D-13

Historic Structures Report

ON

INDEPENDENCE HALL

Independence National Historical Park

Architectural Data Section

PART I, SUPPLEMENT I

Prepared by
Lee H. Nelson
Architect
September 1961

RECOMMENDED

Charles R. Peterson
Supervising Architect, Historic Structures — Date Sept 22-61

Robert G. Hall
Chief, EODC — Date 9/22/61

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

ON MICROFILM

CONTENTS

		Page
INTRODUCTION AND BACKGROUND FOR THIS REPORT.....		1
RECOMMENDATIONS FOR STRUCTURAL REPAIRS.....		2
PRELIMINARY COST ESTIMATE FOR STRUCTURAL REPAIRS.....		3
ARCHITECTURAL RESEARCH.....		4
APPENDIX I		
14 July 1961	Extract from Historic Structures Weekly Newsletter	6
14 July 1961	Memo to Superintendent, Independence NHP, from Chief EODC, re Replastering Assembly Room Ceiling, Independence Hall	7
19 July 1961	Memo to Chief EODC from Supervising Architect, Historic Structures, re Meeting on Rehabilitation and Plaster Repairs, Independence Hall	9
20 July 1961	Memo to Superintendent, Independence NHP, from Chief EODC, re Plaster Collapse Second Floor Independence Hall (Report by Architect Lee Nelson, Historic Structures Section).	11
21 July 1961	Memo to Superintendent, Independence NHP, from Chief EODC, re Request for Emergency Structural Investigation of Independence Hall.	15
14 August 1961	SHELDON A. KEAST REPORT, entitled "Repairs to Independence Hall (Exclusive of Tower)," including drawings (2 sheets).	16
16 August 1961	Memo to Supervising Architect, Historic Structures, from Architect Nelson, re Review of Sheldon A. Keast Report entitled "Repairs to Independence Hall," August 14, 1961.	21

Page

1 September 1961 — Memo to Superintendent, Independence, from Chief EODC, re Minutes of Meeting on Independence Hall Restoration (with attachment of Memo to Supervising Architect, Historic Structures, from Architects Hartshorne and Nelson). — 23

APPENDIX II - ILLUSTRATIONS AND DRAWINGS

Photographs of Ceiling Collapse (3) - 13 July 1961

Measured Drawings of Structural Details (14 sheets)

Time Schedule for Rehabilitation Program (Tentative)

INTRODUCTION AND BACKGROUND FOR THIS REPORT

Independence Hall is almost certainly one of the most complicated historic buildings in the country. We have only begun to understand the complex evolution of the interior architectural alterations.

However, our understanding of the basic structure is much more complete. Fortunately, most of the original members have survived to the present time. Their alarmingly poor condition should be an object lesson showing the cumulative result of half-measures taken to correct major defects.

Our attention was dramatically focused on this particular problem as a result of the second floor plaster ceiling collapse of July 13 (Memoranda relating to these events are included in Appendix I). The summer student program gave us the manpower to study and measure the attic floor and roof trusses. The excellent measured drawings of the attic and second floor framing were prepared by students Dave Baker (Univ. of Illinois), Blaine Cliver (Carnegie Tech) and Tom Frost (Princeton). They were assisted by Architect J. M. Everett and supervised by Architect Lee Nelson. The recording of these features revealed many structural deficiencies: dry rot, severe checking of wooden members, excessive deflection and twisting of the trusses and near failure of many secondary roof members. Many of the members were structurally ineffective because they had been cut in two.

While the seriousness of these conditions was becoming evident the ceiling accident occurred and investigation revealed that all ceilings in the building were about to fail. Most ceiling plaster required immediate removal, especially the Assembly Room ceiling which was taken down by contract. The Supreme Court Room ceiling has been temporarily secured by removing the floor boards and supporting the ceiling with wire hangers.

Extensive removal of plaster ceilings and flooring boards allowed a more detailed inspection of the original framing members. Mr. Sheldon A. Keast, the consulting engineer for the structural rehabilitation of Congress Hall, was immediately called in for consultation. On July 21, EODC requested a complete structural investigation of Independence Hall, and recommended engaging the professional services of Mr. Keast for that purpose. His proposals for structural rehabilitation were submitted August 14 in a report titled "Repairs to Independence Hall (Exclusive of Tower)." See Appendix I for the Keast Report in its entirety.

RECOMMENDATIONS FOR STRUCTURAL REPAIRS

The Keast Proposal is a comprehensive and well-engineered plan for structural rehabilitation of the building with a minimum disturbance to the old framing. See "Minutes of Meeting held Wednesday, 23 August 1961" (Appendix I) for a review of the problems and the proposed solution. As consulting engineer, Mr. Keast feels

(and we agree) that remedial work will be extensive and is urgently needed.

The Part I Historic Structures Report (Administrative Data), dated March 1959, recommended that the Ewing Report be adopted. Subsequent study of that engineering report shows that it calls for needlessly drastic measures at Independence Hall. If followed, the building would be gutted throughout, leaving only the exterior brick walls. The interior would be rebuilt of concrete and steel with applied architectural finish. This is incompatible with the National Park Service preservation policy, structurally unnecessary and out of tune with the intrinsic value of the fabric.

We recommend that the Ewing Report be abandoned for this building (as it was for Congress Hall) and that the Keast Proposal be adopted and carried into effect.

The structural work can be executed in two stages, that is, the east and west sections can be rehabilitated separately, with the center section phased with the second stage. This will allow the building to remain open for visitation at all times. A tentative time schedule (for all phases of the work) is included in Appendix II.

PRELIMINARY COST ESTIMATE FOR STRUCTURAL REPAIRS

The extent of the work proposed for contract includes fabrication of structural steel, delivery and erection, shoring,

scaffolding, alterations to existing wooden members, cutting holes in roof for insertion of steel, patching roof, and including the phasing of work in several stages. Our estimated cost (for planning purposes) is $175,000. This figure is below Keast's rough estimate of $250,000, but it is above the Cardell Company's courtesy estimate of $135,000. Cardell is general contractor for the Congress Hall rehabilitation and is in a good position to advise us on costs. We have increased his estimate to allow for unknown conditions and possible increase in steel and labor costs.

ARCHITECTURAL RESEARCH

Removal of plaster and flooring has facilitated investigation of the fabric and enabled us to use the summer team of student architects to good advantage. A number of valuable measured drawings have been prepared (see Appendix II) which will form a basis for the Historic Structures Report, Part II, Architectural Data Section. Much has already been learned and study of the interior finishes should continue.

Architectural research is well under way in the Assembly Room. Some paneling has been removed, and it is evident that most of the woodwork dates from the 1831 and 1898 restorations. There is some indication of the plaster and wood trim as shown in the ca. 1800 Savage painting, presently acknowledged as a reasonably faithful representation of the Assembly Room. This painting shows

a fully paneled east wall with Ionic or "Composite" pilasters with an entablature consisting of a "pillowed" frieze and denticulated cornice.

The side walls (as represented in the Savage painting) appear to be plastered with architraves around the windows and a continuation of the denticulated cornice around the room.

The most interesting aspect of Savage's painting is the representation of a cove ceiling. We have already discerned physical evidence to substantiate this feature, as well as the plaster walls and window architraves. Further study may establish the extent of the entablature and dado.

By continuing architectural study at this time, we hope to have sufficient knowledge to start the actual restoration immediately following the structural rehabilitation. The architectural restoration can also be accomplished in stages, that is, the east and west sections can be restored separately so as to leave the building open at all times.

Although architectural study should continue, actual restoration would not begin until Fiscal Year 1963. The tentative time schedule for this entire project has been charted (previously cited, see Appendix II). By that time much of the structural work will have been finished and we will better understand the 1776 interior appearance of Independence Hall.

APPENDIX I

Memoranda Relating to Ceiling Collapse, Independence Hall, including the Keast Report.

Extract from
Historic Structures Weekly Newsletter
July 14, 1961

Independence Hall. At 12:30 pm, July 13, the east half of the plaster ceiling of the long gallery, 2nd floor, fell to the floor. We were alerted to this situation and took necessary precautions to protect visitors, personnel and all important furnishings and artifacts on the first floor. The balance of the plaster in that room was immediately removed to prevent further collapse. All of the second floor plaster ceilings were investigated and we found that all the weight of the modern (1920's) plaster and metal lath was so inadequately anchored to the ceiling joists that the furring strips have been slowly working loose. The recent activity in the attic area (measuring the old trusses and removal of the attic floor boards) may have aggravated the situation. Upon inspection, the Assembly Room ceiling was also found to be in danger of collapse and should be removed and replastered as soon as possible.

In cooperation with Superintendent Anderson, immediate arrangements were made to contact the Venzie Corporation (specialists in plain and decorative plastering) to further investigate and advise us on the necessary steps to ensure the safety of all plaster in the building. Venzie has done similar work in the Nation's Capitol.

It has not been necessary to close the building to the public.

Eastern Office
Division of Design and Construction
Philadelphia 6, Pa.

H30-H

July 14, 1961

Memorandum

To: Superintendent, Independence

From: Chief, EODC

Subject: Replastering, Assembly Room Ceiling, Independence Hall

We urgently recommend that the subject plaster ceiling be removed immediately. We were alerted to the weakness in this ceiling following yesterday's plaster failure in the long gallery, second floor.

This matter was discussed today with Mr. Venzie of the Venzie Corporation. His firm has had considerable experience of this kind, including repair work in the Nation's Capitol, and they are currently subcontracting for the plaster repairs in Congress Hall.

Venzie is prepared to remove the plaster starting Monday, July 17. His work will include scaffolding, removal and crating of the ornamental medallion, protection of the side walls and floors, removal of the plaster ceiling, new metal furring strips, metal lath and plaster. He estimates that the entire job will take about 6 days as follows: 2 days for scaffolding and protection of woodwork, 1 day for plaster removal, 1 day for channel furring and 2 days for new plaster. The medallion, dating from the 1890's, will not be replaced at this time. His quotation for the above work is $4400.00, which is below the estimates of our architectural staff.

Venzie has also agreed to allow us several days for a survey of the exposed ceiling structure. We recommend taking advantage of this opportunity to record the structural evolution of that room. To participate in this survey, we can assign Architects Hartshorne, Nelson, and the summer student team. We further recommend calling in the services of Sheldon A. Keast, Engineer, to study the exposed ceiling structure. We have selected Architect Lee Nelson as Project Supervisor and coordinator for these activities, with Architect Judd

acting in an advisory capacity.

As a temporary stabilization measure, Venzie has suggested shoring of deflected plaster ceiling, and our day labor forces will complete that work today, so as to provide an extra measure of safety to the visiting public. Existing fire detection devices in that room should be protected during the contract work.

Robert G. Hall
Chief

Copy to: Regional Director, Region Five
Chief of Design and Construction, Attn: Chief Architect (2)

Chief, EODC July 19, 1961

Supervising Architect, Historic Structures

Meeting on Rehabilitation and Plaster Repairs, Independence Hall

H30-H. The following records a meeting held on Monday afternoon to discuss the program for the rehabilitation of Independence Hall with emphasis on emergency plaster repairs and structural investigation. The group met first at Independence Hall to view existing conditions and then in the Regional Conference Room. Messrs. Lee and Palmer from Region Five; Anderson, Kurjack, Grossman and Wallace of Independence NHP; and Hall, Peterson, Judd and Nelson of EODC were present.

DISCUSSION

Regional Director Lee first reviewed the overall program recently prepared by this office in chart form for the restoration of buildings within Independence NHP.

Conditions as revealed by recent architectural investigations in the attic of Independence Hall--and spectacularly demonstrated by the failure of a second floor ceiling--were discussed. It was generally agreed that all ceilings showing evidence of similar failure should be removed including the c. 1898 ceiling in the Assembly Room. The estimate of $4,400 submitted by the Venzie Corporation for (1) protecting the Assembly Room floors and woodwork, (2) erecting scaffolding, remove and crating center medallion, (3) removing balance of ceiling, (4) installing new lath on 3/4" channel and (5) replastering was discussed. Mr. Peterson thought it desirable to obtain a breakdown of this estimate so as to eliminate the replastering phase should we discover an unanticipated structural failure in framing above. Mr. Judd or Mr. Nelson will contact Mr. Venzie. It was agreed that the Venzie Corporation could start this work as soon as possible. This contract to be financed from donated funds. The value of temporarily replacing the plaster as a fire stop--even though it has to be replastered again after the framing has been permanently releveled--is recognized.

It was believed advisable that Sheldon Keast, Engineer, be employed to start a structural investigation of Independence Hall main structure now rather than delaying such investigation until the

restoration is programed. In this way Mr. Keast might have the opportunity to investigate the second floor framing during the period the plaster is removed. We might also have his report and recommendations for the September 19 meeting with the Advisory Board. Mr. Keasts findings may well alter the program to be recommended for the restoration of this building.

NOTIFICATION OF THE CITY

Mr. Anderson will invite the new City Architect, John L. Evans, to visit the Independence Square buildings so he may become acquainted with the existing conditions, EODC architects to be present. No formal letter to the City will be prepared unless requested by the City Architect after viewing the building.

Mr. Anderson mentioned that Mr. Evans is not now a member of the Advisory Board and should be invited as a member in addition to the former City Architect, George I. Lovatt, Jr., who may remain as a member of the board.

Charles E. Peterson
Supervising Architect
Historic Structures

Copy to: Supt., Independence
Regional Director, Region Five
Chief of Design and Construction (2)

APPROVED FOR DISTRIBUTION:

Robert G. Hall
Chief

Eastern Office
Division of Design and Construction
Philadelphia 6, Pa.

H30-H

July 20, 1961

Memorandum

To: Superintendent, Independence National Historical Park

From: Chief, EODC

Subject: Plaster Collapse, Second Floor, Independence Hall (Report by Architect Lee Nelson, Historic Structures Section)

INVESTIGATION OF ROOF FRAMING

This year we have three students participating in the Summer Measuring Program at Independence Hall. They are: Dave Baker (University of Ill.), Blaine Cliver (Carnegie Tech), and Tom Frost (Princeton). They are assisted by Architect J. M. Everett and supervised by Architect Lee Nelson.

The work consists of measuring and recording the attic structural system. Accurate drawings are being prepared upon which can be recorded all architectural evidence pertaining to the physical evolution of the building. The structural changes are very complex, and this advance study is anticipatory to the intensive historical and architectural research yet to come.

Much has been learned during the first month of this Program, and we are now in a better position to understand and evaluate the basic structural problems at Independence Hall. Some aspects of the problem are rather alarming: dry rot and the long history of structural modifications have left the roof fabric in a precarious condition.

Removal of the "modern" attic floor boards was a prerequisite to inspection and understanding of the original attic floor framing. Carpenters commenced removal of the flooring on June 27, and worked intermittantly until July 13, at which time about 75 per cent of the work was complete.

