

LIBRARY
Montana State University
BOZEMAN

131

A NIGHTCLUB
AND
WATER RECREATION
AREA

720.6
M76
5

~~ARCHITECTURAL LIBRARY~~

B

LIBRARY
Montana State University
BOZEMAN

402 South Black
Bozeman, Montana
December, 15, 1964

1098-17

Director, School of Architecture
Department of Architecture
Montana State College
Bozeman, Montana

Dear Mr. Rose,

The following report is being submitted in compliance with the requirements for the research phase of my under-graduate architectural thesis project, "A Nightclub and Water Recreation Area for Great Falls, Montana".

Respectfully submitted,

Eugene D. Wangerin

Eugene D. Wangerin
Senior, Architecture

Encl.

INTRODUCTION

I propose to design a nightclub and water recreational area for my undergraduate architectural thesis problem.

The proposed project is and will be located on the Missouri River about 5 miles west of Great Falls, Montana.

The work on this project shall be carried out in two quarters as outlined by the Department of Architecture at Montana State College.

The first quarter, Great Falls, Montana, shall be done during autumn quarter 1964, will consist of research and preliminary concepts. The information compiled during the first quarter's work shall be presented in the form of a written report. This report shall include a complete building program of the proposed project.

The second quarter, winter quarter 1965, shall be spent in completing a preliminary design solution for the proposed project. This work will be based on the information presented in the design program of the first quarter's work.

architectural thesis 489

Dec. 15, 1964

P378
.W1855

~~720.6~~ CAL
NAD540
ATB
W185

INTRODUCTION

I propose to design a nightclub and water recreational area for my undergraduate architectural thesis problem. The proposed project is to be located on the Missouri River about one-half mile southwest of Great Falls, Montana.

The work on this project shall be carried out in two quarters as outlined by the Department of Architecture at Montana State College.

The first quarter's work, to be done during autumn quarter 1964, will consist of research and preliminary concept. The information compiled during the first quarter's work shall be presented in the form of a written report. This report shall include a complete building program of the proposed project.

The second quarter, winter quarter 1965, shall be spent in completing a preliminary design solution for the proposed project. This work will be based on the information presented in the design program of the first quarter's work.

ACKNOWLEDGEMENTS

I will take this opportunity to thank Mr. Rose, head of the Department of Architecture, Montana State College, and Mr. Stevens of the English Department, at Montana State College, for their help in developing this report.

I am grateful to Mr. Grasseschi, Manager of the 3d Nightclub in Great Falls, and Mr. MORGAN, Manager of the Beaumont Nightclub in Belgrade, for their advice toward the design of this project.

My thanks also to the many people who were kind enough to offer their time and advice in helping me compile the information in this report.

TABLE OF CONTENTS

Title Page	1
Introduction	2
Acknowledgments	3
Table of Contents	4
List of Illustrations	6
Conditions Creating A Need	7
Photographs of the Barge	9
Local Conditions	10
Geographical	10
History of Area	12
Development of Great Falls	14
Economic Conditions	17
Social	22
Climate	24
Site Conditions	29
Site Location and Description	29
Justification of Site Location	31
Topography	32
Adjacent Environment	34
Vegetation	35
Utilities	36
River Conditions Adjacent to Site	37
Zoning Regulations and Building Codes	39
Traffic Patterns	40

LIST OF ILLUSTRATIONS

Soil Analysis	42
Views and Sun Angles	45
Photographs of Site	46
Photographs of Views From Site	48
Function	51
Activities And Function of Project	51
Circulation	52
Nightclub Circulation	52
Boat and Automobile Circulation	53
Boat	
Spaces Required For The Nightclub; Their	
Function and Requirements	54
Function and Requirements of Individual	
Boat Facilities	59
Aesthetic Considerations	60
Building Program	62
Spaces Required	63
Boat Facilities Required . . . ;	68
Parking Facilities	68

Table 6.....Precipitation....p. 26

Table 7.....Wind....p. 27

Table 8.....Cloud cover....p. 28

Map 1.....Map of site and surrounding area....p. 30

Map 2.....Contour map of proposed site....p. 33

LIST OF ILLUSTRATIONS

Figure 1.....	Great Falls, Montana and surrounding geographical features.....	p. 11
Figure 2.....	Population trends.....	p. 15
Figure 3.....	Periodic growth of Great Falls.....	p. 16
Figure 4.....	Great Falls Major traffic patterns.....	p. 41
Figure 5.....	Map of bedrock contours at site.....	p. 44
Figure 6.....	Sun angles for Great Falls.....	p. 46
Figure 7.....	Space relationship diagram for proposed project.....	p. 67
Table 1.....	Age breakdown of labor force for Cascade county.....	p. 18
Table 2.....	Occupations of labor force for Great Falls area, 1960.....	p. 19
Table 3.....	Family income for Cascade county.....	p. 20
Table 4.....	Cascade county employment status for 1960.....	p. 21
Climate characteristics for Great Falls:		
Table 5.....	Monthly averages of maximum and minimum temperatures.....	p. 25
Table 6.....	Precipitation.....	p. 26
Table 7.....	Wind.....	p. 27
Table 8.....	Cloud cover.....	p. 28
Map 1.....	Map of site and surrounding area.....	p. 30
Map 2.....	Contour map of proposed site.....	p. 33

CONDITIONS CREATING
A NEED

CONDITIONS CREATING A NEED

For a Nightclub

Great Falls has only two nightclubs of the scale I propose to design. I believe a third nightclub, although not actually needed, would be a desirable addition to the nightlife activity of the Great Falls residents.

For Boat Facilities

The Missouri River near Great Falls is becoming a very popular area for water recreation.

The exact amount of boats used on the river, and their frequency of use there can not be determined. However, the Cascade County Assessor's Office lists 492 motorized boats in the Great Falls area. I believe the majority of these boats are used on the river because the nearest navigable water, other than the Missouri River, is 60 miles away.

I believe the existing boat facilities on the river are insufficient to accommodate the boating public. The facilities available, and their location are shown in the following table.

Location	Boat Facilities
1. The Barge	storage, launching, docking, fueling
2. Great Falls Boat Club . . (private club)	launching and docking
3. Municipal Boat Docks . . .	launching and docking

The majority of boat facilities available to the public are located at the Barge. The shabby condition of the Barge and it's bar-room atmosphere make this place an undesirable one for boaters using the facilities. Photographs of the Barge may be seen on the following page.

The addition of more boat facilities - launching, docking, and fueling, placed in a desirable family-type ~~ATMOSPHERE~~ ~~are required to~~ meet the needs of the boating public.



VIEWS OF THE BARGE



LOCAL CONDITIONS

LOCAL CONDITIONS

GEOGRAPHICAL

Great Falls is located in north central Montana. Its exact geographical location is 47 degrees 28 minutes north latitude and 111 degrees 15 minutes west longitude. It is approximately 3330 feet above sea level.

The Missouri River is joined by the Sun River at the southwest edge of Great Falls. The river then winds through the metropolitan area and divides the city into three natural districts; the West Side, the city proper, and Black Eagle.

Great Falls lies in the Missouri River valley which is defined by low plateaus and rolling foothills. This valley is encircled by three mountain ranges; the Big Belt and Little Belt ranges to the south and east, and the Rocky Mountains to the west and northwest.

The positioning of these mountains may be seen on figure / page//.

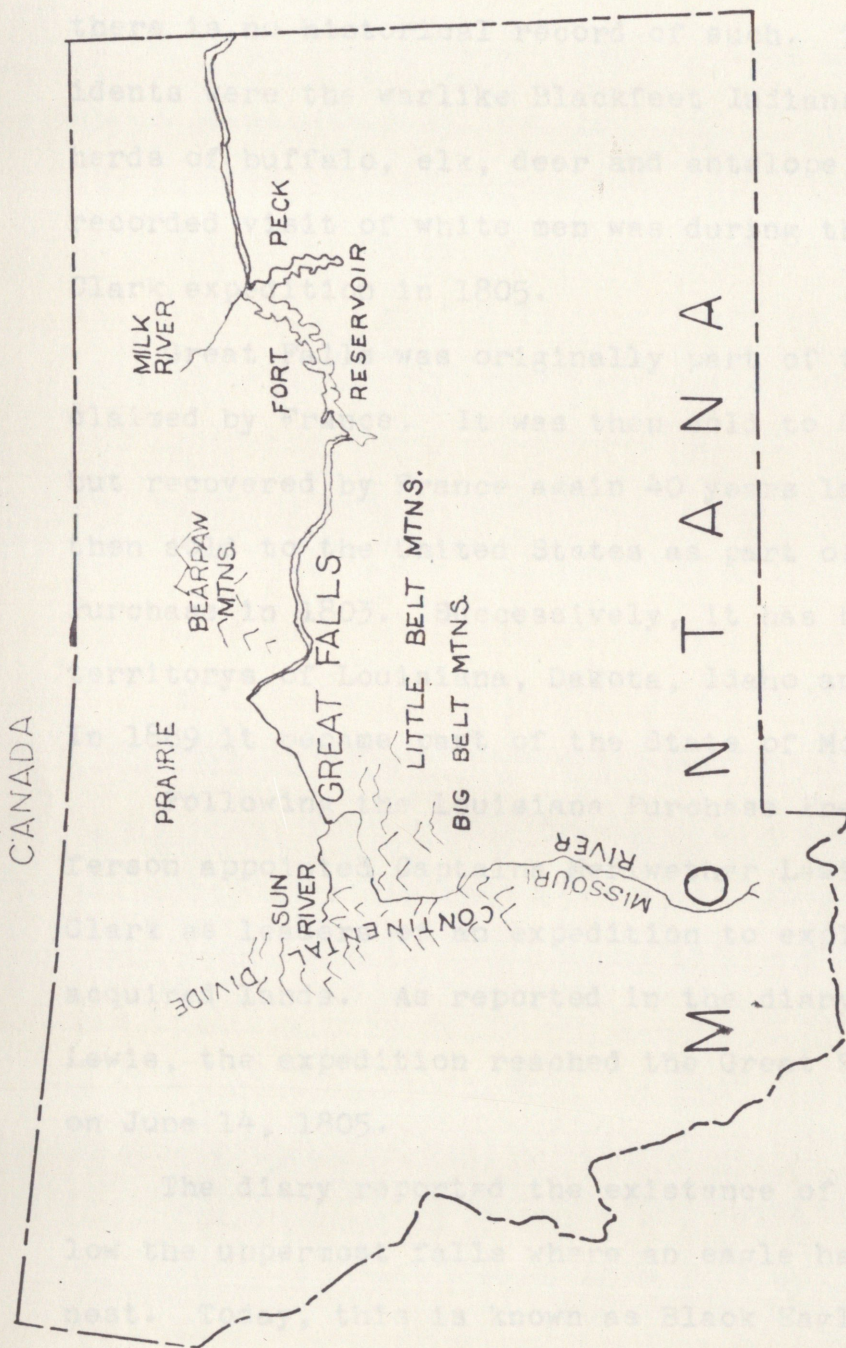


FIGURE 1.

