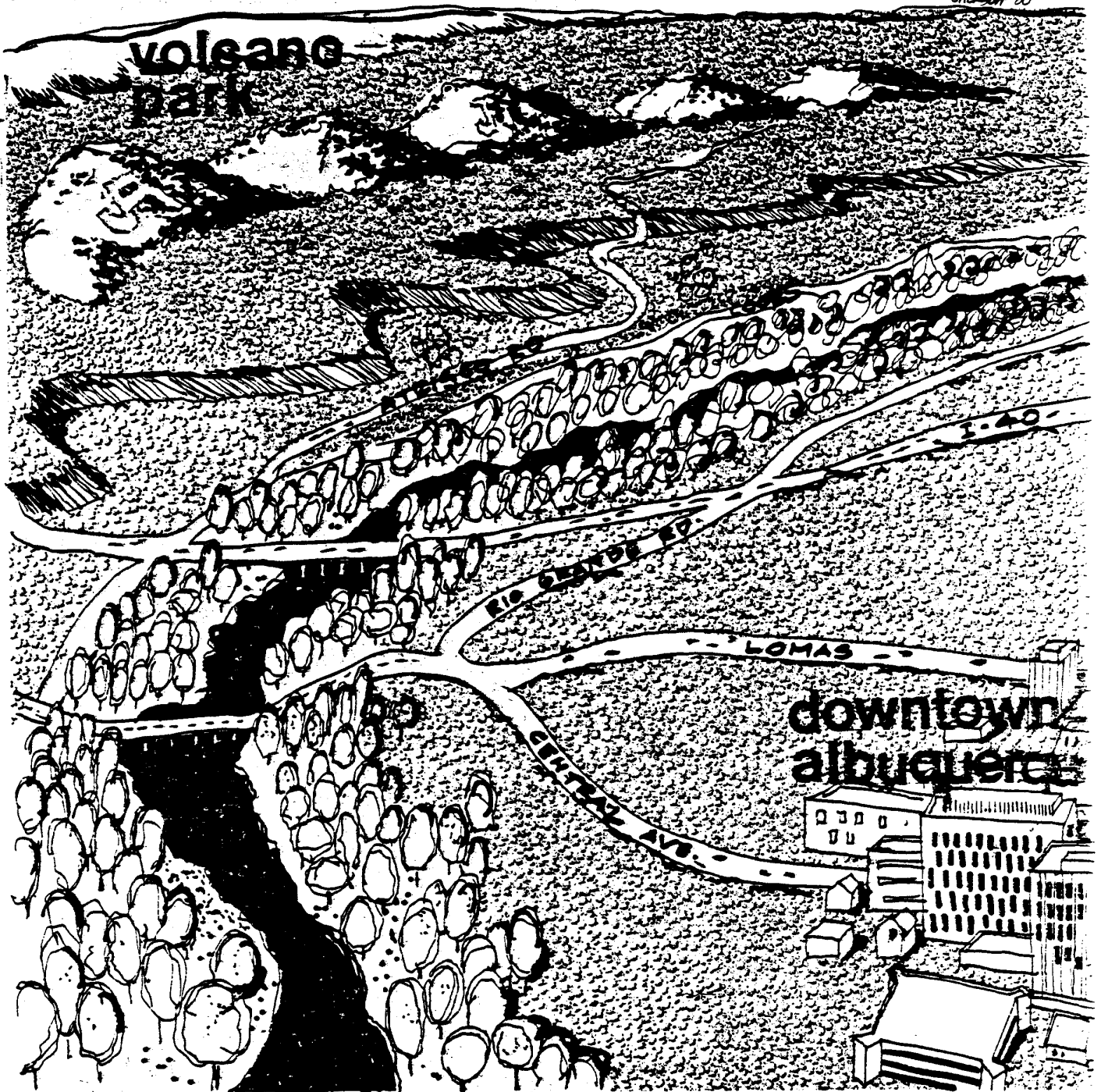


dickson '80



master plan for

volcano park

open space task force/ west mesa committee

MASTER PLAN FOR VOLCANO PARK

PREPARED BY THE OPEN SPACE TASK FORCE WEST MESA COMMITTEE

Ruth Eisenberg, chairman

Clifford Anderson

Michael Dickson

Eleanor Mitchell

Christopher Rasmussen

August 21, 1980

RESOLUTION R-216-80

ADOPTING THE MASTER PLAN FOR VOLCANO PARK.

WHEREAS, the City has adopted policies related to the designation and acquisition of Open Space land; and

WHEREAS, the City has adopted policies for the protection, management and development of Open Space land; and

WHEREAS, the State Natural Resources Department has requested a master plan for recreational use and development of Volcanoes and Bond Ranch Open Space tracts; and

WHEREAS, reimbursement of a portion of City funds used to purchase the Bond Ranch is being withheld pending preparation of said master plan and a schedule of implementation; and

WHEREAS, the Environmental Planning Commission has requested that volunteer Open Space Advisory Group prepare the attached Plan;

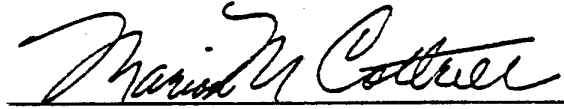
BE IT RESOLVED BY THE COUNCIL, THE GOVERNING BODY OF THE CITY OF ALBUQUERQUE:

Section 1. That the Master Plan for Volcano Park be adopted as the basis for recreational use and development of those open space lands on the West Mesa.

Section 2. That the Mayor is directed to prepare a 1981 Capital Improvement Bond project detailing a schedule for implementation and providing initial funding for that purpose.

PASSED AND ADOPTED this 22nd day of September, 1980.

BY A VOTE OF 9 FOR AND 0 AGAINST.



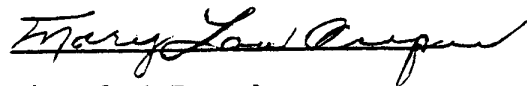
Marion M. Cottrell, President
City Council

APPROVED this 24th day of September 1980.



David Rusk, Mayor
City of Albuquerque

ATTEST:



Mary Lou Argue
City Clerk/Recorder

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PREFACE

ACKNOWLEDGEMENTS

We would like to express our appreciation to the following people, who contributed specific ideas or information used in the preparation of this Master Plan for Volcano Park: Clifford Crawford, Simeon Hyde, Albert Kudo, Gordon Page, and Armond Seidler.

We would also like to express our special appreciation to Paul Lusk and William Mueller, who offered comprehensive advice on the content and format of this Plan.

FOREWORD

One of Albuquerque's greatest assets is its wonderful sense of openness. No where is this felt more than on the West Mesa, where earth and sky seem close, even brought together by the upward thrust of the cones. Those who go to the volcanoes and look to the west are rewarded by something very rare near a modern city: a view of space that goes on and on, until the horizon is broken by the hazy form of Mt. Taylor. Even the sight of the Sandias to the east, the bosque and river below, and glimpses of the City almost hidden from view don't give the same sense of exhilaration.

And since the several persons making up the West Mesa Committee of the Open Space Task Force share the same enthusiasm, our problem of planning for recreational use of the area kept bumping up against the realities of the changes which will be brought about by the new location of the West Mesa Airport. We should like to declare "The volcanoes were here first. They can't be moved to another location. Let them keep their lonely beauty." But since the volcanoes and the airport are to exist in close proximity, each must accept that the other meets a need, Volcano Park no less than the airport. -Perhaps more, since its open space benefits the entire City, and it will offer recreation to many.

It is about 35 years since going to an airport to watch planes fly in and depart has been a form of recreation, so we are not including that among our plans. But while working on other recreational and educational plans has been our chief function, we spent much time trying to avert certain aspects of the airport which would be detrimental to the recreational use of the Park. In the Appendix there is a letter to the City Aviation Department commenting on those aspects.

The Heritage Conservation and Recreation Service has said that Volcano Park should "meet the needs of Albuquerque's major urban park." Almost ten years ago some seventh grade children (they must now be of voting age!) wrote to me as the chairman of Save the Volcanoes to say they supported our goal. One, even then with pre-science, advised not to build on land "that could become a famous park." Another wrote "I would like for you to make it into a park too, but I'd rather have it the way it is." This is the kind of park we hope it will become, as natural in appearance as it is today (or more so, since we hope to obliterate the maze of unnecessary roads and clean the debris of years of neglect). But, at the same time, we hope it will offer the opportunity for activities that will bring an extra quality to living in Albuquerque.

Ruth C Eisenberg

Ruth Eisenberg, chairman

West Mesa Committee of the
Open Space Task Force iv

INTRODUCTION

PURPOSE OF AND AUTHORIZATION FOR STUDY

The preparation of this document was authorized by the Environmental Planning Commission of the City of Albuquerque. Its purpose is to clarify the City's intentions to acquire, develop, and maintain the public open space and recreational facilities in Volcano Park. Upon its approval by the Albuquerque City Council, this document is the official Master Plan for Volcano Park.

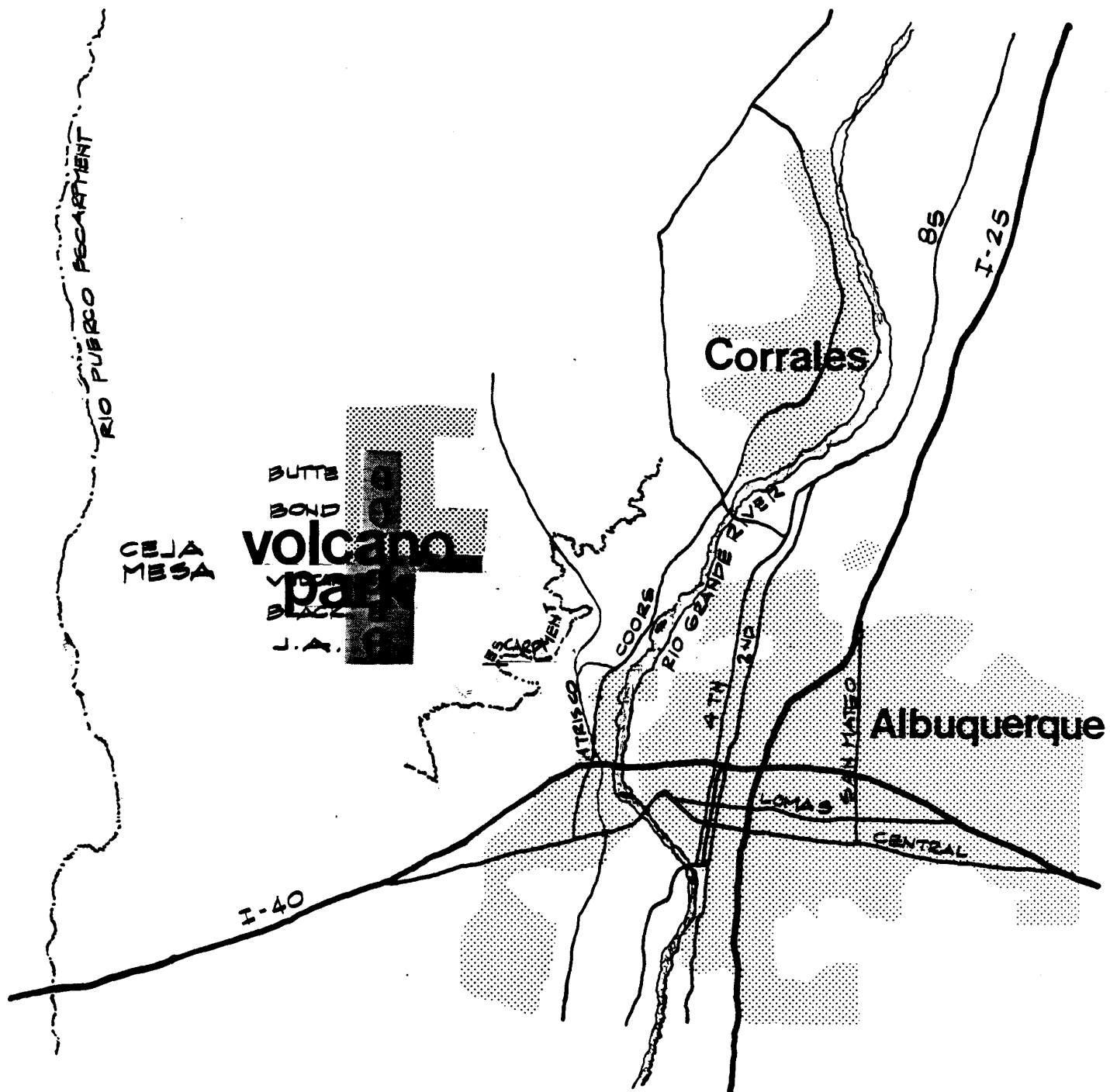
CONTENT AND SCOPE OF STUDY

This document provides brief descriptions of the physical and cultural resources of the Park and summarizes its legal status. It identifies goals and potential uses for the Park, and it suggests some of the facilities which should be developed to accommodate those uses. It recommends that the facilities be clustered in five intensive use areas which are identified on the Master Plan Map for Volcano Park. The Map and several conceptual designs for the proposed facilities are included with the text. Development priorities are discussed. More detailed information is offered in several appendices to the text.

SIZE AND LOCATION OF VOLCANO PARK

Volcano Park is located on the West Mesa five to seven miles from Downtown Albuquerque. It now includes 1570 acres. An additional 1880 acres will be acquired in forty acre tracts over the next eight years. Thus, the Park will include a total of 3450 acres by the year 1988. The other West Mesa tracts which have been designated as major open space and recreational lands are the Escarpment from Piedras Marcadas Canyon to La Rinconada Canyon, Indian Petroglyph State Park, La Boca Negra Park, and Shooting Range State Park. The Escarpment forms the eastern edge of the West Mesa, and Indian Petroglyph State Park and La Boca Negra Park are located along northern and central portions of it, respectively. Volcano Park is immediately west of La Boca Negra Park, and part of a large tract west of it is being studied as the site for a general aviation airport. Another large tract west of the airport site has been designated as Shooting Range State Park.

Two areas adjacent to Volcano Park are owned by the State of New Mexico. They are Section 16 northeast of the Park and Section 32 southeast of the Park. Although they are leased for grazing purposes, they function visually as open space. Two other tracts of land adjacent to the Park are privately owned, but should be acquired as public open space. The first is that portion of the Alameda Land Grant northeast of Volcano Park which contains part of the Northern Geologic Window. It is owned by the Horizon Corporation. The second is Section 5 southeast of the Park. It is owned by the Frank Bond family. Public acquisition of the Horizon land would protect the unique aesthetic, geologic, biologic, and anthropologic resources of the entire Northern Geologic Window. Public acquisition of the Frank Bond land would provide an important link between Volcano Park and La Rinconada Canyon, La Boca Negra Park, the Escarpment, and the Bosque beyond. This Plan strongly recommends that both areas be acquired by the City and developed and managed as parts of Volcano Park.



