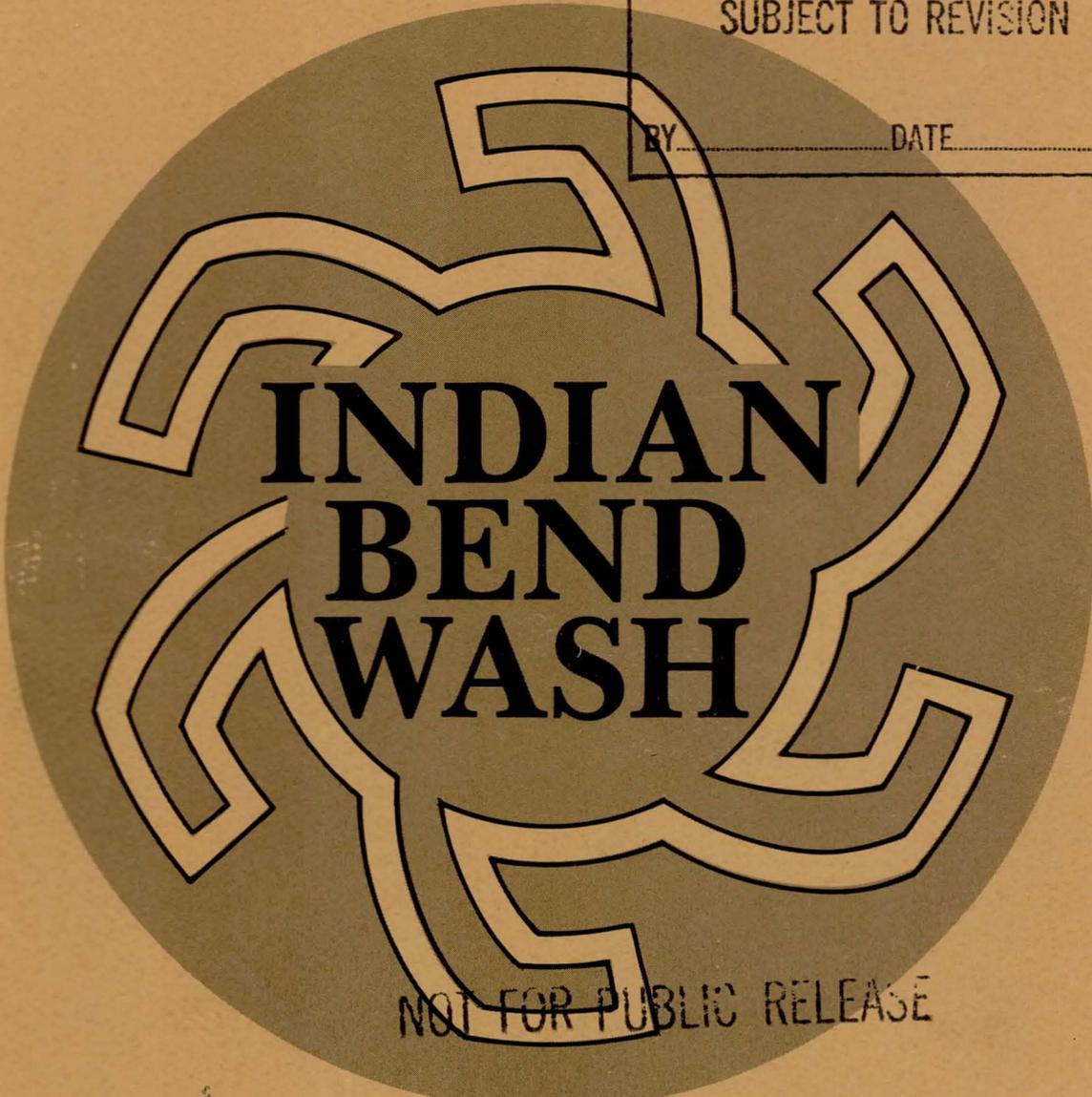


PRELIMINARY  
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# INDIAN BEND WASH

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Maricopa County, Arizona

HYDRO LIBRARY

## RECREATION MASTER PLAN

28.2-00-7-03/75

U.S. ARMY ENGINEER DISTRICT  
LOS ANGELES  
CORPS OF ENGINEERS

FLOOD CONTROL DISTRICT  
OF



MARICOPA COUNTY  
3325 W. DURANGO  
PHOENIX, ARIZONA 85009

DM25

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EXHIBITS

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- 1a Draft of Cost Sharing Agreement with City of Scottsdale (Prepayment Plan)
- 1b Draft of Cost Sharing Agreement with City of Scottsdale  
(50 Year Repayment Plan)
- 2 Draft of Cost Sharing Agreement with City of Tempe



# INTRODUCTION

1. PROJECT AUTHORIZATION. The Indian Bend Wash project was authorized in the Flood Control Act of 1965 (Public Law 89-298), approved 27 October 1965 in accordance with House Document No. 303, 88th Congress. As part of the postauthorization change, recreation development was added as a project purpose. Because the project was authorized after the enactment of Public Law 89-72, the Federal Water Project Recreation Act, the cost-sharing provisions of the law are applicable (50 percent cost-sharing with local interests on recreational development). The project document plan provided for a concrete-lined trapezoidal channel along Indian Bend Wash from the Arizona canal to the Salt River. This entire reach was recommended to be unlined in the Phase I report of October 1973.

2. PROJECT PURPOSE. The authorized purpose of the project is to protect residential, commercial, industrial, and public property in Scottsdale and Tempe against flood damages. Post authorization charges include recreation as an additional project purpose. The average annual charges and benefits, with and without area redevelopment benefits, are summarized in table .1 for each of the separable features for flood control and recreation.

TABLE 1

## Summary of Average Annual Charges and Benefits

(5-5/8 percent - 100 years)

Item	Average	Average	Benefit-Cost Ratio	Average	Benefit-Cost Ratio
	Annual Benefits-With Area redevelopment Benefits	Annual Charges-Without Area redevelopment Benefits		Annual Benefits	
<b>Flood Control</b>					
Inlet	\$488,000	\$309,000	1.6	\$513,000	1.7
Outlet	299,000	276,000	1.1	321,000	1.2
Side channels	491,000	271,000	1.8	510,000	1.9
Total	<u>1,278,000</u>	<u>856,000</u>	1.5	<u>1,344,000</u>	1.6
Total recreation	<u>1,865,000</u>	<u>839,000</u>	2.2	<u>2,075,000</u>	2.5
Total project	<u>\$3,143,000</u>	<u>\$1,695,000</u>	1.9	<u>\$3,419,000</u>	2.0

3. PURPOSE OF MASTER PLAN. This master plan acts as a guide for the development and management of the project's land and water areas and shows in detail how the surroundings will be conserved, enhanced, developed, managed, and used in the public interest throughout the life of the project. This plan summarizes the existing facilities, and formulates a plan for developing the project in the best possible manner by considering costs, future recreational demand, and the water's carrying capacity of the floodway. The master plan is designed to be updated every 5 years, or revised as needed, to accommodate changing needs and conditions of the project.

4. PERTINENT PUBLICATIONS. The previously issued publications that apply to this project, as well as those scheduled for future issuance, are listed below.

Previously Issued

Report Title	Date of Issue
Interim Report on Survey for Flood Control, Indian Bend Wash, Arizona	15 Apr 1962
Environmental Statement, Indian Bend Wash, Maricopa County, Arizona	23 Oct 1973

Design Memorandum No. 1, GDM Phase I,  
Indian Bend Wash, Maricopa County, Arizona

23 Oct 1973

Design Memorandum No. 1, GDM Phase I,  
Supplemental Report on Side Channels System

27 Sep 1974

Scheduled For Future Issuance

Design Memorandum No. 2, GDM Phase II,  
Indian Bend Wash, Maricopa County, Arizona

March 1975

Design Memorandum No. 3, Feature Design  
Memorandum for Inlet and Side Channels,  
Indian Bend Wash, Maricopa County, Arizona

September 1975

5. APPLICATION OF PUBLIC LAWS. The following laws provide for the development and management of Federal projects for various purposes according to the intent of Congress and as they apply to Indian Bend Wash.

a. Section 4, Public Law 534, 78th Congress (The Flood Control Act of 1944), as amended by the Flood Control Acts of 1946, 1954, 1960, and 1962, authorizes the Corps of Engineers to construct, maintain, and operate public park and recreational facilities at water-resource-development projects, and to permit local interests to construct, maintain, and operate such facilities.

b. Public Law 85-624 (The Fish and Wildlife Coordination Act) requires that any agency impounding, diverting, or controlling water consult with the United States Department of the Interior, Fish and Wildlife Service. The Department of Interior would determine the possible damage resulting to wildlife resources and the means and measures to prevent the damage and to provide concurrently for the development and improvement of such wildlife resources.

c. Public Law 89-72 (The Federal Water Project Recreation Act), accompanied by House Committee Report No. 254, requires that full consideration be given to opportunities that the project affords for outdoor recreation and for fish and wildlife enhancement. It also provides for non-Federal participation in land acquisition and the development and management of recreational facilities and fish and wildlife resources.

d. Public Law 89-80 (The Water Resources Planning Act) establishes a water resources council to provide for river-basin commissions. The purpose of this act is to coordinate the diverse water-resources development planning activities of Federal, State, and local governments, as well as other groups. It provides for a comprehensive and coordinated implementation of the national policy to encourage the conservation, development, and utilization of water and related land resources of the United States. One of its important provisions concerns the preparation and council review of comprehensive regional and river-basin plans.

e. Public Law 87-88 (The Federal Water Pollution Control Act, amendments of 1961) amends the Federal Water Pollution Control Act of 1956 to provide for a more effective program of water-pollution control and for other purposes, by extending authority and increasing construction grant authority.

f. Public Law 89-234 (The Water Quality Act) further amends previous laws establishing the Federal Water Pollution Control Administration and Department of Interior.

g. Public Law 91-224 (The Water Quality Improvement Act) provides for establishment of effluent standards for sanitary-waste discharges.

h. Public Law 91-190 (The National Environmental Policy Act) declares for protection and enhancement of the environment and to provide means and measures necessary to minimize any adverse effects.

i. Section 73, Public Law 93-251 (Flood Protection Projects, Considerations) declares that, in the survey, planning, or design by any Federal agency of any project involving flood protection, consideration be given to nonstructural alternatives to prevent or reduce flood damages including, but not limited to, floodproofing of structures; flood-plain regulation; acquisition of flood-plain lands for recreational, fish and wildlife, and other public purposes; and relocation with a view toward formulating the most economically, socially, and environmentally acceptable means of reducing or preventing flood damages.

6. SCOPE OF REPORT. The recommended flood-control project comprises structural and nonstructural features: an inlet with an interceptor channel, an outlet, and collector and side channels. Indian Bend Wash from the Arizona canal to the Salt River is being considered as one total project.

7. In formulating the master plan, consideration has been given to project purpose needs: the recreation and other potential uses of the project and its lands (including natural-resource protection and enhancement); the relationship to other facilities in the region; and the distribution, characteristics, and desires of the people.

8. Contact has been maintained with local agencies and interest groups, and informal discussions have been held to determine the needs and desires of the non-Federal interests.

9. From a recreational standpoint, Indian Bend Wash is divided into three main areas of use: (a) the interceptor channel, designed for passive recreation; (b) the middle reaches of Indian Bend Wash, the greenbelt floodway, designed for active and passive recreation; and (c) the outlet channel, designed for passive recreation. No recreation facilities would be developed along the system of side channels or the inlet channel. An 11-mile trail system, whose trails would parallel the structural and natural Indian Bend Wash channel from the Arizona canal to the Salt River, would tie the entire project together.

**PROJECT DESCRIPTION**

10. LOCATION. The project area lies in and along Indian Bend Wash and extends from Indian Bend Road on the north to the Salt River on the south, a distance of 7 miles in Scottsdale and 1 mile in Tempe. The wash in the project area occupies a small part of the total drainage area of Indian Bend Wash. This reach is bordered on the northeast by the McDowell Mountains, on the east and southeast by the Salt River Indian Reservation, on the west by the City of Phoenix, and on the northwest by the Phoenix Mountains and Camelback Mountain. U.S. Highway 10 is located about 3 miles southwest of the site, and affords access to the project. The Black Canyon Freeway runs through the metropolitan area of Phoenix, which is about 12 miles directly west of Scottsdale.

11. HYDROLOGY AND CLIMATE. Indian Bend Wash, a dry wash, contains flows only during and immediately after storms. Three types of storms produce rain in the area: general winter storms, general summer storms, and local thunderstorms. Most floods are "flash floods" as the result of thunderstorm rainfall that occurs unexpectedly with little or no time to warn affected communities of impending danger to life and property. The shallow, poorly defined wash; the inadequate capacity of the poorly defined stream channels, and the rapid urbanization of the area, with its resultant encroachment on the flood plain, aggravate the flood problem along the wash.

12. Other than immediately following the heavier rains, little streamflow occurs in Indian Bend Wash because climatic and drainage-area characteristics are not conducive to continuous runoff. A series of variable-length, parallel,

ephemeral streams descend from the slopes of the mountains to the alluvial plains, where the channels are poorly defined and braided. The series of parallel streams in the upper reaches of the study feed into Indian Bend Wash, which carries floodwaters to the Salt River in its very wide, shallow cross section. Some runoff is lost to channel percolation in these wide, ill-defined channel cross-sections.

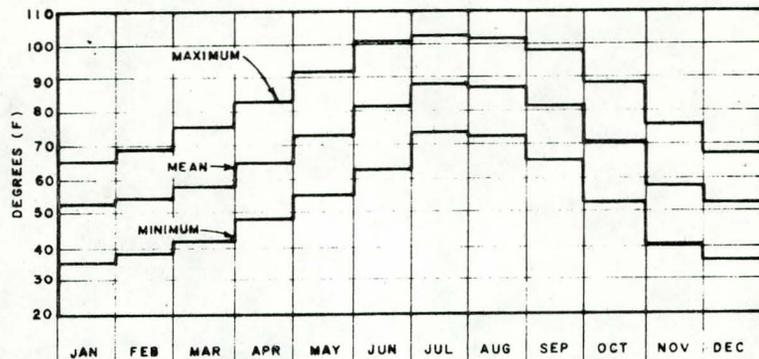
13. The arid and subtropical climate is characterized by short, mild winters with clear days and cool nights; long hot summers (with daytime temperatures usually exceeding 100 degrees Fahrenheit); low annual rainfall; low relative humidity; and a high water evaporation rate. The 90-year mean annual precipitation ranges from about 7.8 inches per year at the Salt River to about 14.0 inches per year in the higher mountains. The rainfall is divided about equally between the summer and winter seasons. Mean maximum and minimum January temperatures range from approximately 65 to 35 degrees Fahrenheit in the valley (see fig. 1) and from about 50 to 25 degrees in the mountains. Mean daily temperatures during July vary from 105 to 75 degrees in the lower portions of the region and from 90 to 60 degrees in the higher mountains. Although prevailing winds are generally rather light, moderate winds often occur in conjunction with general winter storms, particularly in the higher elevations, and in the spring when low pressure develops over Nevada. Summer thunderstorms often produce strong gusty winds over local areas.

14. STREAMS. Indian Bend Wash, the major stream in the drainage area, rises on the southwestern slope of the McDowell Mountains and flows generally southward

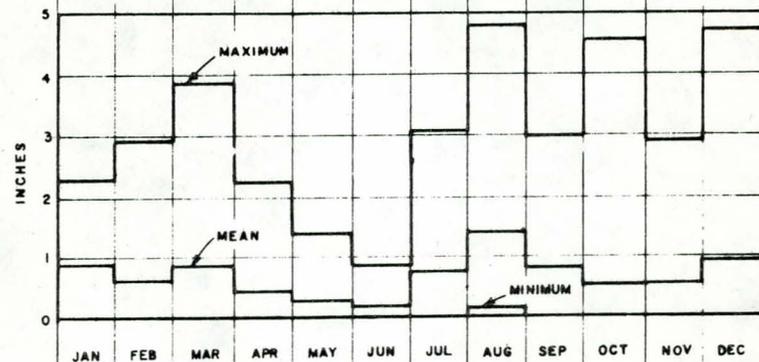
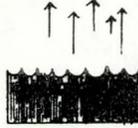
# FIGURE I. CLIMATOLOGIC SUMMARY



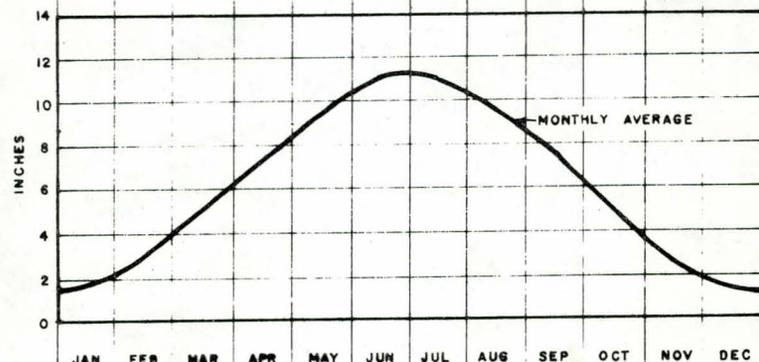
TEMPERATURE



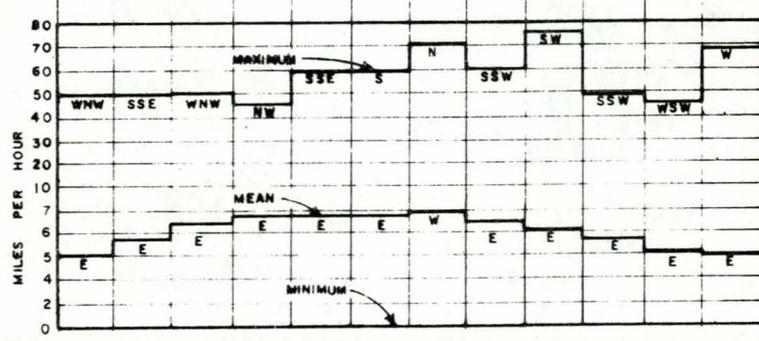

PRECIPITATION

EVAPORATION




WIND



for about 32 miles to the Salt River. Several unnamed streams contribute to Indian Bend Wash upstream from the point at which the Arizona canal crosses the wash near Scottsdale. Surface flow in all streams in the Indian Bend Wash basin is ephemeral. Stream slopes are generally steep in the mountains (about 100 feet per mile) and moderate in the valleys (about 20 feet per mile near the confluence of Indian Bend Wash and the Salt River). The poorly defined channels that lie downstream from the base of the mountains are only adequate for small flows.

15. HYDRAULIC CONSIDERATIONS. The problems of drainage and flooding from Indian Bend Wash have been under study by the U.S. Army Corps of Engineers and the City of Scottsdale for some time. The final master plan for the greenbelt floodway is designed to carry a 100-year flood discharge of 30,000 cfs. The width of this greenbelt system would vary from 230 to 1,170 feet. A series of structures would channelize and direct the runoff water that flows from north of the Phoenix Valley in the southeastern direction into a southern path across the Arizona canal and through the City of Scottsdale. The greenbelt channel containing the water would be of varying width and would include public and private developments. One of these public developments is the park under discussion.

16. Already built, in part, through the greenbelt system is a low-flow channel capable of passing a discharge of 4,000 cfs. This channel, when finished, would extend from McDonald Drive to Thomas Road. The physical dimensions of Indian Bend Wash are indistinct in some places because they

depend on the drainage area. Approximately 24 percent of the area is mountainous area, which is characterized by rugged terrain and steep gradients, whereas the wash is characterized by fairly flat valley land and regular alluvial slopes. The alluvial plains, where the number of suburban developments is increasing, make up 76 percent of the area. Elevation at Indian Bend Wash ranges from 1,300 feet above mean sea level to approximately 1,160 feet at the Salt River near Tempe. The length of the Indian Bend Wash project area is about 8 miles.

17. The natural vegetation, which is rapidly being destroyed by residential and commercial development in the area, is sparse and has a negligible effect on flood runoff. The urbanization, however, significantly increases the runoff potential of the area.

18. LAKES. Scottsdale is in the process of converting the Indian Bend Wash floodway into an open-space urban greenbelt park containing a series of lakes. These lakes are located at Chaparral Park, El Dorado Park, and Vista Del Camino Park. The Indian Bend Wash project is involved in developing two more lakes: McKellips Lake and a lake at Indian School Park. The lakes developed by Scottsdale have been developed primarily for boating and esthetic purposes. McKellips Lake, however, would be developed primarily as a fishing lake and secondarily as a boating lake.

19. VISITATION. This project is well-suited to many recreational uses, including jogging, bicycle riding, fishing, horseback riding, sightseeing, hiking, athletic and court activities, nature study, cultural activities, and exhibitions. The project has been estimated at generating 1,075,000 recreational days during the initial year with an increase in annual attendance until it reaches 2,180,000 recreational days, the maximum practical carrying capacity of the project. Expectations are that this maximum would be reached in the fifth year after the project facilities have been completed and the beautification and recreation programs have become fully developed. Table 2 shows the annual recreation days for each project activity.

20. The climate of the market area affords a year-round recreation season that attains its peak during the summer. In addition to daylight activities, evening temperatures are moderate enough for people to participate in recreation activities at night.

TABLE 2

## The Calculation of Annual Recreation Benefits

Activity	Annual recreation days	Benefit value	Annual benefit
Lake use (near information building) (model sailboating, waterfowl observation)	41,000	\$.50	\$20,500
Information center	125,000	.50	62,500
Exhibit Plaza	248,000	.75	186,000
Playgrounds	800,000	.75	600,000
Hiking, walking, and jogging trails	375,000	.75	280,500
Picnicking	150,000	1.00	150,000
Bicycling	264,000	1.25	330,000
Horseback riding	18,000	1.50	27,000
Athletic courts	135,000	1.50	202,500
Lake fishing	53,000	2.00	106,000
		Gross annual benefit	<u>\$1,965,000</u>

NOTE: Average annual benefit

First-year benefit (\$1,965,000 - 2)	\$982,500
5-year maximization factor at 5-5/8 percent	<u>X 0.8986</u>
Product	\$882,500
First-year benefit	<u>+ \$982,500</u>
Total average annual recreation benefit	\$1,865,000
Area-redevelopment benefits	<u>+ \$210,000</u>
Grand total - average annual benefits	\$2,075,000

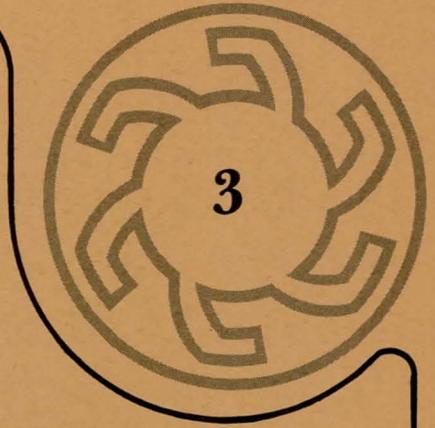
21. BENEFITS. The average annual recreational benefit for Indian Bend Wash is estimated at \$1,865,000 (excluding area-redevelopment benefits). This benefit was calculated by summing the maximum benefit anticipated for each activity and adjusting this maximum to account for the totals from the lesser benefits expected in the first few years. The benefits shown for individual activities were calculated by multiplying the expected annual recreational days for each activity as shown by a benefit value assigned to each activity. Criteria contained in Supplement 1 to Senate Document 97, Eighty-seventh Congress were used to estimate the benefit values. These values range from \$0.50 to \$2.00, and reflect the scarcity of such activities, the expected urban growth in the market area, and the interests of the market-area population.

22. AREA REDEVELOPMENT. The City of Phoenix and the Salt River Indian Reservation have been designated by the Manpower Administration of the U.S. Department of Labor as areas of concentrated unemployment or underemployment, and are accorded the same Federal procurement preference as areas of substantial or persistent unemployment. The cities of Scottsdale and Tempe adjoin the Salt River Indian Reservation and are within a 25-minute commuting distance from the City of Phoenix. Consequently, area-redevelopment benefits were taken for the period of construction of the recommended recreation improvement.

23. In accordance with ER 1165-2-6, dated 1 February 1966, all construction and maintenance labor costs that reduce unemployment are considered benefits that would accrue from construction of the project. Accepted studies indicate

that 10 percent of the project construction cost, including relocations, would reflect utilization of labor from unemployment rolls. Estimated recreational-area redevelopment benefits are \$21,000 from construction of recreational features and \$189,500 from maintenance of recreational features. The total recreational-area redevelopment benefits are \$210,<sup>5</sup>000.

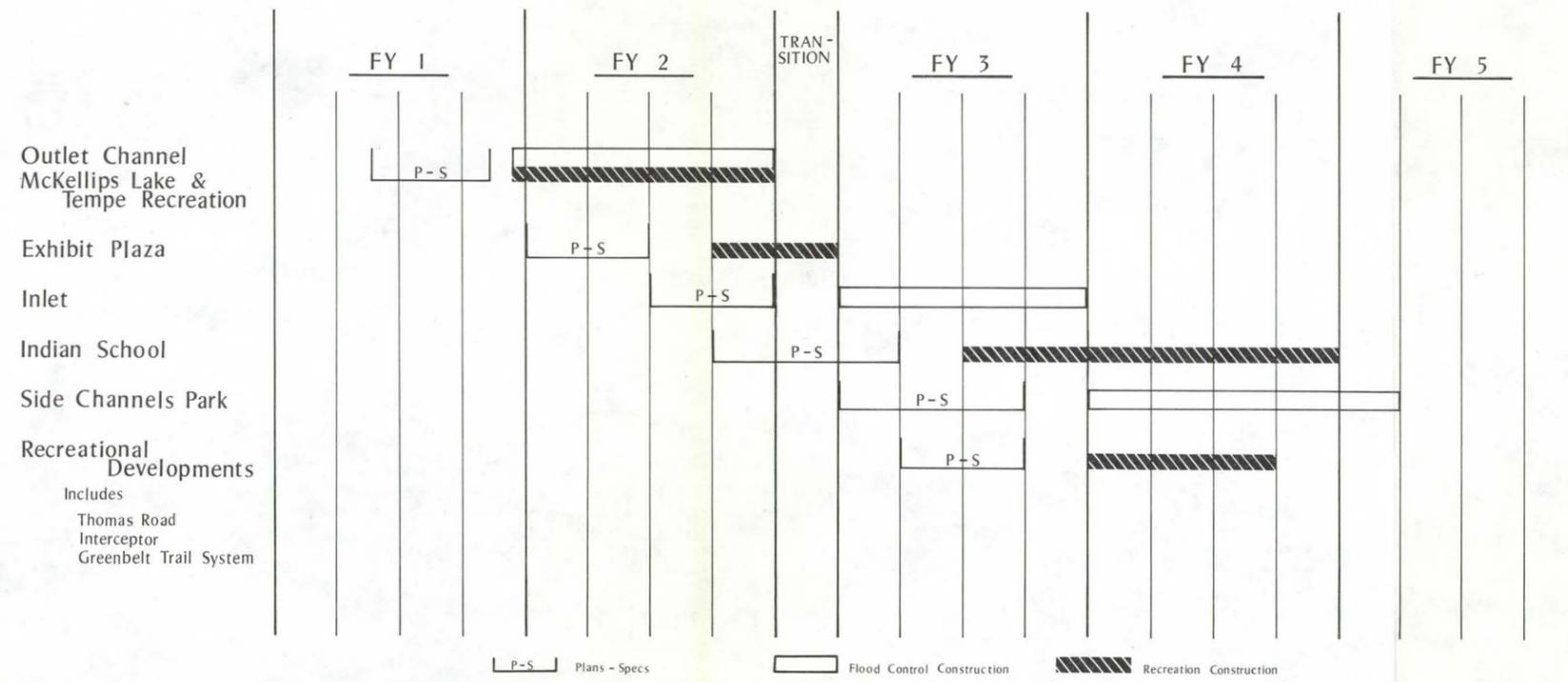
24. BENEFIT-COST RATIO. One measure of a project's value is the ratio of the cost of the facilities to the amount of recreational benefit received because of the facilities. The total average annual cost of the recreational facilities, as shown in table 2, is \$838,000; the average annual benefit is \$1,865,000 excluding area-redevelopment benefits of \$210,<sup>5</sup>000. Dividing the average annual benefit by the average annual cost gives the recreational redevelopment a benefit-cost ratio of 2.2 to 1; the benefit-cost ratio, including area-redevelopment benefits, is 2.5 to 1.



**CONSTRUCTION PROJECT  
STATUS**

25. Construction funds for Indian Bend Wash were budgeted for fiscal year 1974, with construction anticipated to last for 5 years (1979). The outlet channel is scheduled for construction first, followed by the Exhibit Plaza. The anticipated schedule of construction is shown on figure 2.

INDIAN BEND WASH CONSTRUCTION SCHEDULE (REVISION)



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:			
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	APPROVED:	SHEET	
OF			
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- _____ B- _____	OF	
	DISTRICT FILE NO.	SHEETS	

**RECREATIONAL AND  
ENVIRONMENTAL RESOURCES  
OF THE PROJECT AREA**

26. GEOLOGY AND SOILS. The McDowell Mountains, the Phoenix Mountains, and the Camelback Mountains as well as Papago Buttes, are composed primarily of Precambrian granites and schists. Camelback Mountains and Papago Buttes also contain sandstone and coarse conglomerates, extrusive basalt, rhyolite, tuff, and andesite. The valley floor, which is older alluvium, is fairly smooth and has a surface gradient of about 30 feet per mile in the vicinity of the project. Older alluvium consists of medium to well-cemented residual soil and talus debris, and is generally found along the side slopes of the valleys and underlying the Recent alluvium.

27. Alluvium varies in depth from about 250 feet at the outlet to about 750 feet at the inlet and overlies red sandstone, conglomerate, and siltstone bedrock. The near-surface materials consist chiefly of a veneer of fine-grained topsoil overlying lenticular layers of caliche-cemented silts, sands, and gravels.

28. In accordance with the soil conservation service for the City of Scottsdale, the vegetative capacity of the soils falls predominantly into two categories: I-1 and 11-S-6. The I-1 unit, which dominates in the inlet area, is characterized by Gilman loam, Laveen loam, Mohau loam, and Glenbar clay loam. These soils, typically deep and well-drained, have a fine- through medium-textured surface and subsoil. They also have moderate to slow permeability and good water-holding capacity, and are suitable for growing all climatically adapted vegetation under irrigation and normal management. The 11-S-6, found in the project area as rillito gravelly loam, has a texture ranging from moderately fine through moderately coarse in the topsoil and subsoils. This loam has moderately slow to moderately rapid permeability and is suitable for growing climatically adapted vegetation with proper irrigation and management.

29. ARCHEOLOGIC AND HISTORIC FEATURES. According to the State of Arizona Historical Preservation officer, no sites in the project area are currently listed on the National Register of Historic places.

30. Because of existing archeologic sites west of the wash (outside the project area) and the possibility of other sites, the University of Arizona made an intensive archeologic survey of the project area. "An Archaeological Survey of Indian Bend Wash," prepared by the Arizona State Museum for the University in June 1973, reported the findings of this survey, which revealed a Hohokam Indian site within the outlet area. The site, identified as a sherd scatter, is on the western side of the wash near the south end of the project area. Based on existing information, the site does not presently merit nomination to Federal or State registers of historic places.

31. A major part of the site lies just within the western edge of the designated outlet channel rights-of-way. Construction of the project, therefore, would destroy the site. Consequently, the Arizona State Museum has recommended further study to obtain all possible archeologic data, and the National Park Service has advised that it would conduct test excavations and initiate further studies if warranted. Any significant material would be salvaged. Should preservation be warranted, design in the local area would be reevaluated to assure maximum protection to archeologic values consistent with project purposes.

32. LAND USE. The project area is almost entirely surrounded by residential, commercial, and industrial development (fig. 3), a factor that increases the desirability of maintaining open spaces for recreation. Because of the urbanization, little agriculture occurs.

33. The land use surrounding the project area can be divided into two categories. North of the Arizona canal, the land is predominately open space; south of the canal, the usage has become highly urbanized. The southernmost portion of the wash, which is used as a light industrial park, lies within the City of Tempe. The city hopes to place a park or open space at the confluence of Indian Bend Wash and the Salt River.