COLLAPSE OF CEILING

On July 13, the students were measuring and recording in the western half of the attic. Two carpenters were removing floor boards in the same general area, the eastern half having been completed. One laborer was vacuuming dust and dirt from the area already stripped. About 11:45, the laborer turned off the vacuum cleaner and prepared to leave the building. At that time, the students heard the first sound of plaster cracking in the eastern portion of the ceiling. They immediately checked the ceiling from below and visually verified the location and extent of the cracks. Student Blaine Cliver notified Architect Nelson by telephone at 11:55 a.m.

About 12:10 p.m. Architects Judd, Wistar, Nelson, Hartshorne and Everett arrived on the scene. Their first reaction was that of a structural failure in the attic truss about 28 feet from the east wall. Thinking that a truss failure was imminent, shoring was immediately called for and a truckload of shoring timbers was dispatched from the Bishop White House. In the meantime, the plaster commenced cracking rather badly. Before the shoring could be put into place, small pieces of plaster fell to the floor. At that point, it was evident that we could not prevent the ceiling from coming down and our attention shifted to the safety of the visiting public and park personnel. Visitors were led to the safety of the tower stairhall. We requested the guards to remove the most valuable objects from the first floor Assembly Room. They removed the "Rising Sun" chair and the Signer's inkstand.

About 12:40 p.m. the plaster collapsed in the eastern half of the long gallery, bringing down one chandelier with it. The plaster came down nearly intact, that is, plaster, metal lath and wood furring strips came down as a unit. Technically, the plaster did not fail. The wooden furring strips were so inadequately secured to the joists, that only the friction of a few nails has held the ceiling in place. (See sketch)

CLEANUP

Within minutes a large force of carpenters and laborers commenced removal of the debris. Following that, scaffolding was erected for removing all plaster in the western half of the long gallery. The remaining portion of that ceiling was in imminent danger of collapse and we deemed it advisable to remove it under controlled conditions rather than risk a similar occurence. The middle

chandelier was lowered to facilitate this work and all plaster was safely removed by 10 p.m. that evening. We were highly gratified by the high degree of application to the task at hand including the Park staff, our architectural staff, carpenters and laborers alike.

ASSEMBLY ROOM CEILING

Before leaving the building on Thursday evening, a scaffolding was erected in the Assembly Room to minimize the danger to that room. Collapse of the second floor ceiling noticeably weakened the Assembly Room plaster. However, inspection revealed that the condition of the ceiling has been just short of failure for many years. Close attention was given to the plaster to determine the extent of damage. Beyond the initial cracking and sagging of the ceiling, the situation seemed static, and the shoring was introduced as a safety precaution. The museum staff removed the most valuable furnishings and accessories. The copy of Peale's portrait of Washington was covered with a heavy frame of plywood.

No discernible movement has taken place since then, but it is obvious that the ceiling must be removed. In fact, inspection of the building reveals that all plaster is poorly secured and should be removed. In some ceilings, separation has already taken place.

On Friday (July 14), the Assembly Room ceiling was shored at the weakest points, and the room cleared of all furnishings in anticipation of complete plaster removal.

POSTSCRIPT

On the basis of our present understanding of the building, several courses of action seem urgent and advisable.

1) All plaster ceiling should be carefully checked and removed where necessary and secured from above where possible. We believe that the Supreme Court Room ceiling can be temporarily retained by the latter method. The remainder of the second floor ceilings should be removed for safety reasons and to allow a more thorough structural investigation. Following this, the ceiling can be temporarily closed off to reduce the fire hazard.

The Venzie Corporation has been contacted and on July 19 commenced preparations for removal of the Assembly Room ceiling. Mr. Venzie

has agreed to allow us time (before replastering) for study of the Assembly Room ceiling. This will be done in cooperation with Sheldon A. Keast, consulting engineer. If the ceiling structure of that room is inadequate to safely carry a new ceiling, an intensive program of stabilization must necessarily precede the replastering. This aspect must remain unknown until the present plaster is down.

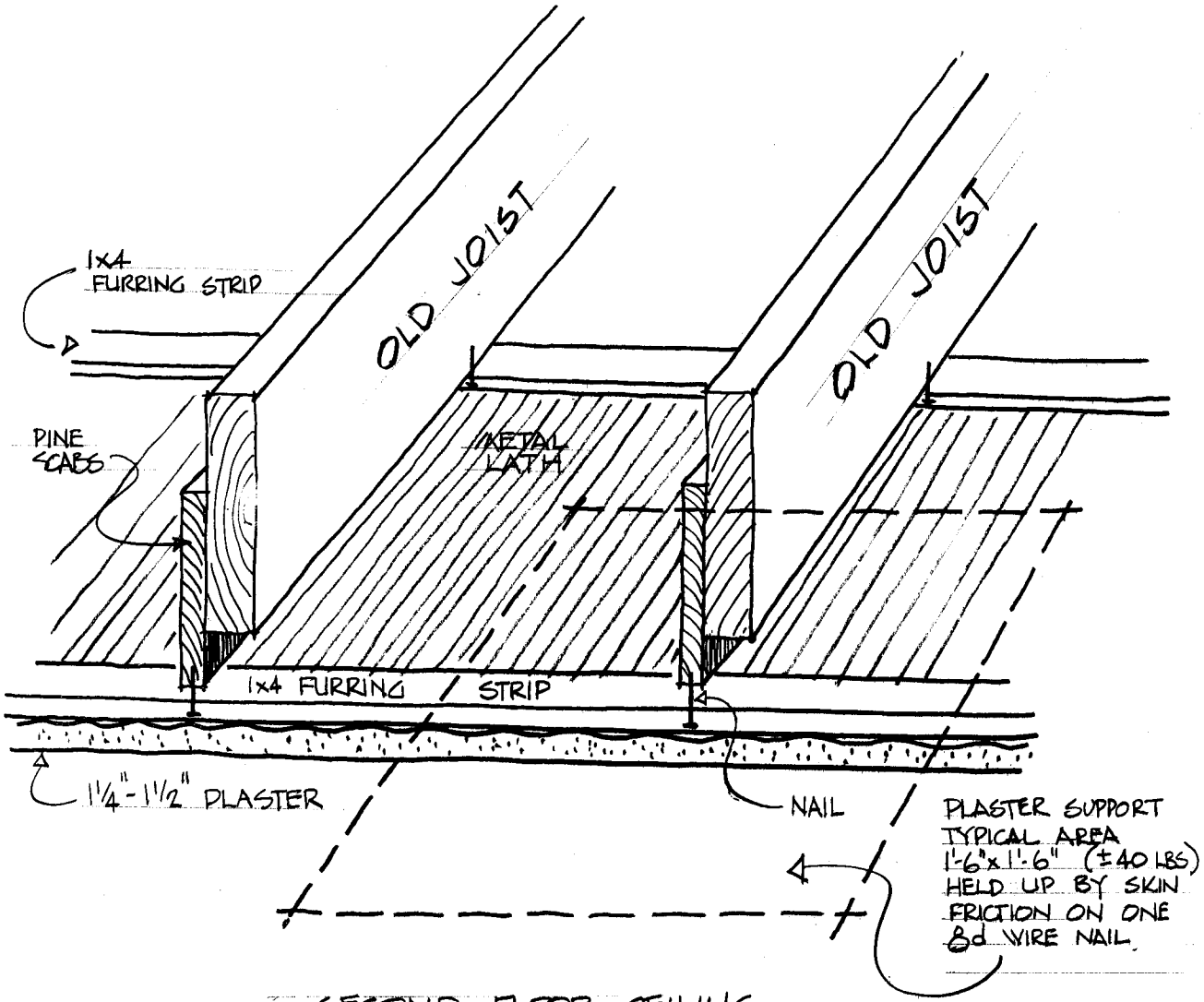
2) A thorough engineering survey of the entire building and tower is urgently needed before a rehabilitation timetable can be worked out. Mr. Keast has been asked to prepare a proposal for your consideration. For further discussion, see memorandum from Supervising Architect, Historic Structures to Chief EODC, 19 July 1961, file H30-H.

Basically, the problems at Independence Hall have been compounded over the years due to drastic and multiple internal changes. Partitions have been removed and relocated at will with little regard for the structural stability of the ancient fabric. Supporting columns have come and gone. A solution was avoided during the period of city ownership. We are now in the position of compensating for the long years of postponement.

Robert G. Hall
Chief

Attachment

Copy to: Regional Director, Region Five
Chief of Design and Construction (2), Attn: Chief Architect



SECOND FLOOR CEILING

OVER LONG GALLERY

INDEPENDENCE HALL NO SCALE LHN 17JULY61

Eastern Office
Division of Design and Construction
Philadelphia 6, Pa.

H30-H

July 21, 1961

Memorandum

To: Superintendent, Independence

From: Chief, EODC

Subject: Request for Emergency Structural Investigation of Independence Hall

Immediately following the falling of the ceiling at the east end of the long gallery room on the second floor, emergency measures were taken to prevent further failure and necessary structural investigations were undertaken. Sheldon A. Keast, the consulting engineer for the structural rehabilitation of Congress Hall was immediately called in for consultation.

It was found necessary to take down the rest of the ceiling of the long gallery and other portions of the second floor ceilings, and also the ceiling over the Assembly Room on the first floor, to prevent their possible collapse. It is most important to take this opportunity to make a structural investigation of the floor structures where the removal of the ceiling below facilitates this. As the plaster must go back on the Assembly Room ceiling as soon as possible this investigation should be done immediately.

Accordingly we recommend that Sheldon A. Keast be engaged without delay to make the structural investigation of those areas and to submit recommendations for immediate measures to be taken that may be necessary to strengthen these portions of the structure.

It is suggested that this immediate investigation as outlined above be made the first phase in the overall structural investigations by Mr. Keast which by your memorandum of July 14 you request us to arrange.

The attached proposal of Mr. Keast covers this first phase. We recommend that this proposal be accepted and a purchase order be made to engage his services.

Robert G. Hall
Chief

Attachment (in duplicate)

Copy to: Regional Director, Region Five
Chief of Design and Construction (2)

August 14, 1961

Superintendent
Independence National Historical Park
420 Chestnut Street
Phila. 6, Pa.

Re: Repairs to Independence Hall
(Exclusive of Tower)

Dear Sir:

The following is a report of the structural conditions of Independence Hall and the recommendations for making necessary repairs to restore the building to a safe and lasting condition.

This report is divided into two parts: First--The Roof and Third Floor Ceiling Supports; Second--The Second Floor Supports.

1. The roof is supported on wood trusses of various designs and conditions on which repairs have been made from time to time. The repairs have been so varied that some of the members originally designed to take stress do not, and in some cases the stress has been reversed. The trusses have a double top chord and with the insertion of belly rods to reinforce the trusses, which was done some years ago, it is doubtful if anyone can tell what stress is being taken by any member. It appears to me that the roof and ceiling are being sustained mostly by arch and tie rod action. Every truss seems to have been repaired in a different manner. The belly rod system throws the tension on the upper chord section

at the heel inside from the face of the wall, rather than in the truss, itself, and thus forms a very complicated and indeterminate structure.

Many of the purlins have excessive deflection, and in some cases have actually split, making them unsafe to carry the roof loads.

While it may be possible to reinforce the trusses, themselves, because of the conditions as stated above, it is my recommendation that the roof be supported on a steel grid consisting of 24 WF's framing across the building at each brick pier (approximately 12' apart) on which 6-8 WF longitudinal purlins will be placed. Placing the 24" WF beams near the center of the front and back piers eliminates the necessity of a steel grillage beam over the windowheads, as would be required if located adjacent to the trusses, as most of the trusses frame over windowheads. A 12 x 12 x 36 concrete pad is to be placed on the wall under each 24" WF to distribute the load.

Both the roof and ceiling will be supported from this grid. The bottom chords of the wood truss and ceiling rafters will be hung from the grid, and the top chord of the trusses and roof purlins will be posted from the grid. This will make not only a very rigid support, but will make little change in the existing roof and ceiling construction, other than making provision for

properly supporting each member. Holes through the shingle roof will be required to be made at each girder location, but should not exceed a few feet in area which can be repaired when the structural steel is in place. See Drawing No. 1.

2. The second floor is a conglomeration of framing and blocking to level the floor and ceiling, which has an 8" deflection in the original wood frame. A wood truss runs East and West through the center partition and supports cantilever girders to which a longitudinal wood girder frames, carrying the joists framing North and South. These longitudinal girders are about 6' or 7' away from the partition truss and run parallel to it. The cantilevers have been reinforced with 2 - 10" channels, but are still overstressed to carry a liveload of 100# per sq. ft. These cantilevers are carried by the partition truss. This floor is in very bad condition and should be repaired as soon as possible.

It would be possible to hang this floor from the steel roof girders, but I do not consider this advisable, as it would be better to distribute the floor load on other walls, rather than on the front and back brick piers between windows. I, therefore, recommend that a 4 ft. steel plate girder be placed in the partition under the ceiling and over the door carrying steel hanger rods to support the floor reinforcing. This girder

is to be carried on a steel column and grillage on the 18" interior brick wall and a steel grillage on the exterior wall.

The floor, itself, would be reinforced with 10 WF beams running from brick pier to brick pier and carried at the center by the steel hangers from the plate girder in the partition. It seems that a girder would be simpler to install in the partition, rather than a steel truss, because of the conditions and framing at the floor level. The existing floor framing is to remain, being supported on these new steel cross beams. The old floor joist is to be hung by new steel joist hangers, and the wood girders carried by the steel beams framing from wall to wall. After the framing is cut loose from the walls, the floor is to be jacked up to its proper level. The second floor must be shored down to the basement in order to jack up and support the floor. The floor is then to be reframed and properly supported, using the old material as much as possible.

The second floor over the entrance also needs reinforcing, which could be done by placing 10 WF beam framing between the two adjacent cross walls. The old floor joists are to be reused, properly hung and reinforced where necessary. See Drawing No. 2.

