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DEVELOPMENT OF A
PRISON PROGRAM

by

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TABLE OF CONTENTS

	Page
Title	1
Preface	3
A Short History of the Prison System	4
Development of a Prison Program	11
Requirements of Prison Planning	
Classification	13
Choosing a Site	15
Units of a Prison Development	17
Administration Building	19
Cell Blocks	20
Segregation Buildings	29
Mess Hall & Kitchen Buildings	31
Prison Hospitals	36
Auditorium & Chapels	40
Industrial Buildings	40
Laundry & Bath Buildings	41
Entrance Gate	43
Walls	44
Costs	45
Addenda	A
Bibliography	D
Plates	

PREFACE

The purpose of this thesis is to present as clearly as possible the essential information an architect would need concerning prisons if he were totally unfamiliar with the layout and construction of the more important buildings in a penal group.

The information included is the result of personal observation and experience while employed as an architectural draftsman on prison work, by the State of New York, during the State's ambitious building program of 1930-31. Supplemented to this experience was a perusal of such books on prison planning as were available in the Library of the State of New York. Such books directly concerning prison construction are difficult for the average person to procure.

Some of the blueprint plates were drawn from the standard sheets used in the office of the New York Division of Architecture; others were arranged by the author from working drawings and details, and from library reference and general knowledge. These plates and thesis are an effort to keep for future personal use information concerning prison buildings and construction pending an opportunity to use it.

SHORT HISTORY OF THE PRISON SYSTEM

In the early development of Europe, and through the Middle Ages there was little use for prisons, as prisons are thought of to-day. The dungeons and cells were simply places of detention until a more summary punishment, usually torture, could be administered, or the prisoner freed; that confinement might be a form of punishment was not considered.

The common jail may probably be said to be the forerunner of our modern prisons and had its humble beginning in England from three movements, described by John Lewis Gillin in his book on criminology. These movements were (1) the recognition of the evils of local prison, (2) the stoppage of transportation to America by the Revolution, and (3) the failure of transportation to Australia.

An English man named John Howard (b.1726), who was once a sheriff of the jail where John Bunyan had written "Pilgrim's Progress", made an exhaustive study of prisons. The results of his study were written in a book "State of Prisons" in 1773. He was indeed a forerunner of the many people who have worked for prison reform.

In a law, formulated by Sir William Blackstone and Sir William Eden, and passed in 1779 it was provided

that a national prison be built and the novel feature of that prison was non-intercourse between the prisoners themselves, and it was advocated therein that the prisoners should be secured in solitary cells at night, and as far as possible carefully supervised during the day when they were working or exercising together.

This law failed in its realization, but the principle formed the basis of the "Auburn System" instituted in America after the establishment of that prison in 1814.

Twenty years later - about 1800 - the British government made a contract with one Jeremy Bentham for the building of a prison outlined in his book, "The Panopticon" or "The Inspection House". The Panopticon was to be in effect a gigantic lantern, lighted by a glass roof, with cells next to the outer wall, facing the middle, and an apartment for the inspector in the middle so that the interior of each cell would at all times be visible from a single point. Little was accomplished due to the Napoleonic Wars, during which time England resorted to the use of prison ships and endowed herself with such a black blotch on her annals of prison history. However, Bentham's ideas have also had an influence in later prison building.

In 1812 England proceeded with a new prison for 1200 prisoners at Millbank; ready for occupancy in part

by 1816, and completed in 1821. It cost over \$2,000,000 and contained provision both for separate and for associated treatment of prisoners. In 1886 it ceased to be a convict prison and has since been destroyed. In the meantime the prison system in America had developed to such an extent that an examiner was sent over in 1832 to report upon the prisons in the United States, where two systems of impounding convicts had developed.

At the time of the Revolution the American colonies had inherited the common jails of Europe; but the new government in Pennsylvania established by William Penn had abolished tortures and the more violent punishments and substituted hard labor, fines, flogging and forfeitures. The new aim was for reformation; but Penn had died in 1718.

In 1790 the state of Pennsylvania established a prison wherein the more serious offenders were to be incarcerated in solitary cells, while others were confined in large rooms. Those in solitary confinement were to be without labor; to the others the rule of absolute silence was enforced at all times except in their dormitories where conversation in low tones was permitted until bed time. By 1793 this new prison system was looked upon as a school of hard labor and a solution to the problem of dealing with criminals.

However, with increasing commitments the system flopped, both in Pennsylvania, and at the Newgate Prison in New York.

In the early days of the Auburn prison this same system was tried, and the evils crept out there in 1822, wherein the large number of prisoners turned the prisons more into training schools for the inexperienced than into places of reform.

In 1818 Pennsylvania established its Western Penitentiary in the western part of the state and in 1821 a bill providing for the Eastern Penitentiary was passed. In both cases the prisoners were to be confined in solitary cells without work and there was no chance of communication with anyone except the chaplain and the warden. But confinement without labor breeds bad results, and so labor was introduced.

Eastern Penitentiary started to receive its prisoners in 1829. Each man was provided a solitary cell. First floor cells each had an exercise yard 8 x 20 feet surrounded by walls 11'6" high outside of the building itself where the prisoner could get light and air. Cells above the first floor were provided with an extra cell as an exercise court. Such a principle of planning is the basis of the new segregation building soon to be built at the Clinton Prison at Dannamora.

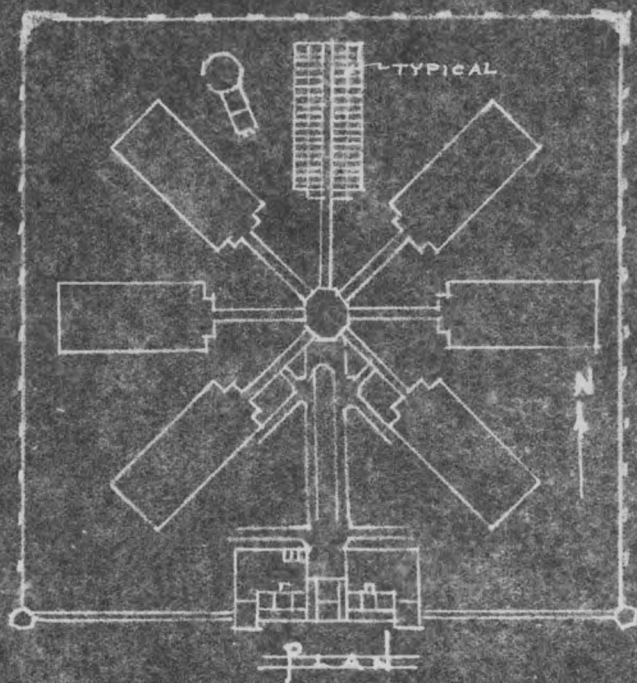
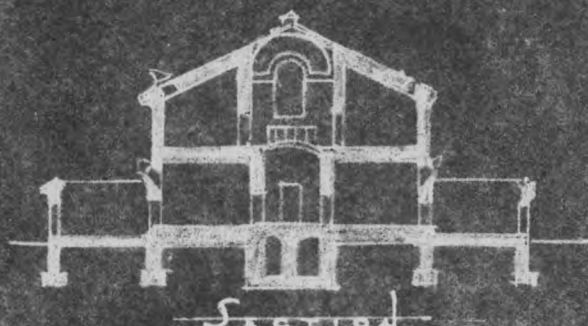
With the completion of a new cell block in 1821 at Auburn, it was possible to try out a new experiment in imprisonment. After the early failures of the congregate plan, and after the governor of New York had himself seen the results of solitary confinement upon the prisoners a new system was established. Instead of allowing the prisoners to work and sleep together, the men were divided into three classes, and the third class formed the basis of the "Auburn System".

The first class of prisoners were the hardened criminals for whom nothing could be done by way of reformation. These men were confined day and night without work. The second class of less incorrigibles were to spend part of their time in work and part in solitary confinement.

The third class was composed of the more promising prisoners who were allowed to work by day and were confined in separate cells at night, and silence was to be maintained at all times; which is the system still in use at Auburn today, and in all the New York prisons and all of the states in the union except Pennsylvania.

The main difference between the Pennsylvania system and the Auburn system is that in the former there was no intercourse between the prisoners at all, in as much as each man worked in his private cell.

AN • EASILY • PRISON • PLAN •



ORIGINAL DESIGN FOR
EASTERN PENITENTIARY OF PENNA.
EDWARD HAVILAND • ARCHITECT • 18176

SEQUENTIALLY CHANGED
AND ADDED TO

The original plans of these two typical prison layouts - Eastern Penitentiary and Auburn - seem to have been devised abroad. The Philadelphia prison was designed by the English architect John Haviland; but previous examples of similiar prison plans on a radial layout had appeared in 1820 in a book of prison plans published by the London Society for the Improvement of Prison Discipline; and it is known a copy had been sent to a society of similiar purpose in Philadelphia. The definite origination of the Auburn plan is not known, but it is suggested that such a system was undertaken at Ghent, Flanders in 1773 by Count Vilain XIV where the prisoners were given individual cells at night and worked together by day. F. H. Wines calls this the oldest example of such a plan of construction. Knowledge of this prison was probably available to the early prison planners in the States. In Vilain's prison a resident physician and a resident chaplain were provided; and proper attention was paid to the classification of prisoners. Felons were separated from misdemeanants.

Europe adopted the Pennsylvania system almost entirely; America clinging to the Auburn development.

A new state prison at Sing Sing, New York, created by an act of 1825, was built by convict labor to the astonishment of mankind who did not suppose such an achievement within the bonds of possibility.

The prison at Elmira, New York was built under an act passed in 1870 but was not ready for the reception of prisoners until 1876. The Elmira System, in practice, is a combination of marks, grades, and the parole, under the indeterminate sentence.

The main history of prisons is included in the survey of the two systems which developed in the United States. After 1830 the new ideas of penology, such as reduction of time for good behavior, the honor system, additions of libraries, schools, use of tobacco, etc., were additions to a system already established. The additions came about through the understanding of capable wardens.

DEVELOPMENT OF A PRISON PROGRAM

Requirements of Prison Planning This world is full of individual ideas relating to the proper punishment and confinement of prisoners. Therefore the preeminent information that an architect must know before he can formulate a prison plan, is the attitude of the state he is hired by, towards methods of punishment and confinement, and what changes are being considered from the methods already in use at the State prisons.

One of the main methods of incarceration is by the use of steel cells, many times more secure than need be for the average prisoner, providing complete isolation day and night, or isolation at night only. Sometimes the dormitory type of building is preferred, and sometimes the cottage or group type is given preference. A great deal of the choice depends upon whether the prisoners are women, youths or male adults and to the system used in the classification of the prisoners, if any. It is obvious that to imprison youths with mature, and often hardened criminals is to defeat the purpose for which they are imprisoned, returning them to society more criminally expert than before.

Three different types of prisons

New York were recommended to the governor of New
 Recommendations
 ations

York in January 1930 by a commission created for that purpose as a result of inquiries growing out of riots at Auburn and Clinton prisons. These three types certainly present a logical solution to a severe problem. The first type provides for a medium security type of prison with convicts housed in rooms instead of cells and confined by a cyclone fence instead of expensive stone walls - the State apparently beginning to be the wiser after the expenditure of over a million dollars for a solid concrete wall three feet thick and thirty feet high around the new prison at Attica - a wall which in some places extends two-thirds as far into the ground as out.

The second provides for a maximum security prison of stone walls and iron and steel cells such as the State now operates at Clinton, Great Meadows, and Auburn and Sing Sing and is building at Attica for the confinement of men according to the "Auburn" system of confinement. The "Auburn" system allows group labor by day but solitary confinement by night - except of course, where the prison is over crowded and a doubling up of cell capacity is required to accomodate successful applicants. These prisons would be used for the tough criminals whose sojourn must be assured by the people of the state.

The third or minimum security type provides for road and reforestation camps and does not come under the scope of this article.

In November 1930 tentative prison plans revealed by Dr. Walter N. Thayer, New York State Commissioner of Corrections, call for three small penal institutions to accommodate about 500 men each. Their purpose is to train the more promising prisoners in preparation for their return to civil life and civil usefulness. These prisoners will be given outside work with virtually complete liberty during the day time. Although they will be locked up at night, the prisons holding them will be as unlike prisons as possible with a minimum of cells and bars. These will be called rehabilitation prisons.

In considering a new prison plan, it is well to consider the question of the classification of prisoners and whether or not such a system is already in use by the state. Factors which must be taken into consideration on the classification of prisoners are their legal status as prisoners; their age, sex, character, color; their criminal history, behavior in prison, physical condition and the institutional policy towards labor requirements. There are miscellaneous factors

too depending upon the policy of the warden in power and his attitude toward classification. In New York state under the three type system recommended by the board, convicts would be divided among the desired types of prison housing after psychiatric examinations had been given each man, with consideration for some of the factors just enumerated. In the new jail for Cook County, Illinois, the cells are classified as receiving, general, hospital, isolation, and debtors.

The use of cell blocks with open tiers hardly goes for the proper classification and segregation of men though that type of building for large prison populations continues to be in popular use among the various states. With increased public interest in classification the treatment of the offender will vary more in the coming decades than it has in the past. For that reason the modern plans should provide for a liberal amount of flexibility in the treatment of the inmate. Instead of planning a prison complete within itself as at Attica, it should be developed in units, with a reasonable opportunity for expansion; an opportunity not usually associated with prisons surrounded by stone walls and closely grouped cell blocks allowing expansion only outside of the walls.

A prison must first of all be easy to supervise; then allowing for efficient classification of the men, it

Super- vision must be well planned for effective segregation, or classification of the prisoner is useless, and in the face of improper prison associates future rehabilitation is impossible, also. The circulation, of prisoners, and stations for the guards should be such as to give the employees of the State a decided advantage at all times, and yet provide for a minimum number of guards.

Choosing a Site Before actual serious planning of a prison can begin a site must be chosen and the plan of the buildings correlated to the site selected. In the selection of a site more things should be considered than one or two politician's desire for a hasty purchase of the plot from some political or personal friend. One New York prison site, purchased in haste, was abandoned after the \$3,276,000 project was completed due to the presence of stagnant water - and political juggling. Such was Wingsdale prison, designed legally to take the place of Sing Sing; - something that has never happened.

Not infrequently considerable filling in is required on prison sites which are on low land; and piling or mat foundations required for the buildings and walls. How regrettable in such cases that with a whole state to

choose from, such land must "get" purchased. Such fill, and foundations readily affect the cost of a project - either by necessitating additional funds, or reducing the size of the buildings from what otherwise might have been obtained for the money. It is not to the discredit of an architect when he is furnished a site of low bearing soil value.

Essential, then, to the successful operation of a penal institution are the environmental factors such as a dry healthy location with a reasonable temperate climate, plentiful and palatable water supply, the possibility of satisfactory sewerage, and a pleasant scenic location. There should also be accessible mineral resources, or tillable soil, or both at close hand; possibilities of adequate transportation at fair prices; availability of building materials and labor not supplied from among the prison population itself.

* "Sing Sing Prison at Ossing, New York is an example of a prison in an exceedingly damp location; of the 1000 acre farm at the Great Meadows (N.Y.) prison only a comparatively small part is cultivatable. The Agricultural value of the Bedford Hills site is exceedingly low and originally the Clinton prison lacked transportation facilities."

An additional factor relating to the final selection of a site is its proximity to other state institutions

* Philip Klein, "Prison Management in New York State".

and particularly to the court. The distribution of prisons too, so that they may conveniently be located in different parts of the state is a factor. For some reason prisoners hate to be located so far from home no matter how long their sentence may be. Political manoeuvring in the location of prisons has to be guarded against, as mentioned. It is said that New York City prisoners transferred to Clinton prison from Sing Sing Prison in New York State have complained of its distance from the City - regardless of the length of their detention. Distance keeps away friends and makes confinement more lonely.

After the site has been select-

Units of a ed and necessary appropriations passed for
Prison Devel- the pursuit of the project, the foremost
opment thing in the general scheme is the proper
correlation of the various divisions of a penal institution
relative to its administration, the admission of prisoners;
their care and education; their productive labor and re-
creation. In the New York prison at Attica these natural
divisions are taken care of in an administration building
which takes care of the business end of the institution as
well as the admission of prisoners; a hospital with the
latest equipment; a kitchen and mess hall, laundry and bath
building, and chapel and cell blocks will take care of the

prisoner both as regards what "welfare" he may expect from the state and a school, yet to be planned, will take care of his education. Industrial, textile and maintenance buildings provide work to make the criminal's hours in prison productive (at least for the state) and a modern athletic field is provided for recreation. In almost every respect Attica prison is the apex of prison construction, worked to incorporate the latest ideas in prison design.

A prison must first be planned as a whole; for when a workable plan is developed the individual units can be planned to suit their purpose. Knowing the proposed population, the buildings desired and the site, the architect must devise an efficient layout of all the buildings, plan them in their relation to each other, and to the industries the prison is to exploit. Consideration must be given to future development, and possible changes in penal construction. What is considered good prison planning today may not be considered so to-morrow. Chances are that it will not.

In general the organization and buildings provided for the large state and federal prisons are the same. The newly admitted convict is sometimes interviewed by the warden before changing into the prison garb; usually after having been received; his commitment papers examined; he checks in his civilian clothes, is given a bath and present-

ed in prison garb. Then it is customary to admit him to the detention ward of the hospital for a quarentine period (of about two weeks) during which time he is given a physical examination, including Wasserman tests, and examined by a psychiatrist; and classified, in prisons where a system of classification is in use. After his detention the prisoner is assigned to a cell and takes his place in the regular routine of prison life.

The administration building provides space for the office of the warden, clerks and often rooms for Bertillion and identification experts. Sometimes the identification offices are in another building as is the case at the new Attica prison where such rooms are located in the prison hospital, the photographic room being located convenient to the dark room provided for the floroscopic and radiographic laboratories. Separate rooms are provided for identification (Bertillion measurements and finger prints) photographs, viewing, and records.

A survey of the plans for the new administration buildings for the Attica Prison (Attica, New York) and Great Meadows Prison (Comstock, New York) shows a similarity of arrangement, and rooms. Following is a list of the principal rooms in the Great Meadows administration building not mentioning toilet rooms, clothes closets and small

utility closets:

First floor - Assistant keeper's room, foyer, vaults, arsenal vault, principal keeper, package room, visitor's room, prisoners visiting room, prisoner's waiting room, private visiting room, guards' barber shop, comptroller, confidential clerk, keeper's clerk, photo room, receiving office and guards' room.

Second floor - Prisoners' mail, file room, warden's clerk, warden's private office, vault, parole office, parole board room, eight bedrooms, guards' recreation room, and showers.

Easily accessible from the administration building of the prison, and quite frequently connected by a corridor, or immediately adjacent is the cell block, or group of cell blocks according to the plan of the prison. A usual type of building for such use is the inside cell block, originally designed to provide solitary confinement in individual cells for every prisoner. In the design of an inside block the cells are built in tiers in the center of an enclosing building providing about 50% of its wall area in windows.

The other type provides an outside cell with individual window for each prisoner.

At the maximum security prisons of the state of New York the inside cell block is the accepted type; however

the Westchester penitentiary is designed with outside cells; Alfred Hopkins being the architect. So is the new Ulster County medium security prison, by the same architect.

In the inside cell block method there is an exhaust register in each cell. Radiation is placed between the windows which open like louvres and with an exhaust fan in the top of the utility corridor it is possible to draw the warm fresh air through the cell to the roof thereby obtaining satisfactory results in both heating and ventilation. An example of this heating is in the new north cell block at Auburn prison where the first three tiers are open tiers, and the fourth and fifth floored off from those below. For the first three tiers unit heaters of 150,000 B.T.U. and two pound steam pressure are used. For the other two tiers 72 square feet 6 tube 38 inch radiators are spaced equally down each side of the exterior wall -- but, of course, on the inside of the building.

Recent cell blocks erected by New York State are of concrete and brick construction with tool proof steel cells -- let any man try to escape from them! The interior is finished in a glazed brick; walls running about 2'-0" thick including the glazed brick. The main ceiling is of Bessemer steel plate 3/16" thick or tool proof steel, in case a man should rise by magic and try to ascend through

the roof! This tool proof steel is a special steel produced for prison work and is specified to be "absolutely hand hack saw, breast drill, file and chisel resisting". It should be, for the tool proof plate steel is built up of two laminations of high carbon chrome steel and three laminations of low carbon steel. The tool proof bars are made of inserts of high carbon chrome steel entirely surrounded by low carbon steel. It doesn't take saws and drills long to become dull before such a combination of steel - yet what expensive steel that is! Cell fronts, bars and transom plate, are of this special steel as well as all bars and plate used for confining a group of prisoners - for instance as all partitions separating end corridors from cells, cells from utility closets and the steel plate backs and ends of door control boxes. In fact it is specified wherever it stands as a direct menace to a prisoner's freedom.

The original cells at the Auburn prison, constructed in 1819 and used until recently were approximately 4'-0" x 8'-0" x 6'-0" high with vaulted ceilings giving approximately 192 cubic feet of air as compared with the 400 cubic feet now regarded as a desirable minimum. The state prison at Great Meadows provides cells with average dimensions of 5'-0" x 9'-0" x 8'-3" high giving very nearly 400 cubic feet. The limit of size seems to have been reached at approximate-

ly 6'-0" x 9'-0" x 9'-0" high giving about 480 cubic feet. The present standard practice for the state of New York is to provide cells 6'-0" wide x 8'-6" long x 8'-6" from tier to tier. This provides approximately 408 cubic feet for each prisoner. One of the Auburn cell blocks is 431'-0" x 51'-0" with five tiers containing 62 cells per corridor on either side of a central pavilion. At Sing Sing prison there are 82 cells in the receiving cell house, 10'-7" x 5'-7" x 9'-3" high, one cell block containing 680 cells on five tiers and another containing 704 cells on four tiers - the cells being 8'-6" x 5'-6" x 7'-0" high.

Housing of prisoners varies with the various states as can be seen by the following review of prison cell blocks summarized from the "Handbook of American Prisons for 1929".

" At the Colorado State Penitentiary the trustees are housed in a cell block comparatively new and different in construction. The cells are in tiers on either side of the building. Bath and toilet facilities are not in the cells, but grouped on each tier. A reading room is located in the open space between the lower tiers. The trustees are not locked in their cells until nine o'clock.

The Colorado State Reformatory has but one cell block in which there are 108 cells 7' x 6' x 7'6" high. A double deck bunk is used. In one of the new cell blocks the

800 cells are arranged on four tiers, and in the other the 450 cells are arranged on five tiers.

Kilby prison, Montgomery, Alabama has two cell houses in which five tiers of cells are built along an outer wall with a center corridor, so that the cells have outside windows which may be controlled by the inmates. Each wing has 108 single cells 10' x 7' x 8'3" high. In each wing there are 72 large cells 22'5" x 10' x 8'3" high which were planned to house six or more men. Each of the cells is equipped with a good washbowl and toilet.