volcano park context map



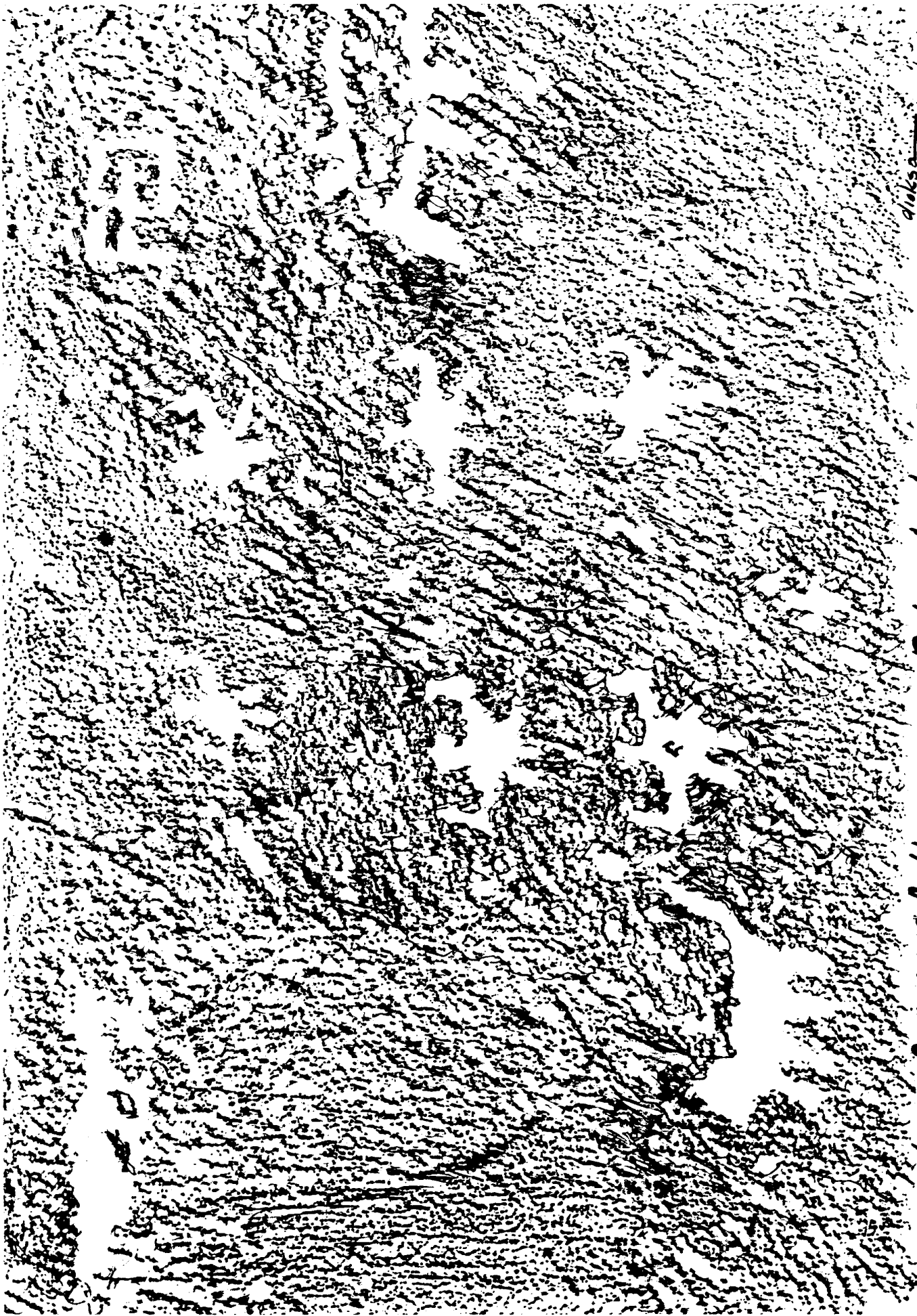
PHYSICAL RESOURCES OF PARK

TOPOGRAPHY, GEOLOGY, HYDROLOGY, AND SOILS

Elevations on the Volcano Park site range from 5460 to 6033 feet above sea level. Five extinct volcanoes and a large amphitheater comprise its dominant topographic features. The volcanoes and the smaller points and nubbins were formed during several geologic events that occurred 500,000 to 1,000,000 years ago. Dense, fine grained basalt rose from considerable depths along a north-trending fissure system associated with the subsidence of the Rio Grande trough. In a series of fiery explosions, volcanic materials were spewed onto the surface of the Santa Fe Formation. The latter consists of unconsolidated to loosely consolidated alluvial deposits of sand, gravel, and cobbles. Subsequent erosion has removed some of the volcanic materials which covered the area, but six flow sheets of various textures can still be seen in or near the Park. The depth to ground water is estimated to be 800 to 1000 feet below the surface of the land. Ground water in the area is generally of poor quality. Following periods of precipitation, surface water flows in an easterly direction through several swales and washes on the site. The shallow to moderately deep, well drained loamy and cobbly soils of the Alameda-Akela association overlie the basalt bedrock. Their textures and shallow depths severely limit their use for most engineering purposes.

BIOLOGY AND CLIMATE

The native plant communities sustained by the Alameda-Akela soils consist primarily of short and medium grasses mixed with some shrubs and annuals. Black grama and galleta are the dominant grasses; Apache plume, fourwing saltbush, and winterfat are the dominant shrubs on a relatively undisturbed site. Broom snakeweed and creosotebush may be common in some areas. The Park shows signs of having been overgrazed, but it may be in better range condition now than it was four or five years ago. About thirty species of amphibians and reptiles and thirty-five species of mammals are known or believed to be found on the site. At least thirty-five species of birds are common in the area. A small herd of pronghorn antelope inhabits the mesa between the Rio Grande and the Rio Puerco. Several have been observed in the Park in recent months. Meteorologic conditions differ slightly from those in urban Albuquerque. Midday winter temperatures are somewhat milder, and midday summer temperatures are hotter. The latter approach and sometimes exceed 100 F. The average annual precipitation is approximately 8.7 inches, about half of which occurs during July, August, and September. Winds from the west are common and sometimes severe. The air usually contains less than 1.0 ppm of carbon monoxide.



diakso 8/17/80

Drawing of one of the many Petroglyphs @
The Northern Geological Window

CULTURAL RESOURCES OF PARK

Archeological research in the vicinity of Volcano Park indicates that man has used the area for hunting and gathering, ceremonial, grazing, and mining purposes for at least 9000 years. La Boca Negra Cave, which is located in Bond Volcano, is listed in the New Mexico State Register of Cultural Activities. Surveys conducted in the Park in 1976 and 1978 identified several more sites and material evidence of man's activities in the area. The sites include Pueblo petroglyphs and a possible shrine constructed between 1100 and 1600 A.D. They also include numerous corrals and windbreaks built by the Spanish sometime after the middle of the 18th century. An old cinder pit at the base of Vulcan Volcano was recently dedicated as a public amphitheatre. It and numerous piles of tailings are the result of mining operations conducted throughout the 20th century.

LEGAL STATUS OF PARK

All of Volcano Park lies in areas designated as existing or proposed major public open space in the Comprehensive Plan for Major Open Space adopted by the Albuquerque City Council and the Bernalillo Board of County Commissioners in 1975. The City of Albuquerque purchased most of the land now included in the Park in 1973 and 1976, and it began to acquire the fifty-three forty acre tracts which will eventually be included in the Park in 1978. The contract which provides for municipal acquisition of the forty acre tracts stipulates that they will be incrementally released to the City with each quarterly payment over a period of ten years. Federal assistance through the Land and Water Conservation Fund was used for all acquisitions. The Santa Fe Pacific Railroad Company holds some of the mineral rights, and the Gordon Bond Estate holds the geothermal rights to the property. The Park is administered by the City Parks and Recreation Department. Four New Mexico Public Service Company transmission lines cross the property. They stretch from the southeast to the northwest perimeters of the site. Several unimproved roads provide public access to the Park from the east and the north.

MASTER PLAN FOR DEVELOPMENT OF VOLCANO PARK

GOALS FOR DEVELOPMENT OF PARK

In its present, mostly undeveloped state, Volcano Park meets at least four different kinds of user needs. It provides educational insights into the earth processes by which the physical environment was formed and the many ways in which man has interacted with that environment over the course of time. It affords recreational opportunities for a variety of unstructured activities. It offers a natural setting for the presentation of cultural programs. And it provides psychological relief from the urban environment.

THE FIRST GOAL FOR THE DEVELOPMENT OF VOLCANO PARK MUST BE TO PRESERVE THE PARK'S CAPACITY TO MEET THOSE FOUR KINDS OF USER NEEDS.

THE SECOND GOAL MUST BE TO ENHANCE THAT CAPACITY.

This Plan recognizes the different needs, interests, and abilities of a broad spectrum of the population. It also considers the needs, etc. of future generations of users. Where choices must be made between the conflicting needs of different users, it gives priority to those which can be met at Volcano Park better than at any other open space or recreational site. It does not attempt to accommodate needs which are incompatible with the natural character of the Park.

USES FOR PARK

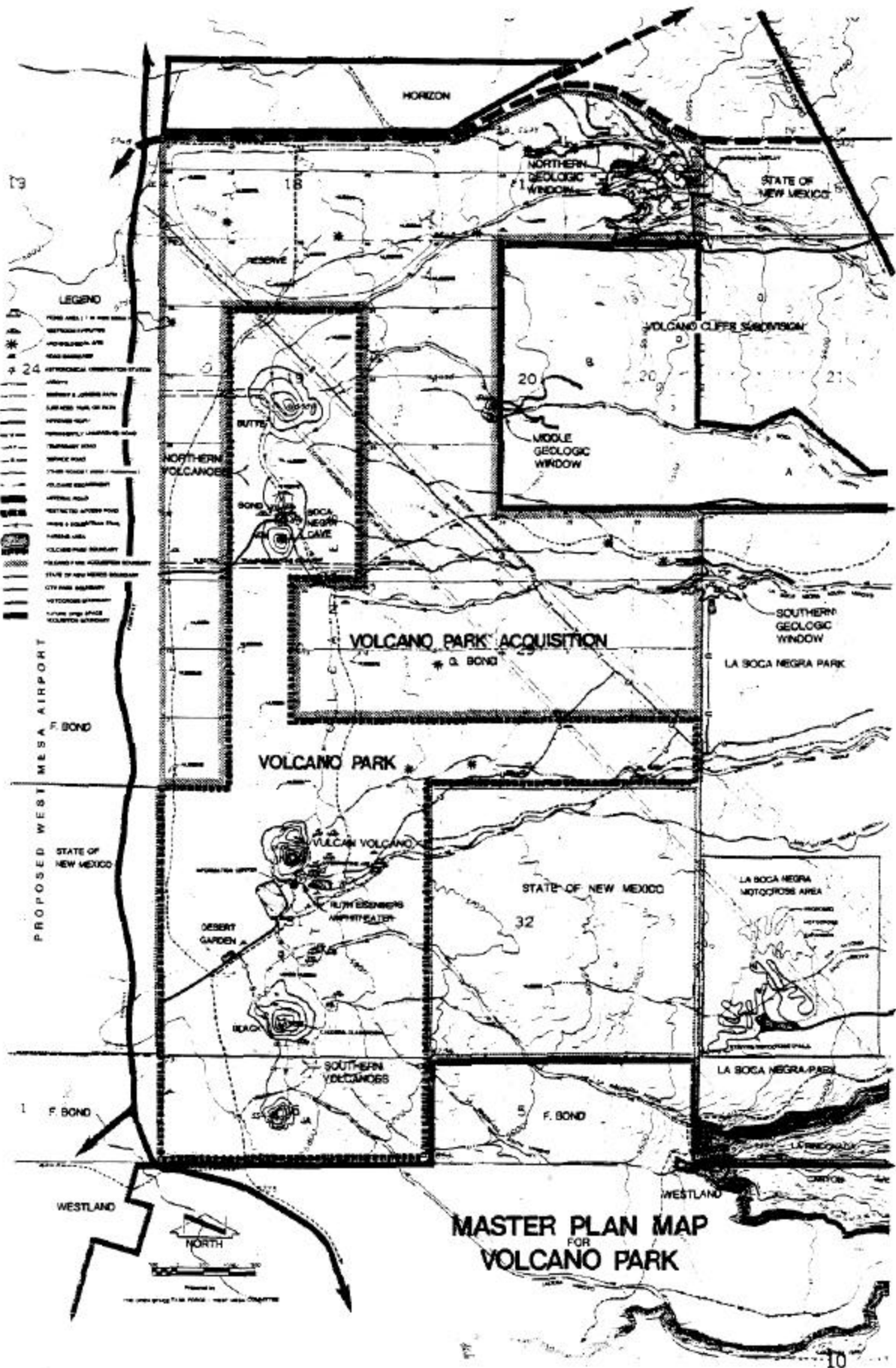
Volcano Park can be used for a number of specific activities which are consistent with the general goals and user needs discussed above. It can be used for studying geology, astronomy, biology, and zoology. It can also be used for studying anthropology. It can be used for picnicking, hiking, horseback riding, bicycling, jogging, horseshoe pitching, painting, and photographing. It can be used for presenting music, drama, and dance. It can be used for cloud watching. And it can be used for quiet reflection.

Volcano Park can also be used for a variety of special events that might be educational, cultural, or just plain fun. Such events might include a Kite Flying Fiesta in honor of Albuquerque's Japanese and Mexican sister cities, an Urban Cowboy Rodeo, and a Horny Toad Hopping Contest.

The Park can be enjoyed by tourists as well as residents of the Albuquerque area. As an important urban park, it can be a source of civic pride now and in the years to come.

OPEN SPACE AND INTENSIVE USE AREAS

Some of the potential uses for Volcano Park can best be accommodated by the development of special facilities. Others require an unstructured, open environment with few or no facilities. In order to efficiently meet both kinds of criteria, five areas have been designated for intensive use. Activities which require the construction of special facilities can be accommodated in those areas. Activities which do not require any facilities can be accommodated in the remaining open space. The five intensive use areas can be identified on the Master Plan Map for Volcano Park as Vulcan Volcano, the Southern Volcanoes, the Southern Geologic Window, the Northern Geologic Window, and the Northern Volcanoes. Each area was selected because it has some unique feature or features which enable it to meet a specific user need. In developing plans for each, activities associated with that need were given first priority. But, wherever possible, complementary uses were also accommodated. Each area is described in detail below.



INTENSIVE USE AREAS

VULCAN VOLCANO

Vulcan Volcano is and will continue to be the most intensively used area in Volcano Park. Its uses will be educational, recreational, and cultural. When an arterial road has been constructed along the eastern boundary of the proposed West Mesa Airport site, an improved road extending east from it will offer access to the Vulcan Volcano Intensive Use Area. The road will lead to a relatively large parking area southwest of the volcano. In the meantime, temporary access is provided by an existing road which is and will permanently remain unimproved. An information center will orient visitors to Volcano Park. An interpretive display and several trails with informative signs will identify the unique geologic and biologic features of the Vulcan Volcano Intensive Use Area. A desert garden southwest of the parking area will display native and exotic plant materials adapted to the Upper Sonoran Life Zone. A short hiking and equestrian trail will extend from the parking area to two picnic facilities on the east side of the volcano. A longer trail will extend east from the parking area to San Antonio Middle Arroyo and follow the arroyo northeast to La Boca Negra Park. A hard surfaced trail which can be used by the physically handicapped will extend south from the parking area to another picnic facility and Black Volcano. The Vulcan Volcano Intensive Use Area will also serve as a staging area for two bikeway and jogging paths. One path will parallel the hiking and equestrian trail which follows San Antonio Middle Arroyo northeast to La Boca Negra Park. The other will extend north and south along the western side of all five volcanoes. The northern extension will follow the northern boundary of the Park east to Atrisco Road. The southern extension will follow an existing unimproved road to the southern boundary of the Park. It may then follow the arterial access road. The existing amphitheater will be reshaped to seat as many as three hundred people. It will accommodate astronomical observations as well as cultural and special events. There will be restroom facilities near the amphitheater and the southern picnic area.

SOUTHERN VOLCANOES

The second intensive use area is the Southern Volcanoes, Black and JĀ. As an area of geologic and biologic significance, its uses will be primarily educational. The least developed of the five intensive use areas, it will also offer psychological relief from the urban environment. Vehicular access will be limited to a service road which will extend south from the improved access road to the Vulcan Volcano Intensive Use Area. An informal outdoor classroom with a seating capacity of fifty to sixty people will be arranged in the caldera of Black Volcano. Astronomical observation stations will be developed on both volcanoes. The hard surfaced trail which will begin at Vulcan Volcano and extend as far south as Black Volcano will continue as an unsurfaced hiking and equestrian trail. It may follow Ladera Arroyo southeast into the land owned by the Westland Corporation. Another hiking and equestrian trail will follow La Rinconada North Arroyo southeast from the picnic area north of Black Volcano to La Rinconada Canyon and the Escarpment. Informative signs along both trails will identify the unique geologic and biologic features of the area.

SOUTHERN GEOLOGIC WINDOW

The third intensive use area is the Southern Geologic Window. Located immediately adjacent to La Boca Negra Park, it will serve as a link between the two parks. Its uses will be primarily recreational. The access will be by a permanently unimproved road along the western boundary of La Boca Negra Park. The road will lead to a small parking area immediately south of the window. The Southern Geologic Window will serve as a staging station for a hiking and equestrian trail which will extend west into Volcano Park and east into La Boca Negra Park. The western extension will follow La Boca Negra South Arroyo to another trail which will connect the northern and the southern volcanoes. The eastern extension will follow the same arroyo east to the Escarpment. Picnic facilities with horseshoe pitching courts and restrooms will also be developed in the Southern Geologic Window.

NORTHERN GEOLOGIC WINDOW

The fourth intensive use area is the Northern Geologic Window. As an area of geologic, biologic, and anthropologic significance, its uses will be primarily educational. Located in the northeast corner of the Park, it will also offer vehicular access to the Park from that direction. The access will be by an improved road along the northern boundary of Volcano Cliffs Subdivision. The road will lead to a parking area east of the window. An interpretive display and a hiking and equestrian trail with informative signs will identify the unique features of the area. The trail will extend southwest along La Boca Negra North Arroyo to the northern volcanoes and the prehistoric site at Boca Negra Cave. Picnic facilities with restrooms will be developed on the existing motocross site. The motocross facility will be replaced by a larger course in La Boca Negra Park.

