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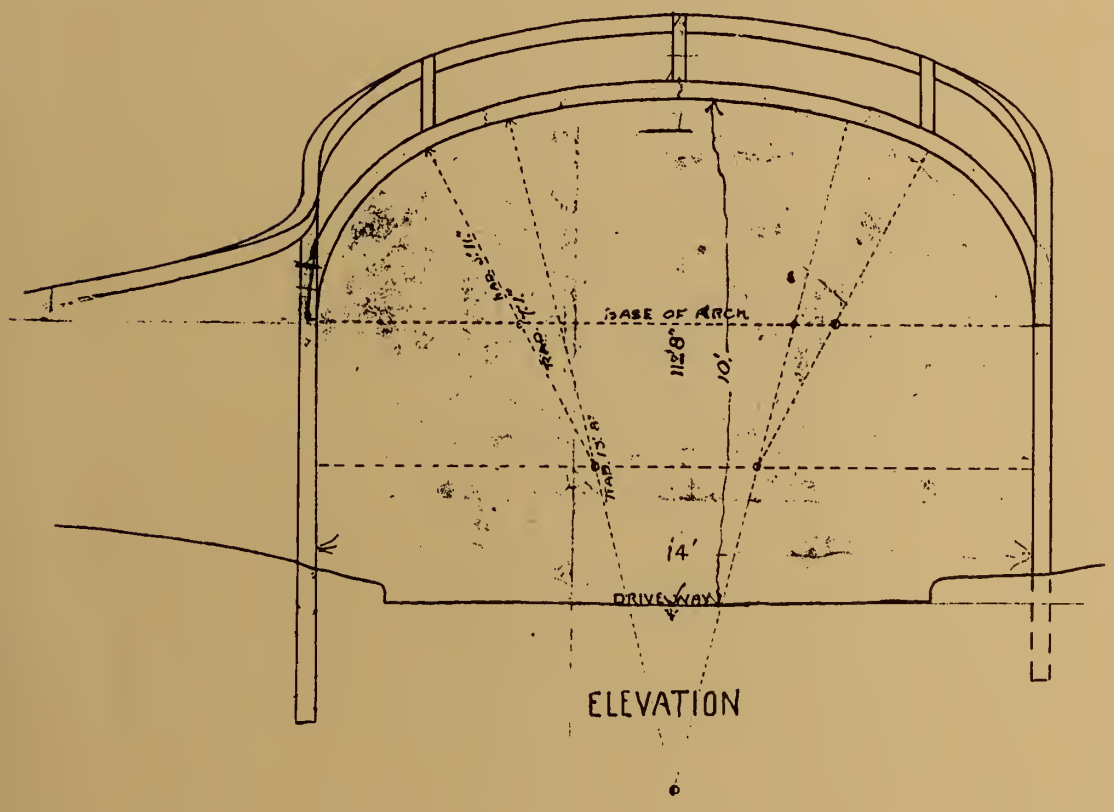
Frederick Law Olmsted
National Historic Site

Volume 3

THE BARN, SHED, AND FENCES



Historic Structure Report

FREDERICK LAW OLMSTED NATIONAL HISTORIC SITE

HISTORIC STRUCTURE REPORT

Brookline, Massachusetts

VOLUME 3

By

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I. THE BARN, SHED, AND FENCES:

PHYSICAL HISTORY AND ANALYSIS

THE BARN

INTRODUCTION

The barn is a frame structure located on the west side of the office complex. It is connected to the house by a covered passageway. The barn consists of three distinct sections—the original barn, a carpentry shop, and an open storage shed. Figures 1-4 show the building as it exists today.

The barn originally stood diagonally across from the southwest corner of the house. It was used as a stable and for hay storage. The barn was moved to its present location by Frederick L. Olmsted, Sr., soon after he acquired the property in 1883. Few changes appear to have been made to the barn itself at that time, but a carpentry shop was added to the south side of the barn shortly thereafter (circa 1884). The barn underwent some remodeling prior to 1909: doorways and windows were added or altered, store rooms were created on the interior, and an open storage shed was added to the north side (figs. 17-18). The first story of the barn was extensively remodeled circa 1910 (fig. 19). By 1914, the entire barn had been taken over for office-related use. An insurance map of that year lists the first floor of the barn as being occupied by the Modeling Room and Soil Testing Laboratory, while the second story was used for the Janitor's Sleeping Room and for Lumber Storage.[1] By circa 1930, it is thought that the second story had a dark room and storage for prints and photographs (fig. 21).

During Olmsted's lifetime and through the early years of the 20th century, the barn was painted dark red with green trim. When acquired by the National Park Service, it was painted green. In 1988, it was painted red with green trim (see "Barn and Shed: Appendix A"). Since acquisition by the National Park Service, the barn has been used for the site's maintenance shop and for storage.

[1] Insurance map, 1914.

ARCHITECTURAL HISTORY

Date of Construction

The date of construction of the barn is unknown. No building permit exists for this structure. The earliest tax records that list the barn are for 1867. The entry reads "Clark, S.D., M.S. and S.B.R. - House Warren St. 2500, Barn 300 Land 2a," so the barn was clearly standing by this date.[2] However, it was probably built before 1867: the tax records from prior years only list the dollar value of the property, rather than the buildings that were located on the property. Therefore, the records cannot be used to identify the exact year of construction.

Early maps and atlases of the Town of Brookline were also checked to see if they showed the barn. Three maps—the 1844 E.F. Woodward map, the 1855 T. & J. Doane map, and the 1871 H.T. Whitman map—all show the Clark House, but no outbuildings.[3] These maps, however, do not show outbuildings on any other properties, so they cannot be used to date the year of construction of the barn. The earliest atlas found showing the barn is the 1884 J.M. Hopkins *Atlas of the Town of Brookline*.

Given this limited documentation, the date of construction of the barn can only placed between 1810, the date of construction of the house, and 1867, when the barn is first listed in the tax records. For convenience, this report will refer to the original portion of the barn as the circa-1867 barn.

Description as Originally Built

Location

The barn, unlike the other buildings at the Olmsted site, has been moved from its original location. It is shown on a pre-1883 site plan for the property (fig. 5). On this plan it is located southwest of the house, at the edge of the hill. A driveway ran across the south lawn, providing access to the barn from Warren Street. To date, no archaeological investigation has been done to verify the location of the barn as shown on this site plan; however, it is assumed that it is relatively accurate.

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[2] Brookline Reports, 1867.

[3] These maps are on file at the Brookline Public Library.

Exterior Elements

Foundation

Landscape alterations have occurred in the area where the barn originally stood, and no archaeological investigations have been conducted there. Thus, nothing is known about the barn's original foundation. It seems likely that it was similar to the existing foundation—flat fieldstone laid with mortar on the ground's surface. The floor was either dirt or wood. The sills have no pockets for floor joists; however, the joists might have rested on top of the sills.

Walls

The framing of the original barn included 8-inch-square sills (fig. 6). Pinned to the sills with mortise and tenon joints were 8-inch-square posts. The girts and plates measured 6 inches square. They are joined to the posts with mortise-and-tenon joints. Both the first- and second-story walls of the barn are reinforced with 4-inch-square horizontal and diagonal bracing. The creation of the tall wagon doorway in the east wall caused the elimination of the girt and bracing in the center of this wall. Figures 7 and 8 illustrate the barn's original wall and second-story framing, respectively.

The original exterior-wall covering consisted of flush sheathing boards 12-16 inches wide. The sheathing boards were placed vertically and ran the full height of the wall. These sheathing boards were secured with cut nails.

The exterior cladding on the north, south, and east walls of the original barn was clapboards. The clapboards had butted ends and a 4-inch reveal. They were originally painted white. (See "Barn and Shed: Appendix A," sample FRLA 03 P014.) The west wall of the barn was shingled. It is not known if the original shingles were painted, since all of them have been replaced.

The existing corner boards, cornice, and gable trim are plain boards 4 1/2 inches wide. They are not original, but appear to be similar to those shown in the early photographs of the barn. The original paint color on this trim is not known.

Doorways and Windows

There is little hard evidence about the locations of doorways and windows in the original barn, due to limited photographic documentation and extensive later alterations. Photographs taken circa 1885 (figures 14-15) show the east elevation with a large central doorway with full-width transom, and a second-story window with a single two-light sash. The two doors in the doorway do not appear to have slid open along the exterior of the wall. Although these photographs were taken a year or two after the barn was moved, the doorway and window may be original features retained at that time.

Physical evidence suggests that the south elevation had two matching first-story windows; two such were extant when the carpentry shop was added to the barn. Both windows were severely altered at that time. The western window was enlarged to create a doorway between the barn and the carpentry shop. Portions of its framing, however, remain along the west side of the doorway.

The eastern window had its sash removed, but its entire frame is still in place. This window opening measures 2 feet 5 1/2 inches wide by 2 feet 3 1/2 inches high. The window frame is 4 1/2 inches wide. It is unlikely that the second story of the south elevation had any windows originally, since the north elevation did not.

The north elevation apparently had no windows in either story originally. One did exist in each story in 1909 (see figures 17-18), but both seem to date to the pre-1909 remodeling. This is based on physical evidence for the first-story window, and on photographic evidence for the second-story window.

The first story of the west elevation probably had the four windows and one doorway seen in the 1909 plan (fig. 17). Such openings would have been needed functionally. However, the doorway probably did not have its "sliding" door at that time, as will be explained shortly. The doorway seen in the second story in 1909 (fig. 18) was probably not original, since there would have been no need for such a doorway in a barn. The age of the window at the west end of the second story is unknown.

Roof

The circa-1867 portion of the barn had a ridge roof. The ridge pole was 8 inches square. The rafters measured 3 by 8 inches, except for the two major framing rafters, which were 6 inches square. The placement of the rafters varies from 3 feet 2 inches to 4 feet 2 inches on center. The gable-end rafters were braced diagonally to the ridge pole.

Interior Elements

Plan

The barn interior consisted of three bays, defined by two-story posts connected by east-west beams. Physical evidence of any original partitions has been almost completely obliterated by later alterations. Most of the original interior framing members have either been moved or replaced. Also, the existing concrete floor has covered over any marks from former partitions that might have been found on floorboards, floor joists, and sills. Nevertheless, some information has been gleaned from the portions of original framing that remain (see figures 7-8), and from existing-condition floor plans prepared in late 1909 (figs. 17-18). It seems likely that:

- the center bay of the barn was open to the roof, to provide access for hay wagons;
- the north and south bays of the barn had second stories, for hay storage; and
- the first story of the north bay contained horse stalls.

Floors

The composition of the original first floor is unknown, because of the later installation of the present concrete floor.[4] The second-story floors of the north and south bays were supported by beams and girts connecting the two-story posts of the center bay. The floor joists appear to have rested on top of the beams and girts. Their ends were cut so that they would not shift off the horizontal framing members. Some of the existing floor joists may be original. They vary considerably in size and placement, and there is no physical evidence to conclusively determine which joists—if any—are original building fabric.

Finishes

The interior of the barn was originally unfinished.

Additions/Alterations

Moving the Barn Circa 1883

Soon after Frederick Law Olmsted, Sr., purchased the Brookline property in 1883, he moved the barn from the south lawn to its present location. The precise date of this work is not known. The barn is shown in its new location on a site plan dated April 28, 1883 (fig. 9). However, this drawing may have been done before the actual move: the plan also shows both the original outline and the proposed 1883 alterations to the house, and so may be a study drawing. At any rate, the barn was probably moved in 1883. This is based on the knowledge that the carpentry shop was extant by February 1885 (fig. 13), and on physical evidence that the barn was moved sometime prior to the construction of the shop. The barn probably continued in use as a stable: stalls were still extant on the first story in 1909.

Addition of the Carpentry Shop Circa 1884

The carpentry shop was added by Olmsted, Sr., to the south side of the main barn probably in 1884. As stated previously, the physical evidence indicates that the shop was definitely built sometime after the move. At the west end of the south wall of the barn is an area of replacement sheathing boards and clapboards (see figure 7). This work was obviously done after the barn was moved, but while the wall was still an exterior elevation. The carpentry shop was in place by February 1885, however; the chimney for it is seen in figure 13. Therefore, 1884 seems a logical date of construction. The shop was a one-story structure measuring roughly 27 by 12 feet.

[4] *Editor's note: by 1998, the concrete had been covered with asphalt.*

Exterior Elements

Foundation and Walls

The shop had a rubblestone foundation with mortar. The east, south, and west walls of the shop were of stud-frame construction. (The north wall consisted of the former exterior south wall of the main barn.) Wood sills sat on the stone foundation. The stud walls were 2 by 4s. The east wall was 4 inches thick; the studs were 2 by 4s set on edge. The south-wall studs were also set so that the wall was 4 inches thick; the window framing was constructed with 3 by 4s, except for the easternmost window (see the subsequent section "Windows"). The west-wall studs were set so that the wall was 2 inches thick.

The sheathing boards of the east, south, and west walls of the shop were nailed horizontally to the studs and covered with clapboards.

Doorways

Figure 17 indicates that the carpentry shop had two exterior doorways by 1909. One was centered on the east wall of the shop. It may have been original to the construction of the shop; this section of wall is not seen in figures 14-15. Alternatively, it may have been created circa 1900. Its door, which appears to be the exterior door of the house's former North Entry, would not have become available for reuse until the North Entry was remodeled circa 1900. The door measures 1 foot 11 inches wide by 6 feet 7 inches high. The other doorway, at the east end of the south wall of the shop, led to the breezeway connected to the servants' wing of the main house. It presumably was original to the construction of the shop, due to the convenient access it provided to the barn complex.

Windows

The carpentry shop now has three windows on the south elevation, and a large sliding window on the west elevation. All but the easternmost south-wall window are original. That one consists of post-construction materials, and its opening is framed differently than those of the other south-wall windows. This window may be a replacement window in an original opening, or it may be a later addition. The south-wall windows have six-over-six, double-hung sashes. The large window in the west wall has five vertical sashes. The two northernmost sashes are hinged to open from the top.

Roof

The slight east-to-west pitch of the carpentry shop's shed roof was obtained by making the west-wall studs shorter than the east-wall studs. The roof rafters ran north-south. Their north ends rested on a 3 by 4 is nailed directly to the side of the main barn. Their south ends rested on 3 by 4s nailed to the top of the south-wall studs. There were 13 roof rafters, made of 2 by 8s (fig. 10). These were placed 22 inches on center and were spiked onto the top of the 3 by 4s (fig. 11). The original roof covering was canvas. The east edge of the roof was ornamented with a latticework "eaves balustrade" 2 feet 8 inches high (fig. 14).

Interior Elements

Plan

The interior of the carpentry shop consisted of one large space with tool benches along the south wall, and a stove on the north wall, by 1909 (fig. 17). This could well have been the original plan.

Floor

The asphalt-covered concrete floor of the carpentry shop is probably original. The shop's floor level was approximately 14 inches above that of the main barn floor. The floor joists ran north-south and were supported by randomly placed brick piers. The joists measured 2 by 8 inches and were placed 22 inches on center. Their south ends were set into pockets in the sill (fig. 12); their north ends were toe-nailed into the original sill of the barn. The flooring was two boards thick. The original floor has a layer of building paper between the subflooring and the finish flooring. The floorboards are painted brown.

Walls

The south wall of the shop consisted of the exposed wall framing. The west wall was covered with 5-inch beaded boards. The east wall was covered with 5-inch beaded boards that were whitewashed. The north wall was covered with clapboards that were the former exterior wall cladding of the original barn's south elevation. (These were originally painted red, but were whitewashed when the shop was constructed.)

Related Alterations to the Main Barn

The two original first-story windows in the barn's south wall were altered when the carpentry shop was built over the lower part of that wall. The west window was converted to a doorway to the carpentry shop; a patched area is visible on the west side of the doorway (see figure 7). The east window was closed. A chimney was built at the south end of the roof of the main barn, to vent the stove installed in the carpentry shop (see figures 17-18).

Alterations Prior to 1909

Changes to the Main Barn

The barn underwent some remodeling between 1883 and 1909. A possible date for this work is circa 1900, when the doorway in the east wall of the carpentry shop received a door from the main house. Some of the changes can be discerned by comparing the circa 1885-1900 photographs of the barn (figs. 14-16) with the two 1909 plans showing the barn's "present condition" (figs. 17-18). However, many areas of the barn are not documented by early photographs; determining the extent of alterations there is more problematic.

Exterior Elements

The first story of the east wall retained its large center doorway with five-light transom. However, its doors were changed to ones that slid open along the exterior of the wall. Also retained were the two regular doorways at either end of the wall (fig. 14). A third regular doorway was added just north of the large center doorway (fig. 17). The window at the north end of the second story (fig. 14) was converted to a doorway for supplies (fig. 18). Another second-story window was created at the south end of the wall (fig. 18).

The first story of the north wall probably received one window near the east end during the pre-1909 remodeling. A window is here today; it is early, but does not appear to be original. (It is smaller than the original, south wall windows were, and its frame has fewer layers of paint.) The early photographs are of no help: this area is concealed by trees in figure 16. The pre-1909 remodeling definitely included the addition of a window at the second-story level: figure 16 shows no windows here in 1896, while figure 18 shows one small one at the west end in 1909.

On the south wall, a second-story window was probably added at this time. As explained previously, it was probably not original, but it did exist by 1909 (fig. 18).

Figure 17 shows a sliding doorway and four windows in the first story of the west wall. Figure 18 shows a glazed second-story doorway above the sliding doorway, with one window to the south of it. As explained previously, it is likely that the first-story doorway and windows were original. The sliding door was probably installed at the doorway during the pre-1909 remodeling, as were the east wall's sliding doors. The second-story doorway with glazed door was undoubtedly added during that remodeling, as explained previously; the age of the window is unknown.

Interior Elements

On the first story, the north bay continued in use as a stable up until 1909, but the east half of the south bay was partitioned off to make a large room prior to 1909 (fig. 17). The room may have been used to store bicycles, based on a later drawing (fig. 19). In the second story, the north and south bays were divided into store rooms, with "lumber racks" in the center bay (fig. 18).

The pre-1909 changes were the first of consequence for the interior of the main barn. It is thus likely that the matched-board sheathing and whitewash presently on the interior walls of the main barn may have been installed at this time.

Changes to the Carpentry Shop

Exterior Elements

The lattice strip above the east wall of the carpentry shop was removed at some point. This may have happened by 1903, when most of the other lattice fencing around the service yard was gone.

Addition of the Open Shed

An open shed was added to the north side of the barn before 1909 (see figure 17). The roof is constructed with wire nails, which indicates a post-1890 construction date, and the shed appears on the 1904 site plan. It thus may have been built circa 1900, when other changes were made to the carpentry shop and barn. It was an open-sided frame structure measuring 27 by 12 feet.

Exterior Elements

Walls. The north side of the shed consisted of three 6-inch-square posts seated on cement blocks on the ground. Beams measuring 6 inches square ran along the tops of the posts.

Roof. The shed roof of the wood-storage shed pitched from south to north. It was framed with 2 by 4s, placed 49 inches on center and running east-west. The 2 by 4s rested on 2 by 8s running north-south; their south ends were nailed to the wall of the barn, while their north ends rested on the three posts. Roof sheathing was tongue-and-groove pine boards 9 inches wide and three-quarters of an inch thick. The shed roof was originally covered with rolled asphalt.

Windows. The window at the east end of the north wall of the barn was altered sometime before 1930, as evident by the red paint on the "new" shingles around the window. (Paint analysis indicates that the barn was painted red during the 1885-1930 period.) Originally the window had five panes of glass with a vertical fluted muntin. The north portion of this window was replaced with a hinged window containing two vertical sash; the muntins are not grooved.

Interior Elements

Judging by figure 12, there were no interior features of the open shed.

Alterations Circa 1910

A number of alterations were made to the main barn circa 1910 to accommodate the needs of the expanding Olmsted firm. These are shown on a November 1909 first-floor plan entitled "Proposed Alterations to Stable" (fig. 19). There is no plan for the second story (although figure 19 does includes a section drawing that shows a new second-story floor for the south bay). This suggests that no other changes were contemplated for that space. Likewise, no structural changes were proposed for the carpentry shop and the open shed, although the carpentry shop may also have been used as a small modeling room.

Changes to the Main Barn

On the first story, the center and south bays were to be converted for use as one large modeling room. No structural changes were proposed for the north bay, but the old stalls were to be used for additional modeling and storage space.

Exterior Elements

Doorways. A new concrete apron was installed for the large doorway in the center of the east elevation. The old double doors of this doorway were retained but altered: each of the doors was fitted with a 12-light sash replacing an "old batten panel in upper part." The transom over the doorway was retained. The existing doorway west of the double doorway (leading to the old Bicycle Room) was retained, but its door was "newly glazed." On the west elevation, the sliding door was removed and a new hinged, glazed door was installed farther north in the wall.

Windows. The existing east-wall window south of the double doors was enlarged. The same was true of the southern window in the west elevation. A new window was created where the sliding door was formerly. The three existing northern windows in the wall window were retained unchanged.

Roof. Figure 19 suggests that new roof rafters measuring 3 by 10 inches were installed.

Interior Elements

Floor. The center and south bays of the main barn received a new concrete floor at first-story level. A new wooden floor was installed in the second story of the south bay.

Walls. The west and north partitions of the room in the east half of the south bay were removed, along with shelves in that room, and a closet that apparently existed along the west side of that room. A glazed partition was built in the general location of the former west partition wall.

The south wall of the room—i.e., the east end of the south wall of the main barn—was also to have been removed, to permit the construction of a new coal bin in this area. However, the section of wall was never removed: it still retains its original clapboards from the time when it was the exterior south wall of the barn.

Ceiling. The ceiling over the west half of the south bay was sheathed with new stock. A new work bench was added at the south end of the west wall, below the enlarged window here.

Stairway. The old stairway along the south side of the center bay was relocated to the north side of the bay, and the old stairwell was closed.

Other. A new gas stove was added for melting glue.

Alterations After Circa 1910

The Main Barn

Figure 20 is a photograph of the interior of the first story of the barn circa 1930, when it was being actively used as the modeling shop. Figure 21 is a conjectural drawing of the second-story plan, based primarily on physical evidence and documentation for the circa-1930 period.

At some point, the old transom over the large east-elevation doorway was replaced with four two-over-two windows (fig. 2). The pre-1909 doorway north of that doorway was converted to a window with six-over-six, double-hung sashes (fig. 2). Louvered panels were added to the north and south gable ends of the main barn (figs. 3-4). The early second-story window at the west end of the north wall was enlarged, and two more windows were added here (fig. 3). Finally, the center of the west roof slope was raised slightly, to provide more headroom for the doorway here (figs. 3-4).

The Open Shed

Also at some point, storage closets were built along the south wall of the shed, and shelving racks were installed at ceiling height. The latter consisted of 3 by 4s spaced about 2 feet 8 inches on center and running north-south. Intermediate support was provided by the closet wall.

Restoration Work of 1981-1988

The barn was in serious disrepair due to deferred maintenance when the Olmsted site was purchased by the National Park Service. The Park Service repaired the barn first, since this building was to house the workshop that would be needed to repair all of the other buildings at the site.

Figures 7-8 includes structural repairs made to the barn in 1981-1982. Extensive structural repairs were made to the carpentry shop in 1982-1983. The south, west, and east sills were replaced, along with the west half of the north sill. Floor joists were replaced at the north end of the shop. New floor joists, subflooring, and finish flooring were installed at the west end of the shop, where the original floor materials had been removed in 1960 during the installation of a cement base for the pool pump. The carpentry shop roof, originally covered with canvas, was stripped and given a four-ply built-up asphalt felt roof with bitumen surface in 1982.

The roof of the open shed was originally covered with rolled asphalt roofing. It was later reroofed with asphalt shingles, and still later with more rolled roofing. In 1983, the most recent rolled roofing on the shed's roof was stripped and replaced with asphalt shingles. The main barn was reroofed with asphalt shingles in 1985-1986.

Finally, the entire barn was painted in 1988, on the basis of information obtained from the paint analysis conducted for the barn ("Barn and Shed: Appendix A").[5]

[5] See also *Completion Report: Contract No. CX 1600-8-0017, NARO - Exterior Painting of Various Buildings and Structures* (Boston: North Atlantic Historic Preservation Center, North Atlantic Region, National Park Service, 1988).

The barn is now fully restored and in very good condition. It is used for the Olmsted's site maintenance shop and for storage. The barn should continue in this use, and its building fabric should be maintained in its present state.

