

TENANT-CONSTRUCTED PLAY AREAS  
AND EQUIPMENT .



U. S. Federal Public Housing Authority - National Housing Agency

TENANT-CONSTRUCTED PLAY AREAS AND EQUIPMENT

## INTRODUCTION

This Bulletin describes play areas and equipment which can be developed or constructed by tenants (and where practicable, by project maintenance workers). It contains specifications, plans, and detailed drawings of equipment and other items for playgrounds, playfields and active recreation areas, and for tenant activity buildings, suitable for temporary housing projects.

The designs call for simple, sturdy construction from native and other readily available materials, and from supplies which may remain on the project site after general construction has ceased. In some instances it may be possible to raise funds for purchase of required fittings and supplies, through popular contributions, social functions, or directly from available project management funds (Account No. 4540, "Health, Education and Recreation").

Certain dangers inherent in the construction of wood playground equipment should be pointed out. Playground equipment in general has been very carefully designed and engineered to give maximum strength and safety, and practically all manufactured equipment heretofore has been constructed mainly of steel. When wood substitutes are used, the points of strain are quite different from those in the steel structures. Wood tends to rot out around holes made by driving heavy spikes at joints, around holes bored for through bolts, and where two pieces of wood are artificially joined. Wood also rots at the earth line when placed upright in the ground. This internal rotting and consequent weakening of the structure is very seldom apparent on casual inspection. The first indication of decay usually comes when a wood support breaks or cracks badly, or a through bolt pulls out of its hole. If breaking or cracking should occur at the time a small child is using the structure, the probability that he may be seriously injured is obvious. There is a further danger in the use of wood, because of splintering. A slide that has apparently been well-planed and sanded may, due to an entirely natural cause, suddenly start to splinter. The same applies to wood supports on which children may be hanging with their bare hands.

Every effort is made, in designing the equipment, to minimize the disadvantages inherent in wood construction. Nevertheless, safety of the children requires that there be frequent and careful inspections, prompt repairs and other servicing. There should be supervision or inspection by a competent shop foreman during construction of those items in which faulty workmanship creates play hazards.

New material for this Bulletin will be issued from time to time, and should be kept in loose-leaf form, filed in the order of release. Tried and practical suggestions for additional items for this Bulletin or for improvement of its contents will be welcomed.

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1091  
2

Item 1. SCRAP LUMBER, BOXES, AND CRATES

Games, apparatus, and equipment which children devise or construct themselves develop inventiveness and often provide more amusement than do play devices ready-made for them. An assortment of materials should be made available to children wherever space and safety conditions permit.

Used packing boxes, planks, scrap lumber, and other materials as a rule are available from stores, the plants where tenants are employed, and from materials remaining on the project when construction is completed.

Safety hazards should be considered in permitting use of such items and in preparing them for the children. Loose boards and barrel hoops are, of course, out of place strewn about on a standard play area. Fragile and easily splintered crates and boards should not be used; protruding nails should be pulled or clinched; planing, sanding, and rounding of edges and corners will lessen danger of splinters and splinters; and packing boxes should be constructed or reinforced with screws.

Painting and other conditioning of some of these items is described in Bulletin No. 6, "Equipment Specifications for Child Service Facilities for Family Dwelling Projects."

Item 2. WOOD SWINGS

Improvised wood swings may be constructed only when metal swings cannot be secured.

These specifications and the accompanying plans (Plates 1 and 1A) represent good durable construction. Each swing will support an estimated weight of 300 lbs. with safety. Extreme caution should be exercised in altering the construction details of the plan and specifications. Any variations must be approved by the Technical Section of the Regional Office.

The quality, type and size of the items set forth herein are intended to set the desired standard for wood swings.

Specifications

Woods in these specifications shall be either oak, maple, birch, dense fir, or dense pine of sizes as shown on drawing. They shall be well seasoned, and checks and cracks shall not be longer than 5" and at least 18" apart with openings not more than 1/16" in width and a maximum of 3/4" in depth.

Wood Dowels, shall be 1" in diameter, preferably threaded white oak, thoroughly set in waterproofed glue. Extend dowels 4 diameters in cross grain and 6 diameters in end grain.

Bolts, Washers, and Nuts, shall be galvanized or painted black finish and of sizes as shown on drawing. All nuts shall be checked for looseness each month or oftener.

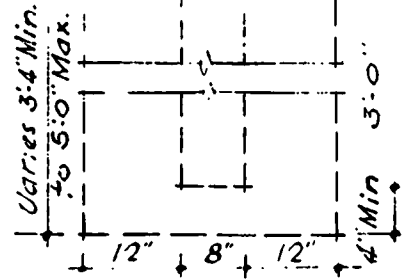
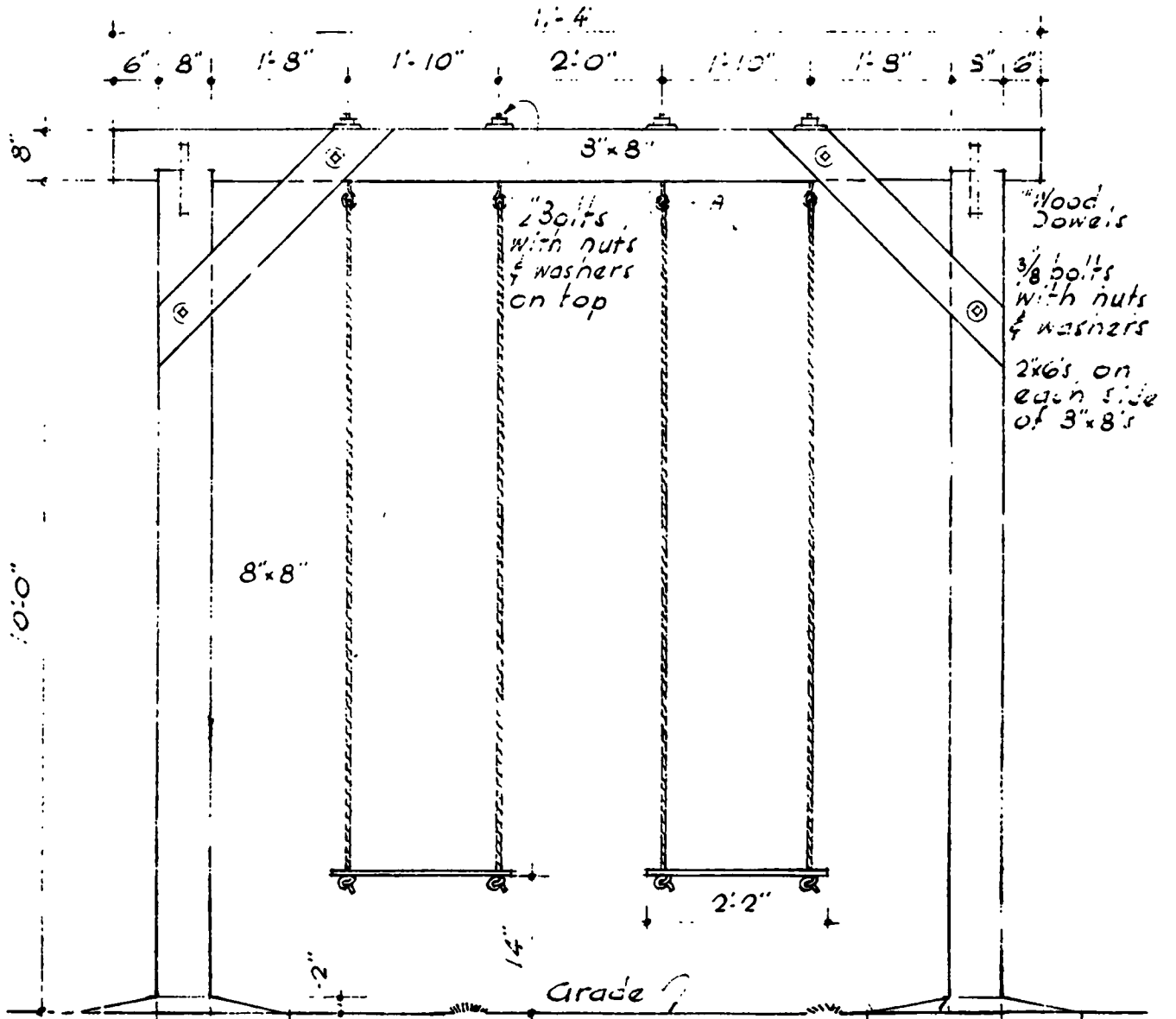
Rope, shall be 5/8" diameter manila waterproofed (or equivalent strength) and securely non-slip knotted under seat and spliced over a malleable iron ring with black finish as detailed on the plan. This rope shall be replaced each year and examined each month. Class BB 1/8" diameter straight link coil chain is preferred if available.

