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BOZEMAN

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AN INDOOR RECREATION AND SOCIAL CENTER FOR BOZEMAN, MONTANA

Part I

Undergraduate Thesis in Architectural Design

By

Edgar E. Alexander

Submitted to the School of Architecture as partial fulfillment of the requirements for the degree of Bachelor of Architecture

at

Montana State University

Bozeman, Montana
August, 1966

P378
.AL2595

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BOZEMAN







BOZEMAN - A GENERAL BACKGROUND

In the early frontier days of Montana, settlements grew around the mining areas. Some pioneers traveling west by wagon train turned off from the Oregon Trail, moved through the Gallatin Valley and on west to presumably make their fortunes. In 1864 John Bozeman lead such a group. He and two of his friends, D. E. Rouse and W. J. Beall, staked out the present site of Bozeman. But, unlike other towns, it was founded around an agricultural economy and in 1893 the state legislature chose Bozeman as the home of the land grant college, Montana College of Agriculture and Mechanic Arts. Now named Montana State University, it has grown to a 6,000 student enrollment and Bozeman has grown into one of Montana's leading retail centers.

According to the 1960 U. S. Census, Bozeman had a population of 13,366 and is estimated at 16,000 today. Although Bozeman has an area of 4.2 square miles its retail trade area covers 24,465 square miles serving a population of more than 65,000 people with annual sales of approximately $30,786,000.

*Information in this chapter courtesy of the Bozeman Chamber of Commerce.

NEED

THE CONDITIONS CREATING A NEED FOR "AN INDOOR RECREATION AND SOCIAL CENTER"

EXISTING FACILITIES

Individually Owned

In the city of Bozeman there is only one indoor recreational center which consists of an 18 lane bowling alley, liquor lounge and pinball machines. During the bowling season this organization handles 19 bowling leagues and an occasional bowling tournament. I was told by the manager of this center that many more leagues could be created if the facilities were larger. One of the major problems this bowling alley has, is that during league nights there are no facilities open for non-league bowlers. They must either come early in the evening or very late at night. Further, there are no provisions, at present, for parking, although facilities are being built near by, by the city.

Also, in the city limits of Bozeman, there are 15 bars or lounges. Of these only five offer dancing and three of these are private organizations. That leaves Bozemanites with only two dance-lounge facilities for entertainment. One specializes in beer and caters to the college crowds, and the other currently features a "honky tonk" piano player as their main entertainment.

In regard to eating establishments, I would classify the majority in Bozeman as cafe's or drive-in's. The three hotels offer luncheons and dinners but lack something in quality and

atmosphere. The Riverside Country Club, north of Bozeman, is considered by most residents to have very good food in a conservatively formal atmosphere. However, all facilities of this club are open only to members and their guests. Therefore, I contend Bozeman needs and would enjoy a restaurant with a luxurious atmosphere and palatable food.

Publicly Owned

The educational systems of Montana and Bozeman do offer limited entertainment for the young people of the town. The University, for instance, has a very small bowling alley, six lanes, which is used for physical education and open bowling for the campus community. They also provide billiard tables and other assorted athletic facilities on the campus but these are limited to daylight hours in most cases. They do not begin to accommodate the 6,000 enrolled students.

The city schools also provide athletic facilities and these too are limited to daylight hours. Frequently dances and other social events are sponsored by the educational system or interested organizations for the young people. Unfortunately these are usually held in a gymnasium or in the parking lot of the First National Bank. Last year the Eagles, a private organization, did open their doors for the teenagers and sponsored dances and refreshments. According to reports this was a big success.

The city also operates a municipal swimming pool which provides pleasure and swimming lessons for children. It was brought to my attention in an interview with Mr. George Marinkovich, coach, Montana State University, that the facilities are so crowded that the pool is operated in shifts. Mr. Tim Herman, pool manager, said their normal attendance is approximately 800 people per day. Therefore, the life guards clear the pool area in the middle of the afternoon to allow a second group of swimmers access to the facilities.

MISCELLANEOUS NEEDS OF THE COMMUNITY

Bozeman has no facilities for supervised muscle toning and weight control other than the Adult Education Classes in physical fitness offered to women for three quarters a year. Mrs. Woodrow Wold, Secretary of the Adult Education Program, stated that two classes were offered last quarter with 60 women attending. She further stated that most were quite pleased with the program. It has been repeatedly pointed out by our federal government and medical profession that weight control and proper muscle toning will prolong life and reduce the minor ills of the population. Operations similar to the "Vic Tanny" and "Slenderella" chains have proven economically successful in other states as well as providing much needed professional guidance and equipment.

In many cases the mothers of our community have free time during the day. But because of child care responsibilities,

they are limited in the types of activities in which they can participate. As recreation is just as important for women, as for men and children, Bozeman needs a baby sitting service so women may leave their children for short periods only.

CONCLUSION

It is hoped that this project; bowling lanes, teen club, health studio, nursery, restaurant and lounge, will spark our inactive neighbors to participate in physical fitness and enjoyment of life as well as provide our young people with a healthy outlet for teenage energies within an appropriate recreational and social atmosphere.


