



109
141
THS

A PRELIMINARY DESIGN
FOR THE
EAST LANSING RECREATIONAL PARK

Thesis for the Degree of B. S.
MICHIGAN STATE COLLEGE

Marvin L. Germaine
1940

THESIS

cop. 1

A Preliminary Design
for the
East Lansing Recreational Park

A Thesis Submitted to

The Faculty of
MICHIGAN STATE COLLEGE
of
AGRICULTURE AND APPLIED SCIENCE

by

Marvin Lyman Germaine
Candidate for the Degree of
Bachelor of Science

June 1940

THESIS

cap. 1

Legal
Description of Park Property

That part of the west half of the west half of the southeast quarter of section seven (7), town four (4) north, range one (1) west, Meridian Township, Ingham County, Michigan, lying south of Michigan State Trunk line M-78, except the south 40 rods thereof, containing 23.72 acres, more or less, reserving, however, to the grantor, his heirs, executors, administrators or assigns, an easement of way over and across that portion of said premises described as: beginning 66 feet north of the southwest corner thereof, thence south to the southwest corner, thence east 66 feet, thence northwesterly in an arc 66 feet, thence northwesterly in an arc 66 feet distant from the southwest corner to the place of beginning, said easement being for the benefit of and appurtenant to the lands now owned by the grantor to the west of the lands herein conveyed, for access to public road extending south to Burcham Drive.

126685

(a)

ACKNOWLEDGMENT

To Professor A. C. Miller for his kind assistance and helpful supervision and to Mr. Harry W. Lott for his suggestions which have greatly aided me in the design of the East Lansing Park Plan, I wish to extend my most sincere thanks and appreciation.

Marvin Lyman Germaine

D E D I C A T I O N

To George Marshall Ames, who devoted his entire life to the study and further development of the field of Civil Engineering and to whose success in life has been my inspiration throughout my college training, I sincerely dedicate this my thesis for graduation.

Marvin Lyman Germaine

PRINCIPLES OF PARK DESIGN

The first principle affecting both beauty and utility in the design of a park is that of sincerity of plan. By this is meant that the plan of a park should first of all meet every demand of convenience, amply accommodating such number of people as may use it, never allowing artistic considerations to outweigh practical necessities. The design should be the outgrowth of governing physical conditions, a meeting of the requirements of contour and ground formation. Rarely does good design require extravagant changing in earth-work. Sincerity of plan may be judged by ease of use, relative expense of execution, and beauty of permanent display.

The second principle of park design is strength of plan. A park design should not only express its purpose, but do so in such a positive way that the message shall carry. Strength of design can be obtained only by a forceful solving of problems well in advance of execution, a getting down to fundamentals and a constructing of the design on an axial two-dimension basis that will diagram simply and read clearly. The more elaborate a park is to be, the more carefully arranged must be the main lines of the design to provide strength for carrying the landscape super-structure.

The third principle is that of unity. The design of a park must express a certain oneness of idea. There must be a common trait in the expression of the different elements of its design and an amiable relation between them. There cannot be unity if there is attempted admixture of too widely variant park elements, and nothing will so destroy the unity of a park and render its effect so distinctly unpleasant as the bringing together of too many miscellaneous features into one park composition. To obtain unity in a park there must be a harmonious relation in both the design and the material of its component parts.

The fourth principle of park design to be recognized is that of scale. A designer will be rendered helpless at the start by too many fixed dimensions. He naturally must accept the boundary lines of the park and perhaps one or two other dimensions, but beyond that, the scale of the park features should be determined by the scale of the proposed design.

The fifth principle, that of character, is of importance in park work in two respects; first, a park design should not seem anonymous; and second, it should express the character of a park, not the character of something else. The design of a park should not be so intricate in its detail as to suggest a private garden. It should express a breadth of purpose, a largeness in the handling of its masses and in the disposition of its parts, that shall make for its civic

character. Character is the distinguishing mark that renders a design worthy of attention; it is the combination of those qualities that will make it appropriate to its surroundings and to the purpose of its building; it is that quality in its makeup or composition that receives good estimate from the community in which it is located.

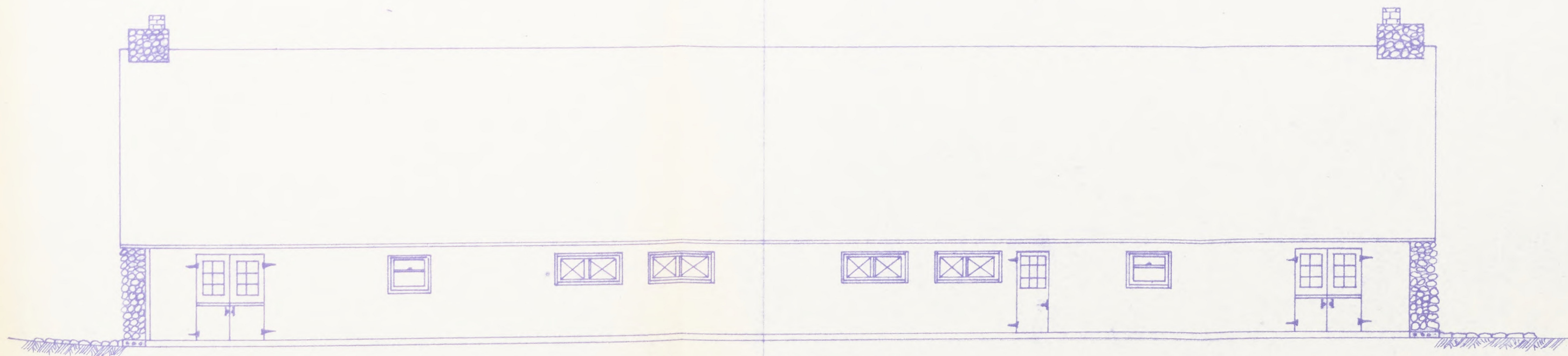
The final law or principle that must be observed in park design is that of attractiveness. The design of a park should be such as to render it attractive and inviting. The park must first of all present an appearance or artistic charm and pictorial beauty that will justify its existence in the public mind. Secondly, and perhaps as important as the preceding law, the design must be such that its attractiveness is not one-seasonal or temporary. Especially important is the problem of maintenance. A shabby park or one "run down at the heel," however beautiful it may be in innate design, will always be discredited and undervalued. A design to satisfy conditions of attractiveness must render a park beautiful and inviting, reasonably permanent as possible and maintenance without imposing burdens of expense.

Ames Memorial Lodge

The lodge or cabin is becoming very popular in most of the larger parks, and is used for various park entertaining programs, concerts, parties, etc. In the design of the Ames Memorial cabin, I have attempted to incorporate the necessities of such a cabin and also to make it as attractive as its surroundings. As shown on the plan view of the lodge, Page 8, the main ballroom is to be 100 feet x 30 feet; however realizing that such a large space would not be necessary in many cases, I have included in my design, to be optional, a collapsible wall running from the front side to the back side directly in the center of the cabin which when closed would divide the cabin into two small rooms 50 feet x 30 feet. There is a complete kitchen, accessible from both sides, which will accomodate any banquets or dinner parties. The fireplaces in each end of the lodge are to be made of field stone and firebrick and are built to accomodate logs up to 5 feet in length. The porch is to be open and has two shuffleboards, one at each end, lined on its floor. The lounge along the front of the cabin is to be equipped with lounging chairs and miscellaneous end tables and magazine racks. It is the desire of the designer that this cabin offer the youth as well as other citizens of East Lansing a place to have their recreational activities.



FRONT ELEVATION



REAR ELEVATION

AMES MEMORIAL LODGE

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

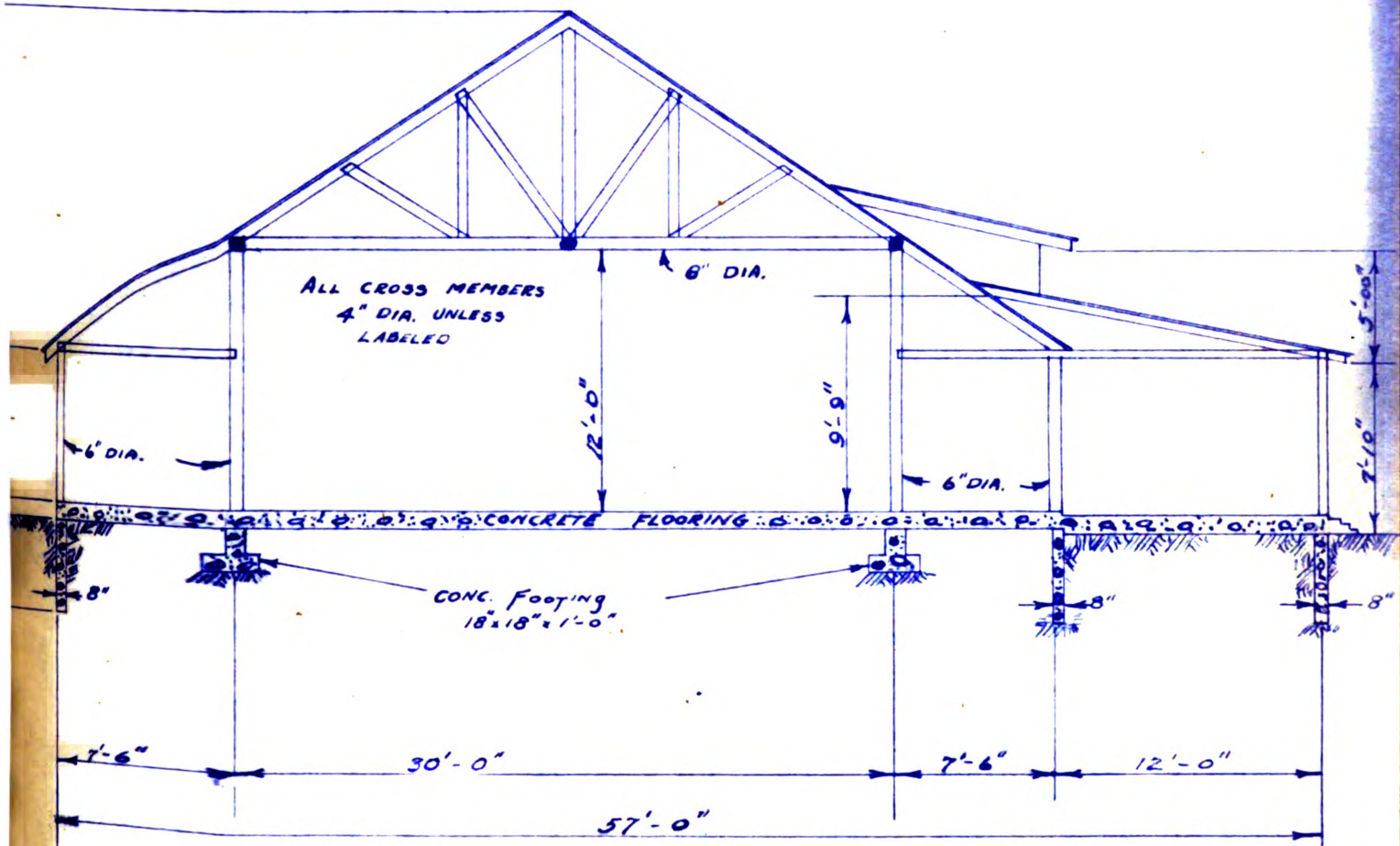


PLAN VIEW
SCALE $\frac{1}{8}" = 1'-0"$



END VIEW

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



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

Baseball Playfield

Baseball may be played on any level field 300 feet square, although an area 325 feet square is preferable. It is possible to play the game on an area as small as 250 x 250 feet if an over-hanging backstop is used. A turf area is desirable, although not essential, but when used the turf is generally removed on certain sections of the diamond. The following directions for laying out a baseball diamond are from the Official Playing Rules.

