

STANDARD DISTRICT PLAYGROUND FOR
SCHOOL AGE CHILDREN.

Albert Ouzounian.

1953

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SCHOOL OF ENGINEERING
PROJECT REPORT



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Project Report

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STANDARD DISTRICT PLAYGROUND
For School Age Children

Studies and Designs

by

ALBERT A. OUZOUNIAN

prepared for

THE ENTERPRISING AND FINANCING COMPANY

Beirut, Lebanon

American University of Beirut

SCHOOL OF ENGINEERING

May 5, 1953

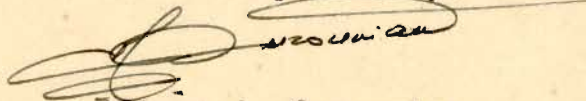
American University of Beirut
School of Engineering
Beirut, Lebanon
May 5, 1953

Mr. C. Ken Weidner
Chairman, Board of Directors
The Enterprising & Financing Co.
Beirut, Lebanon

Dear Sir,

I, herewith, submit the project report of the studies and designs made at your request on a standard district playground for school age children, that would be duplicated in the various districts of the city of Beirut.

Yours Respectfully,

A handwritten signature in dark ink, appearing to read "Ouzounian", with a horizontal line extending to the right.

Albert A. Ouzounian
Engineer

INTRODUCTION

The standard district playground is the chief outdoor center for elementary school children. It is designed to serve the fundamental play needs of children six to fourteen years inclusive. It is also a place where the preschool child can play in a protected area under the supervision of a parent or older child, and where high school children can enjoy games that require little space.

Providing a space to play and gather, the playground helps children to be kept out of mischief by taking them off the streets. At the same time it provides open spaces with sunshine for people living in condensed areas.

A five acre site is needed in order to accommodate adequately the essential features that go on such a type of playground. Studies and designs for a site that has this required area are prepared according to the recommendations of the United States National Recreation Association.

Upon the adoption of the project by the Municipality of Beirut and the Ministry of Social Affairs, this standard playground is to be duplicated in all districts of the city.

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ACKNOWLEDGMENTS

The present project report was made possible after ample reference was made to the following books prepared for the United States National Recreation Association :

1. Recreation Areas : Their Design & Equipment
by George D. Butler
A.S. Barnes and Company, 1947
2. The New Play Areas: Their Design & Equipment
by George D. Butler
A.S. Barnes and Company, 1938
3. Introduction to Community Recreation
by George D. Butler
McGraw-Hill Book Co., Inc., 1940

Other books used for reference are:

4. Architectural Graphic Standards
by Ramsey and Sleeper
John Wiley and Sons, 1952
5. Planning the Neighborhood
by The American Public Health
Association Committee on the
Hygiene of Housing.
Public Administration Service, 1948

PART A

S T U D Y

I. ESSENTIAL PLAYGROUND FUNCTIONS

An understanding of the purposes which the playground is intended to serve is essential to the preparation of a plan for the development of an area for such use. The planner also needs to be familiar with the space and facility requirements for the fulfillment of these purposes.

Among the types of activities which the playground should make it possible to enjoy are:

1. Apparatus play, games stunts and individual activities essential to sound bodily growth and the development and enjoyment of physical skills. These require carefully selected apparatus, space for informal games and activities courts for such games as handball, tennis and horseshoes, and spaces for running and jumping events.
2. Team games and sports which have great physiological values and through team play and cooperative effort contribute to the development of social qualities. Essential to these activities are areas

and equipment for basketball, volleyball, soccer, baseball, softball, touch football and many other games.

3. Activities such as arts and crafts, dramatics, nature and music, which are exceedingly popular with many children, but which cannot be carried on satisfactorily unless special places and facilities are provided for them, out of doors or in the playground building. Among these facilities are tables and benches, an informal stage or theater, a nature museum and a quiet corner for story telling.

4. The informal, individual types of activity which the child enjoys, such as play in the sandbox, the wading pool, the swing and sections of playground not designated for special purpose but available for free play.

5. The study of nature and enjoyment of beauty, as made possible by trees, vines, shrubs, flowers, well designed structures and facilities. Benches at suitable locations contribute to this function of the playground.

II. PRINCIPLES IN PLANNING A PLAYGROUND

The design and development of a playground presents a distinct problem requiring analysis and treatment. The primary purpose of the area and the specific uses it is designed to serve must be determined before a plan for its development can be made. Effective planning utilizes fully the possibilities afforded by the site for the attainment of the purposes desired.

1. Planning Objectives

Certain factors must be considered and certain objectives sought in planning a playground. They should be in the mind of the person who designs the playground and of the officials responsible for approving the plan. Among these objectives are the following:

1. Effective use of the entire site. Since playgrounds are seldom larger than needed, every part of the property should have a definite function and contribute to its utility, or its beauty, or both. The intelligent use of fences and hedges helps to achieve this objective.

2. Provision of essential areas and facilities.

Major or primary features which may possible the activities that are in greatest demand are planned first; minor or incidental features receive secondary considerations in the allocation of space or locations on the area.

3. Multiple use. Wherever practicable, features should be designed to provide varied forms of recreation at different hours or seasons, or for different age or occupational groups. Multiple use increases utility and is economical of recreation space and funds.

4. Adequate space for facilities. To assure satisfactory play, equipment, game courts, playing fields and other features must be allotted ample space. In areas used for such activities as handcraft and quiet games considerable privacy is desirable.

5. Ease of supervision or operation. Some features require constant supervision; others little. This fact is important in determining their location on the area.

6. Facility of circulation and access. Planning should make it easy for persons to come to a playground to engage in or watch activities to reach the sections where these activities are carried on. Facilities for small children for example, are located near the entrance.

7. Utilization of natural features. A natural slope may be used to advantage for an outdoor theater; a grove of trees for a handcraft area, and a large open area for a field.

8. Safety. Careful arrangement of apparatus and game courts on the playground contributes to safety; the proper location of roads and paths in relation to major features must be carefully planned.

9. Economy in construction. Through careful planning expensive operations like grading and drainage may be reduced to a minimum, multiple use of facilities may be secured, and plumbing, surfacing and other costs may be kept low.

10. Economy in maintenance. Maintenance costs often bear a direct relation to construction costs; a small addition to the latter through the use of better materials may result in considerable saving

in maintenance. Careful planning simplifies such operations as grass cutting, hedge trimming, cleaning of pools and buildings, and the care of game courts.

11. Convenience of people using the area. Toilet facilities, drinking fountains, seating accommodations are essential service features. Orientation of game courts and fields is exceedingly important in attaining this objective.

12. Appearance. Every playground should present a pleasing appearance from within and without, even though little space can be made available for plantings. Beauty can be achieved through proper architectural and landscape design.

2. Achieving Planning Objectives

These objectives are achieved by a variety of methods, and their importance varies with different types of properties. In the case of the children's playground, the problem of determining the most essential areas and facilities is comparatively simple. Factors which influence design are the size and shape of the area, its topography, the type of neighborhood or city, needs

to be served, special recreation interests of the people, funds available for development and maintenance and probable amounts and type of leadership. The effective solutions of a particular problem demands, on the part of the designer, an understanding of the recreation needs and interests to be met by the area, a knowledge of the facilities which can meet these needs, their requirements as to space, location and construction, and the ability to arrange these features upon the area in such a way as to produce an effective, attractive plan.

III. ESSENTIAL FACTORS IN DEVELOPING A PLAYGROUND

Certain principles, procedures and features should be considered in the design and development of a playground. They contribute directly to the usefulness of the area and therefore merit careful attention.

1. Survey and Plan

It is unwise to start work on an area until a general plan has been prepared and approved by the proper authorities. Best results are likely to be attained if it is prepared by a competent landscape architect experienced in the design of recreation areas, in collaboration of the recreation executive. Frequently the authorities who are to be responsible for developing and operating the area secure the services of a recreation planner as a consultant. The general plan indicates the location of the various features and affords a basis for orderly development in case the work cannot be completed at one time. Before preparing the plan, the designer needs to know the boundaries of the area, its topography, the location of size of trees and other natural features and

of the sewers and water mains serving it, and the soil, water and drainage conditions upon it.

2. Grading

Comparatively level areas are best suited for most organized games and sports and for many other recreation purposes. Where only uneven land is readily available, it may be necessary to grade it to two or more levels separated by wall or terrace, thus securing the maximum use. The cost of grading and maintaining an area of this sort, however, should be compared with the additional cost of acquiring a level site. Frequently grading is the most expensive item in the construction of a playground. Finished grades should not exceed 2 per cent for those portions where organized sports are carried on.

3. Drainage

The purpose of drainage is to remove excess surface and ground water which would otherwise interfere with the recreational use of an area. The former is usually carried off by inlets and catch basins which are connected with a storm sewer or nearby stream. Ground water

on the other hand is collected and removed by the tile drains laid under the surface of the area. The use of underground drainage system is most common in the construction of special game areas, as tennis courts. The minimum slope for drainage should not fall below 0.5 per cent.

4. Surfacing

Proper surfacing for playgrounds is important for protection of the children. Surfaces of general play areas should be resilient, dust free and quick drying. Sod is best from the standpoint of avoiding injury in the rough play, but may be difficult to maintain under heavy use. Concrete should be regarded as definitely hazardous. Relatively safe surfaces which are easily maintained include asphalt bound pavements containing cork, or other resilient material and fine stone screenings on cinder foundations (settled and bound with calcium chloride). Untreated dirt is dusty and slow to dry after storms.

5. Fencing

The playground should be fully surrounded by fencing or other effective barriers. Low fences are often erected around special features such as the wading pool

and game courts, to protect plantings or to serve as a division between sections of the area.

6. Lighting

Even though children's playgrounds are not used at night, it is advisable, as an aid to policing, to provide sufficient light to make all sections readily visible. Elements essential to successful lighting include the selection of proper equipment and its installation in the correct locations. Neat appearance and permanence are important in lighting fixtures, and the use of steel poles and underground wiring eliminates much of the objections to the appearance of many installations. Lighting is a highly technical problem, the solution of which requires the advice of competent illumination engineers.

7. Water

Water has many uses on a playground. It is needed for shrub plantings and flower beds. The shelter house requires a considerable water supply for the toilets and washbasins. Drinking fountains are needed at the various parts of the playground. An adequate water supply is essential for the wading pool. A definite plan

to care for water needs should be made before work on a playground is begun.

8. Entrances and Paths

Entrances should be placed so as to provide easy and direct access to parts of the playground used by the largest number of children. The fewer the entrances, the easier the problem of supervision. Paths should lead from the entrances to the main centers of interests or activity, such as the shelter house, wading pool, small children's corner. They enable people to reach the various parts of the playground without crossing spaces in active use, thus preventing interference with games and play activities.

9. Maintenance

A well conceived and carefully executed plan is an essential factor in making a playground attractive and successful, but efficient maintenance and control are of great importance in keeping it so. Much savings in labor cost can be achieved through attention to apparently minor details in the design and construction of an area. Continuous care is needed to keep the property in good condition, and the recreation budget should carry an appropriation sufficient to provide for this.

IV. DIVISIONS OF A PLAYGROUND

Because of the widely divergent ages, interests and activities of children using the playground, it is desirable that sections be set aside for special uses. In suggesting definite divisions for the playground, however, it should be emphasized that they are not to be adhered to rigidly. One or more of the divisions may be omitted entirely at some areas; at others divisions may be combined or additional features may be added. Experience has indicated, however, that the following features are usually desirable on a playground and that they are best set aside as separate divisions:

1. Area for children of preschool age
2. Apparatus area
3. Wading pool area
4. Free play and low organized games area
5. Multiple-use paved area
6. Area for field games
7. Area for handcraft and quiet activities
8. Shelter house
9. Landscape area

V. USE OF PLAYGROUND BY ADULTS

Some of the facilities in children's playground are frequently used evenings, Saturdays, Sundays and at other special times by young people and adults. It is well to give consideration to such use when preparing the plans for a playground. Since adults are generally most interested in organized games and sports, it is advisable to plan these special areas so they will be suitable for adult use. Volleyball posts, for example, should be set far enough apart so as to permit a full size court to be laid out, and eye both be provided so that the net may be suspended at the proper heights for both children and older folks.

Often tennis courts are reserved for the use of the adults after 5 p.m. and on week ends. In some neighborhoods it may be desirable for such facilities as handball, horseshoe or badmington courts to be made available for adult play during the evening hours, thereby encouraging families to come together. Special evening events for adults such as community songs,

dramatic events or demonstrations of playground activities can take place satisfactorily on the multiple-use area.

PART B

REQUIREMENTS

I. LOCATION AND SITE

Playgrounds should be distributed throughout the city or a locality so no child is obliged to walk more than 1/2 mile in order to reach one. This distance should be reduced to 1/4 mile in densely populated neighborhoods or where there are unusual traffic hazards. Since the playground is used to a large extent by children of grammar school age, in the well planned neighborhood the best location for the playground is at or adjoining the elementary school site.

The playground should be located as near as possible to the center of the neighborhood it is intended to serve. Location of playgrounds along streets with heavy traffic, railroads, industrial sites or other barriers, or non-residential areas should be avoided.

II. SIZE

The range of the playground size is limited by the minimum area which will accommodate the layout for required activities, and by the maximum number of children who can conveniently participate in all activities. Careful study of the play requirements of children indicates that under normal conditions three and a half acres are needed to provide a well balanced play program where the present or estimated future child population is approximately 600 children between the ages of six to fourteen. If an opportunity to play soccer football is to be provided on the playground, an area of five acres should be provided. Six acres is considered the maximum size for a standard playground. A reasonable standard for the total children's playground space in a city is one acre for each 1000 of the total population. Where the population exceeds 5000 persons two playgrounds should be provided.

III. FUNCTION AND SPACE REQUIREMENTS

Some of the more important considerations in planning the various divisions of the playground are their function, size, location and relationship to one another, equipment and surfacing.

1. Area For Children Of Preschool Age

Function. A place where the young children can play in safety, it prevents them from wandering about in other sections of the playground. This section is not only used by the young children but also by their mothers who often accompany them to the playground.

Size. An average area of 7500 sq.ft. is needed.

Location. It is usually placed near the main entrance so it may be reached easily without crossing other sections. A location near the playground building usually means proximity to the wading pool, which is extremely popular with the preschool group.

Equipment. Equipment commonly provided in the preschool area includes chair swings, low slides, sand box, play houses, junior junglegyms, low teeters and building platform with blocks. Benches should be provided for mothers, and unless the section is partly shaded a pergola or open shelter over or near the sand box contributes to the comfort of both children and mothers. A wide paved walk or track is used for velocipedes, scooters and other wheeled toys, as well as for baby carriages.

Surfacing. Turf, which is ideal for simple games and informal play and which is not harmed by the small children's feet, should be used for part of this section. The circle for wheel toys should be paved. A low fence or hedge around this area is essential in order to keep young children in it, protect them from interference by the older children and afford a degree of isolation for mothers.

2. Apparatus Area.

Function. A place set aside for playground apparatus, it is popular with children of elementary school age.

Size. An average area of 6000 sq.ft. is needed.

Location. A good location for the apparatus area is near the fence and close to the playground entrance. If placed near the shelter house it is readily accessible and easily supervised, unless protected by a fence apparatus should not border an area used for ball games or free play activities.

Equipment. Swings, slides, horizontal ladder, giant stride, junglegym and other climbing devices, horizontal bar, see-saws, gymnasium frame with climbing poles, ropes and ladders, flying rings, traveling rings, merry-go-round, balance beams and others.