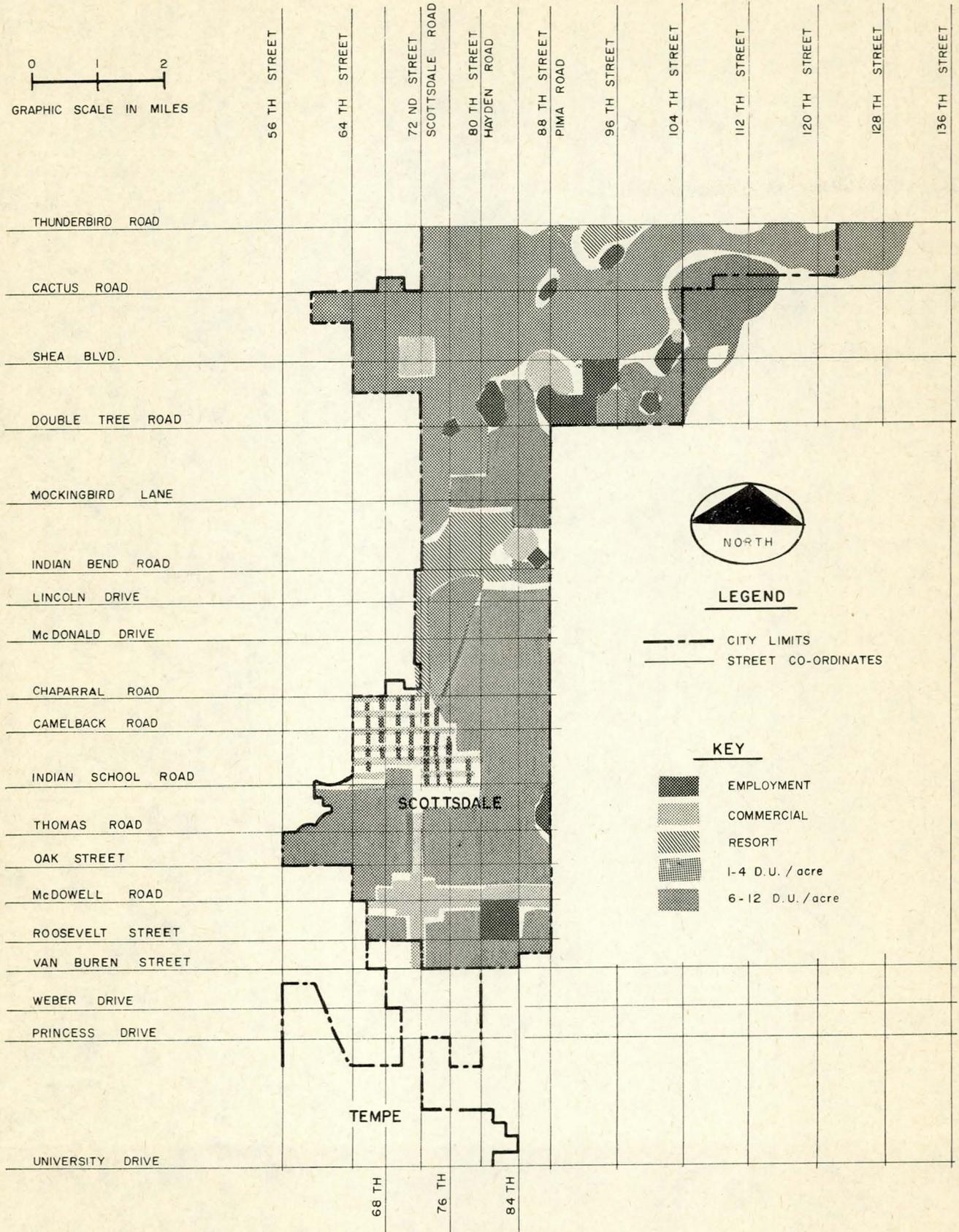
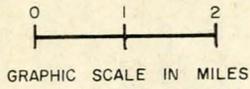
34. BIOLOGIC AND ECOLOGIC FEATURES AND RESOURCES. The project area is not environmentally homogenous. North of the Arizona canal, Indian Bend Wash contains 28 acres of excellent mesquite bosque. The large mature trees in this community provide quality habitat for the smaller forms of native wildlife, such as rabbits, quail, mourning doves, and many song birds. From the canal to Van Buren Street (McKellips Road), the wash has been converted into a greenbelt with parks and golf course. Although this urban greenbelt is less productive and desirable as a habitat for terrestrial wildlife, but does provide an aquatic habitat not naturally present that attracts a number of water-associated birds. The outlet from Princess Road to the Salt River appears more natural, but has been highly disturbed and contains mostly weedy annual plants, such as russian thistle, rigweeds and mustards, and outwash or riparian vegetation, such as salt cedar, salt bush, burro brush, creosote bush, and desert broom. Because this area lacks the esthetic appeal of the urban greenbelt, it attracts very few people.

35. ENVIRONMENTAL AND SCENIC QUALITIES. The environmental setting of the Indian Bend Wash area is dominated by residential development, commercial service facilities, some light industrial development, a greenbelt floodway, some seminatural desert landscape, and scenic panoramas in the distant desert landscape. The McDowell and Phoenix Mountains provide panoramic views from Indian Bend Wash while Camelback Mountains provide a nearby vista.

36. Through the City of Scottsdale, over 50 percent of Indian Bend Wash has been developed into an esthetically pleasing greenbelt environment complete with parks, golf courses, and open space in the overflow area. Scottsdale is mostly a highly urbanized suburban residential community having single-family units, multistory condominiums and townhouses, and commercial-service facilities. And the mesquite bosque vegetation retained along the wash provides a natural environment with scenic qualities. Through the City of Tempe, Indian Bend Wash is mostly open space. Although some sections of the wash are in a seminatural state, unauthorized land fills and the dumping of trash and other debris have transformed most of the riparian and outwash plain habitats into an unsightly environment. Consequently, the wash is not esthetically very pleasing. Along the wash within Tempe, the flood-plain land uses are primarily light industrial development and middle-income residential units.

37. RECREATIONAL AREAS. Because of the climate and varied geography of the project area, outdoor recreation plays a large role in the leisure-time activities of tourists and residents alike. The project area offers a variety of private and municipal recreational opportunities. Public facilities include

# LAND USE MAP



### LEGEND

- CITY LIMITS
- STREET CO-ORDINATES

### KEY

- EMPLOYMENT
- COMMERCIAL
- RESORT
- 1-4 D. U. / acre
- 6-12 D. U. / acre

picnic areas, an olympic-size swimming pool and baseball fields on the grounds of the community center. The three neighborhood parks in the greenbelt floodway are Chaparral Park, Vista Del Camino Park, and El Dorado Park. Pertinent information concerning these parks and their facilities follows.

a. Chaparral Park. Contained within the 74 acres of this park are ball diamonds, a multiplay area, a soccer field, a picnic area, a pool, a community center for meetings and craft classes, a 10-acre lake, tennis courts, day camping, and bicycling and jogging trails.

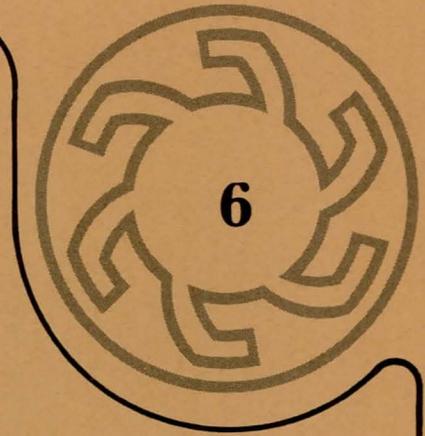
b. Vista Del Camino Park. The 48 acres of this park encompass a lake, a bicyling trail, a children's playground, a picnic area, a recreational center, a ballfield, and a spray play pad.

c. El Dorado Park. Located within the 55 acres of this park are bicycling and jogging trails, a soccer field, a baseball field, a picnic area, a lake with island picnicking, a swimming pool, a pavillion, a control building, and an urban campground.

**FACTORS AFFECTING  
RESOURCE DEVELOPMENT  
AND MANAGEMENT**

SECTION 5

38. GENERAL. The proposed recreational developments would have a minimal effect on the natural resources of the project area. The planning and design of facilities takes into consideration the natural characteristics of the southwest desert atmosphere and respects its land forms, vegetation, and visual integrity.



**COORDINATION WITH  
OTHER AGENCIES**

58. GENERAL. Most of the coordination with the following Federal, State, and local agencies has been maintained informally over a period of time. In addition, the draft General Design Memorandum Phase I was sent to many of these agencies for review; copies of their comments are included in Section 15 "Pertinent Correspondence."

59. COORDINATING AGENCIES. The views and comments of the agencies with whom formal and informal coordination has been maintained are summarized below.

60. FEDERAL AGENCIES. The following Federal agencies were consulted.

a. Bureau of Outdoor Recreation. In addition to informal coordination, a meeting between Bureau and Corps representatives was held in September 1973. After reviewing the design memorandum, the Bureau indicated its approval of the project. In its letter dated 3 October 1973, the Bureau stated, "We can only agree with your statement in the design memorandum that this project serve as a model for similar future projects in the southwest. This is one of the best conceived non-reservoir flood control projects we have seen and we would like to commend those involved for a job well done."

b. Environmental Protection Agency. After reviewing the design memorandum, the agency stated it had no objections to the project.

c. Bureau of Sport Fisheries and Wildlife. Contact with this agency at the initiation of our studies developed into formal coordination.

In this letter commenting on the design memorandum, the Bureau praised the Corps for recommending a plan that complements Scottsdale's development. The Bureau also requested that additional lands, probably offsite, be secured for mitigation of the habitat lost because of inlet construction.

d. National Park Service. The National Park Service has advised that, pending Congressional funding, service personnel will conduct test excavations at the archeologic site within the outlet channel.

61. STATE AGENCIES. This development plan has been coordinated with the following State agencies.

a. Arizona State Parks Board. Coordination with this agency has revealed that it favors the type of recreation being proposed for this project because the proposed recreation would enhance the State's outdoor recreation plan and would complement the statewide trail system.

b. Arizona Department of Game and Fish. Informal contact with this agency developed into coordinated measures for wildlife habitat preservation. The area adjacent to the Arizona canal and the proposed interceptor channel would be developed to accommodate wildlife. This agency formally advised that it applauded the multiple-purpose complexion of the project. The agency identified the fish species to be stocked in McKellips Lake and suggested that offsite mitigation lands be secured.

62. LOCAL AGENCIES. The agencies listed below are considered to have a pertinent interest in the development of this project.

a. Maricopa County. Coordination with this agency is on a continuing basis. Maricopa County is the local sponsor for the flood-control project.

b. City of Scottsdale. This city has been instrumental in the development of plans for recreation and open space. Coordination has been very close to optimize the potential of recreation for this area; and city officials have expressed their desire to share the costs of the recreational facilities. Scottsdale would be the local sponsoring agency for any recreational development within its jurisdiction.

c. City of Tempe. The officials of this city have expressed interest in the continuation of a trail system along that part of the project within Tempe. The trail system has been coordinated closely to provide a continuous transportation corridor through Tempe to link Arizona State University with areas north of the Salt River. A rest area is planned along this reach of the trail, and coordination will be maintained regarding the eventual development of the rest area. These developments would be sponsored by Tempe.

63. PRIVATE ENTERPRISE. A representative of the Salt River project has advised Scottsdale of the agency's approval of a bicycle trail within the Arizona canal rights-of-way. Refer to Section 15 "Pertinent Correspondence" for a copy of the Salt River project letter.



**PHYSICAL PLAN  
OF DEVELOPMENT  
AND DESIGN CRITERIA**

39. Indian Bend Wash recreational facilities are designed to help satisfy several needs of the project-area community as a whole. The trail system would provide an urban transportation network that would allow hikers, pedestrians and bicyclists to avoid vehicular traffic in going to stores, schools, and jobs in and near the project area. As the only one of its type in the community, the proposed nature area would be significant and would preserve the native desert environment so that visitors might observe, study, and "return to nature." Development of the floodway into parks and into active and passive sports areas would help meet the need for open-space recreation required for a growing population. The exhibit area, which would be keyed to the community's cultural interests, would increase the recreational uses afforded by the project. Overall, the proposed facilities along with the lakes and the greenbelt floodway would enhance the esthetics of the project area and thus make it more enjoyable for visitors and recreationists.

40. ACTIVE RECREATION. Playing outdoor games and sports, bicycling, horseback riding, and engaging in similar pursuits are considered active recreation. Outdoor games and sports require playing fields in urban places; bicycling and horseback riding require convenient trails. Generally speaking, active recreational needs are best served by near-to-home facilities. Although often associated with active recreation, swimming and attending outdoor sports' events are categorized differently.

41. In the west, about 30 to 35 percent of the population participates in active recreation on an average of 45 days per participant per year. Most

active pursuits are engaged in for 2 or 3 hours, and only occasionally for a day or more, as in the base of overnight horseback trips. Motives for participating are exercise, skill acquisition, status within a peer group, and sociability. Only at the lower economic levels is income a factor in limiting participation. Lack of time is the most prevalent reason for nonparticipation in all income groups, with a lack of suitable facilities being of less significance. Generally, however, adults engage least in these activities. But as health improvement extends the youthful participation years, more adult participation may be anticipated.

42. PASSIVE RECREATION. This category includes picnics; pleasure and nature walks; pleasure and sightseeing drives; and attendance at sports events, outdoor concerts, drama, and similar events. Although these activities require very little energy, several demand monetary income and others require an urban environment. Many are "road-culture activities" requiring automobile travel.

43. Other pursuits, such as playing checkers, sitting on rocks, etc., are often associated but not readily identified with passive recreational activities; they are, however, generally included as a matter of course in the planning of such activities. Persons of all ages participate in passive recreation, but their age participation varies according to special factors. Young persons, for example, participate heavily in driving for pleasure, whereas middle-aged persons are less inclined than others to walk for pleasure.

44. ACCESSIBILITY. Most project users would originate from a major part of Maricopa County and the Phoenix metropolitan area, a radius of 30 miles. To the north, major access would be from Indian Bend Road; to the south, from McKellips Road; to the east, from Hayden Road; and to the west, from Scottsdale Road. Hayden Road, which is planned as a major northsouth traffic artery in Scottsdale, would be capable of handling up to 40,000 automobiles daily. Camelback and Indian School Roads are major eastwest arteries through the entire Phoenix Valley. Camelback Road, where it now ceases to be a major artery at Hayden Road, would become a two-lane street east of the park. Indian School Road, however, would continue east as a major artery to Pima Road, the boundary of the Salt River Indian Reservation. Freeway access to the project would be available from Interstate 10 by way of the Broadway Road offramp, and from Highway 93 by way of the Curry Road and Galvin Parkway offramps.

45. A comprehensive bicycle system has been proposed for the entire City of Scottsdale including the proposed project area. (See pls. 2 and 3.) That portion of the path involving the greenbelt would generally follow Hayden Road in a northsouth direction, and separate into two distinct routes where Hayden and the greenbelt diverge. North of the Indian School Park, the bicycle path would follow Hayden Road, crossing Camelback through the low-flow structure. South of the park, the path would separate into two routes, one following Hayden and the other following the low-flow channel. The eastwest bicycle paths would follow the major arteries at Camelback, Indian School, etc. Secondary paths have been developed through the publicly owned portions of the greenbelt system. In the Indian School Park, the path would cross at Glenrosa Avenue.

46. Movement of pedestrians would be most easily accomplished in the northsouth direction. In the areas of private development, the movement would be confined to street right-of-ways or to designated trail systems.

47. AREA OF INFLUENCE. The area of influence is defined as the region that is affected by the project. In this respect, recreational aspects would be experienced in as wide an area as any other function of the project. For example, tourism in 1973 brought in \$345 million in Maricopa County. A preliminary estimate indicates that one of the top three sources of income is due to tourism. For this reason, considerable use would occur from other States. Local use would originate within a 30-mile radius from the project, an area which includes most of Maricopa County and the Phoenix metropolitan area. (See pl. 4.) The migration of many people 65 years or older who <sup>c</sup>whose this area for retirement is the major cause of the steady growth of these urban communities.

48. MARKET AREA. In the immediate project area, 80 percent of the population of the City of Scottsdale would be within walking distance of the proposed recreation facilities. Currently, two out of three residents in the area use the greenbelt completed by Scottsdale thus far; and non-Scottsdale residents average 25 percent of the total users of the greenbelt. Since Arizona residents are very mobile and often drive an hour or two to a favorite recreational site, and since Scottsdale offers a variety of recreational, cultural, and shopping facilities, the recreational market area for Indian Bend was extended to include the Phoenix metropolitan area. Plate 4 shows the market area within a 15-, 30-, and 45-minute drive to the project. A young and vibrant population make up this market area.

a. Recreational Demands. According to the State and the Phoenix Chamber of Commerce, about 32 million people participated in passive recreational activities in the market area in 1970, and 48 million are expected to participate in 1985. Also, about 30 million participated in active recreation in 1970 and about 43 million are expected to participate in 1985. Currently, the market area is short 38,000 surface acres of water for water-oriented activities; 2,800 units for picnicking; and 1,100 courts for multiuse. In 1972, 25 million recreational days were spent bicycling in Maricopa County. Based on the county's standard measurement of providing 25 miles of bicycle trail for every 50,000 residents, Scottsdale needs 40 miles of trail for bicycling. A recent survey by Scottsdale indicated more than 26,000 bicycles in 24,000 households. So the demand for bicycle trails exists and will increase as the population increases.

b. The per-capita participation rates for Maricopa County, as presented by the Arizona Outdoor Recreation Coordinating Commission (AORCC), were applied to the market-area population. These rates, shown in table 3, were adjusted to reflect the effect of increasing disposable income, mobility, and leisure time on recreational demand in future decades.

TABLE 3

## Per-capita Participation Rates for Maricopa County

Activity	Year					
	1964	1970*	1973	1980	1990	2000
Outdoor games and sports	14.4	16.2	17.2	19.7	23.0	26.2
Bicycling	12.3	13.9	14.2	16.9	19.7	22.5
Picnicking	8.1	9.2	9.4	11.2	13.0	14.9
Attending outdoor events	5.4	6.0	6.4	7.3	8.5	9.7
Hiking and nature walking	3.5	4.0	4.2	4.9	5.7	6.5
Lake fishing	3.3	3.8	4.0	4.6	5.4	6.5
Horseback riding	1.9	2.2	2.3	2.6	3.1	3.5

\*Base year

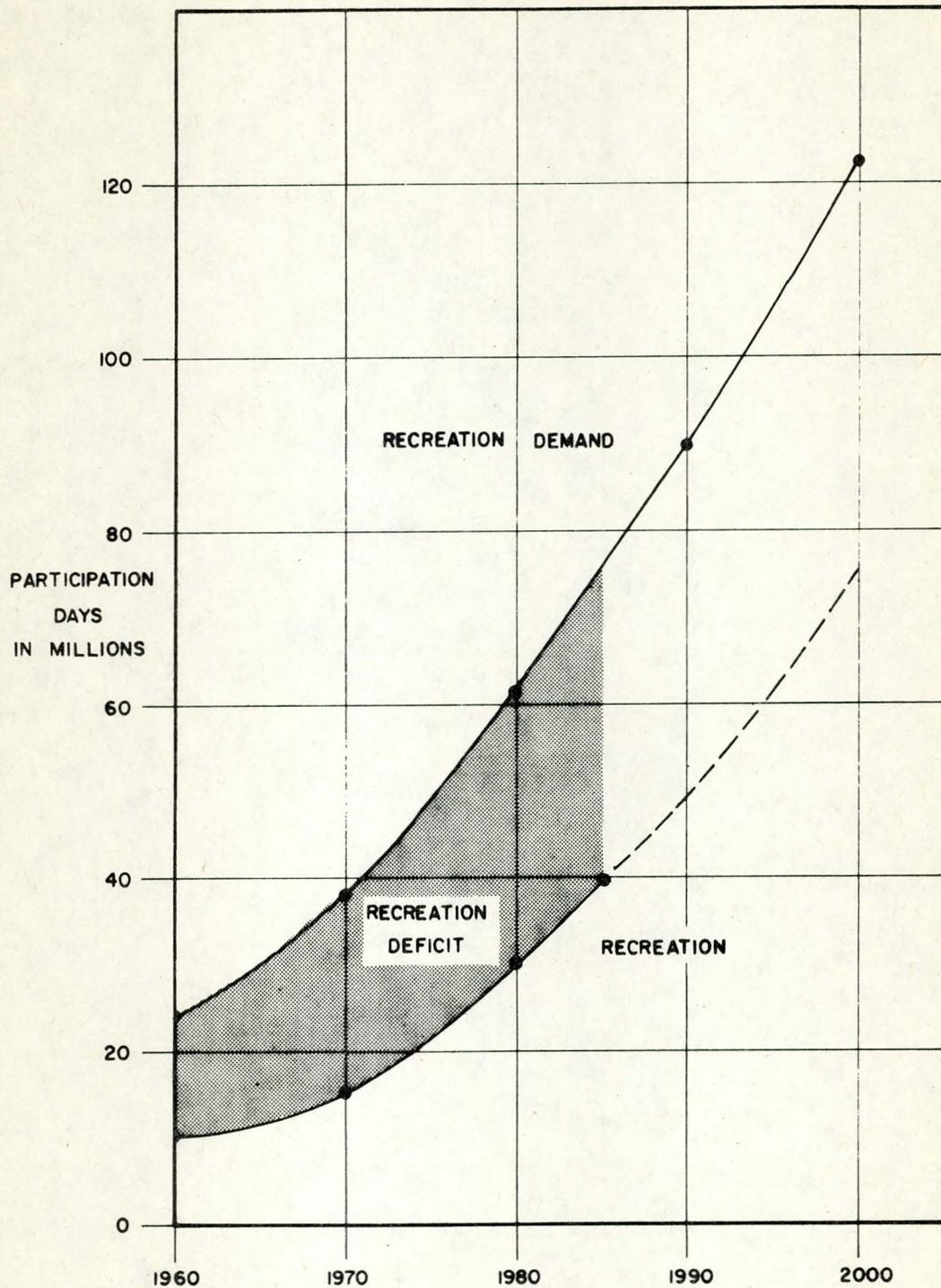
c. The market-area recreational demand for any single recreational activity offered by the project equals the per-capita participation rate for that activity multiplied by the market-area population. The sum of the recreational demands for the individual recreational activities equals the project's total market-area recreational demand. In 1972, the market-area recreational demand for all the recreational activities offered by the project was estimated at 62,027,000 participation days. This demand can be either expressed in participation days or converted to recreational days by multiplying the

participation days by a ratio of duplication. (The ratio for the Indian Bend Wash project is 0.833.) The ratio of duplication reduces the number of participation days to account for recreationists engaging in more than one recreational activity during a single visit to the project.

d. The amount of project-offered recreational activities the market area can supply independent of the project is difficult to assess accurately because the existing supply of (and demand for) certain recreational activities, such as horseback riding and hiking, cannot be as accurately computed as that for other recreational activities, such as picnicking and court games. To illustrate, an open field or dirt road can satisfy the supply of (and demand for) horseback riding areas equally as well as a designated equestrian trail. The same situation applies to hiking, one of Arizona's top 10 outdoor activities. Because of the necessity for physical equipment, however, a fairly accurate computation can be made of the supply of (and demand for) recreational activities usually requiring specific facilities, such as picnic tables, bicycle trails, and outdoor games and sports fields.

e. By determining how many participation days each recreation facility can supply and then multiplying this amount by the number of existing facilities, the recreational supply of that activity can be calculated. Subtracting this known supply from the recreational demand for the activity reveals the excess or deficiency in participation days for that activity. Figure 4 shows the existing and estimated (a) market-area recreational demand for picnic facilities, bicycle trails, and outdoor games and sports field;

# MARKET - AREA RECREATION DEMAND AND SUPPLY



\* FOR PICNICKING, BICYCLING, AND OUTDOOR GAMES AND SPORTS.

and (b) market-area recreational supply of these facilities (including those supplied by the project). The figure indicates that a recreational deficit exists. Table 4 details the existing and estimated recreational demand, supply, and deficit for each of the activities (picnicking, bicycling, and outdoor games and sports) for the years 1970, 1980, and 1985.

TABLE 4

Market-Area Recreational Demand,  
Supply, and Deficit

Year	Activity	Participation Days		
		Demand	Supply	Deficit
1970	Picnicking	8,901,000	2,499,600	6,401,400
	Bicycling	13,448,300	3,440,400	10,007,900
	Outdoor games and sports	15,673,500	9,981,300	5,692,200
	Total	38,022,800	15,921,300	22,101,500
1980	Picnicking	14,905,500	5,427,600	9,477,900
	Bicycling	22,520,200	9,108,600	13,411,600
	Outdoor games and sports	26,246,600	15,285,400	10,961,200
	Total	63,672,300	29,821,600	33,850,700
1985	Picnicking	17,608,800	7,827,600	9,781,200
	Bicycling	26,604,600	13,338,600	13,266,000
	Outdoor games and sports	31,006,800	19,245,700	11,761,100
	Total	75,220,200	40,411,900	34,808,300

f. The project's capability to meet the market-area demand for recreational facilities is discussed in the following section entitled "Recreation Attendance." Briefly, the project can satisfy only 4.9 percent of the total 1973 demand for recreation.

g. Needs Not Met by Other Programs. The need exists for flood control and recreation in the project area. Scottsdale has been receiving funds from the U.S. Department of Housing and Urban Development, which authorized funding under the "open space" program. In 1970, this program was incorporated into the "legacy of parks" program; and Scottsdale has received no funds since funding was terminated in January 1973. Scottsdale has applied through the State of Arizona to the U.S. Bureau of Outdoor Recreation for a grant under the authority of the Land and Water Conservation Fund Act as amended (Public Law 88-578). Although the grant application has not yet been approved or disapproved, such approval would not cause the grant project to conflict with the recreational proposals presented in this report - proposals that have been coordinated between Scottsdale and the Corps of Engineers fund for limited development.

49. SOCIOECONOMIC DEVELOPMENT. The socioeconomic characteristics - existing population; projected population growth and distribution; growth patterns; and income, leisure time, and mobility - are discussed in the following paragraphs.

a. Existing Population. The population that would be served by the project is principally from Maricopa County, one of the fastest growing metropolitan areas in the nation. The climate, in terms of both business and temperature, is mainly responsible for the accelerated population growth in this area.

b. The population of Maricopa County increased over 47 times from 1900 to 1974, growing from 20,500 people in 1900 to 967,500 people in 1974. Maricopa County comprises 55 percent of the State of Arizona's population, and provides 60 percent of both the jobs and all retail sales in the State. Most of the county's growth has been in the eastern Phoenix metropolitan area, which includes the communities of Paradise Valley, Scottsdale, Tempe, Mesa, and the eastern part of Phoenix. The population of the City of Scottsdale has increased from 10,000 in 1960 to 67,823 in 1974, a 578-percent growth. The City of Tempe's population has grown from 24,900 in 1960 to 63,000 in 1974, a 153-percent increase. Similarly, the population of the City of Phoenix has grown from 439,000 in 1960 to 768,000 in 1974, a 74-percent increase. The factors contributing to this phenomenal growth are nationwide growth rates, migration to the west, and favorable climate of the southwest.

c. The median age of the market-area population is 25.1 years, which is less than the national median of 28 years. Approximately 8.7 percent of the population is over 65 years of age, and 54 percent is under 18 years. The median annual household income is \$11,691; the median educational level is

12.7 years. The reduced housing supply occasioned by recent growth has caused a 95-percent occupancy rate. The median home value is \$24,492, and the median rent is \$148 per month.

d. Projected Population Growth and Distribution. The existing and projected market-area (Maricopa County) population is as follows:

Year	Population
1960	663,500
1970	967,500
1980	1,328,000
1990	1,600,000
2000	1,930,000
2010	2,230,000
2020	2,539,000

The population density in the market area varies considerably. The density in and around the Scottsdale and Tempe central business districts ranges from 10 to 20 persons per acre, whereas the population density in the Phoenix Mountains and the Indian reservation is less than one person per acre.

e. Growth Patterns. For the last 4 years, Maricopa County (the market area) has absorbed heavy population increases. In fact, in the last 3 years this market area has increased by 287,000 persons, a 28-percent increase.

When compared to the growth of 46 percent between 1960 and 1970, cited in the U.S. Census, the growth in this county becomes significant. Less-than-year-round residents, who account for a small portion of the population increase, are an important and distinctly separate market segment. The majority of these households (64 percent) reside in the market area more than 6 months at a time; another 26 percent are in the area 3 to 6 months.

f. In the immediate project area, the growth rate is increasing at a slower rate than in the past, but a large amount of construction and expansion is currently taking place. Future growth is being directed toward the lands north and northeast of the proposed inlet structure. At the present time, construction has begun of a major development of large, upper- and middle-income, single family units; a regional shopping center; and a new limited-access highway connecting the area with Phoenix. Ultimately, the development will occupy 4,200 acres and house 35,000 residents. Upon completion, this development area will completely surround the proposed Indian Bend Wash project.

g. Income, Leisure Time, and Mobility. The Arizona Outdoor Recreation Coordinating Commission (AORCC) concludes that households with family incomes ranging from \$10,000 to \$15,000 are the most active participants in outdoor recreation in Arizona. The mean income for the project market area is well within this income bracket. And in the Phoenix planning area, the Phoenix City Planning Department estimates the per-capita effective buying income (disposable income) will rise 68 percent by 1990. Similar changes can be expected in the disposable income of the market-area residents.

h. According to estimates, increased productivity will reduce the average workweek to 36 hours, as compared with the 1960 workweek of 39 hours. The eventual adoption of the 4-day workweek by some businesses will combine much of the leisure time in the workweek into one long weekend. The realignment of national holidays, which has already created several 3-day weekends, allows many workers to participate in more intense outdoor recreation than was previously possible.

i. The registration of motor vehicles shows that the number of persons per vehicle has been dropping steadily and the number of vehicles purchased has been increasing. For example, the Phoenix metropolitan area in 1964 had a ratio of 2.69 residents per vehicle. This ratio, according to a study made by the Arizona Highway Department, will drop to 2.40 residents per vehicle and will continue to decline well past 1995 when there will be 2.25 residents per vehicle. This increase in motor-vehicle ownership and completion of a more extensive limited-access highway system will significantly affect the mobility of the market-area population.

50. RELATED RECREATION. The Phoenix 200, Big Surf (a surfing lake), Big Skate (a roller-skating rink), and Legend City Amusement Park are some of the major commercial attractions within the market area. Table 5 presents pertinent information concerning the existing and desired alternative recreational resources within the market area. Although the recreational facilities recommended in the project plan do not include any golf courses, the table includes such information to indicate the strong emphasis on recreation

in the market area. Listed in table 6 is pertinent data concerning the existing water-oriented recreational resources available in the project area for a better understanding of the water-oriented aspect of the recommended plan.

TABLE 5

## Market-Area Recreational Resources

Resource	Number	Existing Acreage			Desired Percent Standard Acreage	
		Total	Total developed	Necessary to meet standard*	Acquired	Developed
Neighborhood parks	84	507	405	2,594	19.5	15.6
Community parks	44	2,111	929	4,346	48.6	21.3
Regional parks	19	110,417	3,808	24,200	456.2	0.1
Golf courses	49	5,191	5,191	2,904	178.7	178.7
			(729 holes)			

\*The Maricopa County standard is the number of acres desired for every 1,000 people. For neighborhood parks, the standard is 2.68 acres; for community parks, 2.49 acres; for regional parks, 10 to 25 acres; and for golf courses, 3 acres.

TABLE 6

## Existing Water-Oriented Recreational Resources

Name	Average surface acreage	Distance from project (mi)
Saguaro Lake	1,100	25
Canyon Lake	850	30
Bartlett Lake	2,200	30
Lake Pleasant	3,540	35
Horseshoe Lake	1,500	40
Apache Lake	2,400	45
Roosevelt Lake	15,000	50
Painted Rock Lake	300	70

51. WATER QUALITY. Determination of the suitability of water for domestic use is generally based on the content of dissolved solids. The U.S. Public Health Service drinking water standards (1962) indicate that domestic water supplies should not exceed a total dissolved solids limit of 500 milligrams per liter (mg/l), but domestic water supplies of up to 1,000 mg/l are not uncommon. In central Arizona, the quality of ground water varies by area and with depth, depending primarily upon the mineralogic composition of the aquifer from which water is pumped. Most of the wells in the project area produce water containing 500 to 1,000 mg/l dissolved solids, but some have dissolved solids as high as 1,500 mg/l.

52. RECREATIONAL SEASON. The climate of the market area produces a year-round recreational season that attains its peak during the summer, especially in the month of July, despite the high daytime temperatures of 112 degrees Fahrenheit that preclude strenuous recreation. Several factors account for the summer peak.

a. Schools are closed during the summer giving students more time to utilize recreational facilities. Scottsdale city officials are considering experimenting with a 12-month school year in one school next year. Should such a plan be adopted, student use of recreational facilities would be evenly divided throughout the year.

b. The combined climate and existing lakes and pools make the summer a peak aquatic month.

c. Day and evening temperatures vary sufficiently so that nights are cool enough for people to participate in recreational activities. Parks remain open and are well lighted until 10 p.m. In fact, in July 1973, 19,000 people played on the ballfields in Scottsdale in the evenings.

d. The summer playground program implemented by Scottsdale attracts participants.

e. Despite winter being the peak tourist season in the market area, nationwide summer is the traditional vacation season. During the summer, out-of-State vacationers visit the market area and some people living in the market area take their annual vacation.

f. Because of these factors, 15 percent of the annual recreational demand in the market area is expected to be in 1 peak summer month, July. Assuming that these factors create an even demand for recreation throughout the week, 50 percent of the recreationists visiting the project during the peak summer months will do so on a weekend. (It is assumed that the peak recreational month would average 9 weekend days.)

53. PROJECT RECREATIONAL CAPACITY. The land-capacity method was used to compute the maximum practical carrying capacity of the project.

54. LAND-CAPACITY METHOD. In this method, the recreational season data is used to convert the maximum possible capacity of a facility (participation days) to a more realistic attendance figure (recreational days).

Unit x density

x turnover

= Participation days <sup>PD</sup> (~~pd~~)

$\frac{PD \times R \times N}{M \times W}$

= Annual recreation days

where

R = Ratio of duplication (0.833)

N = Number of weekend days during peak  
recreation month (9)

M = Percent of recreationists during year who visit  
project during peak month (15 percent)

W = Percent of recreationists during peak month who  
visit project during weekend (50 percent)

By using the appropriate figures from table 7, the land-capacity method can be applied to each project activity to determine the annual recreational days for each activity. The computations show that the project can satisfy only 4.9 percent of the total 1973 market-area recreational demand (45 million participation days), a demand that will increase as the market-area population increases.