Footing, shall be a 1-2-3½ concrete mix and of design as shown on drawing.

Seat, shall be 1" thick hardwood, smoothly sanded, with rubber hose or felt attached entirely around its edges. Rope holes shall be centered on board with outer edge one inch from ends.

Guard Rails, (plate 1A) shall be provided at front, sides and rear of swing set. Their purpose is to prevent smaller children from walking into the area while swings are in use. They may be omitted only where this hazard is not present, or from a side where an existing fence or wall prevents approach to the swing area. Guard rails at sides of swing shall be 4'-0" distance from face of posts. Guard rail at front and rear shall be located 18'-0" from swing (i.e., 9'-0" beyond arc of swing). Rails shall be constructed of 2" x 4" members, laid flatwise, and shall be 2'-4" high, supported by 2" x 4" uprights at ends and at intervals not exceeding 8'-0" on centers. Uprights shall be sharpened at one end and driven in earth deep enough to secure firm bearing, depending upon soil conditions encountered. Protect top of vertical stakes with wood block while driving. Secure rail to uprights with two 16-penny nails at each stake.

Finish. Fill checks and cracks with putty, then apply two coats of clear creosote sealer or two coats of oil paint to all wood members before final assembly, so that bolt holes will be painted within.



Creosote ends before placing  
 Concrete

SCALE 1/2" = 1'-0"

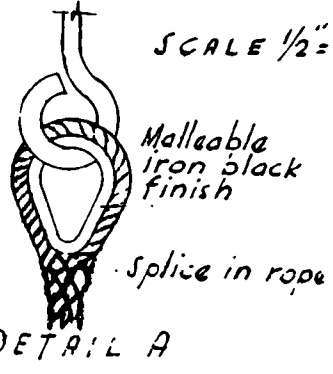
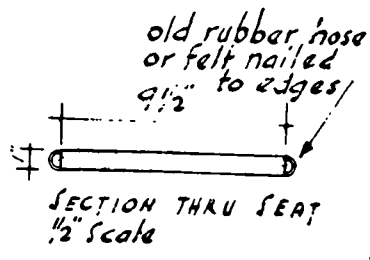
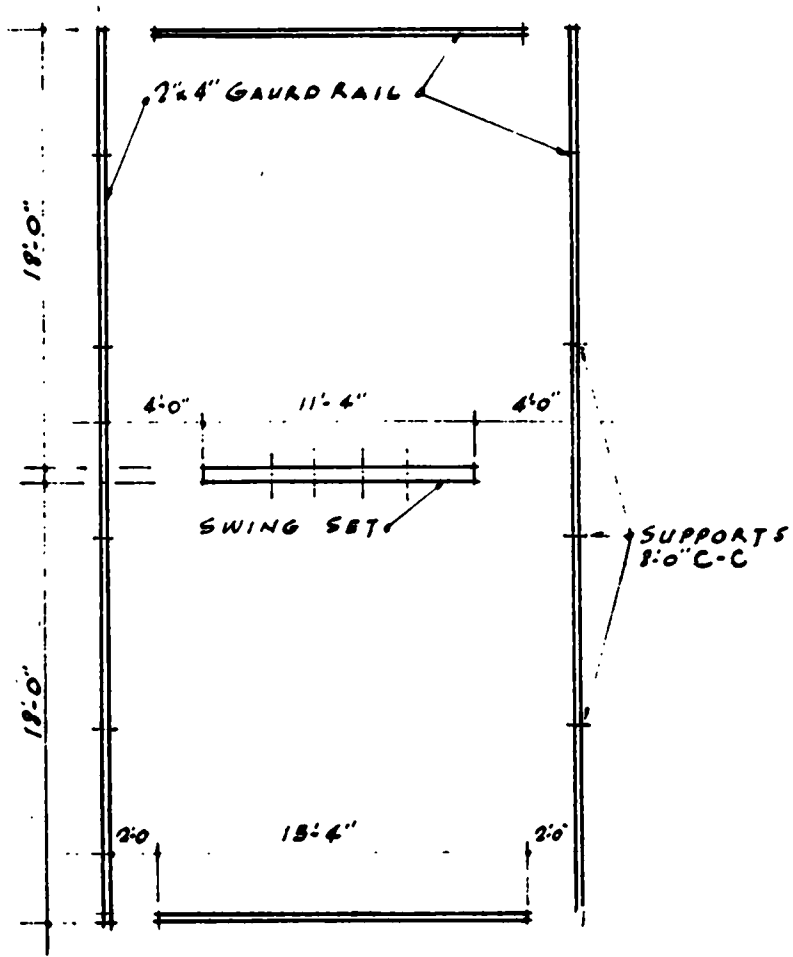
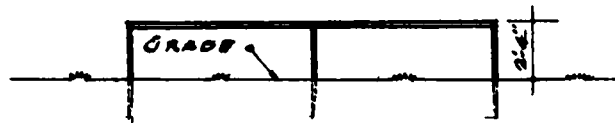


PLATE No. 1  
 WOOD SWING

P L A T E NO. 1 A  
S W I N G S E T G A U R D R A I L



P L A N .



ELEVATION OF FRONT RAIL  
SCALE  $\frac{1}{8}" = 1'-0"$

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Item 3. THE DODGER

This unusual, inexpensive piece of playground equipment may be constructed from concrete, bricks or cinder blocks. It is designed to encourage the same creative, imaginative play children engage in when they are permitted to climb freely in and around partially constructed or demolished buildings. The basic design is that of a wall 4'-6" high by 8" or 12" thick and following various rectangular patterns, as suggested in the accompanying drawings (Plates 2, 2-A, 2-B). All exposed surfaces should be smoothed to prevent abrasions or lacerations. The "dodger" is preferably located in a quite, partially shaded section of the small children's play area. If placed among trees or properly screened with shrubs, its appearance, as well as its attraction for the children, will be greatly enhanced.

This simple structure may serve as a ship, an airplane, a horse or as a medium for playing "house" or "school". On those projects where dodgers have been built they provide the children with a device for innumerable improvised games, and are in constant use.

Item 4. THE BALANCE BEAM

The balance beam (Plate 3) provides a good means of developing muscular coordination in young children. It is a safe substitute for the railroad track, fence or street curb on which children like to walk. It is easily constructed by cutting the 2" by 2" beam and the 2" by 6" braces to the same length. Temporarily nail the brace in place and layout and drill the 13/32" bolt holes through the brace and the rail. Remove the nails and bolt the braces in place. Lay out and cut the end pieces to size from the 2" by 10" lumber. Screw the end pieces in place with 3" screws. Paint all wood with two coats of flat paint. Countersink all screws. Inspect apparatus once every month for loose bolts and screws. (An alternate plan is shown on Plate 3-A).

