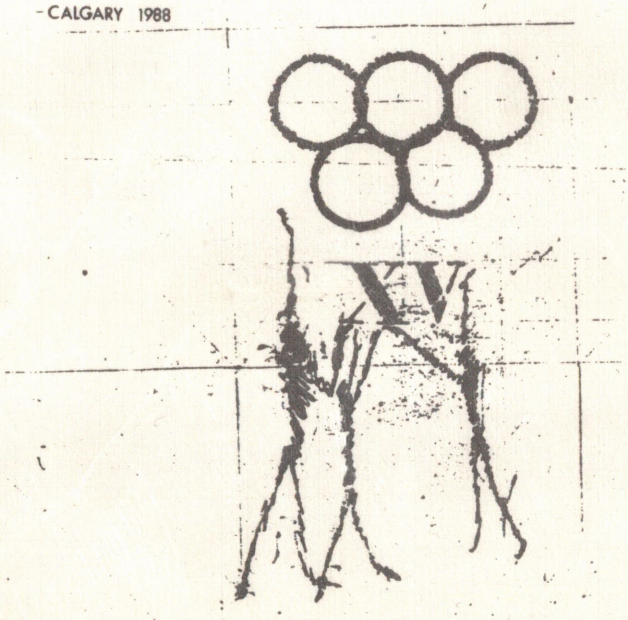
PERPETUATION OF A MYTH

... A STUDY OF THE XV WINTER OLYMPICS
- CALGARY 1988



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PERPETUATION OF A MYTH

by

Stuart Blair Webster

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

Approved by:

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MONTANA STATE UNIVERSITY

Bozeman, Montana

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INTRODUCTION

The focus of this study will revolve around movement and its relationship to path and goal - in terms of Olympic competition.

The principal objective will be a synthesis of an architectural environment through the creation and development of movement systems.

The ultimate goal will be to achieve clarity along with a kinetic atmosphere through the clustering and possible intersection of three distinct types of competition paths: bobsled/luge, speedskating, ski jumping.

Project Definition

. The project will be a study of three athletic facilities which will be used for the 15th Winter Olympic Games - Calgary.

. The facility will be located in Canmore, Alberta - sited 88 km. from Calgary.

Project Objectives

. To study the idea of 'path and goal' on several levels.

1) To site plan the various functional activities to occur at the Canmore portion of the Calgary Olympics.

2) To programmatically resolve the physical requirements of the speedskating, bobsled-luge and ski jumping facilities at Canmore.

3) To explore the idea of departure-arrival and goal related to three distinct types of paths and users:

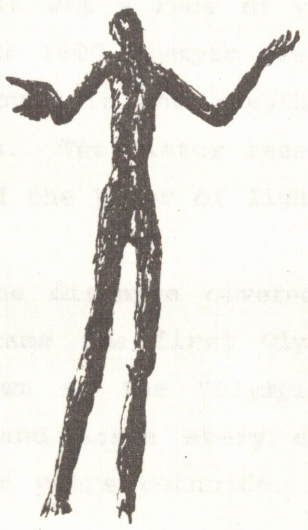
. Spectator
. Official
. Competitor

4) To evolve a design response to site planning, programmatic and movement objectives as defined.



"The Slee"
michelangelo

"At the time of the full moon of the month of Appollonius, in the year that we now reckon as 776 B.C., there was a great foot race in a meadow beside the River Alpheus at Olympia, and one Coroebus was the winner. He was crowned with a wreath of wild olive, a garland woven from the twigs and leaves of the tree that Hercules - so sang the ancient poets - had sought in the lands of the Hyperboreans and planted in the sacred grove near the temple of Zeus at Olympia. Thus Coroebus, a youth of Elis, was the first Olympic victor of whom we have anything more than legendary record."[8]



ORIGIN OF THE OLYMPICS

At best, the origin of the olympics is obscure. The myths range from feats accomplished by mortals to battles amongst the gods, the most prominent of which is the battle between Zeus and Kronos. This battle took place on the heights of Mount Olympus. The prize - the earth. The battle was the most violent within Greek mythology. Zeus was victorious. As the legend describes, for every lightning bolt cast by Zeus which struck the earth, the ground became sacred. One such bolt cast an aura of sanctity over Altis-Grove, Greece - Olympia.[9]

This site, a sanctuary, was chosen as the place at which the Greeks would conduct their religious festival. It was defined by the construction of an altar, which harboured the symbolic flame. The flame of the alter was ignited with the assistance of the heavens and the power of the sun. A large part of the ceremony involved the lighting of the torch. The ceremony which led up to the first Olympic event was a race of young boys over a distance of 200 yards (600 Olympic feet, a distance which Hercules could cover in one breath),[10] to the base of the altar of Zeus. The victor received the sacred torch and was bestowed the honor of lighting the sacrificial flame.[11]

This event evolved until the distance covered by the torch lighting ceremony became the first Olympic event. The festival became known as the "olympiad." The ceremony was held on a grand scale every eight years, when the linear and solar years coincide. Due

to rising popularity this was later adjusted to a quadrennial cycle.

The first olympiad was held in 776 B.C.; however, the religious festival dated back as far as the thirteenth century B.C. In addition to its cosmic significance, this festival was blessed with the poetics of peace. Through the duration of the olympics all of the Greek states were ordered to lay down their arms, unite and honour the elite. Men were compared and judged as individuals. The winner was crowned with an olive wreath within the temple of Zeus. At the instant of recognition the victor was bestowed the honor of communicating with the gods.[12]

Immortality being the ultimate gift, news of the olympics spread rapidly. The teachings of the olympiad cultivated the importance of the union between body and soul. This belief provided the means with which to develop the necessary environment for cultural growth and refinement. As the Greek states acquired world recognition the same became true of the olympiad. The olympics were not only man's chance to witness or achieve immortality, but also to indulge in the pleasures of the arts. Olympus became the birthplace of new ideas in philosophy, athletics and art. It was this progressive atmosphere and the quest for perfection which led to the development of the classical era.[13]

> "So great was the flame of the games, it was believed that this was the greatest event any man could witness."
>
> Plato

It was this dignity which maintained the purity of the Olympics. This lasted 1168 years. Upon the rise of the Roman Empire the games were transformed from ceremony, culture and competition for honor to a pagan

festival in which slaves fought wild animals for their lives. The last olympiad was held in 393 A.D.[14]

> "Glory had vanished and of vast riches there were now left but a few ruins and the name of Olympia. Something immortal remained, however, the Olympic spirit."[15]

The myth had lain dormant for over 1500 years until the flame was reignited in Athens in 1898. This marked the rebirth of the Olympics and birth of the modern games as we know them. The power of the flame has survived countless attacks and witnessed two world wars, yet has remained unscathed.

In 1924 the Olympics developed a seasonal counterpart - the Winter Olympic Games. Some felt this duality would tarnish the image, but the majority felt that it would only strengthen the games as a whole. Each was to be held during the Olympic year and until 1936 the same country hosted both facets. Now the scope of the games is such that they are so large that the summer and winter games are awarded to different nations.

> "To participate is to win."
> "To win is to be honored."
>
> Unknown

MOVEMENT AS AN IDEA

Movement is an inevitable phenomenon. The universe is in a continual state of flux, being a conglomeration of swirling masses silently gliding through space. The movement takes place in a variety of domains and scales, cosmic to molecular. The space between these two defines the domain of man.

Movement of man may seem arbitrary, yet it is a response to both our physical domain as well as to the fulfillment of a need; the need to seek and discover or progress from a point of departure to a goal. A path may be as relaxed as a river flowing towards the sea or as direct as the crow flies. In each case the path has meaning and relationship to the user.

All paths have a goal, some of existential reality, and some of an achievable definition. The common denominator becomes the termination. The rationale to proceed from one place to another varies greatly. Kurt Lewis refers to this as "hodological" space (derived from the Greek word "hodos," meaning way). "Rather than a straight line between two points, hodological space contains preferred paths."[1] These preferred paths were constructed of:

Shortest distance

Security

Minimal work

Maximum experience

Each of these elements in part or in whole create a relationship which will define the desired route.

The result is a journey along a path of known origin in which direction is determined by both our

purpose and environment. The stronger the idea of the goal, the greater will be the image of the path. The path becomes a connection between two points.

When two paths cross or intersect they define a third point or place. Within this intersection are created four distinct domains. The context of the place is determined by the flavor of the paths, be they natural or artificial. "A place is situated within a larger context, and cannot be understood in isolation."[2] "Domains can be defined by the power of nature," rivers, cliffs and shorelines. These are termed edges. Although edges are not considered paths, the end result of the two is still the same.[3]

> "The character of a path is thus determined by its relation to place. It either leads towards a goal, away from a point of departure, or it forms a ring around the place, expressing that 'existence is round.' As any place lives from the tension between centripetal and centrifugal forces, place and path must be interdependent."[4]

The union of the three - path, domain and place - create yet a fourth quality, a "center." The center, as Eliade describes, is a quality which is neither tangible nor visible, "and to the profane constitutes an elusive existence of yesterday."[5]

Eliade continues the point. He feels that at this center there is a union between the earth and the heavens and this introduces the vertical dimension. The Greeks saw the mountain as being sacred because they believed it was the point at which earth touched the heavens. Such was the site of Olympus.

The concept of the third dimension (verticality) transcends the physical state. It can be created within the philosophical realm at a point where paths of great significance intersect:

> "The third dimension represents a path towards a reality which may be higher or lower than daily life, a reality which conquers gravity; that is, earthly existence, or succumbs to it. The axis is more than a center. It represents a connection between the three cosmic realms, and it is only at the center axis that a breakthrough from one realm to another can occur."[6]

Thus the ultimate path would be that in which the goal is the cosmic union between the three dimensions. The ancient Greeks used this philosophy in their Olympic festival.[7] The path was a controlled surface and thus individuals could compete on a common ground. The victor won the right to be taken to the point where mortal existence became three dimensional. Thus the victor became immortal.

An Olympic facility should be sited in such a fashion that it would be conducive to the termination of an age old pilgrimage. This pilgrimage takes place at the union of paths in which the ground has been declared sacred. At that point Eliade states that if the paths are of great enough importance, the "center" then is expanded into the third dimension.[16] This is derived from the ancient Greek belief that communication with the gods had to take place where the earth touched the heavens - the mountains.[17]

The mountain, in addition to being an element of communication, gave to a sacred site a physical and eternal identity. This identity served to strengthen the desire to undertake the pilgrimage to Olympus. Thus, the site continually perpetuated its own importance.

> "Sacred space always centers on one or more sacred places, that is, foci where the common cosmic image is represented. Often the centers are connected by sacred paths which lead to the meaningful goal. Pilgrimage, thus, is one of the great symbols of human existence."[18]

The success of the site relies on the image or the area. Like myths and places of great moral or spiritual importance, they grow and evolve. Myths follow in a set formula, a ring. Those start and end along the same path and with the grace of time, become self supporting or "truth."

> "A hero ventures forth from the world of common day into a region of supernatural

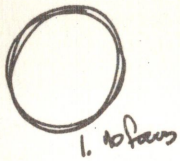
> wonder: fabulous forces are there encountered and a decisive victory is won: the hero comes back from this mysterious adventure with the power to bestow boons on his fellow man."[19]

It is this attitude towards an environment which has the capacity to develop an aura of sanctity in time. Thus, I feel the initial pilgrimage to the Olympics will give to the site its original notability. If acceptance of the area and setting are high, the possibility of the creation of a legend exists and thus, the creation of a ring.

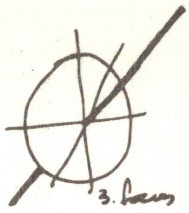
> "The ring unites man to man through the infinite chain of hands. The individual is absorbed by a superior form, and thereby he becomes stronger. When men agree, they form a ring, as if they were following a secret law. The ring has neither beginning nor end, it begins and ends everywhere. Curved back into itself, it is the most sincere and potent of all figures, the most unanimous."[20]

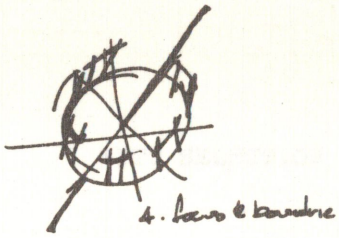
The Olympics still honor the ancient concept of world peace. For the most part, during the period of the olympiad mankind drops arms, unites, and forms a ring - the Olympic symbol - which honors the pure and worships the immortal.

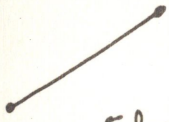
> "Ultimately, the heroes of today will become the gods of tomorrow, the earth their domain."

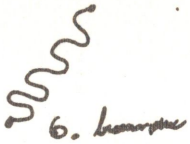

1. no focus

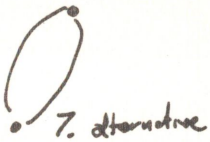

2. center


3. focus

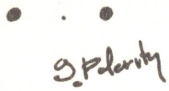

4. focus & boundaries


5. linear

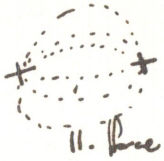

6. [illegible]


7. alternative


8. continued


9. Polarity


10. stand off


11. [illegible] field

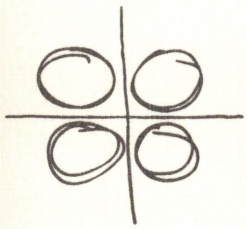

12. equal opposites

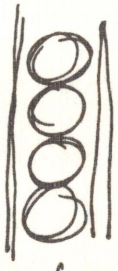

13. Duality

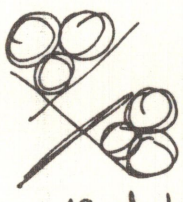

14. Similar

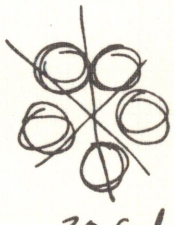

15. opposites


16. Parallel


17. Rooms


18. Linear


19. clusters


20. Center

VOCABULARY

SITE SELECTION

HISTORY OF THE CALGARY BID

Calgary's bid for the XV Olympic Winter Games has been accepted by the Comittee International Olympique. Their bid was accepted on the basis that the city and government could provide the required physical and geographical environment in which to house the games and perpetuate the "Olympic spirit."

This is Calgary's second bid to host the games. Their initial proposal in 1956 was rejected and awarded to Cortina d'Ampezzo. Since their first bid, however, Calgary has built up an impressive portfolio of hosting sporting events on both the national and international level. In addition to the continual hosting of the World Cup Ski Races, Calgary hosts/accommodates the international hockey tournaments and the Calgary Stampede.

Calgary, like other centers in the area, originally started as a trading post. This settlement originated in 1875 and in eighteen years grew from a node along the Bow River to a city. The area now houses six hundred ninety thousand people and is expected to grow to a population or over one million by 1988. Contributing to this growth are the rapid development of area resources and the city's designation as a corporate hub.

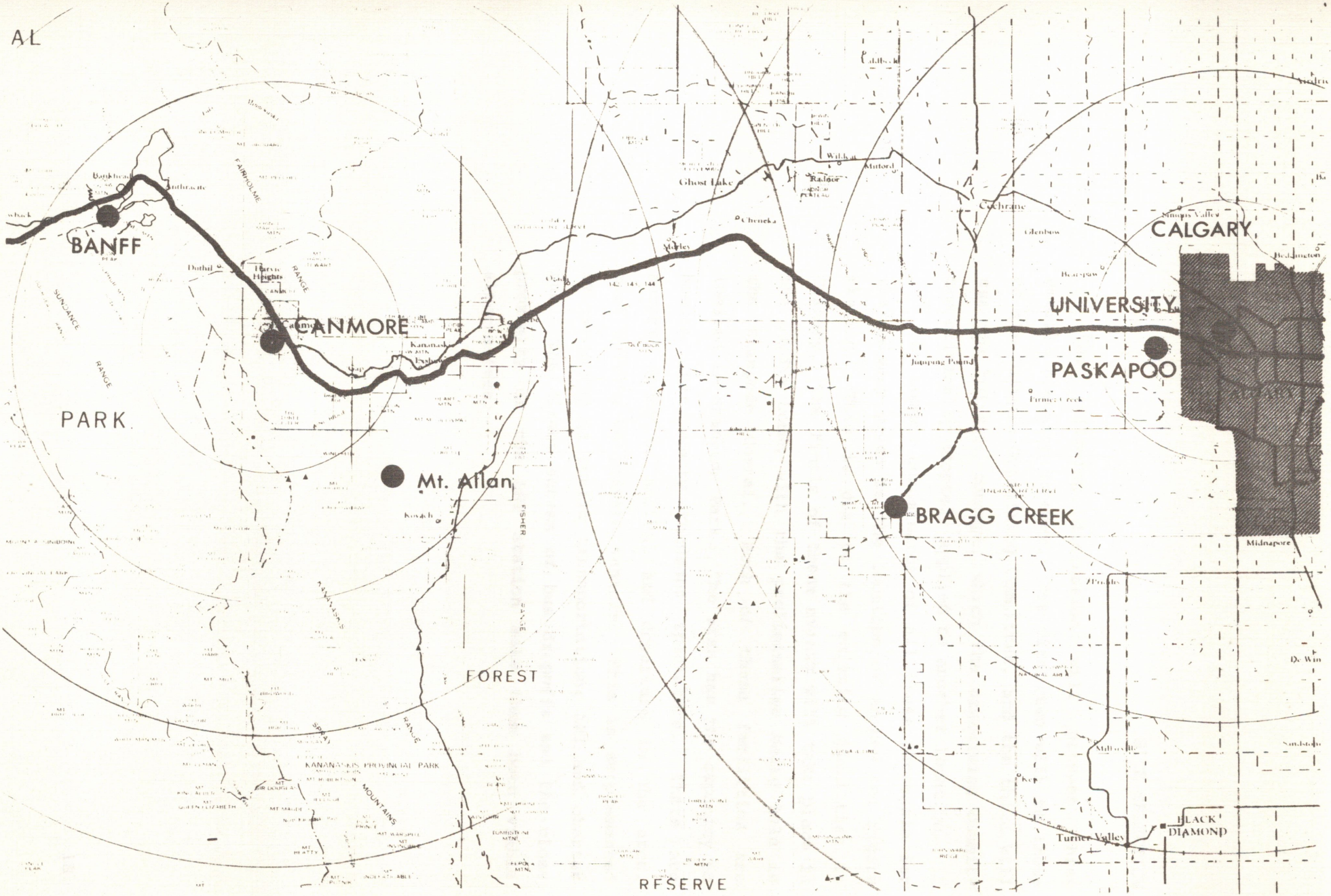
The various forces involved in the placement of the Olympic facilities are:

The Olympic Organizing Committee
The University Organizing Committee
City of Calgary
Province of Alberta

The events and facilities which need to be provided for are:

Alpine competitions
Nordic competitions
Biathlon
Ski jumping
Figure skating
Speed skating
Ice hockey
Tobogganing
Bobsleigh
Housing for athletes and officials
Opening ceremonies

The evolution of the planning and location of these events has gone in several directions with the organizing committee only arriving at a common denominator in several instances. The overall theme has evolved from a total concept in one particular area, much the same as used in past games, to one that is fragmented and displaced.


AL
BANFF
CANMORE
PARK
Mt. Allan
FOREST
RESERVE
CALGARY
UNIVERSITY
PASKAPOO
BRAGG CREEK
BLACK DIAMOND
Ghost Lake
Cochrane
Turner Valley
KANANASKIS PROVINCIAL PARK
MOUNTAINS
FISHER
RANGE

SITE STUDY

SITE SELECTION

The following discussion will present three overall planning schemes. The first two will be those of the Olympic Organizing Committee, and the third will use the holistic concept, which the organizing committee originally adopted, applied to another location.

The common denominator of all these proposals for the Calgary games is the location of hockey and figure skating. This is due to the existing facilities in Calgary. The finals of these events will take place in the Saddle Dome, with the preliminaries being held in the Stampede Corral. Both of these facilities are located in Stampede Park. The area has the capacity to handle over twenty thousand spectators. There are several modes of arrival and departure in the area, most relying on private vehicle. This is supplemented by two modes of public transportation: LRT and charter bus. The direct access of bus dropoffs and the close proximity of the LRT station make them both viable alternatives.

Scheme #1 represents the present proposal of the Organizing Committee which seems to be relatively disjointed. With this scheme, the games will be spread out over a distance of one hundred kilometers. The events have been broken up into four areas. Each of these clusters has been developed with task specific criteria as well as for the possibility of reuse by Calgary residents after the games. Two of the four facility groups will be located within the city, with the third on the city's edge and fourth some one hundred kilometers away.

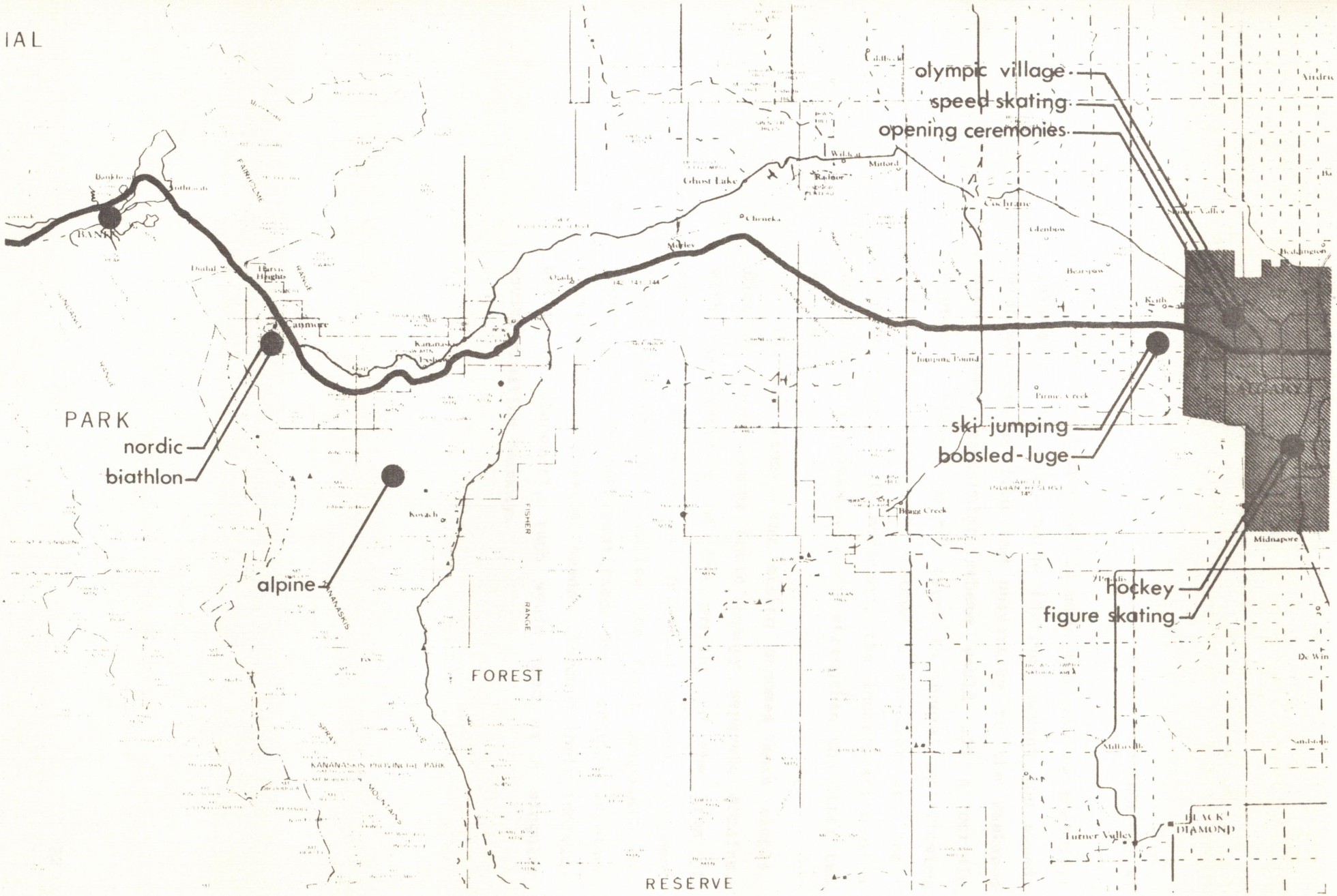
Within the city will be ice hockey, figure skating, speedskating, opening ceremonies and the Olympic Village. (Ice hockey and figure skating have been permanently placed due to existing facilities.) The university will be housing the remainder of the facilities. The university agreed to this because of the strong possibility of reusing many of the Olympic structures.

The university is responsible for housing the athletes as well as the officials. This will require additional structures. The Student Union will undergo renovation and expansion so that it will be adequate to provide offices for each team and officials as well as additional space for entertainment and recreation. The acceptance of speedskating will be conditional: the building would be placed adjacent to the existing physical education complex. These buildings are to be joined by a common change area. The criteria for accepting the speedskating complex is that it be a

covered structure. In the case of an enclosed structure, it could be used year round for the study of bio-kinesis. The processional mall which is to be constructed would start at the campus and be terminated in McMahon Stadium with an altar housing the Olympic flame. Thus, the village would be physically linked to the flame as well as to the opening and closing ceremonies.

Paskapoo has been proposed for the jumping and tobogganing events. This particular site has been suggested for two reasons, the first being the physical qualities of the hill and the second, its close proximity to the city. This location is only eight kilometers from the university and can be seen from several vantage points, including the university. The problems of arrival and departure are not as great as they will be with the urban sites. The principal mode of arrival/departure will be by bus. The access to the area, Highway No. 1, is the same road which would be taken to the ski area.

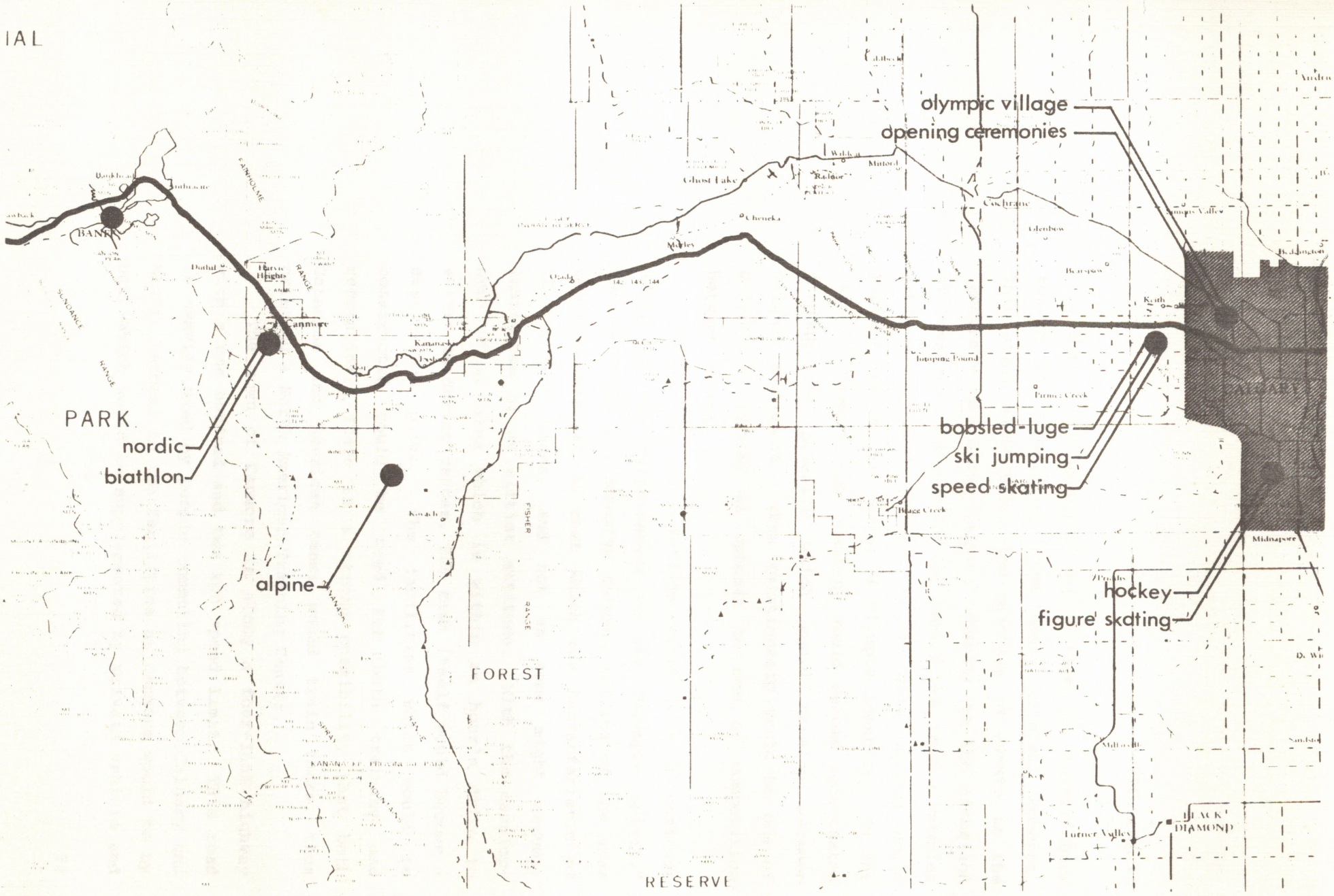
All of the Alpine and Nordic events would be held in Canmore. The town is located between Calgary and Banff. Each of these centers offer lodging for the spectators. The principal mode of arrival would be by bus, supplemented by the "possible" use of the Canadian Pacific Railway as a commuter train. The distance from the university is one hundred kilometers.


IAL
olympic village
speed skating
opening ceremonies
PARK
nordic
biathlon
alpine
ski-jumping
bobsled-luge
hockey
figure skating
FOREST
RESERVE
Ghost Lake
Cochrane
Canmore
Kananaskis
Kovach
Midnapore
Turner Valley
BLACK DIAMOND
KANANASKIS PROVINCIAL PARK

PROPOSAL 1.

The second proposal is much the same as the first proposal. The only change involves moving the speed-skating complex from the university to the Paskapoo area. This particular scheme would add a certain degree of clarity to the games in general by allowing the Olympic Village to become a singular and homogeneous element. In addition, the incorporation of a third sport at Paskapoo would strengthen the other two sports.

In this study, the siting becomes more simple. Each of these events would occupy separate domains, with the exception of the overlap in the area of spectator destination and technical support equipment (i.e., compressors). Unlike the first proposal, the sports would become stratified; each sport's location dictated by its physical needs. Through their individuality of placement, each would read as a singular entity creating harmony.


IAL
olympic village
opening ceremonies
PARK
nordic
biathlon
alpine
bobsled-luge
ski jumping
speed skating
hockey
figure skating
FOREST
RESERVE

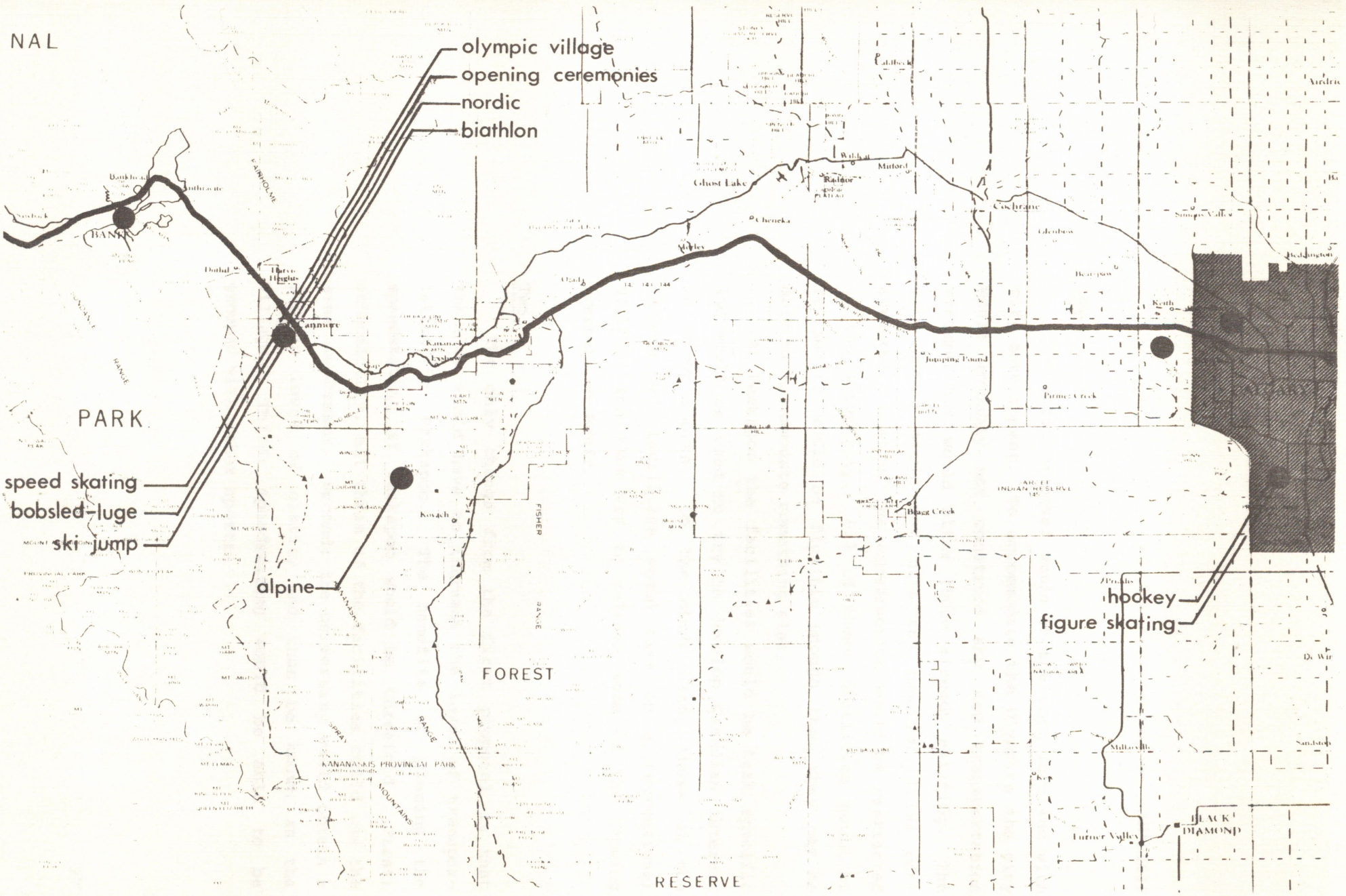
PROPOSAL 2.

The third proposal would seem to revert back toward the Organizing Committee's original concept. This study would place the majority of events in the Canmore - Mt. Allen region. Similar to the situation at Paskapoo, the removal of facilities from a complex urban environment to one that is more natural would further develop the issue of Olympic identity. In the case of Canmore, the identity would become accentuated through the polarity which would develop between Calgary and Banff. This relationship would be one of polyphonic harmony as opposed to one of competition between cities.

Invariably, this setting would have a positive effect on the perpetuation of the "Olympic spirit." The seclusion and cohesive natural setting of the area would be similar to that which was characteristic of the ancient games, and not as some might assume, indicative of an elitist attitude. With the development of an area which is within an hour's drive to either bordering center, the town itself would become a destination point. The facilities which would be constructed could be used for both training and recreation. There is a strong possibility that both Canadian and American teams would train there, thus creating a North American Training Center.

The town of Canmore is along a four-lane highway with a one hundred and ten kph speed limit. This road is heavily used by people commuting between Calgary and Banff. Access to the facilities at Canmore would be by bus, which would be supplemented by private vehicle and

the possible use of the Canadian Pacific Railway. Traffic would flow from both Calgary and Banff, thus offering a choice of accommodations and settings.


NAL
olympic village
opening ceremonies
nordic
biathlon
PARK
speed skating
bobsled-luge
ski jump
alpine
hockey
figure skating
FOREST
RESERVE
Ghost Lake
Cochrane
Canmore
Kananaskis
Bragg Creek
Turner Valley
BLACK DIAMOND
KANANASKIS PROVINCIAL PARK
FISHER RANGE
MOUNTAINS

PROPOSAL 3.

One

The first proposal would be the most involved with city development. To accommodate the Olympics the city would probably not construct any new transportation systems, but would alter those already existing. The city itself would not have any new facilities constructed. Most of the construction would be restricted to the university. All of these facilities would be revised or would be flexible enough that they may be able to accommodate something else.

At Paskapoo the facilities would be task specific and would be used to try to develop Canadian interest in these sports. On the other hand, those at the Canmore ski facilities would take on a recreational quality, and thus try to relieve some of the growing pressure on Banff.

