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A SUMMER THEATER

Part I

Undergraduate Thesis in Architectural Design

441
By

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

at

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CONDITIONS CREATING A NEED

Bigfork, a small town forty miles south of Glacier National Park, is nestled against the Mission Mountains overlooking a bay on Flathead Lake. Because it is located near the center of an area of much natural beauty, it is a very desirable place to vacation. Visitors may fish the rippling rivers, swim in the lake, hike along lush mountain trails, or just relax. It is in this setting, among the beautiful pines, that the Bigfork Summer Playhouse opened in 1960.

The Bigfork Summer Playhouse is a corporation that received its charter in June of 1960. That summer Mr. Firman H. Brown and his wife, Margery Hunter Brown, produced and directed the theater's first three productions. These first productions were held in the town Legion-Rebekah hall, where the theater is still operating under cramped conditions.

The Playhouse had only 38 nightly performances that summer, but the season was judged successful, and the theater has become a welcome addition to the town. The Playhouse has grown considerably since the first season's 100-seat capacity.

In 1965 a thrust stage replaced the three-sided arena staging, and ramped seating made room for an additional 100 seats. The present total is 286 seats. The length of the season and the size of the cast have also increased. For the 1966 season, the theater is offering 72 nightly performances and two shows on Saturdays, making a total of 82 performances. The staff and cast of the Playhouse total 25 members this year, almost doubling that of the first season.

To make room for the 286 seats and still carry on an ambitious program of four repeating productions each season, the theater has had to use every square foot of space available. The cramped quarters force the company to prepare sets in a garage across the street, and there is no storage area for keeping these sets from one year to the next. In 1965 the costume department was moved into this same garage. This gave more space to the theater but created a situation in which the performers must prepare costumes and makeup on one side of main street and then cross (in what is possibly

record-distance for entrances) to the Playhouse stage.

If a new structure were to be built, it would offer not only more space, but more usable space. The present structure was never intended to be used as a theater. In order to accommodate the number of people that it does, the seats have been ramped up to within head height of the open rafters of the building. This places the people in the top rows near the ceiling where the heat generated by the crowd is most severely felt. The building lacks a ventilating system that can handle the problem. The staging offered is no better. There is no backstage area nor any fly loft. Changing of sets, which is not easy in a full-fledged theater, becomes a real problem here. With a fly loft, the sets could be designed separately and changed easily.

The need for a new Playhouse in Bigfork is illustrated in a report by Corplan Associates of IIT research institute on the economic potential of portions of Flathead Lake and Lake counties. They recommend that a new Playhouse with a seating capacity of 500 persons be built in Bigfork.¹

It is conceivable that a new Playhouse is financially possible. The Playhouse had an attendance of 11,000 during the summer of 1963. This figure increased 36% by 1965 for a total of 15,000 persons. According to Mr. Brown, the Playhouse presently operates on a budget of 27,000 dollars. This budget is met by playing to an average of 195 persons or 68% of capacity.

In the present operation it is not necessary for the Playhouse to carry the burden of making returns on borrowed funds nor do they have an excessive cost of maintenance. If the Playhouse continues to operate at the same level, it is not very possible that a new structure can be built. But, if the Playhouse were to relocate in a more attractive structure offering better facilities and, if it were to use a good promotional campaign, a significant increase in profits would probably occur.

The new structure would have facilities to accommodate those people who are now turned away during peak attendance. Mr. Brown stated that the Playhouse has no full-time publicity manager, and he feels that there is a definite need for one.

If the Playhouse had more capacity and the publicity were well handled, I'm sure that it could count on an increase in attendance. Finally, with the present facilities, the Playhouse is hard-pressed to justify rates higher than \$2.50. Given new facilities, the prices could be raised, obtaining more funds without losing attendance. These factors indicate that, if no other funds appeared, the Playhouse could possibly make the return on a long term loan.

But, it is justified to say that a theater built without assistance in some form would be very limited in its effectiveness. Thus it is important that as plans for a Playhouse in Bigfork are developed that other occupancies which will share the fixed and variable charges of taxes, operations and capital. Philanthropic or governmental support or a combination of both can play an important role here.

