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HISTORIC STRUCTURES REPORT

PART II, SUPPLEMENT I

ARCHITECTURAL DATA SECTION

ON

RESTORATION AND RECONSTRUCTION

ON

MERCHANTS' EXCHANGE

Independence National Historical Park

Prepared by

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Architect

November 1963

United States Department of the Interior, National Park Service
Eastern Office, Design and Construction

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HISTORIC STRUCTURES REPORT

PART II, SUPPLEMENT I

RESTORATION

OF

MERCHANTS' EXCHANGE

Independence National Historical Park

A P P R O V A L S H E E T

RECOMMENDED

_____ Date _____
Superintendent

Robert D Hall Date 11-5-63
Chief, EODC

_____ Date _____
Regional Director, Northeast Region

APPROVED

_____ Date _____
Director

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I. FOREWORD

The restoration of the exterior of the Old Philadelphia Merchants' Exchange follows two extensive alterations to the building. In the rehabilitation of the building in 1901 under the direction of Architect Louis Hickman, the interior was completely altered, the roof and lantern rebuilt, and windows were added on the east and the west facades. In 1958 the interior was again revamped to adapt the structure for use as an office building for the National Park Service.

The east facade can be accurately restored based on remaining evidence and on the numerous photographs of that facade dating from the 1840's to the present.

To date no photographs have been found of the west facade (existing main entrance) pre-dating the 1901 alterations. Although new materials installed at that time are obvious, indications of earlier conditions will not be clear until the new is removed.

The recommendations contained in this report are based on early woodcuts which are known to be inaccurate in many respects. The windows shown flanking the central door on the west facade are foreign to the design of the building and are not consistent with other buildings designed by William Strickland.

The study of the west facade continues. If evidence is found to justify a major change to the recommendations in this report, a supplement will be issued.

Henry A. Judd
Architect

II. INTRODUCTION

The historical importance of the Merchants' Exchange has been described in detail in the "Historic Building Report" dated May 1958, and "Historic Structures Report, Part II", dated July 1960.

The purpose of this report is to illustrate the work involved to complete the restoration of the exterior of this structure.

Since the preparation of the last report, additional research has been made and has yielded some new evidence.

Architecturally there is much to determine and study in the way of reconstruction from physical evidence and old photographs before working drawings can be completed.

Careful consideration and study must be given to the treatment of the mutilated marblework on the east facade, caused by the construction of produce stalls that were installed in 1922 and removed in 1953.

The main roof and the brick chimneys on the roof were restored in 1959. The restored roof was covered with a tin-coated sheet metal and painted. According to an Insurance Survey dated March 31, 1834, this roof was originally covered with sheet copper. The type of material used for the new roof covering is historically incorrect.

The double-hung wood windows and wood doors on the north and south facades were also restored in 1959. Only partial window restoration was made on the west facade. It is the writer's opinion that all the exterior doors on the first floor level on the north,

west and south facades have not been restored in keeping with the period and design of the original doors as shown on the early photographs of the east facade. (See Illustrations No. 3, 4 and 5)

The east facade, which originally was the main entrance to the Merchants' Exchange, has been untouched since the demolition of the produce stalls in 1953.

In an Insurance Survey dated March 31, 1834, "two flat skylights in the roof" were mentioned. The original roof was removed during an extensive alteration in 1901, when Louis C. Hickman was selected to be the architect. He supervised the alterations consisting of rebuilding the interior completely and rebuilding the roof and lantern. The position and design of these skylights is now unknown, and the need for their restoration is questioned as they probably would not be seen from the ground. Of the original structure, only the exterior walls were retained in the 1901 alterations.

Working drawings and specifications for the reconstruction of the "Lantern" were completed in October 1962. However, new evidence indicates that minor revisions should be made. The set of drawings consists of:

16 sheets of architectural drawings
7 sheets of structural drawings
1 sheet of electrical drawing

A 3/8-inch scale model was made of the east facade for the purpose of studying and developing proportions of the "Lantern" by comparison with early photographs. Also full-size models of the exterior carvings have been developed. Illustrations of these models are included in this report.

III. BRIEF PHYSICAL HISTORY FROM DOCUMENTARY SOURCES

1832 - 1834 (construction period)
1836 - 1959 (alterations)

In 1832, the Merchants' Exchange was designed by William Strickland, Architect and Engineer [1788 - 1854]. The original building was constructed between the years 1832 and 1834 and remained essentially unchanged until 1850, when interior remodeling took place.

From the ledger of Samuel Henderson & Son, Marble Quarrier, the quantity of marble delivered to the site from January 7, 1832 to February 3, 1834 amounted to 30,811 feet (cu. ft).

The cornerstone of the building was put in place on February 22, 1832.

> "The hundredth anniversary of the birth of George Washington was chosen as the day for the laying of the cornerstone. There was a ceremony at 12 noon when the large block was placed twenty feet below the surface of the ground. It had carved on it the following inscription:
>
> February 22d. Anno Domini 1832
>
> Building Committee — Joshua Lippincott, Ashbel G. Ralston, John Sites
>
> Elwood Morris--Clerk of Works
> John K. Kane--Solicitor
> William Strickland--Architect
> John Struthers--Marble Mason
> John O'Neill--Carpenter
> Joseph S. Walter & Son--Bricklayers
> David Henderson--Marble Quarrier
> Leiper & Crosby--Stone Quarriers"[1]

[1] Historic Philadelphia, The Philadelphia Exchange: William Strickland, Architect, Agnes Gilchrist, 1953, p.87

In June 1833, the Post Office moved into its new location in the Exchange Building and remained for 30 years.

On October 31, 1833, the weather vane for the Lantern was put in place.

In November 1833, the roof and Lantern were completed.

The building opened for business as an Exchange on March 23, 1834, and on June 18, the clock in the Exchange Room was started.

In April 1836, gas was introduced into the Reading Room.

In circa 1838, the two marble lions were placed at the outer stairs to the Exchange Room, a gift of John Moss (1774-1837), a Philadelphia merchant. They were imported from Italy and are copies of the lions by Canova in St. Peter's in Rome. Strickland was in Rome in 1838 and may have had something to do with importing the statues of the lions.[2]

According to Daniel Bowen's writing in 1839, "The marble pavement beneath the portico (at the second-floor level) on the east front has been removed, and one of asphaltus and ornamental pebbles substituted."[3]

In 1867 the building had been altered, particularly in its interior arrangement. The copper roof had been replaced by one of tin. The north stairway, from the first to the third floor, had been removed. Water closets had been installed and several of the rooms, including the Exchange Room, had been divided by partitions.

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[2]Historic Philadelphia, The Philadelphia Exchange: William Strickland, Architect, Agnes Gilchrist, 1953, pp.86-95.

[3]Daniel Bowen, History of Philadelphia, with a notice of villages, Philadelphia, 1839, B1 - B2.

Sometime between 1869 and 1890 the east doors were replaced by more ornate doors, and the small lights of glass in the windows were replaced by large panes of glass.

Up until 1900 the building deteriorated very rapidly. At this time the Philadelphia Stock Exchange decided to move from the Drexel Building back into the Exchange Building. A competition was held to select an architect to renovate the Exchange Building. This competition was won by Louis C. Hickman, Architect, and he was retained to supervise the alterations, which consisted of rebuilding the interior completely and rebuilding the roof and the tower. Of the original structure only the exterior walls were retained. The building was purchased by the Philadelphia Stock Exchange and after rebuilding, housed that organization until 1912.

In 1912, the building was purchased by the Peoples' National Fire Insurance Company and was again rented to various firms.

In 1922 the building was purchased by S. W. Hollowell. The marble steps flanking the east portico were removed, and the lions on either side were removed and are now in the possession of the Philadelphia Art Museum. The Third Street entrance became the main entrance, and the market sheds were built around the portico. The structure was used as an office building and as a produce market.

The market sheds were removed following acquisition of the building by the National Park Service in 1952.

In 1959 the interior of the Exchange was rehabilitated for use as an office building, housing jointly the Northeast Regional Office and the Eastern Office of Design and Construction.

IV. ADDITIONAL STRUCTURAL EVIDENCE

Since the preparation of the earlier Historic Structures Reports, additional research has yielded some new evidence on the physical history of the structure.

A. Marble Steps To Basement From Third Street

During the removal of a non-historic sidewalk along Third Street in front of the Exchange in August 1961, some remains of marble steps were uncovered on both sides of what is now the main entrance to the building. These dual steps led to an area under the passage of the entrance supported by a vaulted brick ceiling. The floor in this area was paved with brick. The opening in the stone foundation has wrought-iron pintles engaged in the stone, indicating that a pair of heavy wood doors were hung on the inside of the vaulted area. This apparently was the only means of ingress to the basement from the outside. Illustration No. 7, an 1848 lithograph of the west facade, shows railings flanking the entrance that was then the rear entrance to the Exchange, indicating this point of ingress to the basement. Illustration No. 10 is a measured drawing showing evidence of the remains of the stairway.

B. Ledger Owned By Samuel Henderson & Son, Quarrier

A ledger that is now in the possession of the Independence National Historical Park, revealed the quantity of marble that was

delivered to the site of the Exchange. This ledger was owned by a Samuel Henderson & Son, Quarrier. A day-by-day entry shows the quantity of marble that was delivered. The 7th of January 1832 was the first entry, and the last entry was dated February 3, 1834. A total of 30,811 feet (cu. ft.) of marble was delivered. The marble was obtained from a quarry in Montgomery County, Pennsylvania. This ledger also reveals the quantity of marble delivered to the Second Bank of the United States.

V. EXTERIOR RESTORATION RECOMMENDATIONS

These recommendations are confined to restoring the exterior of the Philadelphia Exchange to its original appearance of 1834-1850.

A. Cleaning Existing Marble Surface

The exterior stone masonry is constructed of marble. The marble used was obtained from a quarry in Montgomery County, Pennsylvania with the exception of the column and pilaster capitals which Strickland imported from Carrara, Italy.

Before any marble restoration is started, it would be desirable to have all the marble thoroughly cleaned and brought out to its natural color. It will be necessary to know the color variations in this white-blue marble in order to properly match the new with the old for repairing and patching.

It is recommended that the cleaning of the marblework be done immediately and by a day-labor force before the other restoration work is begun. The surface of this marble is in such a condition

that only skilled hands, under careful control and close supervision, should be employed to handle such specialized work. The delicate carvings of the column capitals and the spalling and disintegration of the column shafts must be handled with special care. The removal of roofing tar from the marble surfaces around the east and west porticos also presents a special problem that has to be dealt with.

A portion of the marble surface on the northeast corner between the grade and the second floor cornice has been cleaned with fluoride solutions and water by the day-labor force. This was one of many experiments with different types of chemicals which have been tried. This last experiment has proved successful.

B. Method Of Restoring Mutilated Marble

An imitation marble has been produced to simulate the existing marble by the use of Polyester resins and sand. This formula was applied in a soft pliable consistency to an edge of a piece of broken marble. After being thoroughly dried and cured, it was ground and finished off to a smooth surface with a grain very close to the existing marble. The color is somewhat of a neutral shade, not matching the existing color. However, by using a white sand or ground marble dust a white imitation marble can be produced. By application of a penetrating stain over the imitation marble, colors can be matched to the existing colors which vary from white to white streaked or clouded with blue or blue-white. Further experiments must be made for matching of colors.

The imitation marble sample was made for us by George J. Kreier, Jr., of Philadelphia. Mr. Kreier has a unique background in sculpture and plastic technology. The large carvings for the decorative details of the "Lantern" of the Merchants' Exchange were modeled in his studio.

This experiment in producing imitation marble is very promising and should be carried out further. Polyester resins have remarkable adhesion qualities and are highly resistant to moisture.

It is our intent to limit this type of "repair work" to mutilated marble. Normal wear and natural weathering of the marble, exemplifying the age and character of the structure, should be left as is.

C. Method Of Repairing Spalled And Deteriorated Marble Cornices - First Floor And Roof Level

Special attention will have to be given to the marble cornice at the first floor level and the roof level. The spalling of the sloping wash on the cornices are severe. The vertical and horizontal joints are in a deteriorated condition. Water seepage has occurred at the roof cornice on the southeast corner of the structure where it had seeped through to the interior of the building in the Winter of 1961. The water seepage saturated a portion of the third floor ceiling and ran down the interior of the walls and partially saturated the corner walls of the second floor. This was due to melting of a heavy layer of snow and ice laying on the cornice wash which slowly seeped through the deteriorated marble joints.

The spalled and disintegrating surfaces will have to be removed and cleaned down to a firm surface. Application of alternate layers of Polyester resins and a fiberglas woven fabric (3 ply) would result in a continuous "built-up flashing." This would arrest any further deterioration as well as seal the existing joints which are in a very poor condition. This surface would not be visible from the street level. Polyester resin can be colored to harmonize with the adjacent colors.

Metal flashing (lead) would not be practical for this particular condition because reglets would have to be cut into the existing marble and lead caulked in. It would not be advisable to do any cutting in this soft marble.

D. Pointing And Sealing Of Existing Marble

Upon completion of the restoration of the marble, the old joints between the marble blocks should be repointed and all exposed marble surfaces should be treated with a sealer to prevent further deterioration of the marble surface.

E. East Facade - First-Floor Level

1. Marble Stairs And Wrought-Iron Light Standard

The two marble stairways that flanked the east portico should be reconstructed basically as shown on the study drawings. (See Illustrations No. 31, 34 and 35) Further study of Architectural details is necessary before the reconstruction of these monumental stairways. The richly carved marble scrolls that embellished the

lower cheeks of the curved stairway should be modeled full size in clay and carefully studied for size and form. Study drawings are being developed from old photographs for these carvings. The wrought-iron standard for the light fixture in front of the scroll will also require careful study.

2. Original Marble Lions

The two original marble lions, that once rested on top of the high cheek of the stairways, are now in the possession of the Philadelphia Art Museum. Through the cooperation of the Museum, they should be restored to their historic location. (See Illustration No. 9) If the original lions are not made available, new ones will be required.

3. Sidewalk And Wrought-Iron Grating

The sidewalk adjacent to the exterior doors, including the steps and door sills, should be of the same type of marble that was used on the exterior walls. (See Illustrations No. 4 and 30) The wrought-iron grating shown on Illustration No. 4, in front of the pair of main entrance doors, should be inserted in this paving with a false bottom. This grating was probably over a coal chute sloping towards the basement coal bin.

F. East Facade - Second-Floor Level

1. Existing Brick Arches Supporting Portico Floor

The portico floor is supported by nine brick arches. A preliminary exploration has been made of a small area revealing the top of one of the brick arches. The brick arch is approximately 8-1/4

inches thick. Over the arch is a fill consisting of mortar (lime, sand and clay) and broken stones. At the high point of the arch, the fill is approximately 10 inches thick. Over this fill is a combination of roll roofing and tar. It is recommended that the existing fill over these brick arches be removed entirely so that the arches can be explored for any signs of structural defects. A new light-weight fill should be installed in place of the existing one.

2. Marble Portico Floor

According to Daniel Bowen's writing in 1839, "The marble pavement beneath the portico on the east front has been removed, and one of the asphaltus and ornamental pebbles substituted."[4]

It is recommended that the portico floor be paved with marble slabs as shown in Illustration No. 31. The marble should be of the same type as was used on the exterior walls. The slabs should be layed over a cement setting bed with a layer of membrane waterproofing (or a lead pan) between the setting bed and the new fill over the existing brick arches.

3. Repair And Replace Marble Cornice At Portico Floor Level

The original marble cornice at the portico level has deteriorated and has been mutilated almost beyond repair as a result

[4]Daniel Bowen - History of Philadelphia, with a notice of villages; Phila. 1839, B1 - B2.

of the construction of produce stalls in 1922. (See Illustrations No. 12, 15 and 16) Most of this cornice may have to be cut back far enough so that a new marble cornice could butt up against the remaining portion of the old cornice. This detail will require careful study.

4. Ornamental Wrought-Iron Railings For Portico

It is recommended that the ornamental wrought-iron railing on both sides of the portico, between the pilaster and the first column, be reconstructed. (See Illustration No. 5) The existing post holes for these railings have been located and study drawings developed. The present iron pipe rails between the columns installed sometime after 1869 should be removed.

5. Portico Windows And Doors At Head Of Marble Stairs

The original double-hung wood windows around the portico had 12 glass lights in each sash. The original wood doors at the head of the marble stairs had two panels in each leaf. (See Illustrations No. 1, 2 and 3) Some time after 1869 the small lights were replaced by large single lights in each sash and the doors were replaced by more ornate doors. (See Illustrations No. 4 and 5)

Some time after 1890, or possibly during Hickman's extensive alterations during 1901, the windows were replaced with smaller window frames maintaining the original window heads and jambs but creating higher window sills.

The doors that were at the head of the marble stairs were replaced with double-hung windows. These were probably replaced during the construction of the produce stalls and the destruction of the marble stairs flanking the portico. See Illustration No. 25 which shows it as it appears today.

The eleven double-hung wood windows and the two pair of paneled wood doors should be restored to their historic appearance. See Illustrations No. 1, 2, 3, and also Illustration No. 34, showing the proposed restoration of the East facade.

G. East Facade - Third Floor Level

1. Marble Recessed Panels

The marble recessed panels (except two) above the original second floor windows and doors were removed some time after 1901 and replaced with double-hung windows. These windows are higher than the height of the original marble panels. The jambs and sills were held within the recessed panels. (See Illustration No. 25)

These windows should be removed and new marble panels installed to match the two existing originals. Illustration No. 1 shows the original panels as they appeared in 1849. Note: The reconstruction of the marble panels will eliminate all daylight from the third-floor conference room. However, there is ample artifical light and air conditioning necessary for this room.

H. West Facade - Basement And First-Floor Levels

1. Reconstruction Of Stairway To Basement

The marble steps leading into the basement were uncovered in August of 1961 on both sides of what is presently the main entrance to the building. The findings have been surveyed and recorded. (See Illustration No. 10)

The original sidewalk grade level and the original floor level of the structure has changed considerably since 1834. To restore these levels to the proper relationship of 1834 would be almost impossible as well as impractical. These stairs will have to be restored to meet the present sidewalk grades and conditions. These stairs should be reconstructed to their historic appearance (as near as present grades and conditions will allow) including the wrought-iron railings that embellished the entrance to the building. It is also recommended that iron gates be installed at the bottom of the first landing of the stairs as a measure of safety for the visiting public; and also as a precaution against vandalism at the basement level. Illustration No. 36 shows the proposed restoration of the West facade. Study drawings are being developed for the reconstruction of these stairs.