Surfacing. Tanbark or a mixture of shavings and sand is used with excellent results in concentrated areas, and is especially recommended under climbing apparatus. A concrete coping or a curb of 2-inch planks enclosing the apparatus area helps keep the surfacing materials in place and discourages children from running through it. Soft landing pits filled with shavings, sawdust and sand or tanbark are needed at the foot of slides and such apparatus as the horizontal bar or ladder.

3. Wading Pool Area.

Function. The wading pool provides a space for children opportunity to enjoy playing with water during hot weather. (For plan and space requirements of the wading pool refer to part D, plate 21)

Size. An average area of 7500 sq.ft. is needed.

Location. A location adjoining the preschool area is desirable. Constructing the wading pool near the recreation building has several advantages. Young children using the pool need ready access to the toilets in the building; construction costs are reduced by having the concrete work done and the water pipes and drains installed as a unit; and the pool and building require close supervision.

Equipment. The necessary equipment for this area are the wading pool, a paved sidewalk around it and benches for mothers.

Surfacing. For the pool a concrete reinforced bottom is usually laid on a base of sand, broken stones or cinders. The sidewalk around the pool is of concrete.

4. Area For Free Play And Low Organized Games.

Function. Children 6 to 12 require an area where they can enjoy informal play activities and running and low organized games without interfering with the more highly organized teams games of the older children.

Size. An average area of 17,500 sq.ft. is needed.

Location. Since this section is used by the same age group as the apparatus area they should be near one another but not immediately adjoining unless separated by a fence, hedge or walk. There is an advantage in having this area near the shelter house and wading pool, which also requires more supervision than some of the other sections.

Equipment. No special equipment is needed for this section.

Surfacing. Turf is the best kind of surfacing, but if the playground is intensively used some other surface is required.

5. Multiple-Use Paved Area.

Function. During seasons when other parts of the playground may be unfit for play due to ground conditions, the multiple-use area is used for many kinds of group play. This area is usually marked off for various court games. It is also used by adults for special evening events such as social gatherings and dances.

Size. An average area of 25,000 sq.ft. is needed.

Location. The location of this section usually lies between the spaces used by the younger children, the open areas used by the team games and the shelter house.

Equipment. The necessary equipment for this section are the removable goals and net posts used for the various court games that can be played on this area.

Surfacing. This area should be paved by a concrete or bituminous surface.

6. Area for Field Games.

Function. This section provides a large open area that can be developed and used for a variety of team

games. Its primary use is for such games as softball, soccer and similar games. Much of the time, however, it will serve for informal play such as kicking football or soccer, knocking out flies, catching or kite flying.

Size. An average area of 125,000 sq. ft. is needed.

Location. The precise location of the game field with respect to the center of control is of relatively minor importance, since the groups using it require less supervision than the younger children. Furthermore, older children can be required to walk farther from the main entrance in order to reach facilities designed for their use. A location along a boundary fence speeds up play and affords a degree of safety.

Equipment. The equipment in this area is limited largely to backstops and goals required for various games; some of this may be of the removable type to facilitate multiple-use during different seasons. Horseshoe courts, goal-hi or tether tennis posts may be installed along the side of the field or in corners where they will least

interfere with the major activities. A portion of the field, preferably near the playground building, may be devoted to lower games.

Surfacing. Field games require a larger level open area, preferably in turf. Unless the playground is relatively level, this section must be developed on the portion that has the least grade.

7. Area For Handcraft And Quiet Activities.

Function. This section provides suitable space and facilities that include arts and crafts, nature, music, drama, folk dancing, storytelling, quiet games and a variety of other activities.

Size. An average area of 8000 sq.ft. is needed.

Location. Because some of the activities a reasonably quiet isolated location it is well to place this area at a distance from the section used for apparatus, the wading pool and the free play. A location near the shelter house is desirable, however, because direct leadership as well as equipment and supplies are required for many of the activities carried on in this section. A wooden slope can be used advantageously

for this section. It is very desirable that this area be shaded by trees.

Equipment. Features suitable for this section of the playground include tables and benches used for arts and crafts activities. Other features include quiet games such as chess or checkers which are popular during hot periods or when only a few children are present. The outdoor stage or theater, platform or special area for folk dancing, council ring and storytelling corner are popular features.

Surfacing. Turf is the best surface for the area used for quiet games and informal activities. It is seldom possible to maintain turf under dense shade or under the tables and benches, so in such parts of the area a special surface such as clay or gravel is more satisfactory.

8. Shelter House.

Function. The shelter provides spaces for: separate toilet rooms for boys and girls; a director's office; storage space (the office and storage room may be combined); and a covered porch. (For plans and space requirements of the shelter house refer to part D, plates 22 and 23).

Size. An average area of 6000 sq.ft. is needed.

Location. The building should be reached easily from the main entrance and be readily accessible from the various divisions. When it is well designed and placed near the main entrance, and the immediate surroundings are effectively landscaped, persons entering or passing the playground gain a favorable impression of the area. As suggested earlier, it should be near the preschool area and not far from the wading pool and other sections used by the younger children.

Equipment. The girls toilet room provides three toilets and a lavatory. The boys room provides two toilets, one urinal and a lavatory.

The office generally provides a desk, two chairs, a large cabinet for supplies, a filing cabinet, a locker for clothing and other miscellaneous equipment. A couch for use in case a child be injured or become ill is a desirable feature.

The playroom provides tables for games and crafts and built in bookcases. A piano is useful for many activities.

The flagpole and a drinking fountain are frequently placed near the entrance to the building.

Architecture. The type of architecture should be appropriate to the general neighborhood and the location of the building or the site; its location and architecture affect not only the general design and appearance of the area but the arrangement of the other divisions.

9. Landscape Area.

Function. The landscape area introduces natural beauty into the different parts of the playground.

Size. An average area of 15,000 sq.ft. is needed.

Location. The most common location for landscaped areas are between the fence and an abutting sidewalk in front of or surrounding the shelter house, near the main entrance or in a corner set aside for the playground theater or children's gardens. Parts of the playground that have steep grade, can usually be best used as a planted area.

Equipment. Plants comprise the only kind of equipment necessary for this area.

Surfacing. Turf is the most appropriate type of surfacing that can be used on the landscape area.

IV. TOTAL SPACE REQUIREMENTS.

No specific amount of space or percentage of the total playground area can be prescribed for the various playground divisions because conditions and needs in different neighborhoods vary widely and site limitations require many adaptations in design. Rarely is the entire playground area divided into clearly defined units. Nevertheless, experience has indicated the approximate space requirements of the various divisions. The table that follows indicates that a site between four and six acres is required for the facilities needed to make possible the activities listed at the beginning of part B.

<u>Name of Division</u>	<u>Suggested space in sq.ft.</u>		
Area for children of preschool age	5000	to	10000
Apparatus area	4000	to	8000
Wading pool area	5000	to	10000
Area for free play and low organized games	10000	to	25000
Multiple use paved area	20000	to	30000
Area for field games	100000	to	150000
Area for handcrafts and quiet activities	6000	to	10000
Shelter house	4000	to	8000
Landscape area	10000	to	20000
	<hr/>		
Total	164000 (3.77 acres)		271000 (6.22 acres)
Average total area	5.00 acres		

V. PLAYGROUND APPARATUS

Apparatus has an important place on the playground because the children enjoy it; it is body developer; it is useful in developing skills, and it provides an outlet for the surplus energy of children. Most types require relatively little supervision. Therefore, the provision of apparatus makes it possible for leaders to take care of a large number of children. Furthermore, it permits variety in the program and provides an offset to the highly organized activities. Many children are attracted to the playground by the apparatus, but remain to engage in other activities.

Because apparatus on public playgrounds is used by large numbers of children of varying ages, it is essential that it be constructed in such a way as to minimize hazards and to withstand the strenuous use to which it is subjected. The design, materials and workmanship should be such as to insure safety, durability, serviceability, economical maintenance, simplicity of supervision and developmental and recreational value.

According to the United States National Recreation Association, the minimum standards recommended are:

For preschool age children (under 6 years)	Chair swings (set of 6) Sand box Small slide Simple low climbing device
For children of elementary school age (6 to 12 years and older)	Swings - frame 12' high (set of 6) Slide - 8' high (approx. 16' long) Horizontal ladder giant stride balance beam Horizontal bar
Optional - if available funds, space and attendance justify	Travelling rings See-saws (set of 3-4) Low climbing device

(For diagrams and space requirements of playground apparatus refer to part D, plates 1 through 8 inclusive)

VI. GAME AREAS

Areas and facilities set aside for active games and sports occupy a large percentage of most active playgrounds. A knowledge of the spaces and facilities is therefore essential to the designing of an area for recreation use. It is recommended that recreation officials and planners consult copies of the official rules and dimensions as well as suggestions for laying out the various game areas.

Courts and fields must be well designed , constructed and maintained if they are to provide satisfactory playing conditions. For most games in which the play is primarily lengthwise of the court or the field, they should be laid out with the long axis north and south. The boundary lines of all courts should be marked plainly since this facilitates accurate play and the enforcement of rules.

Courts are frequently used not only for more than one type of game, but by persons or children of different

ages. Before erecting permanent standards consideration should be given to the possibility of multiple use of the court or the field and the posts should be set the necessary distance apart to permit such use.

The games most commonly played on playgrounds by children are: badmington, basketball, goal-hi, handball, hopscotch, horseshoes, marbles, paddle tennis, soccer, table tennis, tennis and volleyball. Diagrams and space requirements are given in part D, plates 9 through 20 inclusive. Official dimensions are indicated in the case of games for which official or standard rules have been adopted governing size, layout, and equipment of the playing court or field. It should be kept in mind that these rules are frequently modified to meet local conditions, such as limited space and funds, and that such modifications are often desirable in order to make possible the maximum amount of play. Many games can be played satisfactorily on areas that do not entirely conform to regulations.

PART C

DESIGN

I. THE DESIGN OF A PLAYGROUND FOR A FIVE-ACRE SITE.

A standard district playground is designed according to the recommendations of the United States National Recreation Association. The design follows the principles stated in part A and the requirements stated in part B of this report.

The dimensions of the site considered are 400 x 540 ft. This site satisfies the space requirements as stated in part B, section II, where it is mentioned that an average area of 5 acres is needed in order that a playground could be developed adequately with all the necessary features. The orientation of the long axis of the playground is along the north-south direction.

A site plan indicating the arrangement of the various divisions of the playground is prepared. The apparatus to be used on the playground is selected according to the minimum standards recommended in part B, section V. In selecting the type of games for the courts and fields, attention is paid to the local interest of

children. The game courts and fields that are provided for are the ones that are mentioned in part B, section VI.

PART D

DRAWINGS

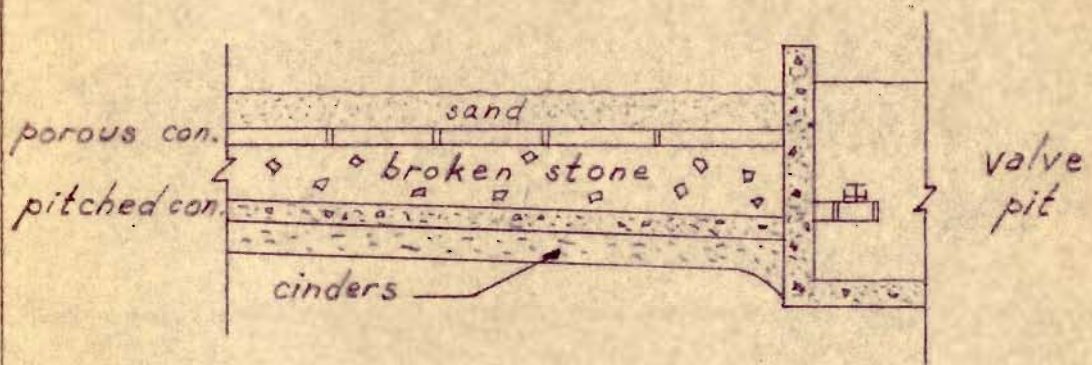
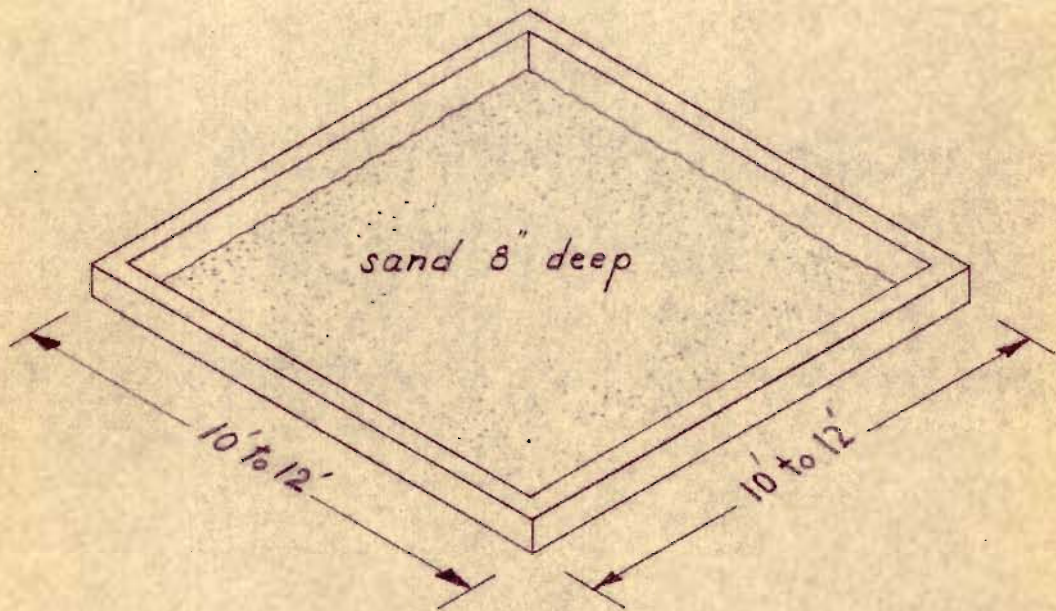
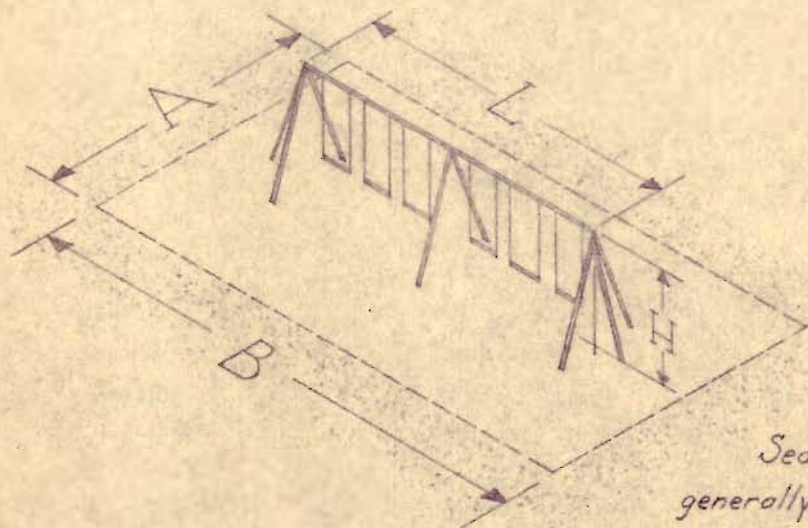


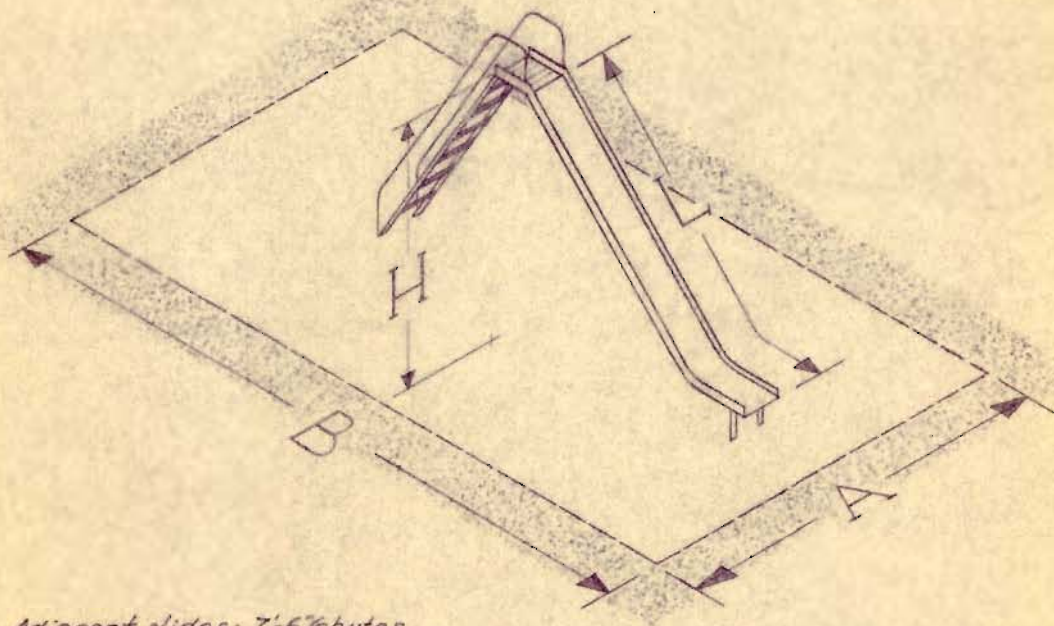
Plate 1. Diagram and details of SAND BOX.