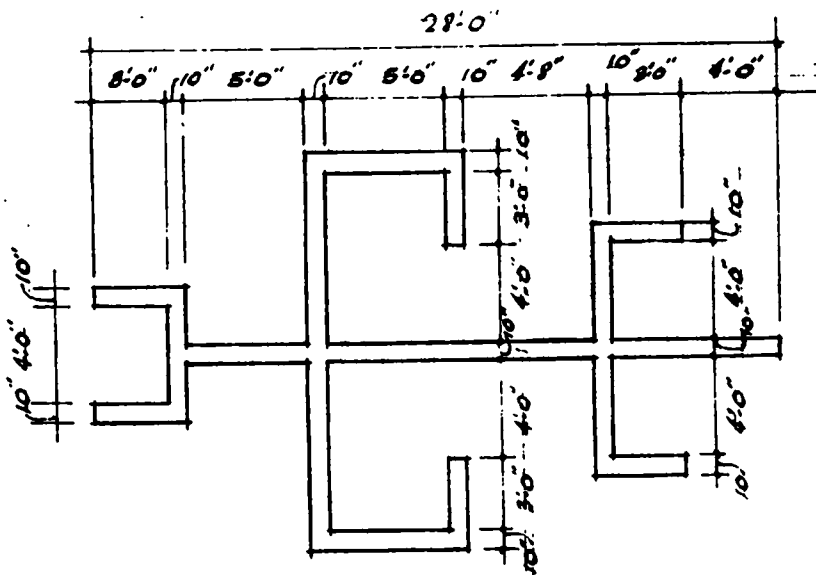
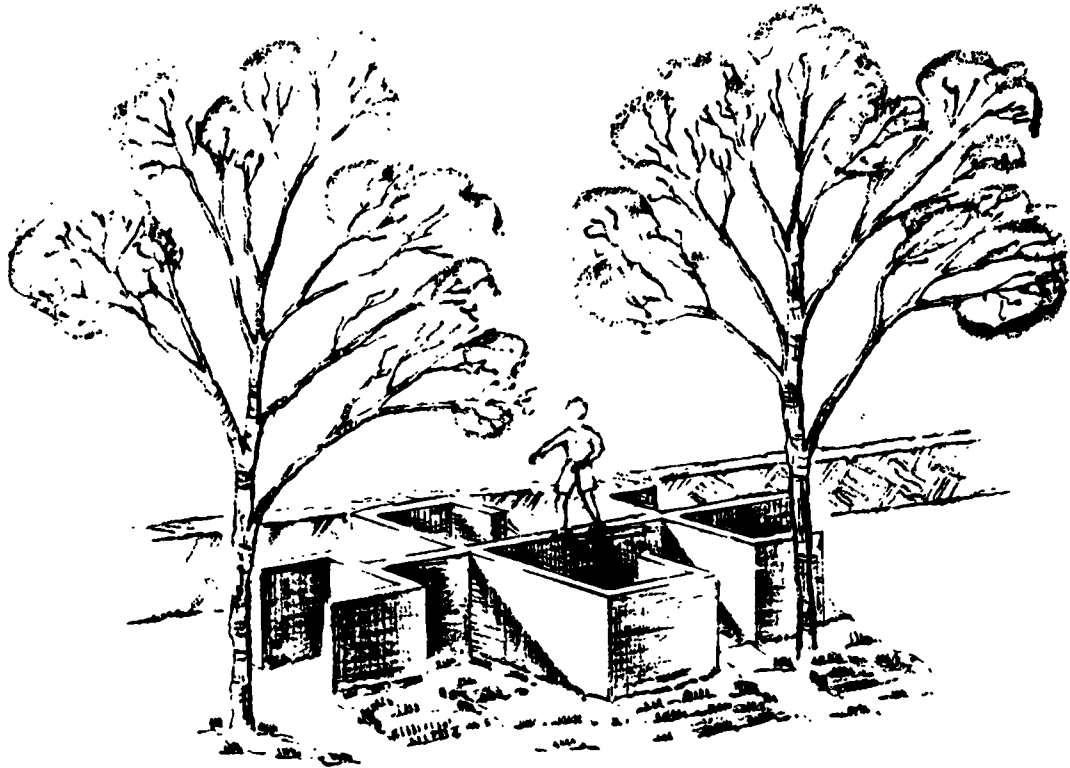


PLATE NO. 2  
THE DODGER  
SCALE 1/8" = 1'-0"