2. Hickman's Alterations

Unfortunately, no early photographs have been found of the west facade. However, we do know that some alteration took place particularly at the center entrance that was then the rear entrance

which led to a hall and passed through the center of the building and to Dock Street. The Third Street entrance was widened during Hickman's alterations in 1901, apparently making this the main entrance. (See Illustration No. 27, a 1963 photograph showing its present appearance.) The two round columns at the first-floor level and the two curved window panes under the portico on either side of these columns are Hickman alterations.

3. Reconstruction Of Third Street Entrance

The round columns and the curved windows should be removed and the entry reconstructed to its historic appearance as shown on Illustration No. 7 an 1848 lithograph. Note the square columns forming the entry flanked by two double-hung windows. Also, see Illustration No. 36, a sketch showing the proposed restoration of the West facade. The square columns existed in 1879. (See Illustration No. 8)

I. West Facade - Second- and Third-Floor Levels

1. Removal Of Four Double-Hung Windows

Some time after the 1880's, four double-hung windows were added to the west facade in the portico, two windows on the second floor flanking the tripartite window, and two directly above flanking a tripartite window on the third floor. The 1963 photograph, Illustration No. 27, shows these windows as they appear today. These four windows should be removed, the openings blocked in, and the exterior faced with marble to bring it back to its historic appearance as shown on Illustrations No. 7 and 8 and as indicated on Illustration

No. 36, a sketch showing proposed restoration of the West facade.

2. Hickman's Alteration To The Portico Floor

The entire original west portico floor has been removed, but no physical evidence or photographic material has been found to indicate what the portico was paved with. It could be assumed that it was paved with marble slabs, similar to the east portico. The present portico floorline is approximately 4-3/4 inches higher than what it is believed to have been in its original form. It is now surfaced with composition roofing material and tar over a concrete slab. The slab was apparently laid at the time of Hickman's alteration in 1901 when the Third Street entrance was sided and the two round columns at the first floor level were put in place. (See Illustration No. 11).

It is the writer's recommendation that the reconstruction of the portico floor should not be attempted for the following reasons:

a. No physical evidence or photographic material has been found to indicate what the original portico floor was paved with.

b. The portico floor will not be visible by the visiting public from the street level.

c. To remove the present concrete slab would involve a major structural change in the portico floor area (approximately 400 square feet).

J. Wire Mesh Guards Enclosing Carved Marble Column Capitals

Removal of the copper-wire mesh guards that encase the marble column capitals on both the east and west facades, and removal of the bird manure that is so heavily encrusted on the marble carvings is recommended. After the wire guards are removed, a maintenance program should be started to keep the capitals clean. Illustration No. 29 shows the present wire guards.

K. Cornerstone

The mention of a cornerstone in the writings of Agnes Addison Gilchrist, that was placed "twenty feet" below the surface of the ground on the 100th anniversary of the birth of George Washington, should not be ignored. Every effort should be made to locate this cornerstone and relocate it above grade on the southeast corner of the structure, where it can be seen by the visiting public walking along Walnut Street.

It is the writer's opinion that the cornerstone was not placed twenty feet below the surface of the ground. Since the present basement-floor level is approximately 10 feet below the present outside grade, it may be assumed the cornerstone was placed on top of the wall "footing", possibly on the southwest or southeast corner of the structure, (the east facade then being the front of the building).

L. Basement Foundation Walls

1. Removal Of Old Debris And Mortar - Parging Foundation Walls

Attention is called to a most undesirable condition which now exists in the basement. There are furred walls approximately 2-1/2 feet in front of the existing foundation walls. Behind these furred walls is a collection of old debris, such as discarded building materials including wood, that has accumulated over a period of years. There is also an accumulation of mortar that has disintegrated from the old joints of the stone foundation and parged walls. In some places this is more than ankle deep.

It is recommended that this collection of rubbish and loose mortar be removed and the old joints in the stone foundation be repointed.

VI. RECONSTRUCTION OF THE "LANTERN"

A. Development Of Proportions By Reverse Perspective Method

Study drawings were developed in the summer of 1956 for the reconstruction of the Lantern. The method and research employed in developing these drawings are described and illustrated in the Historic Buildings Report dated May 1958. Plate No. 36 in this report illustrates the lantern elevation in 1/4 inch scale, developed from an 1849 photograph (talbotype), by working in reverse perspective from this photograph. Thus, it was felt original proportions had been determined as accurately as possible. With proportions determined, a study of the various

decorative elements of the lantern was instituted. These are illustrated on Plate No. 37 in the Historic Building Report dated May 1958.

B. Scale Model Of The Lantern

In September of 1961 the writer was assigned to this project for further study and development of the lantern.

To test the accuracy of the reverse perspective method, besides going through the same procedure and rechecking proportions, another method was used. An accurate 3/8 inch scale model of the lantern was made in wood, using the proportions illustrated on Plate No. 36 in the Historic Building Report dated May 1958. Because the lantern is circular in form, the model was turned on a lathe and made in several sections so that any one of the sections could be taken apart for "reworking" if necessary. A cardboard model of the east facade of the building was also made.

C. Photographing Model To Determine Proportions

The first step was to photograph the model in the same relative camera positions as the 1849 photograph, thus acquiring the same perspective. The model photograph was then enlarged to the same image size as in the 1849 photograph. This was the first attempt to test the accuracy of the "reverse perspective method" for proportions by photography. For comparison see Illustrations No. 37 and 38. It can be seen that the model was not photographed in quite the same perspective as the 1849 photograph. However, it did give us some information. Comparison of these two photographs did reveal

that the profile of the lantern roof was by no means correct. The extreme diameter of the roof cornice, the main body of the lantern and the diameter at the observation level were not wide enough. In general the mass was too slender in comparison to the 1849 photograph.

To correct the perspective for a retake of the model, the angle and position for the camera was computed by projection of certain lines and geometry over the 1849 photograph.

The lantern model was revamped and photographed several times before the proportions began to fall into place. Illustration No. 40 shows the model of the lantern with proportions developed to scale. (Compare proportions with 1849 photograph, Illustration No. 39.) It is felt that this method of arriving at proportions has a higher degree of accuracy in determining the unknown proportions than the reverse perspective method from photographic materials.

D. Strickland's Development Of The Lantern From The "Choragic Monument"

Mr. Strickland probably developed his design from the book Antiquities of Athens by Stuart and Revett, Vol. I, 1762 edition. The Choragic Monument of Lysicrates in Athens was no doubt his inspiration for the lantern. (See Illustrations No. 43, 44 and 45) The design of the column capitals that were used on the east and west facades of the Merchants' Exchange are identical in detail to the capitals on the Choragic Monument. (See Illustration No. 44) The profile of the main cornice is also similar in character. However,

the carvings for the lantern clearly show that Mr. Strickland was only inspired by this Greek structure and definitely had not copied its decorative elements in detail.

Photographic material, available at the time the models of the carvings were being developed, was not sufficiently clear to determine exact detail for the carvings. However, they were used to determine "mass proportion."

E. Original Cornice Dentil And Fragment Of Carving. Original Color Of Paint.

The only decorative part of the lantern based on actual physical evidence is a wood cornice dentil and the top portion of an intercolumination tripod wood carving that embellished the frieze of the cornice. These two elements were found in the attic while investigations were made of the building (See Illustrations No. 41 and 42). The original color of paint has been determined from these two elements.

F. Models Of Carvings

The developed details were somewhat guided by the decorative elements on the original Choragic Monument (See Illustrations No. 44 and 45).

The intercolumination tripod ornament and the roof antefix (See Illustrations No. 52 and 54) were carved full size in wood by the day-labor force at Independence National Historical Park.

The column capital, roof scroll, and the weather vane support (See Illustrations No. 52, 53 and 55) were executed by Sculptor George Krier, Jr., of Philadelphia, from our study drawings and under our

direction. Each carving was first modeled in clay in its full size to study its mass form. Detail and depth of relief for shadows was studied carefully with data we had on hand. Some details in these carvings are conjectural because definite evidence could not be determined from the photographic material we had on hand. However, it was felt that the end result depended very much on correct "mass proportion" rather than detail which could not be obtained from the old photographs.

A model of the decorative weather vane must be made in order to study the whole composition in its full-size form. Illustration No. 50 shows the drawing for the weather vane but should not be considered as being final until the weather vane has been studied in clay for "mass proportions" as well as detail.

Note: Since the completion of the carved models, another photograph was uncovered (January 1963) of the east facade of the Exchange (See Illustration No. 4). There are two names visible in this photograph, a John Moss, Jr., Stock Broker, and a James Wallace, Marine Fire Insurance Agent. These two names are listed in the old Philadelphia Directory as occupants in the Merchants' Exchange in 1882. This photograph has revealed more distinct details of some of the carvings on the lantern than on some of the earlier photographic material we had on hand when the carvings were being developed. In view of this 1882 photograph, some revisions to the details of the column capital and the roof antefixes will have to be made.

G. Access To Lantern

Illustration No. 46 shows the entire composition of the lantern for reconstruction. Note the interior winding stair ascending from landing "B" to landing "C". No attempt was made to make an authentic restoration of these stairs; only to show that a winding stair did exist and can be visible in silhouette form from the street level. Access to the interior of the lantern or to the exterior of the observation platform will be from the third-floor level by spiral stairs.

H. Materials Used On The Original Lantern

Material for the construction of the original lantern was mainly wood. The structure being circular in form, narrow strips of wood were used vertically to face the finished surface in the front of the framework (See Illustration No. 4). The six columns, the column capitals, and the intercolumniation of the tripod ornament were carved in wood. The wood cornice was apparently fashioned out in segments.

The roof, we know from insurance records, was a standing seam-copper roof.

It is the writer's opinion that the original antefixes were cast in metal, the roof scroll in wood, the weather vane support possibly cast in metal or formed in sheet metal with framework to support it. The weather vane's design of a wing spread, counterbalanced by a form of the Medical Caduceus emblem (intertwined snakes), was also cast in metal and most likely gold-leafed.

For reasons of durability and maintenance it is recommended that the roof antefixes, roof scroll, weather vane support and weather vane be cast in bronze or aluminum.

I. Materials Recommended For Carvings

It is recommended that the column capitals be cast in Fiberglas reinforced plastic instead of carved in wood. A wood-carved capital would have many glue joints exposed to the weather. The carvings mentioned above will be painted as were the original carvings with the exception of the weather vane which should be gold-leafed.

J. Materials And Methods Used For The Reconstruction Of The Lantern

1. Exterior Materials

See Illustration No. 46

2. Structural Framing

It is recommended that structural steel be used for the main framework and laminated circular wood-cored panels, backed up with laminated wood hoops, be used to form the shell for this circular lantern. The laminated shells are bolted to the steel frame, making it a rigid piece of framework. The laminated shells provide an excellent nailing surface for the fastening of the finished millwork.



Drawn by William Strickland.

Engraved by J. Sartain.

See Appendix A for description.

Photo: Courtesy Historical Society of Penna.
Copy Neg. No. INHP 1692

VII. APPENDICES

APPENDIX A

Atkinson's Saturday Evening Post, March 23, 1833, p.1
Philadelphia Exchange

[View after Strickland
looking N. W.
with female statuare
atop the Lantern]

Description.

This beautiful building, which was only commenced about eleven months since, stands on the angle formed by the intersection of Dock with Walnut street and at the corner of Walnut and Third Streets. The engraving represents it as it will be when finished; at the present moment the basement and principal stories are carried up nearly to their destined height, and are covered in for the convenience of carrying on that part of the work which can be executed in the winter months.

The Exchange is built entirely of marble, and the semi-circular portico on Dock street is composed of beautiful Corinthian pillars; it communicates with the great "Exchange Room", by means of nine separate doorways. This portico is of the height of two stories, and opens into a circular lantern, rising forty feet above the roof.

The Exchange is a rectangular parallelogram 95 feet front on Third Street, by 150 feet on Walnut Street, including the semi-circular basement on Dock street of 72 feet diameter. The basement story is 15 feet in height, and has 12 doorways on Third street front and flanks. This story is arched throughout, and on the north or Dock street sides is an apartment for the Post Office, 74 by 36 feet. Adjoining this, there is a hall or passage to shelter the public when receiving and delivering letters; this useful passage communicates with the main passage which runs through the entire building from Dock to Third streets. At the corner of Third and Walnut there is a room 35 feet front intended for the Exchange Bank, and another of similar dimensions for the Chamber of Commerce & c. adjoins it. The other apartments in the basement are of a suitable size for Ensurance and other companies.

The Exchange room over this basement occupies an area of 3300 superficial feet; it is of course on the east front, extending across the whole building. In this story are also the great reading room, brokers' room, & c. The approaches to the Exchange room are by four flights of steps; two from the semicircular basement, and the others from the main avenue underneath. The newspaper or reading room is over the Post Office - that over the Bank will be kept for the meetings of stockholders, & c. The brokers' room, & c. have fire proof closets. These arrangements appear complete and will no doubt be found very convenient.

The attic story is of the same height as the basement, 15 feet, containing six large rooms, which will be rented to artists, &c. who will be sure of plenty of light and quiet. The roof is of copper, and the ornaments designed for the semi-circular portion over the front colonnade it is said will be superb. The entire building will be finished it is presumed in another twelve month, and the Post Office will be removed to it by June or July, proving a vast accomodation compared with our present, where one has to stand under the showers of rain to receive even a newspaper.

The Girard Banking-house, the Pennsylvania Bank and the Exchange may now all be taken in at one view, and we perceive in the print shops that our artists have already taken advantage of this circumstance to engrave beautiful pictures. This view is one of the handsomest for architectural display our city can boast of, having large and imposing avenues by which the eye can gaze unobstructed on the whole, which at a sufficient distance to obtain the full effect. We have but one regret to add, and that is the eye-sore of Mr. Gowan's Wine Store, which if we had our own way should certainly come down.

The prototype of this building is the Choragic Monument ir Athens, called by the modern Athenians the Lanterne of Demosthenes. It stands near the eastern end of the Acropolis, and is now partly enclosed in the Hospitium of the Capuchins; this monument was erected 330 years before the Christian era, and is said to have been exquisitely wrought. In this relic of antiquity, we have presented the richest example of Grecian Corinthian architecture to be found in Atica. All the capitals from the hands of the best Italian artists are expected shortly.

F.H. 3/26/63

APPENDIX B

The National Gazette, March 24, 1834 p. 3

Philadelphia Exchange

The Public is informed that this establishment is now completed, and will be open for exhibition on Tuesday and Wednesday next, the 25th and 26th inst.

Mar 21-,d3t J. F. Fenimore, Secretary

APPENDIX C

MERCHANTS EXCHANGE

Public Ledger, March 3, 1855

Change at the Exchange.--

The portion of this building occupied as the Post Office since the erection was vacated...[The Northwestern Insurance Company] will refit the rooms before removing thither. As soon as the splendid block at the southeast corner of Third and Walnut streets, erected by the Delaware Mutual Insurance Company is completed, the rooms it now occupies in the Exchange will be vacated and taken possession of by the Home Insurance Company.

FH 3/28/63

ILLUSTRATION NO. 1

1849 Talbotype, southeast view of the Dock Street Portico. This is the photograph that was used as the basis for the reconstruction drawings of the "Lantern" shown in Illustration No. 46.

Photo: Courtesy Historical Society Penna.
Copy Neg. No. INHP 2226

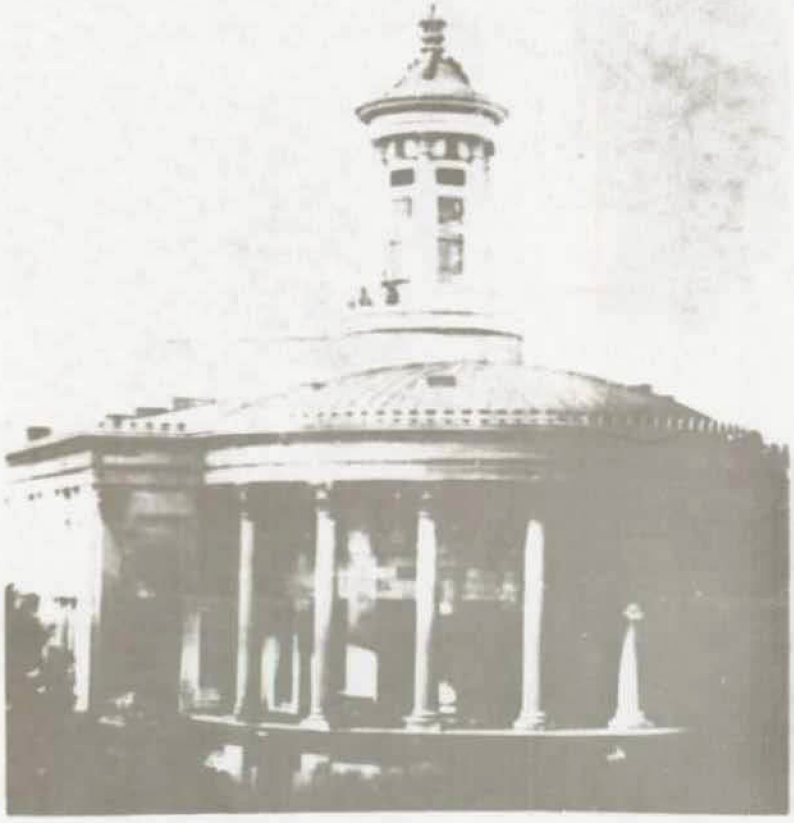


ILLUSTRATION NO. 2

1850 Talbotype - W.E.E. Langenheim, southeast view.

Photo: Courtesy of Missouri Historical Society
Copy Neg. No. INHP 2120

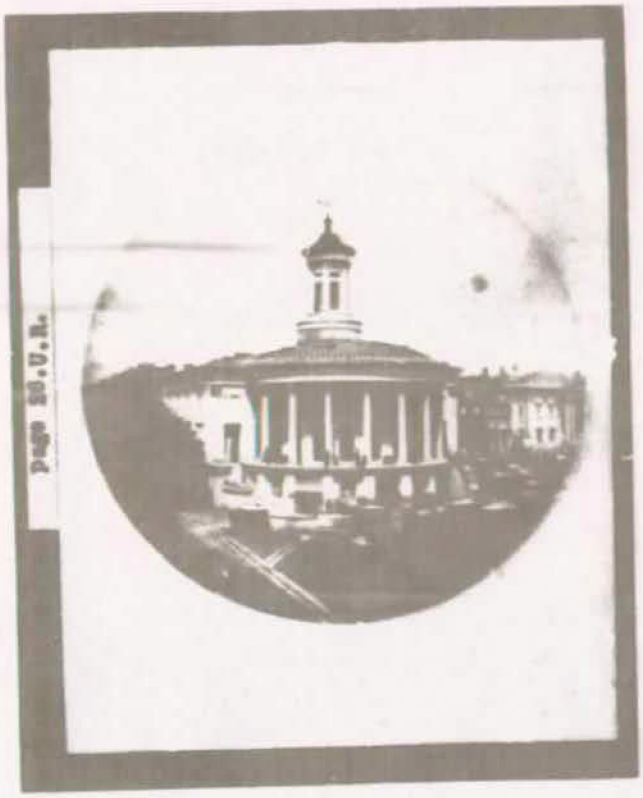

Page 20.U.R.