*Seats & chairs
generally 1'-6" from
ground*

S W I N G S										
Number of Swings	Chair Type			Seat Type						
	L	A	B	L	A	B	A	B	A	B
2	8	17	24	9	17	25	21	25	25	25
3	10	17	26	15	17	31	21	31	25	31
4	16	17	32	18	17	34	21	34	25	34
6	20, 24	17	38	27, 30	17	46	21	46	25	46
8	.	.	.	36	17	52	21	52	25	52
9	.	.	.	45	17	61	21	61	25	61
Height	8'			8', 10', 12'	8'	10'				12'

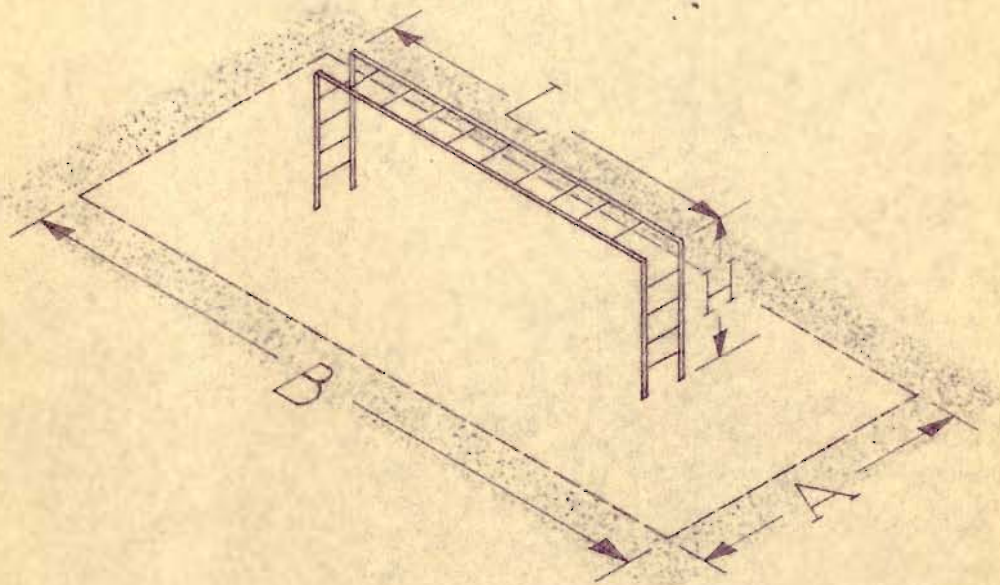
All dimensions in feet.



Adjacent slides: 7'-6" (chutes
c.to.c.) Others 10'-0" o.d.

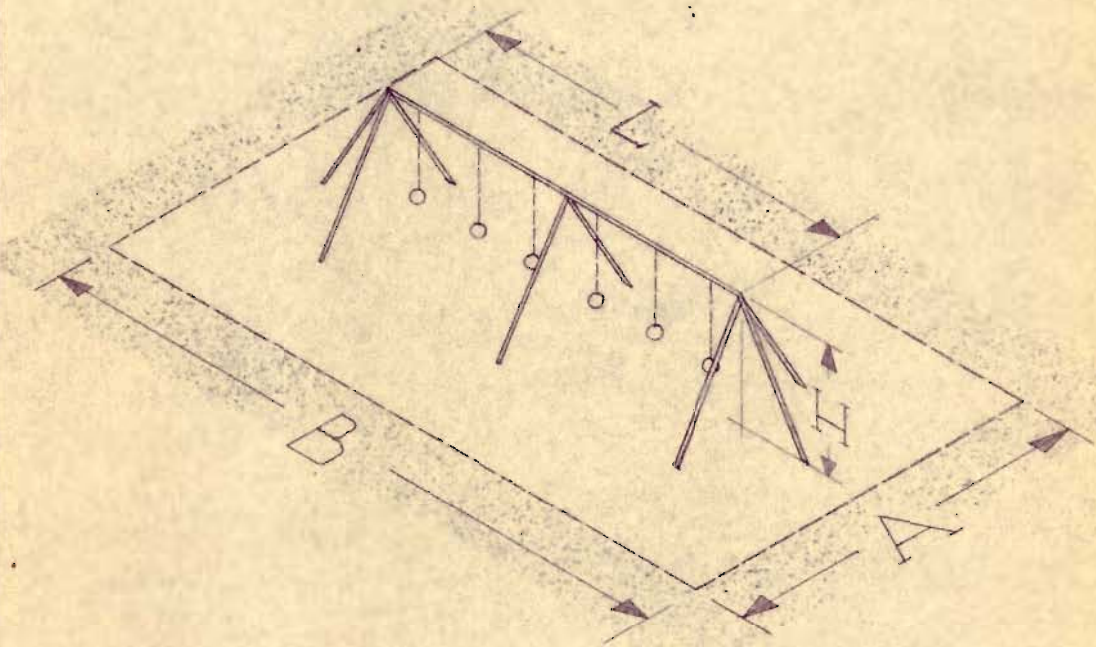
SLIDES							
H	L	Nursery		Straight		Racer	
		A	B	A	B	A	B
5	10	8	20	.	.	.	.
6	12	8	22	.	.	.	.
7	14	8	24	.	.	.	.
8	16	.	.	12	30	20	30
10	20	.	.	12	35	20	35
12	24	.	.	15	40	25	40
13½	30	.	.	15	45	25	45

All dimensions in feet.



HORIZONTAL LADDER			
Height	Length	A	B
6	12	8	25
7½	16	8	30

All dimensions in feet.



TRAVELING RINGS			
Height	Length	A	B
10	36	20	60
12	36	20	60

All dimensions in feet.

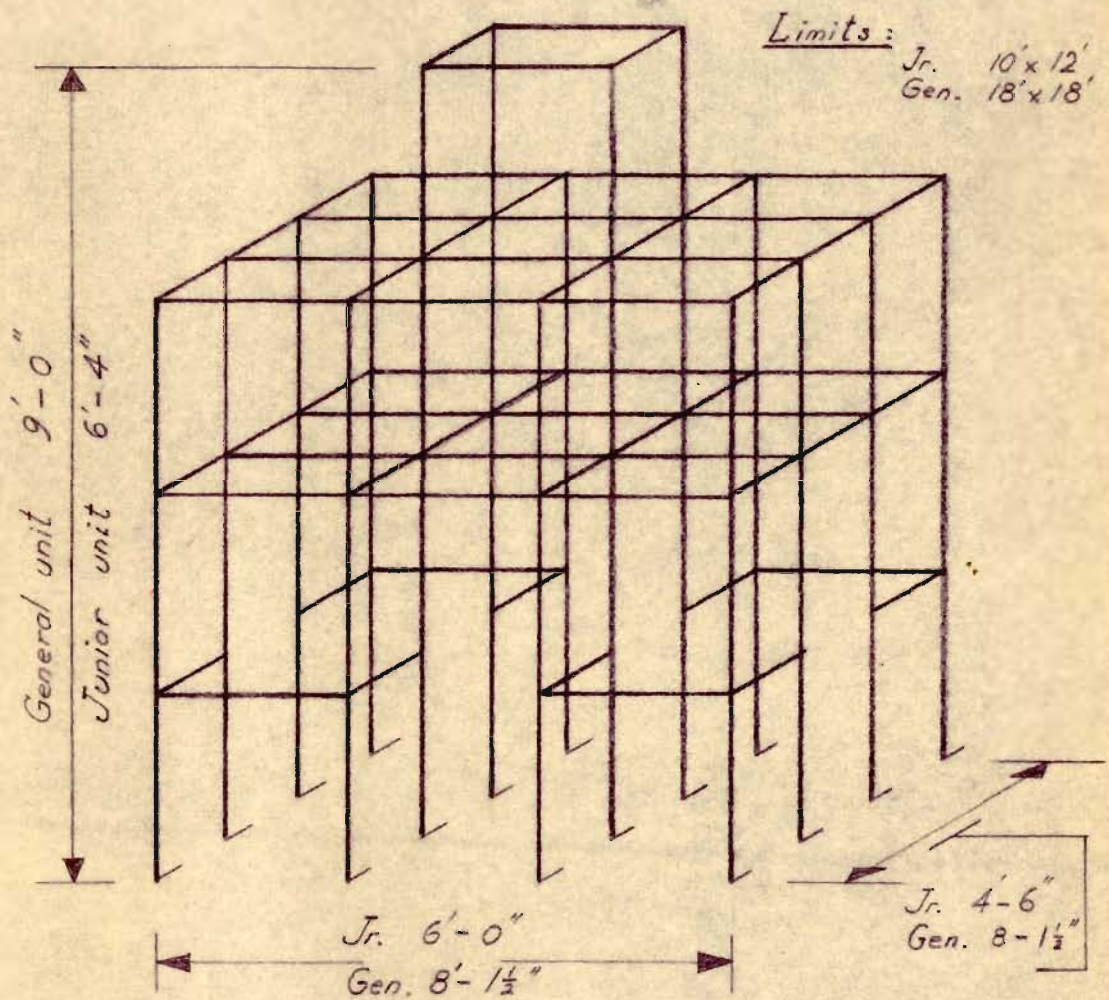
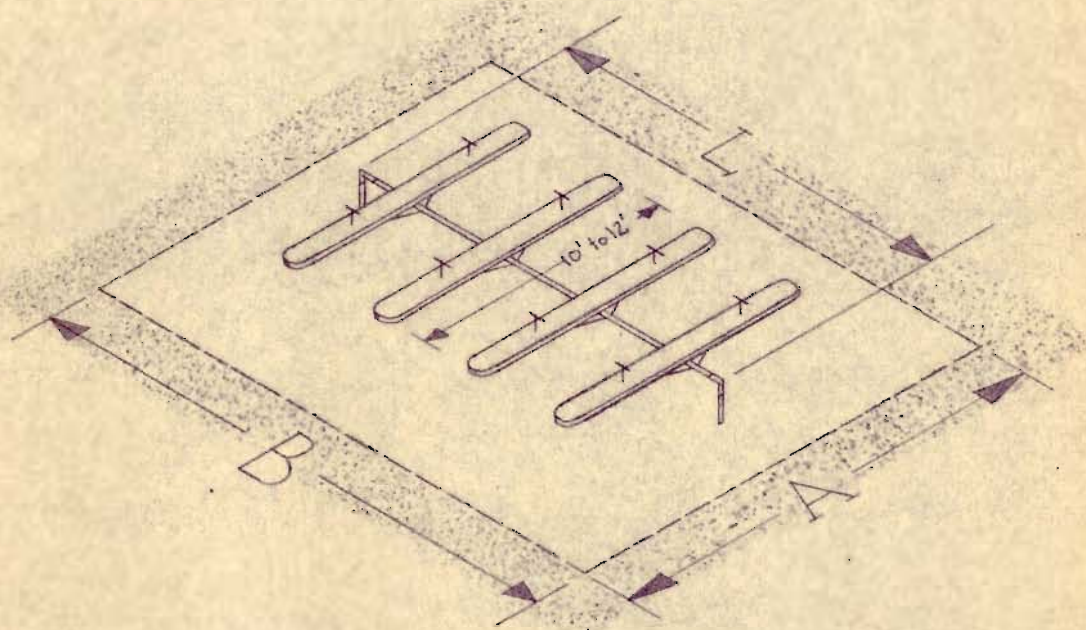


Plate 6. Climbing structure - JUNGLEGYM

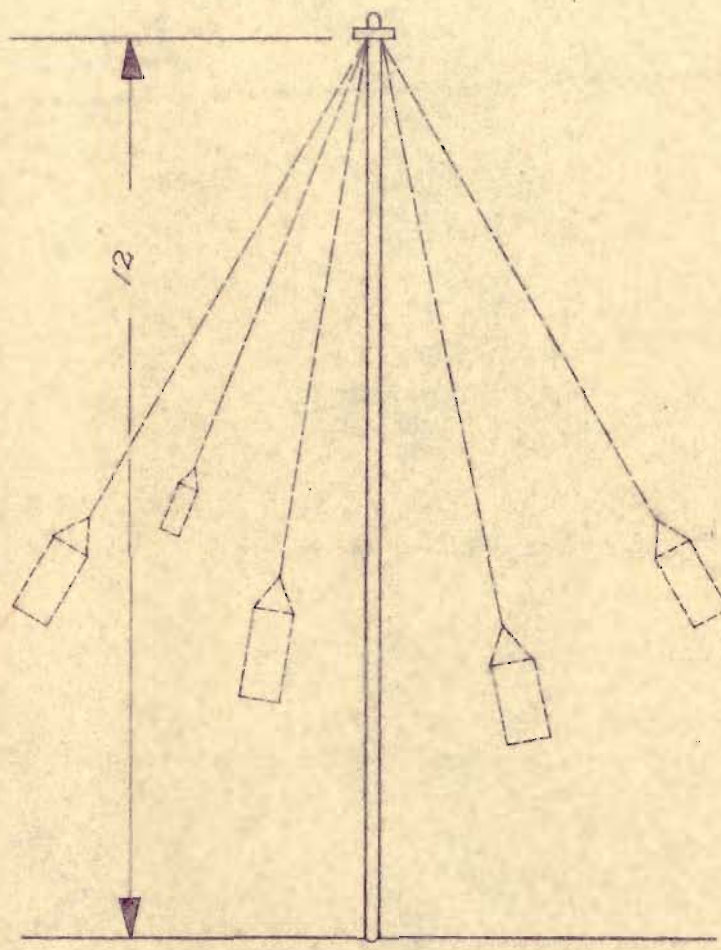


Height of ctr. pipe
1'-0" to 3'-0"
above ground.