GREAT FALLS MONTANA AND SURROUNDING GEOGRAPHICAL FEATURES
 TRACED FROM A MAP COURTESY OF THE AMERICAN AUTOMOBILE ASSOCIATION

HISTORY OF AREA

Although early trappers and explorers may have reached the Great Falls area during the 18th century, there is no historical record of such. The only residents were the warlike Blackfeet Indians and large herds of buffalo, elk, deer and antelope. The first recorded visit of white men was during the Lewis and Clark expedition in 1805.

Great Falls was originally part of the territory claimed by France. It was then sold to Spain in 1763, but recovered by France again 40 years later. It was then sold to the United States as part of the Louisiana Purchase in 1803. Successively, it has been part of the territories of Louisiana, Dakota, Idaho and Montana. In 1889 it became part of the State of Montana.

Following the Louisiana Purchase President Jefferson appointed Captains Meriwether Lewis and William Clark as leaders of an expedition to explore the newly acquired lands. As reported in the diary of Captain Lewis, the expedition reached the Great Falls vicinity on June 14, 1805.

The diary reported the existence of an island below the uppermost falls where an eagle had built a nest. Today, this is known as Black Eagle Falls.

On the return trip Captain Lewis returned to and explored the area northwest of Great Falls.

From 1807 to 1843, the Missouri River became the site for considerable fur trapping and trading activity. Trading forts were established in 1832 at Fort McKenzie, about 50 miles downstream from the Great Falls area, and in 1846 at Fort Benton about 40 miles downstream.

The Great Falls of the Missouri, which were later to provide the impetus for the founding of the city, were an obstacle to travel through in the early days. The Lewis and Clark expedition had to portage its boats and supplied around these falls, and when navigation of the river developed, the head of navigation was established at Fort Benton, about 25 miles below the lower falls.

The discovery of gold in Montana brought in many prospectors, miners, and settlers. As the head of river navigation, Fort Benton became a boom town with an estimated 10,000 river boat passengers passing through in 1867. Fort Benton also became the eastern terminus of the military road which was mapped by Captain John Mullan from 1856 to 1860. The road connected Fort Benton with Walla Walla, Washington.

The settlement of the Great Falls area came much later because transportation routes by-passed the present site. It was not until after 1881 that development began.

POPULATION TRENDS
URBAN TRANSPORTATION SURVEY OF GREAT FALLS
COMMISSION

DEVELOPMENT OF GREAT FALLS

The founding of Great Falls is credited to Paris Gibson, an engineer who visited the area in 1881. He recognized the industrial potential of the area with the undeveloped water power, and the imminent construction of the Great Northern Railway through the northern part of the state. With the financial backing of James H. Hill of the Great Northern Railway, the Great Falls Water-power and Townsite Company was incorporated.

Early industrial development included a dam and hydroelectric plant at Black Eagle Falls, a flour mill, a smelting plant and a meat packing plant. By 1890 the population had reached 3,989 persons and in the next decade it reached 14,390. After a slight decrease between 1900 and 1910, the city has since experienced a steady growth in population. Figure 2 on page 16 shows the growth of Great Falls in comparison with Cascade County, Montana and the United States.

Current estimates show Great Falls as the largest city in the state of Montana with a population of 72,190. Cascade county, of which Great Falls is the county seat, is estimated to have 78,000 residents and in 1960 was the second most populous county in the state.

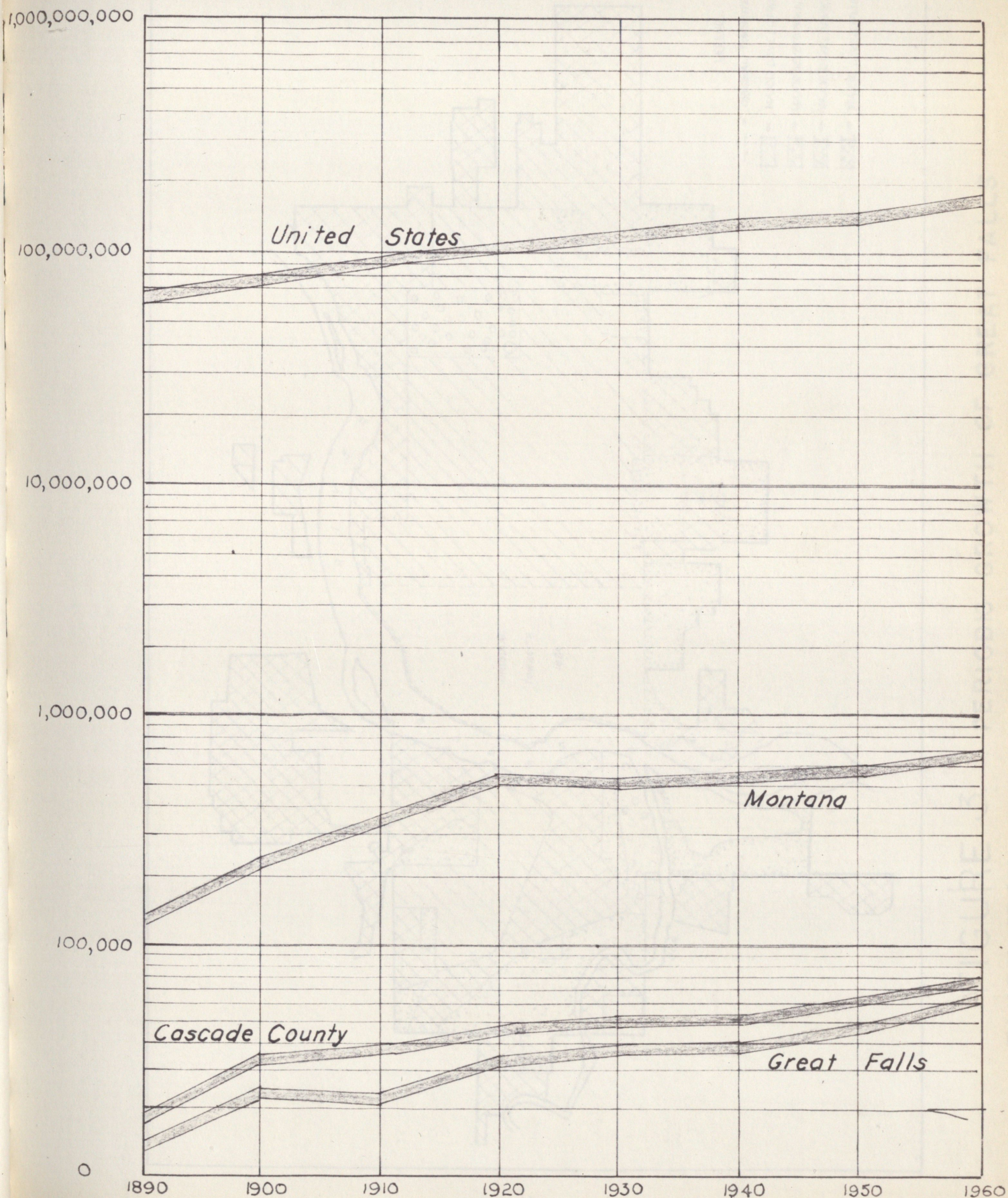
Figure 3 on page 17 shows the periodic growth of Great Falls.

FIGURE 2.