ILLUSTRATION NO. 3

Southeast view of the Dock Street Portico 1869.

Photo: Courtesy Free Library of Phila.
Copy Neg. No. IMHP 2018



ILLUSTRATION NO.4

East view of the Exchange, about 1882.

This photograph was found in January 1963 from a collection of copies of old photographs of Philadelphia, owned by Charles P. Mills and Son of Philadelphia, a professional photographer.

The east facade remained unaltered except for the following:

1. The paneled doors at the head of the stairways were replaced by more ornate doors.

2. The double-hung windows around the portico were replaced from multiple to single light sash.

3. The horizontal pipe rails between the columns were added.

4. The stair handrails on both stairways were added.

5. The lantern remained unaltered except for the wood apron just above the domed roof. This wood apron was shortened and narrow vertical strips were used as covering. The original apron had wider vertical boards which ran down and met the domed roof.

Compare this photograph with Illustrations No. 1, 2 and 3.

Photo: Courtesy Charles P. Mills and Son
Copy Neg. No. EODC 4301



ILLUSTRATION NO. 5

Southeast view of the Exchange circa 1890.

Note the fine detail of the marble staircase and the wrought-iron railing between the pilaster and the first column. The horizontal pipe rails between the columns have been added sometime after 1869. The portico window sash have been replaced from multiple to single light sash.

The Lantern remained unaltered.

Photo: Courtesy Historical Society Penna.
Copy Neg. No. INHP 2203



THE MARITIME EXCHANGE BUILDING, PHILADELPHIA, PA.

WILLIAM STRICKLAND, Architect

ILLUSTRATION NO. 6

Newspaper photograph showing alterations to the Exchange in 1901. The interior, roof and lantern were completely rebuilt in this year. Only the exterior walls of the original structure remained.

Louis C. Hickman was retained as the Architect for this alteration.

Photo: Courtesy of the Free Library of Phila.
Copy Neg. No. LNP 2285



ILLUSTRATION NO. 7

Lithograph of the west facade, 1848.

This shows the rear entrance to the Exchange from Third Street. Note the metal railings flanking the entrance.

See Illustration No. 27 as it appears today with round columns and a widened entrance. Illustration No. 10 shows the remains of the dual stairway that once was used as means of ingress to the basement.

Illustration No. 36 shows the west facade restored.

Photo: Courtesy of the Ridgeway Library (Library Company of Phila.)
Copy Neg. INHP 2280

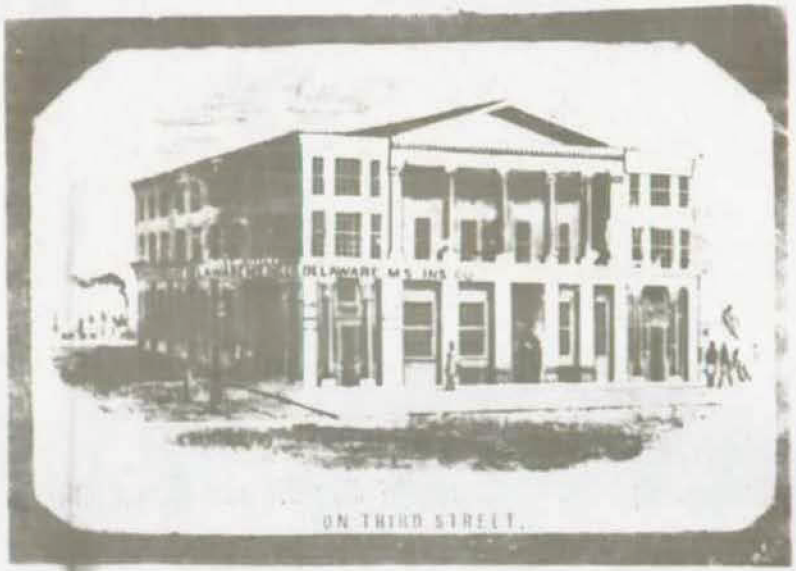

ON THIRD STREET.

ILLUSTRATION NO. 8

West facade circa 1879

Note that the metal railings were removed and two double hung windows at the first floor level were replaced by two squint windows and two doors.

Compare with Illustration No. 7.

Photo: Courtesy Free Library of Phila.
Copy Neg. No. HSP 2307-B



ILLUSTRATION NO. 9

One of the original lions that once embellished the marble staircases on the east portico. They were removed when the stairs were demolished in 1922, making way for the produce stalls. Both of these lions are now in possession of the Philadelphia Art Museum.

Photo: W. H. Gaskill, September 1954
Neg. No. INHP 2327-B

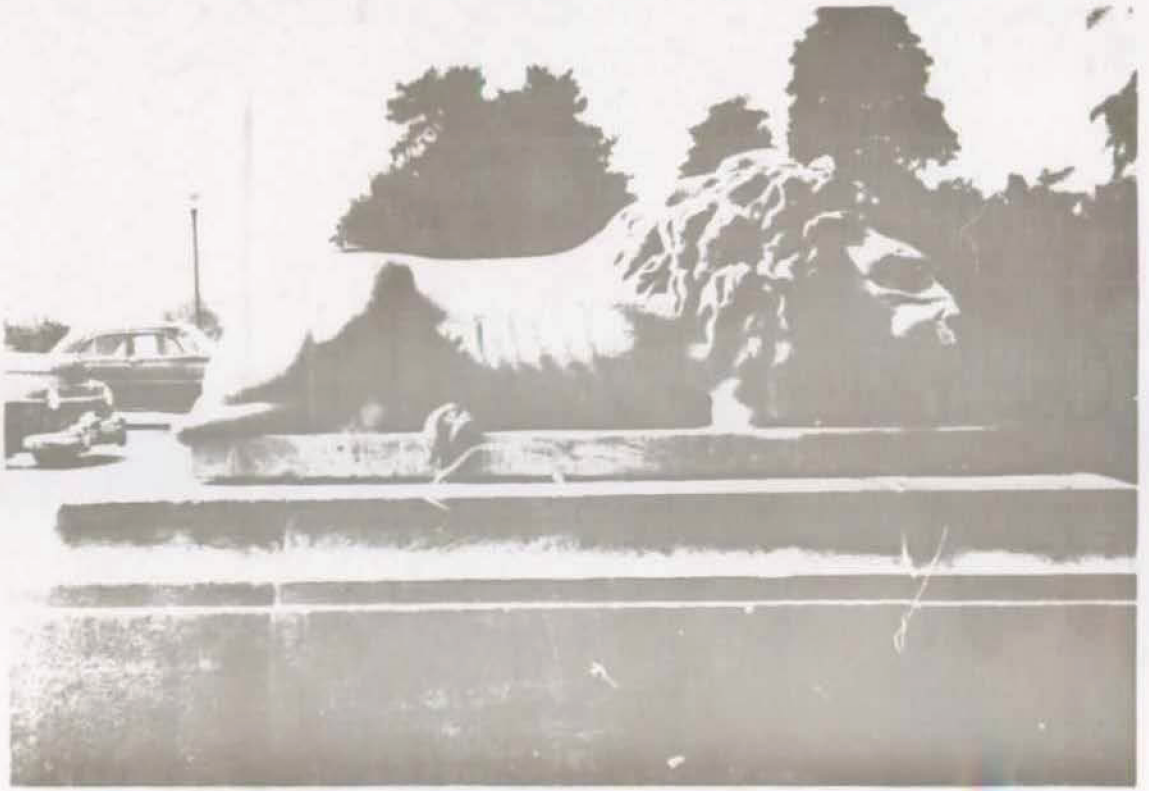


ILLUSTRATION NO. 10

Measured drawing showing the remains of the dual stairway on the west side of the Exchange that was once used as means of ingress to the basement from the sidewalk level on Third Street.

MARBLE PLATFORM AT MAIN ENTRANCE

CURB LEVEL

BRICK AREA WALL

RUBBLE AND MORTAR PAVEMENT

RUBBLE

RUBBLE

BRICK ARCH WALL

NEW AREA WALL

SECTION A-A
SCALE ½"-1'0"

INNER WALL

MARBLE RIBS FOR COLUMN

STREET SIDE OF CURB

WEST END OF BASEMENT FLOOR PLAN
SCALE ⅛"-1'0"

IRON SPIKE

STEP TREADS

OUTER BRICK WALL

REMAINS OF MARBLE STEPS

BRICKS FOR STAIR SUPPORT

OUTLINE OF BRICK VAULT

IRON SPIKE

OUTLINE OF STONE RIB

1902 BRICK WALL

SECTION B-B
SCALE ⅛"-1'0"

EDGE OF AUG. 1961 EXCAVATION

BRICK CULVERT BUILT 1902 FOR ELECTRICAL CABLE

FLOOR BRICKS MISSING

E. CLAYTON, DEL. 1961

EASTERN OFFICE, DIVISION OF DESIGN & CONSTRUCTION

PHILADELPHIA EXCHANGE

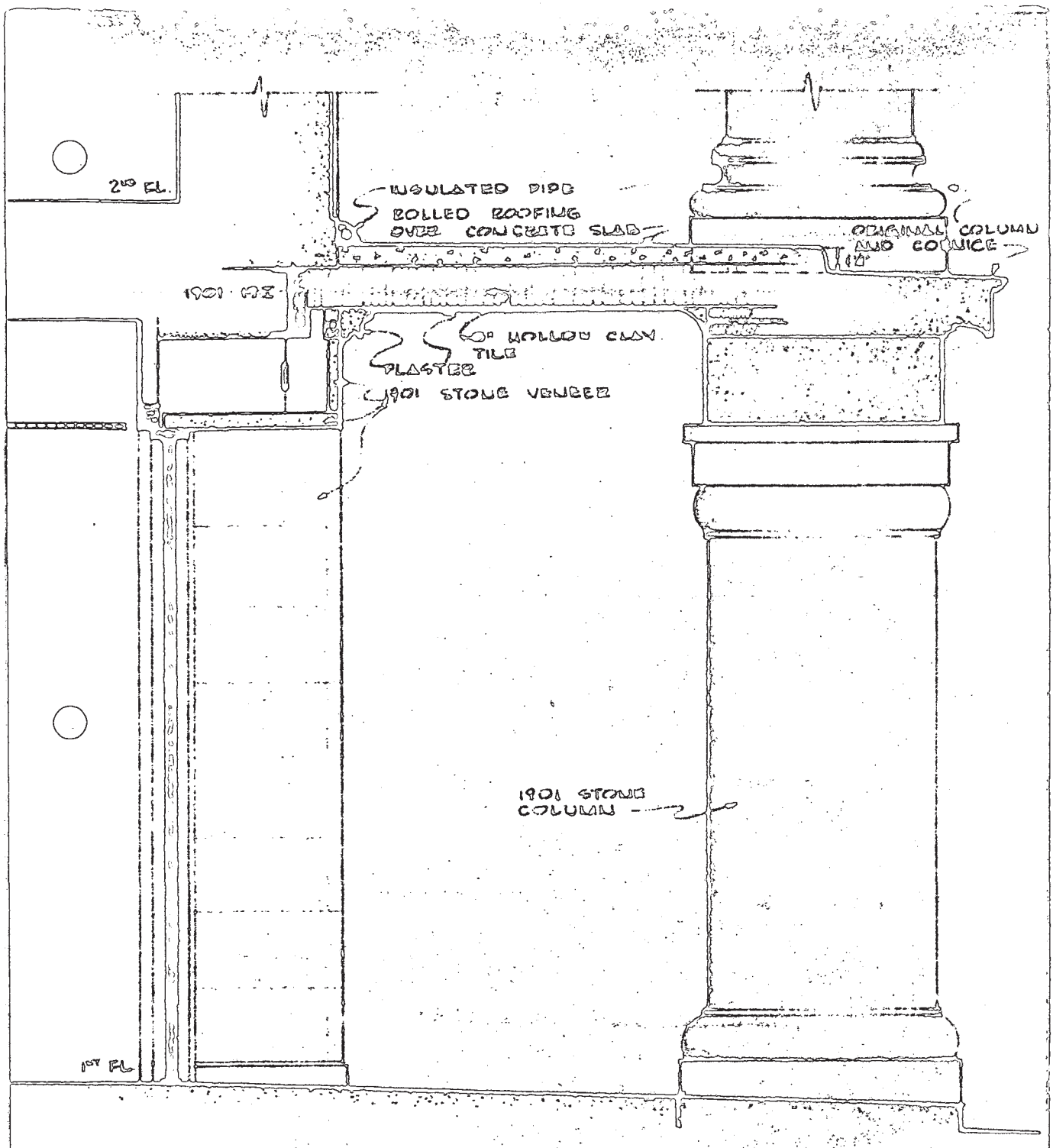
THIRD, DOCK, AND WALNUT STREETS

PHILADELPHIA, PA.

HISTORIC AMERICAN BUILDINGS SURVEY

ILLUSTRATION NO. 11

Section through Third Street entrance and west portico floor, showing present construction. Note the concrete slab in relationship to the top of the original cornice. The slab apparently was laid at the time of Hickman's alteration in 1901 when the Third Street entrance was widened and the two round columns were put in place.



SECTION
WALNUT STREET ENTRANCE
&
WEST PORTICO FLOOR
showing
PRESENT CONDITIONS

ILLUSTRATION NO. 12

View from the northeast during the removal of the produce stalls in 1953. The lantern designed by Hickman is still in place.

Photo: Swallow Studios, September 1953
Neg. No. DEP 2428

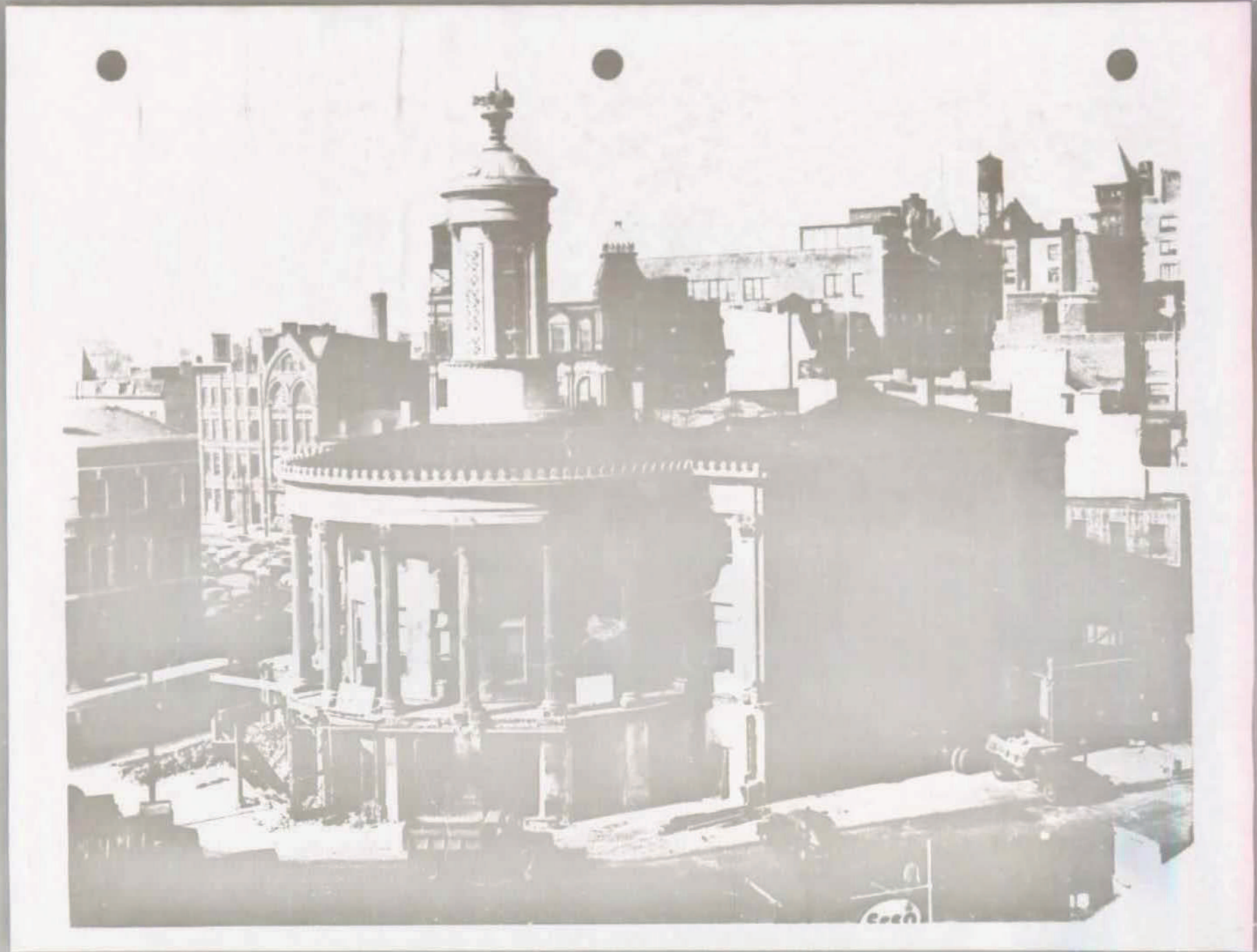


ILLUSTRATION NO. 13

North facade, after the removal of produce stalls in 1953.

Photo: Swallow Studios, October 1953
Neg. No. INHP 2429



ILLUSTRATION NO. 14

View of the west facade on Third Street in 1954.

Photo: W. H. Gaskill, September 1954
Neg. No. INHP 2366



ILLUSTRATION NO. 15

Close-up view of the east portico showing the mutilated marble work.

Photo: Swallow Studios, October 1953
Neg. No. INHP 2432

ILLUSTRATION NO. 16

East portico after removal of produce stalls in 1953.