TEETERS (See - Saws)

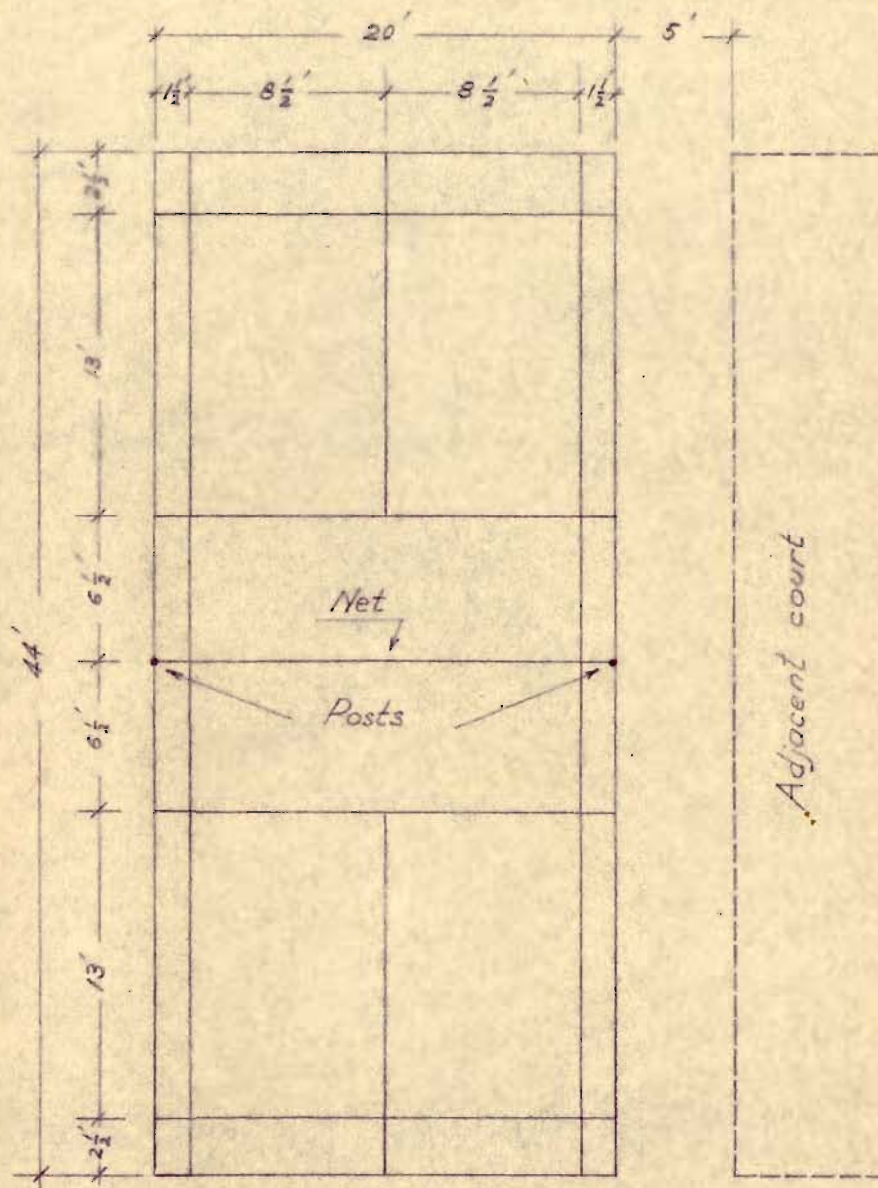
Boards	L	A	B
1	3	20	5
2	6	20	10
3	9	20	15
4	12	20	20
6	18	20	25

All dimensions in feet.



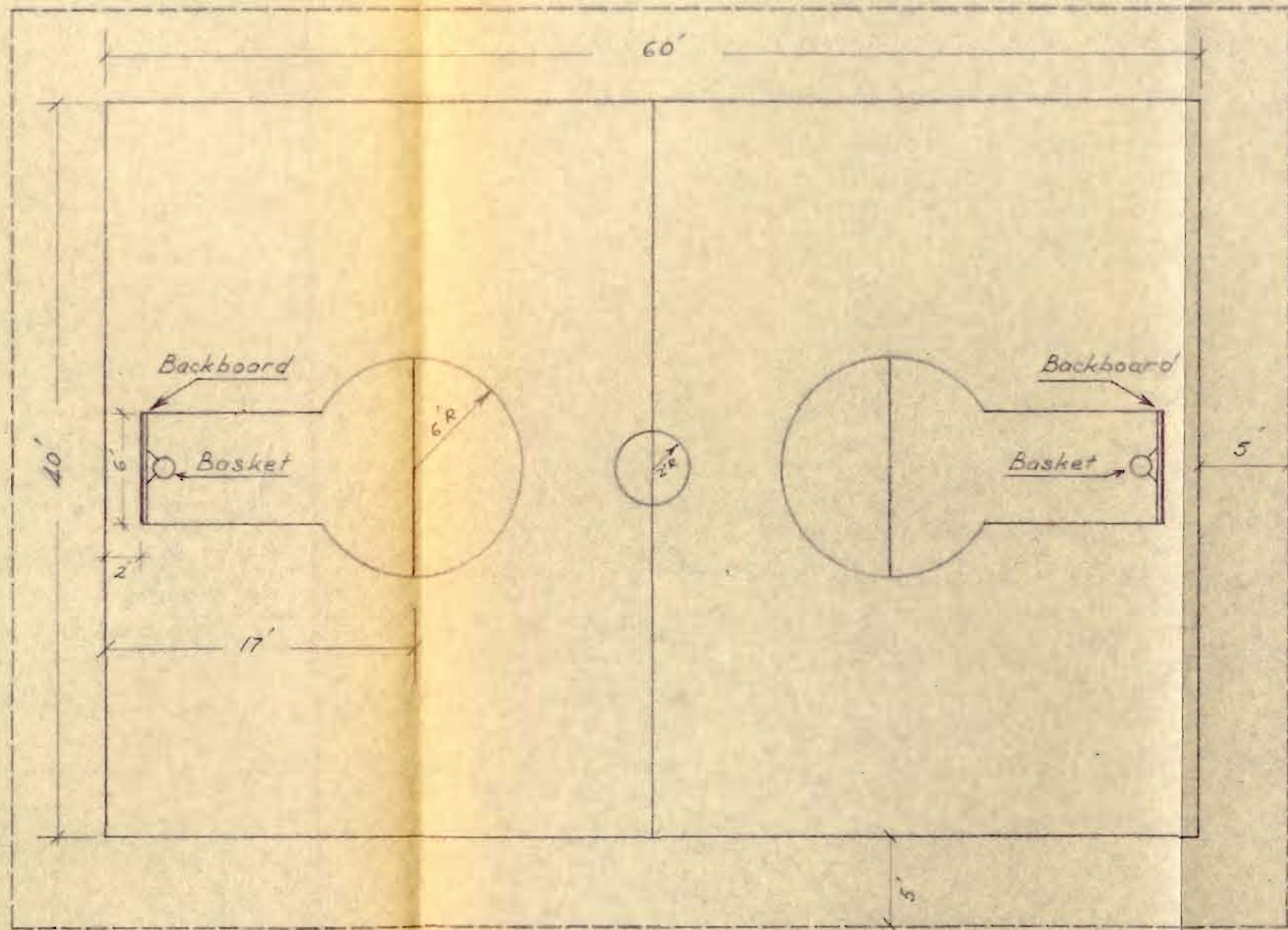
Space required 30' diameter

Plate 8. THE GIANT STRIDE



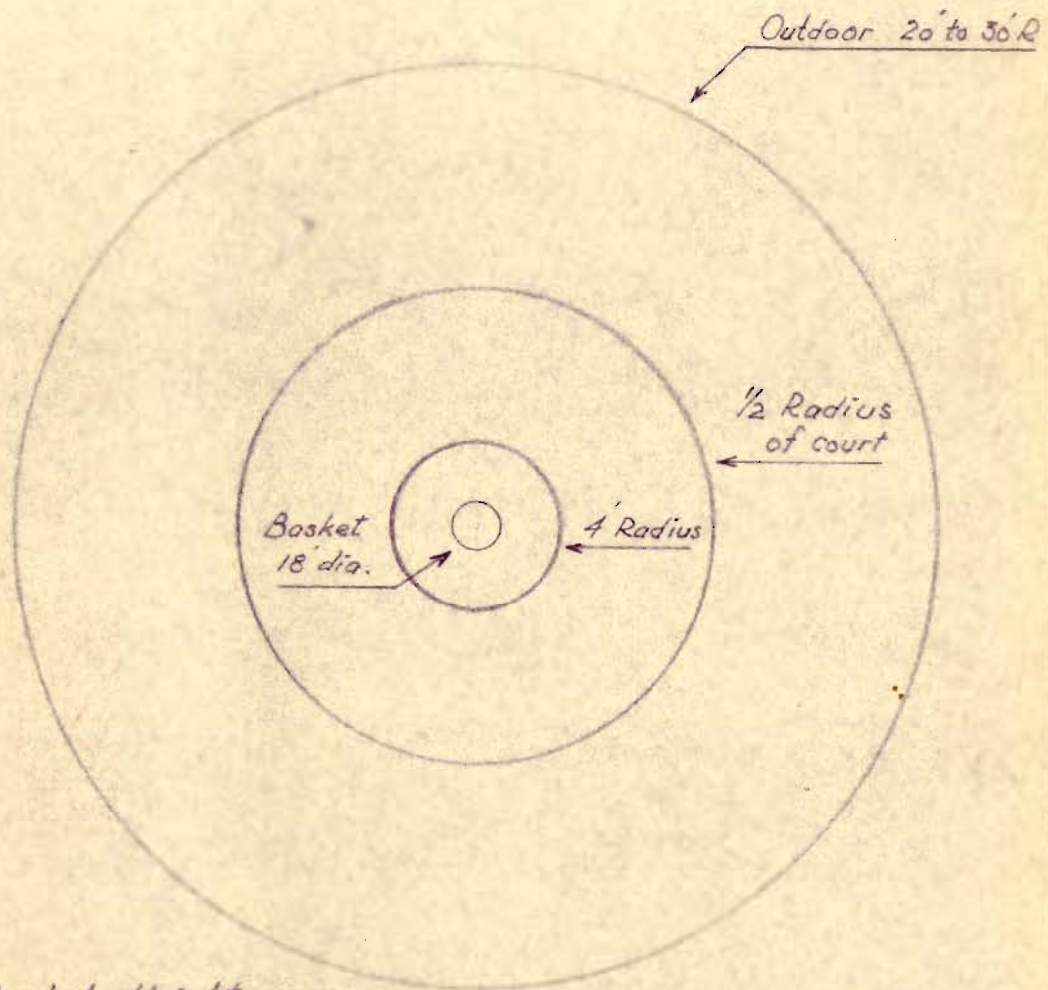
SCALE 1:100

Plate 9. Diagram of BADMINGTON COURT.



SCALE 1:100

Plate 10. Diagram of BASKETBALL COURT.



Basket Heights:

- 8' height - Elem. Sch. use
- 9' " - Junior H.S. "
- 10' " - H.S. & College

SCALE 1:100

Plate 11. Diagram of GOAL-HI COURT.