This work could be carried out in three operations, with minimum interference with visitors. The East and West Sections could be done separately, and then the Center Section. The visitors

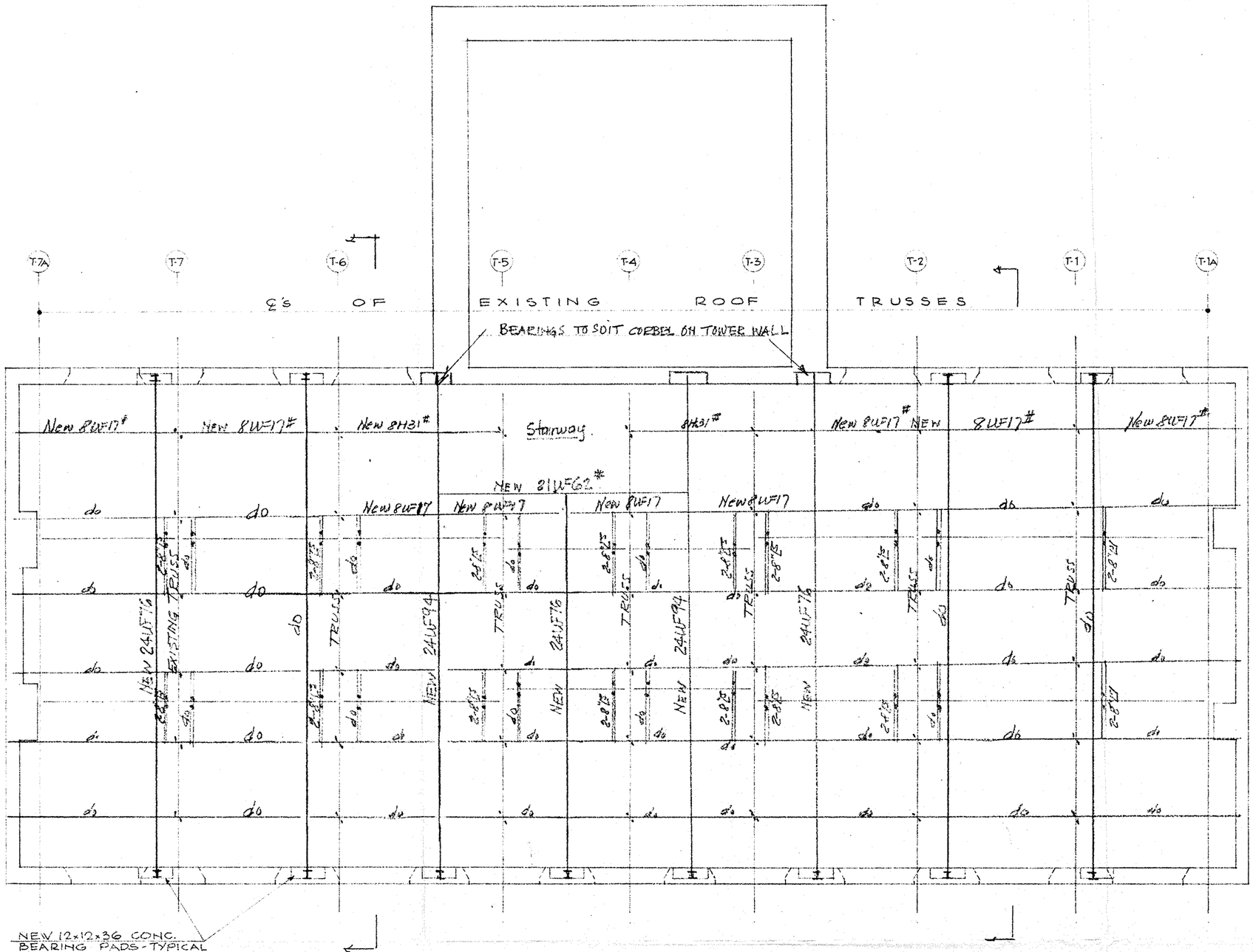
could be protected by proper overhead protection so as to eliminate any danger to them during construction.

In my opinion, the condition of the roof construction and the second floor construction is such that work should be started immediately on the structural repair to this building. As it would be very difficult to support the longitudinal girders in the second floor without a major operation, except by placing posts in the first floor and basement, which would be undesirable, I believe that it would be advisable to make the complete necessary structural repairs at once. The restoration features could follow anytime after the building is made safe.

Because of the public nature of this building, every precaution should be taken to protect the many visitors; and the structure should be made safe and to last for many years, rather than repeat the method of making temporary repairs, as has been done in the past.

Respectfully submitted,

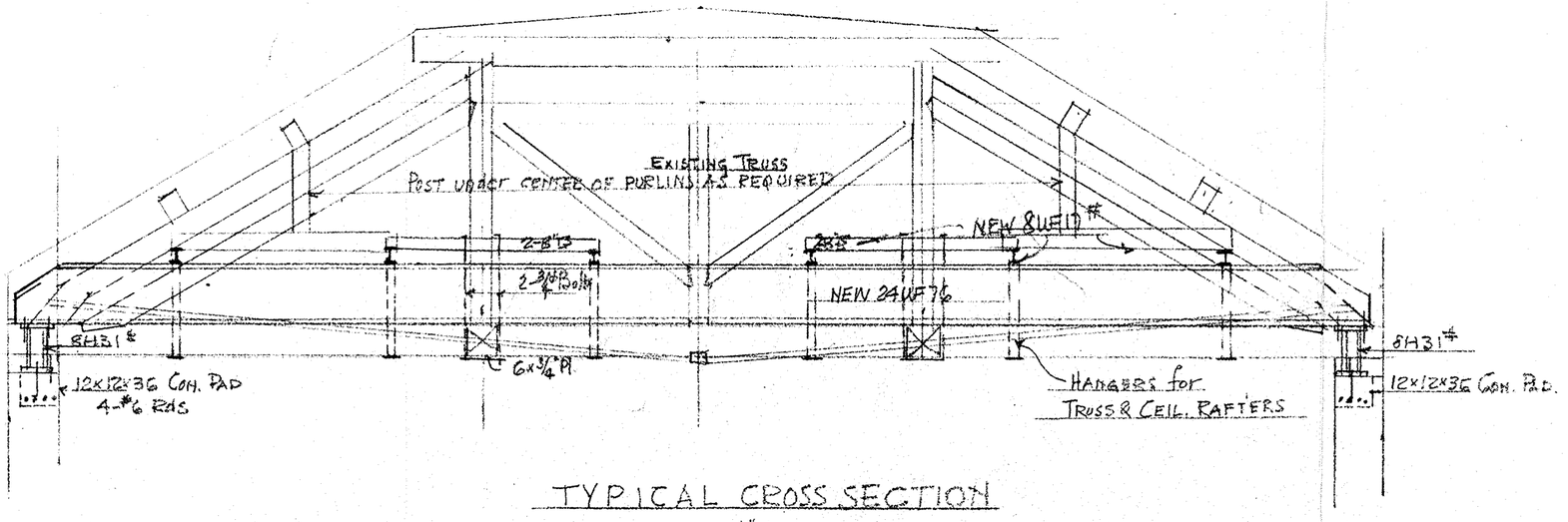
SHELDON A. KEAST



NEW 12×12×36 CONC. BEARING PADS - TYPICAL EXCEPT AS NOTED

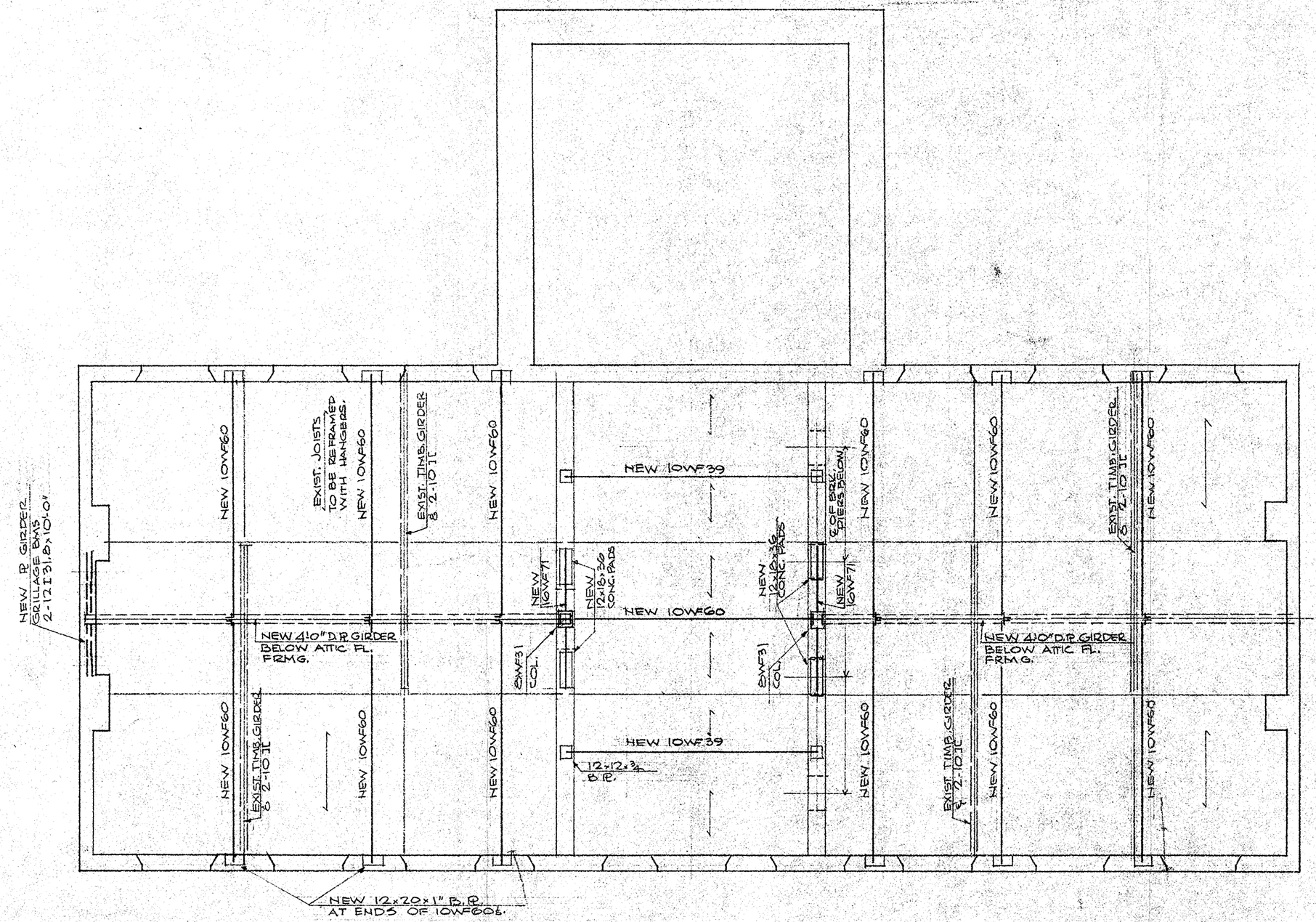
ROOF PLAN AT ATTIC LEVEL

SCALE $\frac{1}{8}$"=1'-0"

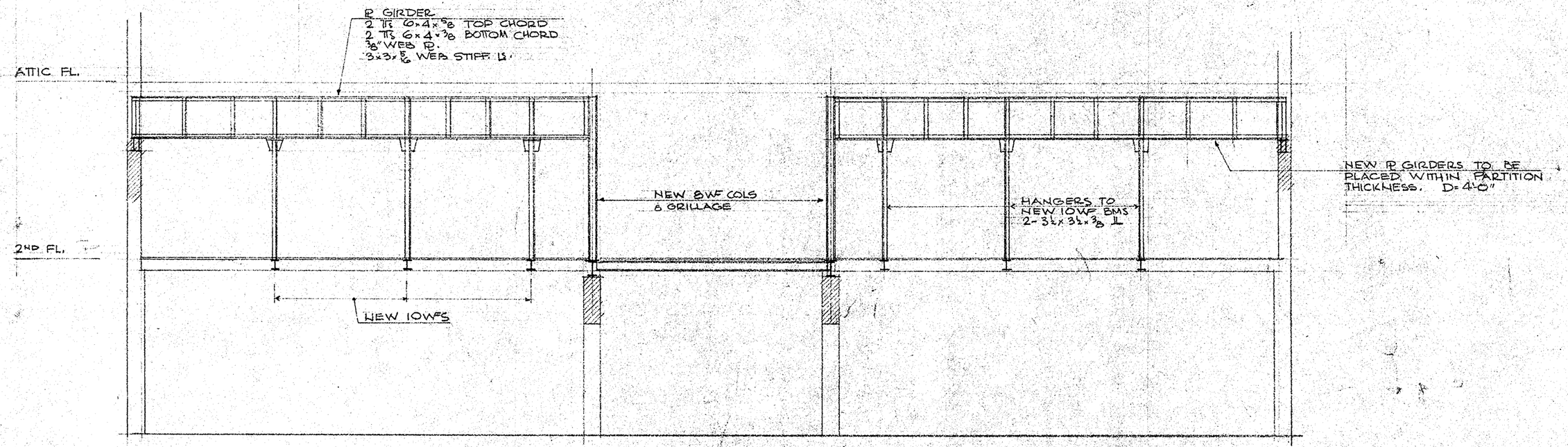


TYPICAL CROSS SECTION

SCALE $\frac{1}{4}$"=1'-0"



SECOND FLOOR FRAMING



LONGITUDINAL SECTION A-A

LOOKING SOUTH

Supervising Architect, Historic Structures August 16, 1961

Architect Nelson

Review of Sheldon A. Keast Report entitled "Repairs to Independence Hall", August 14, 1961

The subject report was hand delivered to me late Monday afternoon, August 14. Architect Judd and I have reviewed Mr. Keast's proposal and it appears to be a conservative, well-engineered scheme for structurally rehabilitating the building and provides for a minimum disturbance to the old framing. The roof trusses and attic floor beams will remain intact but the second floor girders will have to be cut through in several places to accommodate the WF (wide flange) beams.

I worked closely with Mr. Keast and approved the general outlines of his proposal prior to submission of his report. He is sympathetic with our desire to preserve the original fabric wherever possible. This is a major departure from the Ewing Report which calls for complete removal of all old framing members.

I furnished Mr. Keast with prints of the excellent measured drawings made by our student architects, and his preliminary plans are largely based on the basic information supplied by this office.

His proposal is certainly sound in general, but several minor problems remain to be solved, especially where steel members require bearing in the tower walls. All members have been designed to sustain a live load of 100 pounds per square foot, as required by the National Building Code and the National Park Service Building Construction Handbook.

Mr. Keast suggests that the work be carried out in three operations, that is, the East and West sections can be rehabilitated separately, followed by the center section.

Before fabrication drawings are started, the whole problem of atmospheric control equipment should be considered, as this will affect design of the steel framing. We also must give some attention to fire proofing in the new floors. Prior to installation of the steel framing, the existing attic sprinkling system must be dismantled and later reinstalled.

The problem of physical coordination of the work will be especially important as well as providing extra safeguards for the visiting public.

Mr. Keast called today and estimated that the structural repairs will cost about $250,000. He suggested that we contact the Cardell Co. for a courtesy estimate to verify this figure. Keast will be available for a staff conference, except on Tuesday, next.

Lee H. Nelson

Eastern Office
Division of Design and Construction
Philadelphia 6, Pa.

H30-H

September 1, 1961

Memorandum

To: Superintendent, Independence

From: Chief, EODC

Subject: Minutes of Meeting on Independence Hall Restoration

Attached is a copy of a report to Architect Peterson from Architects Nelson and Hartshorne on the meeting of Wednesday, August 23, concerning the present status and future program for the restoration of Independence Hall.

We are now acquiring estimates for the preparation of working drawings for the structural stabilization and the atmospheric control installation preliminary to awarding the contracts for this work.

A limited investigation of the architectural fabric of the Assembly Room has been started.