TABLE 7

## Annual Recreational Days for Each Project Activity

Activity	Unit of Measure	Density	Daily Turnover	Annual Recreational Days*
Lake use (near information building) (model sailboating, waterfowl observation)	4,125 Lin. ft.	1/40 People per foot	4	41,000
Information center	5 Acres	25 People per acre	10	125,000
Fishing lake	3,300 Lin. ft.	1/25 People per foot	4	53,000
Playgrounds	20 Acres	100 People per acre	4	800,000
Hiking, walking, jogging	15 Miles	25 People per mile	10	375,000
Picnicking	125 Tables	5 People per table	2	150,000
Bicycling	11 Miles	30 People per mile	8	264,000
Horseback riding	1.5 Miles	20 People per mile	6	18,000
Athletic courts**	45 Courts	6 People per court	5	135,000
Exhibit Plaza***	17+ major shows at 12,000 persons each	35+ minor shows at 1,200 persons each	200 people per weekday	248,000
TOTAL				2,209,000

\* Figures have been rounded.

\*\* See section "Proposed Recreational Development" under "Recommended Plan of Development" for a discussion of the court activities.

\*\*\* Number of shows and persons attending are based on past exhibitions held in Scottsdale.

55. RECREATIONAL ATTENDANCE. As estimated, the project would be used by 1,075,000 persons in the initial year. Annual attendance would then increase until it reached 2,180,000 persons, the maximum practical carrying capacity of the project. In the fifth year, beautification and recreational programs should be fully developed and this maximum carrying capacity should be reached.

56. COST SHARING. In accordance with Federal policy based upon House Committee Report No. 254, which accompanied Public Law 89-72, cost sharing of recreation is required between the Federal Government and the local interest. Under this policy local interests must perform the following requirements.

a. Provide fee title to all lands needed for recreational development and to insure public control of the development, with appropriate credit as given below in paragraph b.

b. Where the appraised value of the land so provided amounts to less than 50 percent of the total first cost of the recreational development, make additional contributions sufficient to bring the non-Federal share to at least that level; additional contributions may consist of the actual cost of carrying out an agreed-upon portion of the development, or a cash contribution, or a combination of both.

c. Operate, maintain, and replace without expense to the Federal Government, the recreational areas and all facilities installed pursuant to the agreement.

d. The City<sup>100</sup> of Scottsdale and ~~Maricopa County~~<sup>Tempe</sup> have agreed to accept all local responsibilities with regard to this cost-sharing requirement. A draft cost-sharing agreement and letters from the Cities of Scottsdale and Tempe based on the terms of this agreement, are inclosed as Section 14, Exhibits.

57. ENVIRONMENTAL FEATURES. Scottsdale is a highly urbanized residential community with single units and multistory condominiums and townhouses. The parks, golf courses, and open spaces in the overflow area in Scottsdale create a clean, esthetically pleasing environment, which residents of the area use daily. The esthetics of the wash area in Tempe are influenced by the amount of open space; Indian Bend Wash exists in its seminatural state, and riparian vegetation and habitat are present in and along the flood plain. This open space is marred by unauthorized landfill, junk yards, and other debris, all of which contribute to unsightly environment.

64. GENERAL. The flood-control open-space plan allows the development of a new and dynamic recreation plan. (See pls. 2 and 3.) Traditionally flood-control projects have dealt with the single-purpose function of containing periodic excessive waterflow to eliminate flood damages to the surrounding areas. Now close coordination between the Corps and the Cities of Scottsdale and Tempe has culminated in the development of an innovative project that combines both structures and nonstructures. This project, a structural inlet and outlet and a greenbelt floodway, would protect against flood damages and also reflect the people's desire for recreation and open space. The citizens desire the greenbelt, which lies entirely within Scottsdale, for several reasons: to provide open space and relief from urban sprawl, to provide an urban population with an outlet for the release of anxiety and tension; to preserve some open space in one of the most rapidly growing areas in the country; and to demonstrate sensitivity to current environmental concerns.

65. The concept of an open-space greenbelt floodway is consistent with the type of development Scottsdale has been experiencing and wants to encourage. Community involvement is a major key in this development. The citizens participate in year-long study programs with the city council. And these programs have resulted in a clear mandate for major park systems and in ordinances that prohibit billboards and large signs and require that a qualified planning group approve the design and site plan of any commercial structure. As a result, Scottsdale does not have the appearance of a typical urban city, but possesses a resort-type quality. With its natural esthetics and its cultural and recreational facilities, Scottsdale is an esthetically pleasing city.

66. ZONING. The Indian Bend Wash project was developed in conjunction with the general planning concepts for the zoning and development of the Cities of Scottsdale and Tempe. When completed, the project would provide a wide corridor serving as open space, a recreational area, and a flood-control facility. In addition to providing both residents and visitors with recreational opportunities, the project would accommodate pedestrians, cyclists, and equestrians. This greenbelt pathway system extends through the low-, medium-, and high-density residential areas that exist adjacent to, as well as within, the project area; and functions also as a connecting element between these residential areas and the commercial employment areas interspersed throughout the project area.

67. At present, all the "neighborhood" areas outside Indian Bend Wash are physically established. All vacant land outside the project area can be expected to develop either as multiple-family residential or as nonresidential use. The remaining development will essentially fill in the holes of an already committed urban pattern.

68. RECREATION SITES. The Corps of Engineers is responsible for developing five major sites along the flood-control project. These sites are: the interceptor channel area, Indian School Park, Thomas Road rest area, the Exhibit Plaza, and McKellips Lake and the outlet channel. A hiking and bicycling trail would tie these sites together. The Corps would not develop any recreation facilities along the inlet, collector, and side channels.

69. TRAIL SYSTEM. The recreation plan calls for a bicycle and hiking trail to wind throughout the project. This concrete trail, 8 feet in width, would be about 7 miles long, running parallel to the structural and natural Indian Bend Wash channel from the Arizona Canal to the Salt River and passing through El Dorado Park, Chaparral Park, and Vista Del Camino Park. This trail, which would be integrated with the bikeway system developed by the City of Scottsdale, would be for the use of bicyclers, hikers, joggers, and sightseers. Another trail, 12 feet in width and an offshoot from Maricopa County's primary Sun Circle hiking and riding trail, would run only in the inlet area along the interceptor channel.

70. In addition to the recreational opportunities afforded by the trails, the proposed trail system, designed to avoid conflict with vehicular traffic, would provide a pedestrian-oriented transportation corridor extending from the inlet to the Arizona State University campus near the outlet. The greenbelt trails would be lighted for night use.

a. Rest Areas. As a complement to the trail system, rest areas would be located in the interceptor channel area and at Thomas Road. Designed to blend with the surrounding environment at each site, these areas would contain comfort stations, ramadas, picnic tables, and drinking water; and their facilities would be connected to existing local water and sewer lines.

b. Bridge Alterations and Underpasses. So that trail users might avoid vehicular traffic arteries, the trail system would include four bridge alterations (Chaparral, Camelback, Indian School, and McKellips) and two underpasses (at McDonald and Chaparral). The bridges, originally designed for flood-control purposes, would not be high enough for trailusers to pass underneath them. So representatives of the City of Scottsdale and the Corps of Engineers decided to facilitate the use of trails by raising the bridges. Their decision was based on the following:

(1) Trailusers would not have the hazard of crossing heavily traveled traffic arteries. The amount of traffic on streets crossing the wash is as follows:

Location	Vehicles per day
McDonald Drive	13,000
Chaparral Road	10,000
Camelback Road	11,000
Indian School Road	14,400
Thomas Road	16,200
McDowell Road	25,000

(2) Lowering the invert of the channel without raising the bridges was not considered workable. The cost of pumping or draining storm water that would pond under the bridges would be greater than that of raising

the bridges. Also, the lowered invert was not compatible with the concept of the greenbelt floodway.

(3) Grading the trail to permit passage under the bridges without raising them was not considered workable. The cost would be more expensive than the bridge raising; and the grading alternative would not be compatible with the greenbelt-floodway concept.

71. INTERCEPTOR CHANNEL. The interceptor channel would be constructed 100 feet north of the Arizona canal as a 100-foot-wide corridor for mitigating the loss of mesquite within the inlet (see pls. 5, 6, and 7). About 15-1/2 acres of this corridor would become a rest area for trailusers, a wildlife sanctuary, and a nature area designed to achieve a balanced harmony between man and nature. Mesquite would be planted along the corridor to create a natural area where man could enjoy the desert environment. Plans to further this enjoyment include a nature trail, information signs, and a nature information display.

72. Scattered around the mesquite would be a few picnic tables. In other areas benches would be specially placed to accommodate the wildlife watchers. Besides providing people with good cover from the desert sun, the mesquite would supply a habitat for the existing bird population.

73. The only major recreation here would be the trail system. The interceptor area would be the only part of the project to have the equestrian trail, which would be a small part of the 110-mile Sun Circle hiking and riding trail system that loops throughout the valley. No fee would be charged for the use of this trail.

74. INDIAN SCHOOL PARK. The area between Indian School Road and Camelback Road would be developed into a park, called Indian School Park and into an information center, called El Posadero de la Tira Verdosa. (See pl. 8.) This area in the center of the greenbelt is less than a mile away from several activity nodes that create a large instant demand: a high school; a private school; and the civic center (with its office employees, tourists, and visitors). Feeding into the area are major traffic arteries and the proposed trail system; east and west of the greenbelt boundary is urban development.

75. The proposed Indian School Park would satisfy in part the present and future demand for recreational activities. The planned facilities would be divided into active and passive recreation, and any facilities that would be inundated during high flow would be constructed to withstand such inundation. Because Scottsdale presently has no shuffleboard courts or horseshoe pits on any of the city facilities, the facilities planned for the passive area would include these items in addition to picnic tables with barbecues.

76. This park has been designed both visually and in intensity of use as a focal point of the greenbelt system. Generally, the Scottsdale greenbelt system has been planned as a series of high-intensity-use focal areas occurring

within low-intensity park spaces. These focal activities would include recreation buildings, swimming pools, baseball, football, and soccer fields. This basic concept is also true of this park scheme. However, a much larger percentage of park area than usual would be designed for intensive use. Included in these intensive-use areas would be extensive active and passive recreational paved areas designed to accommodate a variety of court games. The information center, another intensive-use area, is visualized as a facility that would provide information concerning Indian School Park and the total Indian Bend greenbelt system, as well as the City of Scottsdale. Additional uses that would duplicate uses in other parks include football, soccer, tot lots, and picnicking. Also, a series of lakes would be developed throughout the greenbelt as visual features, activity centers for model boating, stilling basins, and irrigation supplies. Plans include an 8-acre lake for the southern portion of the property. The following paragraphs give pertinent information concerning Indian School Park.

a. Residential and Commercial Densities. The greenbelt system is generally surrounded by a medium to high density of residences, 4 to 22 dwelling units per acre (Du/acre). Where commercial development does occur, it is of medium intensity in the nature of shopping-center or auto orientation. A proposed commercial development south of Indian School will include a hotel and shops and be of a higher intensity nature. Presently bordering the southern portion of Indian School Park on the east and west are two townhouse developments: Hallcraft Villas on the east with a density of 12 Du/acre, and Villas San Marcus on the west with a density of 8 Du/acre. North of Villas San Marcus is the high-rise or multistory Indian

Bend apartment complex with a density of 22 Du/acre. The areas immediately adjacent to the wash and north of Hallcraft Villas and the Indian Bend Apartments are presently vacant. Behind the vacant lands to the east, however, exists an extensive area of single-family dwellings of 4 Du/acre. Adjacent to the extreme northwest corner of the property on Camelback Road is a condominium project of 22 Du/acre.

b. Commercial development near the site is concentrated at the extreme southeastern end of the property. Immediately adjacent to the parcel at the south end are a service station and several fast service food establishments. Across from the property on the southeast corner of the intersection of Indian School and Hayden Roads is a local shopping center. The hotel and shopping complex mentioned previously lie across Indian School Road from the property at the extreme southwest corner. Two golf courses, both privately owned and operated as part of development projects, border the property to the north and to the south.

c. Utilities. At present a major 39-inch sewage line runs parallel to the alinement of Hayden Road. This line serves the area north of Camelback between Hayden and Scottsdale Roads as well as the areas east of Hayden between Camelback and Indian School Roads. Conflict between the sewage line and park development should be minor except in the area of the lakes. Shifting of the line should not be necessary, but ample coverage should be provided over it. A high-pressure gas line of 10 inches presently enters the parcel from west Camelback Road and then continues south past Indian School. This line also would have to be rerouted in the vicinity of the lakes.

d. A 12-inch waterline also follows the alinement of Hayden Road from north to south. A 6-inch lateral ties in at the continuation of Glenrosa Avenue, and an 8-inch line branches to the east with a 12-inch line branching to the west at Indian School Road. Because the amount of excavation for the park in the lakes area would approximate 18 feet in some spots, this line would be rerouted. An irrigation water line of the Arizona Public Service on 82d Street is located along Camelback Road from Granite Reef to 82d Street where it continues south on 82d Street. It is proposed that a 6-inch fill line to the park lake be tied in at 82d Street and Glenrosa Avenue.

e. At present, powerlines run through the property north and south on the Hayden Road right-of-way alinement, east of the present road. The poles, jointly owned by the Salt River project and Arizona Public Service, include two 69-kv lines and one 12-kv line. The 11 power poles include the poles at the intersections of Hayden at Indian School and at Camelback. In some instances, poles would need to be relocated to avoid conflict with either water or parking areas.

f. Traffic Development. Several things are worthy of consideration in the movement of automobile traffic through Indian School Park. The single most important factor is the presence of Hayden Road in the park proper. Currently, the road divides the park into two somewhat similar parcels. So that the actual usable space available can be maximized, Hayden Road should be relocated to a position parallel and adjacent to the low-flow channel on the west side of the property. From the intersection of

Hayden and Camelback Roads, the new alignment would closely follow the channel in alignment and elevation. Approximately 1,000 feet from the Indian School Park, the new road would then curve back to meet the present intersection of Hayden and Indian School Roads. Thus, the road would cross the lake at an elevation sufficient to allow pedestrian movement underneath at the lake's edge. The planned widening of Hayden Road to an ultimate six-lane section would require a second pedestrian underpass at the lake junction.

g. Parking would be situated in four different areas with access provided from two streets. The major parking area (150 automobiles), located off Hayden Road on the east side of the park, would be situated in approximately the middle of the parcel. Connected to this large lot and situated adjacent to the courts' area would be a small lot for approximately 50 cars that would allow immediate access to the courts' area, maintenance buildings, and an area for senior citizens. A small parking lot for 25 automobiles would be located adjacent to the information center with an approach from Hayden Road. This lot would also allow parking on the east side of the park for picnicking and lake usage. The fourth parking facility, located off Camelback Road adjacent to the northernmost tennis courts, would provide reasonably direct access and would also be near the soccer and football fields.

h. The park would be reasonably accessible from all sides except the west. The low-flow channel on that side and the accompanying flows would create a major obstacle that would hinder movement from that direction. The quality

and location of major arteries would determine the automobile accessibility. With regional arteries bordering the site on the north and south and a major carrier bisecting the site in a north-south direction, automobile access should be relatively direct. Drainage structures would provide access for pedestrians who otherwise would have to use surface access and be subject to conflicting automobile movement. To the east, the park would be immediately adjacent to and readily accessible from a multi<sup>7</sup>unit housing development. Although fencing for the courts would hinder free movement, numerous access points would exist along that boundary.

i. Drainage Development. Since the primary function of the total Indian Bend Wash greenbelt system is flood control, the Indian School Park would also serve this purpose. A low-flow channel capable of carrying a 4,000 cfs discharge would be constructed on the west side of the site. At present the low-flow discharge of 4,000 cfs crosses over Camelback Road at the low-flow channel location, moves down the channel, and exits at Indian School Road. Floodwater in excess of 4,000 cfs crosses Camelback east of the channel location. At Camelback and Indian School Roads, there would be low-flow bridges. Current plans by a developer for a golf-course project would involve lowering the existing channel invert about 10 feet downstream from Indian School Road.

j. Within the park itself, the paved passive and active recreational areas would be placed on a terrace or shelf at or above the 20-year flood line, with a promenade linking the various courts and areas at the 10-year

flood level. To compensate for the steplike intrusion into the channel of the promenade and courts, a limited amount of cut would be required in the open grass areas of the park. More cut, however, would be required south toward the lake areas (pl. 9) to meet the eastern lake elevations at +31. Connecting the eastern and western portions of the lake would be a waterfall. Water level would drop from +30 at the eastern lake to +26 at the western portion. A pedestrian underpass would be located at the junction of the lakes and Hayden Road. The top of this structure would be set at +36.5, dropping to +35 at the intersection of Hayden and Indian School Roads.

k. Lake Development. A lake at the southern portion of the park would provide maximum visual exposure and work in harmony with the information center and picnic areas. Divided into two major portions, it would be linked by means of a cascade under Hayden Road. At this point, a pedestrian underpass would be located along the water's edge. In addition to being a visual focal point, the lake would function as a passive play area, furnishing opportunities for model boat sailing, fishing, etc. To create the lake, material would be excavated to a depth of +17 on the low side, with a water-surface elevation of +27. This would allow a maximum depth of 10 feet, which would be sufficient to promote fish growth and to minimize the problems of algae. A salt-seal process would be used to seal the bottom of the lake.

l. Promenade. A pedestrian promenade or walkway would act as the major pedestrian linkage between all passive and active paved court areas as well as to field sports' areas. And being at an intermediate level

vertically, the promenade would separate the field sports from the paved courts areas. At the southern end, the promenade would extend to the lake, where the structure would be armored, either riprap rock or cast concrete. Proposed as a shaded and intersecting means of moving from one area to another, the promenade would offer certain social activities not offered in specific play areas. Tied into court areas and the control-maintenance center, the promenade would provide vantage points for strolling, sitting under shade ramadas and trees, watching sports activities, and seeing art displays.

m. The promenade, basically a hard-surfaced area, would use either color or a special finish on concrete. Detailing, finishes, textures and colors would be utilized to maintain a human scale throughout the promenade area. Shade structures, the ramada at the control-maintenance center, and the concession area would be of wood. Candles, approximately 5-feet-high, would provide low-intensity lighting that would be ample for safety but not intense enough for glare. Street furniture, graphics, structure, and finishes would establish the character of the project in line with the scale of the courts area and the promenade. A variety of elements would provide contrast, rhythm, and change and yet maintain overall the continuity and unity of design purpose. Structures within the promenade, such as the maintenance building and comfort station, would be southwestern in character with mass walls, wood beams, tile roofs, and suitable trim and hardware, and would be reinforced in basic quality through the use of similar materials, detail, or trim in other elements of the promenade.

n. Courts. The courts would be arranged along the pedestrian promenade with paved areas located above the pedestrian promenade and grassed or sand areas located below. The paved areas above the promenade would dominate visually and would provide vantage points for viewing activities in the tot lot, the open space, and the areas of the playing fields. As the largest single concentration of tennis courts in Arizona, 24 tennis courts would be arranged at opposite ends of the site, with one 12-court group at the northern end of the park and one 12-court group at the southern end. In their arrangement along a pedestrian spine or promenade, these courts would link all play areas together. It is proposed that these courts be constructed of asphalt with an applied acrylic topping material. As a further hydraulic consideration, the court fencing would be 12 feet high, constructed of chain link with the vertical and horizontal supports galvanized and the fencing material mounted on hinged sections. This would allow for movement in the event of floods of over 20-year recurrence, decreasing resistance and reducing problems of debris collection.

o. The practice tennis courts, basketball, volleyball, handball, shuffleboard, and horseshoe areas would be located in the center (see pl. 9), an arrangement that is based on hydraulic considerations as well as an attempt to create cross mingling of different age groups and types of people. The basketball courts would be concrete slabs of college court size (50 x 94 ft.). These courts would be lighted for nighttime use but would not be fenced. As part of the grass play areas, the volleyball courts would be sand with strips of concrete to retain sand and to facilitate mowing and

trimming. These courts also would have standard court lighting. The six handball courts with four wall courts would be lighted and suitable for nighttime play. Construction would be of reinforced concrete. As handball courts present a definite obstacle to water movement in the event of flooding, they would be located as high and as close to the eastern property line as possible. One wall of the handball court could be used as a practice tennis court wall. Sixteen shuffleboard courts, constructed of reinforced concrete and of championship quality, would be grouped into two eight-board areas, with shaded ramadas, seats, and spectator areas located in each group. The 12 horseshoe pits, which would be surrounded by a mowing strip of concrete or steel, would be lowered slightly from the surrounding walk areas for safety. Separating the courts and the promenade would be sloping areas planted with trees and low shrubs.

p. Special-Use Areas. Secondary in overall importance to the information center and of major importance to the promenade area would be the control-maintenance-center area. Both visually and socially and control-maintenance-center with its concession stands, comfort stations, and control-maintenance building would be located in the center of the promenade and adjacent to the southern cluster of tennis courts and also front on the tot lot area. Grouped around a paved, multilevel exhibition area suitable for displays and public gatherings, the complex would also be near a parking area for 50 automobiles and as close as possible to the eastern edge of the floodway for hydraulic considerations. The various buildings would be raised above the 100-year flood level. Ramada structures would complete the complex, providing shade, shelter, and visual definition.

q. A special area, including 16 shuffleboard pads and 12 horseshoe spaces, would be located near the maintenance building and exhibit area for senior citizens. Provisions for ramadas and gathering and viewing areas would include both social and activity space. Ready access by pedestrians would be easy and direct from nearby parking.

r. Immediately adjacent to the control-maintenance center would be the tot lot. This would allow access to parking and easy access from the east side of the parking and adjoining townhouse and single-family developments. Close proximity to the control-maintenance building area would offer supervision by parents viewing displays or simply relaxing and socializing. A series of broad steps from the promenade would drop down into the tot lot itself, which would be surrounded by sculptured land forms not high enough to constitute a major hydraulic problem, but high enough for spatial definition and enclosure. Within the land forms could occur integral play activities, such as climbing steps, and playing on platforms and slides, and in tunnels. The major portion of the tot-lot area would be sand contained within a concrete curb (see pl. 12). The variety of designed play forms (earth forms and timbers) featured would offer a variety and a continuity of play activities.

s. The spray pad, a play area kept wet by water sprays, would be constructed of gunite or concrete, and would undulate with mounds, steps, and slides, affording a variety of forms. Designed for children of 5 to 13, it would offer both cooling mists and sprays of water in the hot summer months, as well as active recreation, such as sliding, jumping, and climbing in the

water. Because it would be a wet area with air-carried water around it, the pad should be isolated physically somewhat from pedestrian movement areas. For this reason, the pad would be located on an island in the eastern portion of the lake.

t. Major sports fields would consist of one full-size football field and two full-size soccer fields of grass with regulation stripes and equipment that would be used only during the daytime. Located at the northern end of the park, these fields would constitute the major use in that area with the nearby parking lot off Camelback Road offering immediate access. The promenade would border the fields to the east and give a vantage spot for viewing sports events.

u. The picnic area would be close to several fast-food retail outlets fronting Indian School Road, with the picnic tables and ramadas located principally in the southern portion of the park and around the lake area. Parking would be available close to the tot lot, the control-maintenance building, and the promenade. Wooden picnic tables would be securely attached to a reinforced-concrete pad underneath, and ramadas would provide overhead shade over some of the picnic units. Located at each table would be charcoal-fired grills, with refuse containers and water nearby.

v. A series of small ramadas in the promenade area and larger ones in the exhibition area would be of wood with lattice tops that could be either left open or kept solid. The ramada in the control-maintenance center area, which would be designed primarily as an open structure giving shade, could support vines and other plants.

w. Information Center. Although the greenbelt floodway would occupy most of the 7-mile reach along Indian Bend Wash, residents, visitors, and tourists using segments of it might not grasp the total impact of the greenbelt-floodway concept. To publicize the history and purpose of the greenbelt and the extent of Corps participation in its development, an information center (El Posadero de la Tira Verdosa) would be build next to a lake. (See pl., 11.) In addition to concentrating the total picture of the greenbelt in one area, this center would also provide information about the recreation activities in the greenbelt.

x. Constructed above the 100-year flood line, the building would be partially on columns extending into the lake, and at grade. Access from the adjacent parking area would be easy; the low-flow channel berm has been widened to allow space behind the proposed structure for an access road and parking and to provide support for a portion of the building. Influenced by traditional southwestern forms and materials, the building would be stucco-finished with arches and tiled roof and in keeping architecturally with the balance of the architecture in the greenbelt. A veranda surrounding the building on three sides would provide vistas of the greenbelt system. Glass curtains inside the arched colonnade exterior and veranda would reduce heat and glare. Rather than mass construction of the walls, steel-frame construction is proposed because of the need for long spans and changing support conditions and also the need for longer columns at the lakeside. The ceiling inside would either be coffered or have exposed wooden beams; and inside space would be free of vertical structural elements except at the walls. This would allow

greater flexibility in display organization and also provide unbroken views of the outside. All service activities, offices, information desk, storage for office supplies, display storage, conference rooms, and comfort stations would be located on the northwest wall in close proximity to the access road, and leaving the remainder of the area open and free of obstructions. Entrance to the information center would be from a courtyard or entry area, situated slightly lower than the building itself, and would offer seating, shade ramadas, potted plants, and trees. Within this entry, a large, high, open display and exhibit space would dominate. To suit specific display purposes, displays would be mounted on movable walls and space definers could be added, removed, or shifted as needed.

y. Because of its <sup>e</sup> height, bulk, and position at the lake's edge, the information center would be the most dominating single visual feature within the park. Also, being the only structure in the west portion of the park would increase its dominance. Automobile access to the building would be from Hayden Road and pedestrian access by foot would be through the underpass. Immediately adjacent to the building would be parking space for 25 cars and additional parking would be located at a short distance across Hayden Road.

z. Control-Maintenance Building. The control-maintenance center (see pl. 9) is planned to provide recreational control services as well as storage and recreational supplies. As the dominating feature of the exhibition space and ramada area, this structure would act as a secondary visual focal

point for the park as a whole and the major center of activity for the play courts and promenade. The architectural style of the structures and ramadas in the center would be similar to that of the information center, - buff-colored stucco with tile roofs and heavy wooden beams. The decorative lighting would fit the overall character of the park.

aa. Lighting. Nighttime lighting would serve a variety of purposes by illuminating sports fields, parking lots, and courts for nighttime usage and highlighting specific features in the landscape, such as specimen trees, objects, and buildings. Lighting of pathways and promenades would not only illuminate and guide but would also enhance and strengthen spatial quality. Each lighting could be used in positive and esthetic ways, specific application depending on the individual situation, need, and design principles. Tennis, basketball, and handball facilities will be lit to suit playing needs. Such fixtures will include metal halide, quartz iodine, and similar high wattage, very intense lamps. Mounting will be dependent upon specific playing conditions, being 25- to 30-feet for tennis courts. The differing requirements for the illumination of street and parking areas would reflect present City of Scottsdale requirements. Parking-lot lighting intensity would be designed to promote parking-lot safety and ease of maintenance, and reduce problems of vandalism. Such lighting would principally be mercury vapor or metal-halide.

bb. Decorative lighting would be low level, low intensity, and designed for esthetic purposes as much as for guidance and safety. The promenade and walkway areas would need

decorative lighting to reinforce a quality of space, a character, or to define a physical element. Such lighting must also meet requirements for maintenance free operation, vandal resistance, initial costs, and operating costs.

cc. Lighting is used for highlighting in a very refined and highly designed manner. Objects are carefully lit from the front, from beneath, from above, or from behind to achieve carefully planned results and such lighting must be restrained to achieve maximum total effect. For example, selected specimen trees might be lit from beneath to highlight the sculptural effect of branches, trunk, and limbs; a group of plants or trees might be lit from behind to achieve a silhouette of dark foliage and plant form against a lit backdrop.

dd. Signs. Sign<sup>s</sup> impart information of various kinds, including direction, traffic control, and parking. In the case of Indian School Park, certain of these functions would overlap sign functions already established by either the City of Scottsdale or the State of Arizona, such as traffic control and parking signs. Also, the City of Scottsdale has already set certain graphic standards in reference to its park systems. Continuity, therefore, should be maintained throughout the park system in the type, purpose, and location of signs. And since the problem of disseminating information of various kinds would be a major one in this park, an extensive and careful graphic analysis of the signs and their use should be made.

ee. Plantings. Planting in the Indian School Park would serve many purposes including the following: developing ground cover for soil stabilization; providing screening for visual privacy, safety, and spatial definition; accenting through vertical or contrasting emphasis; providing shade and color; and reinforcing space areas. The dominant shape in the park landscape scheme would be trees in their many forms because they offer a great deal in terms of maintenance, care, longevity, and usefulness. Specific uses would be to provide shade, vertical accent, or contrast of texture, color and form, color, or screening. Shade trees would include pistache (*Pistacia chinensis*), honey locust (*Gleditsia triacanthos* 'Inermis'), ash (*Fraxinus velutina*), and mulberry (*Morus alba* 'fruitless'). Vertical accent trees would include palms (*Washingtonia robusta* and *Washingtonia filifera*, *Cocos plumosa*), and Canary Island pine (*Pinus canariensis*). Specimen trees would include willow (*Salix babylonica* 'Nigra'), Jacaranda (*Jacaranda acutifolia*), Carob (*Ceratonia siliqua*), Olive (*Olea europaea*), bottle tree (*Brachychiton populneum*), and eucalyptus (*Microtheaca* and *Polyanthemos* variations). If planted in carefully defined areas, shrubbery would offer certain qualities. Massed shrubbery could prevent or discourage movement at ground level; provide a very effective screen for traffic and parked cars and for maintenance areas; and create points of interest and accent on the ground plane level of the landscape. Effective planting of these types, however, would require careful separation from grass or ground-cover areas to maintain neat, clean groupings of shrubs. Suitable shrubs would include pampas grass (*Cortaderia selloana*), junipers (*J.c. pfitzer* var. and *J.s.* 'Tamariscifolia'), natal plum (*Carissa grandiflora*), *Pyracantha*

coccinea ('Santa Cruz' and 'Tiny Tim'). Ground covers would be limited to open field areas and the sloping areas between the eastern property line and courts and the area between the courts and promenade. Plants for these spaces would include Vinca major, Potentilla verna, Rosmarinus officinalis, and Pyracanthus and Juniperus varieties.

77. EXHIBIT PLAZA. As part of the proposed recreation plan, the area upstream from McDowell Road would be designed as an Exhibit Plaza (see pls. 14, 15, 16, and 17<sup>18</sup>) and used as a prototype for a flood-control project. This area would be paved and designed to withstand flood damages up to a 100-year flood. Scottsdale would use this facility year round, scheduling different activities every week, such as art shows, craft classes, rock shows, dog shows, and art and craft displays, flower shows, and instructional classes. National shows, such as the Rock Show, the Fine Arts Festival, the National Indian Arts and Crafts exhibition, which draw national and international visitors, would also be scheduled here. Presently, these shows are held on the second floor of the library. City officials estimate that a major show scheduled at the Exhibit Plaza for a weekend would draw 15,000 to 20,000 users and a special-interest program during the week would draw 200 people a day.

78. An important consideration of such an Exhibit Plaza is how such a space functions and is experienced both during events and when it is visited as a "space" without events happening. In this case, the Exhibit Plaza itself must be an interesting experience with level changes, textured surfaces, visual focus points, places to sit, and different degrees of shade protection and

definition. It should have a "sense of place" with form and character; it should not be just an empty place. Over and beyond exhibits, the Exhibit Plaza should be capable of functioning as a "Festival Center" for the community. This should be the place where a wide diversity of activities, such as the annual "Festival of Nations," Halloween events, informal music performances, and many other forms of recreation can occur. These community activities and events are of paramount importance to Scottsdale's recreational program.

79. Adjacent areas should be landscaped with grass and trees to provide open recreational areas that are free. Also, some additional picnic areas would be developed to bring life and activity to the Exhibit Plaza itself. A unique opportunity exists at the fine grove of natural mesquite trees on the central peninsula, which serves as the main natural landscape feature in the design. Planting material, where introduced, would be a flood-basin type that would be alkali resistant. Native and other plants requiring minimum maintenance and water would be incorporated. Incorporated in the design concept are several water features. The existing water channel would be reworked to provide a safe edge and depth and would, by providing several control dams, create two decorative pools on the central picnic peninsula. This channel would lead into the main decorative water feature that serves as the focus for the overall design and would run through the Exhibit Plaza to a spillway, which would carry the water to the lake to the south (see pl. 14).

80. A design theme for the Exhibit Plaza and the adjacent park was one major point in developing the design concept. It was felt that the name "Indian Bend

Wash'' and the strong background of Indian culture in the Scottsdale area could be incorporated in many ways in the design. For example, actual petroglyphs of ancient Indians, which the City of Scottsdale has available for use, would be used. Displays and exhibits would be used also to accentuate the theme and be both educational and entertaining. This idea would be reflected further by the colors and materials used to produce a truly unique place for the people in the Valley of the Sun.

a. Traffic Movement and Parking. Analysis of the site indicated only two feasible vehicular entries into the site: from the existing roadways at the northwest and northeast corners that service the park to the north. Driveways 24 feet in width would connect to the parking areas below at less than a 10-percent grade and parallel to the main flow of water.

(1) Adjacent to but semiscreened from the main activity area would be two parking areas. The west parking area would accommodate 58 cars; and the east area, 35 cars. This number of 93 spaces would be augmented by short-time parking areas at the two turnarounds located at the ends of the drives. These turnarounds would be large enough to allow trucks to deliver exhibit material directly to the plazas areas and to provide easy access for maintenance vehicles for clean-up, etc. Driveways and parking areas would be paved with 2-inch asphaltic concrete and 4-inch A.B.C. edged with a curbed access walkway on one side and at the end turnaround. Removable steel posts used at the east plaza access point would prevent unauthorized vehicles from entering the plaza area.