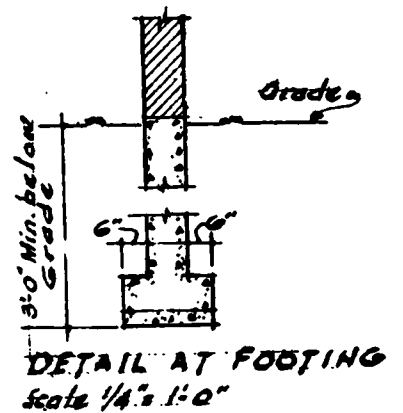




PLATE No. 2A.  
DODGERS  
ALTERNATE PLANS

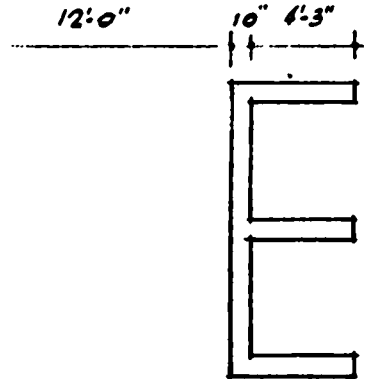
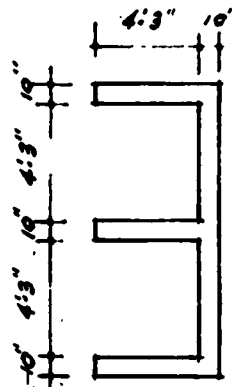
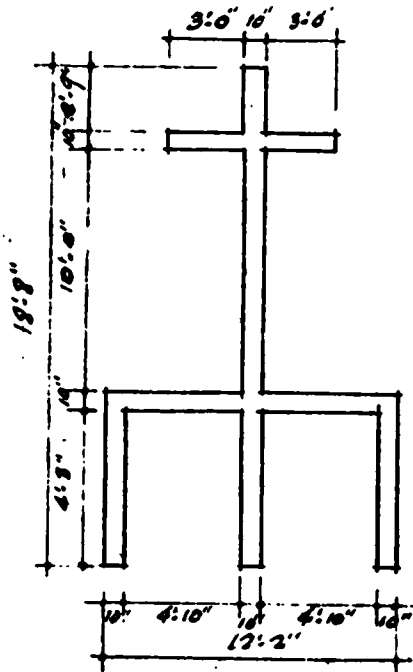
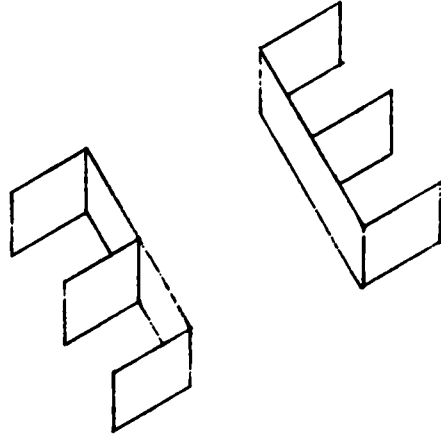
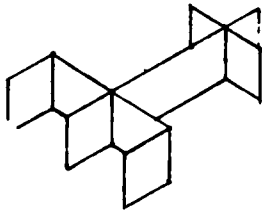
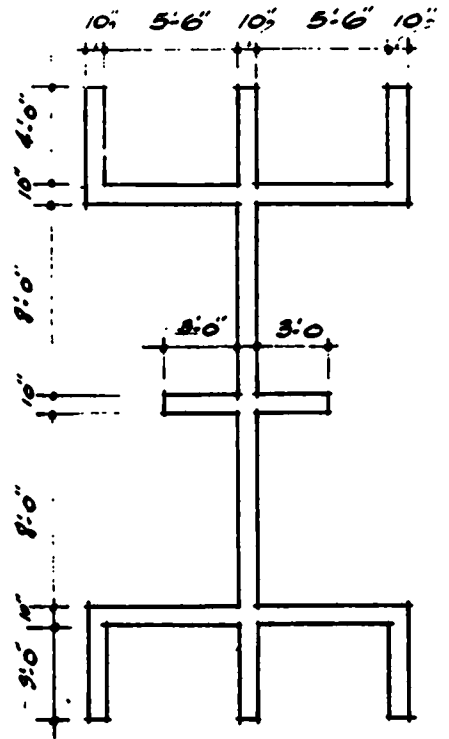
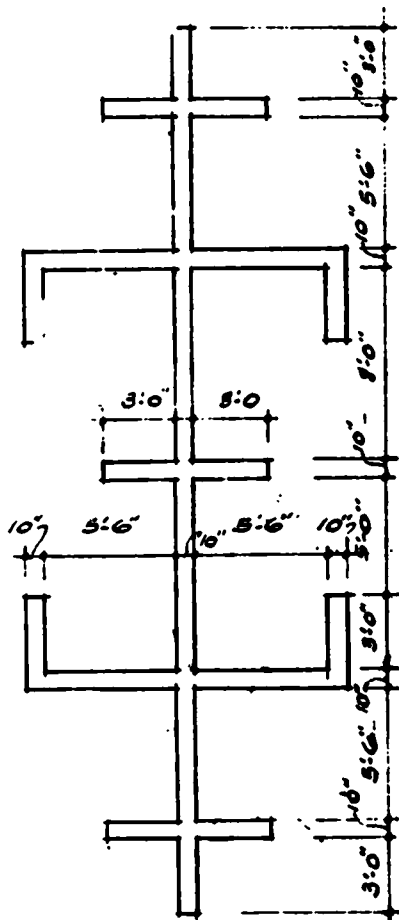
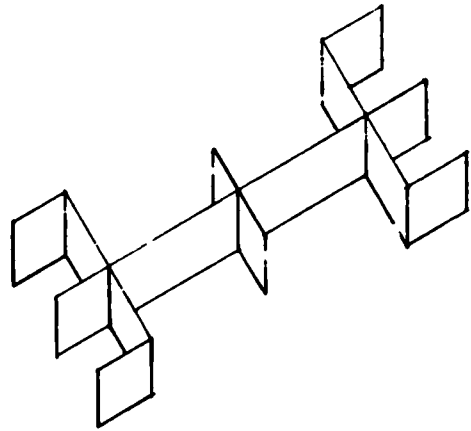
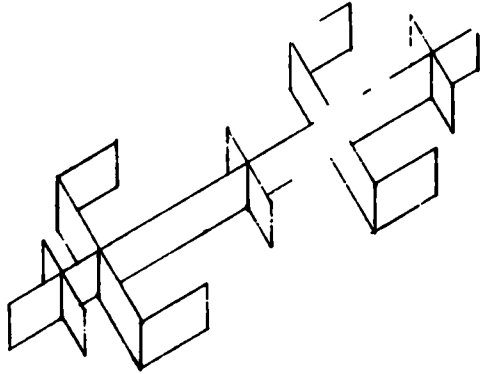
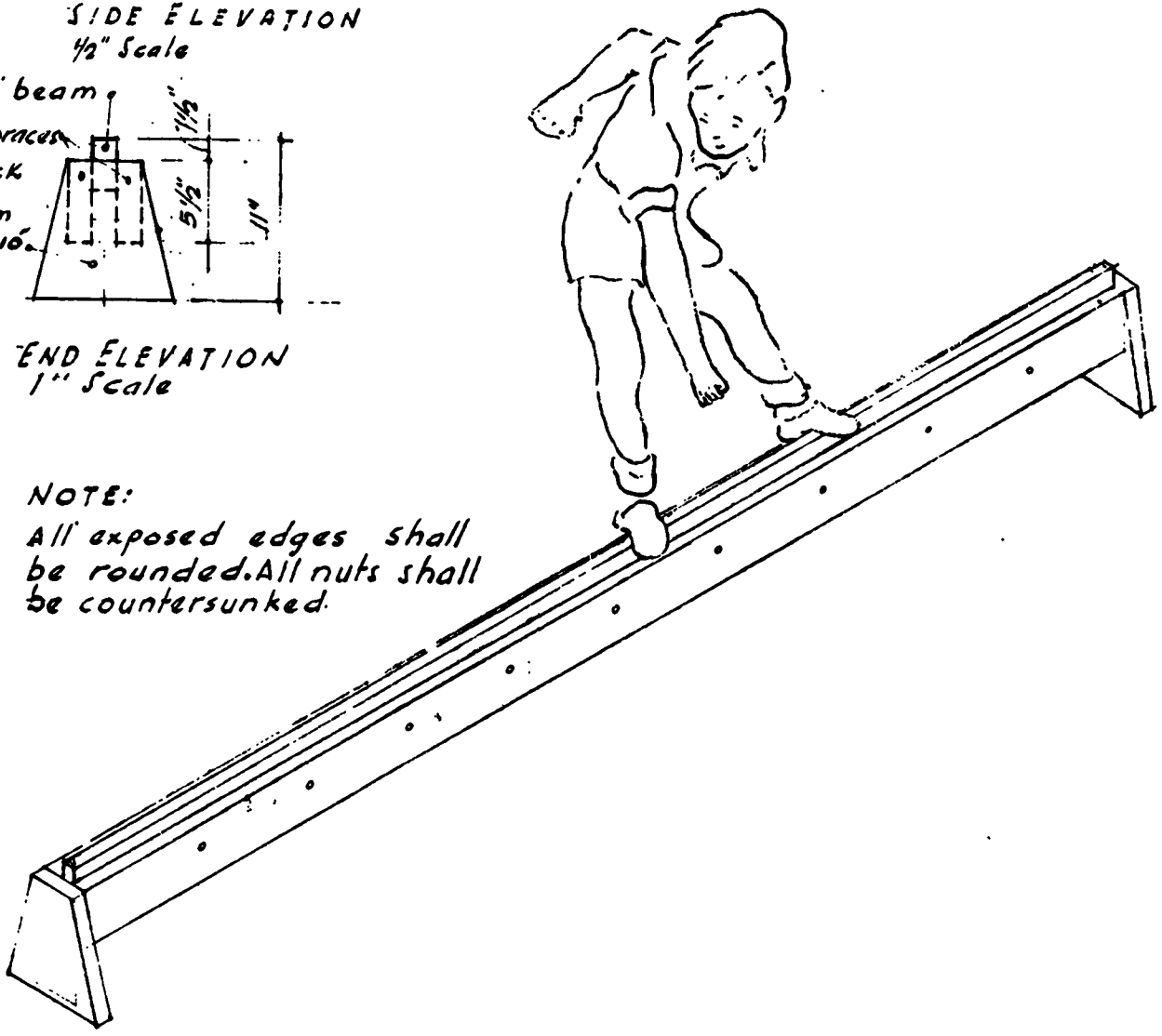
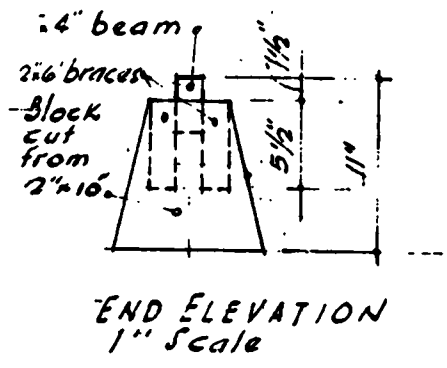
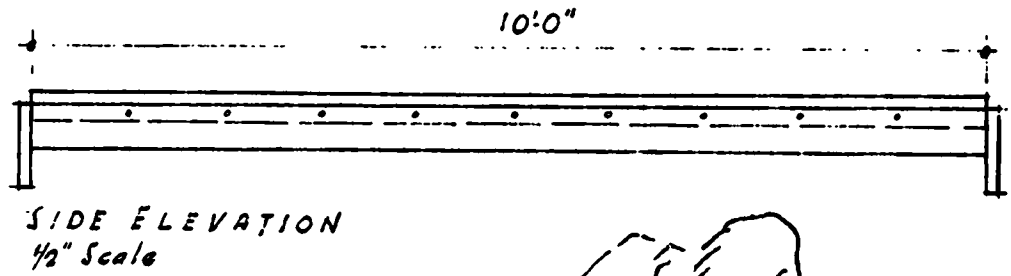
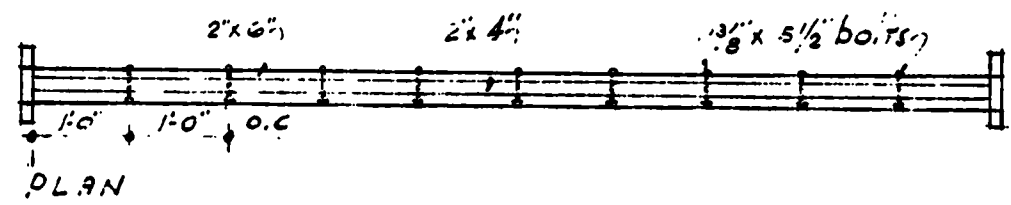


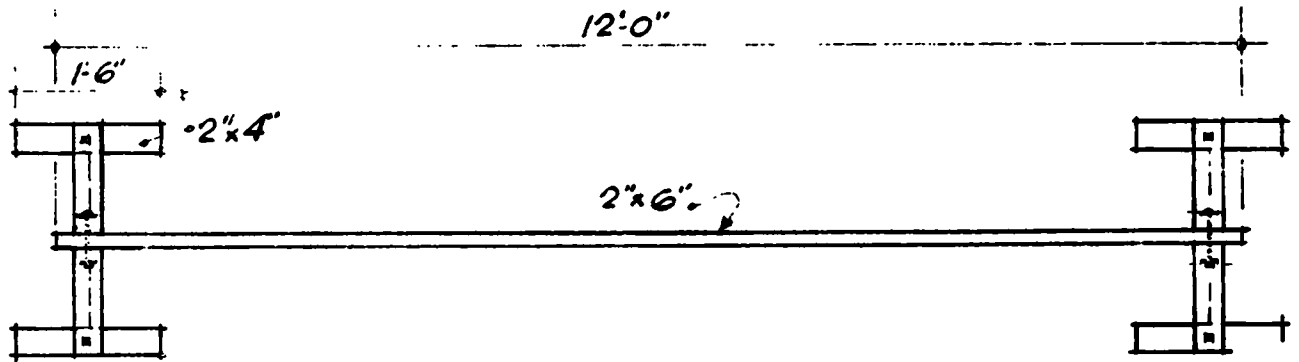
PLATE NO. 2B.  
DODGERS  
ALTERNATE PLANS



