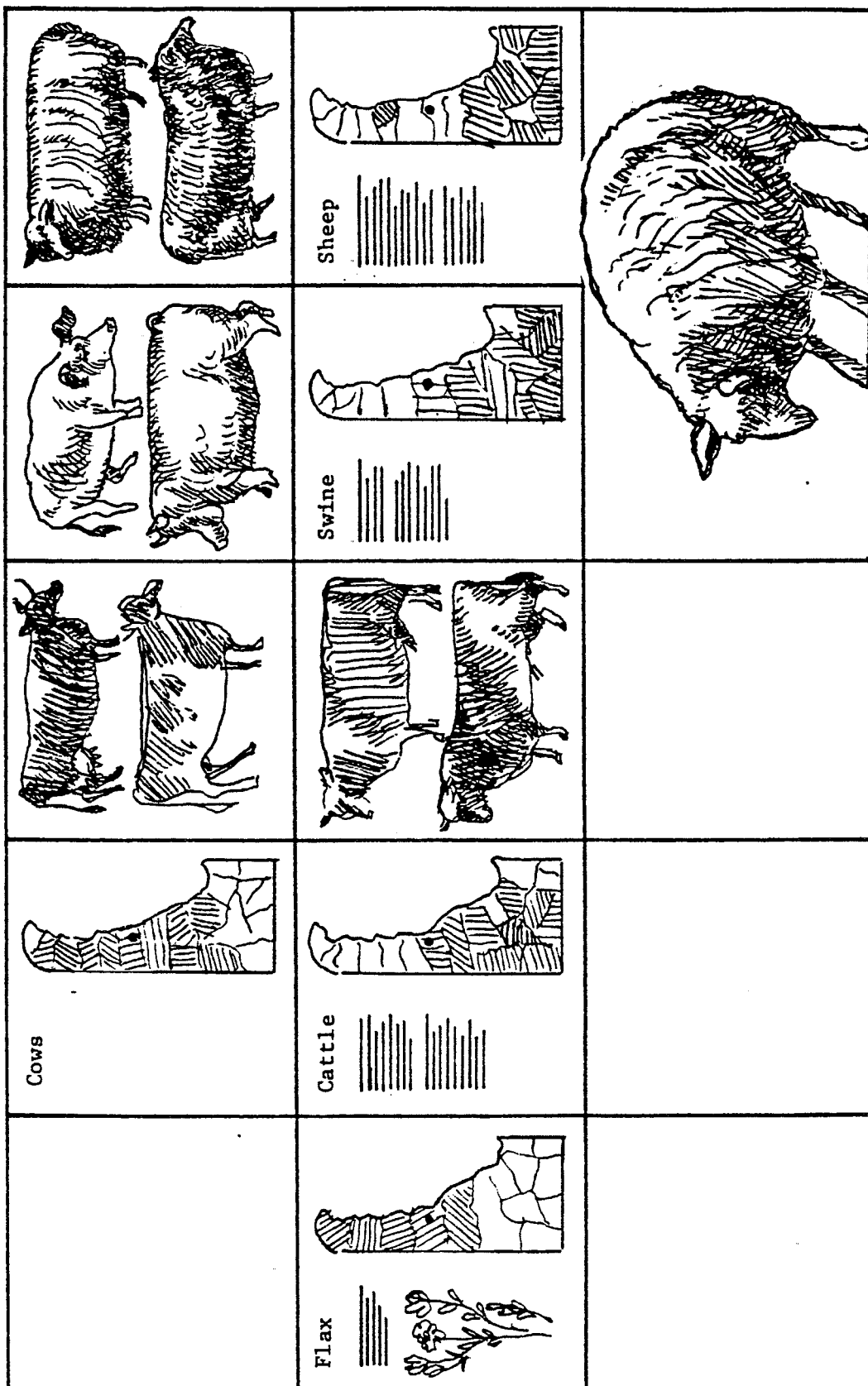
4.11

4.12

4.13
4.14

4.15
4.16 A & B

4.17



Unit:

4F

4G

4H

4I

4J


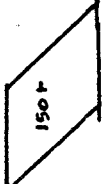
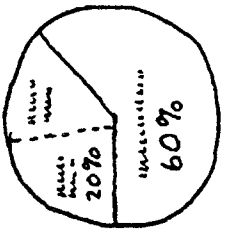
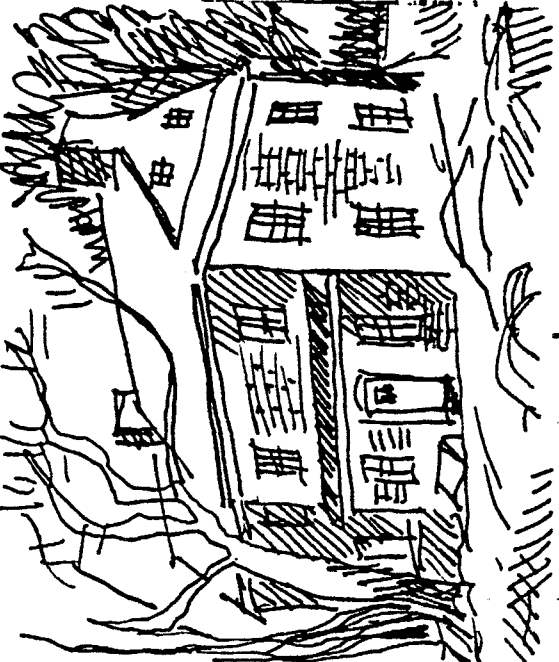

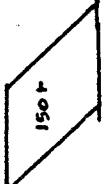
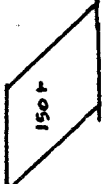

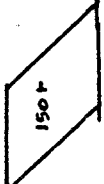
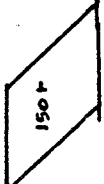
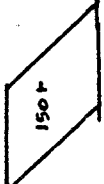
Delaware Agricultural Museum - Exhibit planning elevation

Section: CROPS &
LIVESTOCK

Annual Crop Calendar	Winter			Spring			Summer			Fall		
	JAN	FEB	MAR	APR.	MAY	JUNE	JULY	AUG	SEPT	OCT	NOV	DEC.
Corn		PLOWING		PLANTING		HOEING			THRESH	PLANT	HARVEST	HUSKING
Wheat						HOEING	HARVEST	THRESH	PLOW	PLANT		
Oats			PLANT	PLANT			HARVEST	THRESH	THRESH			
Clover/Hay			PLANT		1ST CUT	RAZING	STACK	2ND CUT	3RD CUT	THRESH		
Flax		CLEAN	CLEAN				PULL	STACK				
Sheep					SHEAR	HOEING						
Fencing		HOEING	FENCE	FENCE	FENCE	FENCE	FENCE	FENCE	FENCE	FENCE		
Slaughter	HOGS	CALVES								HOEING	BEEF	CALVES
Fertilizing			SPREAD	HOEING								








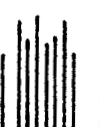



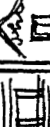
Unit:

Object/ Graphic # 5.01 5.02 5.04 5.06A 5.06B 5.07A 5.07B 5.08A 5.08B 5.09A 5.09B 5.10A 5.10B

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Unit: 5A 5B 5C 5D 5E

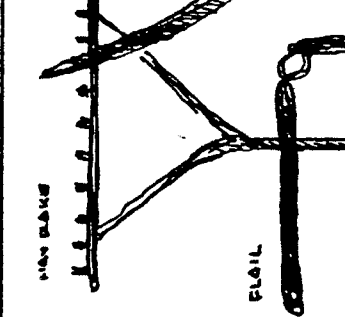
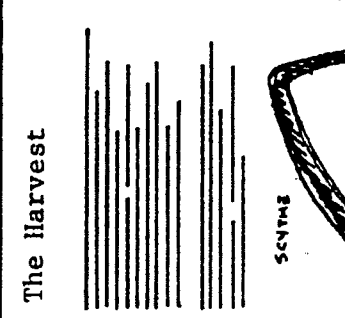

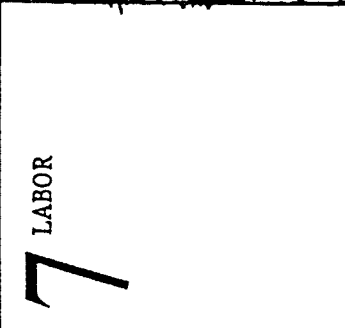
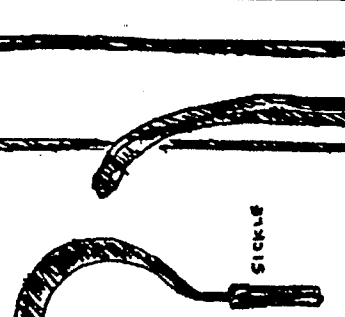
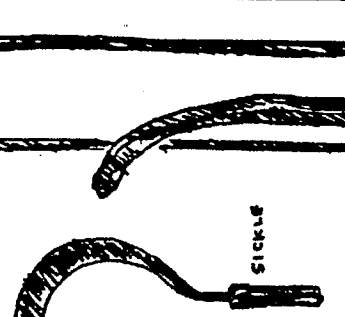
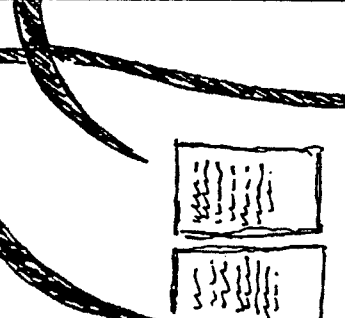
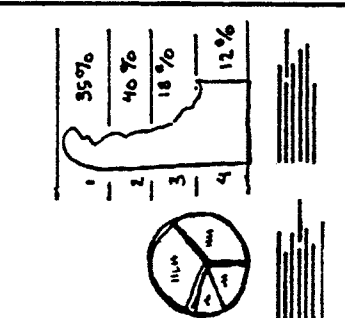
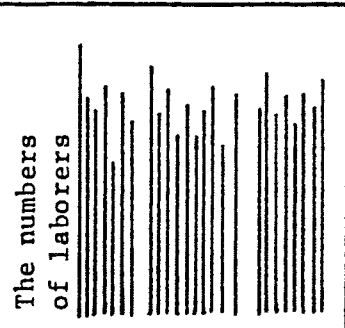
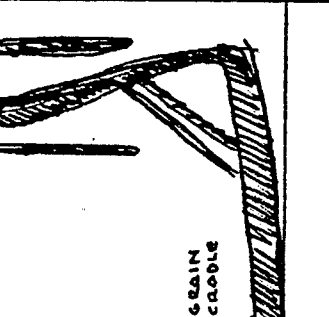
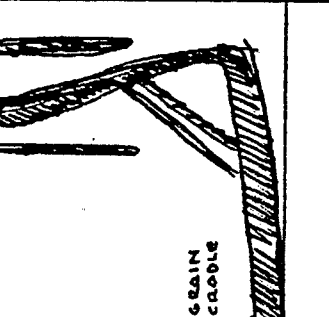
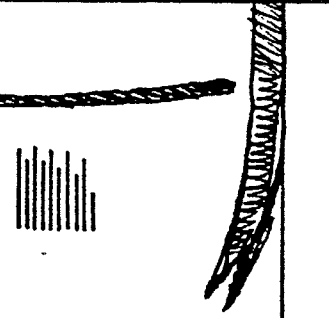
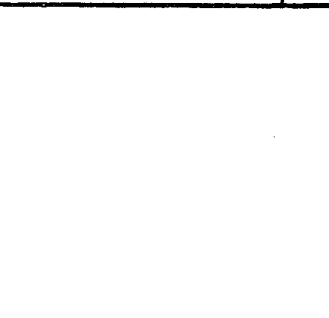
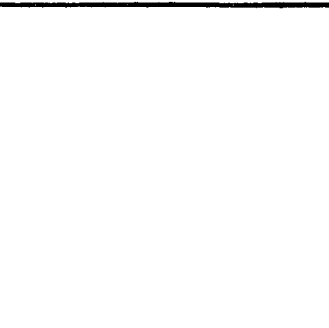
Delaware Agricultural Museum - Exhibit planning elevation Section: SOCIAL STRUCTURE

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Unit: 6A 6B 6C 6D 6E


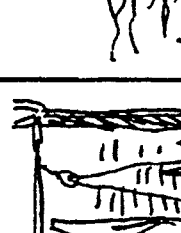















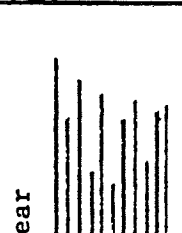


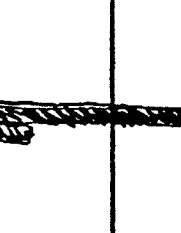

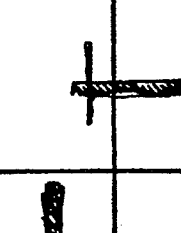

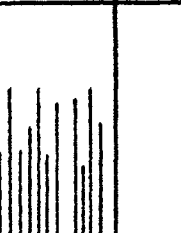
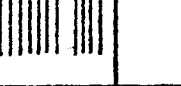