(2) One important consideration in locating the parking areas and turnaround drives was the need to bring the motion and visual excitement of vehicles into a relationship with the plaza itself. Instead of totally excluding vehicles from view as most parks do, these vehicles would bring visual action to this area and make it "alive" and active. An example of this is the traffic patterns around Trafalgar Square in London, a truly alive and exciting plaza space.

b. The Plazas; Exhibit, Festival and Upper-Viewing and Visirot-Orientation Areas. Unlike many conventional plazas, the design determinants dictated a more articulated and flexible solution than a single, rectangular paved space. Three main areas evolved, each of which had its main function and was formed separate from but linked to the others. The major linking element was the central focus, the water feature. The "petroglyph" waterfall, cascade, and holding pools form the center pivot of these related areas, which are described separately as follows:

(1) Major Exhibit Plaza (under the McDowell Bridge). The form, location, and size of this area was primarily determined by hydrologic considerations established by the City of Scottsdale engineers. The northern limits are considered mandatory as paved areas and the southern are the suggested limits for a spillway into the adjacent lake. A sill, located as shown would require the design of a "stile" like ramp for circulation over this obstacle. The intent of the proposed design is to "feature" this sill

by using an interesting ramp design and executing the sides in integral colored, exposed aggregate concrete. For bike and pedestrian safety, the top of the ramp would be broom-swept finish. The basic paving of this Exhibit Plaza would be a strong diagonal pattern in a basic module of 12 feet by 24 feet. Material, except in feature areas, would be integral-colored (desert tan), salt-finished concrete. Dividing strips would be of dark-brown integral-colored concrete. Feature areas would be exposed aggregate pebbles set in concrete of terra-cotta<sup>a</sup> color. The water-channel spillway would incorporate large river-washed cobbles set in concrete. Three date palms located in the center open area of the bridge, parallel to the bridge columns for protection, would match and continue the trees in the planter median on McDowell above. The area around the trees would be filled in with cobblestones. The purpose of the strong and active paving pattern would be to enliven a rather dull and rigid space under the bridge. The City of Scottsdale was enthused over the proposition that the City of Scottsdale Public Schools develop "mural" projects for execution by students to discourage "graffitti" on the walls, since this plan has worked well in other cities. Two bike paths, which would tie into this plaza at the south end, would be developed by the city at a later date.

(2) Central "Festival" Plaza. This area would extend from the Exhibit Plaza on the south to a performance stage at the center of the grass amphitheater bowl at the north. A main pedestrian entrance near the center would bring people into the heart of the area from the west parking area. This semiseparate area would provide a smaller scaled and less noisy area for the many community recreation activities of the people. A system of masonry piers

(incorporating night lighting) and stainless steel cables would provide definition and opportunities for temporary shade awnings and "booths" for such activities as the "Festival of Nations," art shows, children's activities, etc. A central feature of this area would be a grass turf carpet surrounding a large firepit for nighttime events. Forming a vertical accent at the center would be three flag poles to fly "Festival Flags." As a focus for the north grass amphitheater, ramps and large steps would change level up to a performance center. Paving in this area would follow the pattern and material of the Exhibit Plaza with the exception that a 24-foot-square section at the main entry node would be impressed with the design of a Papago Indian "Maze Design." The change of level would have ramps for the handicapped.

(3) Upper-Viewing and Visitor-Orientation Plaza. Located under the existing mesquite trees on the upper peninsula and adjacent to the "water feature" would be a small plaza and sitting area. Linking this plaza to the areas below would be two stairways made of railroad ties and concrete. The central focus of this area, a large cluster of rocks incorporating actual prehistoric Indian "petroglyphs," would be provided by the City of Scottsdale. Exhibit panels would tell of the development of the Indian Bend Park project and about the Indian culture native to the area. A pedestrian path, adjacent to the existing water course and "dammed" ponds to the north, would connect to small picnic areas located under the existing trees.

c. Central Water Feature. An existing rough-water channel containing a periodic flow of Salt River Project runoff water would run from the north down through the center of the peninsula, and reach a major point of fall at the end of this dominant land form. This point, the obvious major focus of the entire site, would be visible from the McDowell Road bridge. The design is intended to make this the major water feature of the project by creating a series of waterfalls, cascades, and shallow holding pools that ultimately lead to the water course that crosses the Exhibit Plaza and empties into the lake on the south. One important consideration in the design is that, when the water is flowing and falling, it will catch the light from the southern sun and create a strong visual sparkle to the area. For this reason, a series of water drops have been incorporated to create a maximum effect of water play. During slack times, two large pools at different levels, 18-inches deep and lined with river-washed cobbles, would hold the water. Drains would allow the emptying of the pools for maintenance purposes. All water movement would be by gravity flow so that no pumps or mechanical equipment would be needed. Equally as important as the water movement is the need to make the feature visually interesting at all times, even when the flow of water is at a minimum. For this reason, a group of abstract "petroglyph rocks" (see pl. 18) has been designed for the water to flow over and through. Of sandblasted, sand-colored concrete these "rocks" would have authentic Indian petroglyph designs cast into the surface. This would be visually exciting, educational, and reinforce the "Indian Bend theme" of the plazas.

d. Amphitheater Area. At the north end of the project (see pls. 14 and 15) the terrain would be graded to accommodate the required water flow, etc. of the project. This grading would provide a natural bowl, grass turfed, focusing onto a raised "performance stage." At the top of the bank, an 8-foot circulation path of salt-finished concrete would encircle the surrounding grass areas to prevent scouring of the plane at the foot of the slope. At the suggestion of the City engineer, numerous trees would be located on this slope at 30 feet on center minimum to assist in controlling the water flow in this area and to provide shade for the spectators. So as to not impede flow or vision, the trees would be high branching. Although the multidirectional form of the stage would allow seating on the bank in many directions to accommodate the sun, its general north-south orientation would be optimum.

e. Maintenance Building - Comfort Station. The position on the site at which this structure would be located is the result of an analysis of all possible locations with respect to the following criteria: (See pl. 17.)

(1) Proximity and access to the only existing sewer and utility lines located to the west in Miller Road.

(2) Location above the 1,210-foot elevation for protection against flood waters.

(3) Proximity to vehicular access for ease of servicing and maintenance.

(4) Ability to be reasonably screened by landscape so as not to visually dominate the site.

(5) Proximity and visibility for use.

Of these five points, the one that suffers is the last one. The maintenance building - comfort station, however, is connected with a gentle sloping walk and does not seem to be an unreasonable distance to walk. The octagonal nature of this structure's form results from a desire not to have a building with an obvious front or rear, so as not to offend people living in the area to the west.

(a) At the suggestion of the Parks and Recreation Director of Scottsdale, a Visitors-Orientation Plaza would be located near the entries and overlooking the park below. This exhibit could tell the story of the Corps' involvement in the development of this unique park system. The structure itself would be built on a concrete slab with 8-inch concrete slump block walls. Resawn Douglas Fir structural framing and plywood sheathing would form the roof, and the structural and interior plumbing walls. The concrete tile roof would be of terra-cott<sup>A</sup> color. Colors and forms would reflect the "southwestern" architectural character of the park. Interior area of the structure would be approximately 1,000 square feet and include two toilet-wash rooms, and a maintenance, storage, and mechanical room. A central-access chase would be provided for maintenance of the toilet plumbing. Louvered windows and a central roof vent would allow the building to be naturally ventilated. All electrical service elements and controls for the entire project would be located here.

Interiors of the comfort station would be exposed masonry and tile for minimum maintenance. Ceiling-hung toilet partitions would allow easy cleaning, as would a sloped concrete floor with a central drain. A drinking fountain would be located on the entry porch where a public telephone could be located if so desired.

f. Bike Trail System. Connecting to the existing trail to the north would be an 8-foot-wide, broom-finish concrete bike trail. The trail would cross the site and come down a ramp east of the water feature. Near this point would be a bike-rack parking area. A differentiated area would edge the main plaza center to help separate pedestrians and riders. The ramp at the "sill" would allow for continuity to the south. Two exits, allow the trails to continue to the recreational facilities, would be located in the park below. All design would conform to the City of Scottsdale's program and standards. The intent is to allow the trail to meander through the trees, up and down interesting slopes, and generally be a delightful experience.

g. Picnic Areas. The upper plaza would be linked to the park in the north by a pedestrian path. This path would wander through the mesquite trees adjacent to the water channel and pools in the center of the "natural" peninsula. Approximately 20 picnic areas would be located in an informal manner in this area. Tables, benches, grills, and refuse containers would be of precast concrete and anchored so as not to be affected by flood conditions. Final location would be "site selected" by architects to fit the existing tree locations.

h. Access Paths to Adjacent Sites. At the southern end of the site, the land has been formed to accomplish certain water controls adjacent to the bridge. The city has requested that access paths be developed to link the privately owned sites above the project to the project itself. A 5-foot-wide paved path would have an 8 percent (12-to-1) slope. Some low concrete slump-block retaining walls and built-in bench seating would add visual interest. Railroad ties would be used for steps and connecting linkages. The two steeply sloped areas on top of the concrete retaining walls by the bridge would be covered with stone cobbles set in concrete. The planting pockets would allow native Palo Verde trees to reduce the glare and harshness of the concrete structure.

i. Densities. The immediate residential density along McDowell Road, one of Scottsdale's main commercial thoroughfares, is a 6 Du/acre. A good percentage of the recreational use in the area would probably be family oriented, since most dwellings in this area are single-family dwellings and the dwellings just south of the project area and east of Vista Del Camino Park are low-income residential housing (4 Du/acre).

j. Landscaping (Organic Plant Material). The landscaping would utilize trees, grass, and shrubs in a manner to help solve the functional problems of flood control and environmental design. (See pl. 15.) The basic ground cover on the gently sloping banks (3-to-1 slope) and the flat areas would be Bermuda grass. Steep banks would have a mixed shrub cover of native-type plants selected for their soil-retention qualities. A grove of tall screening trees on both the east and west banks of the project would be used for both sun

protection (shade and glare) and for visually screening the park from the adjacent areas. A group of three date palms would be planted under the bridge to grow up through the bridge opening and continue the line of palms in the existing median. Adjacent to the parking area on the west, a screen of Chilean mesquite trees would both separate the vehicles from the plaza and provide shade in the adjacent grass areas. The "natural" water course (not a part of the established program at this time would be developed using native reeds, willows, and decorative grasses to maintain its informal character. A water irrigation system would be needed to "establish" the trees during the early years and to take care of lawn and shrub areas. When final drawings are executed, a detailed examination of this will be made.

k. Night Lighting. The general policy of the City of Scottsdale is to maintain relatively low levels of illumination in parks adjacent to residential areas. For this reason, lighting would be confined primarily to the central plaza areas and the related parking areas. Lighting added to the bridge structure would make this area both safe and usable at night. Flood lights in the Festival Plaza area have been designed as an integral part of the shade structure columns and would be adjustable for different uses. Electrical service and controls would be located at the maintenance building. Fixtures should be located above the height of the maximum flood level (16 feet). ~~(See also for attached file 11/1/44)~~

l. Flood-Water Cleanup. It is recognized that all the park would periodically be inundated. Hence a sufficient water supply with well-located hose-bib connections should be available for the maintenance crews to wash down all areas after a flood.

81. THOMAS ROAD REST AREA. A 2-acre rest area for trailusers at Thomas Road (see pl. 13) would provide picnic facilities, barbecues, drinking water, a comfort station, and a maintenance shop for minor bike repairs. Existing trees and vegetations would be preserved and integrated into the rest area. This intimate rest area would also include a small group picnic area with a fire ring. In addition, the picnic area and trail system would be lighted for night use. Because of the mature trees and vegetation, no shade ramadas would be needed.

a. Control and Maintenance Buildings. These buildings would be remodeled existing buildings. The control building would serve as headquarters for the trail systems of the greenbelt, and would house a conference room and comfort-station facilities. The maintenance building would be used as a rest area and for minor bicycle repair. Tools and equipment would be furnished and maintained by the City of Scottsdale.

b. Drainage. The proposed rest area would be located outside the floodway and be above the 100-year flood.

c. Usage. This area would be used primarily by trailusers, with possible participation from local immediate residents for quiet intimate family picnics. The fire ring would provide for small group outings.

82. MCKELLIPS LAKE. The primary purpose of this lake, which would be located just upstream from McKellips Road in the flood-control channel (see pls. 19 and 20), would be for children and adults to enjoy the sport of fishing. The water-surface area of the lake would be 6 acres; and the adjoining surrounding land area, 18 acres. No swimming would be allowed in this lake designed primarily for fishing. Picnic areas, a tot lot, a comfort station, and a facility for large group picnics would complement this lake area. Recreation in this area would be of the more passive type. The Arizona Game and Fish Department would both stock the lake with fish and assume the cost of such stocking.

a. Residential and Industrial Densities. Because McKellips Lake is located south of Vista Del Camino, a low-income housing development, most of its usage would come from this area. Only single-family dwellings exist in this area, which has about 4 Du/acre. Zoning to the east is industrial with no residential at all; directly adjacent on the west is a privately-owned trailer park; and to the south is the City of Tempe, in which the outlet channel begins.

b. Access. The only automobile access to this proposed lake would be off Pierce Street, one block north of McKellips Road on Hayden Road - one of the main northsouth arteries in Scottsdale. Because of the hazardous sight clearances, no access would be made off McKellips Road. The hiking and biking trail, which would run through the whole greenbelt, could be used for pedestrian and bicycle access.

c. Drainage. A drop structure containing a low-flow wier would be constructed immediately upstream from the proposed lake to direct low flows into the lake through the wier.

d. Picnic Facilities. All picnic areas would contain picnic tables, barbecue pits, refuse containers, and a hose building; some picnic areas would have shade ramadas. Overlooking the lake would be a picnic area for large groups. The shade ramada planned for this area would be constructed of heavy timber with a patio cantilever over the water. These facilities would accommodate ~~250~~<sup>50</sup> to ~~300~~<sup>75</sup> people. In addition to the picnic tables and refuse containers, the area would have three large barbecue pits.

e. Planting. Planting and landscape design would be provided at McKellips Lake. Small intimate picnic areas would be designed by use of trees and shrubs.

83. OUTLET RECREATION. The recreational design concept (see pls. 21, 22, 23, and 24) in the area of the outlet channel is to preserve and simulate the unique character of the site. After the channel excavation has been completed, the outlet channel would be developed by using existing native vegetation, which would be transplanted into strategic locations to accommodate the trail system and the proposed rest area. Located within the rest area would be a comfort station, picnic tables, barbecues, ramadas, and drinking water. Since the outlet channel area is the only part of the project area that is within the City of Tempe, the city would participate

in the proposed development. At present, however, Tempe cannot financially support its share of developing both the trail system and the rest area. The development of the trail system in the outlet would tie-in with the overall system ending at Arizona State University and would terminate one of the most extensive trail systems in the southwestern United States.



**SPECIAL PROBLEMS AND  
RECOMMENDED SOLUTIONS**

84. POTENTIAL ENCROACHMENT AND DEGRADATION OF RESOURCES. A desert environment along Indian Bend Wash between the Arizona canal and the Salt River is almost nonexistent with the exception of one or two short reaches and the reach from Princess Road to the Salt River. A major resource along the wash until recent years, agriculture gradually began to yield to urbanization and associated development in many areas. The land could still be used for agriculture except that it is no longer economically practical. Only a few areas are still open fields of outwashed desert lands. And development is rapidly encroaching as trailer parks, townhouses, schools, etc. encroach into the undefined wash area on fills above the 100-year flood line. Future development within the designated floodway would be consistent with flood-plain management techniques. Land use consistent with the flood-plain management concept allowed within the floodway will continue to be allowed throughout the wash area. Such land use, a form of open space called a "greenbelt floodway," consists of parks and golf courses.

85. The lands adjacent to the floodway would be developed in accordance with Scottsdale and Tempe's plans for land use. For the most part, Scottsdale's development will be primarily residential, and Tempe's will be industrial.

86. PROVISIONS FOR THE HANDICAPPED AND THE ELDERLY. Provisions for the handicapped and the elderly would be made wherever possible at the rest areas along the trail system and at the recreation sites. All comfort stations would have accommodations for the handicapped.

87. BUREAU OF LAND MANAGEMENT AND NATIONAL FOREST LANDS. No Bureau of Land Management or National Forest lands are adjacent to or included in the project.

88. INTERIM USES OF LANDS. The sites proposed for future public use within the floodway are open fields or agricultural land with no significant economic productivity. Interim uses of these sites will not hinder their future development into areas for public use.

89. WATER SAFETY. Except for the proposed lakes near the information building and near McKellips Road, the recommended recreational aspects of the project would be land-oriented. At McKellips Lake, Scottsdale would assign recreational leaders to supervise the children and teach them to fish. For the most part, these recreational leaders would be college students with physical education majors who would be hired by the city part-time to instruct the public in recreational skills. At this lake, no swimming or boating would be allowed. The esthetically pleasing lakes that Scottsdale has built or is planning to build within the greenbelt floodway in Chaparral Park, El Dorado Park, and Vista Del Camino Park, however, will be used primarily for boating. Also, the proposed lake near the information building would be used for model sailboating and waterfowl observation.

90. OTHER PROBLEMS. The greenbelt-floodway areas that would be public should be compatible with flood-control purposes. In some reaches of the greenbelt floodway, a low-flow channel would convey up to 4,000,cfs without interrupting traffic at major street crossings.

91. Arizona is noted for its hot, dry desert climate. Because temperatures reach into the 100's during the summer days but cool off during the nights, recreational use becomes maximized at dusk and well into the hours after dark. Consequently, provisions should be made for night recreation and for a security patrol program.

**PROJECT RESOURCE  
MANAGEMENT**

92. OPERATIONAL AND MAINTENANCE RESPONSIBILITIES. In accordance with the recreational cost-sharing agreement (House Committee Report No. 254, Public Law 89-72), operation, maintenance, and replacements would be the responsibilities of the local entities, (City of Scottsdale, City of Tempe) without expense to the Federal Government.

93. ADMINISTRATIVE RESPONSIBILITIES. Administrative duties for the recreational facilities would rest upon the local agencies. The Department of Parks and Recreation for the City of Scottsdale would have full responsibility for all recreational facilities within the city limits. The City of Tempe would have control of the outlet which lies within its city limits.

94. LAW ENFORCEMENT. Law enforcement in the project area would be the responsibility of local enforcement agencies of Scottsdale and Tempe. Public telephones distributed strategically throughout the area would help recreationists and patrons in case of emergencies.

95. SAFETY. Signs, markers, and physical barriers provided throughout the entire project would control foot, equestrian, and vehicular traffic and warn the public of potentially hazardous conditions. The local entity would undertake measures to insure safe and proper use of project lands, recreational facilities, and other features. This would include the control and supervision of the public in and around the greenbelt, interceptor channel, and outlet, and the evacuation of the public from areas subject to inundation during flood conditions.

96. CONCESSION ACTIVITIES. No permanent concessionaire activities are proposed at this time. Such activities that might exist after completion of the project, however, would be at the discretion of the local agencies, such as the Cities of Scottsdale and Tempe.

**COST ESTIMATES**

97. This section presents detailed cost estimates for the construction of the proposed recreational developments. The total recreational cost is \$4,322,518. The total recreational cost will be shared equally by Federal and local interests (Cities of Scottsdale and Tempe). Local interests have elected to pay for their share in the following manner: the City of Scottsdale has elected to make payment for McKellips Lake development prior to construction and for the interceptor channel, Indian School Park, Exhibit Plaza, and Thomas Road rest area, the city has elected to repay over 50 years with interest. The City of Tempe, in like manner, has elected to pay its share of the cost for the outlet channel prior to construction.

TABLE 8

Estimated Cost for Recreational Development of Greenbelt *Trail System*

Description of Item	Estimated		Unit	Total
	Quantity	Unit	Cost	Cost
Bike and hiking trail	5.5	Lin. ft.	\$8.00	\$232,320
Bridge alterations	4	Each	10,000	40,000
Underpasses	2	Each	20,000	40,000
				<hr/>
Subtotal				312,320
Contingencies				37,500
				<hr/>
Subtotal				349,820
Engineering and design				28,000
Supervision and administration				24,500
				<hr/>
Total				\$402,320
				<hr/> <hr/>

TABLE 9

Estimated Cost for Recreational Development  
of Interceptor Channel

Description of Item	Estimated	Unit	Unit	Total
	Quantity		Cost	Cost
Comfort station	1	Job	Lump sum	\$18,000
Biking and hiking trail	7,920	Lin. ft.	8	63,360
Picnic tables	10	Each	100	1,000
Grills	10	Each	80	800
Refuse containers	10	Each	45	450
Signs	16	Each	75	1,200
Information board	1	Each	1,500	1,500
Shade ramadas	3	Each	3,000	9,000
Benches	25	Each	200	5,000
Equestrian trail	95,040	Sq. ft.	.25	23,760
Railing	7,920	Lin. ft.	1.00	7,920
Contingencies				15,839
Subtotal				147,829
Engineering and design				11,826
Supervision and administration				10,348
Total				\$170,003

TABLE 10

Estimated Cost for Recreational Development  
of Indian School Park

Description of Item	Estimated Quantity	Unit	Unit Cost	Total Cost
Grading	186,768	Cu. yd.	\$1.00	\$186,768
Landscaping	1,742,400	Sq. ft.	.05	87,120
Trees				
24-inch box	150	Each	150	22,500
15 gal.	75	Each	<del>45</del> 3,375	<b>3,375</b>
5 gal	75	Each	15	1,125
Irrigation	1,742,400	Sq. ft.	.09	156,816
Park lighting	1,742,400	Sq. ft.	.04	69,696
Picnic tables and pads	40	Each	150	6,000
Grills	40	Each	75	3,000
Hose bibs	40	Each	75	3,000
Refuse containers	40	Each	45	1,800
Tennis courts	24	Each	15,000	360,000
Basketball courts	4	Each	5,000	20,000
Handball courts	6	Each	14,000	84,000
Shuffleboard	16	Each	2,000	32,000
Horseshoe pits	12	Each	500	6,000
Volleyball courts	6	Each	500	3,000

TABLE 10 (Continued)

Estimated Cost for Recreational Development  
of Indian School Park

Description of Item	Estimated	Unit	Unit	Total
	Quantity		Cost	Cost
Parking	83,000	Sq. ft.	.60	49,800
Curbs	2,000	Lin. ft.	4.00	8,000
Spray pad	1	Job	Lump sum	30,000
Portable bleachers	10	Each	1,000	10,000
Promenade				
Concrete paving	70,000	Sq. ft.	1.25	87,500
Lighting	70,000	Sq. ft.	.04	28,000
Ramadas	5	Each	3,000	15,000
Playground equipment	1	Job	Lump sum	25,000
Salt sealing	348,480	Sq. ft.	.10	34,848
Information building	4,000	Sq. ft.	30	120,000
Administration building	1,600	Sq. ft.	30	48,000
Large ramada	3,000	Sq. ft.	5	15,000
Maintenance shop	400	Sq. ft.	30	12,000
Shade ramadas	7	Each	3,000	21,000
Pump station	640	Sq. ft.	25	16,000
Pump	1	Each	Lump sum	8,000

TABLE 10 (Continued)

Estimated Cost for Recreational Development  
of Indian School Park

Description of Item	Estimated		Unit	Total
	Quantity	Unit	Cost	Cost
Comfort stations	2	Each	15,000	30,000
Pedestrian overpass	3,250	Sq. ft.	20	65,000
Bike and hiking trail	4,000	Lin. ft.	8.00	32,000
Move Hayden Road	3,000	Lin. ft.	50	150,000
Incidental masonry and riprap	1	Job	Lump sum	25,000
Subtotal				\$1,876,348
Contingencies				225,802
Subtotal				2,089,150
Engineering and design				167,852
Supervision and administration				146,870
Total recreational facilities				2,412,872
Recreational lands				368,220
Total recreational cost				<u><u>\$2,781,092</u></u>

TABLE 11

Estimated Cost for Recreational Development  
of Exhibit Plaza

Description of Item	Estimated Quantity	Unit	Unit Cost	Total Cost
Grading	87,000	Cu. yd.	\$1.00	\$87,011
Paving	4,840	Sq. yd.	3.00	14,520
Slop paving*	300	Lin. ft.	70.00	21,000
Surfacing*	43,560	Sq. ft.	1.90	82,764
Portable display stands	25	Each	200.00	5,000
Pedestrian bridges	2	Each	4,000	8,000
Parking	14,000	Sq. ft.	.60	8,400
Lighting	20	Each	700	14,000
Picnic tables	20	Each	100	2,000
Grills	10	Each	80	800
Refuse containers	30	Each	45	1,350
Benches (Timberform)	15	Each	200	3,000
Comfort station and maintenance building	1	Job	Lump sum	30,000
Contingencies				<u>33,342</u>
Subtotal				311,186
Engineering and design				24,895
Supervision and administration				<u>21,783</u>
Total recreational facilities				357,864
Recreational land cost				<u>45,000</u>
Total recreational cost				<u><u>\$402,864</u></u>

\*Cost received from City of Scottsdale.

TABLE 12

Estimated Cost for Recreational Development  
of Thomas Road Rest Area (2 acres)

Description of Item	Estimated	Unit	Unit	Total
	Quantity		Cost	Cost
Landscaping				
Turf-hydromulch	87,120	Sq. ft.	.05	\$4,356
Picnic tables	20	Each	100	1,600
Grills	20	Each	80	1,600
Hose bibs	20	Each	75	1,500
Refuse containers	20	Each	45	900
Bike and hiking trail	1,000	Lin. ft.	8	8,000
Lighting	6	Each	700	4,200
Maintenance building with				
comfort station	1	Job	Lump sum	25,000
Control building	1	Job	Lump sum	15,000
Contingencies				7,507
Subtotal				70,062
Engineering and design				5,605
Supervision and administration				4,905
Total recreation cost				<u>\$80,572</u>

TABLE 13

Estimated Cost for Recreational Development  
of McKellips Lake

Description of Item	Estimated Quantity	Unit	Unit Cost	Total Cost
Excavation and filling of lake	91,440	Cu. yd.	\$1.00	\$91,440
Salt sealing for lake	348,480	Sq. ft.	.10	34,848
Landscaping				
Turg-hydromulch	522,720	Sq. ft.	.05	26,136
Trees				
24-inch box	15	Each	150.00	2,250
15 gal.	15	Each	45.00	675
5 gal.	20	Each	15.00	300
Irrigation - automatic				
sprinklers	522,720	Sq. ft.	.09	47,045
Comfort station	1	Job	Lump sum	25,000
Pump	1	Each	8,000	8,000
Ramadas	7	Each	8,000	8,000
Picnic tables	15	Each	100	1,500
Grills	15	Each	75	1,125
Hose bibs	15	Each	75	1,125
Refuse containers	15	Each	45	675

TABLE 13 (Continued)

Estimated Cost for Recreational Development  
of McKellips Lake

Description of Item	Estimated	Unit	Unit	Total
	Quantity	Unit	Cost	Cost
Parking	22,500	Sq. ft.	.55	12,500
Bike and hiking trail	5,000	Lin. ft.	8.00	40,000
Lighting	12	Acre	1,400	16,800
Group picnic structure	1	Job	Lump sum	30,000
Patio	500	Sq. ft.	4	2,000
Picnic tables for group picnic	30	Each	100	3,000
Fire pits	4	Each	3,000	12,000
Refuse containers	10	Each	45	450
				<hr/>
Subtotal				377,069
Contingencies				45,248
				<hr/>
Subtotal				422,317
Engineering and design				33,785
Supervision and administration				29,565
				<hr/>
Total				<u>\$485,667</u>

**CONCLUSIONS**

98. With its new aspect of recreational design in a major flood-control channel, this Recreational Master Plan for Indian Bend Wash would accomplish the following objectives:

a. Optimize the use of the land and water areas required for flood-control purposes by providing a new and unique recreational development in a major floodway.

b. Preserve and enhance the environmental and scenic qualities of the project area.

c. Meet to some extent Maricopa County's recreational demands.

d. Insure the preservation of open space in a rapidly developing area.

**RECOMMENDATIONS**

99. It is recommended that this Recreational Master Plan for Indian Bend Wash be approved so as to accomplish the following:

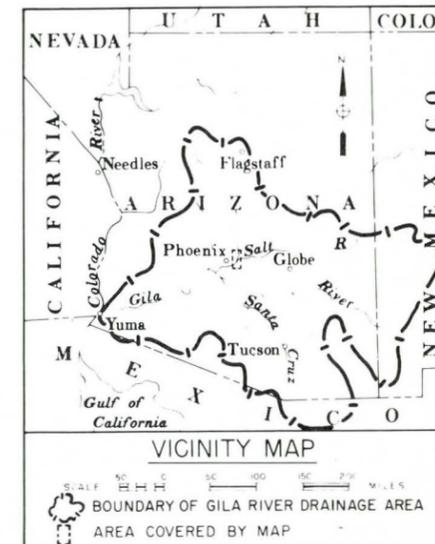
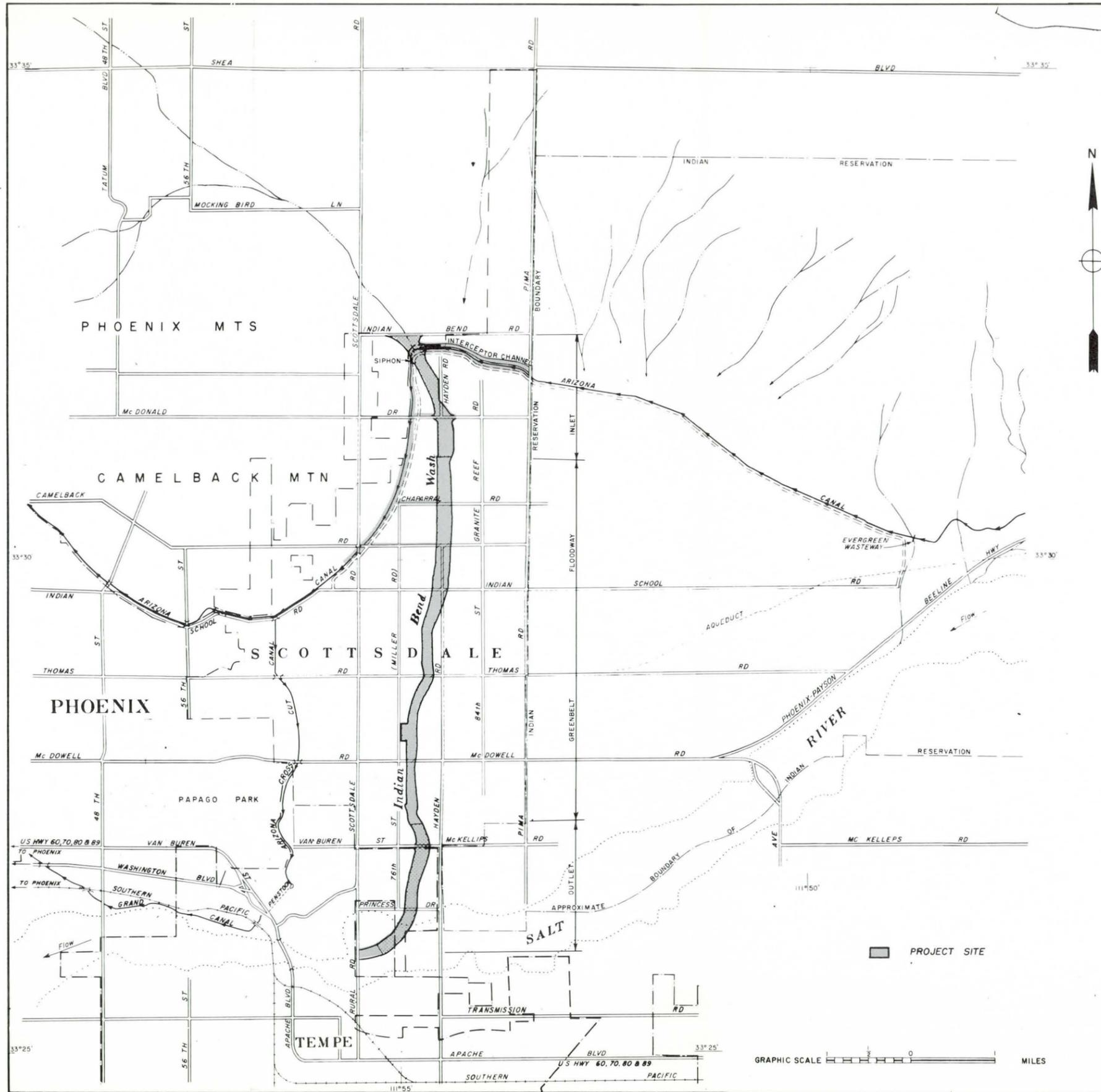
a. Serve as the basis for the enhancement, development, and preservation of the natural surroundings of the southwest environment.

b. Meet the recreational needs of the people in this area.