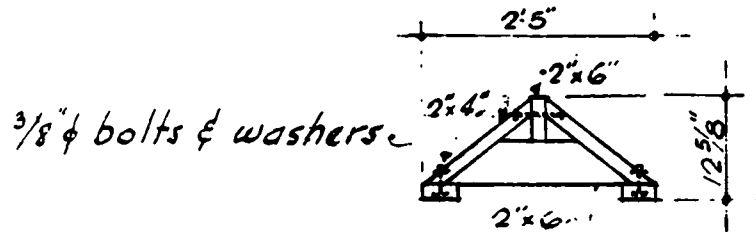
# PLATE No. 3 THE BALANCE BEAM



P L A T E N O. 3 A.  
T H E B I L A N C E B E A M  
A L T E R N A T E P L A N

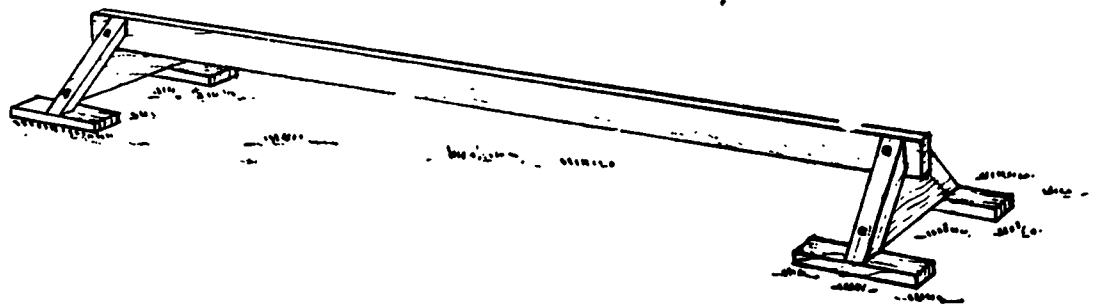


T O P V I E W



E N D V I E W

NOTE:  
All exposed edges shall  
be rounded. All nuts  
shall be countersunk.



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This simple structure may serve as a ship, an airplane, a horse or as a medium for playing "house" or "school". On those projects where dodgers have been built they provide the children with a device for innumerable improvised games, and are in constant use.

Note: Careful consideration should be given to the siting of the dodger. Its location in isolated areas should be avoided. The dodger is preferably located near dwelling units or other buildings where its convenient supervision and observation by adults can be afforded. Such location will discourage the misuse of this structure by the children.

Item 4. THE BALANCE BEAM

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1/ This page supersedes the corresponding page, dated 6-30-44, of Bulletin No. 41. The drawings on the reverse side have been modified by eliminating parts of the wings in the center section of the dodger. This affords easier supervision. Seats and steps have been indicated as desirable additions to the dodger. Plate Nos. 2A, 2B, 3 and 3A remain unchanged and should be retained.

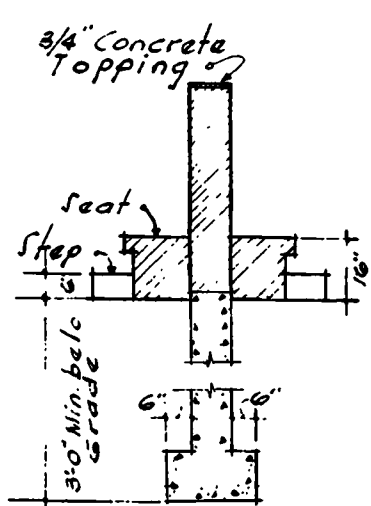
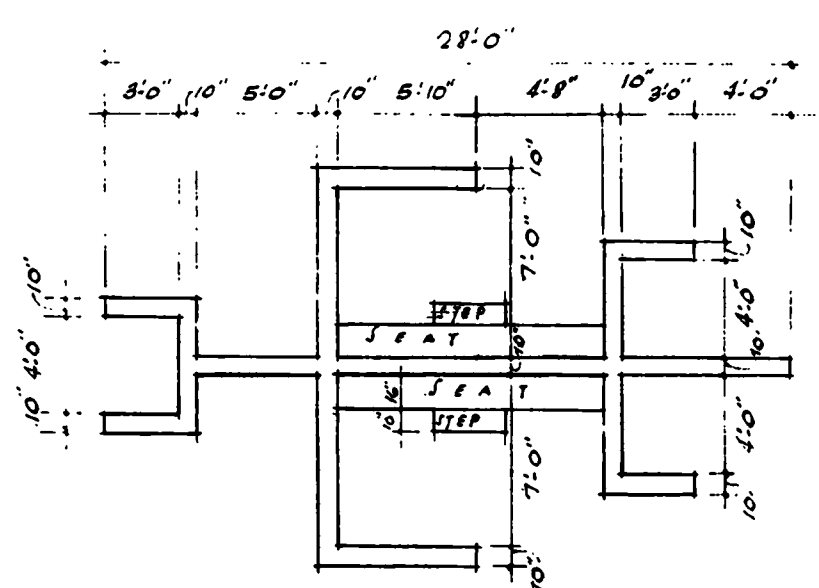
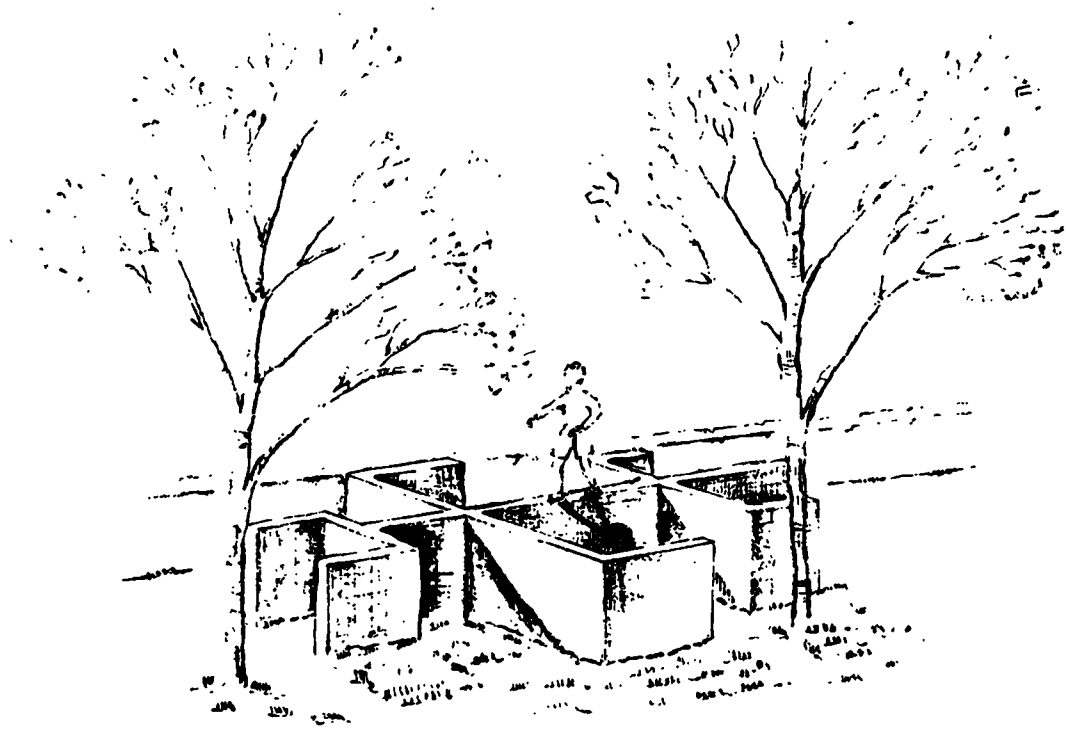


PLATE NO. 2  
THE DODGER  
SCALE 1/8" = 1'-0"

DETAIL AT FOOTING  
SCALE 1/4" = 1'-0"

Item 7. Baseball

Baseball fields shall be laid out in accordance with the drawing (Plate 7).

Space Requirements. This game requires a fairly level field, preferably turf, at least 300 feet square. A much larger area is needed if the regular distance of 60 feet between home plate and backstop is used. If two or more baseball fields are laid out with overlapping outfields, there should be at least 550 feet between home plates. Seating facilities, unless protected by a wire screen, should never be less than 60 feet from home plate.

Orientation. Same as described for softball (see page 4).