At the U. S. Penitentiary, Leavenworth, Kansas there are four cell houses in which the cells are built on five tiers. Two cell houses contain 210 cells and one contains 500 cells 11'6" x 5' x 8'6" high. The fourth cell house contains 110 cells, 16' x 24' x 8'6" high. These cells are used for eight to ten men and the cells in the other blocks, originally planned for one man, are in most cases now used for two.

The cell blocks in the new state penitentiary at Joliet, Ill., are circular in form, the cells, built on four tiers are constructed so that each has a window and ventilation can be controlled by the inmate. In three of the cell houses there are 248 cells 11' x 6'6" x 8'6" high, and in the fourth cell house, planned for 248 men, instead of in-

of individual cells units are planned for 16, 32, and a few for 64 men." The circular plan for cell blocks are descendents from the Panopticon of Jeremy Bentham.

In the inside cell block type of housing there is always a wide corridor on either side of the cell cages. Sometimes this is partitioned by tool proof steel bars into a prisoner's corridor and guard's corridor; considering that each tier is floored off separately. Where the cell cages are in the center of the building housing them the prisoners' walk is cantilevered from the cages and connect either to regular run stairs at the ends of the cell block or to circular stairs provided for circulation from groups of individual cells. The latest cell buildings for the State of New York have the stairs at each end of the cell block and at its center pavilion. The stairs are of steel construction and have closed risers to prevent the prisoners from dropping anything through them. However where stairs occur that a prisoner might hide behind, open risers are used.

Cage construction is entirely of 3/16" steel plate, channels and angles with light concrete floors in all the new New York cell blocks. A typical floor is built up of a $3\frac{1}{2}$ " concrete slab supported by angles, $\frac{1}{4}$ " waterproofing, 2" of fill and an $1\frac{1}{4}$ " of surfacing; that gives a head room

of 7'11" in each cell. Walls of the cell are of steel plate and the front is of 7/8" tool proof steel bars.

The length of the building housing the cells is of course controlled by the number of cells desired by the State. New York spaces its cells exactly 6'0" on centers which, being 8'6" deep and 7'11" in the clear high provides slightly over the minimum cubage desired per prisoner. It would then be foolish to make the width of the cells greater on new prison construction. Whatever is added to each unit compartment immediately reflects itself into the length of the building and so consequently into its cost.

The individual cell which may be a man's home from one year to life in New York State contains as fixtures three clothes hooks, an electric light, lavatory, a water closet on a raise in the floor, and a cot. Perhaps the floor drain should be counted too. The floor is of terrazzo divided with brass strips. The door opening is 1'11 $\frac{1}{2}$ " wide and is closed by a sliding grate door, which can be operated singly or collectively with the other cell doors. An 8 x 8 tool proof steel register provided ventilation; the choke damper being regulated in the utility corridor at the rear of the cell. This 5'0" utility corridor cares for plumbing pipes, vent ducts and electric wiring. An iron grating walk occurs at each tier.

The cell doors are arranged so that they may be operated individually, collectively, or in any combination desired by the keeper, from a lock box in the guard's room at one end of the cell row. These door devices have indicators in the control box to show whether the doors are locked or unlocked without making a survey of the cell row. The cell door operators make it possible to unlock, open, lock, open, close and lock any one door or any number of doors from the one control box, accomplished by one operation of the lever or controlling device. The control room, where the control box is located is glazed with bullet proof glass for the protection of the guard.

Where bullet-proof glass is used it is approximately 1" thick and built up with two outer layers of glass each $7/64$ " thick with an inner core $3/4$ " thick composed of such material as to provide clear vision and to resist a 45 calibre bullet fired at a distance of four feet. Such glass is used in all prison doors or other places where protection for the guards is afforded in time of emergency.

A variance from the steel cell construction for an outside cell block occurs in the Westchester (N.Y.) county penitentiary where the walls and cell partitions of the building were built of terra cotta tile, filled with concrete and reinforced with $3/8$ " rods. In the cells

thus formed, 5'9" x 9'0" (with one corner cut out for plumbing shafts) a cot, table, chair, shelf, hook, wash basin and a water closet are provided. The cell walls are painted a soft arch gray. Ventilation is provided each prisoner at his individual window, and with cells on either side of a corridor cross ventilation is obtained.

In the Alabama State prison at Kilby a high outside window is provided each cell in its outside cell block. Ventilation is provided by 48" ventilators at 15'0" intervals on the roof; exhaust fans driven by a common line shaft are in each ventilator. By means of these fans it is possible to completely ventilate the cell houses at intervals, the air being drawn in at the windows and discharged through the roof.

For painting the cells oil paint and enamel are now generally used. The cells at Auburn are enameled and most of the other prisons are painted with oil paint. The color is generally ocher or some darker tint of yellow and occasionally gray with a preference for dark borders at the bottom. For the bars and steel work aluminum paint is used extensively, and particularly for all exposed steel surfaces built into exterior walls.

Cell block buildings are usually built as a long building, frequently of hideous design, but the X plan is sometimes used as in preliminary drawings for a Segregation

Building for Clinton Prison at Dannamora, New York - this was later revised. The circular form is used at the Illinois state prison where outside cells are built around a circular shell; called panopticons. At Joliet, Ill. eight panopticons have been planned radiating around a common center (kitchen) only three of which have been completed.

A building of similar cell construction, yet different in plan, is the new Segregation Building at Clinton prison, just mentioned. The purpose of this building is for the complete segregation of incorrigibles and it provides an enclosed steel cell, as in the regular cell blocks, attached to an adjacent concrete cell which is open to the weather, covered only by a grating of tool proof steel. The plan of the building is a square formed by cell blocks with exercise courts at the center. There are twelve cells with adjoining exercise yard in each side of the square. The steel cell is 7'2" x 10'0" with one corner framed out at an angle for plumbing accessories. The exercise yard is 6'6" x 9'6" and is open on top except for a tool proof steel grille. The cell front is open bar work and faces a guard's corridor. The door to the exercise yard is a solid steel door and enters on the prisoners' corridor. The men are taken to and from their cells in this corridor so that they cannot be seen by the other prisoners. The building is planned so that only the top of the exercise

court is open to the weather though vault lights are used in a covering in the roof directly overhead to prevent rain or snow from falling into the yard.

Some of the shortcomings of cells may be summed up under the following; size, ventilation, over-crowding, inadequacy of equipment, vermin, lack of water supply, poor light, unsatisfactory bars (too many or too poorly planned), lack of privacy, and the material used in the construction of both the building and the cells it contains.

At the Alabama State Penitentiary at Kilby, a wing of the cell building is used as a detention building. It contains rooms for Fingerprint and Bertillion experts, the deputy warden, a doctor, dentist and a psychiatrist. Such functions as these for a part of a building are usually outlined by the warden or commission supervising the planning work of the architect.

A new building being planned for the New York State program at Attica to contain receiving cells, clinic, segregation cells, and classification cells. An auditorium for doctors and psychiatrists with a "show up" platform at one end will give opportunity to study newcomers in order to arrive at a classification. Similiar arrangements will be made to give the doctors unsuspected observation of the men at recreation. A cafeteria in the building will be supplied from the prison kitchen building.

The Mess Hall

Considering that a prison is being put under contract as the plans for the buildings are completed and buildings started for immediate occupancy when finished, it is quite necessary that a kitchen building and mess hall are included along with the cell blocks. Or else, where shall the prisoners eat? Riot experience has shown that most prison trouble starts in the mess hall - either because of the food given the men; or because it affords a common meeting place; or both. Therefore it is necessary that the mess halls be planned to give the guards the entire advantage for the control of the prisoners. A new move is the installation of tear gas ejectors for use in case of uprising. In the new mess halls for both Attica and Auburn prisons a guards' gallery was provided overlooking the dining room and not easily accessible by the prisoners. The method of feeding the men and their seating arrangement must be considered too.

In the two new mess hall and kitchen buildings just mentioned the men are served in cafeteria manner and are seated at tables facing each other, four men to a side. The practice in some prisons, however, is to have the men all facing the same direction. A mess hall must be planned according to the desired method of seating in order to adequately take care of the circulation. An allowance of 20

square feet per man is a very liberal one.

In the Attica mess hall building there are two mess halls each containing 12 rows of tables, eight tables to a row seating eight men to a table usually, thus having a capacity of 768 men at a feeding. (Under crowded circumstances two additional men could be seated - one at each end of the table.) Each dining room is 47'6" x 159'0" and 35' high to the ceiling and provides 15 square feet per man if corridors are included. The tables are spaced 5'0" between ends and 3'6" between tables. The same seating arrangement is used at Auburn, but the ceiling height is 21 feet, each room holding 400 men in ten rows of tables - five tables to a row. Where just the actual dining room space is squared, there is 9.75 square feet per man at Attica and 8 square feet at Auburn. An allowance of 8 to 10 square feet per man would be sufficient. At Attica there is a plaster ceiling, hung from steel trusses which support 2" planking or purlins, and tile shingles. At Auburn the steel trusses support a concrete roof.

Included in the plan must be small toilets for the prisoners, guards' room toilet, and small kitchen for heating food if it is required by the prison that they furnish their own lunch, a dishwashing room, and the kitchen with its necessary supply, refrigerating and bakery rooms. It must be known whether the prison is to have a special stor-

age building or that only a day's supply need be kept accessible; or if space must be provided for the storage of at least a week's supply; and that raises the question as in what quantities supplies will be purchased; particularly such supplies as flour and sugar.

The kitchen at Auburn is 49'0" x 50'6" x 18'0" high. Mechanical exhaust is provided from the kitchen hood. The Attica kitchen is 38'8" x 73'6" x 32' high. The following list shows the sizes of the rooms in the service portion of the latest kitchen buildings now being used by the state of New York.

Auburn

Kitchen	49'0"	x	50'6"
Bakery	30'0"	x	50'8"
Garbage Ref.....	6'5"	x	16'0"
Meat	7'9"	x	16'0"
Dairy	7'4"	x	16'0"
Egg	6'0"	x	16'0"
Fish	6'0"	x	16'0"
Smoked meats	6'0"	x	16'0"
Salt meat	6'0"	x	16'0"
Cut meat	23'8"	x	33'9"
Dishwashing	24'2"	x	44'11"

Attica

Kitchen	38'8"	x	73'6"
Bakery	40'6"	x	52'6"
Dry Storage	13'6"	x	14'0"
Garbage Ref.....	5'6"	x	14'0"
Vegetable Ref.....	14'0"	x	15'0"
Meat	12'0"	x	23'0"
Dairy	10'8"	x	15'6"
Dishwashing	25'0"	x	50'0"

In all the buildings for the State of New York

a transformer room and steam room must be provided. These are in the basement at Auburn and meet the tunnel which carries the steam mains to the building. In the basement is also a refrigeration machine room, and space for the exhaust fan to the kitchen range; and coal bunker, as the range is coal burning.

Other rooms of the Auburn building are toilet and locker room for the kitchen help, vegetable and meat preparation rooms, a scullery, a receiving room and loading platform - though there was some argument at the time as to whether this should be called an unloading platform. The point was ignored and so it stayed a loading platform. At least the garbage has to be loaded from that platform for carting away.

The kitchen walls at Auburn were built to within 10" of the ceiling with porcelain glazed terra cotta tile, the floor being quarry tile. The other service rooms carried a 7'8 $\frac{3}{4}$ " wainscot of the same material; sand finished plaster walls and ceiling except for the refrigerating rooms where cement plaster was specified. Service floors were of a good grade of cement topping.

Porcelain glazed wainscoting is also used in the dining halls and connecting side aisles. At Attica the finish for the walls is a salt glazed brick.

On preliminary studies for a bakery, cold storage

and ice house for the Woman's Reformatory at Bedford Hills, New York some of the space requirements desired were:

Fresh meat	350	Sq. ft.
Cut meat	60	" "
Smoked meat	60	" "
Salt meats	60	" "
Fish	50	" "
Milk	60	" "
Butter	80	" "
Cheese	40	" "
Eggs	80	" "
Fresh fruits	80	" "
Cereals	400	" "
Meat Cutting room	200	" "
Machine room & ice tank	200	" "
Ice storage	80	" "
Ice cream	100	" "
Cannery	600	" "
Woolens and Blankets	600	" "

In the bakery there was to be space provided for the following equipment - similar equipment having been used in the Auburn and Attica prisons - with variation, of course, in the smaller bits of equipment;

Flour blender	Moulder & divider
Bread racks	Bake oven (built in)
Table	Cake mixer
Dough mixer	Roll divider

In every building and with all moving doors and machinery, care must be taken to safe-guard the prisoner. In most states the state is monetarily liable for all injuries to the prisoner while in its care, which makes it essential that no prisoner be given the slightest opportunity to injure himself. Thick felt is frequently used on the jambs of mechanically operated doors so that no prison-

er can hastily shove his fingers between the closing door and get his fingers smashed - no matter how willingly.

All of which brings us to the subject of prison hospitals. One of the latest prison hospitals to be designed by any state is that for the new Attica prison at Attica, New York. Here for an ultimate capacity in the prison of 1600 men allowance for hospital service is made for 80 patients; and it is figured that one official keeper is necessary for each ten men in the hospital.

A review of the other New York state hospitals shows that at Auburn there is an average of 33 prisoners allotted to each bed in the prison hospital; 50 prisoners to each bed at the Great Meadows prison, in the old hospital; 20 men to each bed at Clinton prison, and 30 men to each bed at Sing Sing, according to the figures given in the American Prison Handbook for prison populations and hospital capacities. It is interesting to note that Western State Penitentiary, Pa., allots 43 men to each bed; and the Eastern State Penitentiary allots 15 men to each bed in a converted cell block providing two wards of 28 beds each and 44 cells of one bed each.

The new hospital at Attica is a three story fire-proof building of structural steel frame, concrete joist floors, and originally designed for spread footings, though there were plans made for setting the building upon a mat

foundation. A number of the Attica buildings were built up on pile foundation because of the nature of the soil and the large amount of filling in necessary.

Entrance into this hospital building is made direct into a lobby, supervised by an office. On the first floor are located locker and toilet rooms for the general hospital staff, an eye clinic with its necessary alcove, a dental clinic, a room for the charge nurse, clinic waiting room, doctors' examination room, doctors' office, visitors waiting room with auxillary toilets; a pharmacy with its work room, vault; and store room in the basement accessible only by circular stairs from the work room above.

Located conveniently together are the Floroscopic room with its adjacent laboratory and toilet, and the Radiograph room. The machine room, control room, supply room, and dressing room being located in close connection. Immediately available from the Radiograph and Floroscopic rooms is the dark room. In connection with this layout are a viewing, photograph room, record room and one for identification. These last four rooms were mentioned under administration buildings.

The following diagram will explain the relationship of the X-ray rooms:

Fluoroscopic room	lab and toilet
Dressing room	Machine room & control rm.
Radiograph room	

A lead lining 7'0" high is used in all walls and partitions separating the fluoroscopic and radiograph rooms from rooms where men will be required to work while views are being made, the Cathode ray being exceedingly dangerous to human tissue after frequent exposure.

Two stairs of steel construction and bluestone threads were provided, and an elevator, each enclose, within 8" brick fire walls.

The second floor is planned for one twenty bed ward, two ten bed wards and fourteen private wards. The bed space was planned to allow fifty square feet of space to each man. The private wards were planned to open into an auxillary corridor which could be locked off as a special segregation group of private wards - accessible to utility and toilet rooms of its own. A cross section of the plan shows a private room, auxillary corridor 4'0" wide, main corridor 6'0" wide, auxillary corridor and private room. The private rooms are each 7'0" x 11'0". On each floor there is an operating suite comprised of a doctor's rest room (8'4" x 19'0") giving access into the scrub up room; off of which is the operating room (21'3" x approx. 24'0"). A receiving room gives access into the anesthesia room (8'0" x 15'0") and hence into the operating room from the side opposite the scrub up room. A sterilizing room (11'0" x 19'0") and a work room of similiar size completes the operating suite.

A room for the psychiatrist, three private wards, a hydrotherapy room (11'0" x 15'0"); a blow bath room (8'0" x 11'0"), two porches for tubercular patients, a medical and surgery convalescent day room, six attendant rooms, diet kitchen and necessary utility and toilet facilities completes the third floor plan.

The use of two ten bed wards, each with its utility and toilet room on the second floor allows segregation of infectious and medical and surgery cases. These wards were 23'3" x 27'4" which allows 63.5 square feet per patient.

Doors to the private rooms were 3'6" wide x 7'0" high which is enough to allow a bed to pass through. Where the auxiliary corridor was used the private room doors were grouped in pairs and a 5'0" door provided opposite for access into the main corridor. For doors to operating rooms a good minimum is 3'8" and a much more preferred width is 4'0"; avoiding double doors to operating rooms.

For patients an elevator 6'0" x 8'0" is a good size and where a freight elevator is used it may be as small as 6'0" x 6'0". The elevator shaft on the Attica hospital is 7'11" x 6'10" and the car is 5'0" x 7'6", rated at 2500# capacity with a speed of 100 feet per minute. The machine room is in the basement.

Floor lines on this hospital job were set at 12'6". The floor construction comprised five inches of fill, slab

and joists with plaster. The average ceiling height was approximately 11'0".

Where the money can be appropriated for such a building it is well to have a separate chapel, or auditorium building for the men. In some of the prisons about the country a floor above the mess hall has been utilized as a chapel and designed as such; thus giving additional height to the building, and possibilities for an impressive mass in design.

Services in most prisons are alternated between those for Catholics and Protestants, though a few allow services for both. An example of a well designed auditorium or chapel building is at Sing Sing prison, Ossing, N. Y. of recent construction. Here the building was planned in the shape of a close Y, the stage section being in the end of the stem of the Y and a chapel in each wing. Each chapel seats 360 men and the main stem of the Y plan seats 775. Thus the building offers possibilities as a complete auditorium, or the three different sections may be separated by means of folding doors and services conducted in each section simultaneously.

The buildings for the industrial housing of a prison must be designed to house the type of industry sponsored by the state prison board. The occupations for the prisoners may vary from mill work, textile work, to making

automobile license plates. These buildings are of the usual mill type of construction or of reinforced concrete. Such buildings contain few partitions, except those for the prisoners' toilets, and guards' toilets.

Of general interest: the pay of prisoners in the various state prisons in the United States ranges from nothing at all; a cent and a quarter a day in New York state; four cents a day at the Kansas penitentiary; or from ten cents to a dollar a day, according to the work, at the Michigan State prison.

One important item is that all places where the men might be accidentally hurt must be well protected by adequate guards or felt, since the state is liable for any personal injuries the prisoner may receive while in the involuntary servitude of the state.

Power plants will not be elaborated upon here other than to say that they are usually located at the lowest point of the prison site in order to take advantage of gravity returns for the steam pipes. It is well that the power plant be separated from the prison yard proper by an adequate wall to help make it inaccessible to prisoners in time of riot.

Another essential building in the prison layout, if it is centered in a separate building at all, is the laundry and bath building. In New York state these service

facilities are housed in separate buildings at all the great prisons. The new Sing Sing laundry and bath building is constructed on bearing walls, with reinforced concrete floors; the foundations built on solid rock. The first and second floor plan is 61'0" x 111'0"; the first floor containing the laundry machinery and disinfecting apparatus.

The second floor contains the attendants' room, guards' toilet, inmates' toilet, soiled linen room (with clothes chute to the first floor); shower room containing 72 shower stalls and dressing compartments and elevated guard walks; cubicle room and barber shop. There is an elevator. The third floor, 59'0" x 61'0" houses the tailor shop, guards' toilet, inmates' toilet and the elevator shaft.

In all the New York State prisons the inmates are allowed one haircut in approximately three weeks; and about 75% shave twice a week. It takes about 15 minutes for a shave and thirty minutes for a haircut. This figures down to one barber for about 75 men.

The general circulation for the bathing facilities requires that the prisoners enter the soiled linen room and deposit their soiled clothing, proceed to the showers; then receive clean linen, dress and leave the building.

The floor heights of the Sing Sing laundry building are 18'8" first to second; 14'0" second to third; and 11'0" third floor to ceiling. In the new Clinton laundry

building the heights are 18'8" first to second floors; 16'8" second to third; and 12'0" third floor to ceiling. The new building at Attica follows the same general scheme.

Prisoners in various prisons in the United States are bathed once a week; twice a week, according to the prison policy; or as frequently as they choose, according to the work they are required to do. At Auburn and Attica a shower is included in the kitchen building for the use of the kitchen help.

In conjunction with some one of the prison buildings a few school rooms should be planned, preferably easily accessible from the cell blocks since most of the school work done by the men is accomplished at night. At the Attica prison a school building is being planned as an individual unit. Usually just the more fundamental subjects are taught.

If the prison is entirely surrounded by a wall an entrance gate house is necessary so that all visitors may be identified, and if necessary, frisked. (Frisking is just another name for bodily searching). At Attica the gate house provides a waiting room, visible from the guards control room. From this a visitor is admitted through a barred gate to an identification room, identified and admitted through another locked door to the prison yard. The same process is in reverse as the visitor leaves. Bullet-proof

glass is used around the control room for the protection of the guards.

Prison walls must be made absolutely impregnable, and for this purpose reinforced concrete probably proves the best material of, or the solution of, this problem, though thick walls of stone certainly offer plenty of opposition to any prisoner desirous of escape. In prisons having a guards' walk directly on top of the wall, stone is a good building material; but in the present day the walls are usually of concrete, with the guards' walk supported by the cantilever brackets from the concrete wall. As the walls are floodlighted at night on both sides it is necessary that places be provided to receive the flood-lights. At points of advantage protected mounts for machine guns should be provided. Guard towers are provided at intervals along the walls if no guards' walk is provided. The interval for towers is about 400 or 500 feet on straight walls, and at every corner not directly under supervision.

The wall of the Alabama State Penitentiary at Kilby is 20'0" high, being 12" thick at the top and 1'8" at the bottom, setting on a concrete mat 6'0" wide. A most noteworthy example of wall construction is the wall around the new Attica prison in New York state. It has cost approximately a million dollars. Its height above grade is 30'0" and it is 3'0" wide at the base, with a foundation

wall 4'0" wide on footings ranging from 11'0" up to 16'0" wide and ranging in depth below finish grade from 5'0" to 20'0". There are guard towers at intervals along the wall; and the entrance house is set on piling. There is a lock for railway cars and auto traffic into and out of the prison.

A new wall adjoining the power plant at Auburn prison is 30'0" high; 1'6" thick at the top and 3'0" wide at the bottom. The foundation wall extends 12'0" under finish grade to solid rock.

It is expensive to build prisons! The cost of a few of the buildings will show the amount of money that must be appropriated by a state for the upkeep of its prisons. Money appropriated for a continuance of the building program for the New York state prison at Attica, for plans finished in January 1931, was \$2,900,000. The set of working drawings contained over 96 sheets. The appropriations for the cost of the buildings, as limited by law were:

Administration Bldg.....	\$200,000
Hospital "	\$150,000
State Shop "	\$100,000
Shop "	\$142,000
Textile "	\$392,000
Maintenance "	\$119,160
Additions to wall 	\$485,000
East cell block 	\$900,000

The new mess hall at Auburn carried an appropriat-

ion of \$350,000. The Great Meadow Administration building carried an appropriation of \$150,000; Clinton laundry and cell block building \$800,000; and the Clinton segregation building \$175,000 for 48 separate cells and connected exercise court.