POPULATION TRENDS

TAKEN FROM-

URBAN TRANSPORTATION SURVEY OF GREAT FALLS
MONTANA HIGHWAY COMMISSION



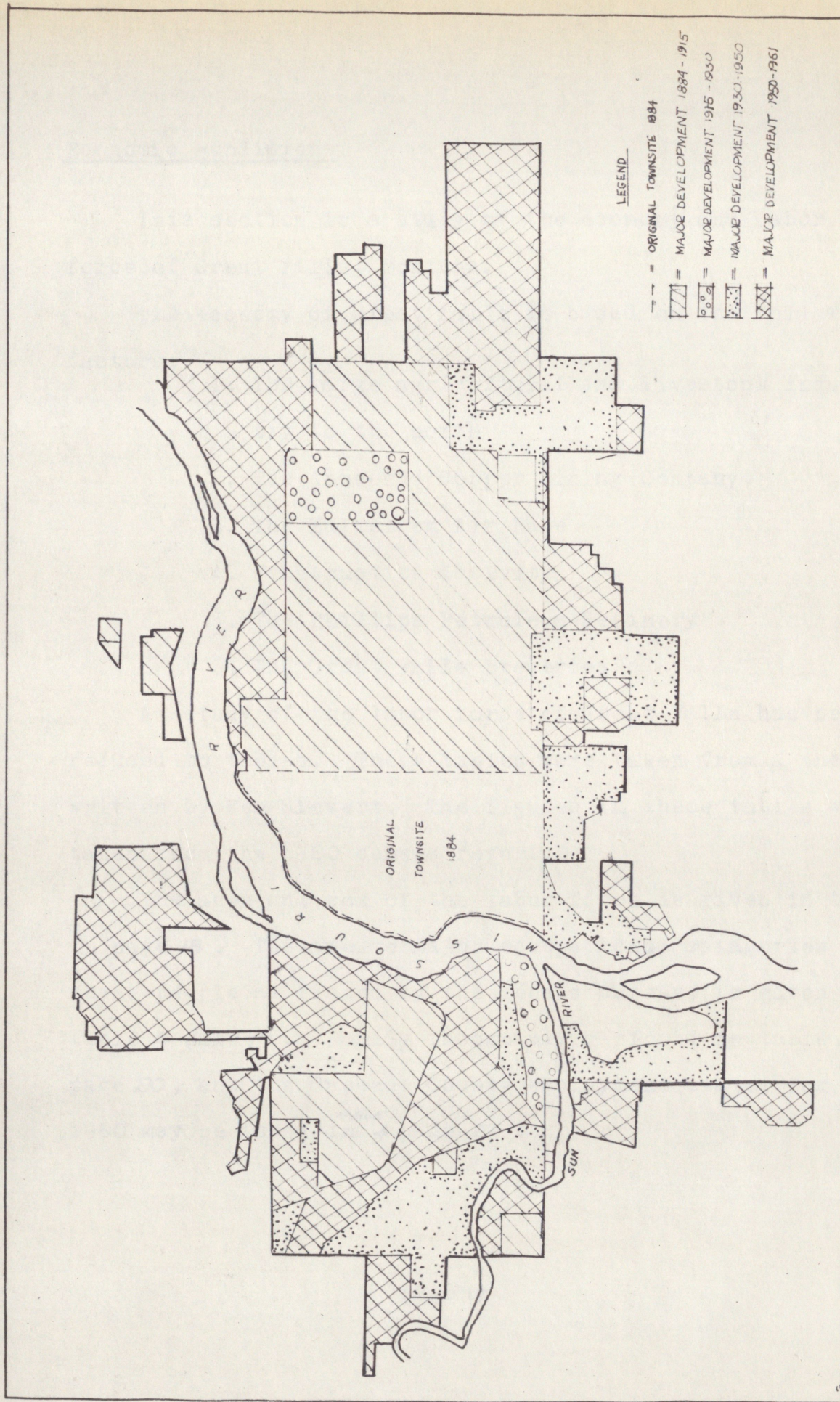


FIGURE 3. PERIODIC GROWTH OF GREAT FALLS
TAKEN FROM URBAN TRANSPORTATION SURVEY OF GREAT FALLS — MONTANA HIGHWAY COMM.

Economic conditions

This section is a study of the economy and labor force of Great Falls, Montana.

The economy of Great Falls is based on the following factors:

1. The large agricultural and livestock industry to the north
2. The Anaconda Copper Mining Company
3. The Malmstrom Air Base
4. Construction activity
5. The Phillips Petroleum Refinery
6. The Great Falls Breweries

A study of the labor force of Great Falls has been reduced to tables. These tables were taken from a thesis written by Ken Sievert. The figures in these tables were taken from the 1960 census report.

The ages and sex of the labor force is given in table / page 18 . The twelve major occupational categories of these people as listed by the census bureau, is given in table 2 page 19 . Family income may be found in table 3 page 20 , and the Cascade County employment status for 1960 may be found in ^{TABLE} 4 page 21 .

AGE BREAKDOWN OF LABOR FORCE FOR CASCADE COUNTY - 1960

<u>Age</u>	<u>Great Falls (S.M.S.A.)</u>		<u>Cascade County</u>	
	<u>male</u>	<u>female</u>	<u>male</u>	<u>female</u>
14-17 years old	800	587	802	587
18-24 years old	1739	1542	3683	1564
25-34 years old	3856	1469	5397	1544
35-44 years old	4283	1990	4749	1934
45-64 years old	4732	2633	5798	2653
65 years and over	723	379	900	429
managers, officials, and professionals, excluding farmers	2,344	487		
craftsmen, foremen, and kindred workers	3,612	51		
operatives and kindred workers	2,414	327		
clerical and kindred workers	1,056	2,471		
sales workers	1,356	789		
private household workers	31	673		
service workers, excluding private household	902	1,471		
farm laborers, unpaid family workers	417	73		
laborers, except farm and mine	--	--		
occupation not reported	531	362		

table 1.

page 18

OCCUPATIONS OF THE LABOR FORCE FOR THE GREAT FALLS AREA

(1960)

<u>Occupation</u>	<u>Number</u> <u>Great Falls (S.M.S.A.)</u>	
	<u>male</u>	<u>female</u>
employed	16,159	8,020
professional, technical and kindred workers	1,491	1,296
farmers and farm managers.	886	8
managers, officials, and proprietors, excluding farmers	2,344	487
craftsmen, foremen, and kindred workers	3,612	51
operatives and kindred workers	2,414	327
clerical and kindred workers	1,056	2,471
sales workers	1,358	789
private household workers	31	675
service workers, excluding private household	902	1,471
farm laborers, unpaid family workers	417	73
laborers, except form and mine	--	--
occupation not reported	531	362

table 2

page 19

FAMILY INCOME FOR CASCADE COUNTY IN 1960

<u>income</u>	<u>number</u>
under \$1,000.00	507
1,000 - 1999	904
2,000 - 2,999	1173
3,000 - 3,999	1690
4,000 - 4,999	2227
5,000 - 5,999	2541
6,000 - 6,999	2381
7,000 - 7,999	1883
8,000 - 8,999	1374
9,000 - 9,999	1006
10,000 - 14,999	1784
15,000 - 24,999	576
25,000 and above	190
unemployed	614
Avg. yearly income	.6032
inmate of institution	100
enrolled in school	1,740
other, under 65 years of age	11,099
other, over 65 years of age	2,370

table 3

CASCADE COUNTY EMPLOYMENT STATUS FOR 1960

<u>Male</u> 14 years old and over	25,221
labor force	21,329
armed forces	4,187
civilian labor force	17,142
employed	16,158
unemployed	984
not in labor force	3,882
inmate of institution	137
enrolled in school	1,396
other, under 65 years of age	622
other, over 65 years of age	1,737
 <u>Female</u> 14 years old and over	 23,970
labor force	8,661
employed	8,026
unemployed	614
not in labor force	15,390
inmate of institution	100
enrolled in school	1,740
other, under 65 years of age	11,099
other, over 65 years of age	2,370

table 4.

SOCIAL

This section is devoted to studying potential clientele. A knowledge of the type and class of people to be served is important to the design concept in that an atmosphere compatible to all be developed.

There are 3 types of people in the Great Falls area. These are:

1. Residents
2. Tourists and conventioners
3. Shoppers and buyers from the outlying agricultural area

All three of these groups fall mainly in a middle class category. Very few could be considered either poor or wealthy.

Occasionally cold winter air will invade the region and cause the temperature to fall from above freezing to below zero. This happens from mid-November to March but, as a rule, there is no real cold weather or lasting snow until January.

Snow comes during late fall, winter, and early spring, although rain is likely to fall any month. Late spring, summer and early fall usually receive precipitation as rain. Fall does fall occasionally during

CLIMATE

The weather in this area is generally very pleasant in the summer with cool nights, and moderately warm and sunny days. Only a few days are hot with temperatures of 98 degrees or more. If a hot spell does occur, it will usually be toward the end of July and last for only 3 or 4 days. An average year will have only 15 days with temperatures 90 degrees or warmer.

Freezing temperatures do not occur in July or August, very rarely in June, and usually only 2 or 3 days in May or September. Frost is quite frequent in April and October.

Winters are relatively mild for this latitude. This is largely a result of "Chinook" winds which can cause a positive temperature differential of 40 degrees in a matter of a few hours.

Occasionally cold polar air will invade the region and cause the temperature to fall from above freezing to below zero. This happens from mid-December to March but, as a rule, there is no real cold weather or lasting snow until January.

Snow comes during late fall, winter, and early spring, although rain is likely to fall any month. Late spring, summer and early fall usually receive precipitation as rain. Hail does fall occasionally during

CLIMATE CHARACTERISTICS FOR THE GREAT FALLS AREA
summer thunder showers. The yearly precipitation
average is 12 inches.

The following tables on pages 25 to 28 give more
detailed information. The information in these tables
was received from the U.S. Weather Bureau Station at
Great Falls.

Great Falls.	41.1	21.2
April	55.2	32.9
May	65.7	42.2
June	71.9	48.9
July	73.7	56.1
August	70.9	53.8
September	70.2	45.5
October	59.3	37.6
November	44.2	26.4
December	35.8	19.8
Yearly	56.2	19.3

CLIMATE CHARACTERISTICS FOR THE GREAT FALLS AREA

Temperature - degrees Fahrenheit

Month	Maximum	Minimum
January	31.6	13.5
February	34.0	14.6
March	41.1	21.2
April	55.2	32.9
May	65.7	42.2
June	71.9	48.9
July	83.7	56.1
August	80.9	53.8
September	70.2	45.5
October	59.3	37.6
November	44.2	26.4
December	36.8	19.8
Yearly	56.2	19.8

table 5

CLIMATE CHARACTERISTICS FOR THE GREAT FALLS AREA

Precipitation - inches

<u>Month</u>	<u>Maximum</u>	<u>Minimum</u>
January	1.80	-
February	2.16	0.01
March	2.14	0.15
April	2.50	0.27
May	8.13	0.27
June	5.32	0.52
July	4.32	0.04
August	2.94	0.04
September	3.56	0.10
October	1.89	0.03
November	2.27	0.02
December	1.73	-

CLIMATE CHARACTERISTICS FOR THE GREAT FALLS AREA

Wind - miles per hour

<u>Month</u>	<u>Mean Hourly Speed</u>	<u>Direction</u>
January	16.8	S.W.
February	15.8	S.W.
March	14.0	S.W.
April	13.7	S.W.
May	11.8	S.W.
June	11.9	S.W.
July	10.7	S.W.
August	10.9	S.W.
September	12.1	S.W.
October	14.2	S.W.
November	16.2	S.W.
December	17.1	S.W.
Yearly	13.7	S.W.