ZEBRA
COCKTAIL LOUNGE & BAR
BOZEMAN

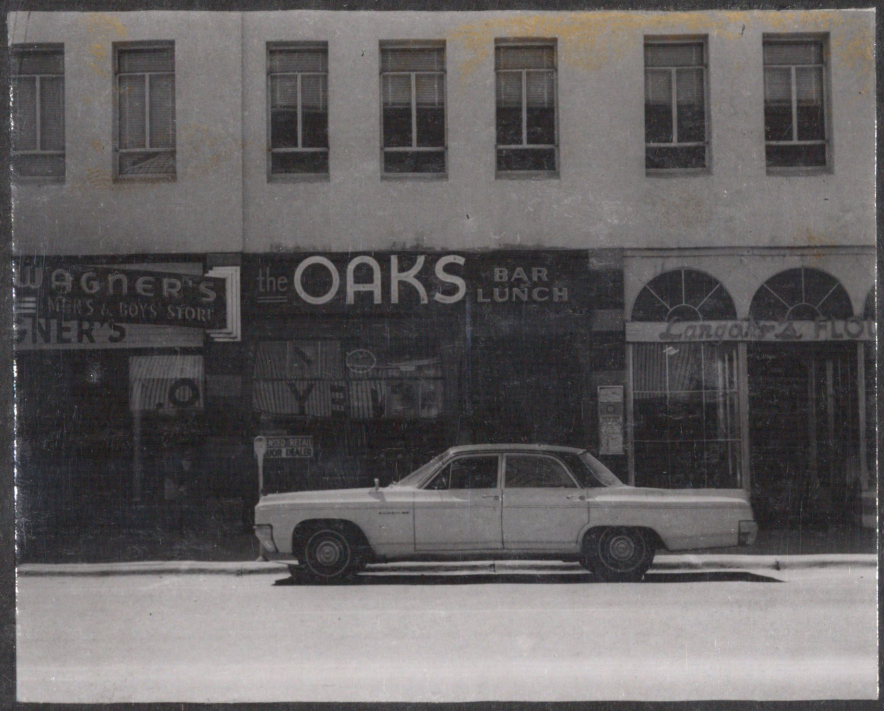

THE BOWL


48's
CAFE
Broasted SIDES
Broasted CHICKEN

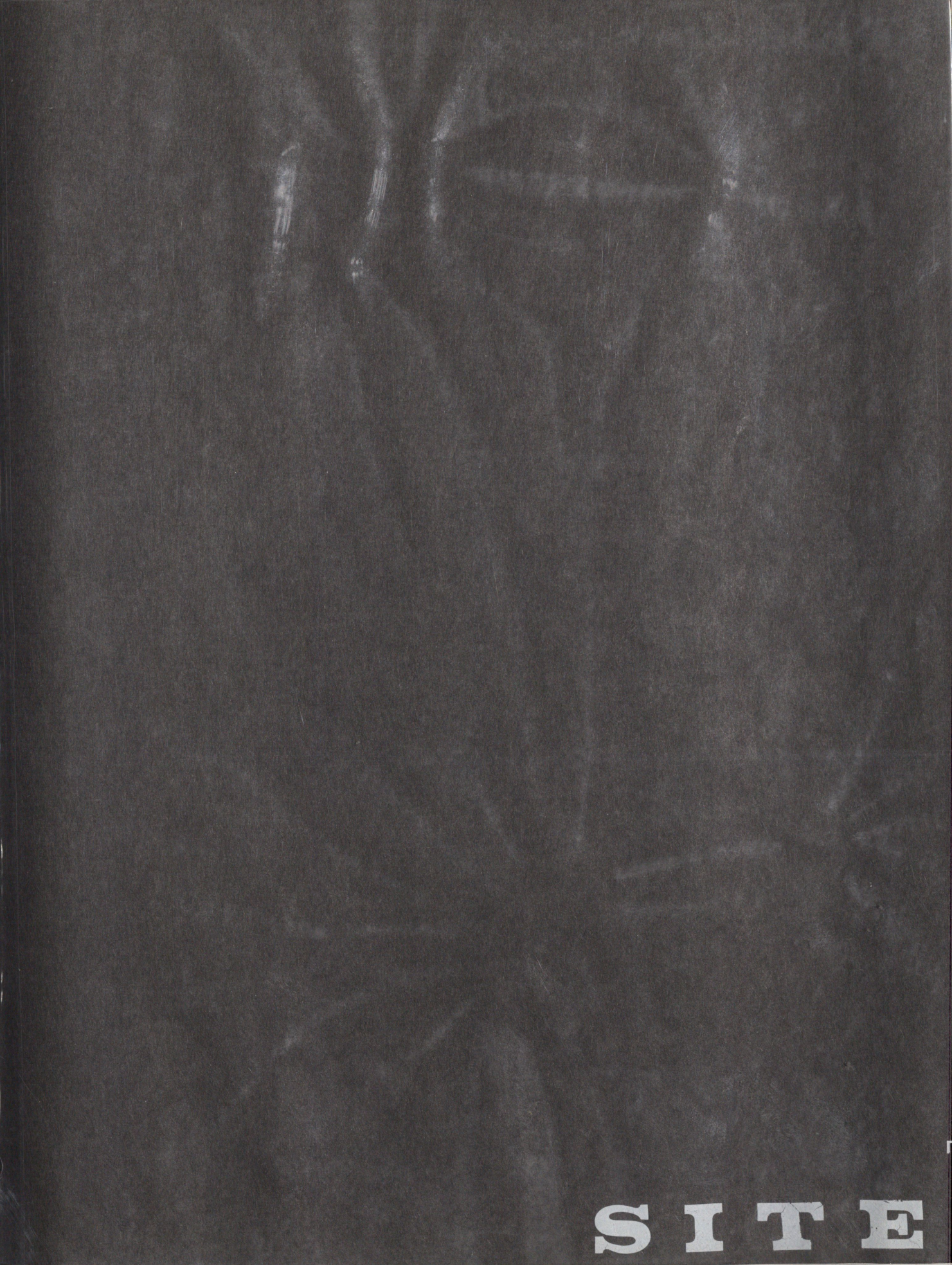

MOLLY BROWN

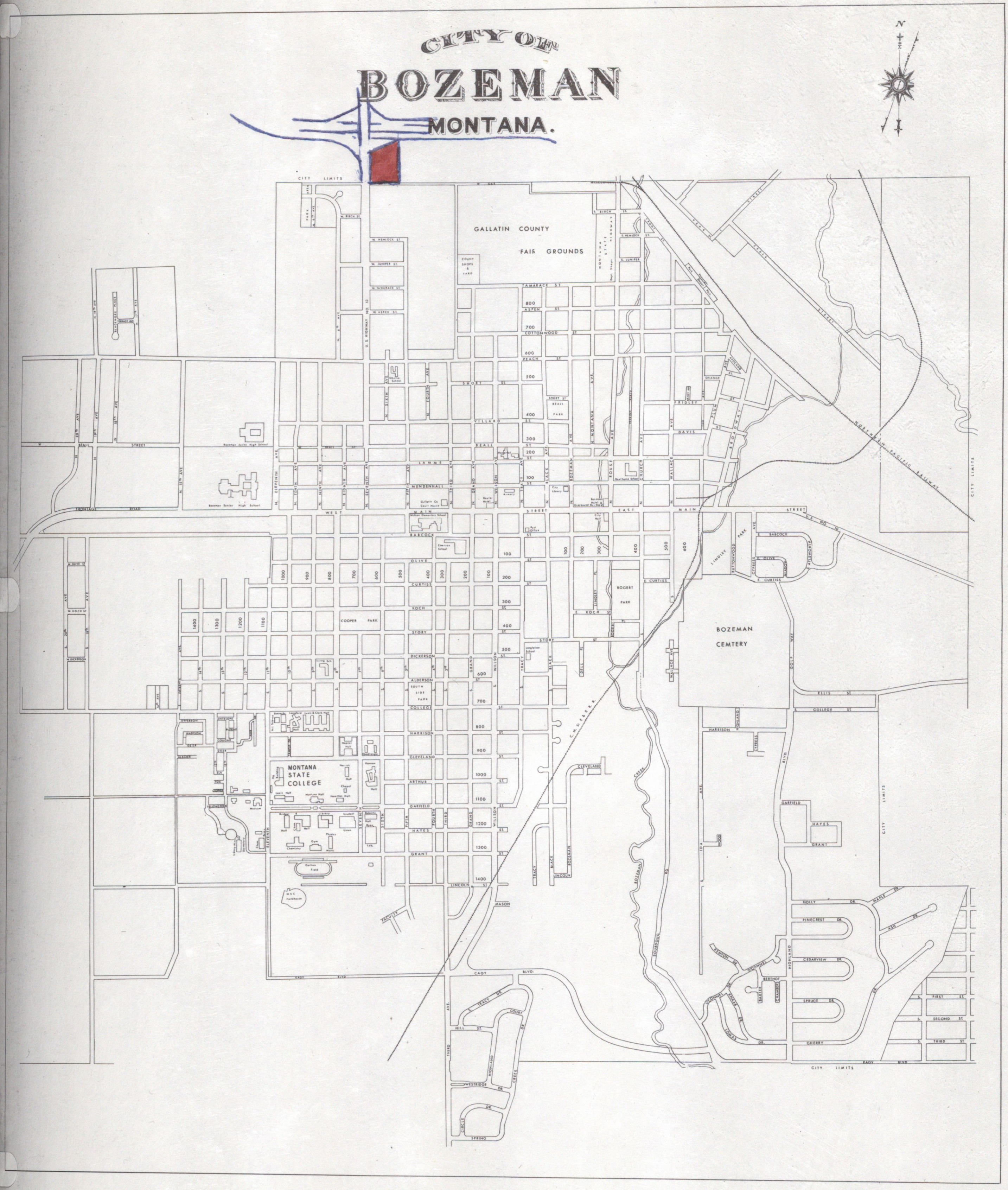

ITURE
Ver


PINES
CAFE
BAR

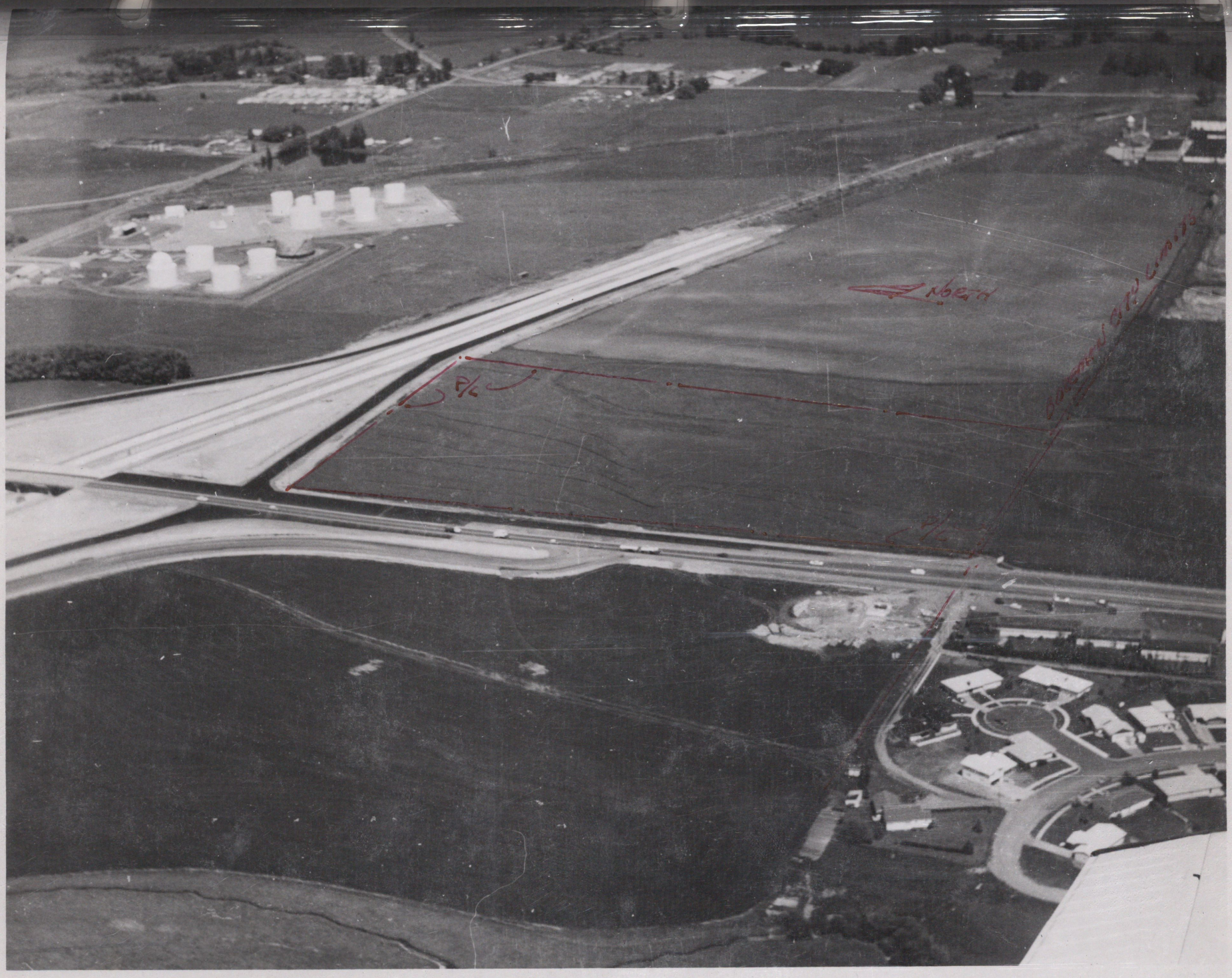

WAGNER'S
MEN'S & BOYS' STORE
the OAKS
BAR
LUNCH


AFE
GAS
FOR LESS
Bair's
BAY
STEAKS! STEAKS


SITE


CITY OF
BOZEMAN
MONTANA.
N
GALLATIN COUNTY
FAIR GROUNDS
CITY LIMITS
BOZEMAN
CEMTERY
BOGERT
PARK
COOPER PARK
MONTANA
STATE
COLLEGE
NORTHERN PACIFIC RAILWAY
FRONTAGE ROAD
WEST
MAIN
STREET
EAST
LINCOLN
CAGY BLVD.

N


NORTH
P/L

SITE CONDITION

LOCATION

In selecting the site for this project I considered easy accessibility by townspeople to the activities provided of major importance. Secondly, the restaurant-lounge portion of the center should be in a position to visually attract the tourists, summer vacationing in the great northwest or winter snow skiing at Bridger Bowl.

The site I selected, I believe, meets both of these considerations.

ORIENTATION

The site is located on the southeast corner of the intersection of North Seventh Avenue, Bozeman's major north-south traffic artery, and the new Interstate Freeway which will be a major tourist travel artery from east to west. Although the site is located just outside the city limits, Mr. Fargo, Bozeman's city engineer, believes that when the area becomes part of the town it will be zoned for motor business as is the area directly to the south.

ADJACENT ENVIRONMENT

Directly north of the site is the freeway with a small, well maintained farm beyond. To the east is the Gallatin County Fair Grounds, while to the west, across North Seventh

Avenue, is a motel and gasoline station. Adjacent to the site on the south are two blocks of vacant property with Bozeman in the distance. The horizon to the north holds the Bridger Mountains; to the southeast, the Gallatin National Forest; the Spanish Peaks to the south, with low rolling farm lands stretching out to the west.

TOPOGRAPHY

This property is presently being farmed with the lessee raising a crop of hay in one portion and grazing a few horses on the remainder. The site itself is relatively smooth, sloping down at the northeast corner to semi-swamp area.

PREVAILING WINDS

During normal climate conditions the wind blows from the north and northeast at four to seven miles per hour during January and eight to twelve miles per hour in June. The storm winds, however, generally come from the east and southeast at velocities up to thirty miles per hour. Architects in this area normally use a wind velocity design load of 100 miles per hour.

SUN ORIENTATION

The sun angles, from the horizontal, are shown on table #1. Essentially it is low, 22° in the southern horizon during the winter months and rises to 68° during the summer.

AVAILABILITY OF UTILITIES

Because the site is so close to the Bozeman City limits all utilities are available at this time. The sewer, for instance, runs the distance of the eastern property line and then turns to the east.

SOIL ANALYSIS

It can only be assumed, without actual testing, that the conditions prevailing on this site are the same as studies conducted by the State of Montana, State Highway Commission for the West Bozeman Interchange on the northwest corner of the site. It was found that thirty-nine feet of silt and clay on a layer of sand and gravel exists and that water is encountered at a depth of seventeen feet. It was also found that the Highway Commission has provided drains to control the water level in the semi-swamp area to the east of the site. These conditions will not present any insurmountable problems in construction.

TEMPERATURE AND RAINFALL

Table #2 shows minimum and maximum temperatures in Bozeman computed over an average year and split into seven day periods. Rainfall for that period is also shown. Table #3 shows the same information in graph form. Tables #4 and #5 are graphs showing the probability in percentages of obtaining a maximum temperature or minimum temperature at any time interval in the year.

TABLE #1

SUN ANGLES

Mountain Standard Time

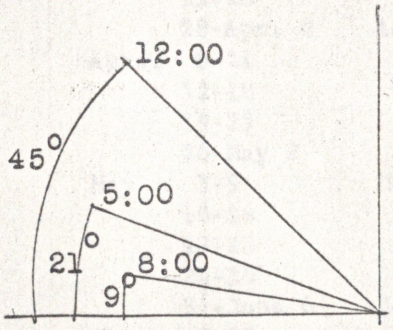
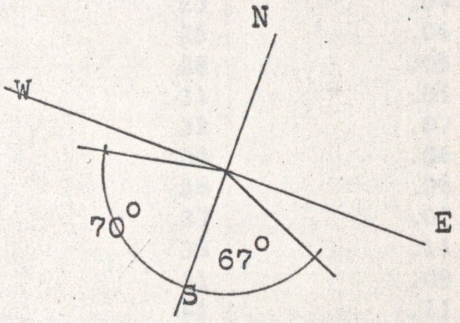
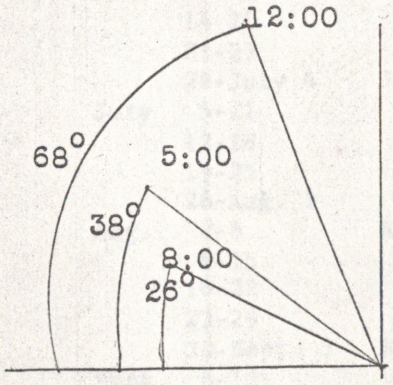
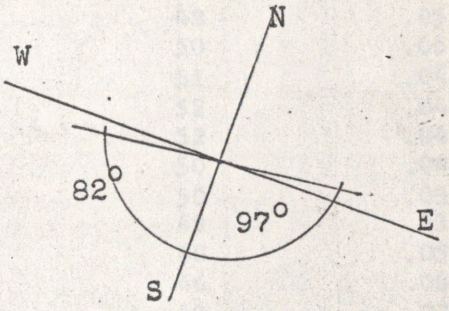
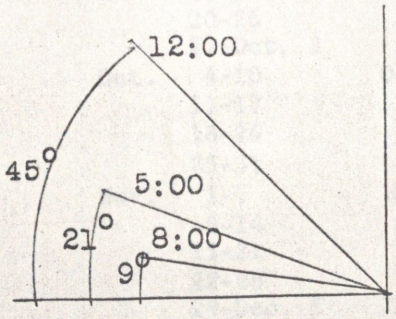
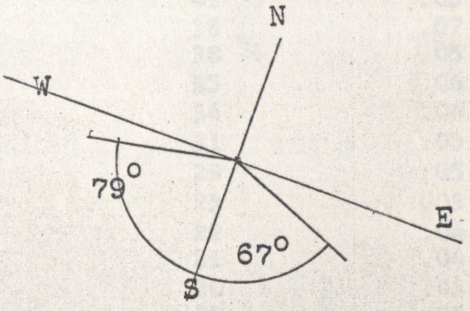
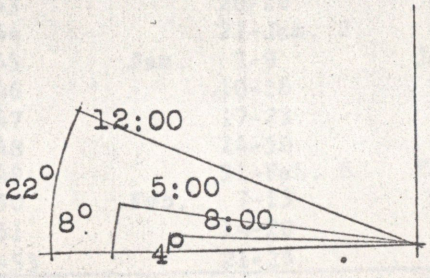
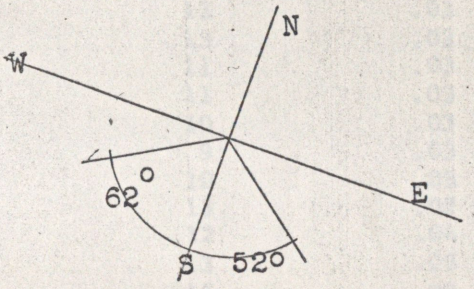
Vertical		Horizontal
	MARCH	
	JUNE	
	SEPT.	
	DEC.	