SITE CONDITIONS

The southern entrance to Bigfork is a gently curving road which leaves Highway 35 and winds across the Swan River on a one-way steel bridge. At this point on the river there is a very nice view of the Pacific Power and Light generating plant grounds. These grounds are situated at a bend in the river opposite the town. The broad sweeps of lawn with their carefully manicured flower beds present a very pleasant view from across the river. (fig. 6) At night the lights from the forebay above dance on the water of the river, and the lights of the grounds wink through the trees.

I have chosen a portion of land across the river from these grounds as a possible site for the Bigfork Summer Playhouse. This northern bank of the river is potentially as beautiful as the grounds of the power plant. On the site there are large cottonwood trees near the river, (fig. 2) and a grove of pine trees protects the site from the street. Carefully landscaped, this portion of land would offer a pleasant and relaxing atmosphere for the Playhouse.

This site also has some potentially good links with the central portion of town, both at the scale of a person walking and that of vehicular traffic. In the spring of this year, several Kalispell architects conducted an informal study of Bigfork with regard to what could be done to enhance the qualities of the area. One of the suggestions made was that a walk from the public docks along the river (fig. 8) to the bridge (fig. 7) would offer an excellent chance for people to enjoy walking along the river. It is my feeling that this path could extend under the bridge and on to the proposed site of the Playhouse. A walk along the street at the front of the site (fig. 3) already exists. If properly cared for, it would offer a more direct route to the site.

Because a good portion of the audience will arrive by car, it is important to have on-site parking provided. The area that is proposed as a site is only large enough for a portion of that required. When the part of the site under ownership 2B is purchased, an option to buy another 100 feet of the land should be obtained.

This will provide sufficient parking at a future date.

There are four structures shown within the bounds of the proposed site. (fig. 2) The two largest of these are houses that have been occupied only periodically during the past few years. It has been a problem to find housing for the Playhouse company during their stay in Bigfork. It is this problem that led Mr. Brown to suggest that housing would be a very welcome addition to any new theater. If they did not fall within the area used for new construction, these houses would provide temporary housing until some other arrangements could be made. The two smaller structures are fishing cabins which may or may not be of any value.

FUNCTION OF THE BUILDING

Theater comes from a Greek word that means roughly, " a place for seeing." Thus, people gather together to experience a planned performance. While doing this, they can expect safety, a minimum of distraction, and complete comfort. At the same time, the producer desires and needs a structure which will attract an audience and give him an efficient and economical production. The audience is concerned with the public area of the theater while the production involves a back stage area.

PUBLIC AREA

"The showman's first direct contact with any member of his audience occurs when that individual comes in sight of the theater. From that moment until the patron is on the highway or subway headed for home, his every movement is the showman's concern. The easier and more pleasant the patron's progress from home to theater seat and back again, the better are the showman's chances of making and holding a repeat customer."² Thus, planning with convenient paths of movement through an attractive environment is important.

The Bigfork Playhouse is in an area where most of the audience arrive by car. There is a need for about 100 to 150 parking places. Under normal circumstances, 500 persons would use 150 cars. But, because of the location and the close relationship of the site to mainstreet and nearby cabin camps, many of the patrons will find it desirable to walk to the theater. There should also be facilities for off-street loading. An occasional rain, during the summer months, will cause need for a loading area where people may seek shelter upon leaving cars. This area should also provide protection from weather typical of western Montana winters if the building is to be used at all during the winter.

Just beyond the entry area there should be facilities for ticket sales. The line of patrons should be kept separate from those passing through and from persons waiting for friends. A reasonable allowance for this area is about one square foot per theater seat. A coat check area is also necessary in this part of the entry.

The site is a beautiful one which will encourage people to stroll during the intermission. This will eliminate the need for extensive lounge area. With the terraces and lawns serving as lounge and the functions of foyer and lobby combined, much space is conserved for seating and stage.