CLIMATE CHARACTERISTICS FOR THE GREAT FALLS AREA

Cloud cover - days

<u>Month</u>	<u>Clear</u>	<u>Partly Cloudy</u>	<u>Cloudy</u>	<u>Fog</u>
January	6	7	18	1
February	5	6	17	1
March	5	8	18	2
April	4	9	17	1
May	6	9	16	1
June	6	11	13	1
July	14	12	5	
August	13	11	7	
September	10	10	10	1
October	8	9	14	1
November	5	7	18	2
December	5	8	18	1
Yearly	87	107	171	13

SITE CONDITIONS

SITE LOCATION AND DESCRIPTION

Location

The proposed building site is located on the west bank of the Missouri River about one-half mile southwest of Great Falls. The site location is shown on map / page 30.

Description

This site may be described as the unsubmerged portion of land in the southeast 1/4 of the northwest 1/4 of section 23 township 20 north, range 3 east.

The total area of this site is 34.14 acres. Although the area required to accommodate the proposed project will be considerably less than 34 acres, it will be assumed that the full 34.14 acres has been provided for the project.

Township Number 20 N.

Range Number 3 E.



JUSTIFICATION OF SITE LOCATION

A main highway and all non-private boat facilities are located on the east bank of the river. The site I chose is on the west bank, therefore I believe I must justify my choice in the location of the proposed site.

The factors influencing my choice were:

1. Few sites on the east bank of the river were large enough to accommodate the proposed project.
2. Those sites on the east bank that were large enough to accommodate the proposed project were either in an area where navigation of the river was hindered by sandbars, or the surroundings were too unsightly to be considered as a setting for the proposed project.
3. A location between the Barge and the Municipal Boat Docks was desirable to intercept the maximum amount of boat traffic. There were no sites in this position on the east bank that were acceptable.

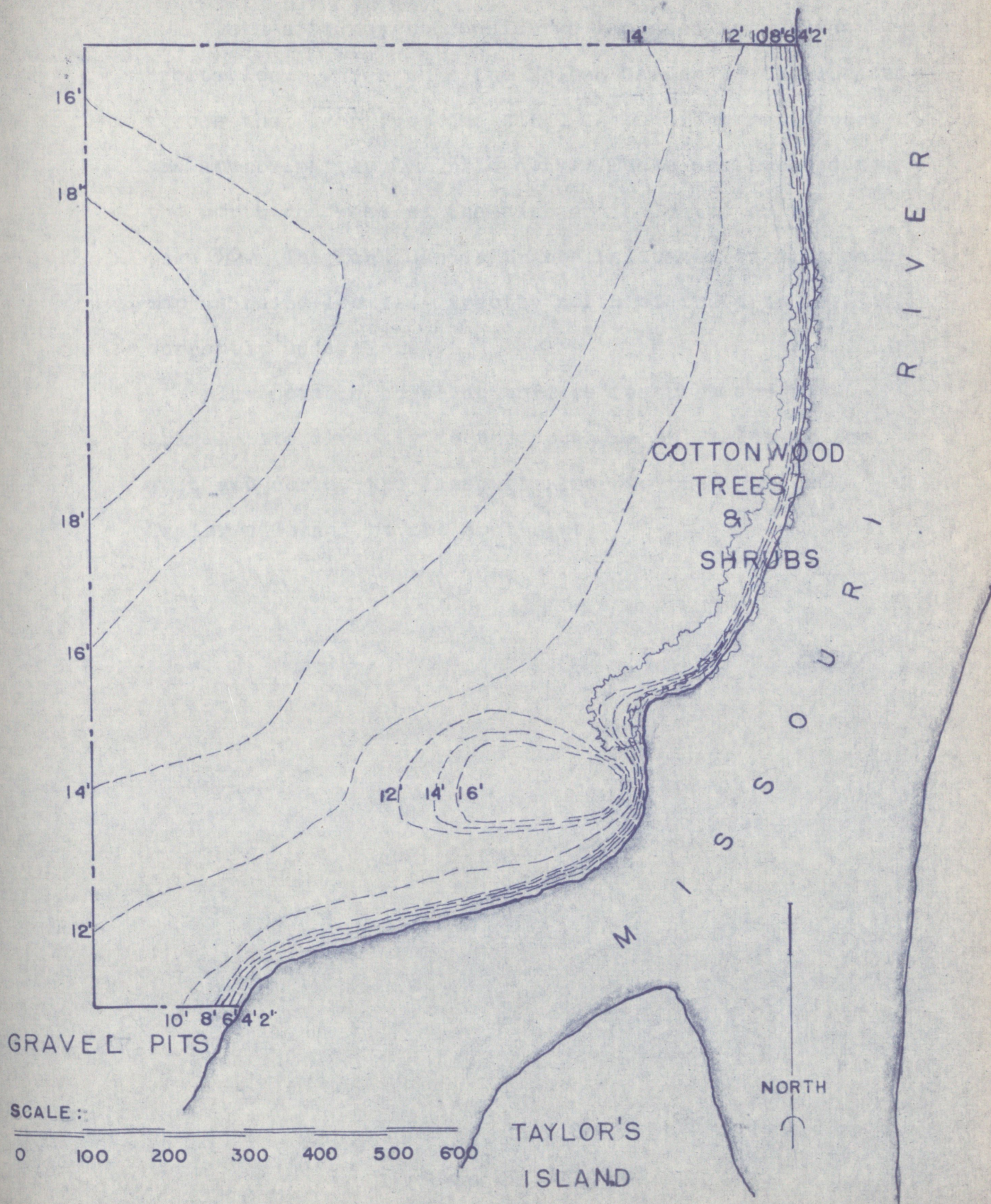
TOPOGRAPHY

The topographical countours of the site are shown at two foot intervals on map 2 page 33.

MAP 2

CONTOUR MAP OF PROPOSED SITE

REPRODUCED FROM AERIAL PHOTOGRAPH



ADJACENT ENVIRONMENT

This site may be considered isolated from human habitation. Other than the Mclean Garden tracts located across the river from the site, the nearest residences are approximately 1/2 mile away. These are located to the north and west of the site as indicated on map / page 30. The Park Garden tracts indicated on this same map as being located directly north of the site are currently undeveloped.

The notable adjacent surface features are the gravel pits directly to the south, open fields to the west and north, the Missouri River to the east and Taylor's Island to the southeast.

VEGETATION

The vegetation in this area consists of large cottonwood trees, briar-like bushes, buffalo grass, and weeds. The trees and bushes are clustered in the low areas along the river bank while the buffalo grass and weeds cover the higher areas. This is more clearly shown on map 2 page 33.

Since the project is located outside of the city limits, city water and sewage systems may not be used. Therefore a well and some type of sewage disposal system must be incorporated in the design of the proposed project.

UTILITIES

Electricity, gas, telephone, water, and sewage lines are located approximately 1/2 mile away. The locations of these lines are shown on map / page 30. Hookups to the electricity, gas, and telephone lines may be made at the points indicated on the map just mentioned; however, because the proposed site is located outside of the city limits, city water and sewage systems may not be used. Therefore a well and some type of sewage disposal system must be incorporated in the design of the proposed project.

1. The land contours at the proposed site rise sharply from the river to an average height of ten feet above the level of normal river flow. Flood waters would have to reach enormous proportions before flooding of the site would occur.
2. The majority of flooding along the Missouri River occurs below where the Sun River joins the Missouri. During the record flood of 1964, which was caused by the Sun River, the Missouri River rose approximately 10 feet above the level of normal flow. The water level at the site,

RIVER CONDITIONS ADJACENT TO SITE

• Navigability of Waters

The Missouri River divides and forms two channels around Taylor's Island near the southern border of the proposed site. If low water conditions occur, the east channel does not carry a large enough volume of water to allow easy navigation. Boat traffic is then confined to the west channel. The west channel is closest to the proposed site.

Possibility of Flooding

There is little danger of flooding at the proposed site because:

1. The land contours at the proposed site rise sharply from the river to an average height of ten feet above the level of normal river flow. Flood waters would have to reach enormous proportions before flooding of the site would occur.
2. The majority of flooding along the Missouri River occurs below where the Sun River joins the Missouri. During the record flood of 1964, which was caused by the Sun River, the Missouri River rose approximately 10 feet above the level of normal flow. (5) The water level at the site,

ZONING approximately 1 mile above where these two
*
rivers join, was only three feet above the
Zoning Regulations
level of normal flow.

This site is located beyond the Great Falls city
limits. *I determined this level by noting the level of
driftwood along the riverbank at the site. County lands, hence
the only fire restrictions on the proposed project are
those which would be imposed by fire insurance rates.

Zoning officials are currently trying to pass leg-
islation which will bring county lands under the jurisdic-
tion of city zoning laws. If these laws are passed,
the area in which the site is located will be zoned for
residential buildings only. It will be assumed that the
proposed project can be built before these laws can be
passed.