Two

The only change from the first proposal is that the city would have to increase the level of transportation to Paskapoo. The benefits of placing the speedskating at Paskapoo would be threefold. First: economically, all three of the facilities could use the same compressor. Second: the university would obtain a certain level of clarity and thus be known as the Village. Third: speedskating would be able to be grouped with other sports.

Three

The third proposal would divorce itself from both city and university, except for figure skating and hockey. The major civic involvement would be to provide lodging and transportation to the site. The aura of harmony which would be developed through the positioning of the Olympic athletes in a natural setting is an important element in creating site individuality. The town of Canmore would become a North American Training Center. The national team athletes would stay in Canada until the beginning of the competitive season. Overseas trips for the athletes would then be an exciting proposition rather than the task it is now considered.

Being within commuting distance between the two cities which house universities would be an asset. This would encourage more athletes to pursue sports for a longer period of time.

The setting is ideal for two reasons. It is far enough removed to become a singular entity, yet close enough to other places of interest, that the athletes can concentrate on training without becoming bored with the area. Also, as has been proven elsewhere, a dynamic setting, such as Canmore, has a positive effect on athletic performance, thus increasing the attractiveness of the site as a location for world championships.

CONCLUSION

Within the scope of this investigation, the principal objective is to select and create a place which is of Olympic caliber, as defined by the ancients' standards.

As previously stated in the ideas of a site, the site should be a singular entity dissolving any political ties with government or bureaucracy. It should be a place where people compete against people. The site should be situated in such a location that the environment generates an aura of power and dignity. Ultimately, this area should spiritually, morally and physically give all who compete or witness, a conscious inspiration.

If one was to consider the perpetuation of the Olympic spirit and sport in general, there would be no contest between the strength and clarity of the Canmore site versus the congestion of the civic proposals.

SITE ANALYSIS

CLIMATE

The major effect of the climate will be on the performance of the athletes. Although there are ideal conditions in which to compete, each of these sports has a range where the environmental conditions are tolerable. The wind should not exceed 20 km/h, the temperature should not drop below -15°C. If possible, the competition surfaces should not be exposed to fluctuations in sunlight for a prolonged period of time.

Within the confines of the site, the mean temperature ranges from 9.5°C to -8.5°C and the wind remains constant from the southwest with a velocity of 5.6 - 8.8 km/h. The site is situated within a wind shadow for most of the period in question. Thus, the effect of wind is negligible and the most important factor becomes temperature.

For this period, September through November, artificial support equipment will be required to sustain the competition surfaces. During this time a portion of each surface will be exposed to sunlight. Sun shading devices may be required for both bobsled and luge.

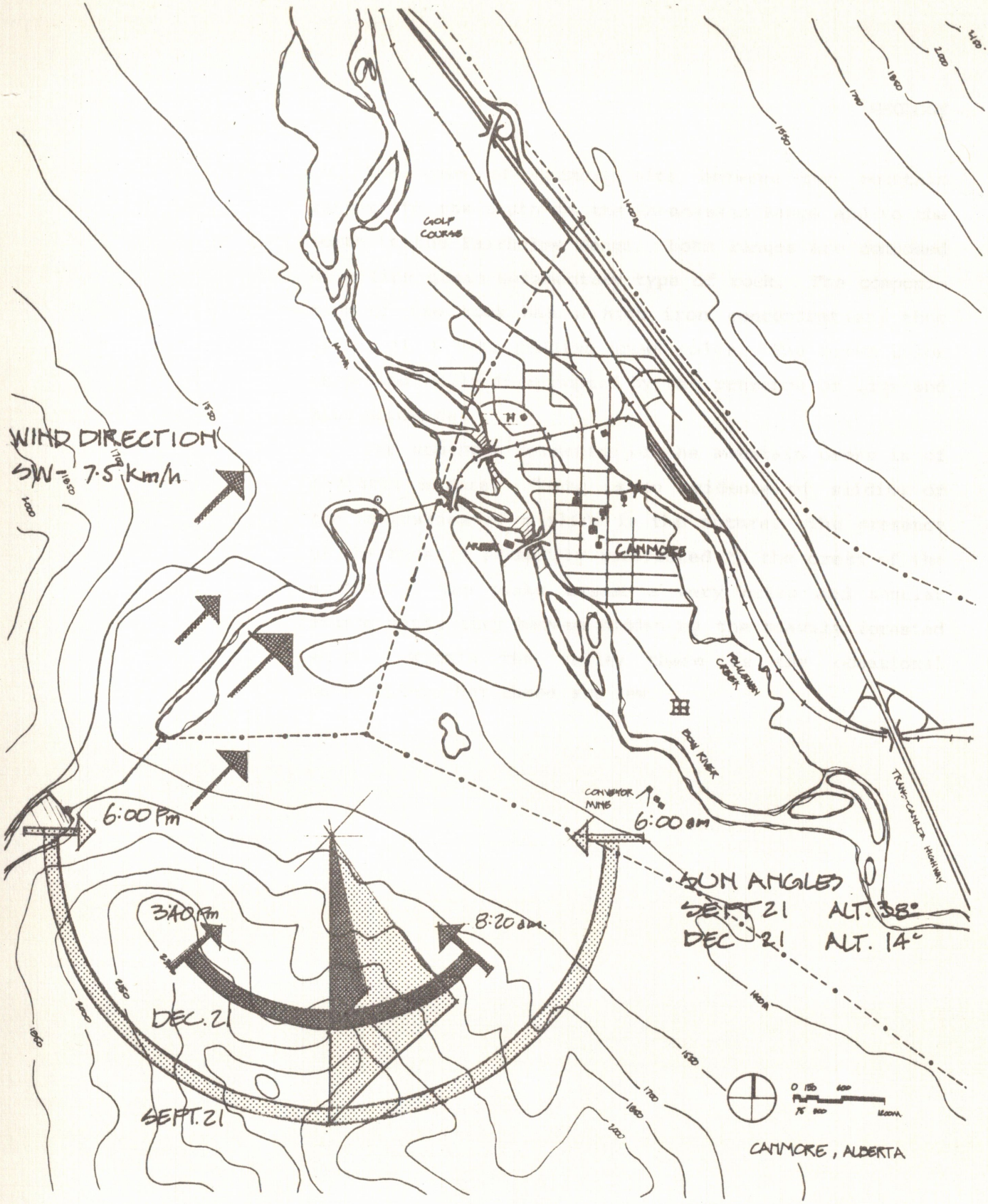
The Olympics are an event of world recognition. The stature of the games depends upon the success of the site. The competition season runs from January-March, with the Olympics being held during the month of February. This involvement can be influenced by the type and extreme of the climatic conditions.

Below is a chart of the type of weather the Canmore area may experience during the Olympic Games.

1982	Temperature Celsius Max.	Min.	Precipitation Snow (cm)	Rain (mm)	Bright Sunshine in Unshaded Areas (hrs)
Feb 1	-1.5	-19.5	3.2		3.5
2	-10.0	-16.0	0.2		.5
3	-13.0	-30.0	--		4.2
4	-9.0	-33.0	--		3.5
5	-7.5	-23.5	--		2.9
6	-6.5	-14.0	T		3.3
7	-5.0	-23.5	--		5.6
8	-11.5	-25.5	--		5.6
9	-10.0	-28.5	--		5.5
10	-9.5	-16.0	T		.0
11	-5.5	-16.0	.5		4.5
12	-9.5	-19.0	7.0		.0
13	-0.5	-16.5	3.0		2.0
14	-4.0	-6.5	4.7		.0
15	+7.0	-10.0		T	4.8
16	+6.0	+1.5		T	2.9
17	7.0	0.5	T	T	4.6
18	3.5	-4.0	6.0		2.0
19	5.5	-1.0	T		7.7
20	6.5	0.5		3.3	2.5
21	-0.5	-11.0	T		.0
22	-0.5	-12.0	--		6.1
23	-8.0	-14.5	0.8		.0
24	-0.5	-20.0	--		8.0
25	-1.5	-20.5	--		6.2
26	5.0	-17.5	1.0		4.5
27	3.5	-10.5	T		4.9
28	4.0	-4.0	0.8		5.7

Month	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Mean Temp °C	9.5	5.2	-4.0	-8.0	-8.2	-5.5	-3.4
Max Temp °C	18.6	10.6	-2.5	-4.8	-5.5	-2.2	3.3
Min Temp °C	2.3	-1.5	-10.8	-9.7	-13	-15	-8.6
Wind Speed (kph)	5.6	8.8	8.5	8.0	6.8	7.5	8.2
Prevailing Direction	SW	SW	SW	SW	SW	SW	SW
Precipitation (mm)	51	27	42	50	52	23	43.8
Type of Precipitation							
Rain (mm)	51	24	2.3	6	T	T	T
Snow (cm)	0	20	37	54	26	27	44.6
Dew Point °C	2	-2.1	-10.8	-14	-17	-12.5	-10.6
Standing Snow Cover (cm)	0	0	2.7	12.5	18	17	22

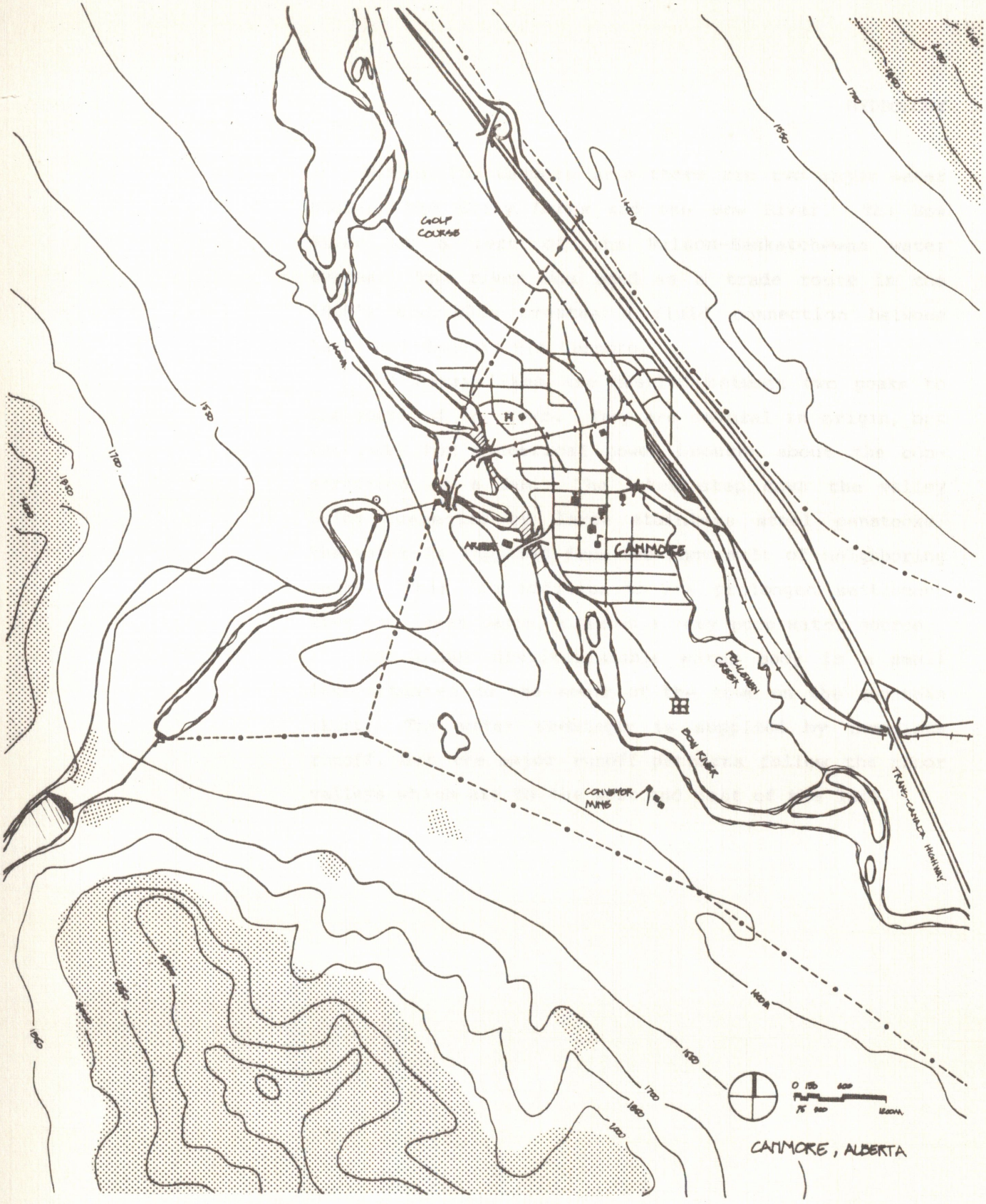
* Data is an average over a ten-year period (1972-1982).


WIND DIRECTION
SW - 7.5 Km/h
GOLF COURSE
CANMORE
POLLEYMAN CREEK
BOW RIVER
TRANS-CANADA HIGHWAY
CONVEYOR MINE
6:00 PM
6:00 AM
3:40 PM
8:20 AM
DEC. 21
SEPT. 21
SUN ANGLES
SEPT. 21 ALT. 38°
DEC 21 ALT. 14°
CANMORE, ALBERTA

CLIMATE

The town of Canmore sits between two mountain ranges; to the south is the Kananaskis Range and to the north is the Fairholme Range. Both ranges are composed of a fine grain sedimentary type of rock. The composition of the rock has a high iron concentration, thus giving it a warm reddish brown color. The brown color is periodically interrupted by the presence of lime and zinc deposits.

The southern formation of the mountain peaks is of a stable nature. There is no evidence of sliding or the indication of a slide in the future. The presence of the rock is primarily restricted to the crest of the mountain. The peaks assume a very crisp and angular stance until they become hidden by the heavily forested skirt. Within the valley there is the occasional outcropping, but these are few.

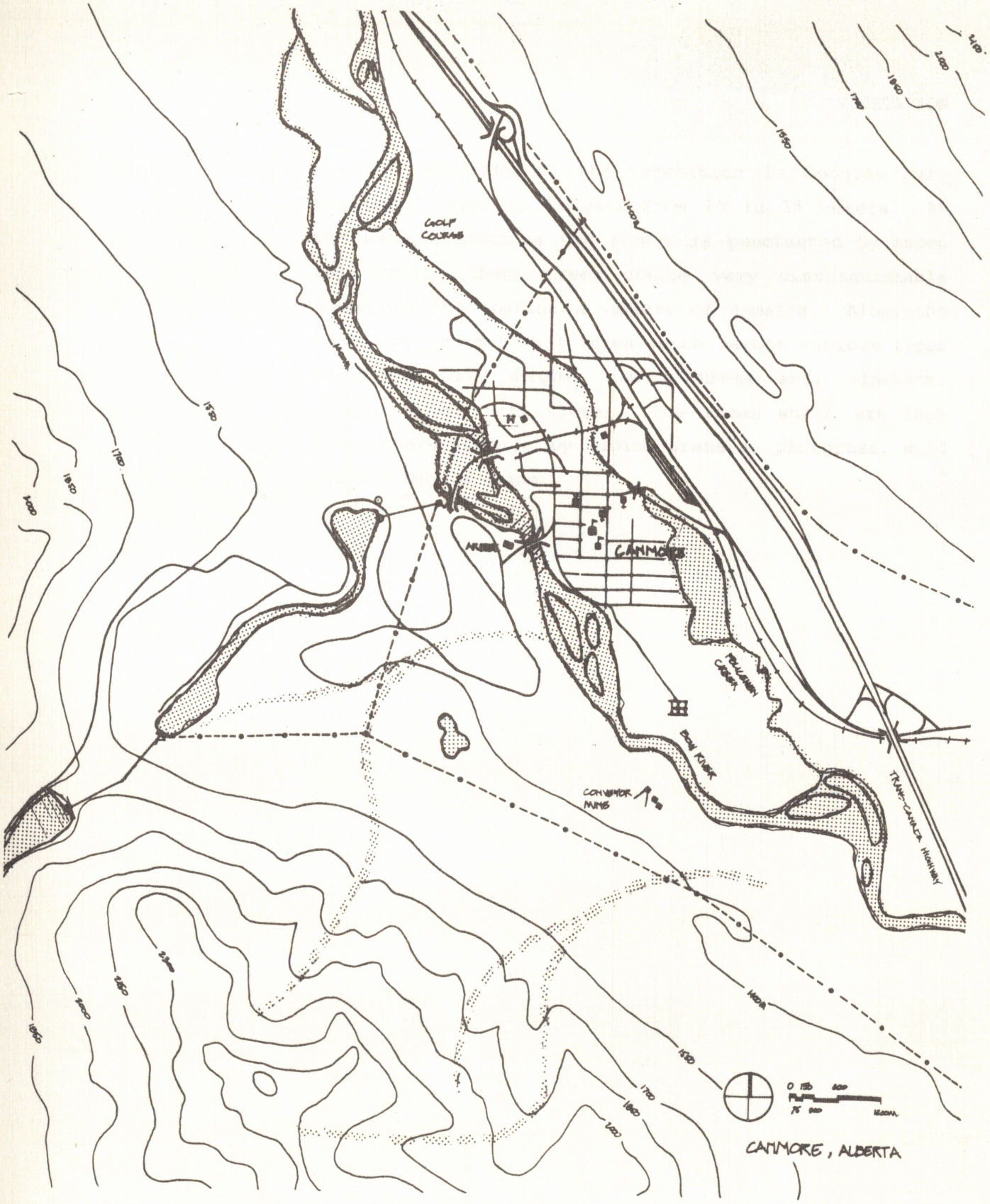

GOLF COURSE
CANMORE
TOWN
CONVEYOR MINE
TRANS-CANADA HIGHWAY
CANMORE, ALBERTA

GEOLOGY

Within the Canmore area there are two major water bodies; the Spray Lakes and the Bow River. The Bow River is a part of the Nelson-Saskatchewan water system. The river was used as a trade route in the 1800's and thus creates a fluid connection between Banff and Calgary via Canmore.

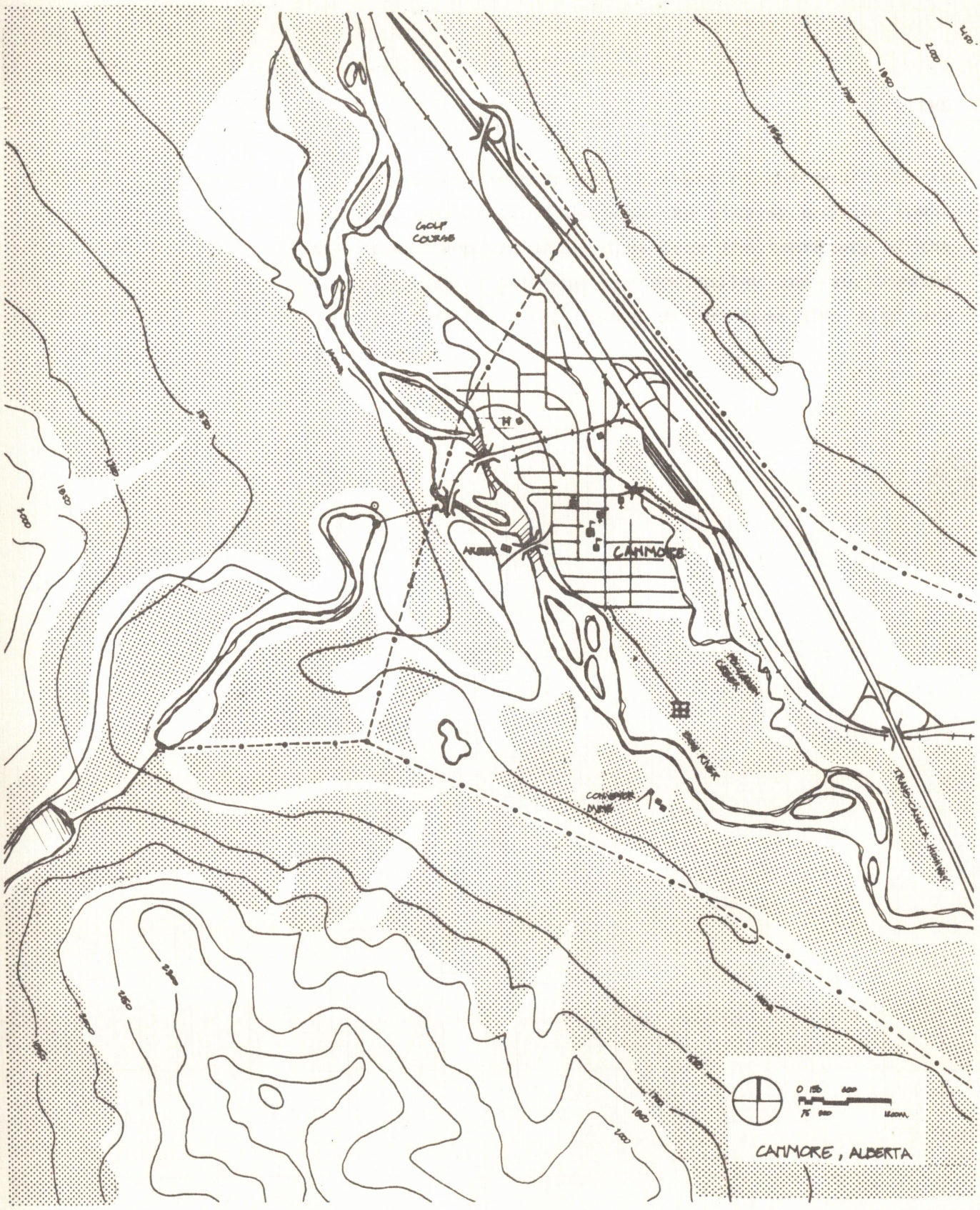
The Spray Lakes are nestled between two peaks to the south of the town. They are natural in origin, but the need for electrical power brought about the construction of a dam. The lakes step down the valley being connected by large stainless steel penstocks. The water is supplied from the snow melt of neighboring peaks. This, in addition to its prolonged settlement time and inert basin, creates a very pure water source.

The other distinguishable water body is a small lake situated to the south of the town on the mountain skirt. The water seemingly is supplied by immediate runoff, but the major runoff patterns follow the minor valleys which are to the west and east of the lake.


GOLF COURSE
CANMORE
BOW RIVER
TRANS-CANADA HIGHWAY
CANMORE, ALBERTA

HYDROLOGY

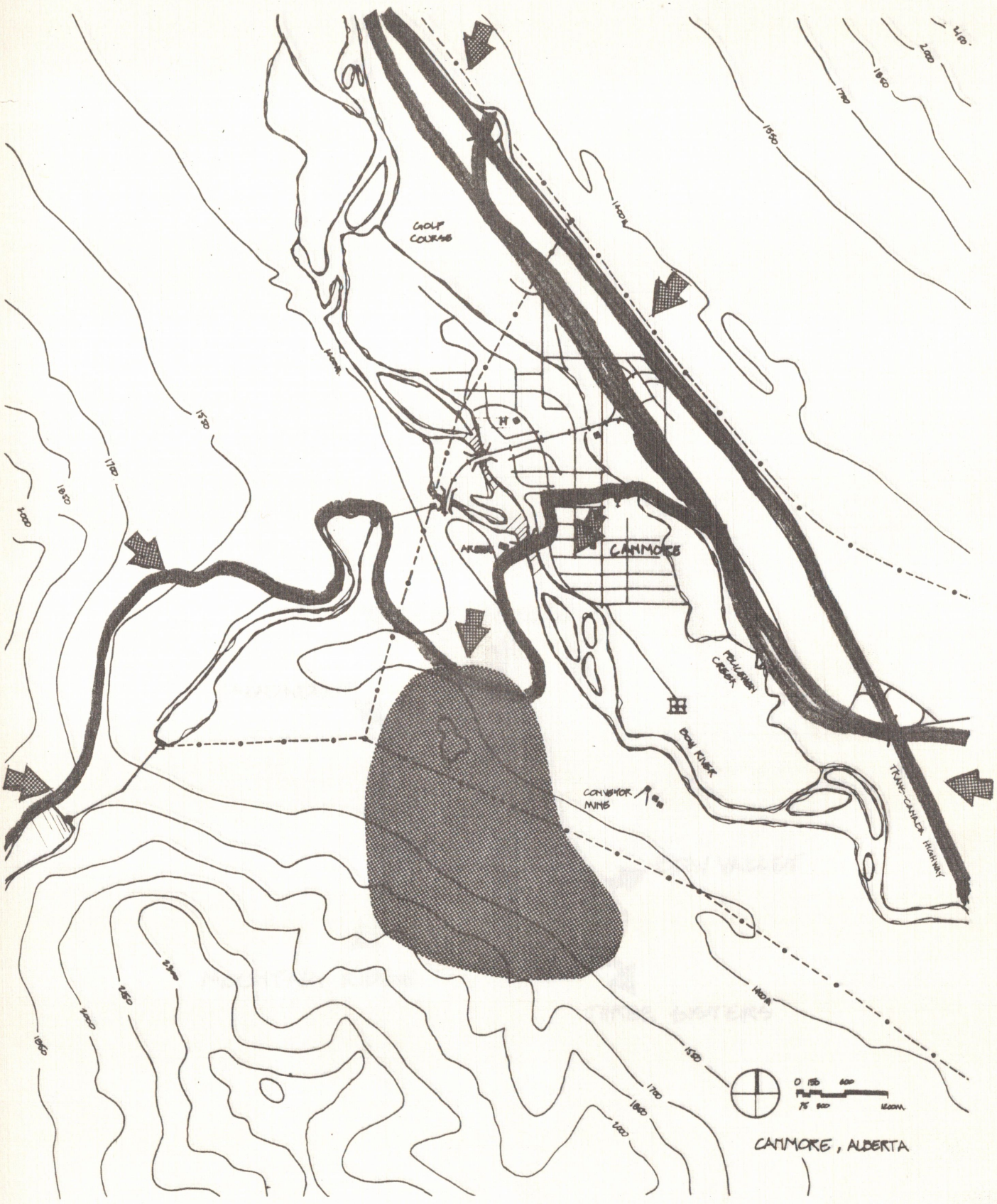
The majority of the vegetation is Douglas Fir. The trees tower to heights from 10 to 15 meters. At the lower elevations the forest is punctuated by Aspen and Popal. These trees create very distinguishable edges and thus define a variety of domains. Along the edges are transitional zones which harbor various types of bushes and shrubs. Among these are: ninebark, snowberry and twin flower. The areas which are thus defined are covered by alpine grasses; pinegrass, wild rye and needle grass.



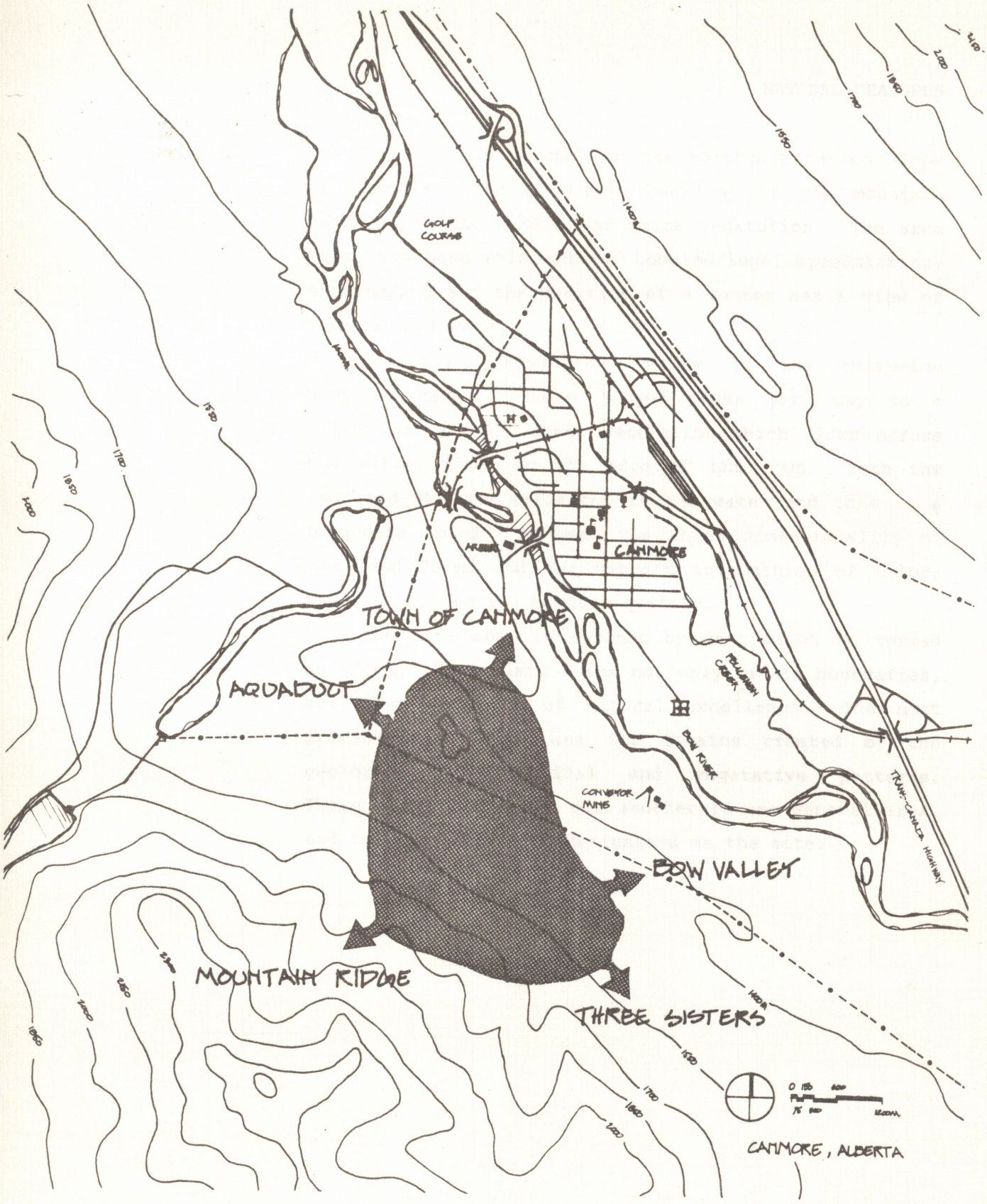
VEGETATION
10-15m.

VIEWS

The site, perched on the skirt of the mountain, is visually accessible from both the highway and the town. The views from the site range from the immediacy of the mountains to a panorama of the valley and surrounding ranges. None of the views to or from the site are undesirable.



VIEW and CIRCULATION
to SITE



VIEW from SITE

The site is perched on the northeast facing slope of Canmore. The geometric backdrop of the mountain peaks melt into a skirt of thick vegetation. The area which has been selected for bobsled/luge, speedskating, ski jumping and the creation of a center has a view of commanding reality.

Directly across the valley is the Fairholme mountain range. These jagged peaks give way to a blanket of vibrant green vegetation which flows across the valley floor to the edge of the town. Both the land and sky are reflected in the water and this is a turquoise color. Between the three dimensionality of the land forms and the vibrant interaction of color, the area projects a magical quality.

The site area is defined by what might be termed as edges. These land forms not only create boundaries, but also a flavor of natural excellence. The most prominent of those are the domains created by the geological, hydrological and vegetative patterns. These patterns overlap one another in one general area, and this area has been designated as the site.

INTRODUCTION

Within the realm of international sports, Canada has been highly competitive and has enjoyed Olympic supremacy. All of the victories, excluding Lake Placid, have been staged in Europe. The reason for this is twofold: first, the majority of the competitors are based overseas; secondly, Canada, or North America, excluding Lake Placid, has no facilities to successfully accommodate such events of international caliber. Thus, with Calgary being selected as the host city for the XV Winter Olympiad, the opportunity exists to create facilities which would be able to accommodate world class competition and, in addition, to introduce Canadians to sports at the highest possible level.

SCOPE

Within the Canmore area are sited all but two events - hockey and figure skating. These two facilities have been left in Calgary because they are primarily indoor activities and already have existing facilities within the city. The remaining sports have also been clustered into groups of similar qualities or site criteria.

- Hockey and figure skating
- Nordic skiing and biathlon
- Alpine skiing
- Speedskating, bobsled, luge and ski jump

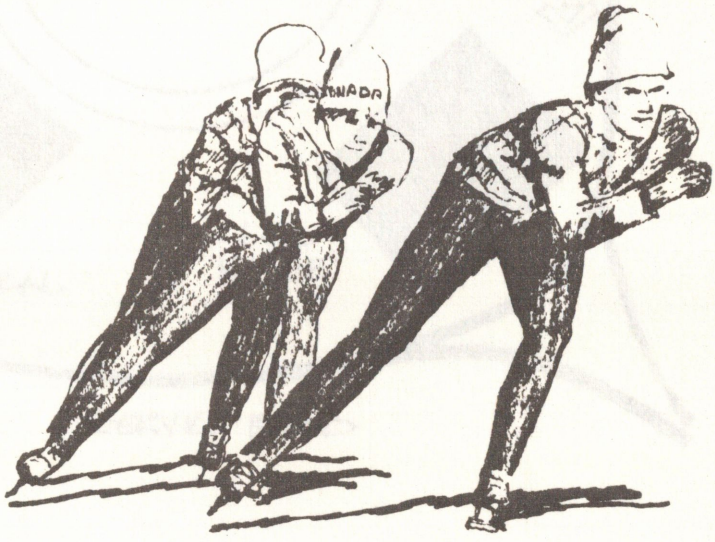
This thesis will be a study of the speedskating, bobsled/luge and ski jumping events. Unlike the other three clusters, these events have few similarities and thus create a greater contrast in both movement and required equipment. The site selected for these facilities has great visual presence within the area and thus could be identified as a center for the games. Within the organization of the competition paths will be a "center." This area will be developed in such a fashion that it can accommodate the opening ceremonies as well as the altar to house the flame.

The programming will thus deal with three distinct types of movement. Each of these sports has few similarities, which will reduce any problems of conflict between siting or sport specific criteria. They have been selected to be studied on the grounds of their diversity in movement and the possibility of creating a kinetic atmosphere, through the cluster organization.

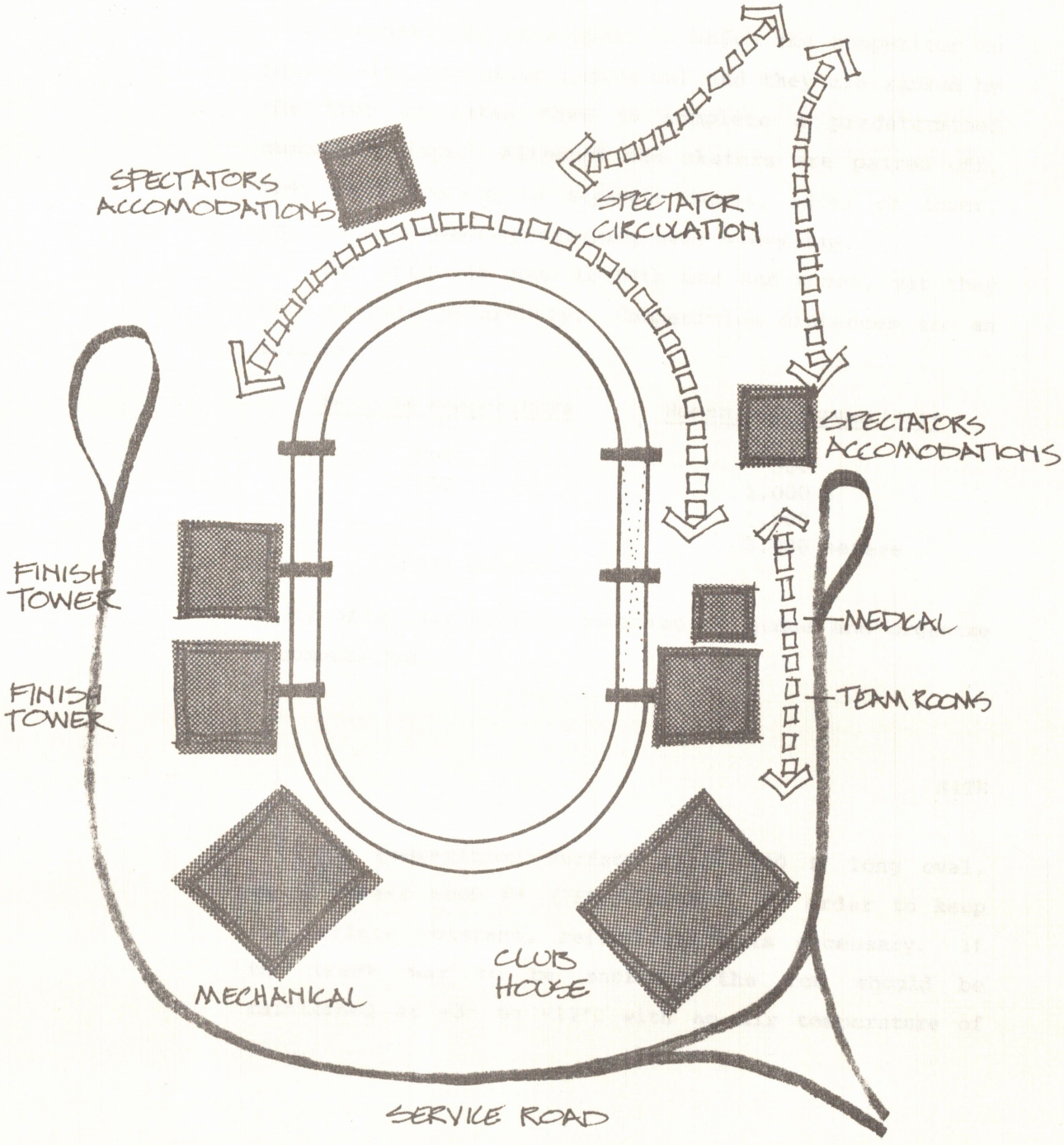
All of the three, speedskating, bobsled/luge and ski jumping, will be placed in close proximity to one another, such that they will generate kinetic energy in addition to strengthening the image of the overall facilities.