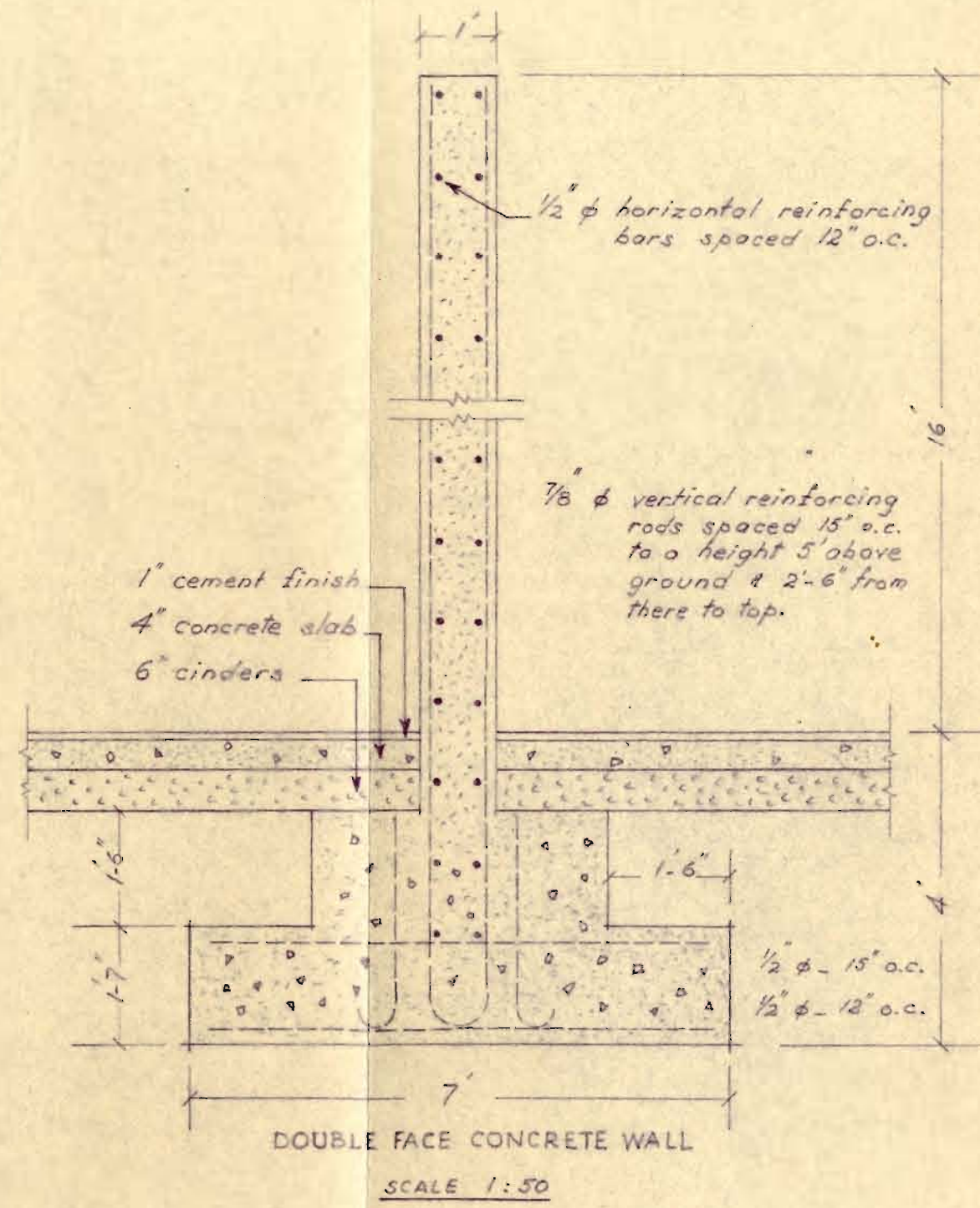
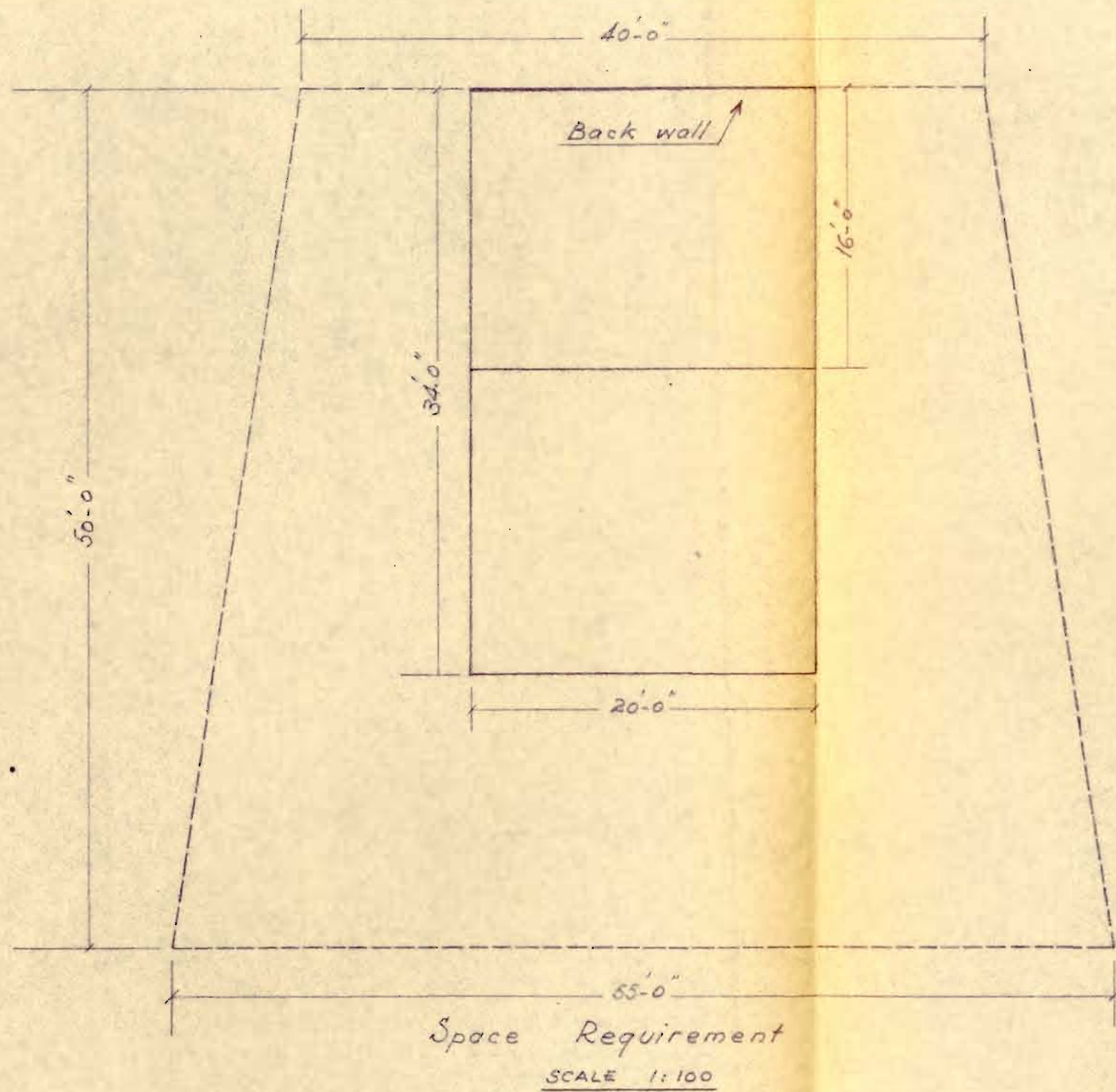
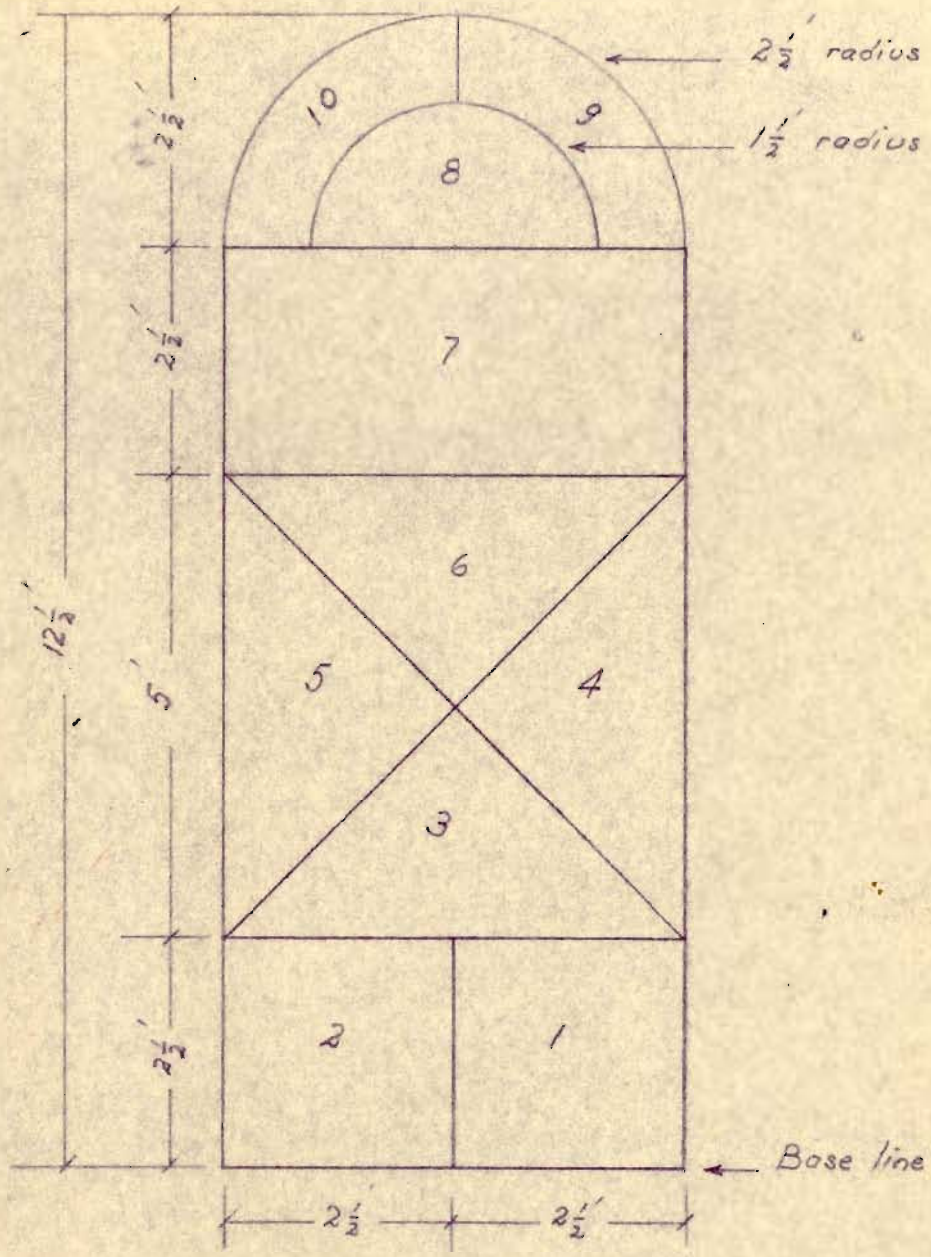
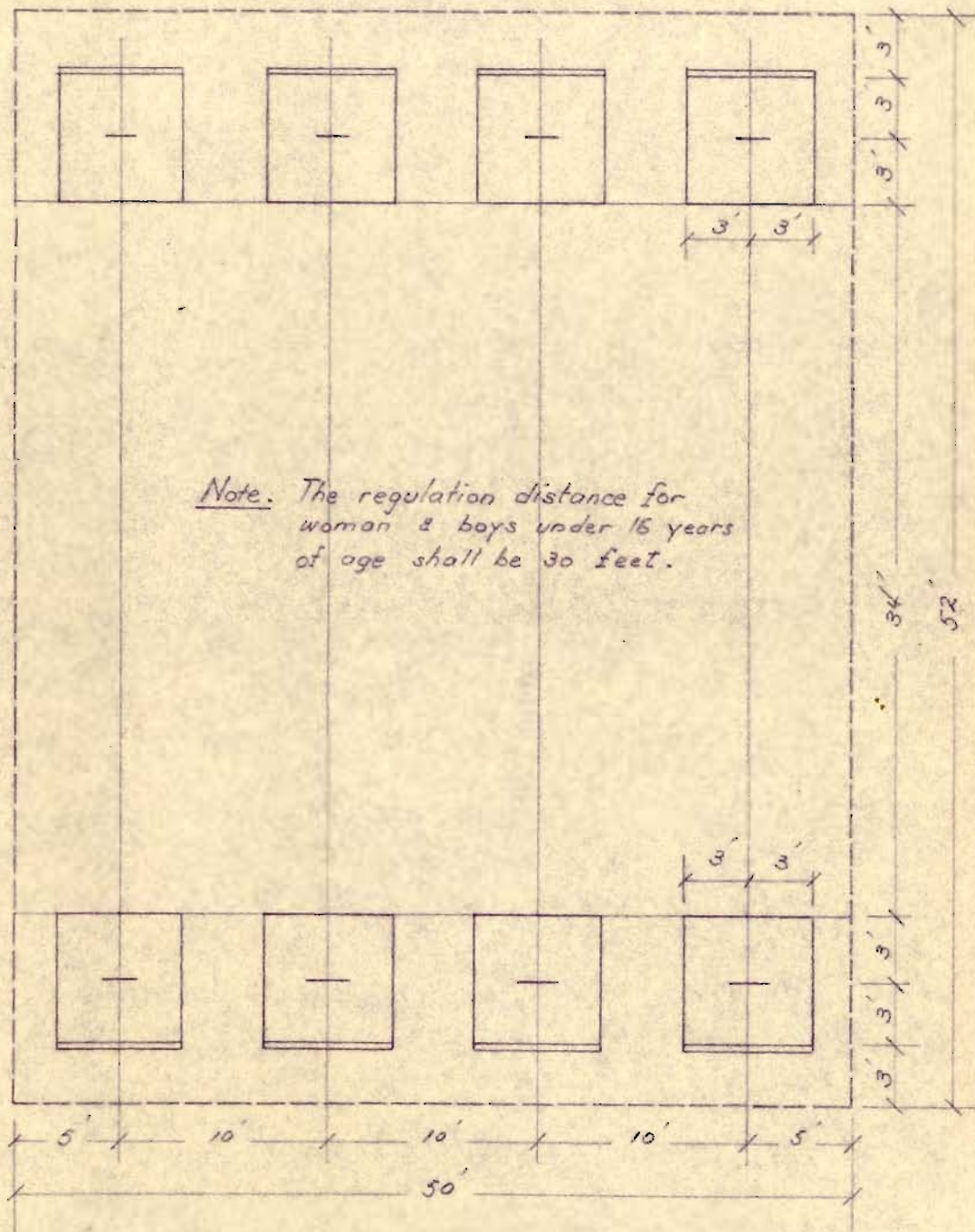


Plate 12. Diagram and details of HANDBALL COURT.



SCALE 1:25

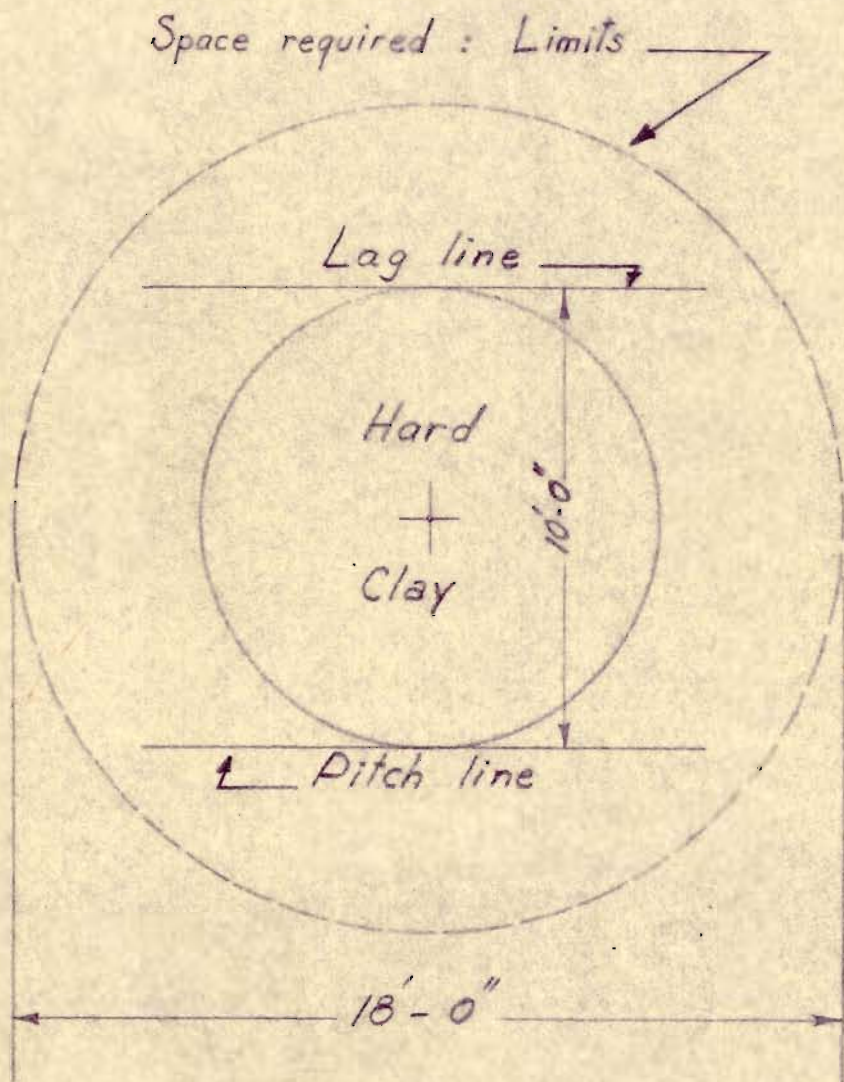
Plate 13. Diagram of HOPSCOTCH COURT.



Note. The regulation distance for woman & boys under 16 years of age shall be 30 feet.

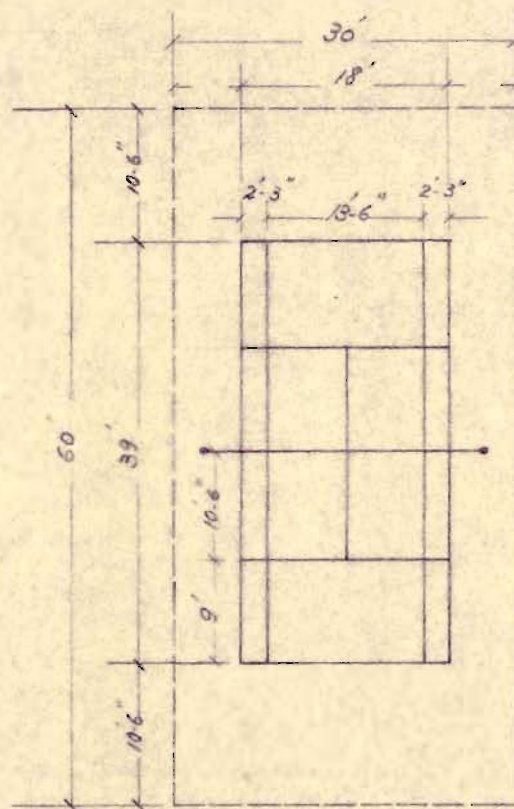
SCALE 1:100

Plate 14. Diagram of HORSESHOE COURTS.