Table Computed from "Architectral Graphic Standards"

TABLE #2

BOZEMAN, MONTANA

MEAN (NORMAL) DAILY MAXIMUM AND MINIMUM TEMPERATURES AND PRECIPITATION BASED ON WEEKLY PERIODS FOR FIFTY YEARS OF RECORD (1909-1958)*

Week Number	Weekly Period	Center Date	Daily Maximum Temperature	Daily Minimum Temperature	Daily Precipitation
1	March 1-7	March 4	37	16	.04
2	8-14	11	38	18	.04
3	15-21	18	42	22	.04
4	22-28	25	43	23	.04
5	29-Apr. 4	Apr. 1	46	25	.06
6	April 5-11	8	49	28	.05
7	12-18	15	55	31	.05
8	19-25	22	55	32	.07
9	26-May 2	29	57	34	.06
10	May 3-9	May 6	60	36	.06
11	10-16	13	61	37	.07
12	17-23	20	64	39	.11
13	24-30	27	66	41	.09
14	31-June 6	June 3	66	41	.11
15	June 7-13	10	65	44	.10
16	14-20	17	71	45	.10
17	21-27	24	74	47	.07
18	28-July 4	July 1	76	48	.05
19	July 5-11	8	79	50	.06
20	12-18	15	81	51	.04
21	19-25	22	82	52	.04
22	26-Aug. 1	29	82	52	.04
23	Aug. 2-8	Aug. 5	80	50	.04
24	9-15	12	80	50	.03
25	16-22	19	80	49	.03
26	23-29	26	78	48	.05
27	30-Sept. 5	Sept. 2	74	46	.06
28	Sept. 6-12	9	70	43	.07
29	13-19	16	69	41	.05
30	20-26	23	65	38	.07
31	27-Oct. 3	30	63	38	.05
32	Oct. 4-10	Oct. 7	60	35	.06
33	11-17	14	59	34	.04
34	18-24	21	54	31	.05
35	25-31	28	50	29	.05
36	Nov. 1-7	Nov. 4	46	25	.05
37	8-14	11	42	22	.04
38	15-21	18	40	21	.04
39	22-28	25	40	20	.03
40	29-Dec. 5	Dec. 2	37	19	.03
41	Dec. 6-12	9	33	13	.03
42	13-19	16	33	13	.03
43	20-26	23	32	13	.03
44	27-Jan. 2	30	31	11	.03
45	Jan. 3-9	Jan. 6	30	11	.03
46	10-16	13	30	10	.03
47	17-23	20	29	9	.03
48	24-30	27	30	10	.03
49	31-Feb. 6	Feb. 3	33	13	.02
50	Feb. 7-13	10	33	12	.04
51	14-20	17	33	13	.03
52-53	21-29	25	35	15	.02

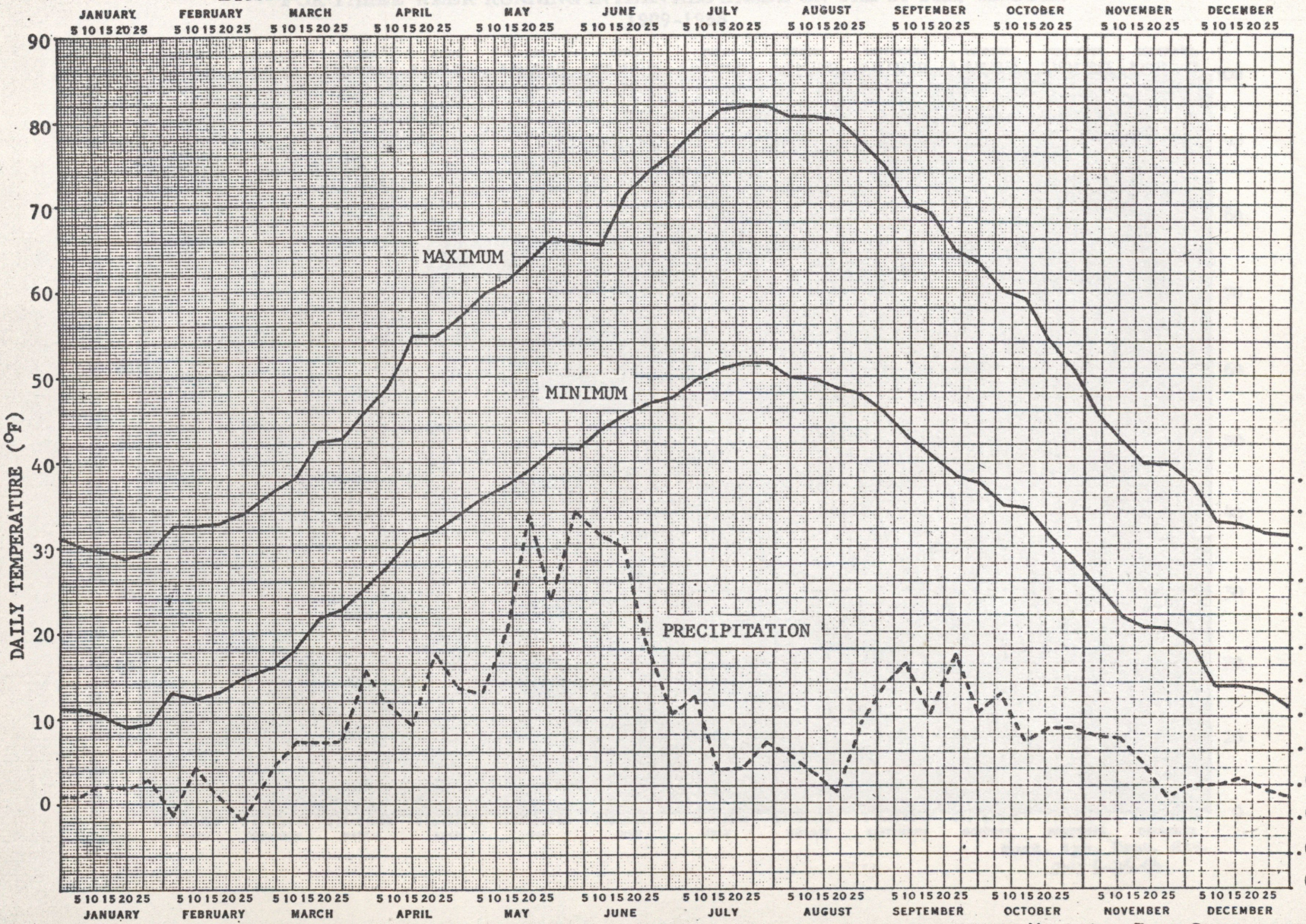
* Data based on official U.S. Weather Bureau records for climatological station located at the Montana State College Campus. Station No. 24-1044-2; Lat. 45° 40'; Long. 111° 03'; Elevation 4,856'.

Mont.Agric.Expt.Sta. JMC 11-20-63.

TABLE #3

BOZEMAN, MONTANA

MEAN DAILY MAXIMUM AND MINIMUM TEMPERATURES AND PRECIPITATION BASED ON WEEKLY INTERVALS FOR THE FIFTY YEAR PERIOD 1909 - 1958