FIGURES FOR THE BARN

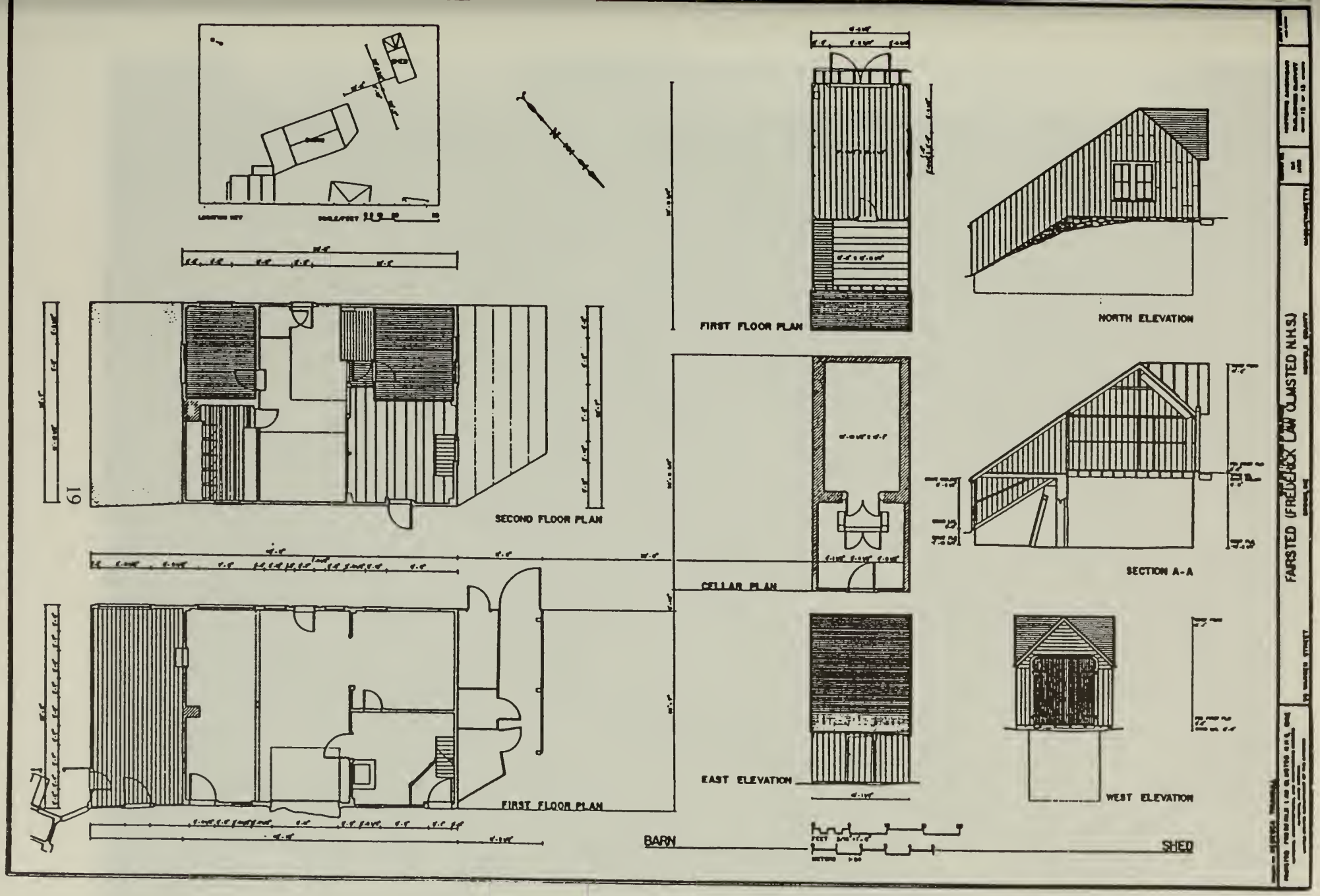


Figure 1. Plans, elevations, and sections for the barn (at left), 1982.

Figure 2. Barn: East elevation (1989).

Figure 3. Barn: North and west elevations (1989).

Figure 4. Barn: West and south elevations (1980).

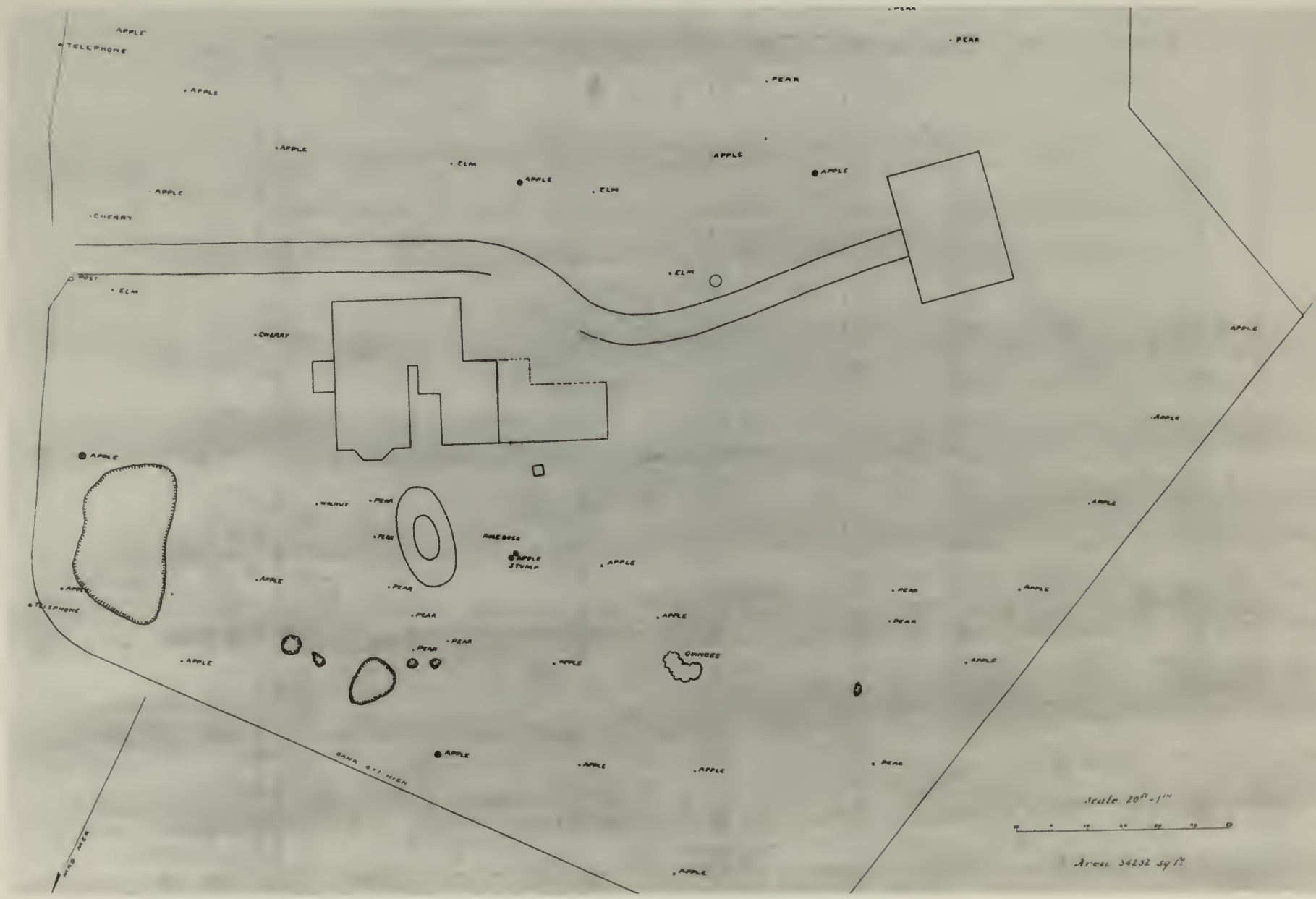
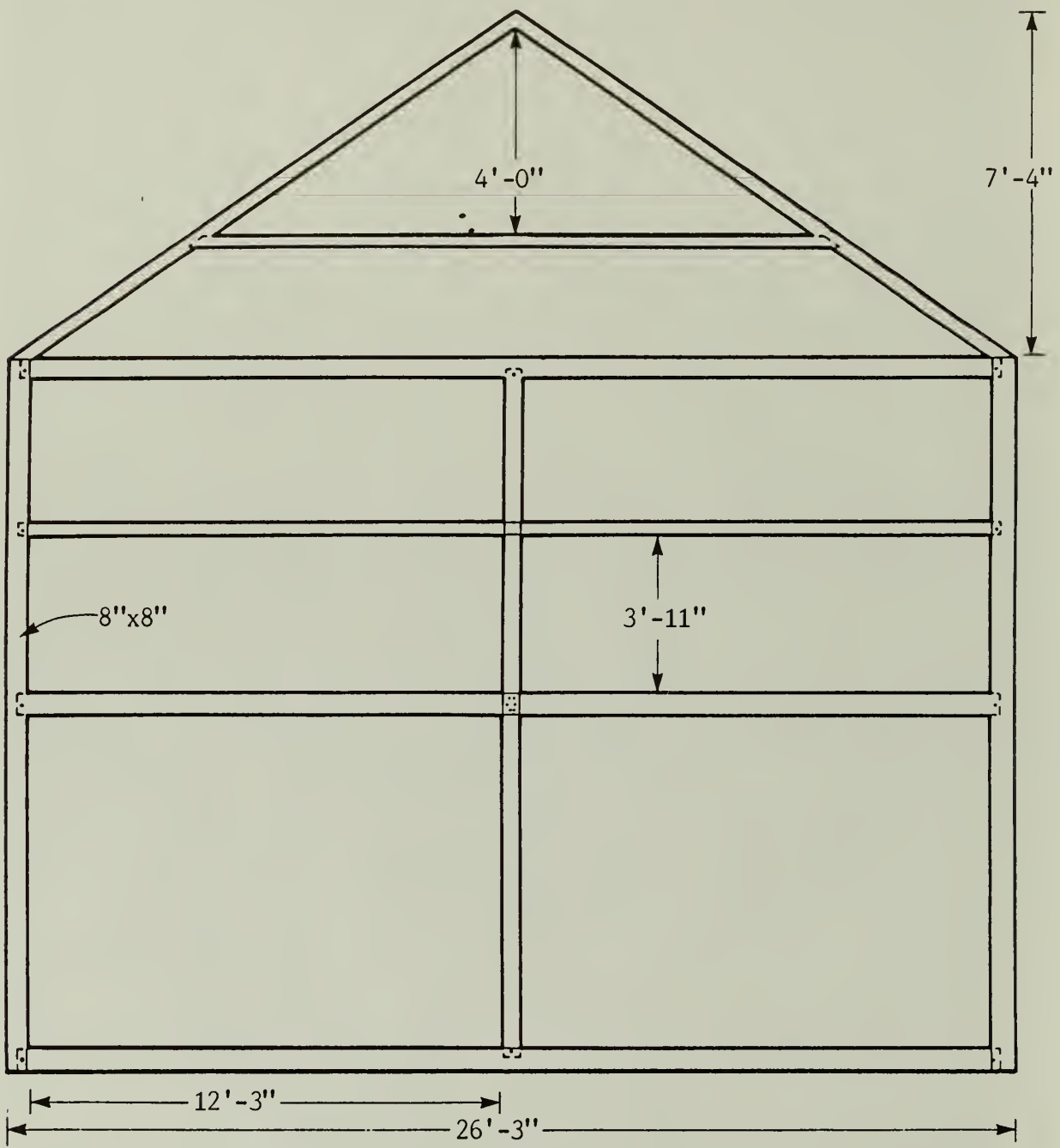


Figure 5. Site plan of the Olmsted property, before 1883, showing barn in its original location.

FRAMING



North Elevation

Not to Scale

Figure 6. Barn: "Framing - North Elevation."

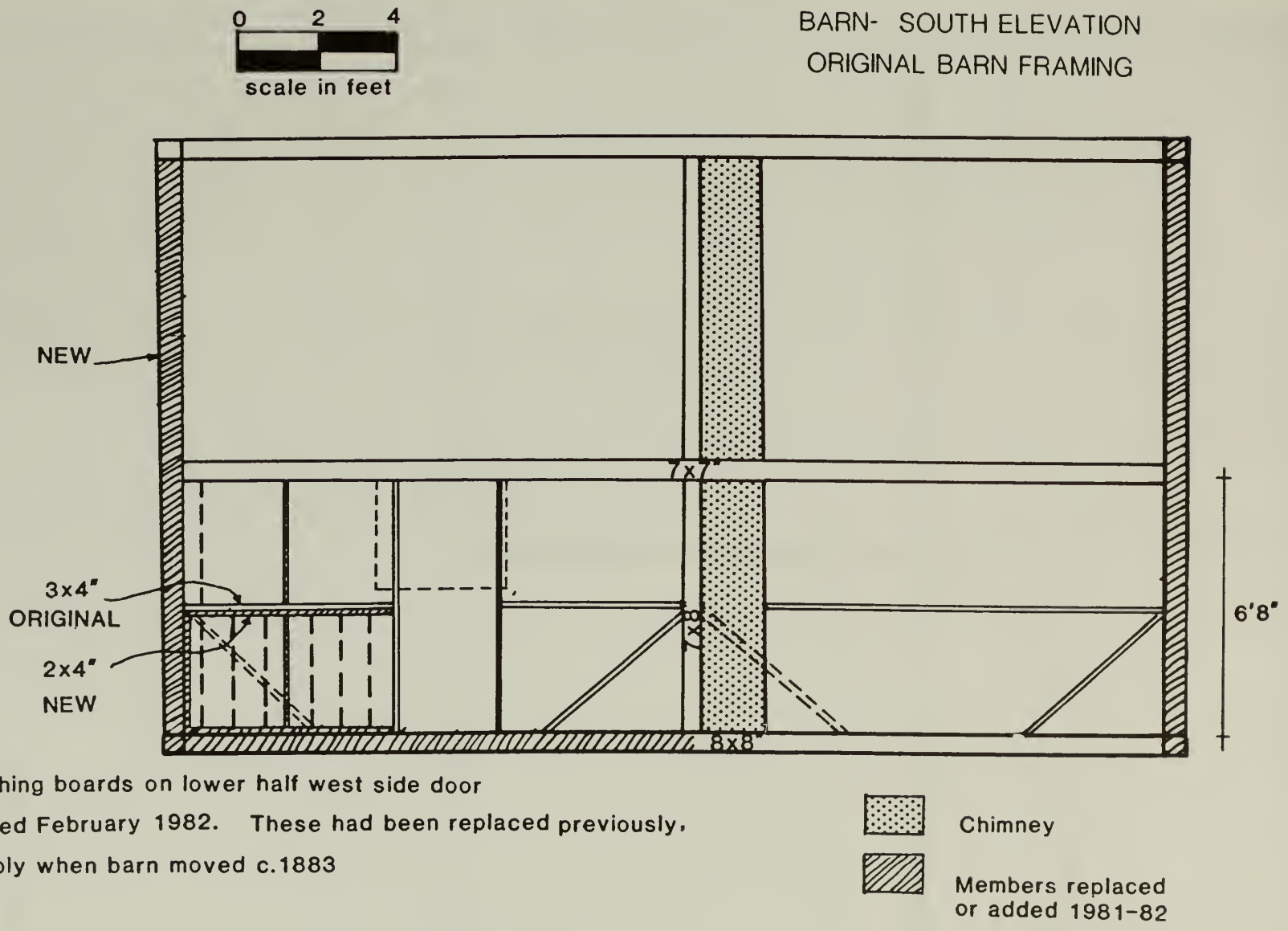


Figure 7. Barn: "Framing - South Elevation."

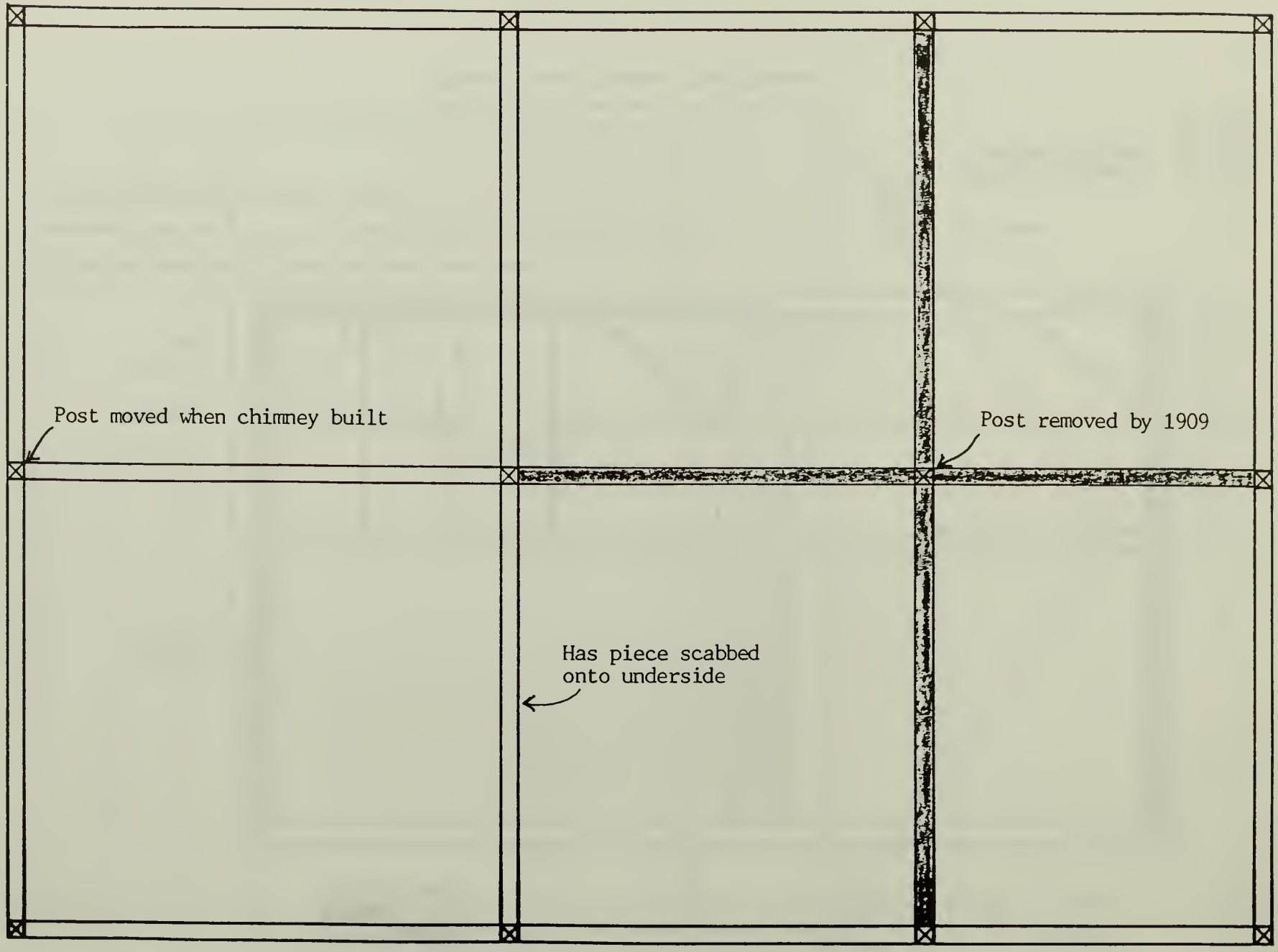


Figure 8. Barn: "Plan - Second Foor Framing."

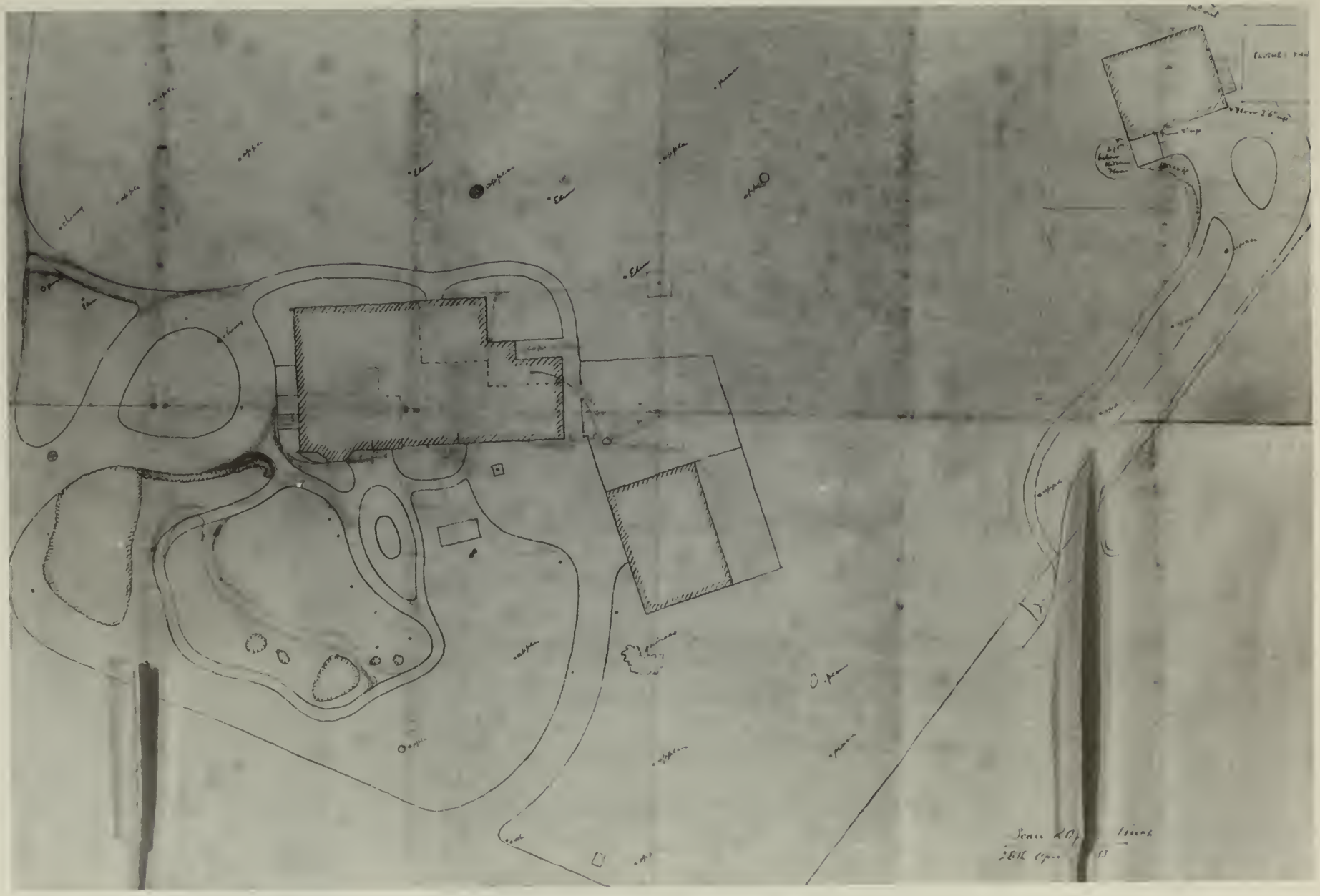


Figure 9. Site plan, April 28, 1883.

CARPENTRY SHOP

ROOF FRAMING

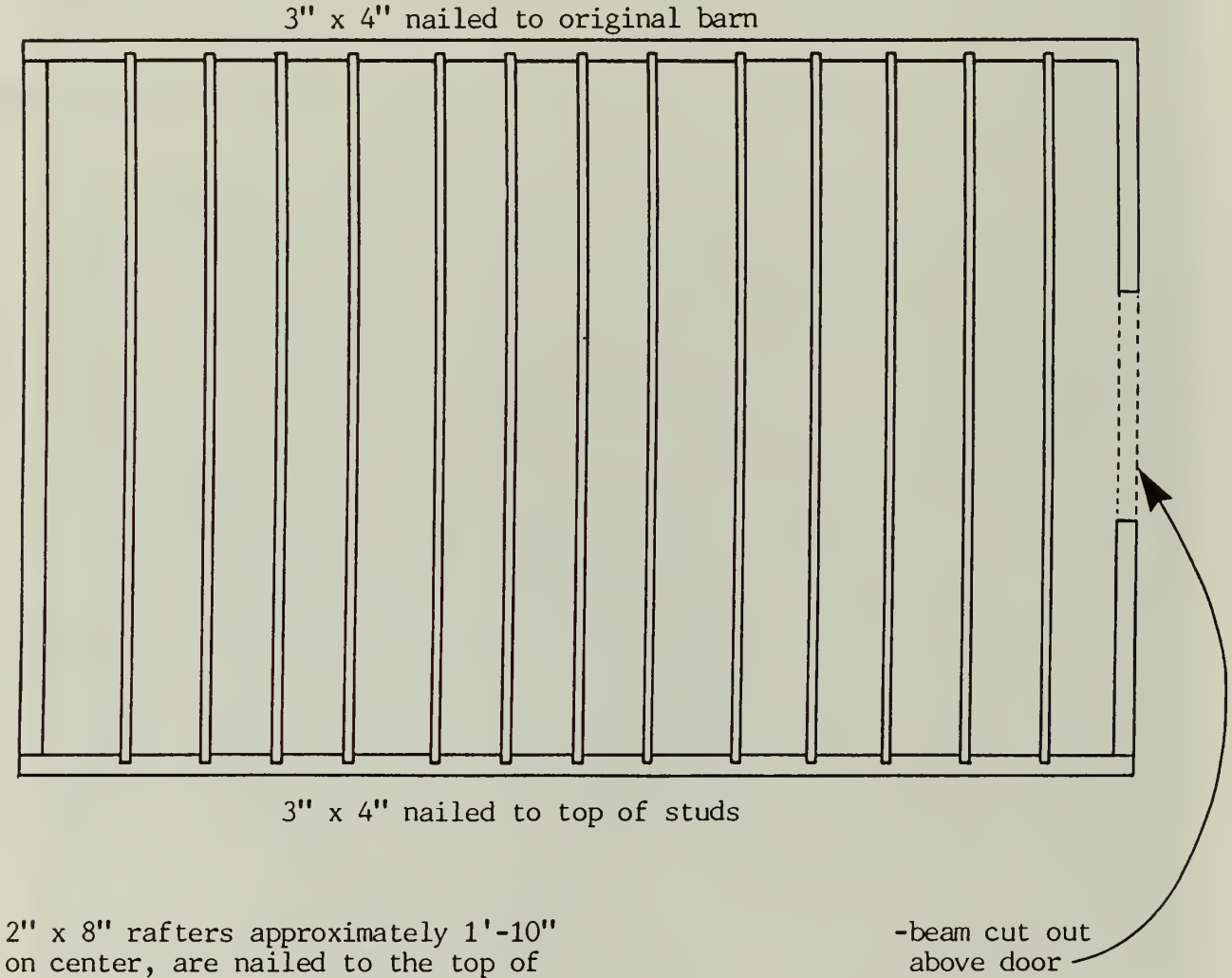
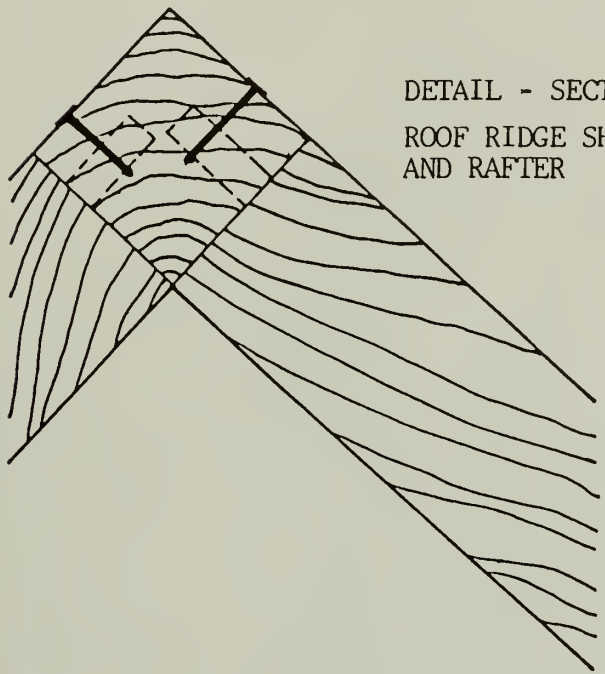


Figure 10. "Carpentry Shop, Roof Framing."