Each facility will be able to be read and defined as a singular entity. Yet, they will reinforce one another by their immediate physical relationship. The common denominator of the three will be a center, a space in which the opening ceremonies will be held. This will be defined by the intersection of the competition surfaces. The paths may unite, collide, or harmoniously pass through one another - the end result being a point of reference. This will allow each sport to be recognized for its physical merits in addition to being defined as a component within an organism.

The three facilities will be discussed in order of physical site requirements, organization, competition surface, competitors and spatial requirements.



SPEEDSKATING



SPORT

Speedskating is a sport in which the competitor is paired with one other individual and they are ranked by the time it takes them to complete a predetermined number of laps. Although the skaters are paired off, they each compete in separate lanes, outer or inner, which are changed by crossing over every lap.

The sport is open to both men and women, yet they each compete separately. Competition distances are as follows:

Men, 78 competitors	Women, 50 competitors
500	500
1,000	1,000
1,500	1,500
5,000	3,000 meters
10,000 meters	

Fifty officials will be required to judge and organize a competition.

SITE

The competition surface is a 400 M long oval, which covers 6000 M^2 (76M x 188M). In order to keep the surface constant, refrigeration is necessary. If the track was to be enclosed the ice should be maintained at -3° to -12°C with an air temperature of 10°C.

ORIENTATION

The oval shaped track does not have any required orientation, yet it would be advantageous to have the finish straight running in a southeast direction. Like bobsled/luge and ski jump, it would be ideal if the track were situated in a place where the surface isn't affected by direct sunlight. If the ice surface is placed in the sun, it will vary throughout the duration of a competition.

Speedskating will require the following facilities.

- Finish tower
- Medical center
- Team rooms
- Club house
- Spectator accommodations
- Mechanical

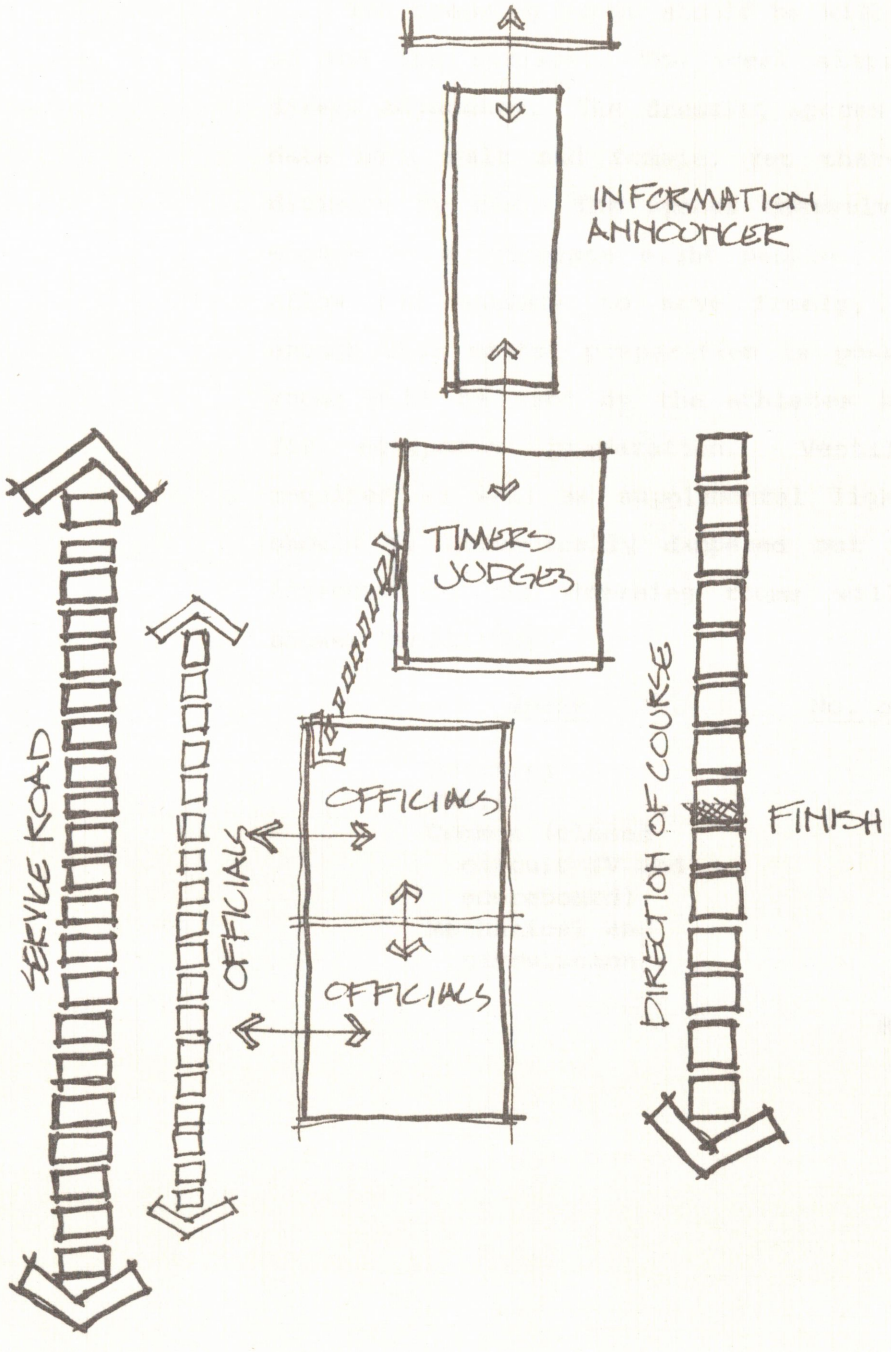
FINISH TOWER

Due to the characteristics of the oval, the points of departure and arrival seem relatively arbitrary. On the track are five locations of starts and two points of finish. Adjacent to the two points of termination will be finish towers. The space will have direct visual access to the track starting points. This space will house both timers and judges. Between the two towers will be a space for the jury room, information services and announcers. These spaces will constitute a common support facility for the officials, and will house a lounge space and toilets.

The finish towers and adjoining spaces should have clear visual access to both the start and finish line. They should be acoustically dampened so that conversations can be conducted without exterior interference. The clerical areas, information services and jury rooms should be separated in such a fashion that they can be used for private discussions and won't interfere with the recording of the event. In addition to their acoustical requirements, artificial lighting will be required in all spaces.

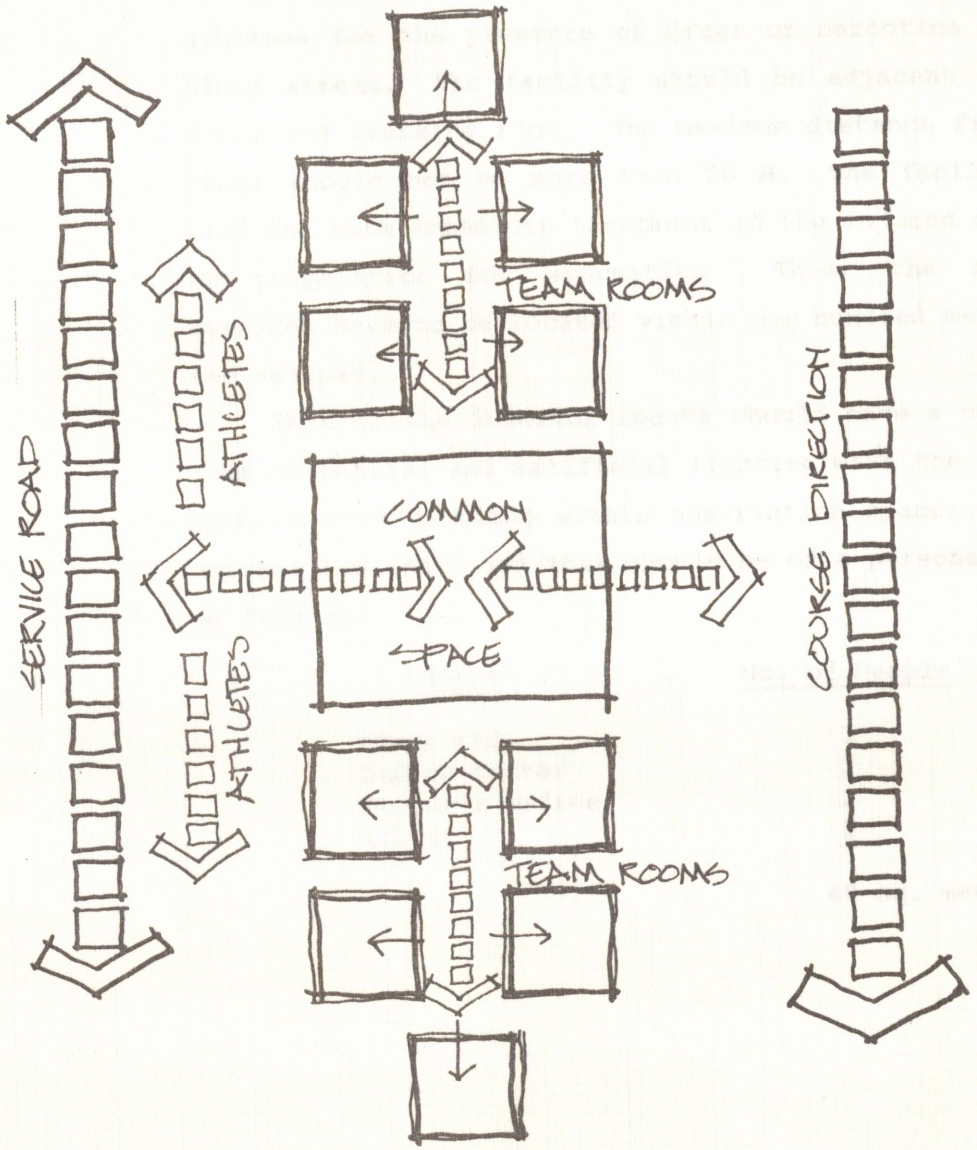
Space	No. of People
Timers	8
Jury room	6
Information service	2
Announcers	2
Officials warming	20
Closed circuit TV	15
Toilets	5
Mechanical and circulation	7%
	73 sq. meters

JUDGE'S TOWER



The dressing rooms should be within fifteen meters of the ice surface. The ideal situation would be a direct adjacency. The dressing spaces have to accommodate both male and female, yet there will not be a division by sex. The spaces themselves will be large enough to accommodate eight people. The space should allow the athlete to move freely, yet be intimate enough that mental preparation is possible. The team rooms will be used by the athletes between races and for equipment preparation. Ventilation will be required as well as supplemental lighting. The space should be acoustically dampened but not sound proof. Adjacent to the dressing rooms will be toilet and shower facilities.

Space	No. of People
Dressing	80
Toilet	6
Common (closed circuit TV and scoreboard)	25
Mechanical and circulation	7%
	870 sq. meters

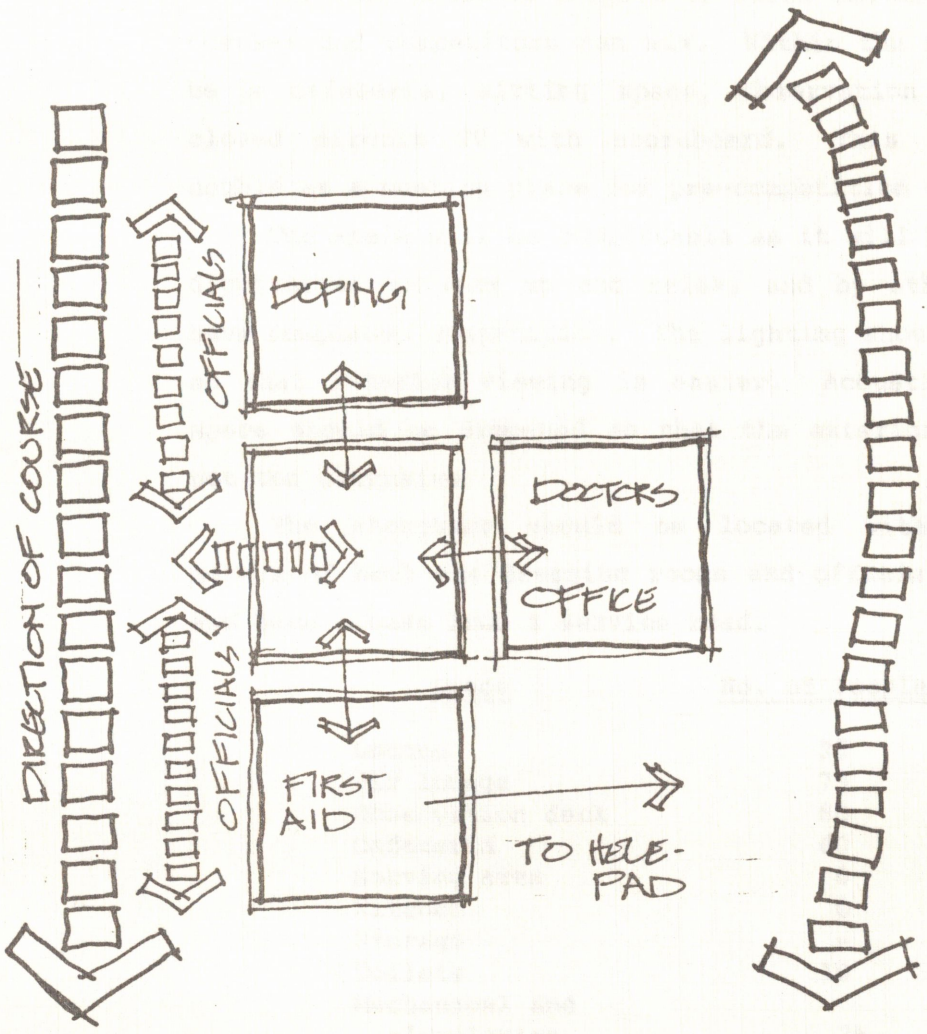

SERVICE ROAD
ATHLETES
ATHLETES
TEAM ROOMS
COMMON
SPACE
TEAM ROOMS
COURSE DIRECTION

MEDICAL CENTER

The purpose of the medical center is twofold. First, the space is used to insure the health and safety of the competitors. The second purpose is to test the athletes for the presence of drugs or narcotics in the blood stream. The facility should be adjacent to the track and dressing room. The maximum distance from the track should not be more than 20 M. The facility is used for both immediate treatment of the injured as well as preparation for evacuation. Thus, the medical services have to be located within one hundred meters of the helipad.

Most of the interior spaces should have a combination of natural and artificial lighting with the supplement of task lighting within observation spaces. These volumes are small and thus should be of a personal scale or feeling.

Space	No. of People
First aid	3
Doping center	3
Doctor's office	3
Toilet	1
	40 sq. meters

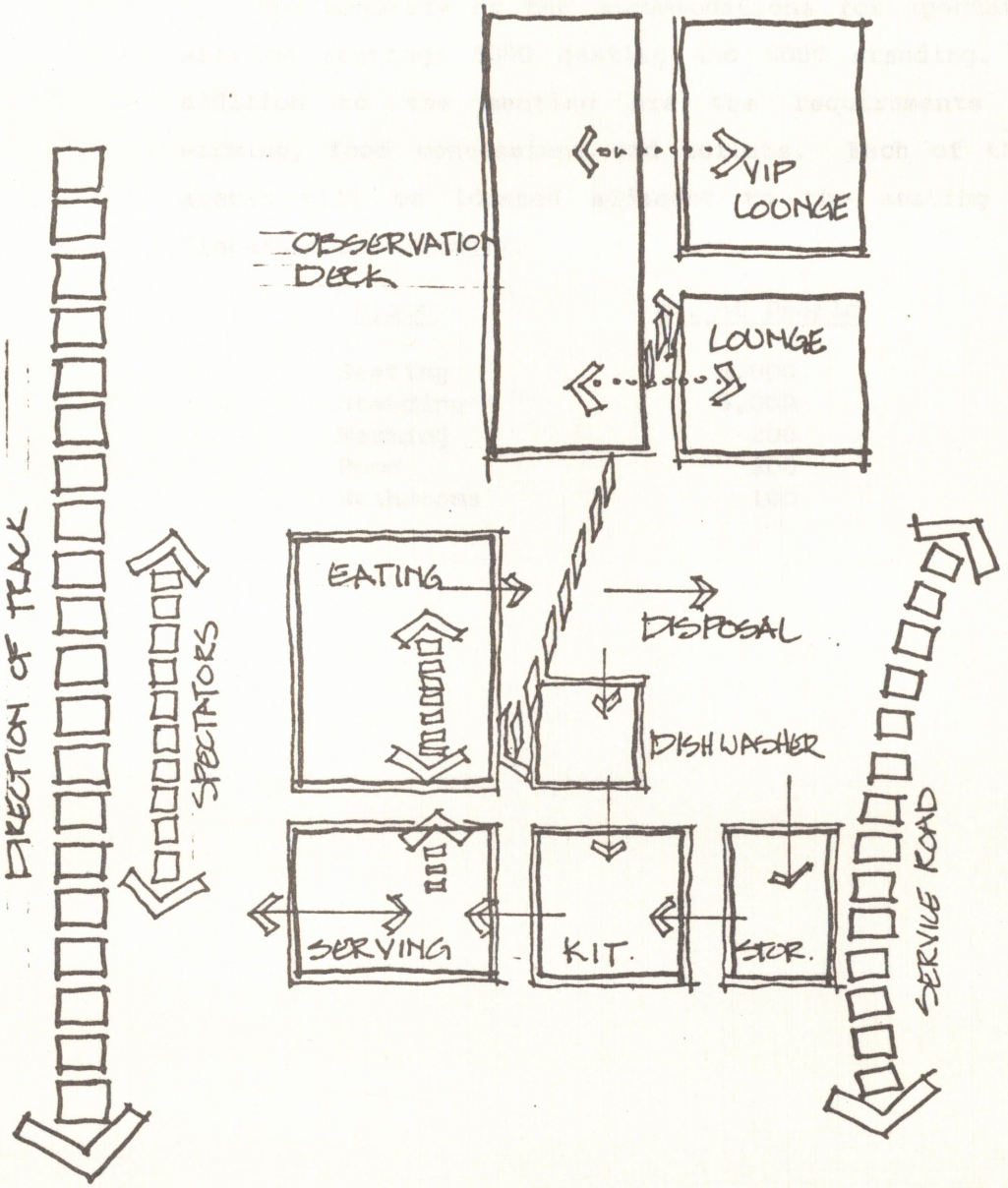

DIRECTION OF COURSE
OFFICIALS
DOPING
DOCTORS
OFFICE
OFFICIALS
FIRST AID
TO HELI-PAD
SERVICE ROAD

The club house is a space in which the dignitaries, coaches and competitors can mix. Within the space will be a cafeteria, sitting space, observation deck and closed circuit TV with scoreboard. This space may double as a meeting place for pre-competition meetings.

The space will be comfortable as it will be used by dignitaries to warm up and relax, and by athletes who have completed competition. The lighting should be soft so that exterior viewing is easier. Acoustically the space should be dampened so that the exterior noise is not too obtrusive.

The structure should be located within thirty meters of both the dressing rooms and official seating, and have access from a service road.

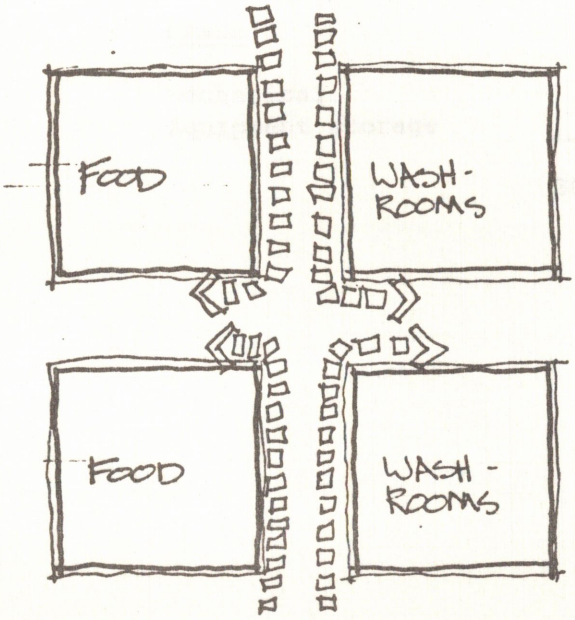
Space	No. of People
Lounge	25
VIP lounge	75
Observation deck	80
Cafeteria	60
Serving area	6
Kitchen	6
Storage	-
Toilets	10
Mechanical and circulation	7%
	600 sq. meters


DIRECTION OF TRACK
SPECTATORS
OBSERVATION DECK
VIP LOUNGE
LOUNGE
EATING
DISPOSAL
DISHWASHER
SERVING
KIT.
STOR.
SERVICE ROAD

SPECTATOR ACCOMMODATIONS

The majority of the accommodations for spectators will be seating; 5000 seating and 5000 standing. In addition to the seating are the requirements for warming, food concessions and toilets. Each of these spaces will be located adjacent to the seating and dispersed accordingly.

Space	No. of People
Seating	5,000
Standing	5,000
Warming	200
Food	200
Washrooms	100


FOOD
WASH-
ROOMS
FOOD
WASH-
ROOMS

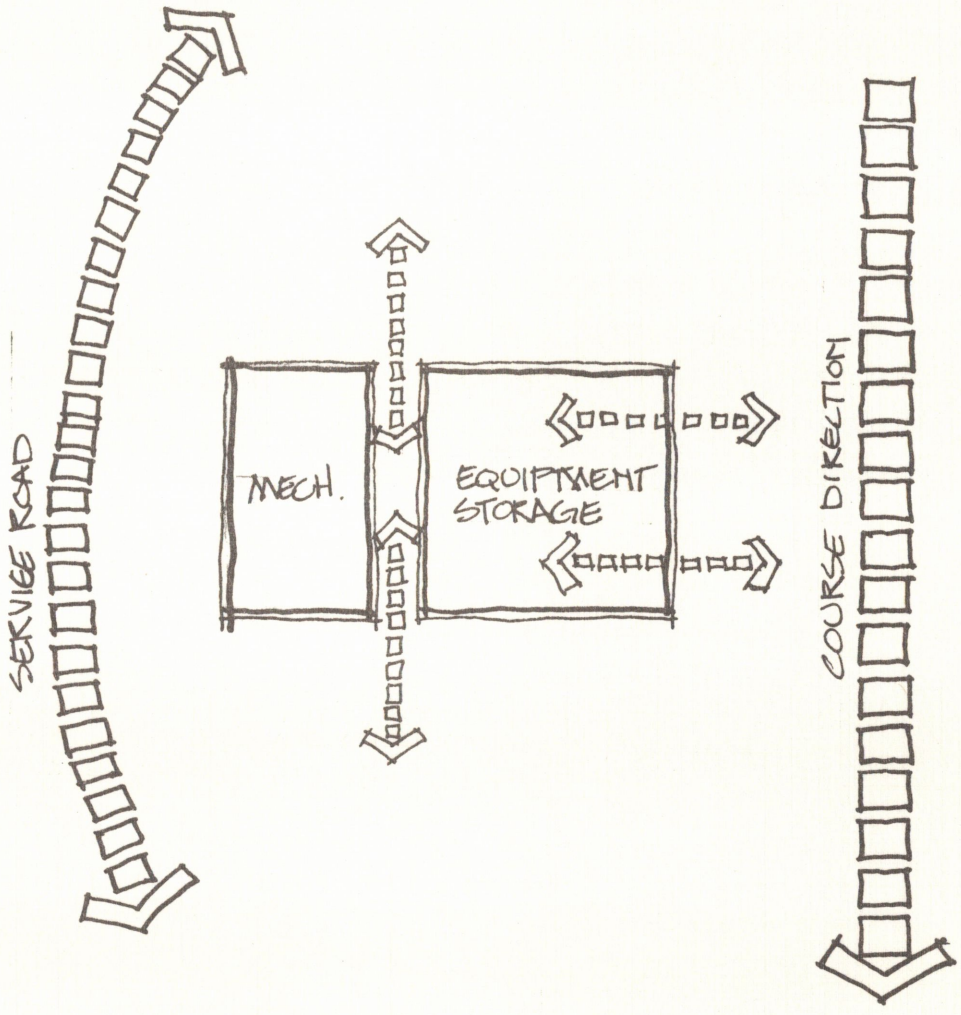
The mechanical space should be located close enough to the track that maintenance machines have easy access. This space would be shared with the artificial support equipment. This support equipment may be shared with the other three sports.

Space

Mechanical
Equipment storage ___

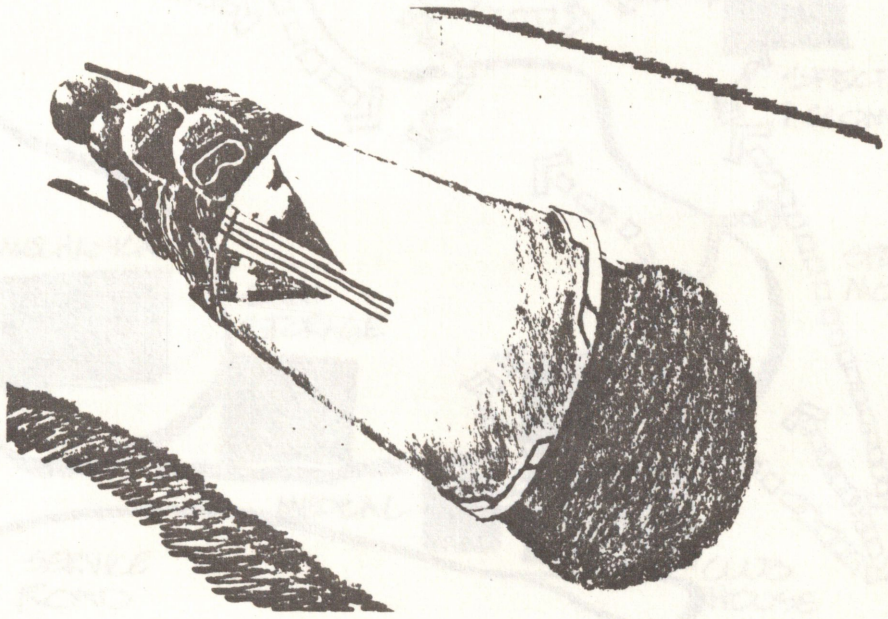
300 sq. meters

MECHANICAL SPACE

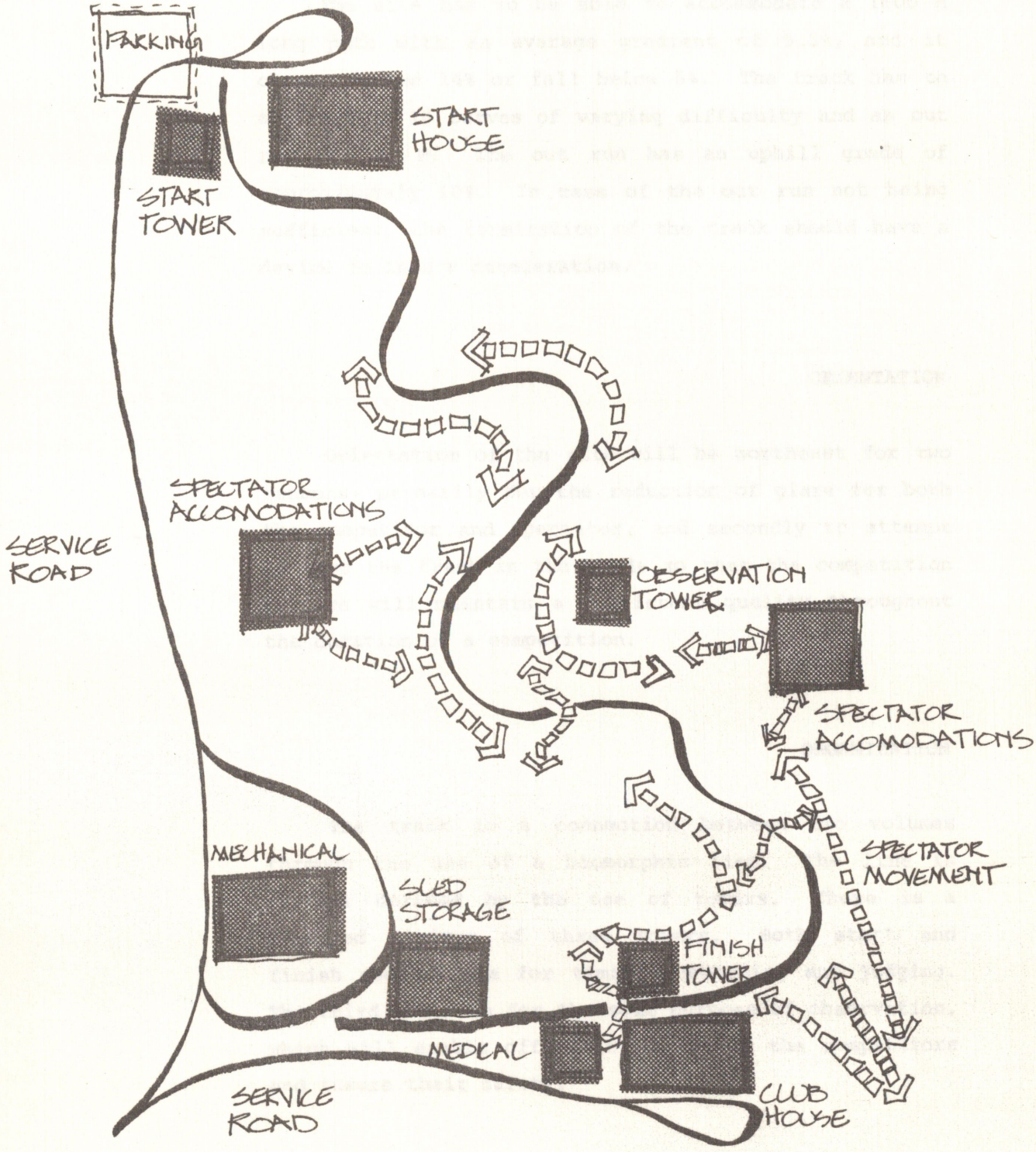


These are sports which, after the initial explosive surge of energy from the sled and team, rely heavily on the physical properties of the earth. With the assistance of gravitational forces the bobsleds and luge are able to obtain speeds of over 130 and 100 km/h respectively. The course is a biomorphically shaped sheet of glare ice which guides the competitor over the topography of the site.

The two sports, bobsled and luge, illustrate many similarities. In fact, it is possible for the two to share the same track. In addition to this, they may co-use either the start house or finish tower. At this time each sport will be programmed separately.



BOBSLED


PARKING
START HOUSE
START TOWER
SPECTATOR ACCOMODATIONS
SERVICE ROAD
OBSERVATION TOWER
SPECTATOR ACCOMODATIONS
SPECTATOR MOVEMENT
MECHANICAL
SLED STORAGE
FINISH TOWER
MEDICAL
SERVICE ROAD
CLUB HOUSE

SITE

The site has to be able to accommodate a 1600 M long path with an average gradient of 9.5%, and it cannot exceed 14% or fall below 5%. The track has to accommodate 16 curves of varying difficulty and an out run of 194 M. The out run has an uphill grade of approximately 10%. In case of the out run not being sufficient, the termination of the track should have a device to insure deceleration.

ORIENTATION

Orientation of the site will be northeast for two reasons: primarily for the reduction of glare for both the competitor and spectator, and secondly to attempt to have the track in the shade so that the competition surface will maintain a consistent quality throughout the duration of a competition.

ORGANIZATION

The track is a connection between two volumes through the use of a biomorphic line. The line is further defined by the use of towers. There is a required minimum of three towers. Both start and finish require one for timing, recording and judging. The third tower is for the sole purpose of observation, which will enable officials to locate the competitors and insure their safety.

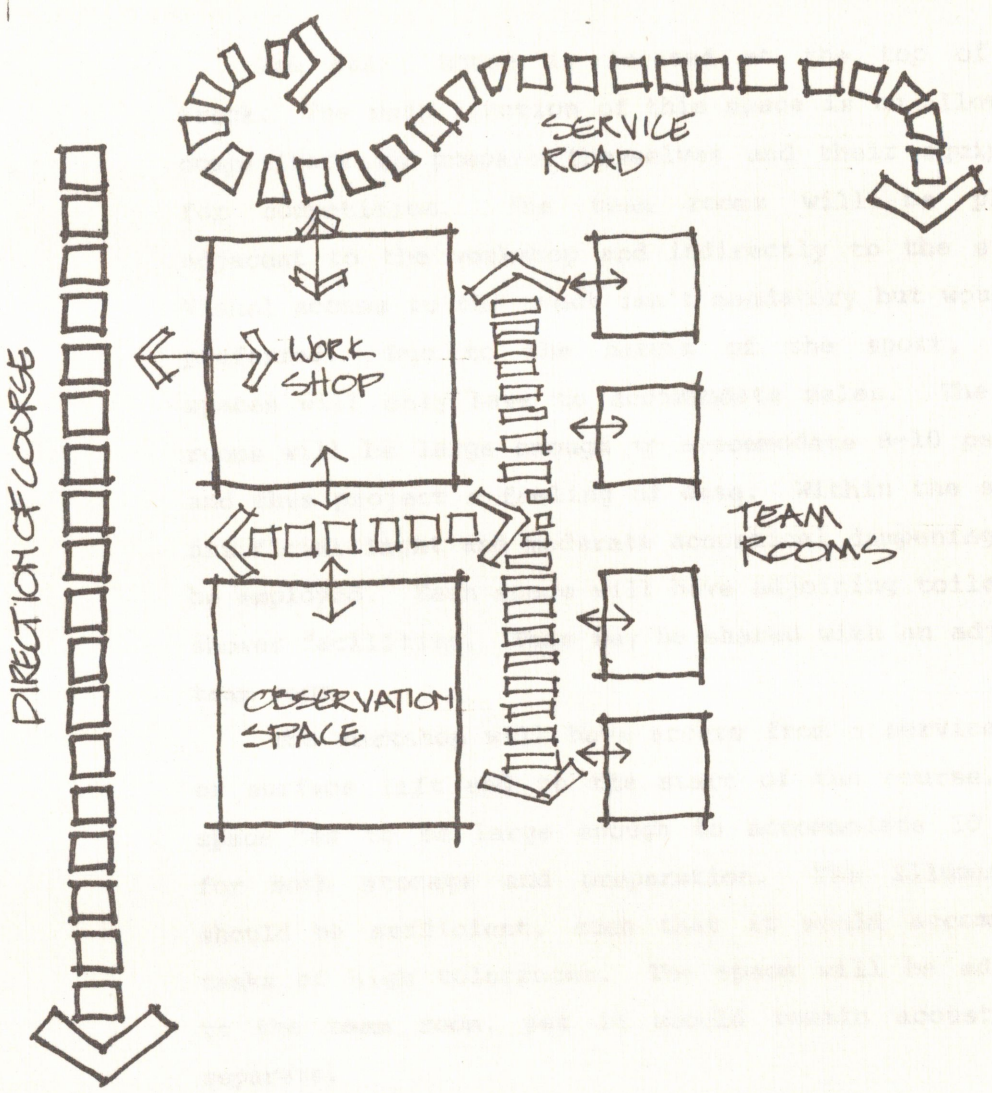
SPACES

Bobsled requires several spaces for structures.