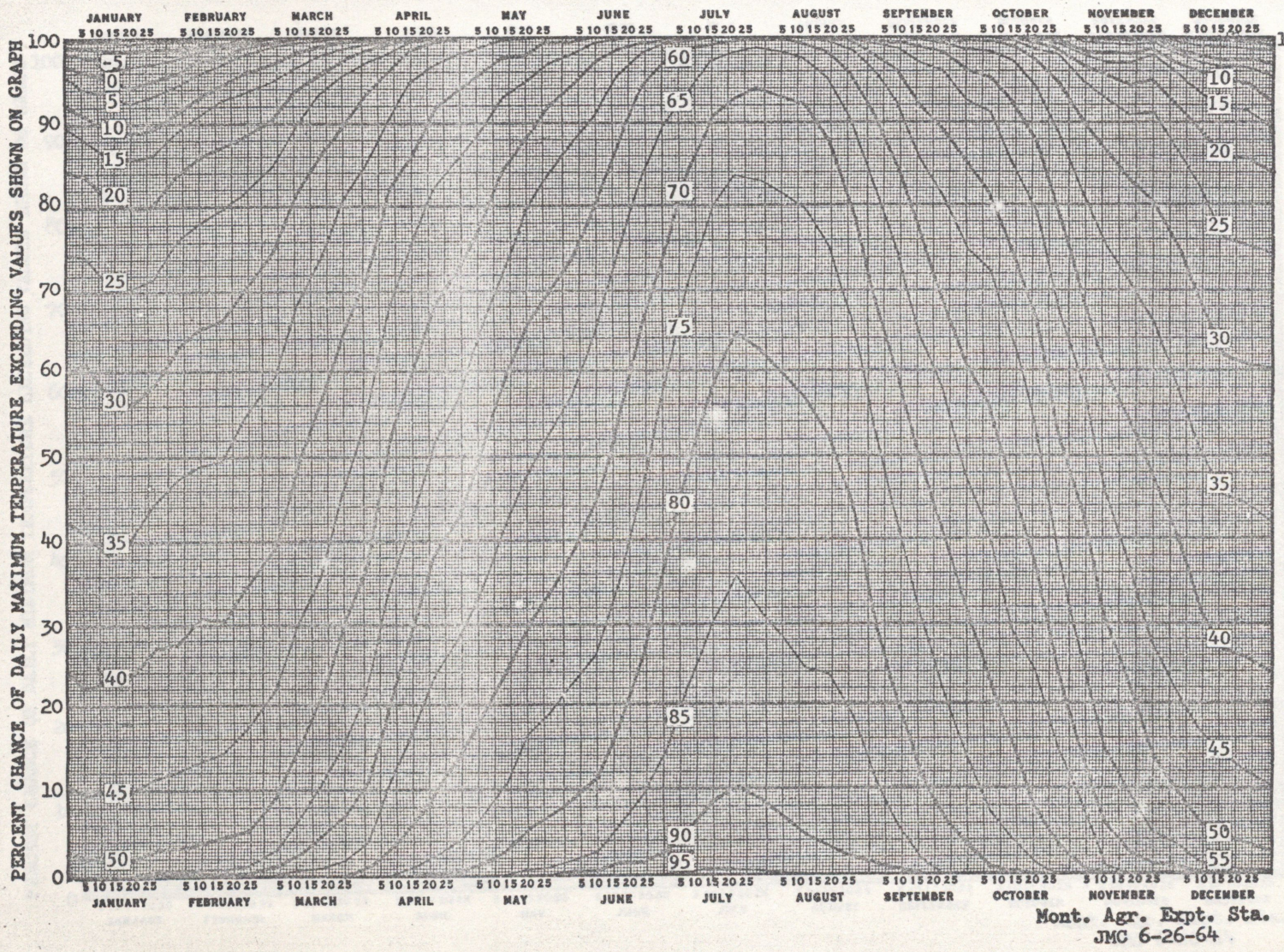


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TABLE #4

BOZEMAN, MONTANA

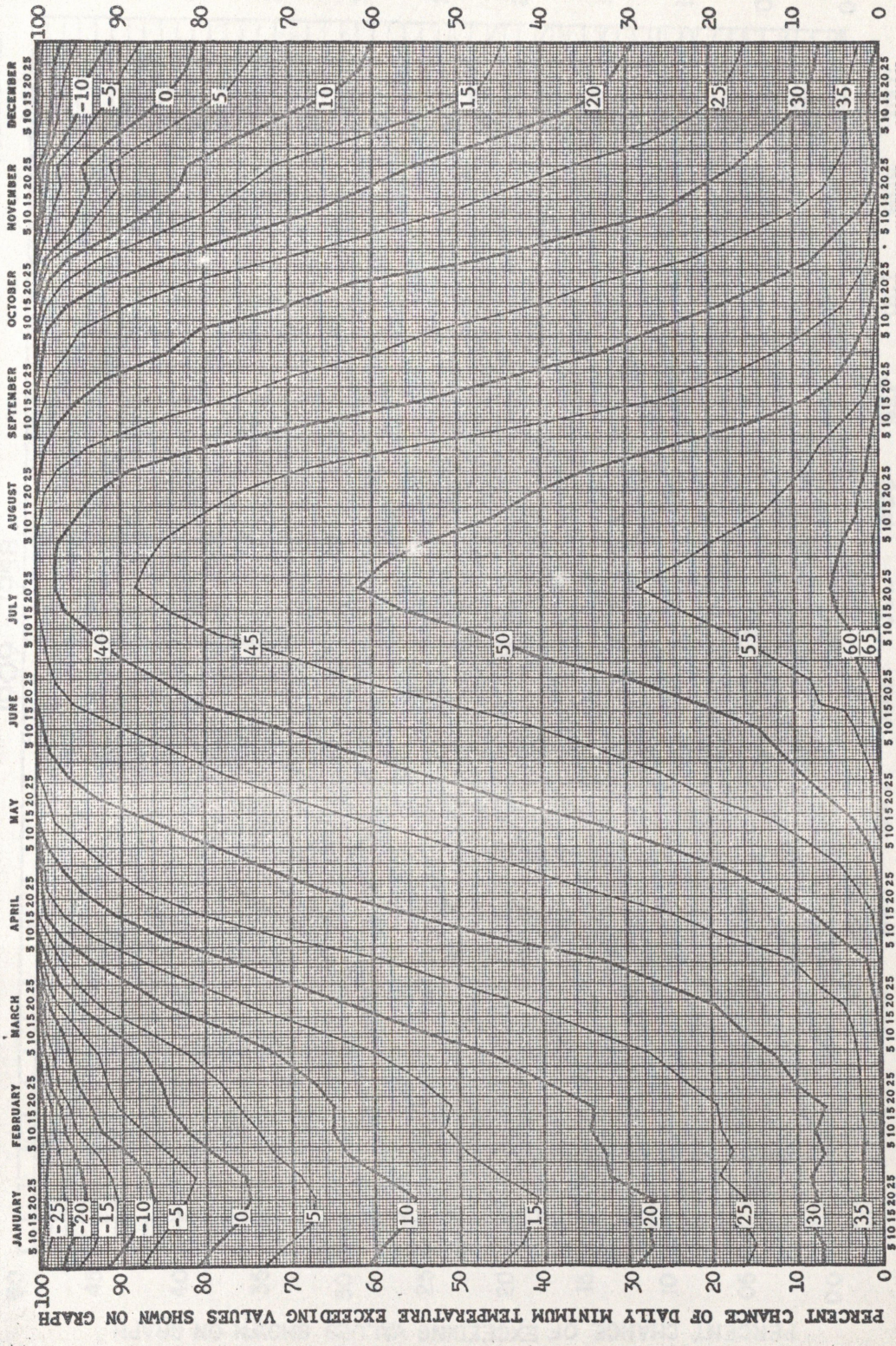
DAILY MAXIMUM TEMPERATURE (°F) PROBABILITY COMPUTED WEEKLY FOR THREE WEEK RUNNING INTERVALS BASED ON THE 50 YRS. RECORD 1909-1958



Mont. Agr. Expt. Sta.
JMC 6-26-64

TABLE #5

BOZEMAN, MONTANA
DAILY MINIMUM TEMPERATURE (°F) PROBABILITY COMPUTED WEEKLY
FOR THREE WEEK RUNNING INTERVALS BASED ON THE 50 YRS. RECORD
1909-1958

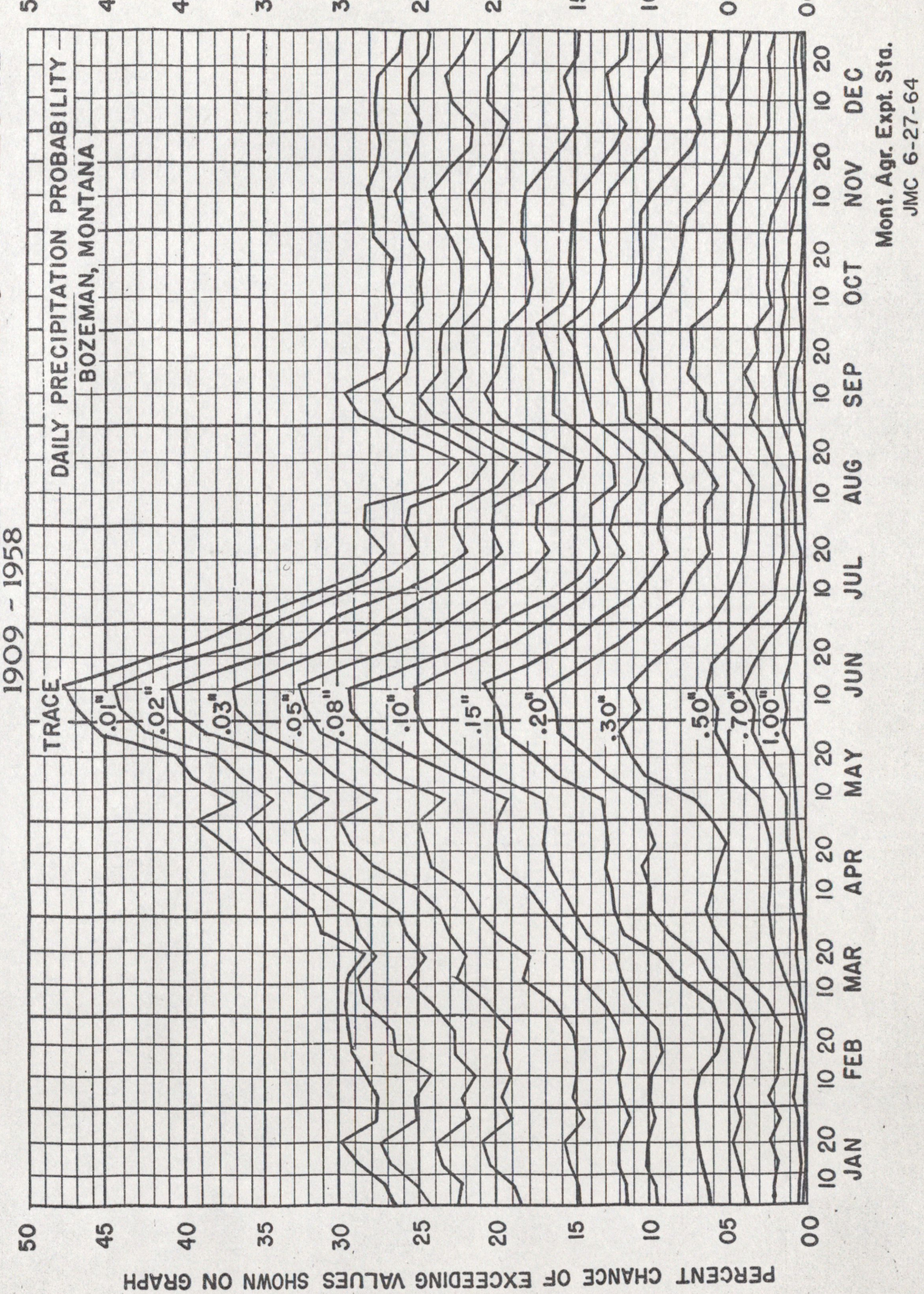


Mont. Agr. Expt. Sta.
JMC 6-26-64

BOZEMAN, MONTANA

DAILY PRECIPITATION PROBABILITY COMPUTED WEEKLY

FOR THREE WEEK RUNNING INTERVALS BASED ON THE 50 YRS. RECORD 1909 - 1958



Mont. Agr. Expt. Sta.
JMC 6-27-64

AESTHETICS

AESTHETIC CONSIDERATIONS

The total character of a building is the foundation of aesthetics in architecture. The form, color, texture and space arrangement give rise to experiences and images which we may or may not term beauty. As this mood or character of a building will affect its financial success, it is the architect's responsibility to create and integrate appropriate atmospheres with activities and arrange the spaces into a harmonic environment.

EXTERIOR MOOD

The exterior mood of an indoor recreation and social center must have several qualities. It should be indigenous to the region, it must be attractive to customers, and it must be a building the community will be proud of. By conservative arrangement of stone and wood in rough textures, my proposed building would reflect the mountain atmosphere and be in keeping with the mood of the surrounding area. In order to attract customers and be an asset to the community a design focal point must be incorporated. This could be a high pitched roof with a sign over the main entrance or perhaps a planting arrangement of tall pine trees on either side of the doorway.

INTERIOR MOODS

As the activities within this center will be so varied in character, an integrating agent should be used to combine

the moods. For this agent a dark stained wood seems appropriate. It would reflect the luxurious mood of the restaurant, teen club and the lounge and is versatile enough to be used as trim in the bowling lanes and billiard room.

While the degree of luxury within the restaurant, lounge and teen club may vary, the basic concept is the same. The mood requires rich, deep colors with materials such as dark leathers, brocades, thick carpeting and highly polished woods. Lighting in these areas also plays a major role in the creation of mood. Dim illumination assists in producing a feeling of elegance and beauty in the quiet areas; increase the intensity and the atmosphere becomes more active and gay.

As the bowling lanes will be the center of most of the activity and because it is a sport for the entire family, it should reflect a mood of wholesomeness and happiness. It should be well lighted and decorated with gay colors. Although noise is expected in conjunction with bowling it should be controlled as much as possible so that it doesn't become unbearable or travel to the other areas. This can be controlled by using sound absorbent and reflective materials.

Billiards is fast becoming a game for women as well as men. Billiard equipment manufacturers are providing tables with pink, baby blue, and other more feminine colored felt tops to make the sport more attractive to the women. In order to encourage more women to play billiards in this project, facilities for comfort and privacy will be provided.

The table areas should be defined by dividing screens and/or planting areas with arrangements of comfortable chairs. This area should be well lighted so as not to create a "back room" image, and the pastel colors of the table tops should be extended within the space to further define it.

The health studio has special requirements. It must have pads on the floors, mirrors on the walls for training purposes and well defined space arrangements for each activity. This dictates a mood of efficiency and spaciousness. Any area concerned with health or health producing activities must also appear meticulously clean and provide a pleasant emotional climate. White and light pastels always have been associated with cleanliness and well being so should be used throughout.

For the swimming pool area the outdoors should be reflected. It must be enclosed by structure in order to be operational during all the months of the year. Glass may be used or perhaps indoor planting areas to achieve the mood. The pool should be clean and safe with life guards in positions of control giving a feeling of security to the swimmers.

The nursery facilities should be the happiest area of all. The colors should be gay and bright and the materials durable to withstand rough use. A feeling of freedom of movement for the children with instant supervision by the sitter should prevail. Again, the outdoors should be used as much as is possible in this climate.