ADDENDA

Guards

Clinton (1924)	122	prisoners to each guard				
Auburn (1923)	150	"	"	"	"	"
Sing Sing (1923)	93	"	"	"	"	"
Great Meadows (1925)	11	"	"	"	"	"
Rhode Island (1925)	14	"	"	"	"	"
Westerfield, Conn. (1925) ..	10	"	"	"	"	"
Maryland State (1925)	20	"	"	"	"	"
Mass. State Prison (1925) ..	12	"	"	"	"	"

(Compiled from "American Prison Handbook")

Miscellaneous Cell Dimensions

Delaware State Prison	5' x 7' x 8' high
Maine state Prison	5' x 8' x 7' "
Maryland State Prison	5'6" x 9' x 8' "
Rockview Prison, Pa.	9' x 7' x 8'6" "
Cook County Jail	5' x 8' x 8'4" "

In the Cook County Jail the size of the cell insures segregation.

In the original cell block at Auburn the cells are 7½' x 4' x 7½'. None of the old cells have plumbing so that the primitive bucket system is used.

New York State Prisons

Sing Sing Prison at Ossing.
 Auburn Prison, at Auburn
 Clinton Prison, at Dannamora
 Great Meadows Prison, at Comstock.
 State Prison for Women, at Auburn
 Attica State Prison, at Attica (new)

At Auburn there are the following industries: manufacture of cloth, school and office furniture, auto plates, baskets and iron beds. There is also a foundry. Prison population at Auburn, July 1923 was 1303; about

ten per cent were negros.

Sing Sing prison was first built in 1825. In December, 1923, there were 1,113 prisoners.

The "Auburn System" is a system of rigid discipline, with separate cells but congregate work.

The "Philadelphia System" is a system where each man has a cell to himself and an exercise court.

The Empire State pays its imprisoned workmen one and a half cents a day.

Society is paying a staggering cost for penal protection but is not getting it.

The state prison is a home-made product. Devised in the latter part of the eighteenth century, it has persisted, with only superficial changes to the present day. Its characteristic feature, the inside cell block, originally designed to provide solitary confinement in individual cells for every prisoner, has been approved and imitated in every American state and in most, if not all, of the countries of central and Western Europe.

Prisoners in Penal Institutions, 1929

Auburn prison	1754
Great Meadows	1137
Clinton	1562
Sing Sing	1708
Colorado State Pen.....	1129
San Quentin	4638
Anamosa, Iowa	1102
Joliet, Ill. (men)	3492
Lansing, Kansas	1798

Libraries

Clinton	7,000	volumes
Auburn	6,000	"
Sing Sing	15,000	"
Great Meadows	4,000	"
Elmira	7,000	"
Western Pen (Pa.)	9,000	"
Eastern Pen (Pa.)	10,000	"
Rockview, Pa.	5,000	"
Maine State	6,000	"
Maryland State	5,900	"
Mass. State	8,000	"
New Jersey State	7,000	"
San Quentin	12,000	"
Canon City Pen, Colo....	10,000	"

In the new Sing Sing prison being developed opposite the old institution at Ossing, N. Y. the following buildings are included: (1926)

Mess Hall	Laundry & Bath Bldg.
Detention Bldg.	Clinic Bldg.
Assembly "	Outside Cell Bldg.
Cell Blocks - A & B	Administration Bldg.

Crime Commission, New York State Report of Sub-Committee
on Penal Institutions, 1928

	Cubage	Rate	Estimated Cost
4 Cell Blocks	3,478,000	57½	\$2,000,000
1 Administration	250,000	60	150,000
1 Hospital - 64 beds	228,000	60	137,000
1 Laundry & Bath	202,500	50	101,000
1 Kitchen Bldg.	510,000	55	281,000
Wall	7540 Lineal feet	55	425,000

Mass. State Penal Colony - Norfolk, Mass.

McLaughlin and Burr, Architects

Cells 6'9" x 12'0", inside cell block, dormitory, with cubicles 5'9" o.c. for privacy.

Berks County Pen. - Reading, Pa.

A. A. Hopkins, Architect

Cells 6'0" x 9'0". Two floors to cell block - 36 cells per floor.

BIBLIOGRAPHY

Books -

- Criminology & Penology ----- John Lewis Gillin
Encly, Americana ----- Vol. 22
International Encly. ----- Vol. 19
Sing Sing, Capitol Punishment & Honest Graft --
J. Sullivan
Punishment & Reformation ----- F. H. Wines
Curing the Criminal ----- Jesse Stutsman
The Offender ----- Burdette G. Lewis
Prison Construction ----- Hastings Hornell Hart
Prison Methods in New York State -- Philip Klein
Prison & Prison Building ----- Alfred Hopkins

Articles -

- Two Prison Mutinies ----- New Rep. 8-7-29
Prison Architecture ----- Arch. Record 1-'30
Chicago Gets a New Jail ----- Scientific Am. 7-'30
Revolt of the Convict ----- Atlantic M. 5-'30
Behind the New York Mutinies - Survey 5-1-29
1928 & 1929 Report of the Crime Commission, Sub-Committee on Penal Institutions.

Current Newspaper Clippings

• *A* • "STANDARD" • ALPHABET •

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
1 2 3 4 5 6 7 8 9 0

a b c d e f g h i j k l m
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FOR ARCHITECTURAL WORK

A B C D E F G H I J K L M
N O P Q R S T U V W X Y Z
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a b c d e f g h i j k l m
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FOR ENGINEERING WORK

USE LETTERS THIS SIZE FOR ALL
MAIN TITLES

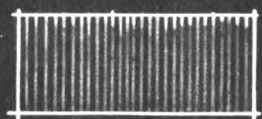
AND THIS SIZE FOR SECONDARY
TITLES - THE SPACING IS OPTIONAL.

FOR NOTES ON DRAWINGS USE THIS
SIZE OF LETTERING, OR
SMALLER AS THE CASE REQUIRES.

Where lower case letters are used
be consistant and use them thruout.

This holds for all lettering
whether on the slant or vertical.

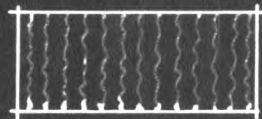
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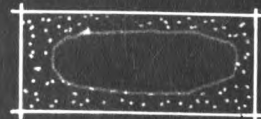
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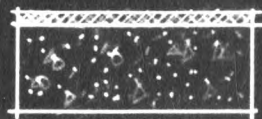
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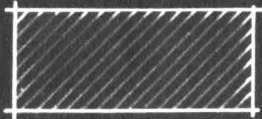
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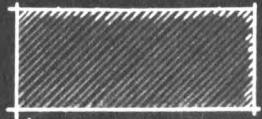
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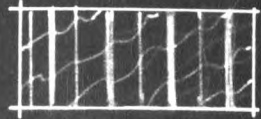
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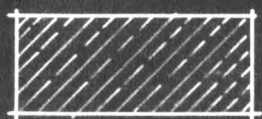
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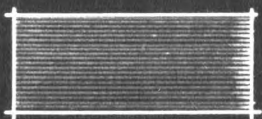
ENAMELED BRICK



ENAMELED FACE TILE



GYP SUM BLOCKS



CORK INSULATION



CEMENT BLOCKS



SLAB PARTITION



GLASS



TERRAZZO

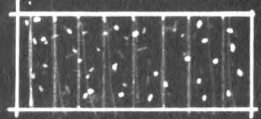


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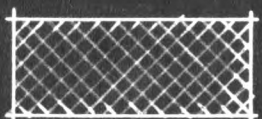
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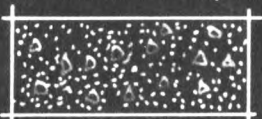
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STUCCO FINISH



CUT STONE



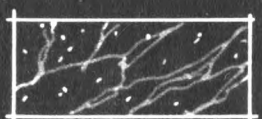
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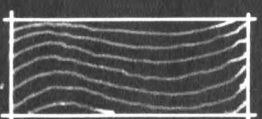
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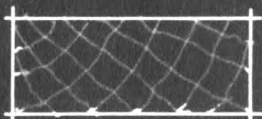
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MARBLE



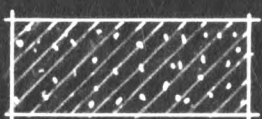
WOOD



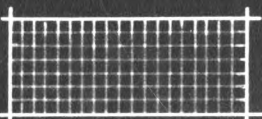
HARD WOOD



PLASTER FINISH



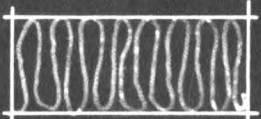
CEMENT FINISH
FOR FLOOR SECTIONS



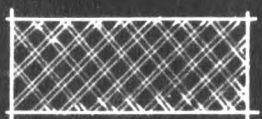
RUBBLE STONE



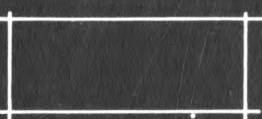
CAST STONE



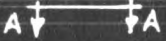











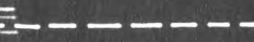





SOUND PROOF PARTITION



NON-FERROUS-METAL



S T A N D A R D A B B R E V I A T I O N S

Section lines		Exterior	Ext.
El. bottom of footing		Face	F.
Square		Guard	Gd.
Round		Hollow	Hol.
Center line		Keene's Cement	K. Cem.
Plate		Linoleum	Lin.
Channel		Limestone	L.S.
Steel I beam		Masonry Opening	M.O.
8" I Beam-23 Pounds	8" I-23#	Marble	Mar.
Angle		Mastic	Mas.
Perpendicular		Maple	Mpl.
Parallel		Metal	Met.
Tongue & Groove	T & G	Molded	Mld.
Polished	Pol.	Mosaic	Mos.
Glass or Glazed	Gl.	Plaster	Pl.
Standard	Std.	Pine	P.
Diameter	Dia.	Refrigerator	Refg.
Radius	r	Rough Opening	R.O.
Column	Col.	Stone	S.
Elevation (grade)	El.	Specification	Spec.
On center	O.C.	Topping	Top.
Center to Center	C.C.	Tile	T.
Steel	St.	Terra Cotta	T.C.
Straight	St.	Terrazzo	Ter.
Galvanized	Galv.	Wrought Iron	W.I.
Down Spout	D.S.	Wood	Wd.
Transom	T.	White	Wh.
Birch	Bir.	Yellow Pine	Y.P.
Brick	Br.	Alpha	α
Bronze	Bz.	Beta	β
Blue Stone	B.S.	Delta	Δ
Ceramic	Cer.	ALPHABET OF LINES	
Cement	Cem.	Visible Outline	
Concrete	Con.(Conc.)	Invisible Outline	
Cast Iron	C.I.	Center line	
Cabinet	Cab.	Extension	
Casement	(Csm't) Case	Broken material	
Detail	Det.	Line of motion	
Double Hung	D.H.	Ditto Lines	

° S T A N D A R D ° A B B R E V I A T I O N S °

Bench mark	B.M.	Building	Bldg.
Foot	Ft.	Inch	in.
Architect	Arch.	Working point	W.P.
Down	Dn.	Number	No.
Risers	R	Floor Line	FL

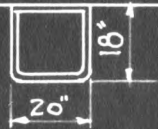
• P L U M B I N G • S Y M B O L S •



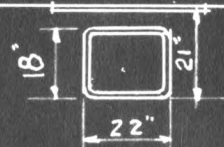
S I N K
 NOMINAL SIZE 22X60
 " " 20X74
 " " 22X78
 HEIGHT 48"



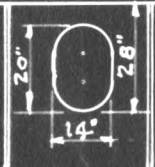
S I N K
 NOMINAL SIZE 20X42
 " " 20X52
 " " 22X60
 DRAINBOARD EITHER SIDE
 HEIGHT 40"



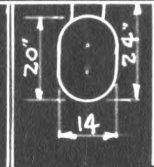
S L O P S I N K
W A L L H U N G



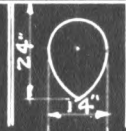
S L O P S I N K
P E D E S T A L
 (GENERALLY USE THIS TYPE)



W A T E R C L O S E T



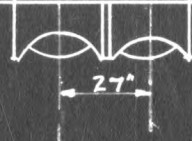
W A T E R C L O S E T
W A L L H U N G
 ALWAYS SET WITH
 WALL SPACE BEHIND



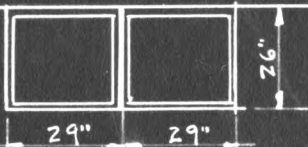
U R I N A L
(P E D E S T A L)



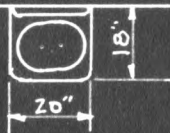
U R I N A L
W A L L H U N G
 ALWAYS SET WITH
 WALL SPACE BEHIND



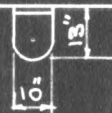
S T A L L U R I N A L S



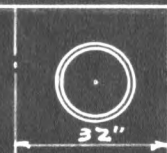
L A U N D R Y T R A Y S
 HEIGHT OVERALL 42"



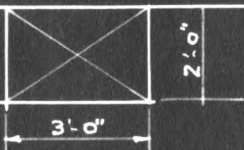
L A V A T O R Y
 WHEN INSTALLED IN
 BATTERIES LEAVE 3"
 BETWEEN - MORE
 IF POSSIBLE



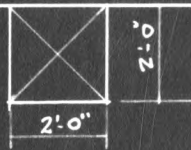
D R I N K I N G
F O U N T A I N



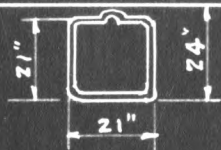
B E D P A N W A R M E R
& S T E R I L I Z E R



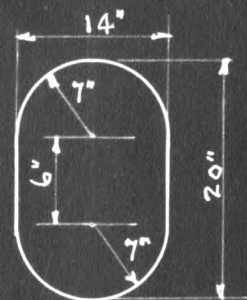
B E D P A N R A C K



B L A N K E T W A R M E R



C L I N I C S L O P S I N K

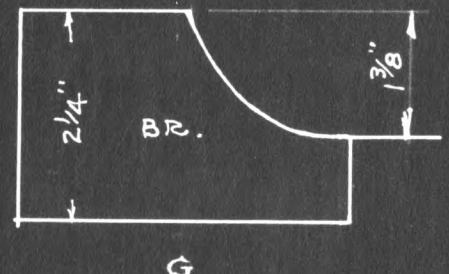
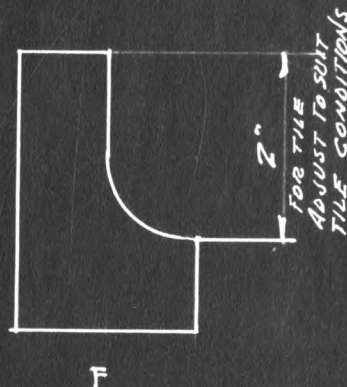
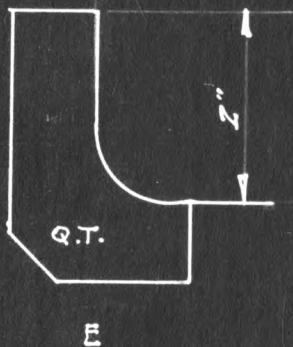


W . C .

• B A S E •

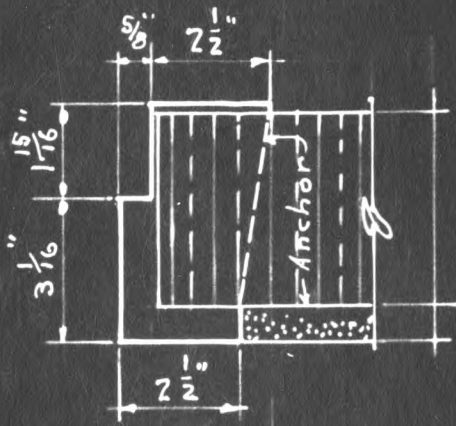
TYPE OF WALL

F L O O R	P.G.T.C.	BRICK	SGF BR	S.G.F.T.	P.L.	C.O.N.
H.D. MASTIC	P.G.T.C. "C"	CEM "F"	SGFBR "G"	SGFT "C"	CEM "A"	NO BASE
L.D. MASTIC	"	"	"	"	"	"
QUARRY TILE	Q.T. "E"	Q.T. "A"	SGFBR "G"	Q.T. "E"	Q.T. "A"	"
LINOLEUM	P.G.T.C. "C"			S.G.F.T. "C"	CEM "A"	"
TERRAZZO	TER. "C"	TER. "F"	TER. "F"	TER. "C"	TER. "A"	"
BLUE STONE	B.S. "D"	B.S. "D"	B.S. "D"	B.S. "D"	CEM "B"	"
WOOD					WOOD	"
CEMENT	P.G.T.C. "C"	CEM "F"	SGFBR "G"	S.G.F.T. "C"	CEM "A"	"
BRICK	BR. "G"	AS DESIGNED	BR. "G"	BR. "G"	CEM "A"	"

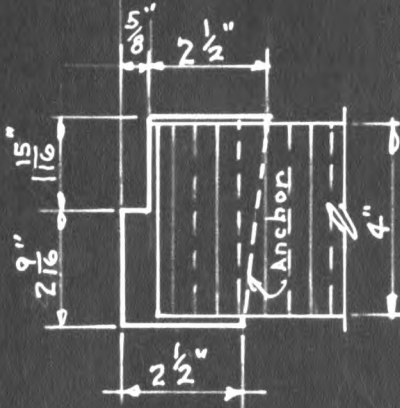


NOTE: TYPES A-B-C-D TO BE USED FOR SLATE, MARBLE & TERRAZZO & CEMENT BASES WHEN & WHERE BUILDING DESIGN REQUIRES.

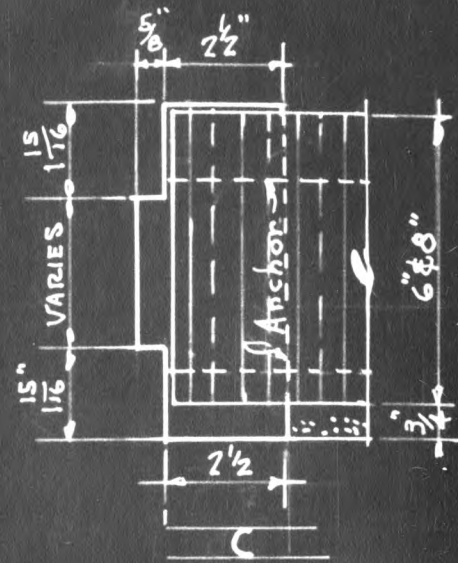
TYPICAL JAMB DETAILS



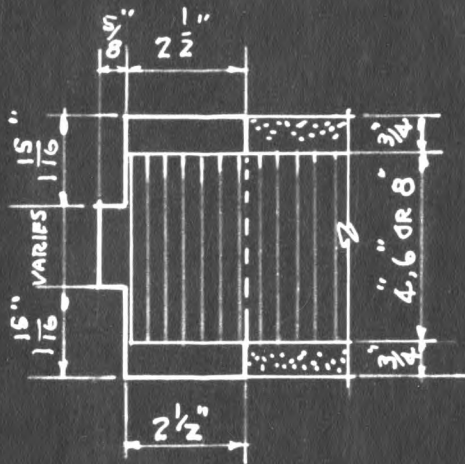
A



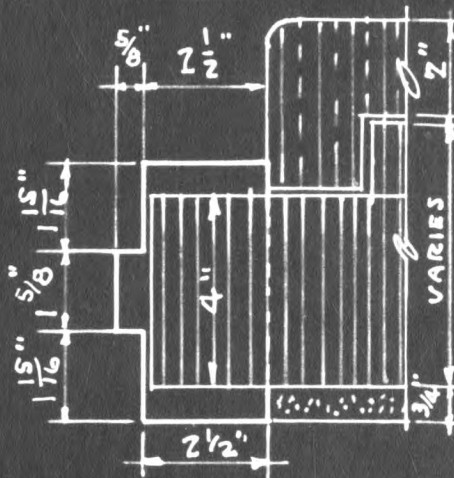
B



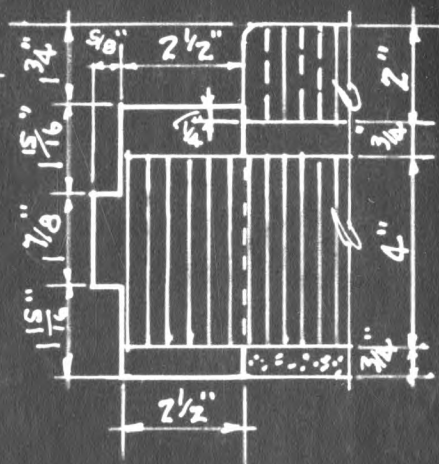
C



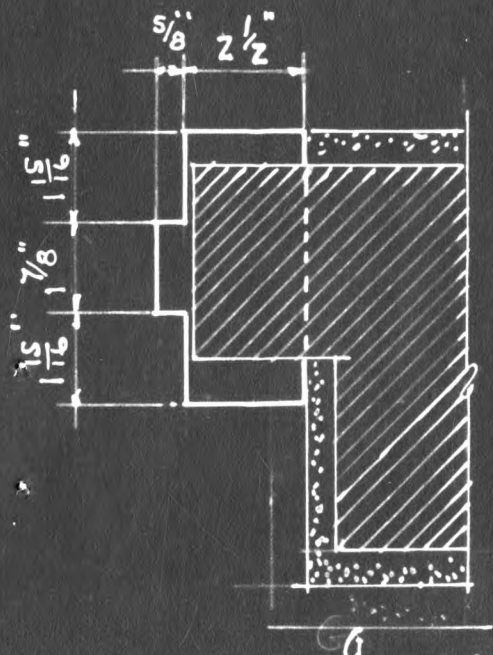
D



E



F



G

NOTES:

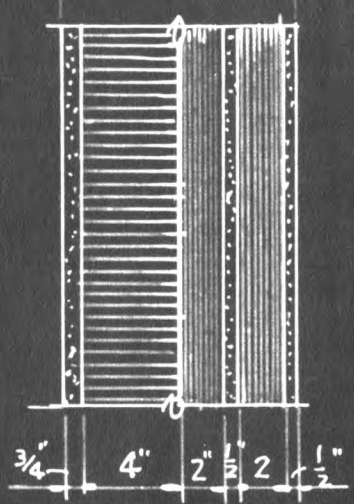
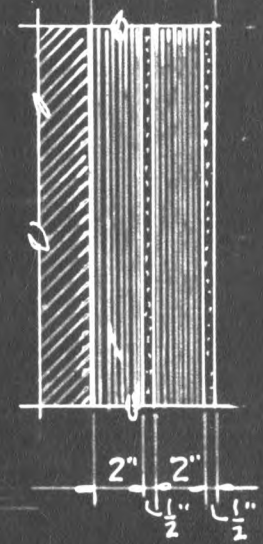
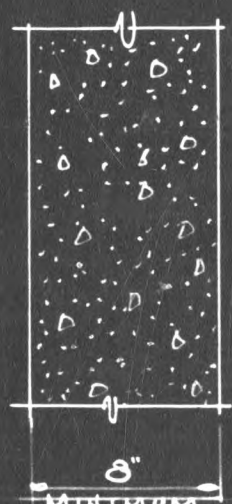
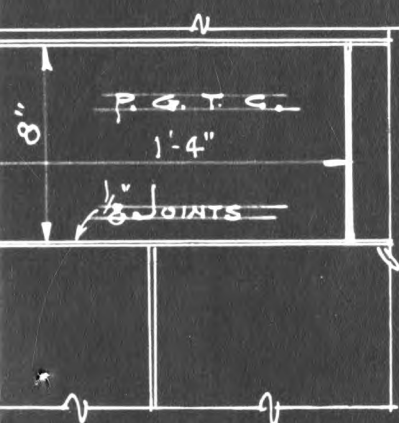
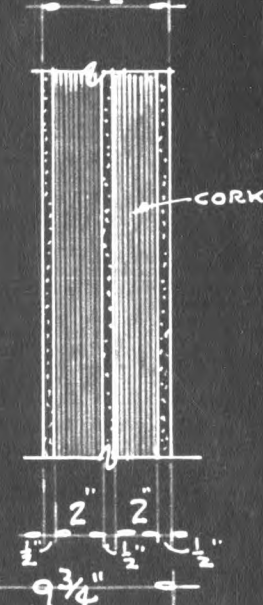
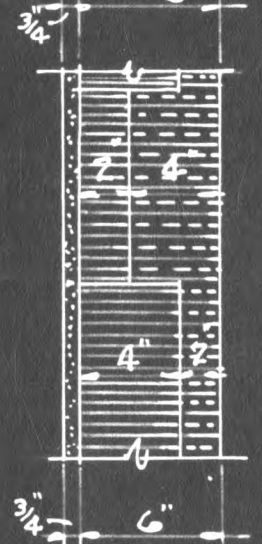
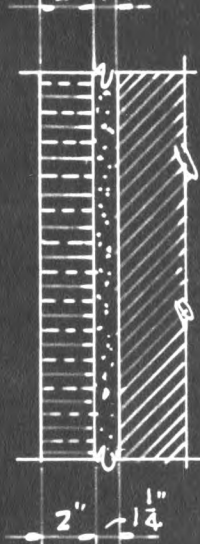
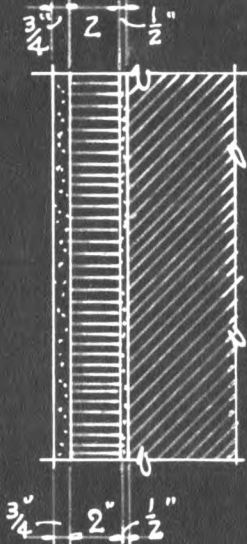
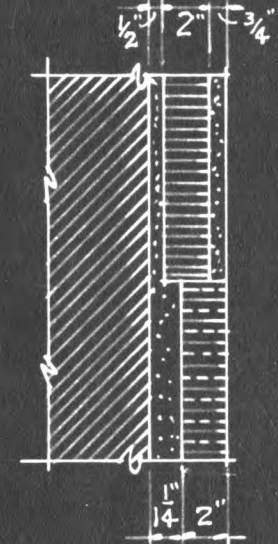
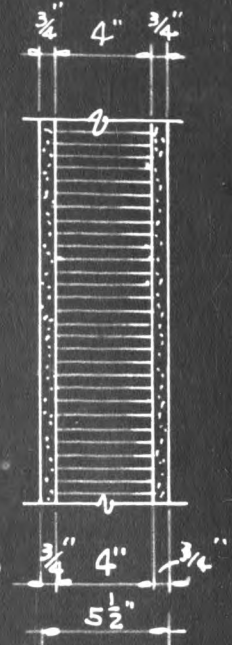
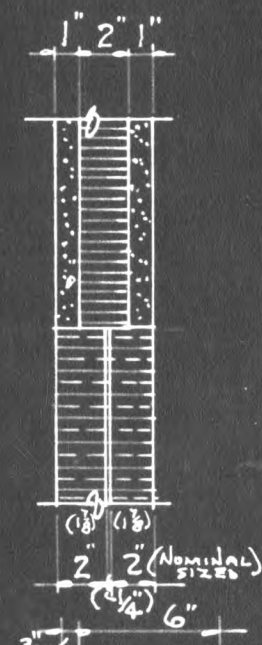
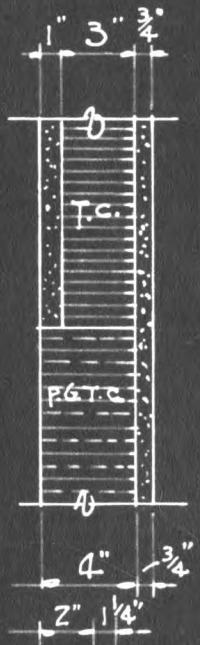
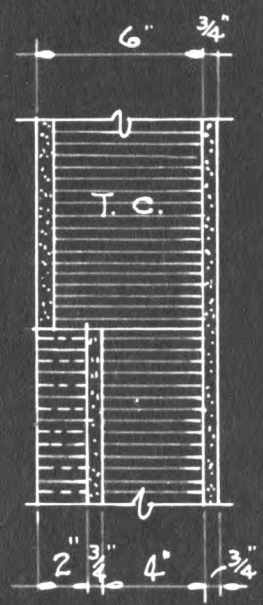
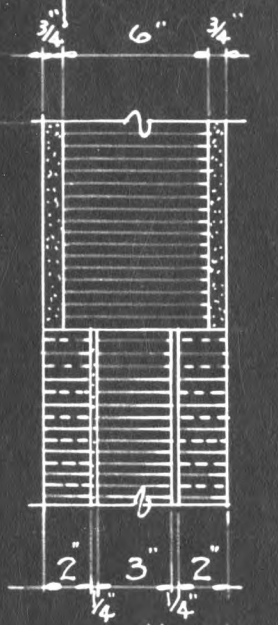
Where membrane waterproofing occurs bucks shall extend one inch below finished floor.

Width of anchor to be thickness of wall up to 4".

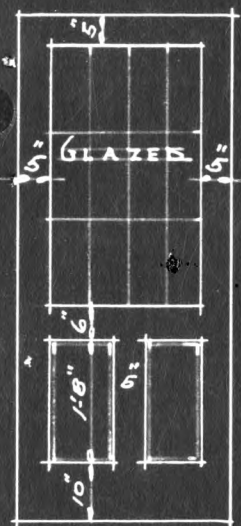
If center stop is to be used for hanging double acting doors its height should be 7/8" instead of 5/8".

Other jamb conditions may be met by a variance of the above types.

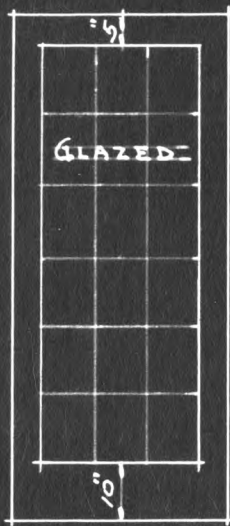
TYPICAL WALL SECTIONS



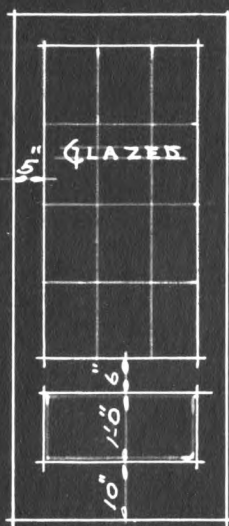
STANDARD DOOR TYPES



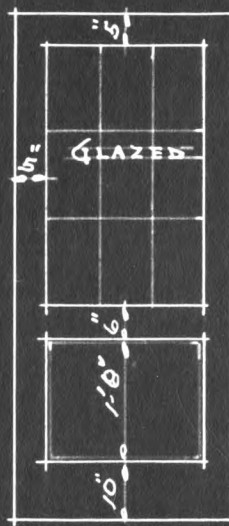
A



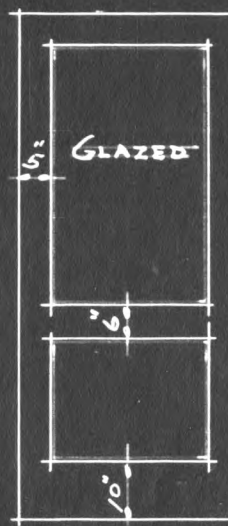
B



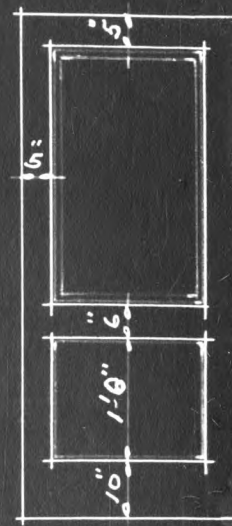
C



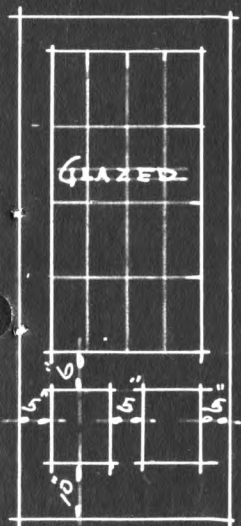
D



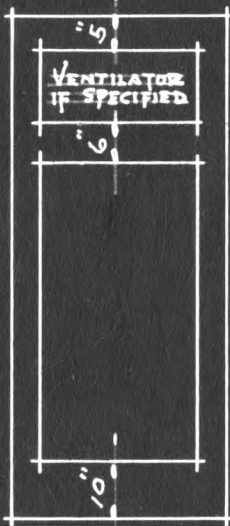
E



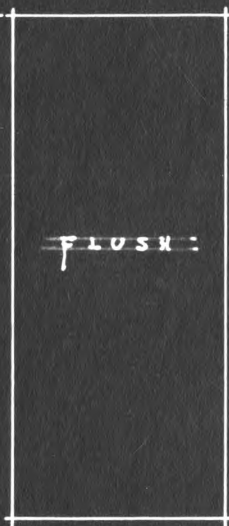
F



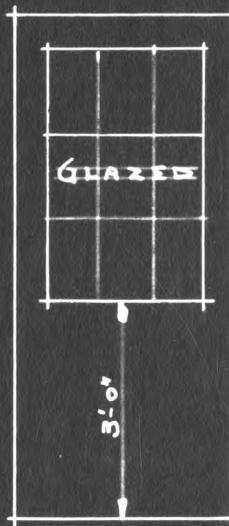
G



H



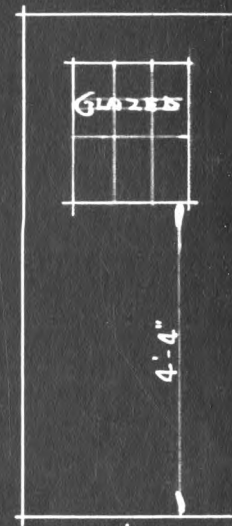
I



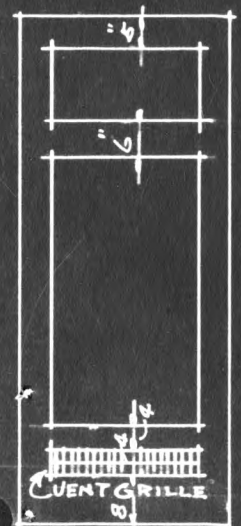
J



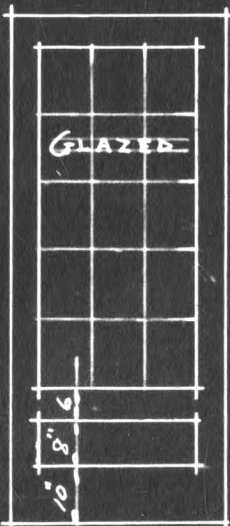
K



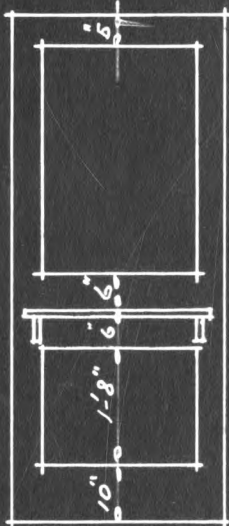
L



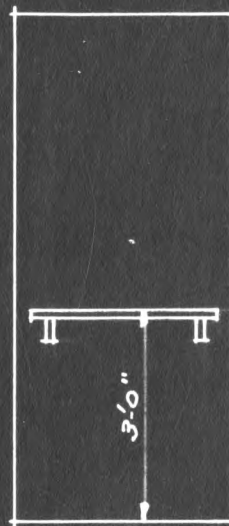
M



N



O



P

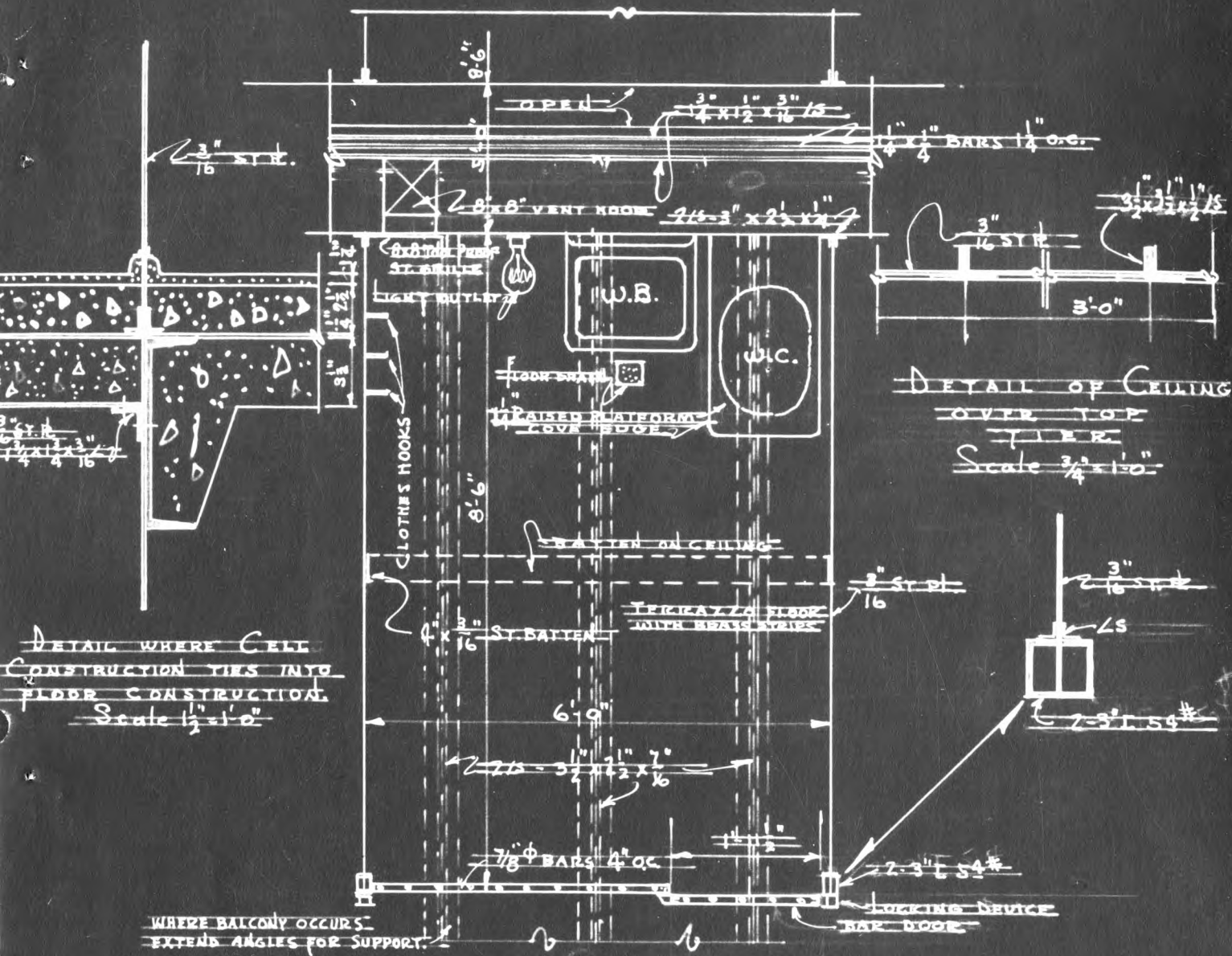


Q



R

ALL EXTERIOR DOORS TO HAVE
TOP RAILS AND SIDE STILES OF
NOT LESS THAN 6 INCHES



• TYPICAL • CELL • UNIT •

FOOL PROOF CELL FRONTS & DOORS

1/8" VERTICAL BARS - 4' of
2 1/2" x 5/8" x 1/4" 3 HORIZONTALS -
2' o.c.; 2 1/4" x 5/8" x 1/4" SIDE
FRAME BARS; 1 1/2" x 3/8"
COUNTER LOCKING BAR,
1/4" TRANSOM PLATE - 5PLY

WALL THICKNESS VARIES WITH
HEIGHT OF CELL BLOCK

3/4" VERTICAL BARS-6" O.C.
2" x 2 1/2" IS-HORIZONTALS 2'0" O.C.

OPEN TIER (2)

TYPICAL
PLAN
OF
CELL BLOCK

SCALE $\frac{1}{16}" = 1'-0"$

1st TIER:

RIVETS

$\frac{1}{2}$ " RIVETS 4" OC. TO
BE USED THROUGHOUT -
UNLESS OTHERWISE -
NOTED. CONNECTIONS
FOR STRUCTURAL MEM-
BERS TO BE $\frac{3}{4}$ " RIVETS.

CORRIDOR WIDTHS VARY
BUT THEY ARE SELDOM
UNDER THAN 12'-0" -

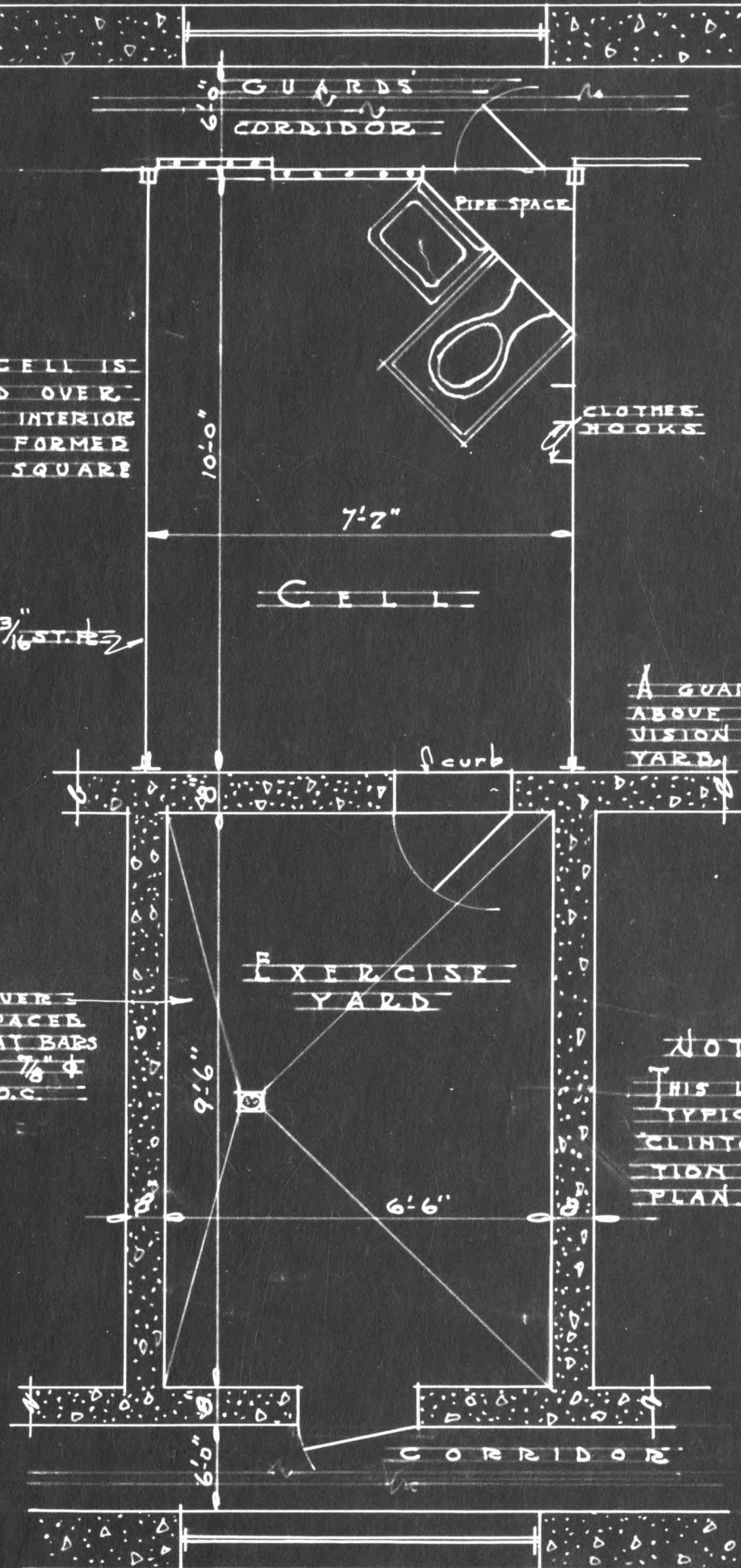
A SEGREGATION TYPE CELL

THIS CELL IS
ROOFED OVER
AS IS AN INTERIOR
COURT FORMED
ON A SQUARE
PARTI.

$\frac{3}{16}$ " ST. PL.

GRATING OVER
2 EQUALLY SPACED
3" x $\frac{1}{2}$ " T.P. FLAT BARS
SUPPORTING $\frac{7}{8}$ " ϕ
T.P. BARS 6" O.C.