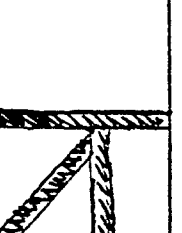
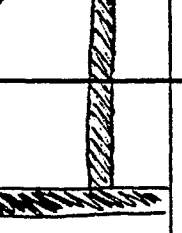
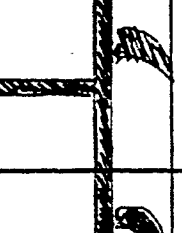
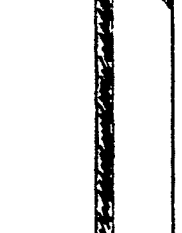
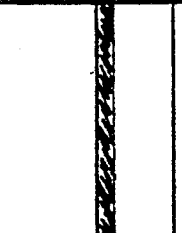

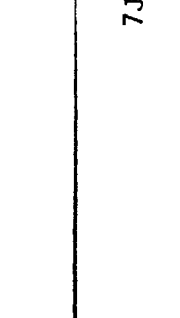
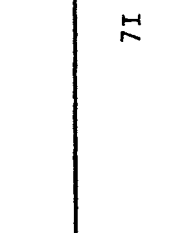
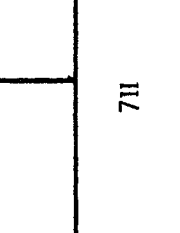
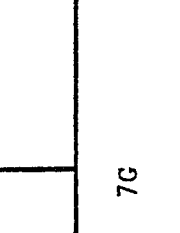
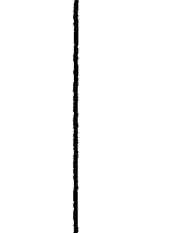
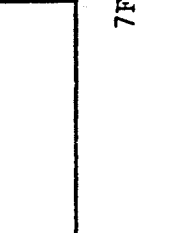

Delaware Agricultural Museum - Exhibit planning elevation Section: HOUSING

Object/ Graphic # 7.01 7.02 7.03 7.05 7.06 7.07A 7.07C 7.07D 7.07E

<p>7 LABOR</p>		<p>The Harvest</p> 		
<p>The numbers of laborers</p> 				
				


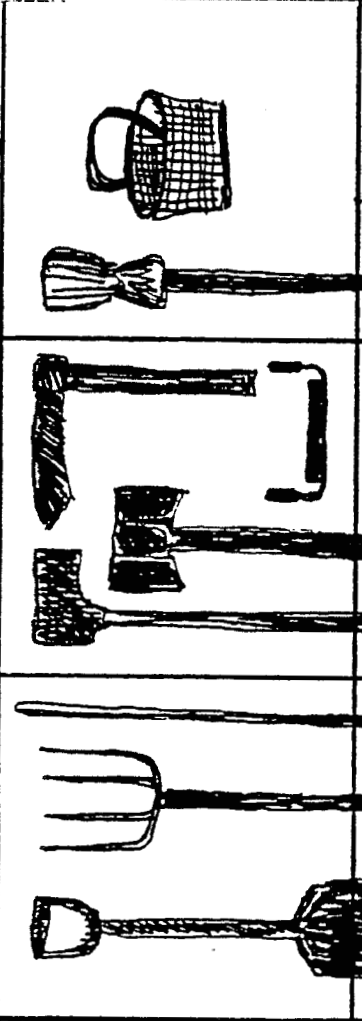
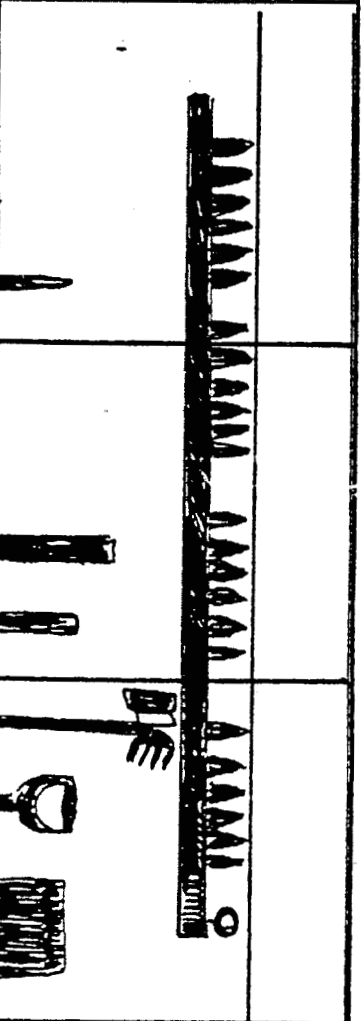
Unit: 7A 7B 7C 7D 7E

Delaware Agricultural Museum - Exhibit planning elevation Section: LABOR

Object/ Graphic #	7.13B 7.13C 7.13D 7.13E	7.13F 7.13G 7.13H 7.13I	7.13J 7.13K 7.13L 7.13M	7.13N 7.13O 7.13P 7.13Q	7.13R 7.13S 7.13T 7.13U	7.13V 7.13W 7.13X 7.13Y
7.21						
The rest of the year						
						
						
						
						

Section: LABOR

Delaware Agricultural Museum - Exhibit planning elevation

			<p>Unit: 7K 7L 7M 7N 7O</p>
<p>LAST TWO UNITS ILLUSTRATED ON NEXT PAGE</p>			



Section: LABOR

Delaware Agricultural Museum - Exhibit planning elevation

Object/
Graphic #

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7.25

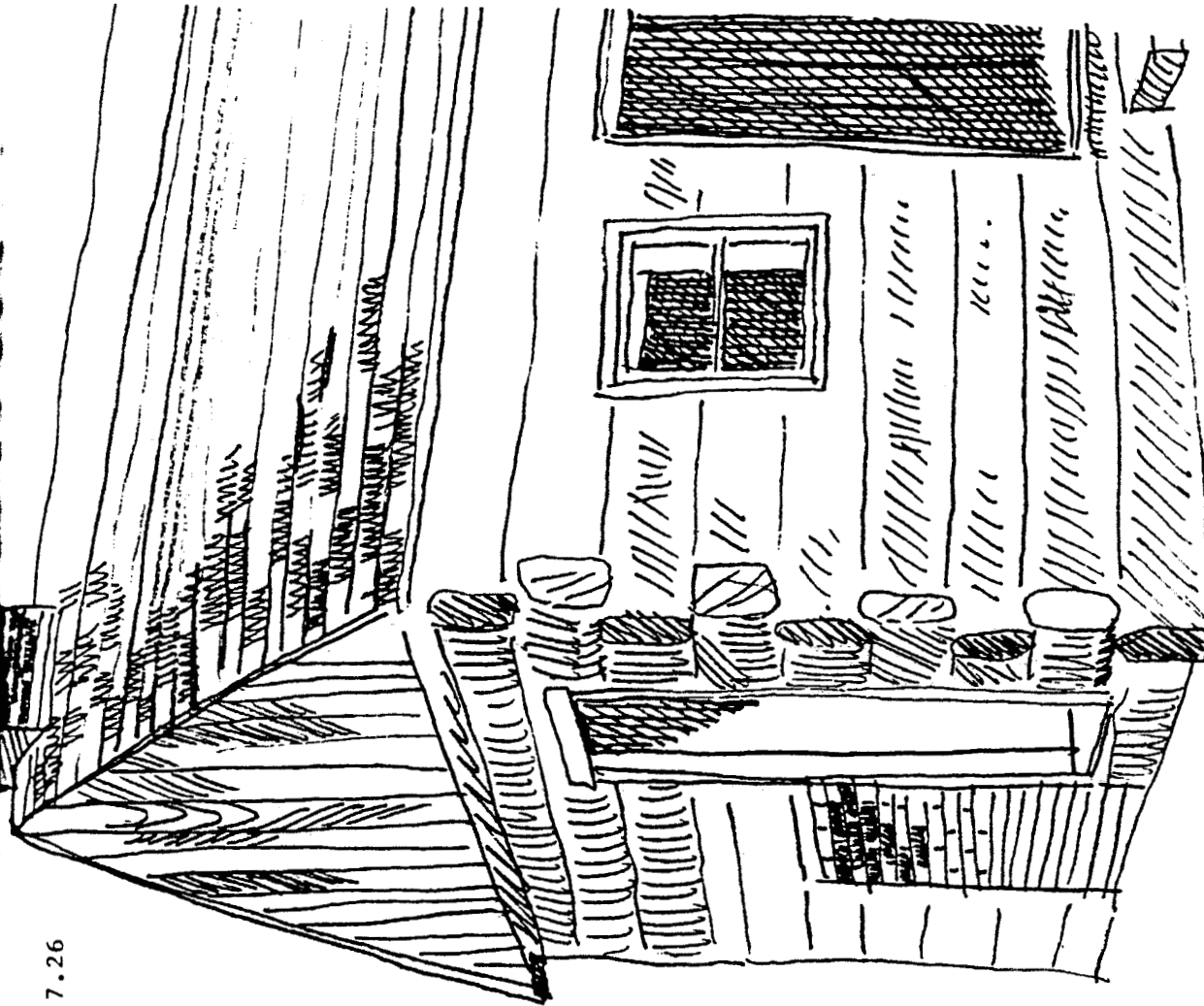
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		<p>7.26</p>
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Unit:

7N

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Delaware Agricultural Museum - Exhibit planning elevation

Section: LABOR

Object/
Graphic #

8.01

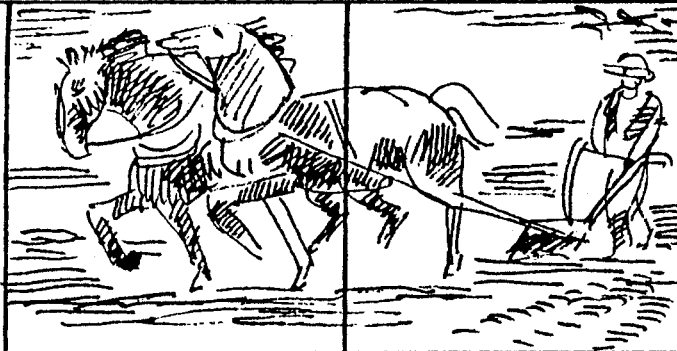
8.02A 8.02B

8.03A

8.03B

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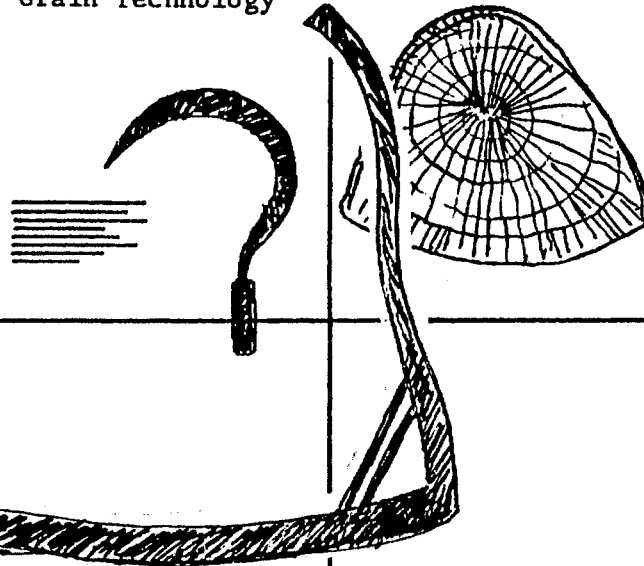
FARM
MACHINERY



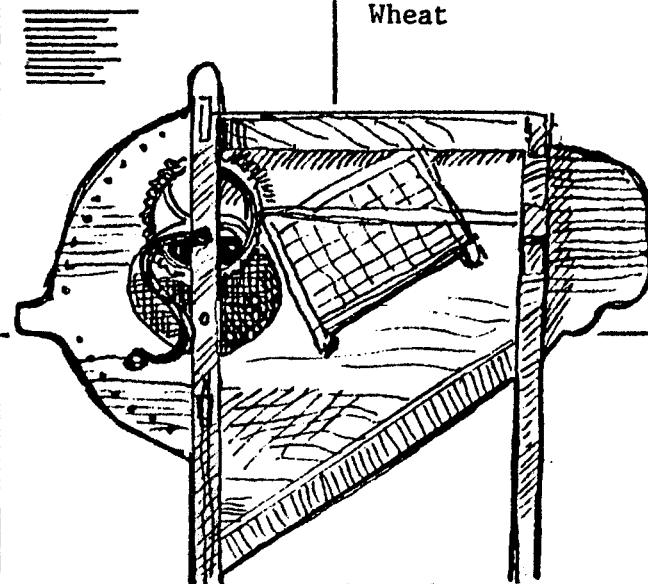
The New Machine

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atib saepe eveniet ut er repudl
tenetur sapiente delectus au
tene sententiam, quid est cur
quos tu paulo ante memorite ti
fier ad augendas cum consciel
busdam neque pecun modut
cupiditat, quas nulla praid om