Robert G. Hall
Chief

Attachment

Copy to: Regional Director, Region Five w/attachment
Chief of Design and Construction (2) w/attachment

To: Supervising Architect, Historic Structures September 1, 1961

From: Architects Hartshorne and Nelson

Subject: Minutes of Meeting Held Wednesday, August 23, 1961 --
Re: Independence Hall Rehabilitation Program

Present: Region Five--Messrs. Lee, Palmer, Crouch, Barnes, Negron-Rodriguez
Independence--Messrs. Anderson, Delgado, Grossman, Kurjack
EODC--Messrs. Smith, Peterson, Judd, Nelson, Miss Hartshorne
Guest--Sheldon A. Keast, Consulting Engineer, Philadelphia

INTRODUCTION

H30-H. Architect Peterson opened the meeting with a brief summary of the fine work done by the student summer teams and the July 13 plaster collapse at Independence Hall. Mr. Keast was asked to verbally summarize the structural condition of Independence Hall. He described the roof trusses and secondary members as being susceptible to failure which might result from any abnormal condition such as a heavy snow load or severe wind pressure. Since most of the roof trusses occur over windows, they cannot be practically repaired without overloading the already inadequate masonry bearing. He proposes to introduce a new grid of steel beams resting on the brick piers between windows. This system would allow retention of the existing structural members by using hangers to carry the attic floor, and posts for the attic roof. The new steel beams would be rolled into position through temporary holes in the roof. Installation would require temporary internal shoring from the cellar to the attic level.

Mr. Keast briefly described the unusual structure originally constructed to support the Assembly Room ceiling. He further called attention to the inadequate remedial repairs of the 1890's. Any new work must be designed to carry a live load of 100 pounds per square foot. He proposes to raise the sagging ceiling and install a supplementary system of the wide flange steel beams. Keast also proposes replacement of the modern longitudinal wooden wall trusses in the second floor. These trusses presently carry some of the Assembly Room and Supreme Court Room ceiling loads. The trusses would be replaced with steel plate girders. The

steel framing over the Assembly Room and Supreme Court Room would be partly supported by the new longitudinal plate girders.

We were glad to know that a relatively simple and inexpensive scheme has been devised. It has the most fortunate advantage of disturbing very little of the original construction which is extremely interesting.

REVISED RESTORATION PROGRAM

Architect Lee Nelson presented a tentative revised program in chart form for the rehabilitation and restoration of Independence Hall. The program was designed to complete the structural rehabilitation of the building one-half at a time, keeping the other half open to the public. The program recommended immediately starting architectural research and a structural rehabilitation design contract for the eastern half of the building, finishing this work and opening this half of the building by January 1963. Work would then commence in the western half of the building, to be finished and open to the public by January 1964.

Restoration of the second floor would be completed and open to the public by June of 1964. The restoration and rehabilitation of the Tower would be complete by June 1965.

Architect Peterson called attention to the tightness of this tentative schedule. Copies of the chart were distributed for study by the Park, EODC and Region.

PUBLIC RELATIONS

If at any time it is found necessary to close the entire main building to the public, it was urged by Superintendent Anderson that this only be done in the winter, and Regional Director Lee stated that this certainly not be allowed to happen until after the first floor of Congress Hall is open to the public.

Regional Director Lee stated that we must remember and plan for the dedication of Congress Hall on July 4, 1962 to which Director Wirth is hoping to invite President Kennedy. Concurrent with this will be the Governor's Conference in Hershey, Pennsylvania (expected to visit Congress Hall) as well as the start of the Sound and Light program of the City of Philadelphia.

The general feeling was expressed that we should turn this restoration of Independence Hall into an asset rather than a liability by acquainting the public with what we are doing to the fabric. A scale model of the building showing its original construction was specifically recommended.

NEXT STEPS

Architect Peterson outlined the initial steps which must be taken to expedite the work.

1. Removal of the Venzie scaffolding from the Assembly Room so that investigation can begin.

2. Commence architectural investigation. The approved Part I, Historic Structures Report, Administrative Section states, "that the architectural investigation of specific features and structural elements involved be made prior to the undertaking of such stabilization and rehabilitations." On this basis, it was decided that research should proceed. The Part I report also was approved with the recommendation that the Ewing Structural Report be followed. Director Lee suggested that a Supplement be written changing this recommendation instead to follow the Keast rehabilitation plan. Mr. Peterson suggested that this supplement might be written in advance of the Architect's Advisory Board Meeting on September 19.

Work will include the removal of at least part of the paneling.

3. Let contracts for the working drawings and specifications for structural rehabilitation and atmospheric control. Regional Director Lee said the tightness of the schedule would require us to go ahead with the structural and atmospheric control contracts as soon as funding can be arranged.

The only question concerning the atmospheric control system was whether a central system or separate units should be used--the cooling tower question has been settled by the City agreeing to supply free water to the system. Mr. Anderson was requested to write a memorandum to EODC asking for their recommendation whether a central or separate unit system should be used and where should the installations be made.

Regional Director Lee requested EODC to provide estimates for the work to be done in the 1962 and 1963 fiscal years.

Penelope Hartshorne
Architect

Lee H. Nelson
Architect

APPENDIX II

Photographs of Ceiling Collapse (3) - 13 July 1961

Measured Drawings of Structural Details (14 sheets)

Time Schedule for Rehabilitation Program (Tentative)

ILLUSTRATION NO. 1

View of cleanup operation following ceiling collapse in long gallery, second floor, Independence Hall. This ceiling was installed in the early 1920s. Technically it was not the plaster that failed, but the 1 x 4 furring strips which were inadequately secured to the ceiling joists. A typical area of plaster (and metal lath), approximately 1'-6" by 1'-6", was secured with a single 8d wire nail driven vertically through the furring strips into soft pine scabs at each joist. When the wood shrunk, the overloaded nails started to gradually pull out, culminating in a chain failure.

All ceilings in the building (including those dating from the 1890s) were found to be similarly fastened and in danger of collapse.

Photo: P. Hartshorne, 13 July 1961
Neg. No. EODC 2165



ILLUSTRATION NO. 2

View of plaster, metal lath and furring strips on floor of the long gallery, second floor, Independence Hall. The infrequent spacing of the 8d wire nails is visible here. With this type of outmoded fastening, the friction failure of one nail increases the load on adjacent nails and so on, resulting in a sudden collapse.

Photo: P. Hartshorne, 13 July 1961
Neg. No. EODC 2166



ILLUSTRATION NO. 3

View showing removal of plaster ceiling, long gallery, Independence Hall. The extent of the collapse involved half the length of the long gallery, but immediate inspection revealed the balance to be near failure and was systematically removed by cutting it out in sections by day labor forces.

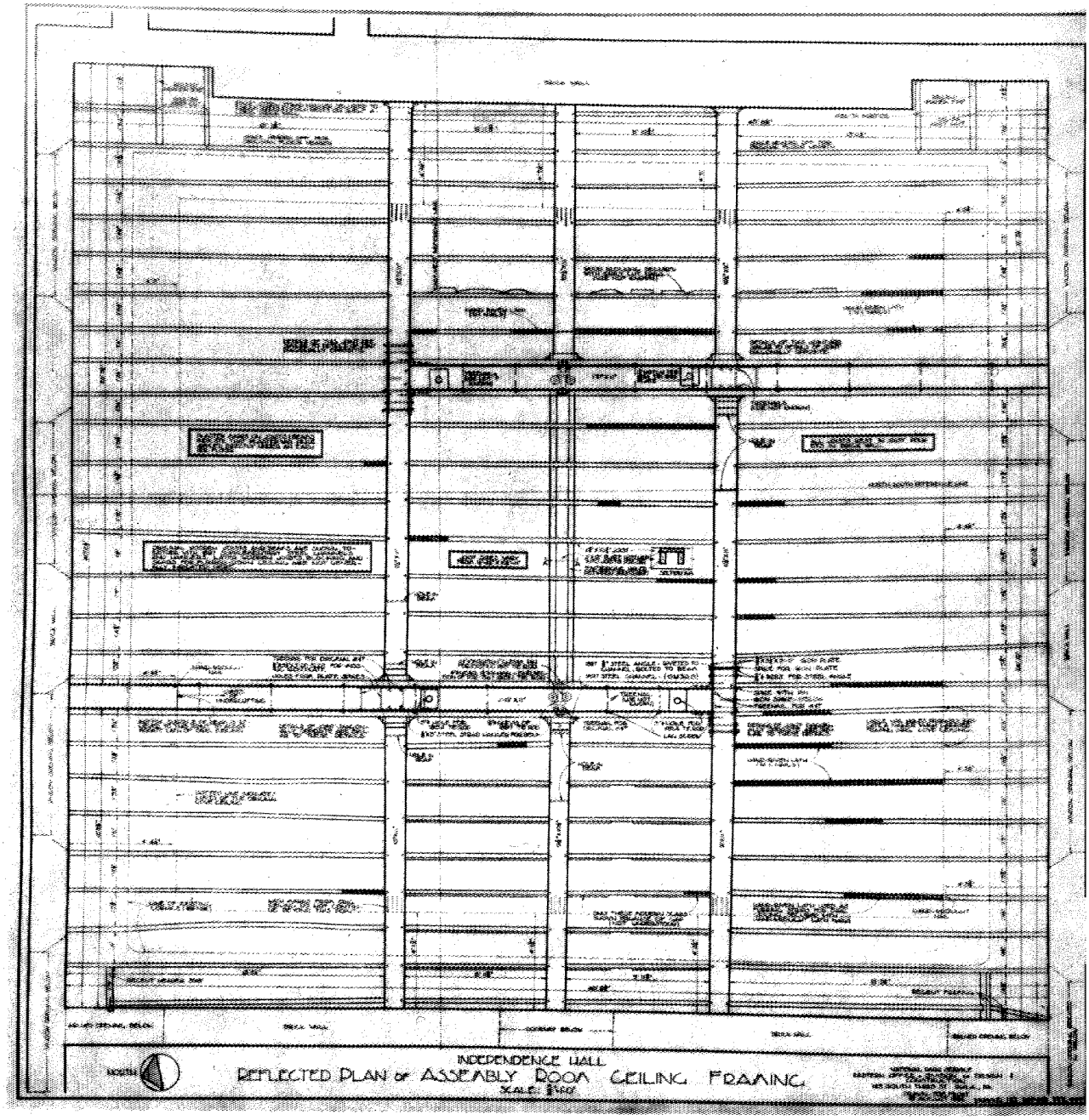
Plaster in the southwest room, second floor, was also ready to fall, and was similarly removed by day labor forces.

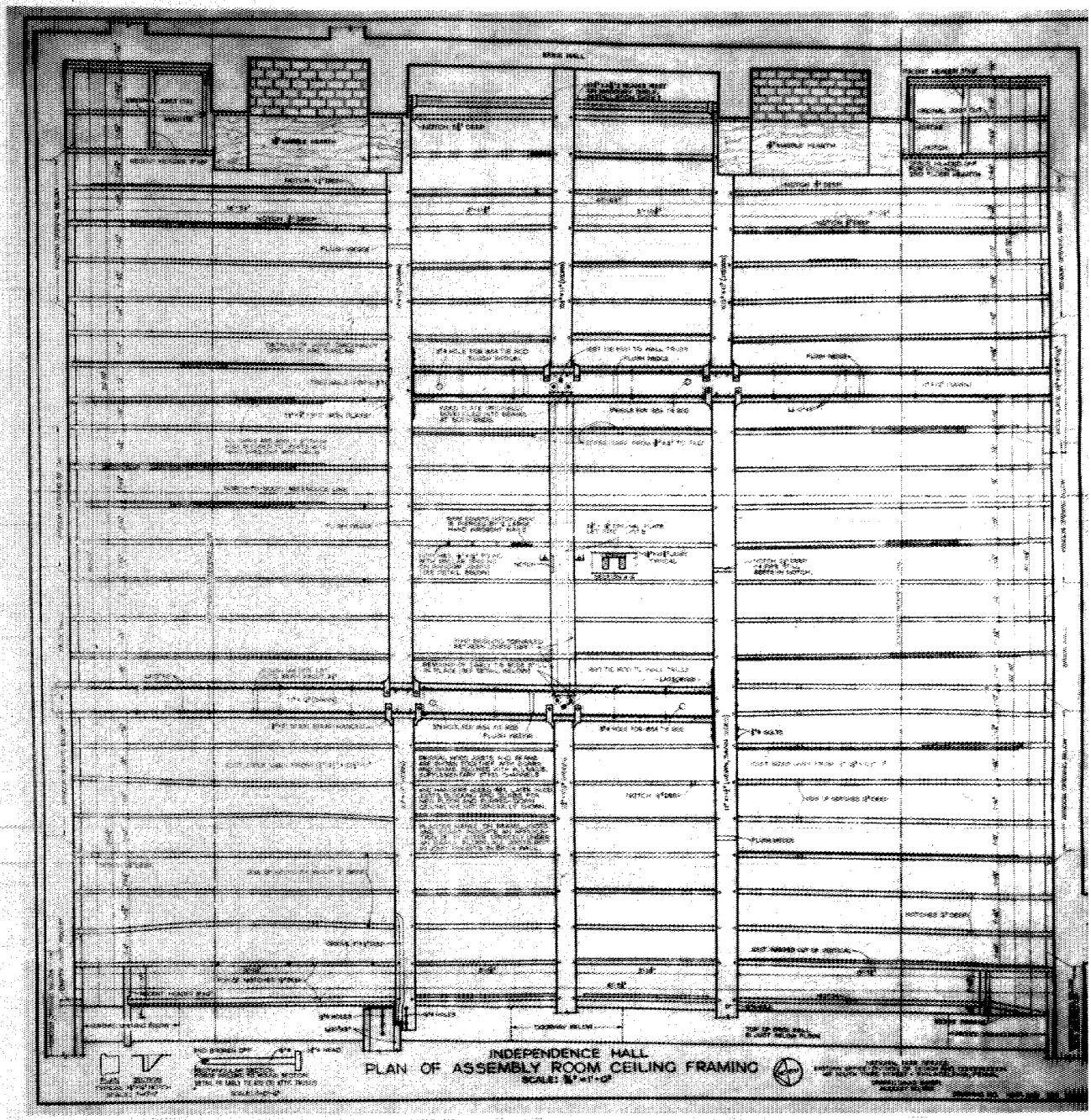
Plaster in the southeast room, second floor, was found to be tight and was left intact.