Building Codes

The building code used in the Great Falls area is
the Pacific Uniform Building Code.

ZONING REGULATION AND BUILDING CODE

Zoning Regulations

This site is located beyond the Great Falls city limits, therefore it is on county land. At present there are no zoning regulations which apply to county lands, hence the only fire restrictions on the proposed project are those which would be imposed by fire insurance rates.

Zoning officials are currently trying to pass legislation which will bring county lands under the jurisdiction of city zoning laws. If these laws are passed, the area in which the site is located will be zoned for residential buildings only. It will be assumed that the proposed project can be built before these laws ^{ARE} ~~can be~~ passed.

Building Codes

The building code used in the Great Falls area is the Pacific Uniform Building Code.

TRAFFIC PATTERNS

Roadway Traffic

Map 4 on page 41 shows the location of the main traffic routes in the Great Falls area. The solid red line indicates the route to the proposed site. The dotted red line indicates where an access road will be constructed. It will be assumed that a right-of-way for the access road may be acquired.

River Traffic

There is approximately six miles of navigable water on the Missouri River in the Great Falls area. This navigable water begins at the Municipal Boat Docks at Broadwater Bay and extends upstream to sandbars which hinder boat passage.

During the summer months, usually from the middle of June to the middle of September, this stretch of water is used by the Great Falls residents for boating.

Boaters usually congregate at two points along the river. These are: the Barge, a tavern located approximately one mile upstream from the proposed site; and the Municipal Boat Docks about one and one-half miles downstream from the proposed site.

Map 1 on page 30 shows the location of the Barge and the Municipal Boat Docks.

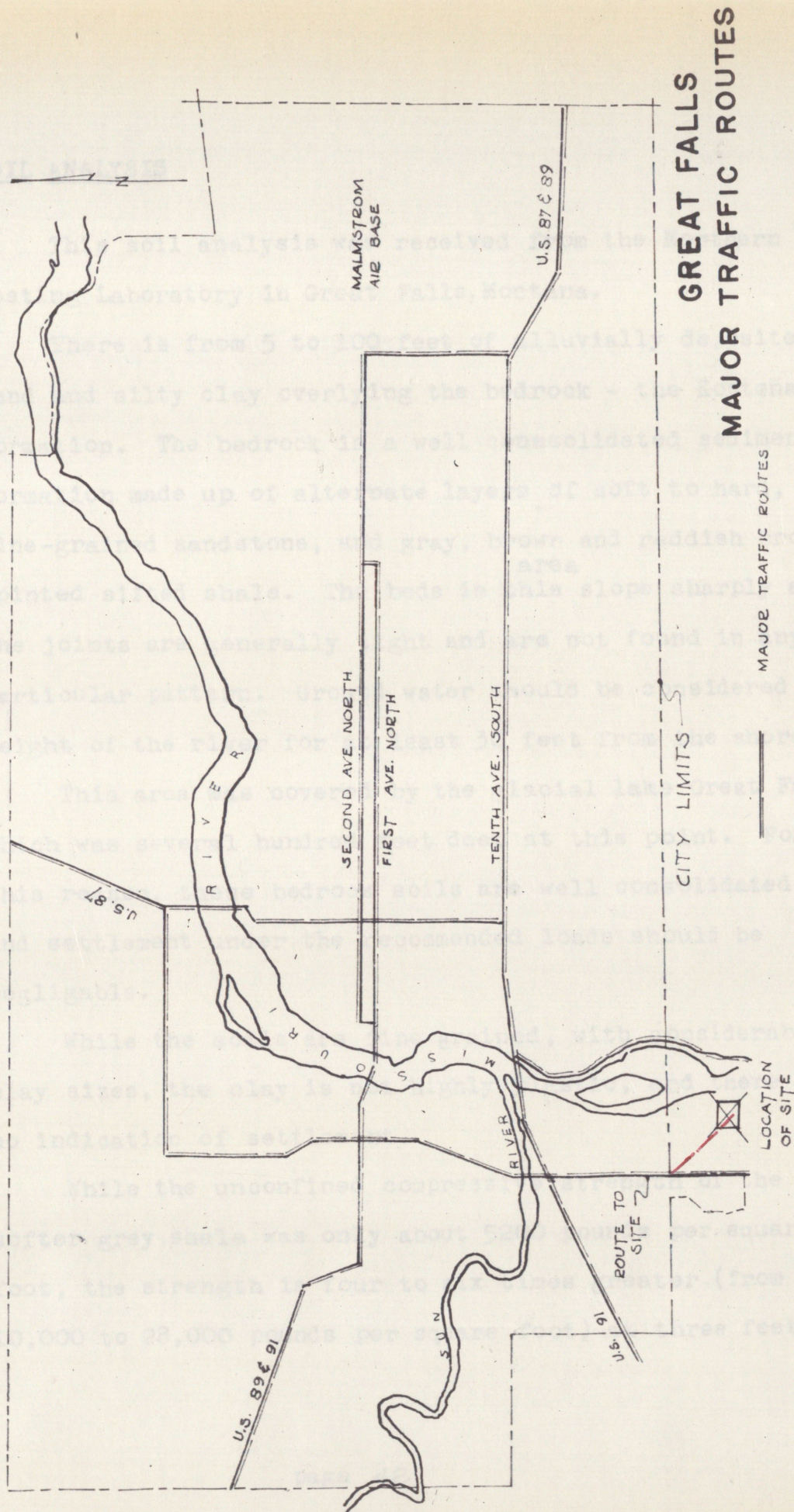


FIGURE 4.

COURTESY- MONTANA HIGHWAY COMMISSION

SOIL ANALYSIS

This soil analysis was received from the Northern Testing Laboratory in Great Falls, Montana.

There is from 5 to 100 feet of alluvially deposited sand and silty clay overlying the bedrock - the Kootenai formation. The bedrock is a well consolidated sedimentary formation made up of alternate layers of soft to hard, fine-grained sandstone, and gray, brown and reddish brown jointed sifted shale. The beds in this slope sharply and the joints are generally tight and are not found in any particular pattern. Ground water should be considered the height of the river for at least 30 feet from the shore.

This area was covered by the glacial lake Great Falls which was several hundred feet deep at this point. For this reason, these bedrock soils are well consolidated, and settlement under the recommended loads should be negligible.

While the soils are fine grained, with considerable clay sizes, the clay is not highly plastic, and there is no indication of settlement.

While the unconfined compressive strength of the softer grey shale was only about 5200 pounds per square foot, the strength is four to six times greater, (from 10,000 to 28,000 pounds per square foot) at three feet

below bedrock surface. The sandstone layers apparently have tremendous compressive strengths (10,000 pounds per square inch), however these sandstone layers are discontinuous.

Figure 5 page 44 shows the contours of the bedrock formation.