OPEN TO
WEATHER

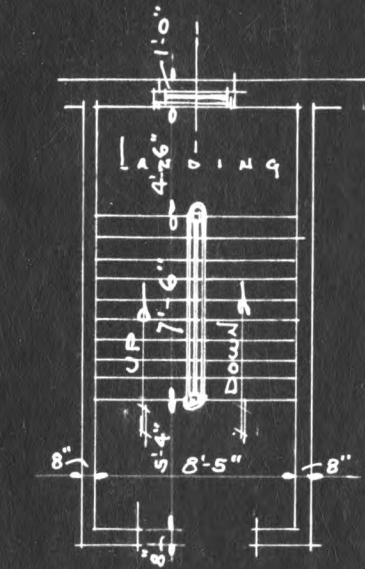


A GUARDS WALK
ABOVE OFFERS SUPER
VISION OF EXERCISE
YARD

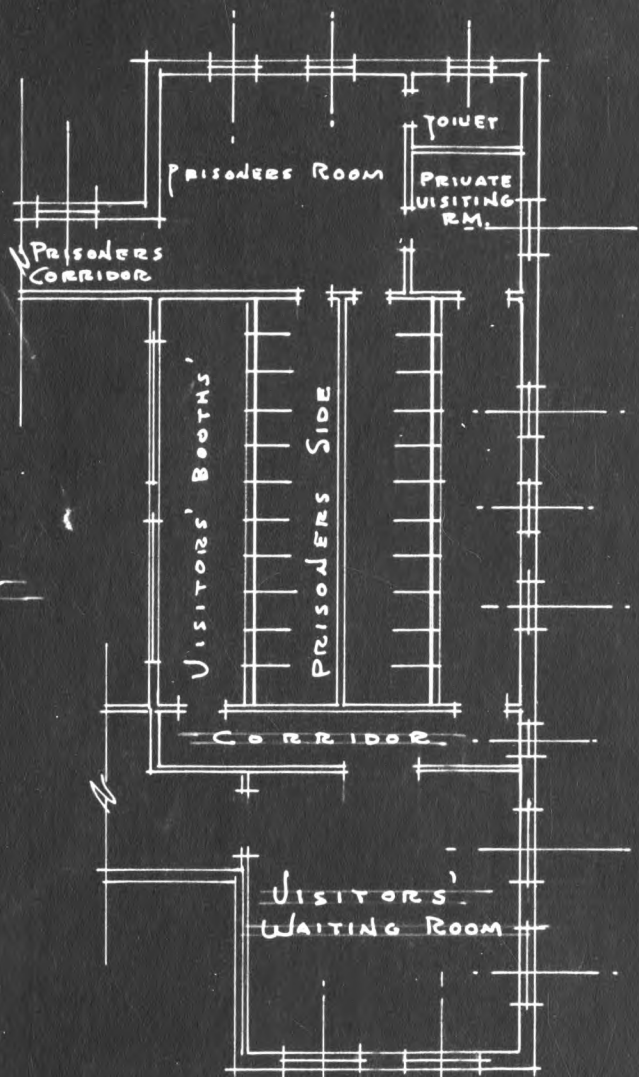
NOTE:

THIS LAYOUT IS
TYPICAL FOR THE
CLINTON SEGREGA-
TION BUILDING
PLAN (BATTICA LATER)

LAY-OUTS FOR PRISON PLANS

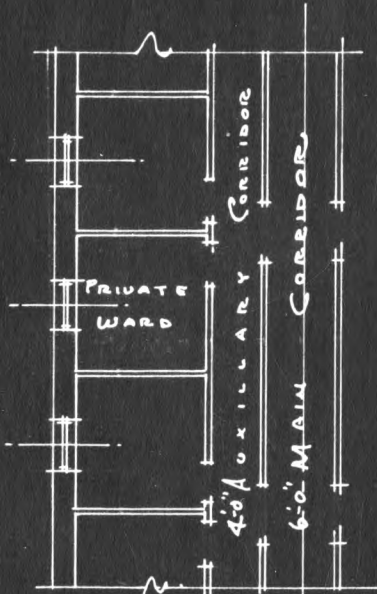
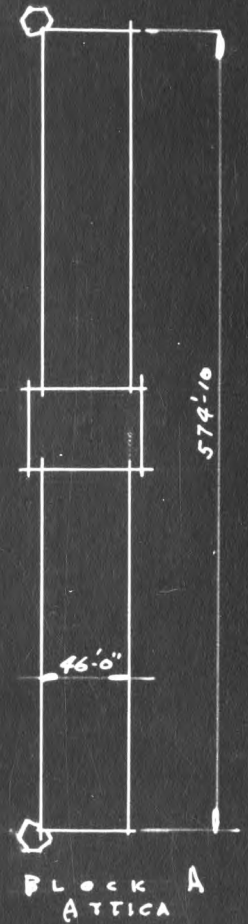


TYPICAL STAIR UNIT
Scale $\frac{1}{8}" = 1'-0"$

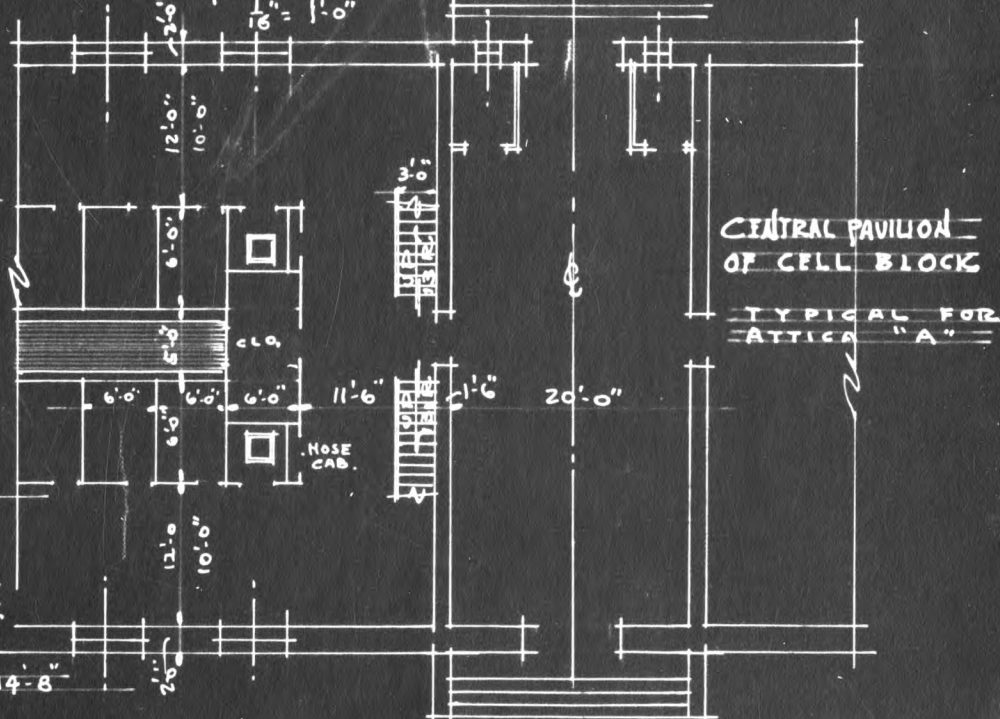


PRISON VISITING ROOM
LAYOUT

TYPICAL FOR ATTICA & GREAT MEADOWS



WARD LAYOUT FOR
SEGREGATION
TYPICAL FOR ATTICA HOSPITAL

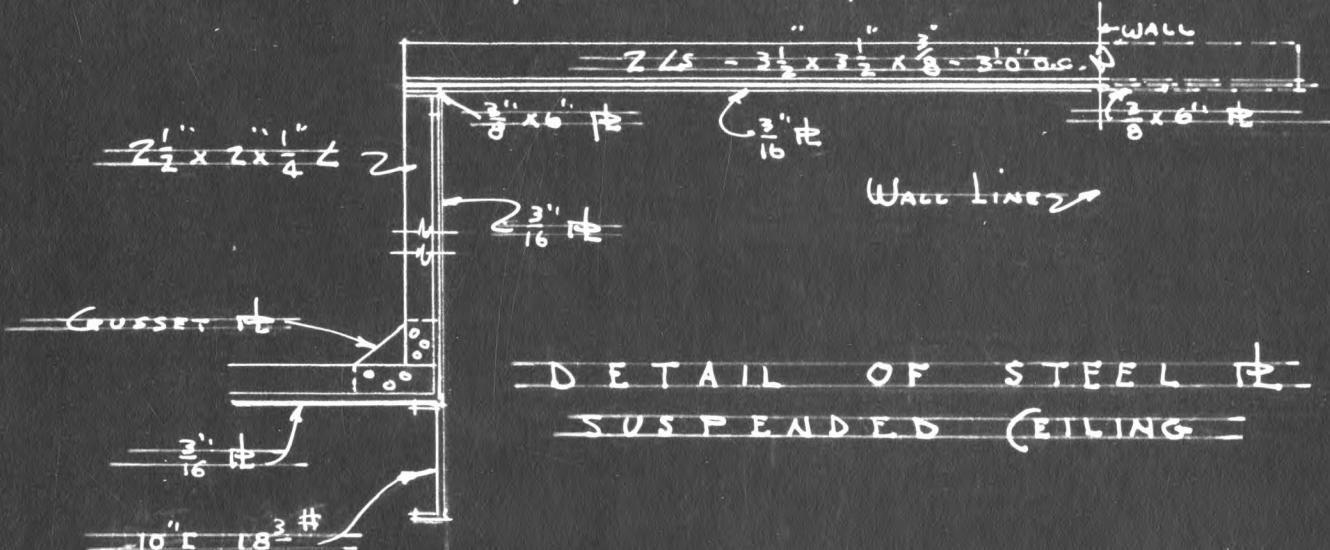
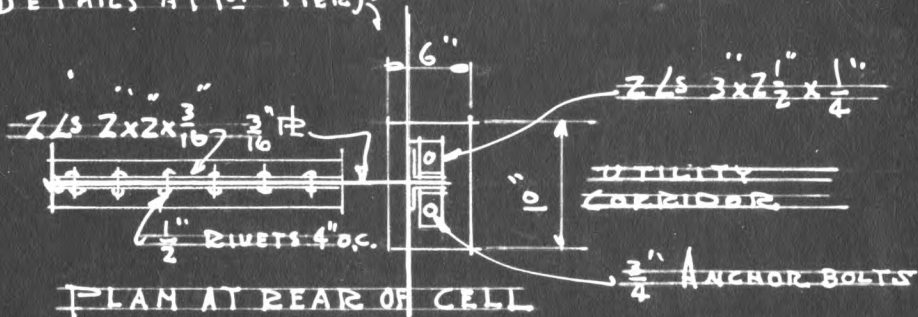
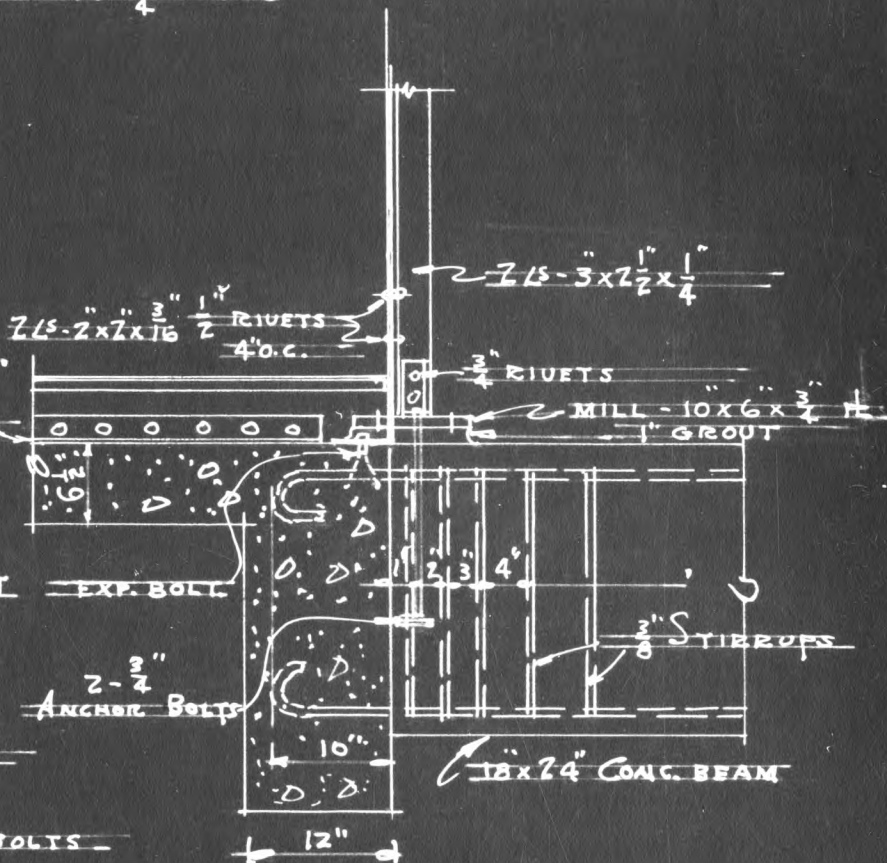
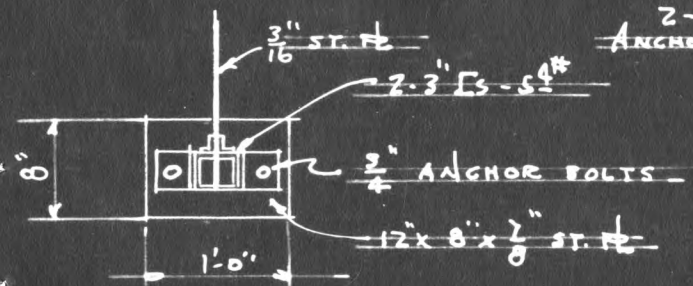
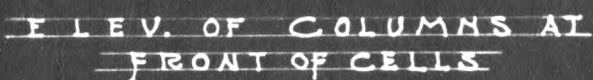
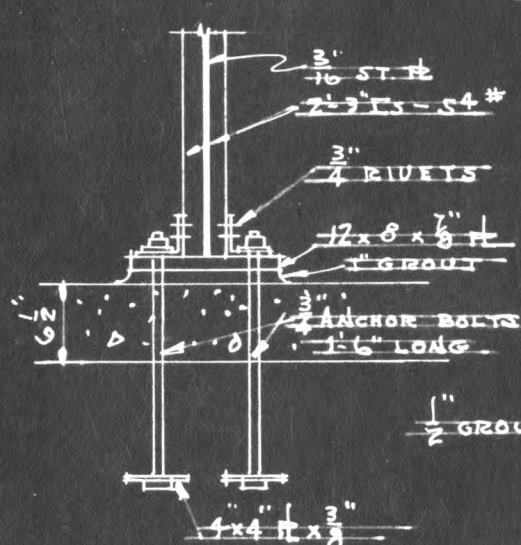


SINGLE ROOMS
BROOKLYN STATE HOSP.
QUEENS L.I.

AVERAGE ROOM 7'-6" x 14'-8"

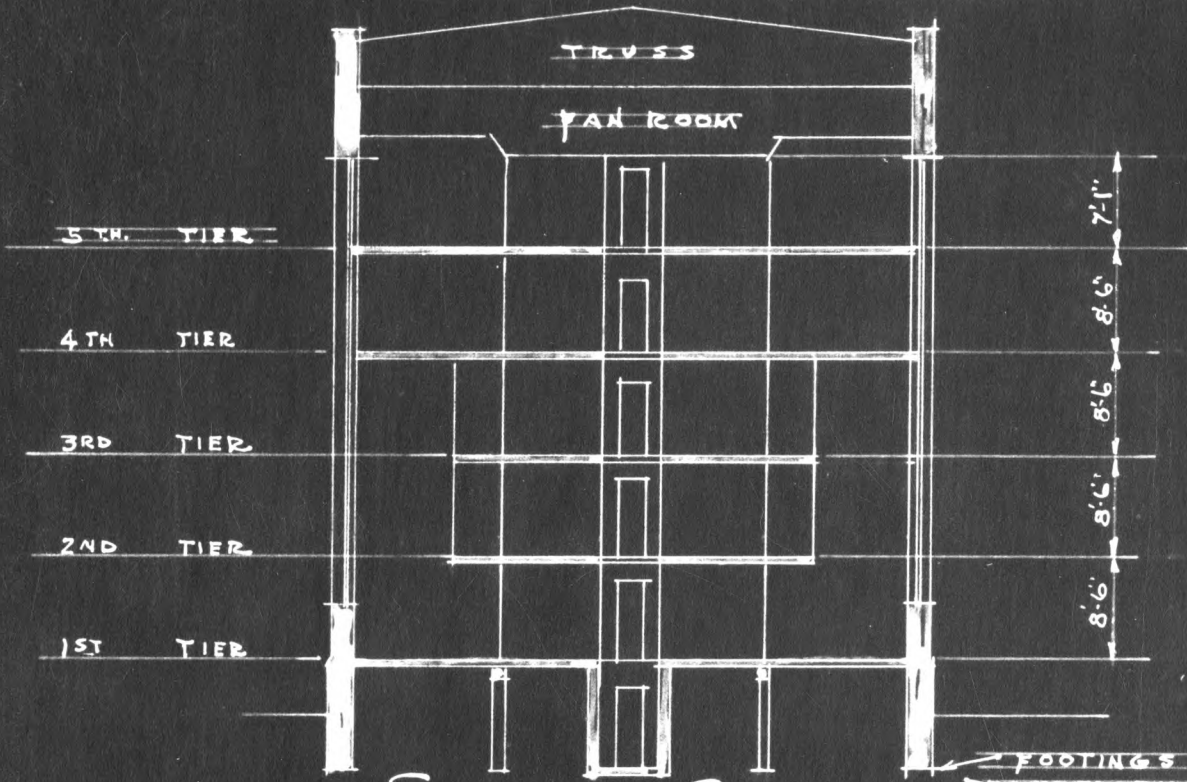
Scale $\frac{3}{4}'' = 1'-0''$

Scale $\frac{3}{4}'' = 1'-0''$



DETAIL OF STEEL $\frac{1}{2}$ SUSPENDED CEILING

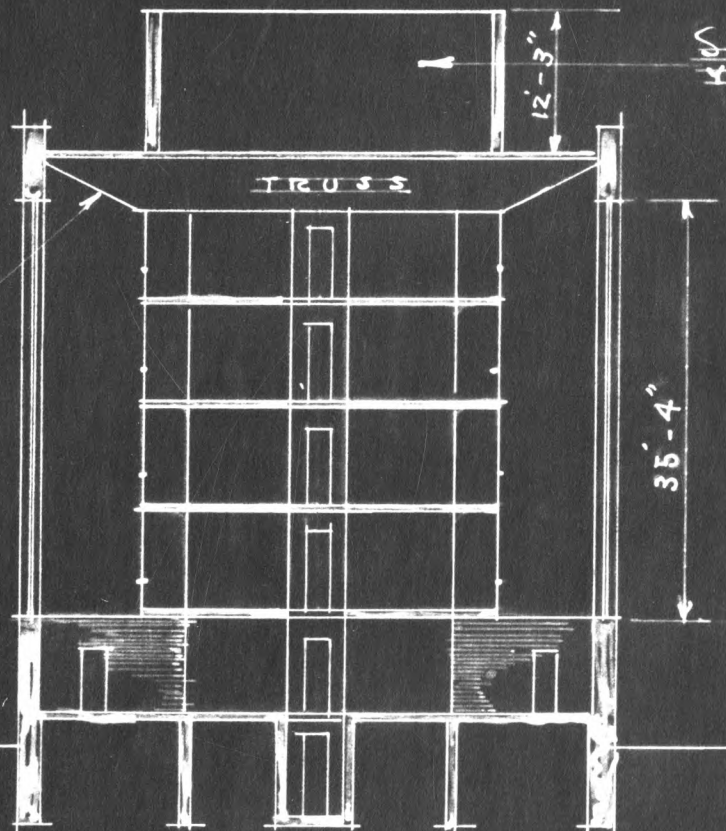
• TYPICAL • CELL • BLOCK •



SKETCH SECTION

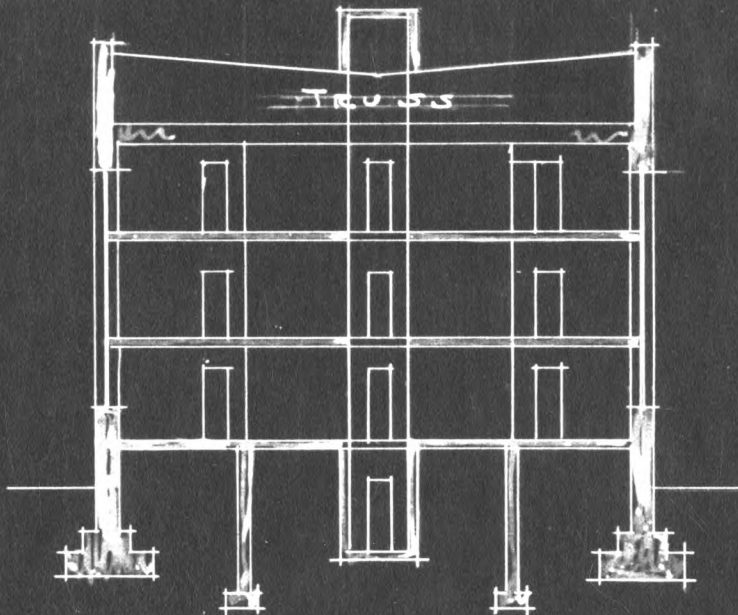
CELL BLOCK AT AUBURN PRISON

(NORTH)



SHUTTER & ISOLATION YARD ON ROOF

3/16 ST PL



MECHANICALLY
OPERATED
VENTILATORS

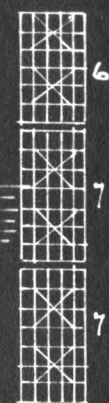
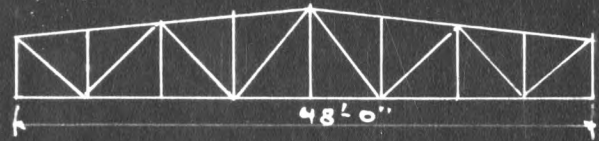
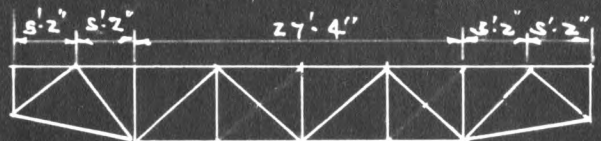


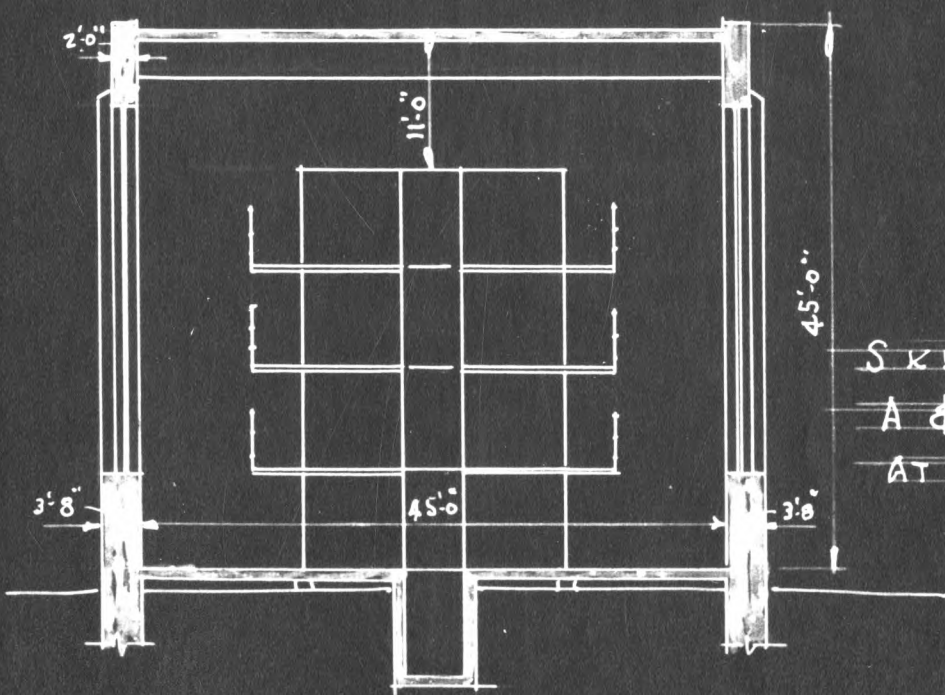
DIAGRAM OF WINDOW
GLASS 14" x 20"