"With a steel tape measure, lay out the base lines and place the home plate and pitcher's box as shown in the diagram, Page 15. If it is possible to do so, have the home plate due north and the pitcher's plate due south. Remove the sod from the base lines between the home plate and first and third bases; also from first base to second base and from around the pitcher's plate. Fill in the base lines and the ground around the pitcher's plate if the sod is removed. Mark the lines of the batsman's box, on each side of home plate, with whitewash, chalk or similar substance. Also foul lines, from home plate to first base and from home plate to third base, continuing out into the field beyond first and third bases.

Distance from home base to first base, 90 feet; from first base to second base, 90 feet; from second base to third base, 90 feet, and from third base to home plate, 90 feet. Total distance around the bases, 360 feet. Distance is

...red 4

...rest,

...are di

...and

...same.

...are, ch

...are pla

...union

...cross.

...are in

...stano

...all b

...are fac

...social

...ecoun

...so am

...littl

...the h

...arks

measured from point of home plate, where the base lines intersect, and not from the front part of the plate. Distance across diamond; from home plate to second base, 127 feet, 3 3/8 inches; from first base, across diamond, to third base, the same. Size of batsman's box, 6 x 4 feet. Size of pitcher's plate, 24 x 6 inches. Size of base bags, 15 inches square. Home plate, one foot square, with the corners filled in on the portion facing the pitcher, where it will measure 17 inches across.

To obviate the necessity, for ground rules, where space is limited, the official rules specify that the shortest distance from home plate to a fence or stand in fair territory shall be 235 feet and home plate to grand stand, 90 feet.

The orientation of the baseball diamond is an important factor. Its relation to other features in the area, especially exits, entrances and grand stands must be taken into account, but the chief consideration is to have the diamond so arranged that the players will be bothered by the sun as little as possible. Best results are generally secured when the home plate is located in the southwest, although in many parks it is in the northeast corner.

Grading For Ball Park

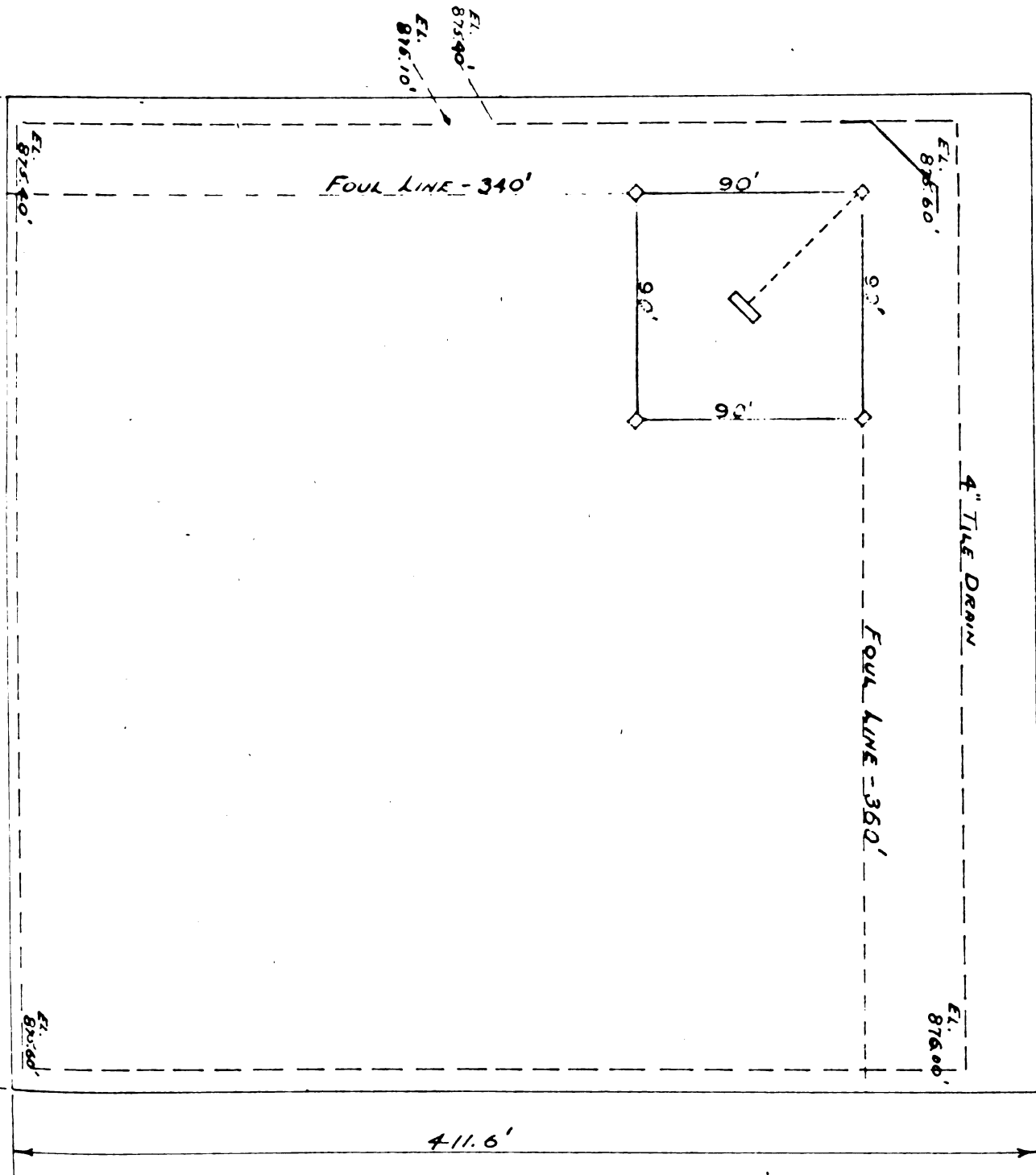
<u>Section</u>	<u>Area</u>	<u>Area</u>	<u>Av. Area</u>	<u>Cut</u>	<u>Fill</u>
1-2	4.58 sq. "	3.68 sq. "	4.13 sq. "x 10	368.0 cu. yd.	
2-3	3.68	3.88	3.78	336.0	
3-4	3.88	3.32	3.60	320.5	
4-5	3.32	2.27	3.30	294.0	
5-6	2.27	2.54	2.41	214.5	
6-7	2.54	2.43	2.49	221.8	
7-8	2.43	2.39	2.41	214.5	
8-9	2.39	2.03	2.21	197.0	
9-10	2.03	1.98	2.00	178.0	
10-11	1.98	1.85	1.92	171.0	
11-12	1.85	1.79	1.82	162.0	
12-13	1.79	1.65	1.72	153.0	
13-14	1.65	1.50	1.58	140.5	
14-15	1.50	1.42	1.46	130.0	
15-16	1.42	1.22	1.33 x 20	236.5	
16-17	1.22	1.03	1.13	200.5	
17-18	1.03	.72	.88	156.7	
18-19	.72	.48	.64	114.0	
19-20	.48	-.11	.18	32.0	
20-21	-.11	-.57	-.34		60.5
21-22	-.57	-.81	-.69		122.8
22-23	-.81	-1.13	-.97		172.5
23-24	-1.13	-.88	-1.00		178.0

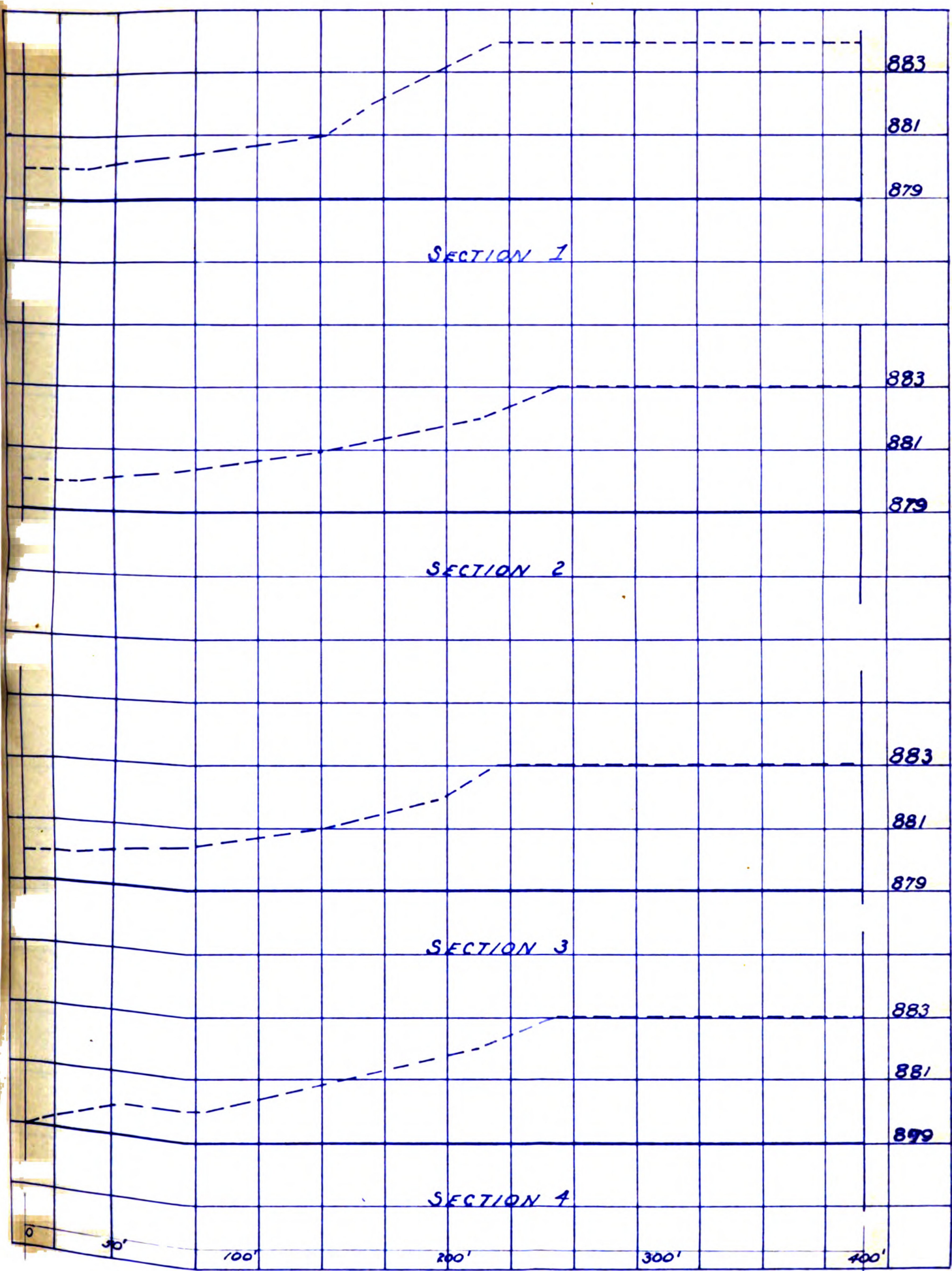
<u>Section</u>	<u>Area</u>	<u>Area</u>	<u>Av. Area</u>	<u>Cut</u>	<u>Fill</u>
24-25	-.88	-1.41	-1.14 x 20		215.0
25-26	-1.41	-1.90	-1.65		293.5
26-27	-1.90	-2.16	-2.03		<u>366.0</u>
				3840.5 cu yd	1408.3 cu yd
Excess - 2,432.2 cu. yd.					