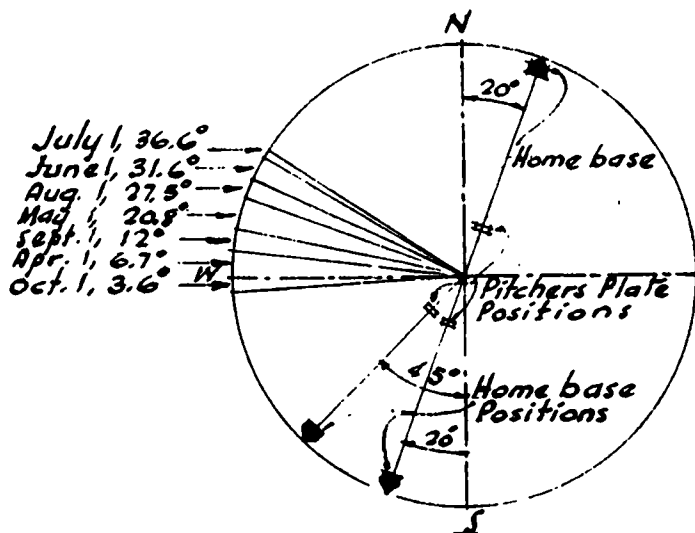
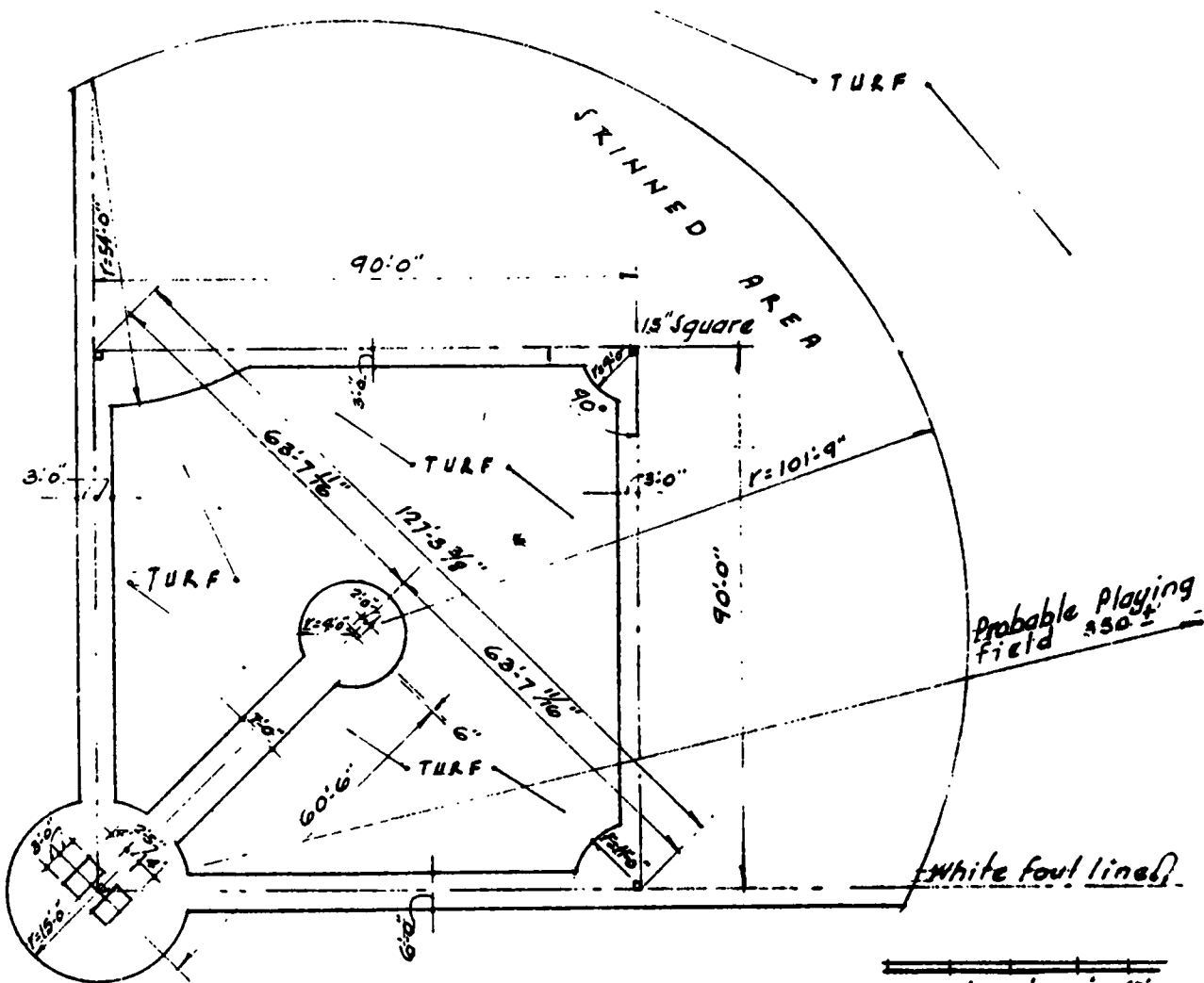
Grading and Surfacing. See "notes" drawing (Plate 7).

Baseball Diamond Accessories. Same as those specified for softball (see page 4 and Plate No. 5).

Baseball Backstop. Same as that indicated and described for softball backstop (see Plate 6).

Item 7

PLATE NO. 7  
 BASEBALL FIELD



NOTES:  
 0 10' 20' 30' 40'

Ideal diamond slopes up 15" from level base lines to pitchers plate. Min. slope for drainage should be 1.5% and a max. of 2%. If diamond must drain in one direction, average slope of 2% is satisfactory, but pitcher's plate must still be elevated above E home plate. Surface should be preferably turf.

ORIENTATION CHOICES FOR BASEBALL & SOFTBALL FIELDS, SUNSET POSITIONS & HOME BASE LOCATIONS.



Item 8. Three-Tier Bleacher

For projects where outdoor athletic fields such as softball or baseball diamonds have been developed, it may be desirable to provide seating facilities for spectators. These should not be expansive. The following specifications for a three-tier bleacher represent sturdy, but simple construction. Except where unusual needs demand larger facilities, the bleacher should be limited to a length of 30 feet.

This bleacher shall be built in accordance with the drawing (Plate 8) and with materials as hereinafter specified: Bleacher steps shall be located not more than 24' apart. All horizontal bracing shall be continuous.

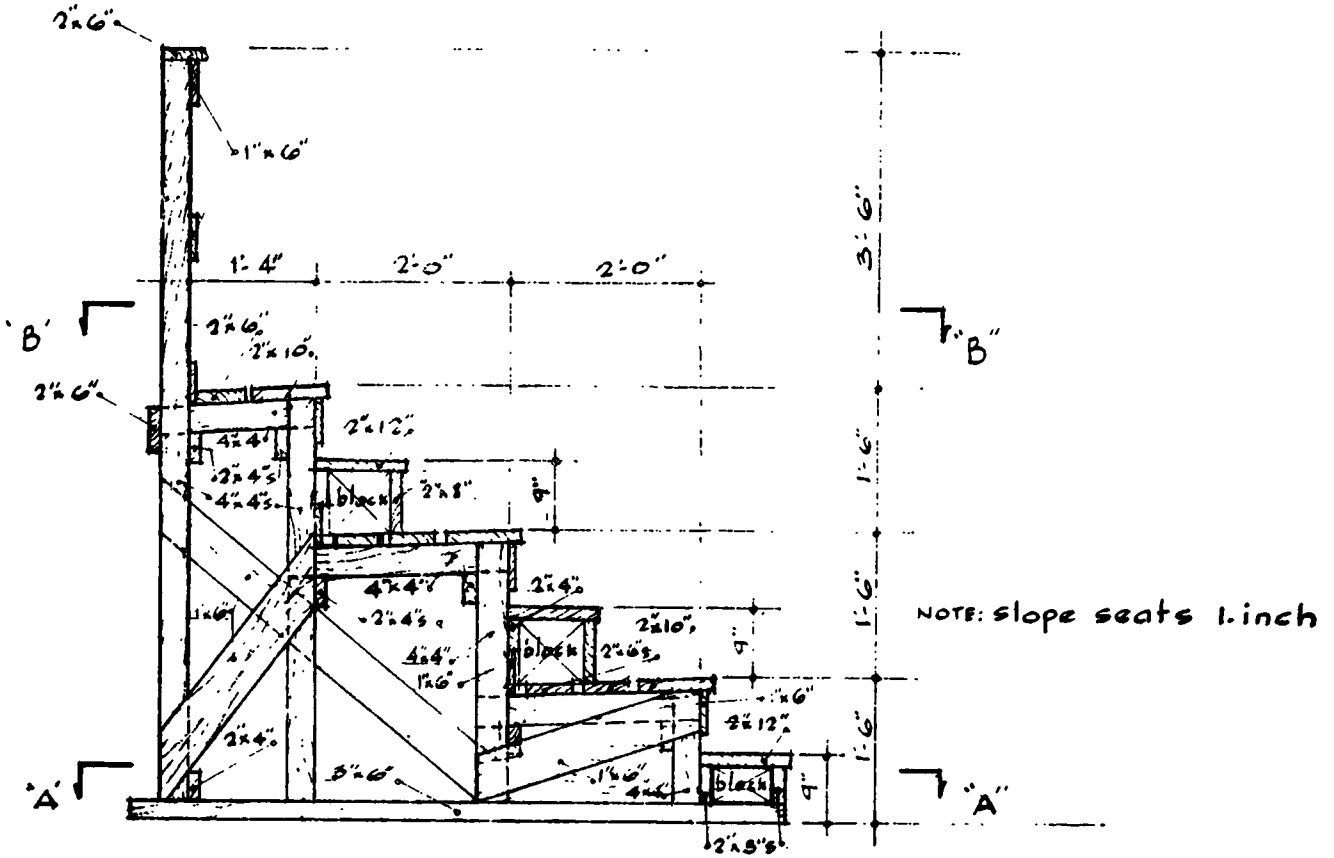
Wood. All wood shall be either oak, maple, birch, pine, fir or cypress (3"x6" sleepers shall be of cypress if available) of No. 2 grade with solid knots.