- Start house
- Start tower
- Observation tower
- Finish tower
- Club house
- Medical center
- Mechanical

Competitors:	117, all male
Events:	2 man and 4 man
Officials:	50-60
Spectators:	8,000 - 10,000

START HOUSE


SERVICE ROAD
WORK SHOP
TEAM ROOMS
OBSERVATION SPACE
DIRECTION OF COURSE

START HOUSE

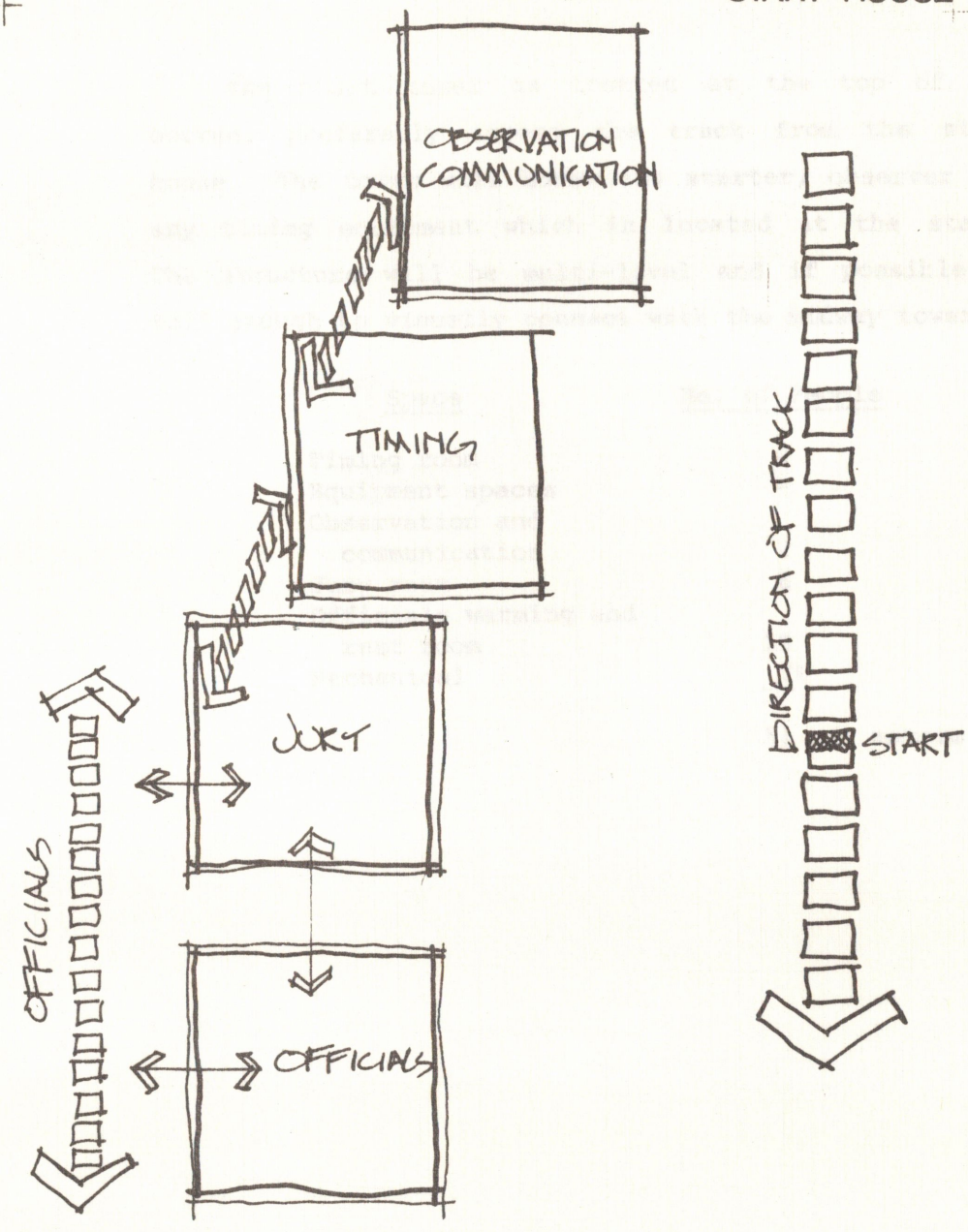
The start house is located at the top of the track. The main function of this space is to allow the competitors to prepare themselves and their equipment for competition. The team rooms will be placed adjacent to the workshop and indirectly to the start. Visual access to the track isn't mandatory but would be preferred. Due to the nature of the sport, these spaces will only have to accommodate males. The team rooms will be large enough to accommodate 8-10 people, and thus project a feeling of ease. Within the space, artificial light and moderate acoustical dampening will be employed. Each space will have adjoining toilet and shower facilities. This may be shared with an adjacent team room.

The workshop will have access from a service road or surface lift and to the start of the course. The space has to be large enough to accommodate 10 sleds for both storage and preparation. The illumination should be sufficient, such that it would accommodate tasks of high tolerances. The space will be adjoined to the team room, yet it should remain acoustically separate.

Also adjoined to the team rooms will be an observation space. In addition to the space having visual access to the track and course, it will house closed circuit TV and a scoreboard. This space will be accessible by both teams and coaches.

Space	No. of People
Team rooms	117
Workshop	10 sleds
Washroom	8
Observation	15
Mechanical and circulation	7%
	780 sq. meters

START HOUSE


OBSERVATION
COMMUNICATION
TIMING
JURY
OFFICIALS
OFFICIALS
DIRECTION OF TRACK
START

START TOWER

The start tower is located at the top of the course, preferably across the track from the start house. The tower will house the starter, observer and any timing equipment which is located at the start. The structure will be multi-level and if possible be tall enough to visually connect with the midway tower.

Space	No. of People
Timing room	6
Equipment spaces	-
Observation and communication	2
Jury room	6
Officials warming and rest room	15
Mechanical	7%
	51 sq. meters

OBSERVATION TOWER

The observation tower will be located about at the 800 M mark. The sole purpose of the tower is to sight the competitors and relay their progress. Thus, the building will be of several levels.

Space	No. of People
Observers	2
Officials' warming	15
Toilets	2
Equipment	-
	32 sq. meters

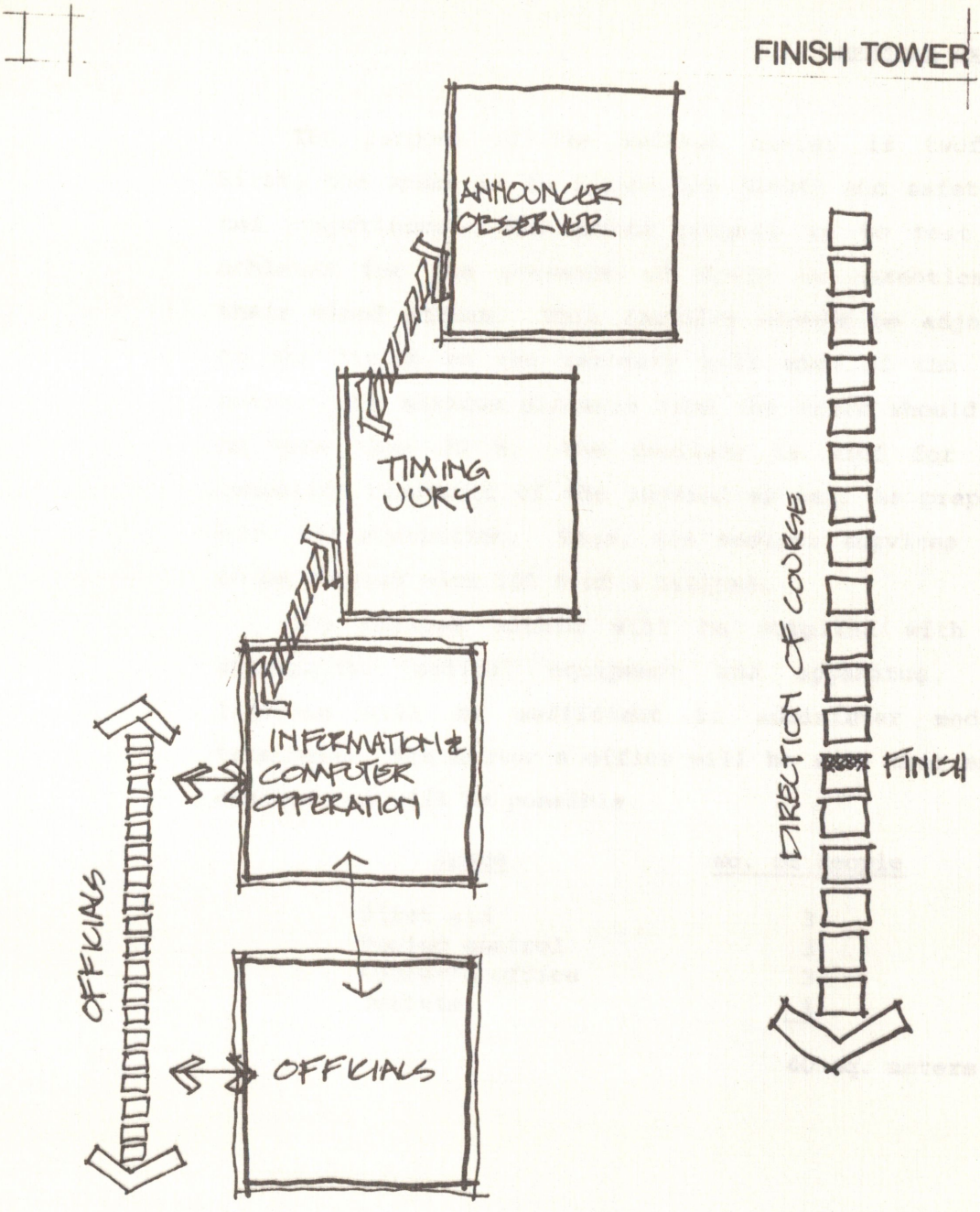
OBSERVATION TOWER

FINISH TOWER

The finish tower will be located at the base of the track, adjacent to the finish line and opposite the club house. The primary purpose of the structure is to time and record the accomplishments of the competitors. The tower will be three or four stories in height. The third level will be used for the purpose of observation. This space will house the announcer along with several other people to observe the progress of the competition. The second level will be used for timing and judging. These two spaces should be acoustically isolated from each other as well as the outside activity. It is imperative that the view from this be non- obstructed. The illumination within the spaces will be sufficient to conduct clerical tasks, yet be such that vision isn't obstructed by reflection.

The third function of the tower or adjoining space is to provide a space for the officials to relax and warm up. This will be located on the ground level or first floor. The space will provide a comfortable seating area with a closed circuit TV. Adjacent to the lounge will be two additional spaces, one to serve both food and beverages and the other to provide restroom facilities.

Space	No. of People
Announcers	3
Timing	6
Jury room	6
Information service	3
Computer and scoreboard operation	4
Officials' closed circuit TV room	15
Officials' toilets	15
Mechanical and circulation	7%
	130 sq. meters

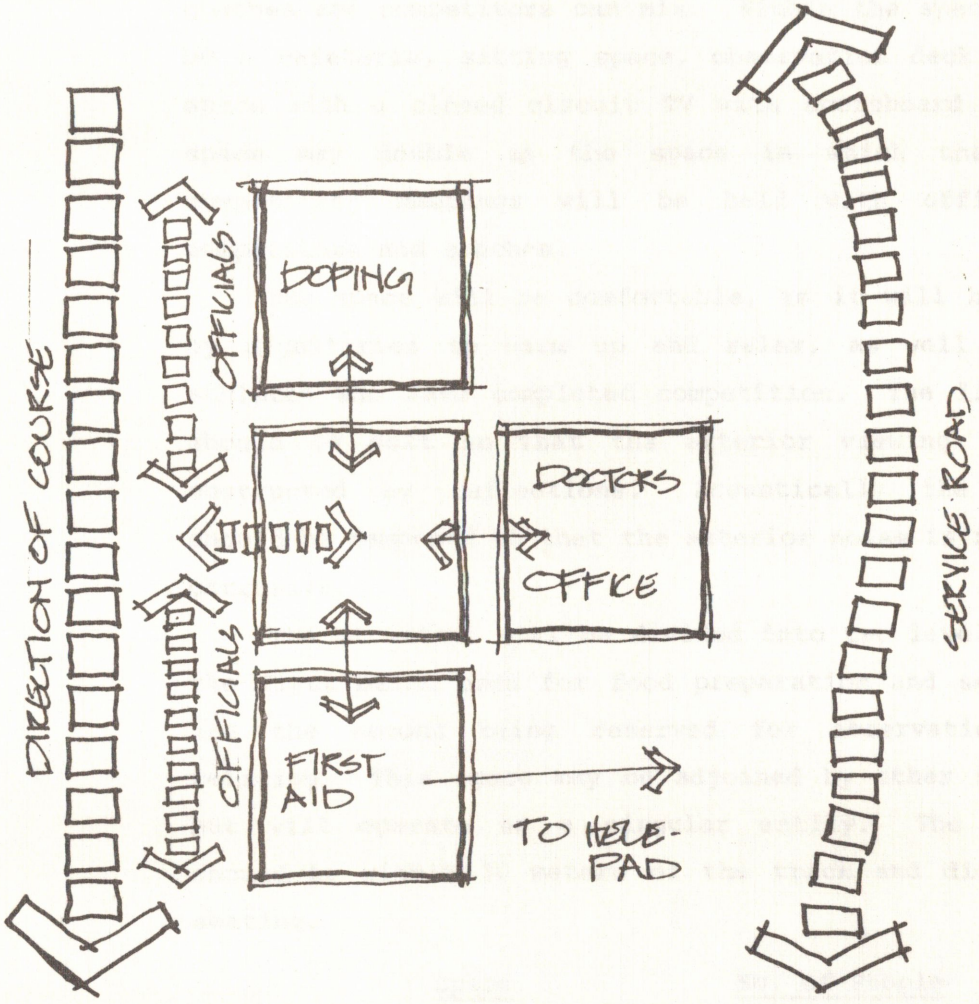

FINISH TOWER
ANNOUNCER OBSERVER
TIMING JURY
INFORMATION & COMPUTER OPERATION
OFFICIALS
OFFICIALS
DIRECTION OF COURSE
FINISH

MEDICAL CENTER

The purpose of the medical center is twofold. First, the space is to insure the health and safety of the competitors. The second purpose is to test the athletes for the presence of drugs or narcotics in their blood stream. This facility should be adjacent to the finish on the recovery hill side of the club house. The maximum distance from the track should not be more than 20 M. The facility is used for both immediate treatment of the injured as well as preparation for evacuation. Thus, the medical services have to be located with 100 M of a helipad.

The offices within will be supplied with the appropriate medical equipment and apparatus. The lighting will be sufficient to administer medical treatment. The doctor's office will be such that small discussions will be possible.

Space	No. of People
First aid	3
Doping control	3
Doctor's office	3
Toilets	1
	40 sq. meters

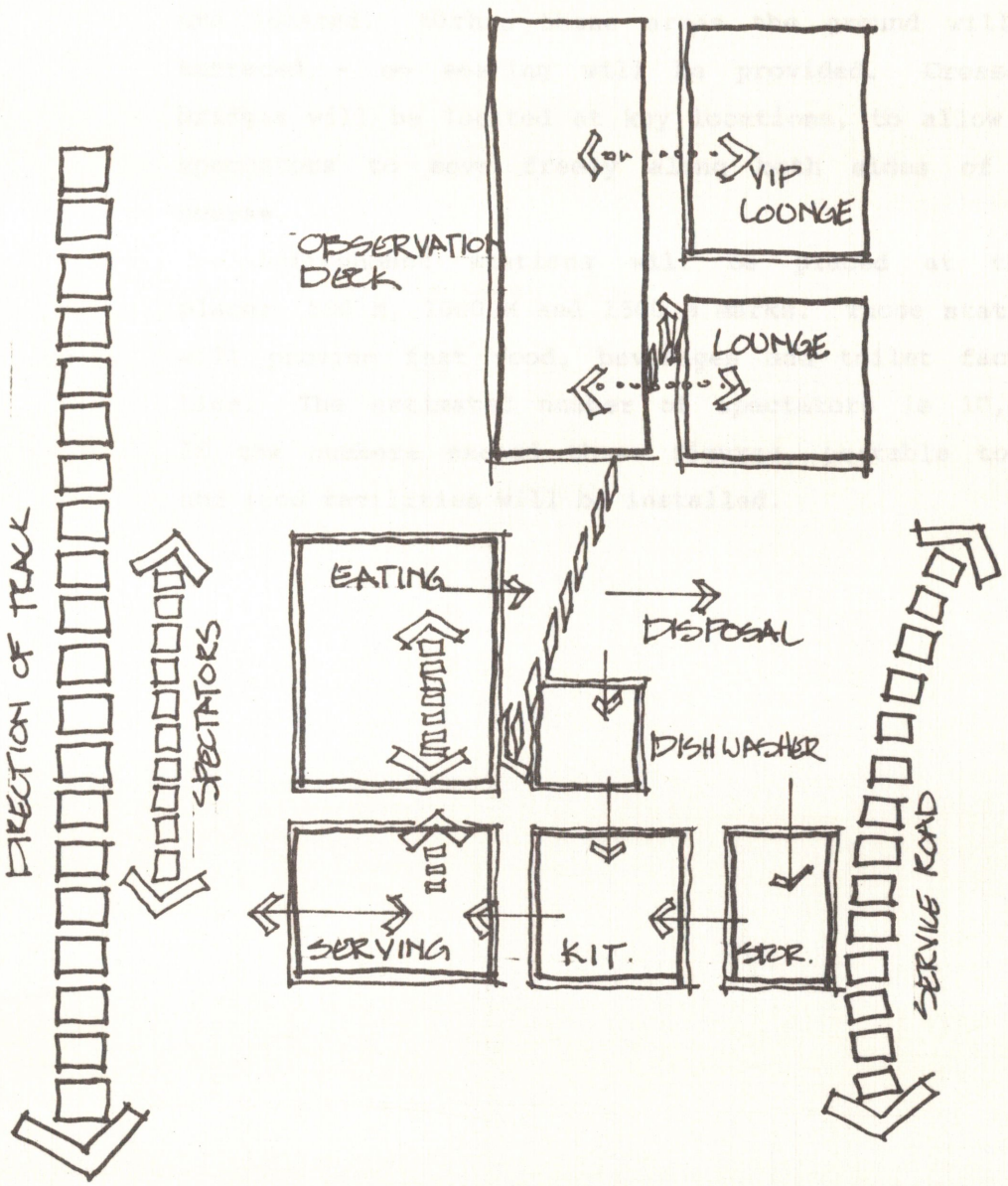

DIRECTION OF COURSE
OFFICIALS
OFFICIALS
DOPING
DOCTORS
OFFICE
FIRST AID
TO HELI-PAD
SERVICE ROAD

The lounge is a space in which the dignitaries, coaches and competitors can mix. Within the space will be a cafeteria, sitting space, observation deck and a space with a closed circuit TV with scoreboard. This space may double as the space in which the pre-competition meetings will be held with officials, competitors and coaches.

The space will be comfortable, as it will be used by dignitaries to warm up and relax, as well as by athletes who have completed competition. The lighting should be soft so that the exterior viewing is not obstructed by reflections. Acoustically the space should be dampened so that the exterior noise is not too obtrusive.

The structure will be divided into two levels with the first being used for food preparation and serving, and the second being reserved for observation and relaxing. This space may be adjoined by other spaces, but will operate as a singular entity. The siting should be within 30 meters of the track and dignitary seating.

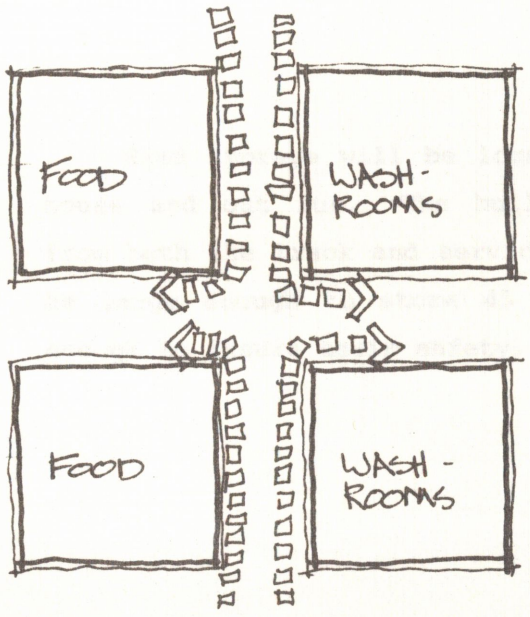
Space	No. of People
Lounge	25
VIP lounge	75
Observation deck	80
Cafeteria	60
Serving area	6
Kitchen	6
Storage	-
Toilets	10
Mechanical and circulation	7%
	600 sq. meters


DIRECTION OF TRACK
SPECTATORS
OBSERVATION DECK
VIP LOUNGE
LOUNGE
EATING
DISPOSAL
DISHWASHER
SERVING
KIT.
STOR.
SERVICE ROAD

SPECTATORS

The observation will take place where the curves are located. Within these areas the ground will be terraced - no seating will be provided. Crossover bridges will be located at key locations, to allow the spectators to move freely along both sides of the course.

Refreshment stations will be placed at three places; 500 M, 1000 M and 1500 M marks. Those stations will provide fast food, beverages and toilet facilities. The estimated number of spectators is 10,000. If the numbers exceed these figures, portable toilet and food facilities will be installed.


FOOD
WASH-
ROOMS
FOOD
WASH-
ROOMS

MECHANICAL

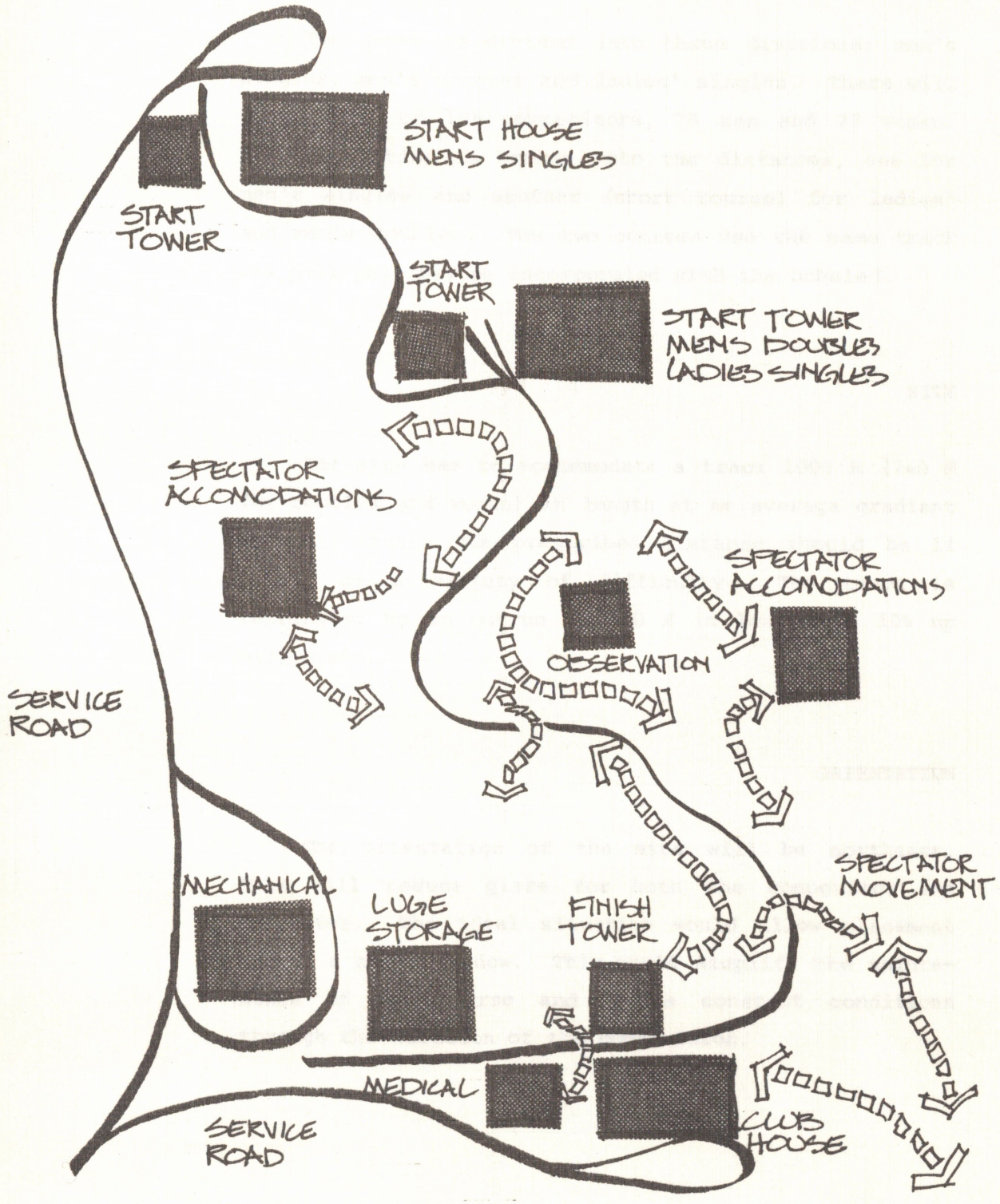
The mechanical space will be located within close proximity of the track. The artificial cooling systems, heating and water pumps will be housed there. The mechanical space may be consolidated into one structure with the other two sports.

STORAGE

Sled storage will be located adjacent to the club house and out run. The building has to have access from both the track and service road. The space has to be large enough to store 45 sleds and be substantial enough to insure their safety.



LUGE


START HOUSE
MENS SINGLES
START
TOWER
START
TOWER
START TOWER
MENS DOUBLES
LADIES SINGLES
SPECTATOR
ACCOMODATIONS
SPECTATOR
ACCOMODATIONS
OBSERVATION
SERVICE
ROAD
MECHANICAL
LUGE
STORAGE
FINISH
TOWER
SPECTATOR
MOVEMENT
MEDICAL
SERVICE
ROAD
CLUB
HOUSE

SPORT

The sport is divided into three divisions: men's singles, men's doubles and ladies' singles. There will be a total of 105 competitors, 78 men and 27 women. The competition is broken into the distances, one for men's singles and another (short course) for ladies' and men's doubles. The two courses use the same track and will possibly be incorporated with the bobsled.

SITE

The site has to accommodate a track 1000 M (740 M for doubles and women) in length at an average gradient of 9%. Within the prescribed distance should be 14 curves of a variety of difficulty. The track is terminated by an outrun of 100 M in length at 10% up hill grade.

ORIENTATION

The orientation of the site will be northeast. This will reduce glare for both the competitor and spectator. The ideal situation would allow placement within a solar shadow. This would simplify the maintenance of the course and insure constant conditions through the duration of the competition.

The luge and bobsled courses have many similarities - the track being a physical link between several volumes. The variants are in the location and relationship of the start and finish.

The start house for the men's singles is located at the summit of the course. Some 260 meters down the track is the start house for the doubles and ladies. The remainder of the course is defined by an observation tower. The location would be half way between the start and the finish.

Spaces

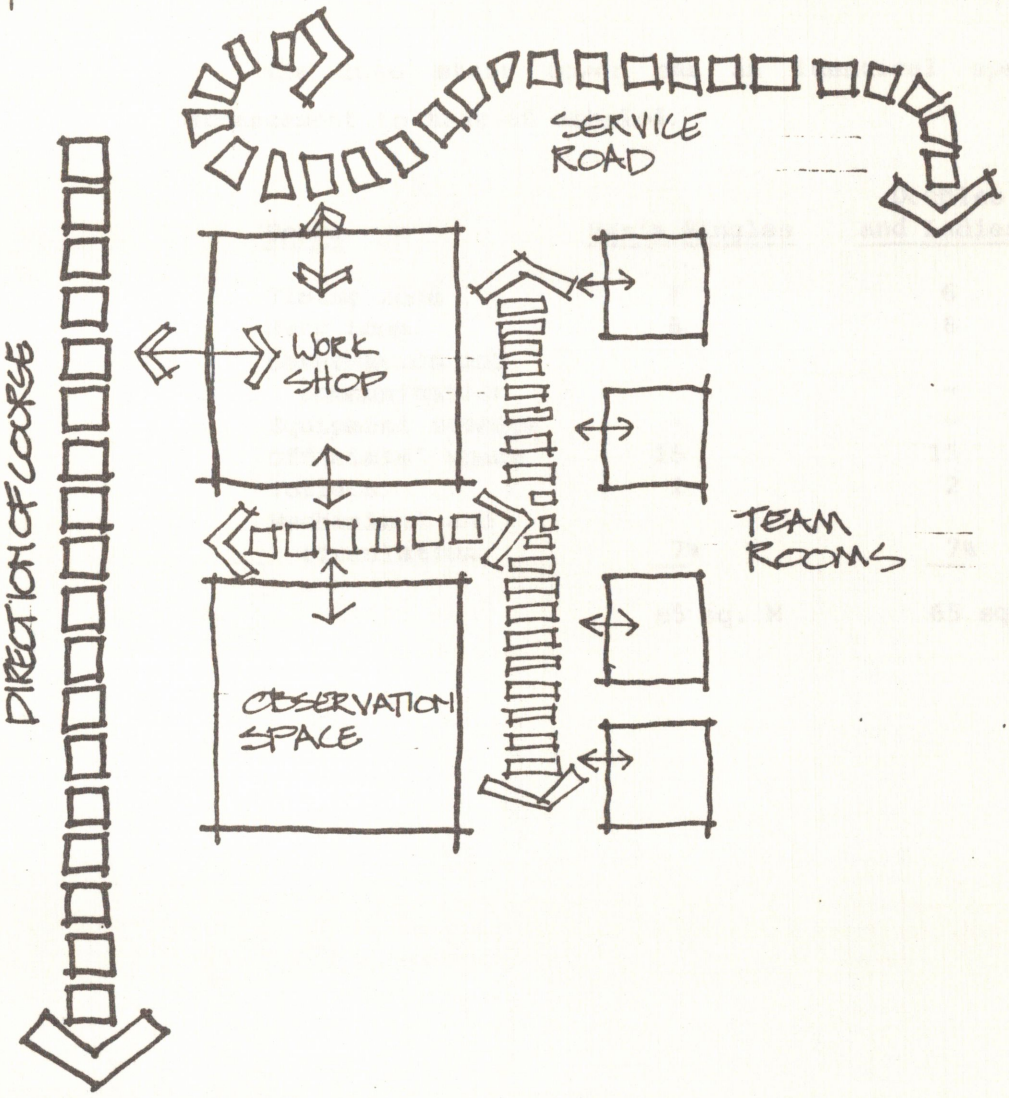
- Start house men's singles
- Start house ladies' and doubles
- Start tower
- Observation tower
- Finish tower
- Clubhouse
- Medical center
- Storage
- Mechanical

START HOUSE

The luge start house has an identical spatial arrangement to that of bobsled.

Space	Men's Singles	Doubles and Ladies
Team room	78	40
Workshop	15 luge	8 luge
Observation space	12	8
Toilet	6	4
Mechanical and circulation	7%	7%
	470 sq. M	34 sq. M

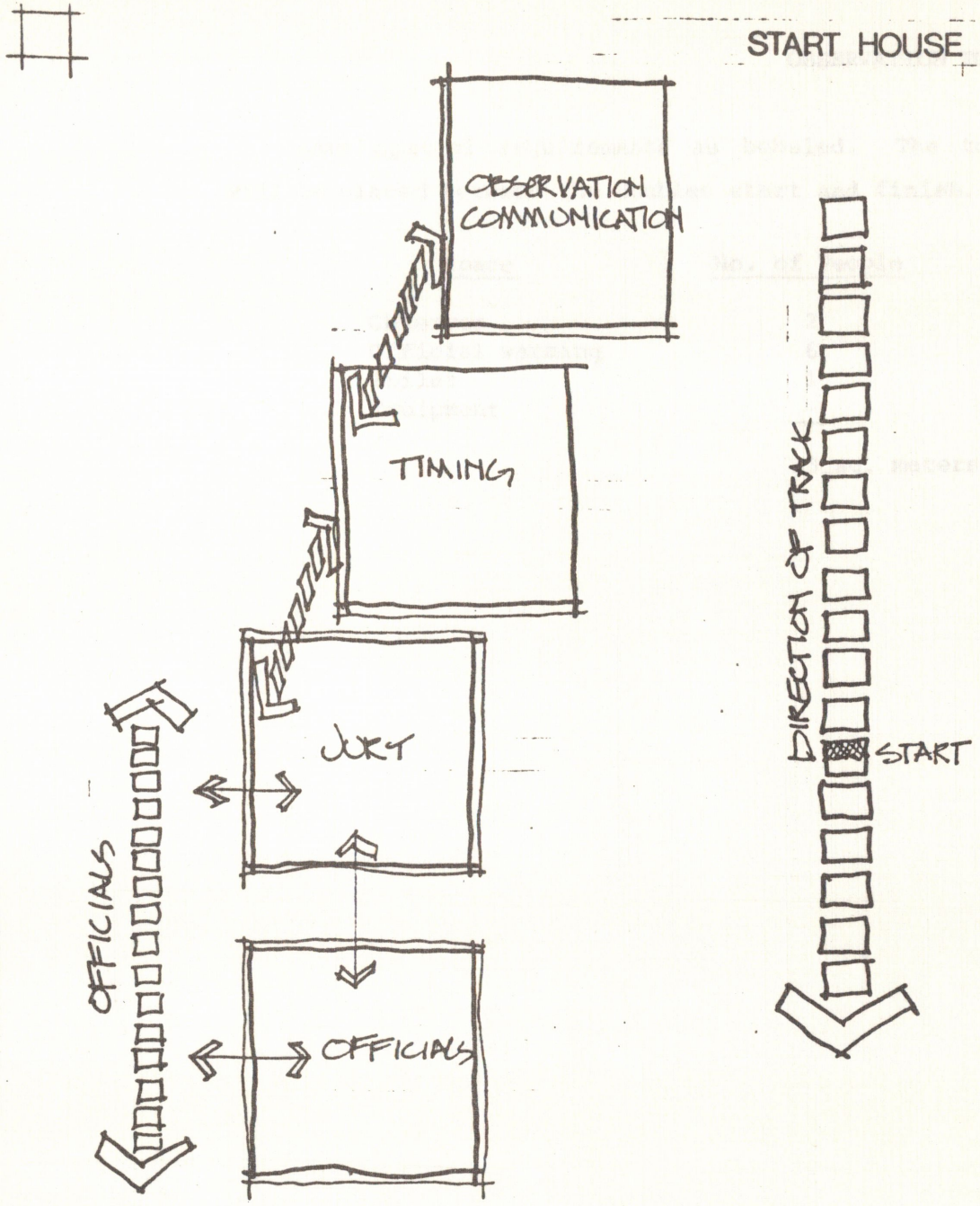
START HOUSE


SERVICE ROAD
DIRECTION OF COURSE
WORK SHOP
OBSERVATION SPACE
TEAM ROOMS

START TOWER

The luge start tower has an identical spatial arrangement to that of bobsled.