Grain Technology



Wheat



Unit:

8A

8B

8C

8D

8E

Delaware Agricultural Museum - Exhibit planning elevation

Section: FARM MACHINERY

8.09D

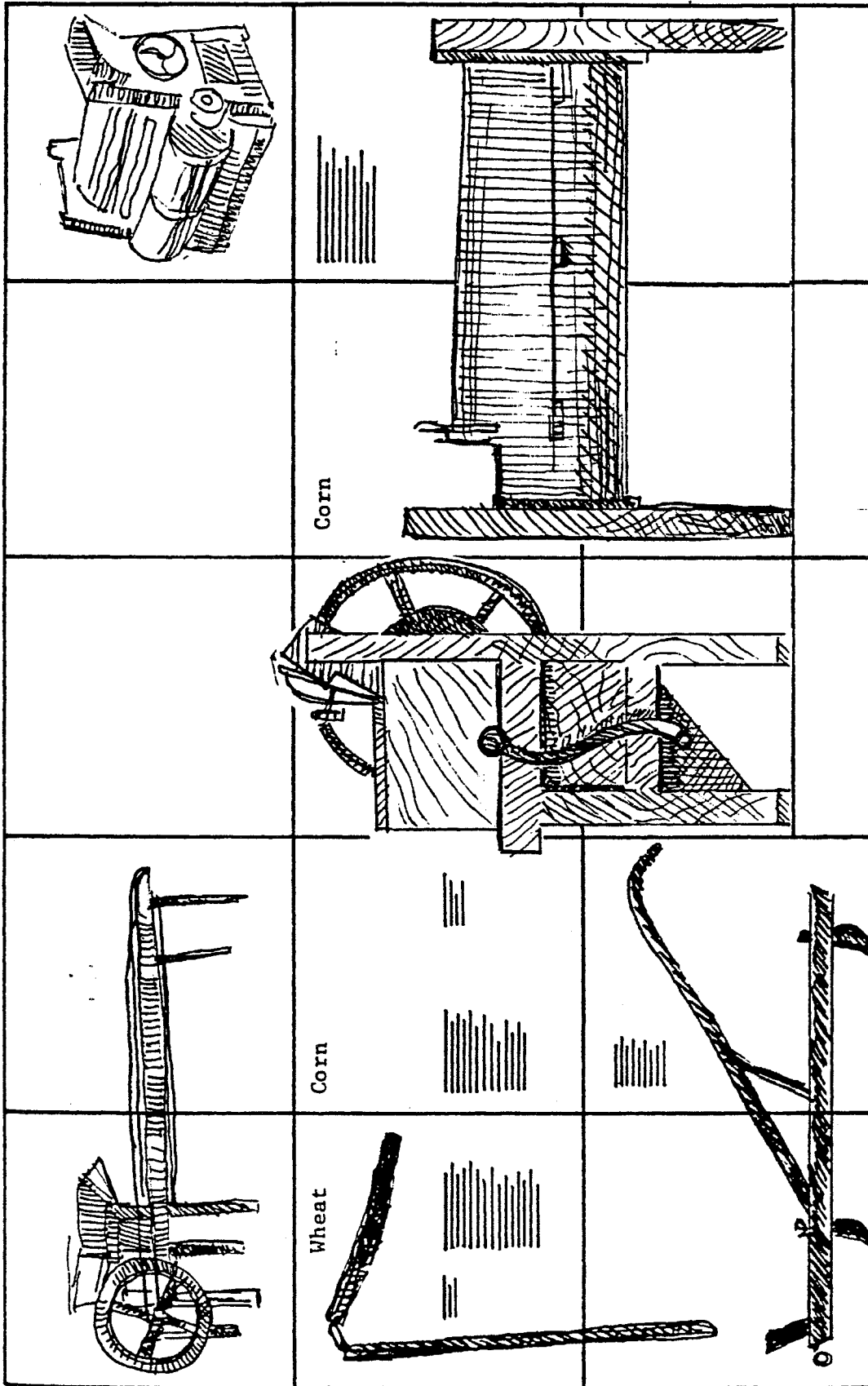
8.07B

8.07A

8.06

8.04
8.05

Object/
Graphic #



8J

8I

8H

8G

8F

Unit:

Section: FARM
MACHINERY

Delaware Agricultural Museum - Exhibit planning elevation

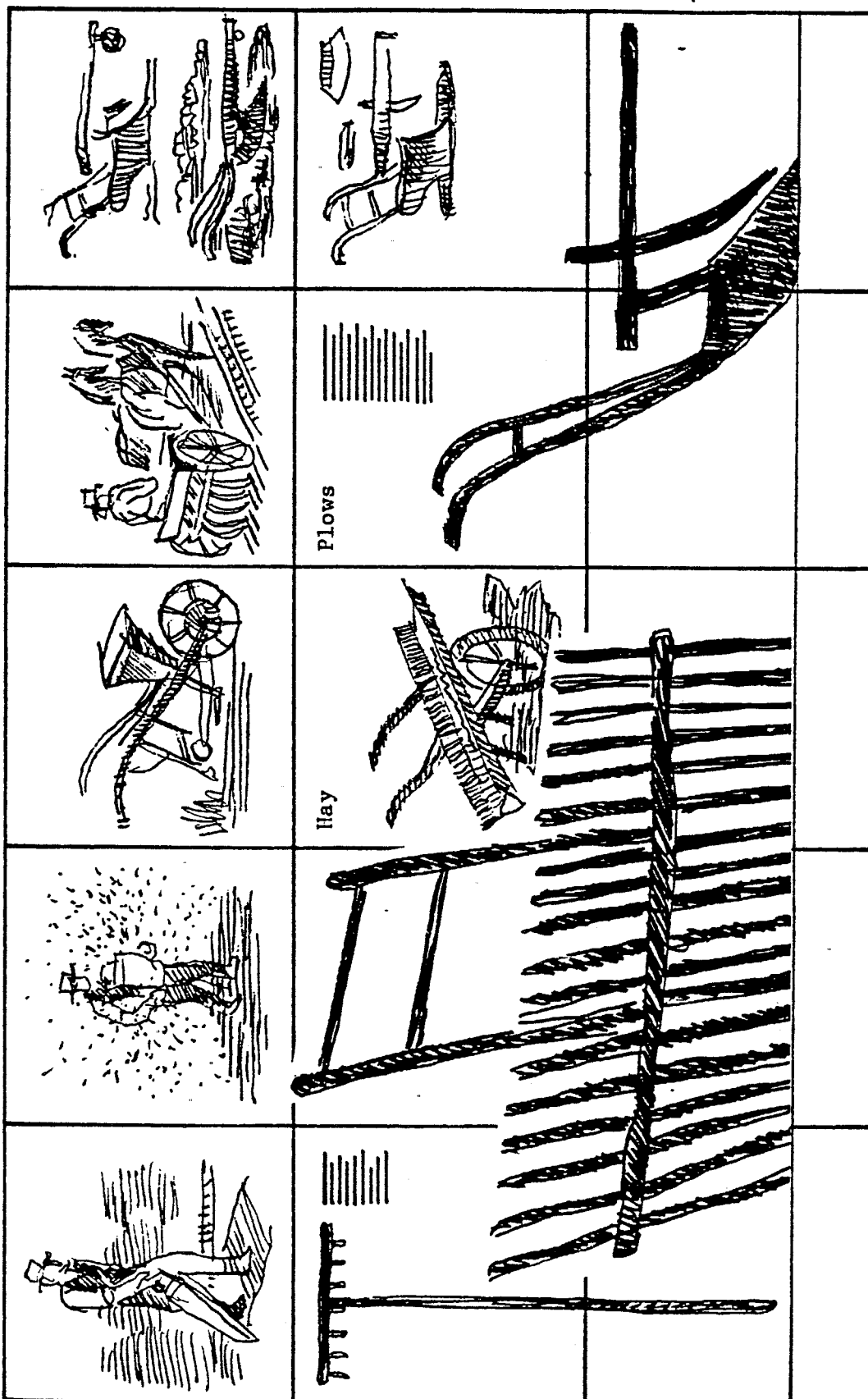
8.09Y
8.09C
8.09E

8.09A

8.09B 8.09E

8.09A 8.08A 8.08B

Object/
Graphic #



Plows

Hay

Unit:

8K

8L

8M



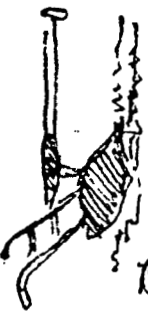







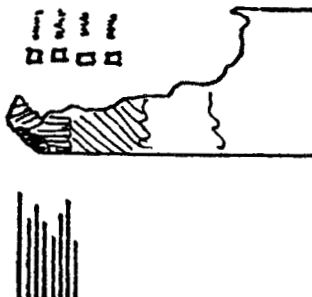
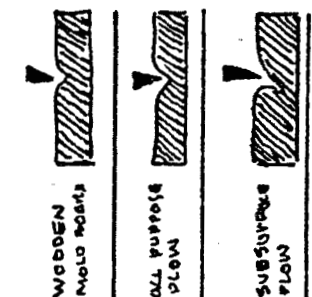


8N

8O

Delaware Agricultural Museum - Exhibit planning elevation

Section: FARM MACHINERY

Object/ Graphic # 8.10B 8.09G 8.09F 8.11 8.10C 8.13 8.15

 	 	 	 	 	<p>The continuing sameness of farm work</p> <p>commodo consequat. Duis aute ipsum ut elit sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat. Duis aute ipsum ut elit sed do eiusmod tempor incididunt ut labore et dolore magna aliqua. Ut enim ad minim veniam, quis nostrud exercitation ullamco laboris nisi ut aliquip ex ea commodo consequat.</p>									
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Unit: 8P 8Q 8R 8S 8T

Delaware Agricultural Museum - Exhibit planning elevation Section: FARM MACHINERY

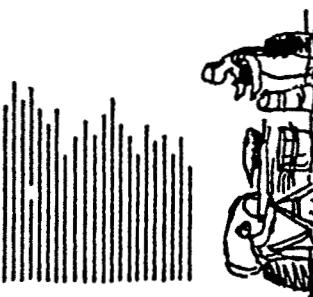
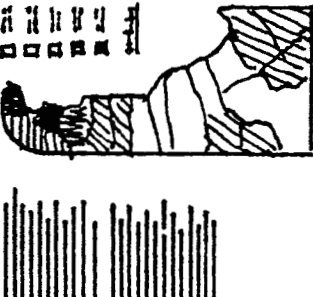

Object:
Graphic #

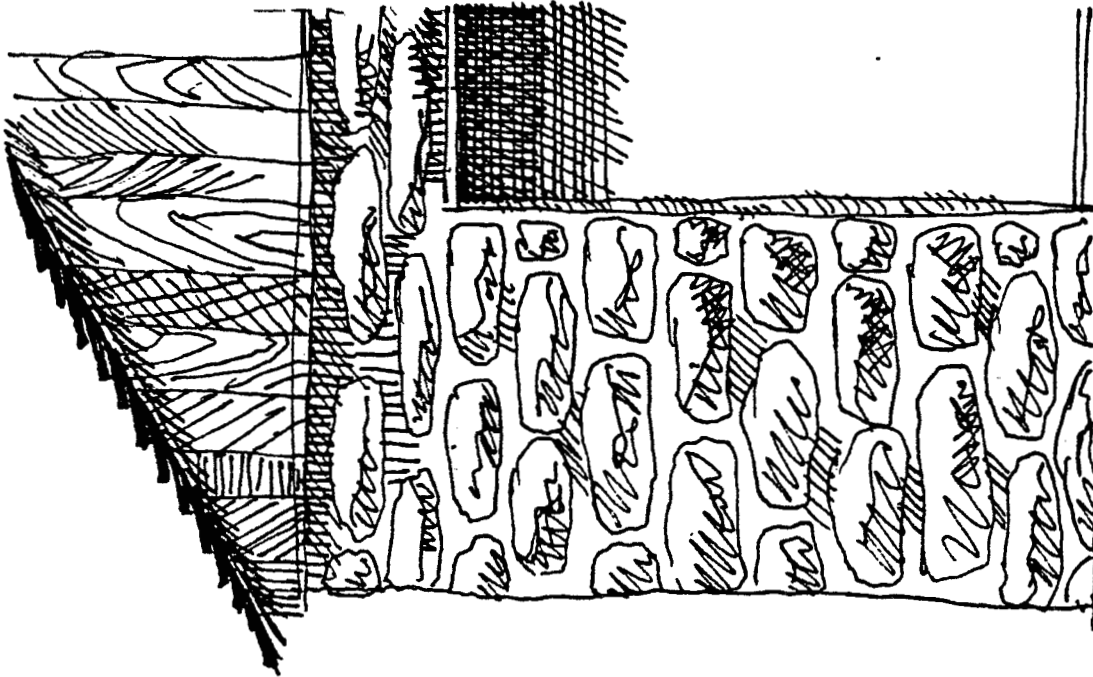
9.04

9.03

9.11 9.14
9.12 9.15
9.16

9.02A 9.08

9 OTHER WORK			
<p>aut preferendis dolorib asperio verear ni ad eam non possin um etia erjat. Nos amice et nebe nt to factor tum poen legum od est neque nonor imper ned libi umtant. improb pary minuit, f sendesse videantur. Invitat igitu aque hominy infant aut iniuste f otiner si efecerit, et opes vel for itung benivolent sib conciliant</p>			