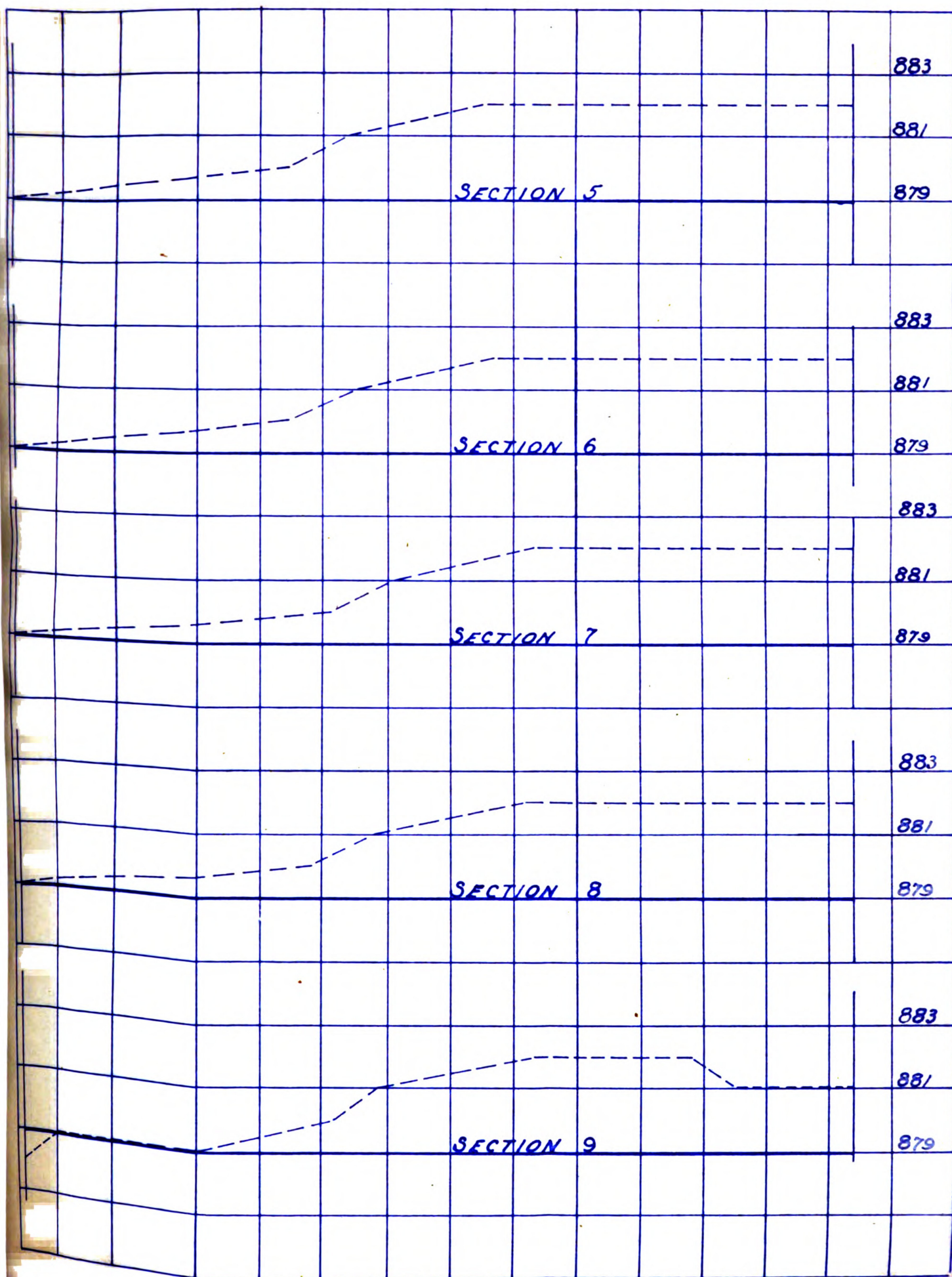
Note: The excess yardage from the grading of the ballpark is to be used to fill the low area along the northern edge of the park within the wooded section.

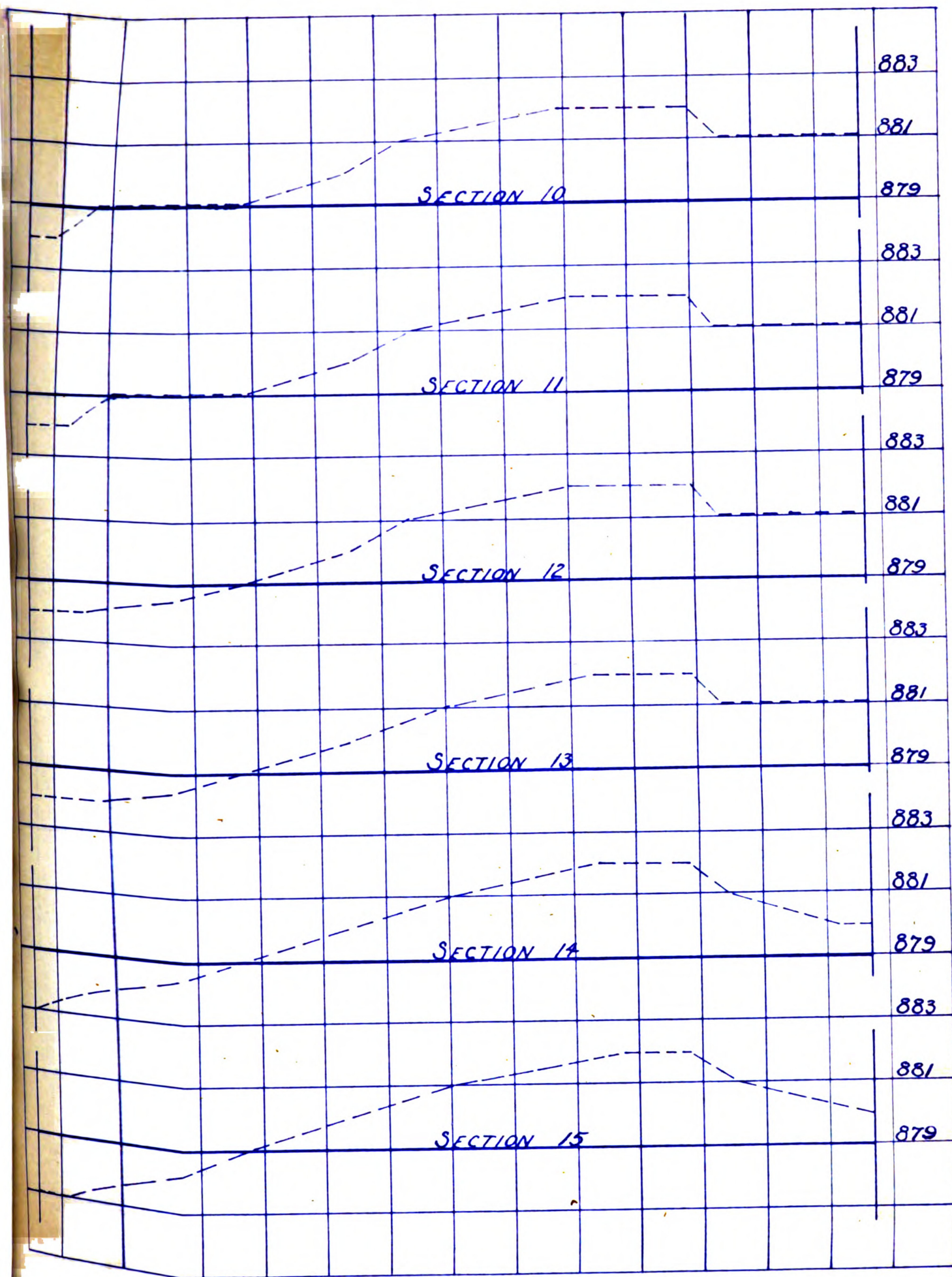
BASEBALL DIAMOND

SCALE 1"=60'









