

LANDSCAPE DEVELOPMENT FOR  
HODGEMAN COUNTY STATE LAKE

by

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A THESIS

submitted in partial fulfillment of the

requirements for the degree

MASTER OF SCIENCE

Department of Horticulture

KANSAS STATE UNIVERSITY  
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## INTRODUCTION

The purpose of the study for this thesis was to design a site and landscape plan for the outdoor recreational development of Hodgeman County State Lake in southwest Kansas.

This new 87-acre lake was completed in the spring of 1957 and is located four miles east and two and one-half miles south of Jetmore, Kansas, on Spring Creek. The lake was stocked with fish in the fall of 1957 and will be opened for fishing in 1960 or 1961. The park area totals 254 acres.

Hodgeman County has a population of 3,310. In addition to Hodgeman County residents, this is the nearest state lake for 47,023 people, the combined populations of Ford (19,510), Edwards (5,553), Pawnee (9,652), Rush (6,661), and Ness (5,647) counties.

Population increases play a major role in recreation planning. According to the United States Department of Commerce, there are 7,200 new people added to our population every day, a rate of increase that adds 2.6 million people a year.

Increases in population do not come from births alone. We are living longer, and, equally important, we are living healthier. There are now over two million people who have already passed their eightieth birthdays. A man today has many active years left following his retirement.

It isn't just the man in retirement who is looking for outdoor activities. It is the workman who finds his work week growing shorter and his pay checks ample to finance trips over the long week-ends; it is the boating enthusiast

seeking new water courses; and it is the family with their new outdoor camping equipment.

Every participating sport is increasing; and outdoor, woods, and water adventure leads all the rest. Americans are spending half as much again for recreation as they spend for clothing or shelter and twice as much as they spend for automobiles.

A National Recreation Association representative has stated we may expect the present generally accepted park and recreation standard of ten acres per thousand population to increase to twenty acres per thousand.

Landscape plans for the development of the Hodgeman County State Lake have been made with careful consideration and study of the use that will be made of the area. Existing topographic and climatic conditions were considered in the location of different use areas and in the selection of plant materials.

## PROCEDURE OF DESIGN

The objectives of this thesis are to anticipate and plan for the many possible uses of the lake area and relate them to the existing terrain.

The purpose of the different studies made was to show how the different use areas could be developed to receive maximum use of the acreage involved.

In selection of the location for different areas and facilities, the topography and natural settings were considered. By so doing, overall development could be achieved more economically and with less disturbance to the natural beauty of the area.

Preliminary studies were made from a contour and topographic map as shown in Plate I. Contours were laid out on five-foot intervals. By following contour lines as closely as possible, roads and other facilities could be located with a minimum of earth moving; this permits construction at least expense, will require less maintenance, and cause little change in the natural terrain.

A composite plan is shown in Plate II. This shows the general layout and landscape treatment of the entire area. The composite plan is drawn to the scale of one inch equaling two hundred feet.