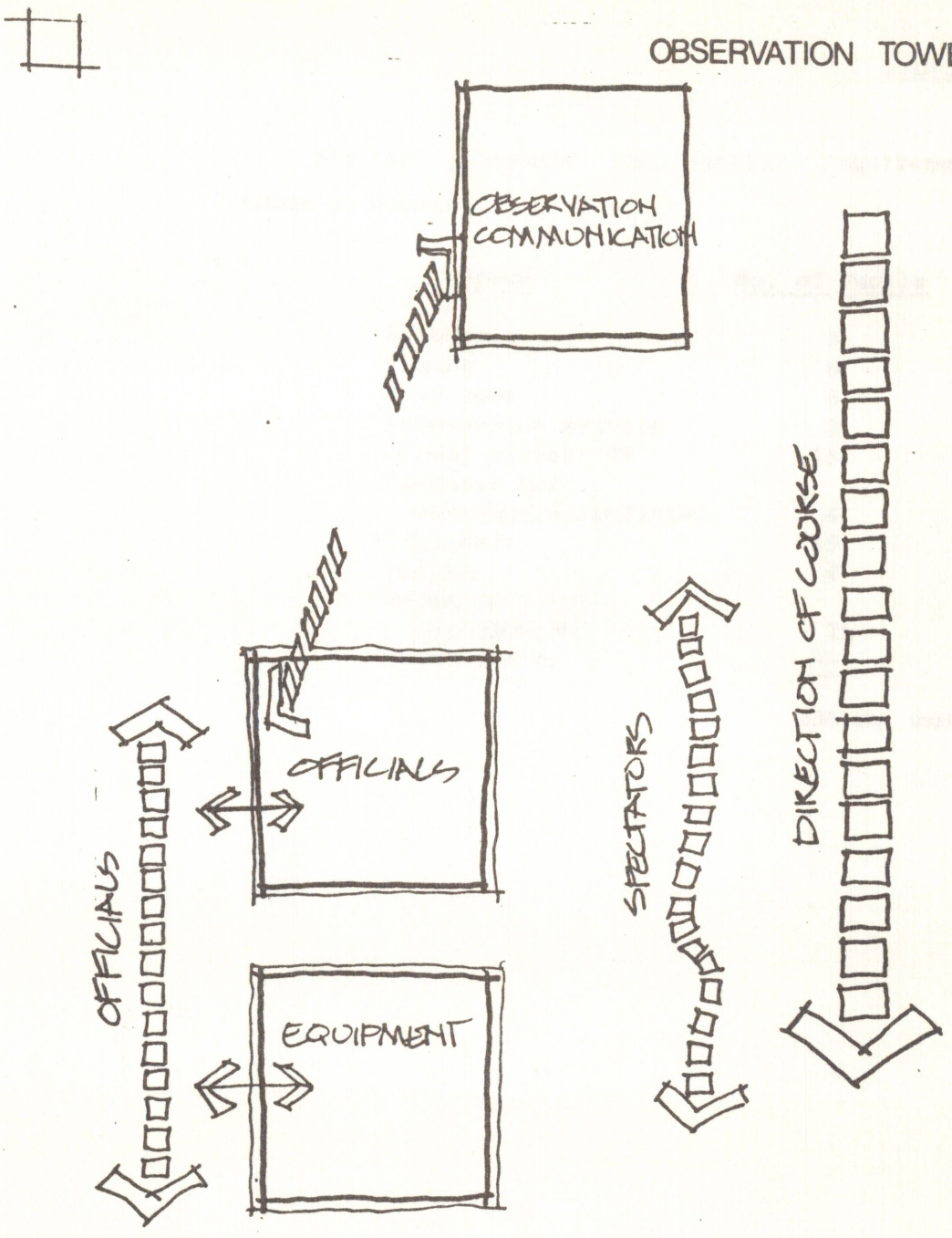
Space	Men's Singles	Doubles and Ladies
Timing room	6	6
Jury room	6	6
Observation and communication	-	-
Equipment storage	-	-
Officials' space	15	15
Toilets	2	2
Mechanical and circulation	7%	7%
	65 sq. M	65 sq. M


START HOUSE
OBSERVATION
COMMUNICATION
TIMING
JURY
OFFICIALS
OFFICIALS
DIRECTION OF TRACK
START

OBSERVATION TOWER

Same spatial requirements as bobsled. The tower will be placed between the doubles start and finish.

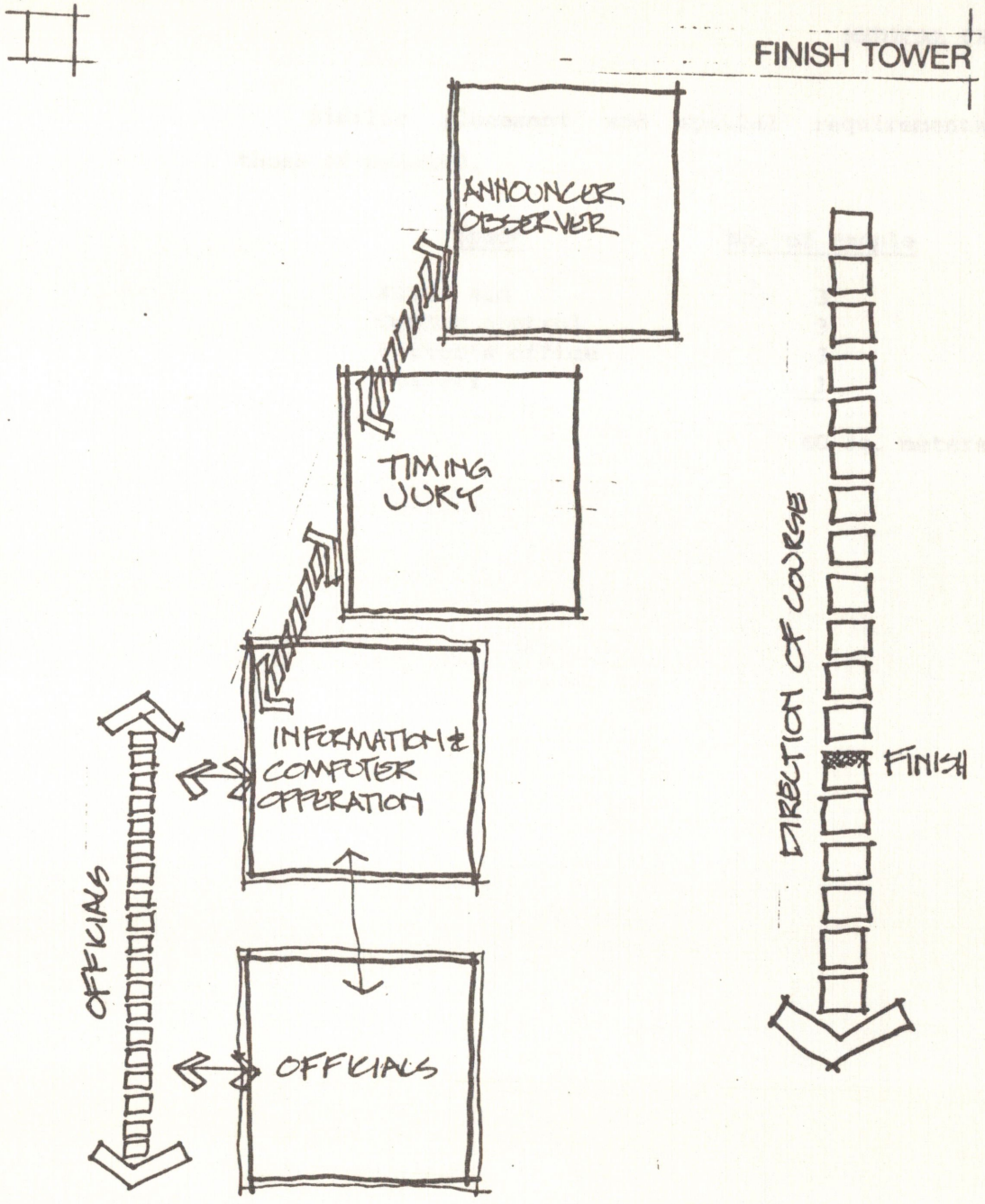
Space	No. of People
Observer	2
Official warming	6
Toilet	1
Equipment	-
	23 sq. meters


OBSERVATION TOWER
OBSERVATION
COMMUNICATION
OFFICIALS
EQUIPMENT
OFFICIALS
SPECTATORS
DIRECTION OF COURSE

FINISH TOWER

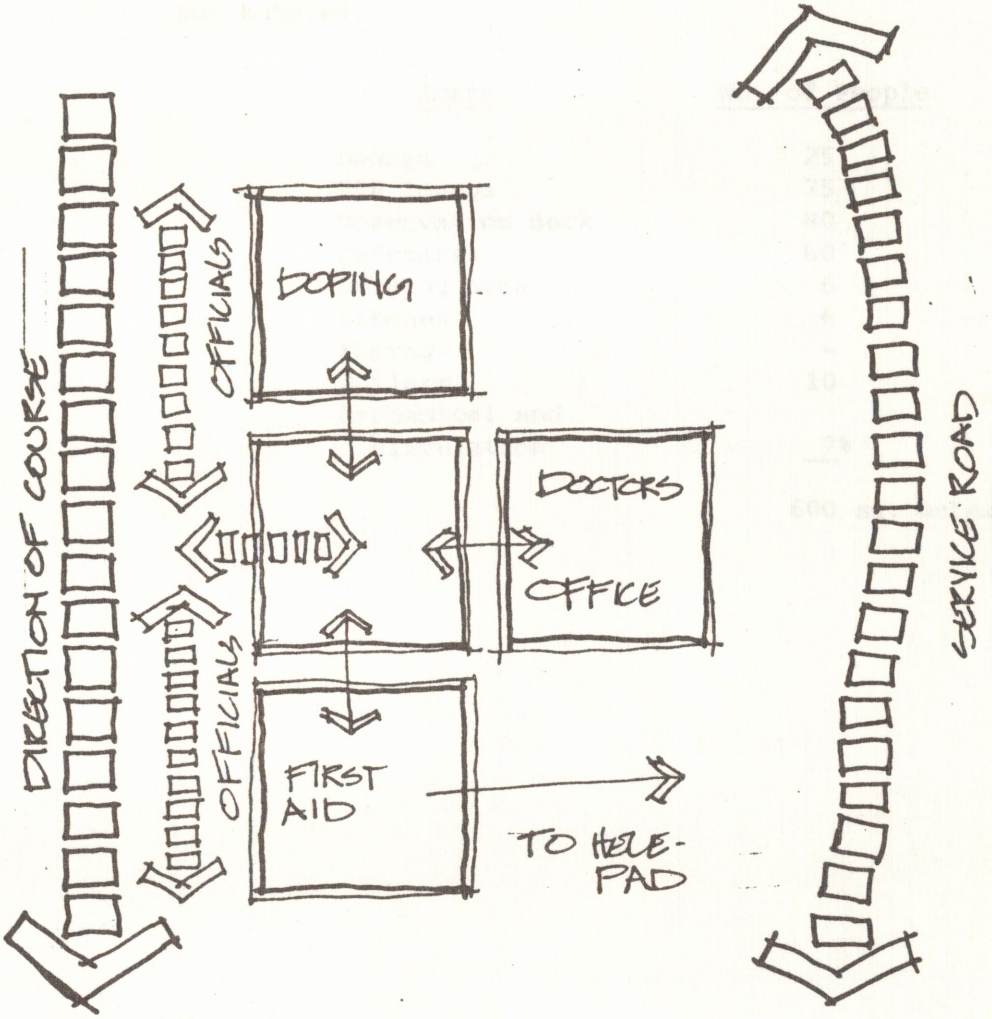
Similar placement and spatial requirements to those of bobsled.

Space	No. of People
Announcer	3
Timing	6
Jury room	6
Information service	3
Closed circuit TV	15
Computer and scoreboard operation	4
Officials	15
Toilet	4
Mechanical and circulation	7%
Weigh scales	--
	235 sq. meters


FINISH TOWER
ANNOUNCER
OBSERVER
TIMING
JURY
INFORMATION &
COMPUTER
OPERATION
OFFICIALS
OFFICIALS
DIRECTION OF COURSE
FINISH

Similar placement and spatial requirements of those of bobsled.

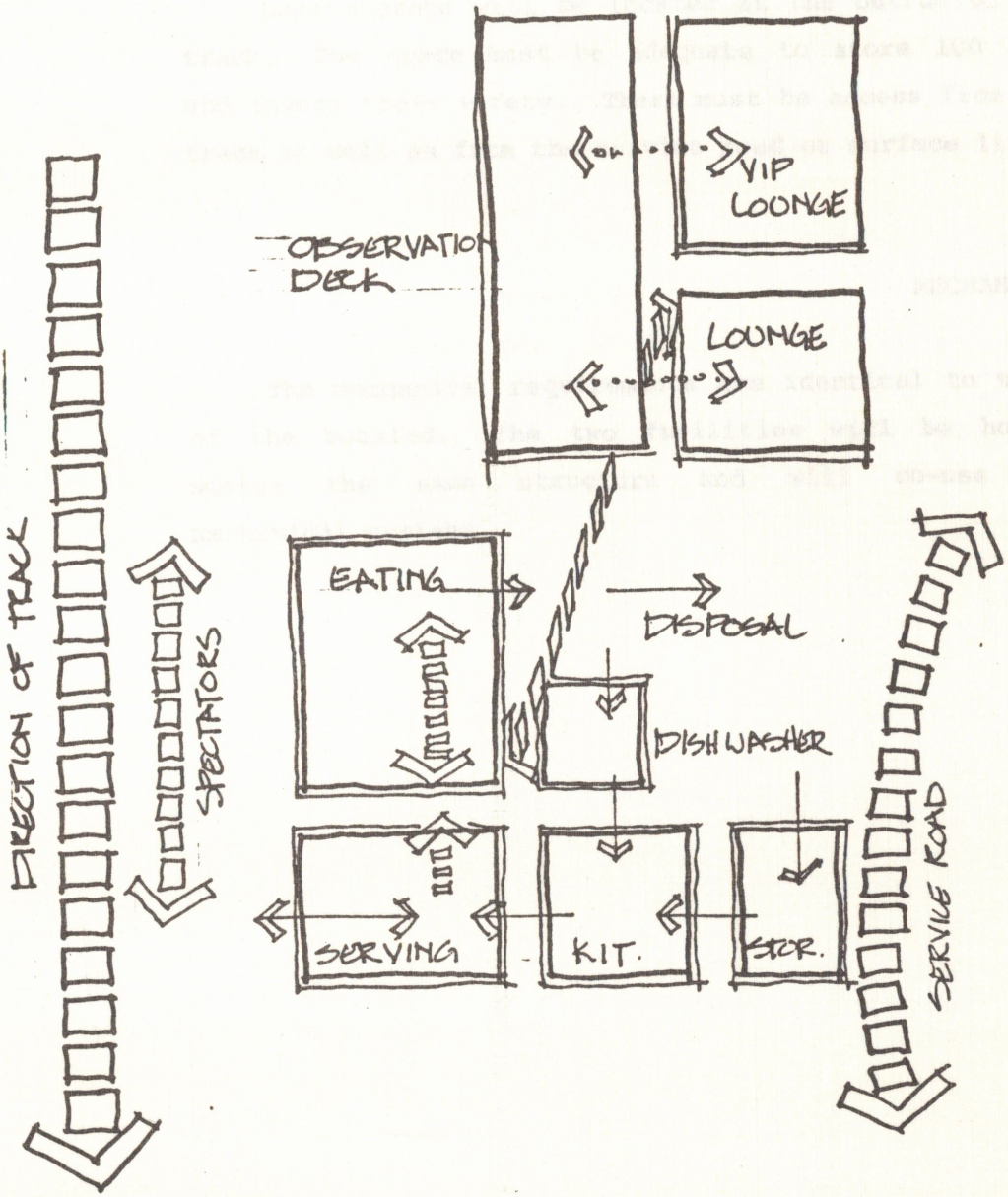
Space	No. of People
First aid	3
Doping control	3
Doctor's office	3
Toilets	1
	40 sq. meters


DIRECTION OF COURSE
OFFICIALS
DOPING
OFFICIALS
DOCTORS
OFFICE
FIRST AID
TO HELI-PAD
SERVICE ROAD

All of the requirements hold true of those stated for bobsled.

Space	No. of People
Lounge	25
VIP lounge	75
Observation deck	80
Cafeteria	60
Serving area	6
Kitchen	6
Storage	-
Toilets	10
Mechanical and circulation	7%
	600 sq. meters

CLUB HOUSE


VIP LOUNGE
OBSERVATION DECK
LOUNGE
EATING
DISPOSAL
DISHWASHER
SERVING
KIT.
STOR.
DIRECTION OF TRACK
SPECTATORS
SERVICE ROAD

STORAGE

Luge storage will be located at the outrun of the track. The space must be adequate to store 100 luge and insure their safety. There must be access from the track as well as from the service road or surface lift.

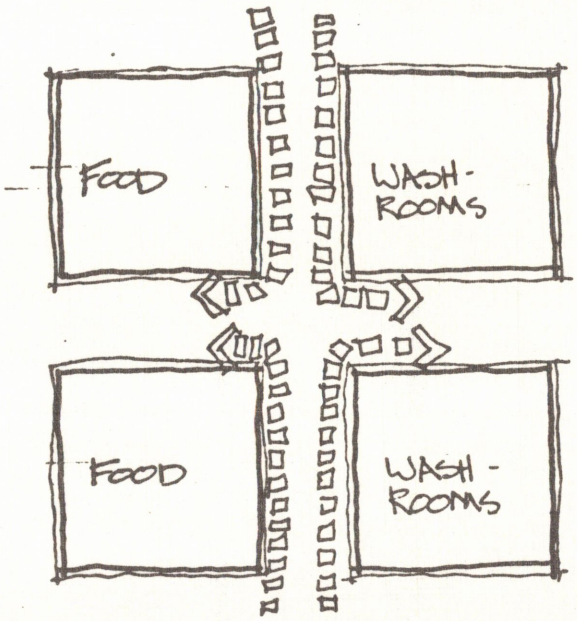
MECHANICAL

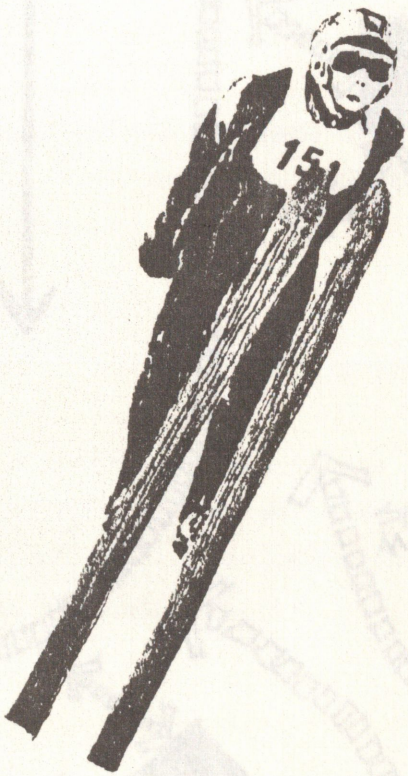
The mechanical requirements are identical to those of the bobsled. The two facilities will be housed within the same structure and will co-use the mechanical systems.

The observation will take place on both sides of the track with terraced standing space being located at the curves. Crossover bridges will be located at key locations to allow spectators to move freely along both sides of the track.

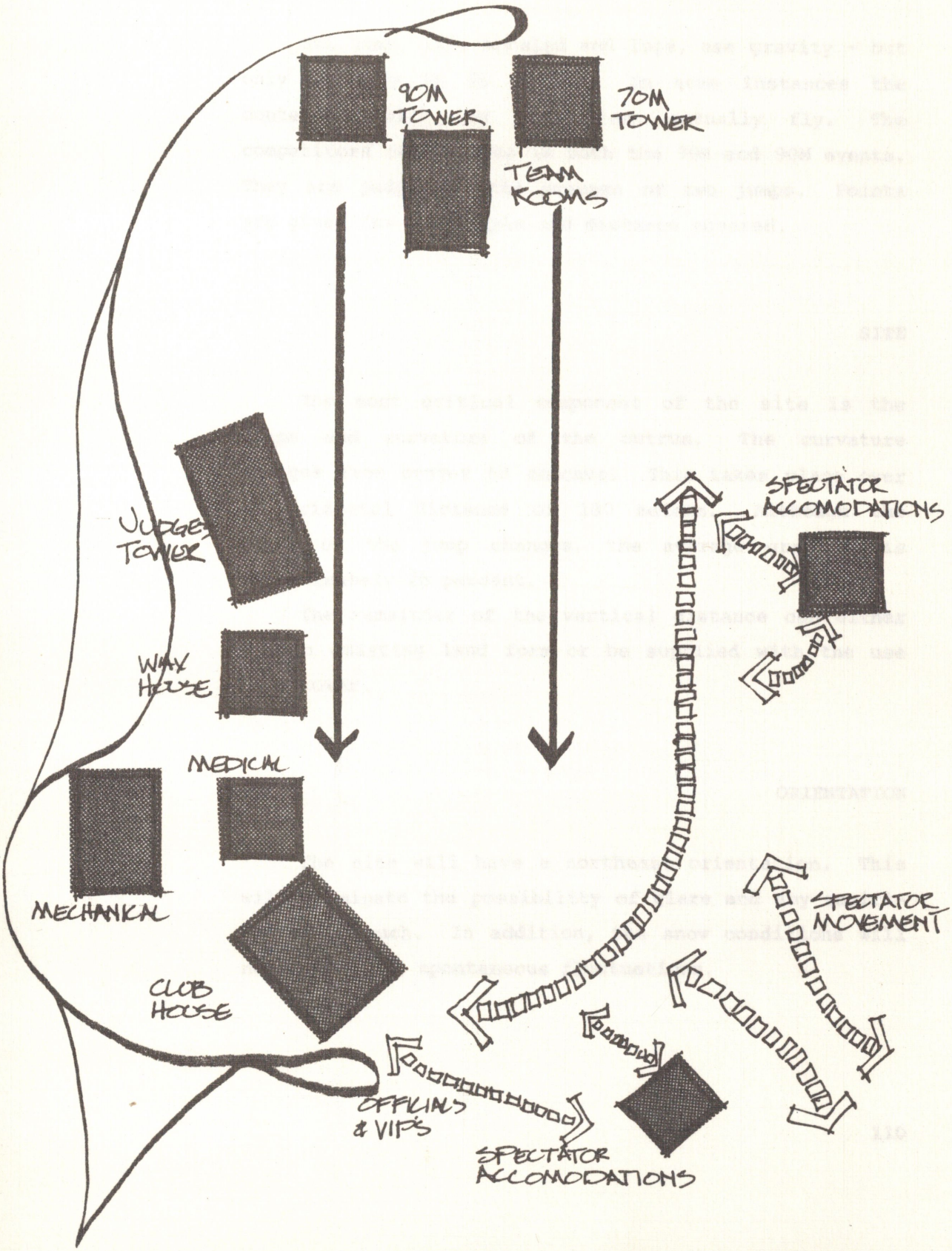
Refreshment stations and warming huts will be located along the track and base area. There is a present estimation that 8,000-10,000 spectators will attend.

Portable facilities will be on hand if attendance exceeds the original estimation.


FOOD
WASH-
ROOMS
FOOD
WASH-
ROOMS


151

SKI JUMP


90M TOWER
70M TOWER
TEAM ROOMS
JUDGES TOWER
WAX HOUSE
MEDICAL
MECHANICAL
CLUB HOUSE
SPECTATOR ACCOMODATIONS
SPECTATOR MOVEMENT
OFFICIALS & VIP'S
SPECTATOR ACCOMODATIONS

SPORT

Ski jump, like bobsled and luge, use gravity - but only to defy it in return. In some instances the contestant will, by definition, actually fly. The competitors can compete in both the 70M and 90M events. They are judged on the average of two jumps. Points are given for both style and distance covered.

SITE

The most critical component of the site is the shape and curvature of the outrun. The curvature changes from convex to concave. This takes place over a horizontal distance of 180 meters. Although the slope of the jump changes, the average gradient is approximately 25 percent.

The remainder of the vertical distance can either use an existing land form or be supplied with the use of a tower.

ORIENTATION

The site will have a northeast orientation. This will eliminate the possibility of glare and any ramification of such. In addition, the snow conditions will not experience spontaneous fluctuations.

ORGANIZATION

The two towers, 70M and 90M, will stand side by side. Although the departure ramps and recovery hill have varied physical characteristics, they will merge into a common outrun. The two will share support facilities and judges' tower. The competition surface is defined by the presence of the jump towers at the summit which flows down to and is terminated by the terraced bowl which will accommodate the spectators.

SPACES

The majority of the spaces will be located in three locations on the hill;

- Towers
- Team rooms

- Judges tower

- Clubhouse
- Medical center
- Wax house and ski storage
- Spectator accommodations
- Mechanical and storage

ORGANIZATION

The two towers, 70M and 90M, will stand side by side. Although the departure ramps and recovery hill have varied physical characteristics, they will merge into a common outrun. The two will share support facilities and judges' tower. The competition surface is defined by the presence of the jump towers at the summit which flows down to and is terminated by the terraced bowl which will accommodate the spectators.

SPACES

The majority of the spaces will be located in three locations on the hill;

- Towers
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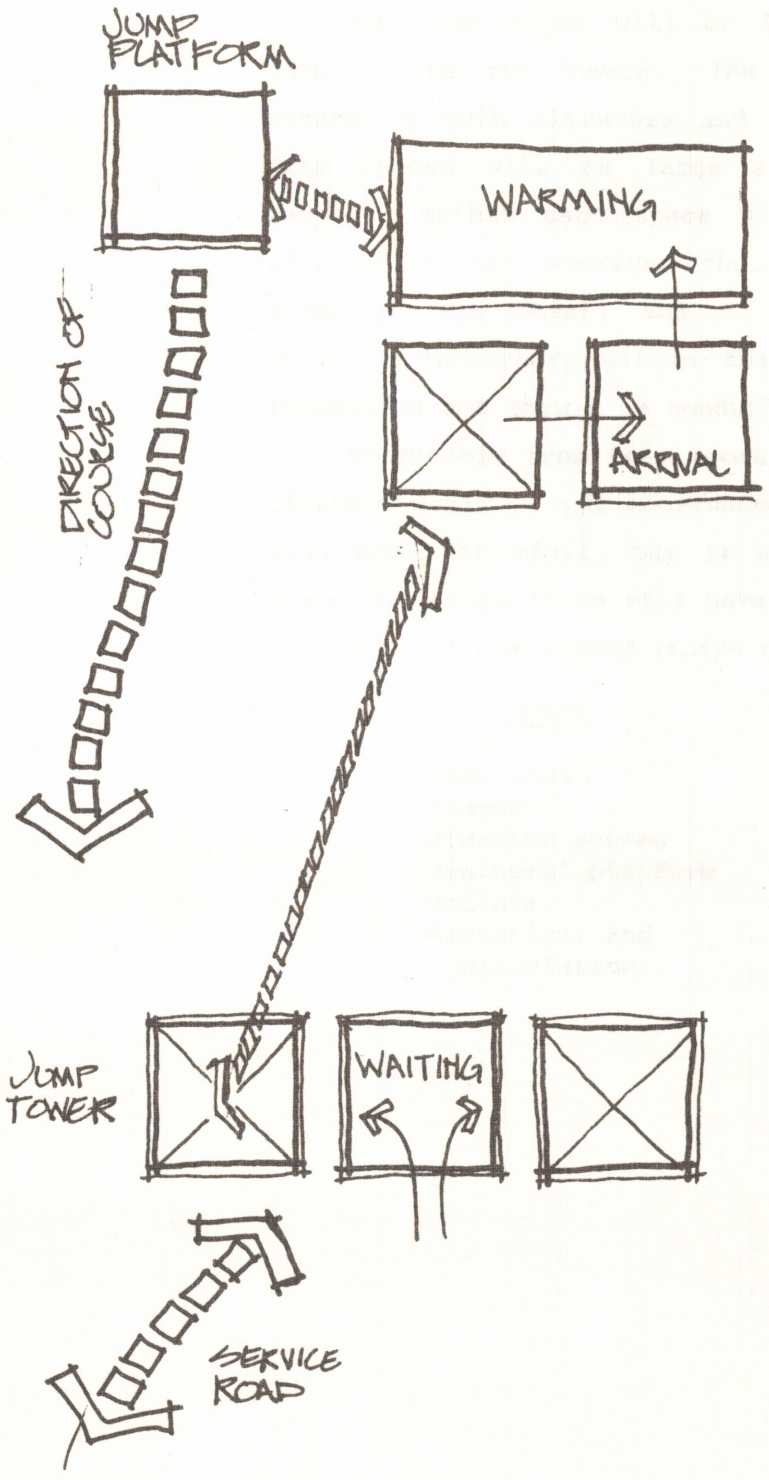
- Judges tower

- Clubhouse
- Medical center
- Wax house and ski storage
- Spectator accommodations
- Mechanical and storage

The jump tower will be located at the summit of the course. The primary function of the tower is to provide the appropriate height at which the competition is held and, secondly, to accommodate those who await competition. The waiting space will have access to the tower elevator. The elevator will bring the competitors up to the waiting space. This space is where the competitors prepare for competition and make final alterations to equipment. There will be both physical and visual access to the take-off ramp.

Upon the ramp will be a space to attach equipment and do final preparatory exercises. The ramp will be large enough that competitors can be organized into jumping order.

Space	No. of People
Towers	90M or 70M
Warming	10
Elevator	10
Jumping platform	5
Washroom	1
Mechanical and circulation	7%
	50 sq. meters

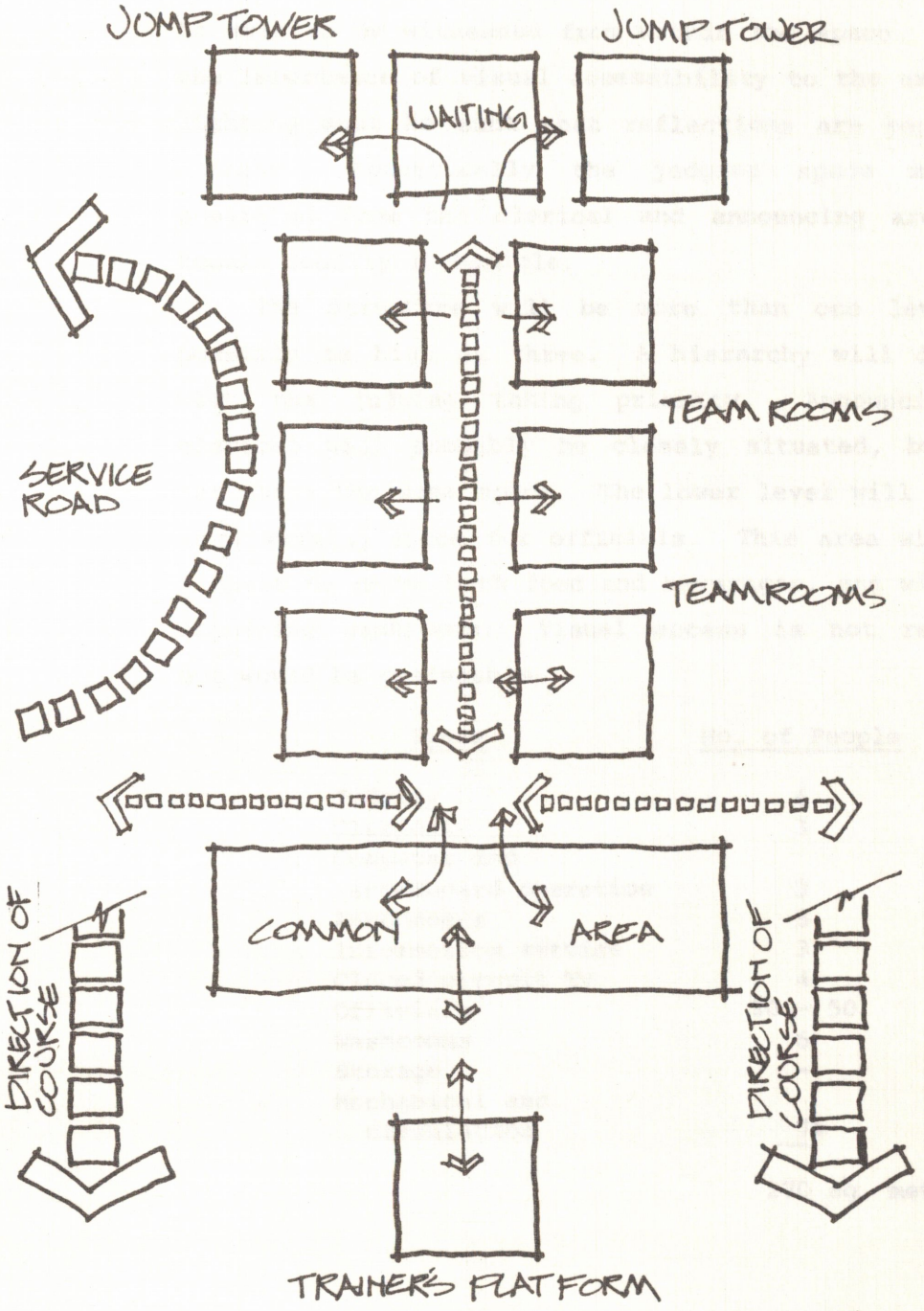

JUMP PLATFORM
WARMING
DIRECTION OF COURSE
ARRIVAL
JUMP TOWER
WAITING
SERVICE ROAD

The team rooms will be located adjacent to the base of the two towers. The space will have direct access to both elevators and the trainers' platform. Team spaces will be large enough to accommodate 8 people. Within each space will be a bench for ski preparation and storage (the majority of which will occur at the base), and an adjoining washroom and shower. Atmosphere within the space would be one of relaxation and should be conducive to concentration.

Accessible from team rooms will be a common with a closed circuit TV and scoreboard. Visual access to the jump would be ideal, but is not required. From this space the competitors will have access to the trainers' platform and the access stairs or lift from the base.

Space	No. of People
Team room	70
Common	18
Elevator access	10
Trainers' platform	8
Toilets	6
Mechanical and circulation	7%
	400 sq. meters

TEAM ROOM


JUMP TOWER
JUMP TOWER
WAITING
TEAM ROOMS
SERVICE ROAD
TEAM ROOMS
COMMON AREA
DIRECTION OF COURSE
DIRECTION OF COURSE
TRAINER'S PLATFORM

JUDGES' TOWER

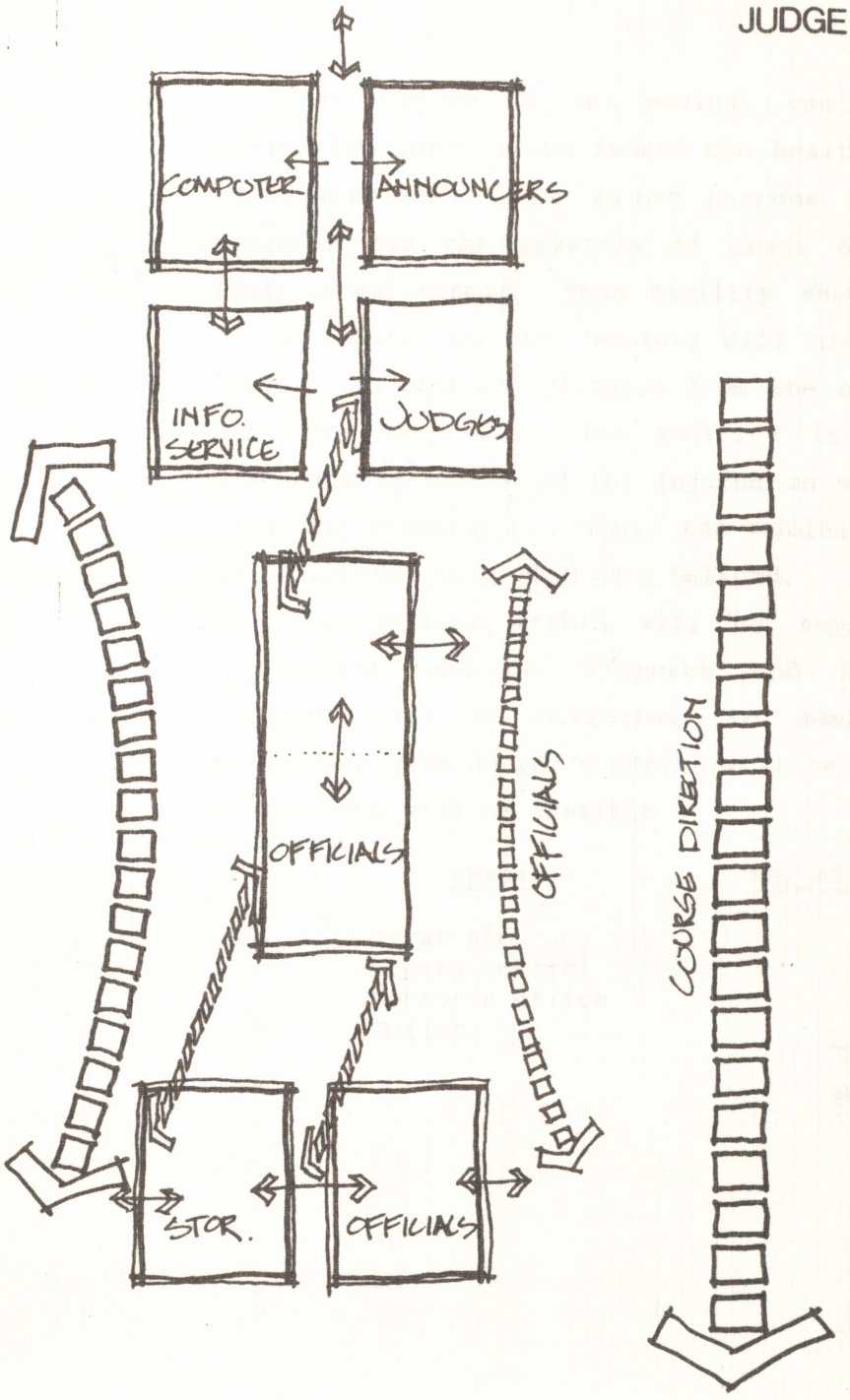
The judges' tower is placed close to the center of the recovery hill of both jumps. The total jump must be able to be witnessed from within the space. Due to the importance of visual accessibility to the exterior, lighting must be such that reflections are kept to a minimum. Acoustically the judging space must be separated from the clerical and announcing area, yet remain readily accessible.