SKETCH SECTION
(ATTICA STATE PRISON)



TYPES OF ROOF TRUSSES
USED ON CELL BLOCKS

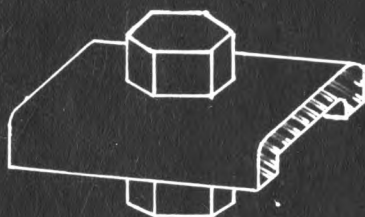
ROOFS: CON SLAB (AS DESIGNED), 1" INSULATION; BUILT UP ROOFING



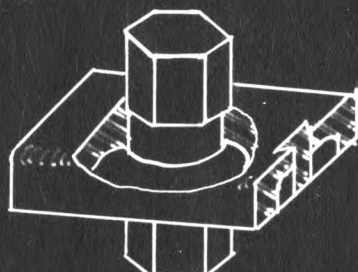
SKETCH SECTION
A & B BLOCK
AT SING SING
1926

TYPICAL CROSS SECTION
OF SHOWER ROOM
SCALE $\frac{1}{8}'' = 1'0''$

• PRISON • DETAILS •

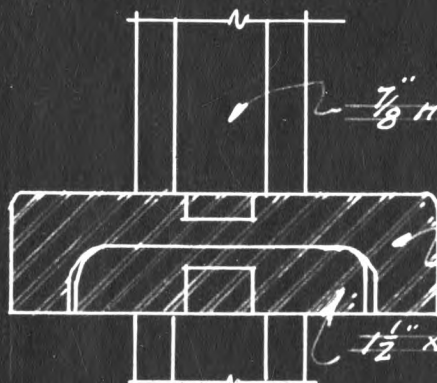
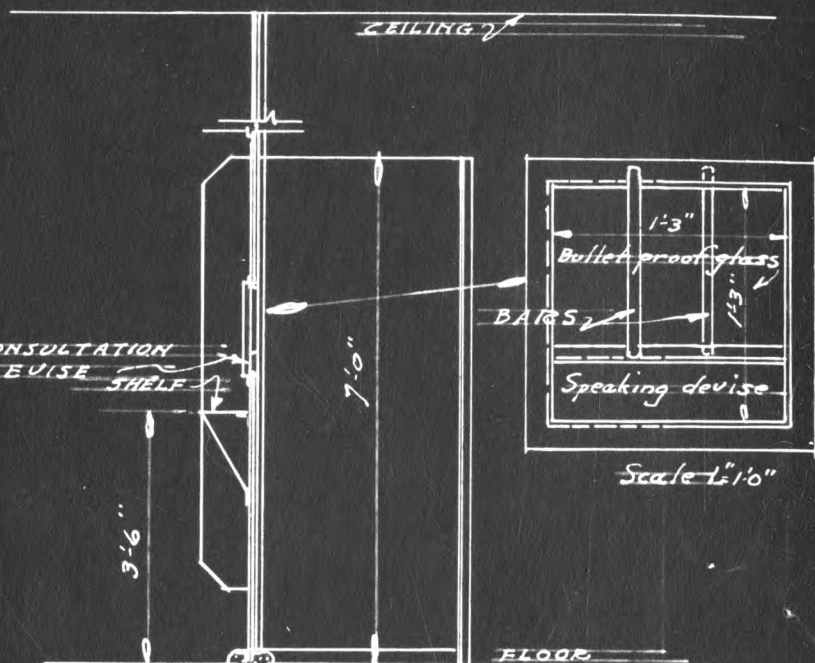


VIEW SHOWING VERTICAL & HORIZONTAL INTERLOCKED TOGETHER INTERMEDIATELY.



VIEW SHOWING FLAT BAR COUNTER-LOCKING THE ENDS OF VERTICALS AT BOTTOM OF LOWER SECTION OF PANEL OF GRATING.

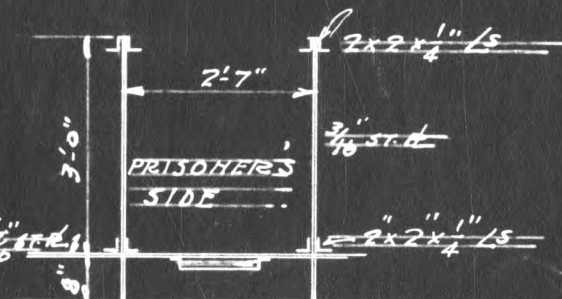
CONSULTATION
DEVICE SHELF



7/8" HEX. T.P. BAR

2 1/4" x 5" x 1/4" T.P.I.

1 1/2" x 3/8" ST. BAR



VISITOR'S SIDE

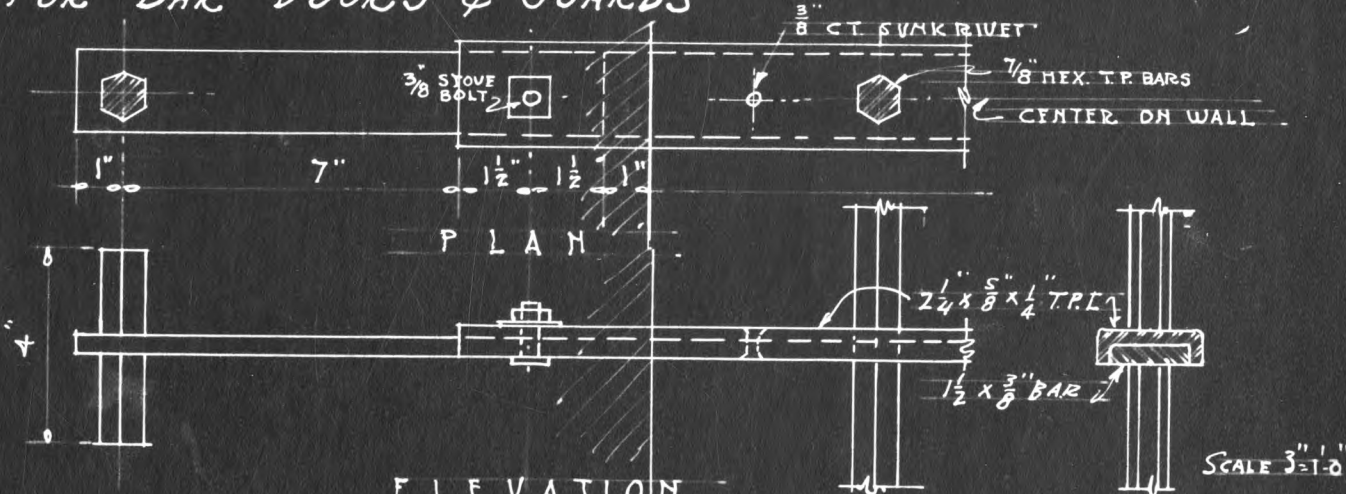
TYPICAL VISITING BOOTH

(GREAT MEADOW ADMIN BLDG)

SCALE 3/8"=1'-0"

F.S. SECTION AT SPLICE FOR GUARD

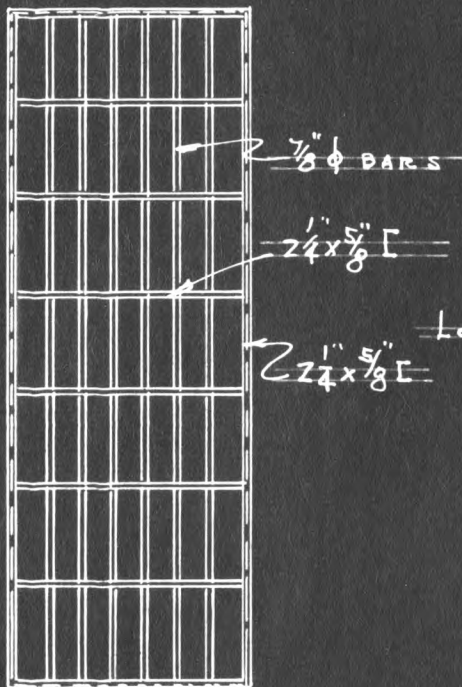
DETAIL FOR BAR DOORS & GUARDS



ELEVATION

BAR ANCHORAGE FOR OPENINGS

TYPICAL PRISON DOORS



SLIDING DOOR
A

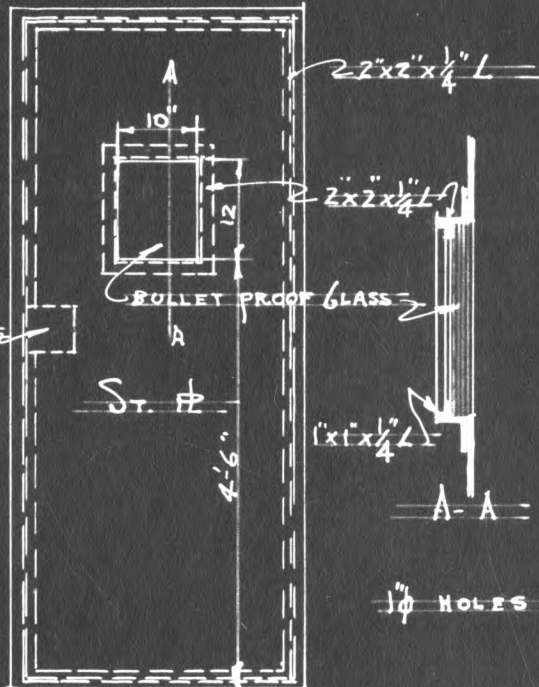


PLATE DOOR
C

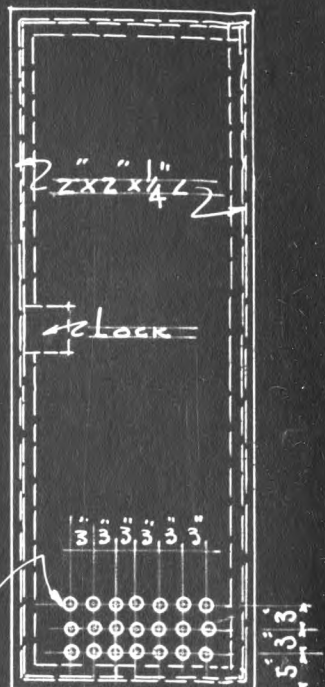
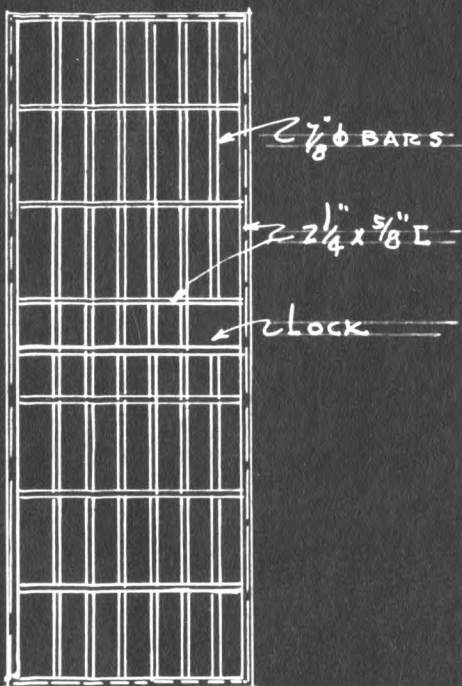
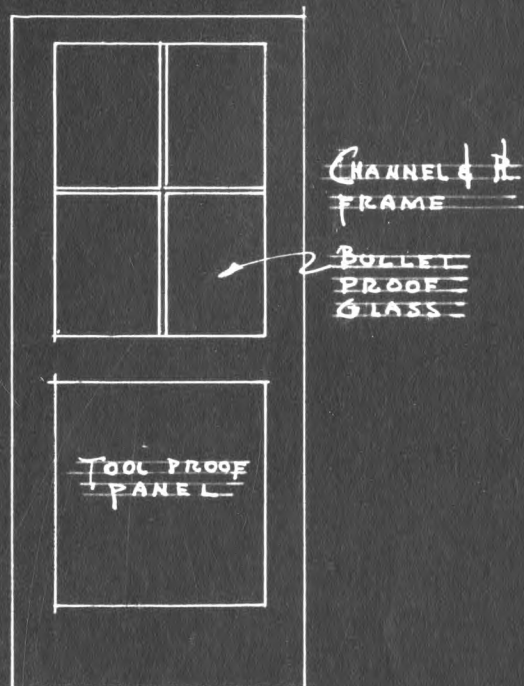


PLATE DOOR
E



CELL DOOR
B



CONTROL ROOM DOOR
D

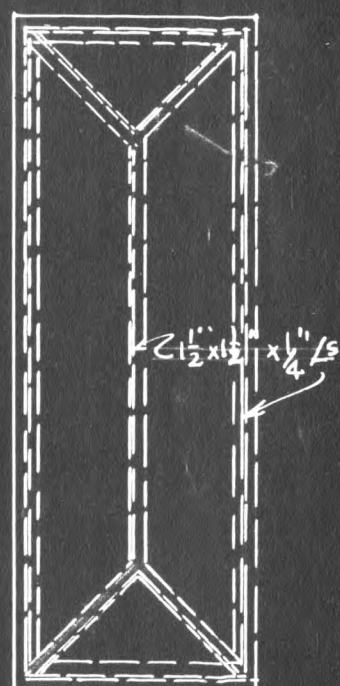
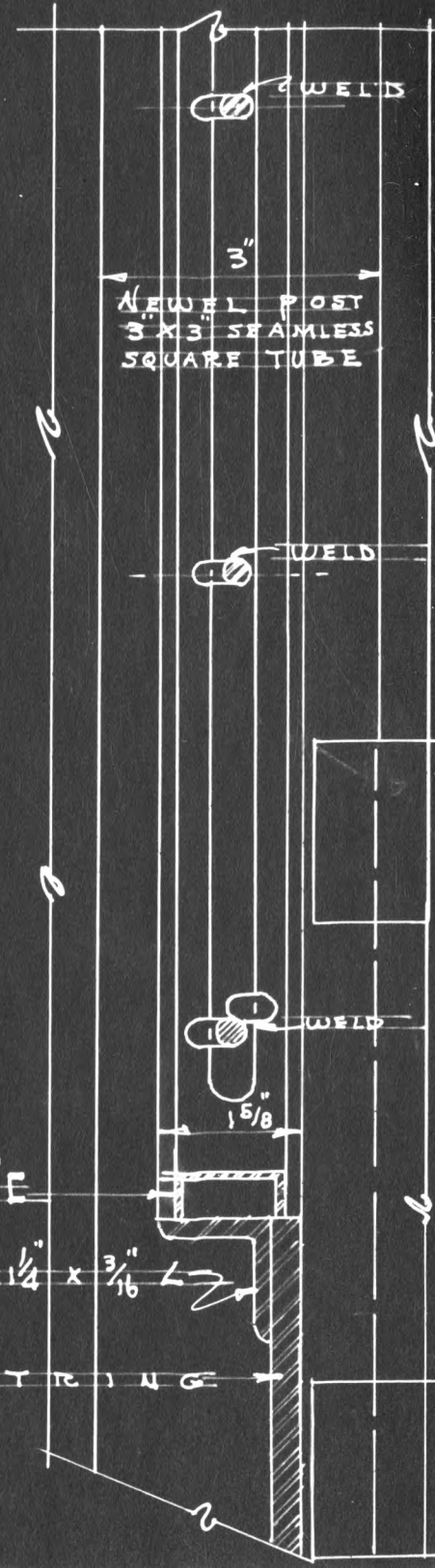
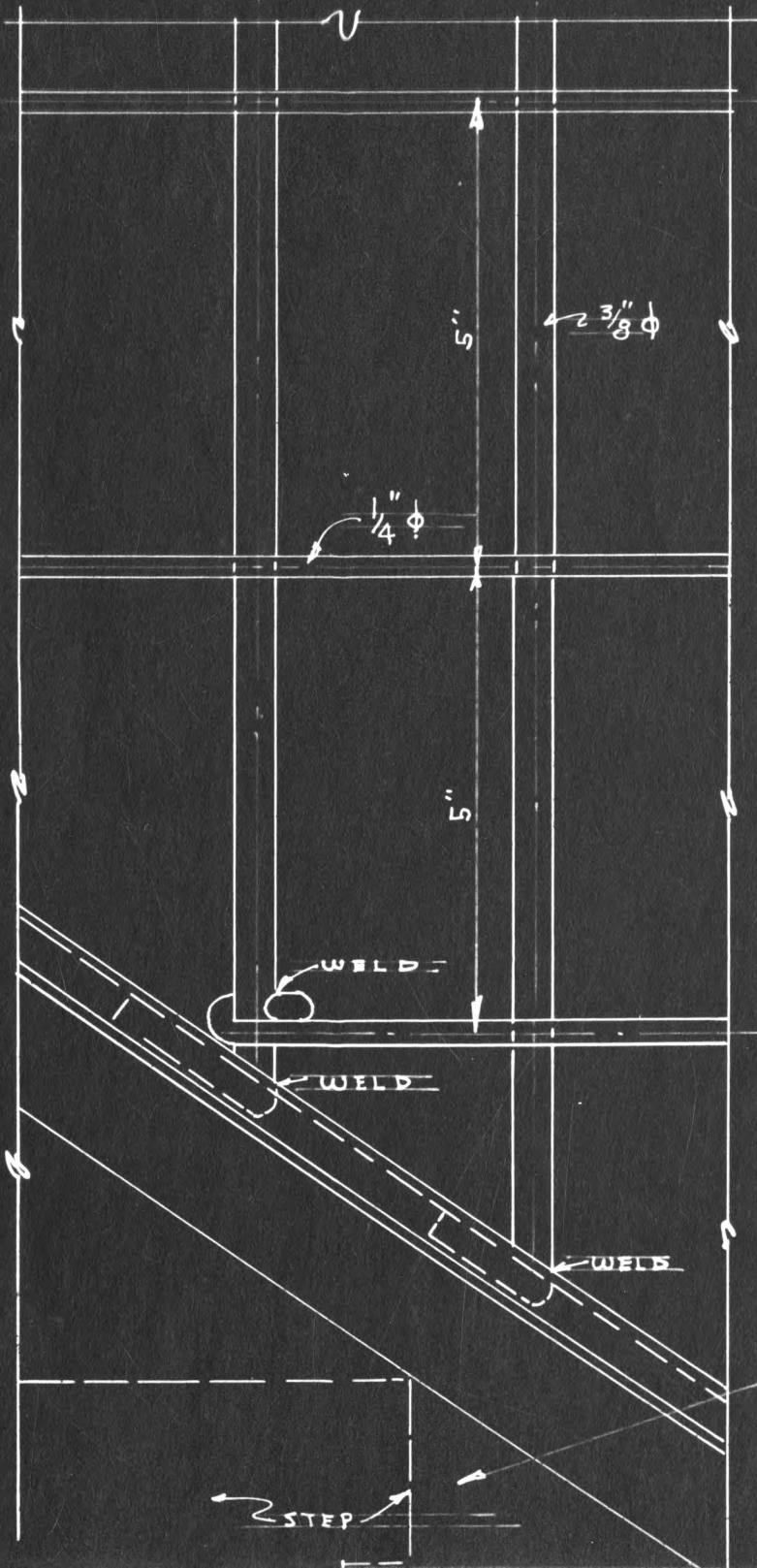
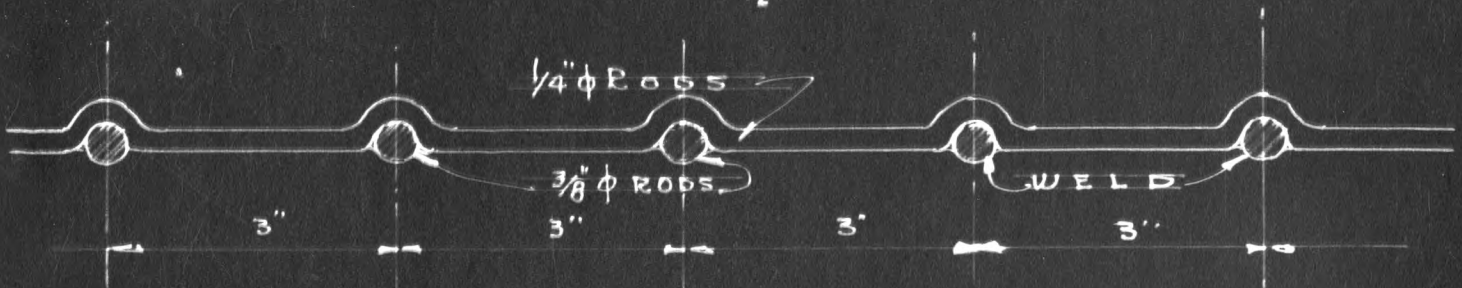