The arrangement of the seating must allow the patrons to reach their seats quickly with a minimum of inconvenience. Their seats should be comfortable and allow them to see the show unobstructed. The patron should be able to see the usher, any steps, and his program as well. Once the production has begun, the audience should be aware only of the stage. The distance from the stage and the angle to it should allow visual fidelity and credibility. In order to achieve this, the seating and aisle arrangement should comply with the limitations of normal human vision.

The principles of planning a theater for optimum visual conditions are covered in detail in the book, Theaters and Auditoriums, by Burris, Meyer, and Cole, 2nd ed.

It should be pointed out that, rather than employing a formula to determine the depth of the Playhouse, 50 feet should be considered ideal as the maximum audience distance from the action, and 75 feet should be a maximum.

Acoustical considerations should also be integrated into the design of the theater. Each element of the structure has its effect on the ultimate acoustical result. Mistakes in basic shape are difficult to correct once the building is finished. A good point of consideration is that the audience is there to hear the show and not the squeaking of seats, rustling of feet, and roar of cars.

The safety and comfort of the audience is of prime importance.

They have a right to expect a maximum of comfort and safety.

This means that:

1. the theater shall have proper illumination;
2. protection from the elements shall be sufficient;
3. fire protection will meet or exceed that of applicable codes;

4. seats should be of a comfortable shape with good spacing;
5. adequate facilities for personal comfort must be provided;
6. heating and ventilation must be adequate and efficient.

Upholstering of seats not only adds to audience comfort, but it aids in achieving uniform acoustics. With a small crowd, many of the seats are empty and the upholstery absorbs approximately the same amount of sound as a person would if he were sitting in it. The seats should be spaced far enough apart so that a person may pass by its occupant without forcing him to rise. This will mean a spacing of about 45 inches from back to back.

NON-PUBLIC AREA

Stage The stage is easily the most important non-public area. The performance takes place in this part of the theater. Its size, shape, and arrangement will be determined by the type of performance. Of all theater, legitimate drama places the most emphasis on the actor. In order for

the characterization to dominate the scene, objects must be realistic in size and shape. Too large an acting area will dwarf the actor and weaken his movement and gesture. Too small an area will crowd him and interfere with him, diminishing the dramatic effect. The bounds of effectiveness are about 240 square feet as a minimum area and 1000 square feet as a maximum.

The modern form of drama seems to demand freedom of audience-performer relationship. This usually calls for projection of the performance into and around the audience. Varying styles of acting will require a great variety of shapes which the stage must be able to assume. Confining the stage entirely within the proscenium limits its flexibility and causes loss of much of the desired audience-performer relationship.

Orchestra pit Occasionally orchestra music is an integral part of a production in legitimate theater, but generally it is purely auditory. As an auditory component, it is not necessary for the audience to see the orchestra. In all cases,

it is important for the conductor to see the action. He must key his music from the action. Occasionally he must even direct the action. In no situation should the orchestra obstruct the view of the audience. Considering the varying requirements of this area, flexibility is of the utmost importance. The pit should be capable of a variety of forms. This can be provided by portable covers or mechanized lifts, although the latter are quite expensive.

The back-stage areas are the last to be considered, but their arrangement is very important to the efficiency of the performance. Figure 9 shows a rough relationship between spaces in this area.

Stage entrance The stage entrance is the first of these areas. It is used by everyone working in the theater. As illustrated on the chart, it must have a central relationship to most of the back-stage area. The area immediately inside the entrance must have the following facilities: time clock, actor check-out board, bulletin board, telephone booth

with muffled bell, mail box, key rack, and control desk. All of these items serve some need of the actors when arriving and departing.

Dressing areas The Bigfork Playhouse will need dressing facilities for approximately 25 to 30 people. The members of the cast who are acting as stage hands will use this area along with the actors. Needed in this area are clothes and costume hangers, shoe racks, make-up table, mirror, well diffused light (25 fc), and full-length mirrors (one per eight persons).

Make-up rooms This area should not be less than about 100 square feet. The equipment must include tables or benches, chairs, and good lighting (25 fc).