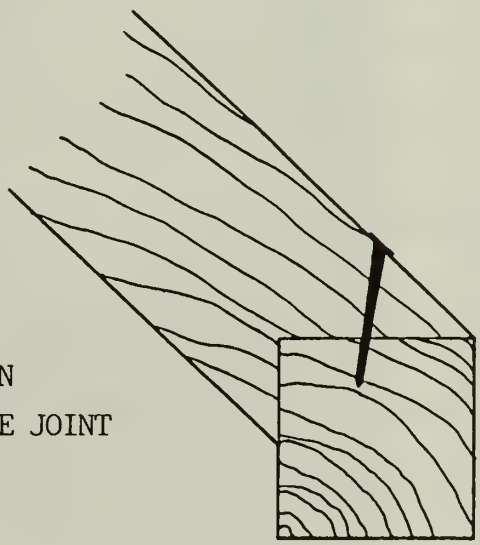
CARPENTRY SHOP

ROOF CONSTRUCTION DETAILS



DETAIL - SECTION

ROOF RIDGE SHOWING END BEAM AND RAFTER



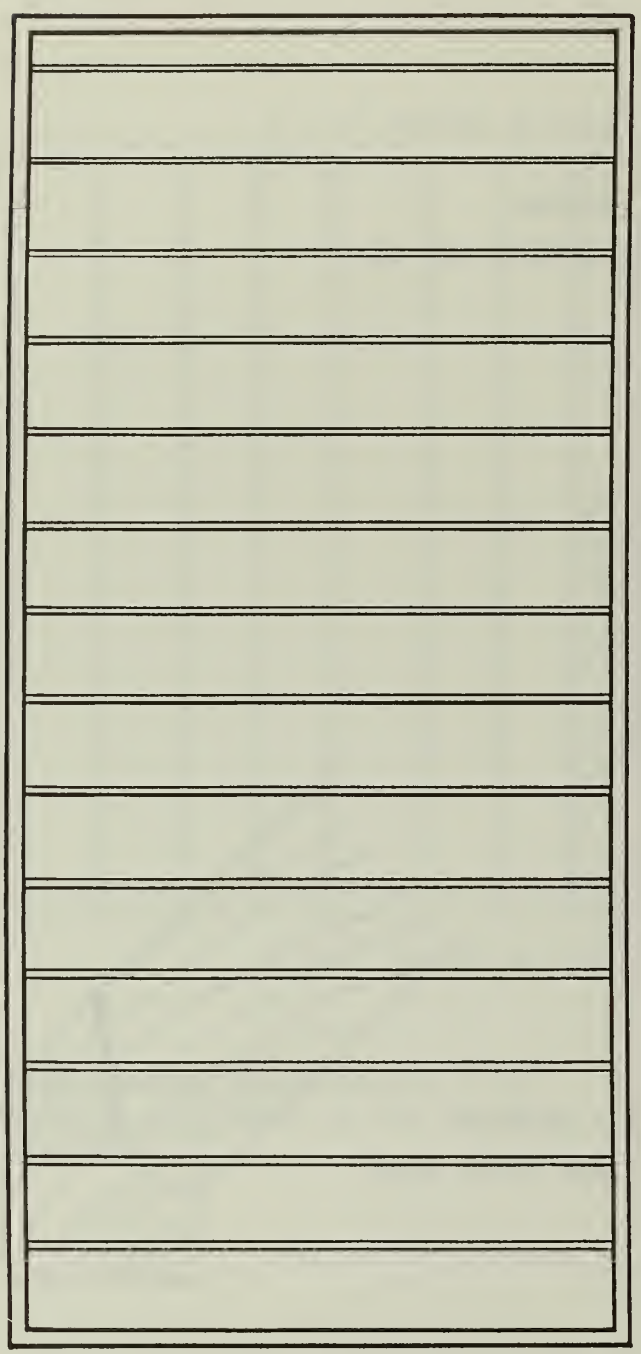
DETAIL - SECTION

RAFTER AND PLATE JOINT

Figure 11. "Carpentry Shop, Roof Construction Details."

CARPENTRY SHOP

FLOOR FRAMING PLAN



ROOM MEASURES 26'-6" X 12'-0"

6 holes for wiring

Floor joists 2"x8"
places 22" on center.

Joists supported by
brick piers - South side
tenoned and pinned into
sill - North end toe-nailed
into sill of original barn.

Two layers of floorboards
original floorboards
9" - 11" wide with
building paper on top.

East half of room retains
its original floorboards-
West half new, will be replaced

Figure 12. "Carpentry Shop, Floor Framing Plan."

Figure 13. East elevation of house, showing barn in new location, with chimney for carpentry shop, February 1885.

Figure 14. Barn: East and south elevations, circa 1885.

Figure 15. Barn: East and south elevations, circa 1885.

Figure 16. Barn: North elevation, September 7, 1896.

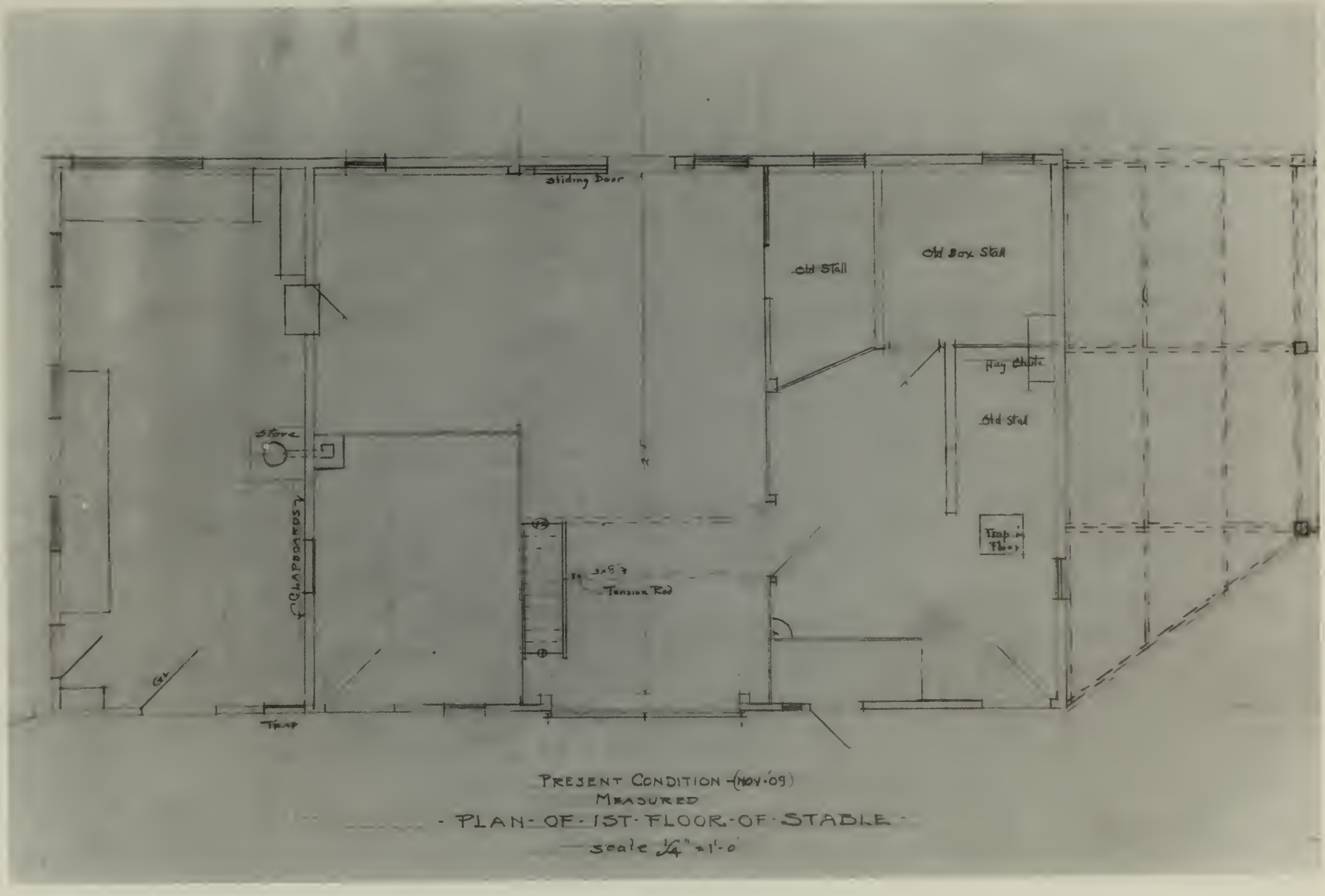


Figure 17. "Present Condition (Nov. '09), Measured Plan of First Floor of Stable."

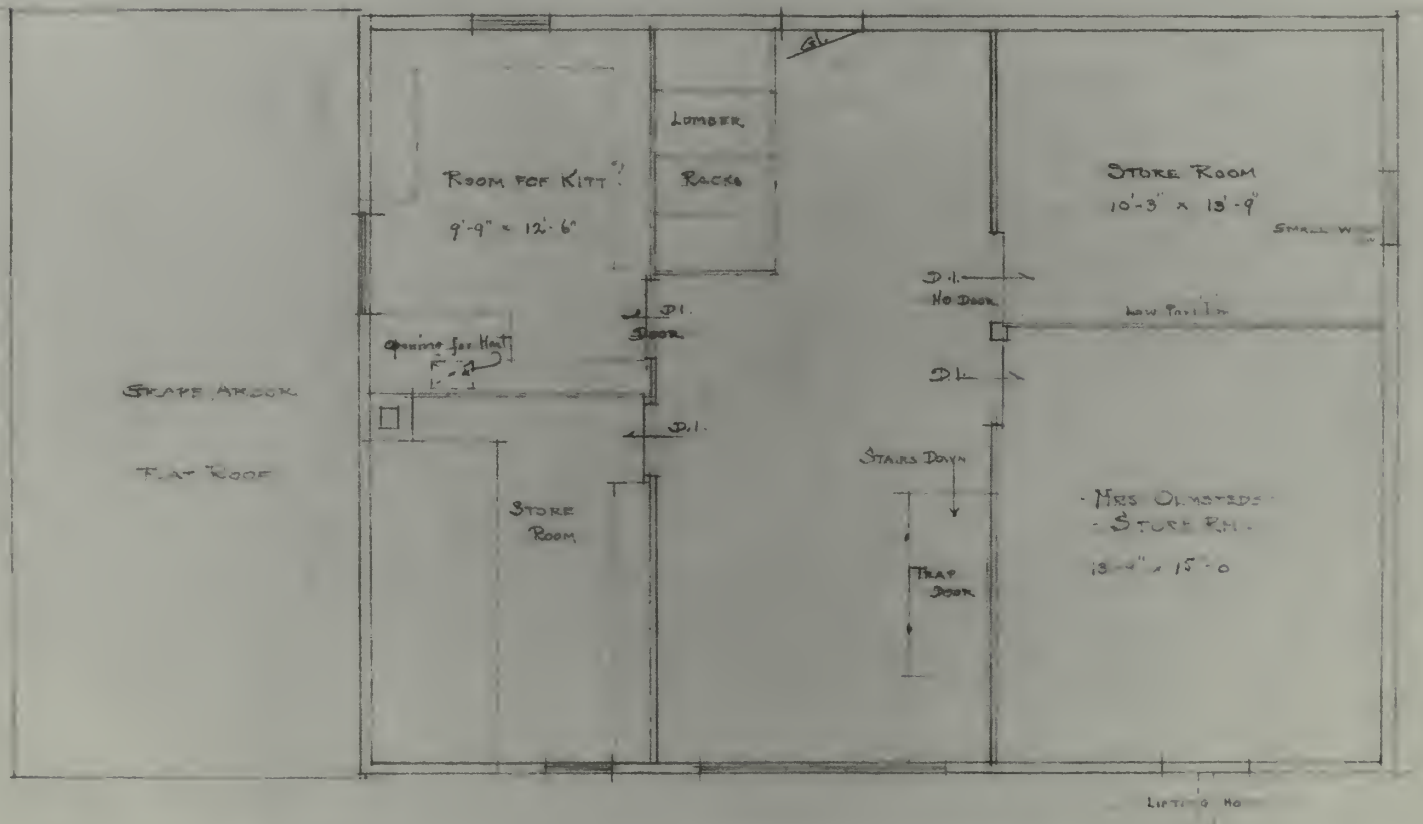


Figure 18. "Present Condition (Dec. 9, '09), Plan of 2nd Floor of Stable."

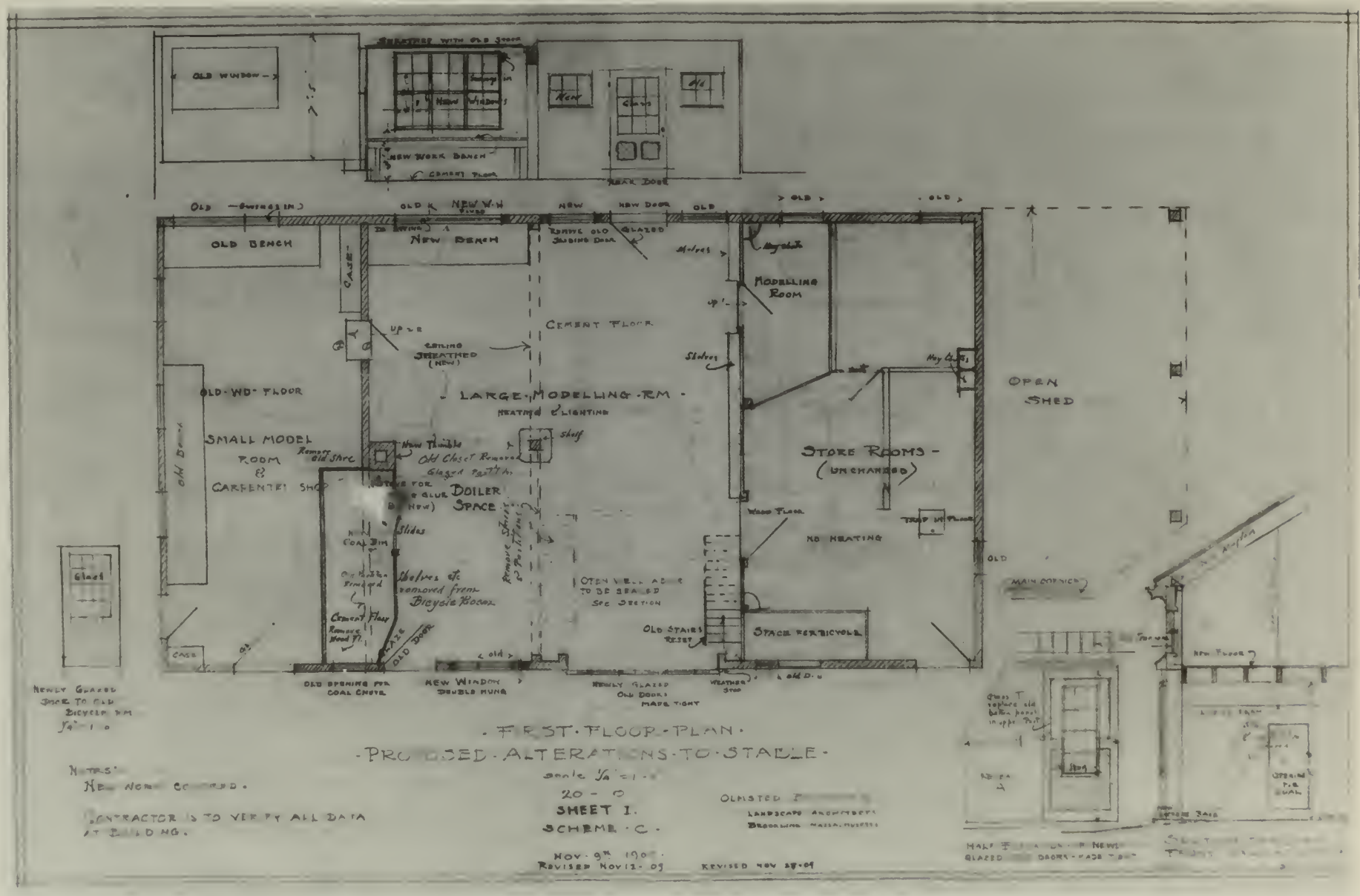


Figure 19. "First Floor Plan, Proposed Alterations to Stable," revised Nov. 27, 1909.

Figure 20. Interior of barn during its use as a modeling shop, circa 1930.

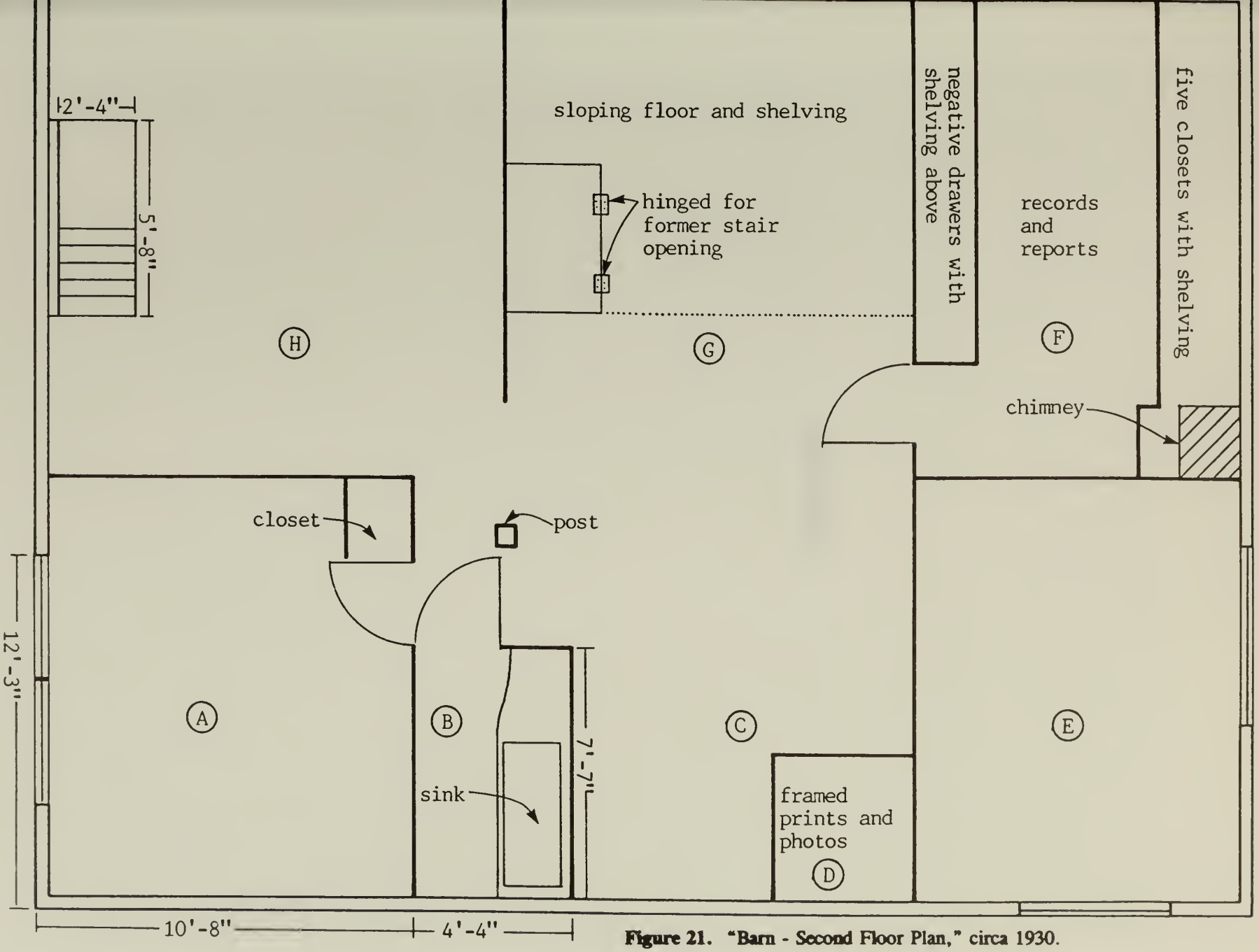


Figure 21. "Barn - Second Floor Plan," circa 1930.

THE SHED

INTRODUCTION

The shed at the Frederick Law Olmsted National Historic Site has also been called the garage and the tool shed in the years since it was erected. This report will call it the shed. It is a simple frame structure located near the northwest corner of the barn, along Fairmount Street. Built circa 1885 by Frederick Law Olmsted, Sr., the shed was designed to conform to the slope of the hill into which it was built (see figure 22). Its western end is two stories high (fig. 23), with the first story underground; its eastern end is one story high (fig. 24).

The shed is built on a rubblestone foundation. It has a post-and-beam frame and is sheathed with 9-inch tongue-and-groove boards. Its gable roof exhibits a saltbox form: the east slope is long and sloping, reflecting the gradual slope of the hill, while the west slope is shorter and steeper in pitch. Into the west side of the gable a cross gable was built circa 1905. The roof is presently covered with asphalt shingles.

The shed appears to have been built primarily for tool storage. Circa 1905 it was extensively remodeled to accommodate a garage for an automobile on the upper level, and a root cellar at the western end of the lower level. The shed is presently used for storage.

ARCHITECTURAL HISTORY

Date of Construction

The exact date of construction of the Olmsted shed is unknown. Neither a building permit nor Olmsted correspondence relating to its erection has been found. In this absence, two atlases of the Town of Brookline—those produced by C.M. Hopkins in 1884 and G.W. Bromley in 1888—provide the best documentation for the shed's date of construction. In the Hopkins atlas, only the house and barn are shown on the site plan of the Olmsted property, but four years later, the Olmsted site plan in Bromley's atlas included the shed. These atlases establish a date of construction for the shed between 1884 and 1888. For the purposes of this report, it has been given a construction date of circa 1885.

Physical evidence found in the shed supports a circa-1885 date of construction. The cut nails used to secure the original sheathing boards, floorboards, and roof shingles are typical of those used for alterations made to the Olmsted buildings during the 19th century.[5] The presence of two sets of shingle nails in the original sheathing boards under the west roof slope further supports a construction date of circa 1885. Entries in the account book of Frederick Law Olmsted, Jr. for the period March 14, 1905 to June 6, 1906 indicate that the cross gable was built into this roof slope in 1905. Since the life expectancy of a wood-shingle roof at the turn of the century was at least 15 years, the two sets of roof nails suggest a construction date of at least 20 years earlier.

Description as Originally Built

Exterior Elements

The shed, as originally built, was a rudimentary frame structure with an asymmetrical, saltbox-type gable roof. It appears to have had no windows; the only openings in its exterior walls were two doorways, located in its east and west elevations.

Foundation

The original foundation of the shed was rubblestone, laid with a tan mortar. The mix for this mortar was approximately 5 parts sand to 3 parts lime.[6] At the west end of the shed—the end that was built into the hillside—the foundation walls were 18 inches thick and 9 feet 3 inches high. At the east end, the foundation walls were 12 inches thick, and they sloped down to a height of 2 feet. In the west end of the shed, at a height of approximately 6 feet, there is a clear change in the wall construction. Below this height the stones are large and cut, and the mortar is even with their faces.

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[5] Derived from a comparison of nails used for the construction of the Carpentry Shop circa 1885 (cut nails) and those used for the circa-1910 alterations to the barn (wire nails). All nails are on file at the Northeast Cultural Resources Center, Lowell, MA.

[6] See Appendix D, samples FRLA 04 M001-M002, M009, and M011.

Above this height the stones are small, irregular, and parged with a hard, dark brown mortar. The reason for this change in wall construction is unknown. However, it does not appear to indicate that the two portions of the wall were built at different times: it would have been impossible for the existing, original building to have been built on a foundation that was 3 feet lower than the existing foundation.

The cellar of the shed was bisected by an interior rubblestone wall located 7 feet 9 inches west of the east foundation wall (see figure 22, cellar plan). The wall was approximately 5 feet thick at its base, 2 feet 6 inches thick at a height of 6 feet, and approximately 8 inches thick above 6 feet. This wall supported the east wall of the first story, which in turn helped to carry the load of the long east roof slope. Only the west side of the wall runs all the way up to the ceiling; the east side stops at a height of 6 feet. The west side appears to be original: it has the same change in method of construction at a height of 6 feet that is found in the exterior walls. The east side, although unevenly finished, is also considered to be original: its lower portion contains the same type of mortar used in the other circa-1885 shed walls.