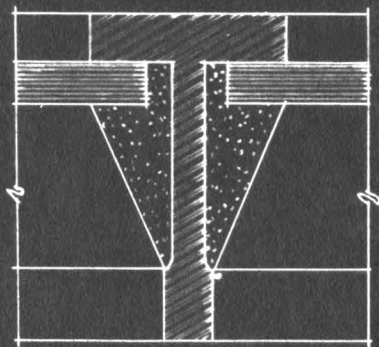
PLATE DOOR
F

DETAIL OF STAIR GUARDS

Scale 1/2 Full Size

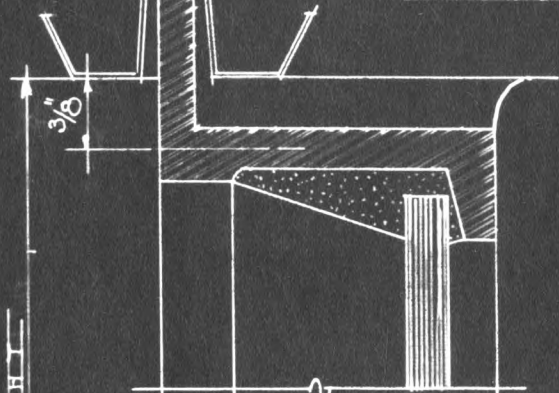


BAYLEY SUPER BAR PRISON SASH

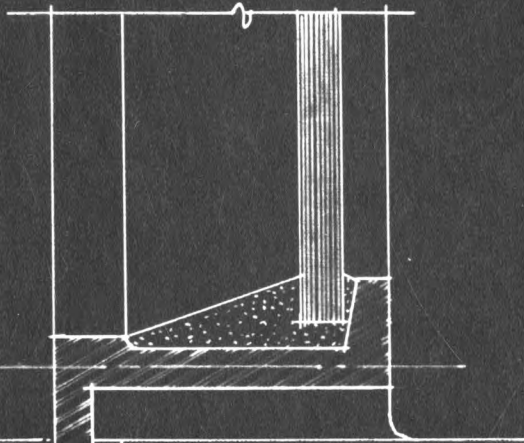


MUNTIN

INSERT



HEAD & JAMB

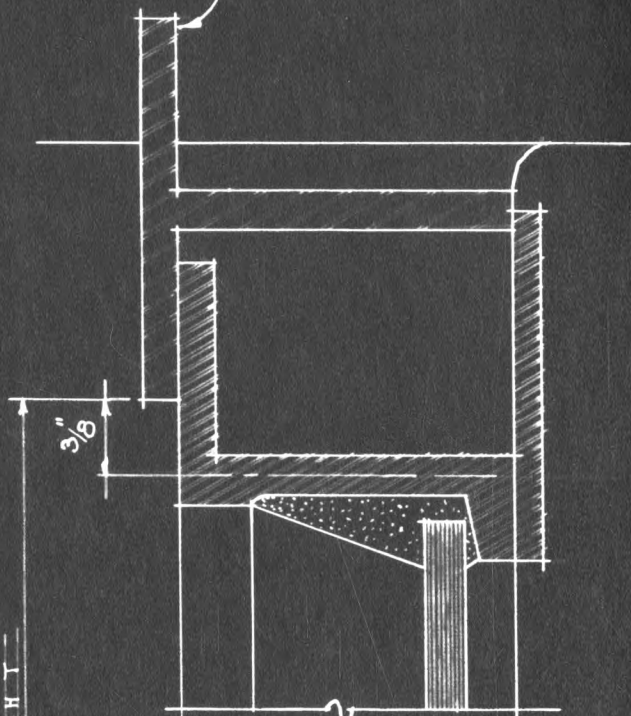


CONCRETE

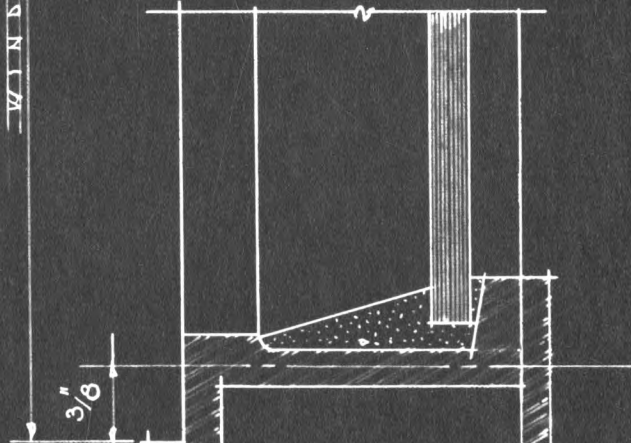
ANCHOR

SILL

STRUCTURAL "T"



HEAD & JAMB

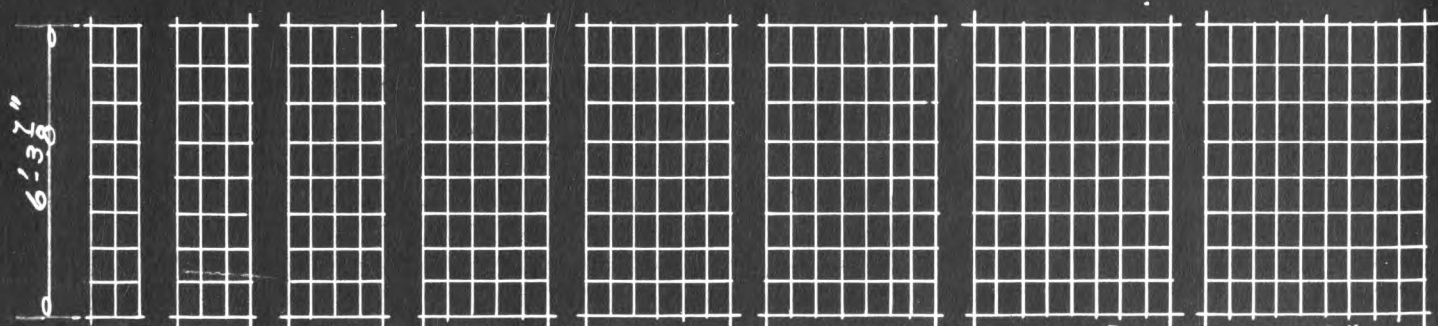
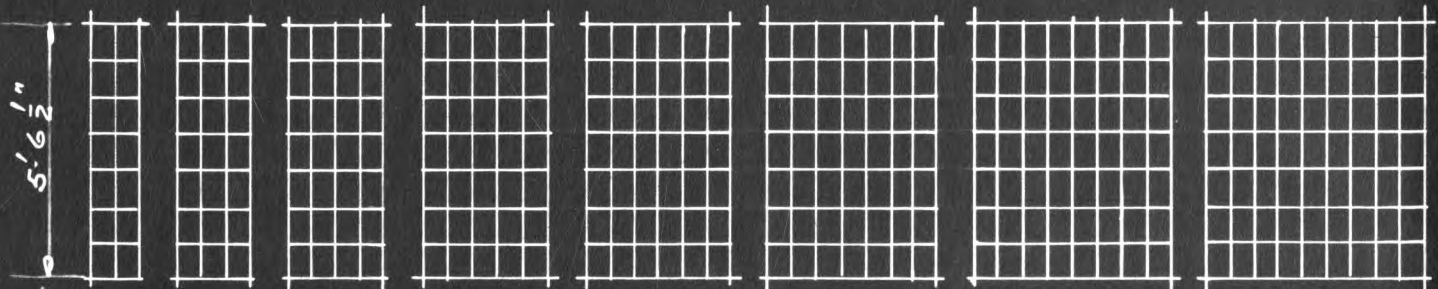
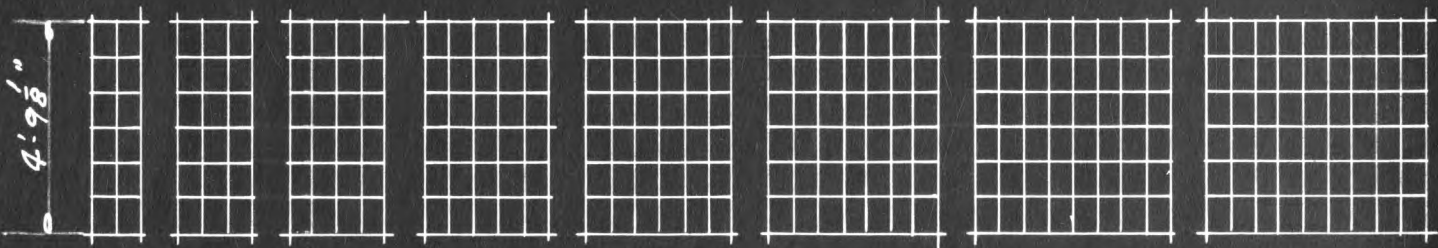
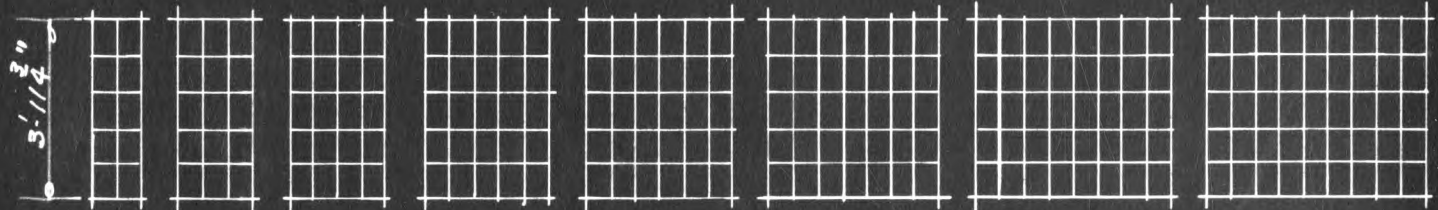
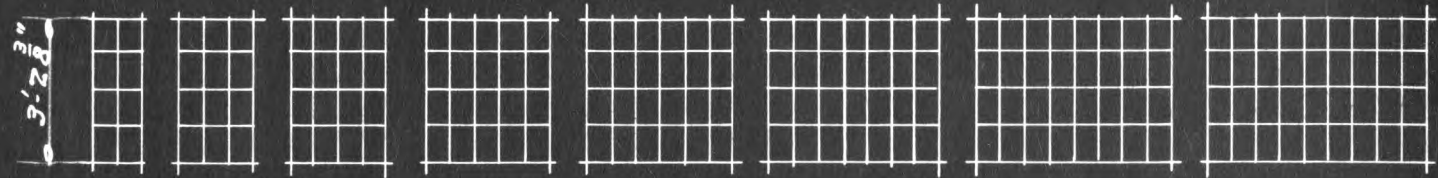
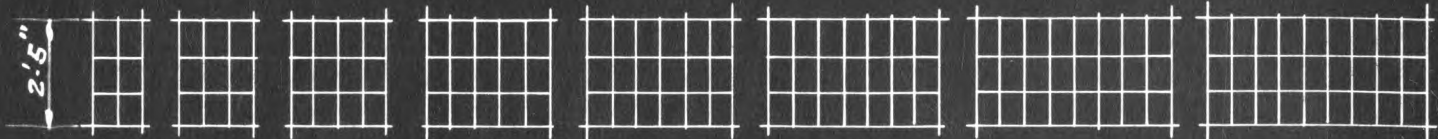
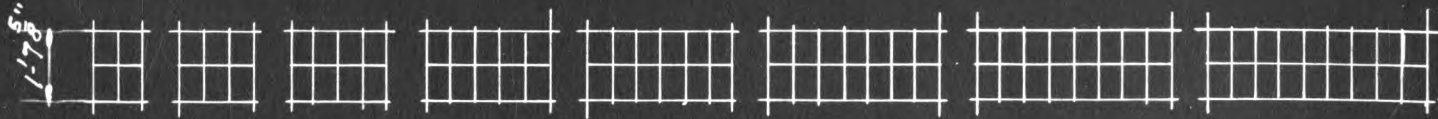


SILL

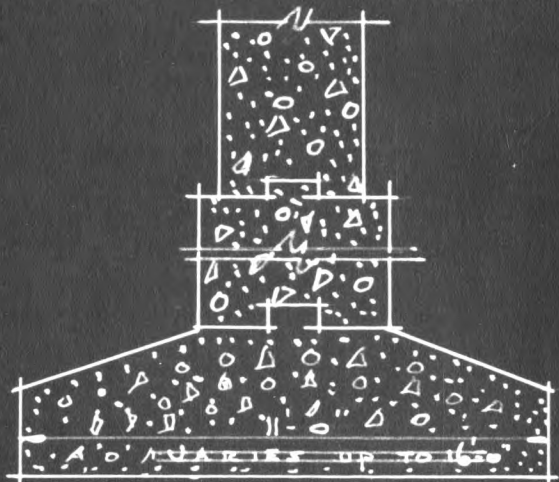
STANDARD SASH SIZES

USED BY STATE OF N.Y.

BAYLEY SPECIAL PRISON SASH

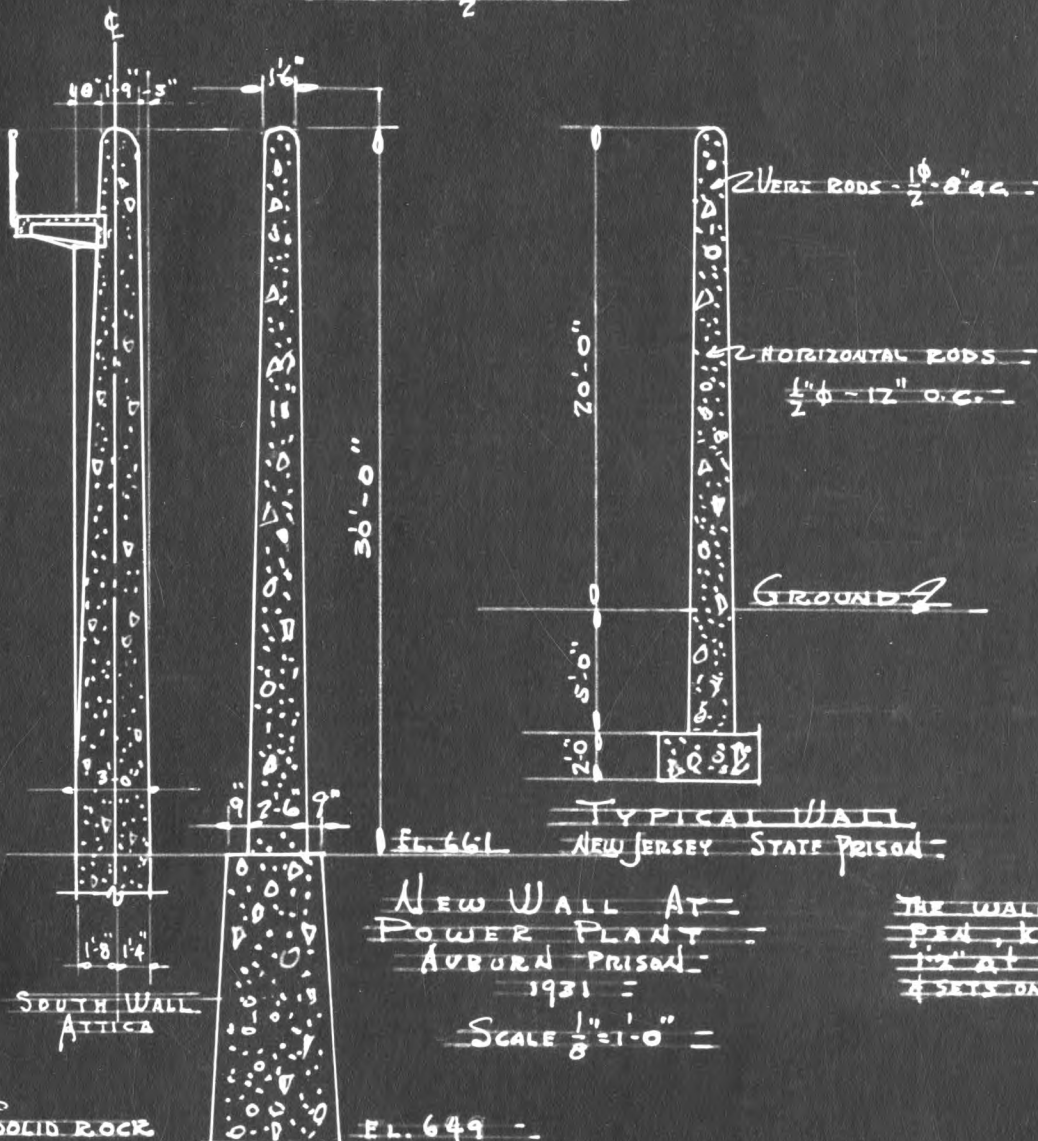


Technical drawing of a mechanical assembly. The drawing shows a vertical component on the left with two circular features. A horizontal component is attached to the side of the vertical component. Dimensions are indicated: 10" for the total width of the assembly, 1'-9" for the width of the main body, and 5" for the width of the base. The vertical component has a height of 3'-6". The horizontal component has a width of 3'-6". The main body is filled with a pattern of small circles and triangles, representing a material or texture. The base is a solid black rectangle.



EXAMPLE OF FOOTING
USED FOR ATTICA PRISON WALL
Scale $\frac{1}{2}'' = 1'0''$

Scale $\frac{1}{2}'' = 1'0''$



THE AVERAGE
HEIGHT OF WALLS FOR
NEW YORK STATE
PENAL INSTITUTIONS
IS 30' ABOVE GRADE &
AT LEAST 4'-0" BELOW
NATURAL GRADE TO
THE BOTTOM OF ALL
FOOTINGS OR AS
DEEP AS IS NECESSARY
TO SECURE ADEQUATE
HEAVING.

THE SURFACE OF
THE WALL MAY BE
PANELED.

NEW WALL AT-
POWER PLANT -
AUBURN PRISON -
1931 -

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

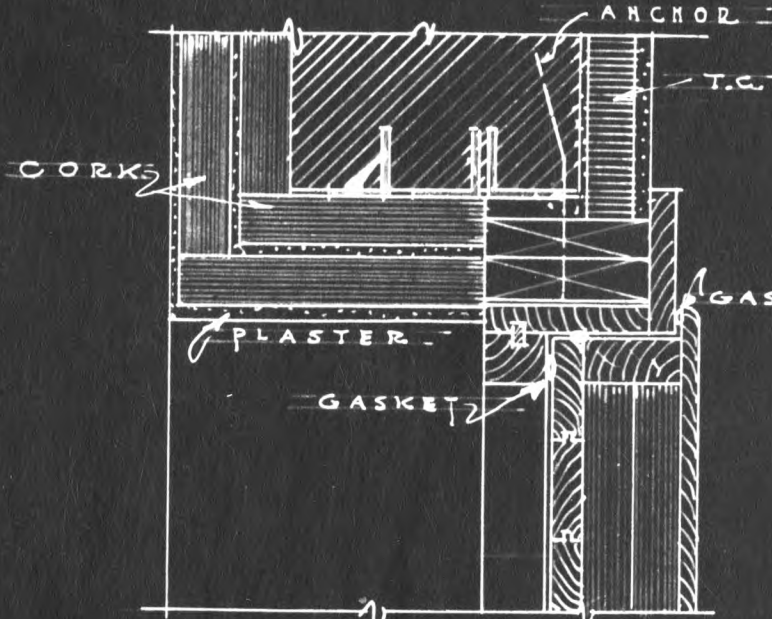
THE WALL AT ALABAMA STATE
PRM, KILBY, IS 26'-0" HIGH,
1'-0" AT TOP, 1'-8" AT BOTTOM
& SETS ON A CONE MAY 6'-0" WIDE