The structure will be more than one level and possibly as high as three. A hierarchy will develop, with the judging taking priority. Announcing and clerical will probably be closely situated, but will not share the same space. The lower level will be used as a warming space for officials. This area will have a space to serve both food and beverages, and will have adjoining washrooms. Visual access is not required, but would be preferable.

Space	No. of People
Judging	6
Clerical	3
Computer and scoreboard operation	3
Announcers	3
Information service	3
Closed circuit TV	4
Officials	30 - 50
Washrooms	6
Storage	-
Mechanical and circulation	7%

270 sq. meters

JUDGE'S TOWER



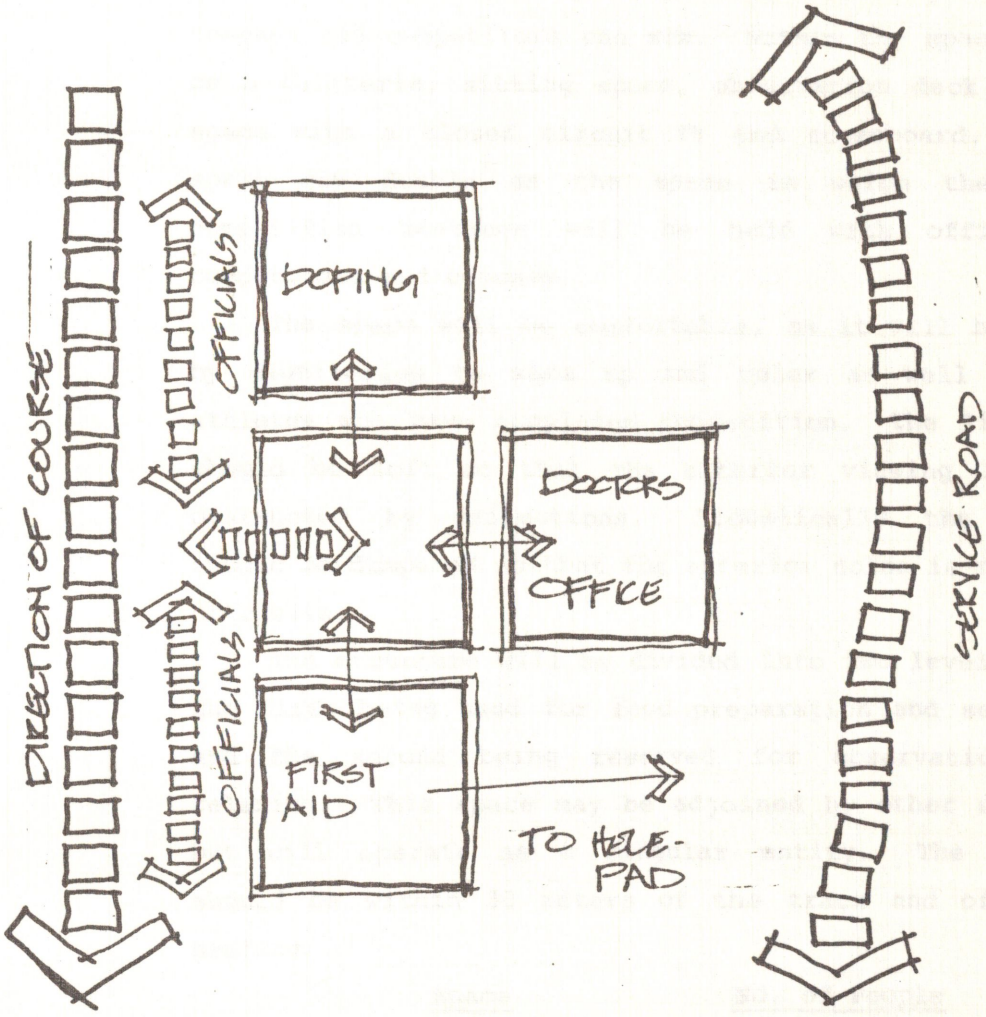
MEDICAL CENTER

The purpose of the medical center is twofold. First, the space is to insure the health and safety of the competitors. The second purpose is to test the athletes for the presence of drugs or narcotics in their blood stream. This facility should be adjacent to the outrun on the recovery hill side of the clubhouse. The maximum distance from the outrun should be not more than 20M. The facility is used for both immediate treatment of the injured as well as preparation for evacuation. Thus, the medical services have to be located with 100M of a helipad.

The offices within will be supplied with the appropriate medical equipment and apparatus. The lighting will be sufficient to administer medical treatment. The doctor's office will be such that small discussions will be possible.

Space	No. of People
First aid	3
Doping control	3
Doctor's office	3
Toilets	1
	40 sq. meters

MEDICAL


DIRECTION OF COURSE
OFFICIALS
OFFICIALS
DOPING
DOCTORS
OFFICE
FIRST AID
TO HELI-PAD
SERVICE ROAD

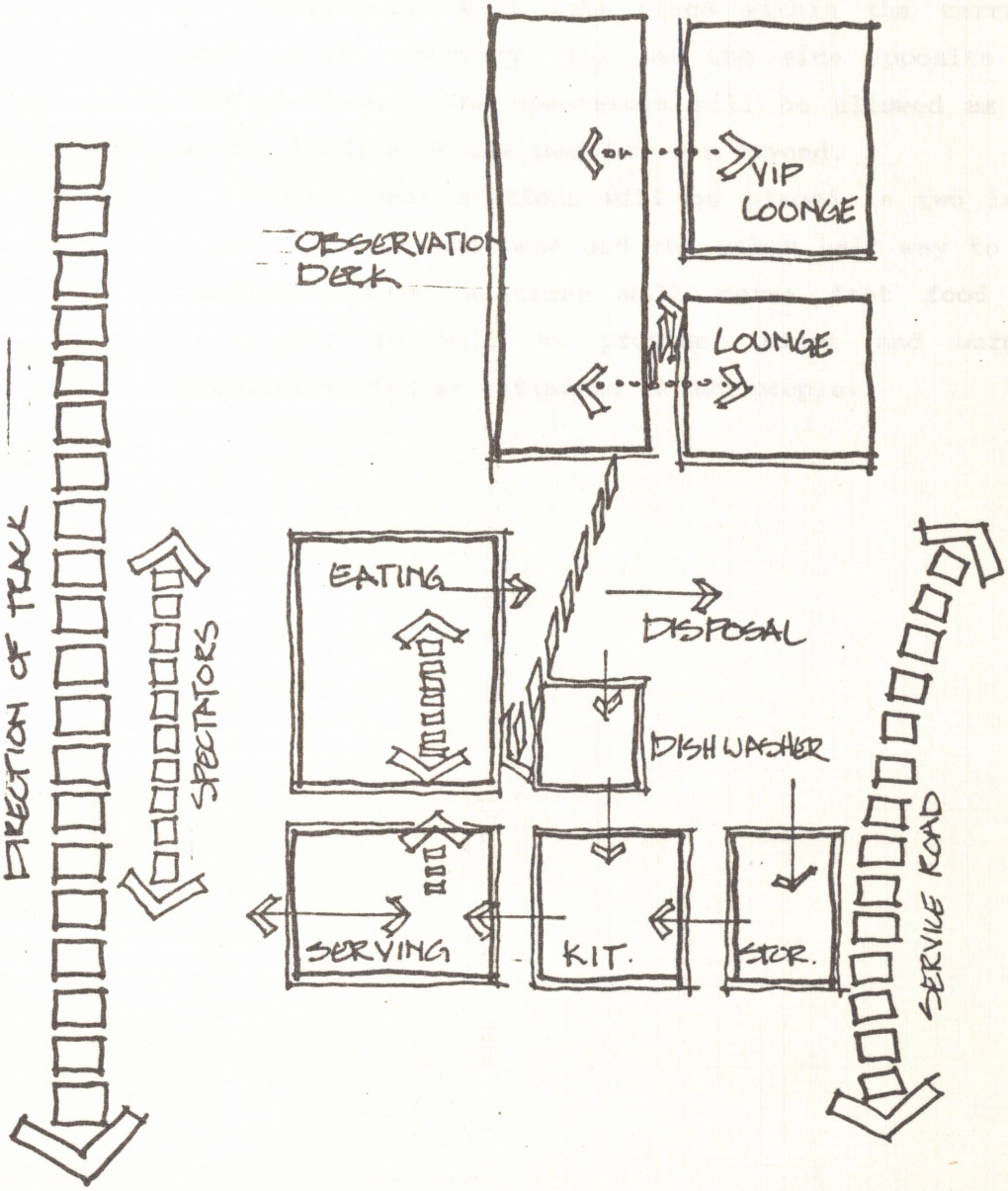
The lounge is a space in which the dignitaries, coaches and competitors can mix. Within the space will be a cafeteria, sitting space, observation deck and a space with a closed circuit TV and scoreboard. This space may double as the space in which the pre-competition meetings will be held with officials, competitors and coaches.

The space will be comfortable, as it will be used by dignitaries to warm up and relax as well as by athletes who have completed competition. The lighting should be soft so that the exterior viewing is not obstructed by reflections. Acoustically the space should be dampened so that the exterior noise is not too obtrusive.

The structure will be divided into two levels with the first being used for food preparation and serving, and the second being reserved for observation and relaxing. This space may be adjoined by other spaces, but will operate as a singular entity. The siting should be within 30 meters of the track and official seating.

Space	No. of People
Lounge	25
VIP lounge	75
Observation deck	80
Cafeteria	60
Serving area	6
Kitchen	6
Storage	-
Toilets	10
Mechanical and circulation	7%
	600 sq. meters

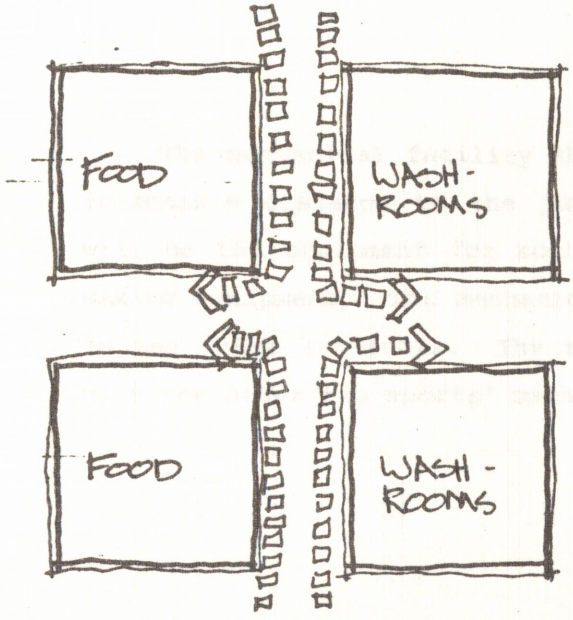
CLUB HOUSE


DIRECTION OF TRACK
SPECTATORS
OBSERVATION DECK
VIP LOUNGE
LOUNGE
EATING
DISPOSAL
DISHWASHER
SERVING
KIT.
STOR.
SERVICE ROAD

SPECTATOR ACCOMMODATIONS

Observation will take place within the terraced bowl of the recovery hill and the side opposite the judges' tower. The spectators will be allowed as far as the landing of the jump but not beyond.

Refreshment stations will be placed in two locations - one at the base and the other half way to the landing. These stations will serve fast food and beverages, as well as provide toilet and warming facilities, for an estimated 10,000 people.


FOOD
WASH-
ROOMS
FOOD
WASH-
ROOMS

WAX HUT

The wax hut is a space to be used by competitors after their test jump. Within the space will be facilities to both wax and store skis. The hut will be located at the base of the recover hill.

MECHANICAL

The mechanical facility should be located within a reasonable distance to the jump. Within the building will be the equipment for both refrigeration and snow-making equipment. The mechanical space should be close to the water reservoir. The structure may be combined with the other two sports' mechanical facilities.

Vehicles to and from the site will arrive from two directions, west from Banff and east from Calgary. The flow will be broken down into three modes: bus, train and private vehicle.

The majority of the traffic will be routed by bus. The city of Calgary will be donating 300 buses, through the duration of the games. With this mode approximately 12,000 people may be transported throughout the duration of a cycle.

Rail will become the second most important form of transportation. Canadian Pacific Railways will donate a fifteen car passenger train, in addition to the use of their tracks for the period of the games. The route will be from Calgary to Banff via Canmore. The mode will have the capacity to move 1,500 people. The route will deliver people to the train station. From the station will be a bus sub-loop to bring people to the site.

The third type will be private vehicle and charter bus. Parking will be provided for 1,000 vehicles and 30 charter buses.

Due to the nature of western civilization, the private vehicle has become a necessary element. Thus, to provide parking for this demand means the installation of thousand of acres of asphalt. The site in Canmore has been blessed with the splendor of natural beauty. To avoid the destruction of the area, the site parking will be kept to a minimum, and public transit will be heavily used.

To insure the use of the proposed transit systems, ticket sales will be divided into three groups: A, B, C. The A ticket will allow entrance to the site with private vehicles. This ticket will be distributed among dignitaries, charter buses and Olympic team attache. The permit will only be required for the driver of the vehicle, while the passengers will have guest passes. Parking will be provided for 1,000 vehicles and 30 buses.

The B ticket will include the cost of the train from either Banff or Calgary. The train will run continuously between Banff and Calgary. The passengers will be delivered from the train station to the site by bus.

The C tickets will include the cost of the bus from either Calgary or Banff. The bus system will be broken into two loops. Each loop will originate in one of the two centers, Banff or Calgary, and run continuously via Canmore.

All modes of transit will converge on a single gate or arrival-departure area. Due to the distances which the buses and train will have to cover, the loading/unloading capacity will be designed to accommodate 10 buses simultaneously. The parking area will be able to accommodate 1,000 cars and 30 charter buses, all of which will be within 600M of the entrance gate.

Bus

Calgary-Canmore	3,800/hour	(220 buses)
Banff-Canmore	1,600/hour	(50 buses)

Train

Average 750/hour (15 cars)

The transportation system will be adjusted according to the events which will be held on any particular day.

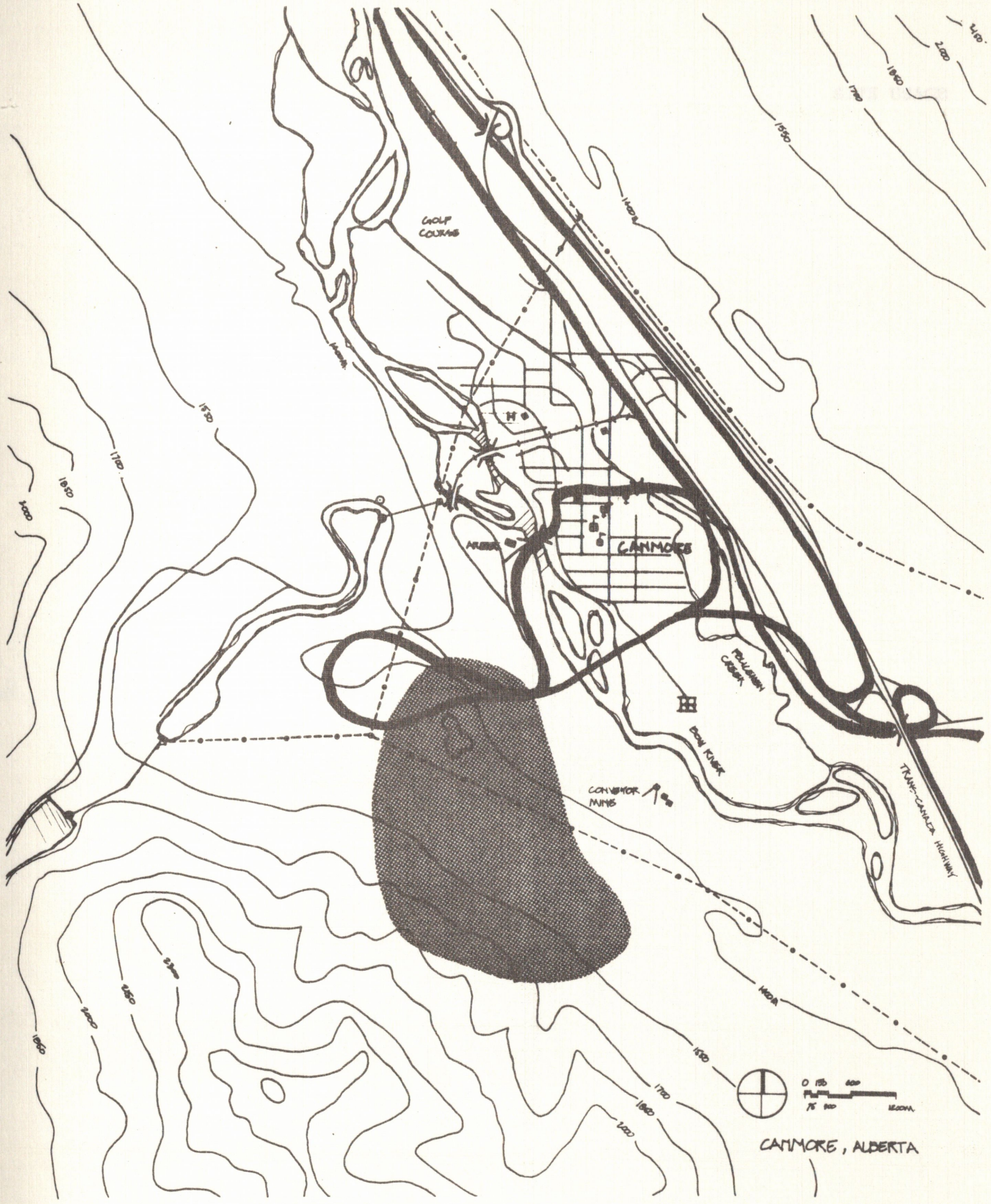
The maximum number of spectators in the proposed site will be 20,000.

ORIENTATION

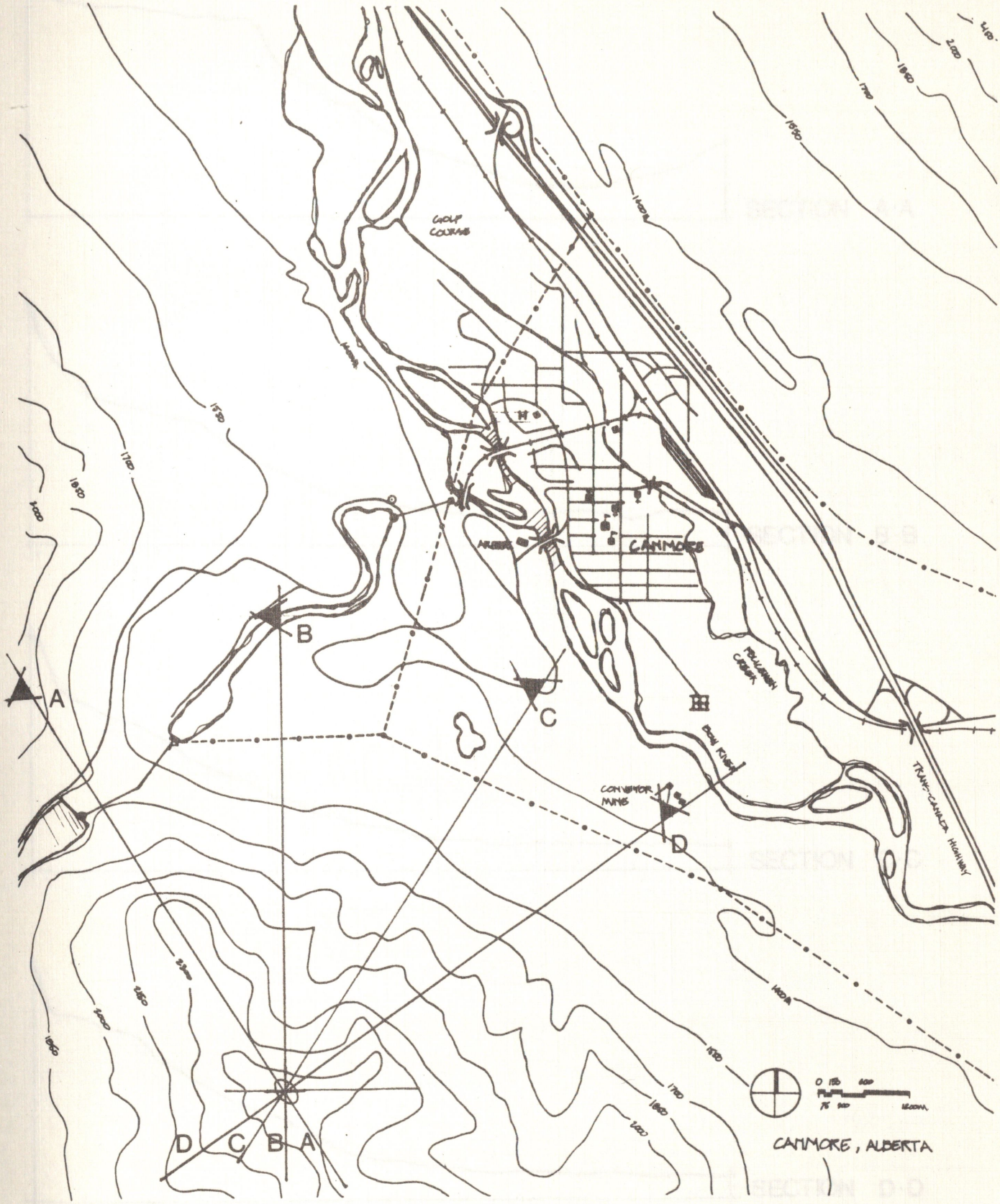
All spectators, competitors and officials may enter through the same gate. At that point each group will be directed to their destination point. Both direction from officials and visual interaction of the facilities will aid in the use orientation.

SITE USAGE

According to the physical criteria of the sports and area, there will be regions within the site which satisfy the domains of the sports and support facilities. Those areas will become defined by both circulation paths and the competition surfaces.



CIRCULATION
bus - private vehical
train



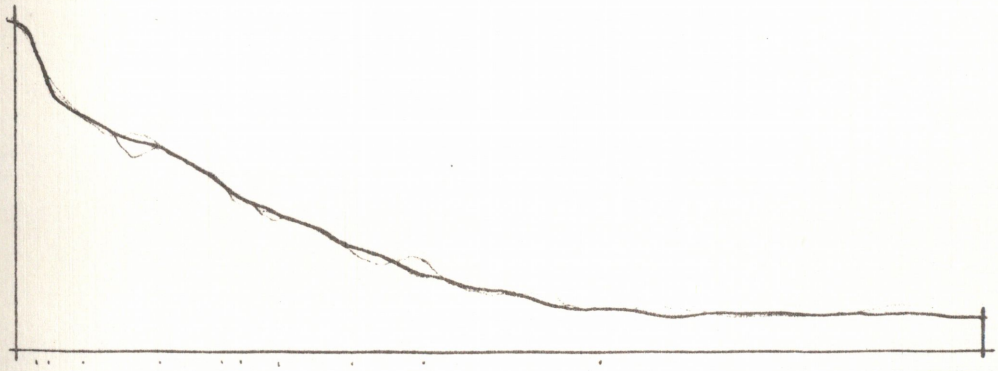
SITE SECTIONS



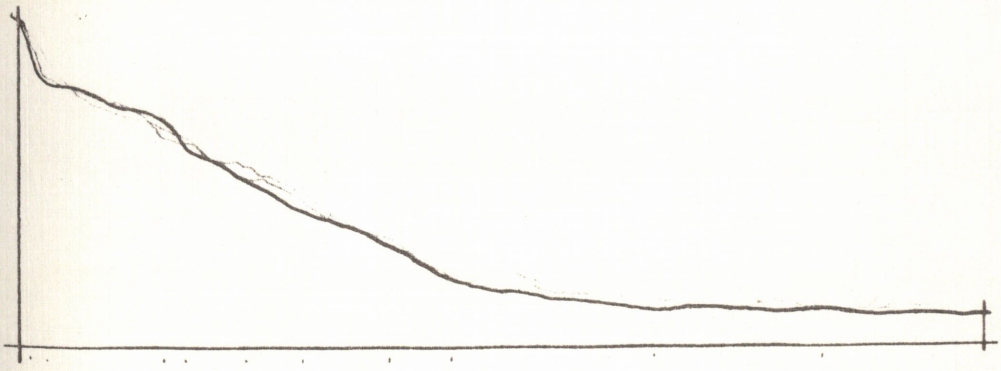
SECTION A·A



SECTION B·B

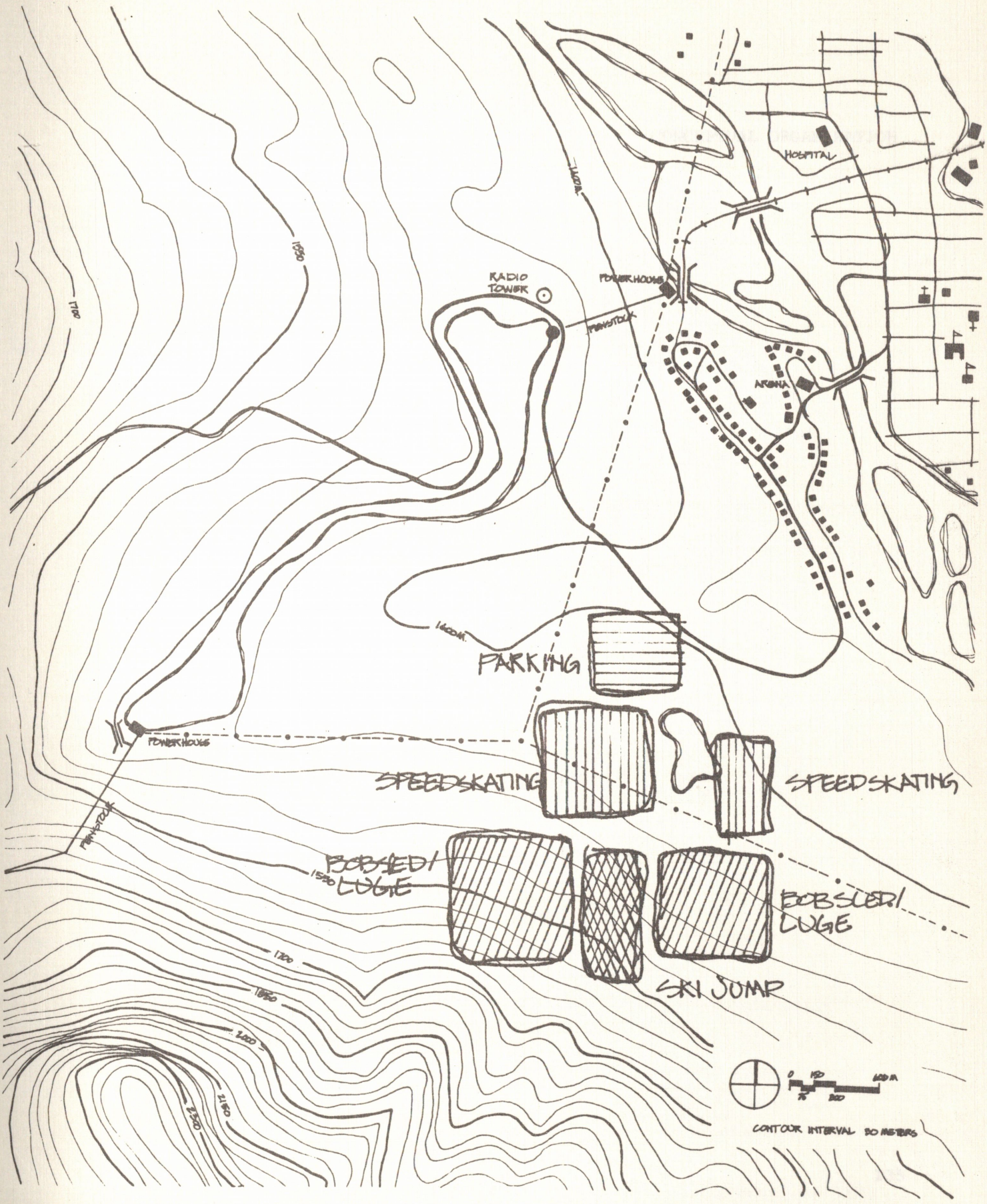


SECTION C·C

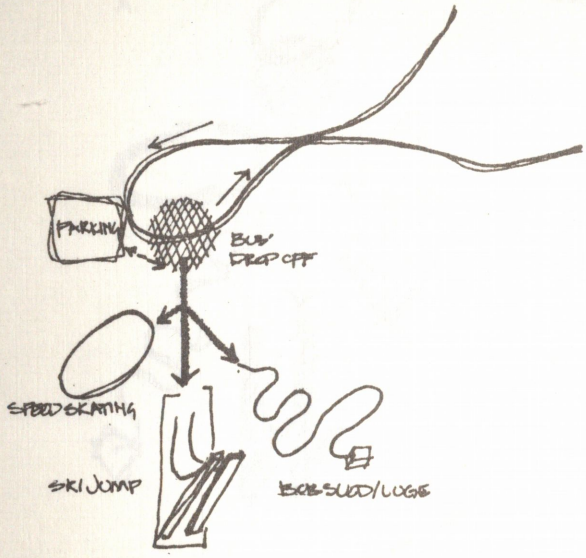


SECTION D·D

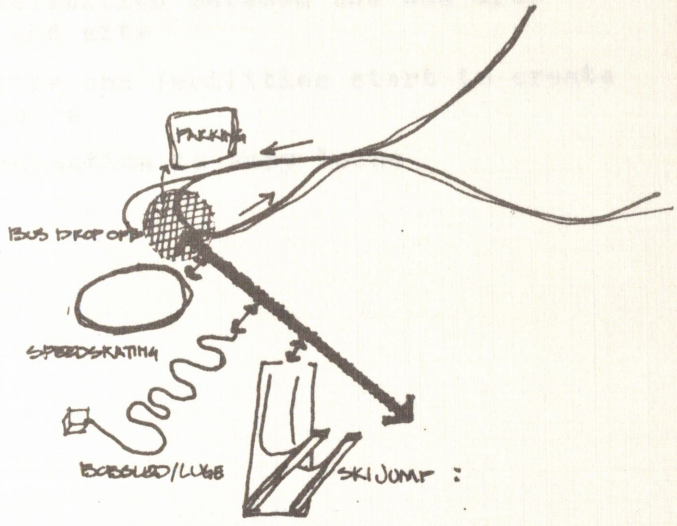
SITE SECTIONS


HOSPITAL
RADIO TOWER
POWER HOUSE
PENSTOCK
ARENA
1600
1700
1650
PARKING
POWER HOUSE
PENSTOCK
SPEEDSKATING
SPEEDSKATING
BOBSLED/ LUGE
BOBSLED/ LUGE
SKI JUMP
1700
1850
2000
2150
2300
CONTOUR INTERVAL 50 METERS

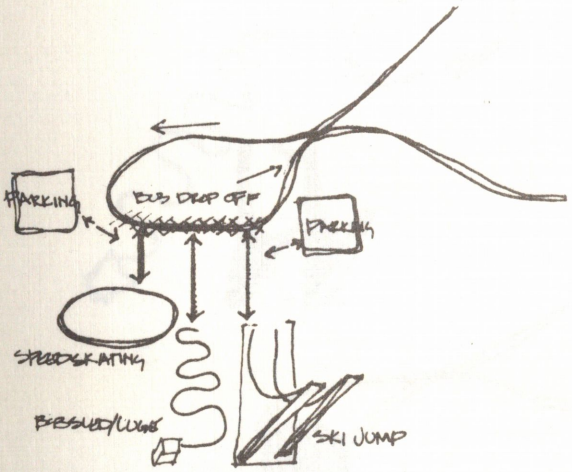
SITE AREAS



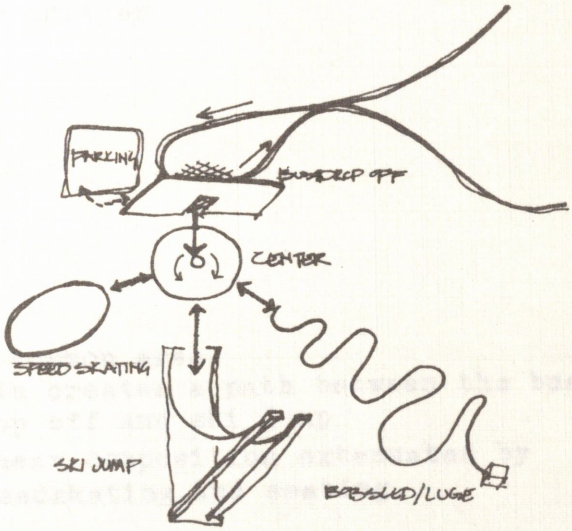
CONCEPT 1. CLUSTER - CENTRAL PATH
+ BUS DROP OF BECOMES SYMBOL
- AXIS BETWEEN ENTRY AND SKI JUMP



CONCEPT 2. LINEAR - CENTRAL PATH
+ LINEAR PROGRESSION
- IMAGE OF REFINEMENT
- SITE BECOMES THE TERMINUS



CONCEPT 3. LINEAR - PARALLEL PATHS
+ DROP OF BECOMES SYMBOL AND ORGANIZER
- PARALLELISM CREATES COMPARISON



CONCEPT 4. CLUSTER AROUND CENTER FORMING RADIAL PATTERN
+ BOTH VISUAL AND PHYSICAL INTERACTION
- CENTER CAN BECOME THE IMAGE

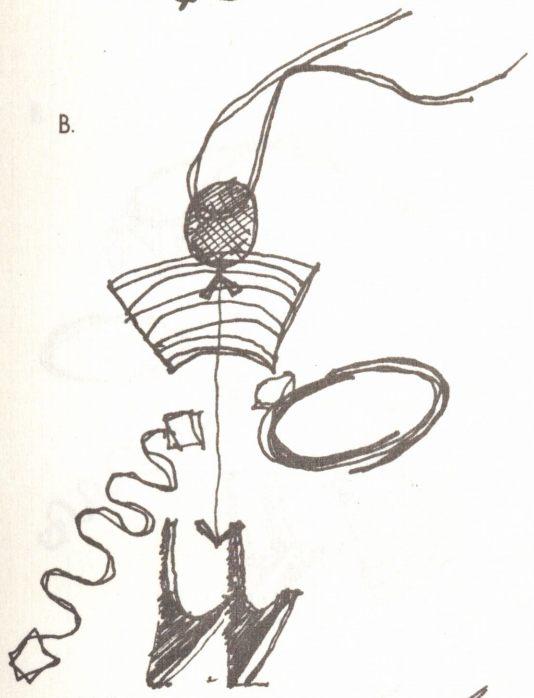
ORGANIZATION

A.



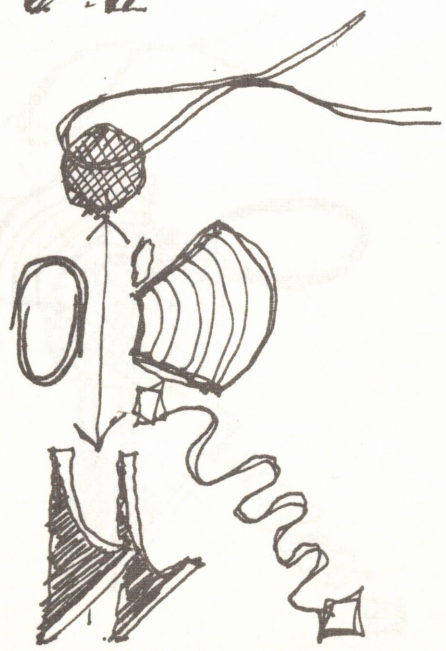
- No definition between the bus drop off and site
- Seating and facilities start to create a centre
- Organization is very loose

B.



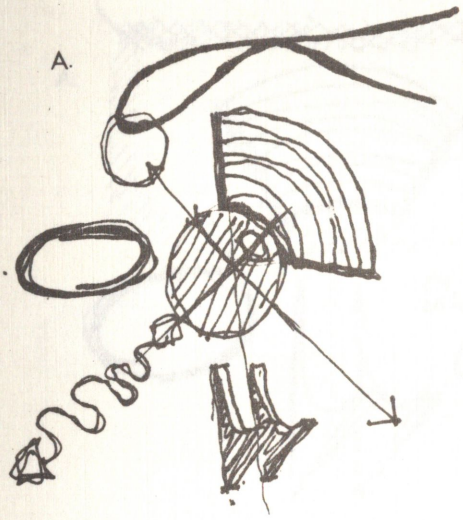
- Creation of an edge between the entrance and the facilities defines the site
- the facilities strengthen the polarity of the path between the ski jump and entrance
- The facilities seem uninterested in one another

C.