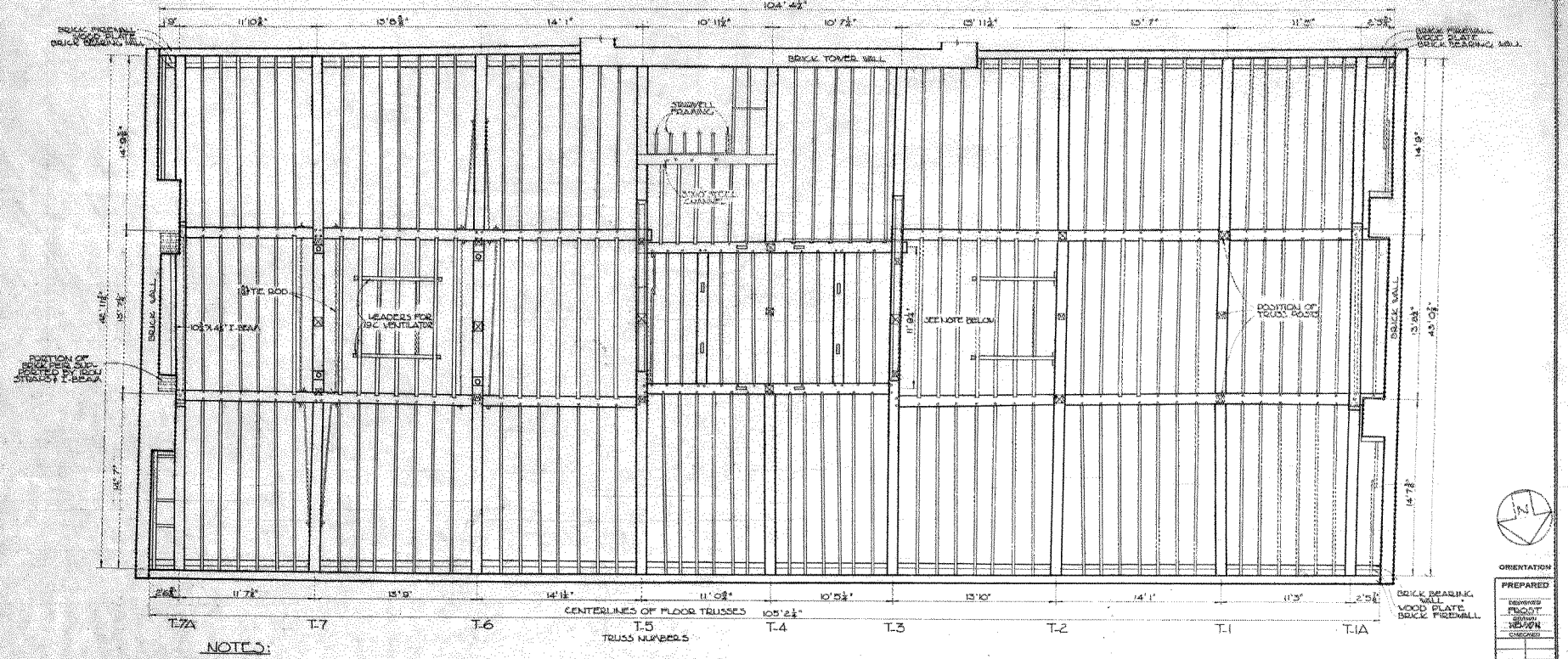
The Assembly Room ceiling was removed by contract with the Venzie Company (plastering contractors at Congress Hall).

Photo: P. Hartshorne, 13 July 1961
Neg. No. EODC 2167




INDEPENDENCE HALL
REFLECTED PLAN OF ASSEMBLY ROOM CEILING FRAMING
SCALE: 1/16"


INDEPENDENCE HALL
PLAN OF ASSEMBLY ROOM CEILING FRAMING



NOTES:

JOISTS:
ORIGINAL JOISTS 4½" TO BEAMS
JOISTS VARY FROM 11" TO 13" DEEP
NEWER JOISTS NOTCHED TO BEAMS
3" NOM. THK.
SPACING BETWEEN JOISTS VARIES FROM 15" TO 19" C TO C
CENTER BAYS BETWEEN T-7 & T-6 & T-5 & T-4:
ORIGINAL JOISTS ADDITIONS & THIN OWNED TO BEAMS BUT REMOVED AT SOME UNKNOWN DATE AND RE-PLACED WITH JOISTS NOTCHED INTO BEAMS.

FLOORING:
1" THK. RANDOM WIDTH - PROBABLY INSTALLED 1890'S - REMOVED JULY 1961

EAST WALL IS NOT TRUE TO NORTH WALL

BASIC DATA EXISTING FIELD CONDITIONS

INDEPENDENCE HALL

PLAN of ATTIC FLOOR FRAMING

SCALE - ¼" = 1'-0"

ORIENTATION

PREPARED

DESIGNED FROST
DRAWN NELSON
CHECKED

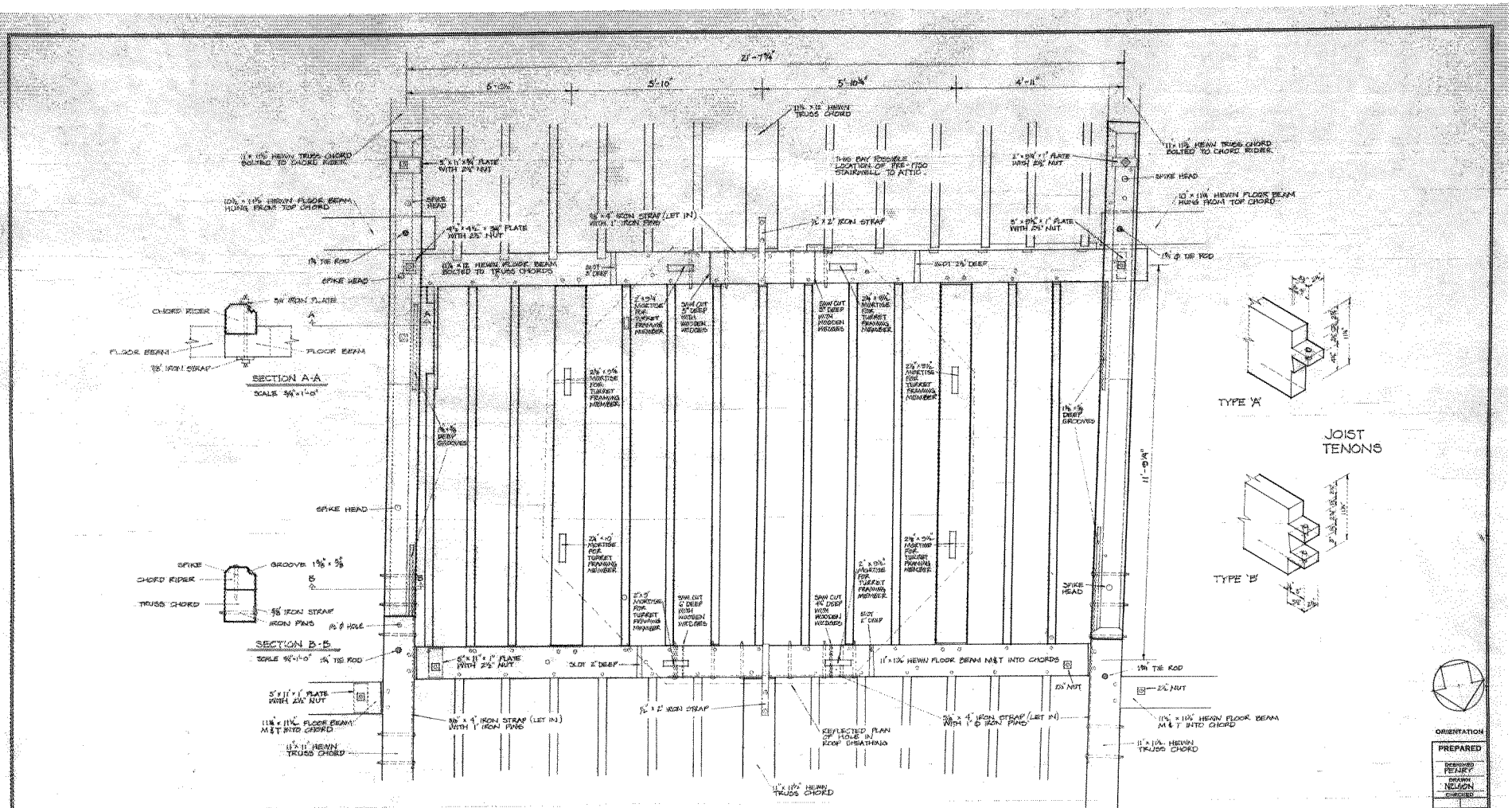
SCALE ¼" = 1'-0"

MARK	DESCRIPTION OF REVISION	DATE	INITIAL
	REVISED		

RECOMMENDED
DATE
DATE
DATE
APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN & CONSTRUCTION
PREPARED IN CHARGE
EASTERN
OFFICE
INDEPENDENCE HALL ATTIC FLOOR FRAMING
TITLE OF DRAWING
INDEPENDENCE SQUARE GROUP
LOCATION WITHIN PARK
INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

REVISION FIVE
ROP NO.
SHEET 1 OF
DRAWING NO. NHP-IHB 321
DATE 5-24-60



ATTIC FLOOR FRAMING PLAN — CENTER SECTION

SCALE ¾"=1'-0"

SCALE AS SHOWN

MARK	DESCRIPTION OF REVISION	DATE	INITIAL

RECOMMENDED _____ DATE

APPROVED _____

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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN AND CONSTRUCTION
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OFFICE

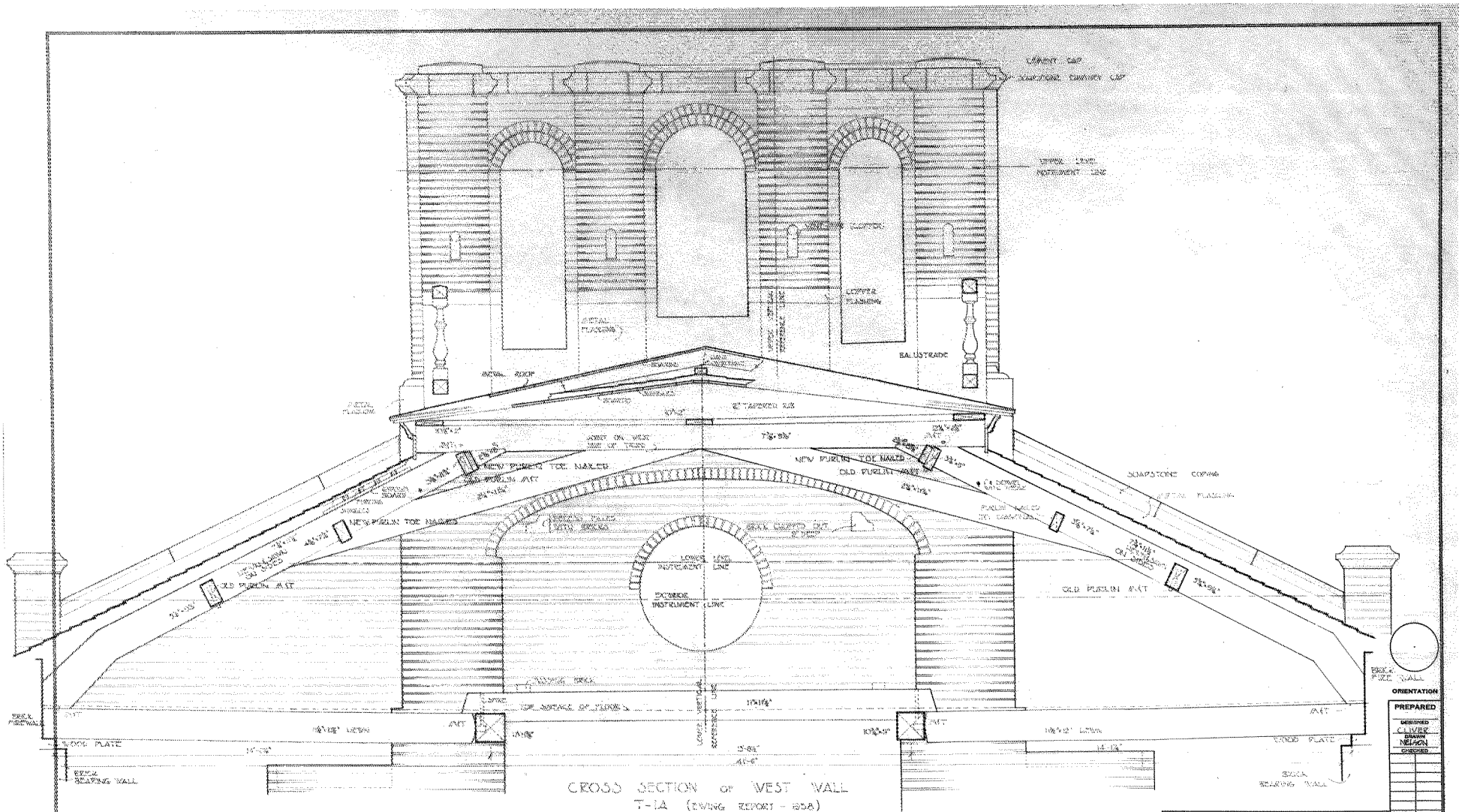
ATTIC FLOOR FRAMING PLAN — CENTER SECTION
TITLE OF DRAWING

INDEPENDENCE SQUARE GROUP
LOCATION WITHIN PARK

INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

PREPARED
DESIGNED PENLEY
DRAWN NELSON
CHECKED
REVISED
MODIFIED
PCF NO.
SHEET 2 OF
DRAWING NO. NHP-IND 3211
DATE 9/8/81

BASIC DATA



CROSS SECTION OF WEST WALL
T-1A (EWING REPORT - 65A)
SCALE 3/4"=1'0" - LOOKING WEST

BASIC DATA EXISTING CONDITIONS

SCALE SEE ABOVE

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			REVISED

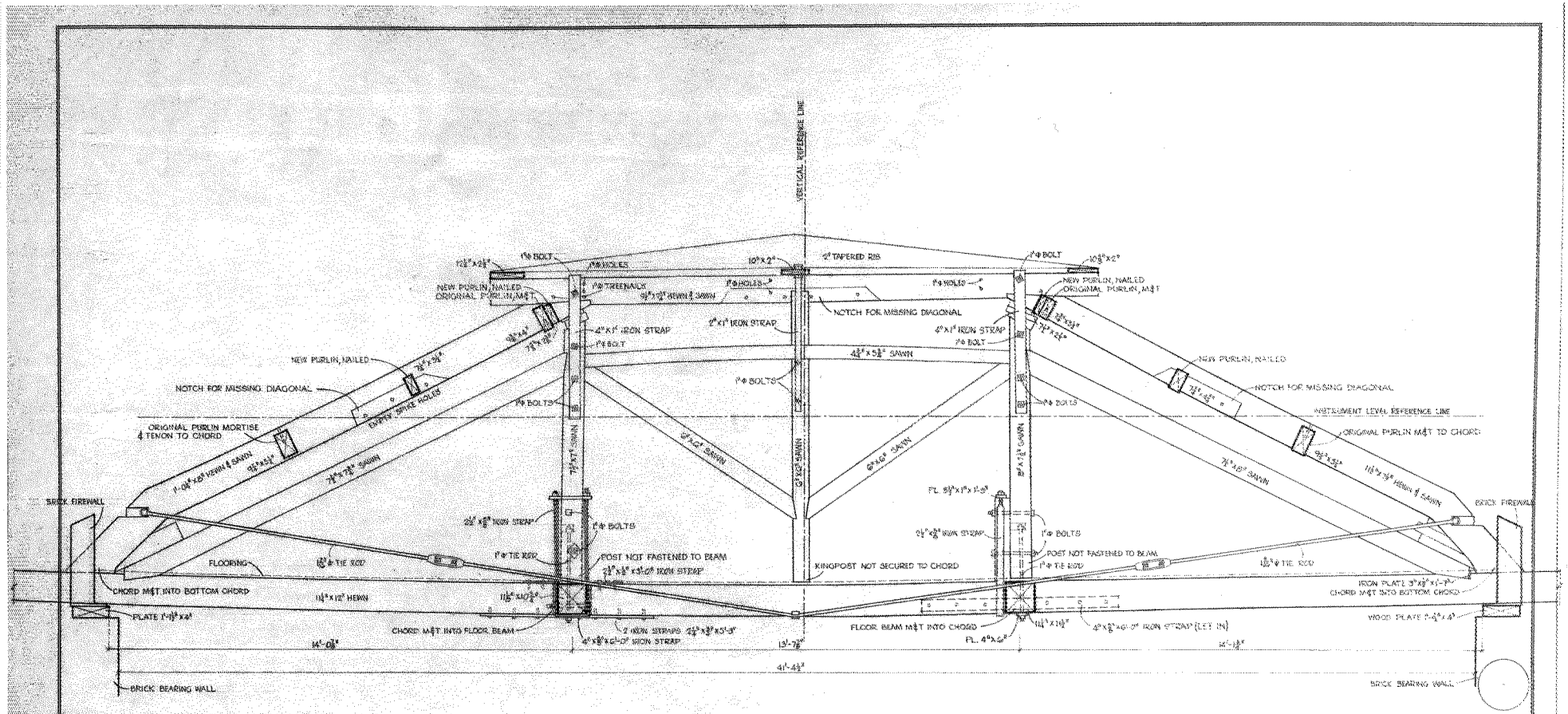
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DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN AND CONSTRUCTION
PREPARED BY
EASTERN OFFICE