Note the desecration of the marble work resulting from the construction of the produce sheds.

Photo: Swallow Studios, September 1953
Neg. No. INHP 2427

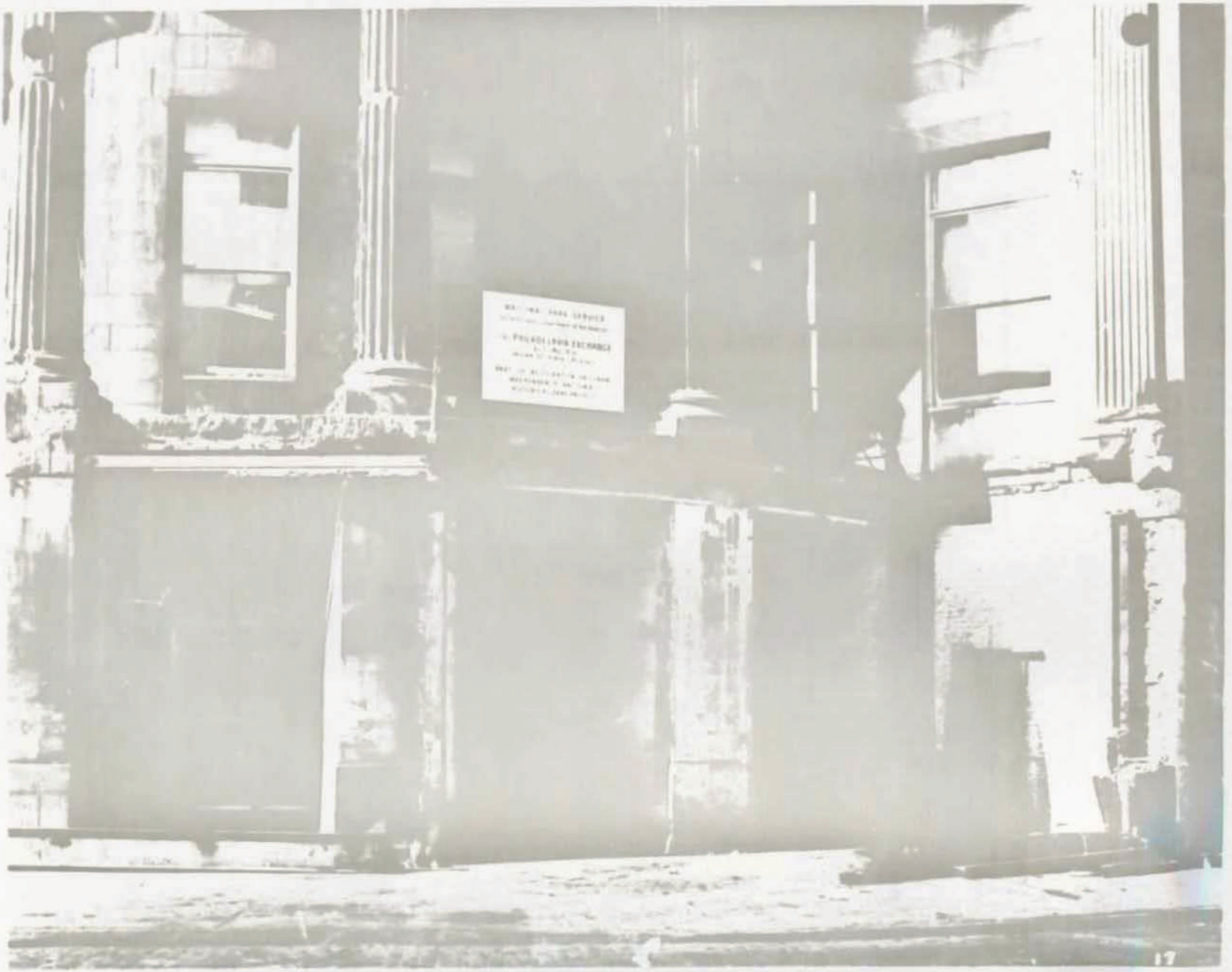


ILLUSTRATION NO. 17

View after removal of produce stalls in 1953 showing location where the South marble stairway flanked the portico that led up to the second floor.

The window between the pilasters at the second floor level is the location where the original wood paneled doors opened into the "Exchange Room."

Photo: W. H. Gookill, July 1954
Neg. No. HMP 2211

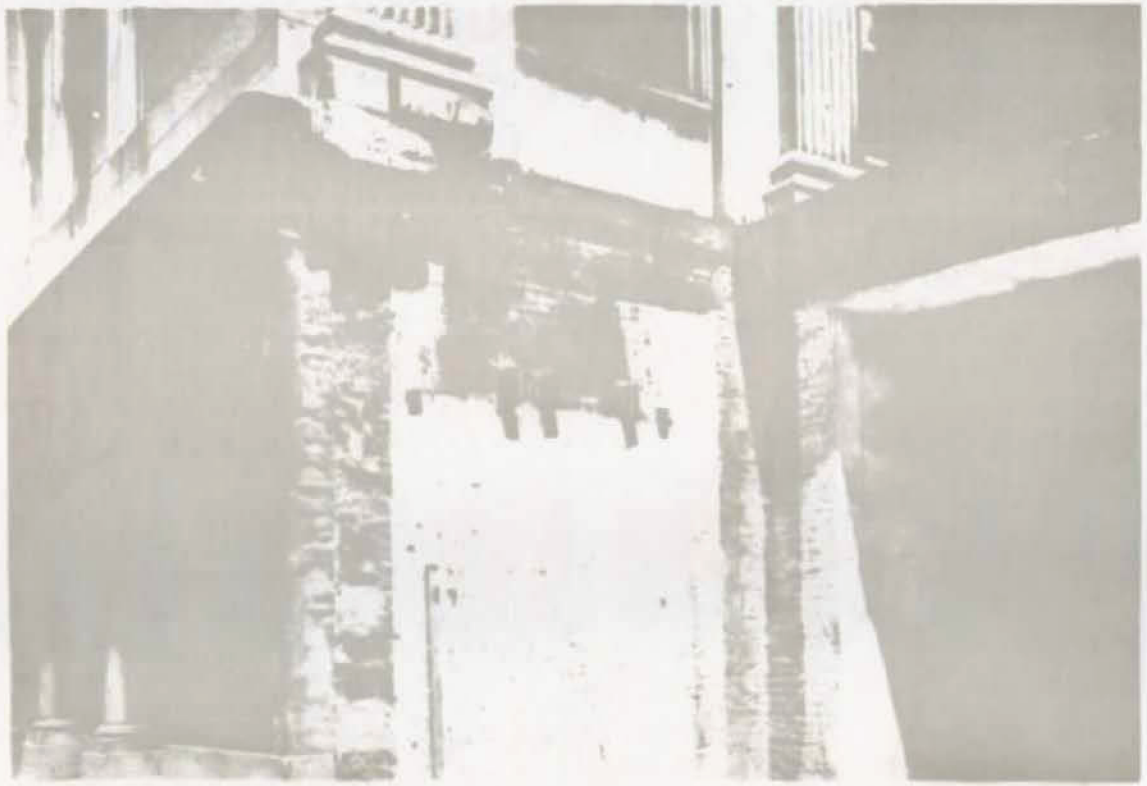


ILLUSTRATION NO. 18

View after removal of produce stalls in 1953 showing where the North marble stairway flanked the portico that led up to the second floor.

The window adjacent to the pilaster at the second floor level is the location where the original wood paneled doors opened into the "Exchange Room."

Photo: W. H. Gaskill, July 1953
Neg. No. HAER 2210

ILLUSTRATION NO. 19

View from east portico showing mutilation of marble columns caused by the construction of the produce sheds in 1922.

Note the disintegration of the column flutings showing the effects from weathering.

Photo: Swallow Studios, October 1953
Neg. No. INEP 2433


23

ILLUSTRATION NO. 20

Close-up view from the sidewalk level showing mutilations of the marble work on one of the east portico marble columns.

Photo: Jack E. Boucher, June 1963
Neg. No. EODC 4200



ILLUSTRATION NO. 21

Columns along the south wall at the first-floor level showing disintegration and spalling of the marble. This is a typical condition at all the columns along the south and north walls.

Photo: Knickerbocker, March 1952
Neg. No. INHP 2030

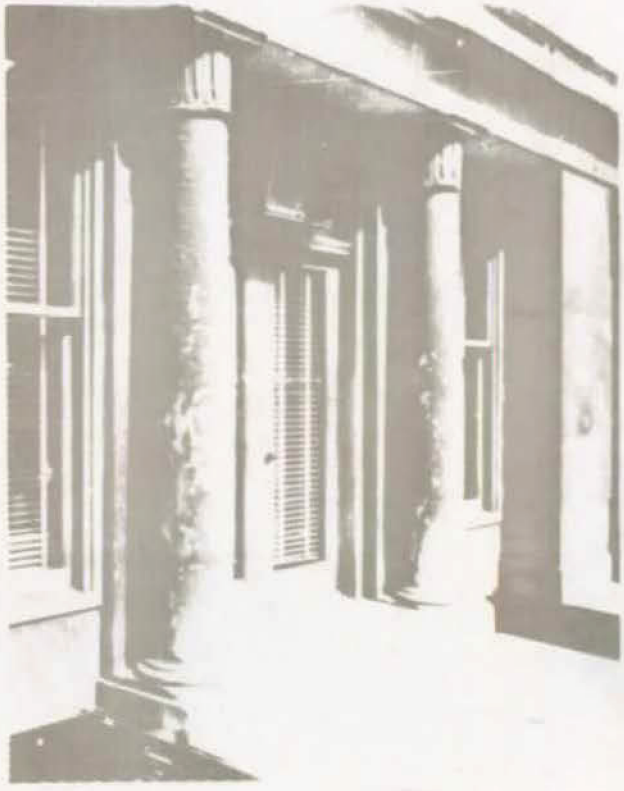


ILLUSTRATION NO. 22

Northwest corner of cornice, between first and second floors, showing disintegrating marble.

Photo: P. Hartshorne, February 1957
Neg. No. INEP 4223



ILLUSTRATION NO. 23

Close-up view of the northwest corner of cornice, between first and second floors, showing disintegrating spalling of the cornice drip.

Photo: P. Hartshorne, February 1957
Neg. No. HABS 4235



ILLUSTRATION NO. 24

View from northeast showing the Merchants' Exchange building after completion of paving of Dock Street in 1962.

Photo: W. A. McCullough, November 1962
Neg. No. HEP 8056



ILLUSTRATION NO. 25

East facade as it appears today.

See Illustration No. 34 showing proposed restoration of the east facade.

Photo: Jack E. Boucher, May 1963
Neg. No. HDDC 4197

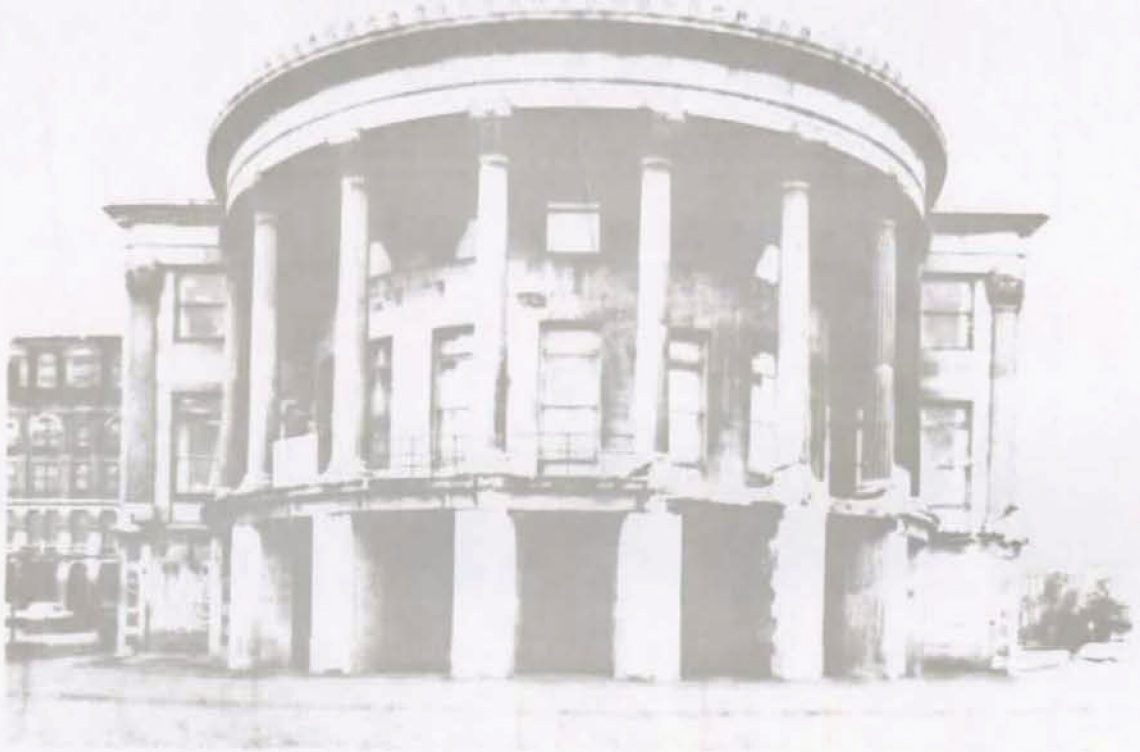


ILLUSTRATION NO. 26

North facade as it appears today. The windows and doors were restored on this facade in 1959.

It is the writers opinion that the doors on the first floor level have not been restored in keeping with the period and design of the original doors on the first floor level, shown on photographs of the east facade, Illustrations No. 2, 3, 4, and 5.

Photo: J. E. Boucher, May 1963
Neg. No. HODC 4196



ILLUSTRATION NO. 27

West facade as it appears today.

See Illustration No. 36 showing proposed restoration of the east facade.

Photo: Jack E. Boucher, May 1963
Neg. No. HABS 4199



ILLUSTRATION NO. 28

South facade as it appears today. Windows and doors on this facade were restored in 1959.

It is the writers opinion that the doors on the first floor level have not been restored in keeping with the period and design of the original doors on the first floor level shown on the photographs of the east facade, See Illustrations No. 2, 3, 4, and 5.

Photo: J. E. Boucher, June 1963
Neg. No. [illegible] 4198

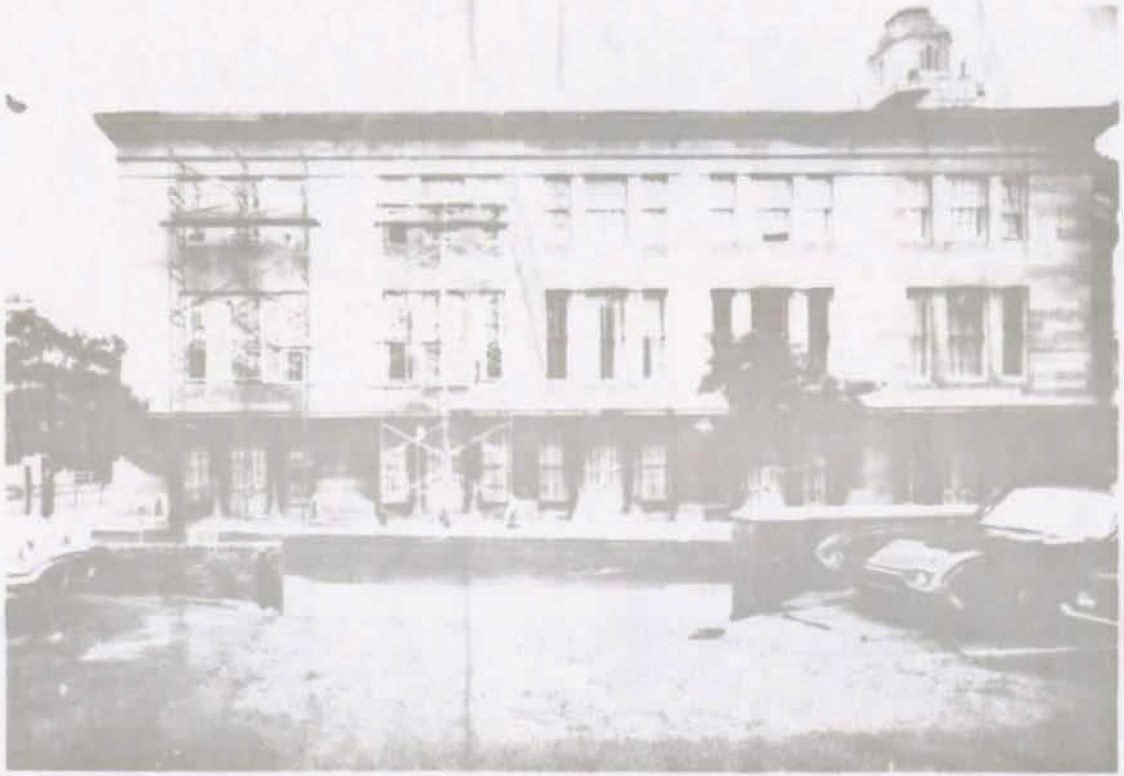


ILLUSTRATION NO. 29

View of the present copper wire guard enclosing the column capitals on the east portico.