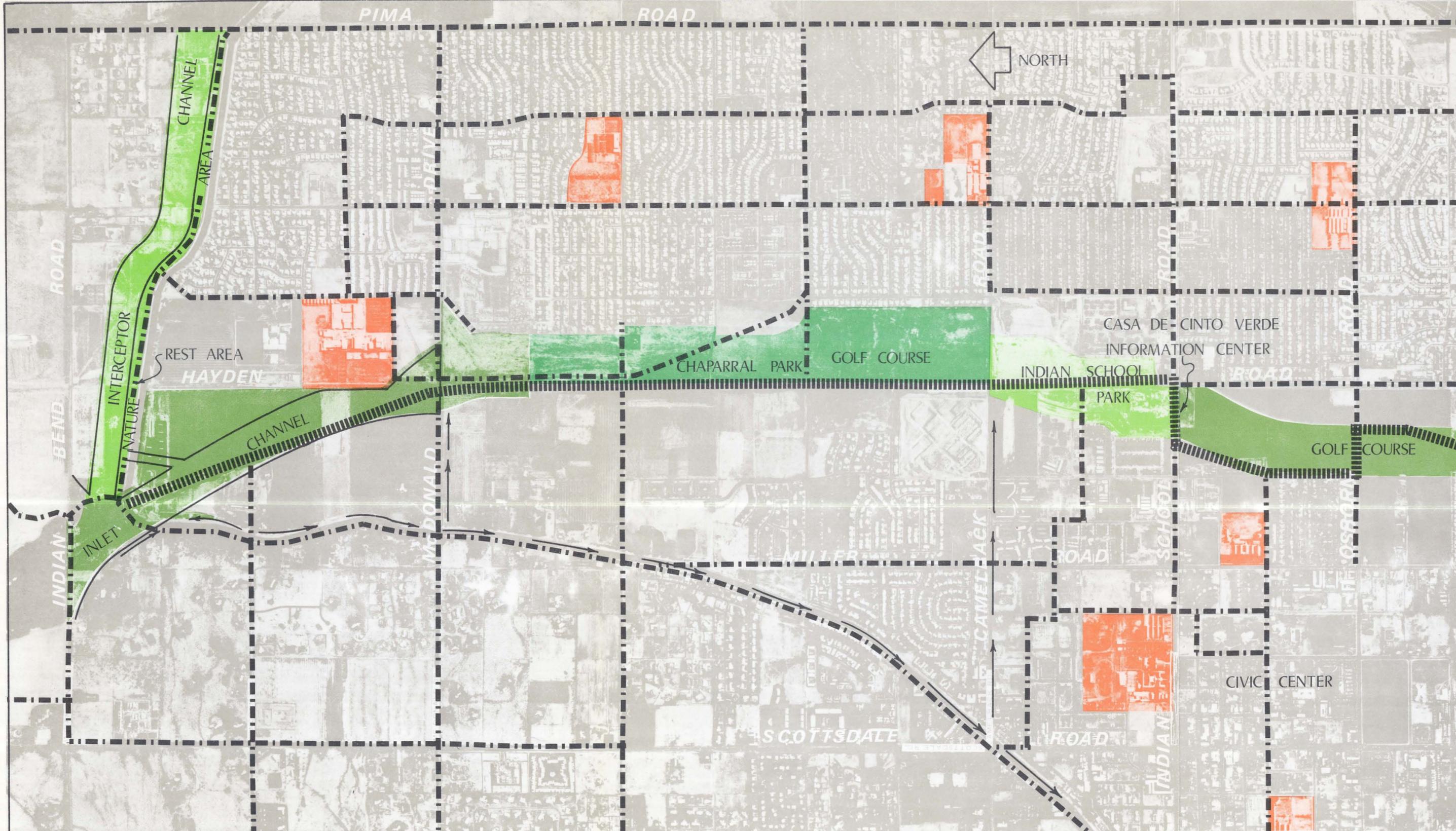
c. Provide a guideline in the preparation of plans and specifications for construction.

13

PLATES



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	<b>GILA RIVER BASIN, ARIZONA INDIAN BEND WASH RECREATION MASTER PLAN VICINITY MAP</b>		
DRAWN BY: <i>RSN</i>			
CHECKED BY:			
SUBMITTED BY:	APPROVED:	SHEET	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09-...	OF	
	DISTRICT FILE NO.	SHEETS	

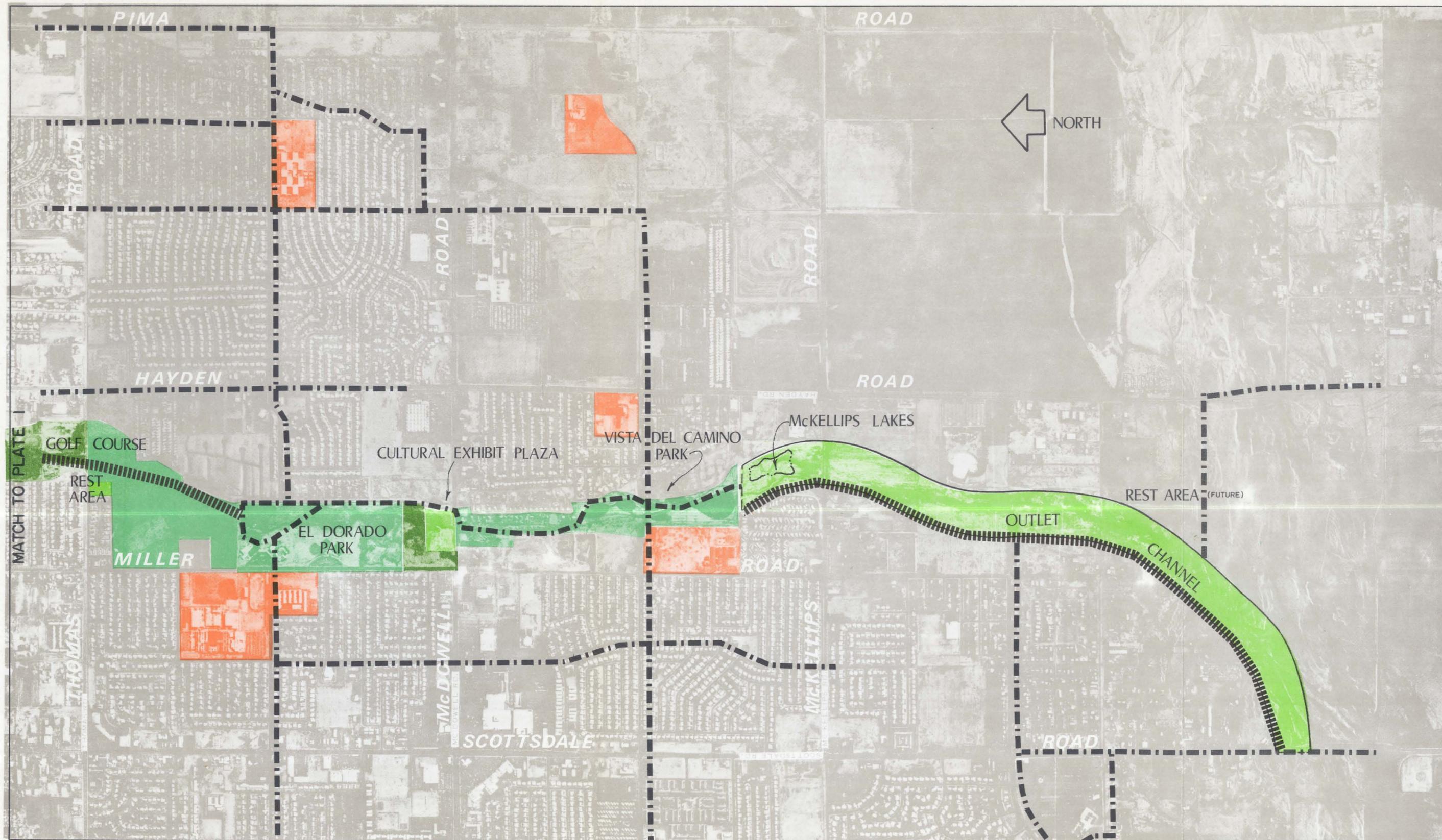


**LEGEND**

- Recommended by Crops of Engineers
- Recreation Area
- Trail System
- Collector Channels
- Boundary of Structural Flood Control Measures
- Local Facilities
- Existing Recreation Area
- Proposed Recreation Area
- Local Trails
- School

MATCH TO PLATE 2

GILA RIVER BASIN, ARIZONA  
 INDIAN BEND WASH  
 GENERAL RECREATION PLAN  
 INDIAN BEND ROAD TO OSBORN ROAD  
 LOS ANGELES DISTRICT  
 U.S. ARMY CORPS OF ENGINEERS



**LEGEND**

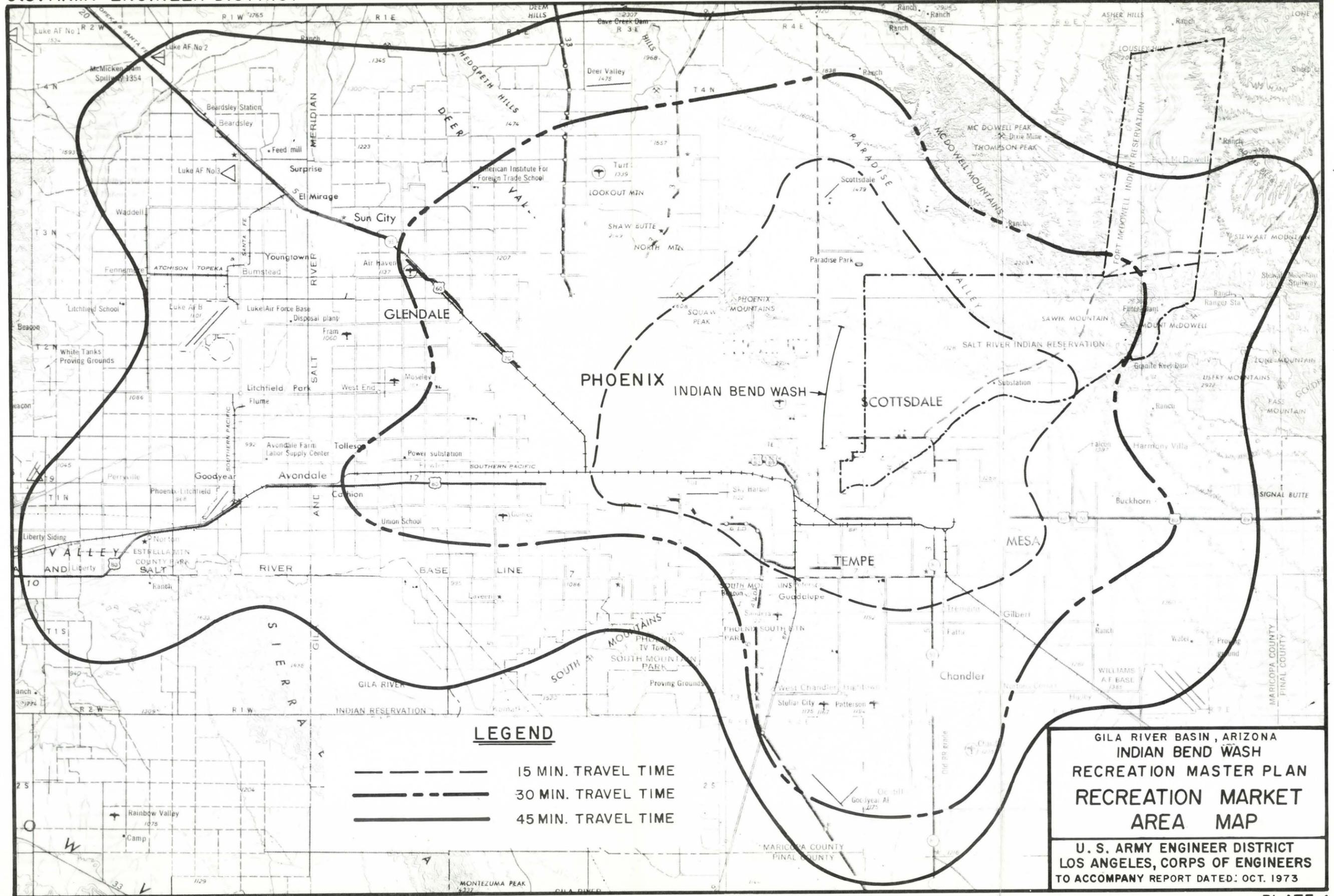
Recommended by Corps of Engineers

- Recreation Area
- Trail System
- Collector Channels
- Boundary of Structural Flood Control Measures

Local Facilities

- Existing Recreation Area
- Proposed Recreation Area
- Local Trails
- School

GILA RIVER BASIN, ARIZONA  
 INDIAN BEND WASH  
 GENERAL RECREATION PLAN  
 THOMAS ROAD TO SCOTTSDALE ROAD  
 LOS ANGELES DISTRICT  
 U.S. ARMY CORPS OF ENGINEERS

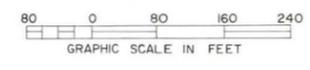
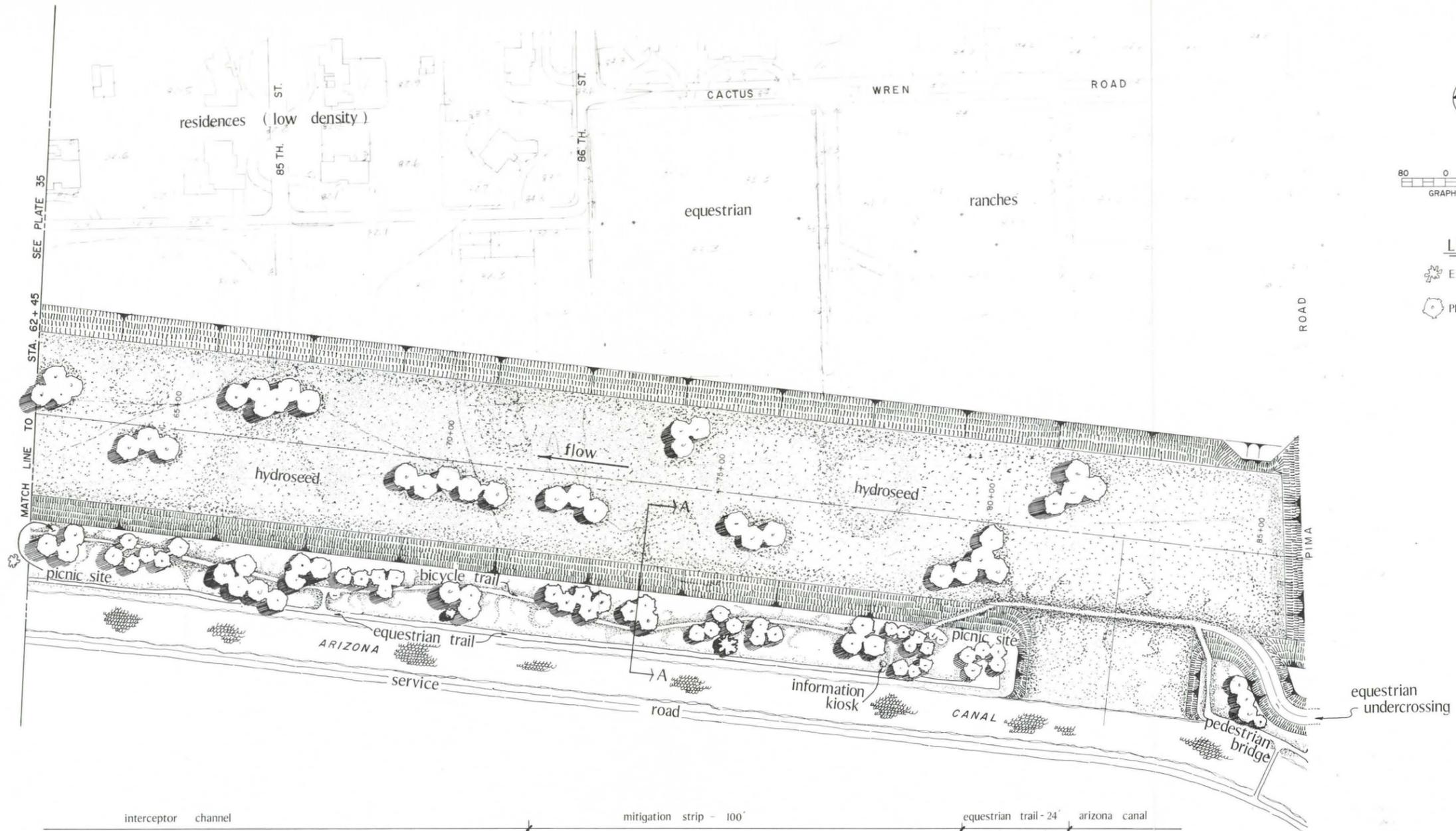


**LEGEND**

- 15 MIN. TRAVEL TIME
- . - . - . 30 MIN. TRAVEL TIME
- 45 MIN. TRAVEL TIME

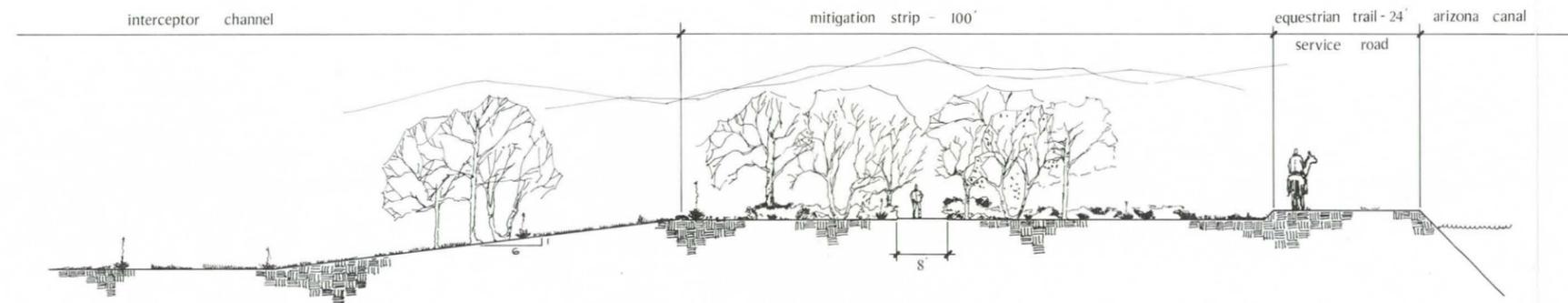
GILA RIVER BASIN, ARIZONA  
 INDIAN BEND WASH  
 RECREATION MASTER PLAN  
 RECREATION MARKET  
 AREA MAP

U. S. ARMY ENGINEER DISTRICT  
 LOS ANGELES, CORPS OF ENGINEERS  
 TO ACCOMPANY REPORT DATED: OCT. 1973



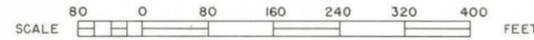
**LEGEND**

- EXISTING VEGETATION
- PROPOSED PLANTINGS



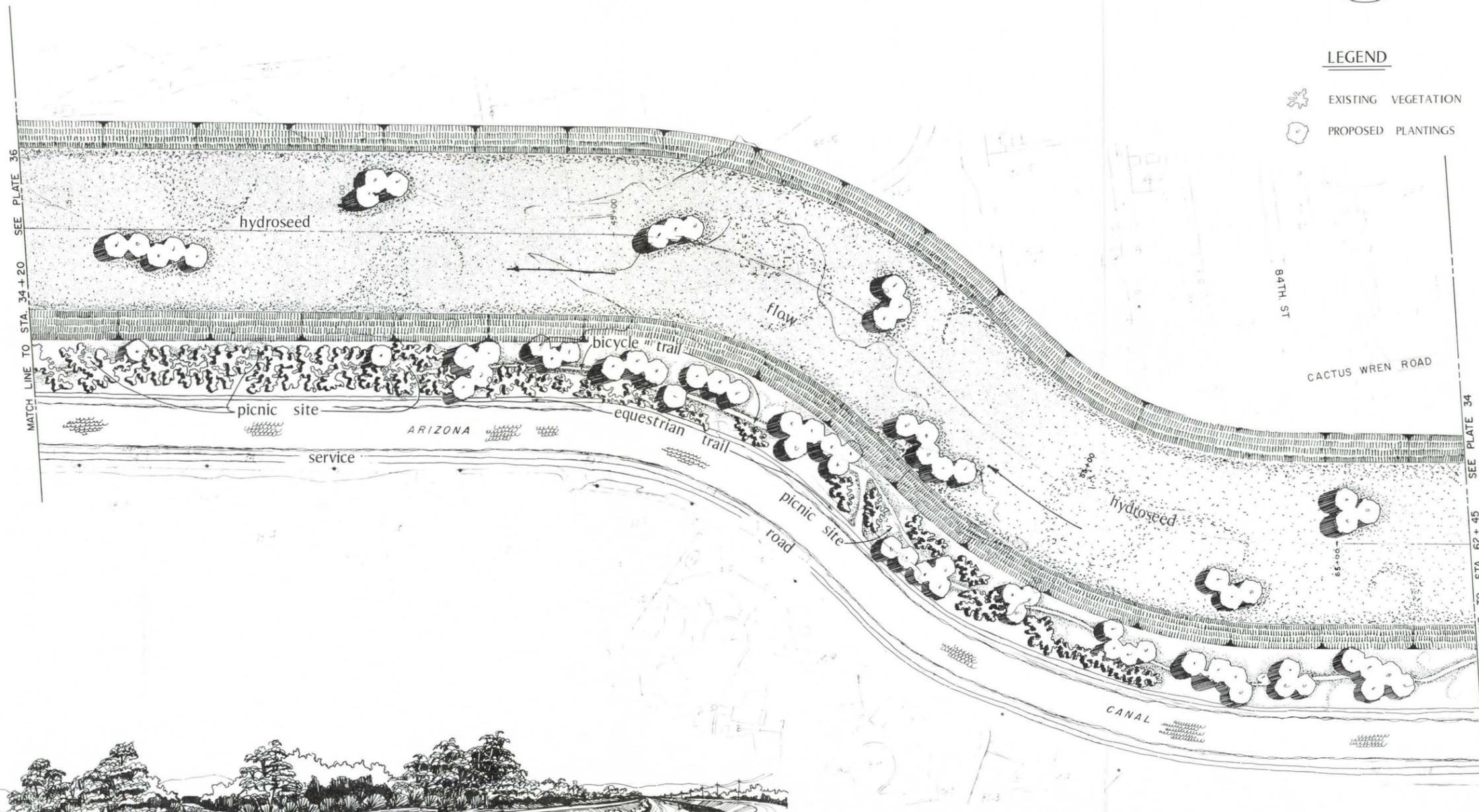
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DRAWN BY:	<b>INDIAN BEND WASH RECREATION MASTER PLAN INTERCEPTOR CHANNEL STA. 85+90 TO STA. 62+45</b>		
CHECKED BY:			
SUBMITTED BY:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II		SHEET
DATE:	DISTRICT FILE NO. 2.3 B / 106		

PLAN



LEGEND

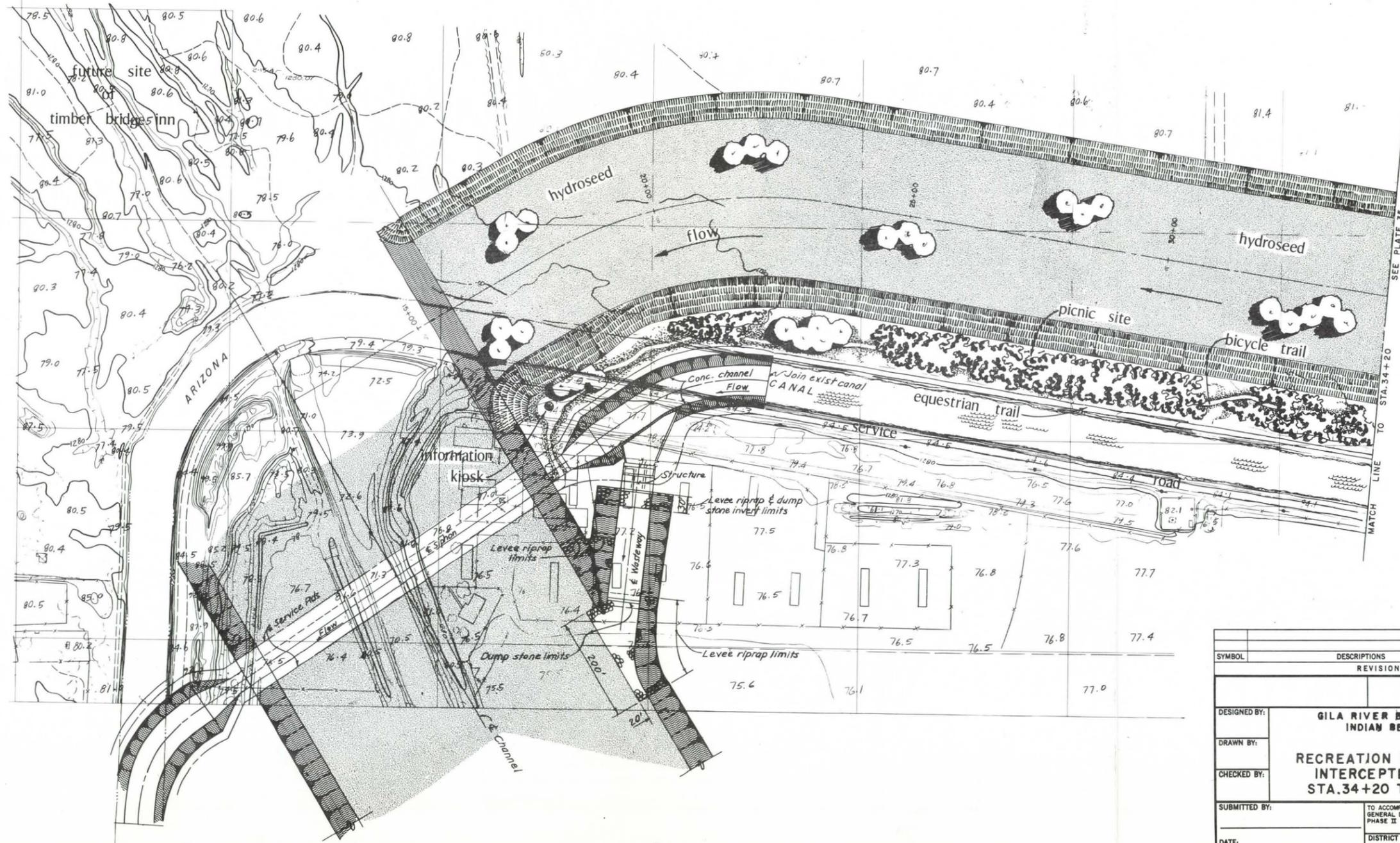
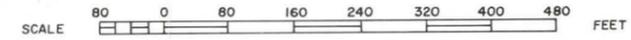
- EXISTING VEGETATION
- PROPOSED PLANTINGS



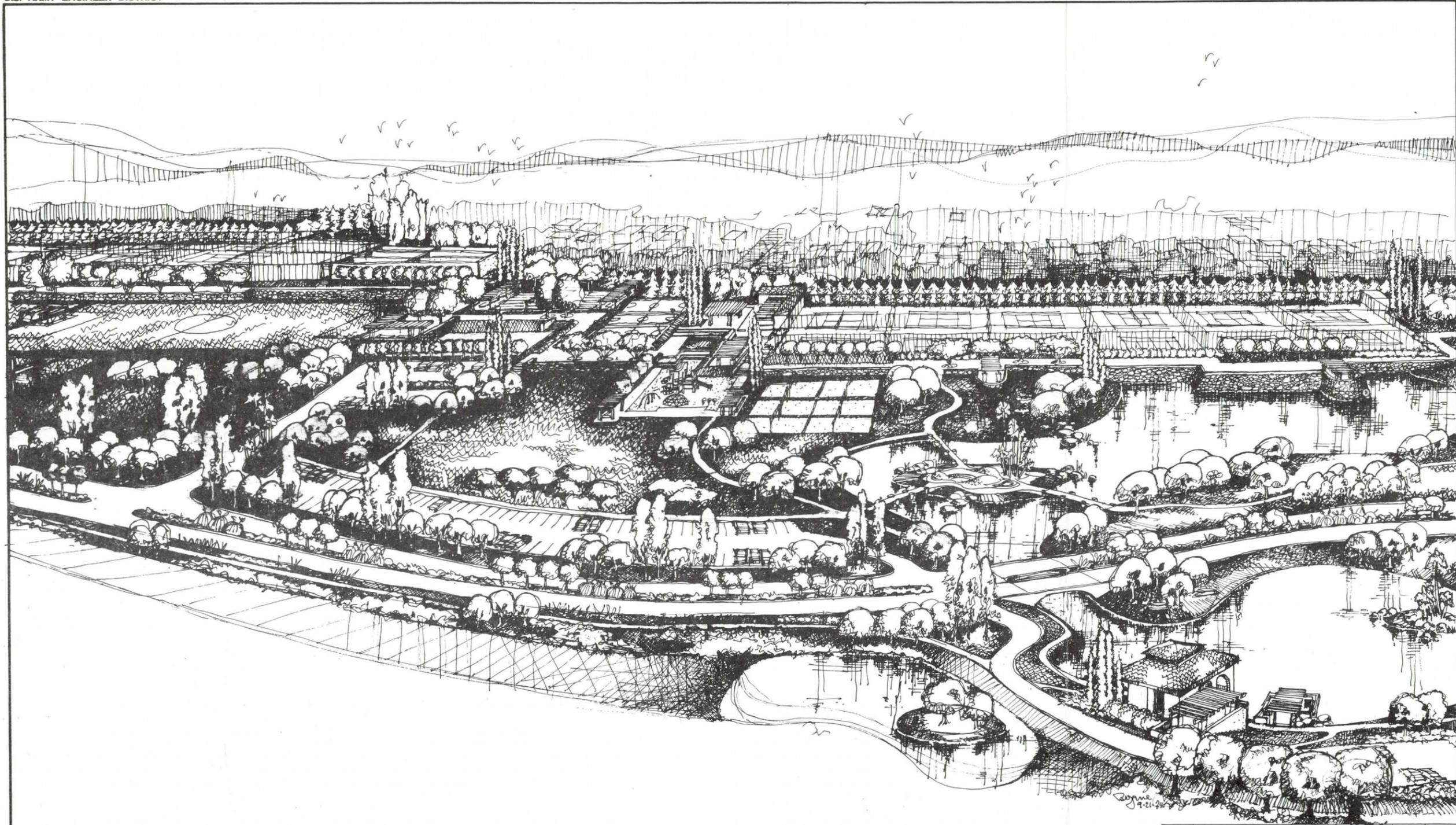
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DRAWN BY:	<b>OUTLET CHANNEL</b> <b>INTERCEPTOR CHANNEL</b>		
CHECKED BY:	<b>STA. 62 + 45 TO STA. 34 + 20</b>		
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DATE:	GENERAL DESIGN MEMORANDUM - PHASE II		
	DISTRICT FILE NO. 238/07		

**LEGEND**

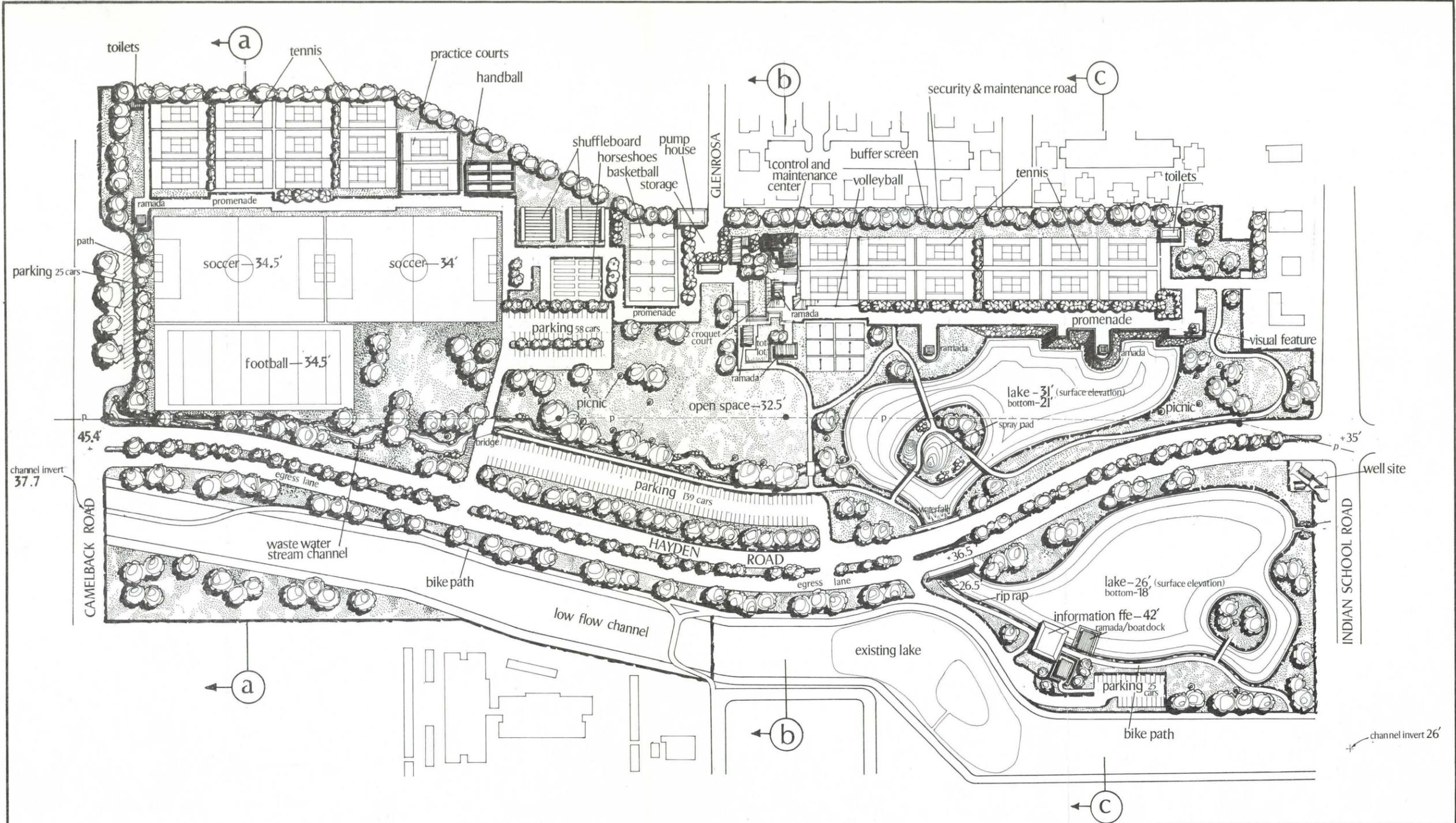
-  PROPOSED PLANTINGS
-  EXISTING VEGETATION