INDEPENDENCE HALL - CROSS SECTION OF WEST WALL
TITLE OF DRAWING
INDEPENDENCE SQUARE GROUP
LOCATION WITHIN PARK
INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

PREPARED
DESIGNED CLIVER
DRAWN NELSON
CHECKED

REVISION
PMC
PCP NO.
SHEET 3 OF
DRAWING NO. NHP-IND
3211
DATE 8/1/80



MEASURED DRAWING OF ATTIC TRUSS "A" (AIA DESIGNATION, 1918)
OR "T1" (EWING REPORT, 1958)
SCALE ¾"=1'-0" • LOOKING EAST

NOTES
FLOORING: 1⅜" T&G, RANDOM WIDTH. PROBABLY INSTALLED 1840'S; REMOVED JULY 1961.
IRON TIE RODS: PROBABLY INSTALLED 1840'S.
BRICK FIREWALL BUILT ON TOP OF WOOD PLATES.

BASIC DATA: EXISTING FIELD CONDITIONS.

ORIENTATION

PREPARED

DESIGNED	
DRAWN	JJN 12
CHECKED	NELSON

MARK	DESCRIPTION OF REVISION	DATE	APPVD.

REVISED

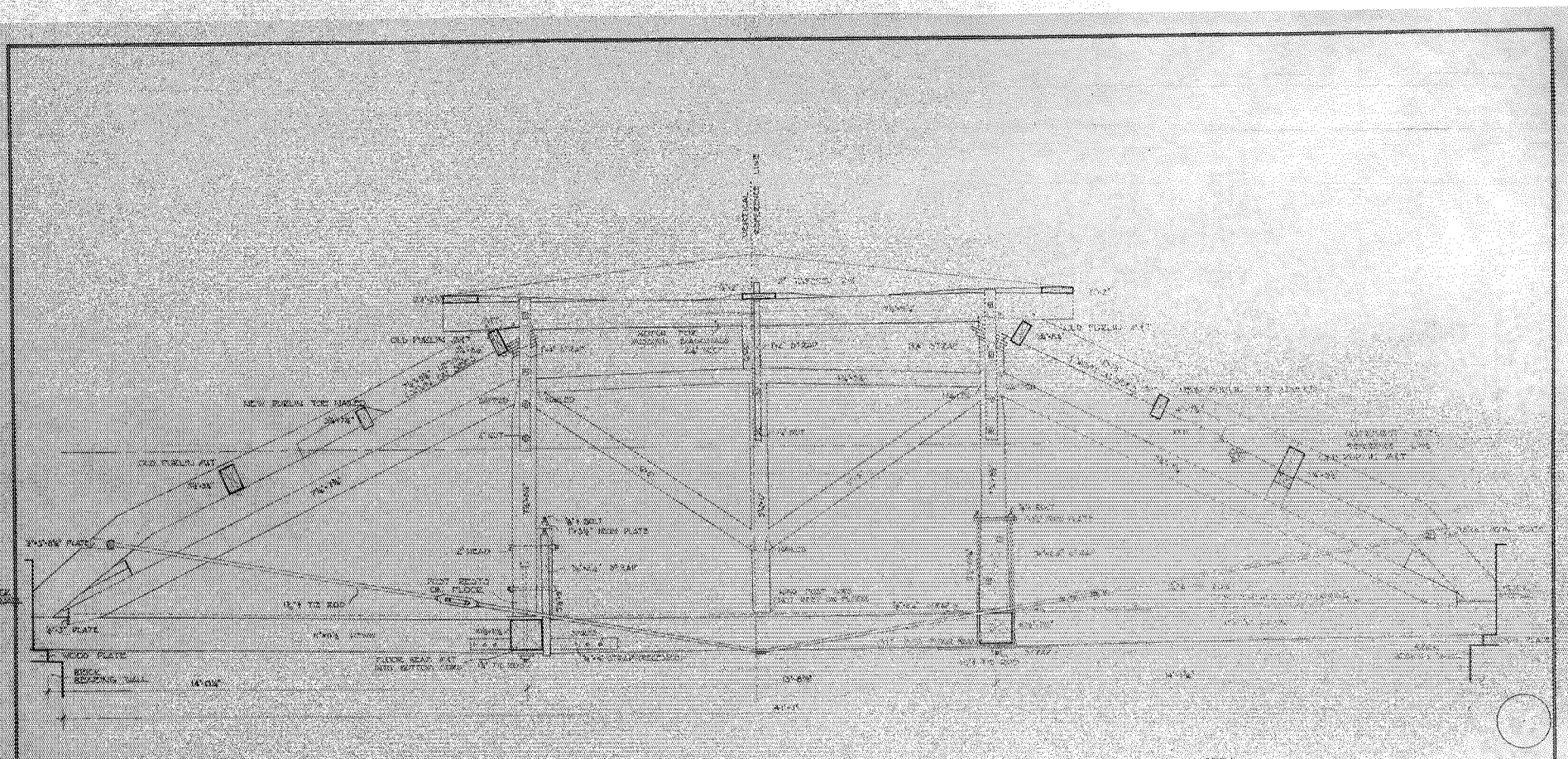
SCALE SEE ABOVE

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DATE
APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN AND CONSTRUCTION
PREPARED BY
EASTERN
OFFICE

INDEPENDENCE HALL - ATTIC TRUSS 'A'
TITLE OF DRAWING
INDEPENDENCE SQUARE GROUP
LOCATION WITHIN PARK
INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

PROJECT NO. 6-IVE
PCP NO.
SHEET 6 OF
DRAWING NO. NHP-1002
3211



MEASURED DRAWING OF ATTIC TRUSS "S" (HAA DESIGNATION 1916)

OR "T2" (EWING REPORT - 1956)

SCALE 3/4"-1'0" - LOOKING EAST

BASIC DATA TAKEN CONCURRENT

ORIENTATION

PREPARED

DESIGNED CLIVER

DRAWN NELSON

CHECKED

SCALE .25" ABOVE	MARK	DESCRIPTION OF REVISION	DATE	INITIAL

RECOMMENDED

DATE

APPROVED

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN AND CONSTRUCTION
PREPARED BY
EASTERN
OFFICE

TITLE OF DRAWING
MEASURED DRAWING - ATTIC TRUSS "S"

LOCATION WITHIN PARK
INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

REVISED

REGION

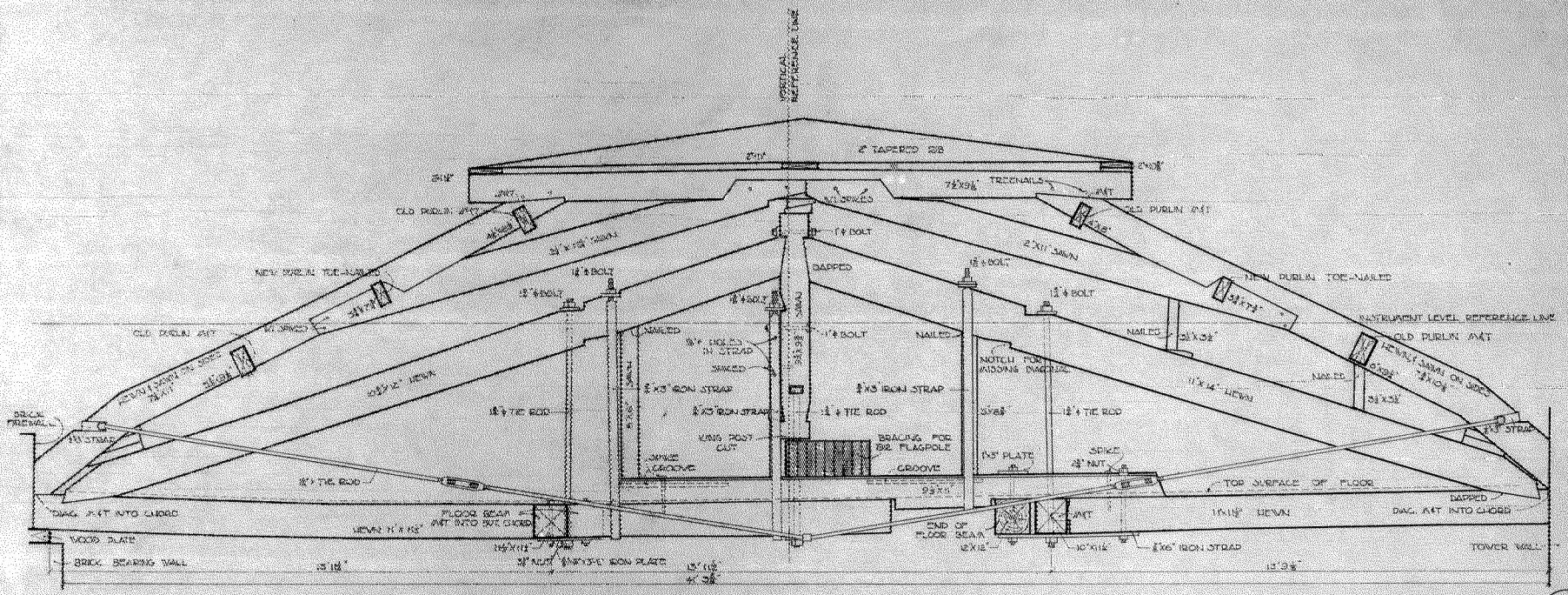
FILE

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SHEET 5 OF

DRAWING NO.
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3211

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MEASURED DRAWING OF ATTIC TRUSS 'C' (A.I.A. DESIGNATION-1918)
OR 'T3' (IRVING REPORT-1958)
SCALE: ¾"-1'-0" - LOOKING EAST

NOTES:

FLOORING: 1" T&G RANDOM WIDTH
PROBABLY INSTALLED 1830's
REMOVED JULY 1961

TIE BEAM:
PROBABLY INSTALLED 1830's
"FLEMISH" BRICK FIREWALL BUILT ON TOP OF WOOD PLATE

BASIC DATA: EXISTING FIELD CONDITIONS

ORIENTATION

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DRAWN	NIELSON
CHECKED	
REVISED	

SCALE: SEE ABOVE

MARK	DESCRIPTION OF REVISION	DATE	INITIAL

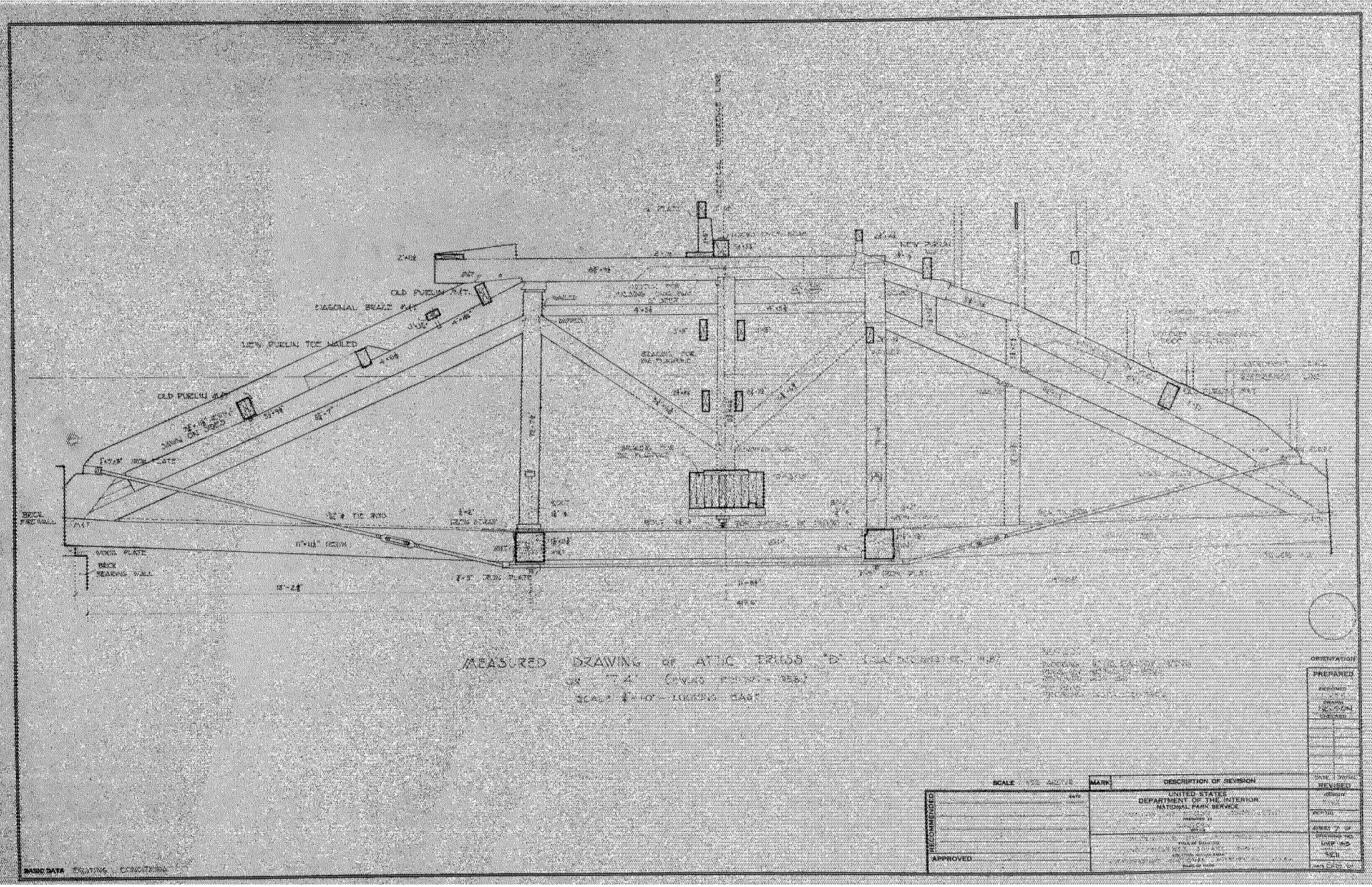
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UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN & CONSTRUCTION