A large number of toilets and lavatories are required adjacent to the dressing and make-up areas. There should be at least one lavatory for each four persons and one in each private dressing room. The toilets are used during short

periods and should number at least one for each six people. One shower for each six people is also necessary.

Stage anteroom This area is used for assembling the cast, making last minute checks, and the director's talk to the cast. This area should be located along the passage from the dressing room to the stage. The equipment may include some lounge furniture for social use after productions.

Wardrobe This area should include room for hanging of costumes, ironing, and sewing equipment for making repairs.

Office A minimum of 50 square feet is necessary for care of scripts, counting of proceeds, and receiving reservation calls. This area will probably be combined with ticket sales.

Along with the needs of the actors are the functions of preparing the stage. These operations are outlined in the following pages.

Loading door six feet wide, ten feet high at the side or rear of stage

Loading platform height from drive equal to average van, approximately 3 feet. Avoid level changes in the theater and allow clear approach for vans.

Receiving space This area should have a clear wall and floor space. Racks will be necessary for storing lumber and other materials necessary for setting up productions.

Shop This area is used to build the sets used in production. It requires equipment for working wood, tin, iron, sewing, painting, and electrical work. It is possible the area may be separate from the theater. But, if it is, a repair shop will be necessary in the theater.

Stage machinery There are three methods that are desirable for changing the stage floor scenery.

1. a cross-fade of lighting from one stage area to another, each containing a setting
2. changing of rear projected scenes
3. a complete change of scenery accomplished by moving the scenic elements intact.

The last two require a rather expensive investment in equipment and will probably not be employed by the theater in the near future. But, it is advisable to develop the back-stage areas so that they can be employed later.

In order to accommodate a wagon system which will be employed in this project of moving scenes, the scenery space must be clear of one set before the other may be moved in. Therefore, there must be enough storage space to accommodate all of the sets used. Also, the paths of movement of the sets must be direct and clear of objects. It is possible that the areas used as storage may double as shop, rehearsal, and practice areas. Space for two full-sized wagons and several smaller ones having only parts of sets should be adequate.

Gridiron Almost all of the productions will need to have equipment such as lighting, scenery, and teasers suspended over the scenery and acting area. The structure facilitating this suspension is the gridiron. It is ".... an openwork floor of steel located under the roof of the stage on which

sheaves may be fastened, either permanently or temporarily, and through which ropes, either wire or hemp, may be dropped for the suspension of scenery, lighting equipment, actors, and anything else which the performance may require to be suspended."3

The most ideal system would be one that would allow any size, shape, and weight object to be suspended anywhere. This may seem idealistic, but successful results can be achieved when a combination of rope and counterweight systems are used. The rope system will be used to fly lightweight pieces of equipment, actors, and light scenery. The rope system will allow this paraphernalia to be moved at will about the gridiron. The counterweight system will be used for the heavier equipment. For storage purposes, the gridiron will extend over at least one of the wagon storage areas to facilitate hanging scenery and equipment.

Lighting The lighting is as important to the production as the scenery, and indeed, may be the chief means used to

create the illusion of a given surroundings. There are productions where only the lighting changes to make a scene change.

The stage area must be designed so that lighting may be placed almost anywhere. There must also be facilities for lighting in the ceiling and walls of the seating area. As mentioned earlier, these fixtures must not distract the audience.

With the portability of control systems now in use and the addition of a good inter-communication system, it is possible to place the lighting controls in a variety of positions with advantage. The Tyrone Guthrie theater in Minneapolis, Minnesota, has its control section behind the audience. This feature will require careful study of the various possibilities to determine the most desirable location.

PROGRAM

The program for a building of the specialized nature of a theater should be very flexible during the early design stages. The complex inter-relationship of the various spaces makes the assignment of a hard and fast area to any given space difficult. This is especially true for the non-public space. Here the size depends on the seating area, its size, shape, and equipment. With this in mind, I am making the following program as a recommendation only, and will make additions and changes as the actual design of the structure is continued.

