

A GYMNASIUM AND ARMORY  
for the  
State College of Washington

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A THESIS

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Presented by  
STANLEY A. SMITH  
Candidate for the Degree of Architect  
K. S. A. C.  
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With the completion of the new \$500,000 Gymnasium and Armory this spring, one of the cherished hopes and dreams of the State College of Washington faculty and several generations of students will have been realized. The need for this gigantic structure has been felt for many years, due to the phenomenal growth of the institution.

Two-thirds of the cost of the Gymnasium has been met by student tuition fees, collected over the past six years. The other one-third was furnished from state funds. The students' share of the appropriations was started by the student body itself in the spring of 1921, when a student committee met with the Board of Regents and asked that a \$10 fee be assessed each individual member of the student body at the beginning of each semester to provide a building fund.

Before any definite plans as to location or type of building were formulated, several tours of inspection were taken by myself and other members of the State College faculty. These journeys were for the purpose of collecting material on other modern gymnasias in the United States and to determine, as far as possible,

wherein other schools had worked out ideas in construction, which might be applied to the needs of the local institution.

I made my first trip east in the fall of 1923 with a three-fold purpose in mind. I wished to consult with William B. Favelle, member of the city planning commission of Washington, D. C., and chairman of a board which drew up plans for the San Francisco World's fair in 1915; as to the location of the Gymnasium; to visit modern and up-to-date buildings on eastern campi, and incidentally to attend a convention of the American Institute of Architects. After the Convention and my conference with Mr. Favelle, I started on my inspection trip. This really opened in the southeast where I examined carefully the structure at the University of Virginia, designed by McKim, Meade and White of New York City. I spent a brief period at the University of Pennsylvania, Philadelphia, but did not gather much data as this gymnasium was more of the field house type rather than one suited to the needs of the State College. I next travelled to New York City where I conferred with Dr. George L. Meylan, Head of the Department of Physical Education at Columbia University.

He referred me to Lewis Jallade, a New York architect who has perhaps designed more gymnasia than any other man in the country.



Mr. Jallade gave me much worthwhile advice and suggested that I visit the gymnasium at Hamilton College at Clinton, N. Y. There I was able to get complete reports on a building just finished and also to meet Mr. Prettyman, President of the National Association of Physical Education Directors and Instructors, who spent a great deal of time in going over various plans with me.

Returning west, I next inspected the University of Michigan gymnasium and the new field house. My trip then took me to the University of Chicago, Northwestern University and the University of Illinois. The University of Illinois has a very similar problem to ours and I felt that their solution would be well worth studying. Consequently considerable time was spent there with the University Architect, going over their sketches and plans and inspecting their buildings.

At the University of Minnesota I received considerable valuable material on swimming pool design and construction from Director Fred Leuhring an authority in this field. This was my last stop on this trip.

Starting out again in the summer of 1925, I took a trip through the middle west, visiting at Ames, Iowa, at the University of Kansas, where they have a building similar to ours; then journeying to Kansas State and the University of Colorado. Colorado had just com-

pleted a gymnasium planned by Day and Klander, Philadelphia, a beautiful structure in which was incorporated many excellent ideas.

My third inspection trip came in the winter of 1925-26, when I accompanied the State College of Washington Varsity basketball players on their seasonal tour over the Northwest. We visited the University of Montana, University of Washington, Oregon Agricultural College, University of Oregon and Multnomah Club, Portland, Oregon, where I inspected college and high school gymnasias and talked to various architects and material men. These trips yielded much, giving me a chance to see, personally, some of the finest athletic structures in the world and to consult with architects who had spent practically a life time in planning gymnasias and similar buildings.

While searching for a head football coach during the spring of 1925, J. Fred Bohler, Director of Athletics at the State College of Washington, and William C. Kruegel, College Bursar, sought out many of the newer gymnasias on their way. Also, during the previous summer, Mr. Bohler had made an automobile tour through the middle west and east with his family, visiting the University of Montana, University of Minnesota, University of Chicago and finally making a special side trip to Dartmouth where a gymnasium, reputed to be the greatest of its kind in the

country, is located.

Preliminary sketches for the building were started in the spring of 1924 when Mr. Favelle was on the campus. He was brought here primarily to assist in choosing a location, but his ideas on gymnasium plans were so good that it was deemed wise to keep many of them for reference.

A number of studies were worked up during that same summer, the majority of them conforming with the idea of a modern field house. Later, after we had the chance to visit buildings in the east and south, we discarded the plan of such a structure, deciding that a field house could be constructed later, when more funds were available.

In our visits, it was found that gymnasias could be placed in three general classes or types: the Y.M.C.A. type, where calisthenics and mass athletics were foremost; the type devoted to athletic contests only with a modern field house being the most representative; and lastly, the combination of the first two types or a structure which would care for both mass instruction and major athletic contests.

After several conferences with the President of the College and members of the Physical Education Department, it was decided that the combination type was most

suited to the needs of the State College. Having definitely settled on the major plan, we went to work in earnest on the drawings and specifications in the fall and winter of 1925. These were finished during the following spring, including sketches, rendered drawings, perspectives of all kinds, and models.

Financial difficulty was encountered at about this time, money for the building being held up by Governor R. H. Hartley until January of the next year, when the legislature went into session. As it was thought advisable to get under way at once, the contract was let in June for the erection of the superstructure. Mr. M. C. Conley, of Spokane, was awarded the contract for \$265,000. The plumbing, heating and electric wiring contracts, as well as the general contract for the completion of the building, were not awarded until the year following.

One incident which happened in the erection of the building, while rather disagreeable was excellent experience for me, was at the time of opening the bids for the plumbing and heating work for the structure. My estimate of the probable cost of this work was approximately \$70,000. The bids ran around \$90,000. Upon investigation we felt certain that these Contractors had formed an alliance in preparing their bids for doing this work. New

bids were called for and an outside Contractor was the low bidder with a bid of \$65,000, or a saving to the College of over \$20,000. The Plumbing and Heating was awarded to Brown the Plumber of Bellingham, Wash., and the Electrical work to J. J. Agutter of Seattle and Mr. M. C. Conley was awarded the work of completing the Gymnasium construction. This was to be expected as he was already on the ground.

Construction started the fall of 1926 with Major Pat Maloney, State College graduate, as structural engineer. Major Maloney had been at this kind of work for years, having had charge of building operations at Camp Grant, Chicago, during the war. From one to three members of our office staff were at the building at all times during the construction to assist Major Maloney.

Several problems presented themselves during the early days of the construction. The building was located on low, marshy land and when excavating for the foundation, the question arose whether to have spread footings floating in the mud or to dig down to bed rock. Test borings were made and it was finally agreed that the piers should be placed on bed rock. There are 156 of these piers under the gymnasium now, all from 15 to 35 feet in length.

Another problem developed concerning the peculiar basaltic rock formation which we had to use in the



concrete. Basalt takes more water than ordinary gravel and the customary formula for mixing concrete had to be changed. All proving of bills, reports and other work, coming under the jurisdiction of the Architect's office ordinarily, were handled by us and a constant check was maintained on the progress of the Contractor.

As basketball is a big indoor sport and is undoubtedly destined to become more popular as more big gymnasias are built, it was decided to first plan a main floor suitable for this sport and build around it. It seemed desirable to plan the construction of the bleachers so that it would be possible to utilize space beneath for additional rooms, such as offices, classrooms and storage space for apparatus and military equipment.

Another important part of the general plan were the lockerrooms, as they must be near the ground on account of moisture and convenient for circulation to and from the main gymnasium floor. The swimming pool plans were also considered early, as warmth, ventilation, artificial sterilization of the pool water and moisture content of the room are of utmost importance in the planning of an efficient pool. The enormous weight of the swimming tank and the desire to keep it as close as possible to the locker rooms caused it to be located on the ground floor. After a thorough study of the various systems of locker assignment it was

decided that the most desirable one for our gymnasium was the so-called Kansas City or basket system, since this uses a minimum of space and a minimum outlay of locker equipment. Other features of this floor, in addition to the main locker and basket rooms, are locker rooms for different athletic teams, for visiting teams, for faculty, and for girl students who make use of the swimming tank. The latter room is so situated that girls can come and go without being seen by anyone else in the building, since it will be necessary for the young women to use the pool in this building until such time as a woman's building is built. The tank will be 75 by 35 feet, while the spectators' gallery will accommodate about 250 persons. Showers, toilets, Turkish baths, supply rooms, laundry and drying rooms, besides four handball courts, complete the main section of the ground floor.

High ceilings in the swimming pool, handball courts and locker rooms are a distinct advantage in that they tend to do away with any odors by providing a greater volume of air, and also allow plenty of room for high spring boards and diving boards for the pool. It was decided that a mezzanine floor could be built over the rooms in which the high ceilings were not necessary. This mezzanine floor provides space for wrestling, boxing and fencing rooms, class and supply rooms and physical education and military classes. Space on this floor has also been used to install fans for ventilating the important rooms of the building.