883

881

SECTION 16

879

883

881

SECTION 17

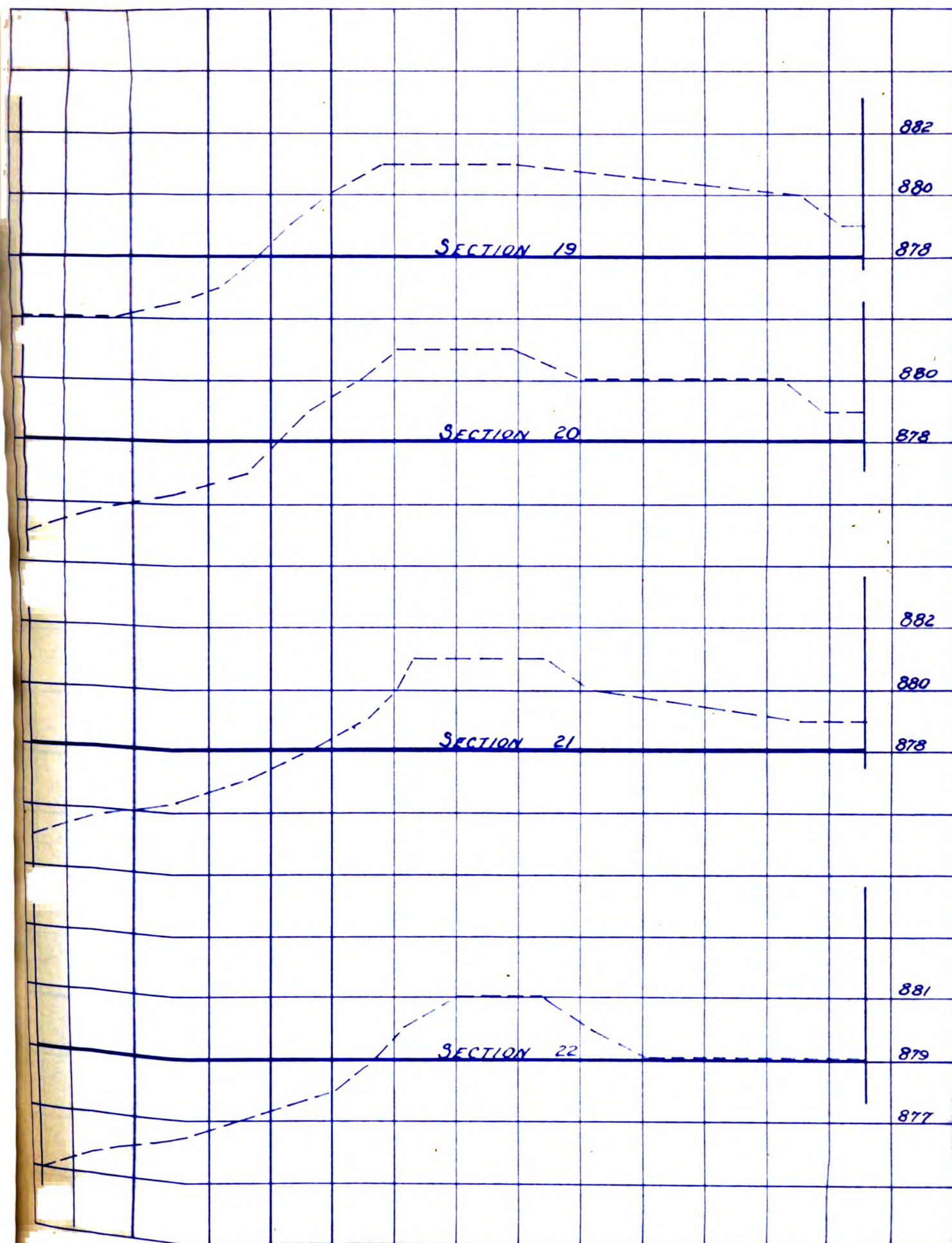
879

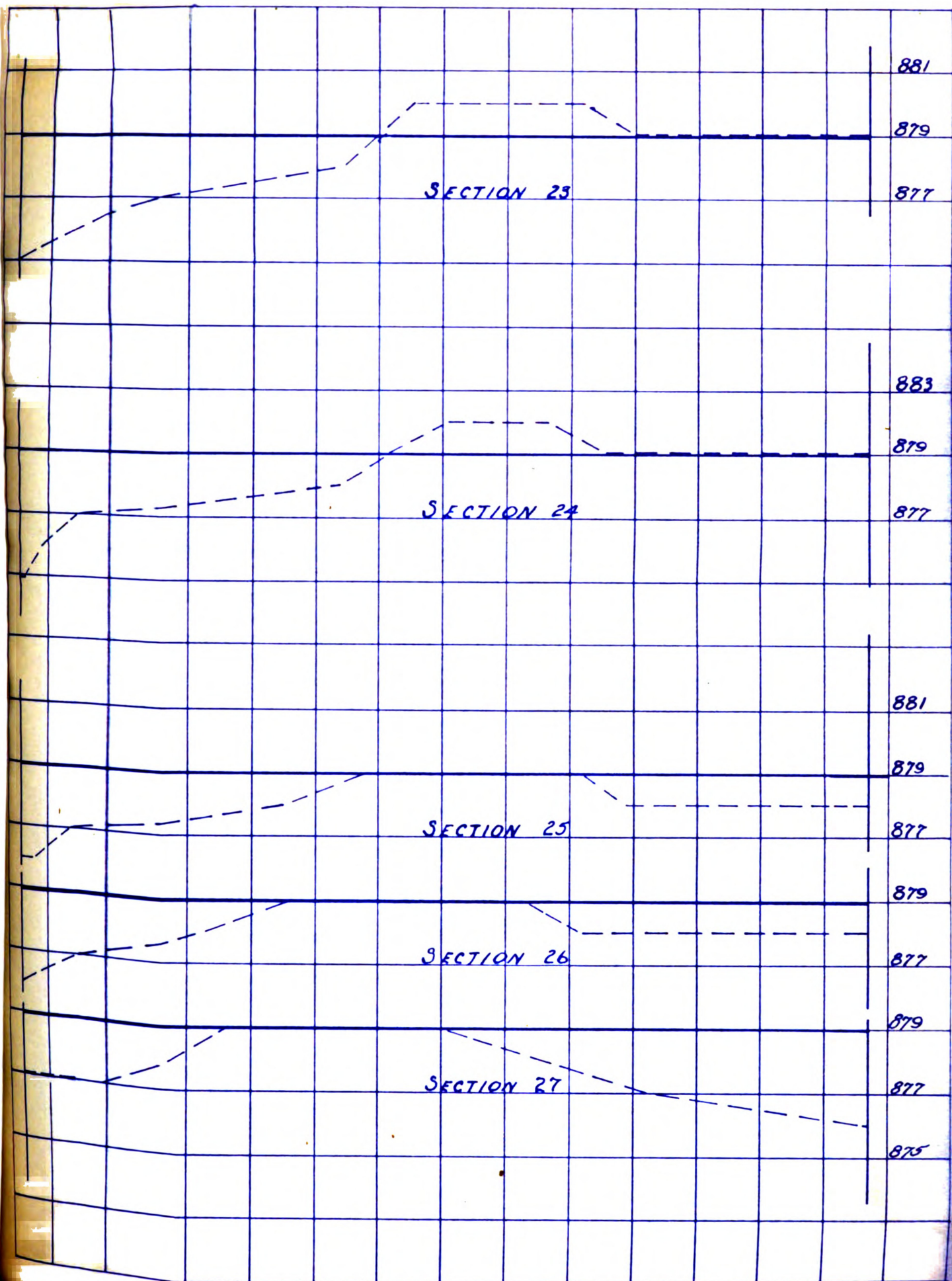
883

881

SECTION 18

879





Tennis Courts

The following specifications are used in constructing a 60 x 120 feet concrete tennis court. Attention is called to the use of lampblack in the surface finish:

Grading

The subgrade should be brought to as near a perfect plane surface as is reasonably possible in locations where there is no frost, and then a layer of sand one inch thick placed upon this surface and in turn the concrete base placed upon this sand. In locations where there is frost the ground should be excavated to a depth of nine inches and the excavations filled with four inches of one and one-half inch crushed rock, three inches of one-inch crushed rock, one inch of pea gravel and one inch of sand. Proper drains should be placed in order that no water can accumulate and freeze in the crushed rock. The sand should be brought to a plane surface, as in non-freezing territory.

Grade

The grade of a concrete tennis court should be .05 of a foot per 12-foot bay. The slope may be entirely from one end or from the middle toward each end. The latter slope is preferable when the topography will permit it.

Base

The base should be constructed of $1:3\frac{1}{2}:3\frac{1}{2}$ concrete, in which the aggregate should be three - fourths inch crushed

rock. The forms should consist of 2 x 4 inches 2 12 feet Oregon pine, surfaced four sides, especially selected for straightness. Some twenty pieces will be required. The forms should be set so there is a clear space of 12 feet between them and a header should be centered at the 12 foot point. The bay is then to be filled to a point three-fourths inches below the top of the forms with concrete well tamped and allowed to take the initial set, after which the surface finish is to be placed.

Surface Finish

The surface finish is to be mixed from one part of cement to two parts fine sand to which are added two pounds of lampblack for each sack of cement. The space occupied by the header is to be filled with surface finish in order that the surface line may be cut through to the subgrade with ease. After the surface has been brought to a plane, the 12 foot lines are cut through to the sub-grade, and the alternate lines are cut through to the base. The surface is to be troweled smooth, then allowed to set to the proper stage, and finally steel trowel floated in order to slightly roughen the surface. The proper stage for floating is quite critical and great care should be exercised in order to do this operation at exactly the right time.

Fence

The finished fence should be 10 to 12 feet high, constructed of half-inch and two-inch galvanized pipe and on

one-inch mesh galvanized poultry netting. The two-inch pipes should be spaced 10 feet center to center, placed in concrete three feet deep, and centered upon a line four inches outside of the finished paving. (See Page 27) The two-inch pipes should be cut off at a height of six feet above the paving, except the corner posts, which should be two inches throughout their entire height. The one-inch pipes should be placed through the eyebolts embedded in the concrete coping and the bottom of the poultry fence attached to it. Openings for 3 x 7 feet gates should be left at such points as may be desired. A serviceable gate of these dimensions is made by the American Steel and Wire Company.

Coping

The coping is to be of similar mixture to that in the base, plastered with regular finish, eight inches wide and the top six inches above the paving. The two-inch posts shall be placed along the center line of the coping. The coping shall be reinforced by two lines of one-fourth-inch reinforcing placed one-inch from the surface on both inside and outside faces. At six-foot intervals two-inch drain pipes approximately eight inches long should be placed in the coping at the low end or ends of the court. Galvanized eyebolts three-eighths by six inches should be embedded in the coping at three foot intervals and the galvanized half-inch pipe inserted therein.

Pipe Posts

The posts should be of four-inch galvanized pipe

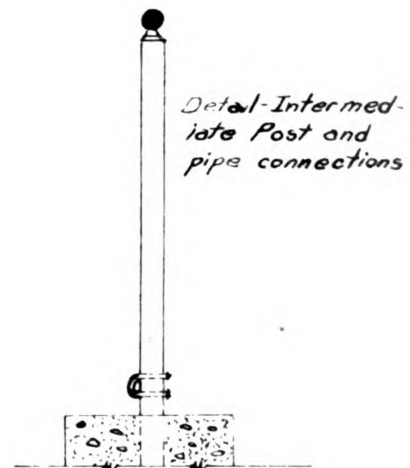
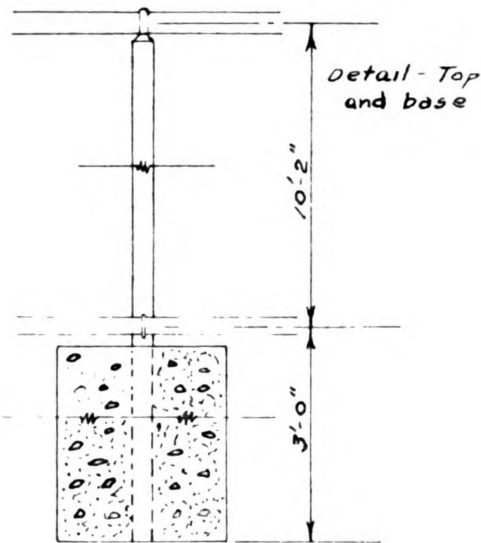
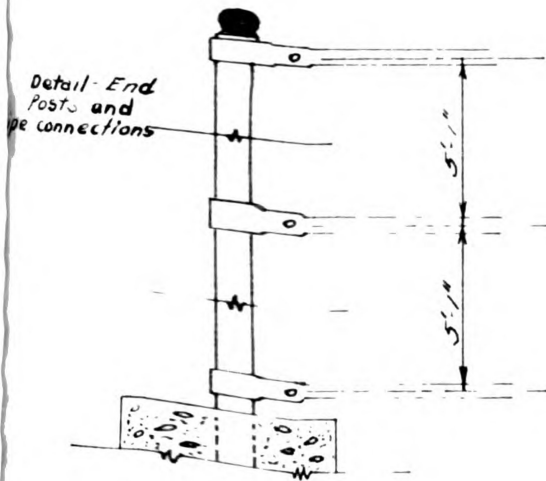
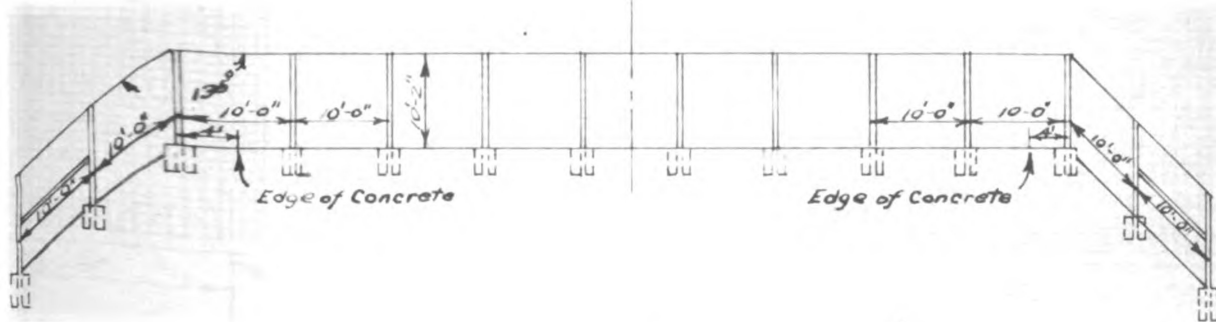
made as per accompanying sketch, (See Page 27) and embedded in a concrete block two feet square by three and one-half feet deep.

Lining

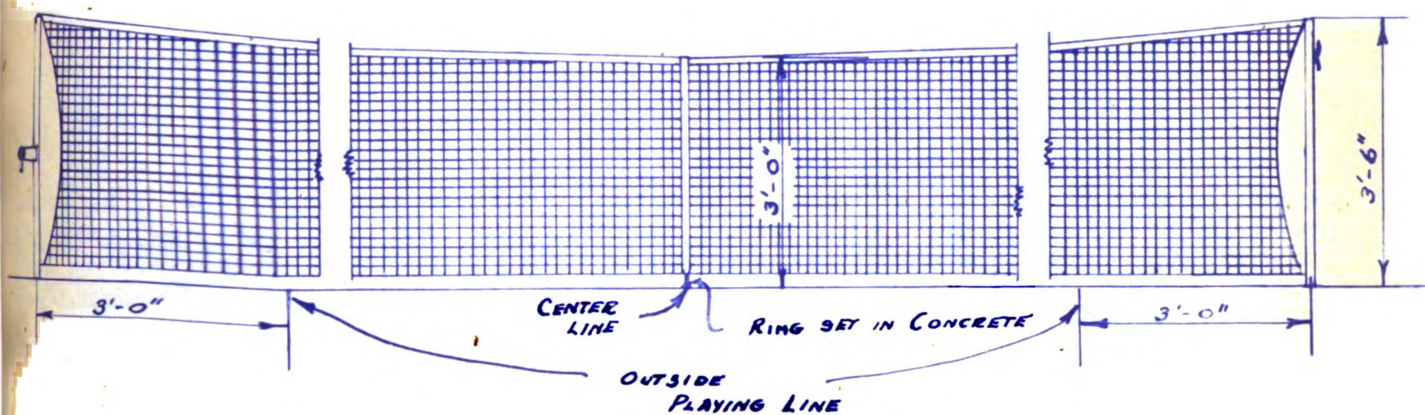
The lines should be painted with concrete, three inches wide on the ends and all others one and one-half inches wide. (See Page 31).

The court as described has no reinforcing in the paving. The expansion and contraction due to temperature changes is accomodated by the cuts through to subgrade. The court if properly constructed is divided into independent blocks 12 feet square.