I believe that to experience some change from one area to another is good. By careful choice of materials and colors I hope to achieve a flowing, changing mood throughout the project.

FUNCTION

FUNCTION AND NOTES

BUILDING PLACEMENT

The building should be located on the property so that it is easily accessible from the main traffic arteries.

PARKING

Space must be provided for storage of the automobiles of the patrons. As suggested by the American Machine and Foundry Company, seven spaces per lane or 210 spaces should be minimum parking for a project of this magnitude.

As a sea of asphalt is undesireable, the parking spaces should be separated by patches of grass, trees and shrubs.

LOBBY

A project of this type depends greatly upon the entrance. It should be impressive, with easy circulation from the parking area to the bowling lanes, restaurant, teen club and lounge.

RESTAURANT

A restaurant must prepare and serve food to the public. Although this restaurant is of a formal atmosphere and should be apart from the athletic activities, some sort of counter facilities should be provided to the bowling area.

The operation of this restaurant should be in direct

contact with the cocktail lounge and the dance area because of their co-ordinated activities.

COCKTAIL LOUNGE

The American Machine and Foundry Company suggests that every bowling establishment include a cocktail lounge as it is an important source of income.

Because this project is to serve two different types of customers, the lounge should be divided into two bars. One area with a night club mood and another on the light side for the bowlers who are in good humor but not interested in the dancing or entertainment provided in the night club.

BOWLING LANES

Sales Desk

The sales desk is one of the most important points of the bowling lanes. It controls the lanes and the billiard room plus greets the customers as they enter.

Some storage space is required for rental shoes and sales merchandise.

Bowling Ball Storage

Every bowling establishment needs an area to store rental balls and an area for private storage.

For rental balls, ball storage racks are used. They sit close to the wall or behind the spectators seating for easy

access by the patrons. For private storage, bowler's lockers should be used. Each bank of lockers stand 75 inches high and provide spaces for 20 bowlers to store shoes, balls and clothing. Provision should be made for at least five of these banks.

Seating

When bowling in leagues, two teams of five men each compete, using two lanes. Seating must be provided for those people who are not bowling and should have direct access to the lanes.

Spectators seating should be directly behind the bowlers settees and slightly raised. This area is for people who wish to watch the activities rather than participate.

Lanes

The bowling lanes are specially constructed to provide bowlers the best equipment possible. In this project, 30 lanes are planned with equipment such as pinspotting machines, scoring tables with screens, etc.

Equipment

Most of the equipment required to operate a bowling establishment may be purchased or, if the investment proves too expensive, it may be leased.

BILLIARD ROOM

Tables should be supplied for patrons to play billiards, pool or snooker. As women seem to feel a little selfconscious about the sport, dividers should be provided to give the table areas a feeling of privacy without actual enclosure.

The control of this area should be in conjunction with the bowling lanes as this helps to reduce the number of operation personnel required.

TEEN CLUB

The operation of this area should be of the same caliber as that of the night club lounge with the exception of no admittance to patrons "over 21" and only soft drinks and food is to be served.

Dancing should also be included in this club with the dance floor and band of a type acceptable to the teenager.

HEALTH STUDIO

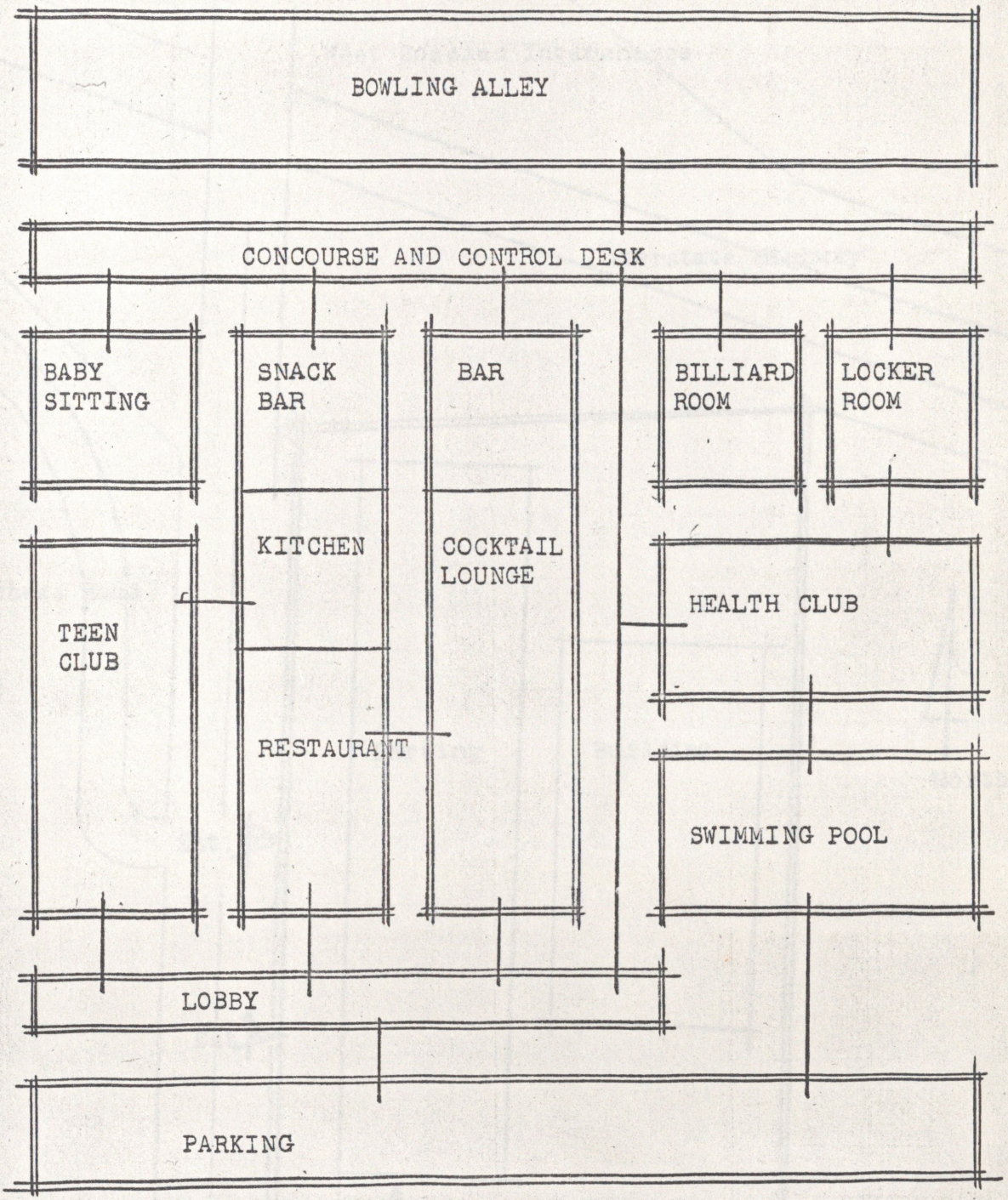
The function of the health studio is to provide the people in the area with supervised weight control and muscle toning exercizes. This area must be separated from any of the other activities for privacy although entrance could be gained from the bowling area. The control of the swimming pool, locker room and steam baths should be under the control of the health studio attendant, reducing the number of operating personnel.

NURSERY

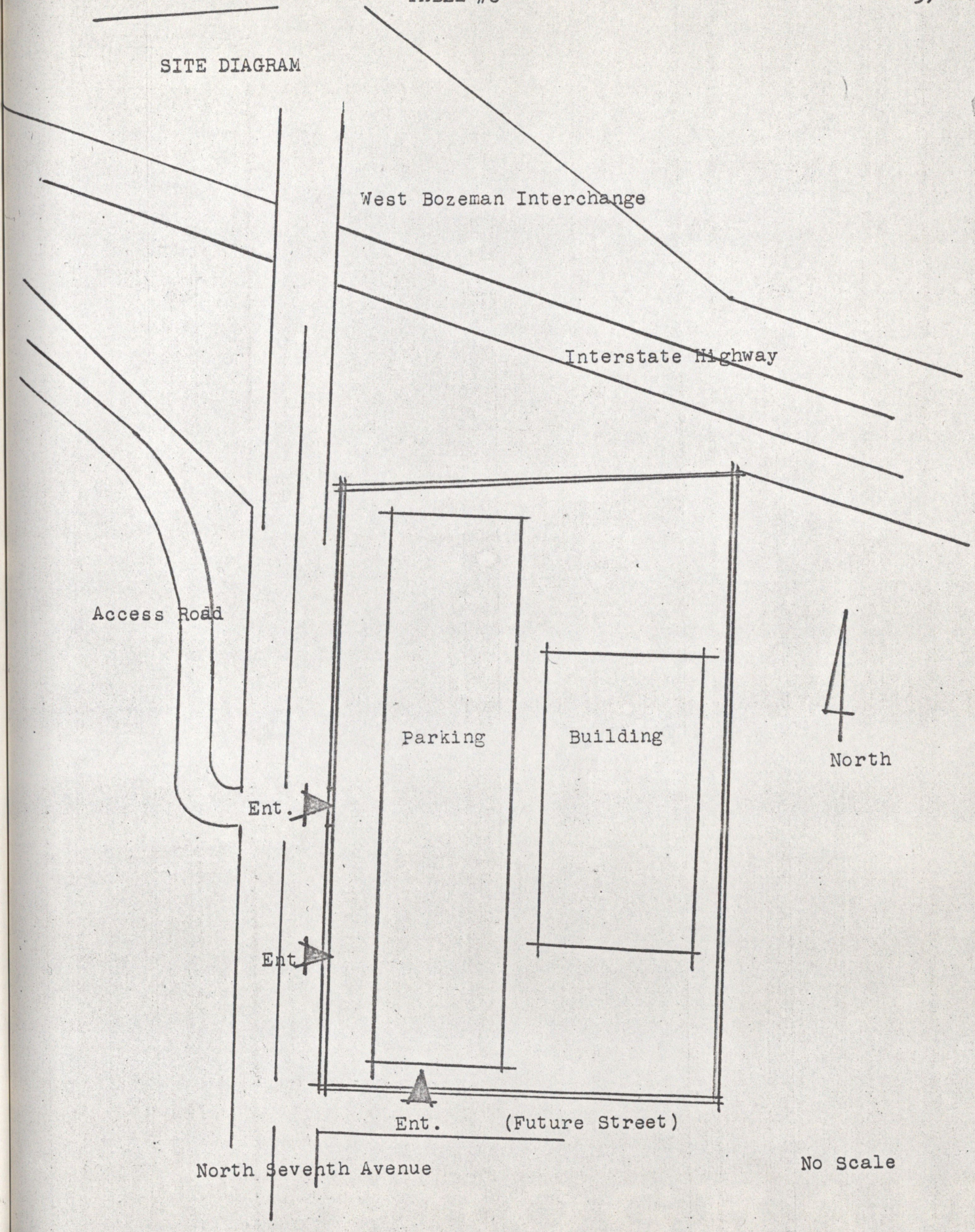
Bowling equipment manufacturers highly recommend baby sitting areas for bowling establishments. Nurseries provide facilities for the care of pre-school children and allow mothers to participate in the activities during the day. It is also possible that this area could be operated during the early evening hours for the parents who work during the day.