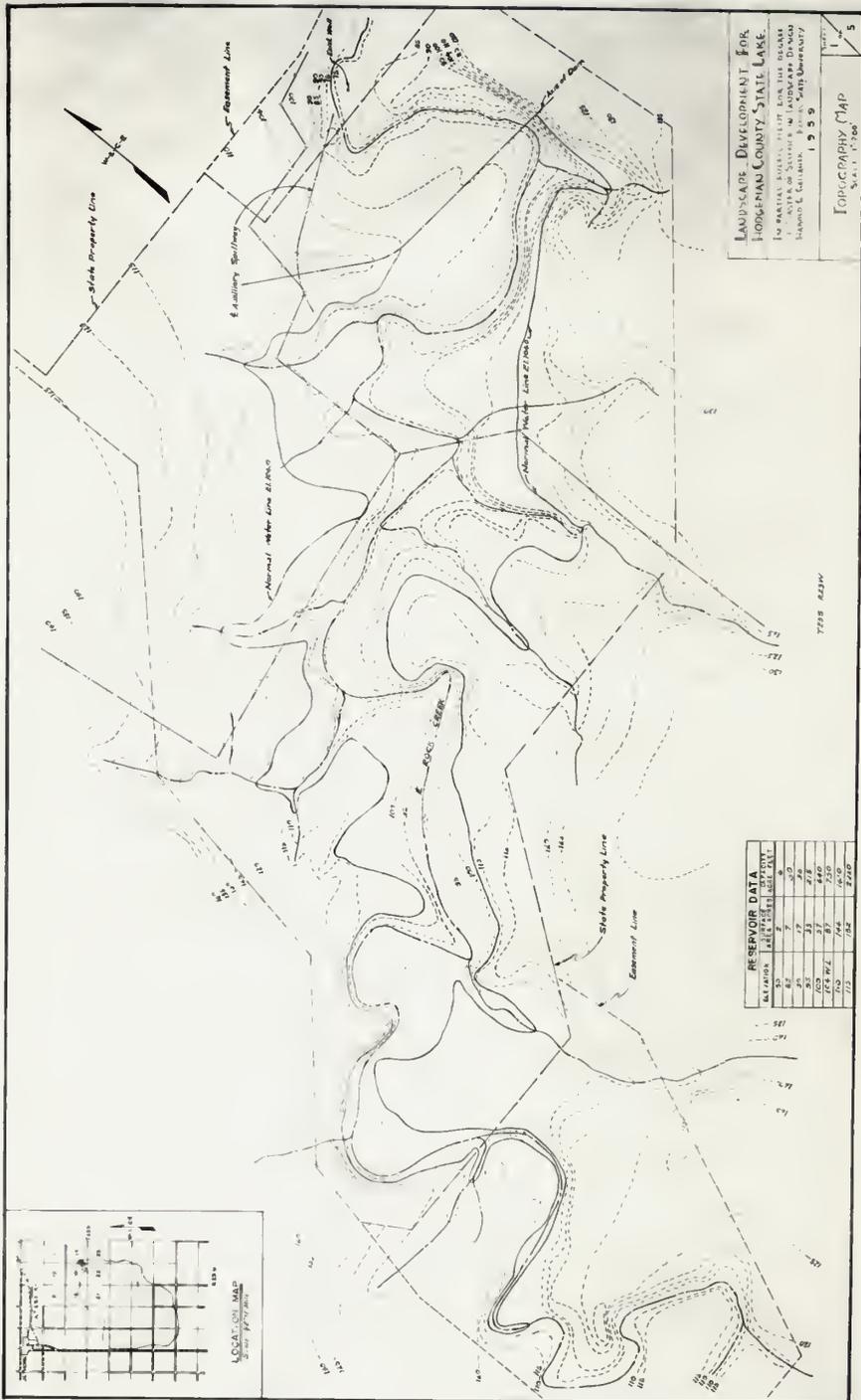
A grading plan (Plate III) and planting plan (Plate IV) were made of the picnic, play, and main parking area. Both are drawn to a scale of one inch equaling fifty feet.

Construction details are shown on Plate V.

All plates were drawn on frosted acetate.