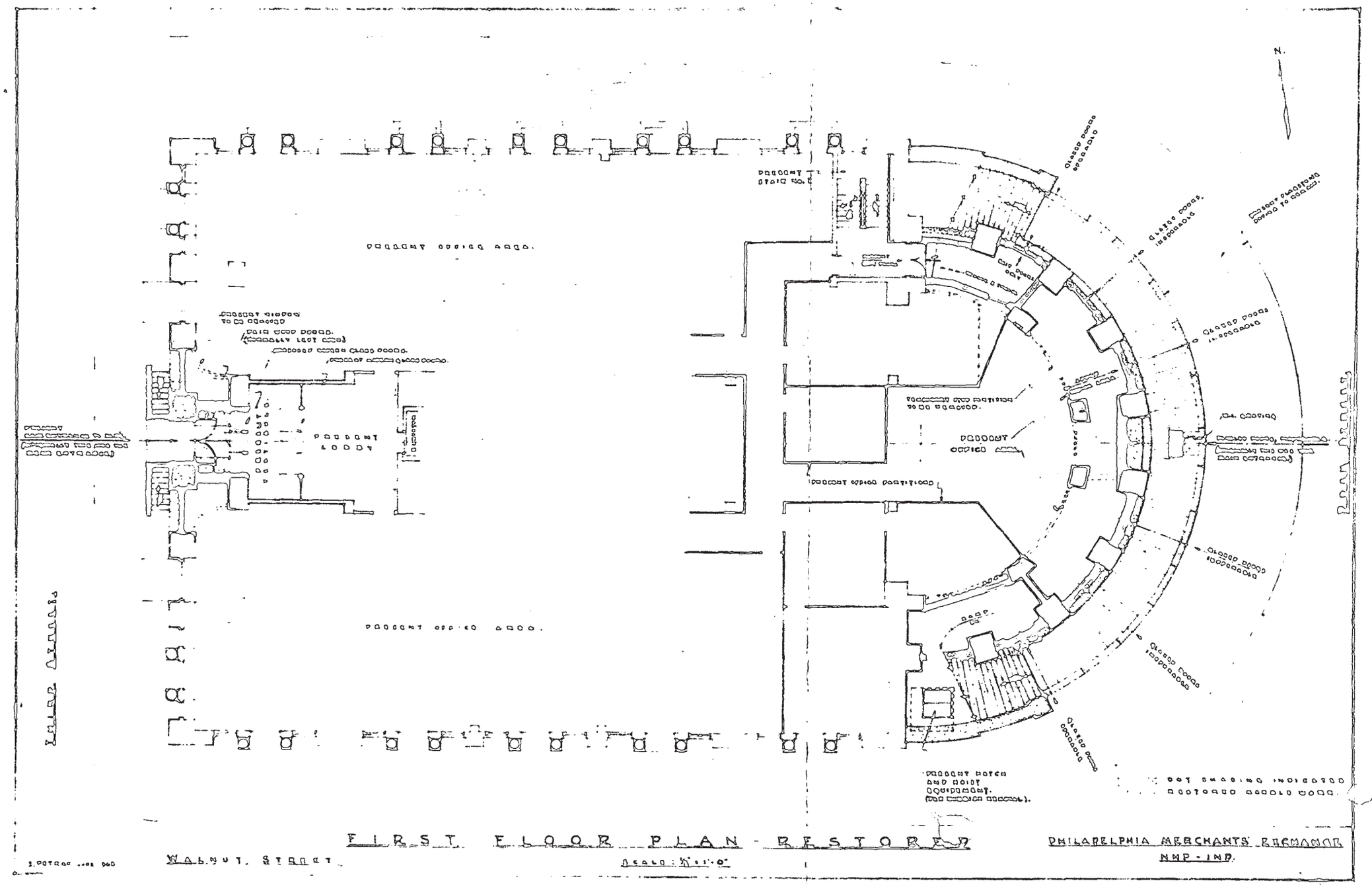
The west portico column capitals have similar guards.

Photo: Jack E. Boucher, March 1963
Neg. No. HABS 4201

ILLUSTRATION NO. 30

First floor plan, proposed restoration.

This plan also shows a suggested arrangement for enlarging the office area under the semi-circular portico. The exterior doors will not be operative, except the pair of doors adjacent to the southeast marble stair that will be used as a means of ingress to the present hatch and hoist equipment which is now being used for the removal of rubbish from the basement. The pair of doors adjacent to the northeast marble stair must be retained for use as a means of egress from the present Stair No. 2.



FIRST FLOOR PLAN - RESTORED

WALNUT STREET

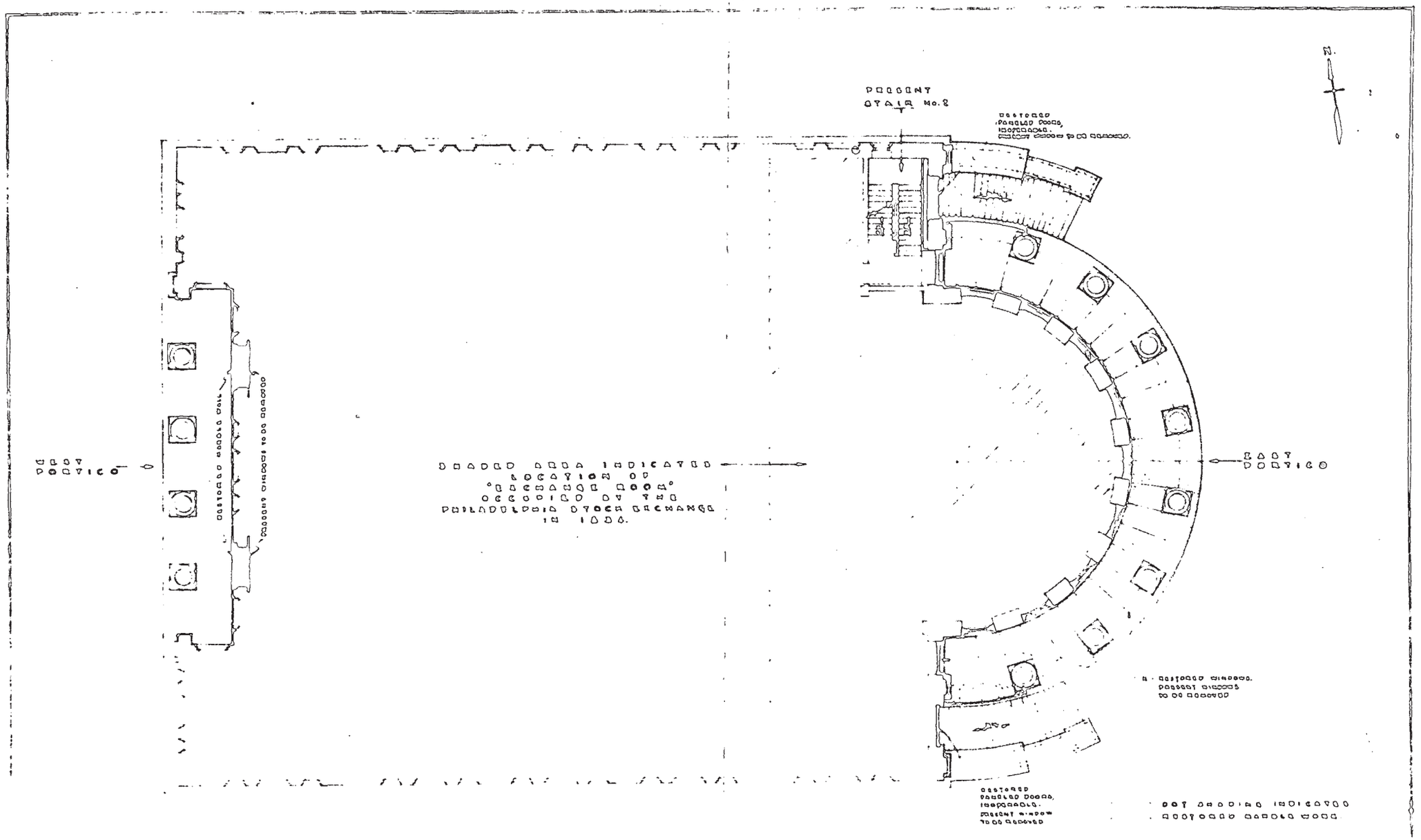
PHILADELPHIA MERCHANTS' EXCHANGE
NHP - INP.

ILLUSTRATION NO. 31

Second floor plan, proposed restoration.

The shaded area indicates location of the "Exchange Room" occupied by the Philadelphia Stock Exchange in 1834. There were two flights of stairs, one on each side of the first floor hall that ascended to the second floor; at the head of these was the entrance to the Exchange Room.

There were also the two marble stairs flanking the east portico that ascended to the Exchange Room from Dock Street. At the head of these stairs were a pair of paneled wood doors. These doors will be restored to their historic appearance. However, the doors will be inoperable because the present second floor level is 11-3/4 inches higher than the top of the original marble door sill.



SECOND FLOOR PLAN - RESTORED

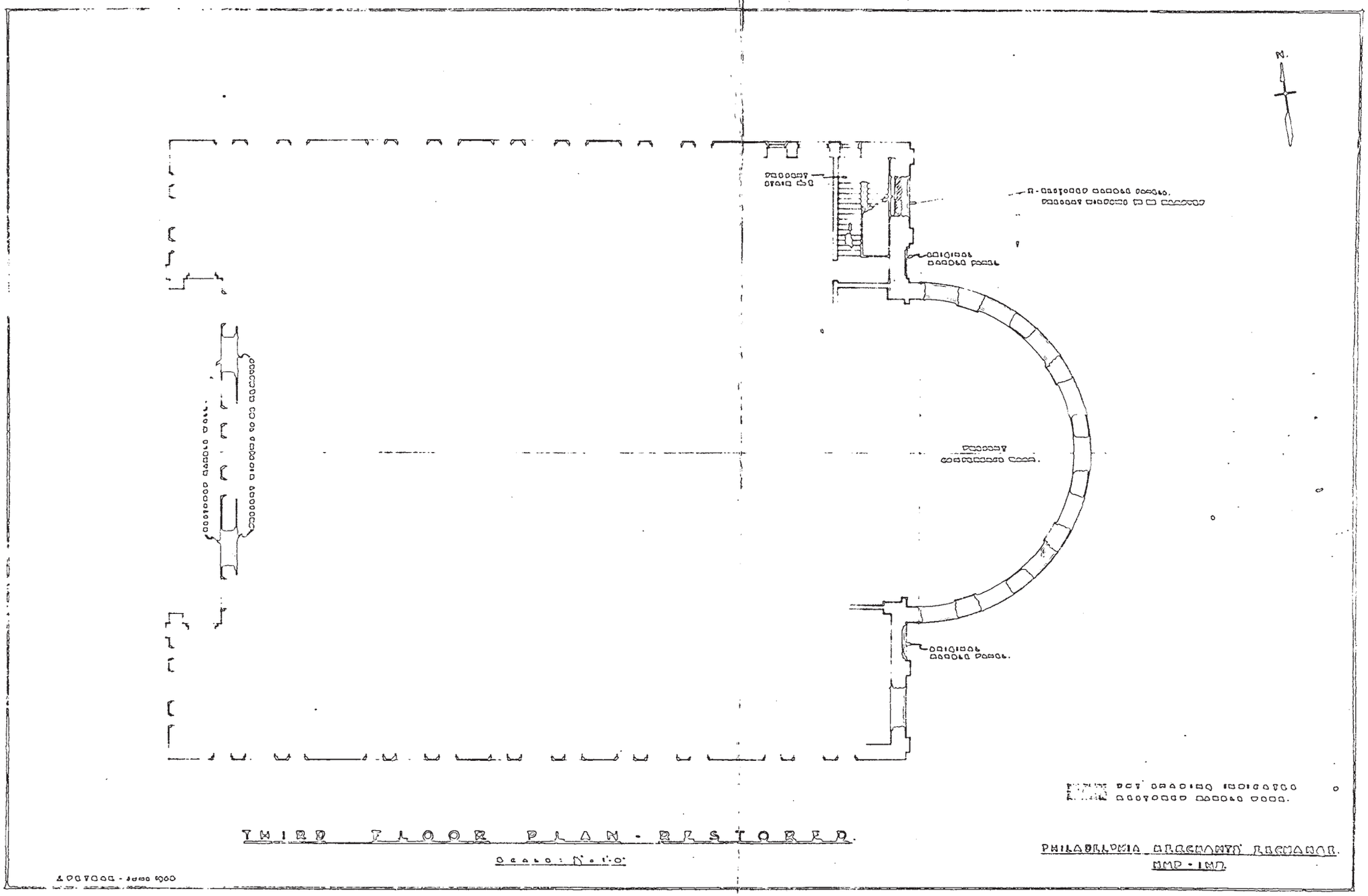
PHILADELPHIA MERCHANTS EXCHANGE
NMP - IND.

ILLUSTRATION NO. 32

Third floor plan, proposed restoration.

Plan shows the location of the two original marble panels on the east portico and two restored marble panels adjacent to the existing ones. Also nine restored panels in the rotunda. These eleven panels were replaced with double hung windows some time after 1906.

The west wall shows proposed restoration of the marble facing in place of two double hung windows that were added, probably during the alterations by Louis C. Hickman in 1901.



THIRD FLOOR PLAN - RESTORED.

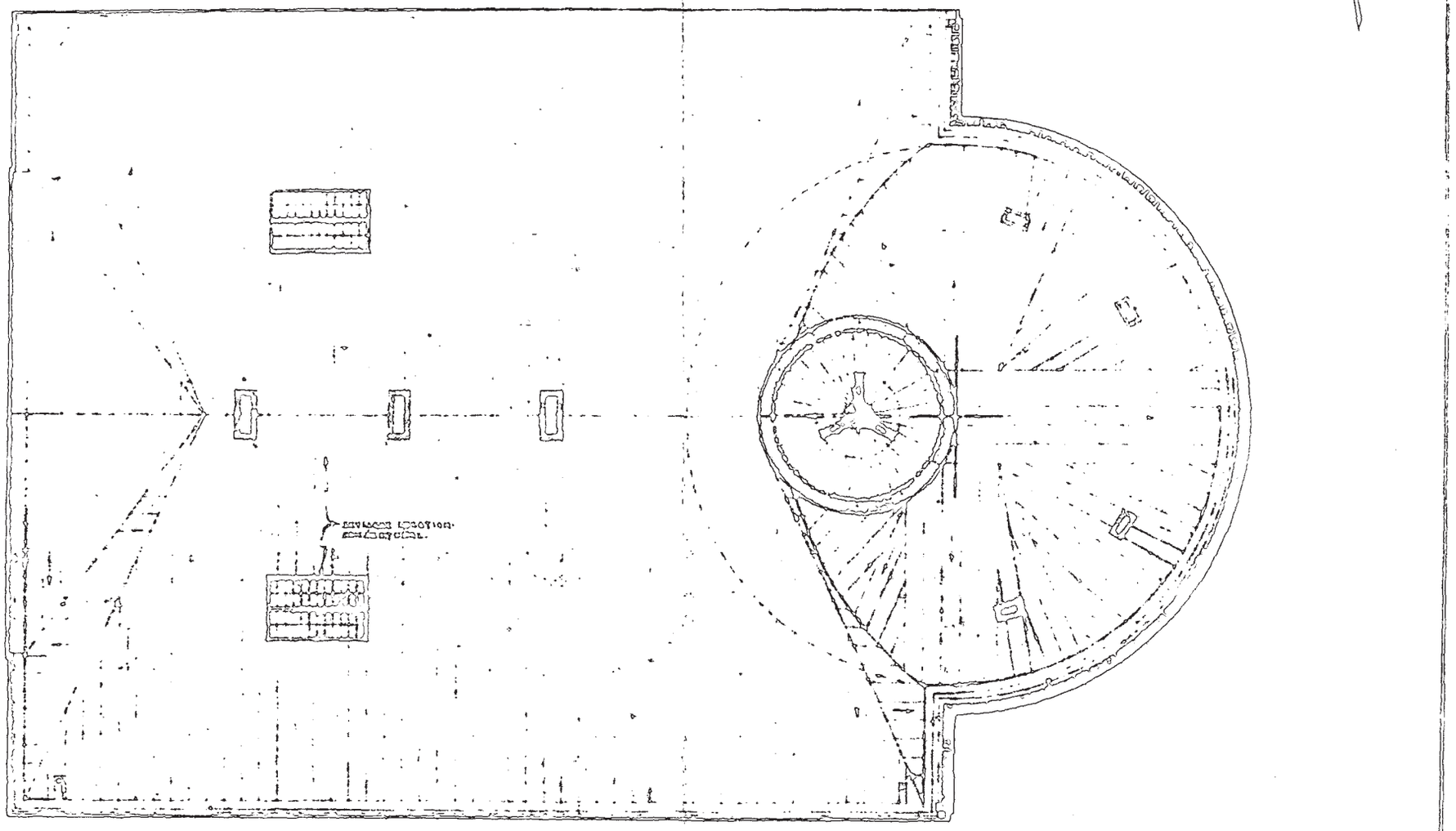
SCALE: 1/8" = 1'-0"

PHILADELPHIA ARCHDIOCESAN ARCHIVES
MMP - 1993

ILLUSTRATION NO. 33

Roof plan, proposed restoration.

It is not recommended that the skylights be restored at this time. Their location is conjectural, they will serve no function and they would not be visible from the street.



ROOF PLAN - RESTORED

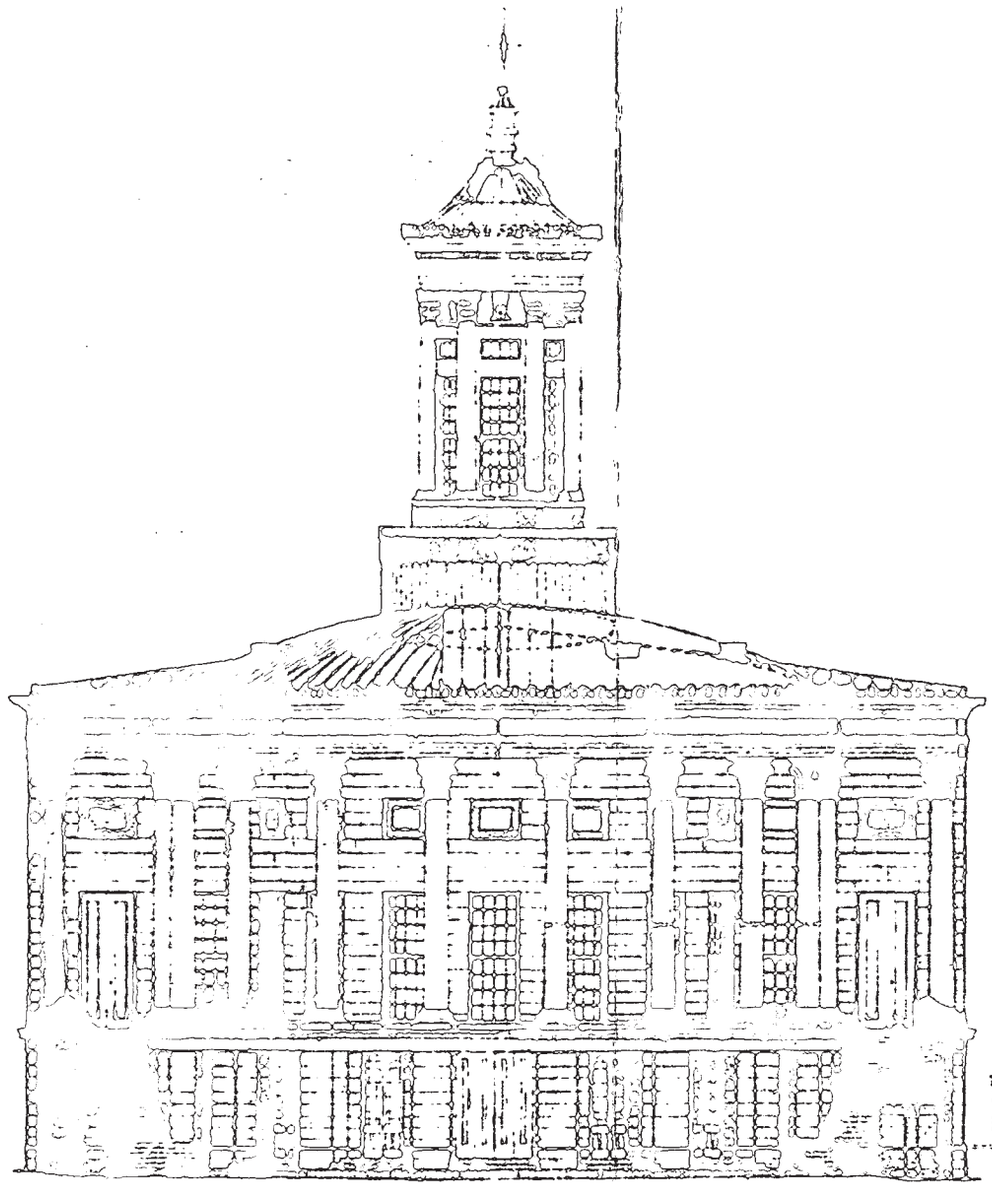
Scale 1/4" = 1'-0"

S. PETROS ... 1900

PHILADELPHIA MERCHANTS EXCHANGE
NHP - INP.