NORTHERN VOLCANOES

The fifth intensive use area is the Northern Volcanoes, Butte and Bond. Its uses will be educational and recreational. When an arterial road has been constructed along the eastern boundary of the proposed West Mesa Airport site, an improved road extending east from it will offer access to the Northern Volcanoes Intensive Use Area. The road will lead to a parking area north of Bond Volcano. In the meantime, temporary access is provided by existing unimproved roads. One of the roads parallels the New Mexico Public Service Company's transmission lines for some distance. A hiking and equestrian trail with informative signs will identify the unique geologic and anthropologic features of the area. An extension of the trail which will begin at the Northern Geologic Window, it will connect with other trails to the middle and the southern geologic windows. It will then extend south to Vulcan and the southern volcanoes. Bond Volcano will also serve as a staging station for a hard surfaced bikeway and jogging path. The path will extend east into La Boca Negra Park and west to connect with the path along the western side of all five volcanoes. Picnic facilities with horseshoe pitching courts and restrooms will be developed north and west of Bond Volcano. Most of the land around Butte Volcano will be maintained as an open reserve.

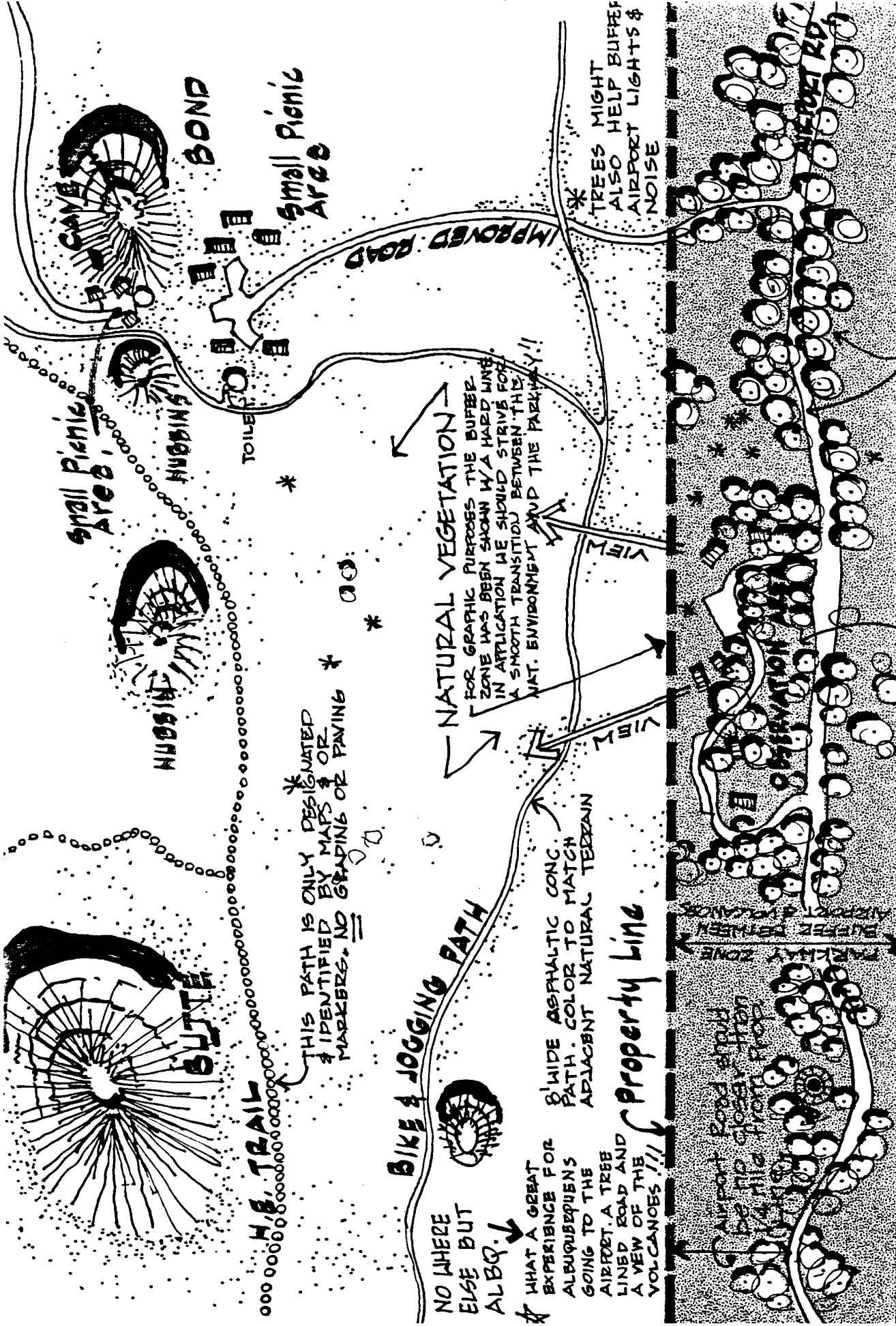
MIDDLE GEOLOGIC WINDOW

While it will not be as intensively used as the five areas discussed above, the Middle Geologic Window will accommodate some recreational uses. The hiking and equestrian trail which will begin at the Northern Volcanoes Intensive Use Area and extend east along La Boca Negra Middle Arroyo will pass through the Middle Geologic Window. Trailside picnic facilities will be developed within the window. Picnic facilities will also be developed along the paths and trails which follow San Antonio Middle Arroyo. The facilities will be located near the eastern boundary of Volcano Park.

DESIGN CRITERIA FOR SPECIFIC FACILITIES

ARTERIAL ACCESS PARKWAY

All of the facilities in and near Volcano Park will be designed and constructed to complement the natural environment. The arterial access road will be a parkway located on the proposed West Mesa Airport site one eighth to one fourth mile from the western boundary of Volcano Park. The transition between it and the natural environment will be smooth and gradual. Groves of broadleafed evergreen and semi-deciduous trees and shrubs will be selected and located to reduce noise, dust, and light from the parkway. They will also soften its visual impact on the landscape. Adapted to the Upper Sonoran Life Zone, the plant materials will be compatible with the native vegetation. The parkway will follow the natural contours of the land. There will be no overhead lighting, and all signs will reflect the high design standards of a parkway.



HUBBINS BUTTE

HUBBINS
Small Picnic Area
TOILET

IMPROVED ROAD

NATURAL VEGETATION

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

Small Picnic Area

HUBBINS

VIEW

VIEW

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

HUBBINS

TOILET

NATURAL VEGETATION

VIEW

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

HUBBINS

TOILET

NATURAL VEGETATION

VIEW

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

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TOILET

NATURAL VEGETATION

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TREES PLANTED TO SOFTEN ROAD

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HUBBINS

TOILET

NATURAL VEGETATION

VIEW

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

HUBBINS

TOILET

NATURAL VEGETATION

VIEW

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)

THIS PATH IS ONLY DESIGNATED BY MAPS & OR MARKERS. NO GRADING OR PAVING

BIKE & JOGGING PATH

NO WHERE ELSE BUT ALBQ.

WHAT A GREAT EXPERIENCE FOR ALBUQUERQUE'S GOING TO THE AIRPORT. A TREE LINED ROAD AND A VIEW OF THE VOLCANOES !!!

8" WIDE ASPHALTIC CONC. PATH. COLOR TO MATCH ADJACENT NATURAL TERRAIN

PROPERTY LINE

NATURAL VEGETATION FOR GRAPHIC PURPOSES THE BUFFER ZONE HAS BEEN SHOWN W/A HARD LINE. IN APPLICATION HE SHOULD STRIVE FOR A SMOOTH TRANSITION BETWEEN THE NAT. ENVIRONMENT AND THE PARKWAY !!

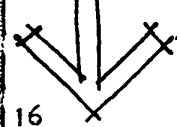
TREES MIGHT ALSO HELP BUFFER AIRPORT LIGHTS & NOISE

MIGHT BE GOOD PLACE FOR BOTANICAL GARDEN

AIRPORT ROAD PARKWAY STUDY

TREES PLANTED TO SOFTEN ROAD

NO SCALE (SCHEMATIC)



Proposed Airport Location

Picks 7/13/80

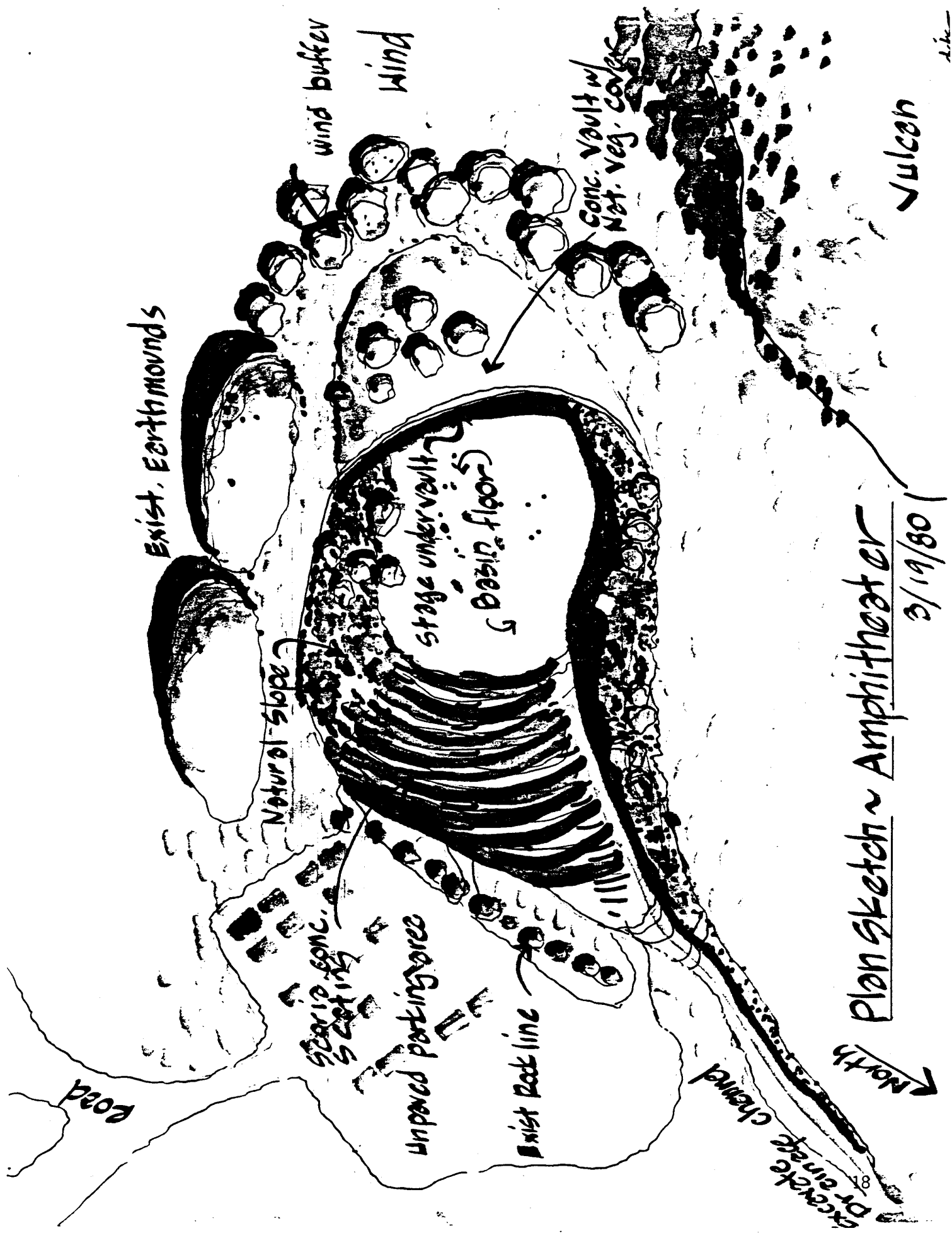
ROADS, PATHS & TRAILS

Most of the roads, paths, and trails constructed in Volcano Park will be located on existing dirt roads. All will continue to follow the natural contours of the land. The unimproved roads will be maintained with the minimum of grading necessary to assure safe vehicular passage. The improved roads and parking areas will be constructed of asphaltic concrete. The roads will be no more than 32 feet wide. The hard surfaced trails and the bikeway and jogging paths will be constructed of soil cement mixed to match the adjacent soils. They will be 8 feet wide, and hazardous materials will be cleared from three foot areas on either side of them. The hiking and equestrian trails will not be graded or surfaced. All informational and interpretive signs will reflect high graphic standards and the natural character of the Park.

OTHER STRUCTURES

The amphitheater, outdoor classroom, picnic shelters, and restrooms will also reflect the natural character of the Park. Their profiles will be low and undulating; their colors will be subdued. Wherever possible, existing earth forms, rocks, and plant materials will be incorporated into the structures. Conceptual designs for some of the facilities are included on the following pages.

The cultural resources of Volcano Park must be protected, and the preservation methods used may vary depending on the resources and their locations. A Cultural Resources Preservation Plan will be prepared by a professional in that area. It will be implemented upon its approval by the Albuquerque Parks and Recreation Department and the Open Space Task Force West Mesa Committee.