Walls

The primary framing system for the shed was post and beam (see figure 22, section). The sills measured 4 by 6 inches, and were laid directly on the stone foundation. The 4-inch-square corner posts were tenoned and pinned to the sills and the plates. The plates measured 3 by 4 inches, except for the east plate of the upper level, which was a 4 by 6.

The original secondary framing for the east wall of the shed consisted of a horizontal 2 by 4 running between the corner posts, and two vertical 2 by 4s used to frame the door. Most of the original secondary framing in the west wall was removed when the garage doorway and cross gable were installed circa 1905. Remnants of a horizontal 2 by 4 here suggest that it was framed similarly to the east wall. The doorway opening may have been slightly wider, however, since this was the primary storage area.

The secondary framing of the north and south walls of the shed included one 2 by 4 per wall. These ran parallel to the walls' sills, at a height of approximately 2 feet 9 inches, and were nailed to the corner posts. (They thus were horizontal in the west portion of the shed, and sloping in the east portion.) These 2 by 4s provided lateral bracing for the structure, as well as a nailing surface for the vertical sheathing boards. These were the only secondary framing members in the north and south walls of the east section of the shed. The north and south walls of the west section of the shed each had two additional 2 by 4s, set vertically and approximately 6 feet apart. These were toe-nailed to the wall's sill, to the horizontal 2 by 4, and to the wall's plate. Above the plate, another 2 by 4 ran vertically up to the ridge of the gable. Still another 2 by 4, placed horizontally, was toe-nailed to this vertical member and the roof rafters at the tops of the walls.

The first story also contained an interior framing system positioned above the interior cellar foundation wall described previously. This framing system helped transfer the load of the long east roof slope down to the interior foundation wall. The framing consisted of four diagonally placed 3 by 4s that were toe-nailed to the sill and the plate.

The exterior cladding of the walls of the shed was vertical tongue-and-groove pine boards 9 inches wide. These were attached with cut nails. The exterior surface of the boards was left rough. Paint samples taken from the sheathing boards indicate that originally they were unpainted.[7] In addition, the portions of the cladding boards behind the north-window casing are unpainted. This indicates that the shed remained unpainted until at least circa 1905.

Doorways and Windows

The only exterior openings in the circa-1885 shed appear to have been doorways in the east and west elevations. Only the east doorway remains intact; the west doorway was removed circa 1905. The nails used to construct the east doorway are cut nails. The door is constructed with the same vertical boards as were used for the exterior cladding boards. It consists of four 9-inch boards and one 4-inch board, all 6 feet 3 inches long, that are nailed to two horizontal boards. The door was originally hung with two 14-inch T-strap hinges; the lower of these hinges has been replaced. A Norfolk latch, of which only a fragment of the upper portion remains, was the only other original hardware on the door.

The west doorway and door were probably similar in construction to the east doorway and door. It may have been slightly larger, however, since it provided access to the shed's primary storage space.

Roof

The rafters for the shed roof are 2 by 6s, with the exception of the end rafters, which are 2 by 8s. They are placed approximately 1 foot 10 inches on center. Their lower ends are toe-nailed to the plates; their upper ends are toe-nailed to a ridge board measuring 1 foot by 8 inches. The east rafters, whose span is roughly 27 feet, are supported near their midpoint by the plate of the east wall of the first story (see the previous section, "Walls"). A bird's-mouth cut allows them to lie securely on this plate.

The roof sheathing is tongue-and-groove boards of random widths, secured with cut nails. The original roof covering was wood shingles. Nailing patterns suggest that the exposure of the original shingles was similar to that of the second wood shingle roof, remnants of which remain under the circa-1905 gable roof. The exposure of those shingles was 5 inches.

Interior Elements

Plan

The shed has two levels, a cellar and a first story (see figure 22). The cellar is divided into two rooms by the interior foundation wall discussed previously. Of these two, the west room is completely below ground. The first story appears to have been one large room originally. The

[7] See Appendix A, "Shed Finishes," sample FRLA 04 P001.

interior framing system positioned above the cellar's interior foundation wall bisected the space, but there is no evidence that this system was ever sheathed to form a wall.

Floors

No evidence has been found for floor framing in the cellar of the shed; it is assumed this floor was originally dirt. The original first-floor framing remains in place east of the interior framing system (see figure 22). The floor joists are 2 by 6s, placed east-west approximately 1 feet 6 inches on center. Their west ends are set into the rubblestone interior wall; their east ends are toe-nailed to the plate. The floorboards are butt-edge, vertically sawn, and of random widths. They are held in place with cut nails.

Evidence of the original first-floor construction in the west portion of the story was destroyed when the existing floor was installed circa 1905. At that time, all of the original floor joists and floorboards were removed and destroyed. There is no discernible patching in the interior rubblestone walls where the original joists might have been located. The original floor joists were probably set on the finished edge of the stone foundation wall. The size and placement of these joists is unknown; however, it seems probable that they were 2 by 6s notched at the ends, since this would have produced a floor fairly level with that in the east portion of the story.

Walls and Ceilings

All of the interior surfaces of the shed's foundation walls are presently whitewashed; it is not known if this was the case originally. The interior walls of the first story of the shed were unfinished.

Doorways and Windows

The interior foundation wall in the cellar had two double doorways in its center, each with a pair of hinged doors.

Additions/Alterations

Creation of the Garage Circa 1905

In 1905, the Olmsted shed was extensively remodeled. This work transformed the structure from a simple tool storage shed into an "automobile house," with a root cellar below. The date of 1905 has been assigned to these alterations on the basis of entries in the account book of Frederick Law Olmsted, Jr. for the period March 14, 1905, to June 6, 1906.[8] These entries relate to the carpentry work on the "automobile house," and to the purchase of a gasoline tank.

[8] Account book of Frederick Law Olmsted, Jr., March 14, 1905-June 6, 1906. Frederick Law Olmsted NHS.

The entries read as follows:

21 November 1905 S.E. Bowser & Co. 255 Atlantic Avenue Gasoline Tank	$30
December 14, 1905 Albro T. Shorey Automobile House Carpenter	$110.11
December 8, 1905 Clark and Mills Electric Co. acct. Automobile house	$15.96
January 3, 1906 Standard Oil Co. of N.Y. 125 gals. motor gasoline	$14.38
January 3, 1906 Albro T. Shorey a/c auto house	$8.50
January 6, 1906 Kenrick Brothers Plumbing labor and supplies for auto house	$41.95

Wire nails used in the construction of these alterations further support this date. A circa-1914 photograph of the shed (fig. 25) confirms that the alterations had been completed by that time. Figure 26, a site plan dated June 30, 1914, shows the gasoline tank on the north side of the shed.

West Portion of the Shed

Exterior Elements

The west part of the shed was extensively altered during the 1905 remodeling. It became the garage.

Addition of Cross Gable. A cross gable was built into the west slope of the main gable roof. This gable spanned the full width of the roof slope; it overhung the west wall of the shed by 1 foot 3 inches, and ran back to the roof ridge. The framing for the cross gable consisted of four rafters, running north-south. The rafters were 2 by 4s, placed roughly 1 foot 9 inches on center. The

westernmost rafter was nailed to the corner posts of the shed; the other rafters were nailed to the main roof rafters and sheathing boards. At their apex, these rafters were nailed together. The cross gable was clad with butt-edge boards of random widths, secured with wire nails. Originally, the roof of the cross gable was covered with wood shingles (fig. 25).

The raking eaves of the cross gable were trimmed with a cyma recta molding (see "Barn and Shed: Appendix B," shed profile A). The tympanum of the cross gable was covered with wood shingles. These shingles, which remain today, have an exposure of 5 to 5 1/4 inches. The top edge of the shingled area is trimmed with a rectangular wooden nailing strip.

Alteration of Doorways. The primary reason for building the cross gable was to permit the conversion of the doorway in the west wall of the shed into a garage doorway. The original height of this wall—7 feet 3 inches—did not provide adequate clearance for such a doorway. With the building of the cross gable, an additional 1 foot 6 inches was gained for the doorway and its double doors. It also allowed for the removal of part of the original roof just inside the doorway, creating an additional 2 feet 10 inches of headroom.

The circa-1905 garage doorway is seen in the 1914 photograph of the shed (fig. 25). Its casing was a simple 1 by 6. The opening was angled at its upper corners. Along the top of the opening, and extending 1 foot 3 1/2 inches down its sides, is a drip molding.[9] The doorway had double doors constructed from matched boards. As will be discussed shortly, the present garage doors date to damage repairs made in 1953. They appear to be of similar construction to the circa-1905 doors, and are hung with the original door hardware. Each of the two doors is 4 feet 1 inch wide by 8 feet 4 inches high. They are angled at their outer, upper corners to conform to the shape of the doorway opening. They swing on 22-inch strap hinges hung on pintles. The pintles are marked "22". Other circa-1905 hardware on the doors include two cast-iron, I-shaped door latches. The face of the latches has an elaborate cast pattern consisting of geometric floral and foliate motifs.

The circa-1905 threshold for the garage doorway has been replaced. However, it was probably similar to the existing one—a 2 by 8 with beveled edges. In front of the garage doorway is a concrete frame measuring 13 feet long by 2 feet wide, into which I-beams measuring 2 1/2 inches are set. This indicates that the doorway originally had a wooden ramp. All of the wood for this ramp has rotted away.

Access to the garage was from Fairmount Street. Patching in the spruce pole fence and remnants of brick paving identify the location of the driveway.

Alterations to Fenestration. Other alterations made to the exterior of the shed circa 1905 were the installation of a pair of windows in the north wall of the west portion of the shed, and the cutting of an opening for a vent near the peak of the south wall of the shed.[10] The frames of the north-wall windows were constructed of boards measuring 4 1/2 by 3/4 inches, and nailed with wire nails. The sides and tops of the windows were flashed with zinc strips. The sashes of the windows

[9] See Appendix B, Shed Profile B.

[10] See Appendix B, Shed Profile C.

were two-over-two and double-hung. The vent opening in the south wall consisted merely of a rectangular opening covered by a piece of wire. The sides of the rectangular opening were parallel to the slopes of the main shed roof. The interior construction of this vent will be described in detail subsequently.

Addition of Gutter. A gutter was hung on brackets on the east side of the shed during the circa-1905 work. They are seen in the 1914 photograph of the shed. The gutter was wood, and measured 4 1/2 inches; the brackets were also wood. The gutter and brackets were secured with wire nails. The downspout for the gutter ran down the northeast corner of the shed.

Interior Elements

Floor. The original first-story floor west of the interior framing system was replaced, including the floor joists. The new floor joists were 2 by 10s, placed approximately 1 foot 8 inches on center. They ran north-south and sat on the finished edge of the inner course of foundation stonework.

The construction of the new floor was unusual. Matched boarding was nailed to the underside of the floor joists immediately after the latter's installation. The portions of the north and south walls between the floor joists were filled in with a hard portland-cement mortar and small stones. This mortar overflowed onto the matched boards, forming small ledges. This overflow was revealed when the matched boards were removed recently, having become deteriorated. The overflow indicates that the matched boards were installed prior to the filling between the joists.

With the matched boards in place and the foundation walls patched, the space between the floor joists was filled with 6 inches of sawdust. The first-floor floorboards, which were 2 by 9 tongue-and-groove boards, were then nailed in place with wire nails. The greater thickness of the circa-1905 floor joists and floorboards make the floor in the west portion of the first story 5 inches higher than the original floor in the east portion.

The circa-1905 floor was constructed in this manner to serve two purposes. First, the 2-by-10 floor joists and the 2-inch-thick floorboards were more than adequate support for any car that could have been parked in the first story of the shed. The depth of the floor joists, and the matched boards nailed to the underside of the floor joists, also provided a contained space for the sawdust used to insulate the ceiling of the root cellar.

In the southwest corner of this floor, an opening roughly 10 inches square was cut to ventilate the root cellar. The vent itself consisted of a wooden casing lined with metal. It ran up the south wall of the shed to a height of 7 feet 5 inches, where it turned and ran diagonally up to the vent opening near the peak of the south wall.

Utility Systems

Entries in the account book of Frederick Law Olmsted, Jr., indicate that the sink and electric service were also installed in the shed circa 1905. On December 8, 1905, $15.96 was paid to Clark and Mills Electric Co. for work on the automobile house. The electric lines for the shed ran

overhead from the northwest corner of the barn to the peak of the gable on the south side of the shed. The interior wiring for the shed was the knob-and-tube type. There was a circular switch on the south side of the garage doorway, and a single suspended socket and bulb in the center of the garage portion of the shed. There is no indication that any other portions of the shed ever had electric lights.

On January 6, 1906, Frederick Law Olmsted, Jr., paid Kendrick Brothers $41.95 for "Plumbing Labor and Supplies for Auto House."[11] This payment was undoubtedly for the running of a 1-inch lead water line into the shed through the north foundation wall, then along the north and west walls of the shed to a sink located in the southwest corner of the first story. A T-connection in the pipe, just inside the foundation wall, indicates that there was also a water faucet in the root cellar. The source of water for the shed line is unknown. It is not shown on the 1904 site plan for the property, onto which all existing and later water supply lines and drains have been plotted.

The circa-1905 shed sink has a rectangular metal basin. It measure 2 feet 6 inches by 1 foot 5 inches and had angled, beveled sides. A single faucet supplied water to the sink. A 2-inch lead drain pipe ran out of the bottom of the sink and through the north wall of the shed. This drainpipe deposited water right at the base of the shed foundation, and has caused the sill and lower portion of the sheathing boards here to rot.

East Portion of the Shed

Only minor alterations were made to the cellar story at the east end of the shed circa 1905. The present-day concrete floor and storage bin along the north side of the root cellar may have been poured at this time: the concrete used for this floor is similar to that used for other circa-1905 work. As stated previously, a matched-board ceiling was installed to hold a layer of insulating sawdust in between the ceiling joists (first-story floor joists). Another alteration that may have occurred at this time was the building of a stairway along the east end of the south wall. All elements of this stairway have since been removed. However, it was probably a simple ladder type, similar to that in the barn. Floorboard cuts indicate that the stairwell opening measured 13 feet long by 2 feet 1 inch wide. This required the removal of the southernmost original floor joist here. Wire nails used to renail the floorboards around the opening suggest that the opening was created circa 1905. The exact date when the stairway was removed is unknown.

Changes Circa 1905-1983

Only minor, maintenance-related alterations have been made to the shed since circa 1905. A partition was built between the west and east portions of the first story circa 1913, directly above the interior foundation wall. The building of this wall necessitated the removal of three of the four original diagonal braces here. The roof-support role of these braces was taken on by the remaining southernmost brace, by new 2 by 4s placed vertically, and by the new 2 by 4s used to frame the new doorway in the center of the partition.

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[11] Account book of Frederick Law Olmsted, Jr., March 14, 1905-June 6, 1906. Frederick Law Olmsted NHS.

The partition is sheathed with "Compo-board." One of the pieces of Compo-board is reused from a packing crate from the Olmsted firm. The label from the crate reads as follows:

> Architectural League of New York
> Twenty-eighth Annual Exhibition, 1913
>
> Exhibitor: Olmsted Brothers
> Brookline, Massachusetts
>
> Plans, Elevation and Details for Formal Garden of Chester Thorne,
> near Tacoma, Washington

From this label, a date of circa 1913 has been assigned to the building of the partition wall.

The door in the doorway at the center of the partition is a typical circa-1883 door, reused from the house.[12] It is hung with 14-inch T-strap hinges, but retains parts of its original butt hinges with ball finials. The doorknob is missing, but the brass rose and box lock are still in place.

Records of alterations made to the shed are nearly nonexistent for the years from 1913 to 1953. Physical investigation and historic photographs suggest that little work, other than general maintenance, was done to the shed during this time (figs. 27-28). At the west end of the south wall, which backs up to the sink inside the shed, the lower portions of the exterior cladding boards were replaced. The cladding boards on the east wall also were cut and patched. The wood-shingle roof was replaced with a green asphalt-shingle roof by 1931. The roof was reshingled again before 1960.[13]

In 1953, a U.S. Postal Service truck slid off Fairmount Street into the northwest corner of the shed. In a letter to Olmsted Brothers dated February 25, 1953, the M.E. Hennessy Company gave the following cost estimate and summary of repairs required:

> We estimate the cost of repairs to the wooden garage facing towards Fairmount Street on your property would cost One Hundred Seventy-eight Dollars ($178.00). This refers to the damage done by the U.S. Postal Truck on February 14, 1953. It consists of repairs to doors, hinges, frame and casing, front left corner and the left side-wall near the front.[14]

Examination of the northwest corner of the shed reveals that all of the cladding boards on this part of the shed have been replaced, as well as both garage doors and the north side of the garage-doorway frame. These repairs were made with wire nails, and used 7-inch, rather than 9-inch, sheathing boards. Paint samples taken from the cladding boards from this part of the shed

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[12] See Appendix B, Shed Profile D.

[13] Interview with Artemas Richardson, March 1981.

[14] Letter from M.E. Hennessy Company to Olmsted Brothers, February 25, 1953. Frederick Law Olmsted NHS.

contain only one layer of brown latex paint, while samples taken from other cladding boards also contain earlier layers of red and brown lead-based paint.[15]

The exterior of the shed was repainted light brown in 1957, along with the house, offices, and barn. In 1968, when the other structures at the site were repainted green, the shed was not painted. Its present color scheme is brown cladding boards with dark green trim.

Restoration by the National Park Service

Exterior Elements

When acquired by the National Park Service, the shed had suffered from years of deferred maintenance. The exterior cladding boards contained rotted areas, especially along the foundation of the shed. The east side of the shed roof was sagging. The most serious damage had been caused by inadequate drainage at the east end of the building. Here, the sill had completely rotted away, causing significant settling of the building. The lower portions of the corner posts and the cladding boards of the east wall also contained extensive rot. There seemed to be two principal sources for this moisture—the deteriorated gutter and missing downspout, and the raised grade of the driveway that surrounds the east wall of the shed.

The other area of the shed that had succumbed to moisture-related damage was the west elevation. During the investigation work conducted for the preparation of this report, the westernmost floor joist was found to be rotten, and was removed. The source of the moisture that caused this rot appeared to be water run-off from the hill into which the shed was built. Penetration of this water into the shed was aided by the deterioration of the wooden ramp that led up to the garage doorway. Damage was especially bad at the south end, which backed up to the garage sink inside the shed.

In 1983, the shed was restored by the preservation crew of the Frederick Law Olmsted NHS. This work included repointing the exterior foundation walls. The mortar used was mixed at 5 parts sand to 3 parts lime. The grade along the east wall of the shed was lowered. It could only be reduced about 2 inches, without regrading the entire adjacent parking lot. However, this was sufficient to put the cladding boards on the wall above grade. Rotted wood framing members were replaced in kind. This included the replacement of the east-wall sill, which reduced the sag in the east roof so substantially that no supplementary bracing was added. Rotted cladding boards also were replaced in kind. The exterior of the shed was then painted with oil-based exterior house paints. The cladding boards were painted gray-brown (Munsell 5YR 5/2; Benjamin Moore GN-31); the wood trim was painted dark green (Munsell BG 3/1; Benjamin Moore "Essex Green").

The asphalt-shingle roof on the shed was replaced in 1986 with new asphalt shingles.

[15] See Appendix A, "Shed Finishes," samples FRLA P001, P009, and P011-P014.

Interior Elements

Around the sink, the sill and many of the cladding boards were rotted. Some of these cladding boards had been replaced previously. Several of the floorboards below the sink were riddled with holes made by carpenter ants. However, the infestation appeared to have been very localized and did not appear to be active.

The matched-board ceiling in the root cellar was also significantly deteriorated when the preparation of this report began. Several areas of the ceiling were missing, and the sawdust insulation that it held in place was spilling into the root cellar. To facilitate the physical investigation of the structure, this ceiling and the sawdust insulation were removed. Their removal revealed minor areas of rot on the undersides of the floor joists—the side of the joists surrounded by sawdust.

Utility Systems

The NPS installed a modern intrusion-alarm system in the shed in 1980. A perimeter fire-detection wire was installed in 1982. Both detection systems were connected to the barn through an underground cable.

EXISTING CONDITIONS AND RECOMMENDATIONS

The shed is generally in excellent condition at this time. However, it retains the knob-and-tube electrical wiring service that was installed circa 1905. The circa-1905 water line, which served the garage sink and the root cellar, has been disconnected.

The shed should continue to be maintained in its present condition for its present use.

FIGURES FOR THE SHED

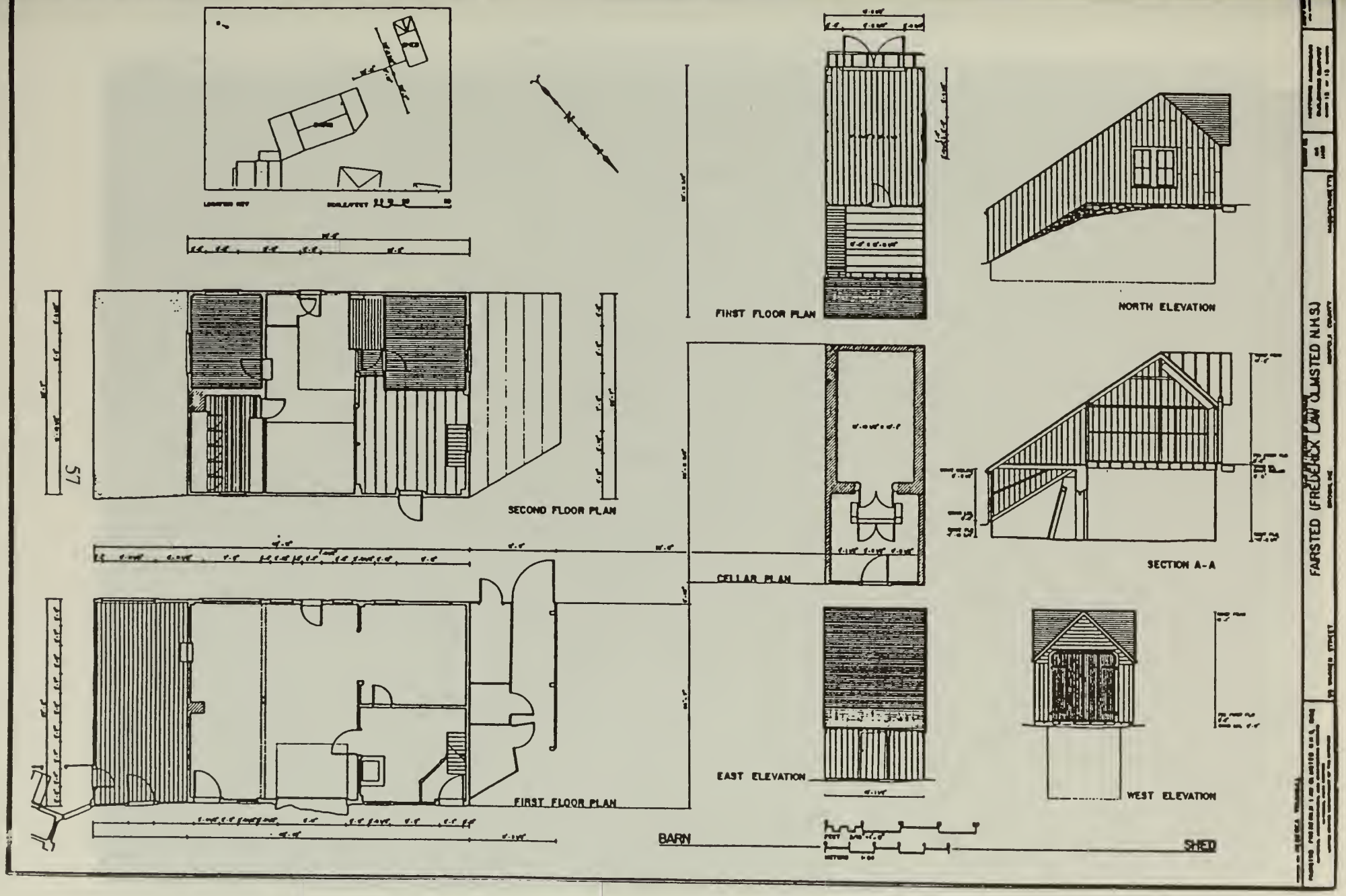


Figure 22. Plans, elevations, and sections for the shed (at right), 1982.

Figure 23. Shed: West and south elevations (1986).

Figure 24. Shed: East elevation (1986).

Figure 25. Shed: West and south elevations, circa 1914.