The main gymnasium floor determined the elevation of the building, it being about six inches above the level of the athletic field. Dimensions of the basketball floor are 100 by 157 feet, large enough for three practice basketball courts or one official court with bleachers erected on all sides. On the main floor are located offices for the physical education instructors and coaching staff, an examination room, an orthopedic gymnasium 25 by 45 feet, to be used mainly for corrective work, a special room for instruction in apparatus work, and offices and supply rooms for the military department.

Five exits to the ground floor and one main entrance from the athletic field to the main floor provide plenty of openings to release a crowd in record time. A special bridge will be built to connect the main entrance with the north side of the athletic field. Seating capacity for 3000 to 3500 persons is provided in the balcony built along two sides of the building, directly above the main floor. By erecting portable bleachers on the main floor, the seating capacity can be increased to from 6500 to 7000. Leading to the balcony above the main gymnasium floor are eight stairways. It was found that the means of emptying the crowds from the building after a game was an item often overlooked in planning of other gymnasia, so that feature was very carefully considered in the design of this building.



So that the main room of the building may be used for social events, commencement exercises and other functions, special electrical wiring has been installed. Conduits run the entire length of the balcony for radio operators to plug in wherever they may wish, and rings for decorative purposes have been provided along the edge of the balcony. An automatic scoreboard is another feature of the main floor.

Over the offices on the main floor, is to be found a second mezzanine floor which contains an auxiliary gymnasium, 25 by 117 feet, to be used for early spring baseball practice and social functions, which may be held in the building from time to time. A small kitchenette for the preparation of luncheons has been built at one end of the auxiliary gymnasium to care for such functions.

Storage space, rooms for golf practice, and stacking rooms for rifles used by the Reserve Officers' Training Corps, are situated on this floor and under the balcony.

A spring floor of maple for the main gymnasium is one of the main features of the building. The floor is built up in a special way over the concrete slab to give a desired cushion effect for athletics and dancing. The corridors and halls are finished in Terrazzo.

A cork carpet covers the floors of the wrestling, boxing and fencing rooms, and non-slip tile car-

borundum is used in the showers and pool rooms. The basement has enameled concrete walls, with plaster in other parts of the building. Steel sash was used in the window construction, with a special glass which will admit ultraviolet rays, in the orthopedic gymnasium and examination rooms.

The building is built in the Georgian style of architecture to harmonize with the newer buildings erected on the campus. Simplicity is the keynote throughout the building, expressing the idea that it is essentially a gymnasium. On the exterior face brick is used, with a cast-stone trim. The main construction is of reinforced concrete with panel walls filled in with hollow tile and concrete. Over the balcony the roof is made of reinforced concrete covered with a composition roofing while the roof proper is constructed of timber covered with copper.

Two artistic features of interest are the sculptural relief work, included in the tympanums over the entrance, and the full relief facade entrances, and the full relief facade ornament. The five tympanum reliefs were modeled by W. T. McDermitt, Head of the Fine Arts Department, and the facade ornament, a large portrait of George Washington, was modeled by Worth D. Griffin of the Fine Arts Department. It is a coincidence of interest

that this work of sculptural merit, by present members of the State College faculty, could be included in the monument devoted to the ideals of Physical development, according to campus art critics. Each tympanum is a figure composition, of three to eight figures in low relief and has the appearance and effect of carved stone. They are semi-circular in shape, ranging in size from four to five feet in diameter. The group of the three tympanums placed over the three doors of the main west entrance, is centered by a kneeling mother, with a small child in the right foreground. In the elevated left hand of the mother is a wreath, symbolizing the victory attained through physical perfection. This also implies that victory of physical development should be planned on, and carried out from childhood, if the ultimate goal of physical development is to be reached.

The tympanum to the right of this center group represents a mature basketball player, while the one to the left represents a football player. These two figures in the side tympanums face the center group, thus making a unification of the three. The center of interest of the middle tympanum is enhanced by lines of radiation in the background.

The south entrance opening upon the football field, composed of one large door, is enriched by a tympanum of eight figures, representing the spirit of football.

Action characteristic of football is portrayed. The tympanum for the north entrance is composed of three figures in realistic action symbolizing basketball.

The facade is composed of a large portrait of George Washington, in relief. Flanked on both sides of the portrait are full form model cougars, facing it. The cougars and portrait make a fitting climax to the facade. The cougar is the mascot of the athletic teams of the State College.

The placing of these sculptural reliefs on the gymnasium is a marked asset, and indicate an added and live interest in the field of decorative art. These decorative features are the result of cooperation of the Department of Architectural Engineering and the Fine Arts Department.

Plans for the building were arranged so that an addition could be made if necessary. At some future time, the College Authorities may deem it expedient to build a stage or to extend the present main floor. This can be done at the east end without detracting from the general appearance of the structure. The erection of a Field House, as was mentioned in the early part of this paper, is, at the present writing, progressing quite rapidly, in fact it looks now as though we would have, in addition to the Gymnasium and Armory, a modern Field House which will be built

very near the Gymnasium with a connecting tunnel or passageway so that the Gymnasium lockers and dressing rooms will be available for those using the Field House. This structure will very probably be about 135 feet wide and 300 feet long with a clear height of 55 or 60 feet. The general style of architecture will be such that will harmonize with the Gymnasium, thereby forming a complete unit for men's athletics.

A great deal of credit for the assembling and preparation of the plans and specifications should go to those associated with the College Architect's office. Recognition should also be given to the excellent cooperation received from the faculty and employees of the College, whose particular training fitted them to give advice relative to this building. Particular credit should be given to the faculty of the School of Engineering, who assisted greatly in the preparation of the mechanical plans, and to the Fine Arts Department, which assisted by modeling many of the decorative details of the building.