Exist. Earth mounds

Natural slope

Scaric conc. & castings

Unpaved parking area

Exist. Rock line

stage under vault
basin floor

wind buffer

Wind

Conc. Vault w/
Nat. Veg. cover

Julcah

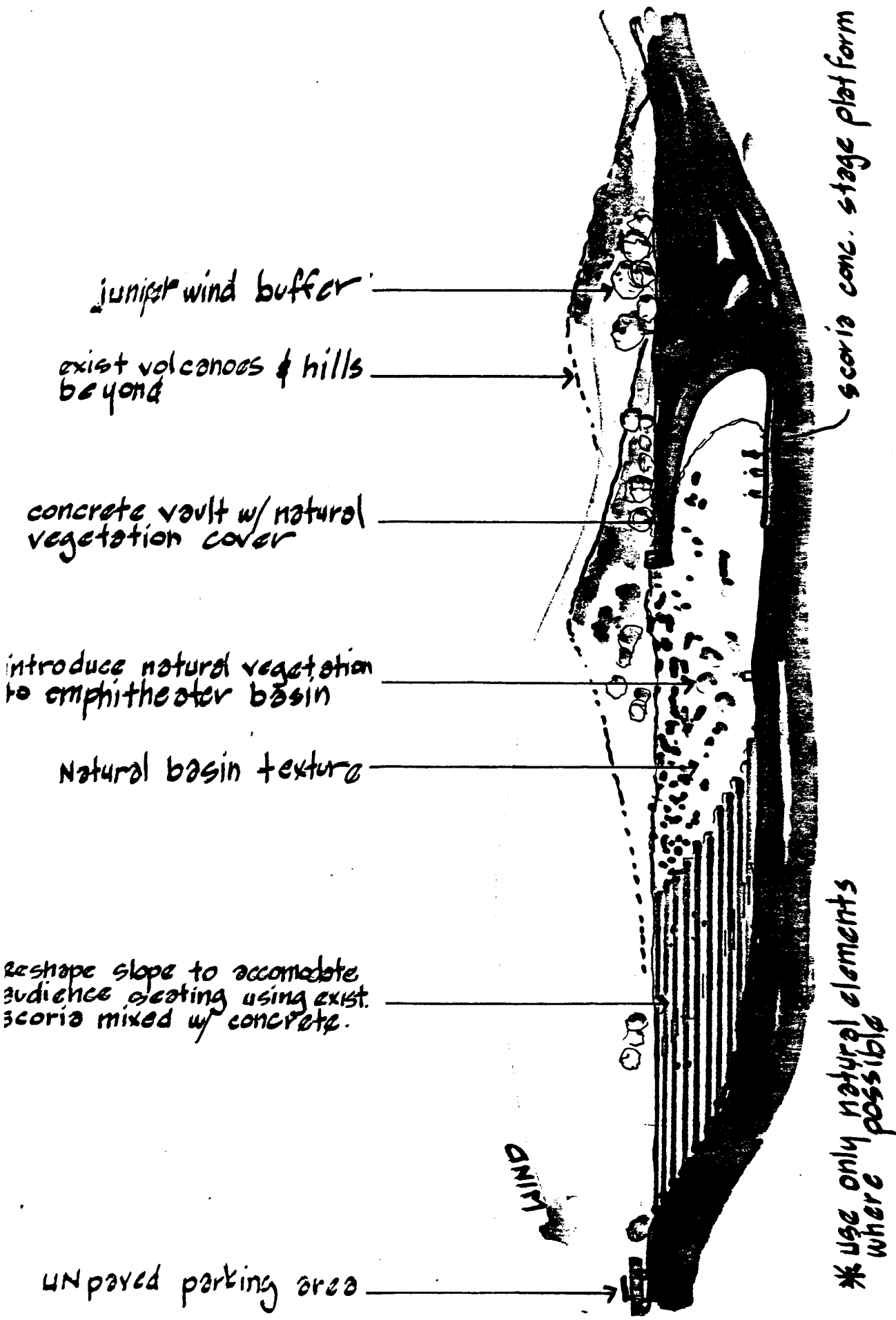
Plan sketch ~ Amphitheater

3/19/80

North

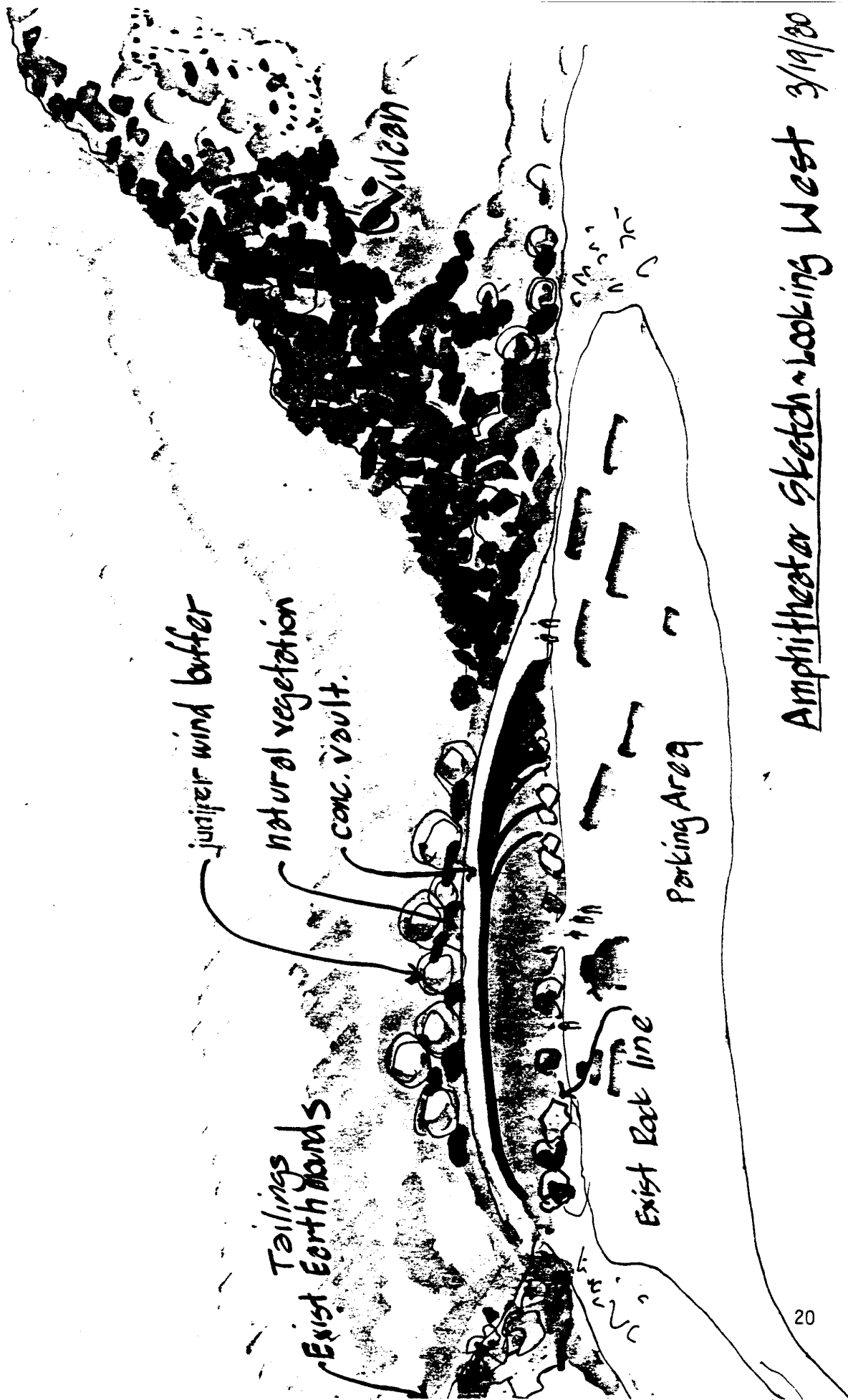
concrete channel
drainage

like



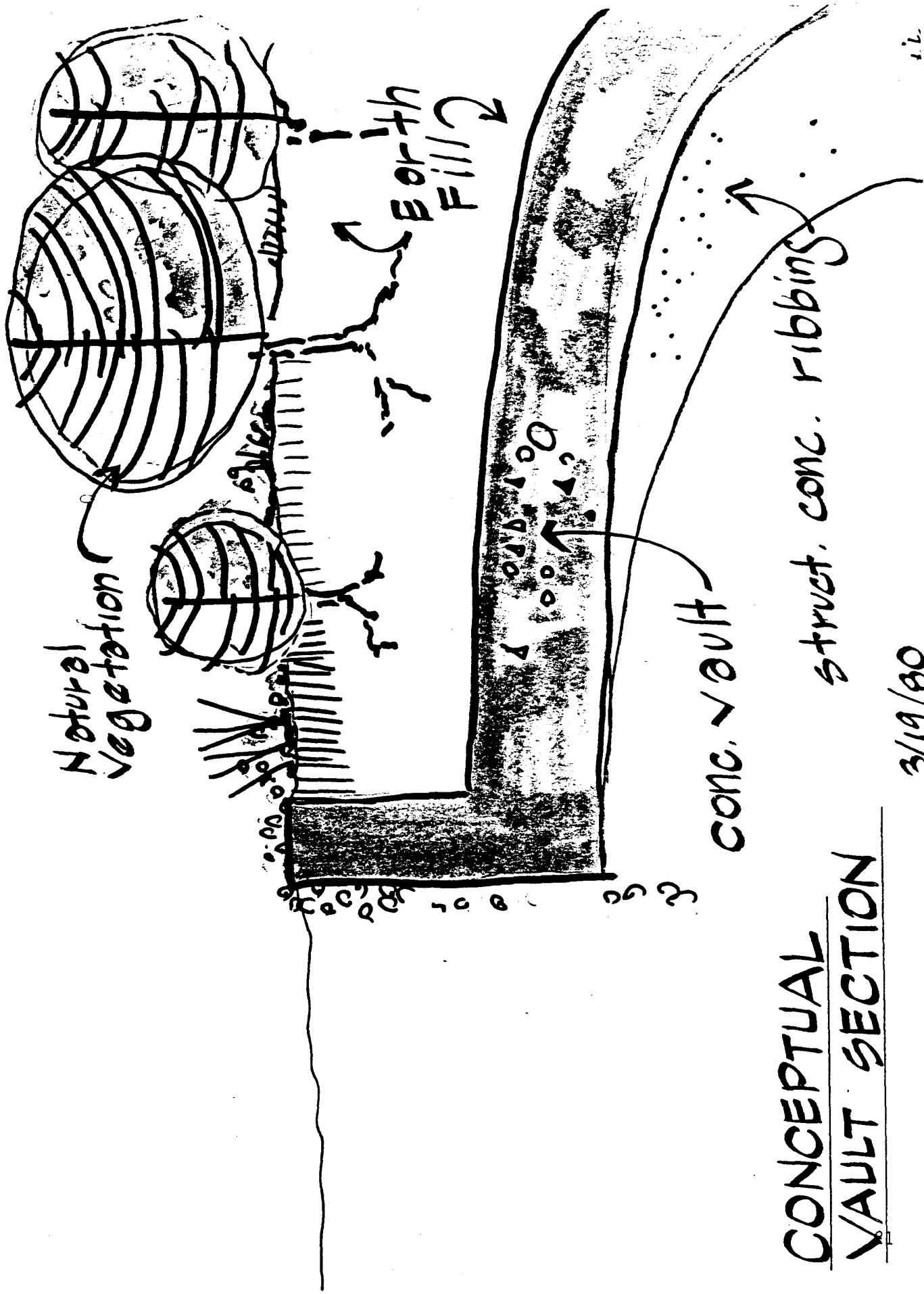
* use only natural elements where possible

Sketch section thru Amphitheater 3/19/80



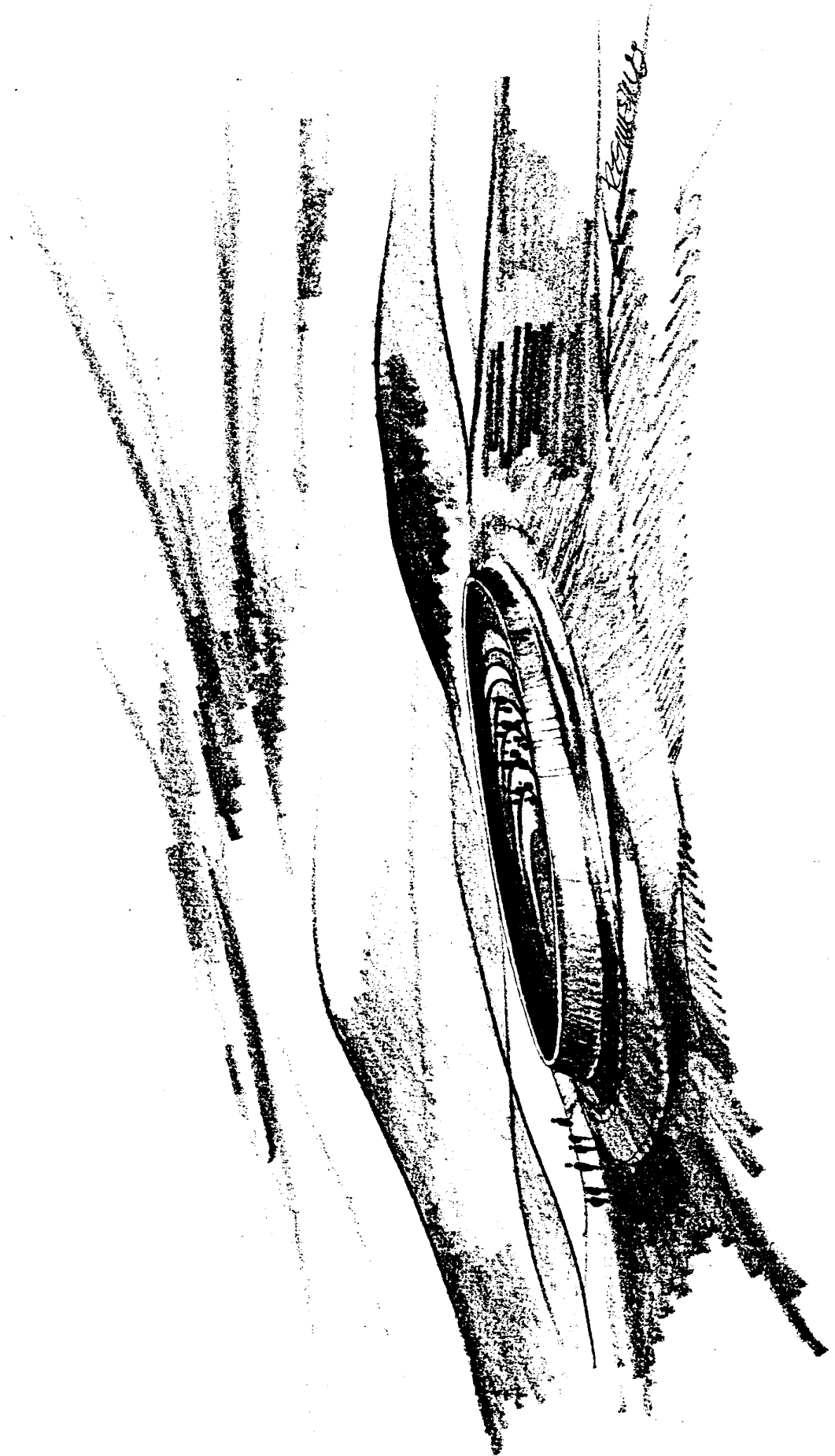
Amphitheater Sketch ~ Looking West 3/19/80

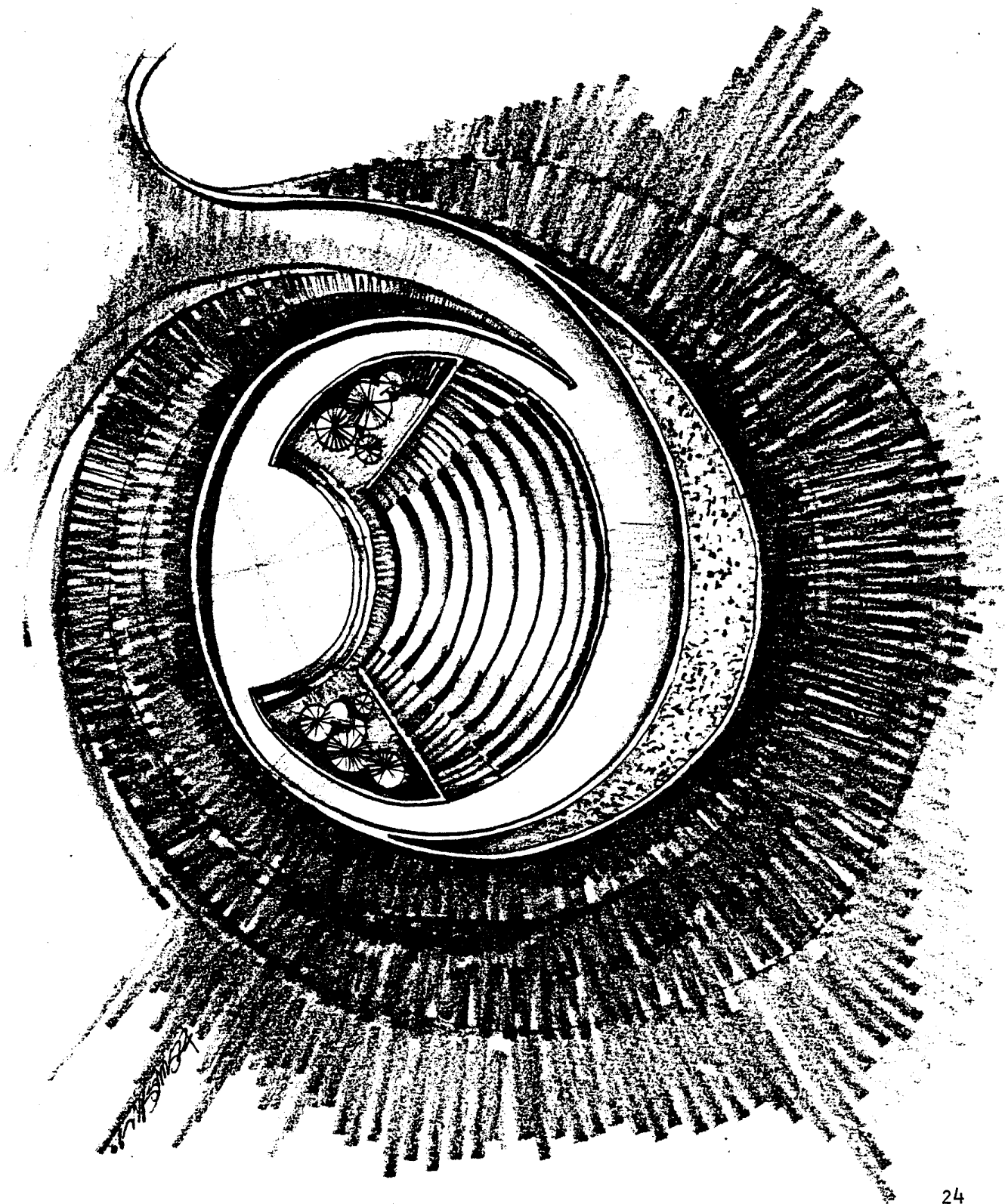
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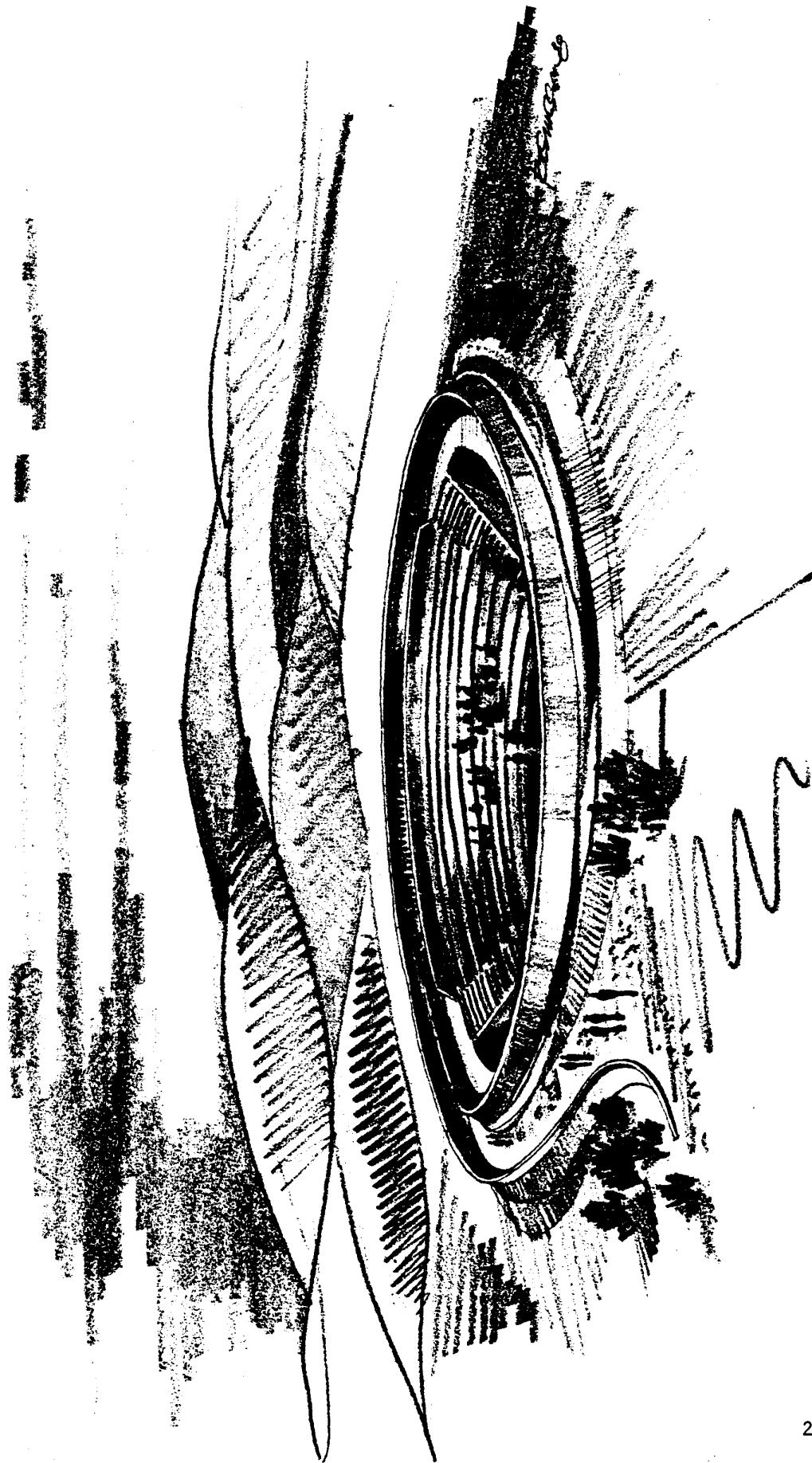