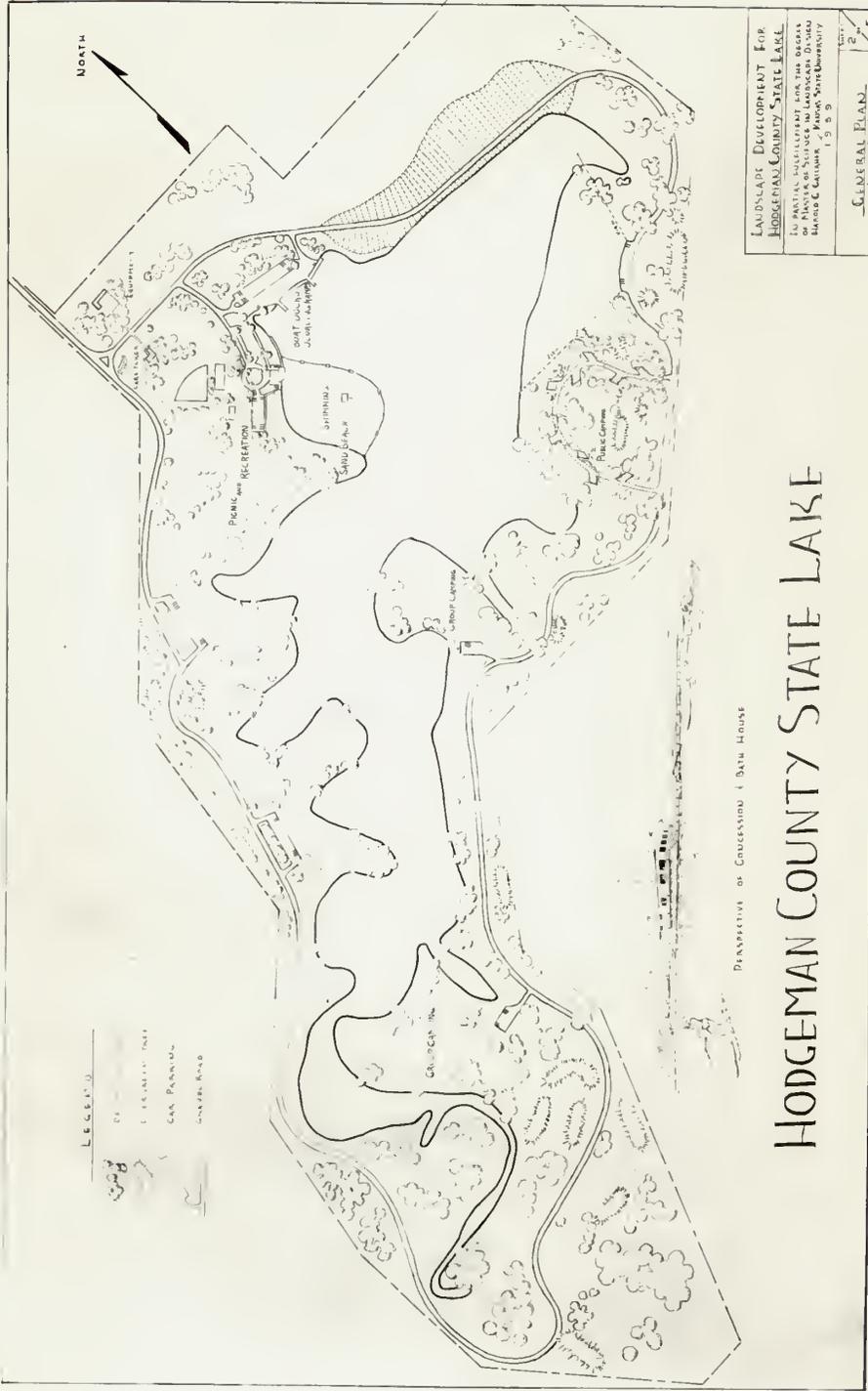
**EXPLANATION OF PLATE I**

**Contour and Topography Map**



**EXPLANATION OF PLATE II**

**General Plan**



PERSPECTIVE OF CONCRETE AND BATH HOUSE

# HODGEMAN COUNTY STATE LAKE

NORTH



PICTURE RECREATION

BOAT HOUSE

SHIPPING

GROUP LIVING

PUBLIC GRASS

REST ROOM

TOILET

WATER TOWER

REST ROOM

TOILET

## GENERAL PLAN

It can be assumed that this state lake will be used for fishing, boating, swimming, picnicking, camping, and other outdoor activities.

The first facility needed is an access road leading to the different areas and a parking space at each facility.

The lake will be used by two distinct groups of people; one group being campers who are going to remain overnight and the other, daily users such as picnickers. Campers and picnickers should not be mixed, but have separate areas entirely removed one from the other. The camping areas have been placed in the more remote areas, the picnickers and other day users closer to the lake entrance. Picnickers and campers are going to build cooking and warming fires; they are going to need water, and toilets must be provided.

Water wells have been indicated in both picnic and camping areas. Final location will depend on test borings. Deep wells, with pressure flow, are most desirable. They are also most expensive. An alternative is the shallow well with hand pump. Many campers will bring their own drinking water and use the supply at the site only for cooking and bathing.

The type of sanitary facility to be provided depends on several factors. Flush toilets would depend on water supply. They are most preferable, but are costly to install and maintain. Well-constructed, pit latrines are an inexpensive and acceptable substitute.

Boat launching ramps have been located where they are easily reached and adequate parking facilities provided nearby for car plus trailer. A

national survey by the Sport Fishing Institute indicated a need for one acre of access area per 30 acres of water.