FOR TWO COURTS

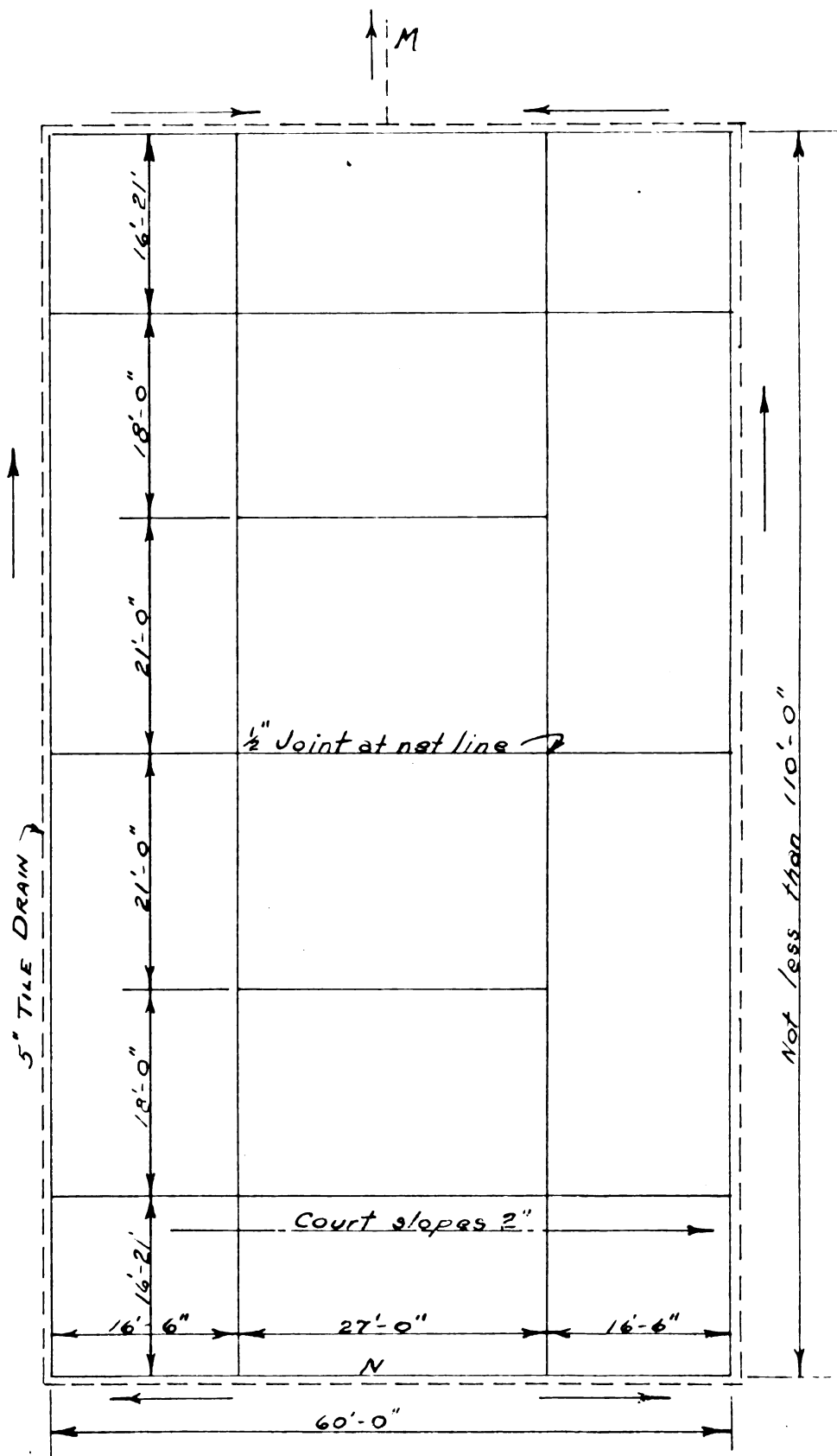


TENNIS COURT BACKSTOPS

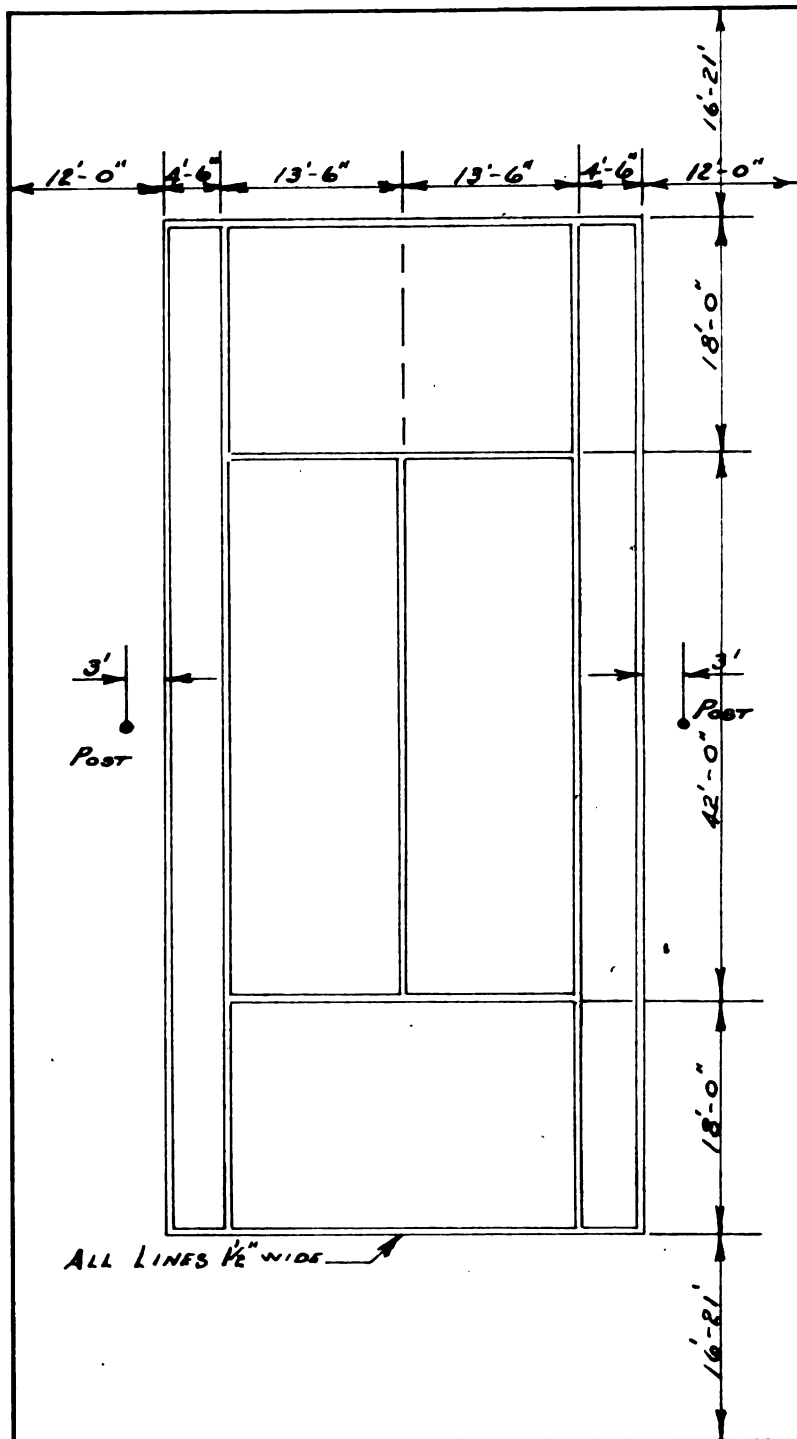


ELEVATION SHOWING PROPER HEIGHT OF NET





CONSTRUCTION PLAN

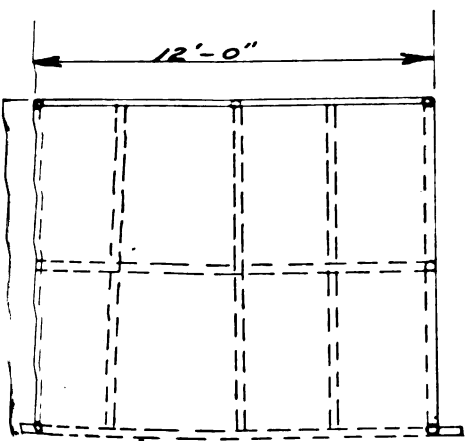


PLAYING PLAN

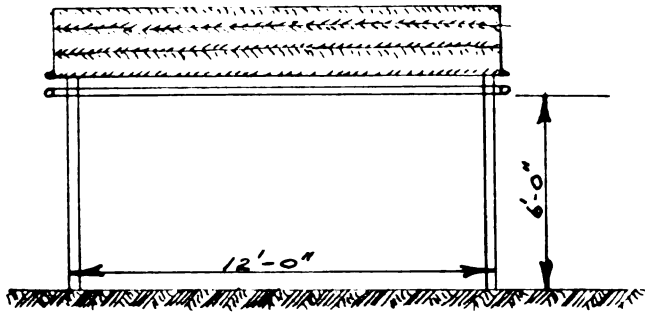
Picnic Facilities

Perhaps no park facility encourages family recreation as much as the picnic ground, and it is being used increasingly in many of the larger parks throughout the country. The average park of this size includes such facilities as fireplaces, picnic tables, shelters and winding paths with occasional loveseats and benches bordering the more secluded walks.

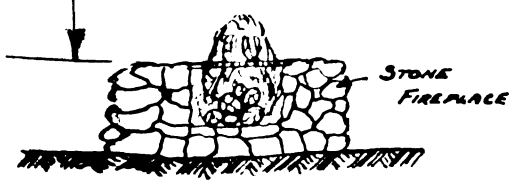
I have attempted in my design to develop the northern section of the park for picnic and outing gatherings. Four small log shelters for picnic goers are to be arranged as shown on park plan drawing. The design of these log shelters (they are all of the same design) is shown on Page 33. To encourage family recreation I have designed a small children's playground within the wooded section of the park to supply child entertainment while the older members of the family are enjoying the beautiful walks or the quiet of Ames Memorial Lodge. The children's playground will be supplied with the customary portable swings, tetter-totters, slides, etc. Remembering father and his favorite game of horse-shoes, a set of six horsehoe courts are to be found directly north of the lodge.



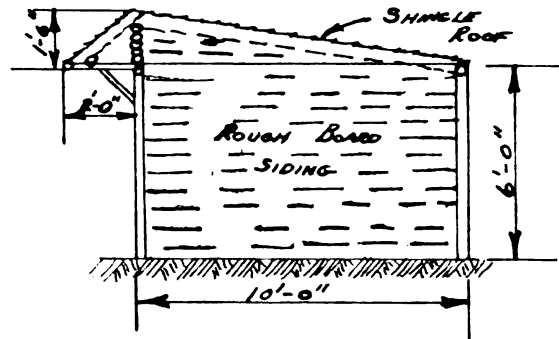
PLAN VIEW



FRONT VIEW



SIDE VIEW OF FIREPLACE



SIDE VIEW

PICNIC SHELTER
Scale 1" = 6'-0"

Road Facilities

To accommodate immediate access to the park and its varied facilities it is deemed advisable for the safety of the children in the park and for the beauty of the natural layout to make the roadway a straight right-of-way, to enter the park from the north at M-78 and running along the west boundary of the park with a right-of-way extending into the park a distance of 66 feet from the west boundary line. The roadbed is to be crushed stone with concrete curbing. The main roadbed is to be graded as shown on Page 41. A parking area within the boundary of the park is to be an offset from the road a distance of 20 feet and running along the road south from the southern edge of the woods, a distance of 700 feet, more or less. From this one road, narrow walks will lead to the various units of the park.

Entering from the northeast corner of the park over a culvert already in place will be a small service roadway running along the eastern boundary of the park meeting a circular drive immediately behine Ames Memorial Lodge. This road is to be used for service only and its entrance will be through a steel gate which when not in immediate use shall be locked. (see park plan.)