CONCEPTUAL
VAULT SECTION









rocks arranged in a semi-circular formation for a max. of 50-60 people



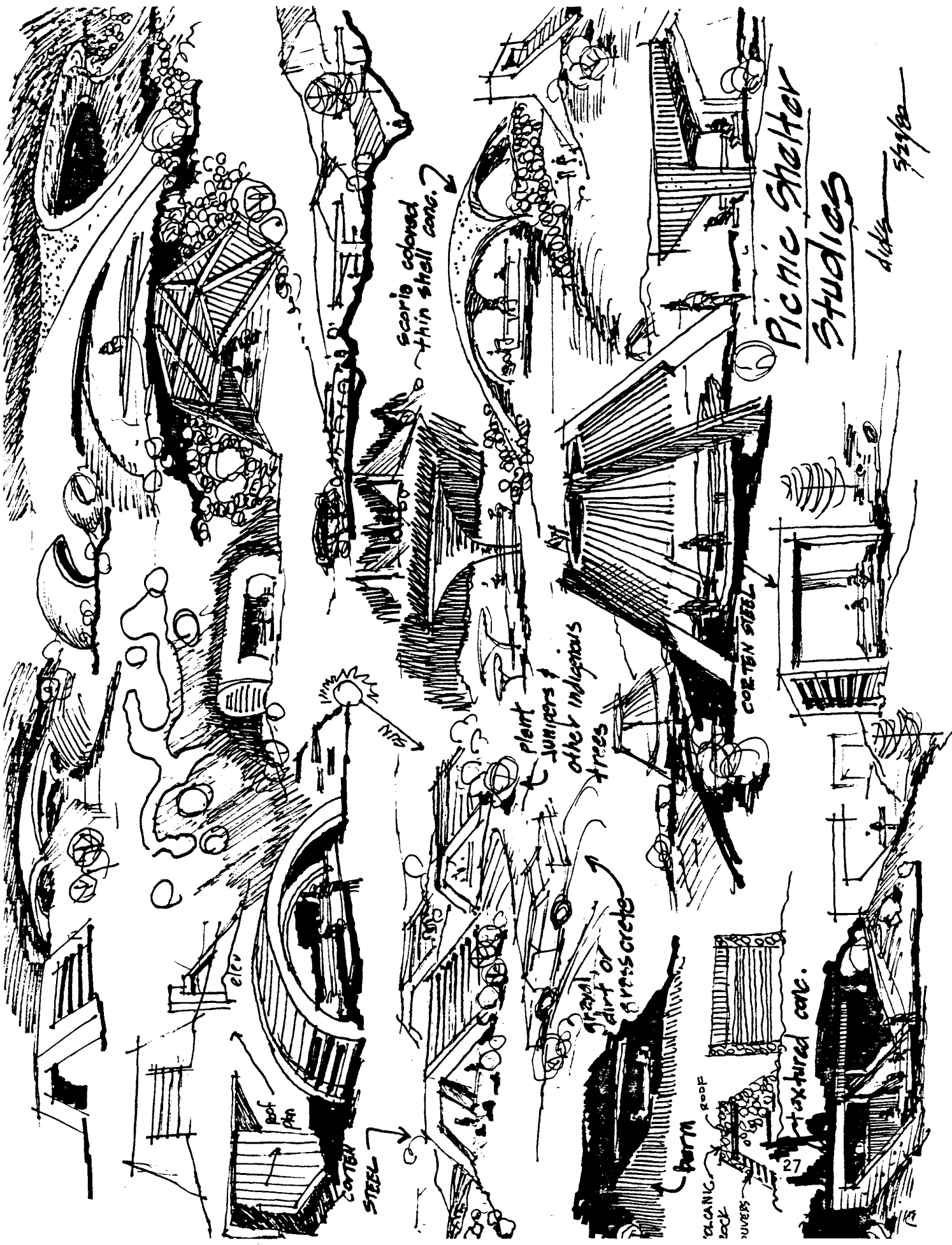
informally arranged seating on rocks

volcano lectures

2 minip grades of existing flood

W. J.

Sketch of Outdoor Classroom in the Black Volcano Caldera



Picnic Shelter Studies

date 5/29/68

scoria colored thin shell conc.

plant junipers & other indigenous trees

CORTEN STEEL

grad, dirt or grasscrete

textured conc.

volcanic rock suvurs

barn

STEEL

roof pan

elcu

CONCLUSION

ORDER OF DEVELOPMENT FOR THE PARK

The development schedule for Volcano Park will depend on increases in public use of the Park. It is difficult to accurately predict future usage patterns, but it may be assumed that urbanization of the West Mesa will place greater user demands on all open space and recreational facilities in the area. The intensive use areas in Volcano Park should be developed in the order in which they were discussed above. The present use of Vulcan Volcano justifies immediate development of that area. Construction of the facilities indicated there will meet the existing needs of an especially broad spectrum of the population. Subsequent development of the intensive use areas in the southern volcanoes and the Southern Geologic Window will provide important links between Volcano Park and La Boca Negra Park and thus facilitate increased usage of both. The facilities indicated in the Northern Geologic Window Intensive Use Area can not be constructed until the last forty acre tract has been acquired in 1988. The development of it and the Northern Volcanoes Intensive Use Area sometime thereafter will assure continuity of usage throughout the Park.

RESPONSIBILITY FOR IMPLEMENTATION OF PLAN

Upon its approval by the Albuquerque City Council, this document is the official Master Plan for Volcano Park. The City Parks and Recreation Department will be responsible for its implementation.

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APPENDIX A

NEWS ARTICLE AND LETTERS

City Told To Prepare Plan On West Mesa Land Usage

By SUSANNE BURKS
Journal Staff Writer

The city must prepare a plan for use of about 3,500 West Mesa acres before a federal agency can clear the way for establishment of a proposed airport there.

Local officials of the federal Heritage Conservation and Recreation Service said they can't judge how the airport might affect the city-owned acreage until they know how the land will be used.

The city, in turn, can't proceed with plans for the airport and obtain promised Federal Aviation Administration money until the recreation service determines the airport's impact — in-

cluding noise — on the land.

The Heritage Conservation and Recreation Service helped pay for 1,300 acres of open space encompassing the volcanoes. It also is helping pay for city acquisition of 2,120 acres of the Gordon Bond ranch north of the proposed airport site.

The city is acquiring that land 40 acres at a time for a total \$3 million purchase, including interest.

The city wanted the volcano and Bond land for open space and recreation and, in the case of the volcanoes, to preserve them in their natural state.

Rolland B. Handley, regional director of the recreation service, said his

agency will withhold \$160,680 it has committed to the Gordon Bond land purchase until it gets the city plan.

Larry Caudill, environmentalist with the city capital programs office, said the city Open Space Task Force, a volunteer citizen group, will meet Wednesday night to begin work on the plan the service wants.

He said the plan possibly could be completed by April 1.

Handley and two other recreation service officials explained that their agency provides to local governments half of the funds needed for acquisition and development of recreation lands.

The lands may be used for open space "as long as there is some kind of recreation with it. We're not in the land-banking business," Handley said.

Edwin Shellenberger, assistant director for recreation programs, said the service learned only after approving acquisition of the first parts of the Gordon Bond ranch that the proposed airport might encroach on the land.

"Our concern is what the city is going to do with the Gordon Bond land, and we don't want to proceed with acquisition until the city provides a plan for its use," Shellenberger said.

James L. Donoghue, assistant regional director, added that the agency's lack of information on city plans for use of the land "is just going to compound the problem with the airport.

"The FAA is asking us whether there will be significant environmental impact and, if so, what mitigating measures would be necessary."

Shellenberger added, "Until we can tell, we can't free up the money (for the Gordon Bond ranch), and we can't assess the impact."

Handley said three federal agencies are involved — the recreation service, the FAA and the Bureau of Land Management. "None of us are trying to be obstructionists, but the city must make a decision."

Albuquerque Journal 3-7-80



United States Department of the Interior

HERITAGE CONSERVATION AND RECREATION SERVICE
SOUTH CENTRAL REGION
5000 MARBLE AVENUE, N.E., ROOM 211
ALBUQUERQUE, NEW MEXICO 87110

IN REPLY REFER TO:

SC 700

January 10, 1980

Mr. William S. Huey
Cabinet Secretary
N.M. Natural Resources Dept.
Villagra Building
Santa Fe, New Mexico 87503

Dear Bill:

Our meetings with the City of Albuquerque and the Federal Aviation Administration and recent newspaper articles concerning Albuquerque's proposed West Mesa Airport have surfaced some concerns.

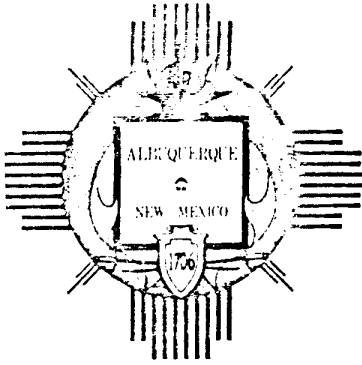
The proposed access road to the airport will apparently cross land proposed for acquisition under Land and Water Conservation Fund (L&WCF) Project No. 35-00720, Bond Ranch Acquisition. Because of the uncertainty of final development plans for the West Mesa Airport we recommend you advise the city of Albuquerque to immediately cease any land acquisition approved under Project No. 35-00720. We will not honor any Letter of Credit drawdowns on this project.

We are also concerned about the impact the proposed airport will have on other adjacent lands including Albuquerque Volcano Park acquired through L&WCF Projects 35-00262 and 35-00551. In order for us to assess this impact please provide to this office by March 1, 1980, the City of Albuquerque's masterplan for use and development of lands acquired under 35-00262 and 35-00551 and proposed for acquisition under 35-00720.

Thank you for your immediate attention to this matter.

Sincerely,

Rolland B. Handley
Regional Director



City of Albuquerque

P.O. BOX 1293 ALBUQUERQUE, NEW MEXICO 87103

MAYOR
David Rusk

June 19, 1980

Mr. Bill Huey, Secretary
Department of Natural Resources
Room 121, Villagra Building
Santa Fe, New Mexico 87503

RE: Volcano Park, Bond Ranch
L.W.C.F. Projects 35-00262,
35-00551 and 35-00720

Dear Bill:

In your letters of January 10 and January 14, 1980, you indicated that reimbursement requests for Project 35-00720 (Bond Ranch) would not be processed pending resolution of conflicts related to development plans for the proposed West Mesa Airport. You further indicated there was a need to resolve an apparent pre-emption of the Shooting Range State Park site by the FAA-preferred runway location. I am glad to report that the principal areas of conflict have been substantially resolved, as described below.


First, the city has settled on N-4 as the final runway alignment. Thanks to a very thorough and well-documented report provided by Dave Bennett and the Shooting Range Advisory Committee, we feel that the alleged incompatibility of range and airport has been negated. Regarding recreation use and development of the subject open space lands, I am providing copies of the following documents:

- (1) Open Space Policies Plan
- (2) City Council Resolution No. R-32, adopting above plan
- (3) Volcano Park Open Space Master Plan (draft--subject to final revision)
- (4) Albuquerque Open Space Management Ordinance, No. 23-1980

Item 3 was prepared by the Open Space Advisory Group pursuant to directives from the Environmental Planning Commission and the City Council. Once in final form, it becomes "official" and will serve to direct the city and Parks Department in the type and location of recreational facilities that will be provided.

I trust that you will accept this response as an indication of the city's intentions regarding the use and protection of open space lands, both owned or acquired in the future. Please advise if you require additional information in order to process reimbursement requests now pending.

Sincerely,


David Rusk, Mayor

DR/mm
Attachments

A-3

PLANNING NOTES

a review of urban planning activities
in the albuquerque metropolitan area

June 1978



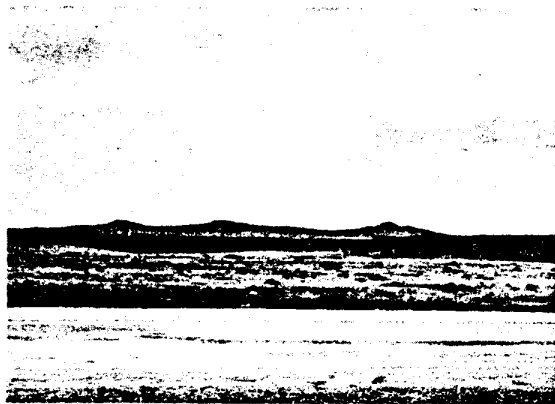
REGIONAL OPEN SPACE:
AN EVENING AT THE VOLCANOES

On June 4, 1978, the City sponsored "An Evening at the Volcanoes" celebrating the City's acquisition of the volcanoes and honoring the leader of the movement to acquire them, Ruth Eisenberg.

As a part of the "Arts in the Parks" program, the New Mexico Symphony Wind Ensemble presented a concert. Several speeches were made lauding Ruth Eisenberg. As founder of SAVE THE VOLCANOES, INC., she was the primary force behind the City's purchase of the volcanoes on Albuquerque's West Mesa as publicly owned and accessible open space. She was instrumental in placing Boca Negra Cave, located on one of the volcanoes, on the New Mexico State Register of Cultural Properties. While her main focus was the volcanoes, Ruth's contributions to the City of Albuquerque go beyond the West Mesa. She has been a tireless advocate for the adoption of the Comprehensive Plan's, PLAN FOR MAJOR OPEN SPACE and other policies and programs relating to open space, influencing the Environmental Planning Commission, the City Council, and the Administration. She has been a visible force in the implementation of the Plan in all areas of the City. As a tribute to Ruth, Mayor Rusk proclaimed June 4th as "Ruth Eisenberg Day" and presented a plaque to be affixed to the overhang which forms a natural amphitheater under the "J" volcano. The plaque reads: RUTH EISENBERG AMPHITHEATER - JUNE 4, 1978.

The volcanoes are a prime example of Regional Open Space as defined in the Comprehensive Plan which sees open space as any large area of land (or water) which is left primarily undeveloped. It can serve one or more of basic five functions: 1) Conservation of Natural Resources; 2) Protection of the public from flooding or other hazard; 3) Provisions of recreational services; 4) Satisfaction of the psychological needs for space; and 5) Definition of Urban Form. The volcanoes fulfill all of these functions, and in particular offer two special features: a spectacular view of the Albuquerque Area; and a westerly horizon at the escarpment unique in the Southwest. From the Ruth Eisenberg Amphitheater, the view of the area and the City itself is beyond a single-word description. One can see farm lands, desert lands, urban centers, the Rio Grande, and a full view of the Sandia, Manzanita, and Manzano mountains. Aesthetically, the western horizon with its 5 volcanic cones gives a sense of openness -- a feeling of space.