ILLUSTRATION NO. 34

East facade, proposed restoration.



EAST ELEVATION RESTORED

(DOCK STREET)

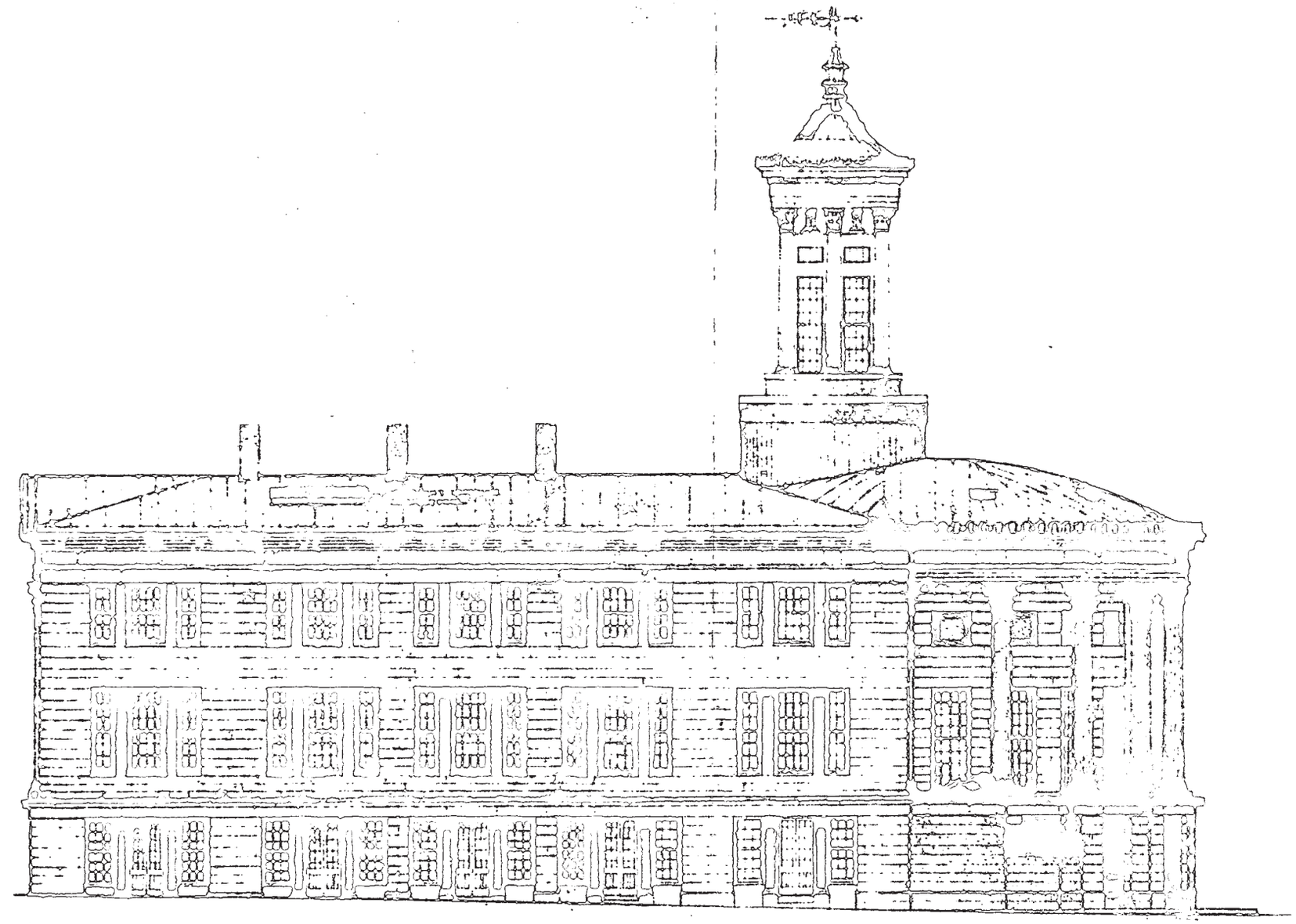
SCALE 1/8" = 1'-0"

PHILADELPHIA MERCHANTS' EXCHANGE

END - IMP.

ILLUSTRATION NO. 35

South facade, proposed restoration.
(North facade similar)



SOUTH ELEVATION RESTORED

NORTH ELEV. SIMILAR

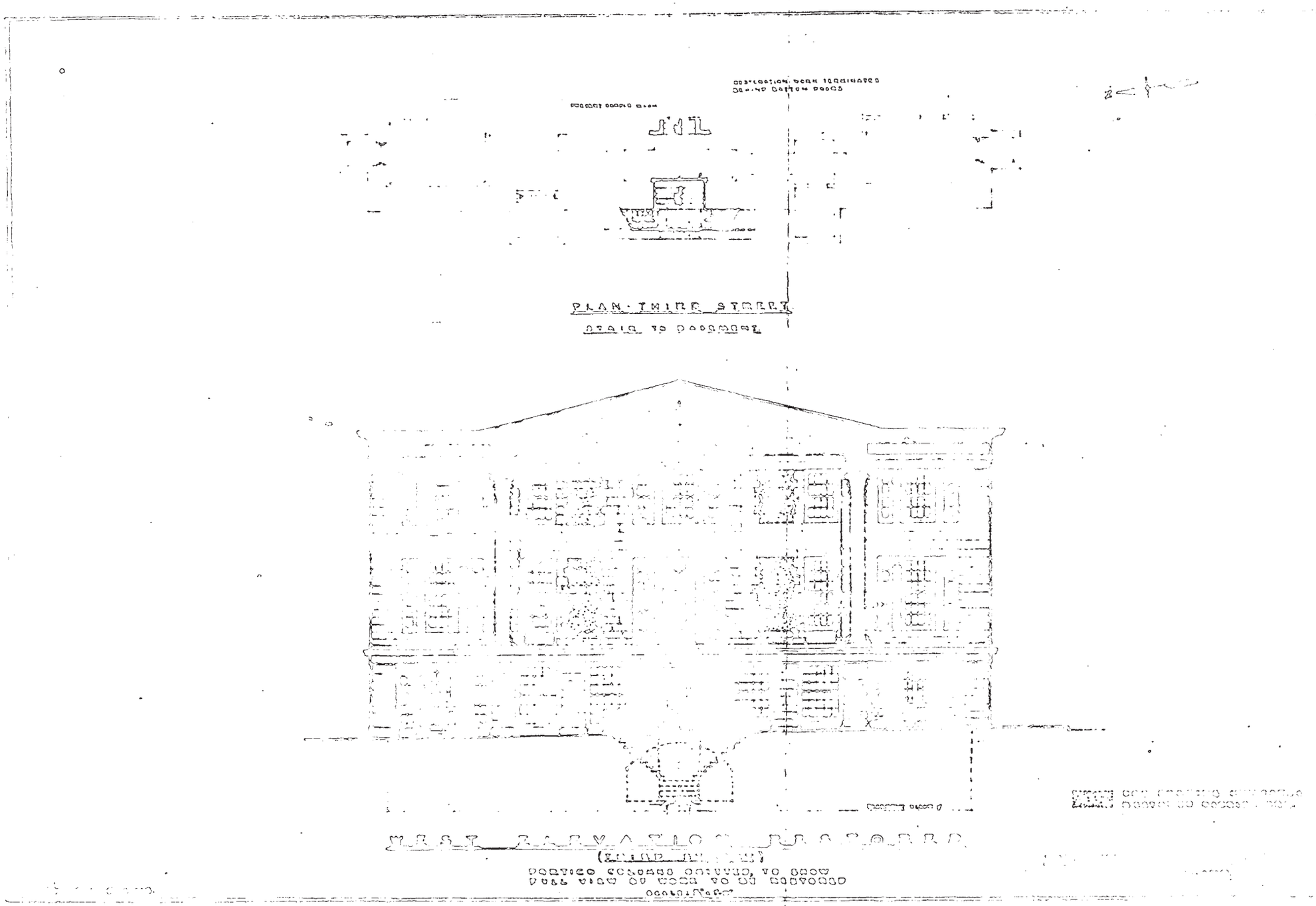
SCALE: 1/8" = 1'-0"

PHILADELPHIA MERCHANTS' EXCHANGE

MMP - MM

ILLUSTRATION NO. 36

West facade, proposed restoration of stairway to basement.



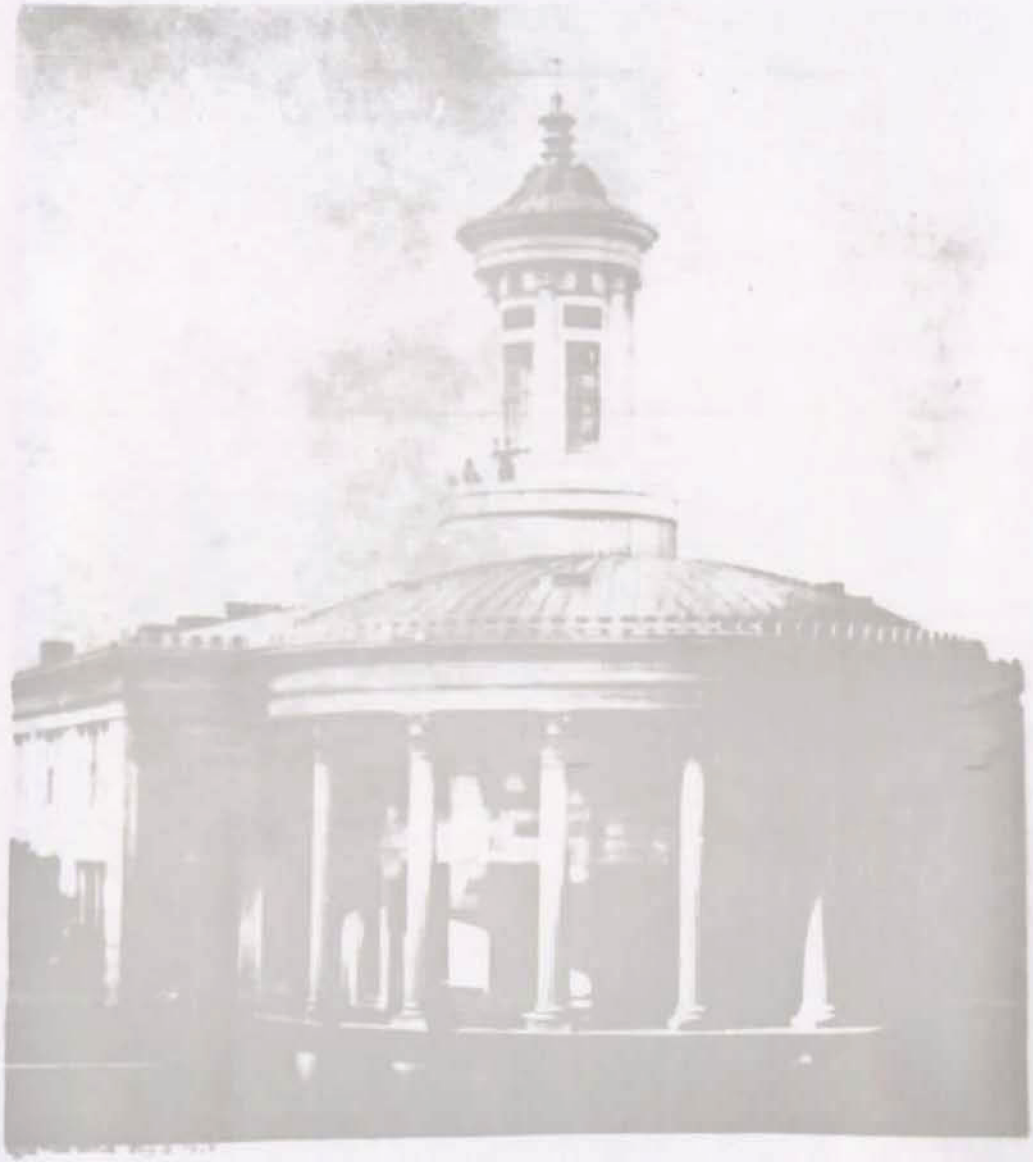


ILLUSTRATION NO. 37

1849 Talbotype, view of the Dock Street Portico, [illegible] (Rotunde).

This is the photograph used as the basis for the reconstruction drawings of the "Lantern" shown in Illustration No. 40.

Photo: Courtesy Historical Society Penna.
Copy Neg. No. [illegible]



ILLUSTRATION NO. 38

First attempt to test the accuracy of the 'reverse perspective method' for proportion by photography. It can be seen that the general mass of 'Lantern' is too slender in comparison with the 1849 photograph.

Photo: Jack E. Boucher, January 1962
Neg. No. HODC 4270



ILLUSTRATION NO. 39

1849 Daltotype, view of the Dock Street [illegible] East Facade).

This is the photograph used as the basis for the [illegible] drawings of the Lantern shown in Illustration No. [illegible].

Photo: Courtesy Historical Society Penna.
Copy Neg. No. [illegible]

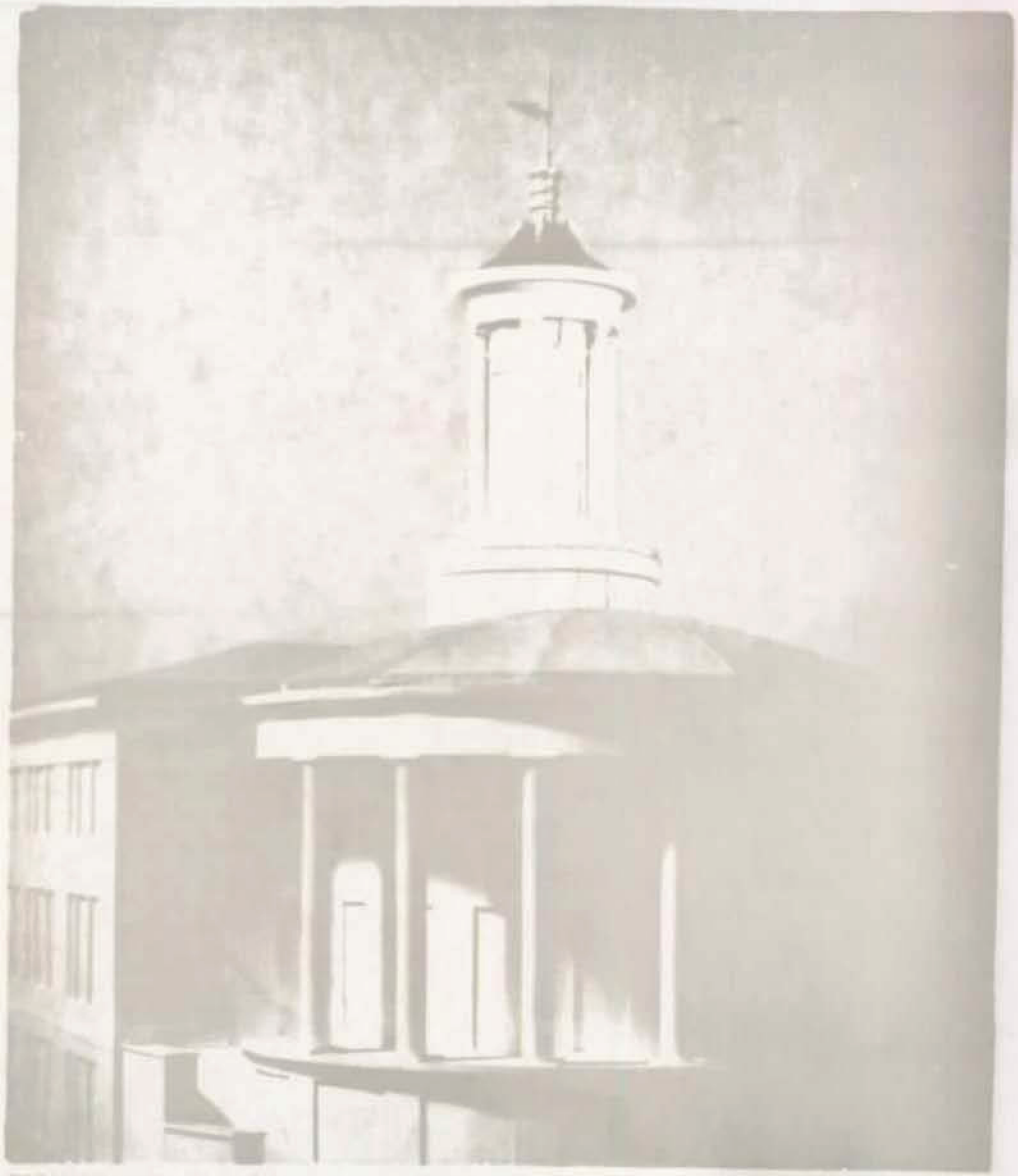


ILLUSTRATION NO. 40

Last photograph taken of the model.

Comparing it with the 1849 photograph the "lantern" still shows a slight slenderness, however, we were able to correct this by using proportional dividers in determining the final diameters and heights for our construction drawings.