Nails. Use the following schedule of nails at each joint located at each support.

4"x4" uprights to 4"x4" joist	2-40D nails each
2"x6", 2"x10" seats	2-20D " "
2"x12" steps	3-20D one into block and one into each riser
2'x4" and 2'x6" horizontal braces	2-20D nails
All 1"x6"s	2-10D nails each
4"x4"s to 3"x6" sleepers	2-20D on opposite sides
2"x8" risers	2-10D into blocks
2"x5" risers	2-10D into blocks

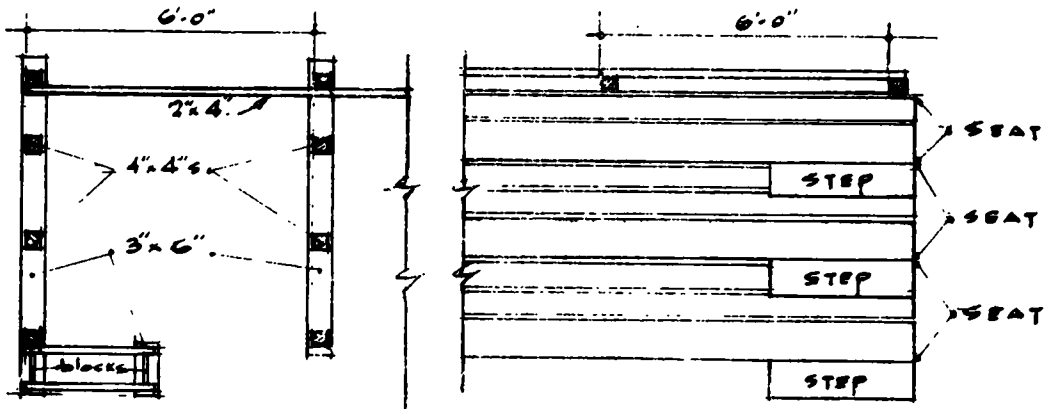
Finish. Creosote 3"x6" sleepers before assembling. Finish entire structure excepting sleepers with 2 coats of enamel paint.

Location. Bleacher stand should be located at least 40 feet from and parallel to the base line between home plate and first base and, unless a backstop has been provided, should never be less than 60 feet from home plate. Bleachers may also be erected in the same relative position to the base line between home and third where required.



END ELEVATION

1/2" SCALE



PLAN AT SECTION 'A-A' PLAN AT SECTION 'B-B'

1/4" SCALE

DETAILS OF A 3-TIER BLEACHER  
P L A T E No. 8

Item 9. Play Log

A large rough-hewn hardwood log, supported horizontally by two upright members (Plate 9) constitutes this simple, but useful play apparatus. It is a device for climbing, balancing, and considerable imaginative play. To the children who sit astride the play log, it is in turn a train, tank submarine, aeroplane, horse, or any one of a thousand other media for locomotion. There is room on board for a dozen or more. A simple variation of the play log conceived especially for today's air-minded youngsters, is shown on Plate 10, wherein it becomes a bomber, transport, or fighter plane.

Specifications

Log shall be well seasoned, preferably oak or other hardwood, approximately 18" diameter by 12" long with bark removed. All edges and roughness shall be smoothed and rounded with course sand paper. Bottom shall be notched to receive posts (supporting members) as shown on Plate 9.

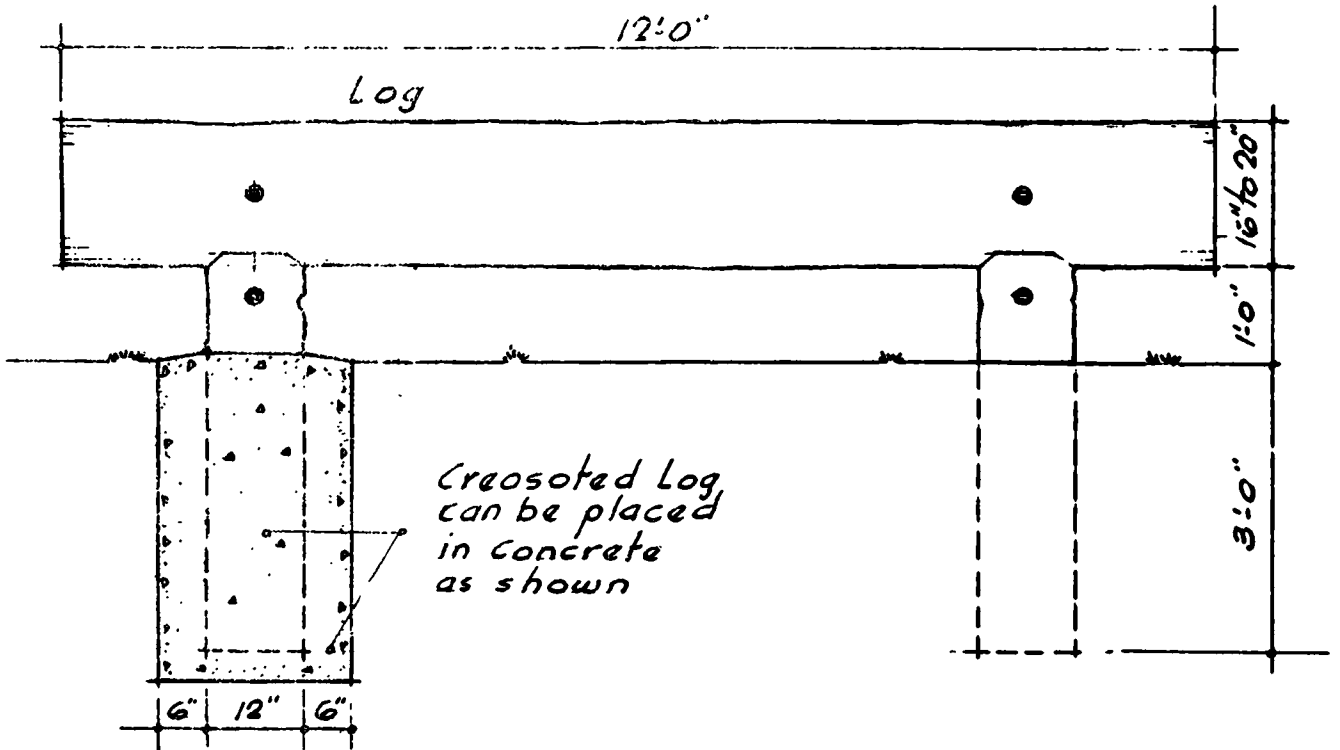
Posts shall be of seasoned hardwood, preferably locust, oak, or ash (dense fir or pine also may be used), shaped and placed in concrete footings, as indicated in drawing.

Hardware. Large log shall be bolted to supporting posts as shown with 5/8" through bolts, countersunk at both ends. Use 1 1/2" washers at each end of bolts. Bolts, nuts, and washers shall be galvanized or painted black finish.