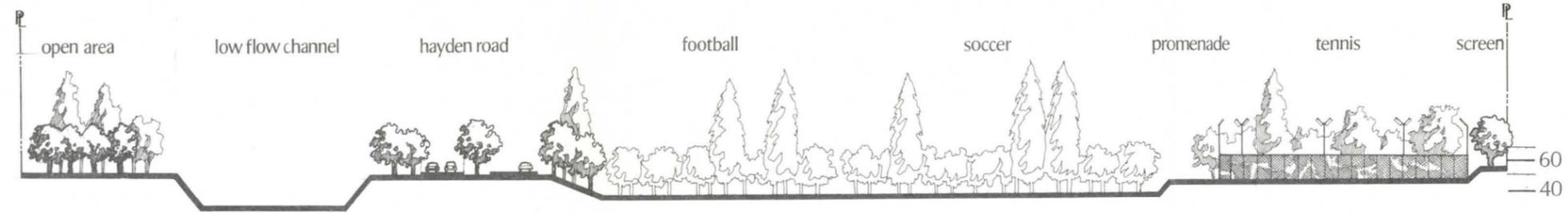
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U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	<b>GILA RIVER BASIN, ARIZONA INDIAN BEND WASH</b>  <b>RECREATION MASTER PLAN INTERCEPTOR CHANNEL STA. 34+20 TO STA. 15+30</b>		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
DATE:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II	SHEET	
	DISTRICT FILE NO. 238/108		



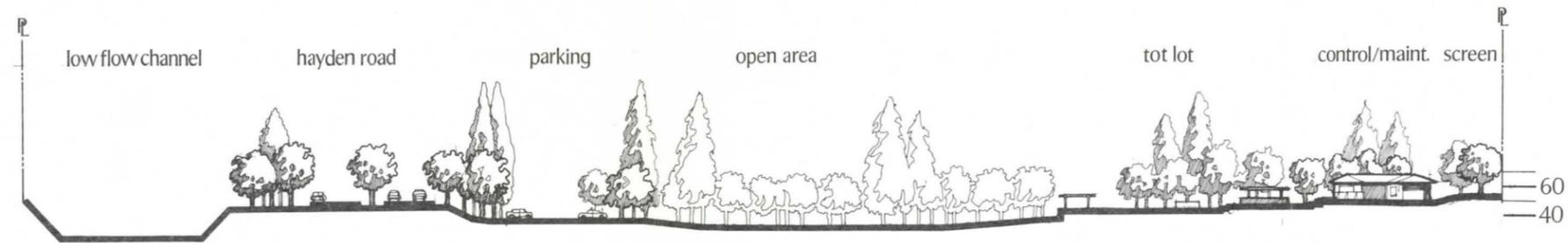
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DRAWN BY:	INDIAN BEND WASH			
CHECKED BY:	RECREATION MASTER PLAN INDIAN SCHOOL PARK OVERALL PERSPECTIVE			
SUBMITTED BY:	CHEF:	MAJEST:	APPROVED:	SHEET
APPROVAL RECOMMENDED:	CHEF, ENGINEERING DIVISION		SPEC. NO. DACW 09- _____ B- _____	OF SHEETS
			DISTRICT FILE NO.	SHEETS



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
GILA RIVER BASIN, ARIZONA			
INDIAN BEND WASH			
RECREATION MASTER PLAN INDIAN SCHOOL PARK PLAN VIEW			
DESIGNED BY:			
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	APPROVED:	SHEET	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- B- ----	OF	
	DISTRICT FILE NO.	SHEETS	



section a-a



section b-b



section c-c

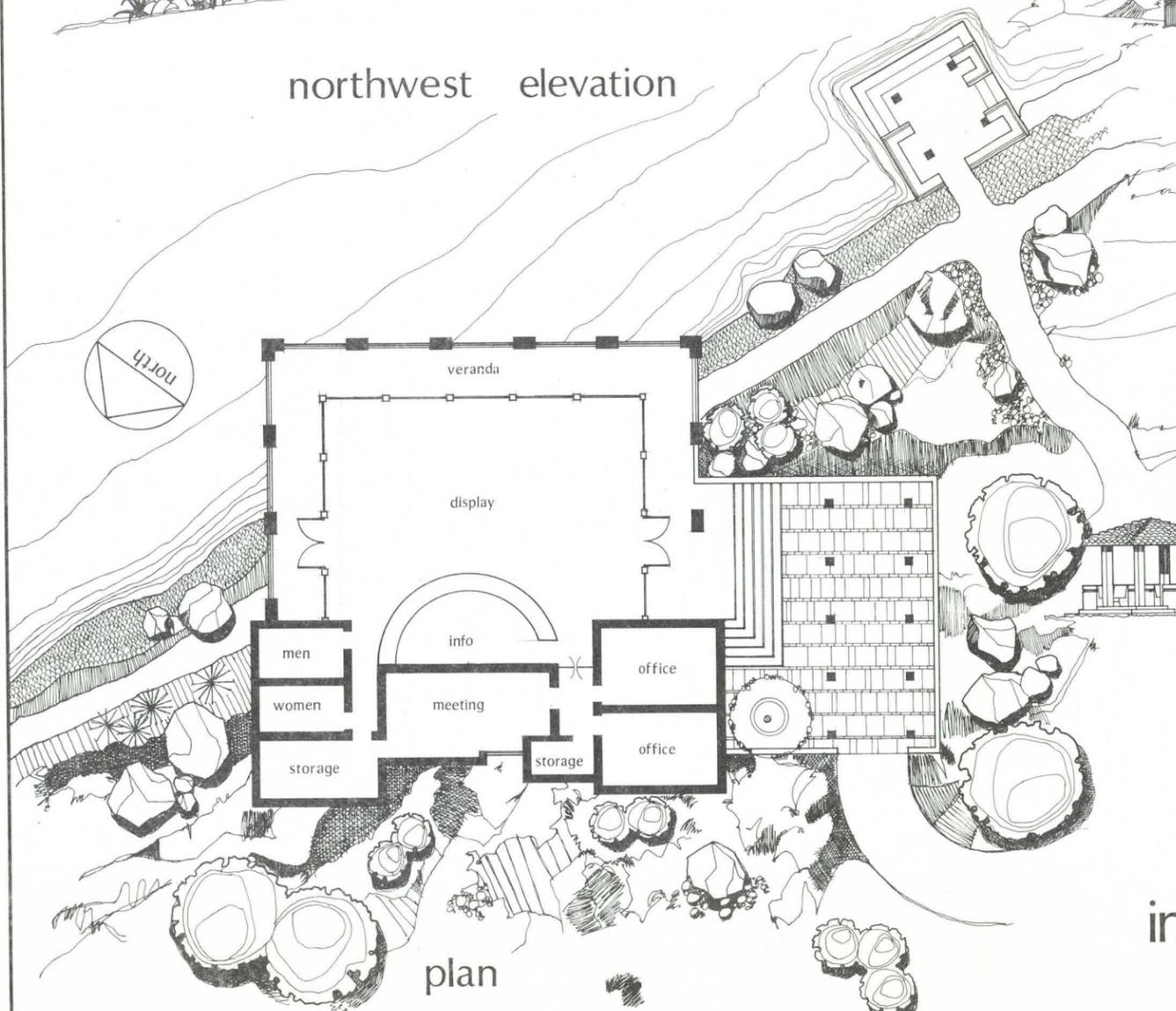
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GILA RIVER BASIN, ARIZONA				
INDIAN BEND WASH				
RECREATION MASTER PLAN INDIAN SCHOOL PARK TYPICAL CROSS SECTIONS				
DESIGNED BY:				
DRAWN BY:				
CHECKED BY:				
SUBMITTED BY:	APPROVED:			SHEET
				OF
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09-...	DISTRICT FILE NO.		SHEETS

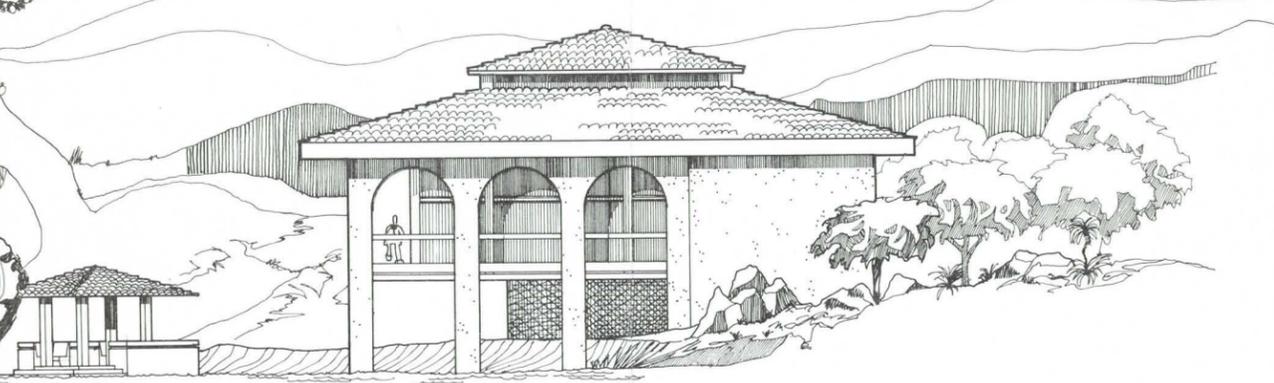


northwest elevation

southeast elevation



plan

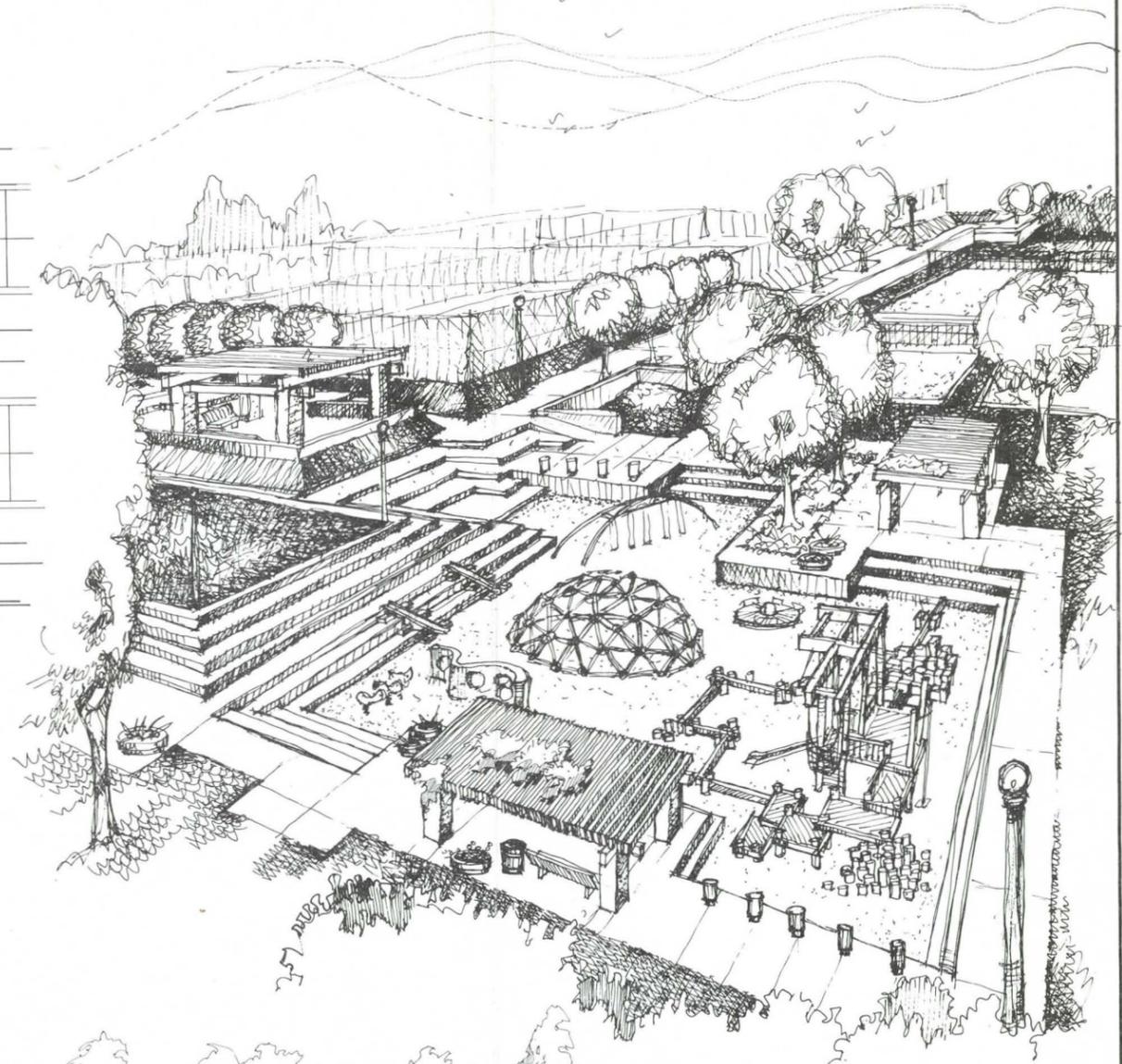
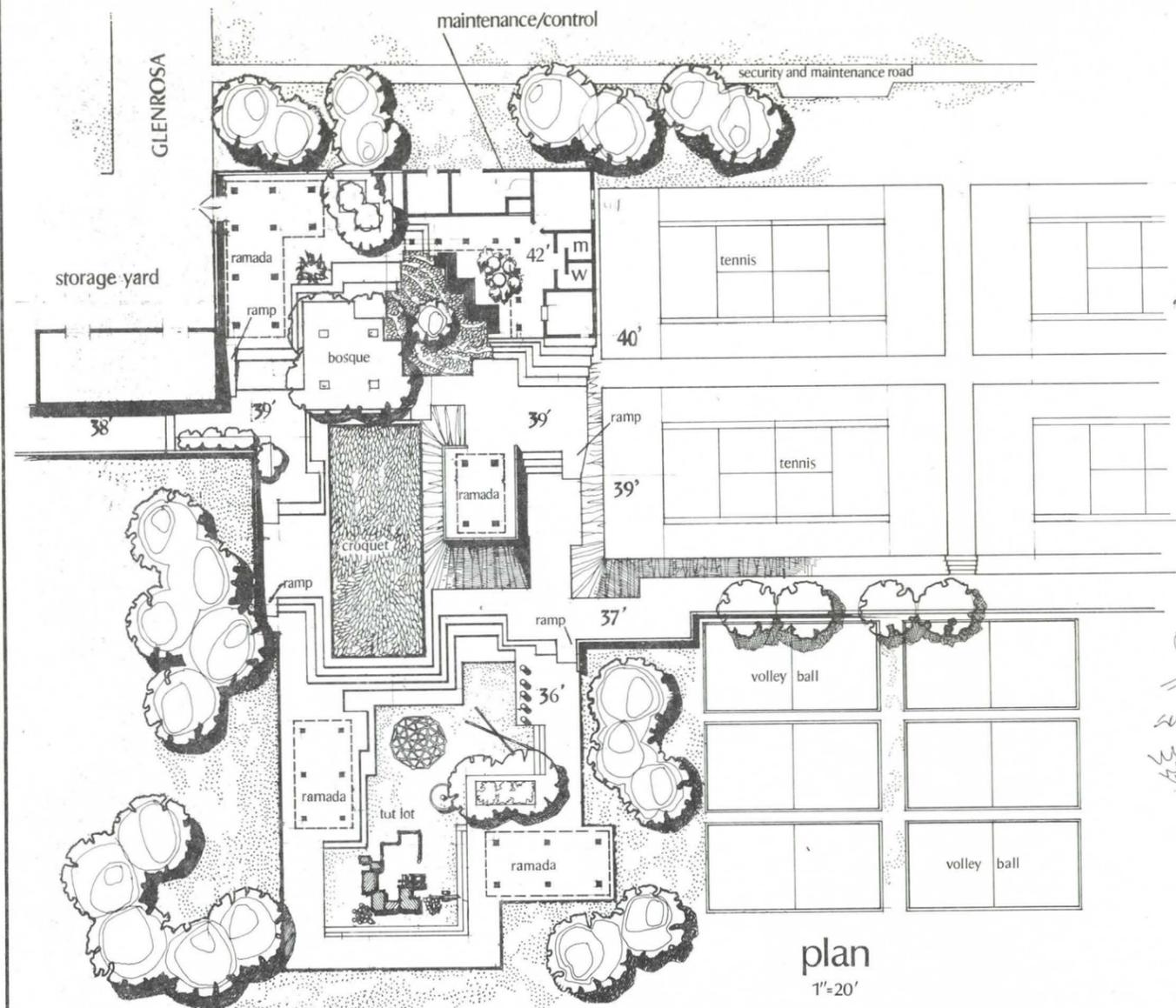


northeast elevation

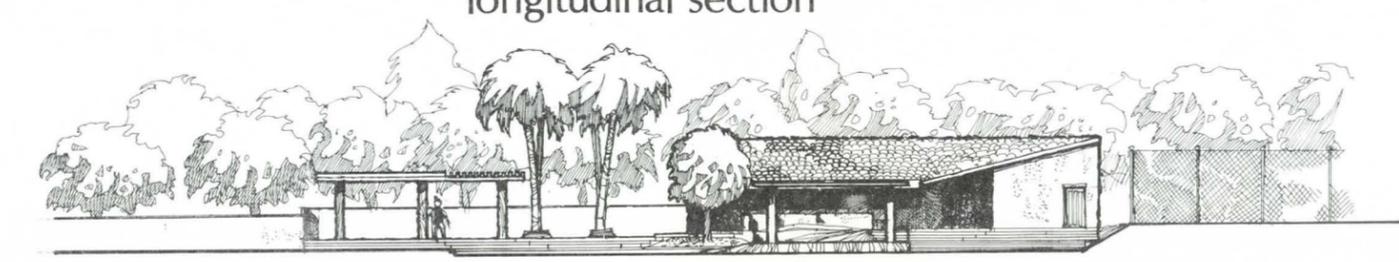
information center

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SYMBOL	DESCRIPTIONS	DATE	APPROVAL
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DRAWN BY:	INDIAN BEND WASH		
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APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- B- DISTRICT FILE NO.	OF	SHEETS

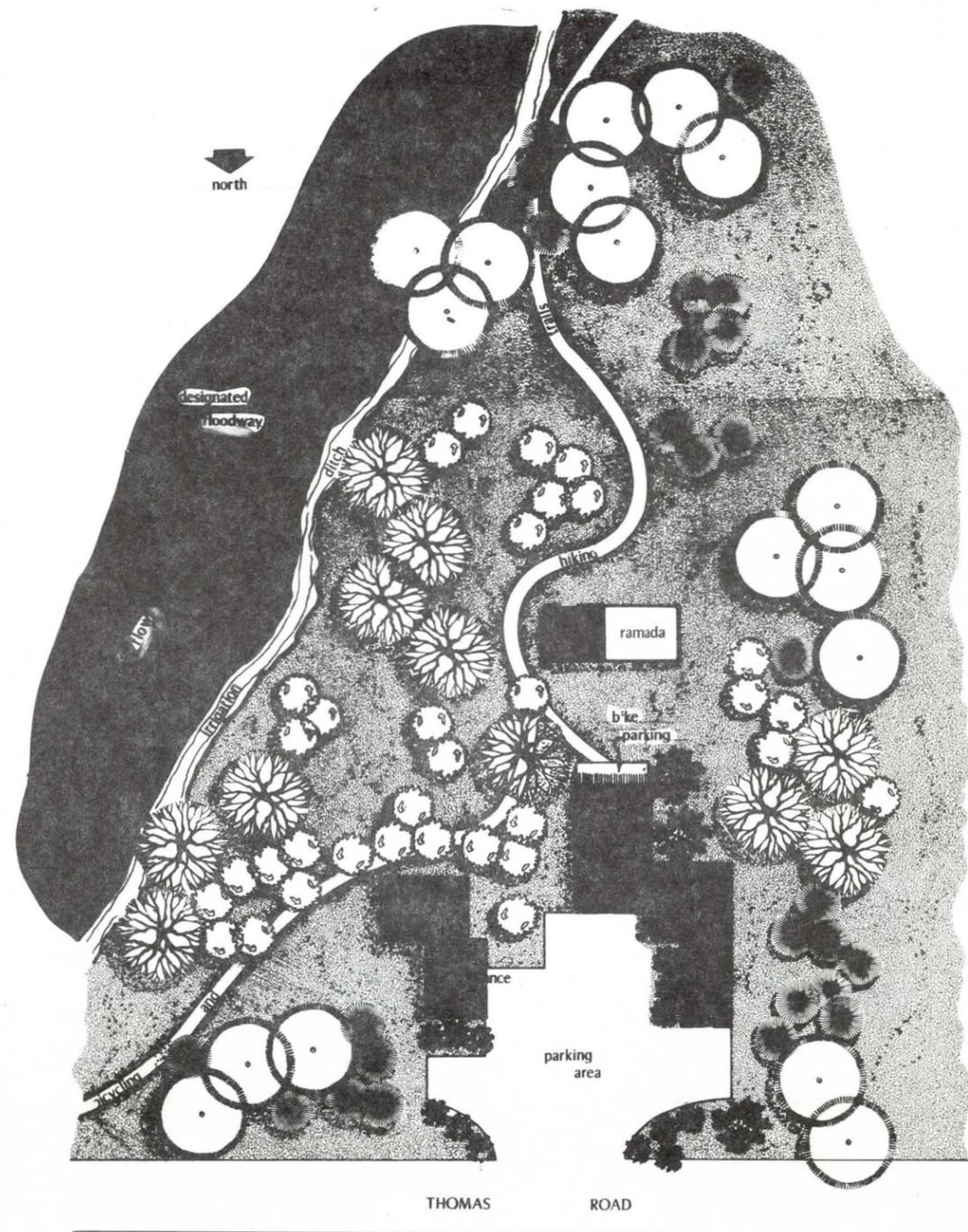


longitudinal section

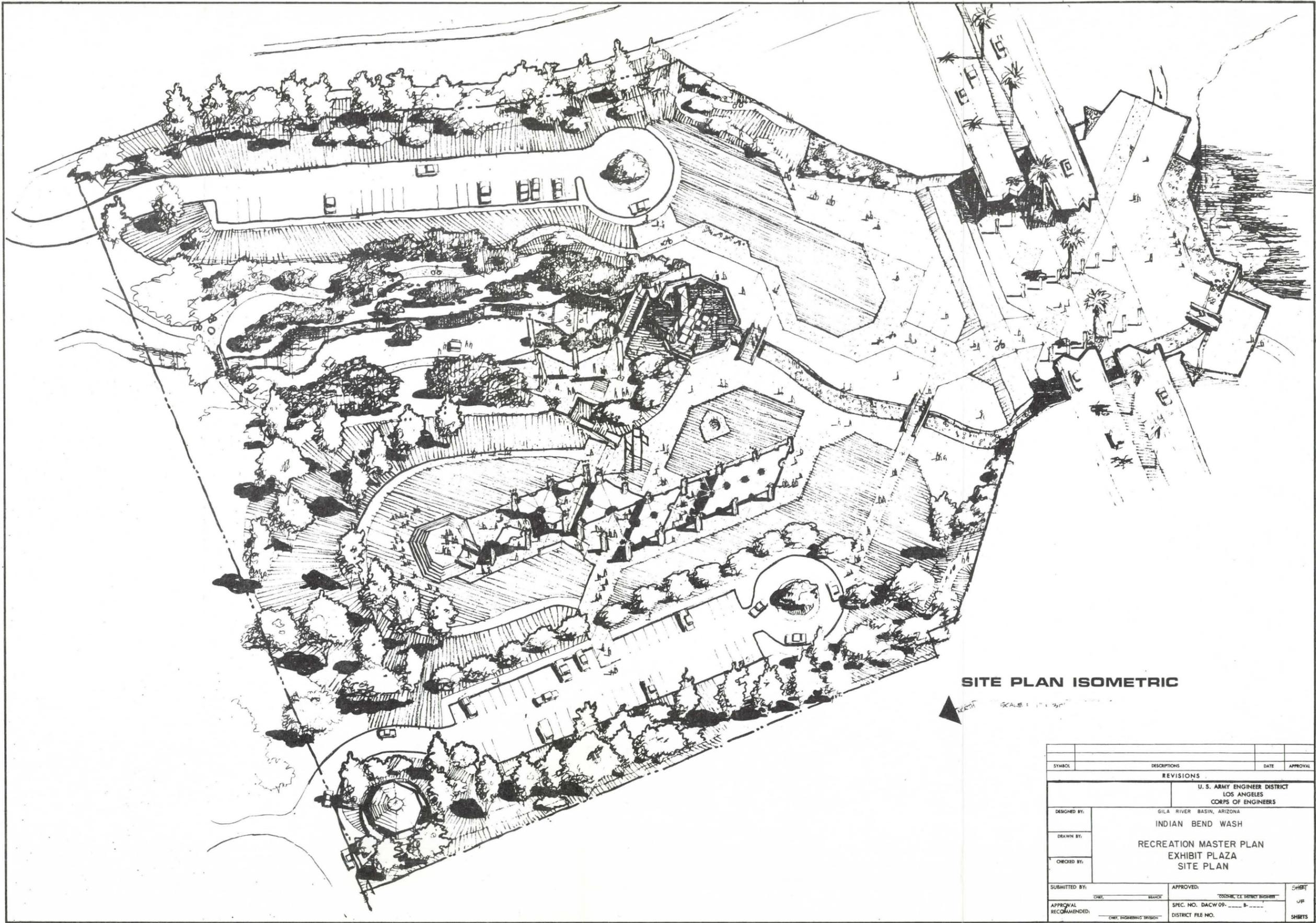


transverse section

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
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DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	RECREATION MASTER PLAN INDIAN SCHOOL PARK TOT LOT		
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APPROVAL	SPEC. NO. DACW 09-	OF	
RECOMMENDED:	DISTRICT FILE NO.	SHEETS	



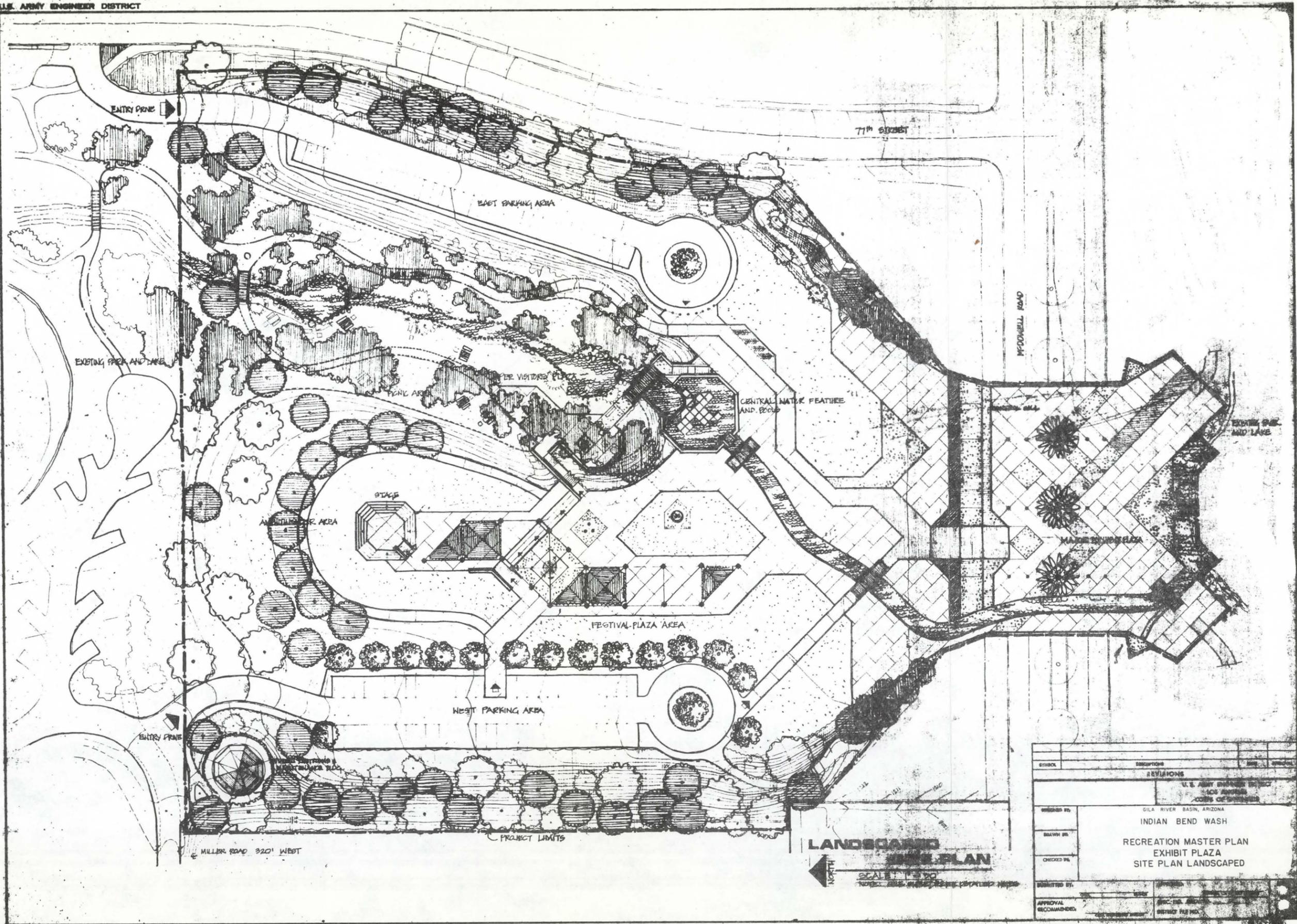
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DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	THOMAS ROAD REST AREA		
SUBMITTED BY:	APPROVED:	SHEET	
THOMAS	COOKING, C.E. DISTRICT ENGINEER	OF	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- _____ B- _____	DISTRICT FILE NO.	
CHRY. ENGINEERING DIVISION	SHEETS		



**SITE PLAN ISOMETRIC**

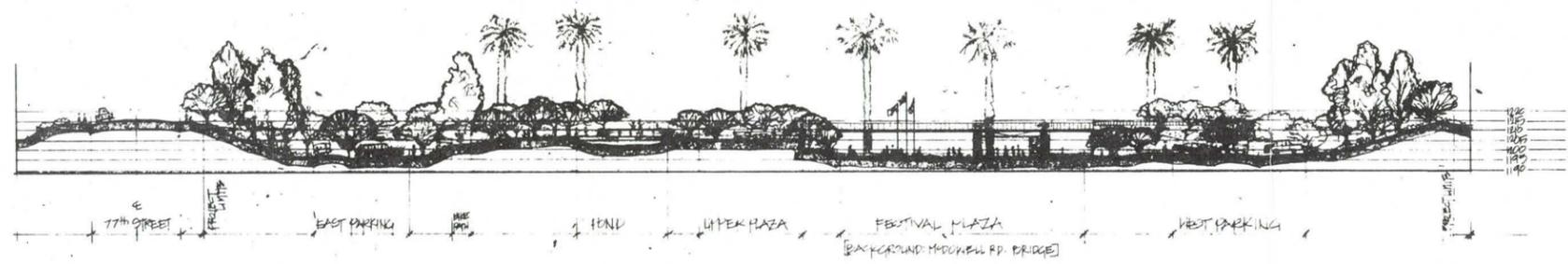
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SYMBOL	DESCRIPTIONS	DATE	APPROVAL
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DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	RECREATION MASTER PLAN EXHIBIT PLAZA SITE PLAN		
SUBMITTED BY:	APPROVED:	SHEET	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09-..... B-.....	UP	
	DISTRICT FILE NO.	SHRETS	



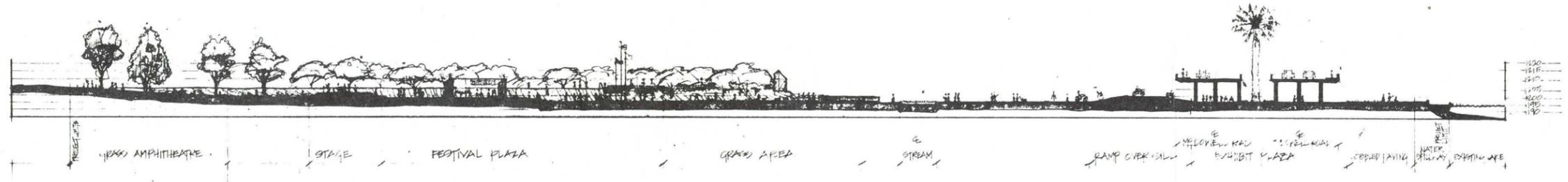
**LANDSCAPE SITE PLAN**  
 SCALE: 1/8" = 1'-0"  
 NORTH