It is felt that the original proportions have been determined as accurately as possible from photographic materials. It is also felt that this method is more accurate than using the "reverse perspective method" on a curved structure.

Photo: J. E. Boucher, June 1963
Neg. No. HODC 4277

ILLUSTRATION NO. 41

One dentil and the top portion of a tripod ornament from the original Strickland lantern.

The two pieces were found in the attic while investigations were being made of the building. This view shows the front elevation of the top portion of the tripod carving.

Photo: P. Hartshorne, May 1958
Neg. No. INHP 5956



ILLUSTRATION NO. 42

Another view of the dentil and the top portion of the tripod ornament showing the curved back of the carving, where it fitted against the curve of the frieze.

Photo: P. Hartshorne, May 1958
Neg. No. INHP 5957



ILLUSTRATION NO. 43

The Choragic Monument of Lysicrates in Athens.

From the book Antiquities of Athens, by Stuart and Revett, Volume I, 1762 edition.

Courtesy: University of Pennsylvania, Fine Arts Library

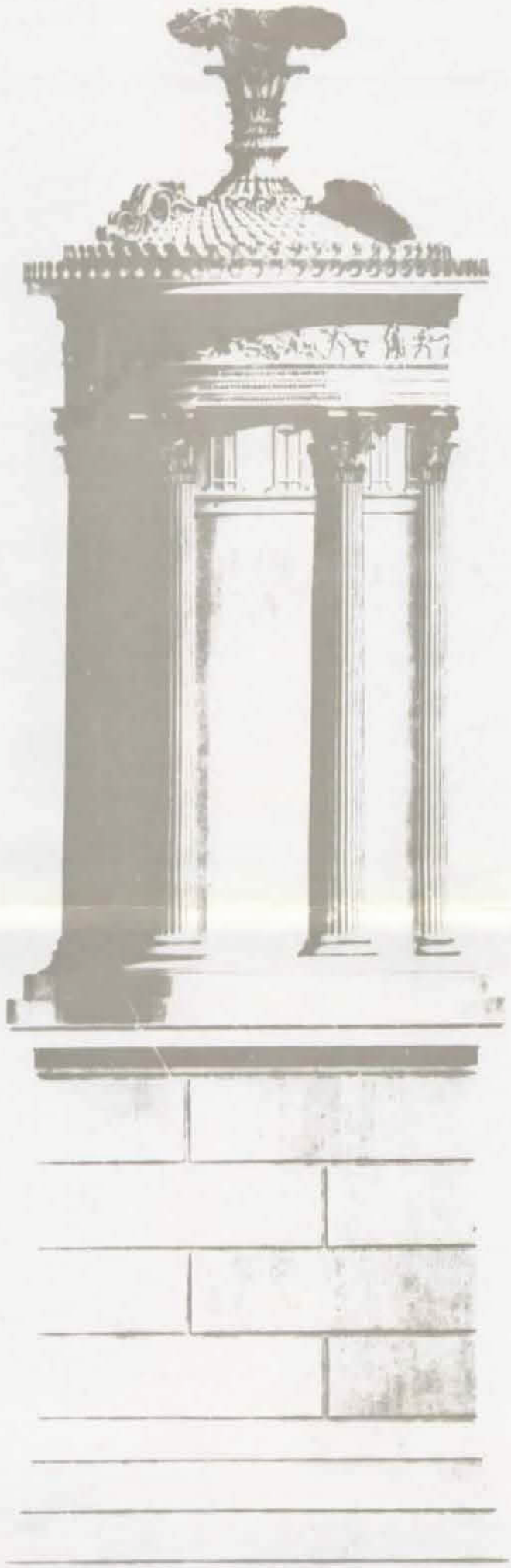


ILLUSTRATION NO. 44

Details of the Choragic Monument, cornice and column capital.

From the book Antiquities of Athens, by Stuart and Revett, Volume I, 1762 edition.

Courtesy: University of Pennsylvania, Fine Arts Library



ILLUSTRATION NO. 45

Details of the Choragic Monument, roof scroll and roof.

From the book Antiquities of Athens, by Stuart and Revett, Volume I, 1762 edition.

Courtesy: University of Pennsylvania, Fine Arts Library

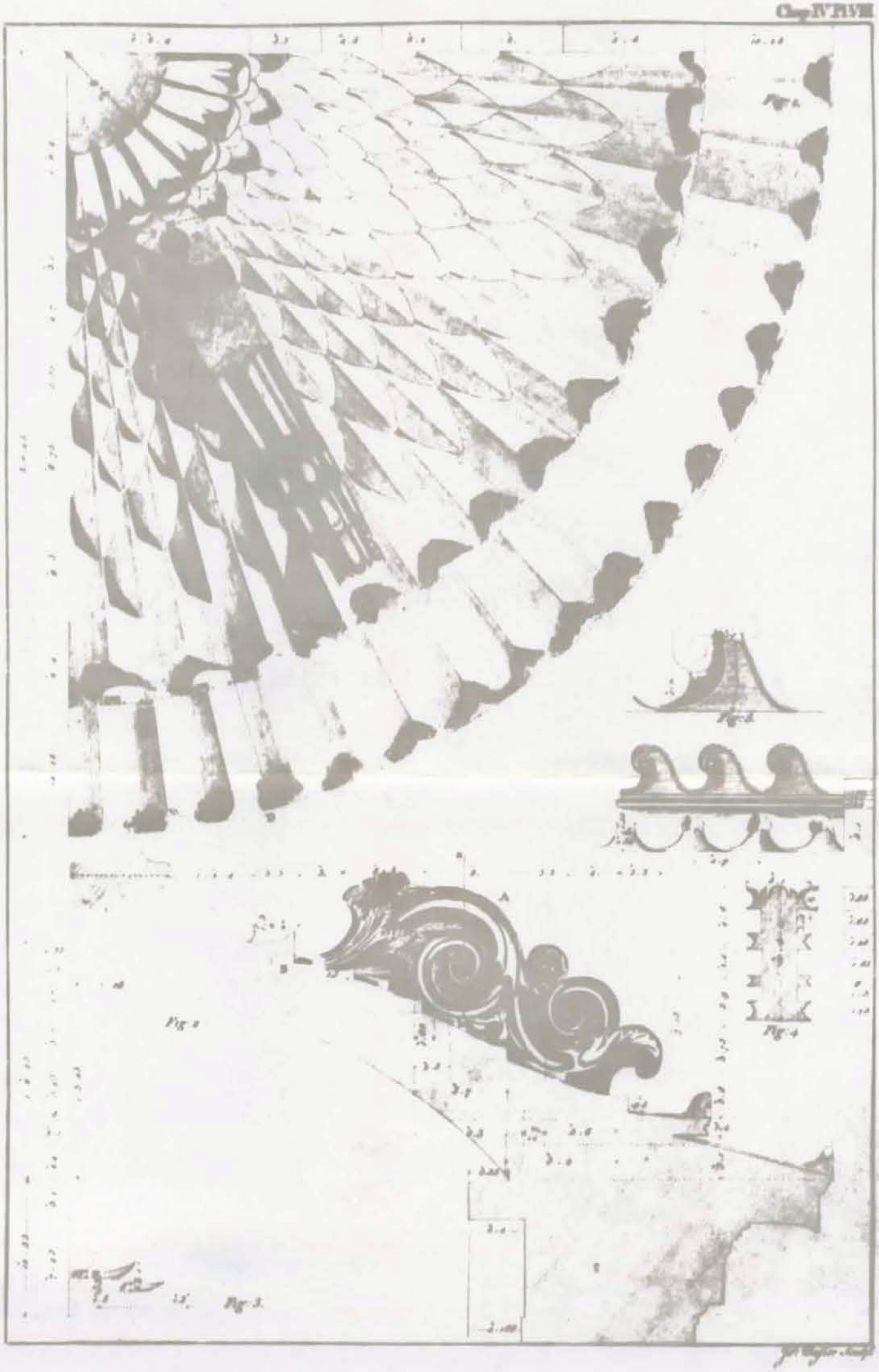


ILLUSTRATION NO. 46

Lantern, reconstructed.

Working drawing of elevation, plans and sections.

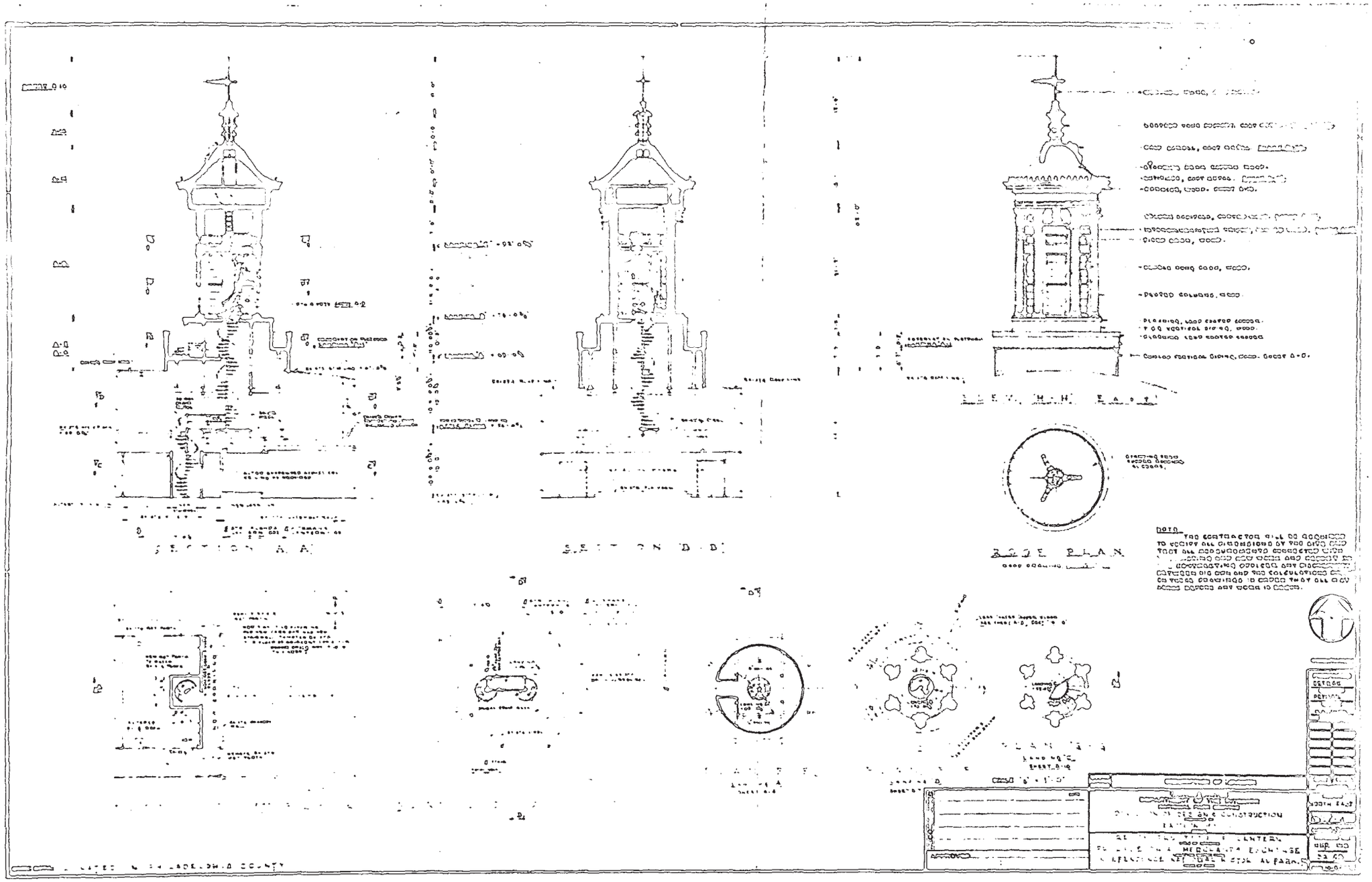

SECTION A-A
SECTION B-B
ROOF PLAN

ILLUSTRATION NO. 47

Exterior lantern details.

Working drawing of the engaged column capital, inter-columniation tripod and roof antefixes.

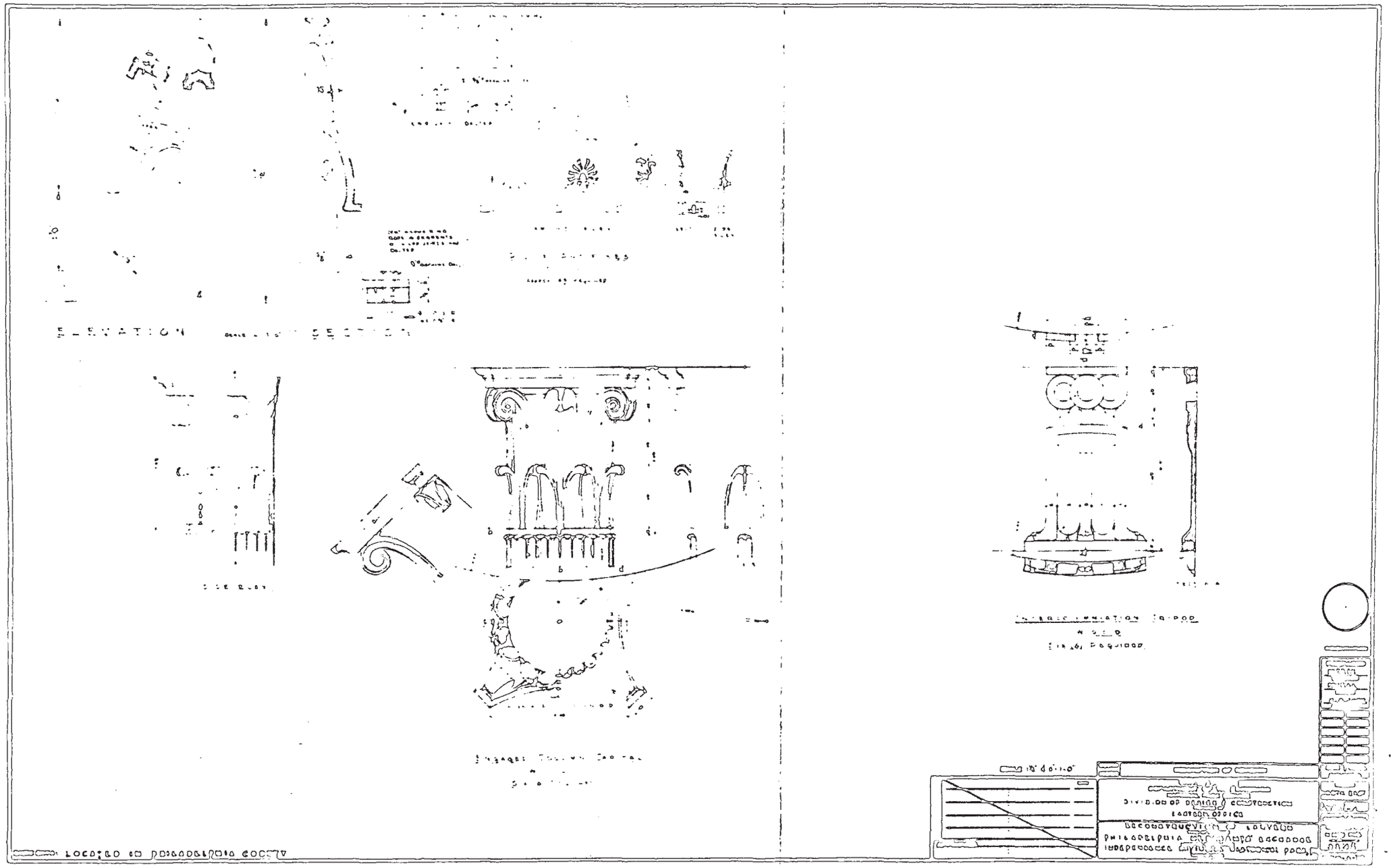


ILLUSTRATION NO. 48

Exterior lantern details.

Working drawing of the roof scroll and weather vane support.

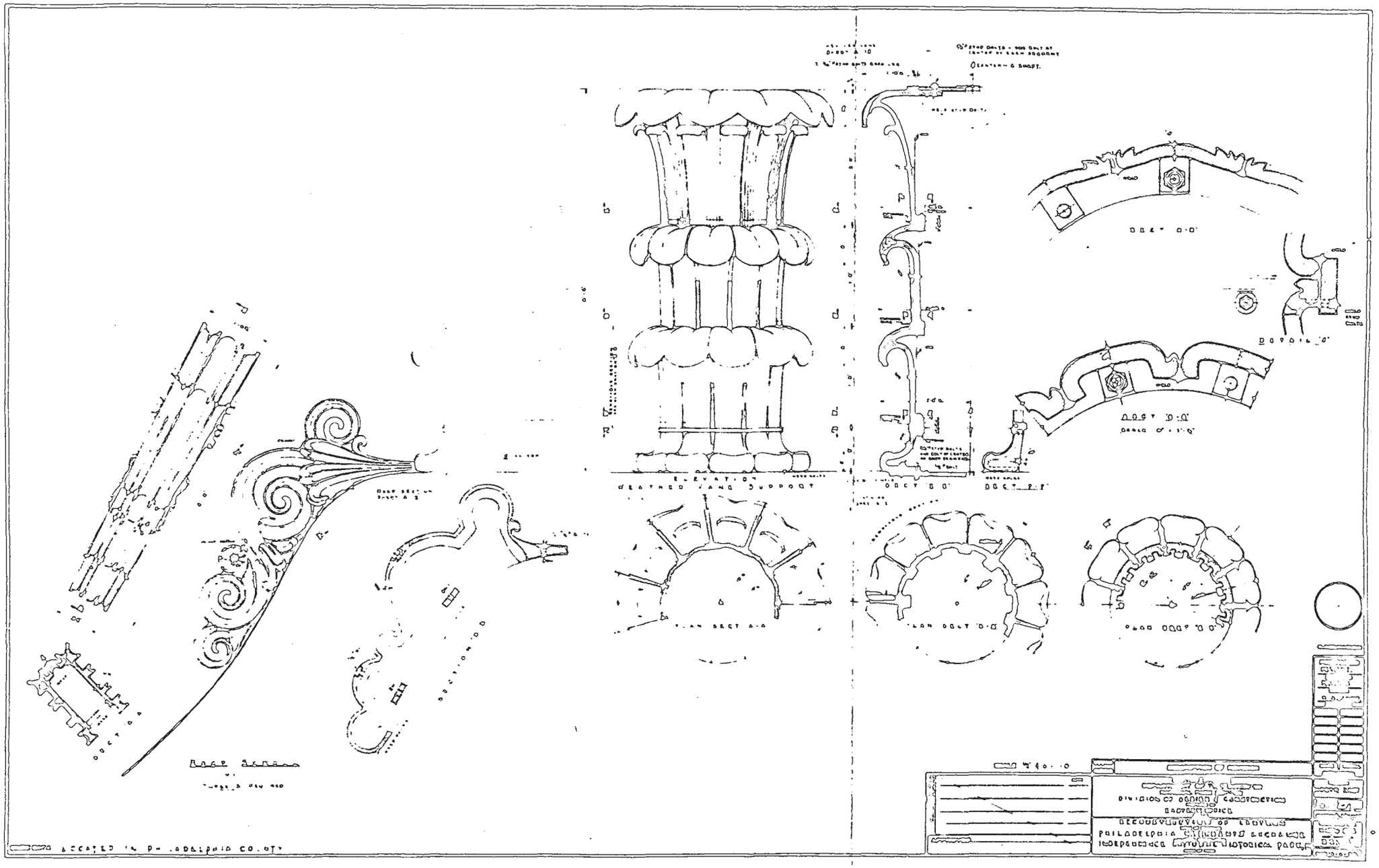


ILLUSTRATION NO. 48

Exterior lantern details.