The boat launching ramp should not exceed a 15 per cent slope. It should have a width of 14 feet and a length of 50 to 100 feet, extending into the water to a minimum of 3 feet depth.

Fireplaces and grills have been located so all fires will be safely confined. Small stacks of firewood will need to be furnished at each of the sites; otherwise, small trees will be used as fuel.

Tables will have to be provided in the picnic and camping areas.

Campers today provide their own shelter and beds. The camp site has provisions for cars to pull off the camp-site trail and make camp in the vicinity of their car.

Three separate camping locations have been provided. One is for individual campers; the other two are for organized group camping such as scouts, 4-H, or church groups.

A combination concession and bathhouse has been located near the beach, picnic, and boating area.

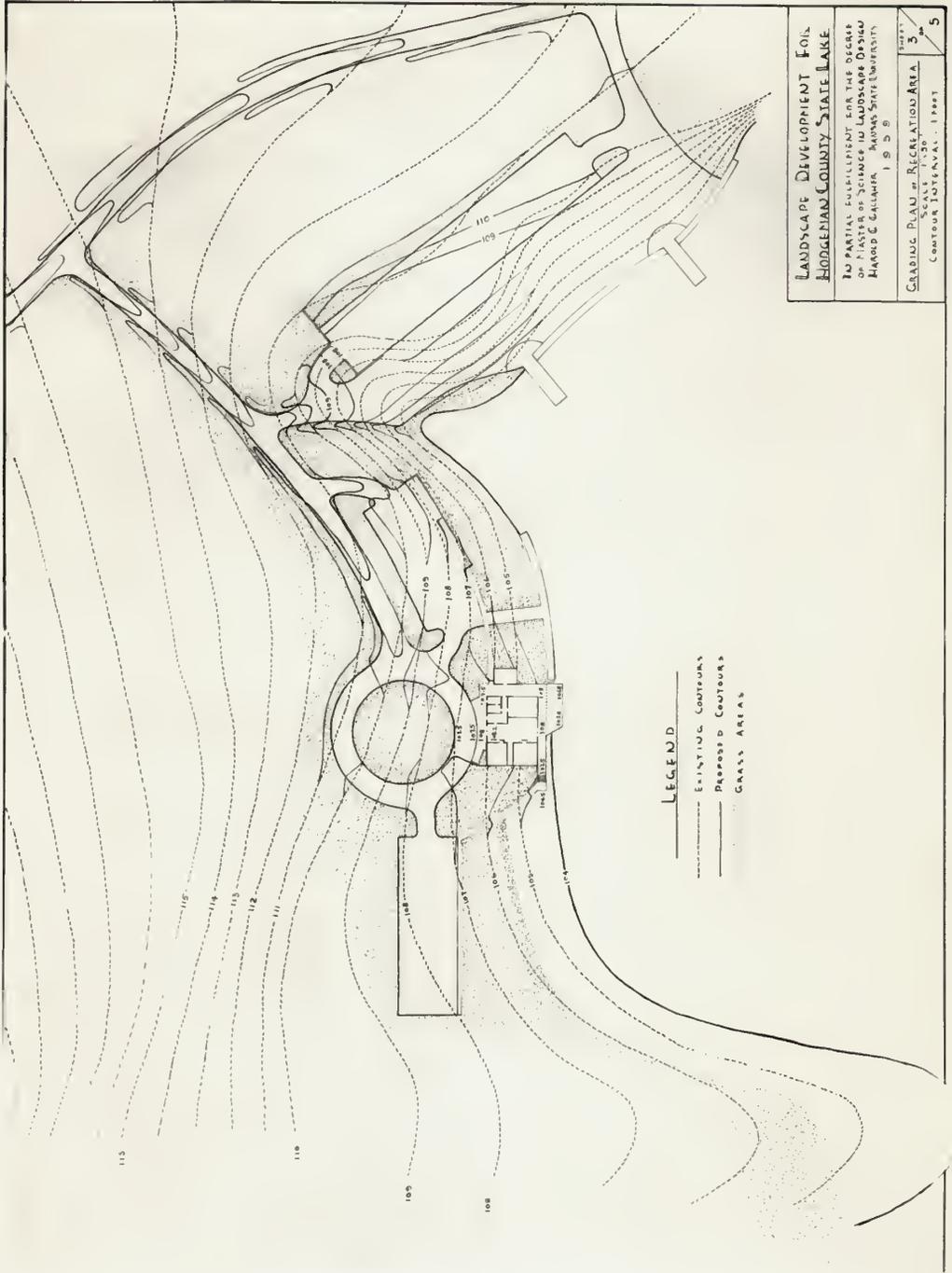
Swimming is confined to one area. Boundaries of the swimming area extend from the sand beach to floating barrels connected by ropes.