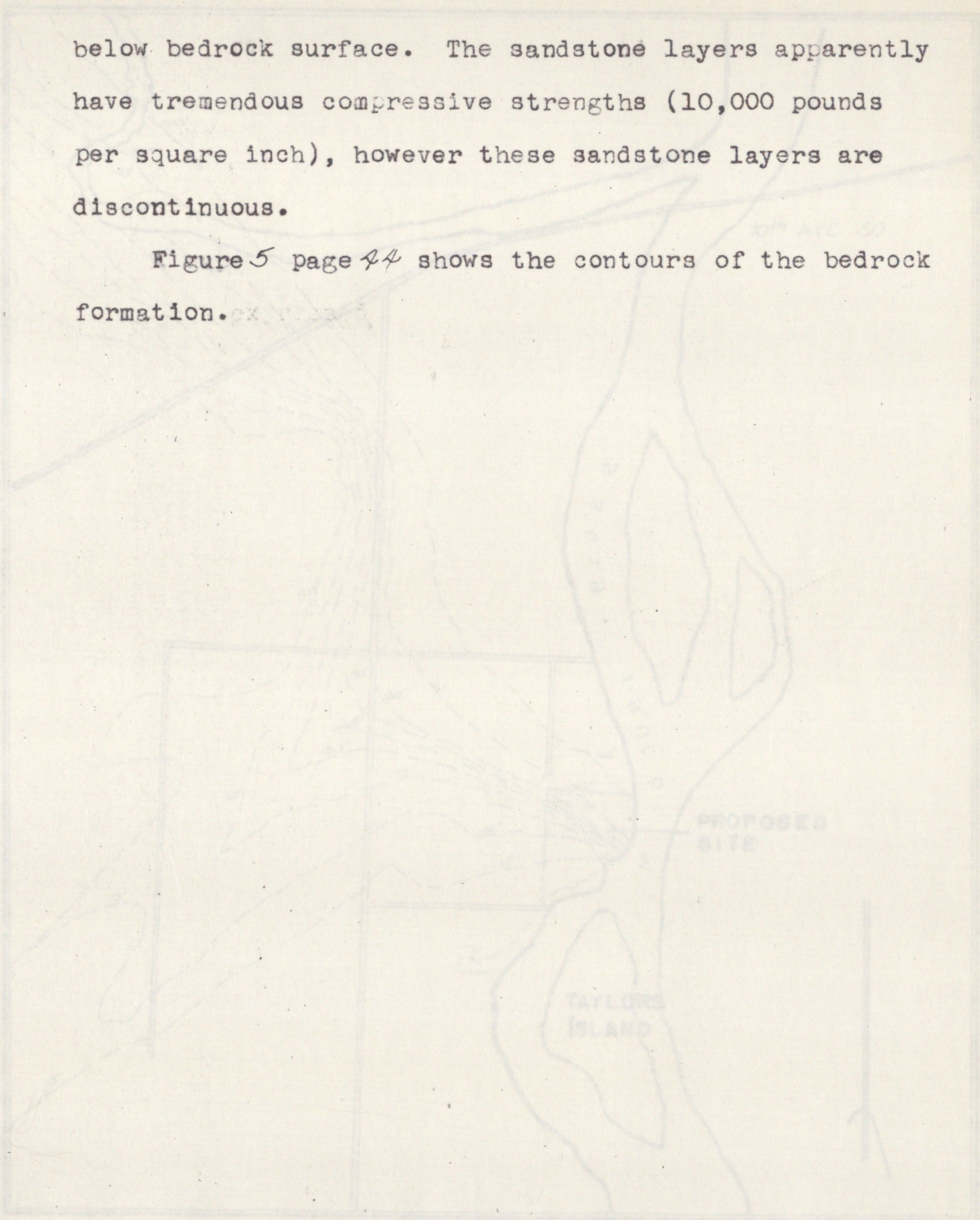


FIGURE 5. MAP OF BEDROCK CONTOURS

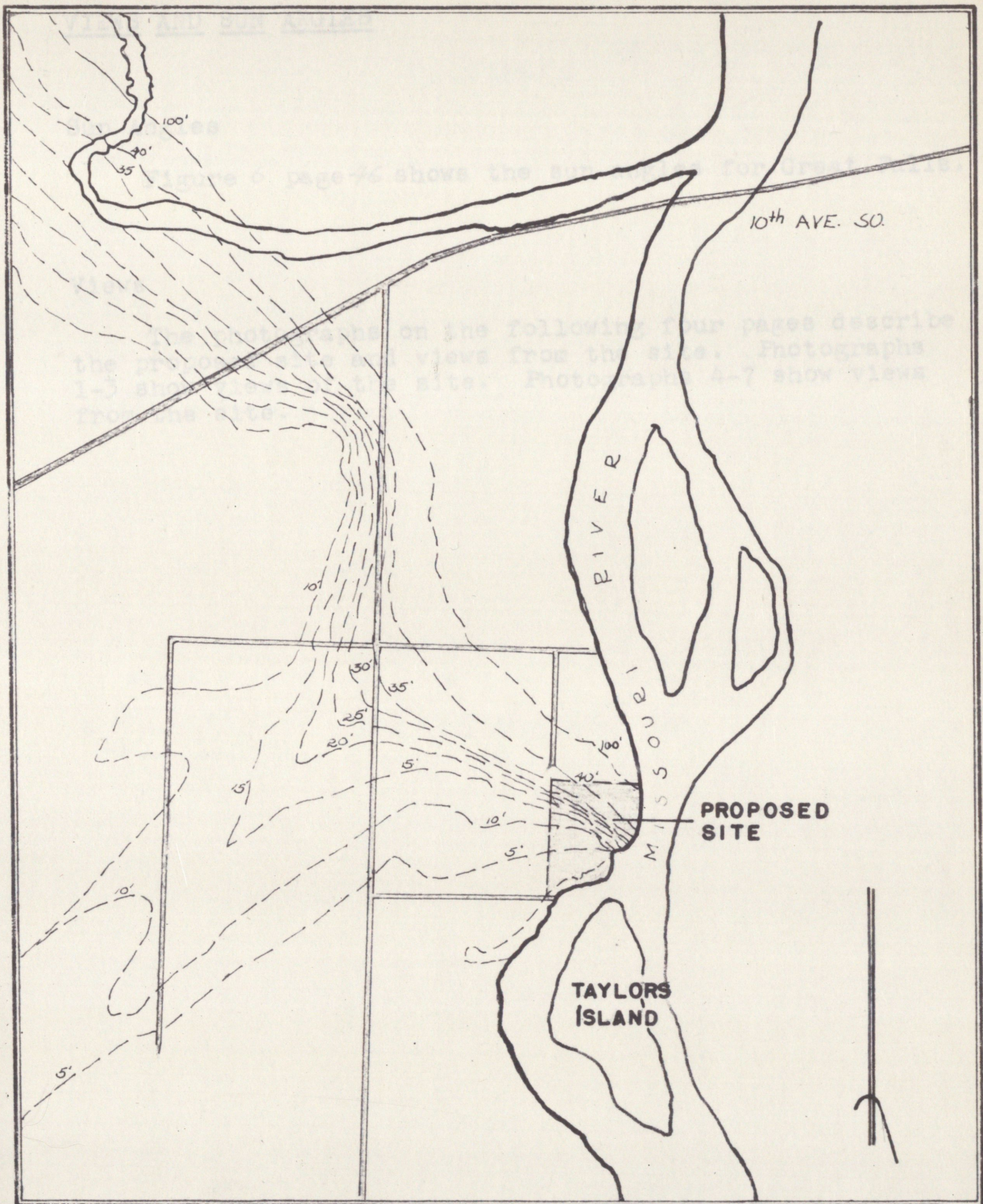


FIGURE 5. MAP OF BEDROCK CONTOURS

COURTESY— NORTHERN TESTING LABORATORIES
(GREAT FALLS, MONTANA)

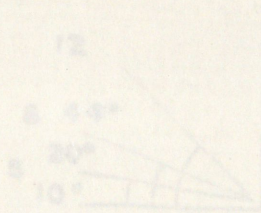
VIEWS AND SUN ANGLES

Sun Angles

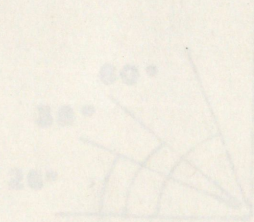
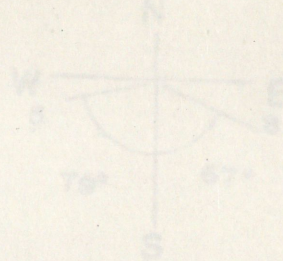
Figure 6 page 46 shows the sun angles for Great Falls.

Views

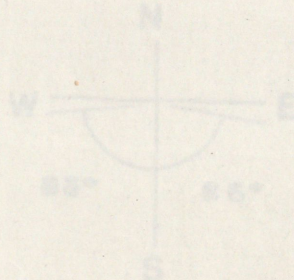
The photographs on the following four pages describe the proposed site and views from the site. Photographs 1-3 show views of the site. Photographs 4-7 show views from the site.



MARCH
&
SEPTEMBER



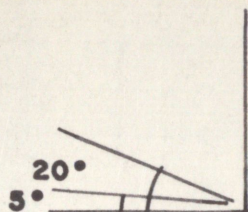
JUNE



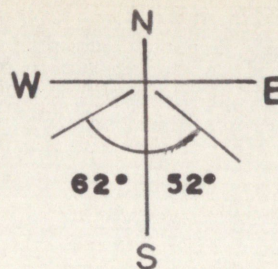
FIGURE

page 45

SUN ANGLES FOR GREAT FALLS

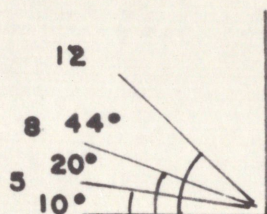


DECEMBER

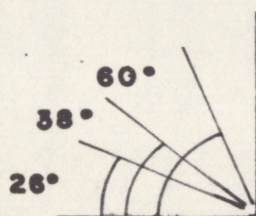
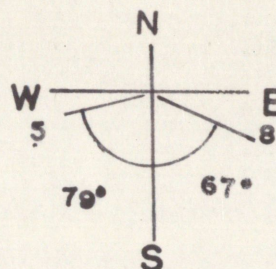


SUN ALTITUDE
AT 8:00 A.M.
12:00, & 5:00 P.M.

SUN AZIMUTH
AT 8:00 A.M.
12:00, & 5:00 P.M.



MARCH
&
SEPTEMBER



JUNE

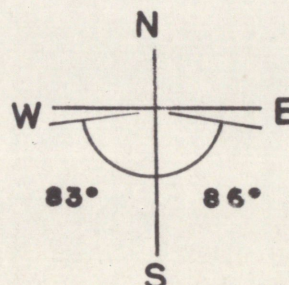


FIGURE 6.