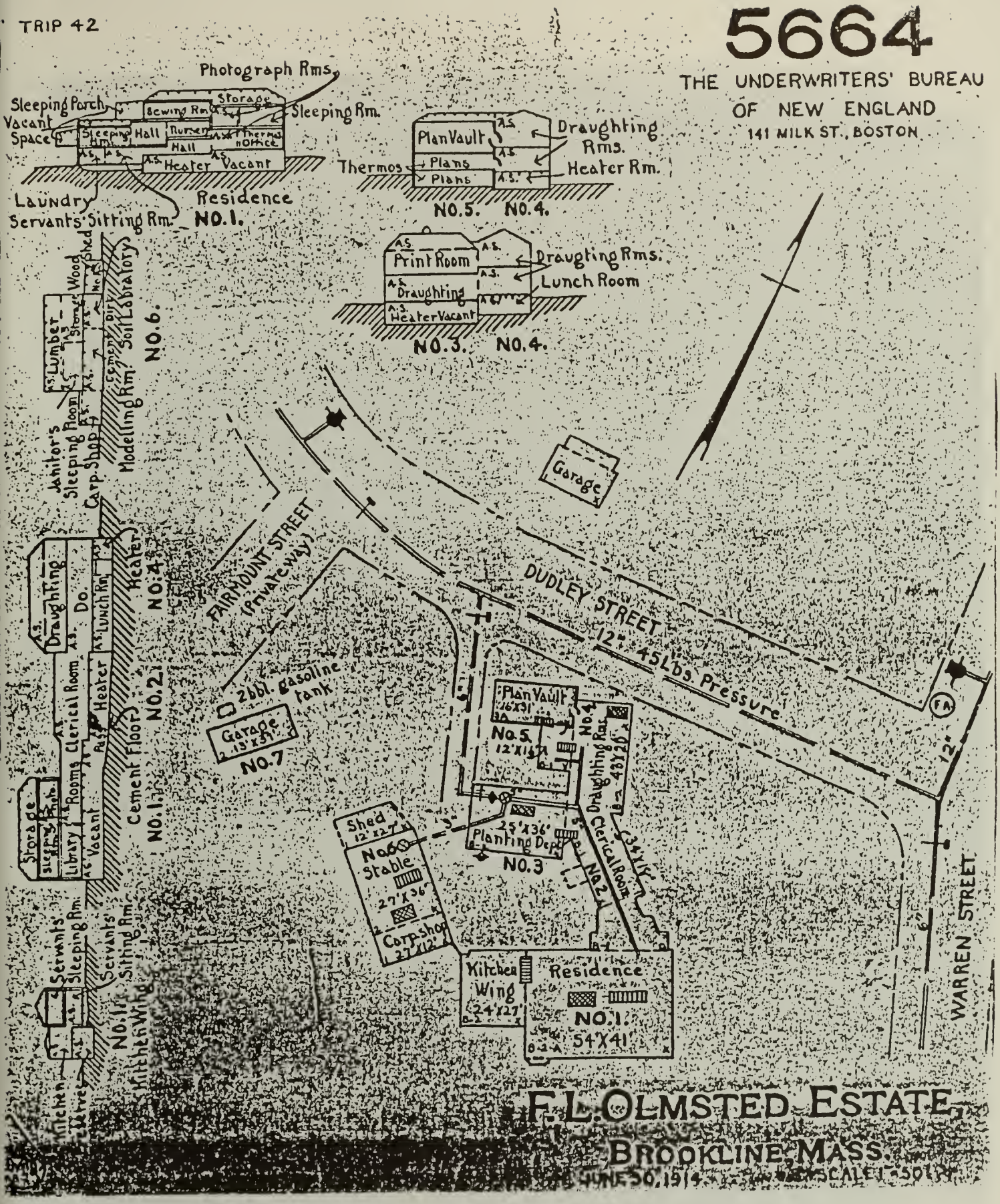


Figure 26. Site plan for the Olmsted property, June 30, 1914.

Figure 27. Shed: East elevation, before 1926.

Figure 28. Shed: East elevation, before 1926.

THE FENCES

INTRODUCTION

The Frederick Law Olmsted NHS has four different types of historic fences around and within the property (fig. 29). The property perimeter is enclosed with three of these types: a spruce pole fence running along Warren, Dudley, and Fairmount Streets; a stone wall running along the south (Gardner Estate) property line; and a metal fence running along the west (Clark sisters') property line. Within the property, a stockade-type board fence surrounds the wood-storage area on the north side of the barn. A fence of this type also runs between the barn and the shed. In addition, a lattice fence surrounds the laundry yard, located between the west wall of the house and the south wall of the barn.

SPRUCE POLE FENCE

The spruce pole fence was erected by Frederick Law Olmsted, Sr., the year after he purchased the property. It is the most extensive and noteworthy of the site's fences. It was installed as part of the extensive alterations that Olmsted made to the property between 1883 and 1884 (figs. 30-34). Its installation coincided with the moving of the barn from the south lawn to the northwest corner of the house, and the abandoning of the drive across the south lawn.

As the site's principal perimeter fence, the spruce pole fence formed a rustic frame for Fairsted's landscape and buildings. Its elaborate spruce pole arch, which spanned the front driveway, created a dramatic point of entry to the site (figs. 35-36). The spruce pole fence also functioned to support the perimeter plantings of euonymus (fig. 37).

Architectural History

Description as Originally Built

Location

Since the spruce pole fence has been altered and rebuilt extensively in its 100-year history, the 1887 site plan (fig. 38) and several early photographs showing the fence provide the best documentation for its original route. No archeological investigation was conducted to identify the original location of the fence's post holes, or the strata of the walks and drives shown on the 1887 site plan. On the 1887 site plan, the spruce pole fence is shown running along Warren Street. Since no differentiation is made on the 1887 site plan between fence lines and the lines identifying drives and paths, historic photographs proved critical for identifying the fencing.

Along Warren Street, the spruce pole fence had two openings. One was at the driveway, at the corner of Warren and Dudley Streets. The other, located approximately 110 feet south of the driveway, was an angled opening to a footpath that connected to the circular front driveway. Figure 39, a photograph of the house taken circa 1885, shows the latter opening. It is the angled, double portion of fence at the right side of the house. Figures 35 and 36 show the portion of the Warren Street fence that is blocked by the house in figure 39. They illustrate well the front driveway arch and the curve of the fence at the junction of Dudley and Warren Streets. Figures 40-41 show portions of the spruce pole fence that ran along Dudley and Fairmount Streets, and part of the fence that ran along the rear drive to the newly relocated barn. The south end of this fence, with its terminus near the barn, is shown in figure 42. A portion of the spruce pole fence along Fairmount Street is also shown in this photograph.

On the 1904 site plan (fig. 43), the perimeter property fence is shown with an alternating long and short line. The location of the spruce pole fence remains essentially the same as shown on the 1887 site plan. Portions of the fence along the east side of the rear driveway had been removed by this time to accommodate the building of the Plans Vault and Planting Department. An opening had also been made in the spruce pole fence on Fairmount Street, for a driveway to the garage that was made by remodeling the first story of the shed circa 1905. Existing fence posts, as well as lines

and labeling on the 1904 site plan, indicate that this drive was lined with a spruce pole fence. A gate in the south side of this fence opened to the path leading down to the west side of the barn.

Unlike the 1887 site plan, the 1904 site plan shows a fence along the west (Clark sisters') property line. The graphic symbol used to denote the location of this fence—an alternating long-and-short line—is the same as used to identify the perimeter spruce pole fencing. However, it varies slightly from that symbol, in that the long line is slightly shorter than the long line used to denote the spruce pole fence. This suggests that the west property-line fence was another type of fence. Figure 44, a site plan for the west boundary of the property dated May 6, 1915, identified this portion of the fence as a wire fence. Since the spruce pole fence has continued to be used in its original location since it was erected circa 1884, it seems unlikely that a section of it would have been erected along the west property boundary, and replaced with a metal fence 11 years later. It is therefore assumed that the west property boundary was never enclosed by a spruce pole fence.

Method of Construction

Fence

The spruce pole fence employed spruce fence posts measuring 5 1/2 to 6 inches in diameter (fig. 45). The posts ranged in height from about 5 to 6 feet, depending on their location in the fence. The posts were buried about 3 feet into the ground. They were placed approximately 7 feet 8 inches apart in the straight runs of fence, and about 6 feet 5 inches apart in its curved portions.

Nailed to the posts were two horizontal rails. The posts were notched out approximately 2 inches to receive the lower rail. The upper rail was nailed to the top of the post. The spruce poles were nailed to these rails. The majority of the rails in the original fence appear to have measured 2 by 5 inches, with the poles nailed to the narrower side (fig. 45). However, a photograph taken between 1902 and 1912 of the back side of the fence along the rear driveway (fig. 46) shows the spruce poles nailed to the wide sides of what appear to be 2 by 4s. Since this portion of the fence had been altered when the Planting Department and Plans Vault were built, the 2 by 4 rails may not be original.

The spruce poles themselves were thin, individual poles that retained their bark. They ranged from 1 1/2 to 2 inches in diameter. The height of the poles varied from about 5 to 7 feet, with the tallest poles being located on either side of the opening for the front driveway. These taller poles formed the tapering sides of the arch over the driveway. The spruce poles were nailed to the horizontal rails with cut nails; cut-nail holes can be found in some of the original rails.

Arch

The construction of the arch over the front driveway was considerably more complex than the straight and curved lengths of fence. Fortunately, the construction drawings for the arch are on file in the Olmsted archives (figs. 30-34). They reveal that the arch was 14 feet wide, 3 feet 4 inches deep, and 10 feet high. Its sides were constructed with two vertical posts. The posts supported a roof frame of modified gable-end, center-ridge design. (Its modifications were that the north and south ends of the roof framing were sloped.) The sides of the arch were covered with

single spruce poles placed vertically. The top of the arch was covered by two rows of spruce poles running down the east and west sides of the ridge.

Openings and Gates

Some of the openings in the spruce pole fence had gates, while others did not. The one remaining gate in the spruce pole fence is constructed with 2 by 4s (fig. 47). The gate frame is rectangular with a diagonal brace. The spruce poles are nailed to the frame. It is hung with strap hinges 1 foot 6 inches long. It is presumed that the historic gate at the southwest corner of the shed, shown on the 1904 site plan, was constructed similarly.

Figure 46 shows that at least one gateless opening in the spruce pole fence had edges that were "curled back" upon themselves to form a finished appearance. This was the opening leading from the rear driveway to the courtyard of the Rear Office Entry. Figure 46 also shows (on the far side of the back driveway) the former opening leading to the annuals garden, which was closed up when the parking lot was created in 1926. This opening also appears to have had curled edges.

Additions/Alterations

Any discussion of alterations to the spruce pole fence in the 20th century must be prefaced by the statement that at one time or another, nearly every part of this fence was rebuilt. Almost all of the nails found in the fence prior to its rebuilding in 1984 were wire nails that postdated 1900. Most of the spruce poles, spruce posts, and horizontal rails have been replaced; even the remaining original ones have been renailed. The variation in the materials used to repair the spruce pole fence indicates that it has been a continual maintenance problem.

The 1904 site plan remained the most accurate and detailed site plan for Fairsted until 1982, when the Paulette-McQueary plan was prepared. During that period, the Olmsted firm made numerous changes to the property that were marked on the 1904 site plan. Unfortunately, no notations were made identifying alterations that were made to the spruce pole fence. A glance at the 1982 site plan reveals that numerous alterations were made between 1904 and 1982, due to neglect and property use changes. It is impossible to pinpoint the dates of these alterations in the absence of written and photographic documentation. Hence, a liberal and broadly defined use of "circa" dates was employed in the following discussion.

Aside from substantial routine maintenance, some specific alterations were made to the spruce pole fence during this period. In 1926, when the annuals garden was ripped out and made into the firm's parking lot (fig. 48), the opening in the west side of the rear driveway fence was widened (fig. 49).

Circa 1930, the opening in the fence for the Warren Street footpath was closed with fencing, since the path had been abandoned by this time. Also, the arch over the front driveway collapsed and was rebuilt (figs. 50-51). The new arch was constructed slightly differently from the original arch: no short poles lined the inner sides of the arch. In order to accomplish the reconstruction, all of the euonymus had to be cut from around the fence.

At some point, a new gate was built into the Dudley Street portion of the fence, at the east corner of the North Drafting Wing (fig. 47). No documentation has been found to indicate when this gate was added. It is not shown on the 1904 site plan. It was probably added circa 1930, before the firm began to decline in size.

The arch over the front driveway collapsed again in 1958, and was not rebuilt until 1984 by the National Park Service. During the early 1960's, the opening for the Fairmount Street driveway was also closed with fencing. This related to the remodeling of the barn for use as a garage, which relegated the garage in the shed to storage.

Other changes to the fence have resulted from neglect. By 1984, all of the fence lining the rear driveway had fallen down, as had a portion of the fence along Dudley Street.

Reconstruction Work of 1984

Fence

By 1984, the spruce pole fence was in a state of advanced disrepair. Numerous posts were rotted off, and some were missing altogether. Others had been replaced with wood or iron posts. Many of the wood replacement posts had not been notched out to receive the lower rail. Also, rails had been haphazardly replaced or repaired. Many replacement rails were of incorrect dimensions (both diameter and length) and wood species, and they had been secured to the posts in a variety of ways. Some of the upper rails had been spiked to the sides, rather than to the tops, of the posts. A number of the spruce poles themselves were completely missing; others were rotted at their tops and bottoms, and/or split where they were nailed to the rails.

In 1984, the deteriorated spruce pole fence was dismantled, discarded, and rebuilt with new materials (figs. 52-53). This work was done by the restoration crew of the Frederick Law Olmsted NHS. The spruce pole fence was rebuilt as originally constructed, incorporating the changes that were made to the route of the fence to accommodate the construction of the office buildings and the rear parking lot. The arch over the front driveway was also rebuilt (figs. 54-56).

Since thin spruce poles were no longer commercially available, they were purchased directly from a forester in Maine. The spruce posts also came from this source. The cedar stock used for the rails was purchased from a lumber company in Vermont. Records for the quantities of materials purchased and their sources are on file at the Frederick Law Olmsted NHS.

The spruce posts used to reconstruct the fence were 5 1/2 to 6 inches in diameter, and they varied in exposed heights from 4 feet 6 inches to 7 feet. The posts were spaced approximately 6 feet 5 inches apart on the curved sections of fence, and 7 feet 8 inches apart on the straight runs. This was the spacing of the existing posts, and it coincided roughly with their locations as shown in the historic photographs. Posts were set into the ground 3 feet, except where ledge made this impossible. In those locations the posts were set in concrete.

The horizontal rails were rough-stock cedar measuring 2 by 5 inches. The lower rails were set into the posts with 2-inch notches. The upper rails were nailed to the top of the posts. The corner rails were cut with a curved face; the old rails served as patterns.

The spruce poles used for the new fence measured 1 1/2 to 3 inches in diameter. They were slightly larger than the poles used for the original fence, because the thinner poles were not available in sufficient quantity. The poles were nailed to the narrow edges of the rails, spaced at roughly eight poles per foot of rail.

Arch

The arch over the front driveway was also rebuilt in 1984. Since it had collapsed in 1958, all of its framing members and spruce poles were missing. Therefore, the 1883 drawings for the arch by Frederick Law Olmsted, Sr., and historic photographs were used as the documentation for its reconstruction. The drawings provided the overall dimensions for the arch. However, they did not indicate how the curved sections of the arch framework were cut and joined. This was worked out by the crew rebuilding the arch, but it is not known how closely the 1984 framework matches the original. Spruce poles taper up to the height of the arch and cover its top, meeting at the ridge.

As rebuilt in 1984, the arch more closely resembles the arch as it was rebuilt circa 1930, rather than as built in 1883. For example, there is no lining of spruce poles on the interior of the arch.

Existing Conditions and Recommendations

The spruce pole fence is now in good condition, and should be maintained accordingly.

STONE WALL

The south property line at Fairsted is marked by a stone wall (fig. 57). It is not known exactly when this wall was built, but it seems probable that it predates the property's purchase by Frederick Law Olmsted, Sr. It may date to the circa-1810 division of the land and building of the house by the Clark family.

The south stone wall is of dry construction. The size of the stones used for the wall varies considerably. The wall's height ranges from approximately 2 to 3 feet; it is about 2 feet wide. This wall is in good repair. No restoration work is proposed for the stone wall.

WIRE LINK FENCE

The west property boundary is delineated by a wire link fence. This fence appears to have been erected before 1904, based on two facts. As stated previously in connection with the spruce pole fence, the fence appears on the 1904 site plan, although it is not identified as a wire fence until the site plan of 1915. Also, a tree has grown through the fence (figs. 58-59), and its large size indicates that the existing wire link fence was undoubtedly erected before 1904.

There was also a section of wire link fence, with a gate, at the south side of the shed before 1926. This fence is visible in figure 60, a circa-1920 photograph of the southeast corner of the shed and the annuals garden. It is also shown on the "F.L. Olmsted Estate Plan for Garden of Annuals, 1926." It seems likely that the same type of wire link fence was used in this location as was erected along the west property boundary.

Architectural History

Description As Originally Built

Location

The route of the historic wire link fence is the same as that today (see figures 43-44), except that the northernmost 12 feet of fence have been removed and replaced with spruce pole fencing.

Method of Construction

The wire link fence was 3 feet 10 inches high, with a 2-inch-square mesh pattern. The gauge of the wire used to construct the fence was three-sixteenths of an inch. A metal pipe 1 1/4 inches in diameter ran along the top of the fence, to give it rigidity. The wire link fence was stapled to spruce posts, called "stakes" on the 1915 site plan (fig. 44). The spruce posts were roughly 6 inches in diameter and 3 feet 6 inches high. They appear to have been the same type of posts as were used

for the spruce pole fence. At the south terminus of the fence, there was no spruce post; the horizontal metal pipe support was set into the stone wall.

Existing Conditions and Recommendations

The wire link fence is presently extensively deteriorated. The spruce posts are still in place, but all are rotted, and large sections of the fence are falling due to lack of support. The posts have been supplemented with additional, randomly placed spruce posts. The wire links themselves are pitted with rust. No evidence has been found to indicate that this fence was ever painted. As noted above, the northernmost 12 feet of this fence has been replaced with spruce pole fencing.

Restoration of the wire link fence should include the installation of new spruce posts. If practical, only the five original posts should be used to support the fence. The wire link mesh should be cleaned and treated with a rust-inhibiting agent. It should then be restapled to the spruce posts. A portion of the missing 12 feet of fence appears to be in the neighbor's rubbish heap. The National Park Service should try to obtain this section of fence, and then straighten, clean, and reinstall it.

STOCKADE BOARD FENCE

A stockade board fence currently begins at the northwest corner of the Planting Department (fig. 61). It runs westward across the rear driveway, and extends along and out past the north side of the barn's open shed. It then turns northward (fig. 62) and runs to the freestanding shed. Stockade board fencing of similar appearance was used during the historic period in this general vicinity, but its specific location was different than that seen today.

Architectural History

Description As Originally Built

Location

A stockade board fence was erected at Fairsted sometime between 1883 and 1887 around a rectangular wood yard located north and west of the barn. This fence is shown on the 1887 site plan (fig. 38), although it is not labeled. It also appears on the 1904 site plan (fig. 43), where it is labeled "Board Fence." (The fact that the enclosure had been expanded eastward by this time is discussed subsequently in the section "Changes Prior to the 1960's.")

Method of Construction

The nature of the materials used for the 1887 wood-yard fence must be deduced from historic photographs (figs. 63-65), and from remnants of the fence that have been reused in the existing fences. A few of the original stockade board pickets seem to have been reused in the fence along the north side of the woodshed. The boards are 6 3/4 to 7 inches wide, three-quarters of an inch thick, and 5 feet 6 inches tall. They have a decorative notch near their top ends. They can be distinguished by their brown and red paint, and by the broken-off cut nails at the locations of the earlier horizontal rails. They have been renailed to modern 2 by 4s with wire nails.

Additions/Alterations

Changes Prior to the 1960's

Enlargement of the Wood Yard/Building of the West Barn Fence

The site plan of 1904 (fig. 43) indicates that the open shed had been added to the north end of the barn by this time, and that the southeast corner of the wood-yard enclosure had been swung outward to accommodate a new gate. Figure 64 is a view of this gate from inside the wood yard. The plan also shows a second stockade board fence, running along the west side of the barn; it terminated at a point about two-thirds of the length of the barn. The plan does not show any fence running from the barn to the shed.

Addition of Shed Fence

Sometime after 1904 and before 1926, a third stockade board fence was built, extending perpendicularly from the north side of wood-yard fence toward the south side of the shed (compare figures 43 and 48). This fence was of the same general type as the wood-yard and west barn fences, with some differences. This is based on the fact that a few of its original stockade board pickets have survived through reuse in the existing shed fence. These boards are 5 3/4 to 6 inches wide, three-quarters of an inch thick, and 4 feet high. They have the same decorative notch as the pre-1887 pickets, but they are smaller in scale.

One of the rails in the existing fence is also reused from the original fence. It is a 2 by 4, with paint markings indicating that the board pickets were placed 1 1/2 inches apart.

Relocation of the Fences Circa 1960

The stockade board fences around the wood yard, along the west side of the barn, and to the shed were rebuilt sometime in the 1960's. (Compare figures 48 and 29—site plans from 1926 and 1982, respectively.) All sections of all fences were dismantled. A new fence was built approximately 10 feet farther south than the north side of the old wood-yard fence. The new fence began at the northwest corner of the Planting Department and extended westward across the rear driveway. It then ran along the north side of the barn's wood-storage shed, directly under the overhang of the shed's roof. It continued out past the wood-storage shed, then turned northward (fig. 62) to run toward the south wall of the shed. It intersected the shed wall at a point 3 feet east of where the old shed fence met the wall. (This location is evident from a paint line on the south wall of the shed.) This work was primarily done to provide additional space in the firm's parking lot.

There were two gates in this fence—at the east end (fig. 61), next to the Planting Department, and at the northwest corner of the barn's wood-storage shed. They exhibited the same type of construction as the rest of the fence.

Existing Conditions and Recommendations

The stockade board fence is satisfactory in terms of historic construction details and condition, but it is not historic in terms of overall configuration or location.

When the rear parking area is restored, the current stockade board fence should be removed. New stockade board fences should be built in the proper circa-1930 locations. These locations are the same as those shown on the 1904 site plan. This work should include the rebuilding of the portion of the fence along the west side of the barn.

LATTICE FENCES

The lattice fences were probably built in 1883, as part of the extensive alterations that Frederick Law Olmsted, Sr., made to the property shortly after he purchased it. The fences were associated with the landscaping of the newly relocated barn and rear driveway. They are shown on the circa-1887 site plan (fig. 38), and in early photographs of the property (e.g., figure 39).

The lattice fences were originally erected in two locations: around the service yard, on the east side of the barn (fig. 66); and around the laundry yard, located between the west end of the house and south end of the barn (fig. 67). Latticework was also used for the west wall of the breezeway; along the south side of the Planting Department's basement areaway (fig. 68); and—as explained previously—in a strip 2 feet 8 inches high atop the east wall of the carpentry shop.

None of the original lattice fences remain today, so their height, component materials, and method of construction can only be based on historic photographs, and on the existing west wall of the breezeway. The breezeway latticework is framed with 2 by 4s. The lattice is constructed with strips one-quarter of an inch thick and 1 1/4 inches wide, placed 1 3/4 inches apart. The strips are secured with cut nails. It is assumed that the lattice fences were built similarly.

Nearly all of the fence around the service yard had been destroyed by 1903, based on figure 69. This photograph shows only a small portion of the fence remaining, near the west wall of the Clerical Department; it appears that it may have been moved there temporarily during the 1903 alterations to the house.

The lattice fence around the laundry yard was removed when the pool was installed in 1968 (figs. 70-71). However, when the pool and brick terrace were removed from the south side of the house in 1985-1986, the lattice fence around the laundry yard was rebuilt. The 1904 site plan was used to lay out the route of the fence, and historic photographs were used for its design. Figure 72 is a photograph of the rebuilt fence.

FIGURES FOR THE FENCES

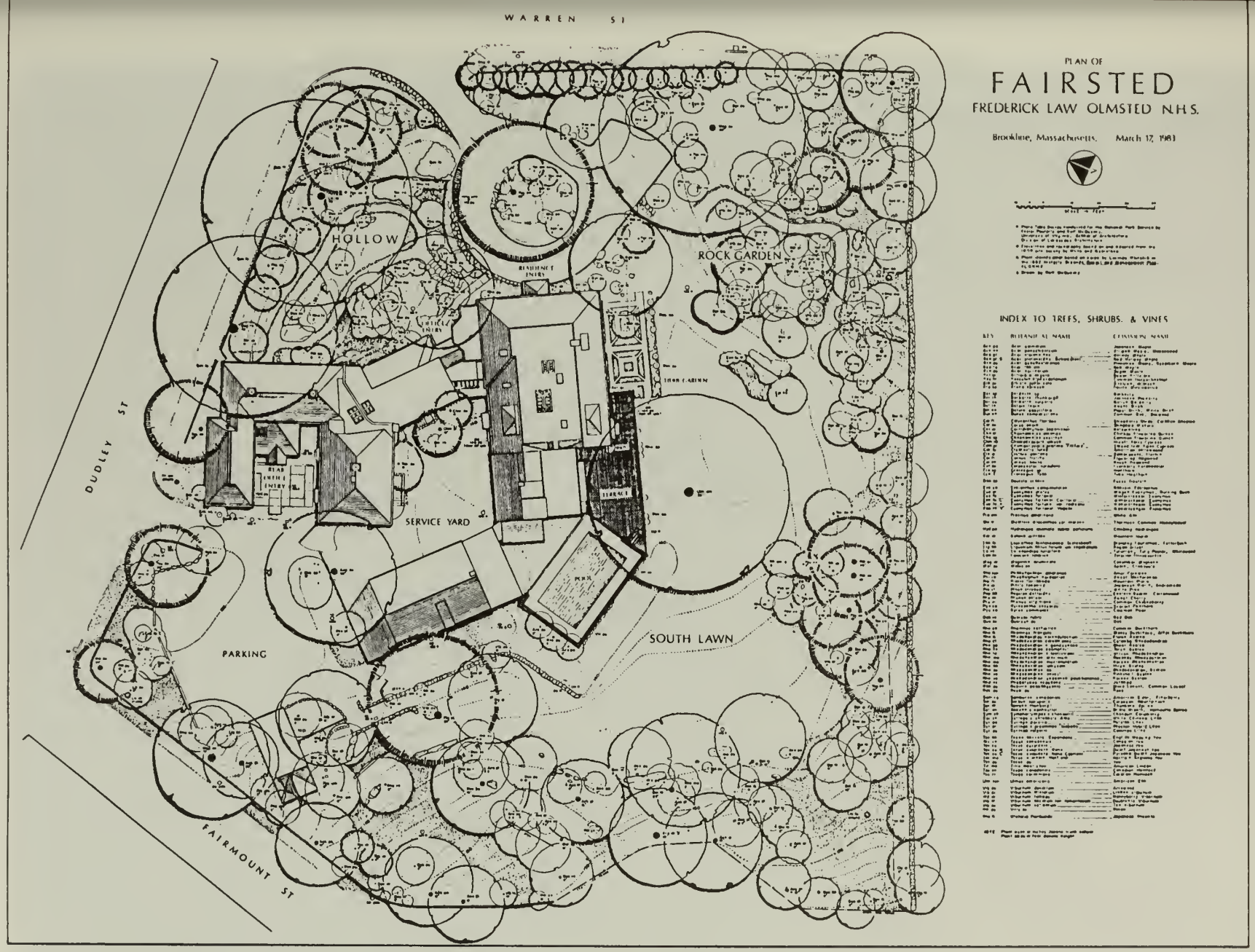


Figure 29. Site plan for the Olmsted property, 1982.