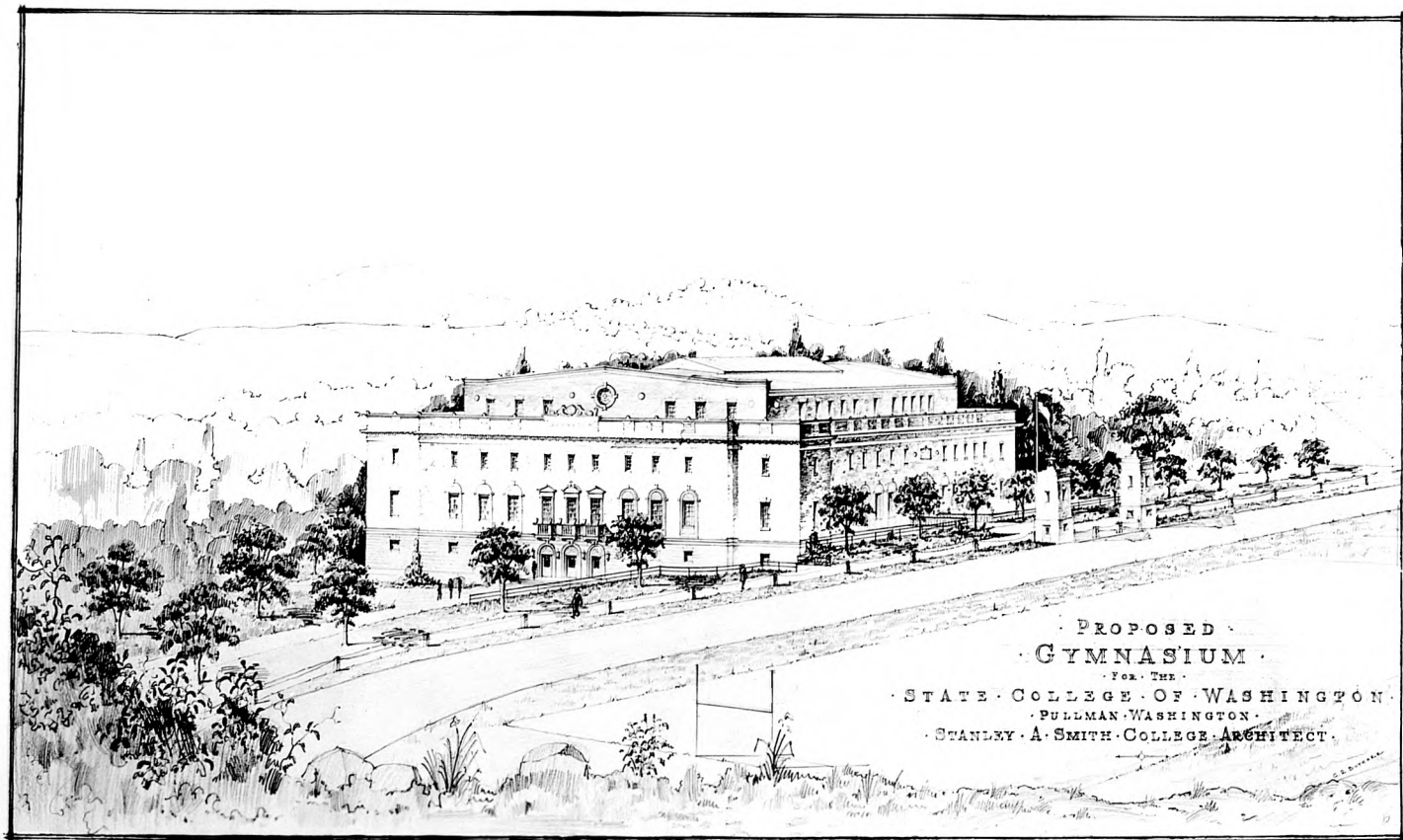


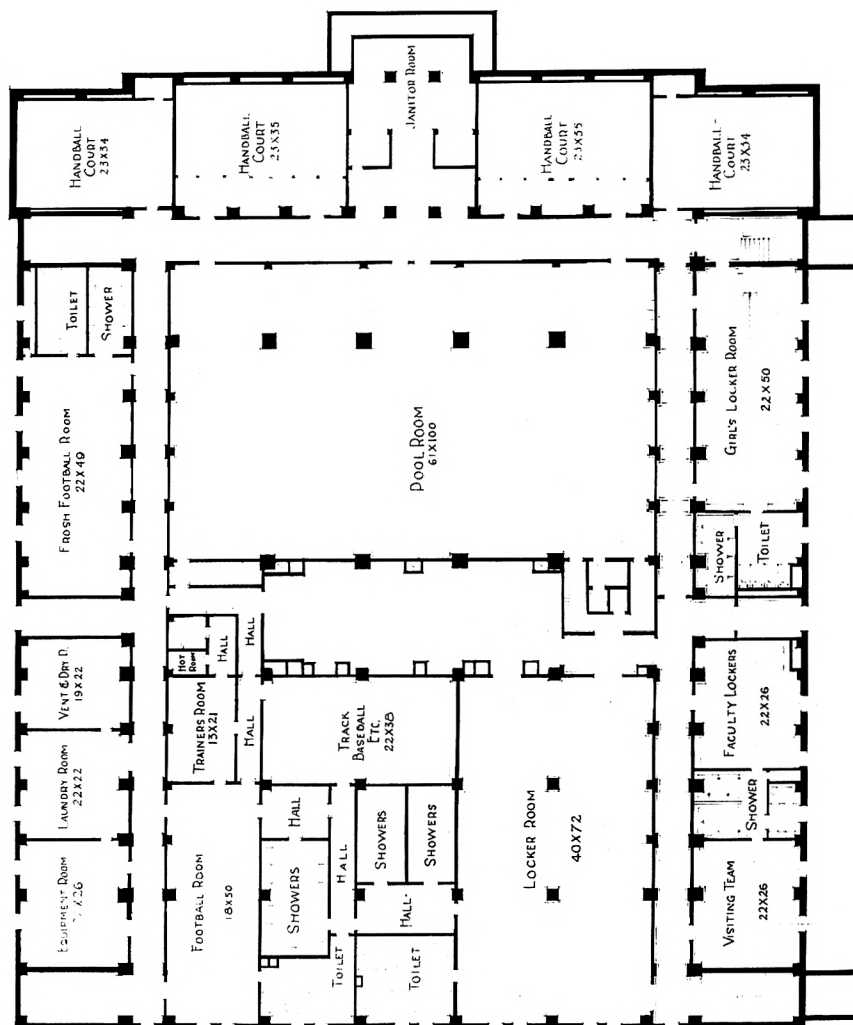
A MODEL OF THE CAMPUS. STATE COLLEGE OF  
WASHINGTON.

The Gymnasium is the building at the extreme left located on the Athletic Field. This model was built primarily to study the various suggested locations of the Gymnasium.



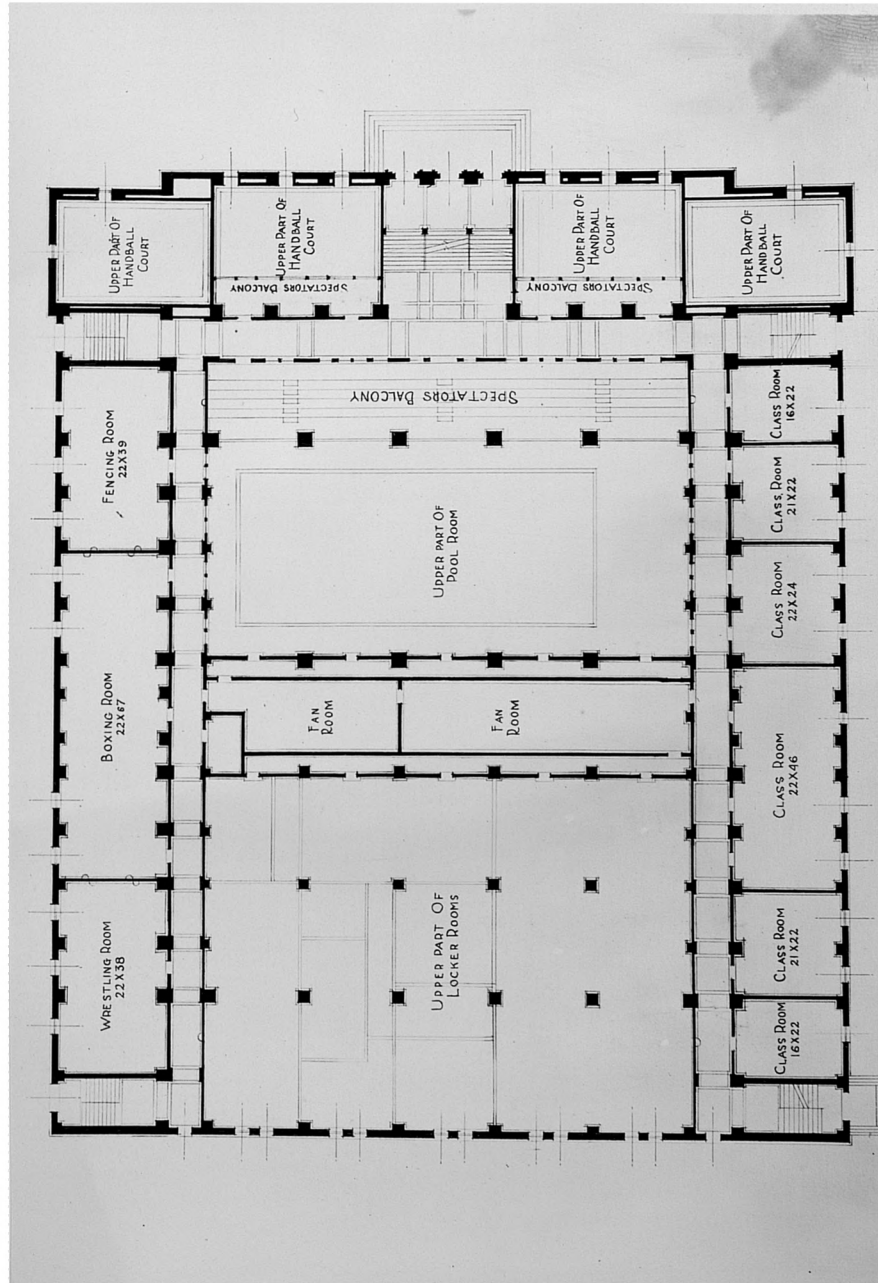
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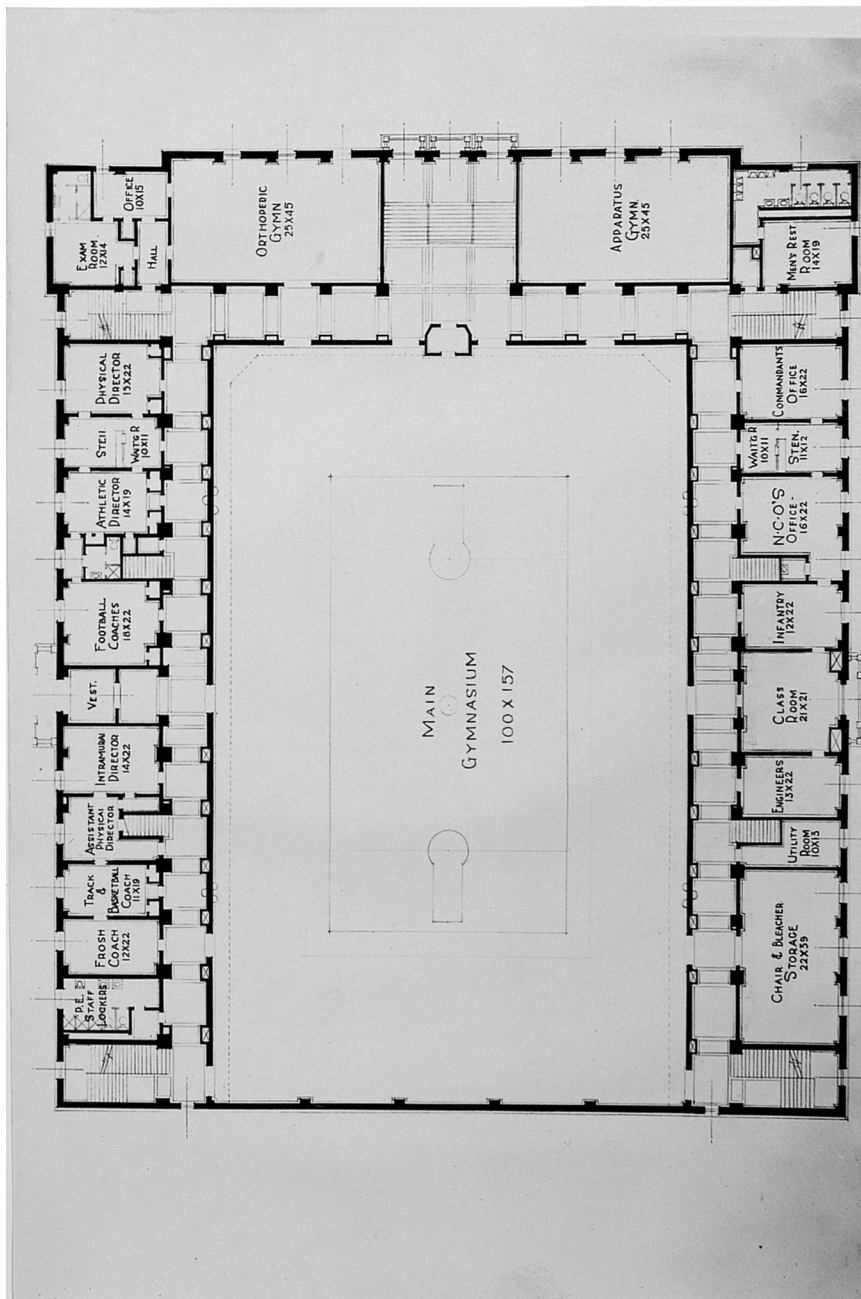