At the southern end of the park, as designed, will be a temporary storage lot for such accessories the city of

East Lansing deems advisable to store. This area will include a small tract of land, approximately one and one-half acres, being bound by the southeast corner of the park, to be used as a nursery and planting area. It is deemed advisable that this area be fenced in and a gate opening onto the road at the south entrance of the park.

The road, leaving the park proper at the southwest corner, will continue South meeting Bircham Drive where Alton street now is located.

Entirely optional and to be left to the planning board is the design of the entrances. It is the plan of the preliminary design to make these entrances as attractive as possible to add to the present beauty of the park. Having the drive bound with field stone pillars and a bronze name-plate embedded within one pillar is one suggestion that might be considered.

Grading for Road

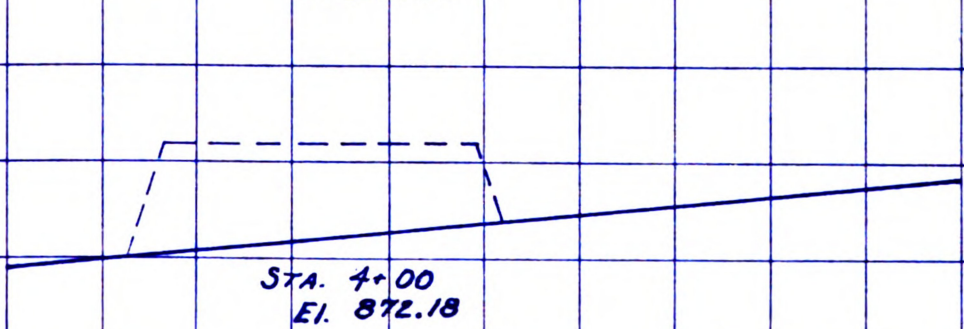
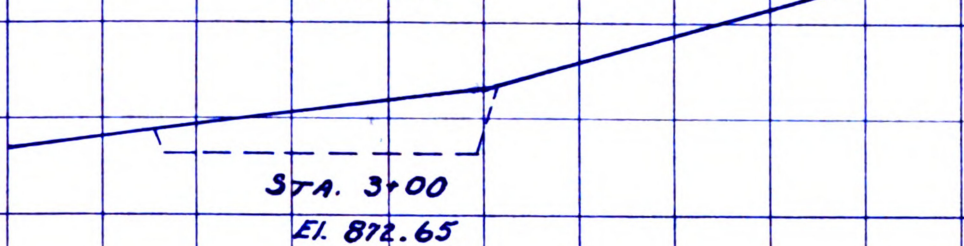
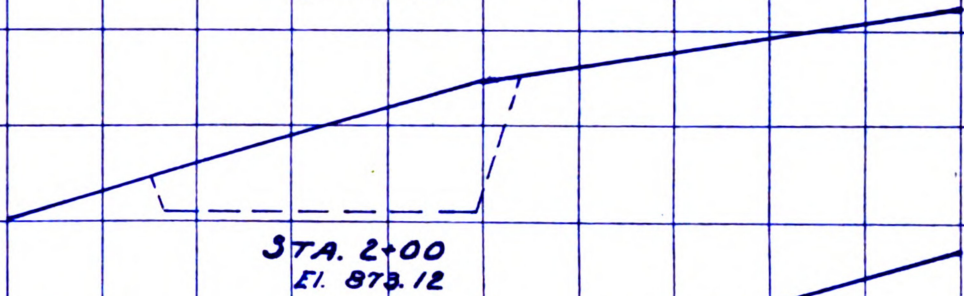
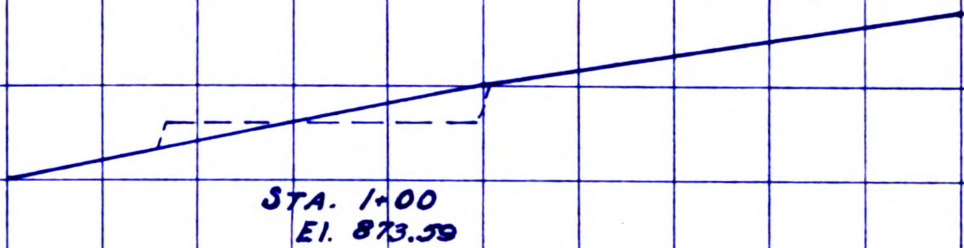
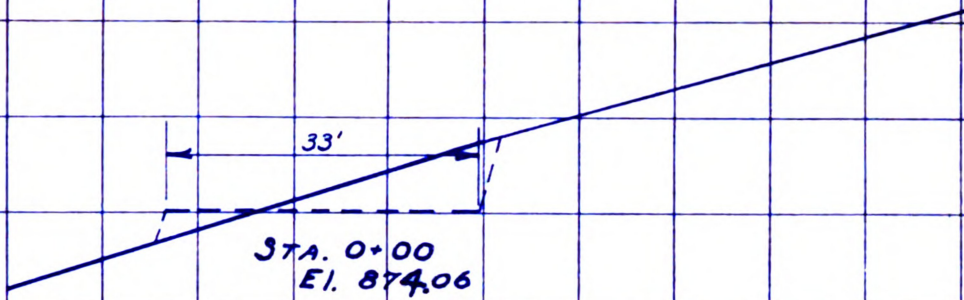
Scale: 1 sq. in. = 40 sq. ft.
length = 100 ft.

Section	Elev.	Area	Area	Av. Area	Cut	Fill
0-1	874.06	.18	.05	.115	17.1	
1-2	873.59	.05	.76	.41	60.8	
2-3	873.12	.76	.36	.56	83.0	
3-4	872.65	.36	-.93	-.29		43.0
4-5	872.18	-.93	-1.85	-1.39		206.0
5-6	871.71	-1.84	2.20	.18	26.6	
6-7	871.24	2.20	6.30	4.25	630.0	
7-8	870.77	6.30	5.70	6.00	890.0	
8-9	870.30	5.70	3.50	4.60	682.0	
9-10	869.83	3.50	2.22	2.86	424.0	
10-11	869.36	2.22	.40	1.31	194.0	
11-12	868.89	.40	-3.25	-1.43		212.0
12-13	868.42	-3.25	-2.95	-3.10		460.0
13-14	867.95	-2.95	-.10	-1.53		227.0
14-15	867.00	-.10	-.24	-.17		25.2

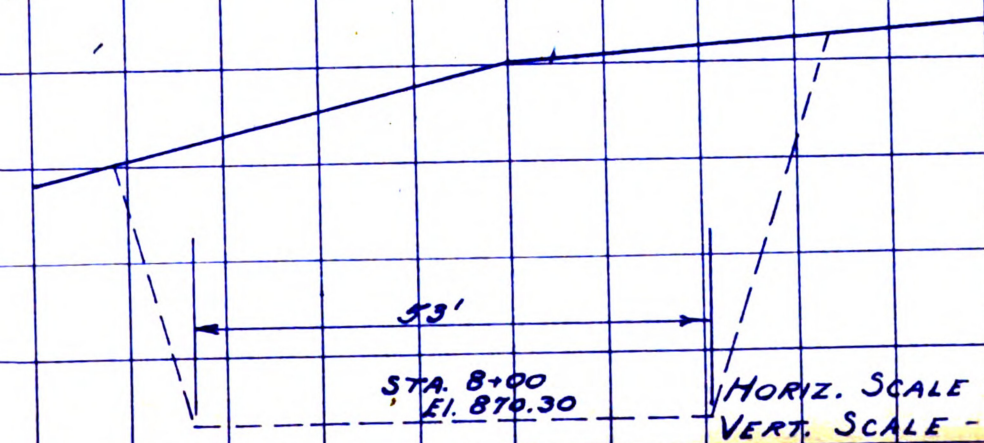
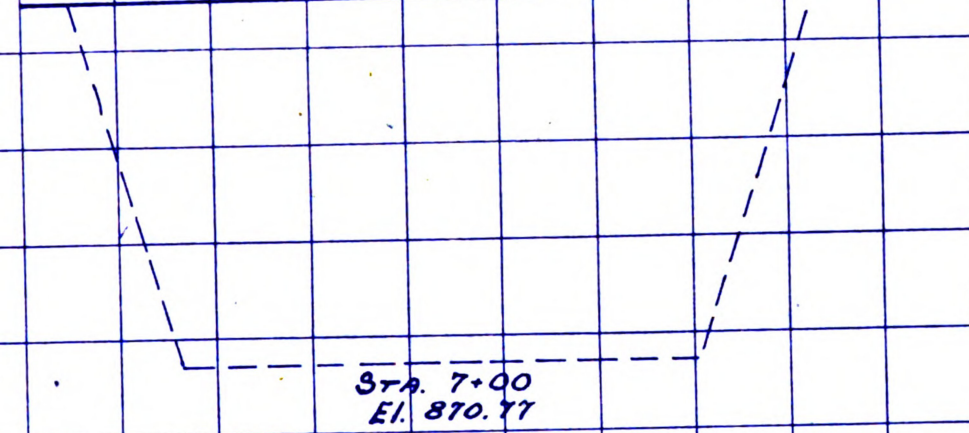
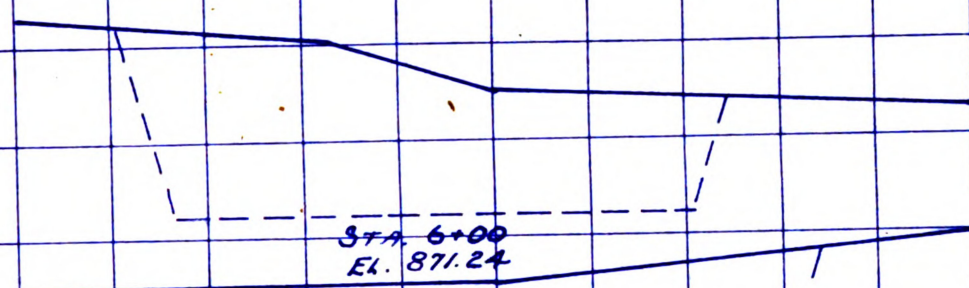
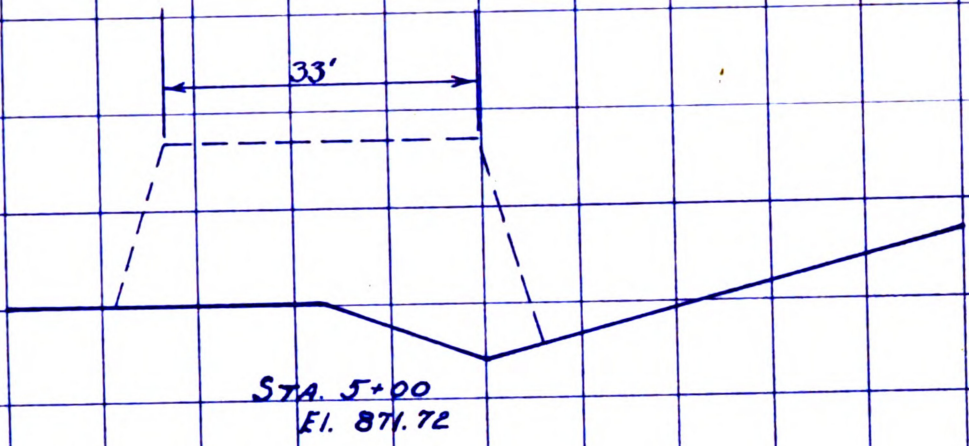
Total cu. yds. 3,007.5 1,173.2