The commitment of the previous City Council and Administration in authorizing the purchase of the volcanoes and the commitment from the present Council and Administration in its negotiations to purchase additional land around the volcanoes, assure that the western horizon will be undisturbed and the open space preserved. Planning for open space requires a commitment from City government to acquire the land and a commitment from each citizen to take care of and use the land responsibly. A well deserved tribute was paid to Ruth Eisenberg by the City, and each of us honors her for her part in helping to preserve open space, including the volcanoes, for all of us.



APPENDIX B

GEOLOGY

The geology of Volcano Park is, of course, the Park's reason for being. Without the cones which arrest the eye as one looks toward the horizon, there would be nothing unique about the area. A very brief description of the formation of the volcanoes is given early in the main body of this report. On the following page is a miscellany of geologic information.

Since the 1980 volcanic activity at Mt. St. Helens, some Albuquerqueans have been concerned that there might be similar action in our local volcanic field. Dr. Albert Kudo, igneous geologist at UNM says a decided "No!" In size and composition there is no similarity. The Albuquerque volcanoes have been extinct for about 250,000 years and in all likelihood will never again become active. It is within possibility, but most unlikely, that there could be some activity in the volcanoes farther south, possibly near Socorro, but if so the eruption would be non-explosive, perhaps blowing ash or having a small lava fountain, enough to give a glow in the dark.

Also, since geothermal rights to Valcano Park land have been retained by the previous owners, there has been question about the likelihood of geothermal exploration which might be unsightly in an open space and recreation park. Dr. Jerasik of UNM's Geology Department, who heads a group doing drilling exploration around Albuquerque, says there is no particular promise near the volcanoes and he does not intend to work in the basalt area. Some very deep wells are planned, and while digging is going on, it could be quite ugly, but later the wells would be capped and not offensive. Dr. Kudo also said there will be no geothermal exploration in Valcano Park, although there will be some elsewhere on the West Mesa.

Our volcanoes have names which, except for the largest one, Vulcan (unhappily, also referred to as the J volcano) are unimaginative and do not add to the attractiveness of the park, as they might. From south to north, they are AJ, Black, Vulcan, Bond (where Boca Negra cave is located) and Butte. In the north-south fissure line from which the lava exuded in six different waves, there are also a series of nubbins and small cones. South of Vulcan, closer to Black, there was a cone which has been destroyed by mining for cinders, and huge piles of tailings surround it, as they do around the southeast of Vulcan, where the surface mine (to be made into an amphitheatre to put the great hole to a positive use) grows larger each year from illegal digging the scoria for landscaping.

Each cone has somewhat different formation, composition, and characteristics, well described in Kelly's "Albuquerque, Its Mountains, Valley, Water, and Volcanoes". (See Bibliography). From the city, the most distinctive difference is seen in Vulcan, where a violent explosion split the center of the dome into north and south half domes.

The entire lava field, mostly to the east of the fissure because of the slope of the land, may have covered forty to fifty square miles, but erosion, especially on the east along the Rio Grande, has left a flow field of about twenty three square miles. The thickness of the basalt (in this case, the hardened lava) varies greatly. Where the road ascends at Petroglyph Park, the lava cap is only from ten to twenty feet thick. Nearer the cones it is much thicker, over a hundred feet at Vulcan, varying in depth according to the number of superimposed flows and the nature of the flows. The later ones were less liquid, moved more slowly, and developed hummocky upper surfaces.

Caves were created in several places in the formation of the cones, the largest extant being Boca Negra, a lateral vent or blowhole, about twenty feet wide, twenty-seven and one half feet deep, and six feet high before archaeological excavation, now deeper. Its entrance was blocked from the time of original cooling until about 4,000 years ago when it opened (possibly from earth quake or storm) and human occupation started.

In New Mexico Magazine of March 1979, Tom Wiley, long time resident and educator who died before his article was printed, described "a cave of sorts" which he came upon. "... a hollow tube in the lava which descends vertically some fifteen or twenty feet, then, between the lava as a roof and the sand as a floor, extends horizontally for approximately two hundred feet." Although Mr. Wiley gave a very general location of this tube, we have not been able to get geological corroboration of the site.

APPENDIX C

BIOLOGY

Volcano Park is desert land, with typical mixed desert grasses, small shrubs and an occasional cactus, and treeless except for some junipers which go along the arroyos, most of them too small to give much shade and a few preempted for some animal habitat. With spring rains, wild flowers give surprising color, and in fall purple asters punctuate the golden meadows. While few fauna are seen, the signs of a busy animal night life are everywhere.

Dr. Clifford Crawford, UNM biology professor, who spoke at a Volcano Day Talk Walk program, submitted the following report when the City was considering purchase of the two northern cones. He advises us now that essentially the same facts would apply to the rest of the Volcano Park.

Biota of the Two Northern Volcanic Cones and
Surrounding Lands Above the Escarpment West of Albuquerque

Clifford S. Crawford
Department of Biology
The University of New Mexico

The flora of the immediate area encompassing the two northern cones just west of Albuquerque represents an interesting assemblage of regional shrubs, forbs, and grasses. The most conspicuous shrub is the ubiquitous snakeweed, Gutierrezia sarothrae, an indicator of overgrazing throughout much of the arid Southwest. This plant is common on the cones as well as in the desert grassland surrounding them. Also conspicuous, but only because of their large size and dark green color, are a small number of gnarled junipers, Juniperus monosperma, on outcrops near the cones.

On the cones themselves the largest major shrub is fourwing saltbush, Atriplex canescens, with groups of squawbush, Rhus trilobata, and Apache-plume, Fallugia paradoxa, being found on several of the smaller volcanic mounds between them. At the northeastern base of the southern cone is a single small patch of the spiny wolfberry shrub, Lycium pallida.

Less prominent shrubs on and around the cones include several species of sage, Artemesia spp, several low leguminous shrubs, a shrubby globemallow, Sphaeralcea sp, and a few winterfat plants, Eurotia lanata. Sporadic clumps of Yucca glauca and of Opuntia and Echinocereus cacti are also found close to the cones.

Forbs do not dominate the landscape except during years when precipitation is above average. Nevertheless, mustards such as the spectaclepod, Dithyrea wislizenii, add a welcome touch of white during the summer. By contrast, red and orange are imparted by species of herbaceous

globemallow, while yellow is sometimes strikingly contributed by a variety of composites, including species in the genera Zinnia, Senecio, and Aplopappus, as well as the unrelated stickleaf, Mentzelia pumila. The ever present silverleaf nightshade, Solanum eleagnifolium, provides purple during much of the summer.

Grasses in the immediate vicinity of the cones seem most abundantly represented by black gramma, Bouteloua eriopoda, an important forage species for cattle. Clumps of blue gramma, B. gracilis, are present on the soil between the cones and appear to be heavily grazed. Other rather common grasses include galleta, Hilaria jamesii, and the tall Sporobolus giganteus.

During the daytime in the growing season a visitor to the cones does not gain the impression that animal life abounds. However, animals one does see include lizards, especially whiptails in the genus, Cnemidophorus, and smaller numbers of Sceloporus spp, and of the lesser earless lizard, Holbrookia maculata. The round-tailed horned lizard, Phrynosoma modestum, is sometimes observed blending into whatever its background coloration may be at the time. Other reptiles one can expect but may not see in the vicinity are the prairie rattlesnake, Crotalis viridis, the bullsnake, Pituophis melanoleucus, and perhaps the western coachwhip, Masticophis flagellum.

A few birds are usually present, such as western kingbirds, Tyrannus verticalis, flying after insects and perching on the cones. An occasional rock wren, Salpinctus obsoletus, will come within a few feet of a quiet observer on the cones. Coveys of scaled quail, Callipepla squamata, and flocks of horned larks, Eremophila alpestris, are not uncommon around the

cone bases. A visitor may also startle burrowing owls, Speotyto cunicularia, perching quietly among the volcanic rocks. Hawks and falcons often fly near the cones.

Evidence of mammals is almost always indirect. Large and small burrow entrances abound among the volcanic rocks and in the grassland below. Since surface activity of the mammalian occupants of these burrows is mainly nocturnal, only the observant night visitor or trapper will see the variety of local rodents. These include the wood rat, Neotoma albugula, Ord's kangaroo rat, Dipodomys ordi (which lives in colonies), the silky pocket mouse, Perognathus flavus, the northern grasshopper mouse, Onychomys leucogaster, and the deer mouse, Peromyscus maniculatus. Exceptions to these night-active species are the black-tailed jackrabbit, Lepus californicus, and the cottontail rabbit, Sylvilagus audoboni, which frequently may be seen darting to shelter among the rocks.

Really much more abundant on and around the cones are invertebrate animals. Most obvious are certain arthropods, particularly insects. Low mounds of fine volcanic gravel signify the presence of harvester ants in the genus Pogonomyrmex. Crawling near these nests and feeding on surface debris may be seen several species of black Eleodes bombardier beetles, common in western grasslands and deserts. Of the flying insects present the most striking are probably species of spider hunters (family Pompilidae), which exhibit irridescent blue bodies and orange wings as they run rapidly over the soil looking for spider burrows. Large robber flies (family Asilidae) are even more common as they fly slowly from perch to perch, sometimes carrying prey insects. Grasshoppers (family Acrididae) are perhaps the most abundant - and certainly among the most active - of the many other insect species present.

Arachnid arthropods also occur, however, with the exception of a variety of web-building and hunting spider species on vegetation and among rocks, they are largely nocturnal or at least inconspicuous during the daytime. Round burrow entrances, slightly built up on the sides, signify the presence of a local wolf spider in the genus Geolycosa. Wolf spiders can move rapidly, such action being typical of the swift (and misnamed) sunspiders, solpugid carnivores that run over the surface and vegetation at night. Several species of scorpions are common here. One, Paruroctonus aquilonalis, sometimes comes to the surface of the desert grassland at night in large numbers and waits quietly for prey to arrive.

The relative isolation of the cones, even from the extensive volcanic escarpment several miles to the east, becomes evident to a biologist comparing the fauna of the two sites. On the escarpment vast numbers of desert millipede, Orthoporus ornatus, forage on the surface following summer rains. Yet the intervening plateau apparently has prevented their movement to the otherwise suitable cone habitat. Strangely, a much less common millipede in the endemic family Atopetholidae is found in both places. This apparent paradox is indicative of the subtle uniqueness of the biotic community of the cones, a community structured mainly by post-Pleistocene climatic events and more recently by the inadvertent efforts of man.

APPENDIX D

ARCHAEOLOGY

Many archaeological sites remain in Volcano Park, probably because of distance from the City and because there has been little roadmaking and building to disturb the land. There have been various detailed studies of the sites (see Bibliography). Several of them are reviewed in the following pages. There is also the application made by Dr. James Judge upon the request of the Save the Volcanoes, Inc., for inclusion of Boca Negra Cave on the State Register of Cultural Properties. There are also a few notes from a talk given by Dr. Florence Hawley Ellis, Professor Emeritus of Anthropology, UNM, to the Save the Volcanoes on April 4, 1974, and a talk by Dr. James Judge.

It should be noted that there was no archaeological study made when the three southern volcanoes were purchased in 1973, or perhaps we have not succeeded in locating such a study, which would be essential before any of the construction is done to carry out the recreational and educational plans of this paper.

Shortly after Dr. James Judge, anthropologist now with the Chaco Center, gave a talk to the "Save the Volcanoes, Inc." members at the foot of Vulcan on November 10, 1974, he wrote to the Albuquerque City Commission recommending that the City purchase the two northern cones. Briefly, he said, it is known that the northern two volcanoes are the locus of sites of the Paleoindian time period (11,000 - 7,000 years ago), the Early Archaic time period -- and the Anasazi time period -- to historic times. Documentation of the occupation comes from the excavation in 1966 of -- Boca Negra Cave (which) yielded evidence of both Basket Makers and Pueblo cultural periods, spanning approximately the last 3500 years. Important evidence of the evolution and early utilization of specific types of prehistoric maize (corn) was recovered from the excavation of the cave, as well as other data of importance to archaeological research. Other sites, as yet unexcavated, are known to exist in the immediate area of two volcanoes, and the protection of these sites, as well as the cave itself, is of prime importance to the archaeological profession.

Dr. Ellis spoke of the Indian veneration for high places: their major spirits live on mountain tops, close to the deities. Even our volcanoes were relatively high places and were regarded as shrines or altars (especially the northern cone), where offerings were deposited. Dr. Ellis believes that at about the time of Christ (this was Basket-Maker II time, preceding Pueblo time) some of the petroglyphs pecked out in the canyons and escarpment below gave testimony to the shrines at the volcanoes, telling of the offerings and what was hoped for. She further believes that Jemez and Santa Ana pueblos still - this was a few years ago, when possibly the volcano area was not the haphazard shooting site it has become - make visitations to the volcanoes to leave offerings. Religious practices were concerned with hunting and agriculture: planting, growth, and harvest, and offerings left on high shrines were man's ceremonial way of getting nature (the gods) to do its share.

Stone artifacts found in Volcano Park show that during the Paleoindian period huge animals such as bison and mastodon were hunted (Remains of a giant sloth were supposedly found on the West Mesa). Later, when the climate had changed and the game was smaller, bow and arrow supplanted the atlatl as weapon; points found indicate both were used in this area. Boca Negra cave became a homesite long before pithouses were becoming the usual architectural. The cave witnessed the change from Basket Making period to pottery development, although there has been nothing to indicate that pottery was made on the mesa. (It was, in nearby Bernalillo). Slowly one culture evolved into another, the climate and knowledge of agriculture changing the nomadic hunter gatherers into a sedentary people, and the mesa was abandoned for the Rio Grande valley. It was still used for hunting forays, and remains of temporary campsites may be found near the volcanoes and elsewhere on the Llano, covered by aeolian sands and then uncovered by further aeolian action. Everytime there is a sandstorm on the West Mesa, Dr. Ellis said, more treasures for archaeologists may come to light.

Review of Archaeological Documents
Relating to Volcano Park

The following documents have been reviewed:

"Northwest Mesa Area Plan " - City Planning Division

"Final Environmental Impact Statement New GA Airport - West Mesa Site"

"Environmental Assessment Acquisition of 2,120 Acres of Land Adjacent to West Mesa Volcanoes Albuquerque, New Mexico" - Earth Environmental Consultants Inc. (EECI)

Reinhart, Theodore R., "Late Archaic Cultures of the Middle Rio Grande Valley, New Mexico" 1968. This PhD dissertation is filed in the Coronado Library of the UNM Library (LD 3781, N 564 R 371 - 2 Volumes)

Of the four documents Reinhart's is the most detailed in the amount of material relative to the Volcano Park area and Boca Negra Cave.

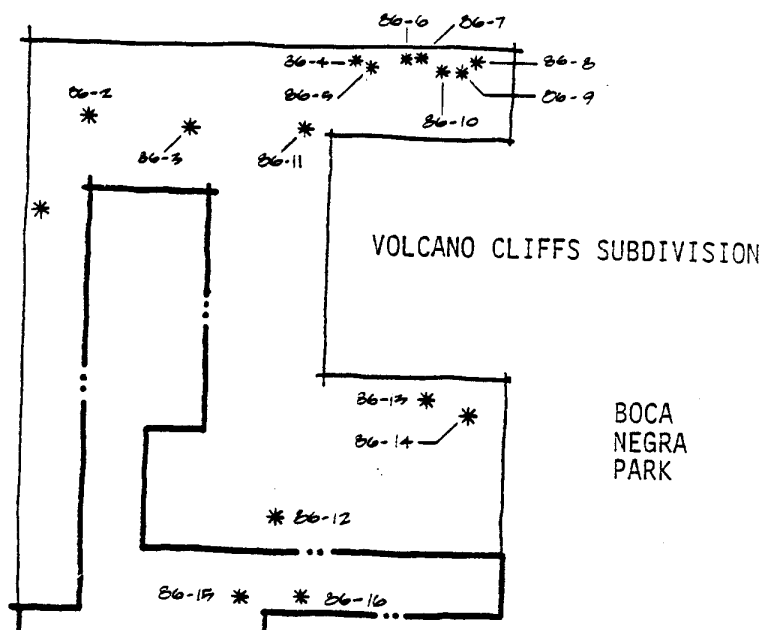
Conversations were also held with Richard Bice and William Sundt (former Presidents of the Albuquerque Archaeological Survey) who have conducted field studies in the discussion area.

Summary of Observations

A map in the West Mesa Site report indicates concentrations of sites west, south and east of Volcano Park but only one site of importance, Boca Negra Cave, inside of the Volcano Park - Gordon and Frank Bond study area.

Jane Whitmores' an Archaeological Reconnaissance Survey of the Volcanoes Area West of Albuquerque, New Mexico "(EECI) gives more specific data of distribution of sites within the study area.