PUBLIC SPACES

Description

Proposed area

No.

sq. ft.

The program for a building of the specialized nature of a theater should be very flexible during the early design stages. The complex inter-relationship of the various spaces makes the assignment of a hard and fast area to any given space difficult. This is especially true for the non-public space. Here the size depends on the acting area, its size, shape, and equipment. With this in mind, I am making the following program as a recommendation only, and will make additions and changes as the actual design of the structure is commenced.

PUBLIC RESTROOM, MEN

150

1

EQUIPMENT: 4 water closets,
4 urinals, 3 lavatories

PUBLIC RESTROOM, WOMEN

150

1

EQUIPMENT: 3 water closets,
3 lavatories

PUBLIC SPACES

Description	Proposed area sq. ft.	No.
<u>FOYER-LOBBY</u>	2000	1
FUNCTION: receiving patrons, ticket sales, waiting space, circulation area during intermission		
adjacent to check-rooms		
EQUIPMENT: ticket window, facilities for checking tickets		
<u>CHECK-ROOMS</u>	125	1
FUNCTION: storage of patrons' outer garments during the performance		
EQUIPMENT: rack and shelves		
<u>PUBLIC RESTROOM, MEN</u>	190	1
EQUIPMENT: 4 water closets, 4 urinals, 3 lavatories		
<u>PUBLIC RESTROOM, WOMEN</u>	190	1
EQUIPMENT: 5 water closets, 3 lavatories		

Description	Proposed area sq. ft.	No.
<u>AUDITORIUM</u>		1

FUNCTION: house the audience
during performance

NON-PUBLIC SPACES

<u>STAGE</u>	3000	1
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FUNCTION: to house performance
and equipment

EQUIPMENT: room for stage
wagons, gridiron over acting
area and at least one wagon
room

<u>STAGE ENTRANCE</u>	95	1
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FUNCTION: used by everyone in
theater

EQUIPMENT: clock, check-out
board, bulletin board, tele-
phone booth, control desk

Description	Proposed area sq. ft.	No.
<u>DRESSING ROOMS</u>	300	2
FUNCTION: used for clothing and costume changes by members of the company		
EQUIPMENT: 2 linear feet of clothes rack, shoe rack, and one locker per person		
<u>MAKE-UP ROOMS</u>	180	1
FUNCTION: used for make-up		
EQUIPMENT: tables, mirrors, electrical outlets, and benches		
<u>STAGE ANTEROOM</u>	500	1
FUNCTION: assembly room for cast, social room, pep talks, last minute costume checks		
EQUIPMENT: lounge furniture, table, blackboard		
<u>BATHROOM, MEN</u>	160	1
EQUIPMENT: showers, lavatories, water closets, urinals, mirrors		

Description	Proposed area sq. ft.	No.
<u>BATHROOM, WOMEN</u>	160	1
EQUIPMENT: showers, lavatories, water closets		
<u>WARDROBE</u>	150	1
FUNCTION: inspection, repairing and pressing of costumes		
EQUIPMENT: electric iron, sewing machine, table		
<u>OFFICE</u>	50	1
FUNCTION: receiving calls, conducting business		
EQUIPMENT: general office equipment		
<u>SHOP</u>	300	1
FUNCTION: used for set repairs		
EQUIPMENT: bench, tools for wood and metal work		

AESTHETIC CONSIDERATIONS

In the informal study of the Bigfork area by several Kali-spell architects, it was concluded that the town has a very "pleasant alpine atmosphere." They suggested that the town attempt to retain much of this rustic atmosphere. Often, when an area begins to grow, the expansion destroys many of its desirable features. I wish to design a theater that, while adding a needed facility to the community, will keep this nature.

The surroundings of the town suggest exciting and beautiful walks among the trees and along the water. Every attempt should be made to make use of the trees and water on the site. A carefully designed site will offer a pleasant stroll for the audience during the intermission. Because the site is directly in the view of visitors approaching the town from the south, the theater will play an important role in forming the visitor's first impression of the town. Intelligent use of existing vegetation will enhance the fresh atmosphere of the town.