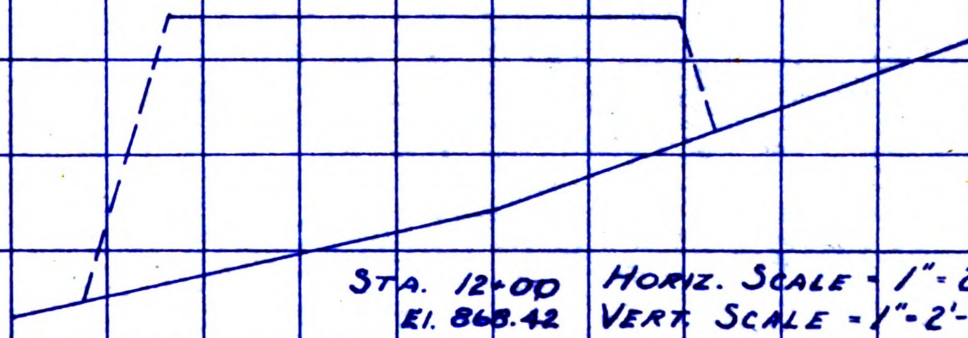
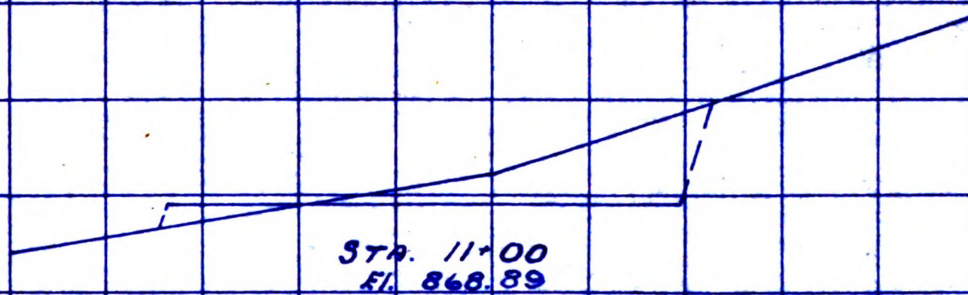
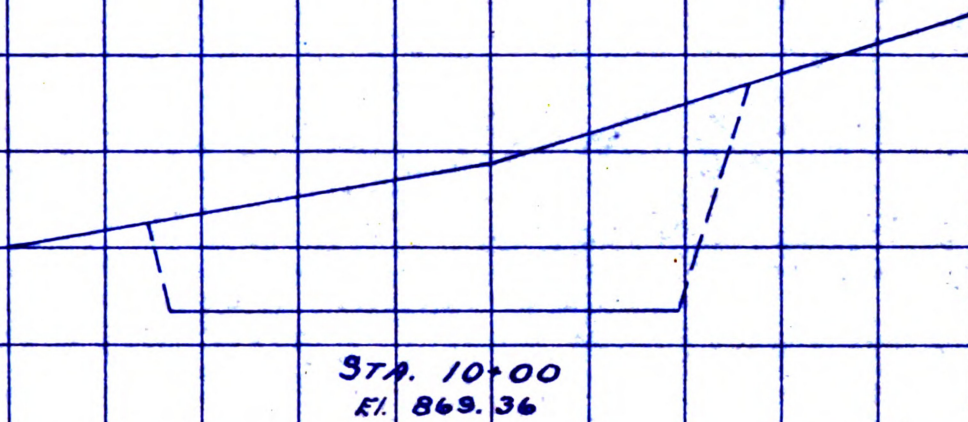
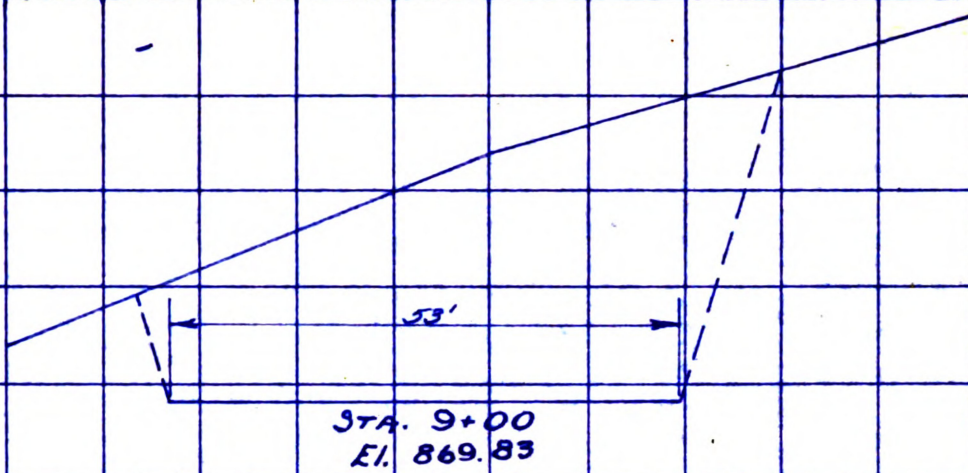
Excess 1,834.3 cu. yd.

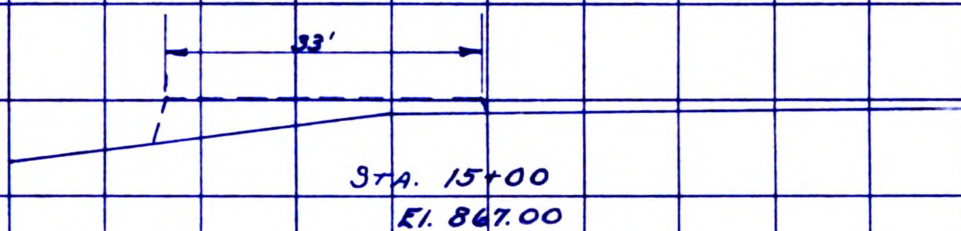
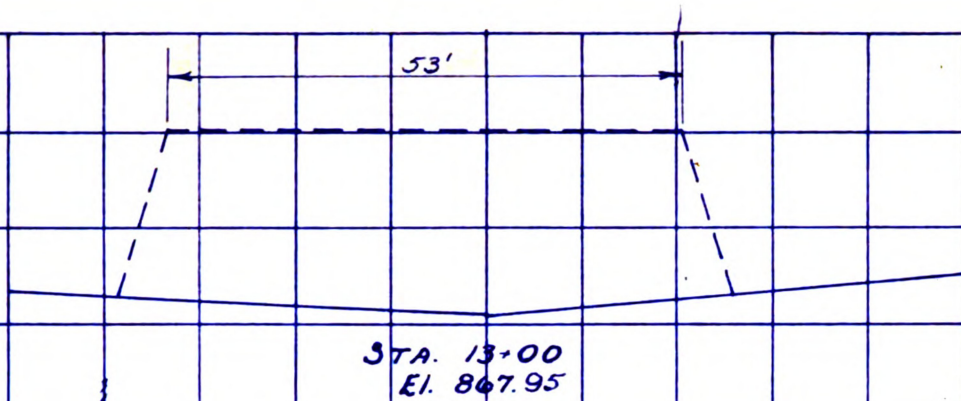
Note: This excess yardage is to be used to fill the southeast corner of the park proper, leveling off an area for the nursery.



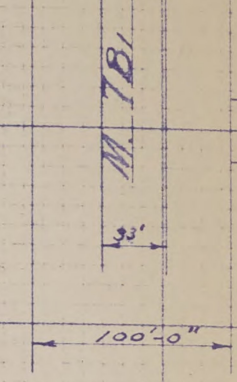
HORIZ. SCALE - 1" = 20'-0"
VERT. SCALE - 1" = 2'-0"







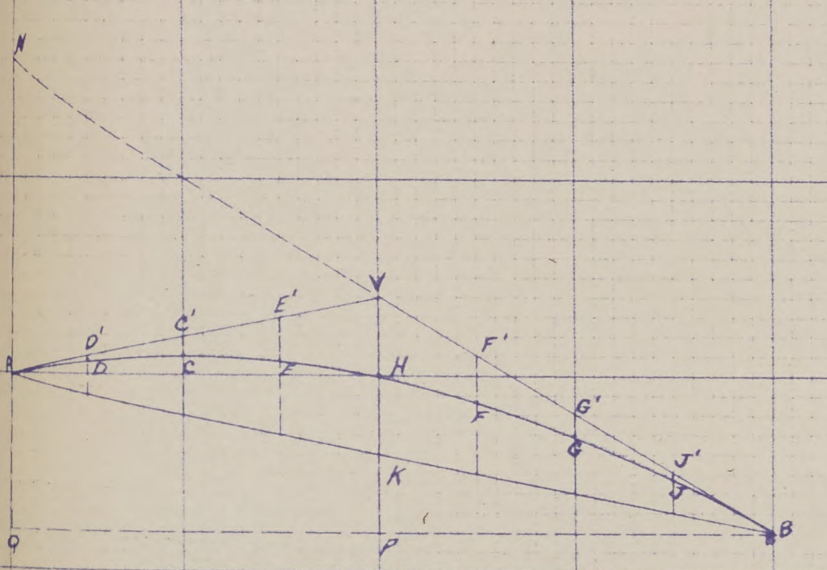
HORIZ. SCALE - 1" = 20'-0"
VERT. SCALE - 1" = 2'-0"