Water skiers have a four-foot wide board dock from which to enter the water.

The lake will have to be supervised, policed, and maintained. The park superintendent residence has been located near the entrance, so he is aware of any traffic coming in or leaving. A maintenance and storage shed has been located so it will be readily accessible to the superintendent's residence, but out of the way from other use areas.

**EXPLANATION OF PLATE III**

**Grading Plan for Picnic and Play Area**



EXPLANATION OF PLATE IV

Planting Plan for Picnic and Play Area



## GRADING AND PLANTING PLAN

An attempt was made to fit proposed roads, buildings, and other facilities into the most desirable sites. All proposed roadways follow existing contours as much as possible. Contour lines on the grading plan are shown at one-foot intervals.

In developing the planting plan, tree and shrub plantings have been used for providing summer shade, slowing the force of the wind, enframing views, preventing erosion, and providing screens for privacy in camping areas.

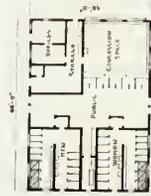
The selection of plant materials has been limited to species that have proven to be hardy to southwest Kansas.

**EXPLANATION OF PLATE V**

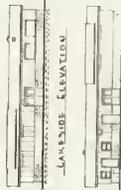
**Construction Details**

CONTRACTORS AND FLEXIBILITY OF USE ARE THE KEYWORDS OF THIS DESIGN. TOILETS, SHOWERS, AND SINKS ARE LOCATED IN THE MEN'S ROOMS. BENCHES ARE PROVIDED IN THE CONVENTION AREA ON THE OPPOSITE END OF THE BUILDING. ACCESS TO THE BUILDING THROUGH THE MAIN ENTRANCE IS IMPROVED BY STAIRS AT THE CORNER. BY PIPE PARTITIONS, SINKS ARE SUBSIDED UP.

OUR SCHEDULE OF THIS BUILDING, CONTRIBUTING TO GOOD INSIDE LIGHTING AND BATHING, IS TO BE A WATER HEATER, AND UTILITY ROOM, SINKS, MEN'S AND WOMEN'S RESTROOMS, AND ENTRANCE TO BE OPEN TO GAINED FROM OUTSIDE.



PLAN



WEST ELEVATION

CONCESSION BATH HOUSE

A DURABLE BUILT WOOD PIT LATRINE FOR USE IN AREAS NOT ACCESSIBLE TO WATER.

ALL WOOD PARTS SHOULD BE TREATED TOGATHER WITH PRESERVATIVE AND PENETRANCE TO THE GRAIN FOR THE MEN'S LATRINE. PROVIDING IT CLEAR, AND SUFFICIENT CAN KEEP IT DRY. ADDITIONAL INTERIOR LIGHT WOULD BE APPROPRIATE BY A BUREAU'S NOSE AND INTERIOR CHANGE LIGHT.



PLAN FOR MEN



ELEVATION

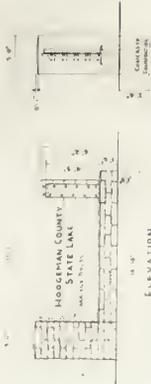
PIT LATRINE ENCLOSURE



PLAN FOR WOMEN



SECTION



ELEVATION

END VIEW



PLAN

ENTRANCE SIGN

WHILE SIMPLICITY IS THE KEYWORD OF THIS PARK ENTRANCE SIGN, IT IS BOTH PRACTICAL AND WELL-HARMONY WITH OTHER PARK VALUES, PARTICULARLY WHEN THE HARMONY MATERIALS ARE APPLIED TO THE SIGN.