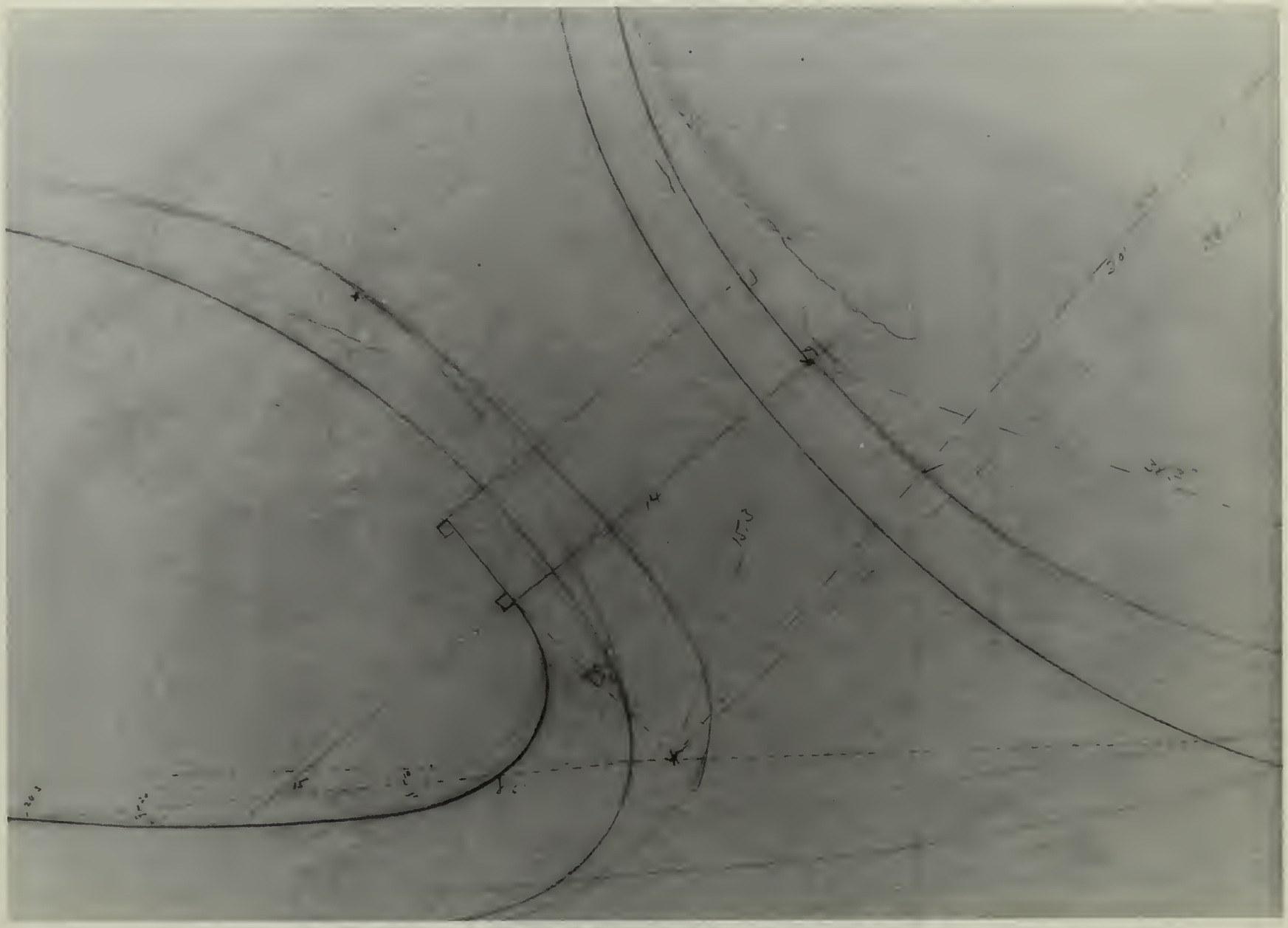


Figure 30. Spruce pole fence: site plan for front driveway arch, circa 1883.

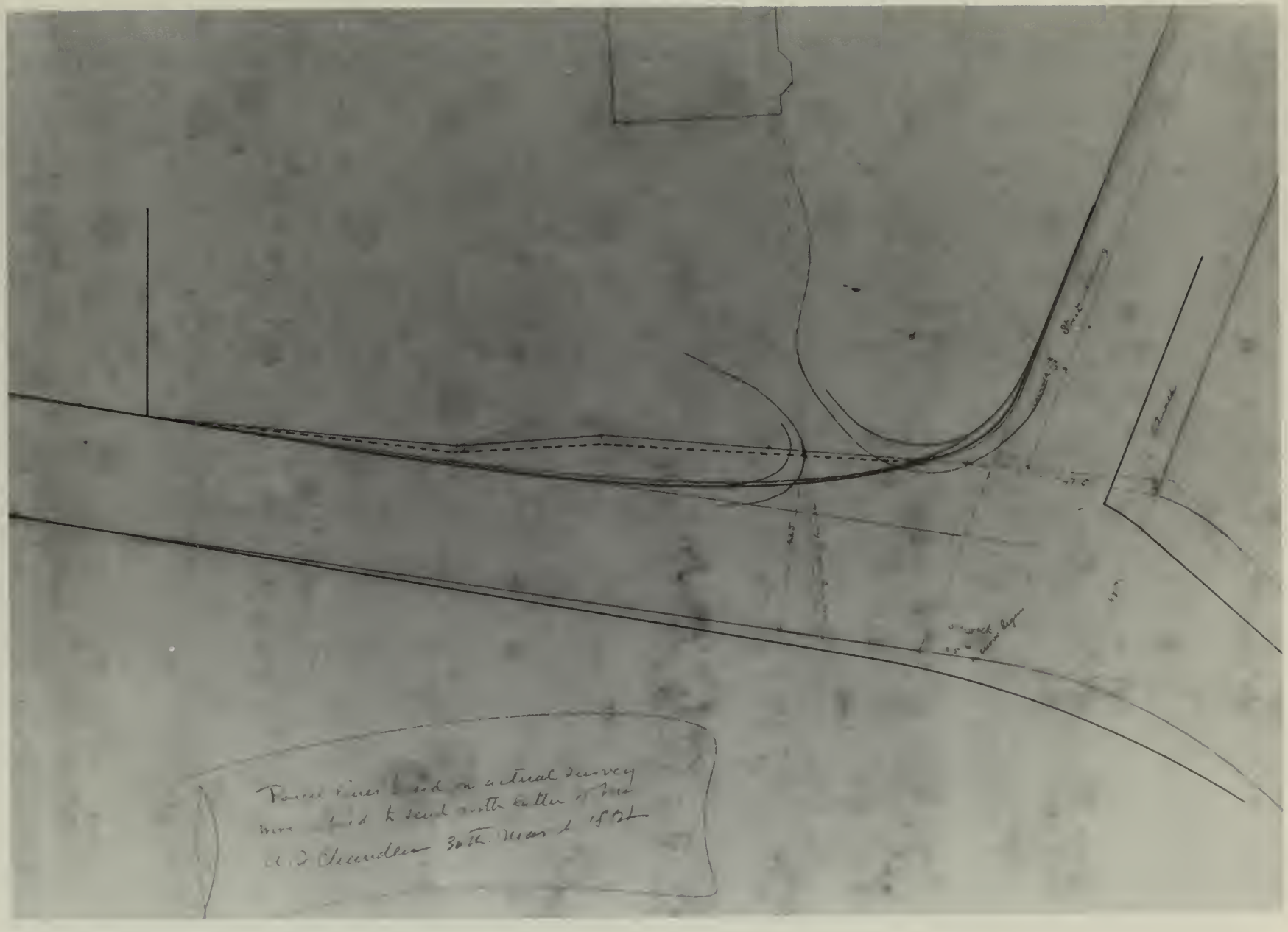


Figure 31. Spruce pole fence: site plan for front driveway arch, circa 1883.

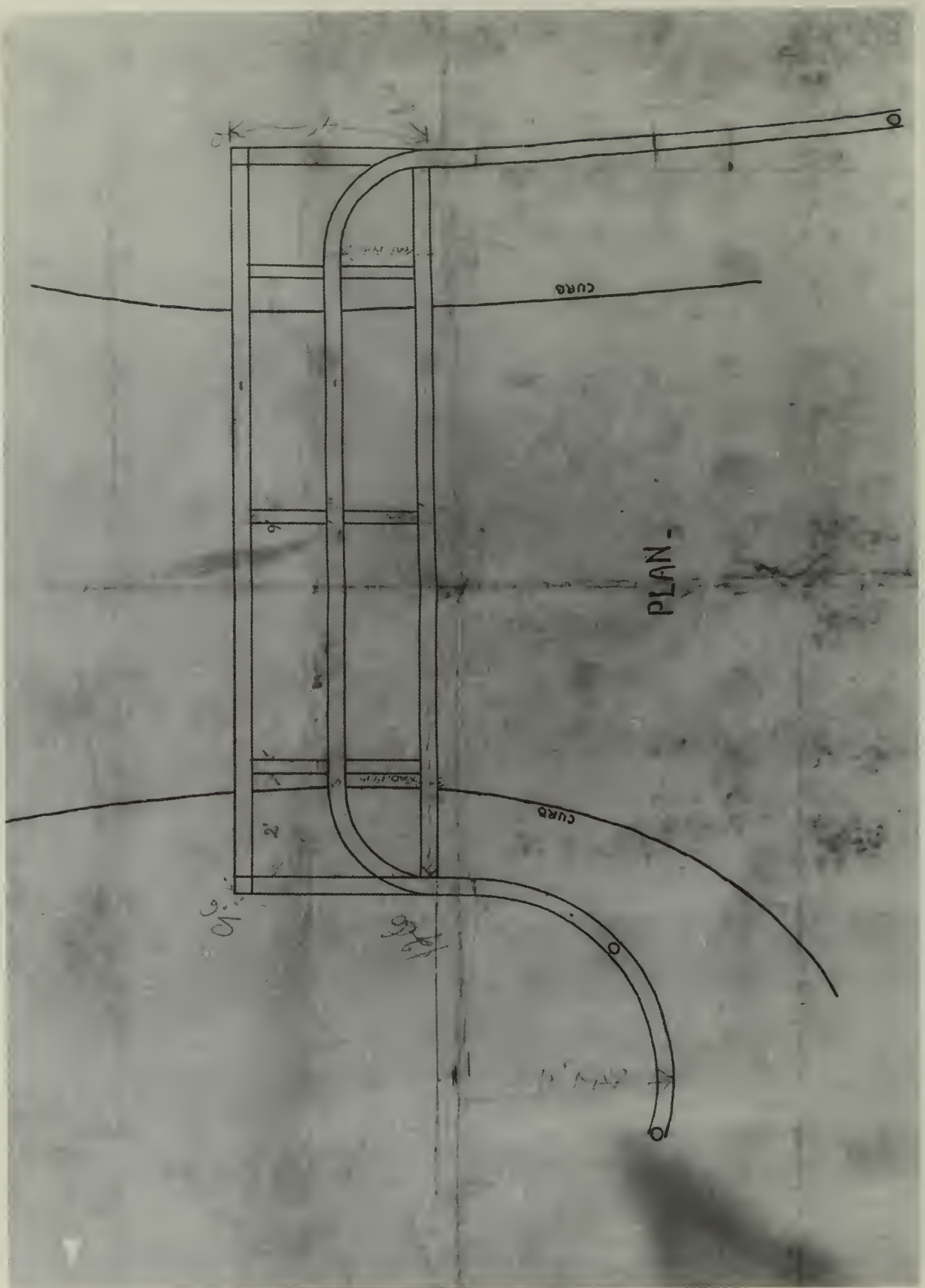


Figure 32. Spruce pole fence: plan of front driveway arch, circa 1883.

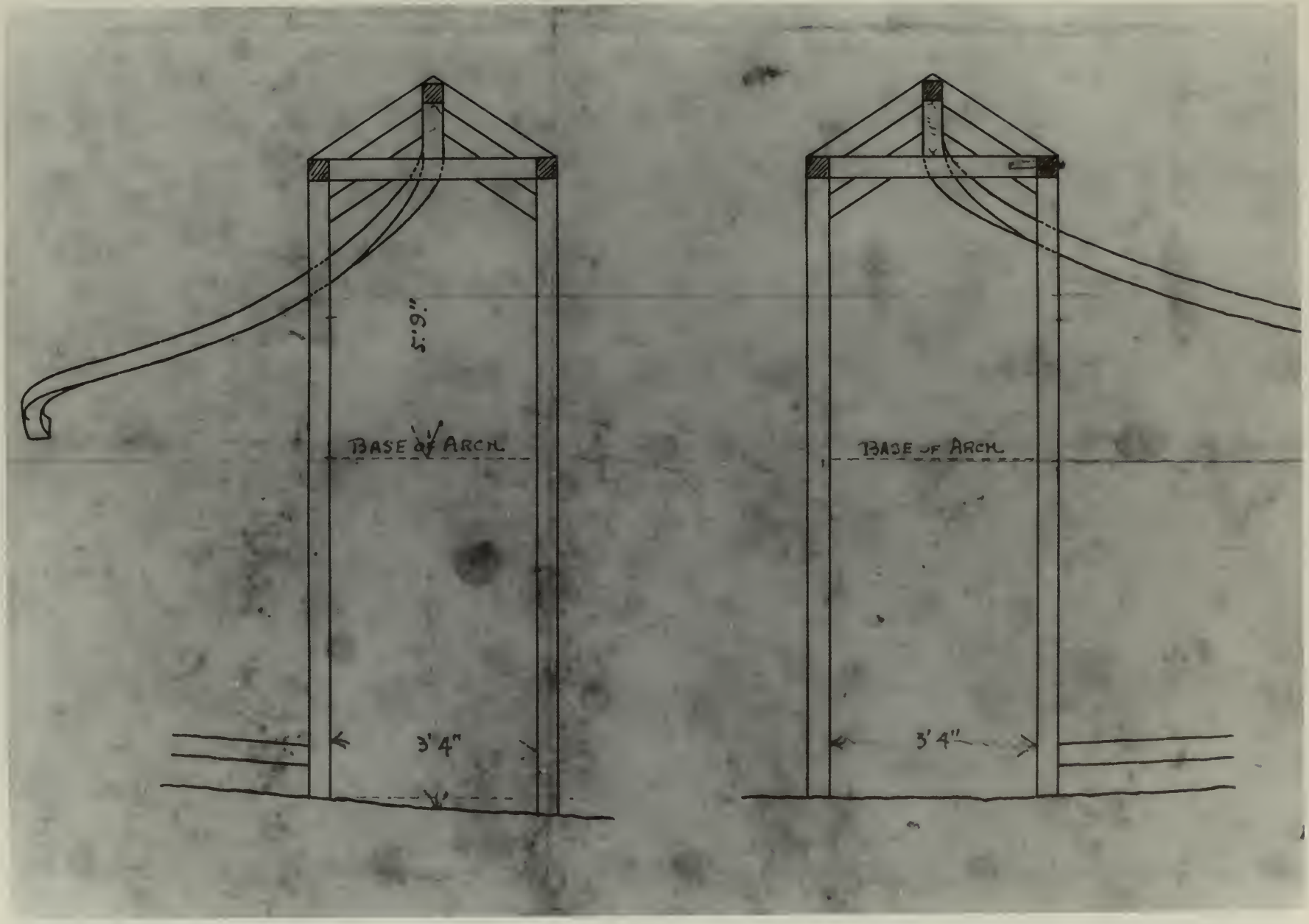


Figure 33. Spruce pole fence: elevation of front driveway arch, circa 1883.

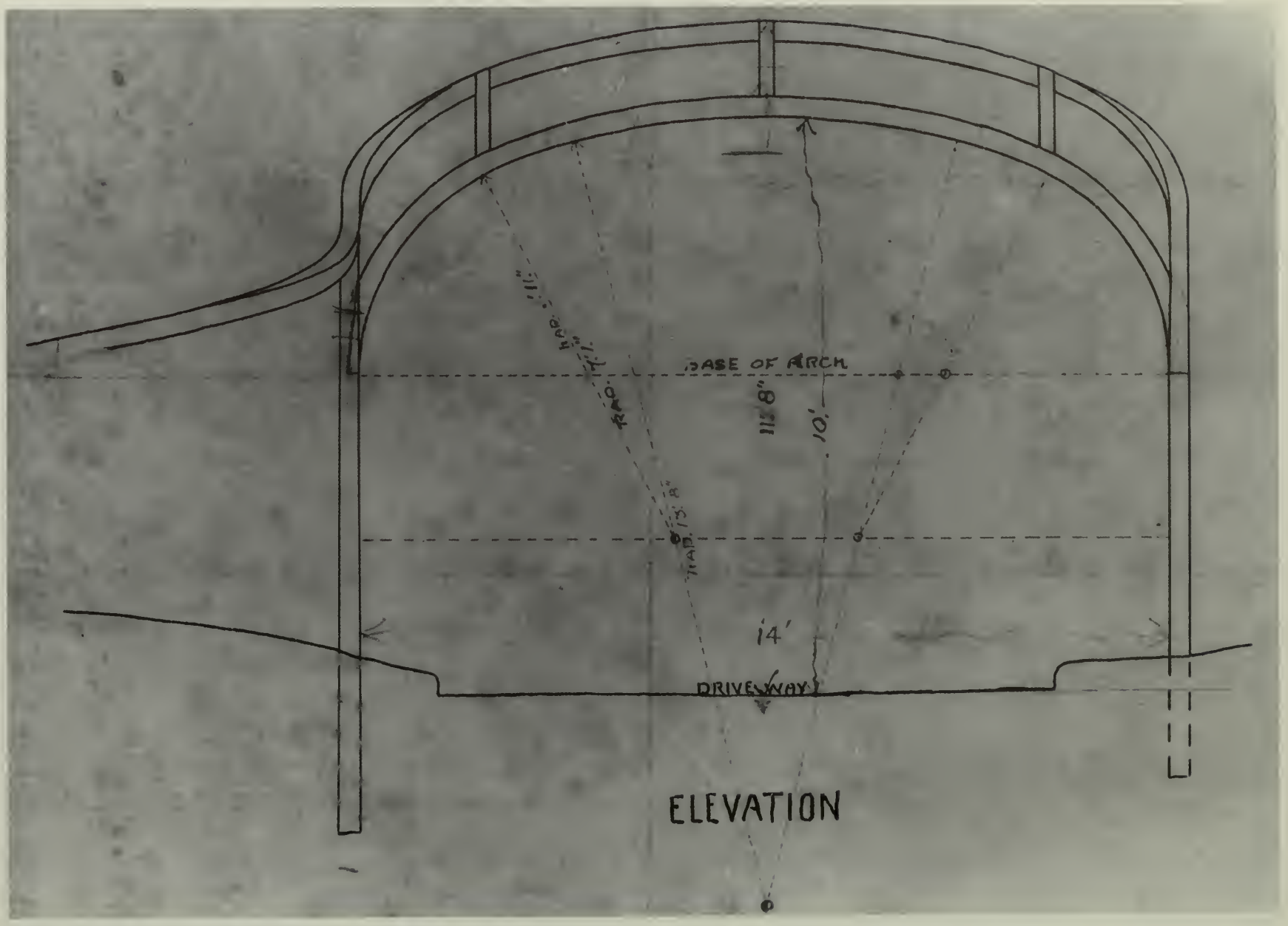


Figure 34. Spruce pole fence: elevation of front driveway arch, circa 1883.

Figure 35. Spruce pole fence: front driveway arch, February 1885.

Figure 36. Spruce pole fence: front driveway arch, Dudley Street curve, circa 1885.

Figure 37. Spruce pole fence: front driveway arch covered with euonymus, circa 1890.

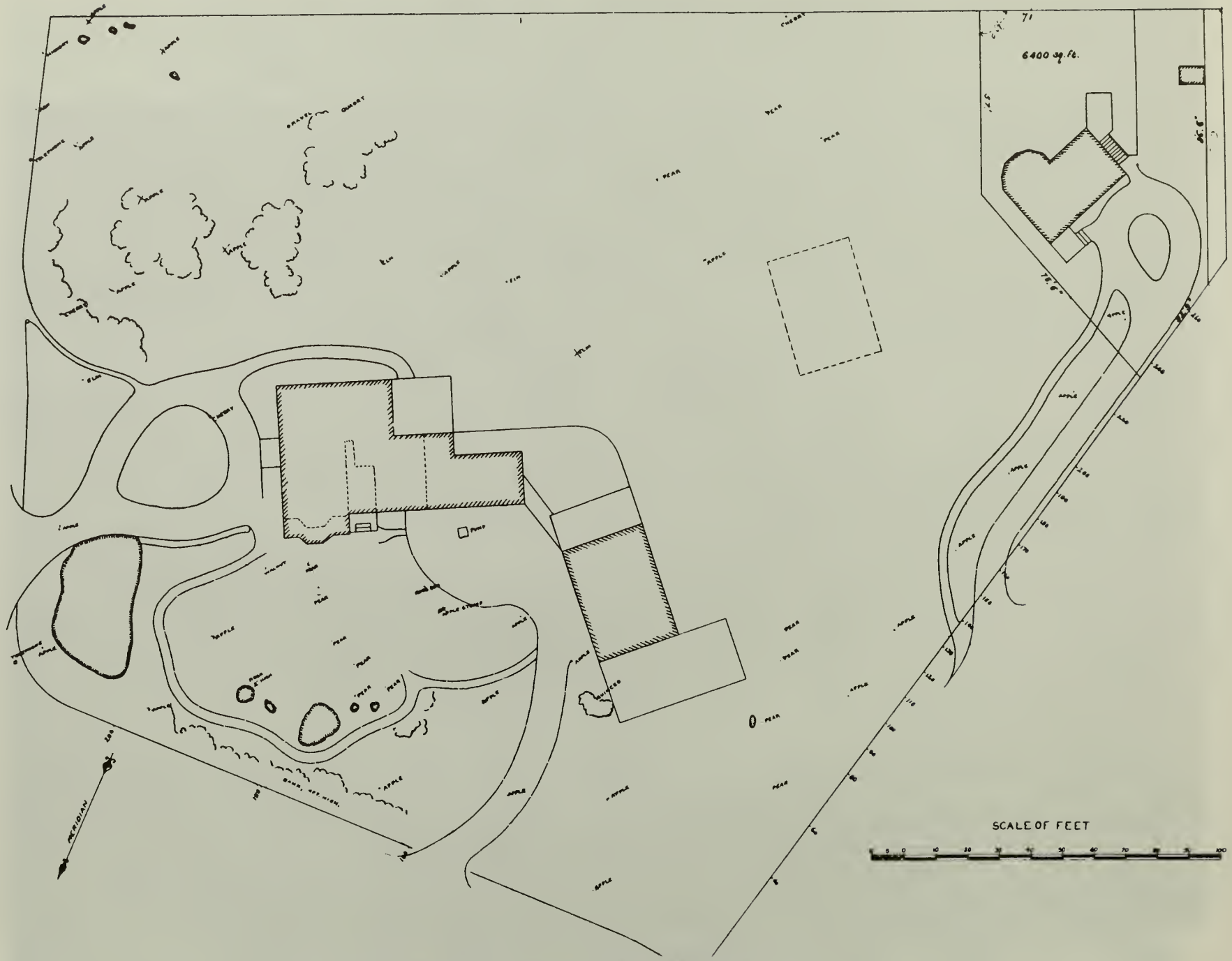


Figure 38. Site plan for the Olmsted property, 1887.

Figure 39. West elevation of the house, showing the site's fences, circa 1885.

Figure 40. Spruce pole fence along Dudley Street and back driveway, March 1885.

Figure 41. Spruce pole fence along back driveway, circa 1887.

Figure 42. Spruce pole fence, looking down back driveway, September 7, 1896.

Figure 43. Site plan for the Olmsted property, 1904.