PARKING AREA

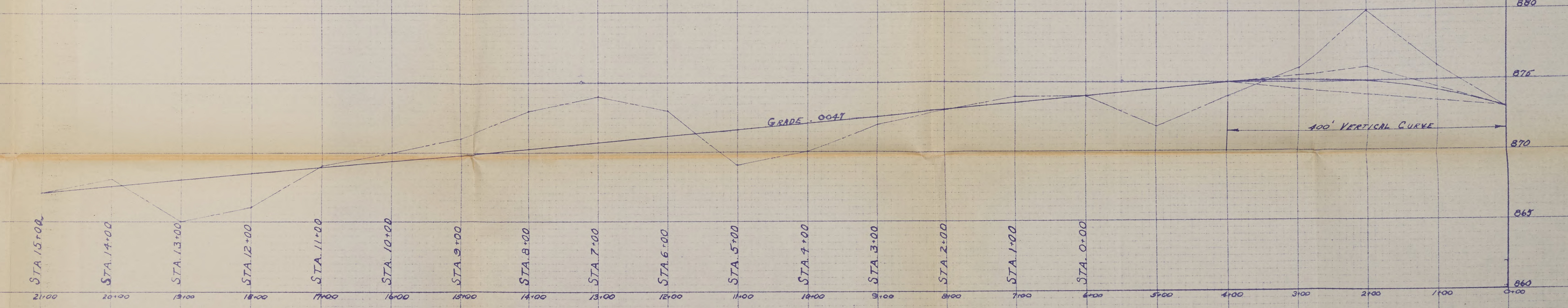
SOUTH SIDE PARK

PLAN & PROFILE for ROAD



400' VERTICAL CURVE

STA.	ELEV.
A	= 875.00
D	= 873.787
C	= 875.25
E	= 875.238
H	= 875.00
F	= 874.638
G	= 874.25
J	= 873.687
B	= 873.00

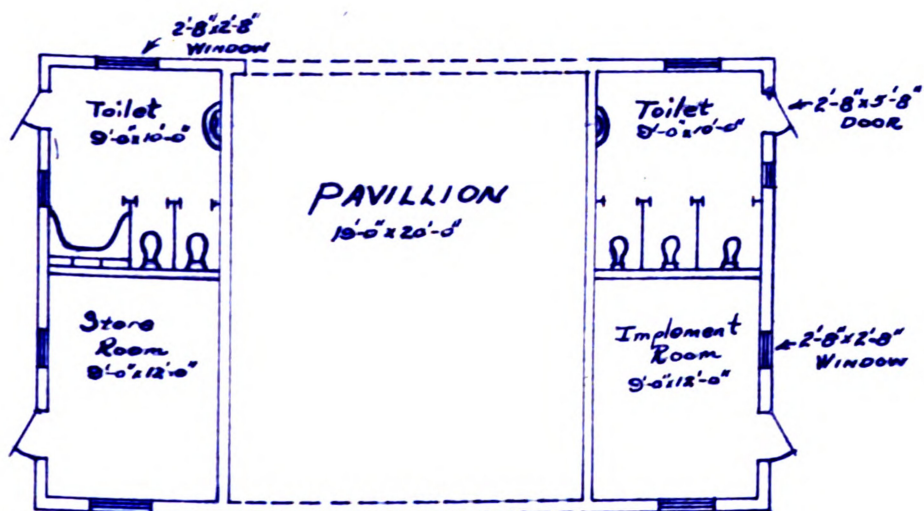


BURCHAM DRIVE

Sanitary and Water Designs

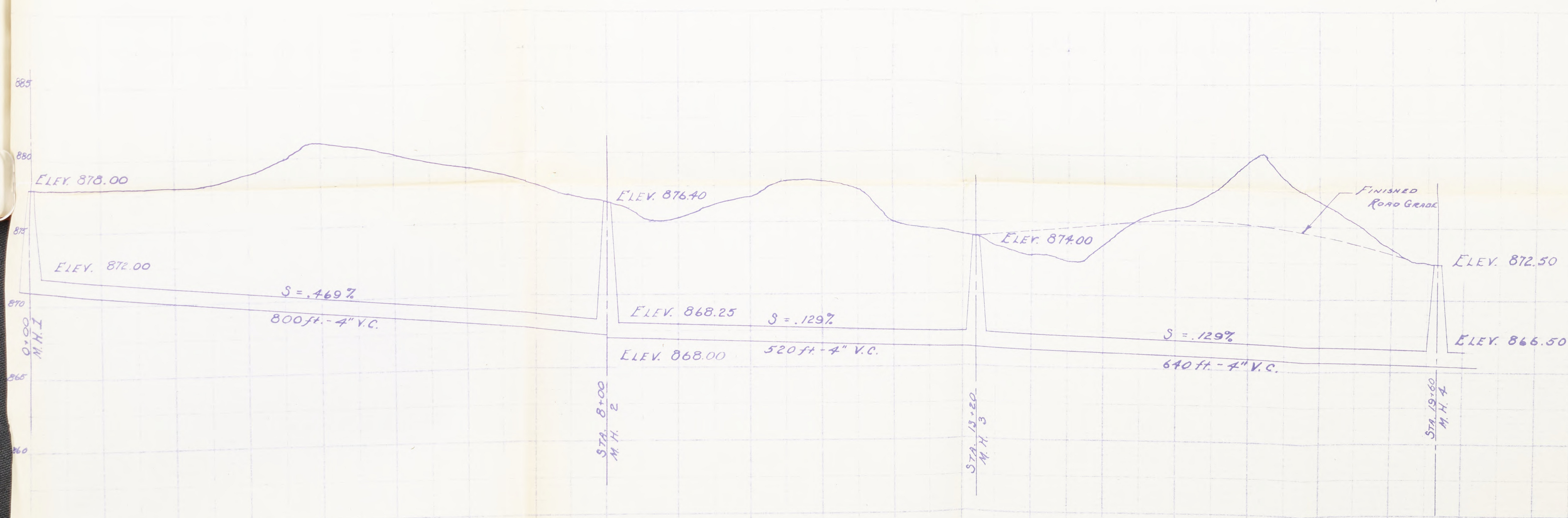
An attractive log structure as shown on Page 43 was designed to accomodate the necessity of a comfort station and at the same time has allowed the use of two rooms for storage or implement rooms. As shown by the plan and profile map, the sewer is to be placed across the park running in the general direction to the southwest corner of the park, thence to Bircham Drive, and thence to the city sewer system connection at Gunson and Collingwood Drive. To accomodate the waste and refuse of the kitchen, a small three inch pipe has been placed from the cabin to connect into the sewer pipe as shown on complete park plan drawing.

Water supply for the park is to be piped from the city mains. It will follow the same ditch as the sewer, being placed on a ledge of the sewer ditch and some three feet above the invert of the sewer. By so placing the water main, considerable excavating costs will be saved, and also, the water will be close at hand for both the comfort station and the Lodge.



COMFORT STATION
SCALE 1" = 10'-0"

COMFORT STATION



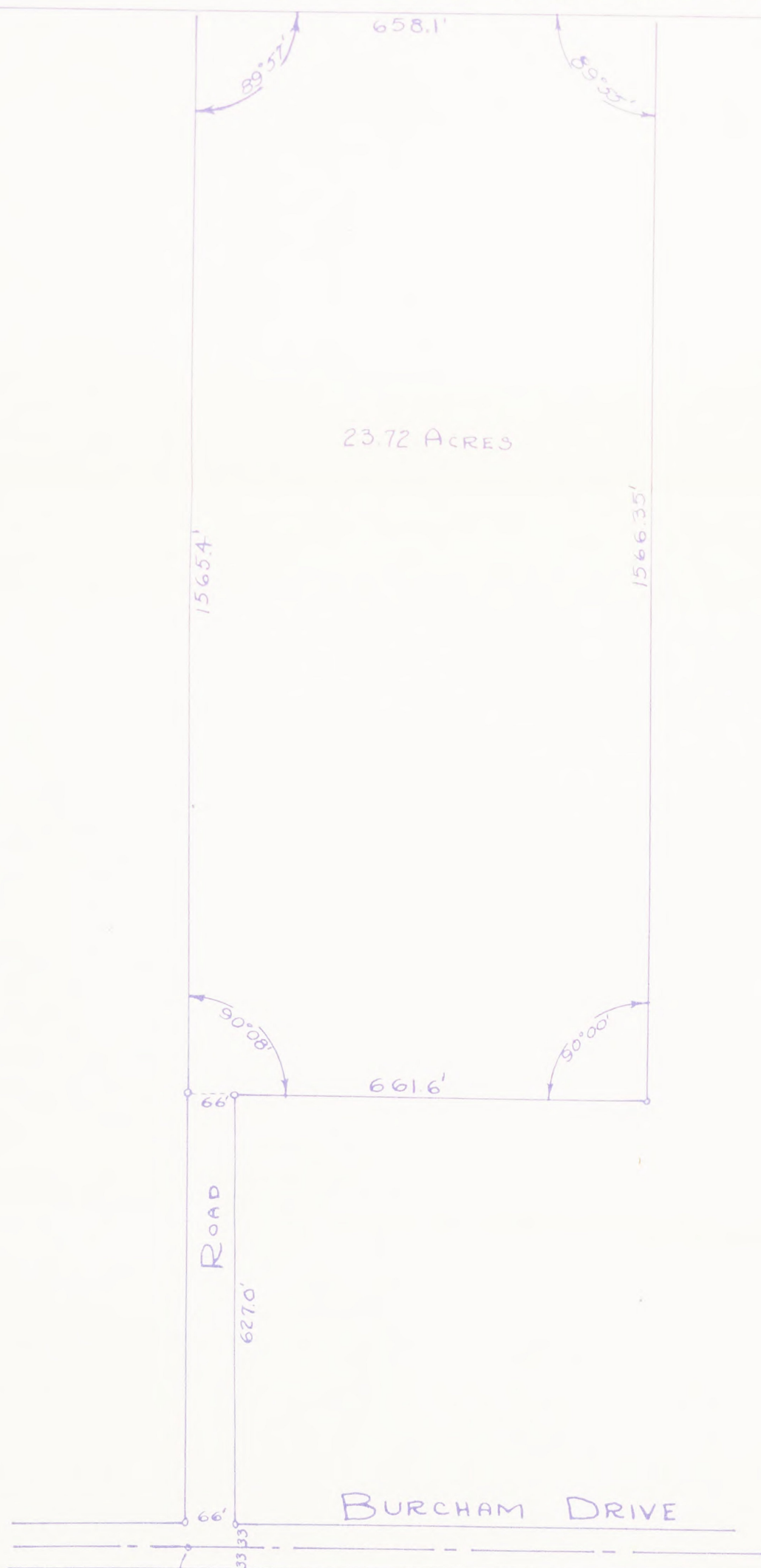
PLAN & PROFILE
of
SANITARY SEWER
PAGE 44

EAST LANSING RECREATIONAL PARK



SCALE:-
1"=200'

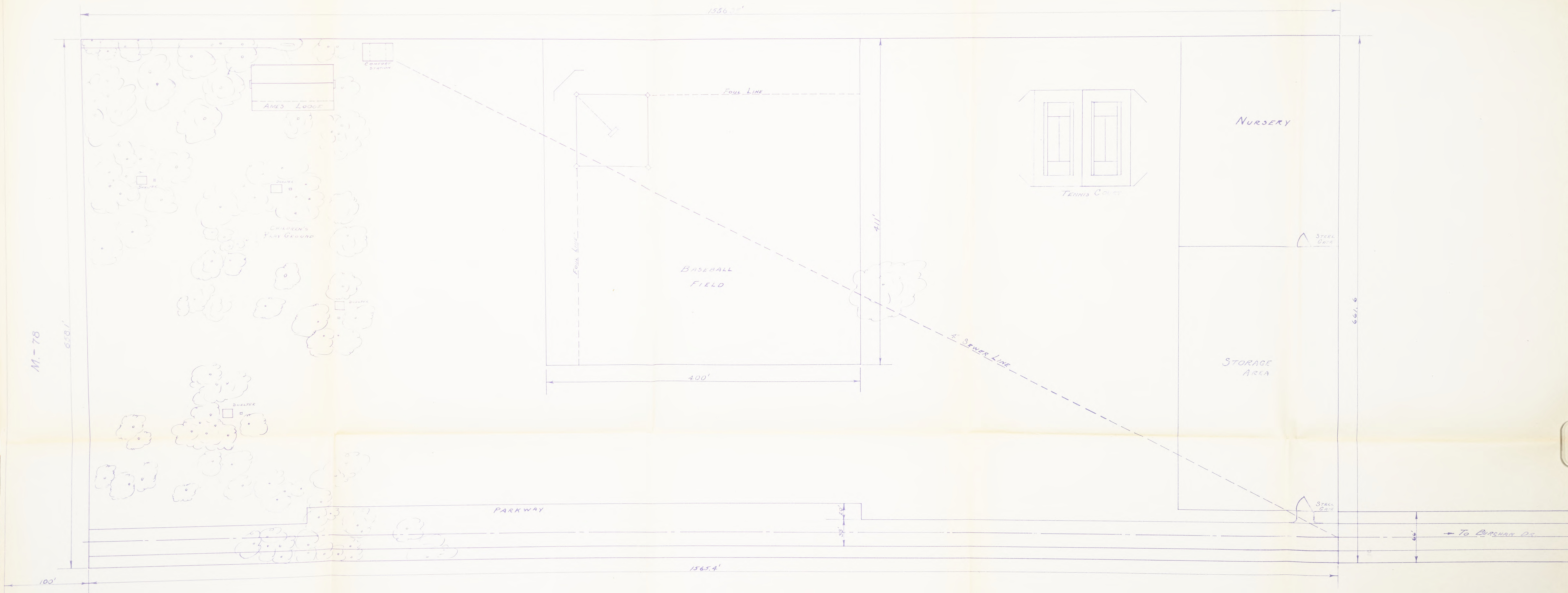
MICHIGAN STATE TRUNK LINE M-78



S $\frac{1}{4}$ POST SEC. 7
MERIDIAN TWP, INGHAM CO., MICH.



RECREATIONAL PARK
CONTOUR MAP



AMES MEMORIAL PARK

EAST LANSING, MICHIGAN
SCALE 1" = 60'

MARVIN GERMAINE
SURVEYOR

TABLE OF CONTENTS

	Page
Legal Description of Park Property.....(a)	
Acknowledgment.....(b)	
Dedication	1
Principles of Park Design.....	2
Ames Memorial Lodge	5
Architectural Sketch of Lodge	6
Elevation Views.....	7
Plan View	8
End View	9
Section View	10
Baseball Playfield.....	11
Grading for Ball Park.....	13
Plan view of Ball Park	15
Contour of Base Ball Field	16
Profile of sections	17
Tennis Courts	23
Tennis Court Backstops.....	27
Elevation showing net.....	28
Cross Section.....	29
Construction Plan	30
Playing Plan	31
Picnic Facilities.....	32
Picnic Shelter.....	33
Road Facilities.....	34
Grading for Road.....	36
Profile of sections.....	37
Plan and Profile.....	41
Sanitary and Water Designs.....	42
Design of Comfort Station.....	43
Plan and Profile of Sanitary Sewer..	44
Property Survey	45
Contour Map	46
Park Layout Plan.....	47

ROOM USE ONLY

ROOM USE ONLY



MICHIGAN STATE UNIVERSITY LIBRARIES



3 1293 03061 2786