SYMBOL	DESCRIPTION	DATE	SPECIAL
<b>REVISIONS</b>			
U.S. ARMY ENGINEER DISTRICT LOS ANGELES OFFICE OF DISTRICT ENGINEER			
DESIGNED BY	GILA RIVER BASIN, ARIZONA		
DRAWN BY	INDIAN BEND WASH		
CHECKED BY	RECREATION MASTER PLAN EXHIBIT PLAZA SITE PLAN LANDSCAPED		
APPROVED BY	DATE	PROJECT NO.	DISTRICT FILE NO.
APPROVAL RECOMMENDED:			



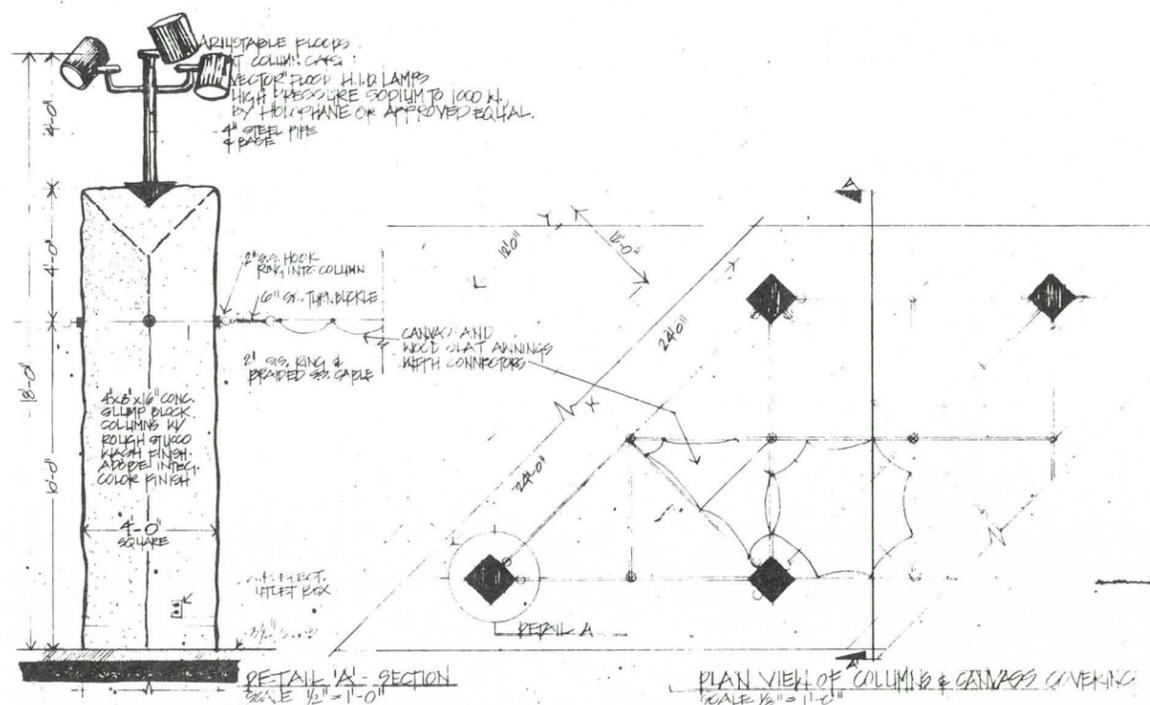
**SITE SECTION-ELEVATION LOOKING SOUTH**  
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A-A

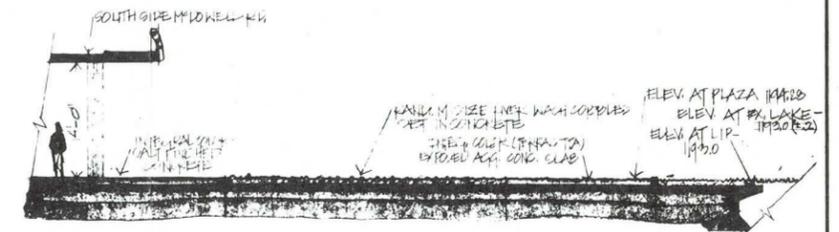


**SITE SECTION LOOKING EAST**  
SCALE: 1" = 30'

B-B



**DETAILS OF FESTIVAL AREA PLAN**



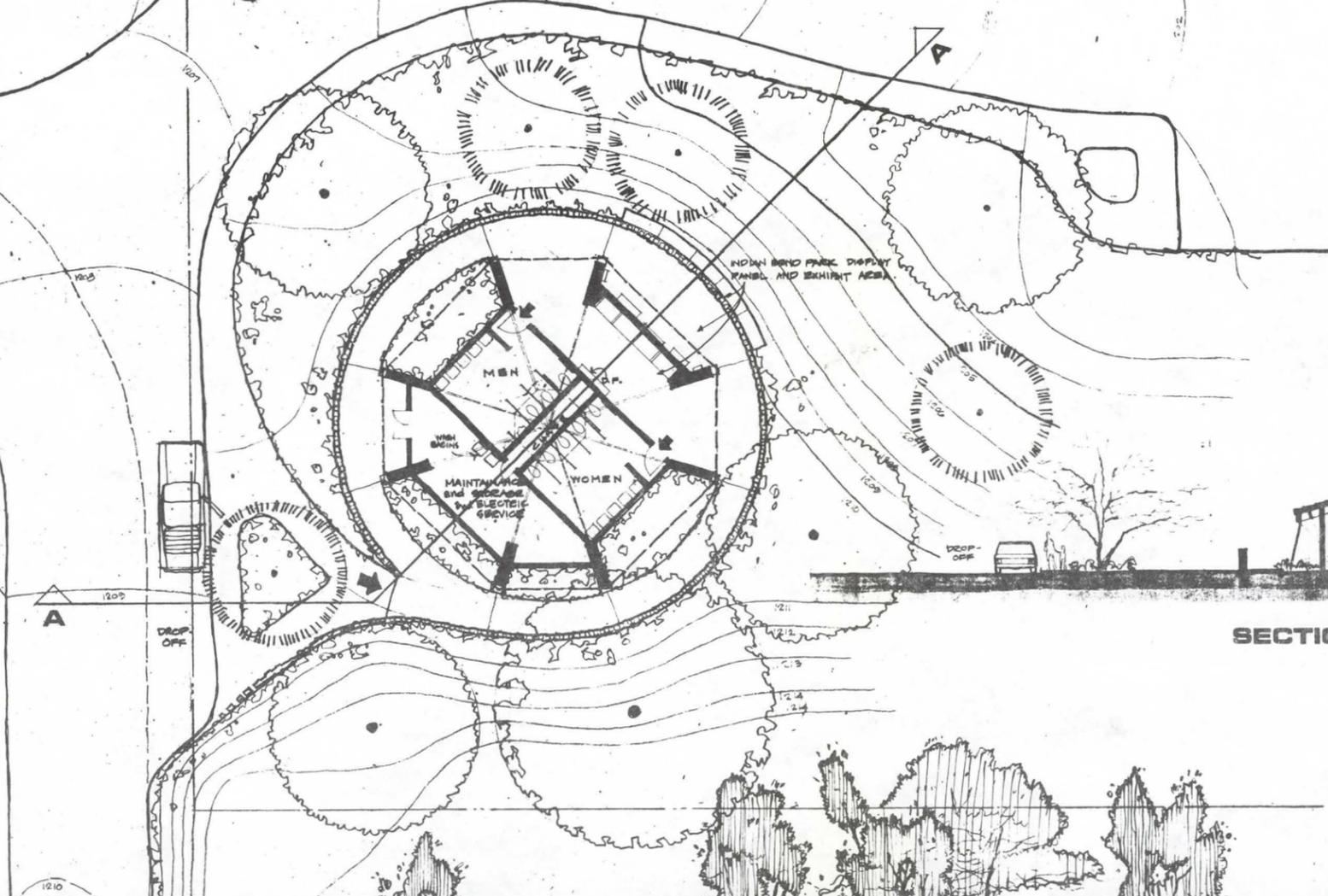
**WATER SPILLWAY SECTION**  
SCALE: 1/8" = 1'-0"



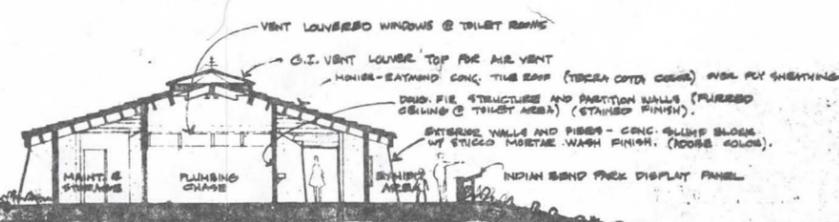
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REVISIONS			
U. S. ARMY ENGINEER DISTRICT. LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	RECREATION MASTER PLAN EXHIBIT PLAZA CROSS SECTIONS		
SUBMITTED BY:	APPROVED:	CORPORAL, DISTRICT ENGINEER	SHEET
APPROVAL RECOMMENDED:	SPEC. NO. DACW 05-	DISTRICT FILE NO.	16

PLAN

NORTH  
SCALE = 1/8" = 1'-0"

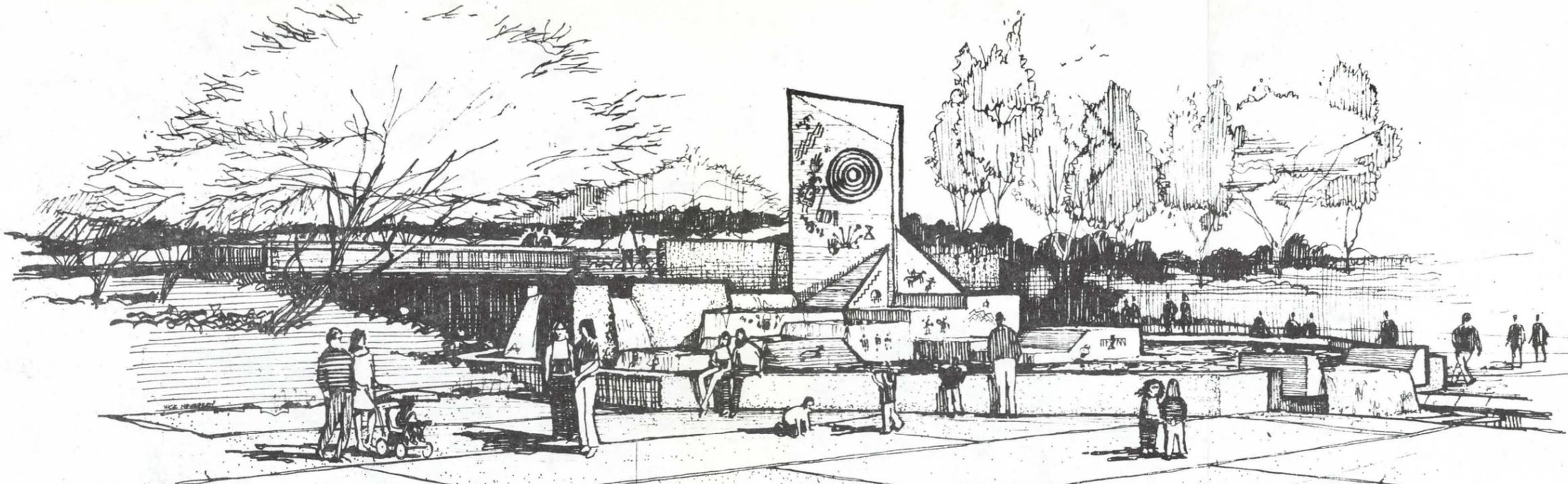


SECTION A-A  
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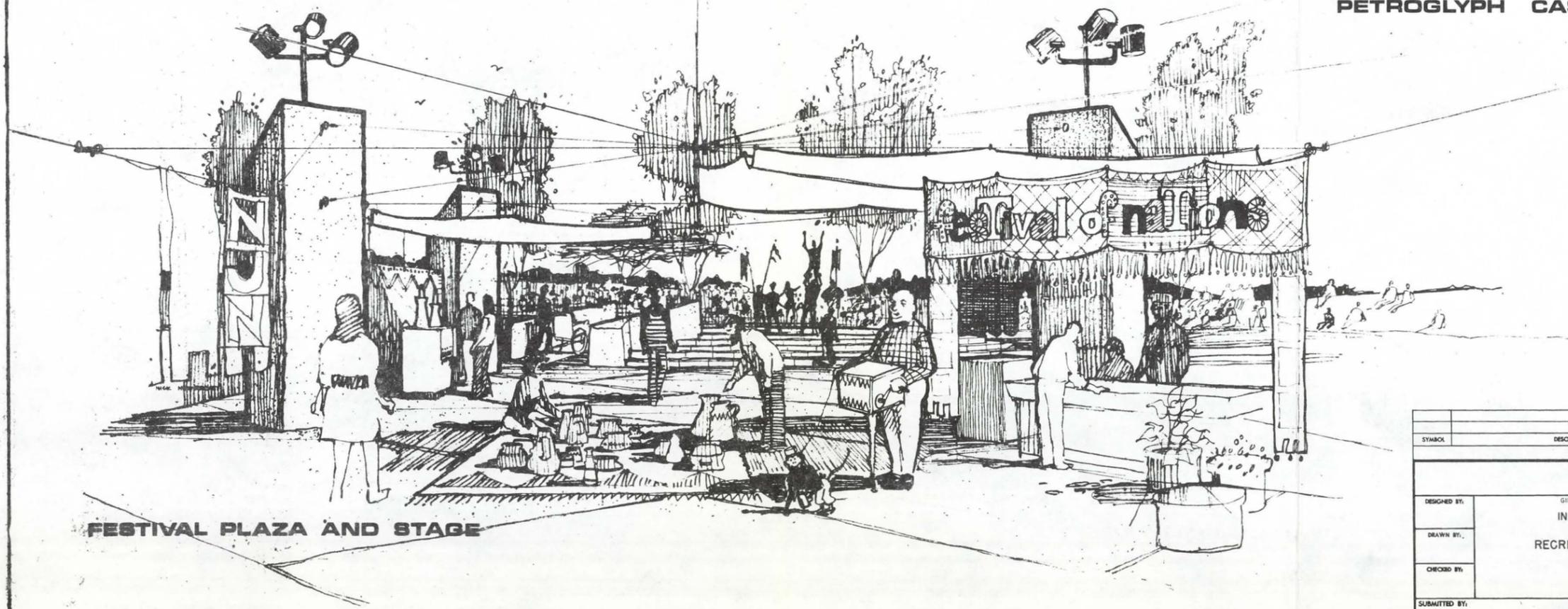


NORTHEAST ELEVATION  
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STAMP	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
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DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	RECREATION MASTER PLAN EXHIBIT PLAZA COMFORT STATION		
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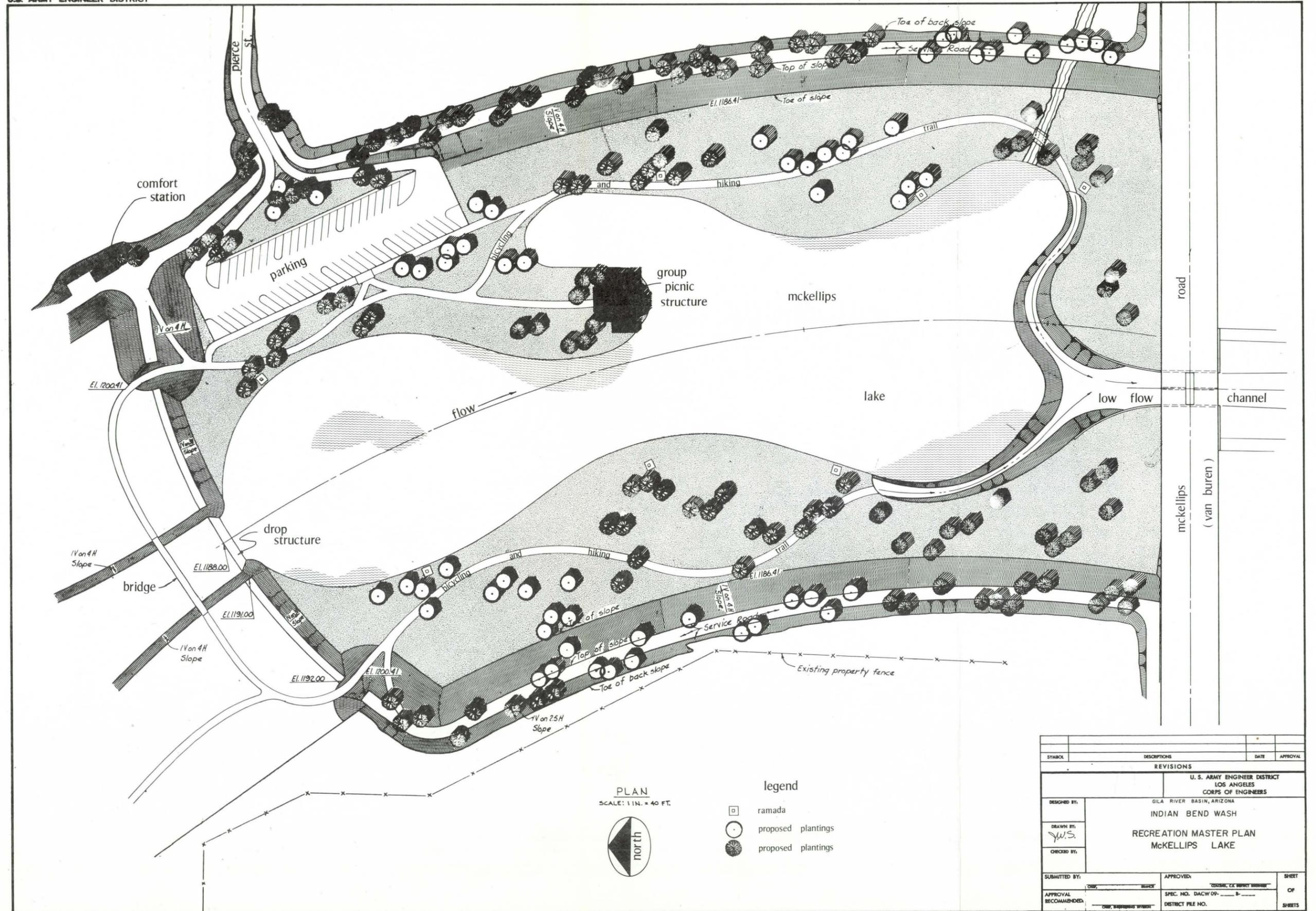


PETROGLYPH CASCADE



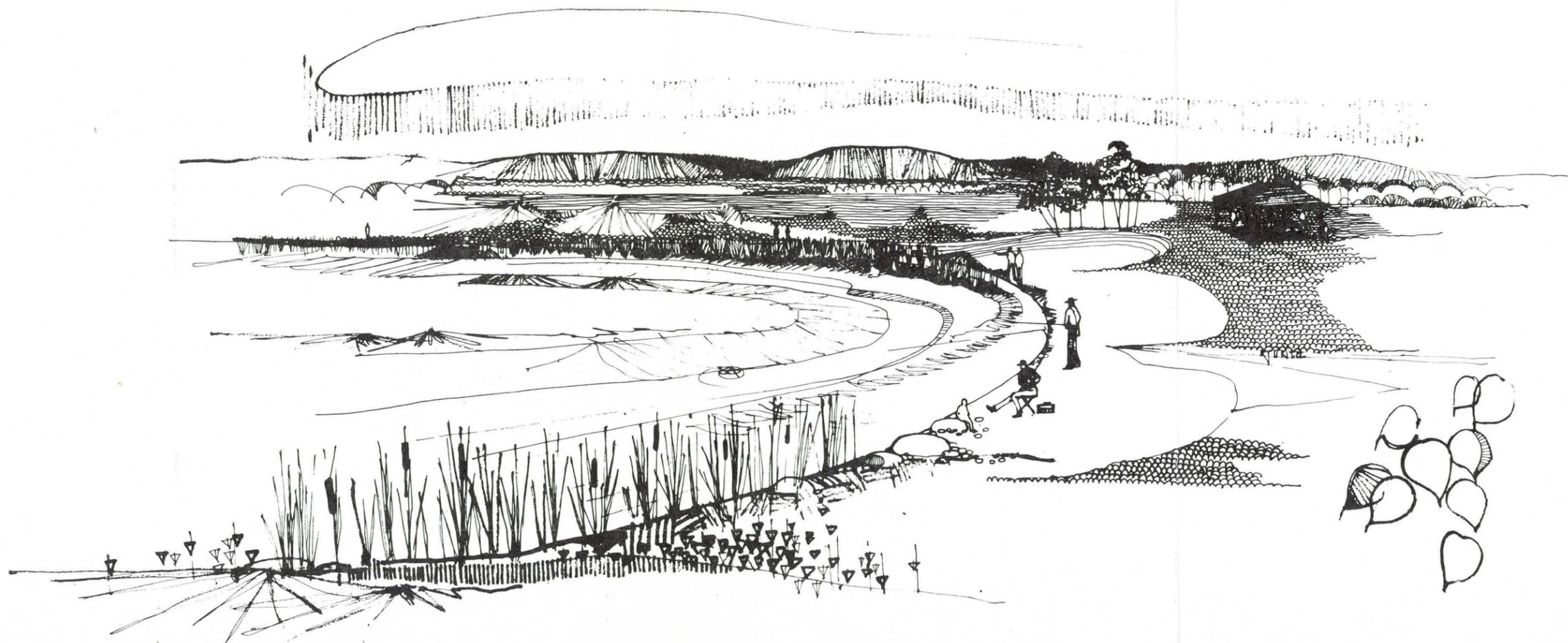
FESTIVAL PLAZA AND STAGE

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
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DRAWN BY:	INDIAN BEND WASH		
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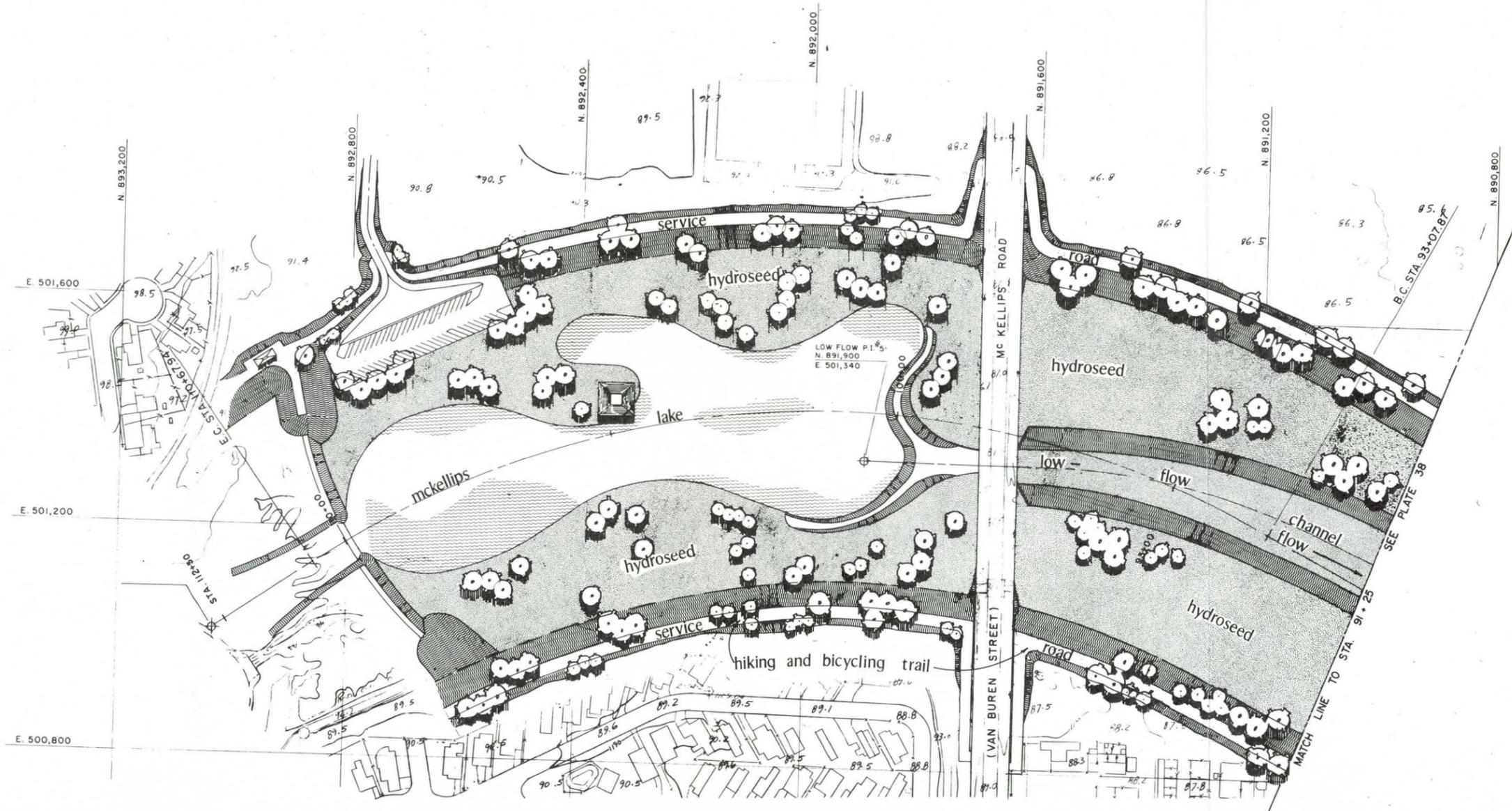


road  
channel  
mckellips  
(van buren)

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
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GILA RIVER BASIN, ARIZONA			
INDIAN BEND WASH			
RECREATION MASTER PLAN McKELLIPS LAKE			
DESIGNED BY:			
DRAWN BY: W.S.			
CHECKED BY:			
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	DISTRICT FILE NO.	SHEETS	



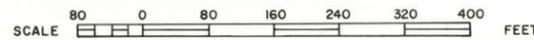
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REVISIONS			
U. S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	<b>GILA RIVER BASIN, ARIZONA</b> <b>INDIAN BEND WASH</b> <b>RECREATION MASTER PLAN</b> <b>McKELLIPS LAKE</b> <b>PERSPECTIVE</b>		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:	APPROVED:	SHEET	
APPROVAL RECOMMENDED:	SPEC. NO. DACW 09- _____	OF	
	DISTRICT FILE NO. _____	SHEETS	



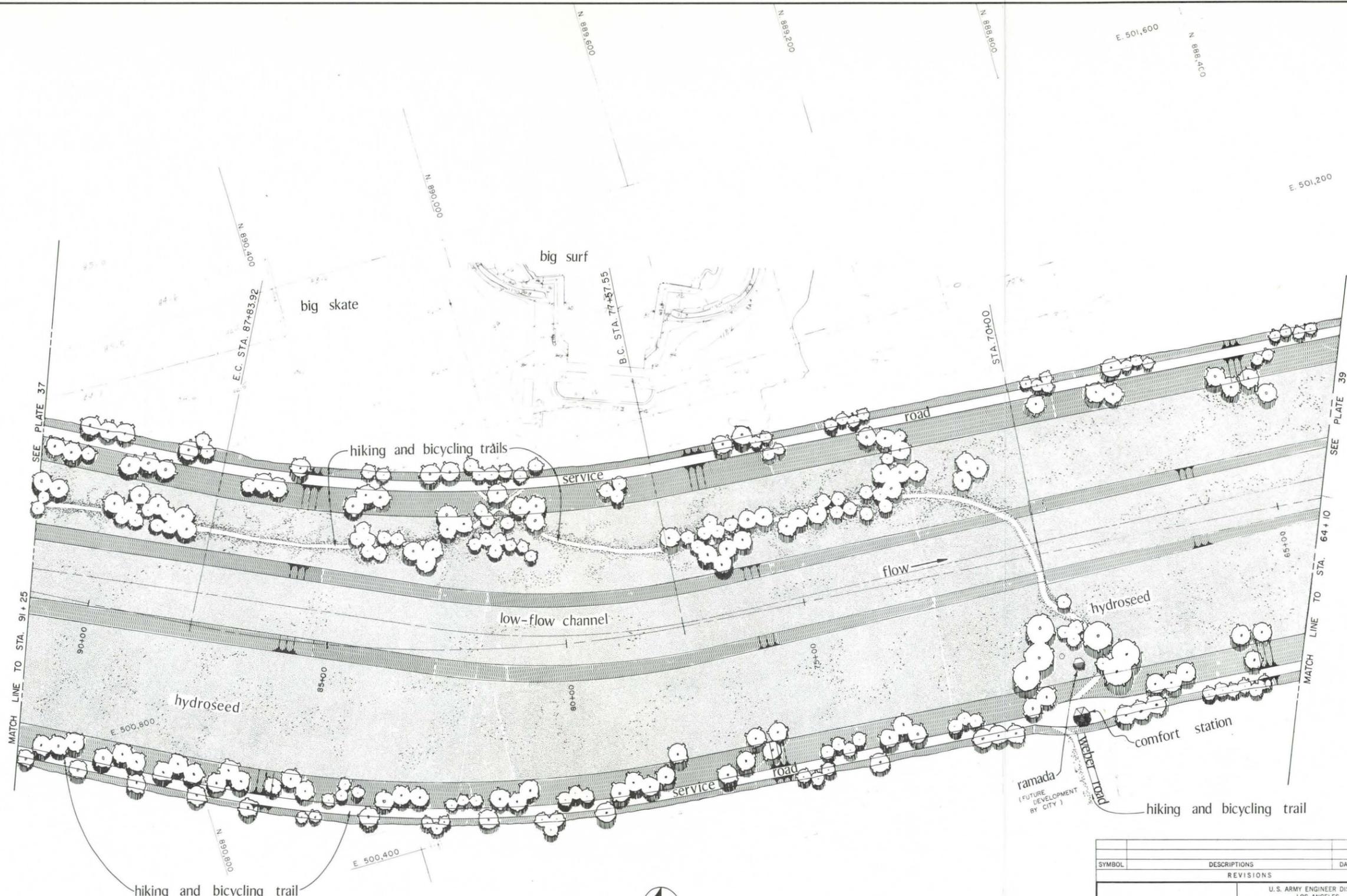
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◊ PROPOSED PLANTINGS

**PLAN**



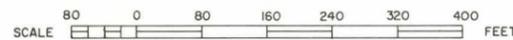
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U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	RECREATION MASTER PLAN OUTLET CHANNEL		
	STA. 110+00 TO STA. 91+25		
SUBMITTED BY:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II		SHEET
DATE:	DISTRICT FILE NO. 238/109		



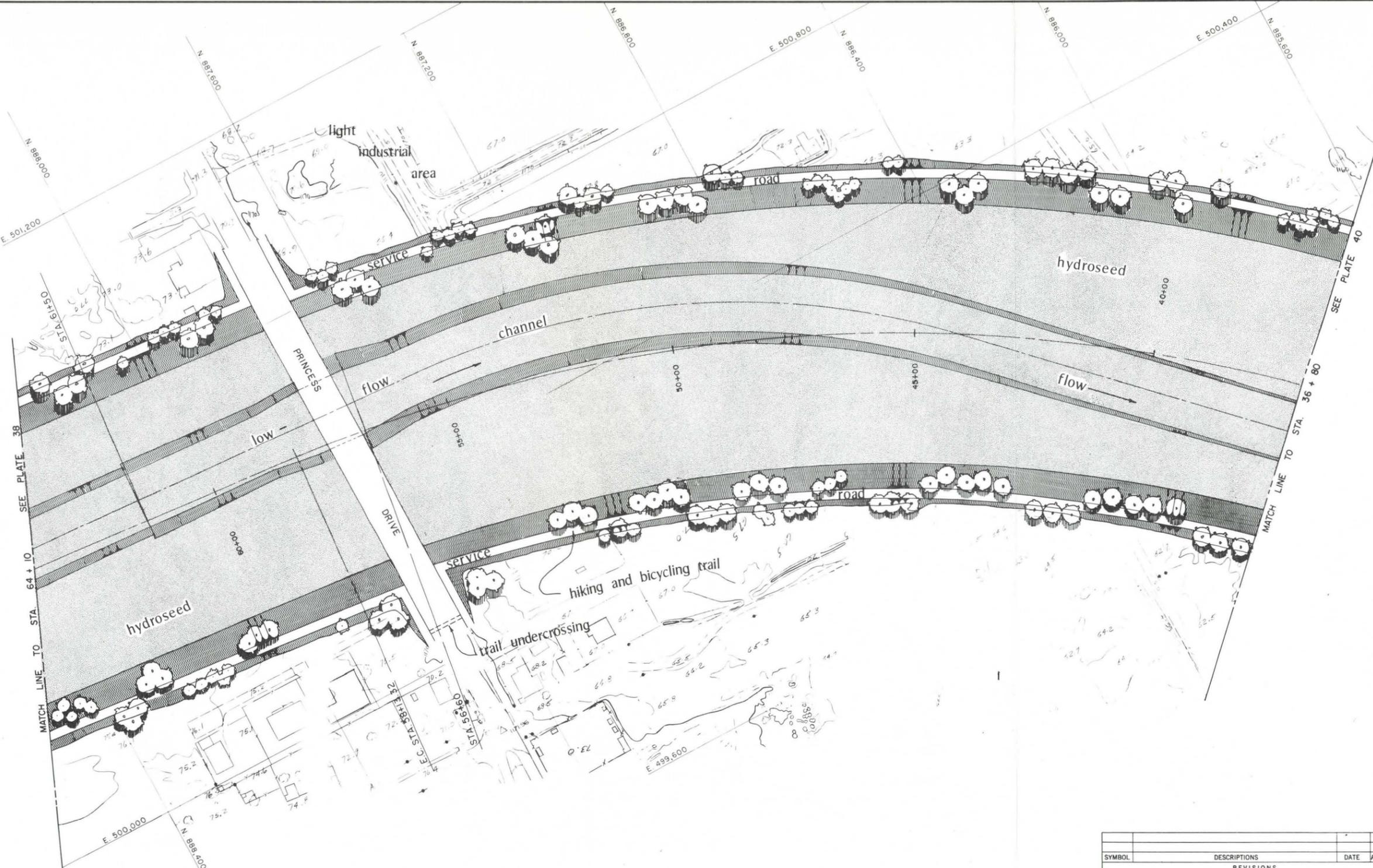
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 [Symbol] PROPOSED PLANTINGS