SCALE 1:50

Plate 15. Diagram of MARBLES RINGS.



Height of Net :

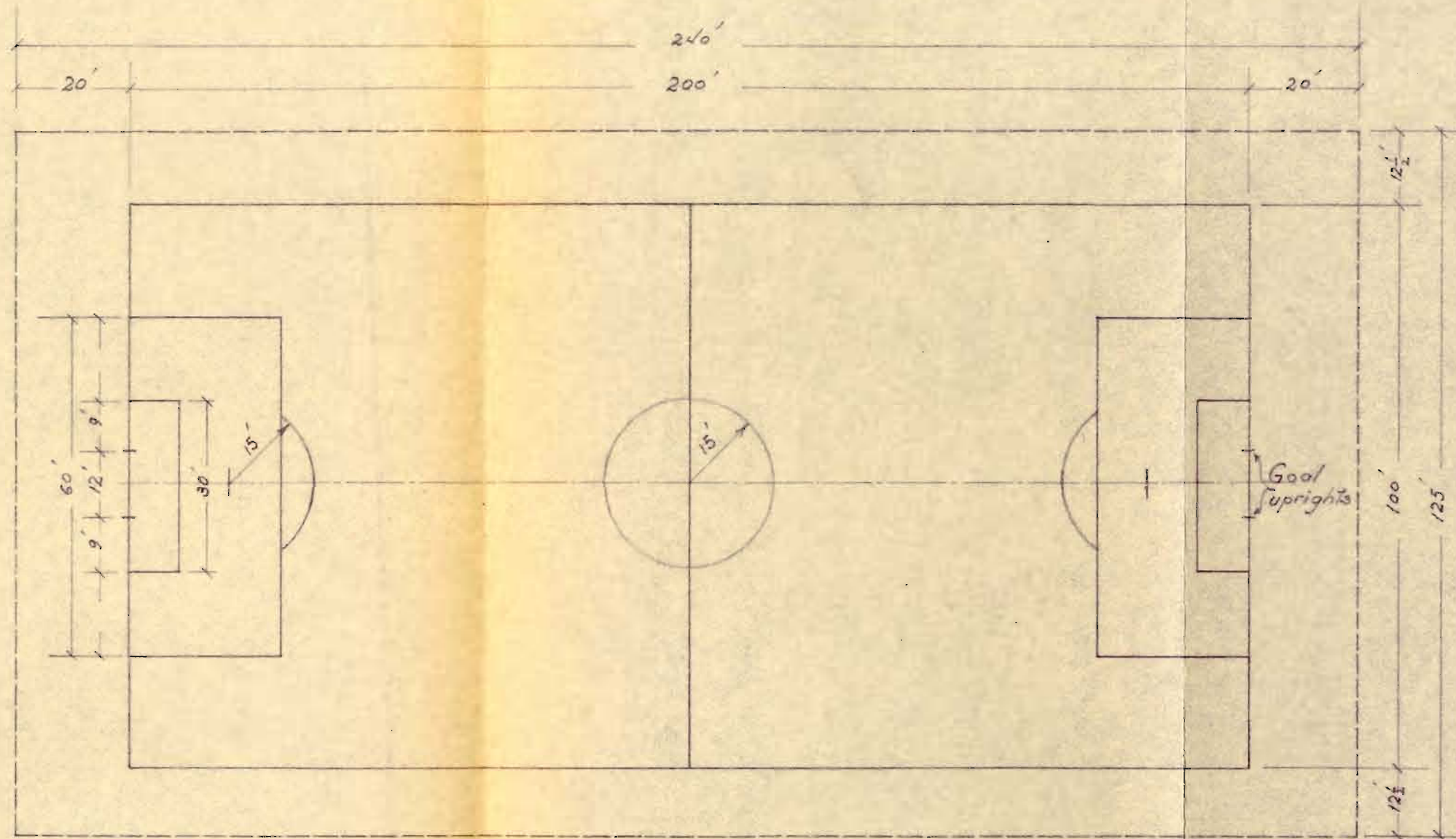
at center 2'-2"
at posts 2'-4"

Posts :

1 1/2' from sidelines

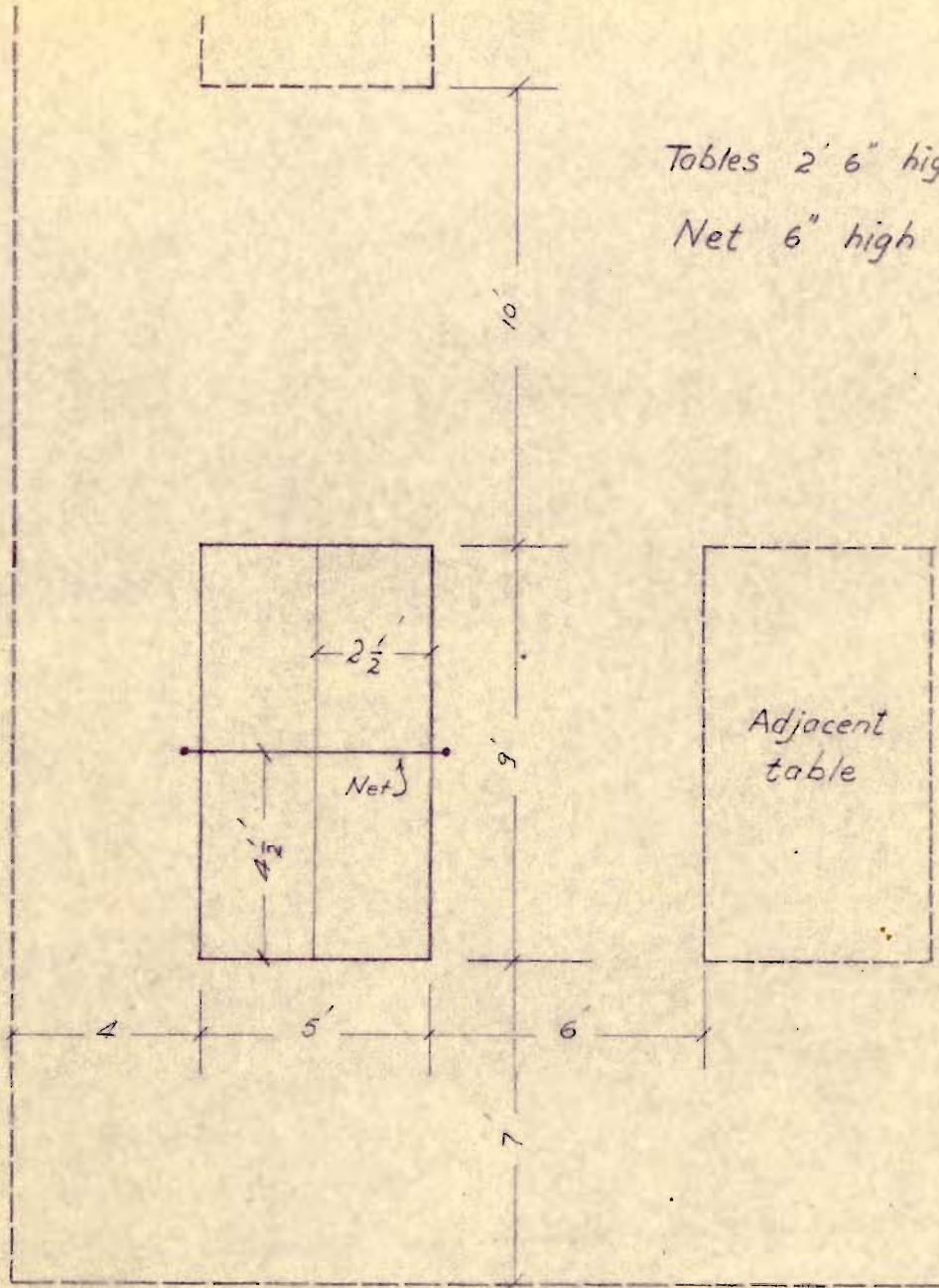
SCALE 1:200

Plate 16. Diagram of PADDLE TENNIS COURT.



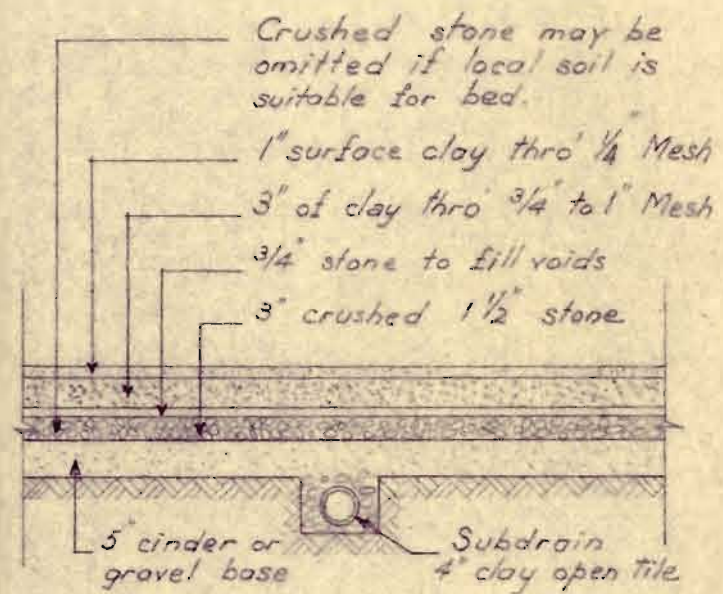
SCALE 1:300

Plate 17. Diagram of
SOCCER FIELD.