Unit:

9A

9B

9C

9D

9E

Delaware Agricultural Museum - Exhibit planning elevation

Section: OTHER WORK

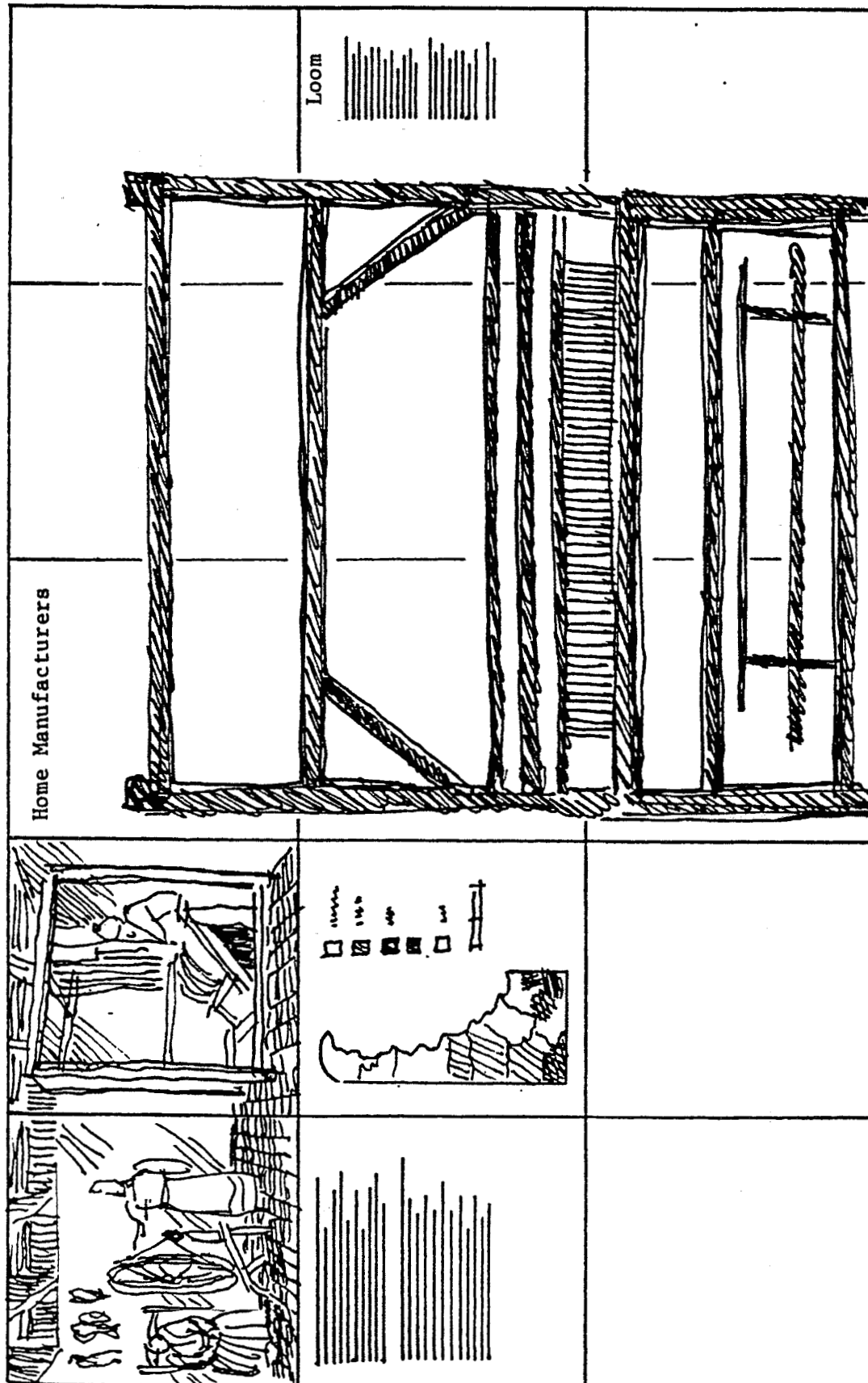
Object/
Graphic #

9.18

9.19

9.17

(9.05)



Unit:

9F

9G

9H

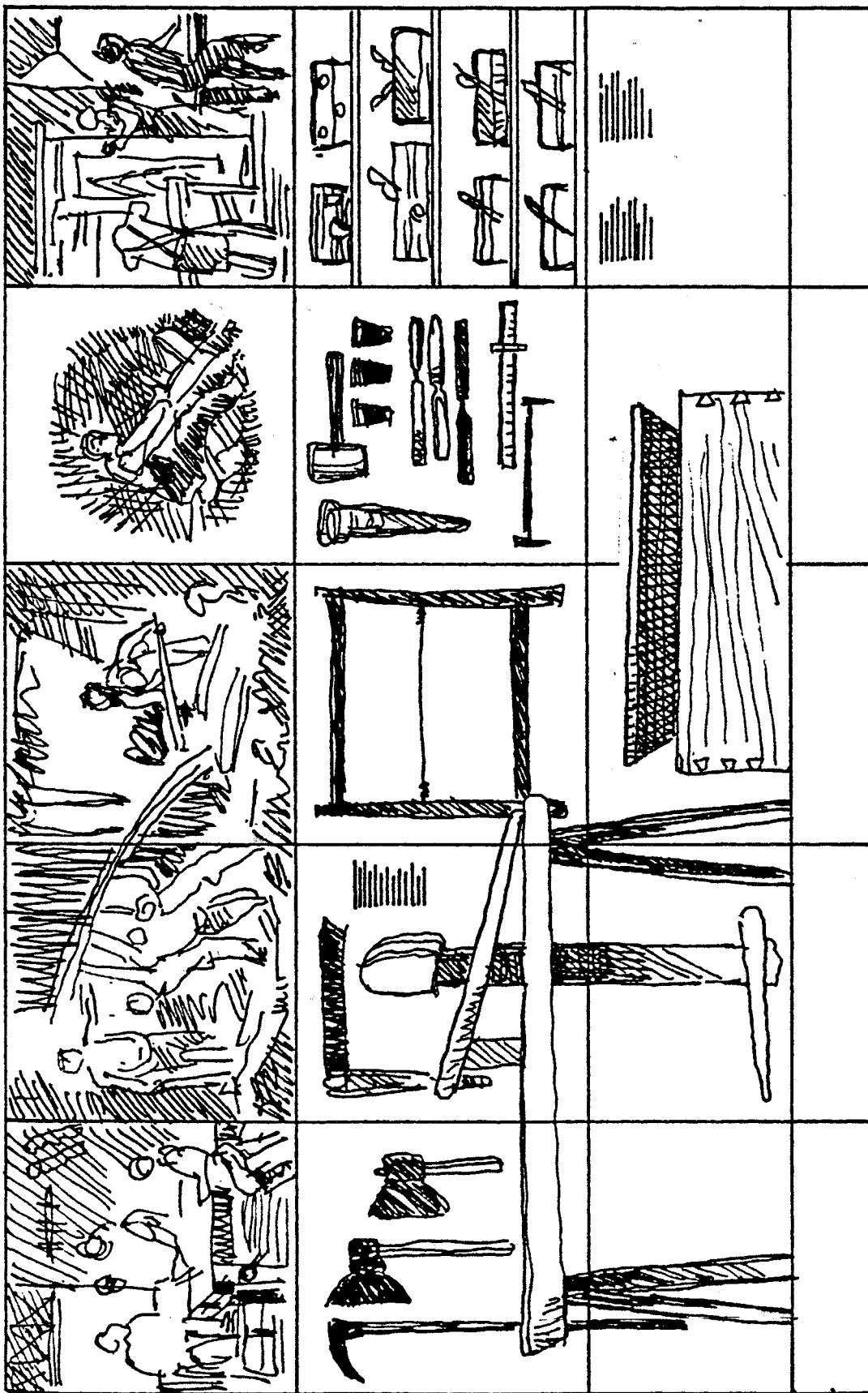
9I

9J

Delaware Agricultural Museum - Exhibit planning elevation

Section: OTHER WORK

Object/ Graphic # 9.23 9.24 9.25 9.26 9.27 9.28 9.32 9.33 9.34 9.42 9.43 9.44 9.46 9.47 9.48



Unit: 9K 9L 9M 9N 9O

Delaware Agricultural Museum - Exhibit planning elevation

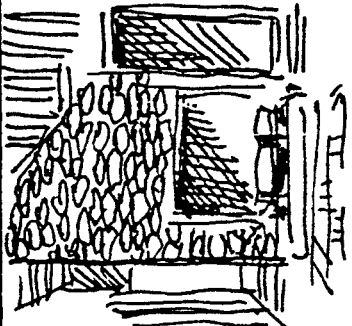
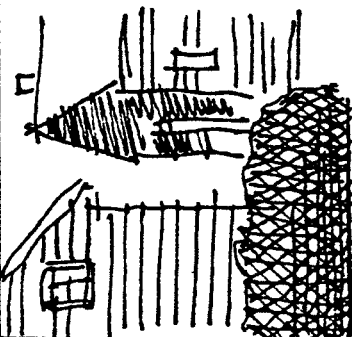




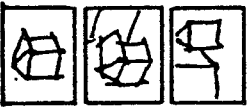


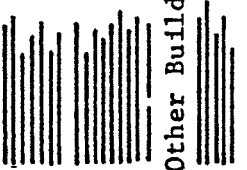


Section: OTHER WORK

Object/
Graphic #

10.01 10.03
10.02 10.04

10.06
10.07

10.09 10.10 10.11 10.12 10.13

<p>10 Domestic OUTBUILDINGS</p>				
<p>tion ullamcorper suscipit labor item vel eum inure dolor in repr illum dolore eu fugiat nulla pa im qui blandit praesent luptatui secat cupiditat non provident, n id est labrum et dolor fuga. E tempor cun soluta nobis eliger im placeat facer possim omnis ribud autem quinsud et aur offi and sint et molestia non recusa</p>	<p>Kitchens</p>  	<p>Smokehouses and Meathouses</p>  	<p>Dairies and Springhouses</p>   <p>Other Buildings</p> 	<p>Regionalism Agriculture and Household service</p> 