ARCHAEOLOGIC SITE IN 1978 PURCHASE
OF G. BOND RANCH



MAP LEGEND

LOCATION

DESCRIPTION

| | |
|----------|--|
| SAR 86-1 | Cairns/Shelter |
| 86-2 | Corral? |
| 86-3 | Windbreak |
| 86-4 | Stone Circle - Shrine? |
| 86-5 | Walls/Corrals/Shrine? |
| 86-6 | Walls/Inscribed Boulder Petroglyphs/Masks |
| 86-7 | Rock Art Panels (10) |
| 86-8 | "L" Shaded Wall/Corrals? |
| 86-9 | Walls - Possible Sheep Pens |
| 86-10 | Corral |
| 86-11 | Wall/Shelter |
| 86-12 | Cairn |
| 86-13 | Petroglyph Panel |
| 86-14 | Corral |
| 86-15 | Corral |
| 86-16 | Corral |

Many of these sites are believed to be sheep pens and shepherds' shelters. The northern group include pictograph/petroglyph/shrine sites. The sheep herding facilities are possibly of the 1700s period.

Of the foregoing sites the 86-2 to 86-10 series hold the most promise for educational purposes. A possibility is that of developing an exhibit area featuring a progression from early Archaic hunting/gathering people (2000 to 1BC) to sheep herding Hispanics of the 1700s (sheep corrals/shelters coupled with petroglyphs related to hunting).

The canyon in the upper northeast corner is believed to have been a possible hunting corridor allowing a shielded approach for Archaic hunters moving toward the river bottoms.

Reinhart notes (of the area) "the Rio Rancho Phase ... a chipped stone technology which is unsurpassed in the Southwest during the Post-Pleistocene". He breaks the 100 B- AD 500 period into:

Atrisco Phase - 1000 BC
Rio Rancho Phase - 1000 BC - 1 BC
Alameda Phase - 1 BC - AD 550

Reinharts' very detailed descriptions of artifacts found in the Boca Negra Cave site could be used in the preparation of a visitors' guide booklet. He notes petroglyphs, flake tools, early arrow points, side notched (Pueblo) points, turquoise, metals (expedient basalt type) atlatl points, scrapers, shell beads and pendants and some pottery sherds. Evidence of pahas (feather fluffs on a stick) may indicate a shrine of later period Pueblos. He believes the cave has been used for the last 3000 years.

Recommendations:

1. That the archaeological cluster in the upper northeast portion be protected from road or urban development and be reserved for development as an archaeological sub-park with self guiding trails and protected exhibits.

2. Since there are, apparently, no Pueblo ruins in the area the educational emphasis could be on primitive agriculture, hunting-gathering cultures progressing to the herding/subsistence agriculture culture of the early spanish period.

3. The archaeological sub-park be coupled with a walking tour to Boca Negra Cave (possibly a bicycle trail).

Gordon Page
05/25/80

APPLICATION FOR REGISTRATION
NEW MEXICO STATE REGISTER OF CULTURAL PROPERTIES
STATE PLANNING OFFICE, SANTA FE

FORM A (Revised)

Property Name: Boca Negra Cave Site
Other Name(s) for Property: _____

Nature of Property: (check one or more as appropriate)
 District Structure(s) Object or
 Building(s) Site Collection

Location of Property:
County Bernalillo Congressional District (1-2)
Municipality Rural Planning District (1-7) _____
Historic District _____
Address or Rural Location Northeast side of volcanic cone located in
the NE 1/4 of the NE 1/4 of the NW 1/4 of Sec. 30, T 11 N, R 2 E, N.M.P.M.

Description of Property:
Property Size (approx. acreage of property) _____
1 acre.

Present Use: (check one or more as appropriate)
 Agricultural Government Park Transportation
 Commercial Grazing Private Resident
 Educational Industrial Religious
 Entertainment Military Scientific

Present Condition of Property:
Check one: Excellent Deteriorated Ruins Unexposed
 Good Fair
Check one: Altered Unaltered
Check one if appropriate: Moved Original Location

Present and Original Physical Appearance: (Use continuation sheet if necessary)
Boca Negra Cave is a lateral vent or "blowhole" on the northeast side of a volcanic cone located west of Albuquerque as described above. Entrance to the cave was blocked from the time of original cooling until approximately 4000 years ago, at which time it opened and human occupation began. The cave measured 20.5 feet wide by 6 ft. high by 27.5 ft. deep prior to archeological excavation. During excavation, a good deal of fill was removed, thus the roof is presently higher than 6 feet in many places.

Ownership:

Owner of Property: (check one or more as appropriate)

Private County Federal
 Municipal State Multiple

Name Gordon M. Bond
Address 518 First Street, N.W., Albuquerque, N.M. (business)
Name 800 Franz Huning Avenue, S.W., Albuquerque, N.M. (home)
Address _____
Occupant, Tenant or Manager:
Name _____
Address _____

Accessibility: Open to public Not open to public

Funded Project--Source:
Name _____
Address _____

Has Property been:

- A. Listed in a municipal or other register or otherwise designated as worthy of preservation Yes No
- B. Recorded in the Historic American Building Survey Yes No
- C. Recorded in the Historic American Engineering Record Yes No

Describe: _____

Other Inventory's:

Name of Institution University of New Mexico
Institution Number or designation Boca Negra Cave

Significant Period(s):

Dates Archaic, Basketmaker, Pueblo, Historic (ca. 4000 BP - Historic Period)

Thematic Classification: (check one or more as appropriate)

- Original Inhabitants Exploration and Settlement
- Westward Expansion Political and Military
- Commerce and Trade Ranching and Agriculture
- Lumbering and Mining Science and Engineering
- Architecture Religion, Education and Culture
- Collections

Why Property is Important: List documentary sources, etc. (Use continuation sheet if necessary)

Boca Negra Cave was excavated in 1966 and 1967 by Dr. Theodore Reinhart as part of his dissertation research, and was later reported by him in his Ph.D. Dissertation in 1968. This work is on file at the University of New Mexico, Department of Anthropology. Dr. Reinhart's work was carefully executed and meticulous records were kept of the excavation. The information and material derived from the cave is stored at the Maxwell Museum of Anthropology, University of New Mexico.

The site is important because the stratigraphic record uncovered by Dr. Reinhart mirrors the chronology of human events taking place in the surrounding area from the time the cave was first occupied (ca. 4000 years ago) to historic times. The earliest occupation recorded from the cave was that of the Atrisco Phase, a late

Why Property is Important:(continued)

Archaic hunting/gathering manifestation of 5000 - 3000 BP. The next occupation was that of the Basketmaker II period (3000-2000 BP), a pre-ceramic, seasonally transient culture which produced the first domesticated crops in the area. Corn of the Chapalote variety was found at a BM-II site a few miles northwest of the cave, and evidence of the same cultural period was found in the stratigraphic record within the cave.

The next cultural manifestation was that of Basketmaker III, initiating both sedentism and ceramics. For this occupation, the cave yielded both actual evidence of a new variety of corn (Maiz de Ocho) and a radiocarbon date. The date, A.D. 370 ±168, represents the earliest date known in the area for Maiz de Ocho. This fact was brought out in an article by Galinat, Reinhart and Frisbie (1970) in the Harvard Botanical Museum Leaflets, Vol. 22, No. 9.

More recent occupations of the cave were those of the Rio Grande Developmental Period, beginning the Pueblo occupation in the Rio Grande Valley, followed by evidence of both the Coalition and Classic Periods. Thus the prehistoric record continues in the cave until 1600 AD. There was also some evidence of use of the cave for special purposes, possibly religious, by Pueblo Indians in historic times. All of this evidence is well-documented by Dr. Reinhart in his dissertation.

Although the cave itself was not used before 4000 BP (it was evidently not open prior to that time), the area surrounding the northern set of volcanoes west of Albuquerque has yielded manifestations of earlier cultures. Near the cave, in the saddle to the north, is evidence of occupation by groups of the Early Archaic period ("Jay" culture) and further to the northwest, on the west side of the northernmost cone, is a site of the PaleoIndian Period (Belen culture) which may date as much as 10,000 years ago.

The importance of the area, then, lies in its evidence of human occupation for the last 10,000 years. At least 4,000 years of this occupation are documented stratigraphically in Boca Negra Cave itself. Deeply stratified sites such as this are not common in the Rio Grande valley, and thus assume an additional significance. Due to the antiquity represented in the cave, the importance of the general area surrounding the cave in terms of past human occupation, and the fact that the excavation of the cave yielded important chronological information as well as the earliest date for the Maiz de Ocho variety of corn, I submit that the site is of sufficient archeological and historic significance to merit nomination to the New Mexico State Register of Cultural Properties, and thence to the National Register of Historic Properties.

Names and addresses of persons preparing this application material:

- | | | |
|----|---|---------------------|
| A. | Form submitted by <u>W. James Judge</u> | Date <u>5/25/75</u> |
| | Address <u>1018 Jefferson NE</u> | |
| | <u>Albuquerque, NM 87110</u> | |
| B. | Inventory date by _____ | Date _____ |
| C. | Recent photograph by <u>T. Reinhart</u> | Date <u>1968</u> |
| D. | Recent map by <u>T. Reinhart</u> | Date <u>1968</u> |

*Planning office received this on 6-18-75, acted on D-7
it 6-20-75, placing Boca Negra cave on state register of
Cultural Properties - PLE*

STATE OF NEW MEXICO



STATE PLANNING OFFICE

GREER BUILDING
505 DON GASPER
SANTA FE, 87503
(505) 827-2073

GRACIELA (GRACE) OLIVAREZ
STATE PLANNING OFFICER

JERRY APODACA
GOVERNOR

March 7, 1977

Mr. Robert L. Burgan
City of Albuquerque
P.O. Box 1293
Albuquerque, New Mexico 87103

Dear Mr. Burgan:

At a recent meeting of the Cultural Properties Review Committee, action was taken to include the Boca Negra Cave Site on the State Register of Cultural Properties because of its historic and cultural importance. This designation places no restraint whatever upon the property, but may assist in obtaining aid in the restoration and preservation of the property.

In view of the above, we would appreciate it if you will sign the Acceptance Clause on the enclosed copy of this letter and return it to our office in the envelope provided. Your prompt attention to this matter is appreciated.

Sincerely,

Thomas W. Merlan, State
Historic Preservation Officer

TWM:jf
Enclosures
Copy to addressee for signature and return

ACCEPTANCE CLAUSE

I accept the registered status of the property named above and would like to avail myself of the protection afforded under the Cultural Properties Act of 1969.

Name (Signature) _____ Date 3-10-77

APPENDIX E

HISTORY

A prominent Albuquerquean, Tom Wiley, now deceased, had an article in the March 1979 issue of New Mexico Magazine entitled "The Five Volcanoes", which ends "Often I have walked across the expanse of lava -- and enjoyed the strange solitude of space - and I have wondered on these occasions how many other generations and races of men enjoyed the lonely splendor of the mesa, for indeed a solitude of time seems also to exist here."

To answer "how many races" is not possible at this time. But here is a meager sketch:

Paleoindians, possible c 10,000 B.C., lived on the West Mesa, perhaps attracted by water in the playas or basins which were formed largely from wind scouring. The volcanoes had long been formed. The tall grass and sage savannah provided habitat for large animals which the natives hunted with throwing sticks with points. In time - a long time - the lakes and springs gradually dried up, the climate became warmer, the great animals were either hunted to extinction or moved elsewhere. Perhaps the people moved onward, too.

The next peoples were of the Archaic periods, Early (about 6500 B.C.), the Middle, and Late into early Christian times. There were different cultures in these periods, with probably the Cochise in our area, some of them undoubtedly at home in Boca Negra Cave, and some in sites which have not yet been excavated. The bow and arrow, with different points than the atlatl, came into use for hunting the much smaller game than had existed thousands of years before. People of the late Archaic period became the anthropologists' classification Basket Maker I. Basket Maker II built pit houses, but so far there is no evidence that these existed near the volcanoes.

Corn reached the middle Rio Grande area from Mexico c 1 A.D. Remains of an early variety, with very small ears, were found in Boca Negra Cave. Gradually, hunting and gathering gave way to agriculture and a more sedentary way of life. The archaeological study made of Boca Negra Park (See Bibliography) describes a water control system worked out there which depended upon direct precipitation, but this was in the Pueblo period of about the fourteenth century. Back in the seventh century, the mesa was becoming more arid, and the inhabitants moved down closer to the Rio Grande for better farming, still going up on the mesa to hunt. Temporary camp sites were used on the mesa and many remains of these have been found. Dr. Ellis suggested that Boca Negra Cave ceased being a permanent dwelling about 700 A.D. but continued to be used as a hunting camp.

The Anasazi culture of the Four Corners area with its good pottery and pueblos was extending to the middle Rio Grande area, and probably for centuries the volcano area was used mostly as a source of lithics, for hunting and for religious ceremonies.

When the Spaniards come with their sheep and cattle, grazing became the main use of the still grassy West Mesa, which was referred to both as La Loma and Ceja Mesa. The many remains of stock pens made out of the volcanic rock, where the livestock was kept at night for protection from predators, show that the volcanoes and gullies leading from them were used by the shepherds. This was open range land used in common by people from the neighboring little communities of Albuquerque, Alameda, Atrisco, Pajarito, Los Padillos, etc., from as far as the Puerco. Shepherds to care for the combined herds were appointed for a month's service on a rotating basis for the hard life on the mesa, where there were no habitations and where Apaches and Navajos raided to get livestock. These raids occurred over about a century, until the time of the Long Walk.*

In the lull which followed peace with the Indians, there was occasional excitement on the West Mesa. Historian Marc Simmons, whose "History of Albuquerque" (UNM Press) is just being published included the following in a letter to us: "In 1881 an Albuquerque newspaper reported that one of the volcanos was giving off smoke. Later the Santa Fe New Mexico noted that there was an explosion in another of the volcanos and a large cloud of black smoke. The Albuquerque fire and police departments turned out in force, anticipating a major disaster. However, it proved to be all a hoax perpetrated by some college boys who had filled the crater with old tires and set them afire."

In 1917 the Santa Fe Pacific Railroad was given part of the land (in the usual checkerboard arrangement) by the Federal government, with mineral rights going to the railroad. The land was leased from the railroad for sheep grazing by Louis Ilfeld, brother of well known merchant Charles Ilfeld. In summer the large herd was moved to the cooler country around Cuba; the wool and pelts were not processed here, but shipped to Boston.**

In 1951 Frank Bond and Co., Inc., bought the land from the railroad and consolidated it by exchange with BLM, thereby doing away with the checkerboard. The railroad retained mineral rights and the right to repurchase land for construction of telephone lines, water-pipes, etc. Some time later, Frank Bond's nephew Gordon Bond acquired the volcano strip and a good part of the land to the east. During the Bonds' ownership, there has been cattle grazing at a low concentration, since the land was fairly denuded by centuries of sheep grazing. The last lessors were the King Brothers.

There must have been an interlude during World War II when there was no grazing around the two northern cones. They were used for aerial bombing practice, and spent shells and bits of sheet metal are the most prevalent artifacts around.

*Information received from Judge Tibo Chavez of Belen

**Information from Mrs. L. S. Hartman, of the Ilfeld family

APPENDIX F

COMMUNICATIONS WITH PARKS AND RECREATION

Our Task Force has met with Mr. Bob Bergan to review with him our plans for recreational use, and to benefit by his long experience with the West Mesa area. He sanctioned our planned use of the dirt road going through Boca Negra Park until such time as there will be a paved road on the west side of the Volcanoes, and after that as secondary access. He also did not negate our plan to reach the second geologic window and to have a picnic area there, although that is within the boundaries of Boca Negra Park. Likewise, our various paths, jogging, bicycling, horse, foot trails may go through that park, and a staging area be created west of the field used for RC model planes.

We presented our plan to the Parks and Recreation Advisory Board on July 11 and requested their approval of the name of "Volcano Park," which was granted. The Chairman, Mr. Perez, raised some questions which we have attempted to answer in the letter which follows this.

In the actual development of our plans we must, of course, work in conjunction with Boca Negra Park about such things as fences, gates, and signs. Of special importance must be consideration of archaeological sites described in the survey made for P. and R. in November 1978 by James Rodgers of The Center for Anthropological Studies.