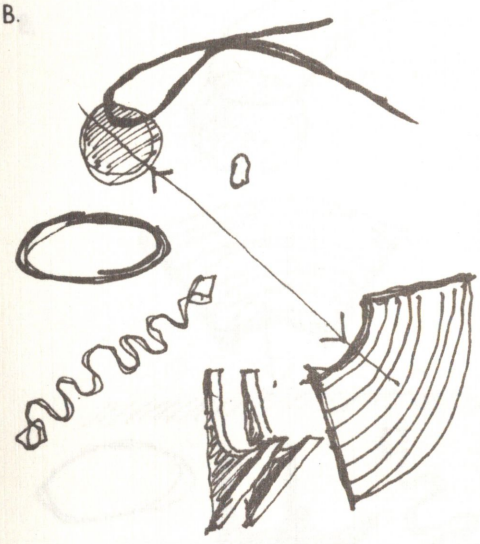
- No common area
- Axis creates a path between the bus drop off and ski jump
- Linear composition extenuated by speedskating and seating

A.



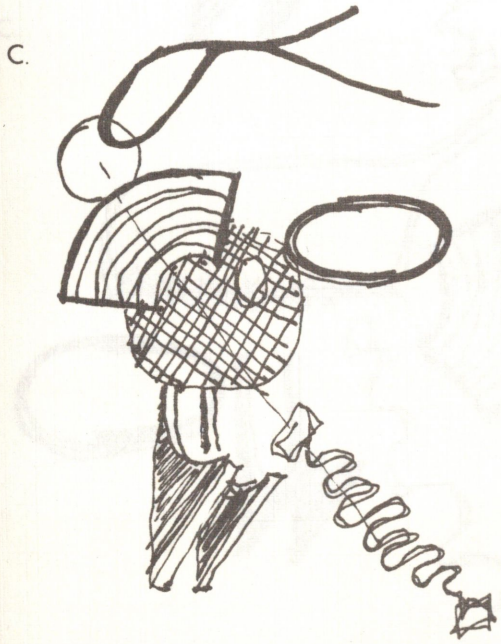
- Radial circulation from centre
- Open ended terminus
- Seating creates a boundary between facilities and vehicular movement

B.



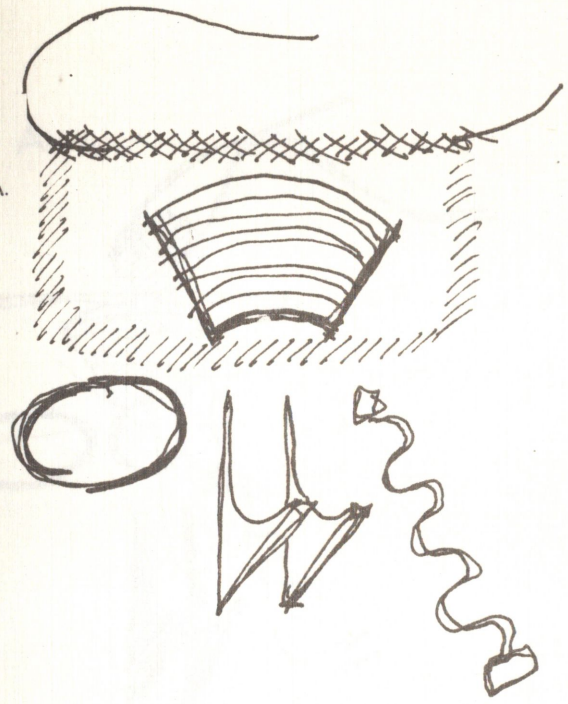
- Seating forms a terminus for the axiality of the path
- Polarity between drop off and seating
- Facilities focus on valley

C.



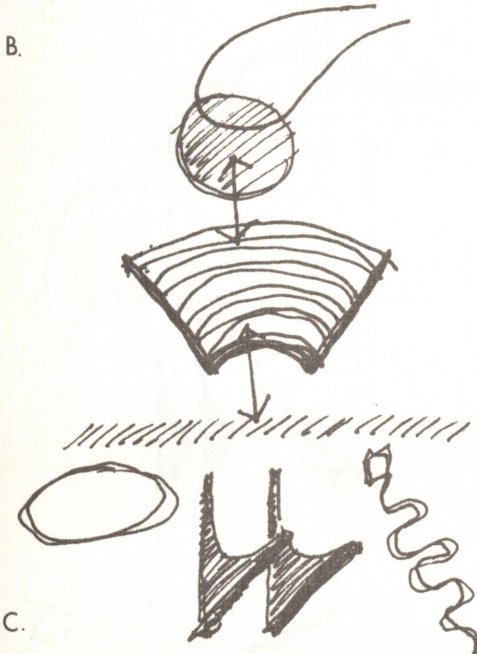
- Seating creates an edge between the drop off and entry
- Transformation from an axial path to a biomorphic line
- Facilities clustered around a centre creating an interior focus

A.



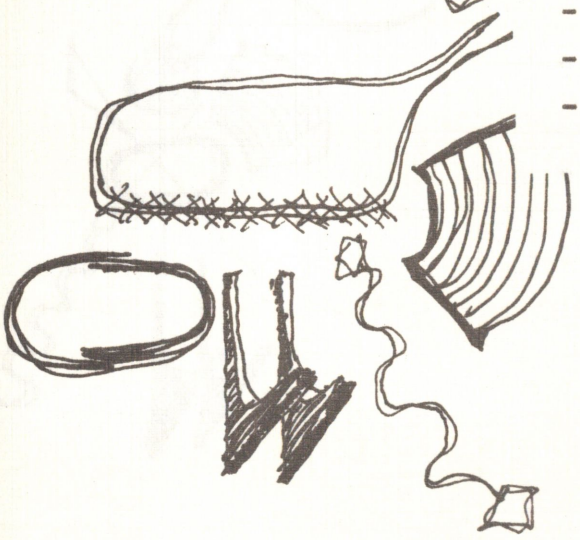
- No interaction amongest facilities
- No focus or centre
- Interior street created between seating and facilities
- Formation of an edge between drop off and facilities

B.



- No central focal point
- Cross axis created between entry and path between facilities
- Edge created between arrival and entrance
- No interaction amongest facilities

C.

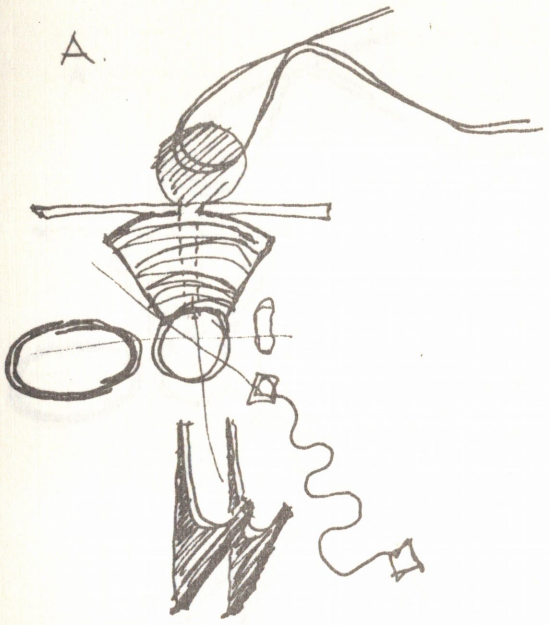


- Linear dispersal
- Facilities function as singular entities
- No principle focus, organization responds to vehicular movement

CONCEPT FOUR

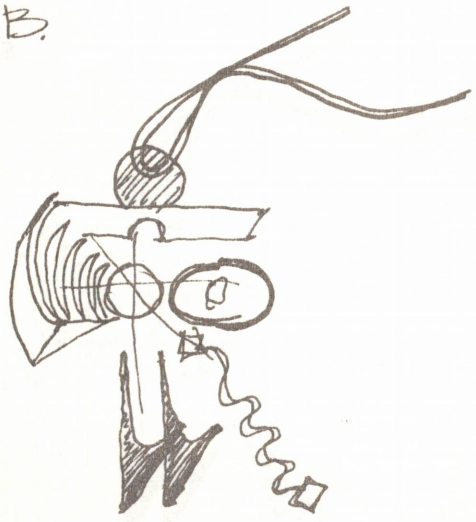
CLUSTER AROUND CENTER

A.



- Entry through the opening ceremonies stand into a common focus, emphasizes pre competition equality
- Conversation amongest facilities created by radial organization

B.



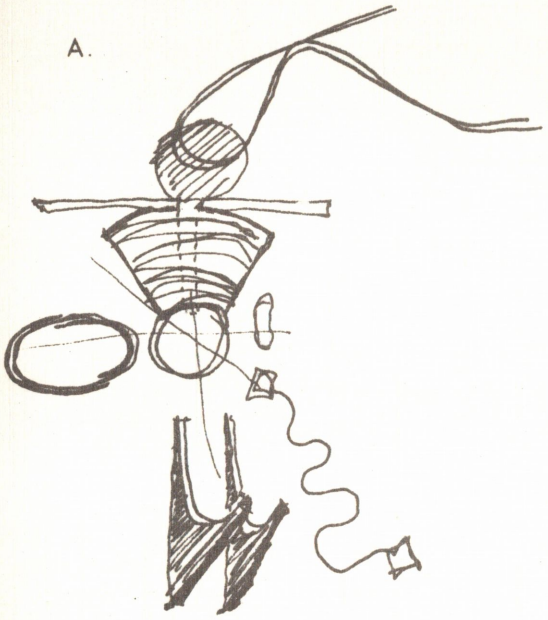
- Opening ceremonies stand creates a visual imbalance
- Two axes created
- Radial organization emphasizes interaction between facilities

C.



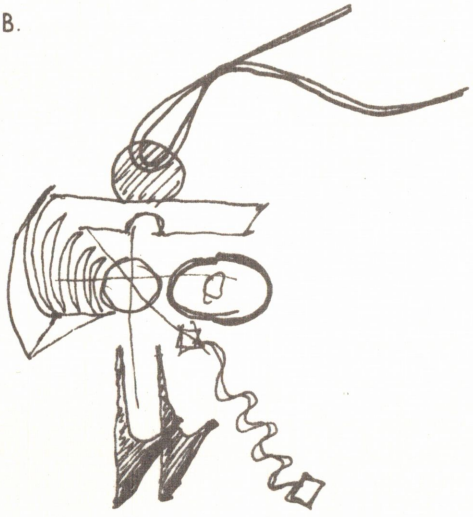
- Speedskating creates a focus that promotes movement
- Entrance creates a funneling action thus intensifying activity at the entrance
- Strong visual interaction between facilities with the focus on speedskating

A.



- Entry through the opening ceremonies stand into a common focus, emphasizes pre competition equality
- Conversation amongest facilities created by radial organization

B.



- Opening ceremonies stand creates a visual imbalance
- Two axes created
- Radial organization emphasizes interaction between facilities

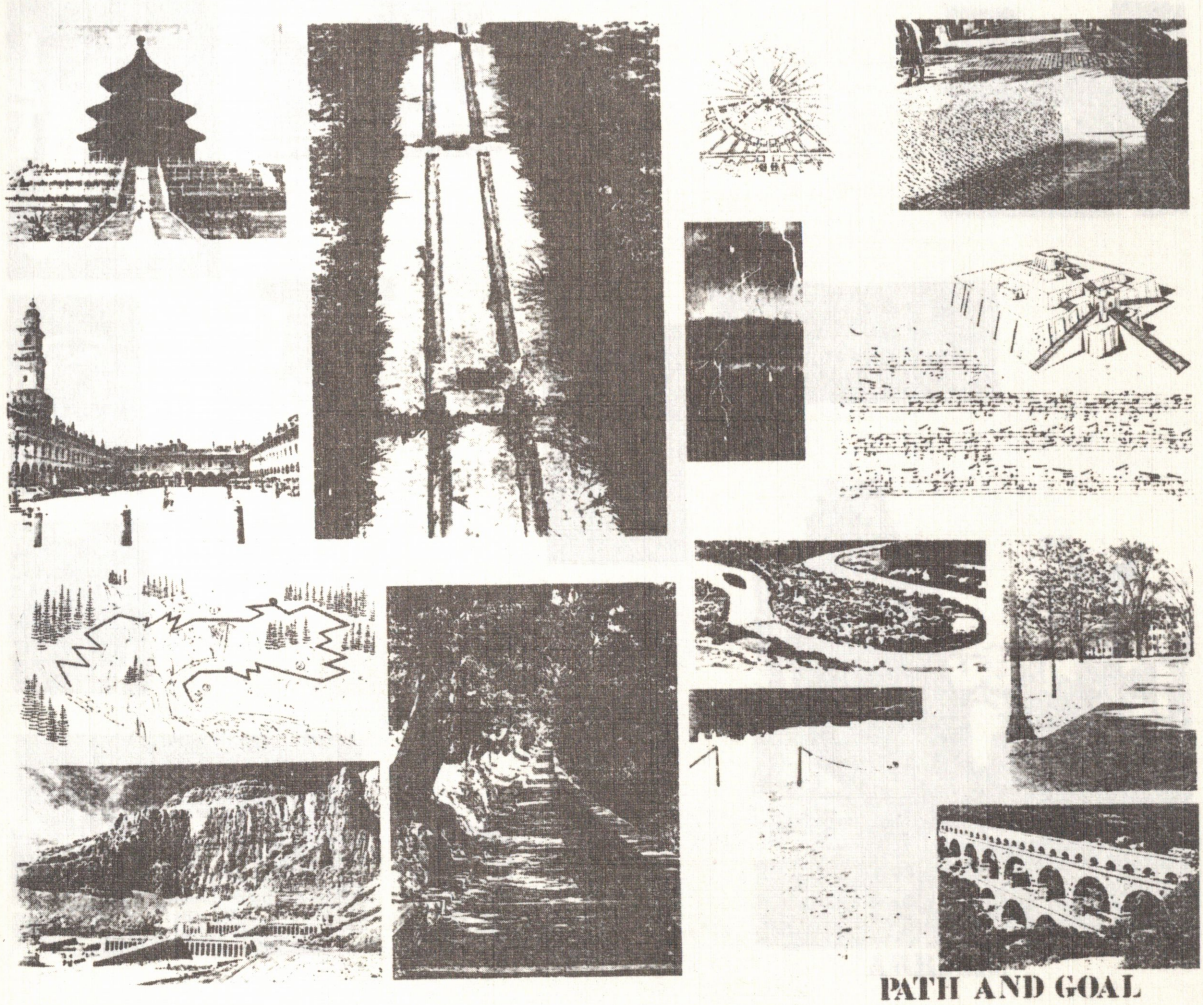
C.



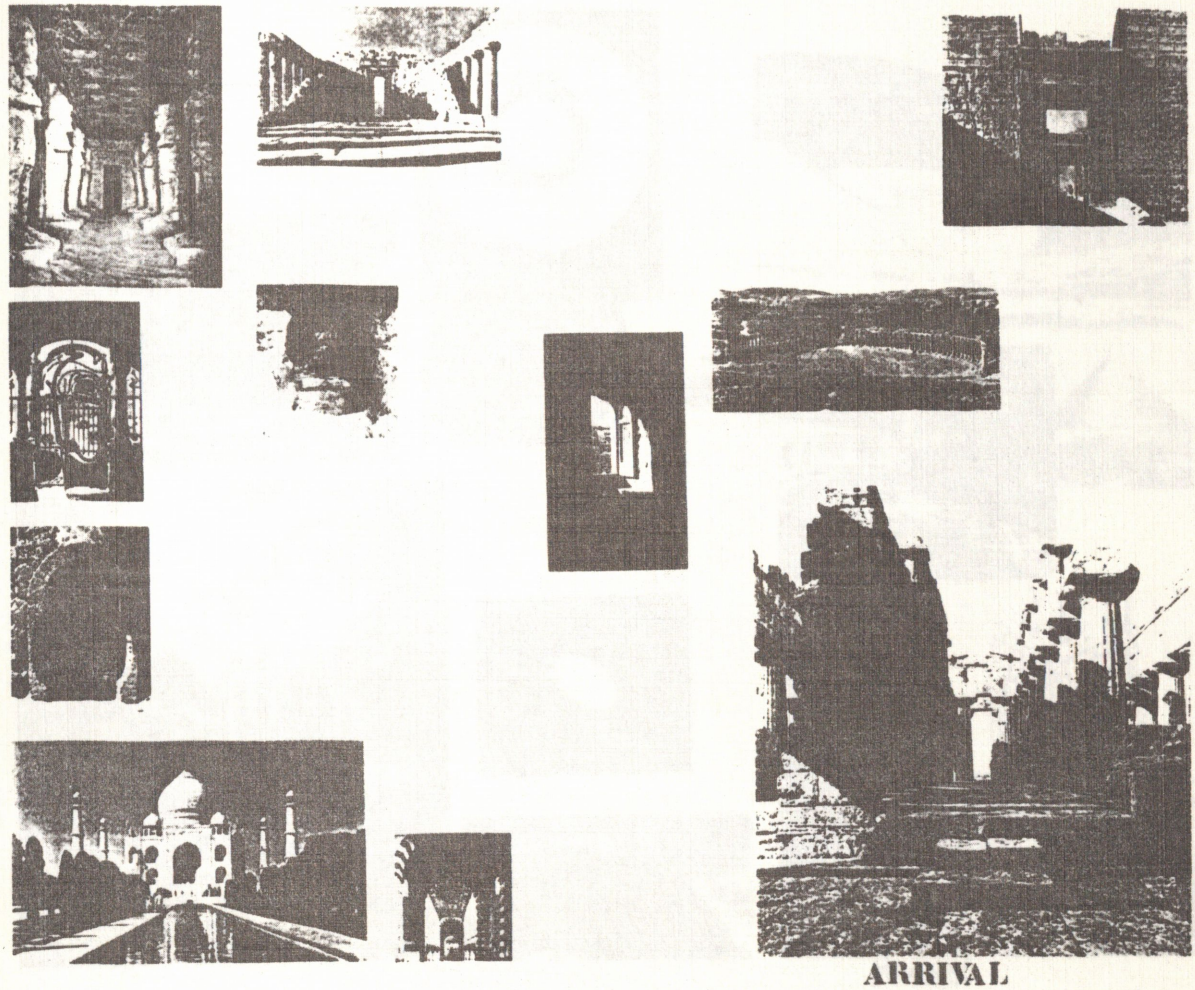
- Speedskating creates a focus that promotes movement
- Entrance creates a funneling action thus intensifying activity at the entrance
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DESIGN DEVELOPMENT

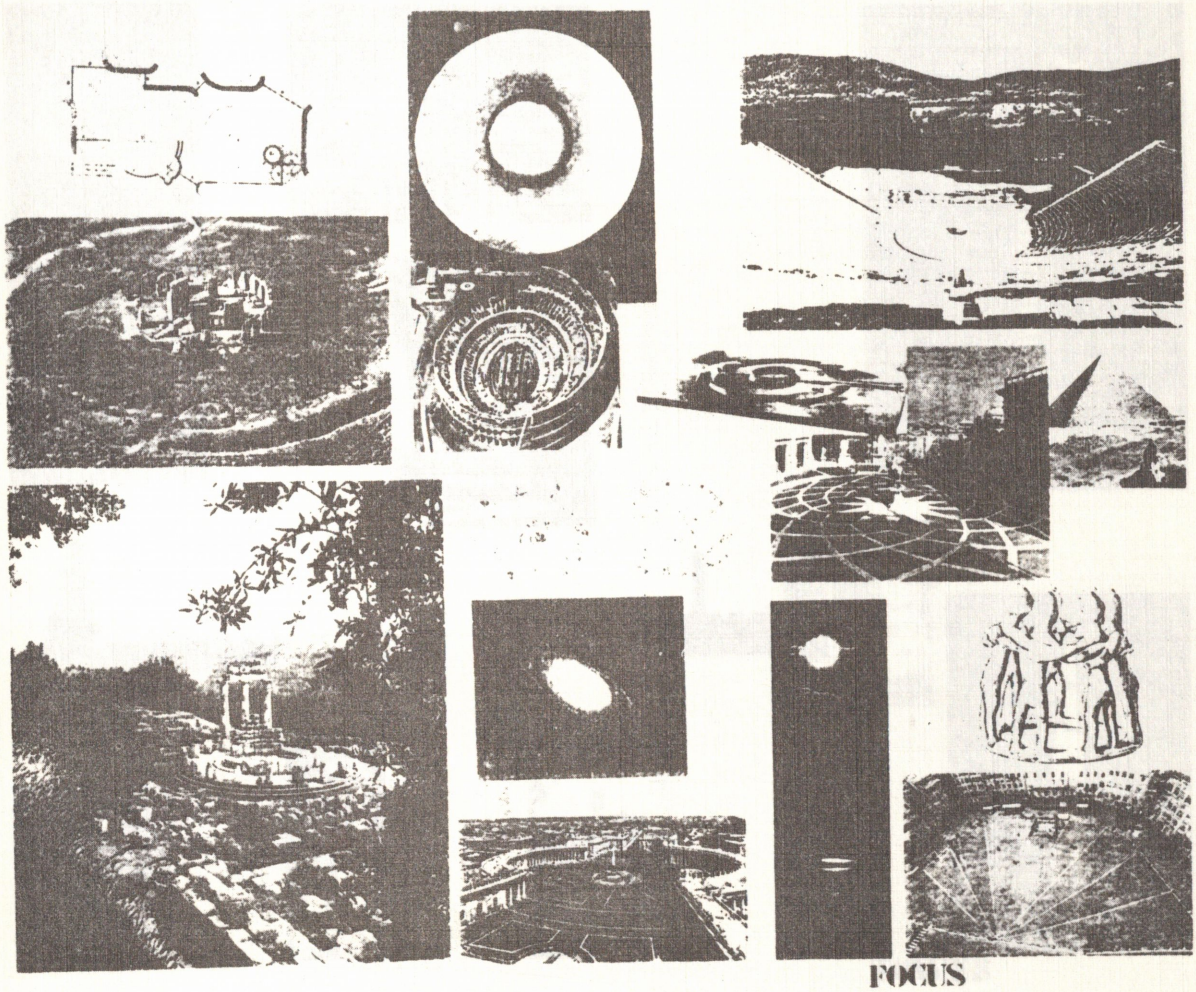
Throughout antiquity, forms of similar function have undergone evolutionary changes. While the physical characteristics have evolved, the meaning of the forms has remained constant. The following represent a collection of images in which certain consistent elements have heightened the experience of space.