The character of a theater is one of thrilling, dramatic events that take place inside. There are many kinds of drama, and the building certainly cannot express all of these. The building should then be simple so that any of these emotions will fit within it. And yet, at the same time, there should be an atmosphere about the building which will attract people and inspire imagination.

The presence of natural finish wood, especially cedar, is predominate in the town. The use of this wood gives a unique and casual atmosphere to the town. Wood, possibly larch, which has some of the nature of cedar and considerably more structural integrity, may possibly give the desired effect.

This material will echo the nature of the town and at the same time, hint at the drama within.

The interior should be treated in much the same manner as the exterior of the building. That is to say, there should be a unity in the building which begins when the patron first

views the structure and carries into the interior. This will give an interior-exterior tie that will spark memories of previous enjoyable plays in the returning patron, and will give the newcomer a desire to see what the interior has to offer.

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APPENDIX

LIST OF ILLUSTRATIONS

FIG. 1 MAP OF REGION AND VICINITY

FIG. 2 MAP OF PROJECTED SITE Scale: 1" = 100' Illustrations
derived of information from England cover map, aerial
photos, and records of Flathead County Assessor

121



direction, location, and number of photographs

1A

property owned by Ellsworth and Dorothy Vinnedge

2A

property owned by Rance Smith

3A

property owned by Pacific Power and Light

2B

property owned by Donald Anderson

--- proposed line

FIG. 3 STREET IN FRONT OF THE SITE

FIG. 4 RIVER AT THE EAST END OF THE SITE

FIG. 5 BOTTOM AXES AND DITCHES ON THE SITE

FIG. 6 POWER HOUSE GROUNDS TO THE SOUTH OF THE SITE

FIG. 7 BRIDGE AT THE ENTRANCE TO THE TOWN

FIG. 8 RIVER BELOW THE SITE

LIST OF ILLUSTRATIONS

FIG. 1 MAP OF BIGFORK AND VICINITY

FIG. 2 MAP OF PROPOSED SITE Scale: 1" = 100'
composed of information from Bigfork sewer map, aerial
photos, and records of Flathead County Assessor