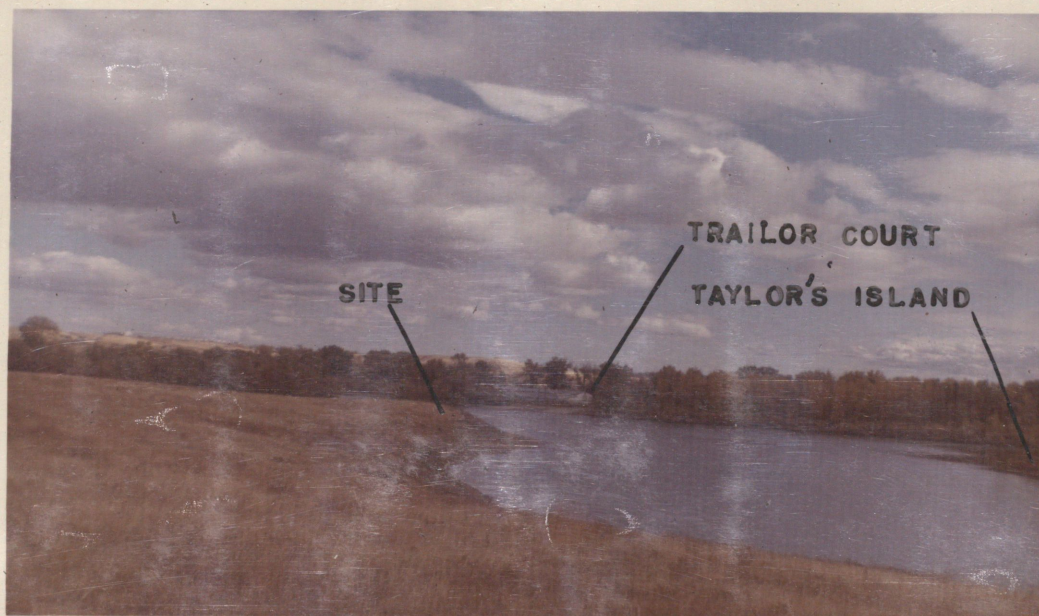
• OCT • 64

1. VIEW OF SITE FROM THE WEST



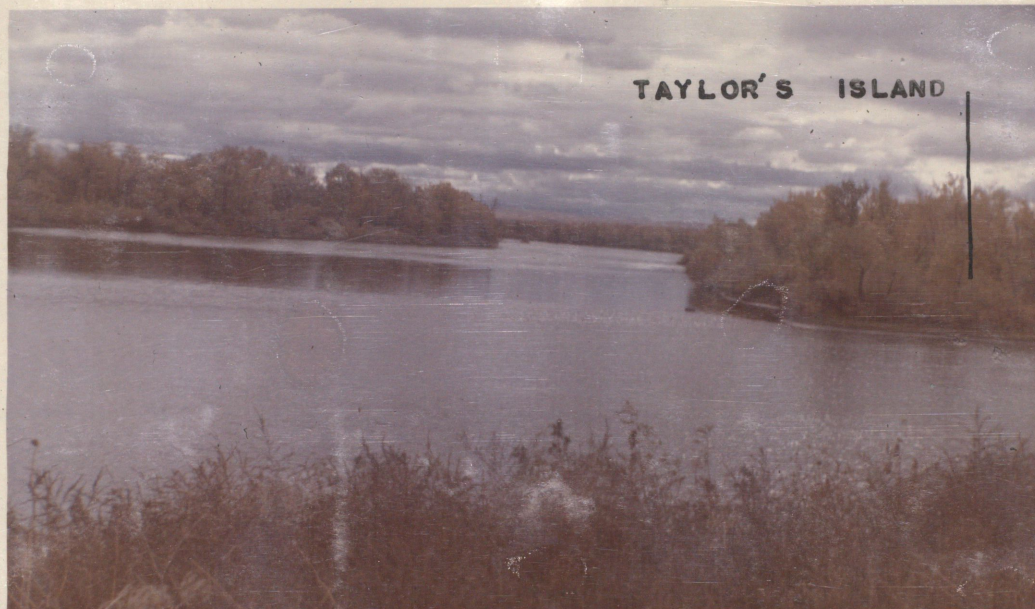
• OCT • 64

2. VIEW OF SITE FROM THE EAST



64
• OCT •

3. VIEW OF SITE FROM THE SOUTHWEST



TAYLOR'S ISLAND

• OCT • 64

4. LOOKING SOUTH FROM THE SITE
(east channel)



TAYLOR'S
ISLAND

5. LOOKING SOUTHEAST FROM THE SITE
(west channel)



6. LOOKING WEST FROM THE SITE



7. LOOKING NORTH FROM THE SITE

FUNCTION

PROJECT FUNCTION SUBJECT

ACTIVITIES AND FUNCTION OF PROJECT

Activities

Two activities will take place within or close to the confines of this project. These activities are water sports - boating and water skiing, and nightclub activity - ^{dining} ~~eating~~, drinking and dancing.

Function of Project

Nightclub The nightclub will operate year around from the late afternoon hours until closing time at 2:00 A.M. Drinking, dining, dancing and floor shows will be featured. Full course meals will be served to the general public in the dining room while large private parties will be accommodated in the banquet room.

In the summer a snackbar and bar will operate ~~substore~~ from the morning until dark to serve the boaters. Boaters presentably dressed will also be accommodated in the dining room.

Boating Facilities The boat facilities will operate only during the summer months. Their main function, other than to accommodate boats, is to establish the nightclub as a center for water activity. By accomplishing this, the water setting of the nightclub will be further authenticated.

CIRCULATION

Nightclub Circulation

Human traffic Human traffic may be divided into two categories, these are:

1. Customer traffic - Customers will enter the nightclub either from the river via the observation deck, or they will enter through the main entry.

Once they are inside, they should deposit their coats, pay the cover charge, and enter either the dining room, the banquet room, or the bar. From these areas they can view the floor show or step to the dance floor. Toilets should be within a close distance of all interior spaces.

Upon leaving, the customers will pay their bills, pick up their coats, and depart.

2. Employee traffic - When the employees arrive they will enter the employees' area, change clothes if they want, and go to work. After work, the employees may shower, change clothes, and leave.

Non-human traffic The term non-human traffic applies to delivery of food to customers, food preparation, and the circulation of items which are not usually seen by the customer. Non-human traffic should be should be such that it will allow economy of movement to these employees.

Boat and Automobile Circulation

Boat traffic Boat traffic will be simple. Boaters will approach the site and either dock their boats or pass on.

Automobile traffic Automobiles approaching the site may either be parked at the main parking lot or, if they have boat trailers attached, proceed to the spaces allotted for automobiles with boat trailers.

Automobiles with boat trailers should be allotted enough room* to maneuver in and out of parking spaces. Also room should be provided so they may turn and back straight into the boat launching area.

* An automobile with a 14 foot boat trailer requires at least 60 feet forward to pull out of a parking space.

SPACES REQUIRED FOR THE NIGHTCLUB; THEIR FUNCTION
AND REQUIREMENTS

The information listed in this section is based on interviews with Mr. Grasseschi, owner of the 3d Club in Great Falls, Montana, and Mr. , manager of the Beaumont Club in Belgrade, Montana.

The spaces required for the nightclub, their function and requirements are as follows:

1. Entry - The function of this space is to provide human traffic with a pleasant passage in and out of the building.
2. Coatroom - Storage for 450 coats will be required. Either one or two coatrooms will be needed. This will depend upon the final design. The coatroom(s) should be located near the entry(s).
3. Checkstand - Meal tabs and cover charges will be paid here. Also, cigars and candy will be sold here.
4. Office - The function of this room is to provide space for the manager to perform his duties. His main tasks will be bookwork and supervision of personnel. Therefore this room should be

located where the manager can easily check on the employees.

5. Dining room - The dining room should be large enough to accommodate 350 people. It should be near the dance floor and provide a good view of the stage.

6. Banquet room - The banquet room will accommodate large private parties. Space to seat ²⁵⁰ ~~100~~ people will be required.

7. Snackbar - The snackbar will operate during the day until sundown. It will serve the boaters and general public. Space for 10 people at the bar is required. This area should be accessible from the observation deck.

8. Kitchen - The kitchen will serve the snackbar, the dining and the banquet room. The snackbar will serve only short orders - hamburgers, hotdogs, and the dining room and banquet room will receive full course meals. Therefore, the equipment needed to prepare these different foods should be separated. These different foods should also be stored separately.

9. Servicebar - The function of the servicebar is to provide the waitresses with convenient access to the prepared meals. The food will be prepared in the kitchen, placed on the servicebar, and picked up by the waitresses. This space should be located adjacent to the kitchen.
10. Garbage area - A separate area should be provided for keeping garbage until it can be removed. This area should be located near the kitchen and snackbar.
11. Bars - The number of bars required in this project will be determined by the design solution. At this stage in the design process, I foresee a need for three bars. These are:
- a. The main bar This bar will accommodate 100 people. Seating will be provided at the bar, at tables, and booths. A small nook for parties of about ten people would also be desirable. This bar should be close to the dance floor. It should also offer a view of the stage.
 - b. Bar off dining room - ~~This bar will be serving~~ the dining room only. Drinks will be mixed here and brought to the customers by waitresses. There should be seating for ten customers at the bar.

c. Bar off banquet room - This bar serves the banquet room in the same manner as the bar off the dining room serves the dining room. There should be seating for ten customers at this bar also.

12. Bottle stacking rooms - These rooms will be located below the bars. Bottles will be sent from the bars to racks in the stacking rooms through rubber chutes. These rooms should be located somewhere below the bars they serve.

12. Observation deck - The observation deck should be located in a position where people on the deck may view the river. There should be access to the dining room, the snackbar, and a bar.

13. Toilets -- Toilets should be located in positions easily accessible from all interior spaces. A toilet should also be accessible from the observation deck.

14. Employees area - The following facilities and rooms should be provided for the employees.

- a. shower and change rooms for men and women
- b. bathrooms for men and women
- c. lounge
- d. 2 off-stage dressing rooms.

The two dressing rooms will be used by performers; therefore, they should be located close to the stage. The function of the lounge and facilities should be obvious to the reader.

15. Stage - The stage should be from one and one-half to two feet above the main floor level. It should be large enough to accommodate about six performers and their props. (6)
16. Bandstand - The bandstand should also be elevated. It should be the same height, or higher than the stage. The height will be largely determined by the design of this area.
17. Dance floor - The dance floor should be large enough to accommodate one third of the total capacity of the nightclub. (6) This is approximately 130 people.
18. Mechanical room - This room will house the mechanical equipment. It should be centrally located.
19. Utility room - Linen will be washed and dried in this area.
20. Janitor's closet - This room will contain the equipment used by the janitor.

FUNCTION AND REQUIREMENTS OF INDIVIDUAL BOAT
FACILITIES

1. Docks - The docks should accommodate 30 boats.
2. Boat launching pad - This should be large enough to allow two boats to be launched simultaneously.
The launch pad should be designed for the launch of two boats in Figure 1 page 58.
3. Fueling - Boat motors run on gas, and gas-oiled oil mixtures. A 'gas' pump will be required for each of these fuels. The pumps should be located in a position where they may service launched boats.

AESTHETICS

AESTHETIC CONSIDERATIONS

This project will be designed around two activities: water recreation, and those activities associated with nightclub entertainment--drinking, dining, and dancing.

With these activities in mind, how should the nightclub look? What mood and character should it express? Should it be serene? Gay? Stately?

I have very strong feelings on these matters. It was my original intent to create a novel type of nightclub atmosphere. Something unique, something that would appeal to the boaters and those seeking only nightclub entertainment.