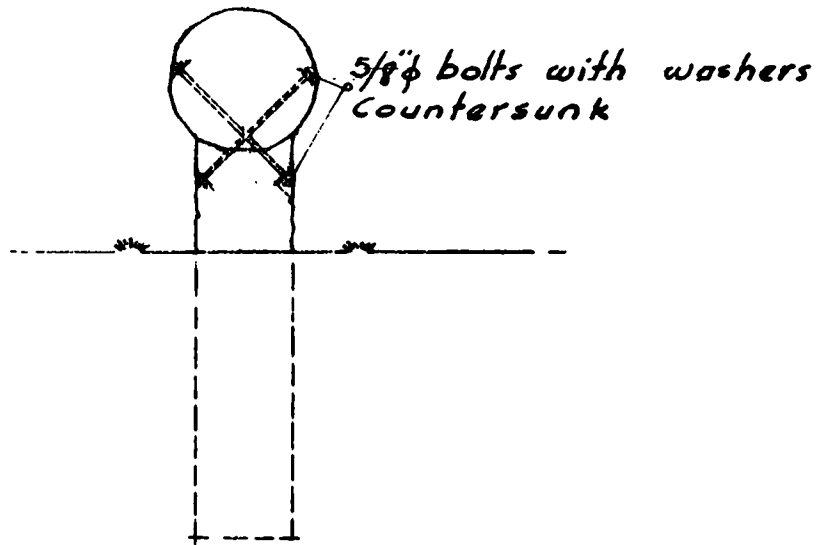
Finish. Log and posts shall be treated with one coat of flat paint and two coats of oil. Bolt holes shall be treated before assembly.

Aeroplane. Where desired, this effective variation of the play log may be created by the addition of wings and cockpits as shown on Plate 10. The wings shall be 3"x8"x4' boards of clear oak, ash, dense fir or pine. Boards shall be planed and sanded smooth with all corners and edges rounded. Wings shall be bolted to log with 2-3/8" bolts, countersunk top and bottom, and holes filled with putty. Cockpits are cut out with cross cut and draw knife as indicated. Finish as above.

PLATE NO. 9  
PLAY LOG

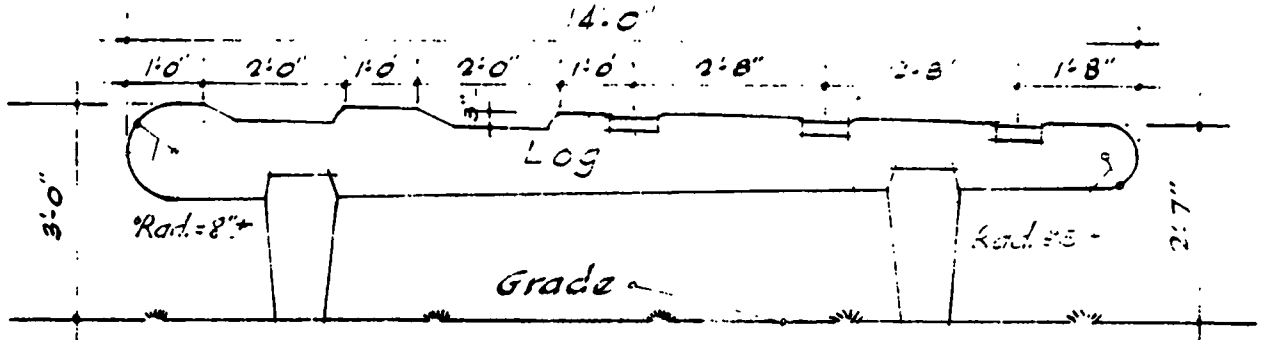


SIDE VIEW



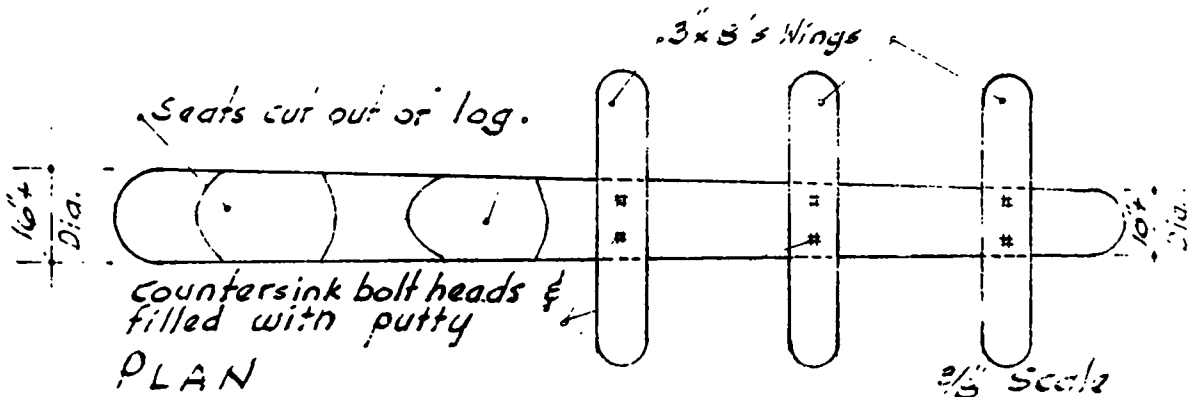
END VIEW 1/2" scale

PLATE NO 10  
 THE LOG PLANE



SIDE VIEW

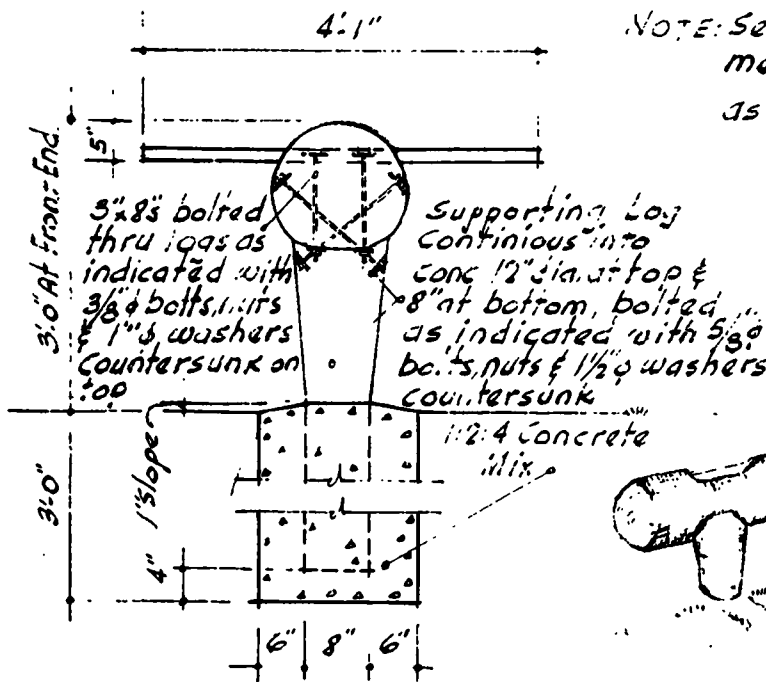
3/8" Scale



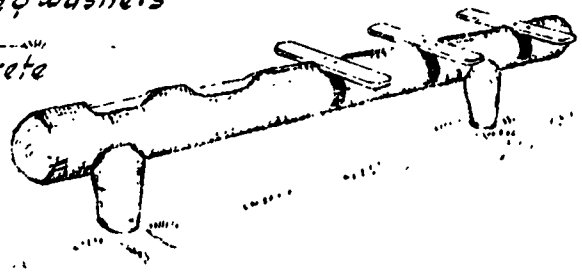
PLAN

2/3" Scale

NOTE: Secure logs that taper to measurements as indicated as near as possible.



FRONT VIEW  
 1/2" Scale



PERSPECTIVE

Item 10. Pipe Tunnel.

The pipe tunnel is made of re-inforced concrete sewer or culvert pipe, 3'-0" diameter and 4'-0" long, set in concrete blocking (see Plate No. 11). The pipes may be arranged in a series of three or more units with angle turns as shown in the drawing. The tunnel should follow the general contours of the play area. Children crawl through and over the pipes, and the cool shade within is an attractive feature on hot, sunny days. A minimum of supervision and maintenance is required in connection with this apparatus.

The foundation blocking should be at 1:2:4 mix, placed as indicated on the drawing. The pipes may be painted with concrete paint if desired.

Pipes are similar to standard pipe made by Universal Concrete Pipe Company, American Vitrified Products Company, or equal. It is suggested that local highway departments be consulted for availability of pipe. Sections with imperfections, which would not hamper use of the pipe, might be obtained at little or no cost.