TABLE #7

FLOW DIAGRAM



SITE DIAGRAM



PROGRAM

BUILDING PROGRAM

Space	Activities	Area in Square Feet	
LOBBY	Entrance to the restaurant, teen club and bowling lanes.		150
RESTAURANT	Vestibule and cloakroom.	100	
	Dining room; 150 people capacity.	2,000	
	Kitchen: Storage and preparation of food.	1,000	
	Restrooms	300	
	Maitre d'hotel desk and cash register	30	
	Total		3,430
LOUNGE	Vestibule and cloakroom: Use restaurant facility.		
	Bar: Counter for patrons with mixing area - 15 people capacity.	200	
	Table and seating area - 100 people capacity.	1,200	
	Dance floor.	1,000	
	Band area.	100	
	Total		2,500
BOWLING LANES	Sales desk: Area for rental of bowling equipment. Also control of lanes and billiard room.	800	
	Bowling ball storage and aisleway: Lockers for private storage, racks for rental use.	2,000	
	Seating: Spectators	834	
	Seating: Bowlers	1,670	

Space	Activities	Area in Square Feet	
BOWLING LANES (Cont.)	30 Lanes	13,026	
	Equipment: Pinspotters	1,670	
	Total		20,000
RESTROOMS (Bowling lanes and billiard room area)	Men: Two water closets, five lavatories, three urinals.	250	
	Women: Five water closets, five lavatories.	200	
	Janitor: Sink, storage.	100	
	Total		550
BILLIARD ROOM	Tables for billiards, pool or snooker, cue storage.		2,000
TEEN CLUB	Vestibule and cloakroom, also entrance control to persons under age 21.	100	
	Table area: Seating capacity 100 people.	1,200	
	Dance floor.	1,000	
	Band area.	100	
	Kitchen: For preparation of food and drinks and storage. (Use restaurant kitchen with small service area).	100	
	Total		2,500
HEALTH STUDIO	Sauna bath; dry heat.	120	
	Steam bath.	120	
	Exercise room: Area for performing exercises with or without equipment.	1,080	
	Locker room: One each for men and women. Lockers, showers, lavatory and water closet, linen storage. Total area for both.	600	

Space	Activities	Area in Square Feet	
HEALTH STUDIO (Cont.)	Office: For control of studio.	80	
	Total		2,000
NURSERY	Play room and toy storage.	550	
	Restrooms.	100	
	Nap area.	100	
	Play yard: Outdoor area including swings, climbing bars, slide, etc.	2,000	
	Total - indoors		750
	Total - outdoors		2,000
SWIMMING POOL	Pool 50' x 75'	6,000	
	Dressing area, lockers, showers and restrooms.	1,900	
	Office: For control of all pool facilities.	100	
	Maintenance and storage. (Use mechanical room.)		
	Total		8,000
MECHANICAL ROOM	Furnace, air conditioner, water heater, water circulator and chlorine dispenser, storage, misc.		300
	Total area of building		42,030
PARKING	250 automobiles		45,000

ECONOMICS

ECONOMICS

There are several methods by which project costs may be estimated. The per capita cost method, segregated cost method, cubic footage cost method and the square footage cost method are only a few. For a project that is in the preliminary design stages, as this one is, the Marshall Valuation Service recommends that the square footage method be used. As much of the data in this study is referenced to building floor area, I also believe this method would give the best results.

The costs given in the Marshall Valuation Service are averages of final building costs throughout the United States including architect's fees and contractor's overhead and profit. The costs are further divided into special types of buildings, such as commercial buildings, offices, churches, etc. For this estimate the section of apartments, hotels and clubs is appropriate as clubs are defined as buildings..."designed mainly for entertainment and have few, if any, sleeping rooms. Generally, they will have ballroom, bar and banquet facilities".*

*Marshall Valuation Service, Marshall and Stevens Publication Company, Los Angeles, California, 1966

BUILDING COSTS (Marshall Valuation Service Calculator Method)

GENERAL

Class "C" Building: Masonry exterior walls, wood or steel roof and floor construction.

Exterior Walls: Ornamental brick or stone facings.

Interior: Paneling, hardwood and vinyl tile floorings, decorative trim.

Lighting, Plumbing and Mechanical: Good lighting, showers, kitchen, bar, etc.

COSTS

		Floor Area Multiplier		Story Height Multiplier	Cost
Square Feet:	$15.93 x	.910	x	1.063	= $15.30
Cubic Feet:	$ 1.59 x	—	x	.886	= $ 1.42

Approximate floor area 42,000 x $15.30	$ 642,600
30 Bowling lanes (operational)	169,550
Swimming pool and equipment	30,000
Billiard tables (installed)	10,000
Furniture and miscellaneous equipment	60,000
Parking facilities	13,500
Landscaping	10,000
Property	71,500
Total estimated project cost	$1,007,150

ANALYSIS OF ESTIMATED INCOME

BOWLING LANES

League Season:

League Play - 7:00 P.M. 15 Lines per day x 30 lanes x 5 days x 35 weeks equal 84,000 lines @ 50¢	$ 42,000
League Play - 9:00 P.M. 15 Lines per day x 30 lanes x 5 days x 35 weeks equal 84,000 lines @ 50¢	42,000
Open Play - Week Days 10 Lines per day x 30 lanes x 5 days x 35 weeks equal 52,500 lines @ 45¢	23,625
Open Play - Week Ends 40 Lines per day x 30 lanes x 2 days x 35 weeks equal 84,000 lines @ 50¢	42,000

Summer Season:

League Play - 7:00 P.M. 15 Lines per day x 30 lanes x 5 days x 15 weeks equal 33,750 lines @ 50¢	16,875
Open Play - Week Days 10 Lines per day x 30 lanes x 5 days x 15 weeks equal 22,500 lines @ 45¢	10,125
Open Play - Week Ends 25 Lines per day x 30 lanes x 2 days x 15 weeks equal 22,500 lines @ 50¢	11,250

Shoe Rentals:

383,250 Lines. Estimated 3 lines to a customer equal 127,750 bowlers. Estimated 1/3 will rent shoes equal 42,583 rentals @ 15¢	6,387

Miscellaneous Income:

Candy, soft drinks, cigarettes, etc. Estimate @ $20.00 per day for 300 days.	6,000
Bowling balls, bags, shoes, etc. Estimate @ $20.00 per day for 300 days.	6,000

Two ball cleaning machines estimated @ $4.00 per day for 300 days.	$ 1,200
Conservative estimate for amusement machines	2,000

OTHER INCOME

Billiards:	
Six tables @ $4.00 per day x 300 days.	7,200
Lounge:	
60% x $209,462 (Bowling Income)	125,677
Restaurant:	
50% x $209,462	104,731
Teen Club:	
40% x $209,462	83,785
Health Studio:	
30% x $209,462	62,839
Nursery:	
10% x $209,462	2,100
Total estimated gross annual income	$595,794

ANALYSIS OF ESTIMATED EXPENSES

Salaries:		
Bowling Lanes:		
Manager	$ 7,800	
Assistant Manager	6,240	
Two Countermen @ $5,000	10,000	
Mechanic for Pinspotters	6,000	
One Serviceman for Pinspotters	3,700	
One Lane Maintenance Man	3,700	$ 37,440
Restaurant:		
One Hostess	2,700	
Four Waitresses	7,680	
One Head Chef	7,800	
One Assistant Chef	6,240	24,420
Lounge:		
Two Bartenders	9.792	
Two Bar Maids	5,400	
Entertainment	5,760	20,952
Teen Club:		
One Hostess	2,700	
Four Waitresses	7,680	
Entertainment	5,760	16,140
Health Studio:		
One Manager	6,000	
Four Life Guards and Instructor	6,656	12,656
Nursery:		
One Baby Sitter		1,920
Janitor		3,600
Total estimated salaries		117,128
Maintenance:		
Lane Maintenance and Service Costs	12,456	
Pinspotter Maintenance and Service Costs	994	13,450
Rental Cost of Pinspotters		27,463
Insurance, Taxes, Merchandise Costs, Miscellaneous (55% of Gross Income)		327,687
Total estimated annual expense		$485,728

ESTIMATED ANNUAL LIABILITY ON NOTE

Assuming client borrows $800,000 at 7% interest rate.

Year	Payment	Interest	Principal	Principal Balance
				$800,000
1	$96,000	$56,000	$40,000	760,000
2	93,200	53,200	40,000	720,000
3	90,400	50,400	40,000	680,000
4	87,600	47,600	40,000	640,000
5	84,800	44,800	40,000	600,000
6	82,000	42,000	40,000	560,000
7	79,200	39,200	40,000	520,000
8	76,400	36,400	40,000	480,000
9	73,600	33,600	40,000	440,000
10	70,800	30,800	40,000	400,000
11	68,000	28,000	40,000	360,000
12	65,200	25,200	40,000	320,000
13	62,400	22,400	40,000	280,000
14	59,600	19,600	40,000	240,000
15	56,800	16,800	40,000	200,000
16	54,000	14,000	40,000	160,000
17	51,200	11,200	40,000	120,000
18	48,400	8,400	40,000	80,000
19	45,600	5,600	40,000	40,000
20	42,800	2,800	40,000	-0-

Note: The first year the client receives a 7% federal income tax investment credit on all equipment purchased. Also, depreciation can be on the declining balance method, which is the greatest depreciation being deducted the first years, thus reducing the income tax liability while payments against the note are highest.

APPENDIX

INTERVIEWS

Mr. M. A. E. Westlake
Property owner

Mr. J. J. Kelly
Certified Public Accountant

Mr. George Marinkovich
Coach, Montana State University

Mr. D. F. Nell
Realtor

Mr. Ray Harrison
Manager, Montana State Employment Service

Mr. Tim Herman
Manager, Bozeman City Swimming Pools

Mrs. Woodrow Wold
Secretary, Adult Education Program

Mr. R. C. Fargo
City Engineer, Bozeman, Montana

Mr. J. M. Caprio
Climatologist, Montana Agriculture Experimental Station

Clerk
Montana State Highway Commission

Clerk
Gallatin County Clerk and Recorder

Mr. E. R. Swart
Surveyor

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Edgar E. Alexander
716 South Tracy Avenue
Bozeman, Montana
July 18, 1966

American Machine & Foundry Co.
Bowling Division
3605 34th Avenue South
Seattle 44, Washington

Gentlemen:

I am presently preparing a thesis for my degree in architecture at Montana State University and wish to include a bowling alley. At this time I plan a bowling alley, billiard room, restaurant and lounge, teen club and health studio. Would you please send me information on the type of equipment required for a 30 lane project, installation proceedures and structural design preparations?

Although this project is of a hypothetical nature I must also justify its economic value. Could you also include information regarding any financial arrangements your organization enters into with new facilities?

Thank you for your help.

Very truly yours,

Edgar E. Alexander, student
School of Architecture
Montana State University
Bozeman, Montana

AMERICAN MACHINE & FOUNDRY COMPANY
BOWLING PRODUCTS GROUP
3605 Thirty-Fourth Avenue South • Seattle, Washington • Area Code 206 PArkway 5-4100

July 25, 1966

Mr. Edgar E. Alexander
716 South Tracy Avenue
Bozeman, Montana

Dear Mr. Alexander:

We wish to acknowledge and thank you for your letter of July 18th with reference to your Thesis including Bowling and Billiards as a part of the project. We are pleased for an opportunity to assist.

You stated you were planning for thirty lanes. We are enclosing a Cost Proposal for twenty-four lanes which included a Cash Flow Projection. We believe you can use these figures and project by increasing the figures of cost and cash down payment by 25% to arrive at an estimate for thirty lanes.

You will notice we sell all the equipment except the automatic pinspotter. These machines can be leased or purchased. We show both investments. The cash flow is based on the assumption the automatic pinspotters are leased. You can substitute the cost for rental for the purchase payments and make a fair comparison of each program as an investment. We have not applied the 7% investment credit in our cash flow analysis. We suggest you do as it will assist in reducing income tax costs.

Pocket Billiard equipment comes in various styles and the prices vary. We believe you can use an average cost of $1,500.00 per table delivered and installed. Your estimated income can be figured on $4.00 per day per table for 300 days per year. We have enclosed architectural dimensions. In the layout of the billiard room, it should be located in such a way that the person at the bowling control counter can also control the billiard operation thus reducing personnel costs.

The food and cocktail operation is not handled by our company. As you can appreciate, the cost of equipment can vary widely. The gross income and expense is variable. A snack bar operation gross income is about 25% of the bowling income. A restaurant could conceivably be greater than the income from bowling. We believe 50% would be a reasonable projection. We normally use 60% of bowling income for the cocktail lounge.

We are sorry we can't help you with the Teen Club and Health Studio.

Off street parking is important in the planning of a bowling establishment. Normally the city code requires five cars per lane off street parking. The ideal situation is to provide parking for ten cars per lane. This allows space for cars during the changing of leagues. As you know, you have a league arriving before a league is through bowling. The cost of land is such, however, that it is not practical to make this investment to handle the half hour period during league change.