LANDSCAPE DEVELOPMENT FOR HODGEMAN COUNTY STATE LAKE	
BY PARTIAL FULFILLMENT FOR THE DEGREE OF MASTER OF SCIENCE IN LANDSCAPE DESIGN HAROLD C. GALAMER, IOWA STATE UNIVERSITY 1950	
SCALE	5" = 1'
CONSTRUCTION DETAILS	

## CONCLUSION

This was a problem relating several forms of outdoor recreation to the topography of the site.

The lake is suited for active use of the water area for boating, swimming, water skiing, and fishing. The shores have been planned for public use in picnicking, camping, sightseeing, nature study, hiking, and a limited playground area for small children.

Plans include developments to facilitate full use of both the water and shore areas. These facilities include boat docks, launching ramps, swimming beach and float, concession building and bathhouse, picnicking and camping structures, parking areas, roads and trails, and related developments to meet public needs.

The designer feels that the plans are functional, adapted to the site, provide for maximum use and beauty, and present a satisfactory solution to the problem.

## PLANT LIST FOR GENERAL PLANTING\*

## Deciduous Trees

<u>Botanical Name</u>	<u>Common Name</u>
<i>Fraxinus pennsylvanica lanceolata</i>	Ash, Green
<i>Catalpa speciosa</i>	Catalpa, Northern
<i>Populus deltoides</i>	Cottonwood
<i>Ulmus americana</i>	Elm, American
<i>Celtis occidentalis</i>	Hackberry, Common
<i>Crataegus phaenopyrum</i>	Hawthorn, Washington
<i>Gleditsia triacanthos</i>	Honeylocust, Thornless
<i>Quercus macrocarpa</i>	Oak, Bur
<i>Maclura pomifera</i>	Osage Orange
<i>Cercis canadensis</i>	Redbud, Eastern
<i>Elaeagnus angustifolia</i>	Russian Olive
<i>Sapindus drummondii</i>	Soapberry, Western
<i>Salix nigra</i>	Willow, Black

## Evergreen Trees

<i>Pinus nigra</i>	Austrian Pine
<i>Pinus ponderosa</i>	Ponderosa Pine
<i>Juniperus virginiana</i>	Redcedar, Eastern
<i>Juniperus scopulorum</i>	Rocky Mountain Juniper

## Evergreen Shrubs

Juniperus chinensis H. V.

Pfitzer Juniper

## Deciduous Shrubs

Prunus glandulosa

Almond, Cherry (Flowering)

Colutes arborescens

Bladdersenna, Common

Rhamnus cathartica

Buckthorn, Common

Shepherdia argentea

Buffaloberry, Silver

Symphoricarpos orbiculatus

Coralberry

Cotoneaster acutifolia

Cotoneaster, Peking

Cotoneaster divaricata

Cotoneaster, Spreading

Cornus racemosa

Dogwood, Gray

Cornus asperifolia

Roughleaf

Lonicera tatarica

Honeysuckle, Tatarian

Syringa vulgaris

Lilac, Common

Ligustrum amurense

Privet, Amur

Rhus aromatica

Sumac, Fragrant

Rhus trilobata

Sumac, Lemonade

Prunus americana

Wild Plum

\*Nomenclature from Standardized Plant Names, American Joint Committee on Horticultural Nomenclature.

## ACKNOWLEDGMENT

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The purpose of this thesis was to design a site plan and landscape development for outdoor recreation and camping facilities on Hodgeman County State Lake located in southwest Kansas.

Objectives for the development were to locate and relate the different use areas and facilities to the topography and natural settings.

The designer tried to comprehend the use and scope of the different functions and fit them to the topography of the site.

Several preliminary studies were made. From the more desirable solutions, five final plans were made. They were: engineering plan, general plan, grading plan, planting plan, and construction details.

The lake is suited for active use of the water area for boating, swimming, water skiing, and fishing. The shores were planned for public use in picnicking, camping, sightseeing, nature study, hiking, and a limited playground area for small children.

Plans include developments to facilitate full use of both the water and shore areas. These facilities include boat docks, launching ramps, swimming beach and float, concession building and bathhouse, picnicking and camping structures, parking areas, roads and trails, and related developments to meet public needs.

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