BASEMENT PLAN.

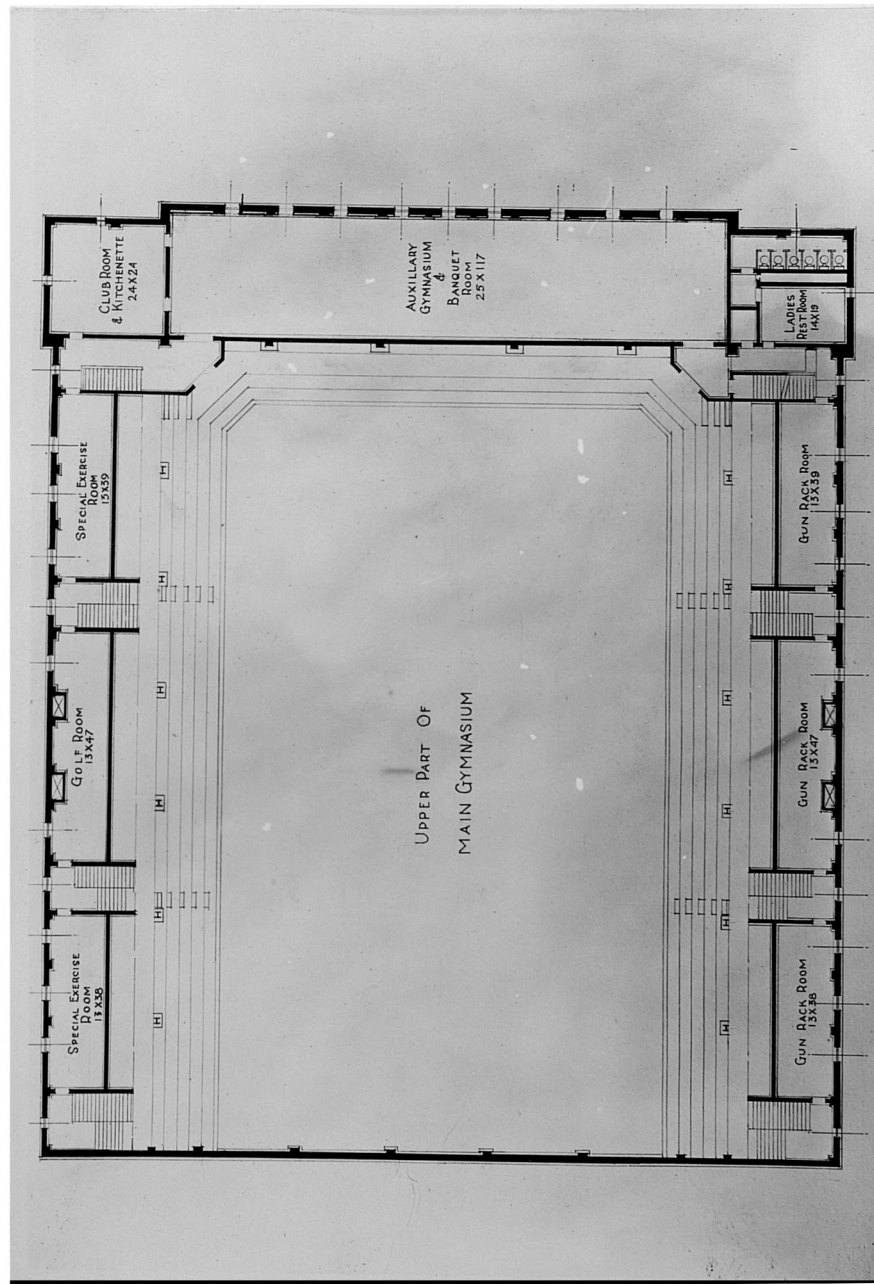




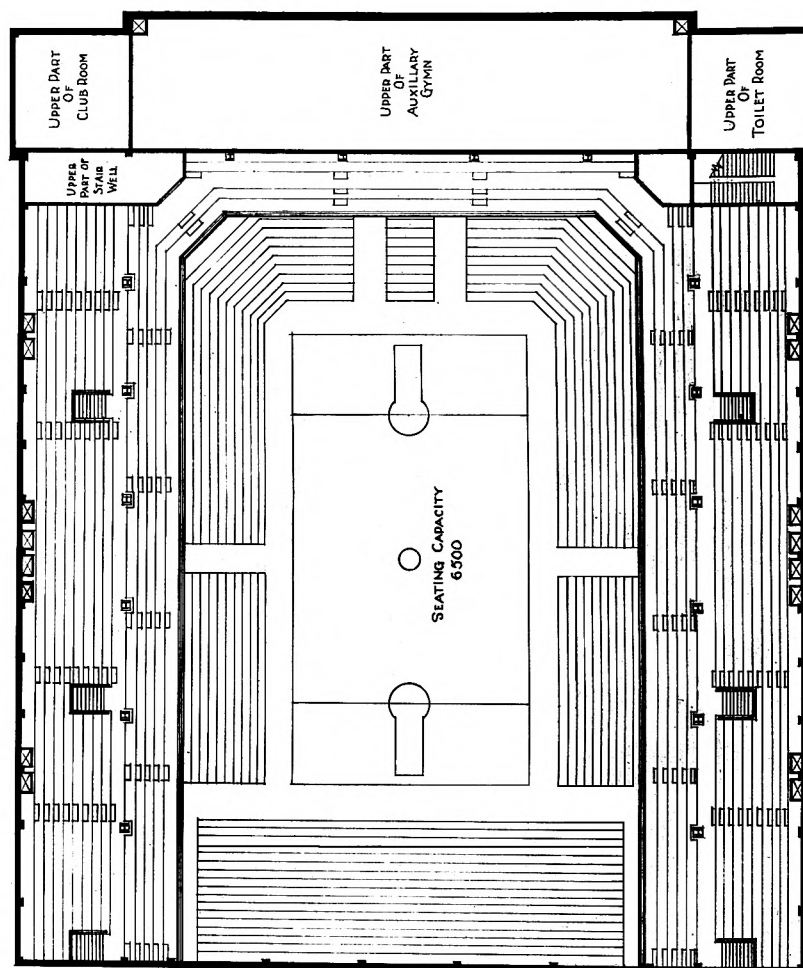
MEZZANINE FLOOR PLAN.