DRAWING BY: EASTMAN

INDEPENDENCE HALL ATTIC TRUSS 'C'
INDEPENDENCE SQUARE GROUP
INDEPENDENCE NATIONAL HISTORICAL PARK

REVISION: FIVE
PCP NO.:
SHEET 6 OF
DRAWING NO.: NHP-IND
3211
DATE: 2-20-61



MEASURED DRAWING OF ATTIC FRAME "D"

SCALE: 1/4"-1'-0" LOOKING EAST

BASIC DATA: EXISTING CONDITIONS

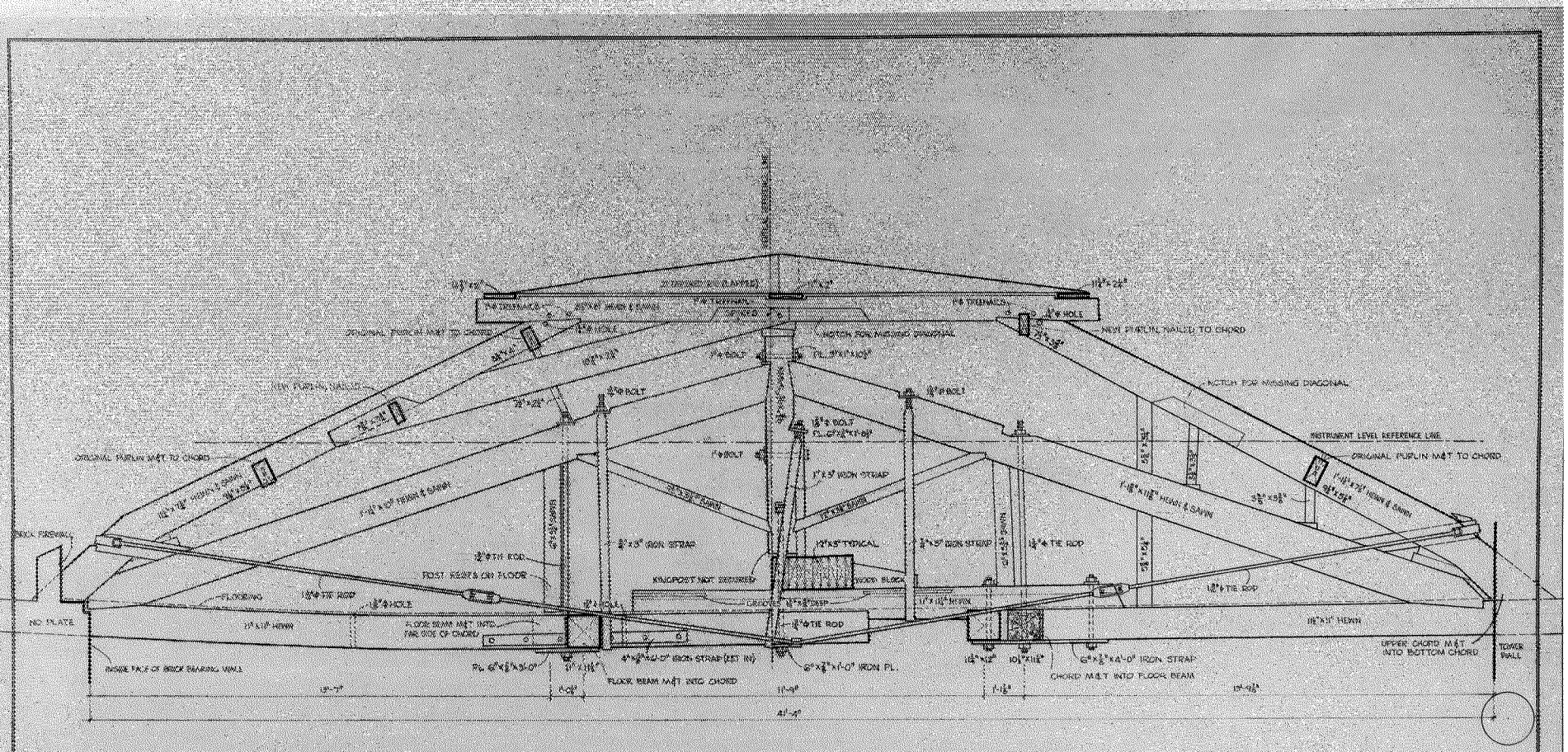
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RECOMMENDED			
APPROVED			

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE

DESIGNATION

PREPARED

REVISED



MEASURED DRAWING OF ATTIC TRUSS "E" (A.I.A. DESIGNATION, 1918)
OR "T5" (EWING REPORT, 1958)
SCALE $\frac{3}{4}$"=1'-0" + LOOKING EAST

NOTES
FLOORING: 3" T & G, RANDOM WIDTH, PREVIOUSLY INSTALLED WINDOWS FROM THE ROOF; PREVIOUSLY INSTALLED WINDOWS

BASIC DATA EXISTING FIELD CONDITIONS

ORIENTATION

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CHECKED	NELSON

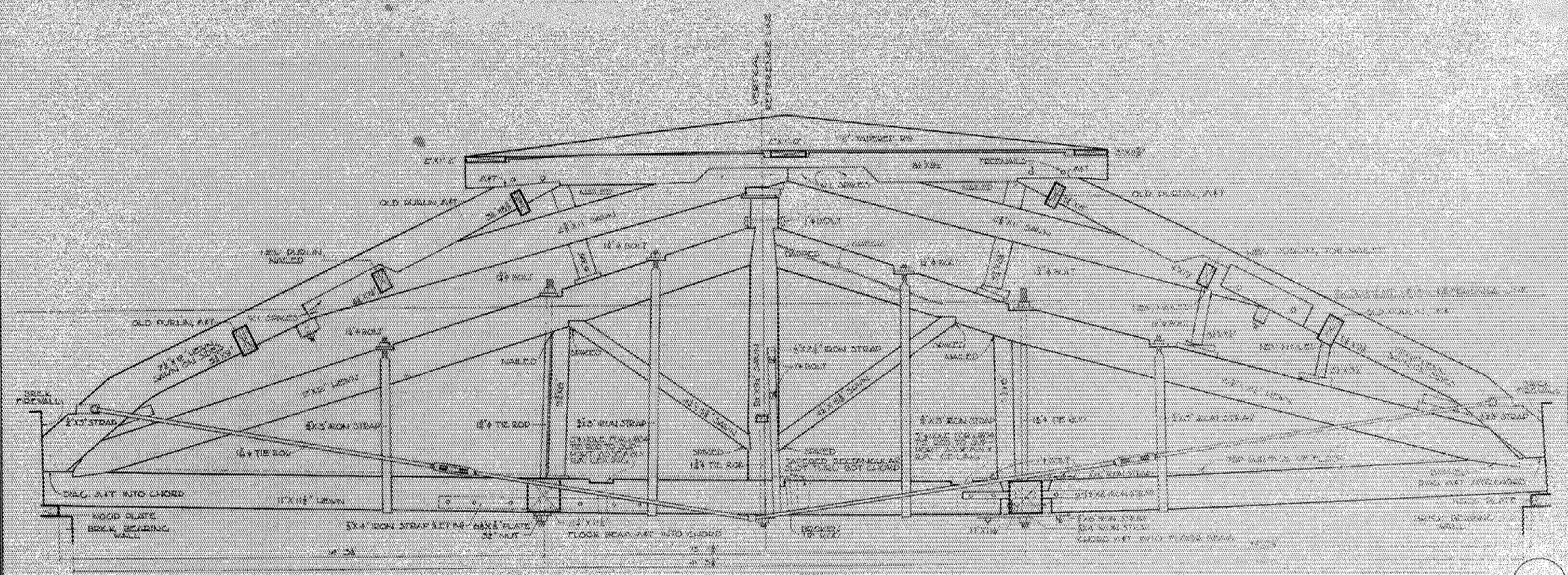
MARK	DESCRIPTION OF REVISION	DATE	INITIAL
	REVISED		

RECOMMENDED — SCALE — DATE
APPROVED — DATE

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN AND CONSTRUCTION
EASTERN

INDEPENDENCE HALL - ATTIC TRUSS "E"
INDEPENDENCE SQUARE GROUP
INDEPENDENCE NATIONAL HISTORICAL PARK

EDITION: FIVE
DSF NO.
SHEET 6 OF
DRAWING NO. NHP-IND 9211
DATE 8/80



MEASURED DRAWING OF ATTIC TRUSS F (ALA DESIGNATION 19B)
OR T5 (EWING REPORT-1958)
SCALE: 3/4"-1'-0" - LOOKING EAST

NOTES:
FLOORING: 1" TAG RANDOM WIDTH
PROBABLY INSTALLED 1890'S
REMOVED JULY 1969
IRON TIE RODS:
PROBABLY INSTALLED 1890'S
MODERN STEEL FIREWALL
BUILT ON TOP OF WOOD PLATE

ORIENTATION

PREPARED	
DESIGNED	PROJECT
DRAWN	WELDON
CHECKED	
DATE	INITIAL
REVISED	

SCALE SEE ABOVE

MARK	DESCRIPTION OF REVISION	DATE	INITIAL

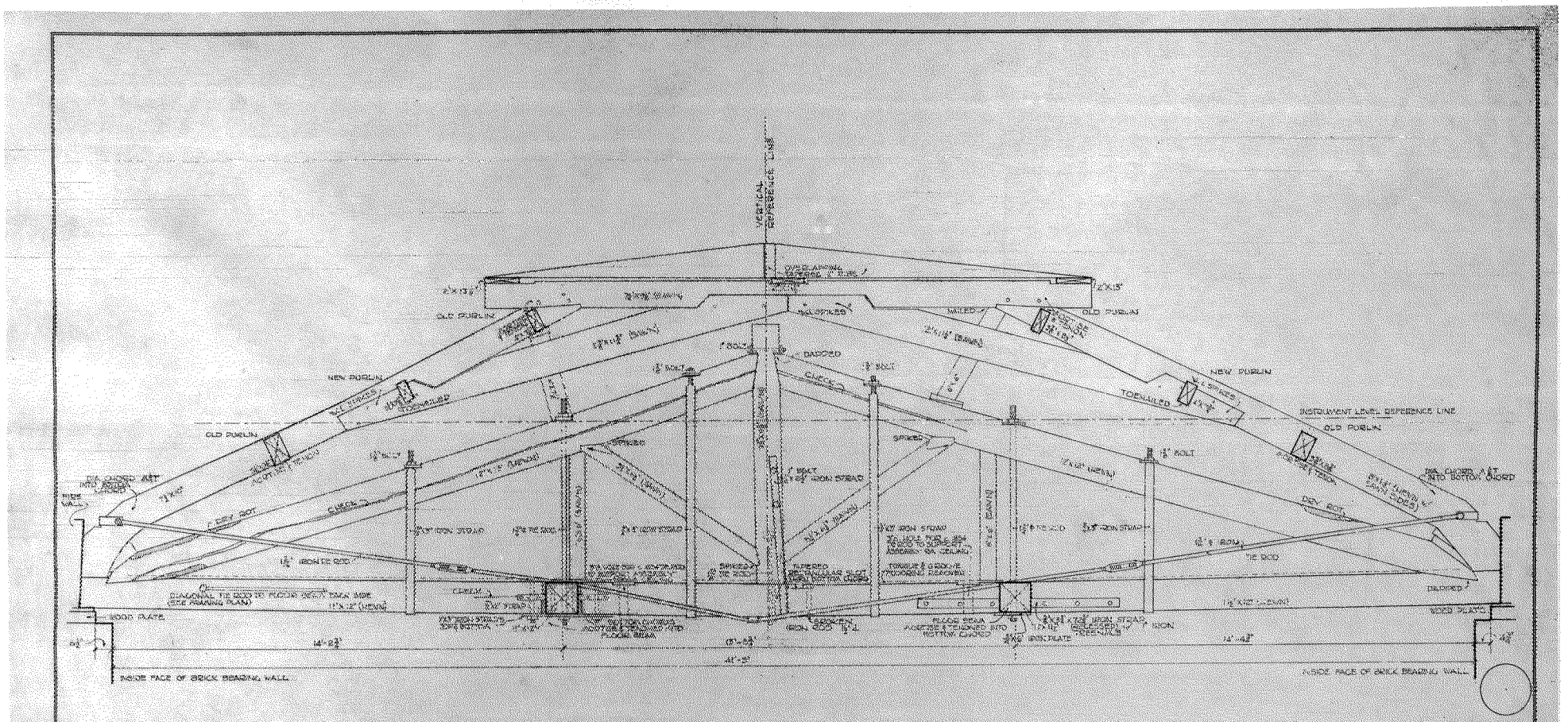
RECOMMENDED ..... DATE
APPROVED .....

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN & CONSTRUCTION
PREPARED BY
WELDON
OFFICE

MEASURED DRAWING ATTIC TRUSS "F"
TITLE OF DRAWING
INDEPENDENCE NATIONAL HISTORICAL PARK
LOCATION WITHIN PARK
NATIONAL HISTORICAL PARK
NAME OF PARK

REGION FIVE
PCP NO.
SHEET 12 OF
DRAWING NO HAER PA-
3211
DATE 8/69

BASIC DATA EXISTING FIELD CONDITIONS



MEASURED DRAWING OF ATTIC TRUSS 'G' (H.A.E. DESIGNATION-1916)
OR "T7" (EWING REPORT-1958)
SCALE: 3/4" = 1'-0" — LOOKING EAST

NOTES
FLOORING: 3" T & G BOARDWALK
CEILING: LATH & PLASTER
IRON TIE RODS PROBABLY INSTALLED IN 1960'S.
"ANDERSON" BRICK PIERS WERE BUILT ON TOP OF WOOD PLATES.