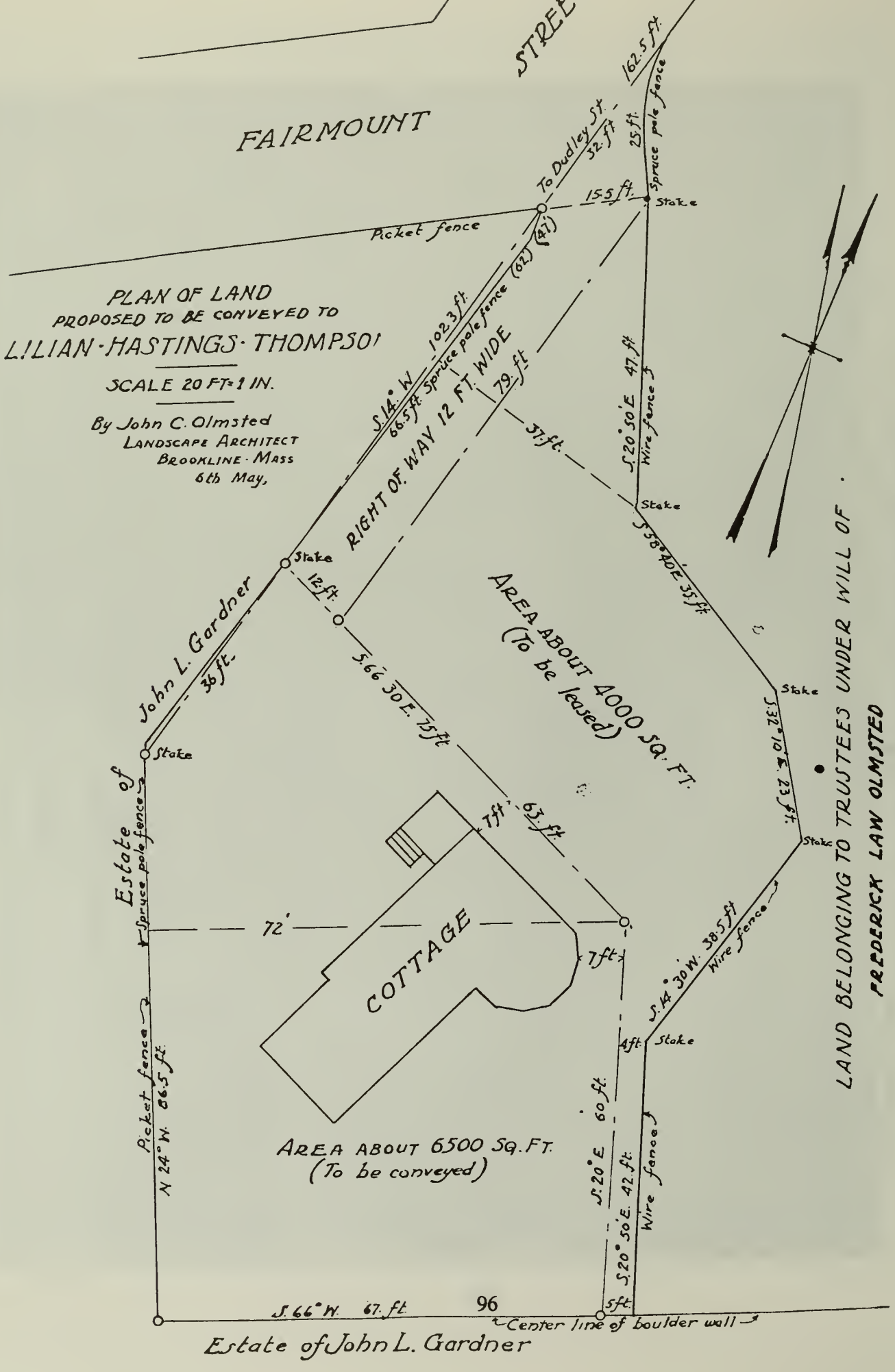


Figure 44. Site plan for the Olmsted property, May 6, 1915.

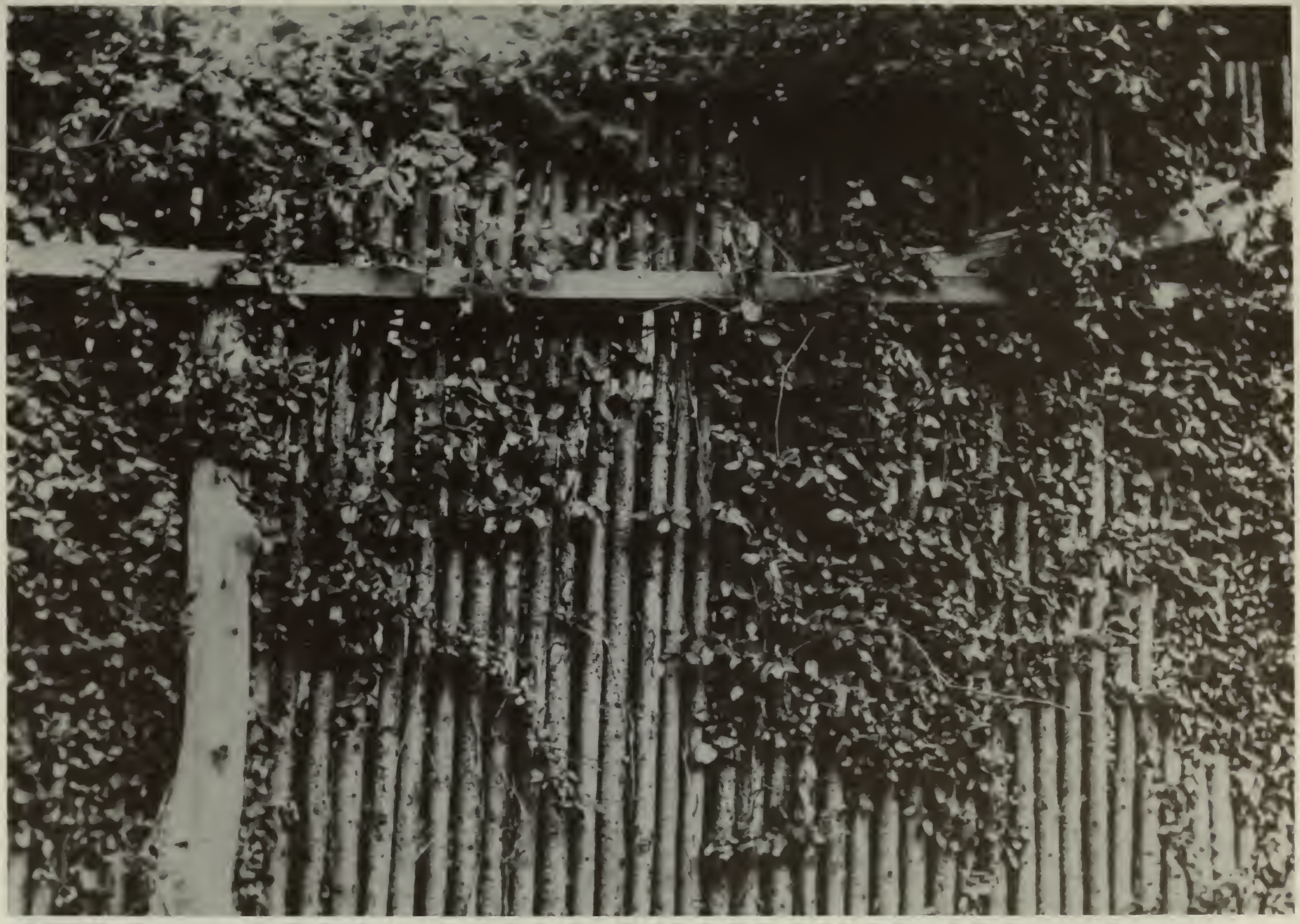


Figure 45. Spruce pole fence: post, rails and poles, circa 1930.

Figure 46. Spruce pole fence: back driveway, 1902-1912.

Figure 47. Spruce pole fence: gate at northeast corner of North Drafting Wing, circa 1930.

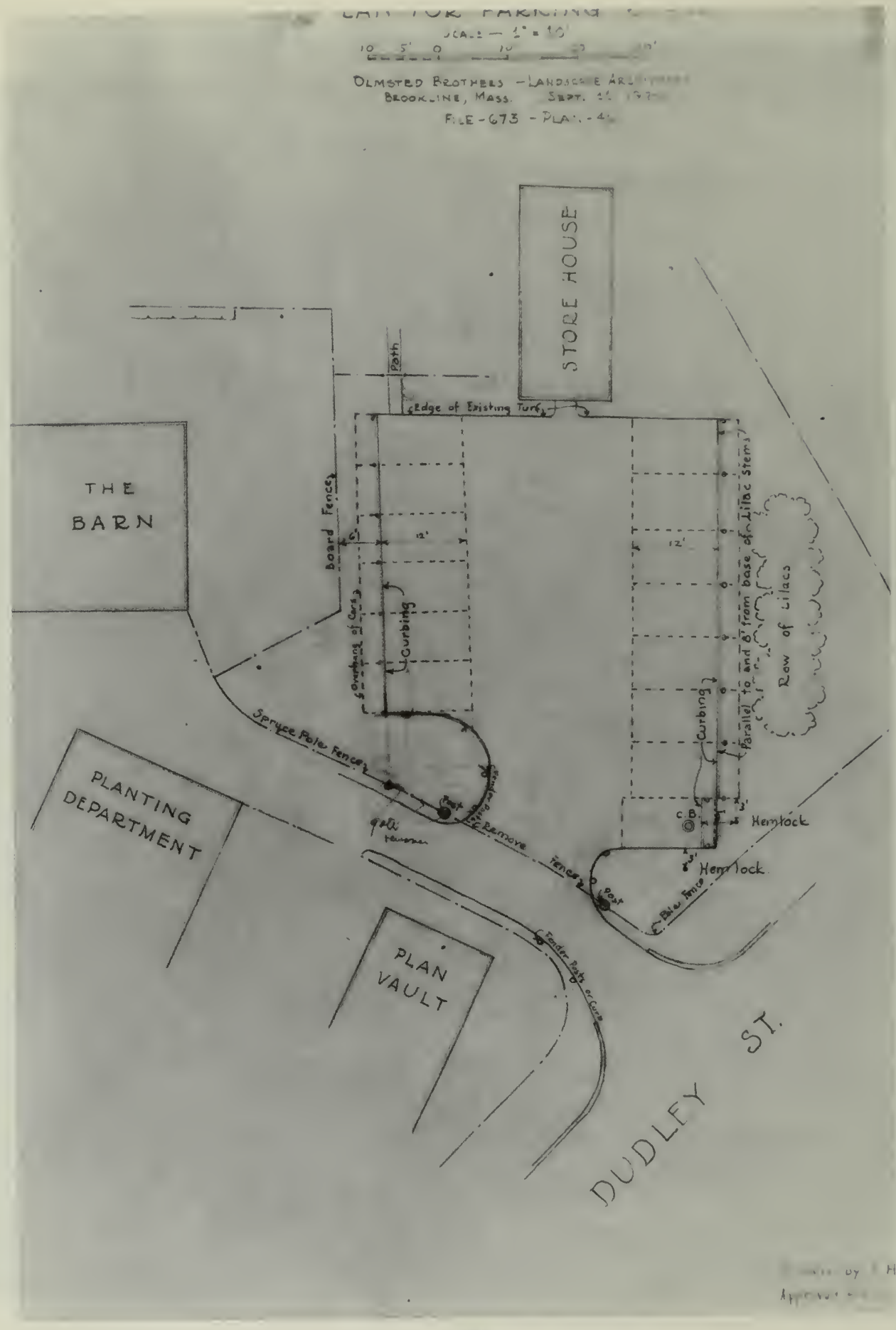


Figure 48. Site plan for the parking lot, showing surrounding fences, September 11, 1926.

Figure 49. Spruce pole fence, looking from Dudley Street into the back driveway and rear parking lot, circa 1935.

Figure 50. Spruce pole fence: front driveway arch, after rebuilding, circa 1930.

Figure 51. Spruce pole fence: front driveway arch, circa 1930.

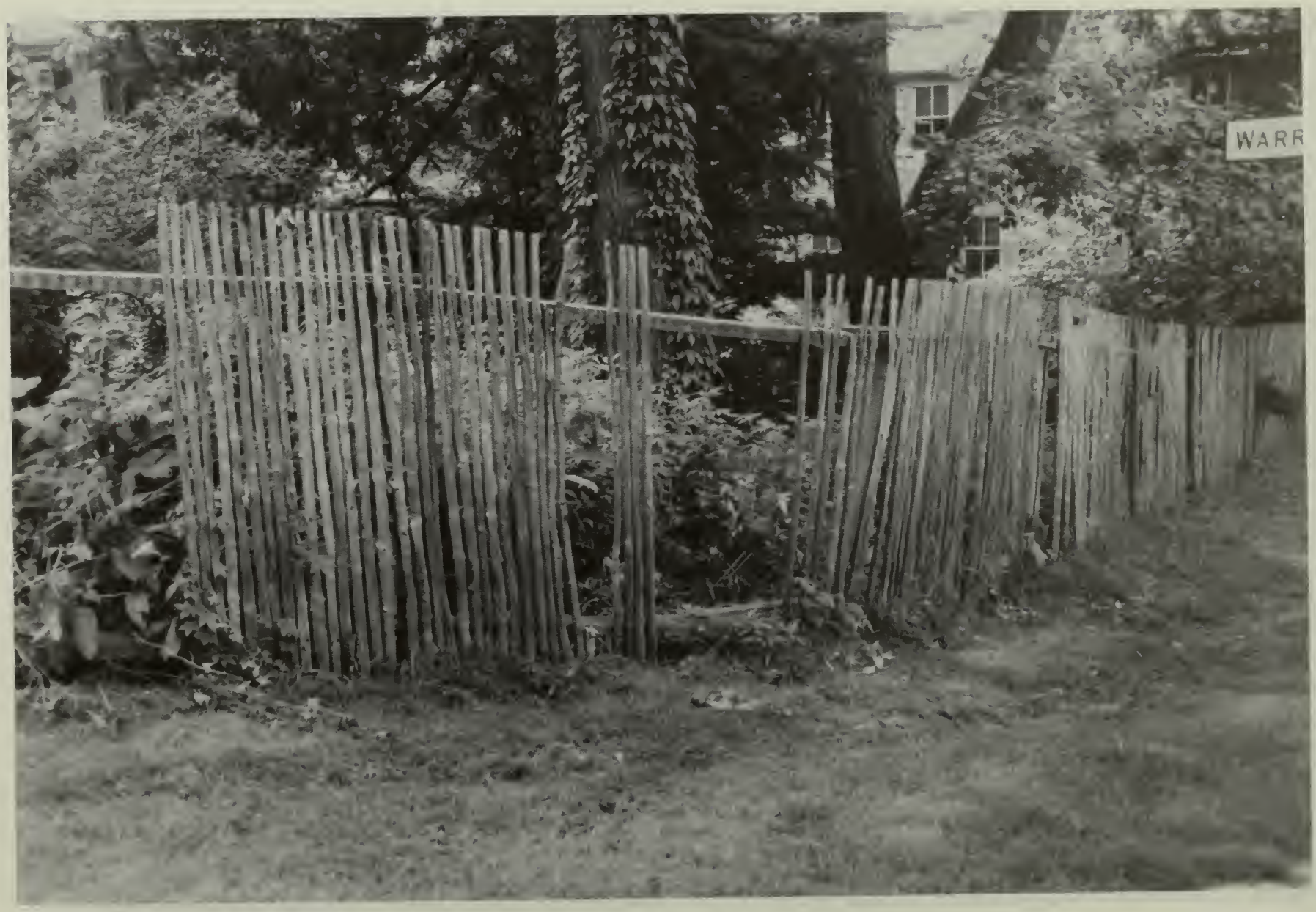


Figure 52. Spruce pole fence: dismantling of existing fence during the 1984 rebuilding.

Figure 53. Spruce pole fence: setting new fence posts during the 1984 rebuilding.

Figure 54. Spruce pole fence: reconstruction of the front driveway arch during the 1984 rebuilding.

Figure 55. Spruce pole fence: reconstruction of the front driveway arch during the 1984 rebuilding.

Figure 56. Spruce pole fence: front driveway arch completed during the 1984 rebuilding.

Figure 57. Stone wall, circa 1885.

Figure 58. Wire link fence, 1986.

Figure 59. Wire link fence, 1986.

Figure 60. Wire link fence at south side of shed, circa 1920.

Figure 61. Stockade board fence, circa 1986.

Figure 62. Corner of stockade board fence, circa 1986.

Figure 63. Stockade board fence: gate to wood yard, and spruce pole fence along back driveway, May 31, 1901.

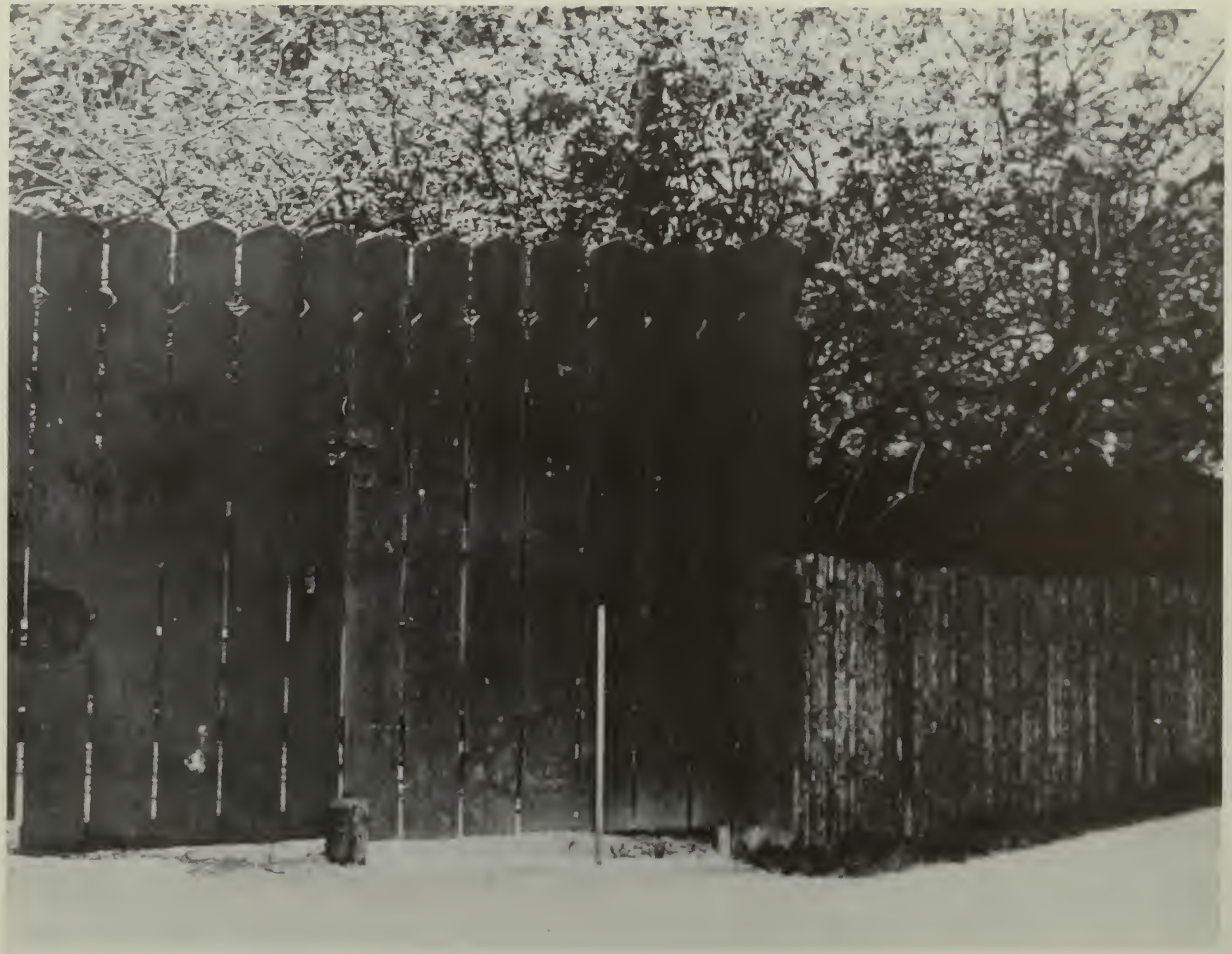


Figure 64. Stockade board fence: gate to wood yard, circa 1920.

Figure 65. Stockade board fence: detail of newel of section along west side of barn, circa 1930.

Figure 66. Lattice fence of service yard, circa 1885.

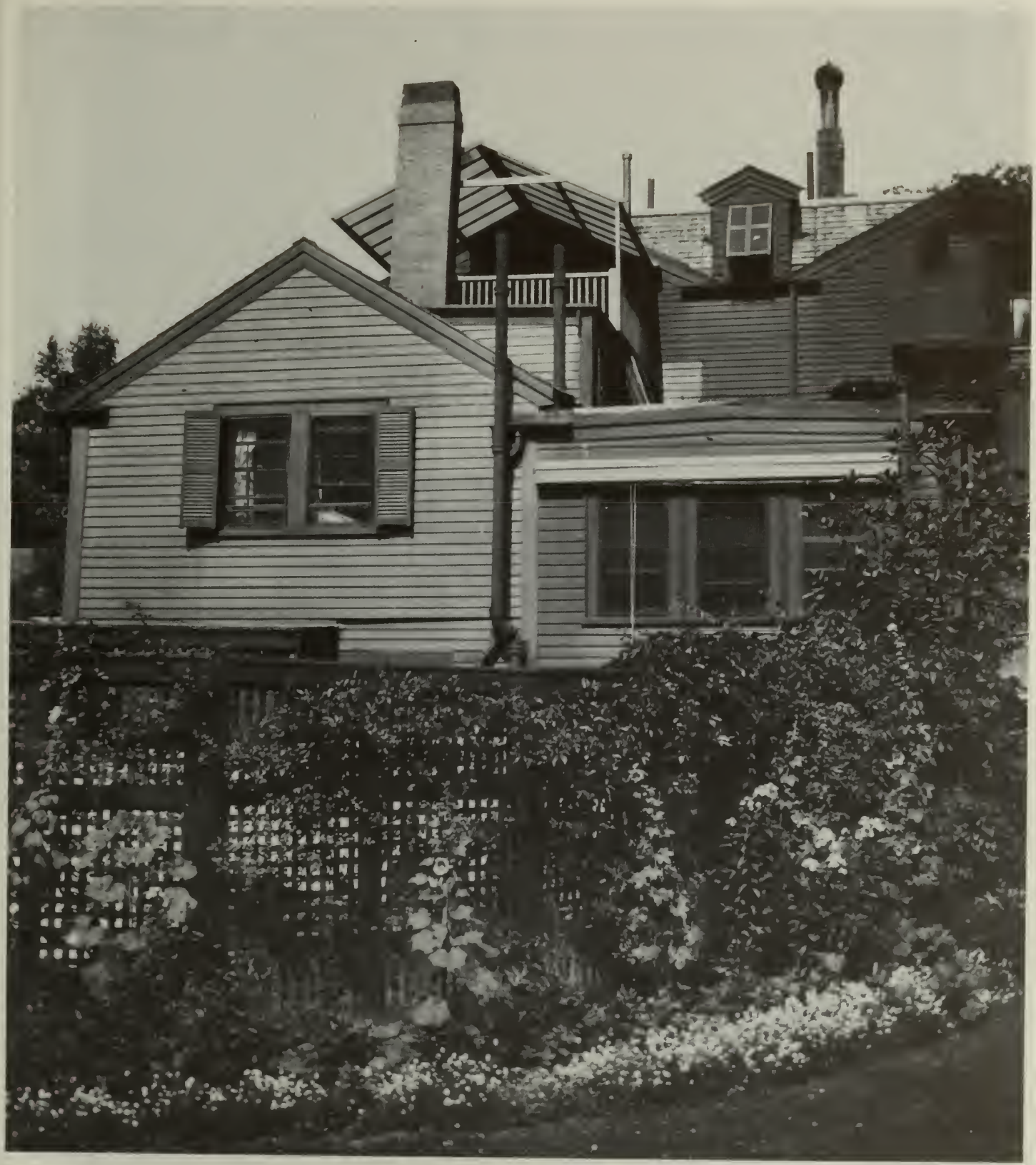


Figure 67. Lattice fence around laundry yard, 1910.

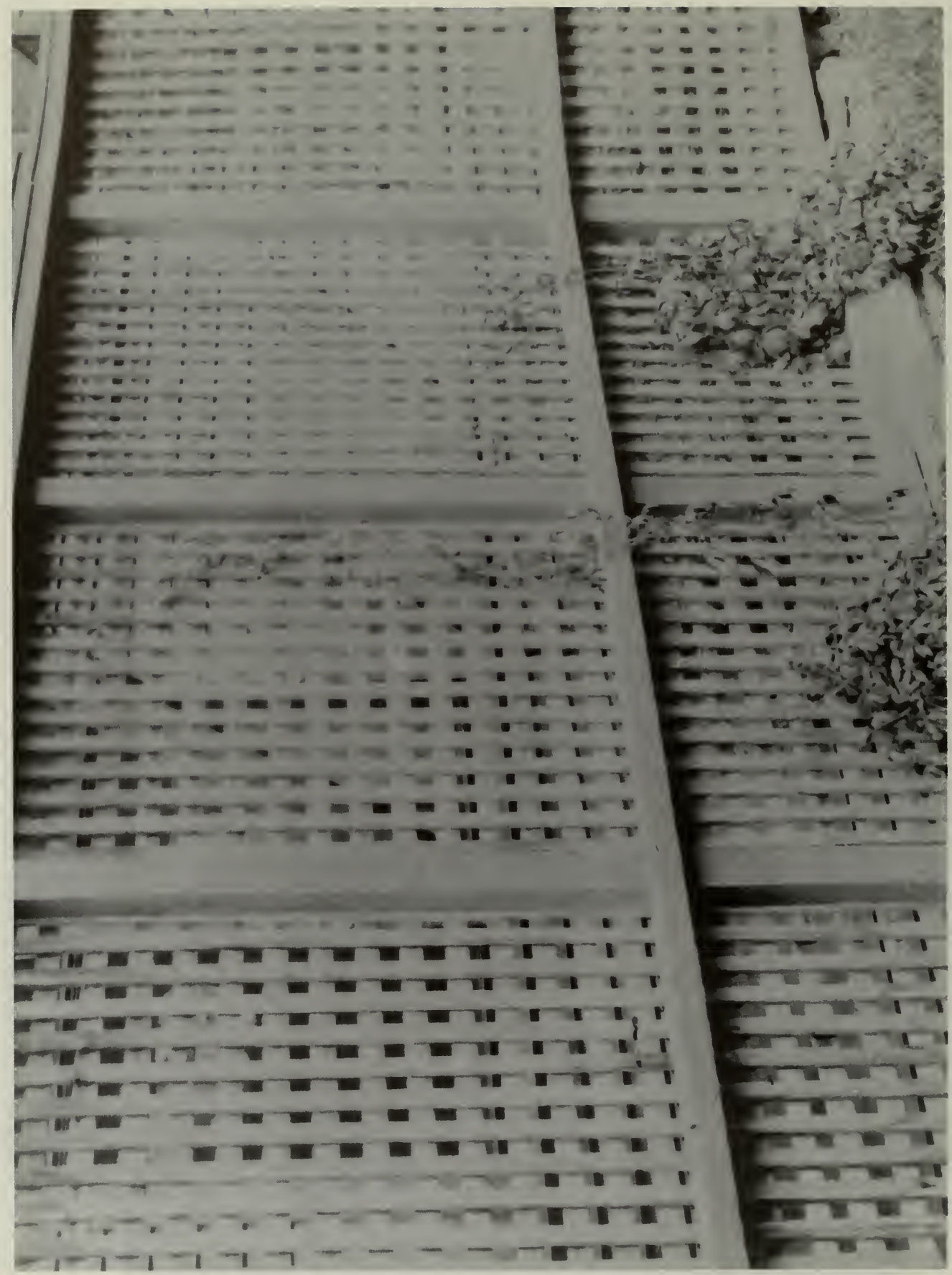


Figure 68. Lattice fence along the basement areaway of the Planting Department, May 31, 1901.