Unit: 10A

10B

10C

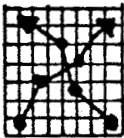
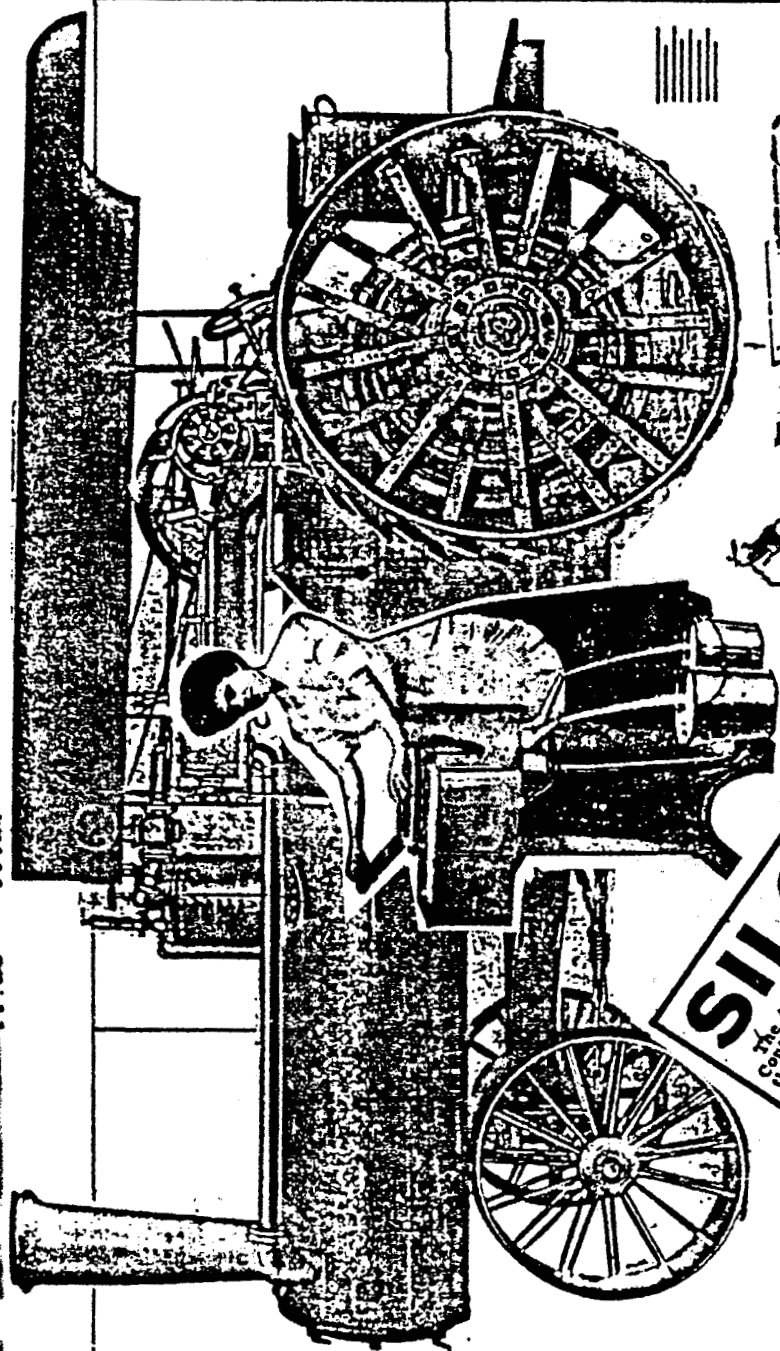

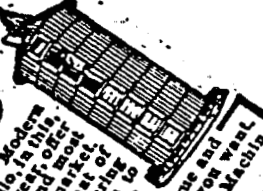
10D

10E

Delaware Agricultural Museum - Exhibit planning elevation

Section: DOMESTIC OUTBUILDINGS

Graphic 8

<p>CONCLUSION</p>	<p>natur aninuset a spe pariende on adversantur luptabib, sic an ce sunt luxam amic quam bus poster tenpor most es muy fu ritae tenes possum neque en ictor ipsuned effit in amicitae istralat parit dolem angorib. Su xerseus, dios labor propter sus consectetur adipiscing elit, sei dolore magna aliquam erat v</p>	
		<div data-bbox="792 945 1305 1491"> <h2>SILOS</h2> <p>The Investors of the Modern Continental Operating Silo, is this to the public the best and most economical silo on the market any other day and most these goods, anticipated that of produce the highest quality of most reasonable price We also make of the silo you want tell us the size of the silo you want and we will make it for you HARDER WFO COMPANY Box 13, Colneville, N.</p> </div> 

Unit: 11A 11B 11C 11D 11E

Delaware Agricultural Museum - Exhibit planning elevation Section: CONCLUSION

March 1, 1986

Delaware Agricultural Museum
866 North DuPont Highway
Dover, Delaware 19901

Exhibition Design Budgeting
FABRICATION & INSTALLATION

A. Major Site Construction	Springhouse (sec. #5)	\$	5,000.
B. Exhibition Fixtures & Cases	Carpentry	\$	3,700.
	Vitrines		700.
	Exhibit panel system		36,000.
C. Graphics & Labels	Xerox/blueprints/repro	\$	2,500.
	Photographic prints/murals		18,850.
	Typesetting		5,450.
	Silkscreen		4,600.
	Label fabrication		2,500.
	Artwork, charts & graphs		3,800.
D. Attachments & Finishing	Light fixtures	\$	12,000.
	Brackets/ armatures		2,800.
	Case furnishing		500.
	Mounting & Attachment		3,800.
E. Photography	Documentation	\$	1,800.
F. Contingencies	Royalties/fees	\$	2,000.
G. Other Design components	Interior hanging banners	\$	5,000.
	Exterior banners		5,000.
	Exterior site label system		7,500.
H. Design services during Fabrication & Installation		\$	15,000.
	30 days @ \$ 500. per day		
TOTAL ESTIMATED BUDGET for Fabrication & Installation		\$	138,500.

March 1, 1986

Delaware Agricultural Museum
866 North DuPont Highway
Dover, Delaware 19901

Exhibition Design Budgeting Worksheet
FABRICATION & INSTALLATION

Date:
Project: N.E.H. Planning

	INTRO	1	2	3	4	CROPS	5
A. Major Site Construction							
1. Walls/ceilings/floors							
2. HVAC							
3. Electrical/lighting							
4. Security System							
5. Glazing							
6. Painting							
B. Exhibit Fixtures & Cases							
1. Carpentry		700	300				
2. Vitrines		400	300				
3. Audio-Visual							
4. Seating/accessories							
5. Carpet							
EXHIBIT PANEL SYSTEM	1,500	3,000	3,000	3,000	3,000	1,500	1,500
C. Graphics & Labels							
1. Xerox/blueprints/repro	100	200	200	200	200	100	100
2. Photographic prints/murals	1,500	900	1,400	1,950	2,400	1,500	1,200
3. Typesetting	200	400	350	400	400	500	300
4. Silkscreen	200	400	500	500	400	400	400
5. Label fabrication	100	200	200	200	200	200	100
ARTWORK, GRAPHS & CHARTS			1,300	400	1,000	200	400
D. Attachments & Finishing							
1. Conservation eqpt.							
2. Light fixtures	500	1000	1000	1000	1000	500	500
3. Brackets/armatures		200	200				
4. Case furnishing		200					
5. Mounting & Attachment	100	200	200	200	100	100	100
PHOTOGRAPHY (BY DAY)				600			300
E. Contingencies							
1. Storage							
2. Shipping/transport							
3. Insurance							
4. Conservation/restoration							
5. Reproduction/models							
6. Royalties/fees							
Sub-total:							

TOTAL ESTIMATED BUDGET: \$

Delaware Agricultural Museum

SITE ANALYSIS

Delaware Agricultural Museum / SITE ANALYSIS

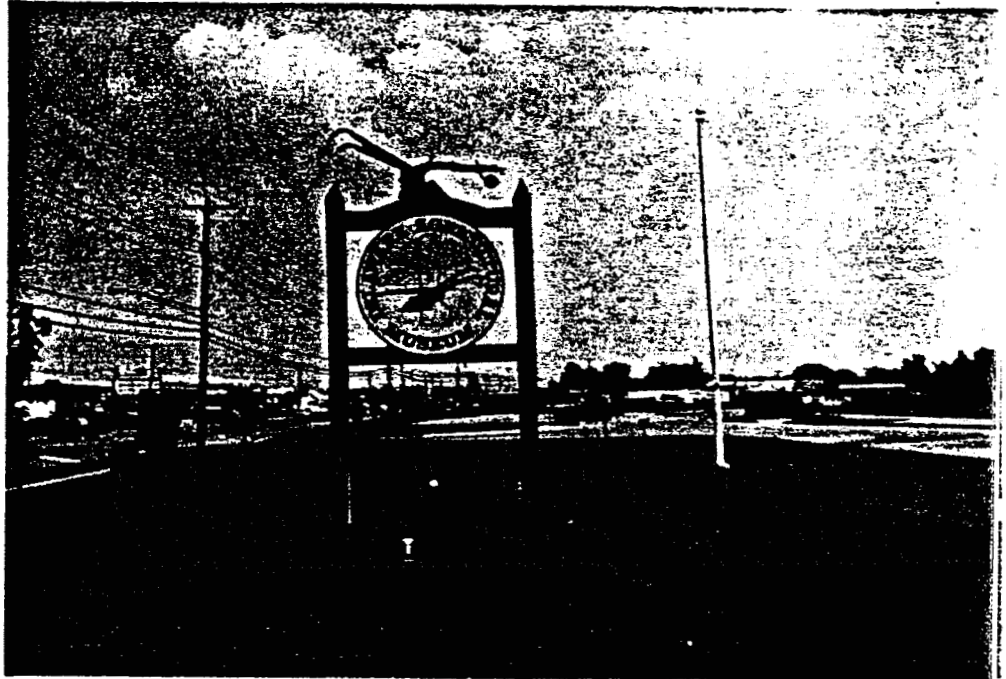
Site Location/
Exhibit section:

FRONT ENTRY
SIGN

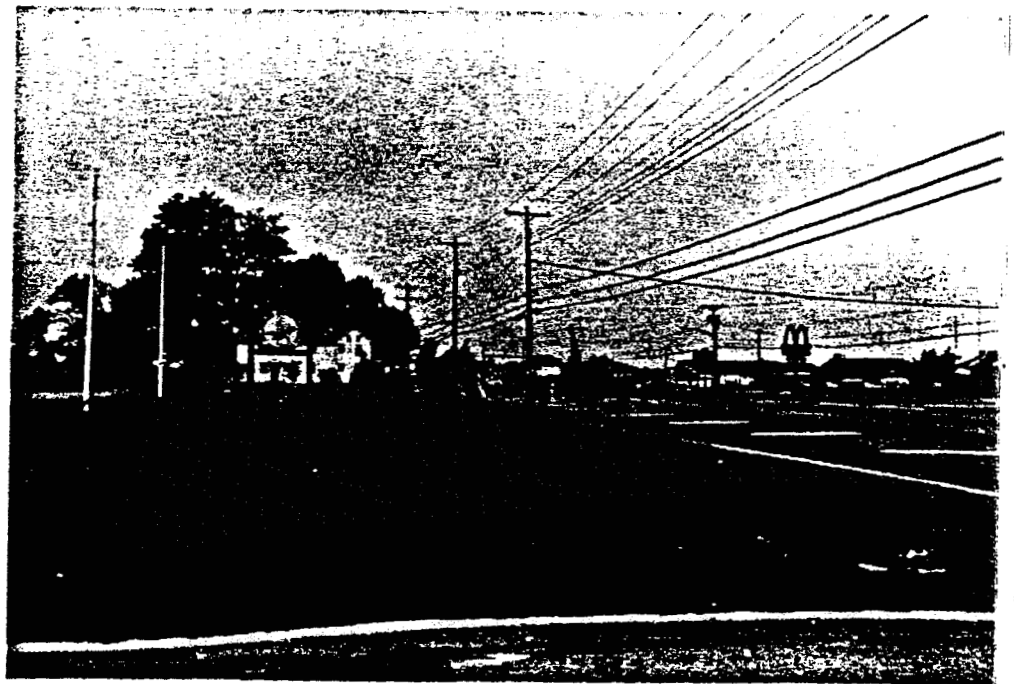
View/angle:

Top,
South view

Bottom,
North view



Analysis/
recommendation:



Current sign is an enlargement of the museum's symbol.
More information is needed on this sign. Below the
circular sign a horizontal panel should be added reading;
OPEN TODAY 10-6

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:



Analysis/
recommendation:

Currently it is very hard for the passing tourist to determine if the museum is open. Further, because of the large empty front yard and few cars in the parking lot, it appears that there is little of interest to see.

More attention is needed to enliven the museum's front yard. Placing one or two large pieces of farm machinery on the front yard will add bright color and interesting objects. Modern equipment on loan to the museum will add an exciting "sculpture" that will draw passing motorist's attention.

Large temporary banners can be hung from the front and south side of the exhibit building promoting special events. "Chicks hatching", "Blacksmith at work" and "Saw Mill demonstration" are messages that will attract curious tourists and local residents.