I want to integrate the water and nightclub activities and make the river setting a complete theme throughout. I would accomplish this by using large glass areas to offer a view to the river and the water activity there. Also, the boaters could dock and step into the nightclub or the snack-bar provided for them.

With these ideas in mind, I believe the building should be a bold, definite statement. One reflecting the fun, enjoyment and excitement of the activities taking place around it. I can imagine the building being cantilevered over the edge of the river bank--almost hovering over the water. This would be very interesting and exciting, not only from the boaters view, but from inside the nightclub. Those inside would be able to look down on the water activity during the early evening hours; or during the evening, view colored

lights which would be making interesting patterns and movements across the water.

I can imagine that customers would enjoy boating up the river to the nightclub to eat dinner and then return home at dark. With the nightclub cantilevered over the river, a water entrance might be incorporated into the design. Boaters could dock their boats and walk directly into the nightclub.

Of course this type of integrated activity could only take place during the summer months. However, I believe that the character and atmosphere could be retained even during the gloomy winter months. Curtains or movable partitions could be placed around the glass areas during the winter and the atmosphere created solely from within, through the use of proper colored lighting, wood paneling, warm colors, and maybe even a porthole-type window.

?

BUILDING PROGRAM

BUILDING PROGRAM

This section is a compilation and analysis of the data and information listed in the preceeding sections.

The information in this section is divided into the following three parts.

1. Space requirements - This part includes the name of the space required, the area of the space, and furnishings and equipment needed within the space. A space relationship diagram is also included. on page. .
2. Boat facilities - This part lists the facilities required and remarks pertinent to the building program.
3. Parking facilities - This part lists the number of cars to be parked.

SPACES REQUIRED

The following information is based on interviews with Mr. Grassechi, owner of the 3d Club in Great Falls, Montana, and Mr. MORGAN, manager of the Beaumont Club in Belgrade, Montana.

<u>SPACE</u>	<u>AREA</u> (sq.ft)	<u>FURNISHINGS</u>	<u>EQUIPMENT</u>
1. entry	-	-	-
2. coatroom	⁴⁵⁰ 350	1 chair	coat racks
3. checkstand	60	1 chair	counter cash register
4. office	200	2 easy chairs 1 desk 3 filing cabinets	1 safe
5. dining room	4200	tables 10 for 2 people 25 for 4 people 25 for 6 people 10 for 8 people 350 chairs	cash register bar cooler 3-compartment sink drainage board bar tape liquor storage
6. dining room storage	100	shelves	cash register 3-compartment sink drainage board liquor storage
7. banquet room	²⁰⁰⁰ 1800	tables for 100 100 chairs	
8. banquet room storage	²⁰⁰ 75	shelves	

<u>SPACE</u>	<u>AREA</u>	<u>FURNISHINGS</u>	<u>EQUIPMENT</u>
9. snackbar	200	10 stools shelve space	cash register coke machine
10. snackbar storage	25	shelves	
11. kitchen	¹⁴⁰⁰ 900	preparation area 4x10 salad bar 4x6 40 feet of counter	2 gas stoves 1 grill 3x5 3 ovens (stacked) 2 refrigerators 2 dble sinks 1 coffee machine 1 milk cooler 1 walk - freezer (8x10) 3 garbage barrels
12. kitchen storage	200	shelves	
13. service bar	25	counter	
14. garbage area	35		
15. main bar	¹²⁰⁰ 1500	bar counter for 30 30 people chairs, tables and booths for 70 shelves for glasses	1 cash register beer coolers 1 3-compartment sink draining board keg taps liquor storage
16. bar off dining room	200	bar counter for 10 people 10 stools	1 cash register 1 3-compartment sink draining board liquor storage
17. bar	200		

<u>SPACE</u>	<u>AREA</u>	<u>FURNISHINGS</u>	<u>EQUIPMENT</u>
17. bar off ban banquet room	200	same as bar off dining room	
18. liquor storage	80		
19. bottle stacking 3 @ 35 rooms		bottle racks	bottle racks
20. customer toilets men	100		3 urinals 2 waterclosets 2 sinks paper towel racks garbage can
women	125	couch cosmetic counter with 2 chairs	4 water closets 2 sinks paper towel racks garbage can MIRROR
21. observation deck	500	chairs and benches for 25 people	
22. employee's area a. toilets 1. men	40		1 urinal 1 watercloset 1 sink garbage can paper towel rack
2. women	40		1 water closet 1 sink garbage can paper towel rack
b. showers	2 @ 16		
c. change	2 @ 60	benches and clothes racks	
d. lounge	140	3 chairs 1 couch	

SPACEAREAFURNISHINGSEQUIPMENTe.dressing
rooms

2 @ 80

cosmetic counter
2 chairs
closet

1.sink

23. mechanical
room

400

1 well pump
furnace
air conditioner24. janitor's
closet

30

1 slop sink

25. general
storageas large
as possible

26. stage

200

27. bandstand

200

28. dance floor

~~800~~
1200

29. utility room

80

1 washing machine
1 drier
1 ironer

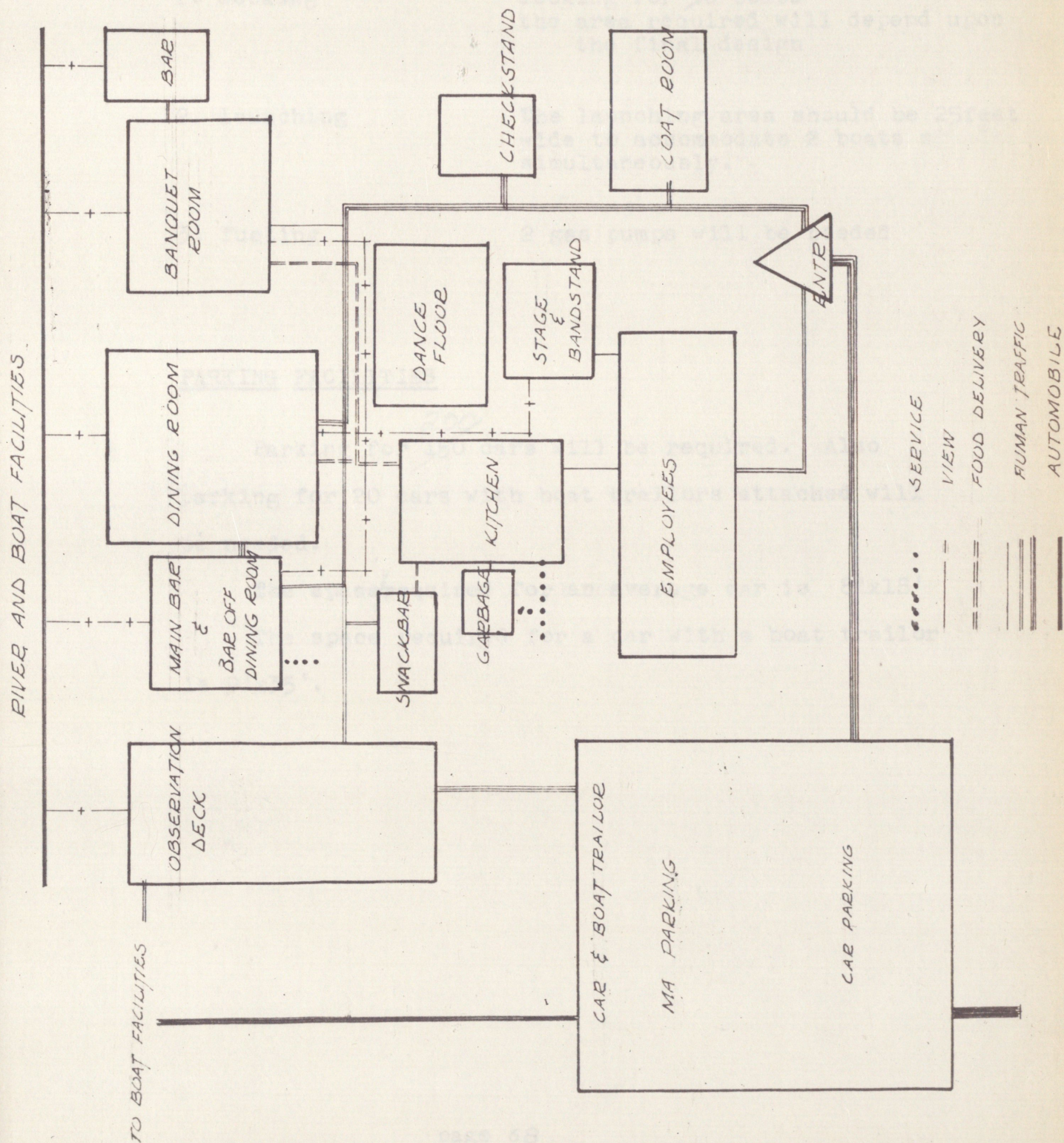


FIGURE 7. SPACE RELATIONSHIP & CIRCULATION DIAGRAM

BOAT FACILITIES REQUIRED

FACILITIES

REMARKS

1. docking

60
docking for 30 boats -
the area required will depend upon
the final design

2. launching

The launching area should be 25 feet
wide to accommodate 2 boats simultaneously.

3. fueling

2 gas pumps will be needed

PARKING FACILITIES

200
Parking for 150 cars will be required. Also
parking for 20 cars with boat trailers attached will
be needed.

The space required for an average car is 8'x18'

The space required for a car with a boat trailer
is 9'x35'.

MONTANA STATE UNIVERSITY LIBRARIES CA
stks 720.6.M76W185
A nightclub and water recreation area fo

3 1762 00159197 1

~~1111~~
1111
1111
1111
1111

~~LIB. USE ONLY~~