SOLID ROCK

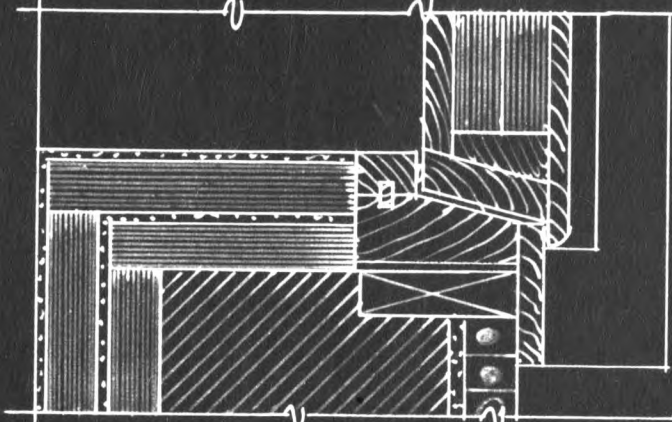
EL. 649 -

REFRIGERATION - DOOR - DETAILS -

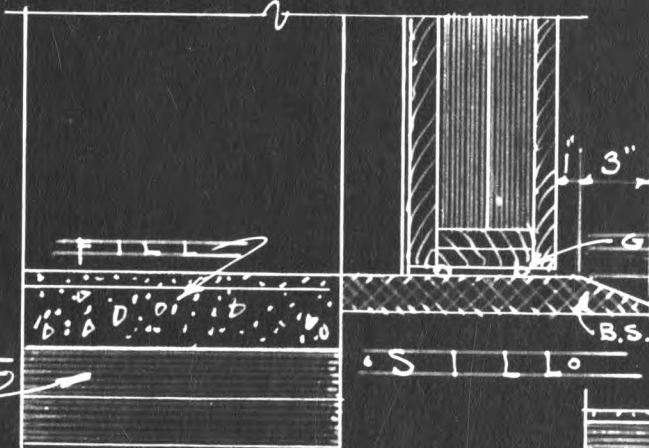
Scale $1\frac{1}{2}" = 1'-0"$



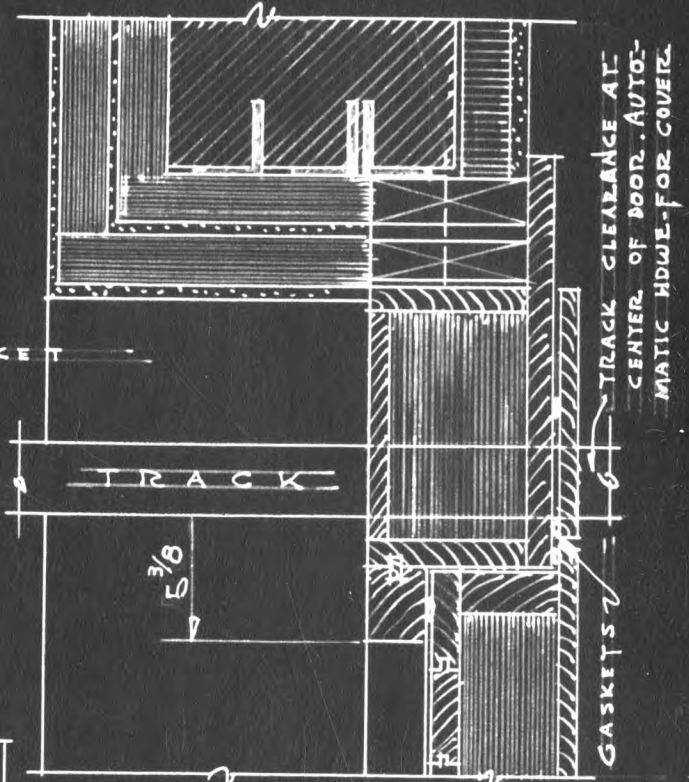
HEAD



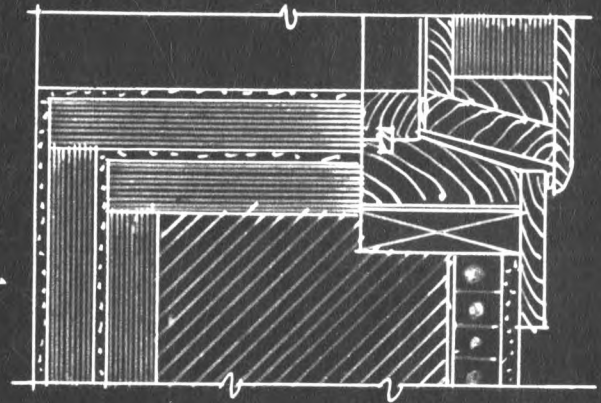
JAMB



REGULAR REFRIG. DOOR

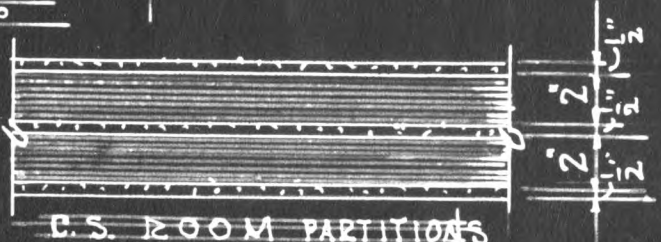


HEAD



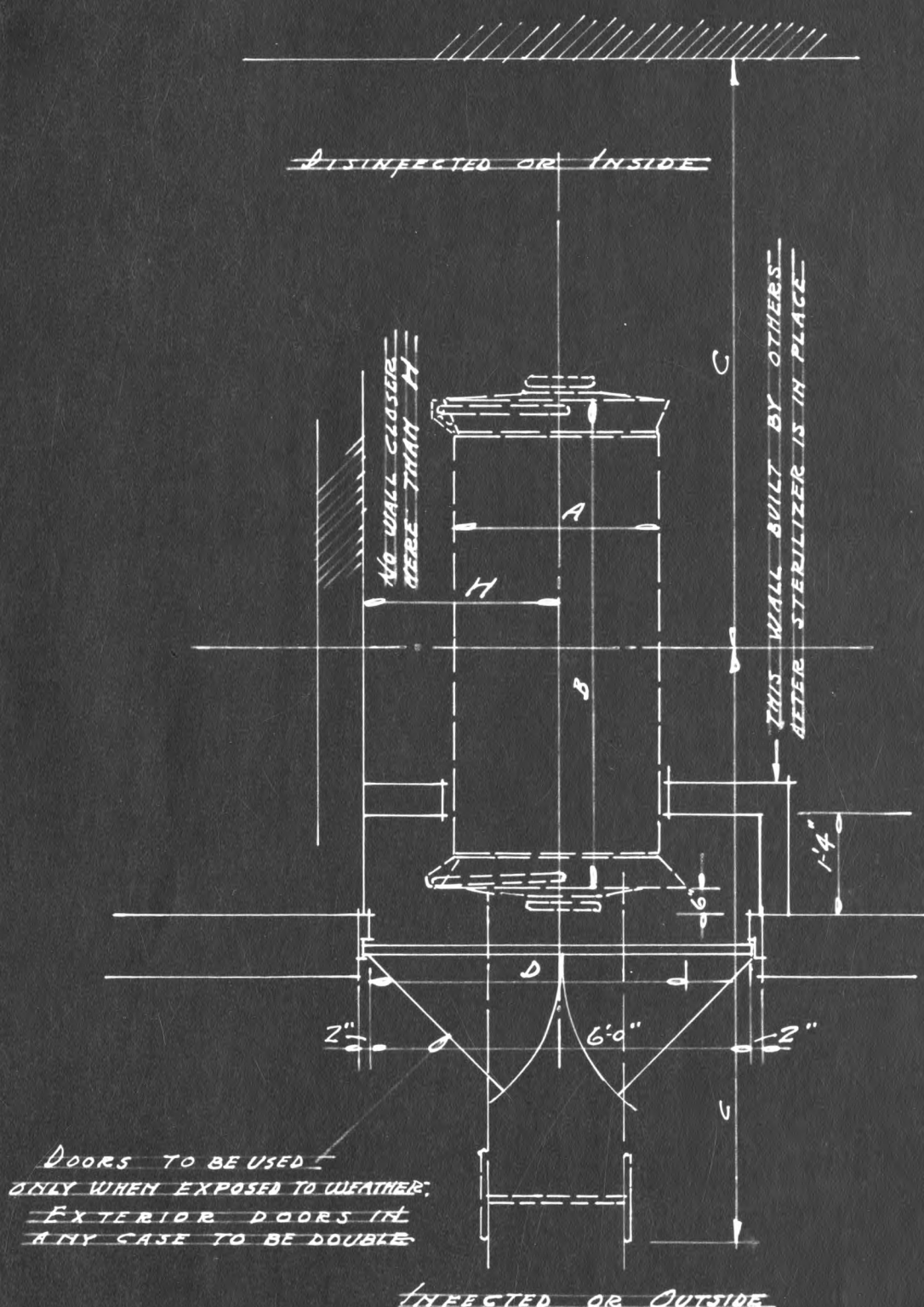
JAMB

DOOR WITH TRACK



STERILIZERS FOR LAUNDRY OR HOSPITAL

OBTAIN PROBABLE SIZE FROM
ENGINEERS



DOORS TO BE USED
ONLY WHEN EXPOSED TO WEATHER;
EXTERIOR DOORS IN
ANY CASE TO BE DOUBLE

RECTANGULAR

SIZE OF CHAMBER	A	B	C	D	H
30' x 42"	2'-11"	7'-10"	11'-5"	4'-7"	32 1/2"
30' x 48"	2'-11"	7'-10"	11'-10"	4'-7"	32 1/2"
36' x 42"	3'-5"	7'-10"	11'-0"	5'-1"	35 1/2"
36' x 54"	3'-5"	8'-5"	11'-5"	5'-1"	35 1/2"
42' x 48"	4'-0"	8'-5"	11'-5"	5'-10"	41 1/2"

CYLINDRICAL

DIA. OF CHAMBER	A	B	C	D	H
24"	2'-5"	6'-0"	8'-6"	4'-0"	29 1/2"
30"	2'-11"	8'-0"	11'-0"	4'-7"	32 1/2"
36"	3'-5"	8'-3"	12'-0"	5'-1"	35 1/2"
40"	3'-9"	8'-4"	12'-0"	5'-5"	37 1/2"
40"	4'-6"	8'-4"	12'-0"	6'-1"	45"

NOTE: DOORS TO BE WHITE PINE AND HAVE EITHER AN
OPERATING VENTILATING LOUVRE IN UPPER PANEL OR IN
TRANSOM & DOORS & FRAME TO BE PRIMED, AND INSIDE
FINISHED WITH ALUMINUM PAINT IN A VARNISH VEHICLE.

· A T T I C A · S T A T E · · P R I S O N ·

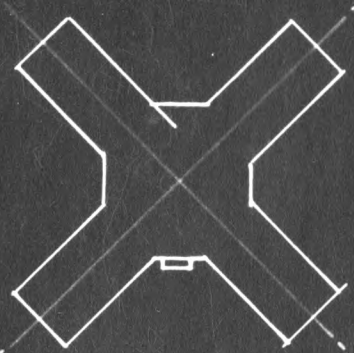
S T R E S S E S U S E D I N S T R U C T U R A L D E S I G N :

<u>S T E E L</u>	<u>18,000 LBS.</u>
<u>f_c</u>	<u>800 LBS.</u>
<u>f_s</u>	<u>18,000 LBS.</u>
<u>M A S O N R Y</u>	<u>250 LBS.</u>
<u>C O N C R E T E</u>	<u>500 LBS.</u>
<u>S O I L</u>	<u>2,000 LBS.</u>

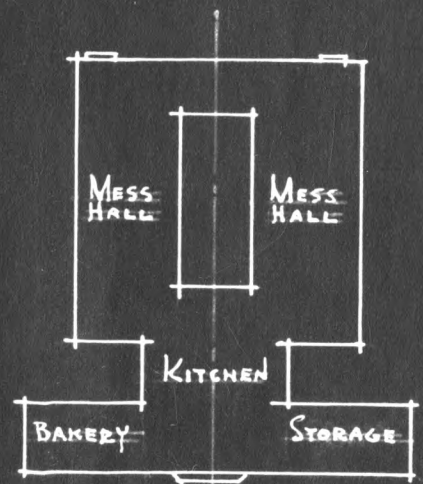
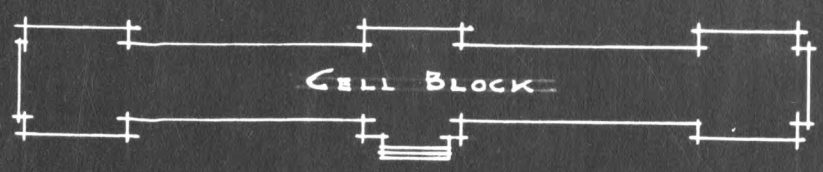
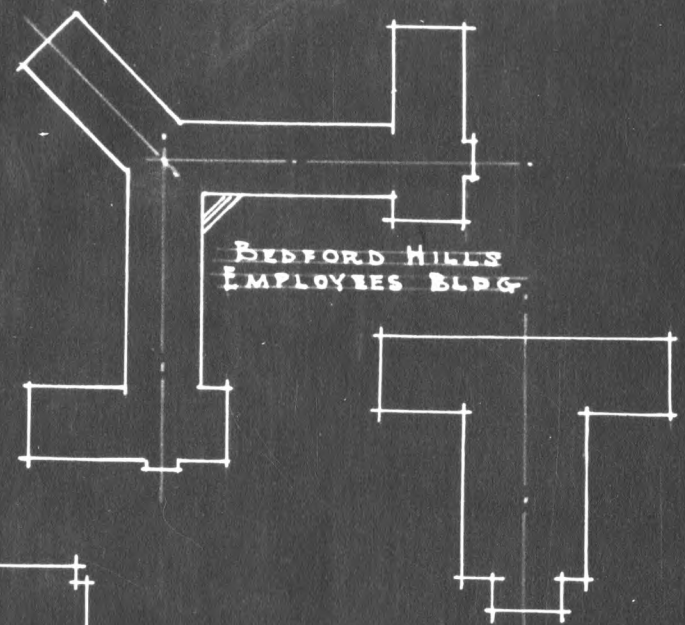
L I V E L O A D S :

<u>C E L L S</u>	<u>60[*]/SQ. FT.</u>
<u>C E L L H O U S E E N T R Y</u>	<u>60 "</u>
<u>G U A R D T O I L E T S</u>	<u>40 "</u>
<u>C L O S E T S</u>	<u>40 "</u>
<u>G U A R D R O O M S</u>	<u>40 "</u>
<u>C O R R I D O R S</u>	<u>100 "</u>
<u>S T O R A G E</u>	<u>120 "</u>
<u>F L A T R O O F (10 20°)</u>	<u>40 "</u>
<u>P I T C H E D R O O F (O V E R 20°)</u>	<u>30 "</u>

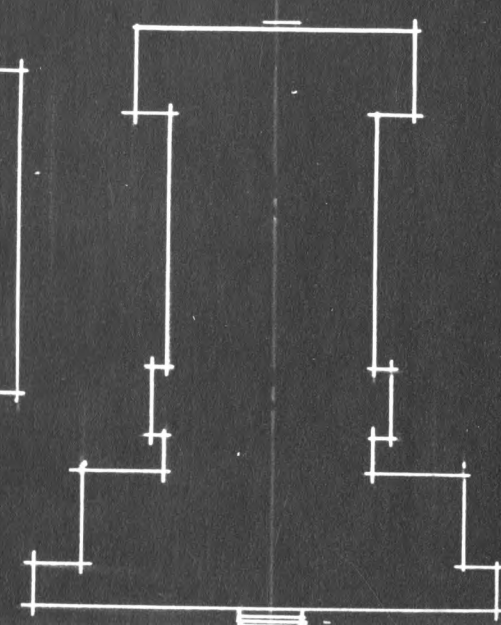
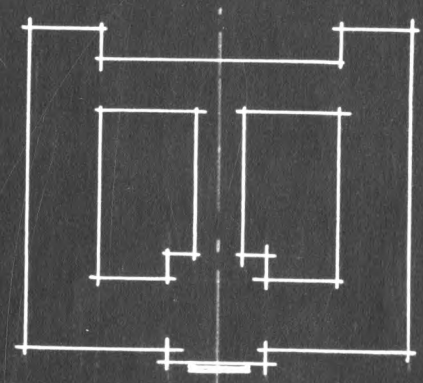
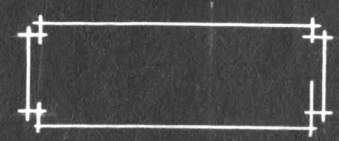
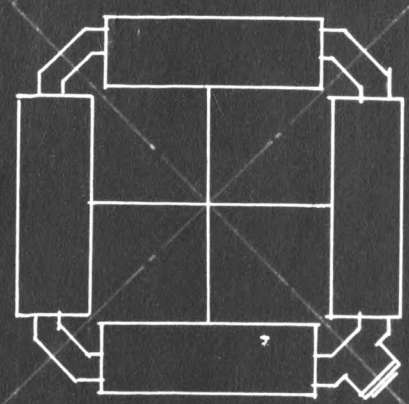
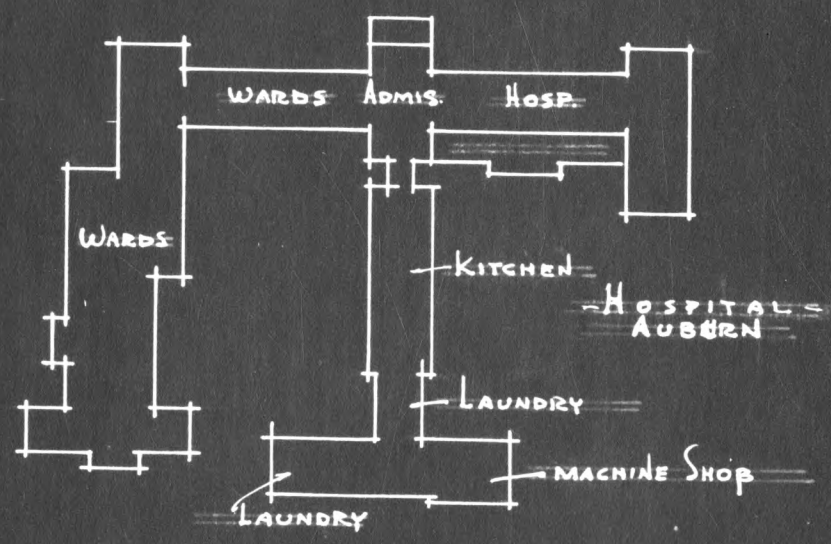
• T Y P E S • O F • P L A N S •



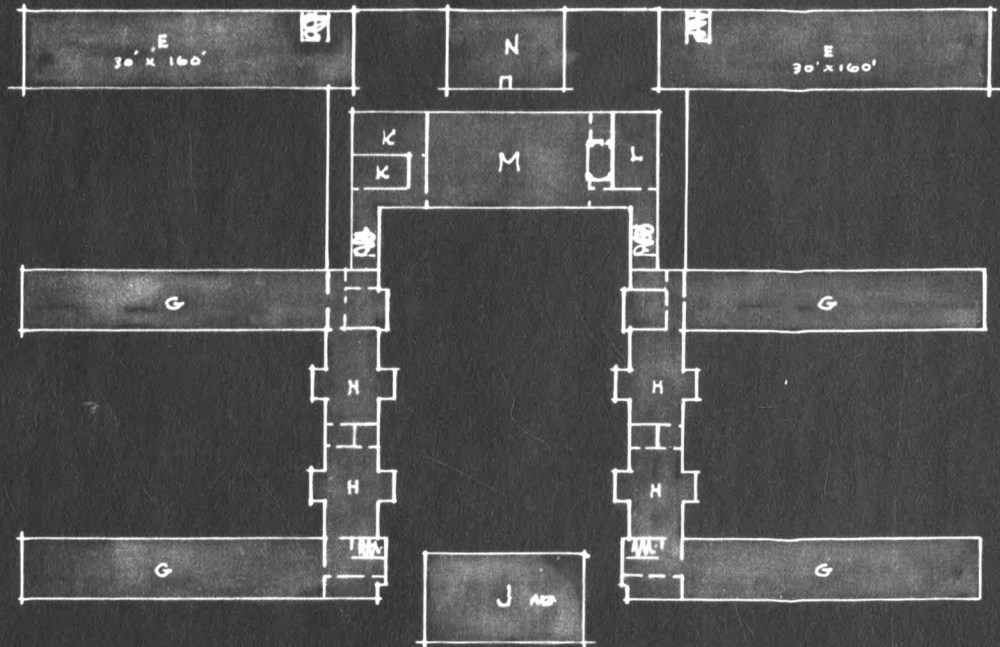
TYPE FOR
CREEDMORE KITCHEN BLDG.



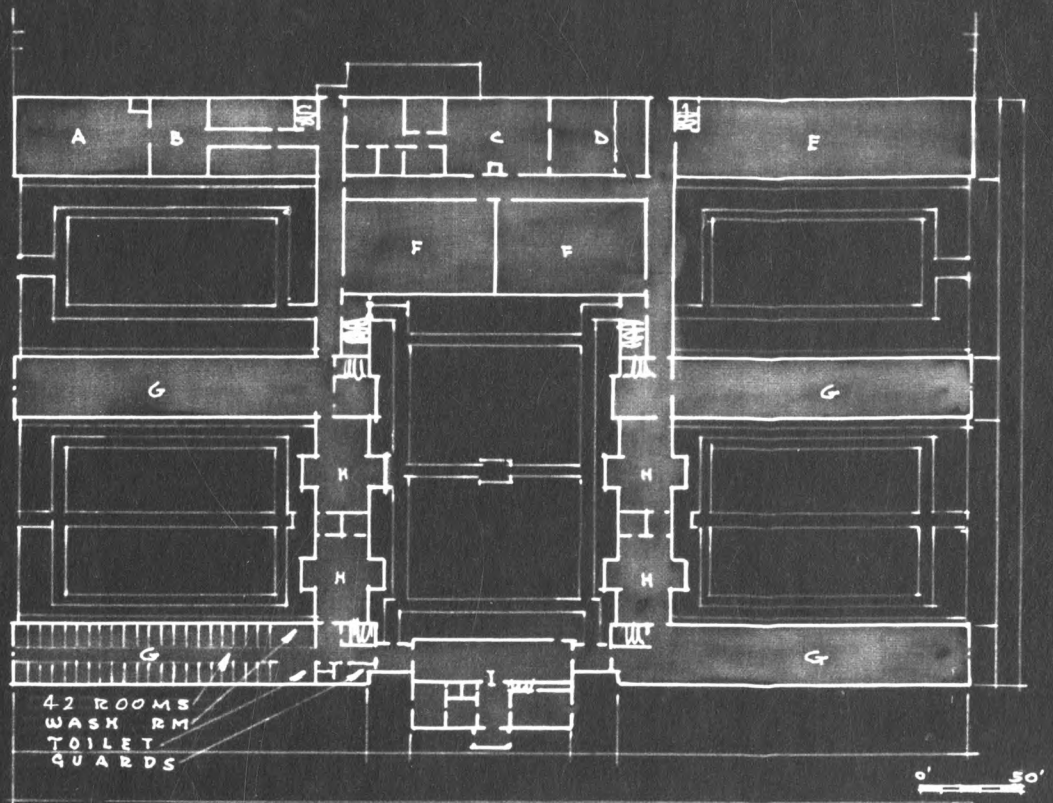
ATTICA MESS HALL
AUBURN MESS HALL



• P R O P O S E D • M I N I M U M • S E C U R I T Y • P R I S O N •
F O R S T A T E O F N E W Y O R K

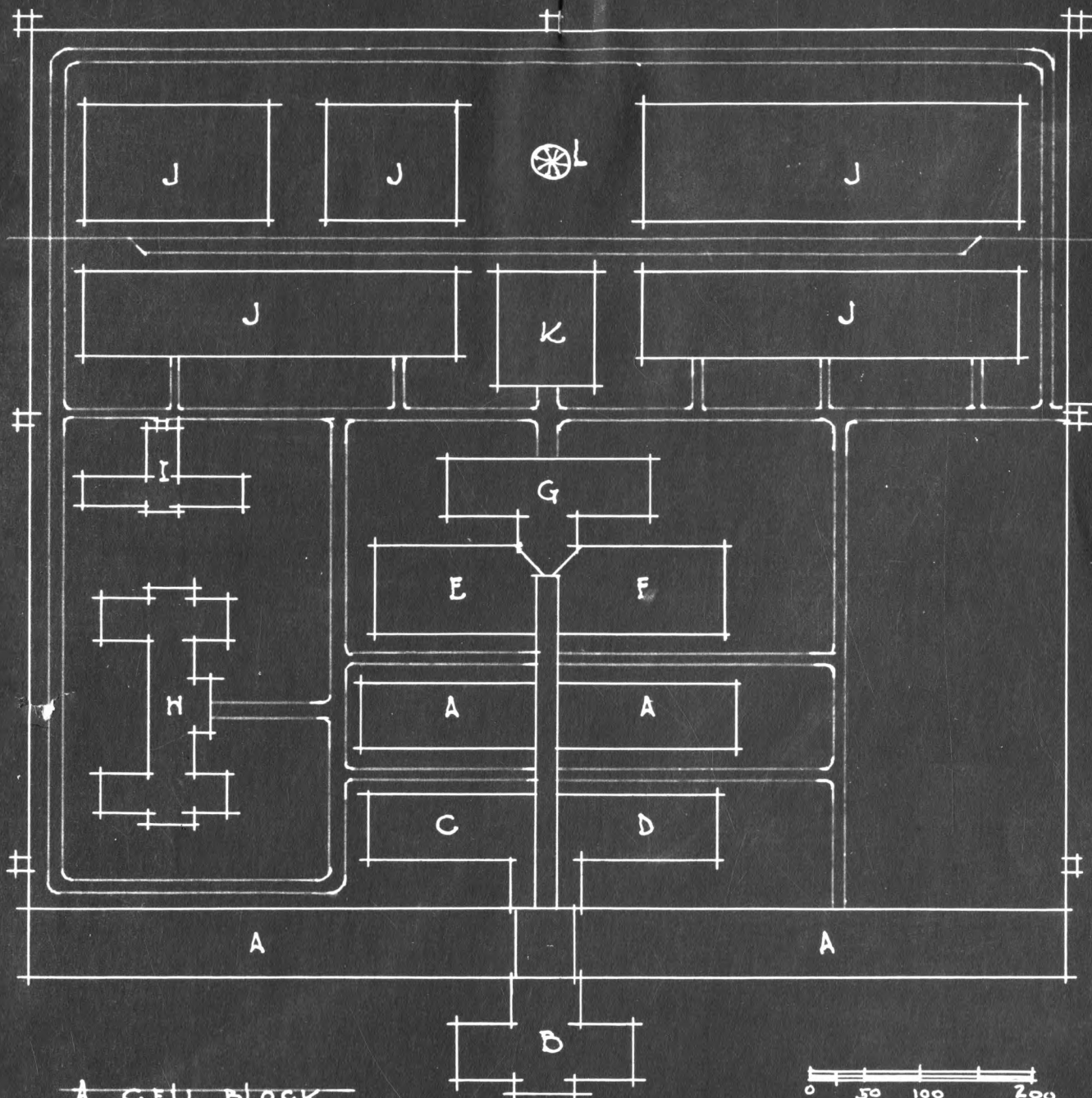


• S E C O N D • F L O O R • P L A N •



• F I R S T • F L O O R • P L A N •

A	LAUNDRY	H	RECREATION
B	REPAIRS	I	ADMINISTRATION
C	KITCHEN	J	HOSPITAL
D	BAKERY	K	CLASS ROOMS
E	SHOP	L	LIBRARY
F	MESS HALL	M	AUDITORIUM
G	CELLS	N	UPPER PART OF KITCHEN



- A CELL BLOCK
- B ADMINISTRATION
- C LAUNDRY
- D RECEPTION & DETENTION
- E MESS HALL
- F CHAPEL
- G KITCHEN & STORAGE
- H HOSPITAL
- I GREENHOUSE
- J SHOPS
- K POWER PLANT
- L WATER TOWER

MICHIGAN STATE PRISON
STILLWATER