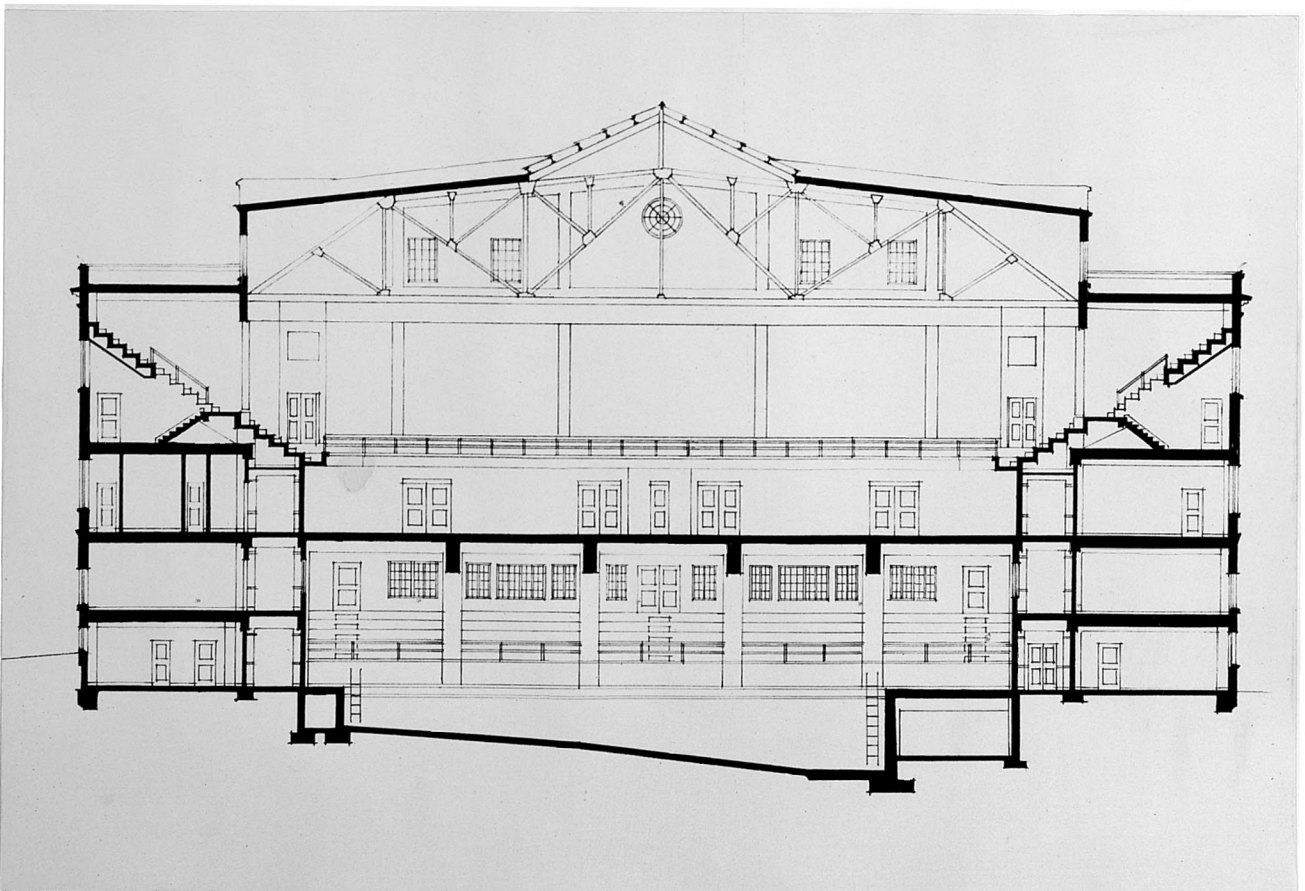
MAIN FLOOR PLAN.



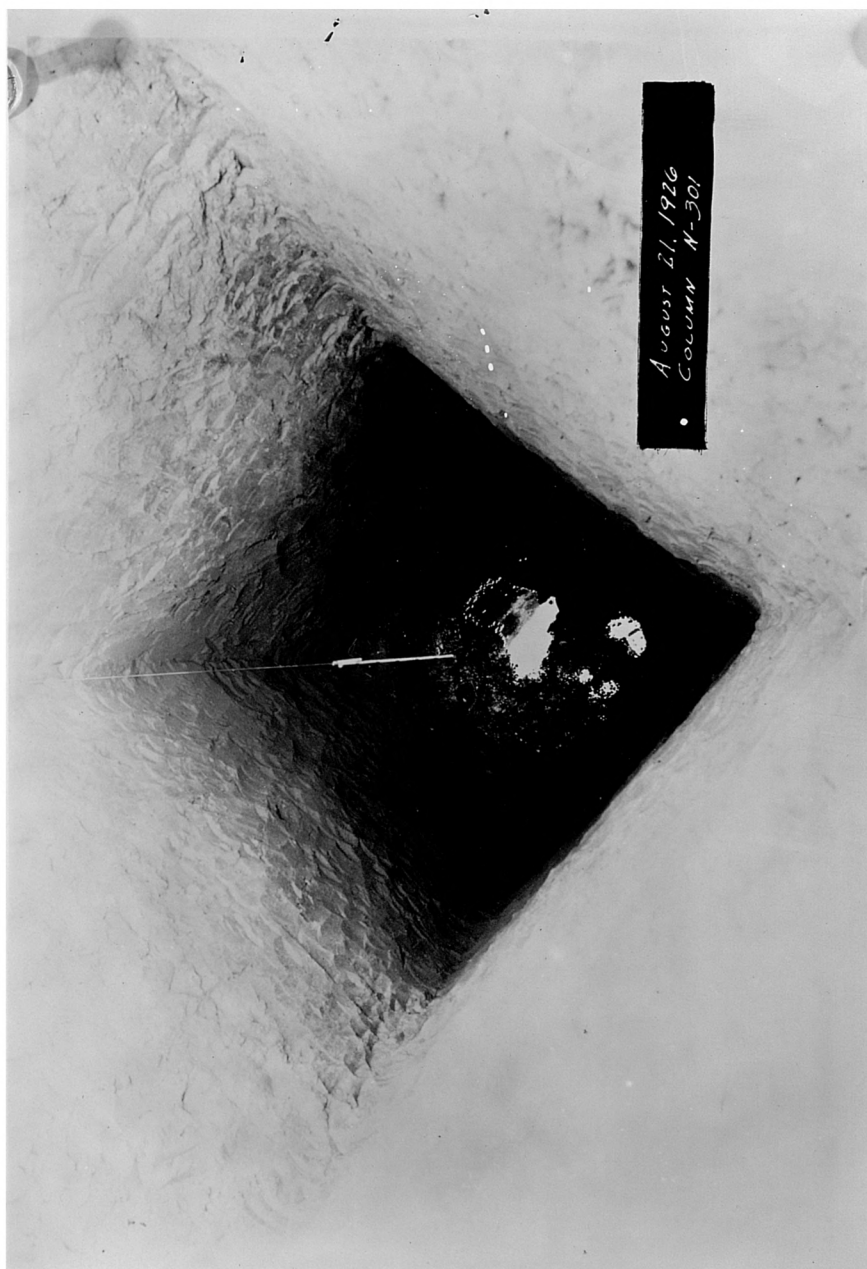
SECOND FLOOR PLAN.



BALCONY SEATING PLAN.



TRANSVERSE SECTION.



#### COLUMN FOOTINGS

Photographs were taken of foundations under all important columns.

















Feb 25, 1927.