KEY



direction, location, and number of photographs

1A

property owned by Ellsworth and Dorothy Vinnedge

2A

property owned by Wanda Bailie

3D

property owned by Pacific Power and Light

2B

property owned by Thomas Ratchford

--- section line

FIG. 3 STREET IN FRONT OF THE SITE

FIG. 4 RIVER AT THE EAST EDGE OF THE SITE

FIG. 5 COTTON WOODS AND SHRUBS ON THE SITE

FIG. 6 POWER HOUSE GROUNDS TO THE SOUTH OF THE SITE

FIG. 7 BRIDGE AT THE ENTRANCE TO THE TOWN

FIG. 8 RIVER BELOW THE SITE

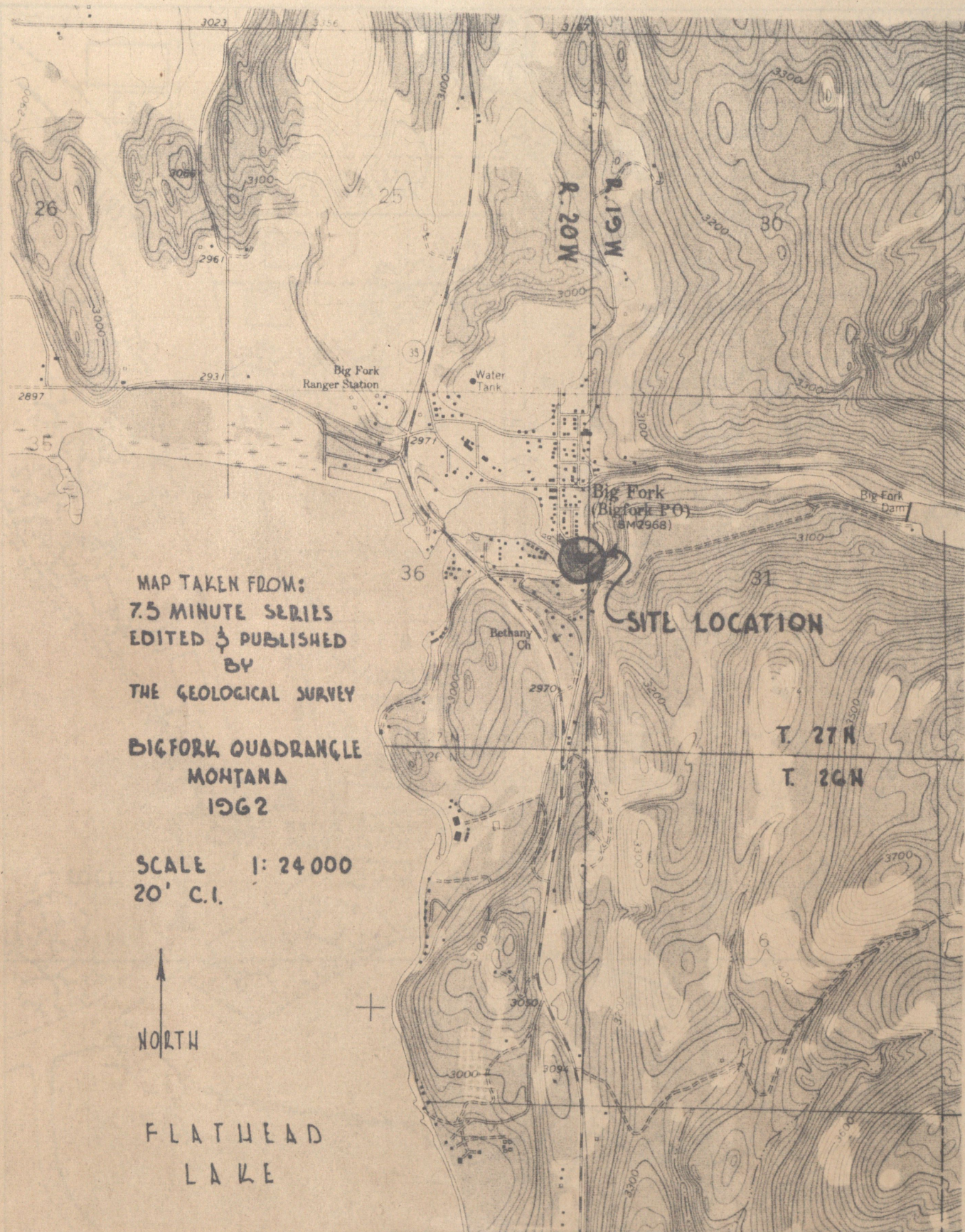


FIG. 1

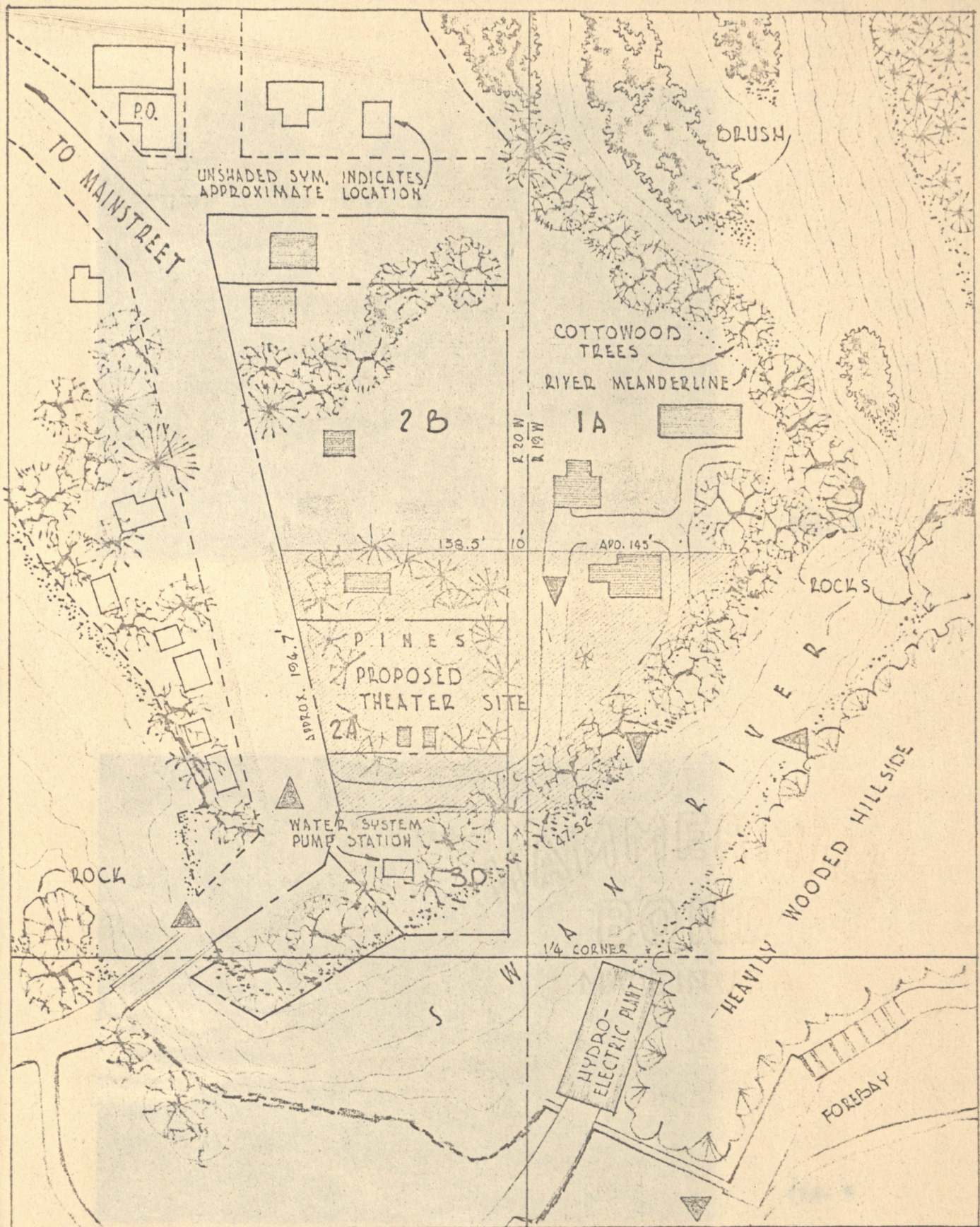


fig. 2



fig. 3



fig. 4



fig. 5



fig. 6



fig. 8



fig. 7

FOOTNOTES

1. Economic Evaluation of Tourism and Recreational Potential of Portions of Flathead and Lake Counties, A Report by the Economic Development Administration (Washington D.C., 1966), Vol. 2, pg 6-7
2. Burris, Meyer and Cole, Theaters & Auditoriums. (New York, 1964), pg 37.
3. Burris, Meyer and Cole, Theaters & Auditoriums. (New York, 1964), pg 231.

BIBLIOGRAPHY

Burris, Meyer, and Cole. Theaters and Auditoriums. New York: Reinhold Publishing Corporation, 1964.

Joseph, Stephen (ed.). Actor and Architect. Toronto: University of Toronto Press, 1964.

Ramsey, Charles and Harold Sleeper. Architectural Graphic Standards. New York: John Wiley and Sons, Inc. 1956.

Wright, Edward A. Understanding Today's Theatre. Englewood Cliffs: Prentice-Hall, Inc. 1959.

Economic Evaluation of Tourism and Recreation Potential of Portions of Flathead and Lake Counties, Montana. A Report Prepared by Corplan Associates of IIT Research Institute. Washington D.C., February 1966.

Souvenir Programs of the Bigfork Summer Playhouse.

Statement by Firman H. Brown, Jr., Chairman, University of Montana Department of Drama, personal interview, July 4, 1966

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