Mr. Fred Perez, Chairman
Albuquerque Parks and Recreation Advisory Board
121 Tijeras, NE
Albuquerque, New Mexico

Dear Mr. Perez,

At the meeting of the Parks Advisory Board on July 11 when two members of the Task Force for Open Space - West Mesa presented plans for the recreational use of Volcano Park, you suggested that we get more information on two matters:

1. Is the climate so severe that the area would not be used over enough of the year to justify the investment?

2. Could a poll of the general public be taken to see if many people would anticipate using the recreation facilities? Would APS use the park for educational purposes, as it uses a nature facility in the Manzanos, and as is planned for Candelaria Farms:

Regarding the first:

Our own report uses information taken from environmental studies of the area, and says: "Meteorologic conditions at the Park differ slightly from those in urban Albuquerque. Midday winter temperatures are somewhat milder, and midday summer temperatures are hotter. The latter approach and sometimes exceed 100 F. The average annual precipitation is approximately 8.7", about half of which occurs during July, August, and September. Winds from the west are common and sometimes severe." The booklet "Albuquerque's Environmental Story" adds this: "Moderate semi-arid climate, warm and dry. Mean annual air temperature 51-60F...195 day frost-free season..few relative extremes if any type." The U.S. Weather Service told me emphatically that the temperatures on the West Mesa are identical to the city, likewise the winds. In the city, of course, buildings and trees give shade and wind breaks. On the mesa, the winds can carry sharp sand. A biologist who does considerable work in the volcano area said that the dark basalt reflects heat, and that in severe winter weather much of the ground may freeze, but that the soil around the rocks remains soft; the rocks have a solar effect. "Save the Volcanoes" has had events at Vulcan around Thanksgiving and the weather was delightful. While it has seemed inviting in February, the bad condition of the present access road prevents ordinary car use. Four wheel drive vehicles get there. Use in the recent extremely hot weather most likely was poor, other than before noon or evening; Petroglyph Park hours are extended until 8 P.M. in the summer, but in July this year, there were very few visitors. I would think that for at least ten months a year the park would be used.

As for the second, this is more difficult. Our small (5 persons) group of volunteers could not undertake a poll. Perhaps UNM has some course where this kind of thing could be a project, if the Parks Department made a request. From past experience our feeling is that with adequate access and some publicity, Volcano Park would attract many users. I have old notes which show that a Talk-Walk program in 1973 attracted 300 (many of them youngsters) to the old mine "amphitheatre." On June 4, 1978, there was a feature article in the Journal about a program, and 176 cars (counted by the Planning Department) and between 600 and 700 people came out with picnic lunches. At the end of August 1978, the Parks Department had a dance-pageant program, moderately mentioned in the press, and I was told over 100 came the first night and 60 the second, although the weather was not the best. I myself have never gone out to the volcanoes without encountering at least a few cars with people enjoying the area, with no publicity, no program, no facilities. Cyclists are eager for a trail there, and we feel all facilities just have to be available to attract people to use them. You showed interest in the school children's letters which I mentioned on July 11, and I enclose a summary of them.

APS use of Volcano Park must remain unanswered for sometime. I have spoken with Mrs. Dike, APS Information Officer, and a middle school science teacher and a high school teacher of archaeology and anthropology, a course which may be taken as an alternative to World History by juniors and seniors in some of the high schools. One of the first two mentioned budget problems for bus trips already planned, and felt it was no time to plan more. Another one said what Volcano Park has to offer would have to tie in with curriculum and would depend upon an interpretive specialist. Since it may be years before access roads, seating in the caldera atop the second volcano, and toilet facilities are available, it seems too soon to approach officials who could not make any real commitment now. The high school teacher (West Mesa) said that for the past six years she has taken her classes on field trips to Petroglyph Park, but the cost of the bus has to be raised by the class and teacher; she feels that the trip is beneficial to the class work, and seeing the additional archaeological sites in Volcano Park would be worth while.

I hope this extra information, although not precisely answering your questions, will be satisfactory

Sincerely,

Ruth C. Eisenberg
Open Space Task Force - West Mesa

APPENDIX G

COMMUNICATIONS WITH F. A. A.

This Task Force unit has met with the West Mesa airport planners a number of times on problems of mutual concern. These include access road; water line; airport lights; noise impact; and, very important, controls on land use for the area surrounding the airport itself, as well as airport related development.

We submitted a letter (which follows this) to the City Department of Aviation and appeared at the August 1, 1980 meeting at which the Environmental Assessment was presented. In our oral presentation we did not bring up that part of the letter which was about the access road, in view of a very recent change made in alignment by Mr. Clint Dodge of Herkenhoff Associates. The new alignment D, as staked out, is on Horizon land north of the geologic window and canyon walls in Section 17; and the 150' roadway, plus enough land south of it to possibly permit a two lane road, seems to skirt areas essential to our planned archaeology area.

Our letter did not address the subject of airport lights, so once more we pointed out, verbally, the negative impact of flashing lights on the recreation area.

For water transmission line and land use surrounding the airport, please see the letter.

July 31st, 1980

City of Albuquerque
Department of Aviation
P.O. Box 9022
Albuquerque, New Mexico, 87119

Dear Sirs:

As members of Save the Volcanoes Association, Inc. and the Open Space Task Force West Mesa Committee, we appreciate this opportunity to comment on the Environmental Assessment for the West Mesa Airport prepared for the City of Albuquerque Department of Aviation by Chambers-Campbell-Isaacson-Chaplin, Inc. Volcano Park is located immediately east of the proposed airport site, and we are concerned about the negative impacts the airport may have on the park's open space and recreational facilities. We recommend that these potential negative impacts be made explicit and that measures be adopted to mitigate their effects:

Our first concern involves possible conflicts in land use. The City of Albuquerque is requesting Federal assistance in acquiring approximately 4,010 acres of the Frank Bond Ranch for use as a general aviation airport. It has, however, acquired an option to purchase the entire Bond Ranch, which includes approximately 6,500 acres or one and a half times the amount of land required for the proposed airport. All of the ranch is zoned A-1 and designated as an "area appropriate for public support of maintenance of open rangeland through tax or other means" (Albuquerque/Bernalillo County Comprehensive Plan for Major Open Space). The conflicts between these land use designations and the proposed airport usage are acknowledged in the Environmental Assessment. But the assessment asserts that the "presence (of the airport) may actually help to preserve most of the area in its natural state, since only a small portion of the site will be developed" (Environmental Assessment, 1-17). That statement appears illogical and inconsistent with information presented elsewhere in the assessment. Figure H-13, the Airfield Land Use Plan, indicates that approximately 474 acres of the Bond Ranch may be used for industrial development. The use of an equally large area remains nonspecific. It is designated for "Unallocated Aviation Related Development." Both of the areas which may be used for industrial development lie outside of the proposed airport property line on land included in the Bond Ranch. One of the unallocated areas lies within the proposed airport property line, another lies outside on land included in the Bond Ranch, and the third is on land currently owned by the State of New Mexico but proposed for

future acquisition as part of the airport. Several smaller areas within the proposed airport property line are designated for commercial use. Thus, according to Figure H-13, almost 1,000 acres within and adjacent to the proposed airport may be used for industrial, commercial, or unspecified aviation related developments. Neither the figure nor the assessment text provides specific information about land uses on the remainder of the Bond Ranch. The text states that "The City administration has reportedly indicated that all portions of the Bond Ranch property that are currently under option but that are not acquired for the airport site, will be purchased as open space. But apparently there is no firm plan or source of funds to do this" (Environmental Assessment, 4-9). The City administration has also indicated to members of our committee that that portion of the Bond Ranch located in Section 5 east of Volcano Park will be acquired and maintained as public open space. As such, it would provide an important link between Volcano Park and La Boca Negra Park. But, again, there are apparently no firm plans or sources of funds for the acquisition.

In order to prevent the many potential conflicts in land use and to assure the continued utilization of property already acquired or contracted for acquisition as public open space and recreational land, we submit the following recommendations regarding land use in the vicinity of the proposed airport:

1. No portions of the Frank Bond Ranch will be designated for industrial or unallocated aviation related developments.
2. No portions of the Bond Ranch outside of the proposed airport property line will be designated for commercial development.
3. The City will make explicit its intentions to acquire and maintain all or part of the Bond Ranch outside of the proposed airport property line as public open space and recreational land.

Our second concern involves the possible use of a portion of Volcano Park for an access road to the proposed airport. The West Mesa Airport Alternate Site Study Final Report (Draft) Facility Characteristics and Airport Plans identified several alternative alignments for the road. Four of them approach the airport from the east, traversing property which the City has either acquired or contracted to acquire as part of Volcano Park. Federal financial assistance through the Land and Water Conservation Fund had been or was being used for all the acquisitions, so the constraints provided by Section 4(f) of the Department of Transportation Act and Section 6(f) of the Land and Water Conservation Fund Act appear applicable to all of the open space and recreational lands involved. The airport planners seem to have been unaware of those constraints or their applicability to the property: "Apparently it was not clearly realized by the airport planners that these alignments crossed land which was intended for open space or recreational use, even if the land was not yet purchased for that purpose" (Environmental Assessment, 4-32). All four of the eastern alignments, including that identified as the preferred route, are located on the land which the

City had contracted to purchase from the Gordon Bond Estate in fifty-three forty acre tracts over a period of ten years. The acquisitions began in 1978. The airport planners also appear to have been unaware of the unique scenic, geologic, biologic, and archeologic values of what is known as the Northern Geologic Window. The preferred route, Alignment C*, would destroy the window and separate the area north of it from the rest of Volcano Park. Recognizing the unique values of the window and the serious legal problems that might result from its use as a transportation corridor, our committee suggested another eastern access route. Located north of the geologic window, it is referred to as Alignment D and described in the Environmental Assessment as "...more acceptable (i.e. would have less adverse impact) than Alignment C*, and should be adopted unless there are major cost differentials or other unknown factors that would influence a decision for C*" (Environmental Assessment, 3-2). It should be added that lengthy legal proceedings would almost surely follow the selection of eastern alignments A,B,C, or C* and that the costs associated with such proceedings could also be "major." While the Environmental Assessment describes Alignment D as the most acceptable of the eastern routes, it identifies the southern route, S-1, as that preferred over all others and urges that it be "seriously reconsidered" (Environmental Assessment, 4-8). We agree with that recommendation. Despite some of the problems recognized in the assessment, Alignment C* is the route upon which all of the proposals and evaluations are based: "The proposed airport access road will pass through this lava area, and at one point will traverse a valley where erosion has gullied through the lava (i.e., it will traverse and destroy the Northern Geologic Window)" (Environmental Assessment, 3-2).

In order to avoid the legal problems which might result from the use of existing or proposed park land for transportation purposes, to preserve the integrity of Volcano Park as a whole, and to protect the unique values of the Northern Geologic Window in particular, we submit the following recommendations regarding the access road to the proposed airport:

1. S-1 will be identified and thoroughly investigated as the most preferred route.
2. Alignment D will be identified and thoroughly investigated as the preferred eastern route.
3. All discussions of eastern alignments A,B,C, or C* will refer to the legal actions which would probably follow the selection of any one of them.

Our third concern involves the possible construction of a water transmission line and associated facilities to serve the proposed airport. One of the proposed alignments runs "...directly west from the (Volcano Cliffs) reservoir, between the Volcano groups and following the existing dirt trail more or less, onto the (airport) site. Restoration of native habitat would be required since this route crosses the Volcanoes Open Space" (West Mesa Airport Alternate Site Study, H-27). The legal

problems which might result from the use of park land as a transportation corridor might also result from its use as a utility corridor. Those problems are acknowledged in the Environmental Assessment, which notes that "Site recreation and revegetation would also be unusually difficult" (Environmental Assessment, 4-34). The alignment is recognized as generally unacceptable, but, because of the lack of specific information, no alternatives are evaluated.

In order to avoid the legal problems which might result from the use of park land for utility purposes and to preserve the integrity of both Volcano Park and La Boca Negra Park, we submit the following recommendations regarding the water transmission line to the proposed airport:

1. An alignment which parallels that of the access road will be identified and thoroughly investigated as the preferred route.
2. All discussions of the alignment through open space and recreational land will refer to the legal actions which would probably follow its selection.

Our last concern involves the noise which might be generated by the proposed airport. Figure E-17, LDN Noise Contours (for) Alignment N-4 indicates that a large portion of the land which the City has acquired or contracted to acquire for park purposes lies within the LDN 59 contour, and one of the northern volcanic cones lies within the LDN 65 contour. The northern cones have been designated as an intensive use area which will be used for hiking, horseback riding, biking, jogging, picnicking, and sight seeing (Volcano Park Open Space Master Plan). Information provided in earlier airport studies indicates that LDN values of 65 and over are normally considered unacceptable in areas used as neighborhood parks and playgrounds (West Mesa Airport Alternate Site Study, Figure 10A and Figure 10B). They must be considered equally unacceptable in the area of the northern cones, which will have many of the uses associated with neighborhood parks and playgrounds. The Environmental Assessment does not thoroughly evaluate the negative impacts of the noise which might be generated by each of the alternative runway alignments, but it would appear that those generated by Alignment N-2 would be less severe than those generated by the preferred alignment, N-4. Noise from Alignment N-2 would impact on a relatively small portion of Volcano Park northwest of the Northern Volcanoes Intensive Use Area. It should also be noted that the Environmental Assessment does not discuss one of the recommendations included in earlier airport studies. The recommendation is intended to mitigate the impact of airport noise on the Ruth Eisenberg Amphitheatre located at the base of the largest volcano. Observing that "...an amphitheatre or music shell type open facility can be very sensitive to interruptive noises,..." an earlier study states that "All alignments would be expected to create some traffic in the terminal area at or below 1000 ft. AGL which could potentially be disruptive. Consideration would be given to an operational system which would alert air traffic control of scheduled Amphitheatre events so that overflights could be minimized" (West Mesa Airport Alternate Site Study, E-21 and E-22).

APPENDIX H

CHILDRENS LETTERS

CHILDREN'S LETTERS ABOUT ALBUQUERQUE'S VOLCANOES

On August 28, 1971, Mrs. Buck, 7th grade teacher at Ernie Pyle Jr. High School, read a small article in the morning paper to her class. It was headlined "Save Volcanoes Petitions Pushed," and this was not only brought to the young people's attention as a current event, but relevant especially because the volcanoes can be seen from their classroom windows. Later in the day, the assignment was letter-writing. About half of the class chose to write to the chairman of the Save the Volcanoes Committee, approving of the concern to keep that part of their environment in its natural state and wanting to be included as petitioners.

Along this line, student Linda Smith wrote in part, "I am interested in seeing the beauty of New Mexico instead of houses, water tanks. I'd rather see mountains, volcanoes, and other beautiful things. . . . Pretty soon if they keep building all these houses and water tanks we won't have any beautiful mountains or volcanoes to visit or learn about."

Some twenty-five such letters were written to Mrs. Eisenberg, and she is justly proud to have them. And she would agree with Ruby Sierra who pleads, "Please do not build houses on our volcanoes, because I and a lot of other people of Albuquerque like the scenery." Patricia Castillo pledges, "I sure am sorry about the volcanoes, but I sure will try to help keep them."

Students offering to sign petitions to preserve the volcanoes, which are privately owned and subject to private development, were Martha Saenz, Elena Moya, Carol Saiz, Linda Garcia, Linda Sisneros, and Kathleen Torrez. Debbie Casias hoped there would be a lot of signers.

Also wanting his name on the petitions was Rudy Sisneros who gave profound reasons for saving the volcanoes. He wrote, "I hope you add my

name to the petition for special reasons; 1, the volcanoes are a pretty sight; 2, they must be the closest volcanoes to Albuquerque; 3, they add some history to the city."

Wanting the volcanoes saved, Ruby Sierra wrote, "We have only a few natural things in Albuquerque. So please don't build houses on our volcanoes. "Martha Saenz noted, "The volcanoes symbolize that nature is all around us. To destroy them would be like helping air pollution on its way." Kevin Kolozsy was against building on land "that could become a famous park." Cheryl Buchanan called them "quite a historic landmark." Priscilla Bojorquez simply did not want them torn down. Their unusual beauty was noted by Gerald Ortiz, Patricia Rodriguez, Debbie Garcia, and Ruby Warner.

That the volcanoes are worth visiting was attested to. Jo Ann Barbero wrote: "The other day our family and some other friends started to walk to one volcano and climbed up and just walked around it. I thought it was beautiful."

Sandra Baca said, "Save the volcanoes please, because I and my family, most of the time I go up there. . . . and most of the time I go up there with my cousins. . . . Well, I would like for you to make it into a park too, but, I'd rather have it the way it is, because my grandmother hasn't seen it yet and she would like to see the volcanoes."

Kathleen Torrez called them "about the only scenic place on the west side of the city." Debra Smith viewed saving them in the light of saving the country, adding, "I'm for it."

A forward looking young man, Billie Joe Lucero, wants the volcanoes preserved, "so when we grow up our kids could see the volcanoes too."

Oh, that only more of his elders were as aware of the true values about them!

Among the sentiments expressed by the pupils was one of gratitude to Mrs. Eisenberg for her work. Gerald Ortiz and Debbie Casias voiced their gratefulness. Ronald Roybal wanted to help her in her efforts.

Thus, the young citizens of Ernie Pyle felt and wrote. How appropriate that this interest in Albuquerque's priceless feature should come from the school named after one who greatly loved Albuquerque. Ernie Pyle's house on Girard, S.E., gave him a sweeping view of the valley where the level horizon was ornamented a little to the north by the unique lines of the five volcanoes.

M. Crosno
October, 1971