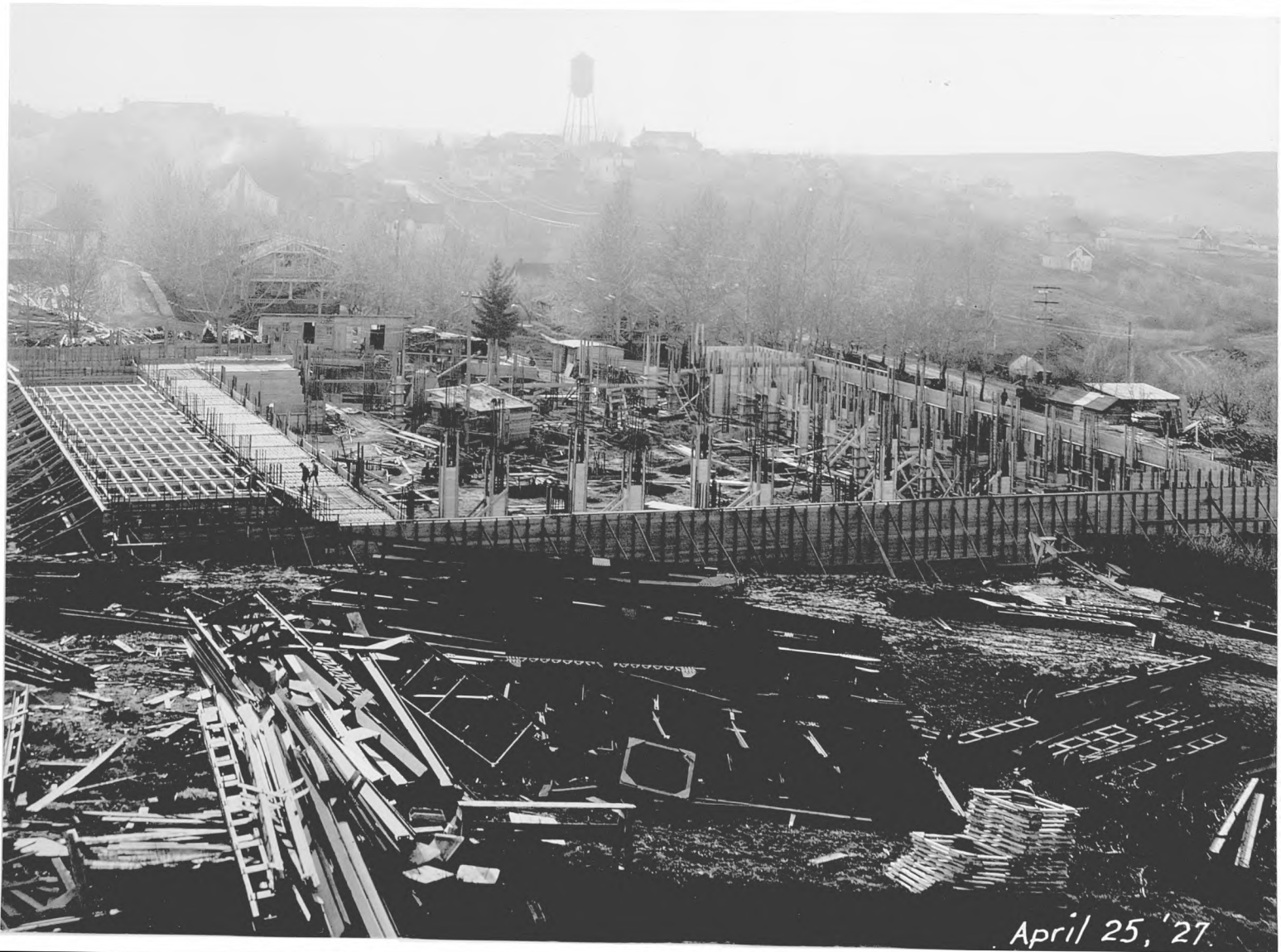




Mar. 25, 1927

PROGRESS PHOTOGRAPHS.