PATH AND GOAL

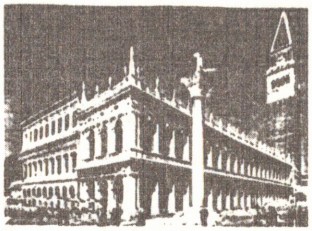


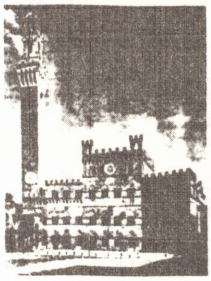
ARRIVAL

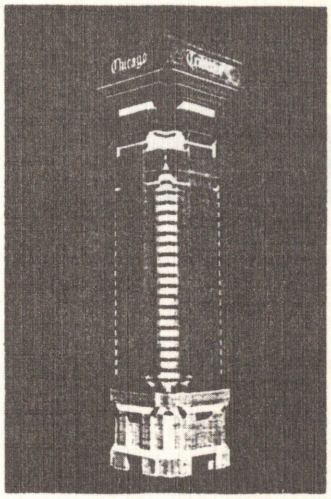


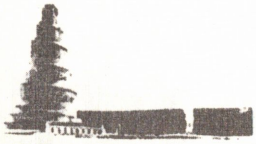
FOCUS

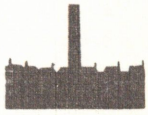


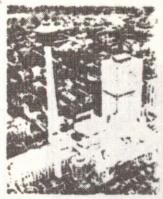


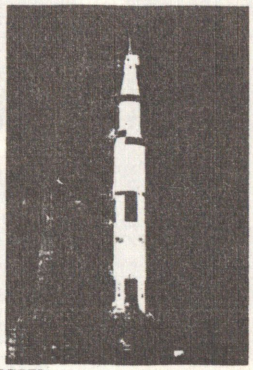




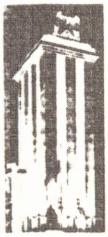


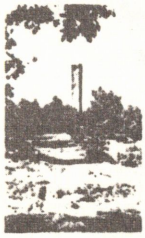




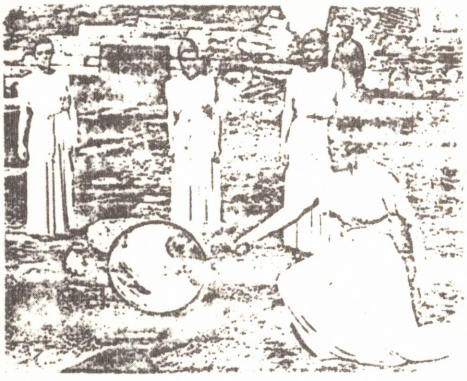


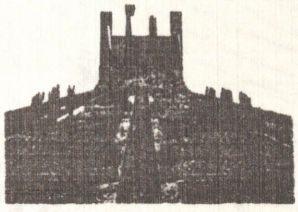




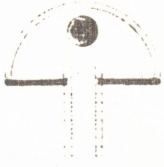


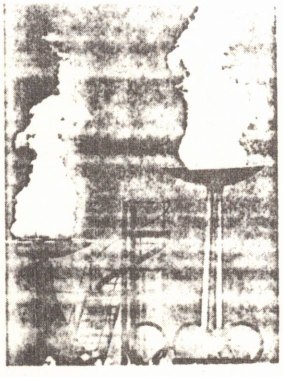
TOWER







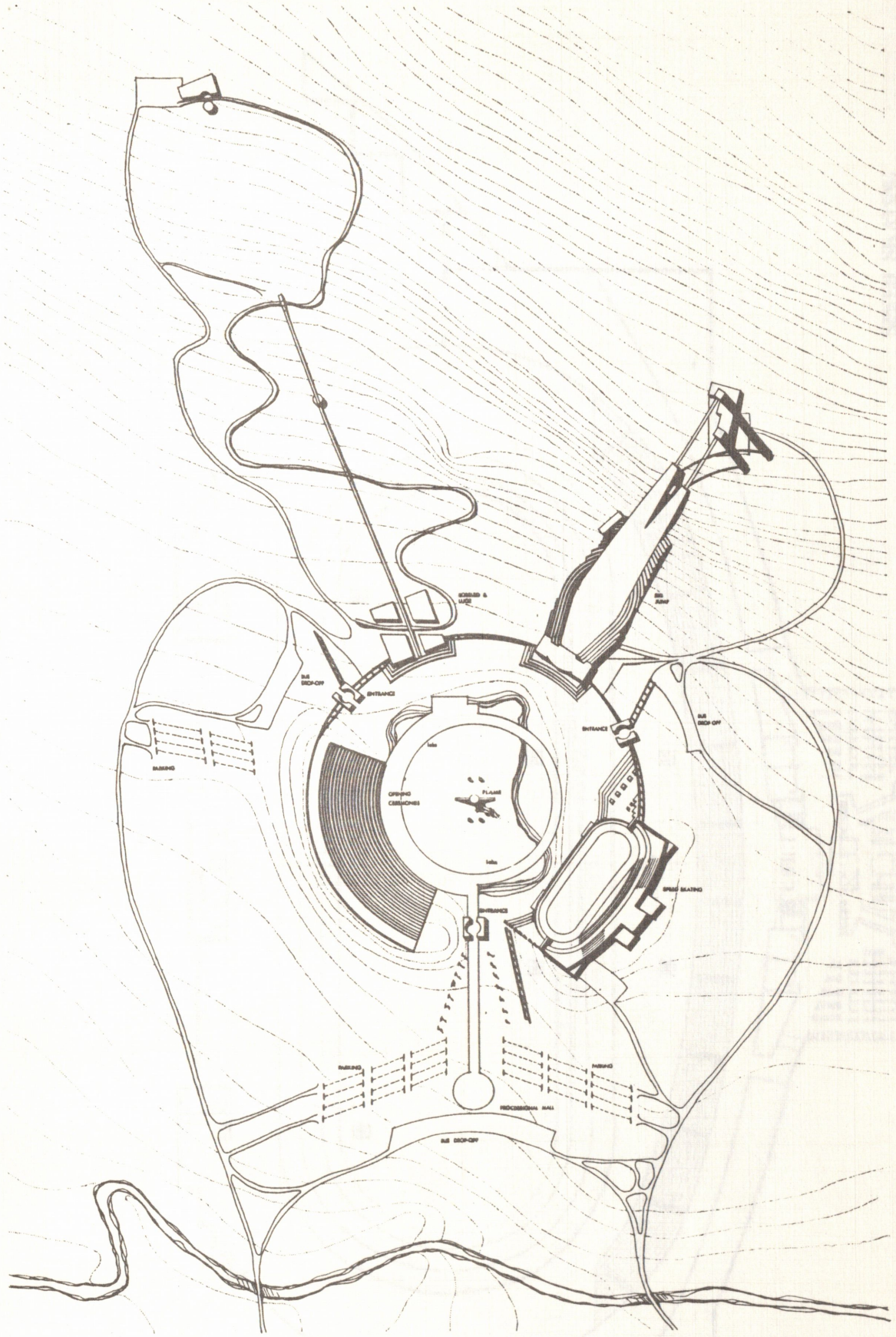




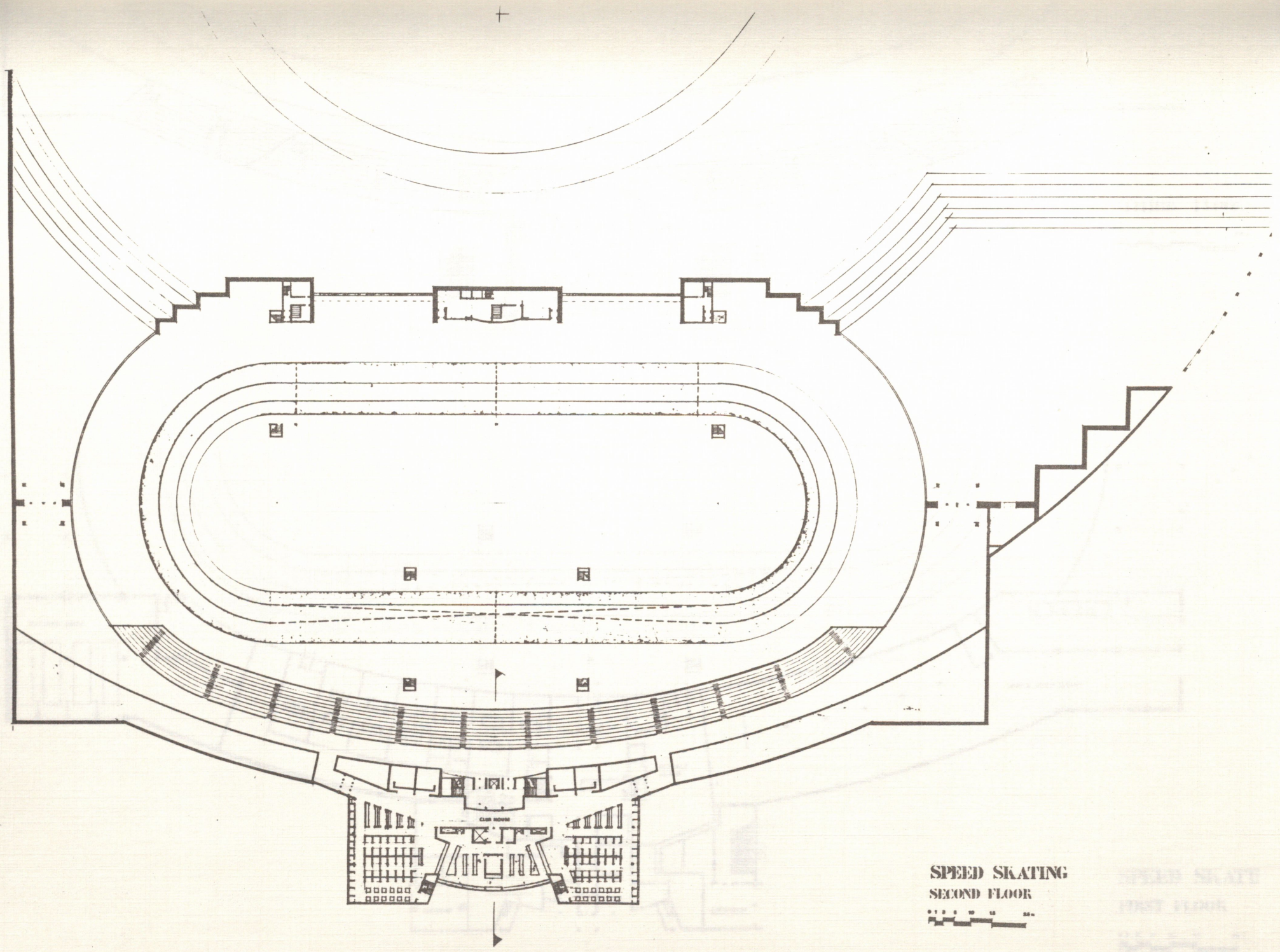




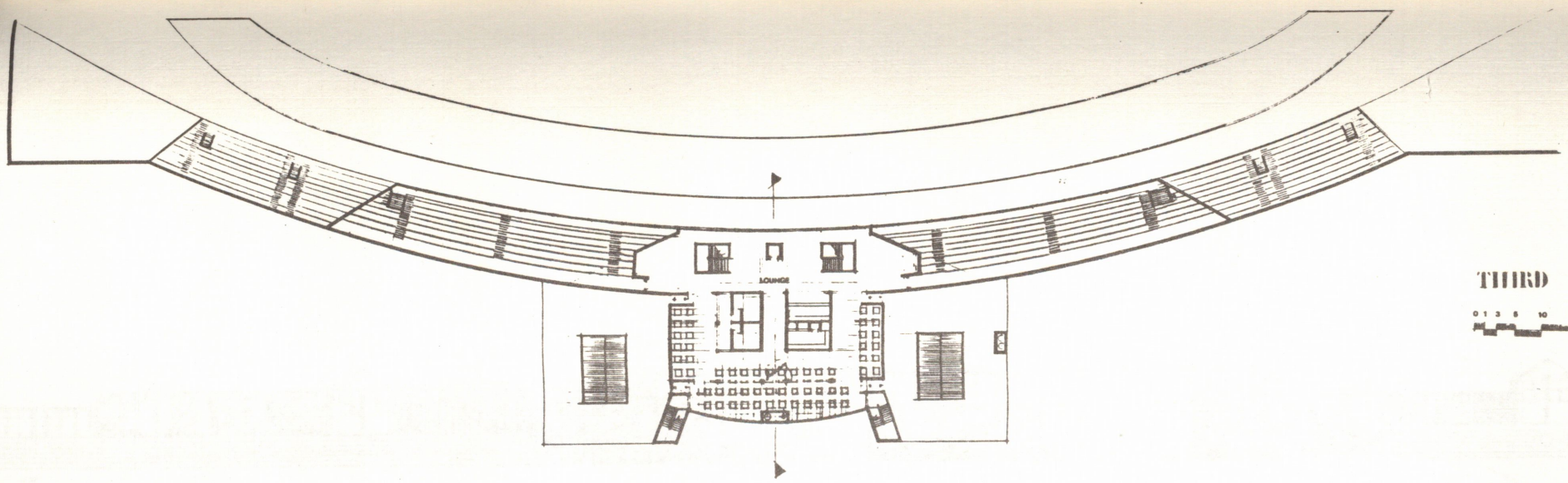
FLAME


BUS DROP-OFF
ENTRANCE
PARKING
OPENING CEREMONIES
FLAME
SPEED SKATING
PROCESSIONAL MALL

SITE PLAN

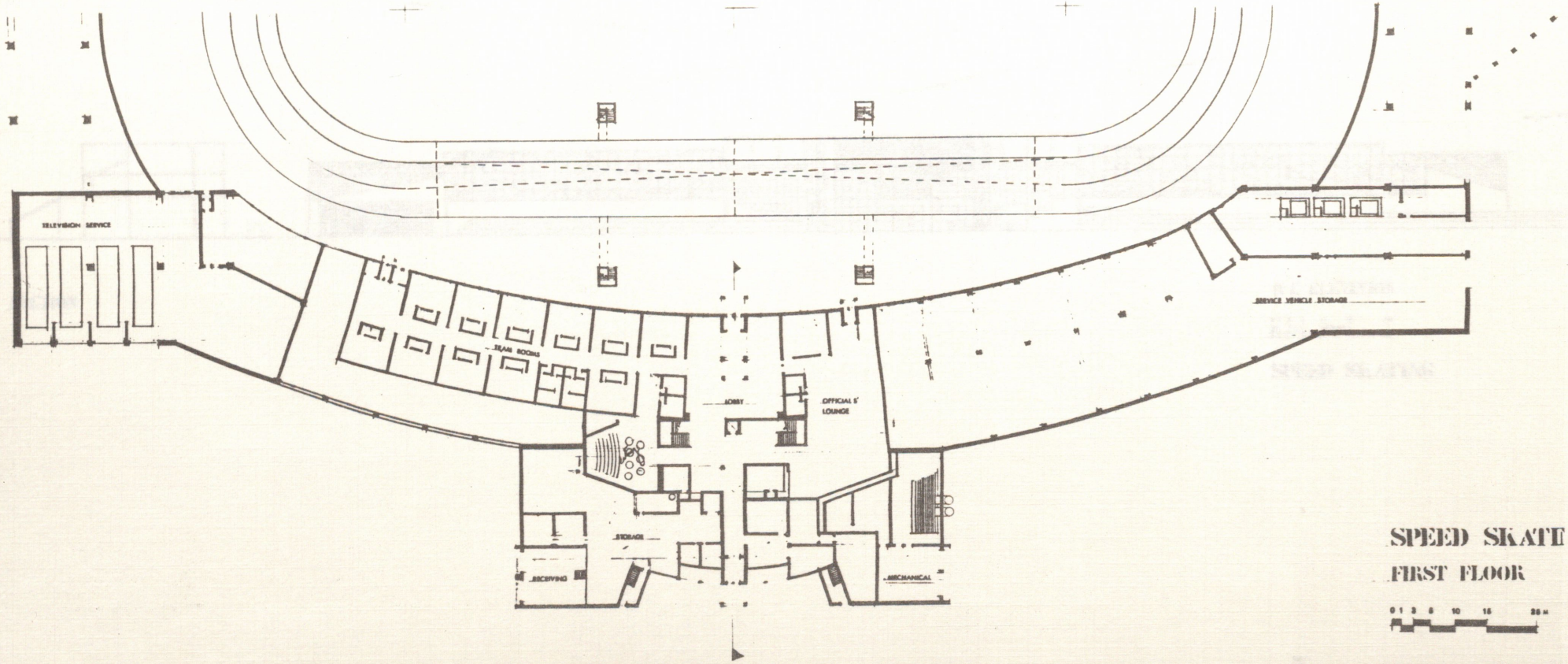


SPEED SKATING
SECOND FLOOR



THIRD FLOOR

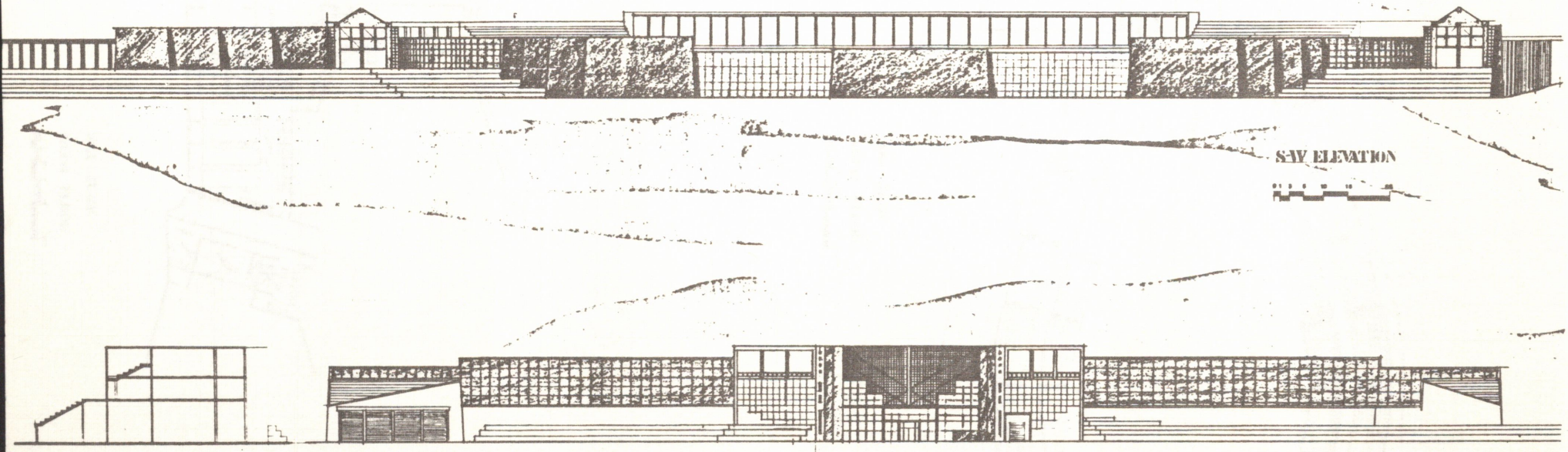
0 1 3 5 10 15 20 m



SPEED SKATE

FIRST FLOOR

0 1 3 5 10 15 20 m

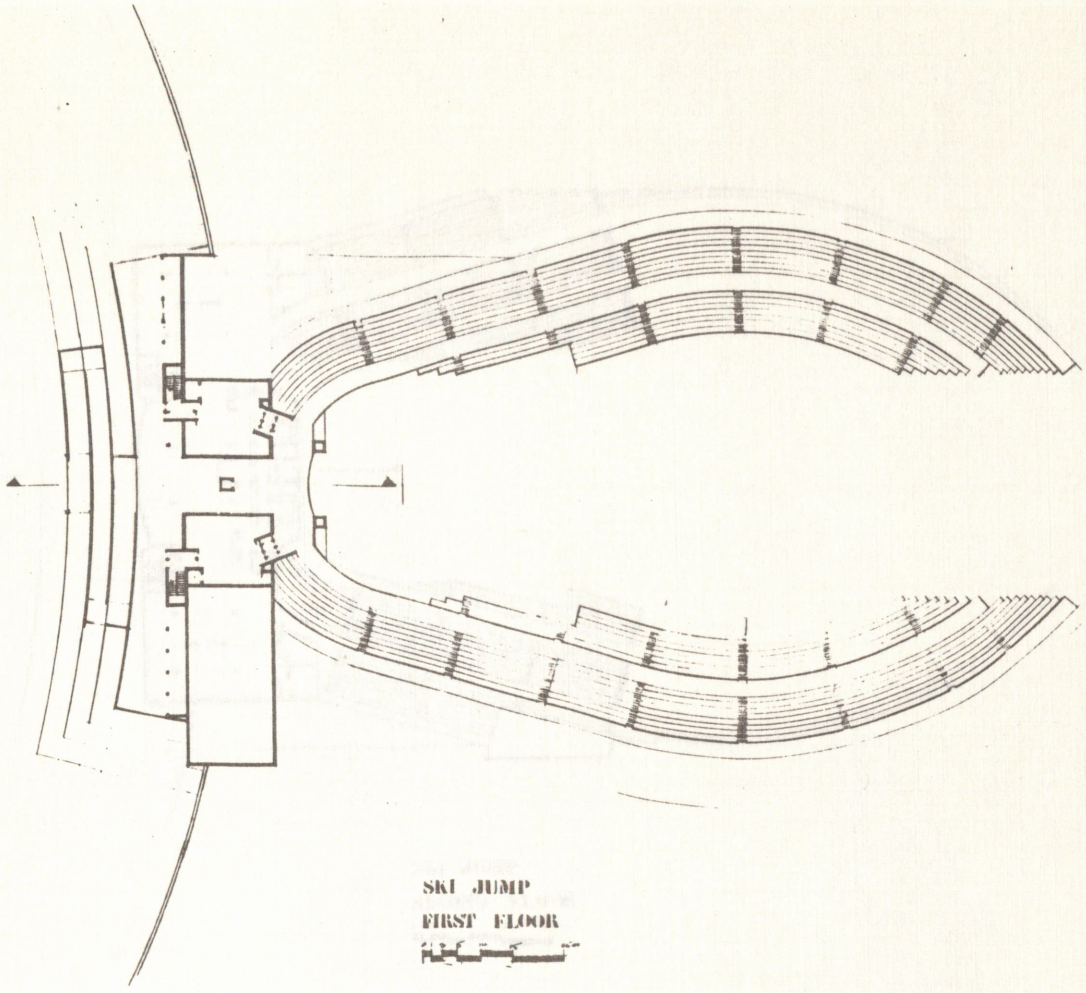


S-W ELEVATION

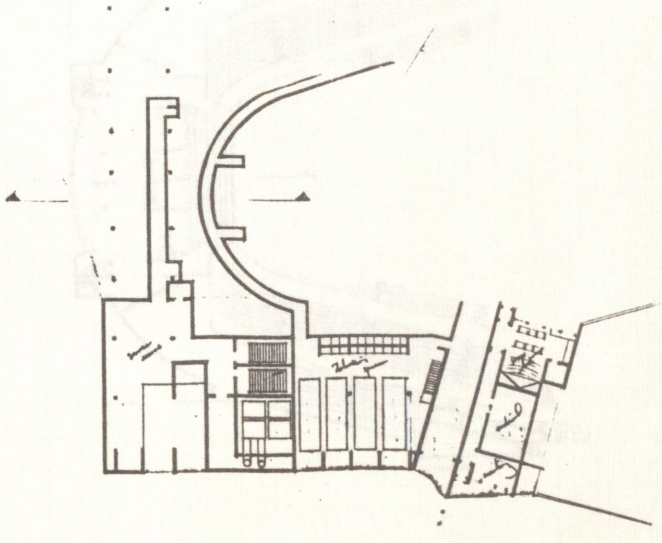
SECTION

N-E ELEVATION

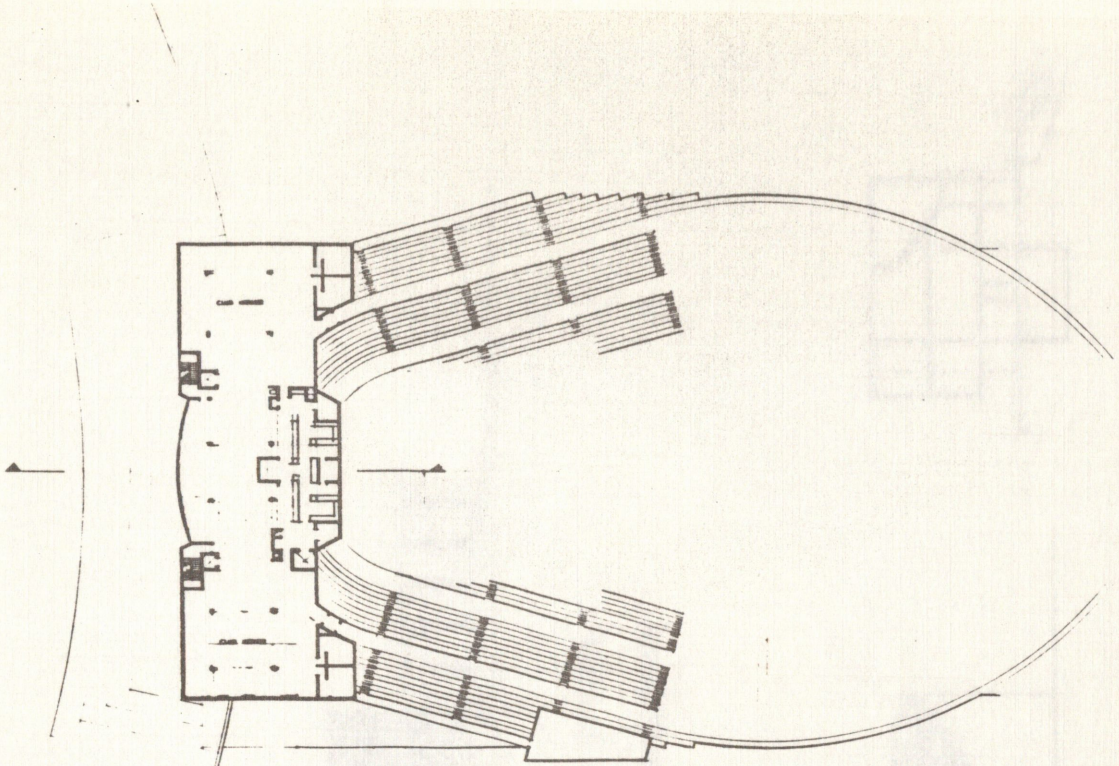
SPEED SKATING



SKI JUMP
FIRST FLOOR

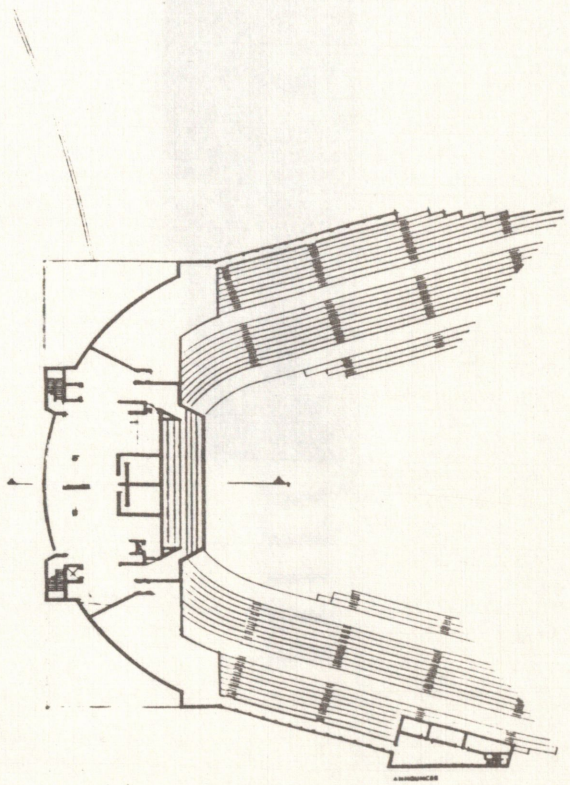


SKI JUMP
MECH FLOOR



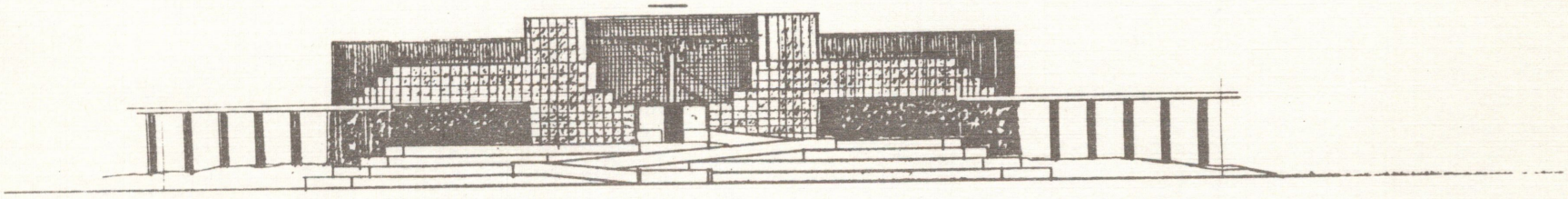
SKI JUMP

SECOND FLOOR

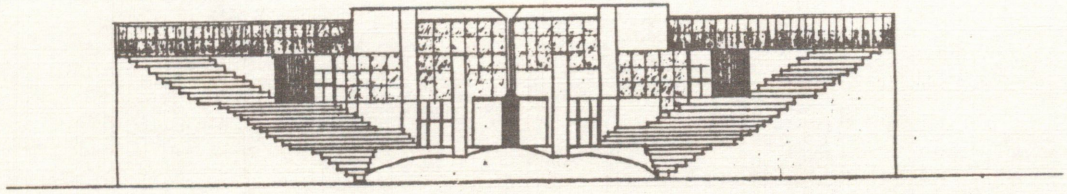


SKI JUMP

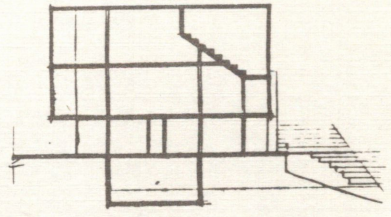
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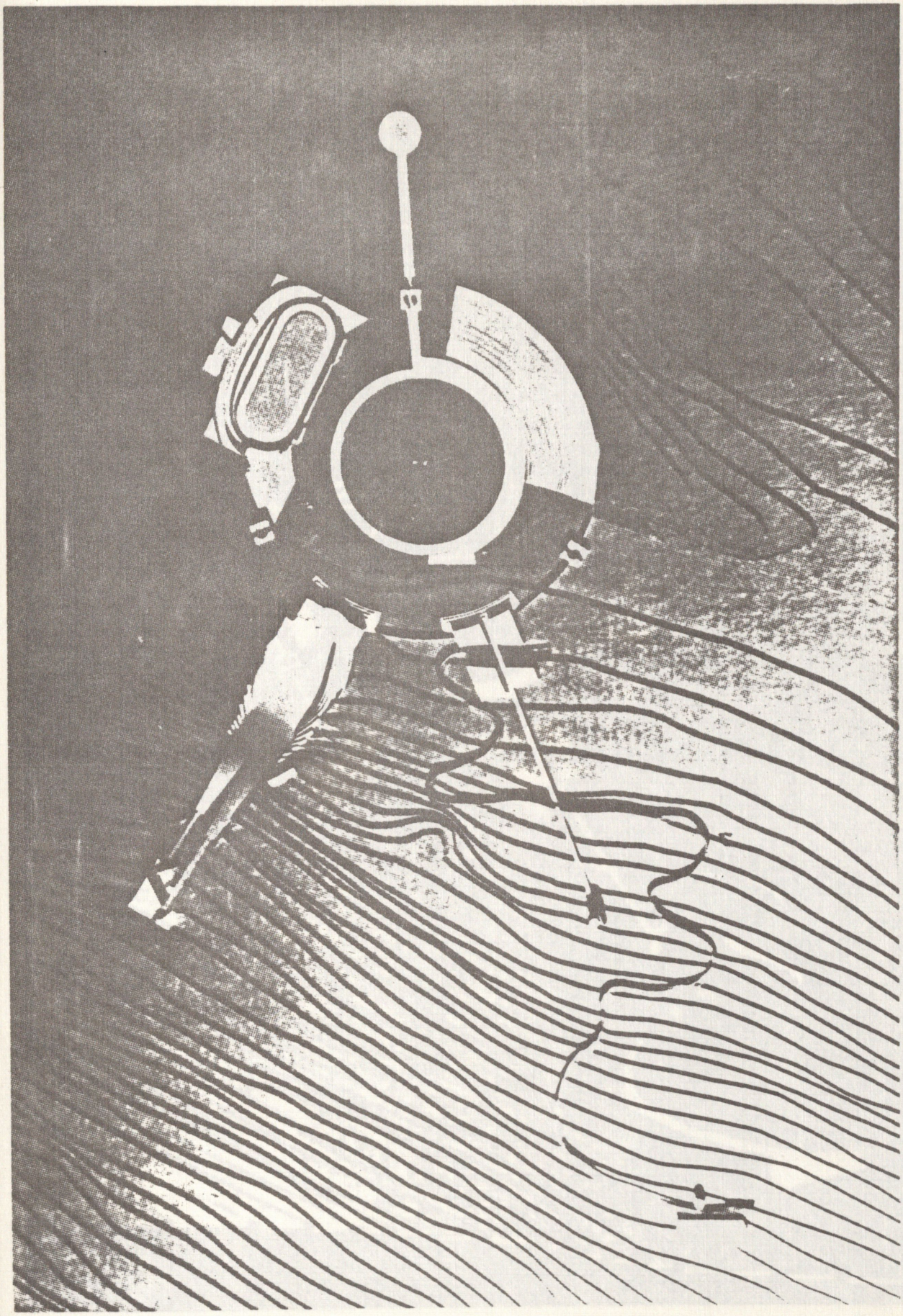
N-W ELEVATION



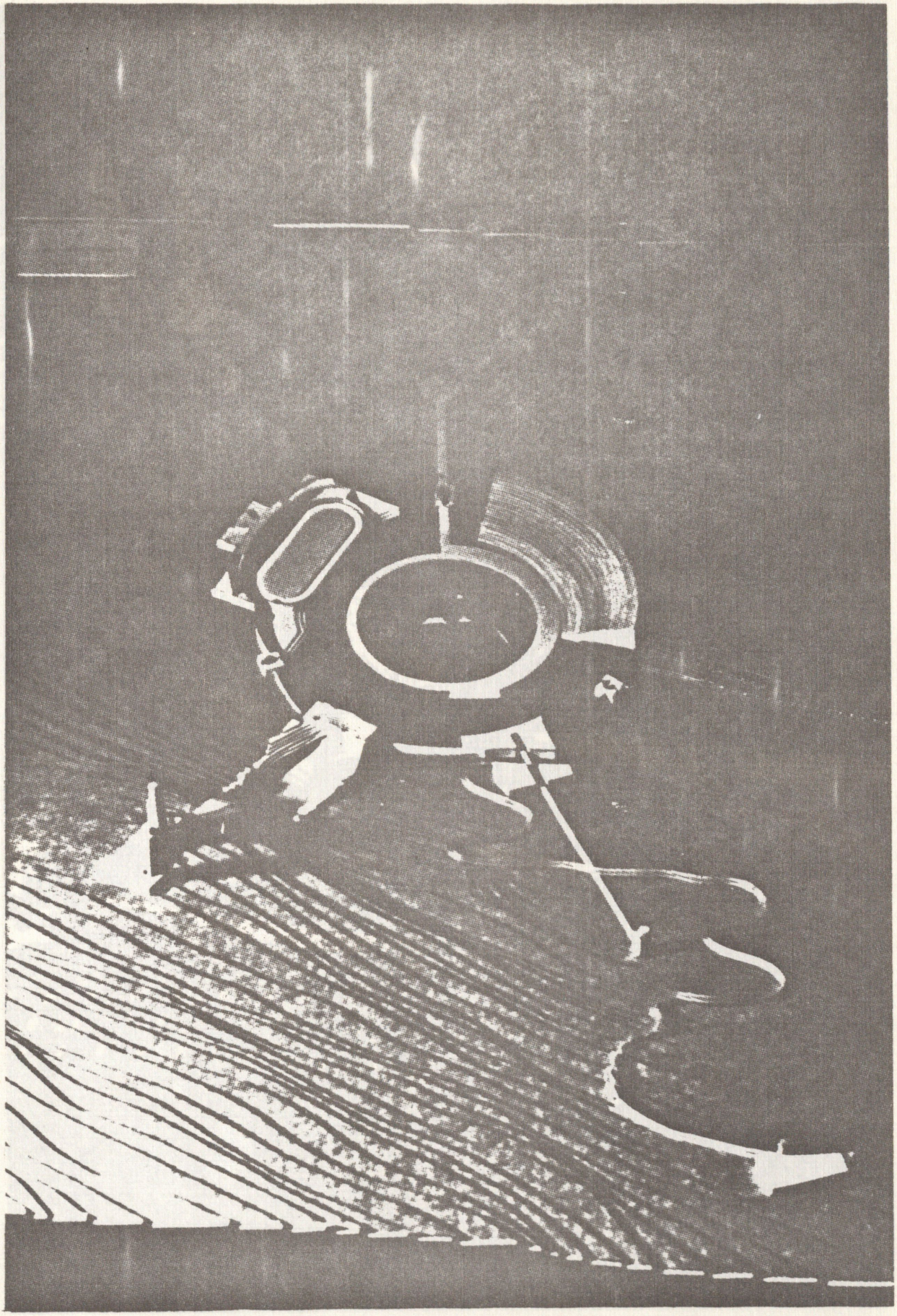
S-W ELEVATION



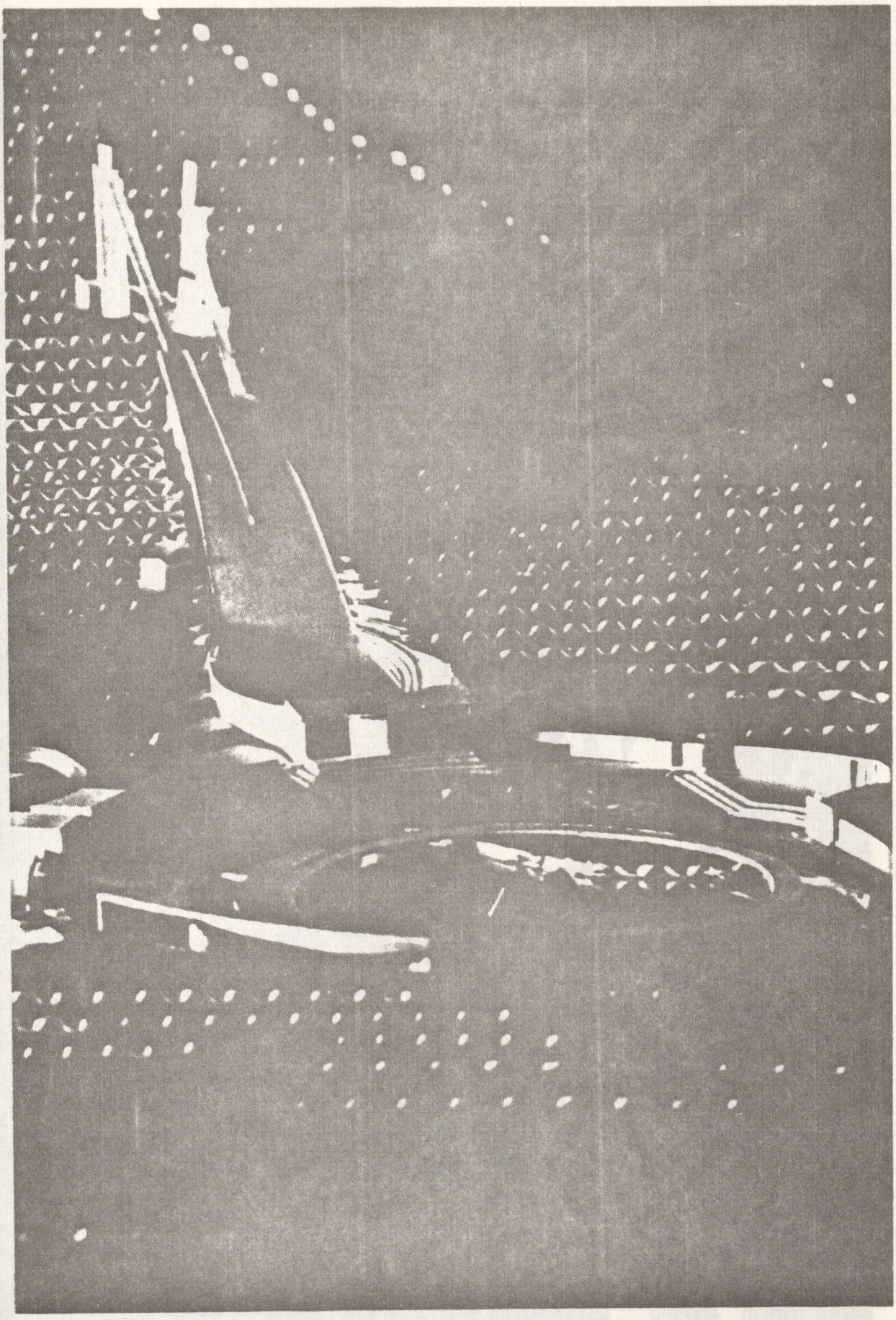
SECTION



PLAN VIEW



NORTH VIEW

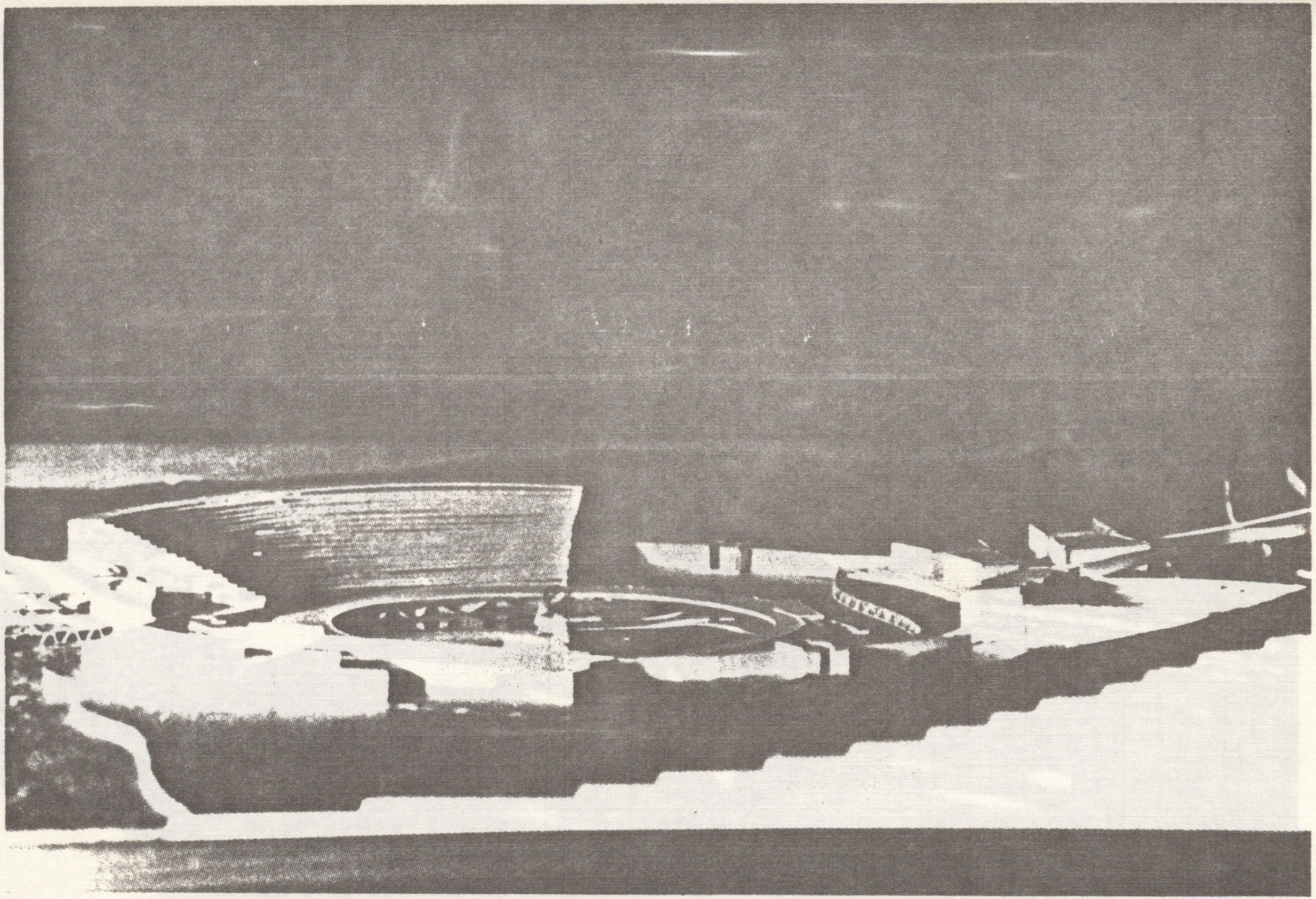


SOUTH-WEST VIEW

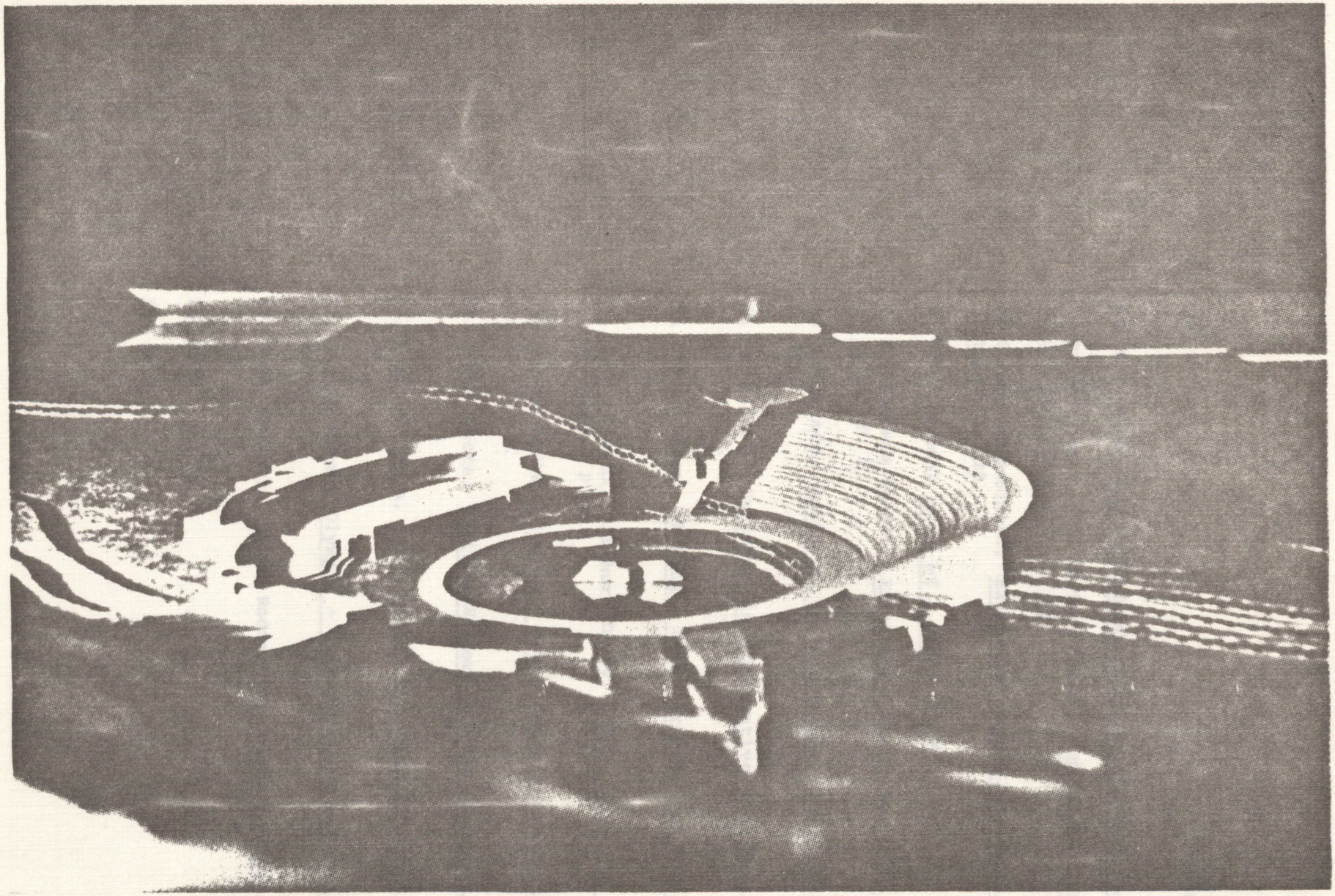
SOUTH-EAST VIEW



SOUTH-EAST VIEW



NORTH-EAST VIEW



NORTH-WEST VIEW

FOOTNOTES

1. Kurt Lewin, Der Richtungsbegriff in der Psychologie. P. 19.
   Translation: C. Norberg-Schulz, Existence, Space and Architecture. P. 22.

2. C. Norberg-Schulz, Existence, Space and Architecture. P. 20.

3. Kevin Lynch, Image of a City. P. 62.

4. C. Norberg-Schulz, Existence, Space and Architecture. P. 51.

5. M. Eliade, Patterns in Comparative Religion. P. 382.

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7. Ludwig Drees, Olympia - Gods, Artists and Athletes. P. 21.

8. John Kieran, Arthur Daley, The Story of the Olympics. P. 3.

9. Ludwig Drees, Olympia - Gods, Artists and Athletes. P. 17.

10. James Coote, Picture History of the Olympics. P. 9.

11. Lord Killanin, John Rodda, The Olympic Games. P. 24.

12. Ludwig Drees, Olympia - Gods, Artists and Athletes. P. 24.

13. Lord Killanin, John Rodda, The Olympic Games. P. 24.

14. Ibid., p. 26.

15. Ibid.

16. M. Eliade, Patterns in Comparative Religion. P. 111.

17. C. Norberg-Schulz, Existence, Space and Architecture. P. 18.

18. K. Goldammer, Die Formenwelt Des Religion. Ch. 4, p. 2.
Translation: C. Norberg-Schulz, Existence, Space and Architecture. P. 35.

19. B. J. Campbell, The Hero of a Thousand Faces. P. 30.

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