Working drawing of the roof scroll and weather vane support.

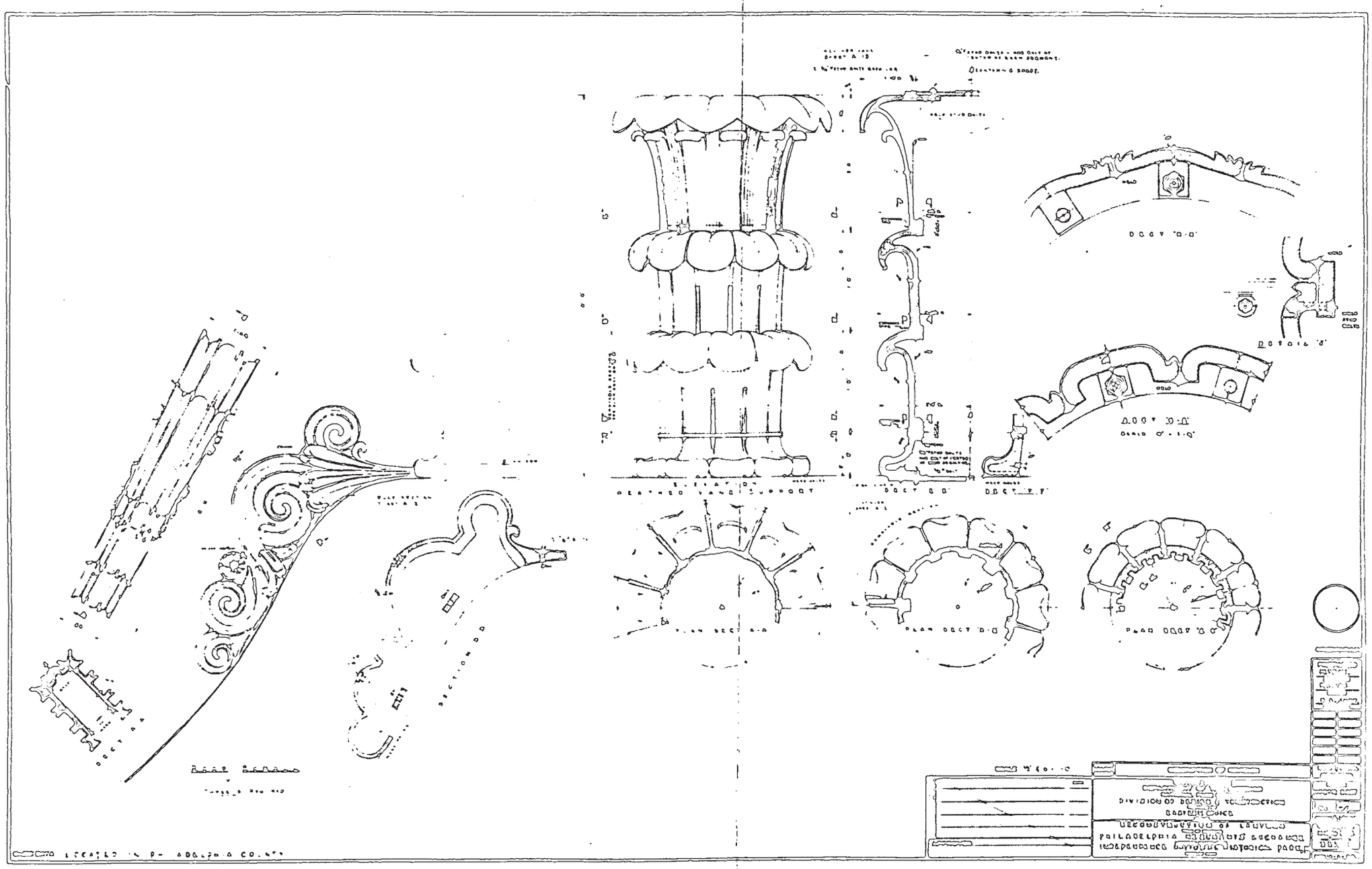


ILLUSTRATION NO. 49

Exterior lantern details.

Working drawing of the cornice profiles.

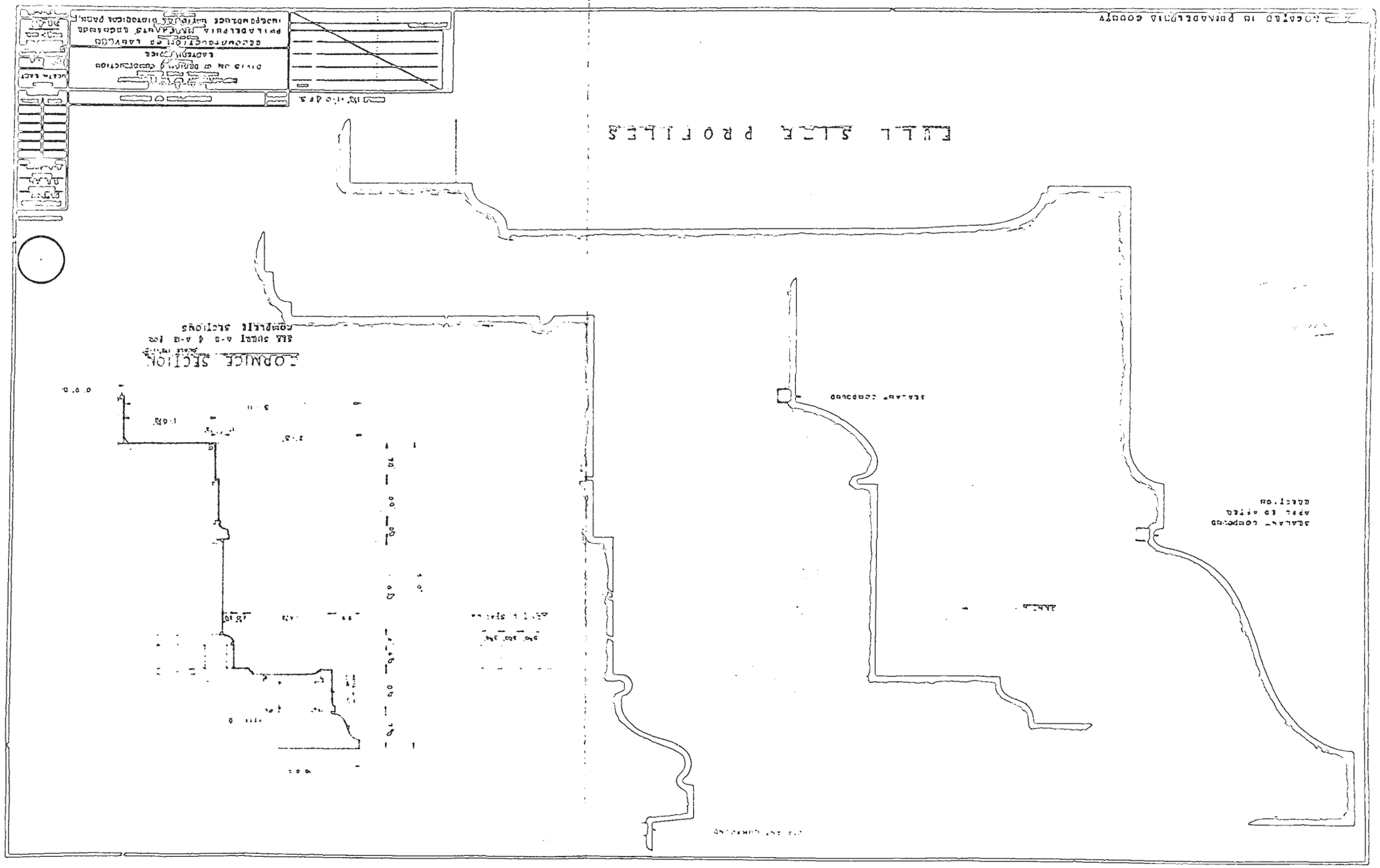


ILLUSTRATION NO. 50

Exterior lantern details.

Working drawing of the weather vane.

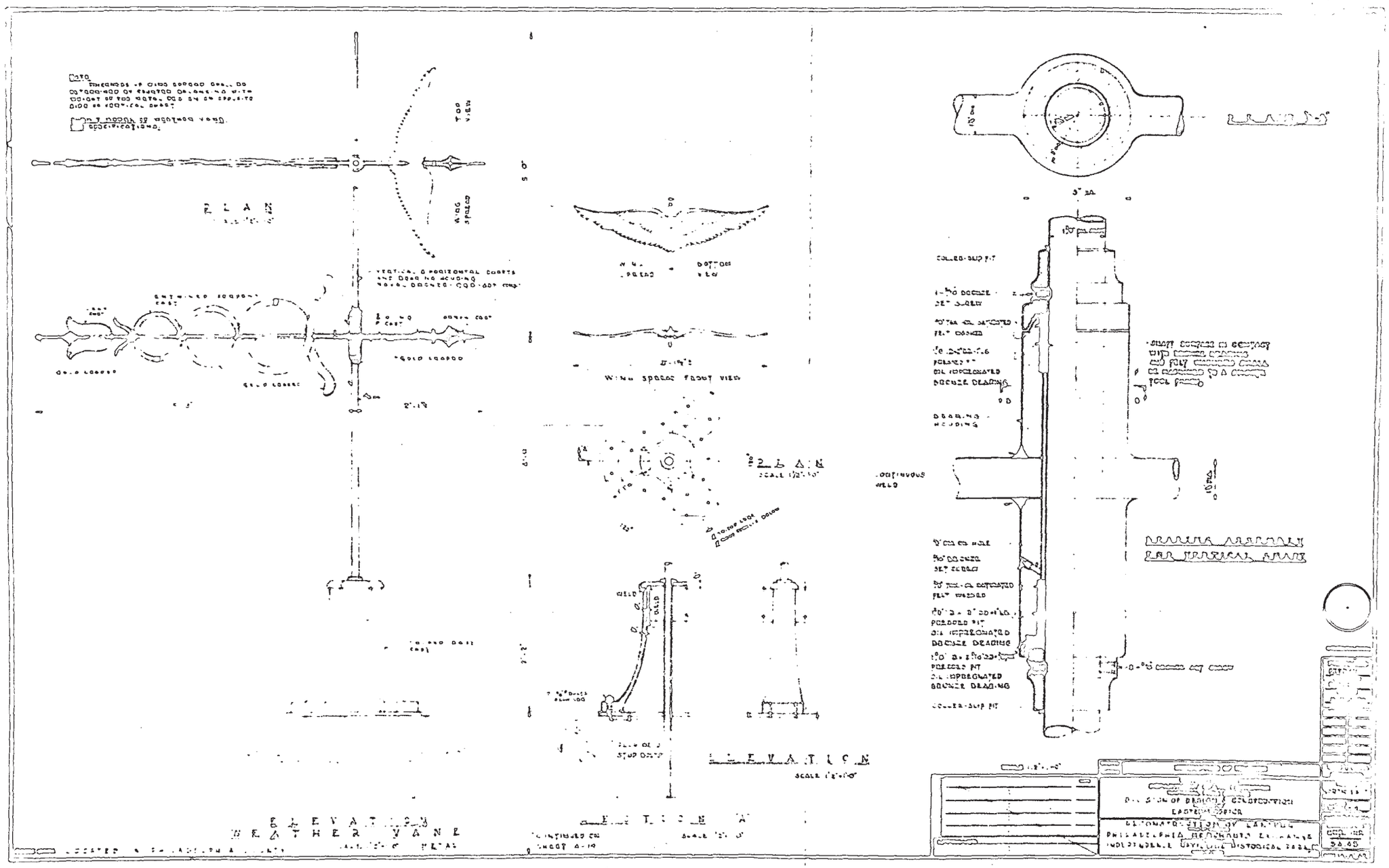

PLAN
TOP VIEW
WING SPREAD
VERTICAL & HORIZONTAL SHAFTS
ARE DRIVEN MOVING
WING SPREAD FRONT VIEW
PLAN
ELEVATION
WEATHER VANE
ELEVATION
ELEVATION
3" DIA
COILED-SLIP FIT
DRIVING HOUSING
CONTINUOUS WELD
BRONZE BEARING
DRIVING HOUSING
DRIVING HOUSING
DRIVING HOUSING
COILED-SLIP FIT
DIVISION OF DESIGN & DEVELOPMENT
EASTERN OFFICE
DESIGNATED BY CONGRESS AS A UNIT OF THE
PHILADELPHIA NATIONAL HISTORICAL PARK
INDEPENDENCE NATIONAL HISTORICAL PARK
DRAWING NO.
NPS 65

ILLUSTRATION NO. 51

Exterior lantern details, full size final model of a column capital.

This carving was first modeled in clay so that the character and depth of relief could be studied. The final model was cast in Fiberglas reinforced plastic from a plaster negative mold made from the clay model.

Photo: Jack E. Boucher, March 1963
Neg. No. EODC 4204



ILLUSTRATION NO. 52

Lantern details, full size final model of an inter-columniation tripod ornament.

This model was carved in wood by the day-labor force. The model will be used to reproduce the finished carvings.

Photo: Jack E. Boucher, March 1963
Neg. No. EODC 4203

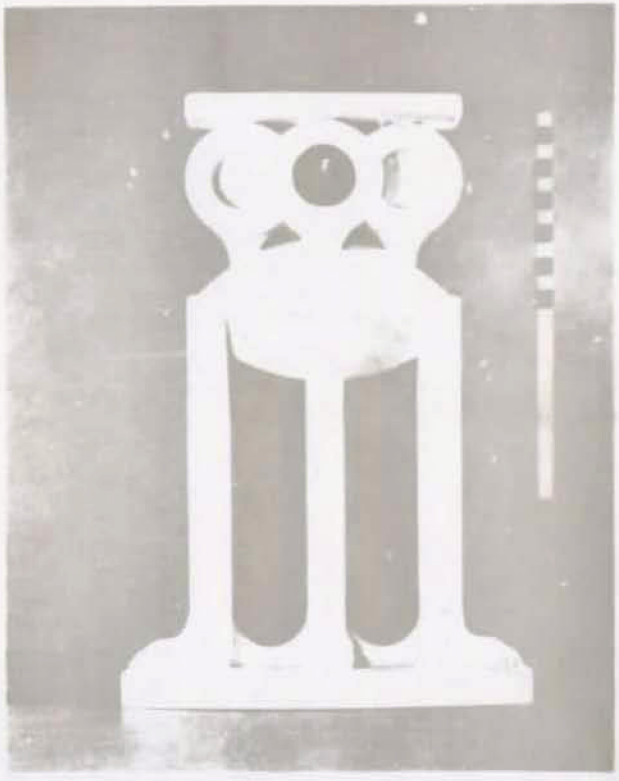


ILLUSTRATION NO. 53

Exterior lantern details, full size final model of a roof scroll.

This carving was first modeled in clay so that the character and depth of relief could be studied. The final model was cast in Fiberglas reinforced plastic from a plaster negative mold made from the clay model. From this plastic model negative molds will be prepared for casting the finished product.

Photo: Jack E. Boucher, March 1963
Neg. No. EONC 4205



ILLUSTRATION NO. 54

Exterior lantern details, full size final model of a roof antefix.

This model was carved in wood by the day-labor force. From this wood model negative molds will be prepared for casting the finished product.

Photo: Jack E. Boucher, March 1963
Neg. No. EODC 4202

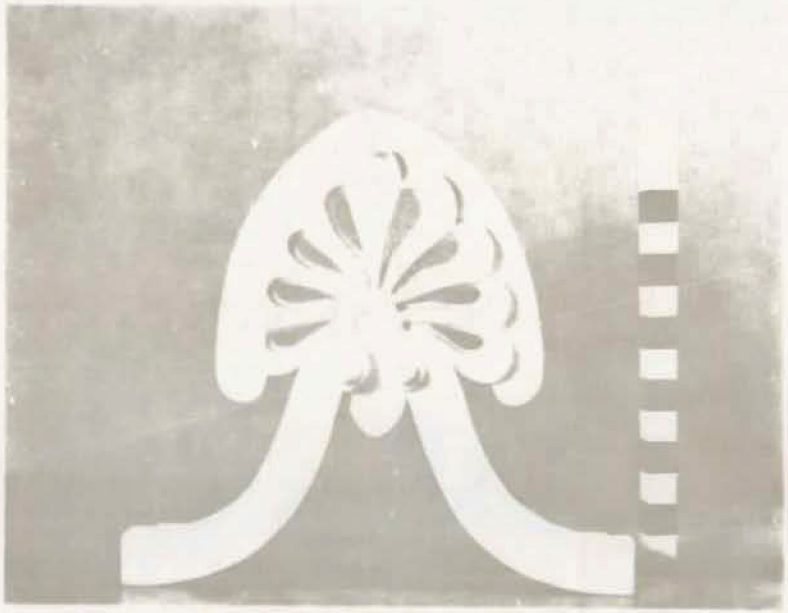


ILLUSTRATION NO. 55

Exterior lantern details, full size model of the weather vane support.

The height of this support is 6'-4". This carving was first modeled in clay so that the character and depth of relief could be studied. The final model was cast in Fiberglas reinforced plastic from a plaster negative mold made from the clay model. From this plastic model, negative molds will be prepared for casting the finished product.

Photo: Jack E. Boucher, March 1963
Neg. No. EODC 4206