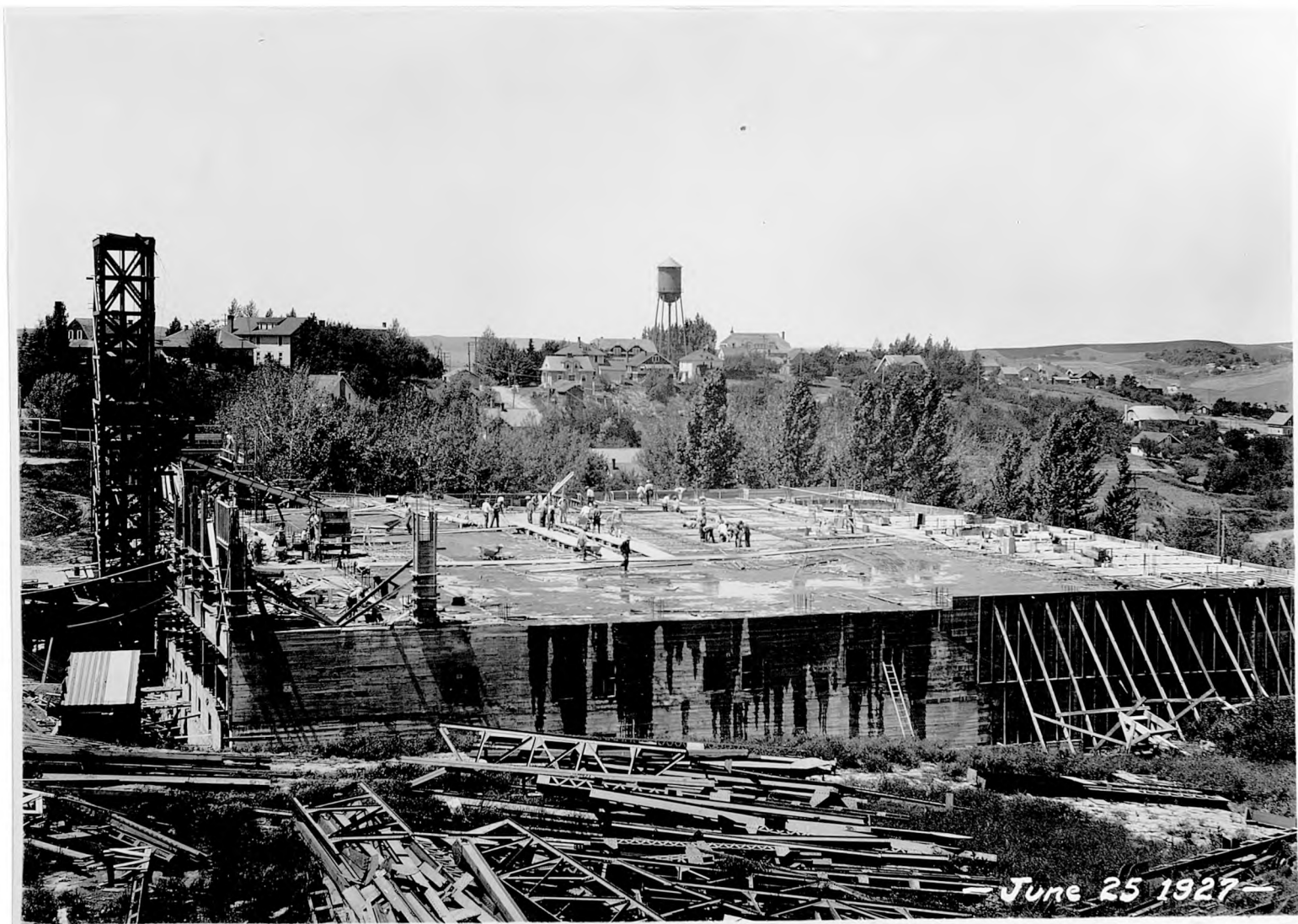




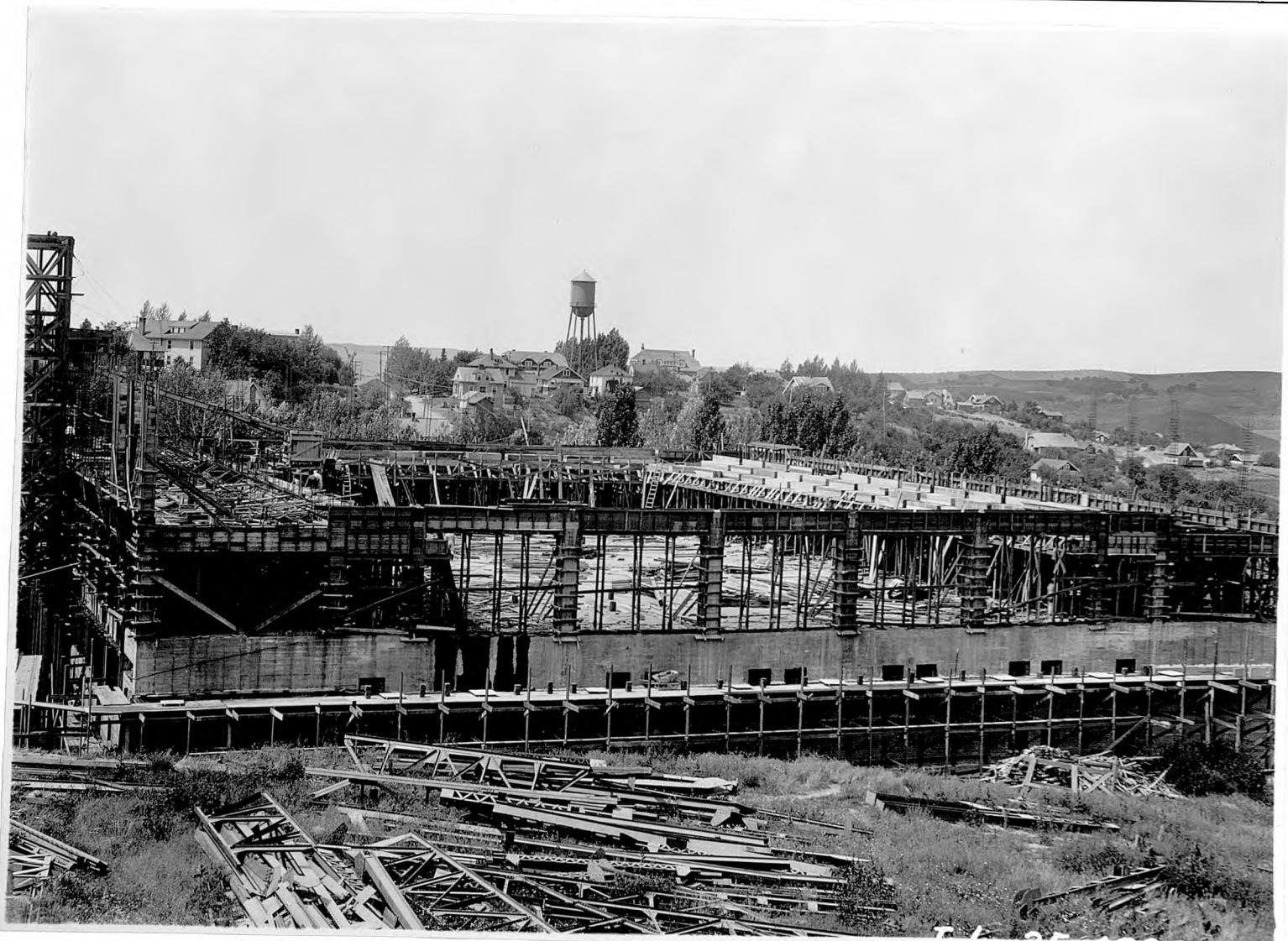
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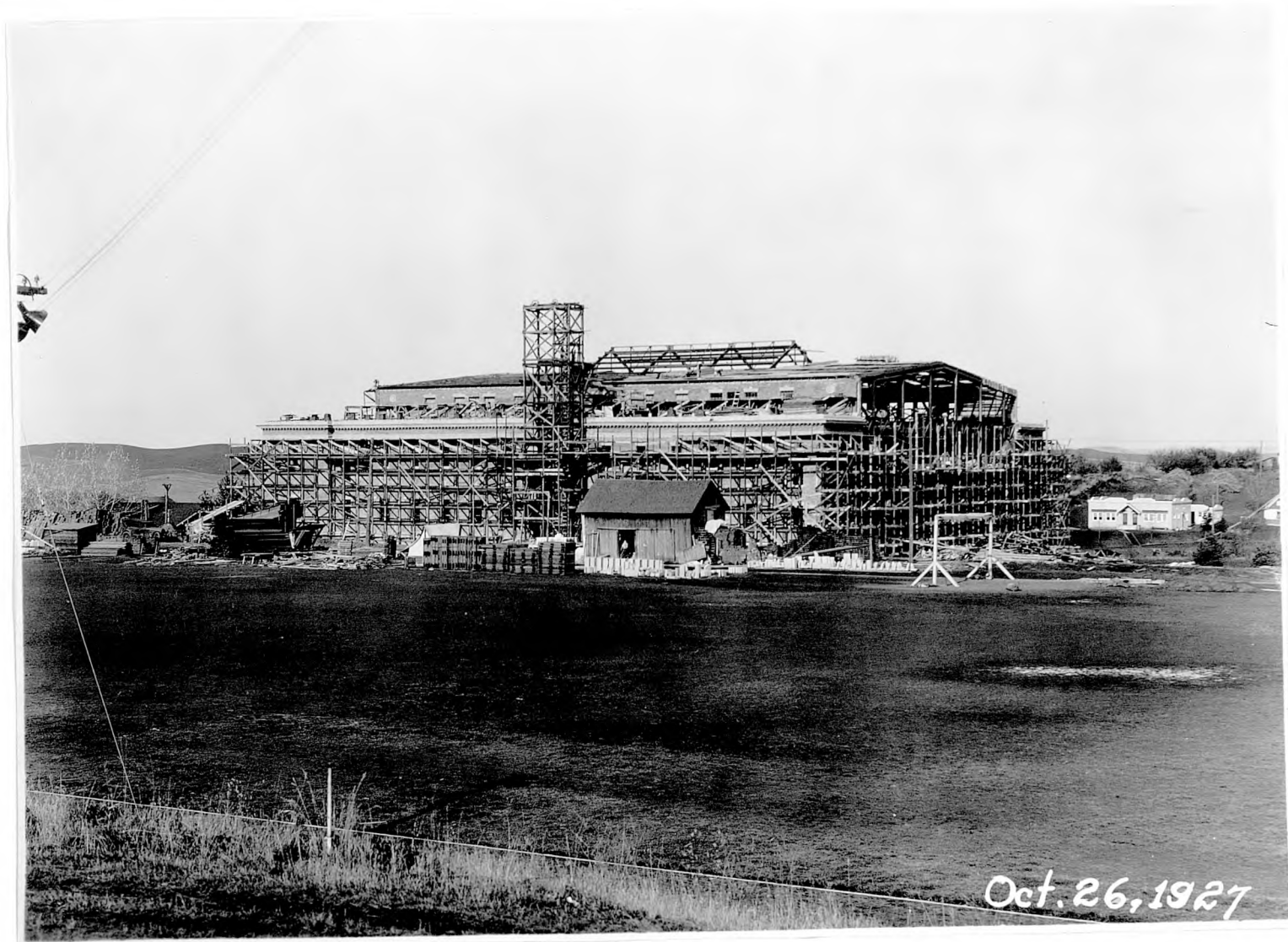
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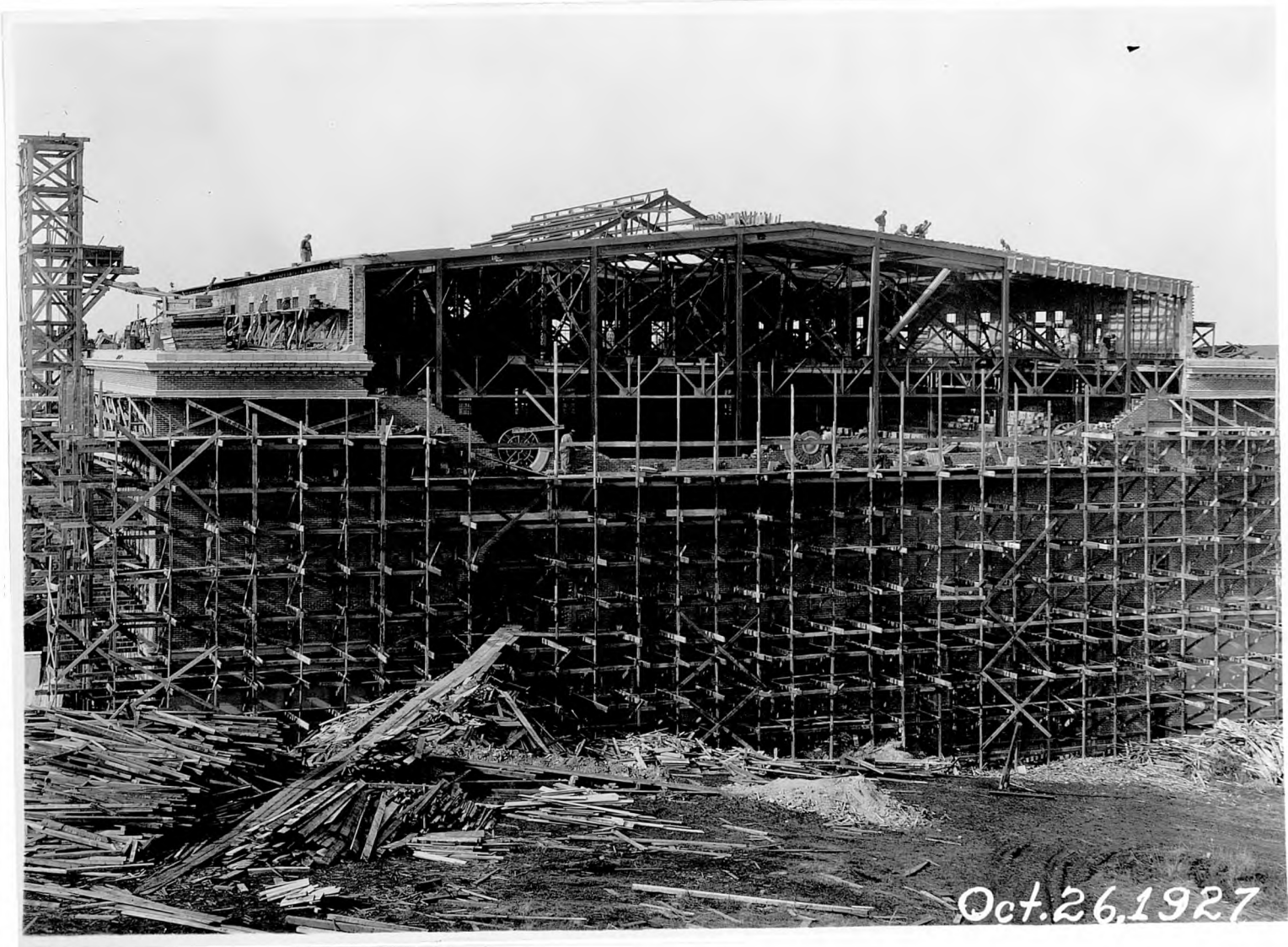