Rental cost for the building should be approximately 1% a month, or 12% a year on the total cost of land and building. Here it is important, whether leasing or owning the building, that land value and building cost be kept within the bounds of the ability of the operating investment to pay. With the type operation you have outlined it is our belief that $1.50 per square foot is a maximum land cost. We feel the building should cost $9.00 per square foot or less. These costs should be analyzed against the gross operation. It's possible, after a study is made, that a greater land and building investment could be made.

We hope we have given you some help and if we can assist you further, we will be pleased to have you contact us.

Very truly yours,

AMF BOWLING PRODUCTS GROUP

Harry H Manous

H. H. Manous
District Manager

HHM:c
enclosures

Required for 30 Lanes

Required 30 Lanes

PROPOSAL FOR 24 AMF "STREAMLANE #21" BOWLING LANES

BASIC BOWLING LANES:

30	24	Basic Bowling Lanes w/Leveling Strips and Metal "T" Bars
60	48	One Piece Style Gutters - complete with Flat Gutters
30	24	Pit End Planks with Fibre Moulding
30	24	Sets Black Fibre Bed Spots, 2-3/4" x 3/4"
46	37	AMF Kickbacks w/3/16" Fibre Plates
16	13	Single Divisions with capping 2-3/4"
15	12	Double Divisions with capping and covers 10½"
15	12	Center Style Underlane Ball Returns
15	12	"Streamlane 21" Approach Ball Return w/Electric Check
31	25	Maple Fill-in Sections, 1-5/64" Face x 1½" Deep
169	140	L.Ft. Face Board for Edge of Approach
30	24	Pair Fibre Edge Boards for Pin Deck
30	24	Sets Rangefinders
15	12	Maple Fill-in between kickbacks at Ball Returns
15	12	Pair Raised Sub-foundations

NOTE: No fill-in between the bowling lanes at any columns or at side aisleways is included. This cost cannot be shown until the amount needed is known, if any

EQUIPMENT AND SUPPLIES:

30	24	Only	"Radaray" Automatic Foul Detectors - installed up to but not including the 110v wiring
1	1	Only	"Radaray" Spare Parts Kit
10	10	M	11" x 12-3/4" Score Sheets
15	12	Only	Free Standing Score Projectors w/screen - installed up to but not including this 110v wiring
30	24	Only	Fibre Glass Score Chairs
5	5	Gro	Graphite Score Pencils
10	10	Gal	Magic Triangle Lane Conditioner
2	2	Ctn	Approach Powder (6)
2	2	Ctn	Approach Reviver (6)
2	2	Only	Lane Bed Brush - 42"
6	6	Only	Speedy Gutter Mops
6	6	Only	Speedy Gutter Mop Refills
185	150	Sets	Tournament Grade Plastic Coated Tenpins
30	24	Only	Ten Compartment Lockers
4	4	Only	All Purpose Bowlers Bench
180	144	Pair	Mens Rental Oxfords N.S.P.
120	96	Pair	Ladies Rental Oxfords N.S.P.
24	24	Pair	Boys Rental Oxfords
24	24	Pair	Girls Rental Oxfords
2	2	Only	Shoe Sterilizer (double unit)
2	2	Doz	Dyna-spray Shoe Freshener
2	2	Only	Model #63 Ball Cleaner with coin meter
10	8	Only	Mobile Ball Storage Racks - 16 balls each
15	12	Only	Smoking Receptacles
6	6	Doz	League Standing Record Books
4	4	Only	12 Unit League Standing Frames

EQUIPMENT AND SUPPLIES: (Cont.)

4	4	Only	12 Unit Sanction and Schedule Frames
2	2	Only	24 Team Lane Designator
1	1	Only	Chrome Bulletin Board, 26" x 38"
15	12	Only	F. G. Shelby Rythm Bowlers Settees
40	28	Only	Glass Holders w/Ash Trays for Bowlers Settees
13	11	Only	Joint Tables for Bowlers Settees
75	60	Only	Fibre Glass Spectator Seats
1	1	Only	20" Floor Cleaning and Polishing Machine w/100' cord
1	1	Only	20" Sanding Pad for Floor Machine
1	1	Only	Deluxe Lino Duster
2	2	Sets	Lino Applicator Kits
10	10	Only	Lino Duster Cloth for Uni-matic Lane Machine
2	2	Only	Lino Duster Cloth - 100 yrds each 44"
1	1	Only	Compression Spray Gun
1	1	Doz	Burlap Bags for Buffing
45	36	Only	Ball Wiper Cloths
10	10	Only	#1-18" Steel Wooler Pads
1	1	Only	Deluxe AMFlo Bowl-vac
1	1	Only	Mobile Workshop for Pinspotters
1	1	Only	Spare Parts Kit for Ball Returns
10	10	Gro	Cellophane Score Pencils
10	10	Pkg.	Cellophane Score Sheets (24 ea)
1	1	Only	Electric Pencil Sharpener
1	1	Only	Manual Pencil Sharpener
150	120	Only	Black Bowling Balls, 75 Men, 45 Women 90 - 60
1	1	Only	Model #2500 Ball Drill Kits w/drills in 1/32" increments
1	1	Only	Carbide Drills (16) in 1/64" increments
1	1	Only	Measuring Ball
1	1	Only	Uni-matic Lane Maintenance Machine
1	1	Only	Tool Kit for Automatic Pinspotters
30	24	Only	Pit Signal Systems for Automatic Pinspotters
1	1	Only	Spare Parts Kit for #82-70 Automatic-Pinspotters

AUTOMATIC PINSPOTTERS - LEASED:

30	24	Only	Model #82-70 Pinspotters w/Pinvisor-Pindicator, Ball Lift, Downsweep, Pit Mat, Cycle Button and Frameter - installed up to 110v wiring
30	24	Only	Sparemakers - installed up to 110v wiring

	$135,640.09
4.2% Washington Sales Tax:	5,696.88
DELIVERED & INSTALLED:	$141,336.97

30 Leagues Approx Cost 169,550.10
Plus Sales Tax _____
Del & Inst,

Form No. P-388-A-5-63

Lease Agreement

Agreement, made the day of 19 , by and between AMERICAN MACHINE & FOUNDRY COMPANY, a New Jersey corporation, with offices at Jericho Turnpike, Westbury, L. I., New York (hereinafter called "AMF"), and LEASE AUTO FOR PINSPOTTERS

(hereinafter called the "Operator").

1. DEFINITIONS. Wherever used in this Agreement, the following expressions shall have the following meanings, respectively: (a) machines: automatic tenpin spotting machine or machines leased pursuant to this Agreement, including the basic unit, ball return mechanism, any extra equipment specified in Schedule A hereof, all substitutions and replacements, and improvements, repair and renewal parts installed therein; (b) AMF Automatic Pinspotters: the machines; (c) frame-cycle: one lowering of the table of a machine to place a new set-up of pins on the alley; (d) rental unit: eleven frame-cycles of a machine; (e) installation date: the date on which the installation of the last of the machines originally leased hereunder is completed, as recorded by AMF's installation technicians, or the second anniversary of the date of this Agreement, whichever first occurs; (f) minimum rental year: each twelve months' period from October 1 to the following September 30, inclusive (the period from the signing of this Agreement to the September 30 immediately following the installation date not being included in any minimum rental year); (g) rental: the combination of (1) AMF's charge for providing advisory service regarding the operation and operating maintenance of the machines, and instruction to Operator's maintenance man as contemplated in subsection (b) of Section 4, and (2) rent for the use of the machine; (h) bowling charge: the sum of Operator's charge for bowling per person per game plus any service charges and other charges of a similar or dissimilar nature which a person must pay in order to bowl at Operator's establishment, regardless of how such charges are designated, provided that to the extent that any such service charges and other charges are imposed on a basis other than a person per game basis, they shall for the purpose of this definition be apportioned on a person per game basis, using the assumption that each person bowls exactly 3 games.

2. AMF LEASES TO OPERATOR the machines specified in Schedule A hereof for a term which shall be the shorter of (a) a period commencing on the installation date and terminating when the number of rental units recorded with respect to the machines on and after the installation date shall aggregate 135,000 multiplied by the number of AMF Automatic Pinspotters specified in Schedule A hereof, or (b) eleven years from the first day of the first full calendar month following the installation date. At the expiration of the full original term hereof, if this Agreement has remained in effect and Operator has duly performed all its obligations hereunder during the entire said term, then Operator shall have the following options:

(i) To obtain a new lease agreement in the form then being generally offered by AMF to the trade under which AMF shall replace the machines leased hereunder with new machines, free of any installation charge payable by Operator; or

(ii) To continue to use the same machines installed hereunder and thereby extend the term of this Agreement at reduced rental rates (of which AMF shall give Operator written notice) for one year with further successive automatic one-year extensions subject to either party's right to terminate this Agreement at the end of any extension year by at least 60 days prior written notice of termination to the other, provided that the minimum rental provisions of this Agreement shall not apply after the expiration of the original term of this Agreement.

3. IT IS MUTUALLY AGREED that any defects appearing more than one year after the installation date shall be deemed to be due to ordinary wear and tear. AMF warrants that the machines will be free of defective workmanship or materials, and it is mutually agreed that this warranty is in lieu of all other warranties, express or implied, and that Operator's rights under this warranty shall be limited to a period of one year after the installation date and shall consist solely of requiring AMF to repair, or in AMF's sole discretion replace, free of charge, f.o.b. factory, any defective parts received at said factory within said year and determined by AMF to be defective. Operator acknowledges that all emergency service or repair calls shall be at Operator's expense at then prevailing rates, notwithstanding the preceding sentences. Operator shall not make any addition, subtraction or alteration affecting the machines without the consent in writing of AMF, which consent shall not be unreasonably withheld, shall promptly notify AMF of any noticeable defects in the machines and shall maintain the machines and keep them clean and free from dust in accordance with the manual of instructions furnished by AMF. In no event shall AMF or the manufacturer of the machines or any related parts or equipment used therewith be liable for any loss to Operator of profits or other direct or indirect costs, expenses, losses or damage arising out of defects in, or operational failure of, the machines or related parts or equipment.

4. AMF AGREES TO:

(a) Notify the Operator at least thirty (30) days prior to the date when the machines are ready for shipment and ship them to Operator's establishment referred to in Schedule A;

(b) Instruct at least one of Operator's maintenance men regarding the construction, operation and operating maintenance of the machines, and use reasonable care in training such employee, provided that if in AMF's sole opinion such employee is not adequately qualified, Operator shall designate another of its maintenance men to receive such instruction; and upon notice by AMF, Operator shall send a competent maintenance man in Operator's employ to AMF's designated training school for such instructions;

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(c) Make available upon call a qualified service technician to provide reasonable necessary emergency service for the machines at then prevailing rates and, subject to the provisions of subsection (f) of Section 6, for repair of the machines and make available, at reasonable charges, repair parts, necessary to keep the machines in operation;

(d) Periodically inspect the machines, indicate parts which may need replacement and submit to Operator a written report after each such inspection;

(e) Inspect Operator's said establishment and advise Operator of minimum space requirements;

(f) Use its best efforts to keep the installation period at a minimum in order to avoid unreasonable delay in the reopening of Operator's said establishment;

(g) Defend, at its own expense, all actions, suits or proceedings instituted against Operator insofar as the same are based on any claims that the said machines or any part or parts thereof or the method or methods authorized by AMF for use in connection therewith constitute an infringement of any patent of the United States or Canada, and AMF will hold Operator harmless from any and all judgments for damages and costs that may be awarded therein, provided that AMF shall have the right at any time or from time to time to modify the machines in a manner which will not lessen the utility of the machines, and further provided Operator gives AMF immediate notice in writing of the institution of the action, suit or proceeding, and permits AMF through its counsel, to defend same, and gives AMF all information, assistance and authority to enable AMF so to do, and provided that Operator has made no change of any kind in said machines without obtaining the prior written permission of AMF, which permission shall not be unreasonably withheld.