Delaware Agricultural Museum / SITE ANALYSIS

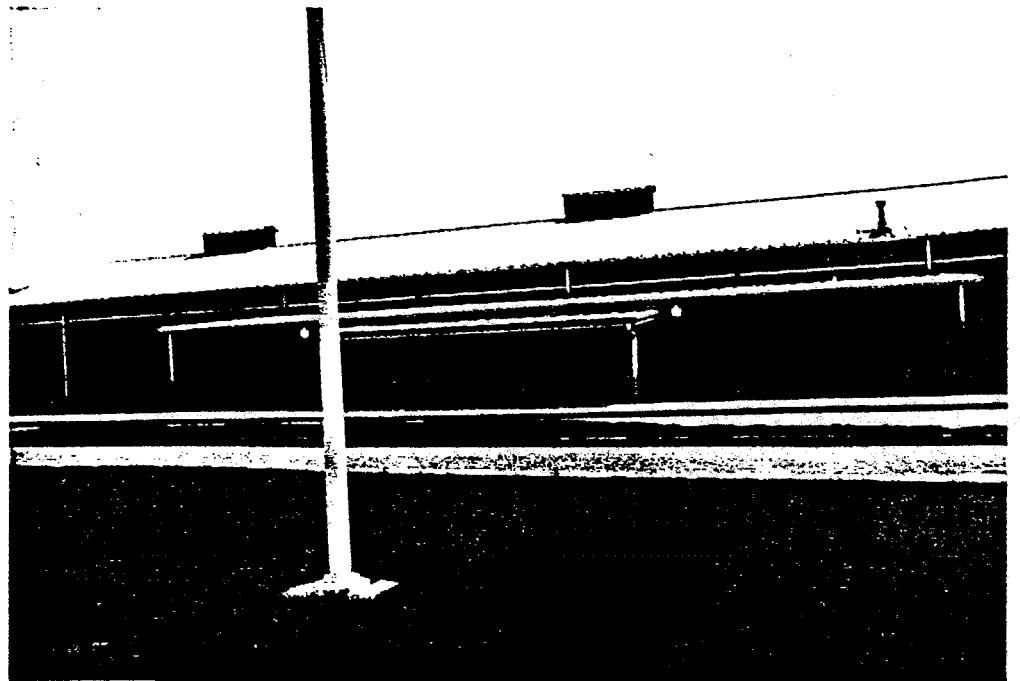
Site Location/
Exhibit section:

MAIN EXHIBIT
BUILDING
FRONT ENTRY

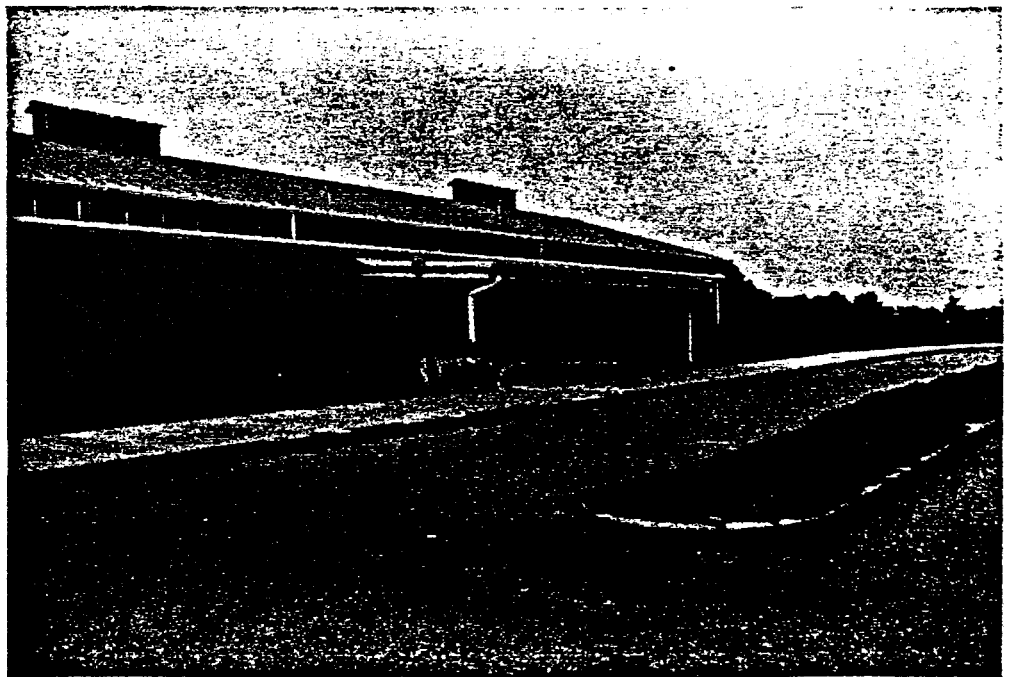
View/angle:

Top,
West view

Bottom,
Northwest view



Analysis/
recommendation:



Is this building open today? How can you tell?
More signs, banners or temporary fixtures are needed
to indicate that the museum is open to the public.

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

1890's Tenant
Farmstead

View/angle:

looking west



Analysis/
recommendation:

Night lighting is excellent,
additional sign for information
label can be installed in the yard
in front of the house.

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

1890's TENANT
FARMSTEAD

View/angle:

Top,
Southwest view

Bottom,
North view



Analysis/
recommendation:



Tenant House is an excellent exhibit. Models of this house can be used for sales as coin banks, bird houses or dollhouses. Drawings of the house can be used on museum publications and decorative materials.

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

1890's TENANT
FARMSTEAD

View/angle:

Top,
Barn
Southwest view

Bottom,
Wagon shed
Granary
Northwest view



Analysis/
recommendation:



Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

1890's TENANT
FARMSTEAD
GARDEN &
MEAT HOUSE

View/angle:

Southwest view



Analysis/
recommendation:

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

GENERAL VIEW
TOWARD THE WEST

View/angle:

Top,
TENANT FARM

Bottom,
BLACKSMITH SHOP



Analysis/
recommendation:



Delaware Agricultural Museum / SITE ANALYSIS

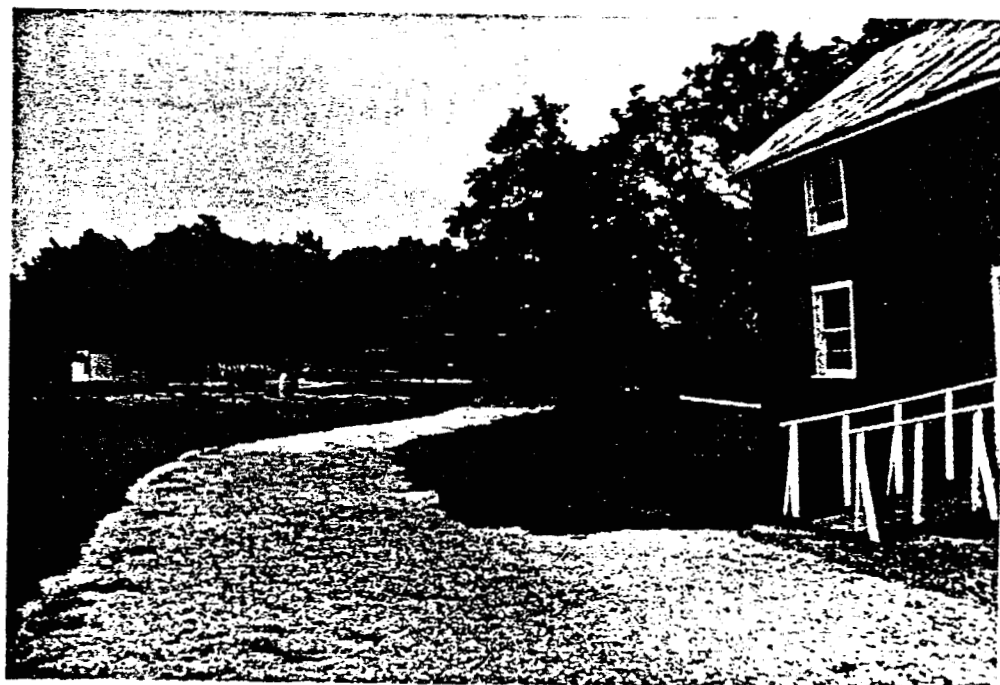
Site Location/
Exhibit section:

BLACKSMITH SHOP

View/angle:

Top,
Southwest view

Bottom,
View toward
Grist/Saw Mill



Analysis/
recommendation:

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

GRIST MILL
SAW MILL

View/angle:

Top,
Southwest view

Bottom
South view
with waterwheel



Analysis/
recommendation:

More misc.
barrels and
material
stockpiles
will add to
exterior
ambience



Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

ONE ROOM
SCHOOL HOUSE

View/angle:

Top,
Southwest view

Bottom
Northwest view



Analysis/
recommendation:

Exterior
sign for
interpretive
information
needed



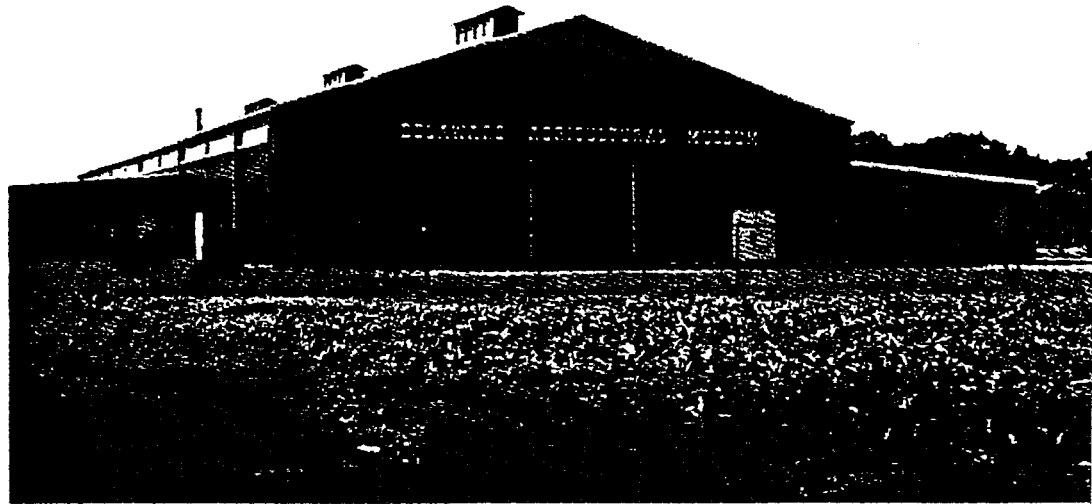
Root & Company, Inc. 445 N Street S.W. Washington. D.C. 20024 202/554-5377

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

View/angle:

Exterior view
looking
North/East



Analysis/
recommendation:

South end of the building
can be used for temporary signs
and banners promoting
special events

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

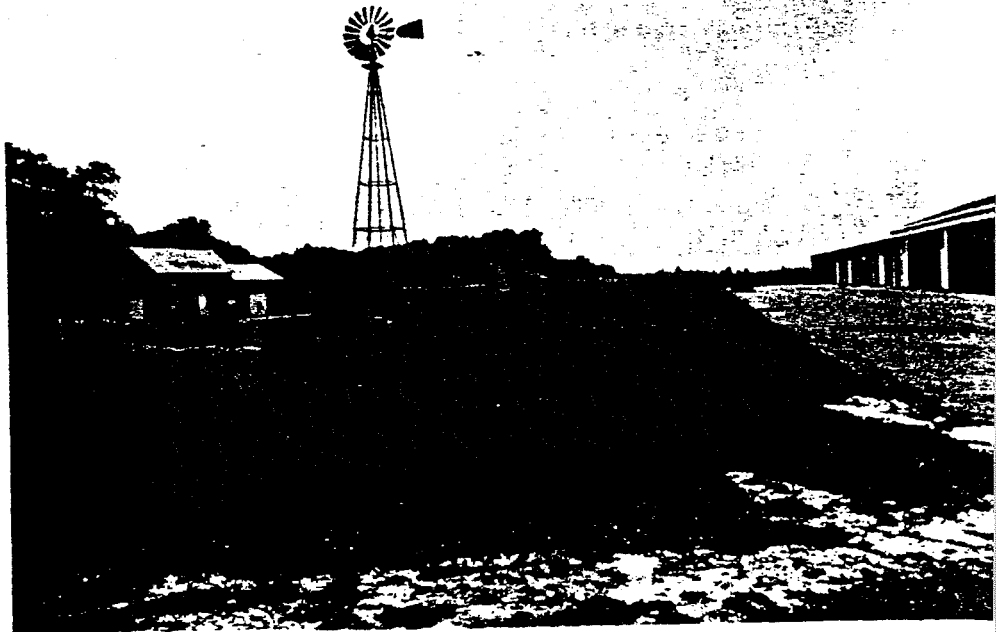
WINDMILL &
MAIN EXHIBIT
BUILDING

View/angle:

View toward
the north



Analysis/
recommendation:



Root & Company, Inc. 445 N Street S.W. Washington, D.C. 20024 202/554-5377

Delaware Agricultural Museum / SITE ANALYSIS

Site Location/
Exhibit section:

MAIN EXHIBIT
BUILDING
BACK ENTRY

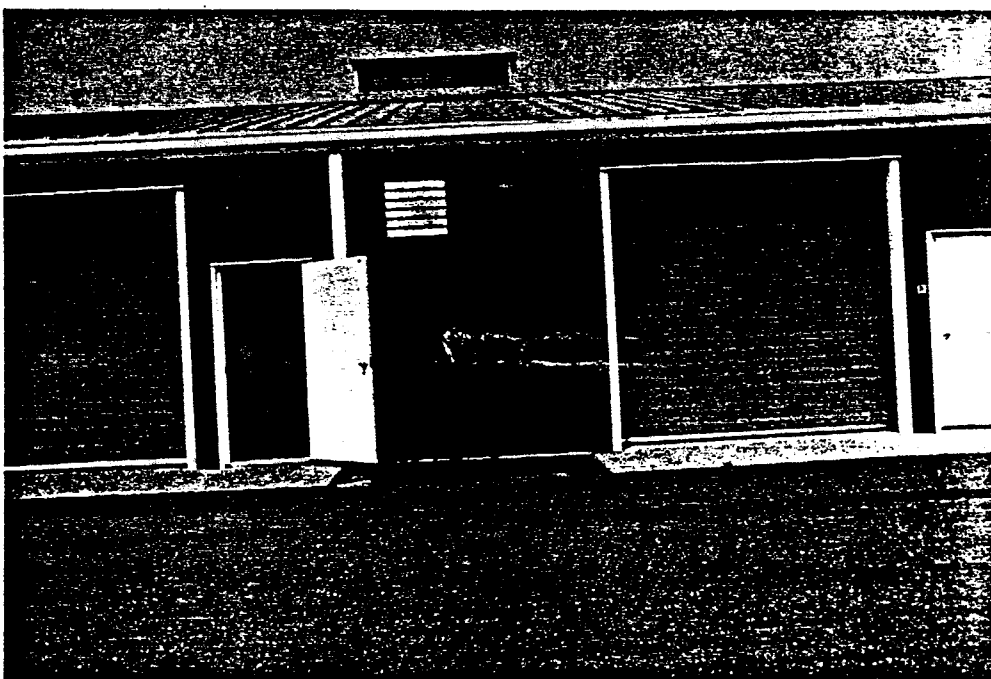
View/angle:

Top,
Northeast view

Bottom,
East view



Analysis/
recommendation:



Delaware Agricultural Museum

APPENDIX

Delaware Farming Regions

Typical Farmstead Diagrams

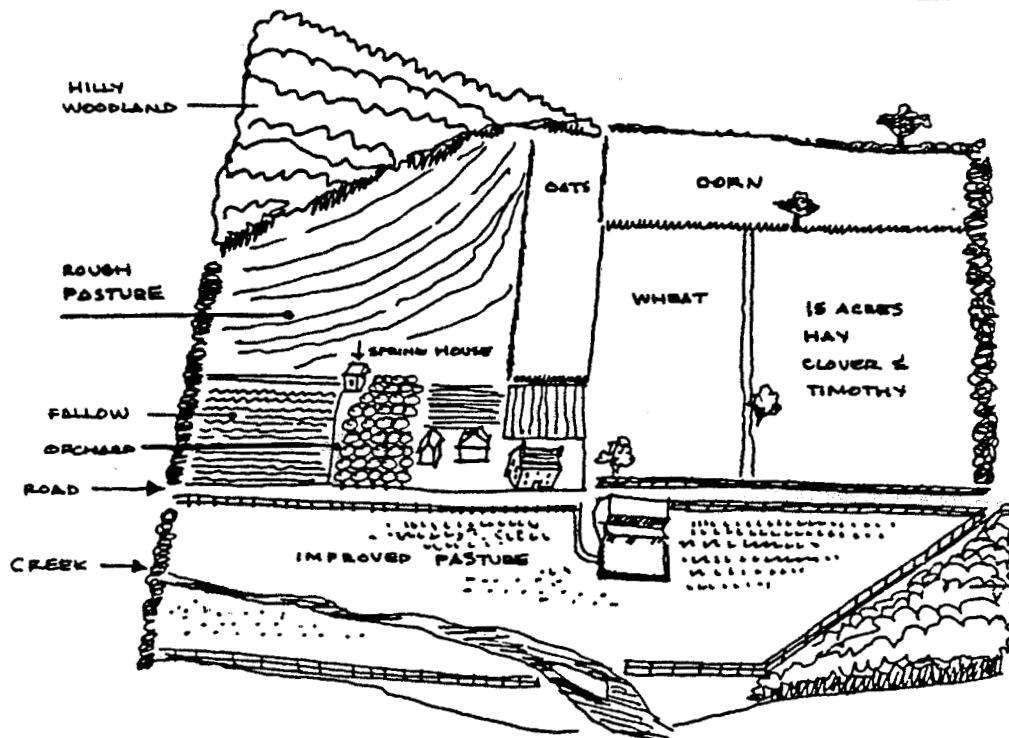
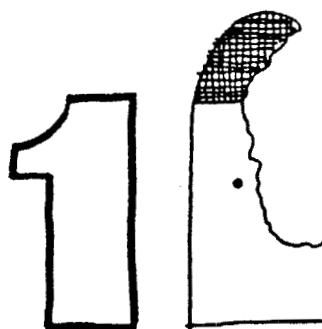
DAIRY REGION

SIZE: 100 ACRES

15 ACRES UNIMPROVED

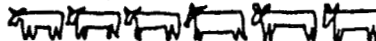
15 ACRES HAY

15 ACRES IMPROVED PASTURE



TYPICAL LIVESTOCK:

SIX STEERS



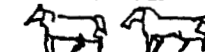
FIVE MILK COWS



FIVE PIGS



TWO HORSES



ONE OX



GRAIN REGION

SIZE: 250 ACRES

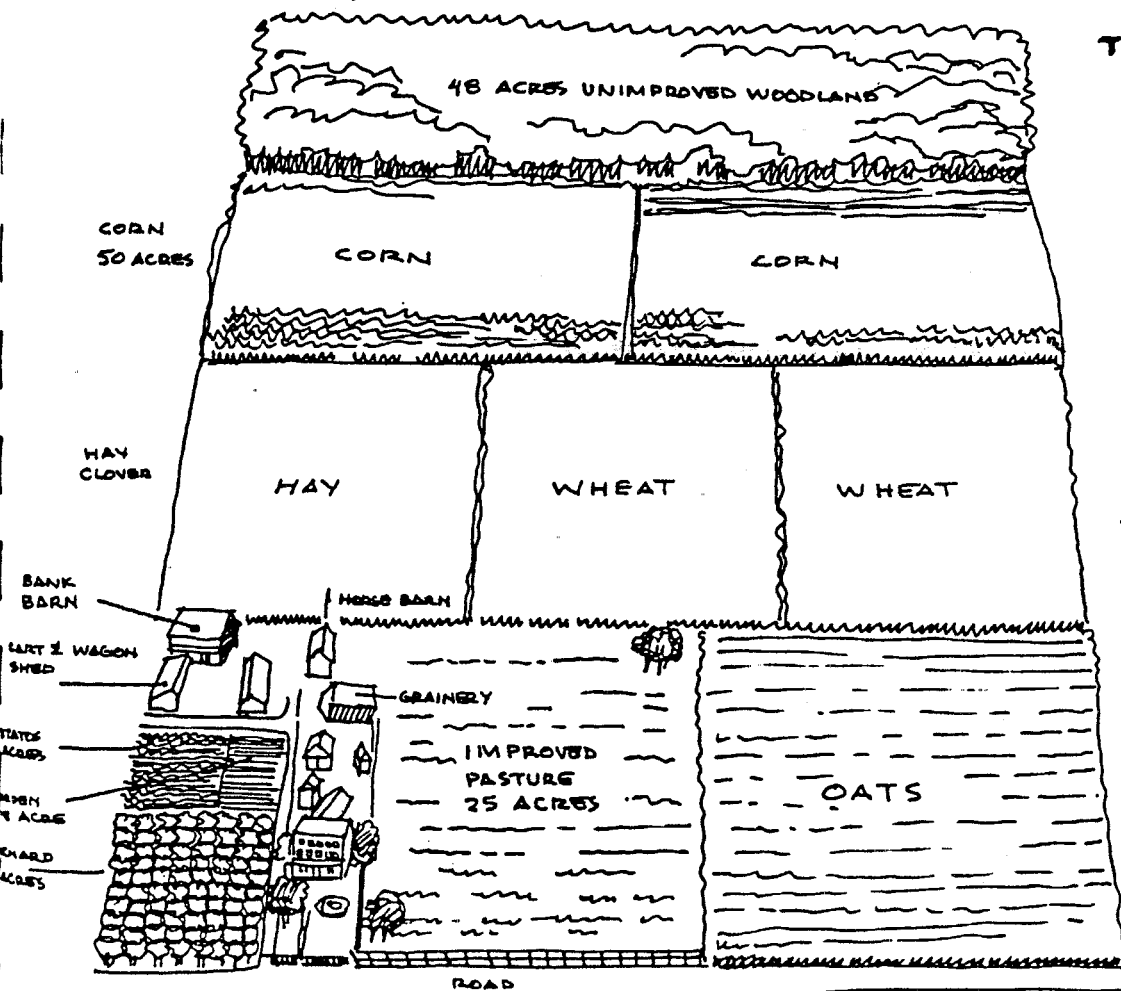
48 ACRES UNIMPROVED

50 ACRES CORN

40 ACRES WHEAT

35 ACRES OATS

2



TYPICAL LIVESTOCK

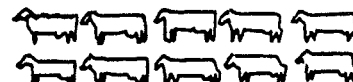
ONE OX



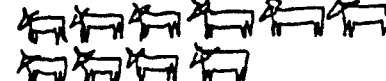
FOUR HORSES



TEN COWS



TEN STEERS



EIGHT PIGS

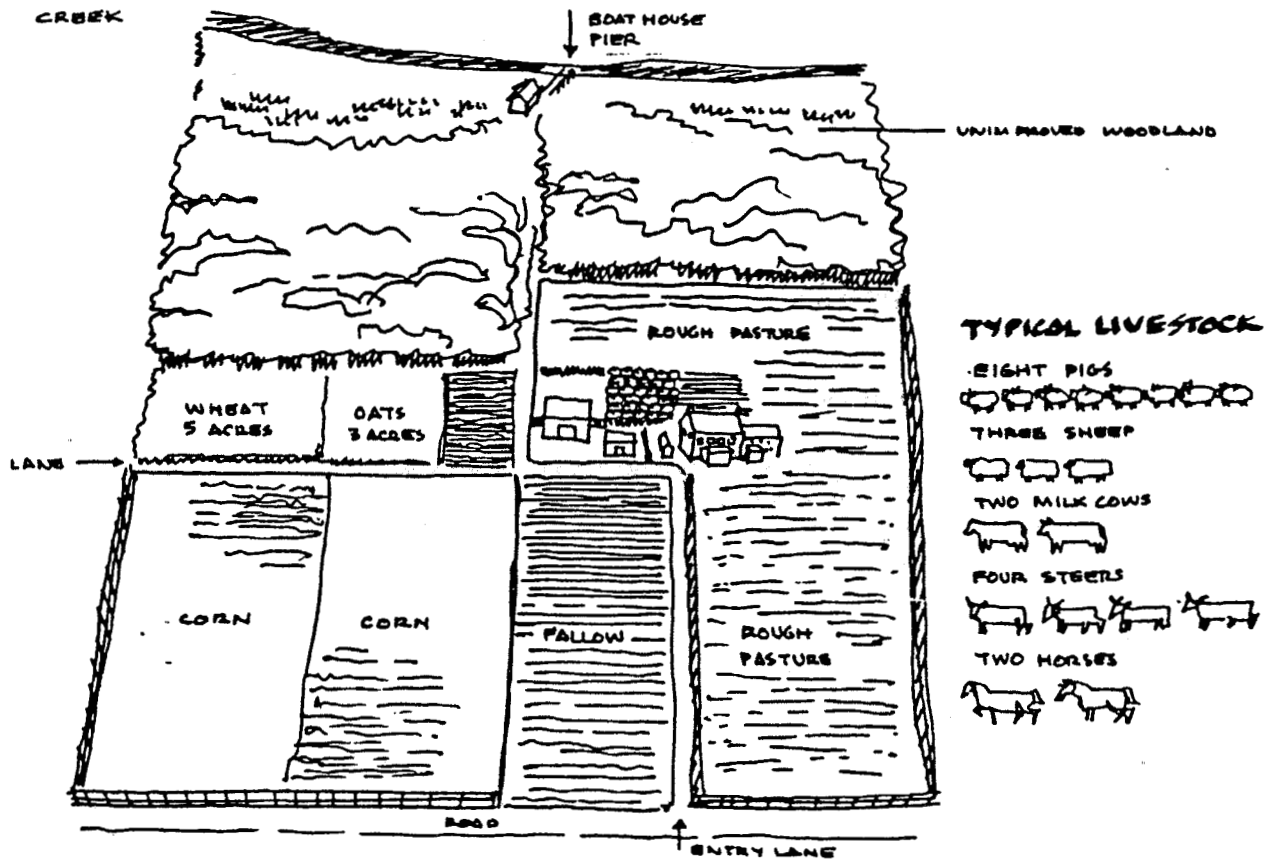
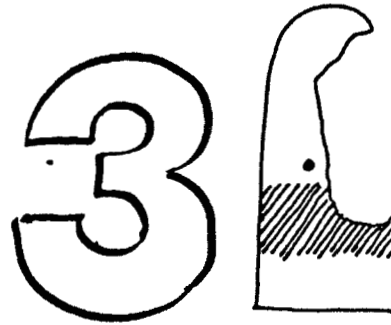