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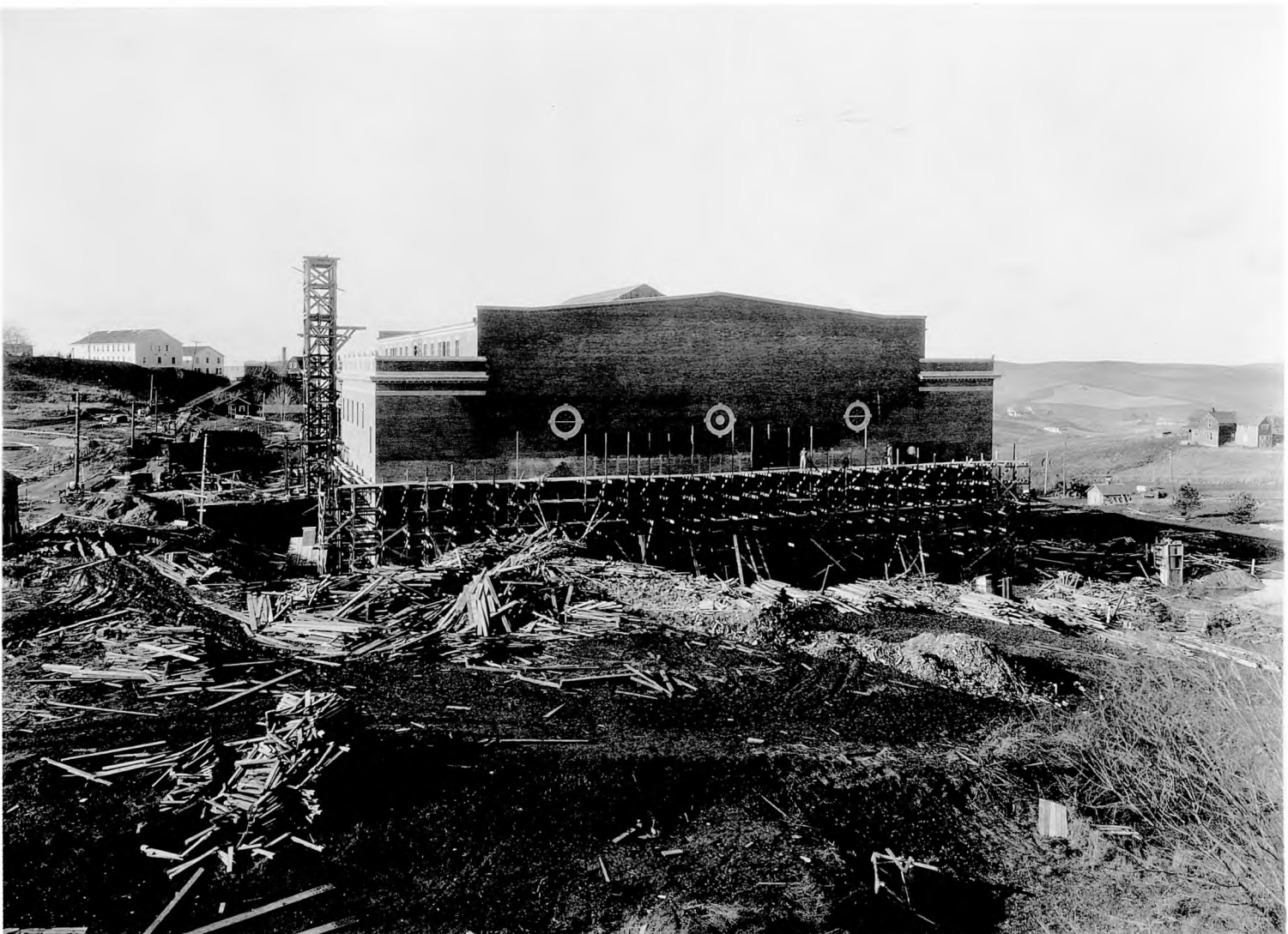








PROGRESS PHOTOGRAPHS. INTERIOR MAIN FLOOR.



PROGRESS PHOTOGRAPH.



PROGRESS PHOTOGRAPHS.



INTERIOR MAIN FLOOR.





INTERIOR MAIN STAIRWAY.



Feb. 27, 1928.



INTERIOR AUXILIARY GYMNASIUM.



INTERIOR LOCKER ROOM.



INTERIOR SWIMMING POOL.



INTERIOR SWIMMING POOL.



INTERIOR MAIN FLOOR.



March 26 1928



INTERIOR MAIN LOBBY.



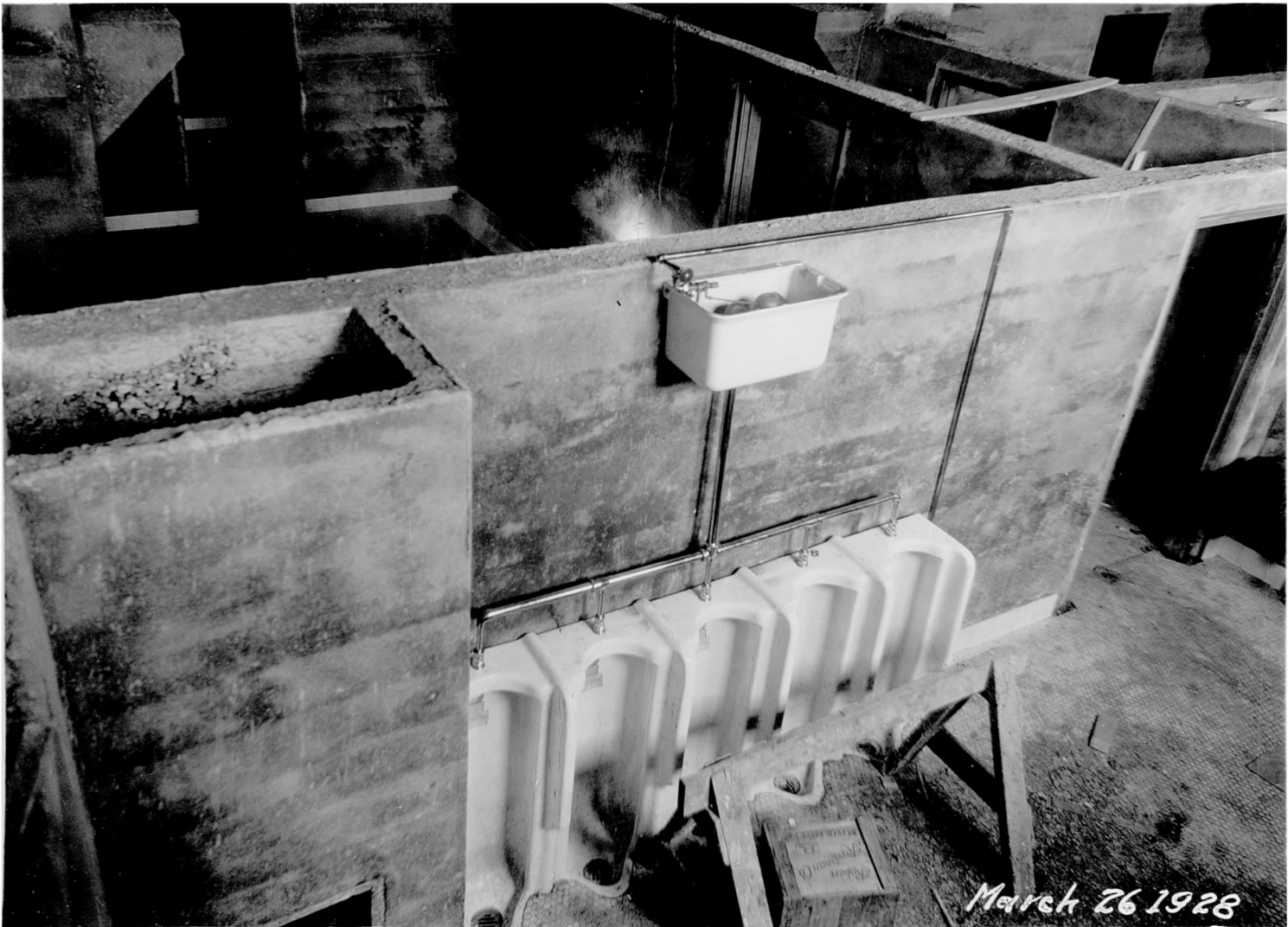


INTERIOR SWIMMING POOL.



March 26 1928

INTERIOR LOCKER ROOMS.





MODEL OF ORNAMENT OVER CENTER WEST ENTRANCE.



MODEL OVER SIDE WEST ENTRANCE.



MODEL OVER SIDE WEST ENTRANCE.







MODEL OF COLLEGE SEAL. WEST ELEVATION.



MODEL OF COUGAR. WEST ELEVATION.