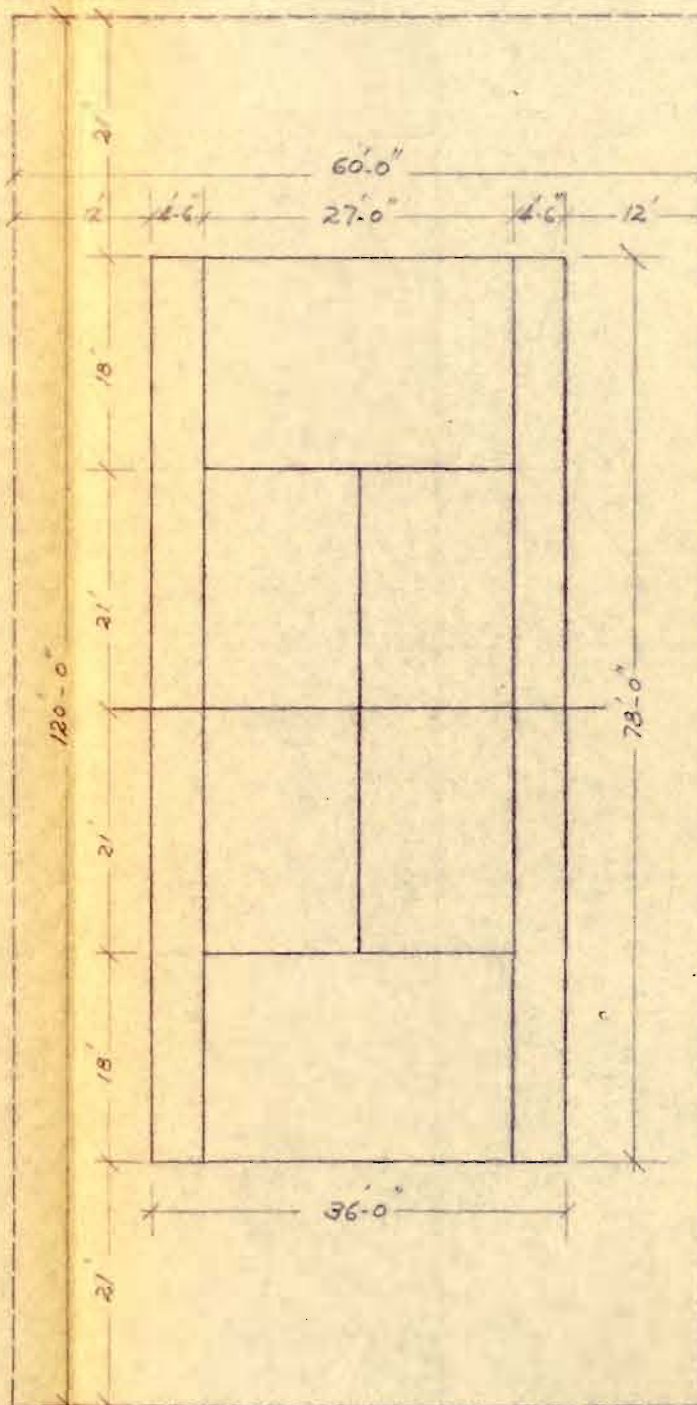


SCALE 1:50

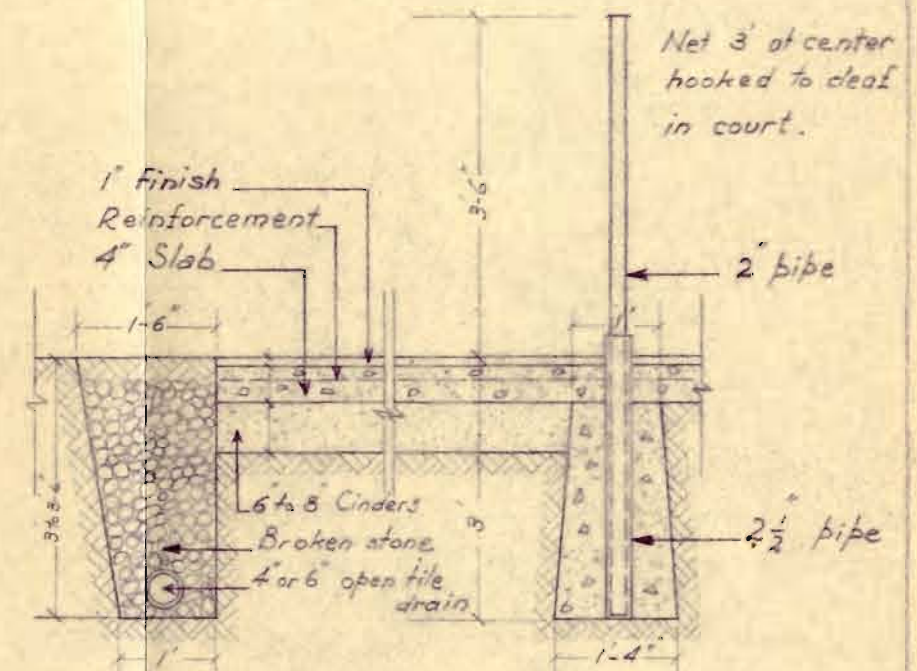
Plate 18. TABLE TENNIS



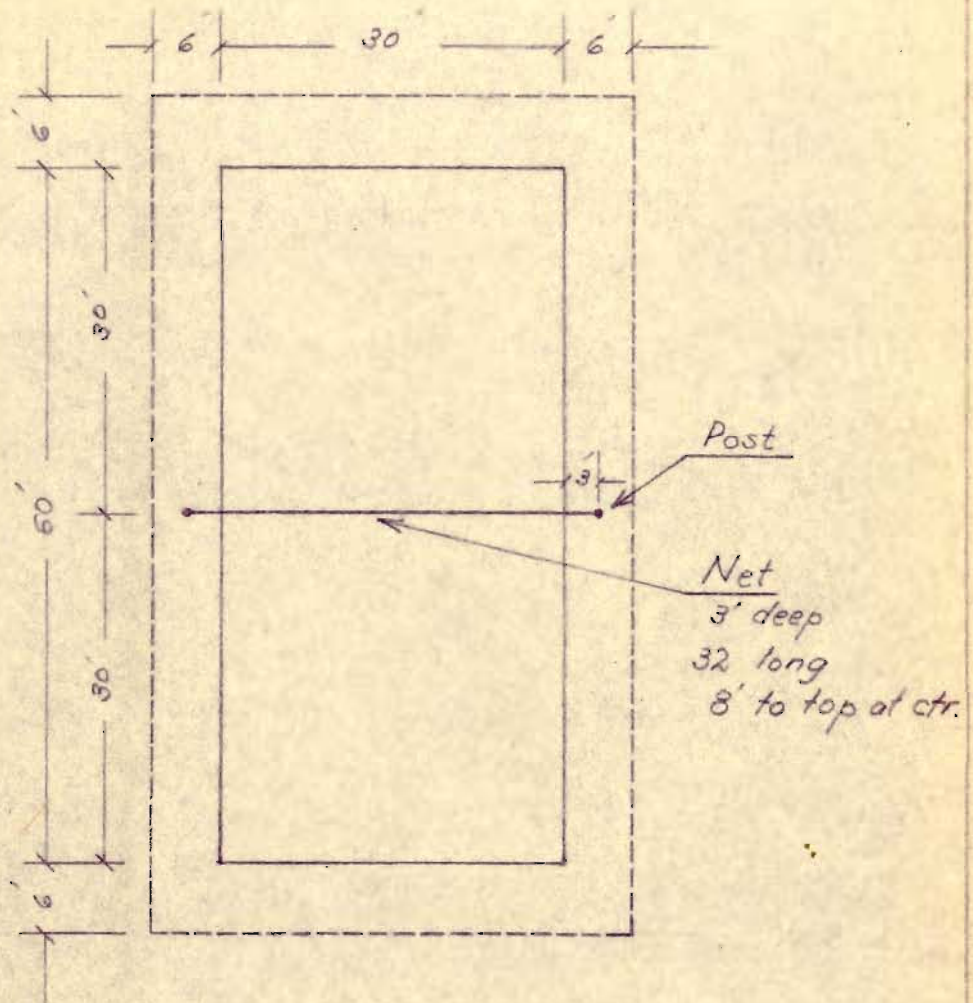
DETAIL OF CONCRETE COURT
SCALE 1:25



SPACE REQUIREMENT
SCALE 1:200



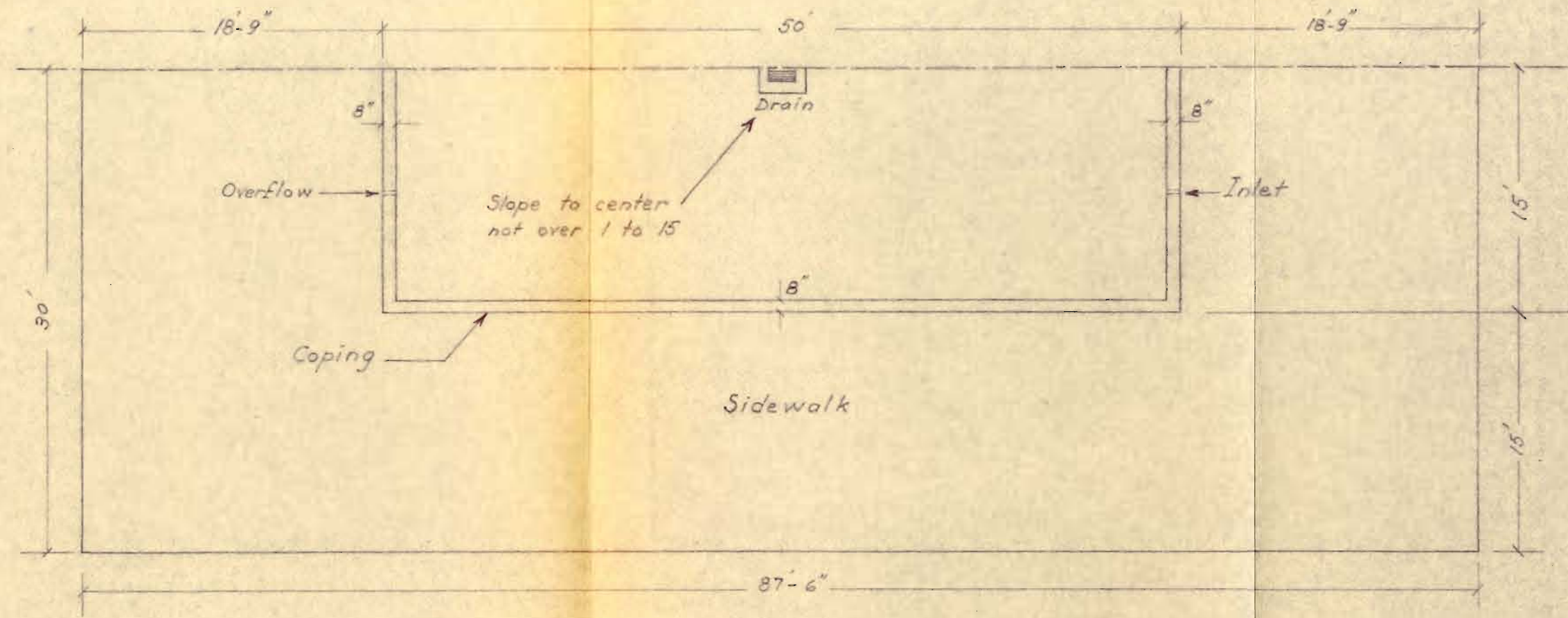
DETAIL OF CLAY COURT
SCALE 1:25



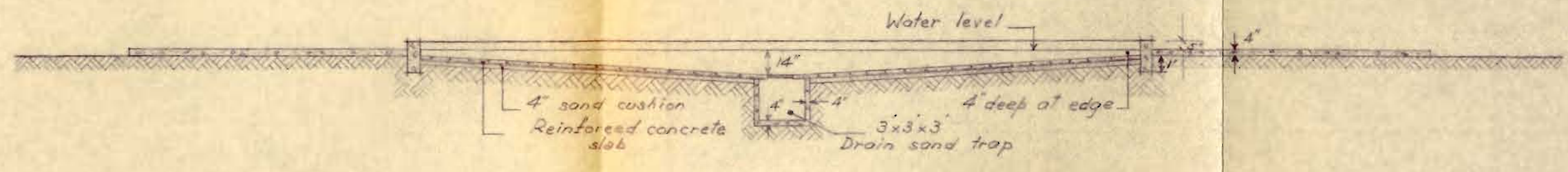
For children use
 a court
 (25' x 50')

SCALE 1:200

Plate 20. Diagram of VOLLEY BALL COURT.



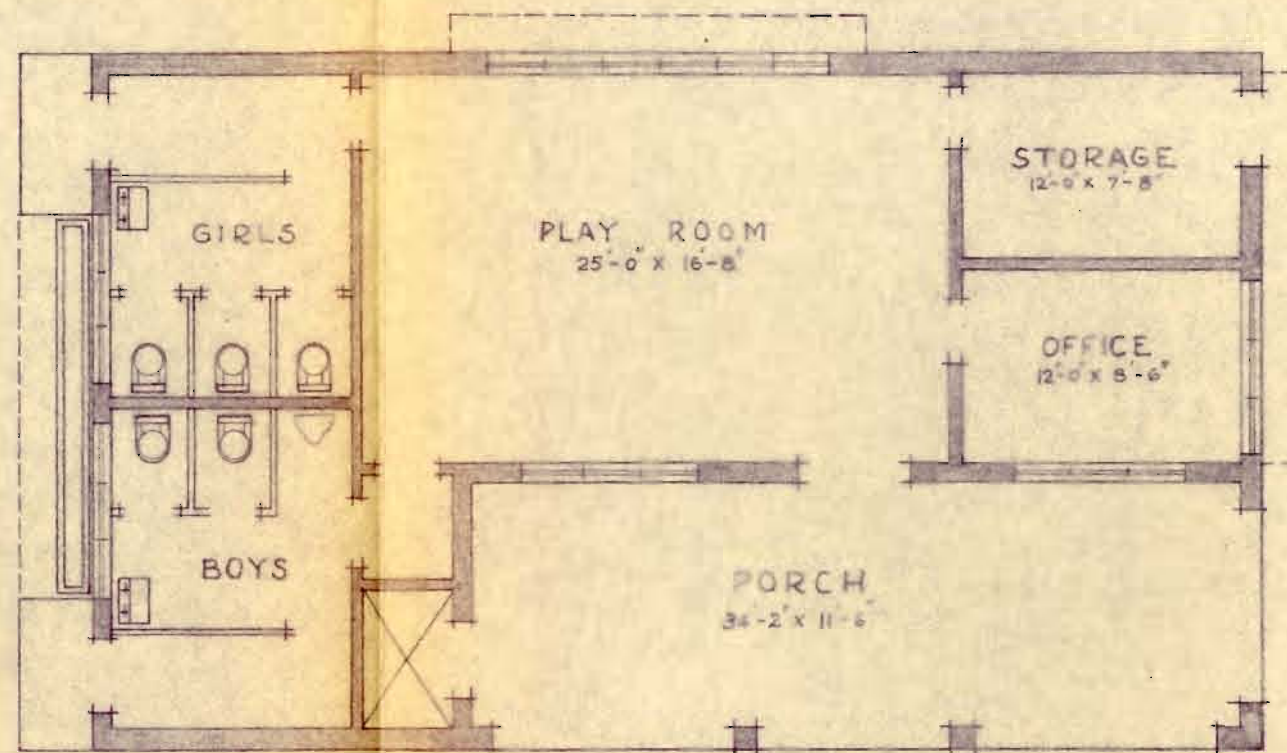
PLAN



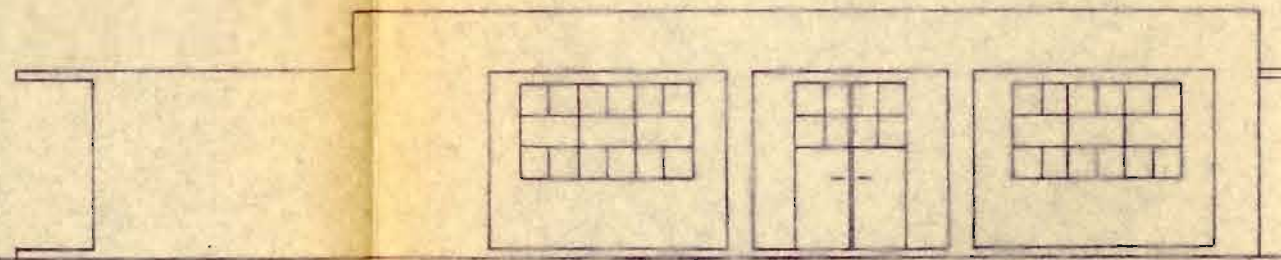
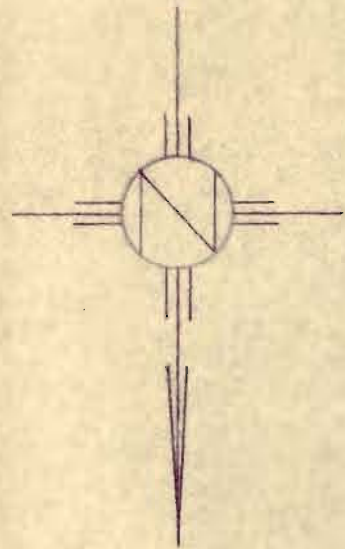
SECTION

SCALE 1:100

Plate 21. Diagram and details of WADING POOL.



PLAN



FRONT ELEVATION

SCALE 1:100

Plate 22. Plan and front elevation of SHELTER HOUSE.