5. OPERATOR AGREES TO:

(a) Prior to the installation of the machines: make, at its own expense, all alterations and changes to its premises and equipment required for the installation of the machines by AMF, including, but not limited to, removal of hand racks, peg spotters, masking units, pit cushions and pit flooring, making of any required structural changes and installation of electrical equipment and power lines up to the control boxes attached to the machines, as to which Operator shall obtain all necessary permission and inspections; close its place of business during the period of installation; furnish such financial information concerning Operator as AMF may request; obtain from every owner, landlord and mortgagee having any interest in said place of business or the equipment therein written waivers of such statutory or common law liens as they may now or hereafter have and of any property rights in the machines, and deliver such waivers to AMF upon AMF's request; and obtain from all lessors, mortgagees or conditional vendors of the bowling alleys on which the machines are to be installed, consents for the installation of the machines on such alleys and the removal thereof, and deliver such consents to AMF upon AMF's request;

(b) Pay AMF Pinspotters Inc., at Westbury, L. I., N. Y. or such other place as AMF Pinspotters Inc. may from time to time specify an installation charge of ($) Dollars for the installation of each machine, in four installments: 20% upon the signing of this Agreement, 20% when AMF gives preliminary installation notice, which notice will be given approximately ninety (90) days before shipment, 40% within ten (10) days after mailing of notice pursuant to subsection (a) of Section 4 hereof that the machines are ready for shipment, and 20% within ten (10) days after the installation of each machine;

(c) Remit to AMF rental at the rate of 10¢ per rental unit per machine, subject to decrease or increase as hereinafter provided payable weekly on Mondays; rental for each machine to accrue from the date it is fully installed, as certified by AMF. If for any minimum rental year the total rental paid for the machines installed hereunder, computed from the first day of such rental year, equals the product obtained by multiplying the number of such machines by $1,000, the rental payable to AMF thereafter for such rental year shall be 8¢ per rental unit per machine, subject to decrease or increase as hereinafter provided, and if for such rental year the total rental paid for the machines installed hereunder, computed from the first day of such rental year, equals the product obtained by multiplying the number of such machines by $1,400, the rental payable to AMF for the remainder of such rental year shall be 6¢ per rental unit per machine, subject to decrease or increase as hereinafter provided. Provided such total rental requirements are met for the applicable periods, the foregoing reductions in rental to 8¢ or 6¢, as the case may be, per rental unit per machine, subject to decrease or increase as hereinafter provided in subsection (d), shall apply thereafter for the period from the installation date to the September 30 immediately following such date, and thereafter for the period from October 1 immediately preceding the expiration date of this Agreement to such expiration date;

(d) Remit to AMF rental at the rates provided in subsection (c) decreased or increased as follows: If Operator's maximum bowling charge in any week is less than 35¢, the rental payable to AMF for such week shall be decreased by 3/10 of 1¢ per rental unit per machine for every 1¢ by which maximum charge is less than 35¢. If such maximum bowling charge in any week is more than 60¢, the rental payable to AMF for such week shall be increased by 3/10 of 1¢ per rental unit per machine for every 1¢ by which such maximum bowling charge exceeds 60¢. If in any minimum rental year the rental paid is less than $800 multiplied by the number of machines installed hereunder, Operator shall at the end of such minimum rental year pay to AMF the amount of the deficiency, provided that AMF may elect to compute and receive minimum rental semi-annually, and further provided that minimum annual rental shall not accrue with respect to a machine from the time it becomes substantially destroyed, through no fault of Operator, until such machine is repaired or replaced. In the event of an operational failure of a machine through no fault of Operator and such machine is not repaired by AMF within 24 hours after notice to AMF or its local agent or contractor of such operational failure, the minimum rental for that machine for the minimum rental year in which such operational failure occurs will be proportionately reduced;

(e) Keep the machines in good condition and replace all worn or damaged parts, subject to the provisions of Section 3, hereof;

(f) Read the counting meters on the machines each Monday and enter such readings on report forms furnished by AMF; complete and sign such forms and mail them to AMF each Monday, together with the rental payment due for the week ending at the time of such readings, to such place as AMF may from time to time specify;

(g) Furnish AMF access to the machines at all reasonable times for the purpose of inspecting and repairing them or reading the meters and allow AMF to inspect its books at all reasonable times for the purpose of checking any matters in connection with this Agreement;

(h) Pay all taxes, assessments, penalties and fees which may be levied or assessed on or with respect to the machines or their use or any interest in them until such machines are removed by AMF, and provide all requisite permits and licenses necessary for the installation and operation of the machines, so that AMF shall receive all payments free of all Federal, State and Local taxes, assessments or other charges, except income taxes imposed on AMF.

6. THE PARTIES FURTHER AGREE AS FOLLOWS:

(a) Delays in or failure of performance occasioned by war, fire, flood, embargo, car shortage, accident, explosion, expropriation of plant or product by Federal or State authority or other like cause beyond the control of AMF, or Act of God, or by strike, lockout or other labor trouble, or inability to obtain sufficient labor interfering with the production or transportation of the machines, or by stoppage of or interference with or reduction of the supply of materials used in the fabrication of the machines whether because of governmental action affecting AMF or its suppliers, or by any action or proceeding at law or in equity, or otherwise, shall not subject AMF to any liability. This Agreement is subject to restrictions and regulations imposed by governmental authority;

(b) If at any time (1) Operator makes an assignment for the benefit of creditors, or (2) a Receiver is appointed for the property of Operator, or (3) any distress, execution or attachment is levied upon the machines or Operator's property, the occurrence of any such contingency shall be deemed a breach of this Agreement and AMF, may at its option, at any time thereafter terminate this Agreement and such termination may be made effective, at the option of AMF, simultaneously with or at any time after the happening of any of said contingencies, regardless of when the option to terminate is exercised by AMF. If at any time a voluntary or involuntary petition is filed by or against Operator under any law having for its purpose the adjudication of Operator a bankrupt, or the extension of the time of payment of, adjustment of, or other arrangement affecting the liabilities of Operator, or the reorganization of Operator, such filing shall be deemed a breach of this Agreement by Operator and this Agreement shall automatically terminate simultaneously with such filing. If at any time Operator otherwise breaches this Agreement or any of its provisions, or fails faithfully and fully to perform each of its obligations under this Agreement, AMF may, at its option, at any time thereafter, terminate this Agreement by notice in writing deposited in the United States Mail, addressed to Operator at the above business address. In the event that this Agreement is terminated pursuant to this subsection (b), AMF shall be entitled to damages for Operator's failure to perform for the full term provided in Section 2 of this Agreement. In the event of any breach of this Agreement or any of its provisions by Operator, AMF shall not be deemed to have waived any of its rights under this Agreement by reason of its failure to assert its rights or its failure to take cognizance of such breach. All the obligations of Operator under Section 5 of this Agreement shall remain in full force and effect at all times that the machines are in Operator's possession, notwithstanding the exercise by AMF of its option to terminate this Agreement or its automatic or other termination;

(c) Upon any termination of this Agreement, AMF shall immediately have the right to possession of the machines and AMF may enter upon the premises where the machines are located, take possession of them without previous demand or notice and without legal process, and remove them to the manufacturer's factory or other place of storage. If the removal of the machines is prior to the expiration of the full term of this Agreement, the taking of possession and removal shall be at Operator's expense. In the event that Operator refuses to permit such entry and removal by AMF, such refusal shall constitute an agreement by Operator to redeliver the machines at its expense to the place of manufacture thereof or other place of storage designated by AMF and AMF shall be entitled to specific performance of such obligation to redeliver. Repossession of the machines by AMF, either as provided herein or through legal process, shall not be deemed a waiver or an election of remedies by AMF as to any of the other remedies provided for herein, or any other remedies AMF may have by virtue of said breach.

(d) The remedies herein provided for shall not be exclusive but in addition to any other remedies AMF may have by virtue of such breach;

(e) Each machine shall be equipped with a counting meter which will record the number of frame-cycles. The count shown on the meter when properly operating shall be binding upon both AMF and Operator. Operator shall not disturb the meters nor the recorded figures shown. If any counting meter becomes defective so that it does not record the proper count, Operator shall notify AMF immediately of such defective condition and AMF shall repair or replace the defective meter. Operator shall make payment for the use of the machine while the meter is defective on the average count of the number of rental units tallied for the other machines (on which the meters are operating properly) in the same establishment during the same period;

(f) Operator shall not be liable to AMF or its insurers for any loss, injury, or destruction of machines caused by the following hazards:—Fire, sprinkler leakage, explosion, smoke damage, aircraft and other vehicles, riot and civil commotion, windstorm and hail, lightning, malicious damage, water damage, earthquake and building collapse, except that Operator shall be liable for loss, injury and destruction to the machines caused by willful action of Operator, its agents or employees;

(g) The machines shall at all times remain the sole and exclusive property of AMF (which reserves the right to assign or encumber the machines) and Operator shall have no right, title or interest to the machines but only the right to use them under this Agreement. The machines shall remain personal property and shall not be deemed otherwise by reason of becoming attached to the premises. Operator shall not permit any machine to be abused, nor permit the removal of any plate or markings put on the machines by AMF, nor attach anything to or remove anything from the machines, nor use any tenpins with the machines except tenpins of the dimensions of "ABC' regulation tenpins;

(h) Operator shall not transfer, deliver, sublease or encumber the machines to any person, corporation or firm; nor may this Agreement be assigned except with AMF's prior written consent, which consent shall not be unreasonably withheld;

(i) All right, title and interest of AMF under this Agreement may be enforced by AMF, its successors and assigns. No representation made by any distributor, employee, agent or representative of AMF shall be binding upon AMF, unless specifically set forth in an instrument in writing signed by an authorized officer of AMF. The delivery of this Agreement by the Operator prior to its execution by AMF constitutes an offer made by Operator to AMF under the laws of the State of New York to lease the machines from AMF in accordance with the provisions of this Agreement, which offer shall remain irrevocable for a period of 60 days from the date of delivery of this Agreement to AMF. Execution of this Agreement by AMF, and notice thereof or the return thereof by AMF to Operator at any time within said period of irrevocability shall constitute acceptance of this offer. After the expiration of said period of irrevocability, such offer shall continue in effect until withdrawn or revoked by Operator by written notice given to AMF prior to acceptance of such offer by AMF in the manner above specified. This Agreement shall not be binding upon AMF until it has been duly executed by an authorized officer of AMF at its principal executive offices in New York and the effective date of this Agreement shall be the date of such execution and thereupon this Agreement shall supersede all previous negotiations and agreements between the parties or their respective affiliates dealing with the machines and shall constitute the entire agreement of the parties in respect of the subject matter hereof;

(j) This Agreement shall continue in full force and effect notwithstanding the death, incapacity or dissolution of the Operator or increase, decrease or change in the personnel of the Operator (which may be a partnership), and shall be binding upon the Operator and the Operator's estate, legal representatives, heirs and successors.

SCHEDULE A

_____ AMF Automatic Pinspotters leased to:

_____
(Operator's corporate or trade name)

for installation at Operator's following establishment:

_____

_____

Machine Contract Serial Nos.: _____

Extra Equipment:

Pinvisor, Pindicator, Cycle Button, Pit Mat (Magic Carpet),

Pit Cushion, Frameter Remote Control Counter, Ball Track Downsweep

Date:.....

Operator:.....

In the presence of:

ATTEST:

.....
Title

.....
Witness (or Secretary if Operator is a corporation)

.....
Title

ATTEST:

AMERICAN MACHINE & FOUNDRY COMPANY

.....
Secretary

By.....
Vice-President

SUMMARY

Although I have not changed the basic requirements for this project I have, during the design phase, found it advisable to make some minor adjustments to it.

The first proposal I found necessary to change was the site area. Because I decided to place a portion of the building on a second floor I gained ground area. In earlier studies I found that some years ago a proposal was made to extend an east-west roadway disecting this property. By accepting this proposal and using the north section of the property I find I have plenty of room for the project and do not lose any of the more attractive elements which prompted me to choose the site in the beginning.

Aesthetically I proposed that wood might be a suitable structural and finish material for this project. After structural study I found I could not span spaces without inducing columns into them. Columns in the bowling lanes would impair the function of the area. Steel members proved to be too bulky but prestressed concrete beams have the ability to span great distances without exceptionally bulky members. I concluded that if the structural system is of reinforced concrete walls and prestressed concrete beams that this material could also be used as a finish material. Because concrete is a plastic material I could still achieve the rough texture and attractiveness I previously desired.

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