PHASING DATA: EXISTING CONDITIONS

ORIENTATION

PREPARED	
DESIGNED	
DRAWN	E. WELLS
TRACED	
CHECKED	NELSON, CHITWOOD
DATE	MATERIAL
REVISED	
REVISED	FIVE
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	2211
DATE	

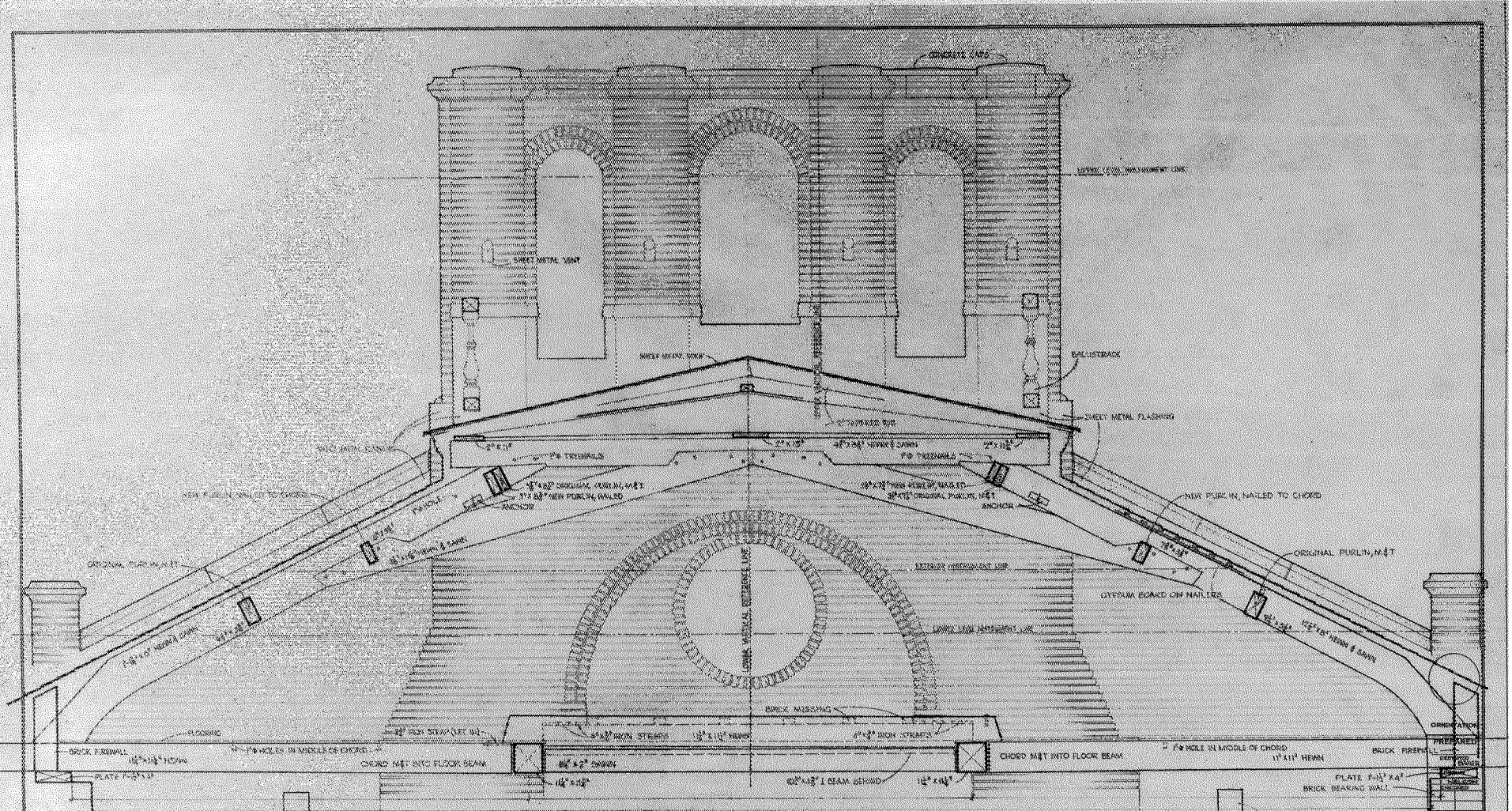
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RECOMMENDED ____ DATE
APPROVED ____ DATE

UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
DIVISION OF DESIGN & CONSTRUCTION
PREPARED IN EASTERN OFFICE

"INDEPENDENCE HALL" G ATTIC TRUSS "G"
TITLE OF DRAWING
INDEPENDENCE SQUARE GROUP
SPECIFIC SECTION NAME
INDEPENDENCE NATIONAL HISTORICAL PARK
NAME OF PARK

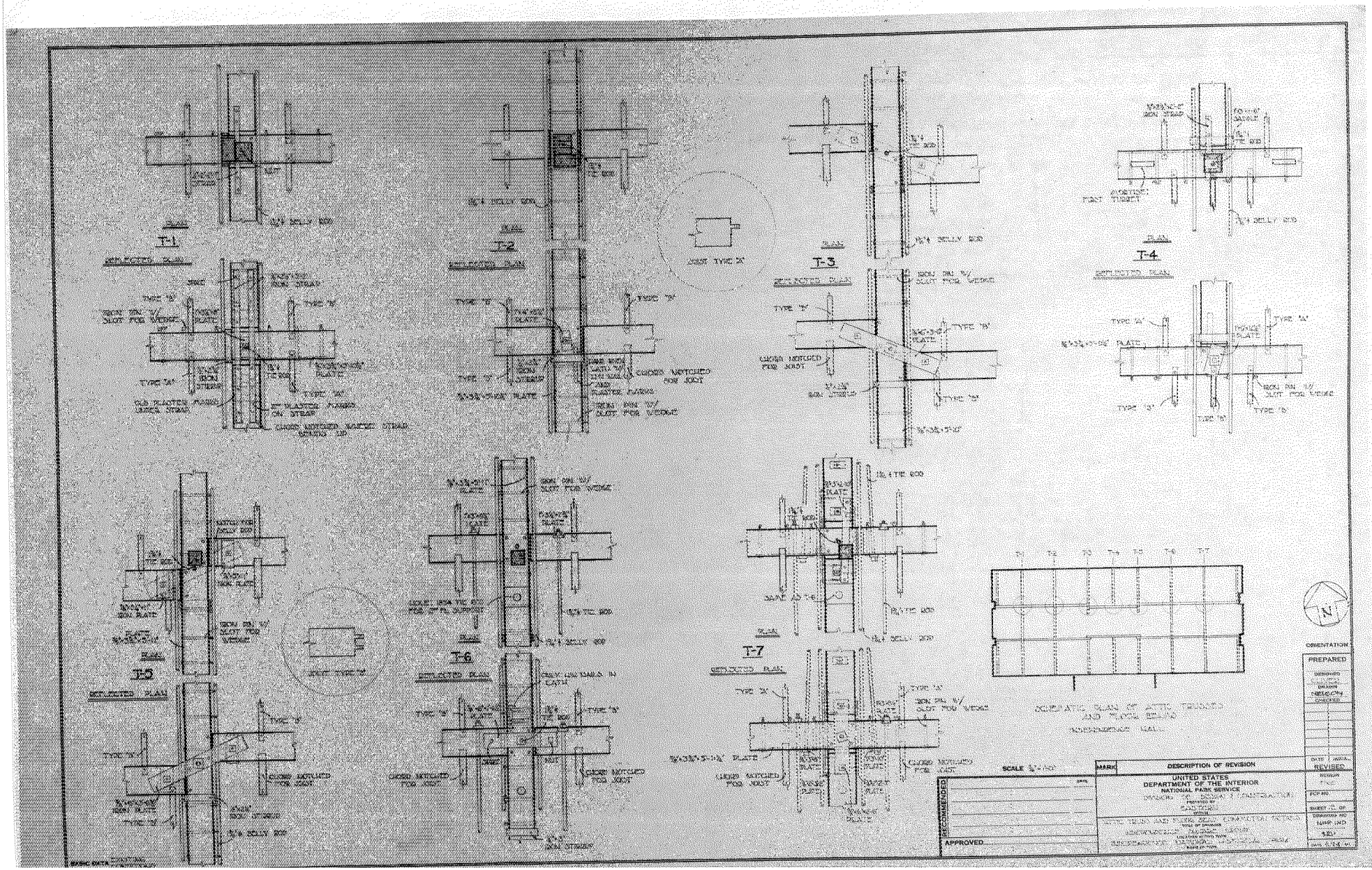


CROSS SECTION AT EAST WALL
TRUSS T7A (EWING REPORT, 1958)
SCALE 3/8"=1'-0" • LOOKING EAST

NOTES
FLOORING 8" T&G, RANDOM WIDTH, PARTIALLY INSTALLED BRICK REMOVED. ADJ. WALL BRICK FIREWALL BUILT ON TOP OF WOOD PLATE.

BASIC DATA EXISTING FIELD CONDITIONS

SCALE (SEE ABOVE)	MARK / DESCRIPTION OF REVISION / DATE INSTALL
DATE	REVISED
RECOMMENDED	REGION FIVE
APPROVED	DSF NO.
UNITED STATES DEPARTMENT OF THE INTERIOR NATIONAL PARK SERVICE DIVISION OF DESIGN AND CONSTRUCTION PHILADELPHIA	SHEET 11 OF DRAWING NO. 10NP-IND 3211
INDEPENDENCE WALL - CROSS SECTION AT EAST WALL	
INDEPENDENCE SQUARE GROUP	
INDEPENDENCE NATIONAL HISTORICAL PARK	DATE 2/5/62


T-1
T-2
T-3
T-4
T-5
T-6
T-7
DIAGRAMATIC PLAN OF ATTIC TRUSSES AND WIND BRACING
SCALE 3/16"=1'-0"
DESCRIPTION OF REVISION
UNITED STATES
DEPARTMENT OF THE INTERIOR
NATIONAL PARK SERVICE
RECOMMENDED
APPROVED
PREPARED
CHECKED
REVISED

ARCHITECTURAL AND STRUCTURAL REHABILITATION

INDEPENDENCE HALL

INDEPENDENCE NATIONAL HISTORICAL PARK

	TOWER AND MAIN BUILDING EXTERIOR			WEST HALF - INTERIOR			EAST HALF - INTERIOR			CENTER SECTION		
	FUNDS	SCHEDULE	FROM START	DELIVER FINISH	FUNDS	SCHEDULE	FROM START	DELIVER FINISH	FUNDS	SCHEDULE	FROM START	DELIVER FINISH
WORK ACCOMPLISHED TO DATE		INTERIOR PAINTING OF CENTRAL HALL AND STATE HALL COMPLETED 10/30/; BRICK REPOINTING ABOUT 1/4 OF TOWER. DISCONTINUED 11/58				STATE LEGISLATIVE CHAMBER (2ND FLOOR) RESTORED BY STATE'S HISTORIC PLACES COMMISSION. CONSTRUCTION OF STUDENT DESK ROOMS AT 2ND FLOOR, TRUSSES AND ATTIC FLOOR FRAME. JUNE 1956. ATTIC FLOOR BOARDED, REINFORCED. JUNE 1956.				STUDENT DESK ROOMS AT 2ND FLOOR, TRUSSES AND ATTIC FLOOR FRAME. JUNE 1956. ATTIC FLOOR BOARDED, REINFORCED. JUNE 1956.		
FY JUL		CONTRACT FOR STRUCTURAL INVESTIGATION.				CEILING BRACKET TO BEAM CONNECTIONS (2ND FLOOR) TESTED FOR STRENGTH. (WITNESSED BY ENGINEERS.)						
AUG		STEEL SPECIMEN TESTING, PAINT INTERIOR MIDDLE HALL 2ND FLOOR.				DRY LABOR PERIODIC START OF STRUCTURAL RESTORATION COMPLETE 2ND FLOOR.						
SEP		FLOOR TOWER PROGRESS.				CONTRACT FOR STRUCTURAL STEEL SHORING (2ND FLOOR)						CONTRACT FOR RESTORATION SPECIAL PLASTERING CEILINGS.
OCT												
NOV		COMPLETE INTERIOR PAINTING (1ST FLOOR)				SPECIAL SHORING OF STRUCTURAL STEEL COMPLETE (2ND FLOOR).						KEEPING SHORING FOR SCULPTURE, STEEL CEILINGS (ONE FLOOR).
DEC		COMPLETE STRUCTURAL ANALYSIS.				DRY LOCATION OF STRUCTURAL STEEL (2ND FLOOR)				LET CONTRACT FOR STRUCTURAL STEEL (2ND FLOOR)		LET CONTRACT FOR HISTORICAL STEEL RESTORATION.
FY JAN												
FEB										ENG'S ARCHITECTURAL REPORT COMPLETE.		
MAR										INSTALL STEEL EITHER ATTIC AND BASEMENT.		
APR												
MAY		START CLEANING BRICK EXTERIOR (MAIN TOWER).										
JUN		COMPLETE EXTERIOR RESTORING.								FINISH ARCHITECTURAL REHABILITATION.		
JUL FY		DEDICATION OF CONGRESS HALL IN CONNECTION WITH GOVERNORS' CONFERENCE AND SOUND AND LIGHT PROGRAM.										
AUG										DRY LABOR PERIOD START RESTORATION.		
SEP												
OCT												
NOV												
DEC												
FY JAN						CLOSE TO PUBLIC AND INSTALL STEEL.				FINISH RESTORATION OF ASSEMBLY ROOMS. START RESTORATION 2ND FLOOR.		
FEB												
MAR						FINISH ARCHITECTURAL WORK.						
APR												
MAY						DRAFT II ARCHITECTURAL REPORT COMPLETE.						
JUN												
JULY FY		CONTRACT FOR STRUCTURAL STEEL (HEATING EQUIPMENT).				DRY LABOR PERIODIC START RESTORATION S.C. ROOM.						
AUG												
SEP		WORKING DRAWINGS FOR STRUCTURAL STEEL COMPLETE.										
OCT												
NOV												
DEC												
FY JAN		LET CONTRACT FOR STRUCTURAL STEEL REINFORCEMENT AND ERECTION.				FINISH RESTORATION S.C. ROOM.						CLOSE TO PUBLIC AND INSTALL STEEL.
FEB												
MAR												FINISH ARCHITECTURAL REHABILITATION, EXCEPT 1ST FLOOR OPEN TO PUBLIC.
APR						REPAIRING RESTORATION 2ND FLOOR.				RESUME RESTORATION 2ND FLOOR.		
MAY												
JUN						COMPLETE RESTORATION OF 2ND FLOOR				COMPLETE RESTORATION 2ND FLOOR.		
JUL FY		START ARCHITECTURAL INVESTIGATION AND STRUCTURAL REHABILITATION.										
AUG												
SEP												
OCT		START II ARCHITECTURAL REPORT COMPLETE.										
NOV		STRUCTURAL REHABILITATION COMPLETE.										
DEC												
FY JAN												
FEB												
MAR		START ARCHITECTURAL RESTORATION.										
APR												
MAY												
JUN		COMPLETE TOWER RESTORATION.										
JUL FY												
AUG												
SEP												
OCT												
NOV												
DEC												
FY JAN												
FEB												
MAR												
APR												
MAY												
JUN												
JUL FY												
AUG												
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OCT												
NOV												
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