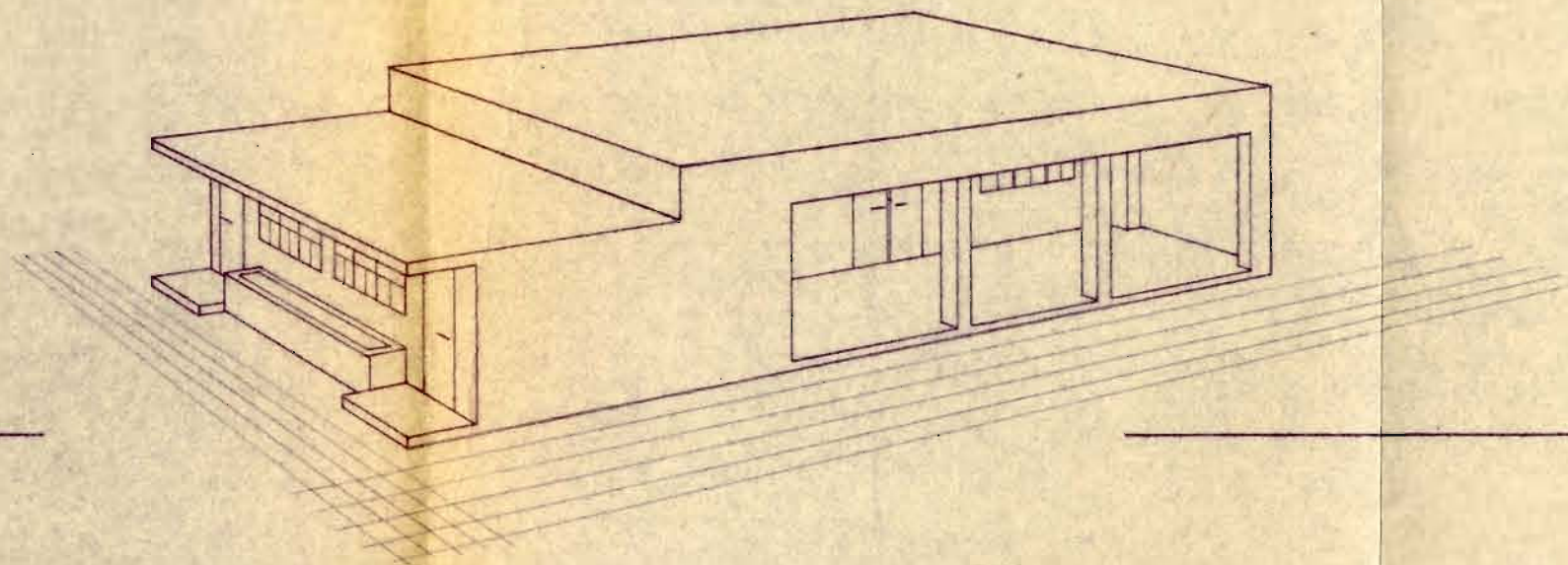
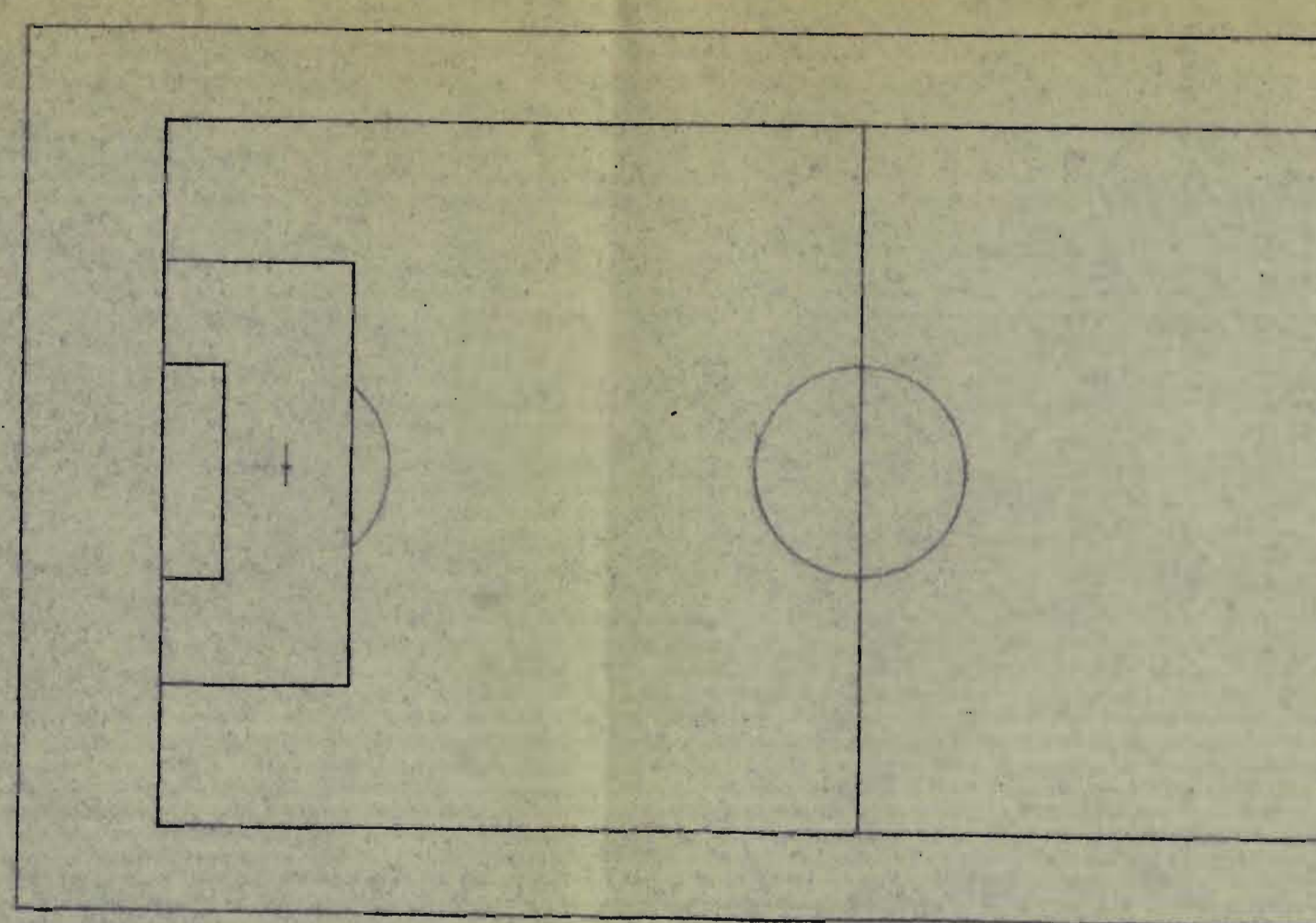
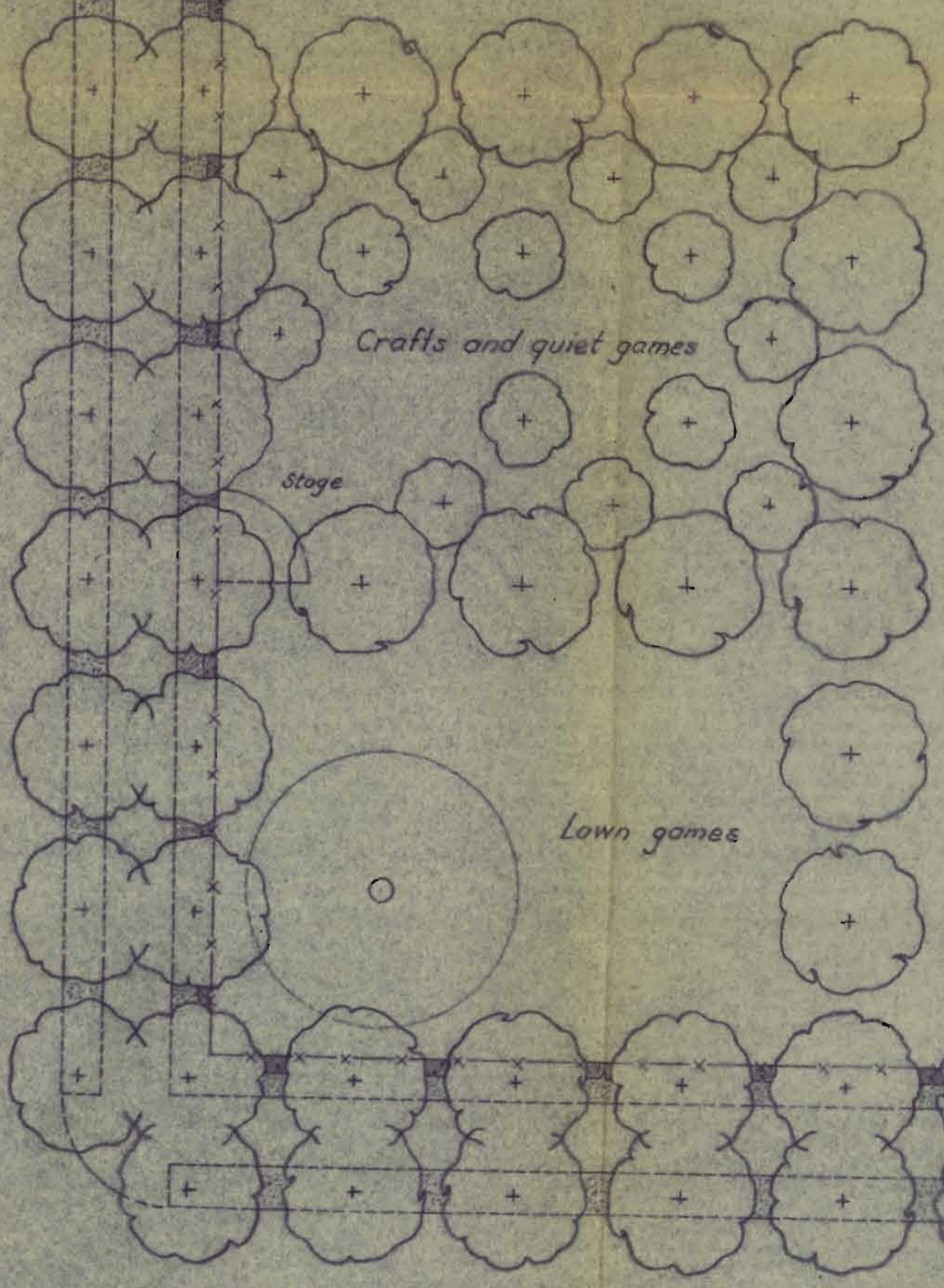
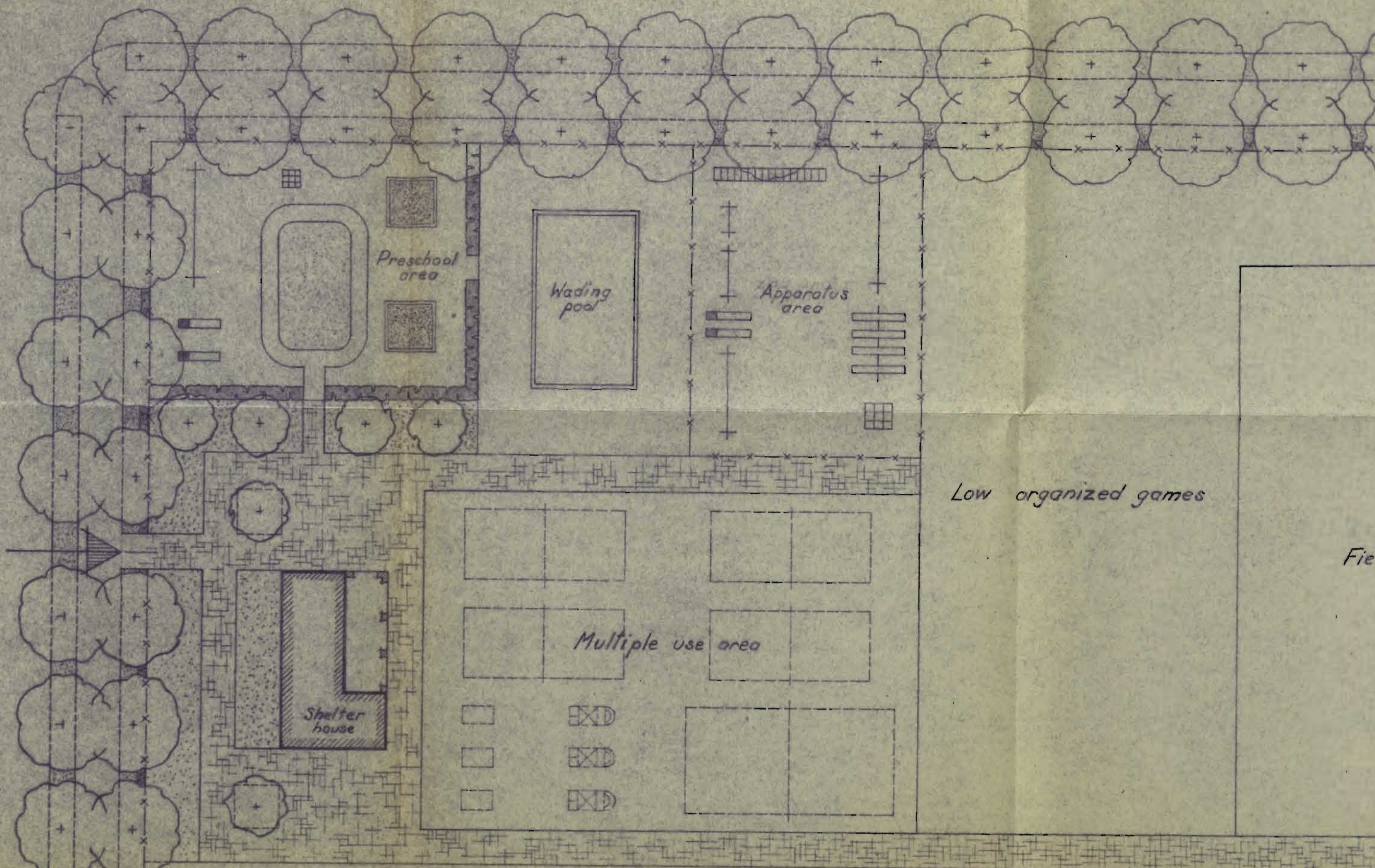
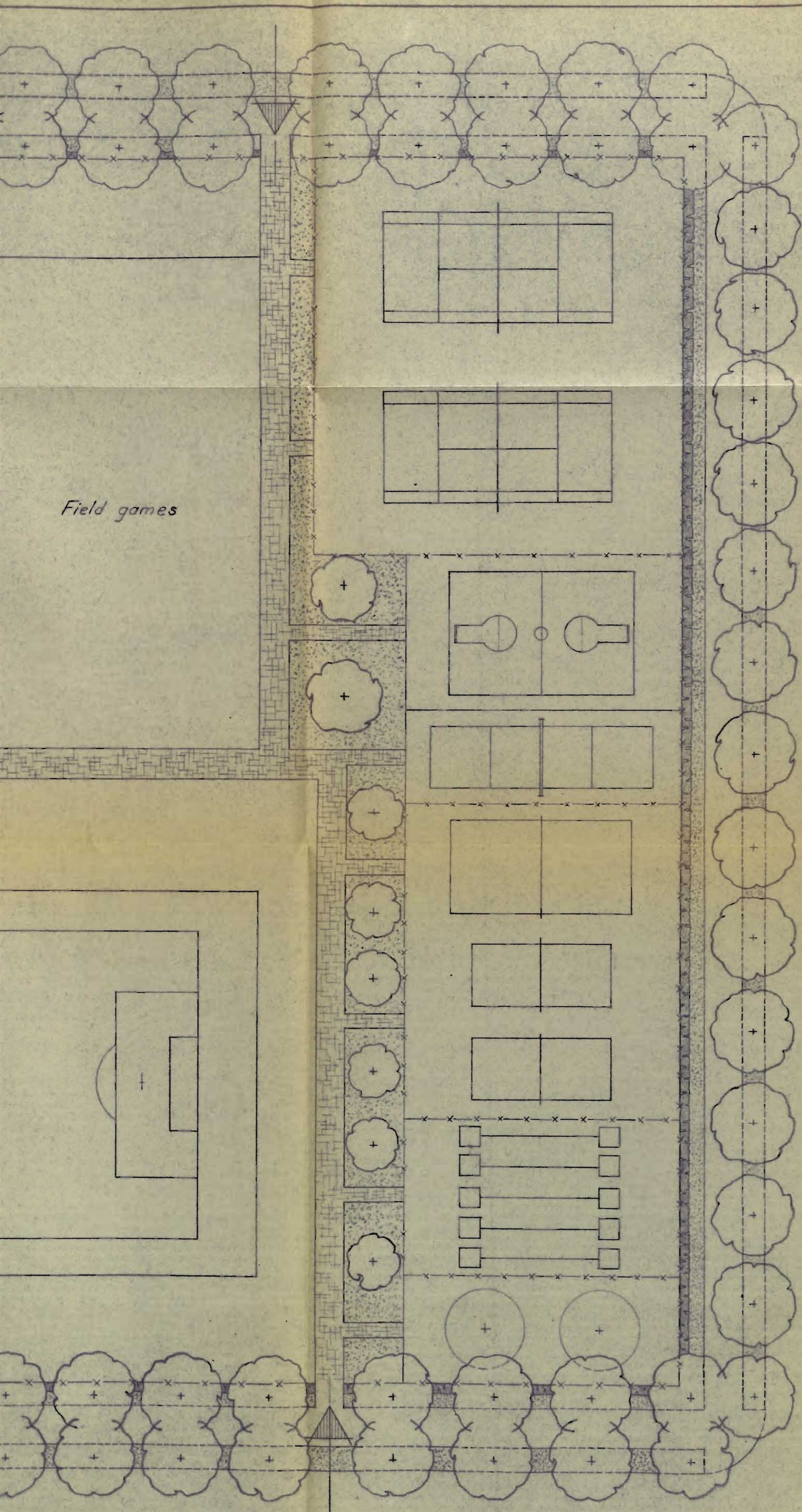
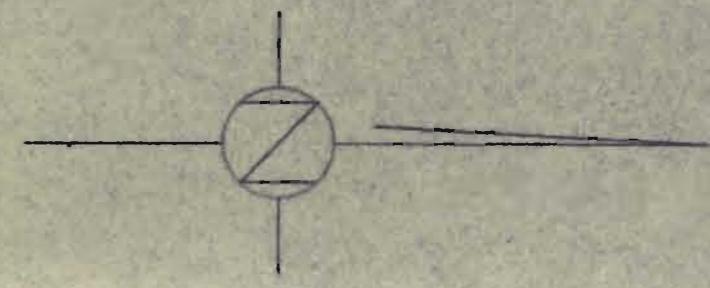


Plate 23. Perspective view of
SHELTER HOUSE.





Field games



SCHOOL OF ENGINEERING A.U.B.
 PROJECT : PLAYGROUND
 SITE PLAN
 DESIGNED BY: OUZOUNJIAN ALBERT, A.
 DATE : APRIL 1953 SCALE : 1:300 SHEET 1 OF 1