Figure 69. View of north elevation of the house, circa 1903, showing the lattice fence removed from the service yard.

Figure 70. Lattice fence of laundry yard during construction of the pool, circa 1968.

Figure 71. Lattice fence of laundry yard during construction of the pool, circa 1968.

Figure 72. Lattice fence of laundry yard, after reconstruction in 1986.

BARN AND SHED: APPENDICES

APPENDIX A.

Exterior Finishes Analysis

BARN FINISHES

Historic Finishes

The historic exterior paint scheme for the barn, based on the paint analysis conducted for this report, is:

Wall shingles	dark red	Munsell 7.5R 3/4
Trim	dark green	Munsell 2.5BG 3/2

The following sections are summaries of the information obtained during the analysis.

Finishes for the Main Barn

Paint Sample Number	Location	Paint Sequence
East Elevation:		
FRLA 03 P010	double doorway - door	white, green
FRLA 03 P008	double doorway - casing	white, green
FRLA 03 P009	north doorway - casing	dark green dark green brown/brown gray brown dark green
FRLA 03 P011	north doorway - door	dark red dark green dark green dark green dark green gray/green gray/dark green
FRLA 03 P012	south doorway - door	same sequence as north door

FRLA 03 P001	northeast corner board	5 reds 2 grays brown (corner board not painted last time barn painted)
FRLA 03 P002	clapboards - south of double doorway	same as P001

South Elevation:

FRLA 03 P014	clapboards - original south wall (north wall of carpentry shop since circa 1885)	white white white red

West Elevation:

FRLA 03 P015	shingles (cut nails, however; second shingling)	red red gray brown
FRLA 03 P003	first-story door	dark green dark green gray green
FRLA 03 P007	second-story door	tan dark green dark green dark green dark green red red red dark green dark green gray brown

North Elevation:

FRLA 03 P016	cornice board	tan red dark green red dark green red dark green dark green gray gray brown green
FRLA 03 P017	clapboards (below shed roof)	white/red/red
FRLA 03 P018	corner board	white/red/red
FRLA 03 P019	water-table board	red/red (paint on sample significantly deteriorated; sample may have originally had early white paint)
FRLA 03 P020	window casing	red/green

Finishes for the Carpentry Shop

Paint Sample Number	Location	Paint Sequence
East Elevation:		
FRLA 03 P021	door	rose/red (this door reused from the house's former North Entry)
South Elevation:		
FRLA 03 P023	door	white green green green white
FRLA 03 P024	clapboards	red red gray brown green
North Wall:		
FRLA 03 P022	door into main barn	cream white white green gray

SHED FINISHES

Fourteen paint samples were removed from the exterior of the shed to help comparatively date exterior building fabric, and to document the correct restoration colors. There is no paint on the interior of the shed. Only the foundation walls are whitewashed.

Paint samples taken from the exterior of the shed reveal that it was unpainted for a number of years. Prior to its repainting in 1983, most of the shed had only been painted twice. No paint was found on the vertical cladding boards under the north window casing installed circa 1905. In addition, photographs taken of the shed before 1926 (figs. 26-27) indicate that it appears to have been unpainted.

The year that the shed was first painted is unknown. Both of the early layers of paint on the shed are lead-based paints; because the paint used on the circa-1953 repairs was a latex paint, it is assumed that the lead-based layers were applied prior to that date.

The first paint scheme for the shed was dark red sheathing boards with dark green trim; the second paint scheme was brown sheathing boards with dark green trim.

The underside of the cross-gable overhang, and the casing of the garage doorway, appear to have been an exception to this paint scheme. This circa-1905 architectural fabric contains five, rather than two, layers of paint (FRLA 04 P005, P013). The layering sequence on this building fabric is: gray, dark green, red, dark green, and dark green. These samples suggest that these elements were painted in the years before the entire building was painted.

The paint samples from the shed (FRLA 04 P001-P014) are on file at the Building Conservation Branch of the Cultural Resources Center, Lowell, MA.

APPENDIX B.

Molding Profiles

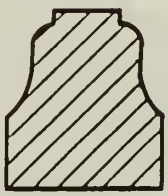
Molding profiles taken by Andrea Gilmore;
final drawings by Jana Gross.

BARN MOLDING PROFILES

DOOR PANEL MOLDING
Rear Barn Door

CARPENTRY SHOP DOOR PANEL MOLDING; main Barn side, Carpentry Shop side; 4 plain recessed panels

MAIN BARN - WEST WALL window south of center door

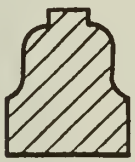


MAIN BARN - WEST WALL, window south of center door

MAIN BARN - EAST WINDOW, north side center door

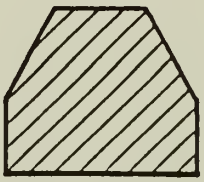
MAIN BARN EAST WINDOW, south side Barn door

CARPENTRY SHOP MOLDING PROFILES

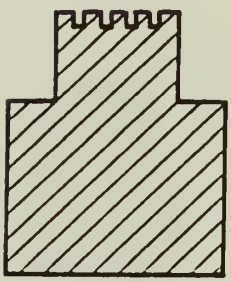


SOUTH WINDOW MUNTIN

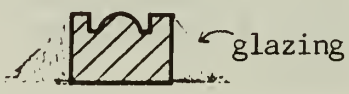
SOUTH WINDOW MUNTINS



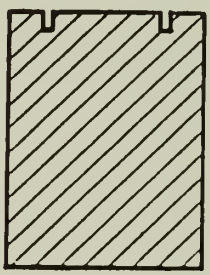
WEST WINDOW - north hinged portion



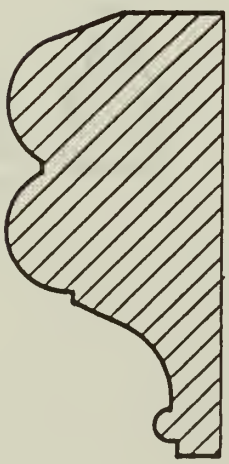
WEST WINDOW - south portion



EAST DOOR, exterior muntin; same muntin on west Carpentry Shop window



EAST DOOR - interior muntin



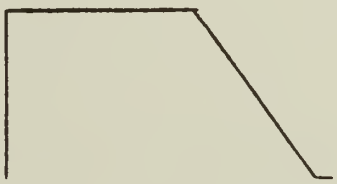
EAST DOOR - exterior molding where two halves of door meet

EAST DOOR - interior panel molding

SHED MOLDING PROFILES

A.

Exterior -
Gable Cornice
Trim



B.

Exterior -
Drip Molding Around
Garage Door Opening

C.

Interior -
Window Muntin

D.

Interior -
Door Panel Molding

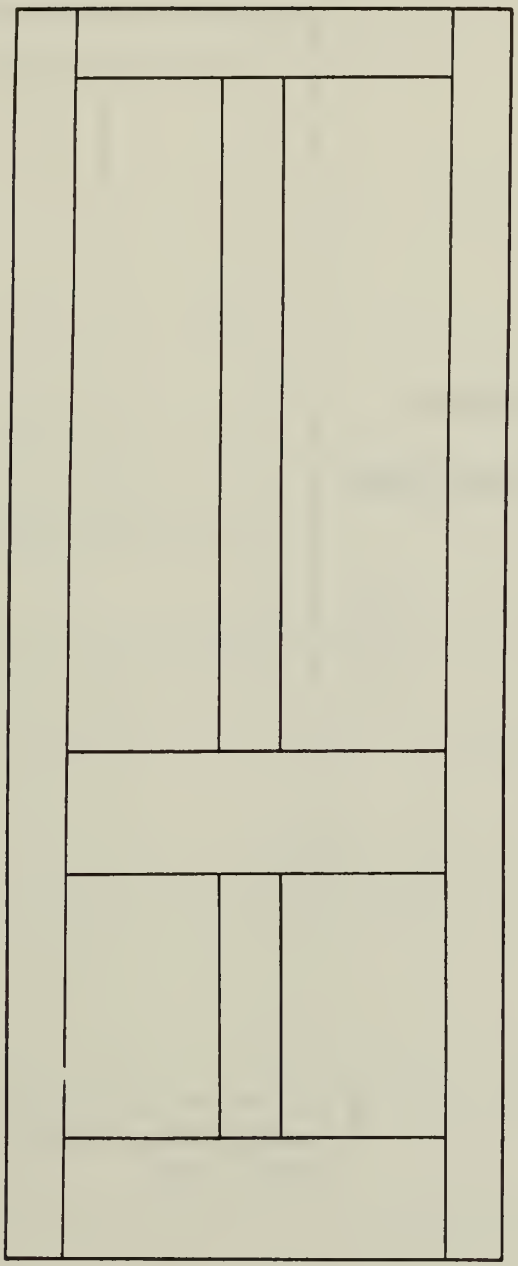
APPENDIX C.

Barn Doors

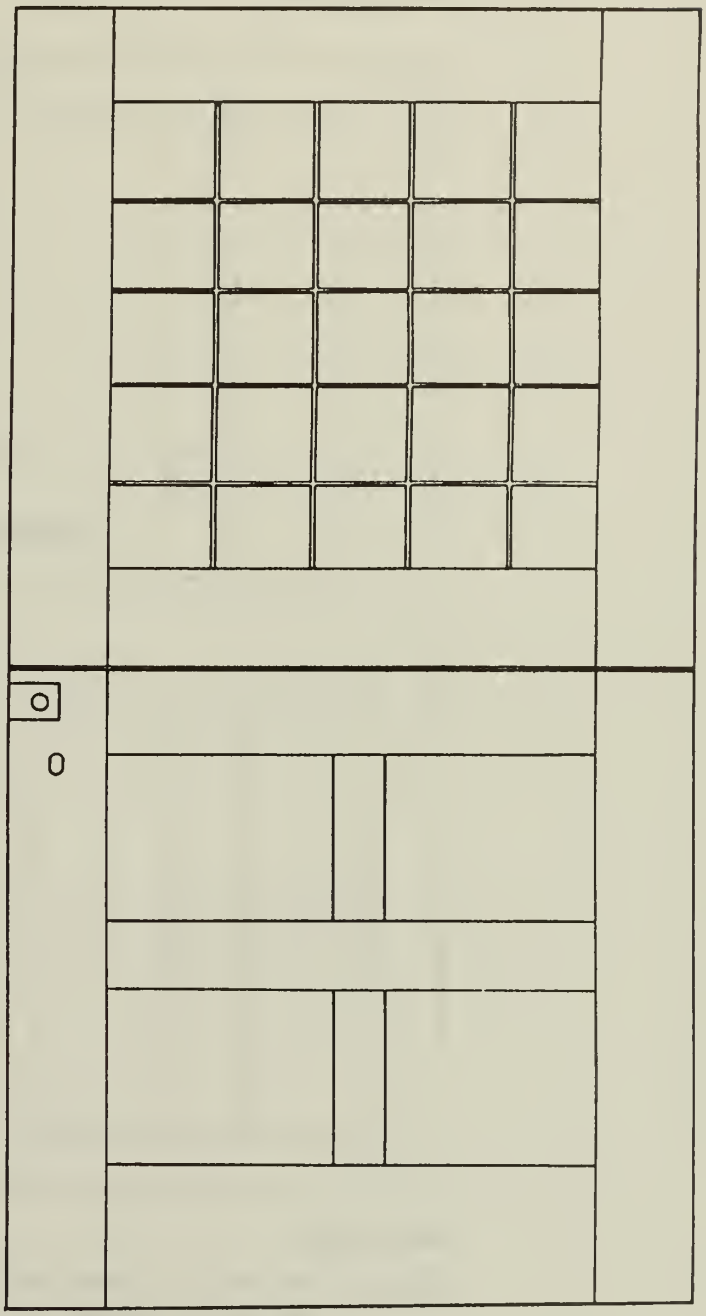
Drawn by Andrea Gilmore;
final drawings by Jana Gross.

CARPENTRY SHOP DOORS

ELEVATIONS



-SOUTH DOOR
2'-6 1/2" X 6'-6"

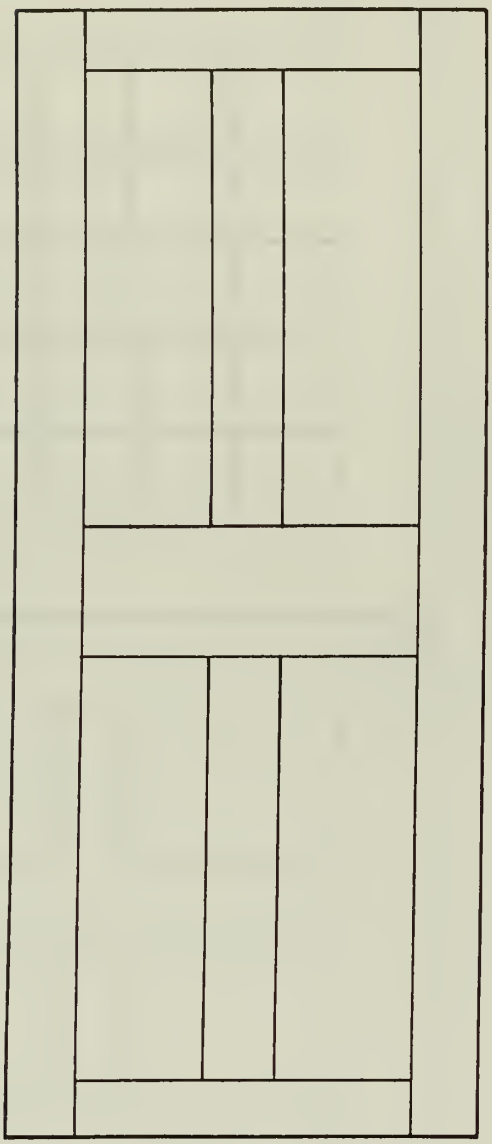


-EAST DOOR
3'-6" X 6'-8"

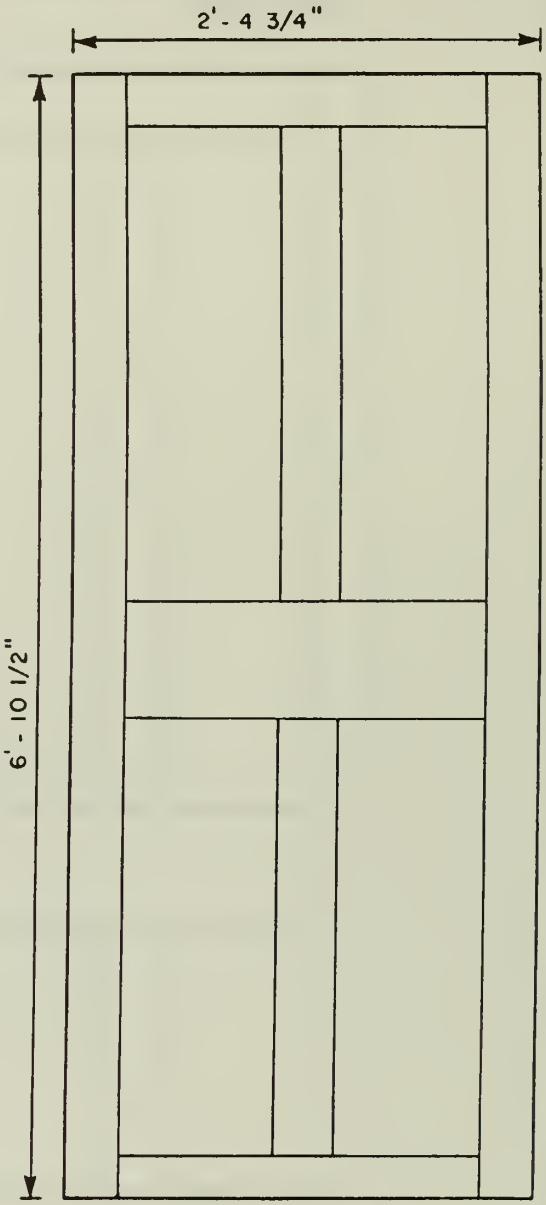
RE-USED DOOR from North Entry of the House

CARPENTRY SHOP DOORS

ELEVATIONS

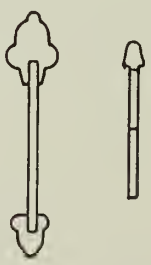


SOUTH SIDE



NORTH SIDE

NOTES:1)Evidence of two sets of earlier HL higes on the north side of door.
2)Currently has a thumb latch.
3)First finish of door appears to have been graining.
4)Door is located between the shop and barn.



-Two Butt with Pineapple top

APPENDIX D.

Shed Mortar Analysis

Introduction

Thirteen mortar samples from the shed were analyzed for the preparation of this report. Sample locations were selected to help identify original (circa 1885) foundation walls, and later alterations, particularly those from circa 1905. The samples analyzed fell into three groups. All mortar samples and data sheets for the shed are on file at the Building Conservation Branch of the Cultural Resources Center, Lowell, MA.

Group I

Group I include samples taken from the original foundation walls. Their sample numbers and provenances are as follows:

FRLA 04 M001 - North wall, interior surface, outside root cellar doorway
FRLA 04 M002 - North wall, exterior surface
FRLA 04 M009 - South wall, exterior surface
FRLA 04 M011 - Outer wall of root cellar

These samples are natural-cement mortars, mixed to the ratio of 2 parts sand to 1 part natural cement. The sand used for this mortar is relatively coarse and contains a distinguishing amber grain.

Group II

The second group of samples was taken from around the root cellar doorway. They do not match the original mortar used to construct this wall. However, they are natural-cement mortars, which indicates that this doorway was an early addition to the root cellar. The sample numbers and locations are:

FRLA 04 M003 - Inner root cellar wall, below the top of the doorway
FRLA 04 M004 - Brick around the root cellar doorway
FRLA 04 M007 - Area above root cellar doorways

These mortars are mixed to a ratio of 1 part sand to 1 part natural cement. The sand is gray/brown in color and quite fine, although there are random larger grains.

Group III

The third group of mortars came from the circa-1905 alterations to the shed. At this time, the first-floor joists at the west end of the shed were replaced. The numbers and provenances of these samples are as follows:

FRLA 04 M005 - Root cellar, north wall, west corner, top of inner wall
FRLA 04 M006 - Root cellar, north wall, mortar between joists
FRLA 04 M008 - Inner wall of root cellar (east wall)[16]
FRLA 04 M010 - Same as M008
FRLA 04 M012 - Root cellar floor

These samples are portland-cement mortars, mixed to a ratio of 3 parts portland cement to 4 parts sand. The sand used for this mortar is relatively coarse and gray.

Miscellaneous

Mortar sample FRLA 04 M013, taken from the garage doorway ramp, does not fit into any of the categories identified above. As stated in the report, the building of this ramp occurred after circa 1905, and this mortar sample substantiates that statement. It is a portland-cement mortar, mixed to a ratio of 1 part lime, 2 parts portland cement, and 5 parts sand. The sand used for this mortar is gray.

[16] The mortar of the east wall appears to have been replaced completely.

II. PRESERVATION/RESTORATION RECOMMENDATIONS FOR THE ENTIRE SITE

PRESENT CONDITION OF THE SITE

The Olmsted site underwent a great deal of restoration in the 1980's. As stated previously, the barn and shed were restored early in the decade, because they provided the workshop and storage space needed for the restoration of the house and offices. Their asphalt-shingle roofs were replaced later, in 1985-1986. The main preservation requirement for them should be only routine maintenance for the next 5 to 10 years.

The restoration of the house and offices was accomplished according to a 4-year program established in 1985.[1] Year I was the first phase of the house restoration, when exterior work was performed. Year II was the first phase of the office-complex restoration, which consisted of exterior work for those structures. Year III was the second phase of the office-complex restoration, when the interior work was performed on the various office structures. Year IV was the second phase of the house restoration, which also consisted of interior work. Each year's work was to require a five- to six-person restoration crew and funding of $150,000 to $200,000. The full 4-year program is presented below. Changes to the program are noted in brackets and italic type. Further information can be found in the completion reports for the various projects, and in the Frederick Law Olmsted slide library, a cultural resource record that documents work performed from 1979 to 1992.

Year I: House, Phase 1 - Exterior Restoration

All necessary structural work
Removal of bay window, doorway in south wall of kitchen, and the restoration of the wall
Repointing of the foundation
Repair and replacement of rotted clapboards and wood trim
Repair of windows (frames, sashes, and blinds)
Repair and replacement of rotted gutters, fascia boards, and downspouts
Painting of all exterior fabric (clapboards, trim, windows, blinds, doors, gutters, etc.)
Repair and hanging of historic storm windows on all of the first story, and on the east and south sides of the second story
Installation of heat cables at the edges of the roofs

Year II: Offices, Phase 1 - Exterior Restoration

All necessary structural repairs
Repointing of the foundation
Repair and replacement of rotted clapboards and wood trim
Repair of windows (frames, sashes, and blinds) not finished in Year I
Repair and replacement of rotted gutters, fascia boards, and downspouts

[1] The program was laid out in a memorandum from Andrea M. Gilmore, architectural conservator with the North Atlantic Historic Preservation Center, to E. Blaine Cliver, Chief of Historic Preservation for the North Atlantic Region of National Park Service, dated May 1, 1985.

Painting of all exterior fabric (clapboards, trim, windows, blinds, doors, gutters, etc.)
Repair and hanging of historic storm windows on the first story of all office structures, and on all stories of the Planting Department
Installation of heat cables at the edges of the roofs

Year III: Offices, Phase 2 - Interior Restoration

Stripping of nonhistoric paint from first floor of Clerical Department and North Drafting Wing. *[The first story of Clerical Department was repainted instead.]*
Restoration, cleaning, and painting of historic finishes
Minor carpentry repairs
Refinishing of wood floors
Installation of interior storm windows
Insulation of all interior crawl spaces and roofs, where possible. *[This was not done.]*

Note: The renovation of the Plans Vault was done under separate contract in 1988-1990.

Year IV: House, Phase 2 - Interior Restoration

Completion of the refurbishing of interior rooms (plaster patching and painting). *[This has not been completed; the park last worked on the interior in 1983-1984.]*
Refinishing of wood floors or installation of carpeting. *[Wood floors were not refinished; carpeting was installed by the park.]*
Installation of interior storm windows
Installation of insulation under the attic floor and in the crawl spaces. *[This was not done.]*

Details of the restoration work are provided in a completion report entitled *Restoration of Fairsted House and Offices*, prepared by Cultural Resources Center Exhibit Specialist Robert Fox in April 1990.[2]

Other Work

Exterior painting was completed on all buildings in 1988. Siding or body color is dark red and trim is dark green. Details are provided in another completion report, entitled *Exterior Painting of Various Buildings and Structures* and prepared in 1988.[3]

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[2] Robert Fox, *Restoration of Fairsted House and Offices: Completion Report* (Lowell, MA: Cultural Resources Center, North Atlantic Region, National Park Service, April 1990).

[3] *Completion Report: Contract No. CX 1600-8-0017, NARO - Exterior Painting of Various Buildings and Structures* (Boston: North Atlantic Historic Preservation Center, North Atlantic Region, National Park Service, 1988).

IMPACT OF USE ON INTEGRITY OF STRUCTURES

No major structural changes have been made to, or are planned for, the house. The most significant changes were accomplished in 1986, when the kitchen's bay window and the pool were removed. Both of these were nonhistoric features; the impact of their removal had no adverse effect. Indeed, the effect was beneficial, in that these changes restored the house closer to its historic appearance. Minor changes were made in certain rooms not open to visitors. These changes were restricted to adding equipment and furnishings for staff office use, such as lighting, computers, and carpeting. A paper-conservation laboratory was created out of a former study and small adjoining room on the second story of the house (Rooms 204 and 207, respectively). No major structural changes have been made to other structures. Restoration work on the office complex, barn, and shed has had beneficial effect, with no adverse effect.

Use of the site as an archival resource center, and for public visitation and interpretation, has had no adverse effect. If overuse becomes a problem, the National Park Service will use the least restrictive means available for controlling the associated impact. Among these might be: staggered hours, reduced frequency of large groups of visitors, use of moveable roll-down walkways in heavy traffic areas, and the institution of an advance-reservation system.[4] Advance reservation is already required for research work in the archives collection.

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[4] *General Management Plan: Frederick Law Olmsted National Historic Site*. Boston: Division of Planning and Design, North Atlantic Region, National Park Service, September 1983, amended 1987, pp. 37-39.

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