MIXED FARMING REGION

SIZE: 150 ACRES

90 UNIMPROVED ACRES

25 ACRES CORN



HOME INDUSTRIES REGION

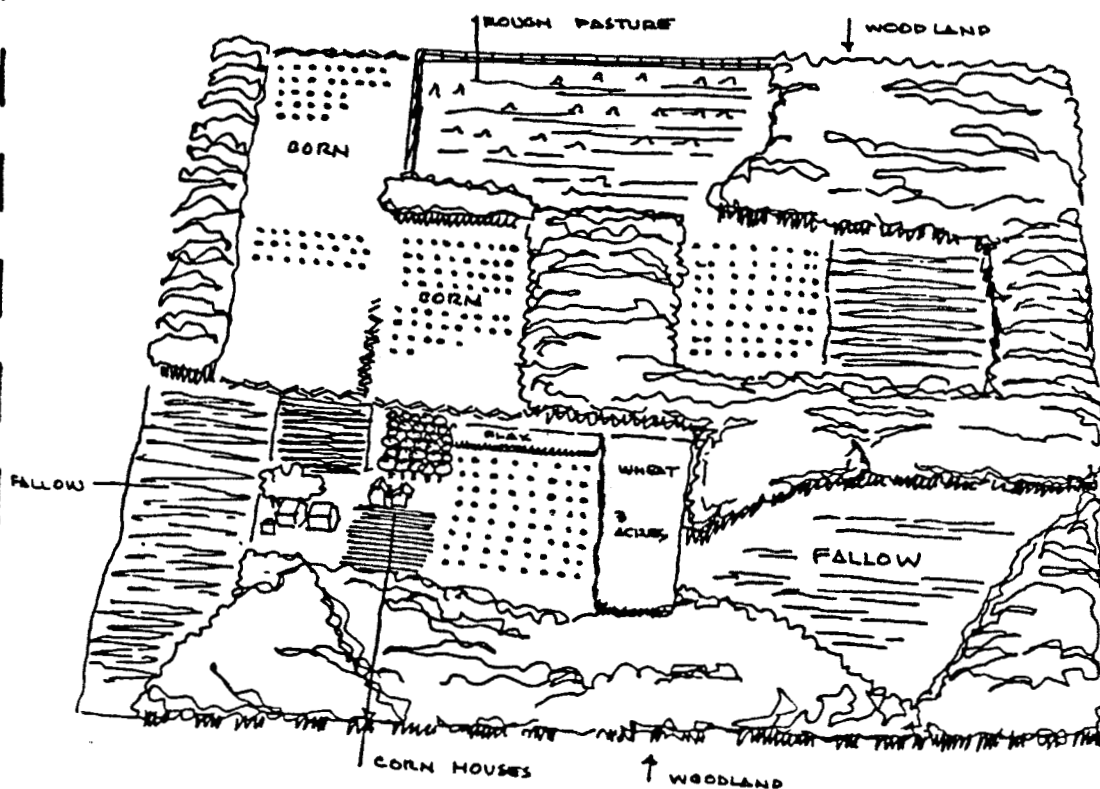
SIZE: 160 ACRES

65 ACRES UNIMPROVED (WOODS)

30 ACRES ROUGH PASTURE

30 ACRES CORN

4



TYPICAL LIVESTOCK

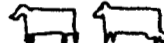
NINE PIGS



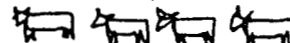
SIX SHEEP



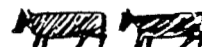
TWO MILK COWS



FOUR STEERS



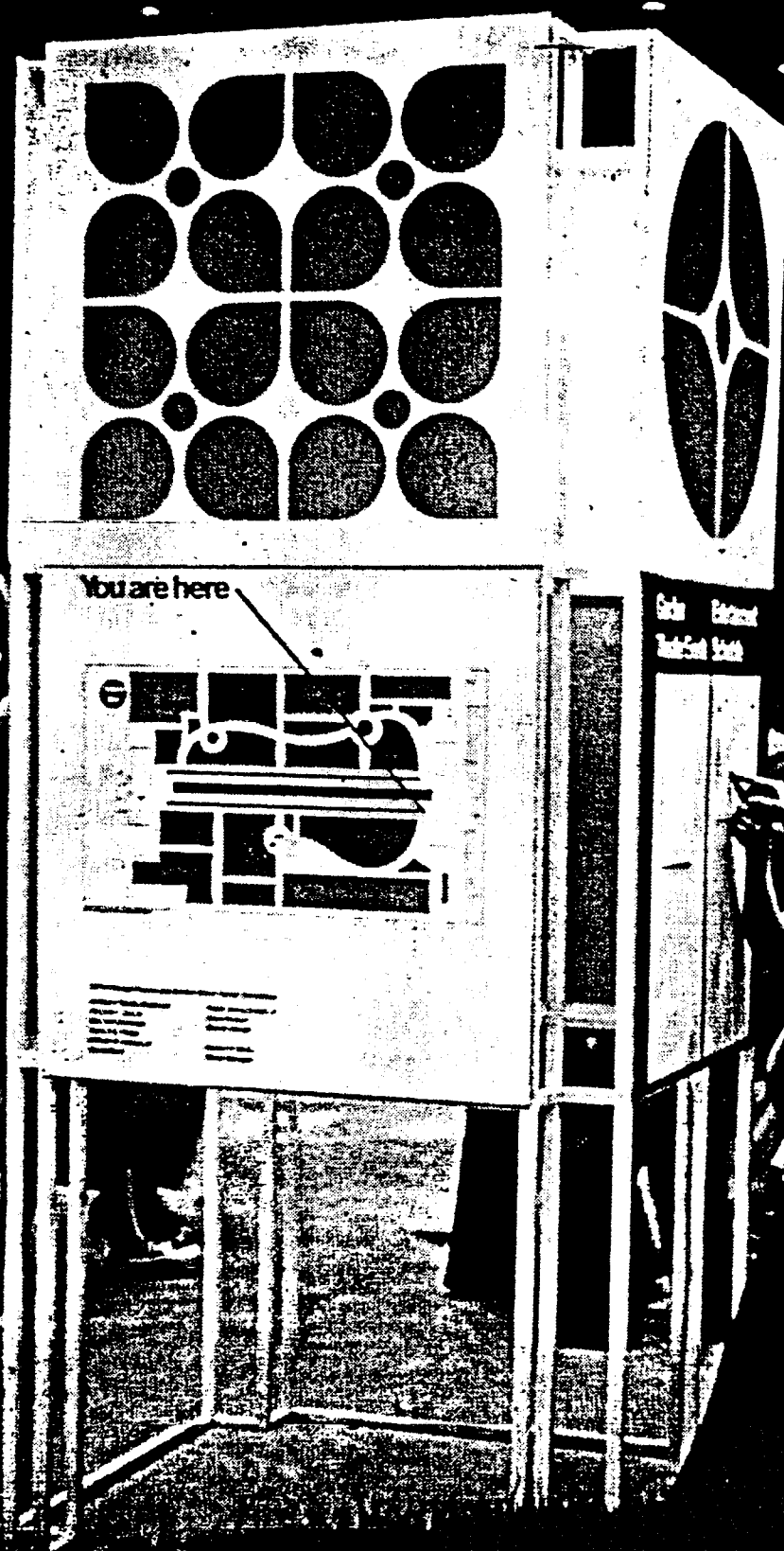
TWO OX



Delaware Agricultural Museum

APPENDIX

Other Design Projects by Root & Company, Inc.
illustrating concepts proposed in this report



Public Event on a spectacular scale

Hanging banners, flags, kiosks, maypoles, etc. are used to compliment horticultural displays and to add a festive atmosphere. Lightweight inexpensive techniques were developed to fill this huge 40 ft. high exhibition hall. Labor-saving design minimized installation costs. This public event is the world's largest indoor flower show attracting over 250,000 visitors each spring.

Chicago Flower & Garden Show
Chicago Horticultural Society



A lightweight method to exhibit photo murals

Architectural photos are framed with an aluminum channel system. Each cubic formation can be quickly disassembled into flat stacking panels.

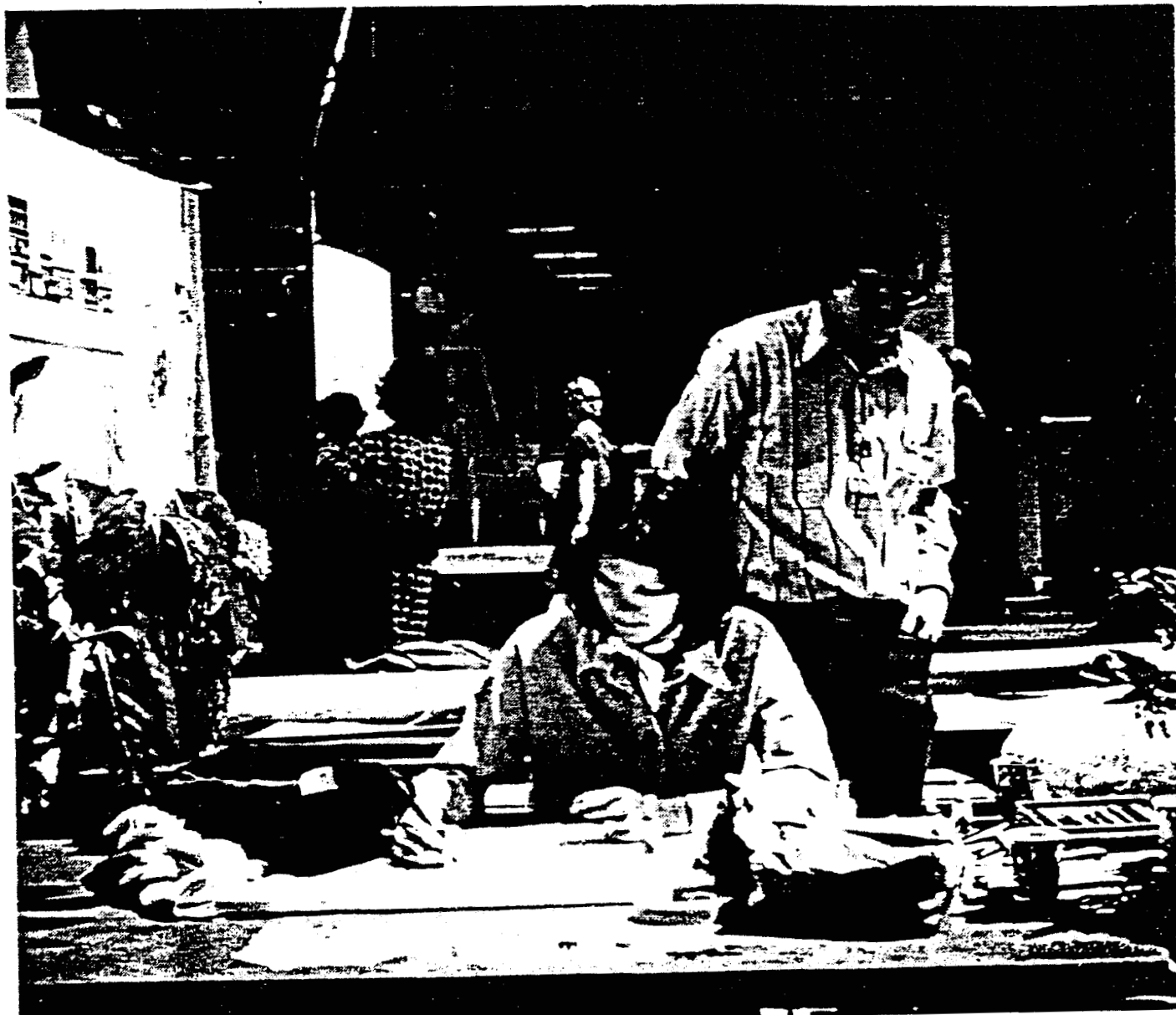
American Institute of Architects
Honor Awards Program
Traveling exhibit system



Bringing 'backstage' into the daylight

The planning, organization and design phases are activities rarely viewed by the general public. Bringing thinking and idea sketches out for all to see can be an exciting educational experience. Watching the formative stages helps understanding and appreciation of the completed project.

Richmond "Downtown" Planning Street Fair
Conceptual Design, Organization & Planning



Plaza Games become an instant performance

Ceramic hopscotch panels attract people to this large central city plaza. "Urban choreography" is created when pedestrians stop to play these pavement games.

First National Bank of Chicago
Public Plaza Events & Activities