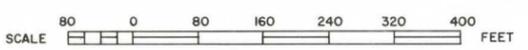
**PLAN**



SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
GILA RIVER BASIN, ARIZONA			
DESIGNED BY:	<b>INDIAN BEND WASH</b>		
DRAWN BY:	<b>RECREATION MASTER PLAN</b>		
CHECKED BY:	<b>OUTLET CHANNEL</b>		
	<b>STA. 91+25 TO STA. 64+10</b>		
SUBMITTED BY:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II		SHEET
DATE:	DISTRICT FILE NO. 238/10		

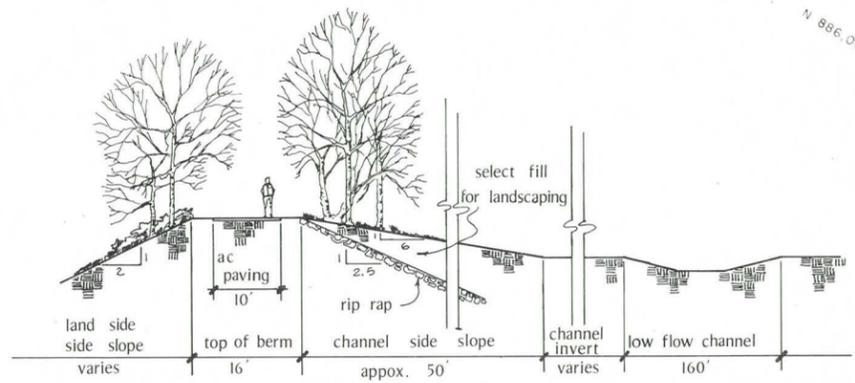
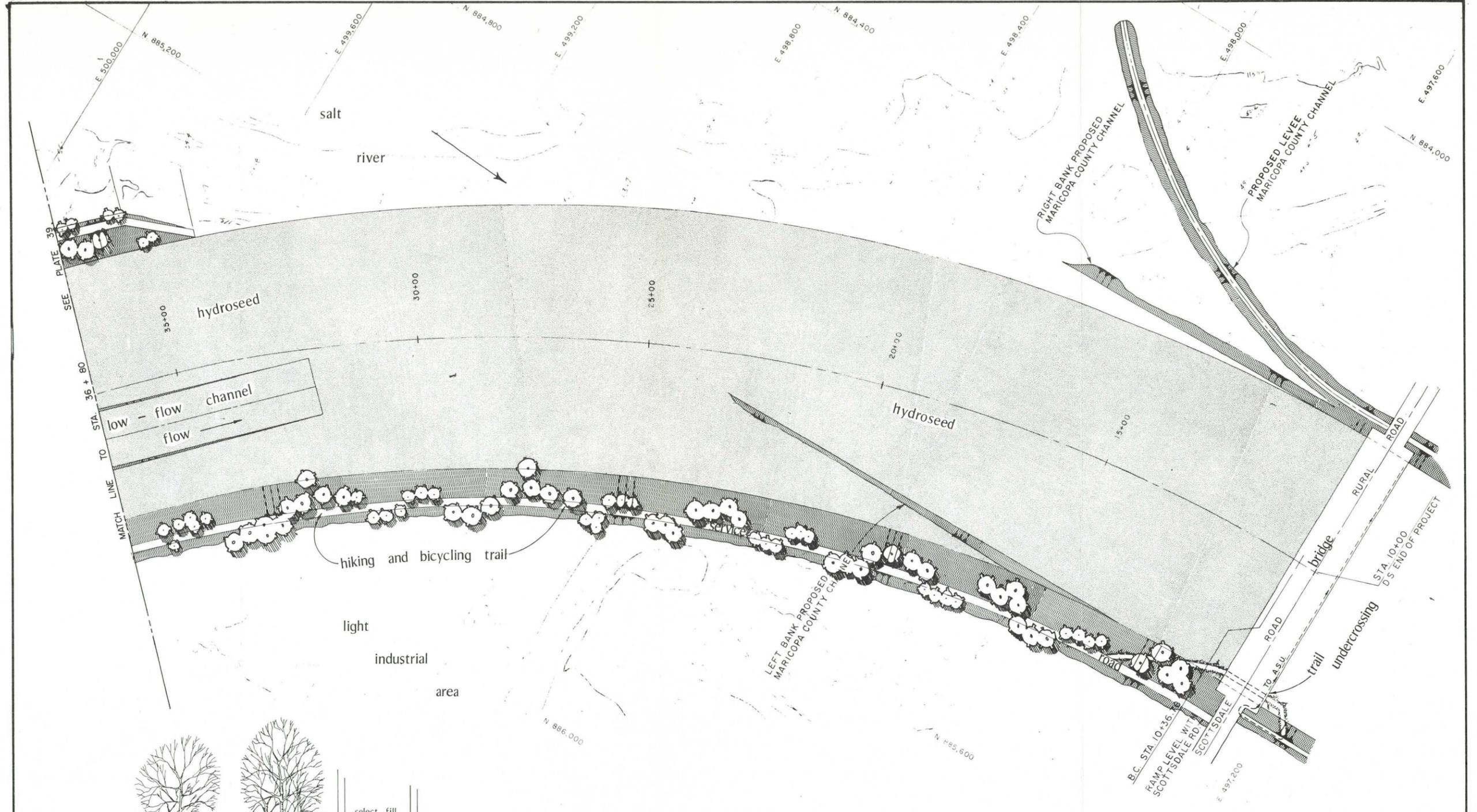


PLAN

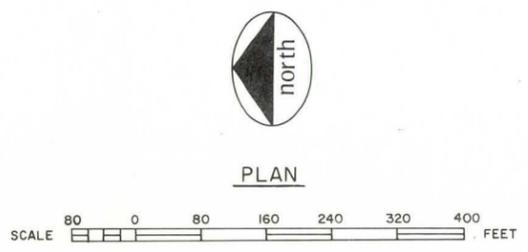


**LEGEND**  
 PROPOSED PLANTINGS

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	<b>GILA RIVER BASIN, ARIZONA INDIAN BEND WASH</b>  <b>RECREATION MASTER PLAN OUTLET CHANNEL STA. 64+10 TO STA. 36+80</b>		
DRAWN BY:			
CHECKED BY:			
SUBMITTED BY:			
DATE:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II		
	DISTRICT FILE NO. 238/111		



TYPICAL SECTION  
no scale



**LEGEND**  
 PROPOSED PLANTING

SYMBOL	DESCRIPTIONS	DATE	APPROVAL
REVISIONS			
*U.S. ARMY ENGINEER DISTRICT LOS ANGELES CORPS OF ENGINEERS			
DESIGNED BY:	GILA RIVER BASIN, ARIZONA		
DRAWN BY:	INDIAN BEND WASH		
CHECKED BY:	<b>RECREATION MASTER PLAN OUTLET CHANNEL STA. 36+80 TO STA. 10+36.78</b>		
SUBMITTED BY:	TO ACCOMPANY DESIGN MEMORANDUM NO. 1 GENERAL DESIGN MEMORANDUM - PHASE II		SHEET
DATE:	DISTRICT FILE NO. 238/112		

**EXHIBITS**

CONTRACT BETWEEN  
THE UNITED STATES OF AMERICA  
AND  
THE CITY OF SCOTTSDALE  
FOR  
RECREATION DEVELOPMENT  
AT THE  
INDIAN BEND WASH FLOOD CONTROL PROJECT  
GILA RIVER BASIN, ARIZONA

THIS CONTRACT entered into the \_\_\_\_\_ day of \_\_\_\_\_, 1975 by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented by the Contracting Officer executing this contract and the City of Scottsdale (hereinafter called the "City"),  
WITNESSETH THAT:

WHEREAS, construction of the Indian Bend Wash Flood Control Project (hereinafter called the "Project") was authorized by the Flood Control Act approved 27 October 1965 (Public Law 89-298, 89th Congress); and

WHEREAS, said Project was subsequently modified by Design Memorandum No. 1 (GDM-Phase I) approved by the Chief of Engineers 3 April 1974; and

WHEREAS, the City is authorized to administer the portion of Project land and water areas for recreational purposes from Indian Bend Road to the centerline of Van Buren Street (McKellips Road) and operate, maintain, and replace facilities provided for such purposes and is empowered to contract for such purposes, and is empowered to contract in these respects; and

WHEREAS, pursuant to Section 4 of the 1944 Flood Control Act, as

amended by Section 207 of the 1962 Flood Control Act, as amended (16 U.S.C. 460d), the Government is authorized to make contracts with non-Federal public bodies for development, management, and administration of the recreation resources of Federal water resources projects;

WHEREAS, the Office of the Chief of Engineers has established certain policy for recreation development at Federal non-reservoir water resources projects consistent with Congressional intent as expressed in the Federal Water Project Recreation Act of 1965 (Public Law 89-72).

NOW, THEREFORE, the parties agree as follows:

ARTICLE 1 - DEFINITION OF TERMS. For the purpose of this contract certain terms are defined as follows:

(a) First costs, used interchangeably with the terms "capital costs" and "project costs," are the initial capital costs of the recreation features of Project, including: engineering, design, supervision and administration, land acquisition and construction.

(b) Recreation lands: Project lands acquired primarily for recreational purposes, excluding lands needed for flood control or other Project purposes.

(c) Recreation facilities: Those facilities for recreation which may be installed pursuant to this agreement.

ARTICLE 2 - LANDS AND FACILITIES.

(a) The City is required to provide all recreation lands.

(b) The Government agrees to design and construct the Project to provide for optimum enhancement of general recreation consistent with

other authorized Project purposes. Details on lands and facilities necessary for such enhancement are shown in Exhibit A as concurred in by the City and incorporated herein by reference.

(c) Title to all lands and facilities specifically acquired, developed, or constructed by or with Government assistance to enhance the recreation potential of the project shall at all times be in public ownership.

(d) The performance of any obligation or the expenditure of any funds by the Government under this contract is contingent upon Congress making the necessary appropriations and funds being allocated and made available for the work required hereunder.

ARTICLE 3 - CONSIDERATION AND PAYMENT. Each party hereto will pay or contribute in kind fifty percent (50%) of the first costs of recreation development and fifty percent (50%) of the cost of future development.

(a) Initial Development. Fifty percent (50%) of the estimated first costs of initial recreation development is estimated to be \$ 243,000 . Prior to advertisement of the first construction contract hereunder and again prior to the advertisement of each subsequent construction contract thereafter, the Government Contracting Officer shall calculate the estimated expenditures which each party shall have made through the end of such contract. If the total estimated expenditures by the Government shall exceed those of the City, the City shall pay to the Government such sum as will equalize the expenditures of both parties, prior to award of such contract.

In computing expenditures, there shall be considered, in addition to cash expenditures, contributions in kind such as land and facilities, at the fair market value thereof at the time such land and facilities are provided, which value shall not include enhancement due to the Project. Upon completion of initial recreation development, an adjustment will be made on the basis of actual costs incurred. It is understood and agreed that the City's share of the cost of the construction contract shall be computed on the basis of actual cost to the Government of the work included in the Government construction contract and on the basis of unit prices in the Government contract and final quantities covering labor, materials, and equipment required for the work under the Government construction contract plus the amount of 15 percent to cover Government's costs for engineering, design, supervision and administration and not on the basis of prior estimates.

(b) Future Development. Neither party is obligated by this contract to undertake any future development of the Project, except to the extent this contract may be so modified by future supplemental agreement signed by the parties and approved by the Secretary of the Army or his authorized representative. If at any time the City wishes to undertake further development of the facilities hereunder, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the City for any portion of such expense in the absence of a supplemental agreement hereto as aforesaid.

(c) Other Federal Funds. No repayment credit of any kind whatsoever

will be allowed the City for expenditures financed by, involving, or consisting of, either in whole or in part, contributions or grants of assistance received from any Federal Agency in providing any lands or facilities for recreation enhancement hereunder.

(d) Adjustment to Reflect Costs. The dollar amounts set forth in this Article are based upon the Government's best estimates, and are subject to adjustments based on the costs actually incurred. Such estimates are not to be construed as representations of the total financial responsibilities of each of the parties.

ARTICLE 4 - CONSTRUCTION AND OPERATION OF ADDITIONAL FACILITIES. Certain types of facilities may be constructed by the City or third parties and may be operated by the City or by third parties on a concession basis. Any such construction and operation of these types of facilities shall be compatible with all project purposes and shall be subject to the prior approval of the Contracting Officer. However, the City shall not receive credit for costs of such facilities against amounts due and payable under Article 3, and such facilities shall not be deemed to be developed or constructed with Government assistance for purpose of Article 2(c).

ARTICLE 5 - FEES AND CHARGES. The City may assess and collect fees for entrance to developed recreation areas and for use of the project facilities and areas, in accordance with a fee schedule mutually agreed to by the parties. Not less often than every five (5) years, the parties will review such schedule and upon the request of either, renegotiate the schedule. The renegotiated fee schedule shall, upon written agreement

thereto by the parties, supersede prior schedules without the necessity of modifying this contractual document.

ARTICLE 6 - FEDERAL AND STATE LAWS.

(a) In acting under its rights and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations, including but not limited to the provisions of the Davis-Bacon Act (40 U.S.C. 276 a-a(7)); the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333); and part 3 of Title 29, Code of Federal Regulations.

(b) The City furnishes, as part of this contract, its assurance that it will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241, 42 U.S.C. 2000d, et seq) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations. The City agrees also that it will obtain such assurances from all its concessionaires.

(c) The City furnishes as part of this contract its assurance that it will comply with Sections 210 and 305 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646).

ARTICLE 7 - OPERATION AND MAINTENANCE. The City shall be responsible for operation, maintenance, and replacement without cost to the Government, of all facilities developed to support Project recreation opportunities. The City shall maintain all Project lands, waters and facilities in a manner satisfactory to the Contracting Officer.

ARTICLE 8 - RELEASE OF CLAIMS. The Government and its officers and employees

shall not be liable in any manner to the City for or on account of damage caused by the development, operation, and maintenance of the recreation facilities of the Project. The City hereby releases the Government and agrees to hold it free and harmless and to indemnify it from all damages, claims, or demands that may result from development, operation, and maintenance of the recreation areas and facilities.

ARTICLE 9 - TRANSFER OR ASSIGNMENT. The City shall not transfer or assign this contract nor any rights acquired thereunder, nor grant any interest, privilege or license whatsoever in connection with this contract without the approval of the Secretary of the Army or his authorized representative except as provided in Article 4 of this contract.

ARTICLE 10 - DEFAULT. In the event the City fails to meet any of its obligations under this agreement, the Government may terminate the whole or any part of this contract. The rights and remedies of the Government provided in this Article shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

ARTICLE 11 - EXAMINATION OF RECORDS. The Government and the City shall maintain books, records, documents, and other evidence pertaining to costs and expenses incurred under this contract, to the extent and in such detail as will properly reflect all net costs, direct and indirect, of labor, materials, equipment, supplies, and services, and other costs and expenses of whatever nature involved therein. The Government and City shall make available at their offices at reasonable times, the accounting

records for inspection and audit by an authorized representative of the parties to this contract during the period this contract is in effect.

ARTICLE 12 - RELATIONSHIP OF PARTIES. The parties to this contract act in an independent capacity in the performance of their respective functions under this contract and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE 13 - INSPECTION. The Government shall at all times have the right to make inspections concerning the operation and maintenance of the lands and facilities to be provided hereunder.

ARTICLE 14 - OFFICIALS NOT TO BENEFIT. No member of or delegate to the Congress, or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefits.

ARTICLE 15 - CONVENANT AGAINST CONTINGENT FEES. The City warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the City for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to add to the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE 16 - ENVIRONMENTAL QUALITY.

(a) In furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (Public Law 91-190, 42 U.S.C. 4321-4331-4335) and Executive Order 11514, entitled "Protection and Enhancement of Environmental Quality," March 5, 1970 (35 Federal Register 4247, Mar. 7, 1970) the Government and the City recognize the importance of preservation and enhancement of the quality of the environment and the elimination of environmental pollution. Actions by either party will be after considerations of all possible effects upon the Project environmental resources and will incorporate adequate and appropriate measures to insure that the quality of the environment will not be degraded or unfavorably altered.

(b) During construction and operation undertaken by either party, specific actions will be taken to control environmental pollution which could result from their activities and to comply with applicable Federal, State, and local laws and regulations concerning environmental pollution. Particular attention should be given to (1) reduction of air pollution by control of burning, minimization of dust, containment of chemical vapors, and control of engine exhaust gases and smoke from temporary heaters; (2) reduction of water pollution by control of sanitary facilities, storage of fuels and other contaminants, and control of turbidity and siltation from erosion; (3) minimization of noise levels; (4) on- and offsite disposal of waste and spoil activities; and (5) prevention of landscape defacement and damage.

ARTICLE 17 - VALUE OF LANDS AND FACILITIES. If the parties hereto cannot

agree on the fair market value of any lands or facilities and cannot otherwise resolve such differences, each party shall name an appraiser and the two appraisers so named shall name a third appraiser, and the decision of at least two of such three appraisers as to the fair market value shall be final and conclusive upon both parties.

ARTICLE 18 - EFFECTIVE DATE. This contract shall take effect upon approval by the Secretary of the Army or his authorized representative.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

THE UNITED STATES OF AMERICA

THE CITY OF SCOTTSDALE

By \_\_\_\_\_  
Colonel, Corps of Engineers  
District Engineer  
Contracting Officer

By \_\_\_\_\_  
Mayor, City of Scottsdale

DATE \_\_\_\_\_

ATTEST:

APPROVED:

By \_\_\_\_\_  
City Clerk, City of Scottsdale

By \_\_\_\_\_

DATE \_\_\_\_\_

The undersigned, as chief legal officer for the City of Scottsdale, approves the foregoing agreement as to form and legality this \_\_\_\_\_ day of \_\_\_\_\_, 1974. I have reviewed the contract in the light of the requirements of Section 221 of Public Law 91-611. I further find that the City of Scottsdale is a legally constituted body having full legal authority to enter into the foregoing agreement and to respond in damages in the event that it fails to fulfill its contractual obligations.

\_\_\_\_\_  
City Attorney  
City of Scottsdale, Arizona

CONTRACT BETWEEN  
THE UNITED STATES OF AMERICA  
AND  
THE CITY OF SCOTTSDALE  
FOR  
RECREATION DEVELOPMENT  
AT THE  
INDIAN BEND WASH FLOOD CONTROL PROJECT  
GILA RIVER BASIN, ARIZONA

THIS CONTRACT entered into the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_  
by and between the UNITED STATES OF AMERICA (hereinafter called the  
"Government"), represented by the Contracting Officer executing this  
contract and the City of Scottsdale (hereinafter called the "City"),  
WITNESSETH THAT:

WHEREAS, construction of the Indian Bend Wash Flood Control Project  
(hereinafter called the "Project") was authorized by the Flood Control  
Act approved 27 October 1965 (Public Law 89-298, 89th Congress); and

WHEREAS, said Project was subsequently modified by Design Memorandum  
No. 1 (GDM-Phase I) approved by the Chief of Engineers 3 April 1974;  
and

WHEREAS, the City is authorized to administer the portion of Project  
land and water areas for recreational purposes from Indian Bend Road  
to the centerline of Van Buren Street (McKellips Road) and to operate,  
maintain, and replace facilities provided for such purposes and is empowered  
to contract for such purposes, and is empowered to contract in these  
respects; and

WHEREAS, pursuant to Section 4 of the 1944 Flood Control Act, as

amended by Section 207 of the 1962 Flood Control Act, as amended (16 U.S.C. 460d), the Government is authorized to make contracts with non-Federal public bodies for development, management, and administration of the recreation resources of Federal water resources projects;

WHEREAS, the Office of the Chief of Engineers has established certain policy for recreation development at Federal non-reservoir water resources projects consistent with Congressional intent as expressed in the Federal Water Project Recreation Act of 1965 (Public Law 89-72).

NOW, THEREFORE, the parties agree as follows:

ARTICLE 1 - DEFINITION OF TERMS. For the purpose of this contract certain terms are defined as follows:

(a) First costs, used interchangeably with the terms "capital costs" and "project costs," are the initial capital costs of the recreation features of Project, including: engineering, design, supervision and administration, land acquisition, and construction.

(b) Recreation lands: Project lands acquired primarily for recreational purposes, excluding lands needed for flood control or other Project purposes.

(c) Recreation facilities: Those facilities for recreation which may be installed pursuant to this agreement.

ARTICLE 2 - LANDS AND FACILITIES.

(a) The City is required to provide all recreation lands.

(b) The Government agrees to design and construct the Project to provide for optimum enhancement of general recreation consistent with other authorized Project purposes. Details on lands and facilities necessary for such enhancement are shown in Exhibit A, B, C, and D, as concurred in by the City and incorporated herein by reference.

(c) Title to all lands and facilities specifically acquired, developed, or constructed by or with Government assistance to enhance the recreation potential of the project shall at all times be in public ownership.

(d) The performance of any obligation or the expenditure of any funds by the Government under this contract is contingent upon Congress making the necessary appropriations and funds being allocated and made available for the work required hereunder.

ARTICLE 3 - CONSIDERATION AND PAYMENT. Each party hereto will pay or contribute in kind fifty percent (50%) of the first costs of recreation development and fifty percent (50%) of the costs of future development.

(a) Initial Development. Fifty percent (50%) of the estimated first costs of initial recreation development is estimated to be \$1,918,000. The City's share of such estimated first costs shall be paid to the Government as follows:

(1) There shall be deducted from the City's share an amount equal to the sum of the fair market value of any lands or facilities provided by the City, (such value being computed as of the date such

lands or facilities were provided and not including enhancement due to the Project) and any cash expenditures made by the City towards the first costs of the Project.

(2) The amount remaining after such deduction shall be paid to the Government with interest on the unpaid balance within fifty (50) years after the recreational facilities are first available for operation. Such repayment will be made annually in such equal amounts as to complete repayment within such fifty (50) year period.

(3) Interest during construction and interest on the unpaid balance shall be at a rate to be determined by the Secretary of the Treasury of the United States as of the beginning of the fiscal year in which Project construction is initiated, pursuant to the formula prescribed by Section 301(b) of the Water Supply Act of 1958 (Public Law 85-500, 43 U.S.C. 390b(b)). The interest rate in effect at the time of negotiation of this contract (United States Fiscal Year 1975) is 4.371 percent. Such interest rate shall not change during the repayment period.

(4) Interest at the rate hereinbefore provided in subparagraph (3) shall accrue during the construction period and shall be added to the first cost in determining the amount to be repaid over the 50-year repayment period.

(5) The estimated schedule of repayment for this Project, based on the current estimate of first costs, the interest rate in effect on the date of execution hereof (4.371 %), and 50 year repayment,

is contained in Exhibit E of this contract. This repayment schedule will be recomputed by the parties upon completion of construction on the basis of actual first costs incurred, the interest rate in effect for the Government fiscal year in which Project construction is initiated, and the amount of the City's share remaining unpaid at the time the Contracting Officer notifies the City in writing that the lands and facilities are available for useful operation. It is understood and agreed that the City's share of the cost of the construction contract shall be computed on the basis of actual costs to the Government of the work included in the Government construction contract and on the basis of unit prices in the Government contract and final quantities covering labor, materials, and equipment required for the work under the Government construction contract plus the amount of 15 percent to cover Government's costs for engineering, design, supervision and administration, and not on the basis of prior estimates.

(6) The initial installment shall be due and payable within thirty (30) days after the City is notified in writing by the Contracting Officer that the lands and facilities are available for useful operation. Subsequent installments shall be due and payable to the Treasurer of the United States within thirty (30) days of the yearly anniversary date of such notice.

(7) The City may, without penalty, prepay at any time or times any part or all of the principal and interest due and payable under this contract. Interest with respect to any prepaid principal shall accrue only through the date of repayment.

(b) Future Development. Neither party is obligated by this contract to undertake any future development of the Project, except to the extent this contract may be so modified by future supplemental agreement signed by the parties and approved by the Secretary of the Army or his authorized representative. If at any time the City wishes to undertake further development of the facilities hereunder, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the City for any portion of such expense in the absence of a supplemental agreement hereto as aforesaid.

(c) Other Federal Funds. No repayment credit of any kind whatsoever will be allowed the City for expenditures financed by, involving, or consisting of, either in whole or in part, contributions or grants of assistance received from any Federal agency in providing any lands or facilities for recreation enhancement hereunder.

(d) Adjustments to Reflect Costs. The dollar amounts set forth in this Article are based upon the Government's best estimates, and are subject to adjustments based on the costs actually incurred. Such estimates are not to be construed as representations of the total financial responsibilities of each of the parties.

ARTICLE 4 - CONSTRUCTION AND OPERATION OF ADDITIONAL FACILITIES. Certain types of facilities may be constructed by the City or third parties and may be operated by the City or by third parties on a concession

basis. Any such construction and operation of these types of facilities shall be compatible with all project purposes and shall be subject to the prior approval of the Contracting Officer. However, the City shall not receive credit for costs of such facilities against amounts due and payable under Article 3, and such facilities shall not be deemed to be developed or constructed with Government assistance for purpose of Article 2(c).

ARTICLE 5 - FEEES AND CHARGES. The City may assess and collect fees for entrance to developed recreation areas and for use of the project facilities and areas, in accordance with a fee schedule mutually agreed to by the parties. Not less often than every five (5) years, the parties will review such schedule and upon the request of either, renegotiate the schedule. The renegotiated fee schedule shall, upon written agreement thereto by the parties, supersede prior schedules without the necessity of modifying this contractual document.

ARTICLE 6 - FEDERAL AND STATE LAWS.

(a) In acting under its rights and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations, including but not limited to the provisions of the Davis-Bacon Act (40 U.S.C. 276 a-a(7)); the Contract Work Hours and Safety Standards Act (40 U.S.C. 327-333); and part 3 of Title 29, Code of Federal Regulations.

(b) The City furnishes, as part of this contract, its assurance that it will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241, 42 U.S.C. 2000d, et seq) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations. The City agrees also that it will obtain such assurances from all its concessionaires.

(c) The City furnishes as part of this contract its assurance that it will comply with Sections 210 and 305 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646).

ARTICLE 7 - OPERATION AND MAINTENANCE. The City shall be responsible for operation, maintenance, and replacement without cost to the Government, of all facilities developed to support Project recreation opportunities. The City shall maintain all Project lands, waters and facilities in a manner satisfactory to the Contracting Officer.

ARTICLE 8 - RELEASE OF CLAIMS. The Government and its officers and employees shall not be liable in any manner to the City for or on account of damage caused by the development, operation, and maintenance of the recreation facilities of the Project. The City hereby releases the Government and agrees to hold it free and harmless and to indemnify it from all damages, claims, or demands that may result from development, operation, and maintenance of the recreation areas and facilities.

ARTICLE 9 - TRANSFER OR ASSIGNMENT. The City shall not transfer or assign this contract nor any rights acquired thereunder, nor grant any interest, privilege or license whatsoever in connection with this contract without the approval of the Secretary of the Army or his authorized representative except as provided in Article 4 of this contract.

ARTICLE 10 - DEFAULT. In the event the City fails to meet any of its obligations under this agreement, the Government may terminate the whole or any part of this contract. The rights and remedies of the Government provided in this Article shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

ARTICLE 11 - EXAMINATION OF RECORDS. The Government and the City shall maintain books, records, documents, and other evidence pertaining to costs and expenses incurred under this contract, to the extent and in such detail as will properly reflect all net costs, direct and indirect, of labor, materials, equipment, supplies, and services, and other costs and expenses of whatever nature involved therein. The Government and City shall make available at their offices at reasonable times, the accounting records for inspection and audit by an authorized representative of the parties to this contract during the period this contract is in effect.

ARTICLE 12 - RELATIONSHIP OF PARTIES. The parties to this contract act in an independent capacity in the performance of their respective functions under this contract and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE 13 - INSPECTION. The Government shall at all times have the right to make inspections concerning the operation and maintenance of the lands and facilities to be provided hereunder.

ARTICLE 14 - OFFICIALS NOT TO BENEFIT. No member of or delegate to the Congress, or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefits.

ARTICLE 15 - COVENANT AGAINST CONTINGENT FEES. The City warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the City for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to add to the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE 16 - ENVIRONMENTAL QUALITY.

(a) In furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (Public Law 91-190, 42 U.S.C. 4321-4331-4335) and Executive Order 11514, entitled "Protection and Enhancement of Environmental Quality," March 5, 1970 (35 Federal Register 4247, Mar. 7, 1970) the Government and the City recognize the importance of

preservation and enhancement of the quality of the environment and the elimination of environmental pollution. Actions by either party will be after considerations of all possible effects upon the Project environmental resources and will incorporate adequate and appropriate measures to insure that the quality of the environment will not be degraded or unfavorably altered.

(b) During construction and operation undertaken by either party, specific actions will be taken to control environmental pollution which could result from their activities and to comply with applicable Federal, State, and local laws and regulations concerning environmental pollution. Particular attention should be given to (1) reduction of air pollution by control of burning, minimization of dust, containment of chemical vapors, and control of engine exhaust gases and smoke from temporary heaters; (2) reduction of water pollution by control of sanitary facilities, storage of fuels and other contaminants, and control of turbidity and siltation from erosion; (3) minimization of noise levels; (4) on- and offsite disposal of waste and spoil activities; and (5) prevention of landscape defacement and damage.

ARTICLE 17 - VALUE OF LANDS AND FACILITIES. If the parties hereto cannot agree on the fair market value of any lands or facilities and cannot otherwise resolve such differences, each party shall name an appraiser and the two appraisers so named shall name a third appraiser, and the decision of at least two of such three appraisers as to the fair market value shall be final and conclusive upon both parties.

ARTICLE 18 - EFFECTIVE DATE. This contract shall take effect upon approval by the Secretary of the Army or his authorized representative.

IN WITNESS WHEREOF, the parties hereto have executed this contract as of the day and year first above written.

THE UNITED STATES OF AMERICA

THE CITY OF SCOTTSDALE

By \_\_\_\_\_  
Colonel, Corps of Engineers  
District Engineer  
Contracting Officer

By \_\_\_\_\_  
Mayor, City of Scottsdale

DATE \_\_\_\_\_

ATTEST:

APPROVED:

By \_\_\_\_\_  
City Clerk, City of Scottsdale

By \_\_\_\_\_

DATE \_\_\_\_\_

The undersigned, as chief legal officer for the City of Scottsdale, approves the foregoing agreement as to form and legality this \_\_\_\_\_ day of \_\_\_\_\_, 1974. I have reviewed the contract in the light of the requirements of Section 221 of Public Law 91-611. I further find that the City of Scottsdale is a legally constituted body having full legal authority to enter into the foregoing agreement and to respond in damages in the event that it fails to fulfill its contractual obligations.

\_\_\_\_\_  
City Attorney  
City of Scottsdale, Arizona

PAYMENT SCHEDULE FOR  
INDIAN SCHOOL PARK

Payment	Balance	Payment	Interest	Principal
1	1,089,981.86	51,741.00	0	51,741.00
2	1,089,981.86	51,741.00	4,097.89	47,643.11
3	1,085,883.97	51,741.00	4,277.01	47,463.99
4	1,081,606.96	51,741.00	4,463.96	47,277.04
5	1,077,143.00	51,741.00	4,659.08	47,081.92
6	1,072,483.92	51,741.00	4,862.73	46,878.27
7	1,067,621.19	51,741.00	5,075.28	46,665.72
8	1,062,545.91	51,741.00	5,297.12	46,443.88
9	1,057,248.79	51,741.00	5,528.66	46,212.34
10	1,051,720.13	51,741.00	5,770.31	45,970.69
11	1,045,949.82	51,741.00	6,022.53	45,718.47
12	1,039,927.29	51,741.00	6,285.78	45,455.22
13	1,033,641.51	51,741.00	6,560.53	45,180.47
14	1,027,080.98	51,741.00	6,847.29	44,893.71
15	1,020,233.69	51,741.00	7,146.59	44,594.41
16	1,013,087.10	51,741.00	7,458.96	44,282.04
17	1,005,628.14	51,741.00	7,784.99	43,956.01
18	997,843.15	51,741.00	8,125.28	43,615.72
19	989,717.87	51,741.00	8,480.43	43,260.57
20	981,237.44	51,741.00	8,851.11	42,889.89
21	972,386.33	51,741.00	9,237.99	42,503.01
22	963,148.34	51,741.00	9,641.79	42,099.21
23	953,506.55	51,741.00	10,063.23	41,677.77
24	943,443.32	51,741.00	10,503.09	41,237.91
25	932,940.23	51,741.00	10,962.18	40,778.82
26	921,978.05	51,741.00	11,441.34	40,299.66
27	910,536.71	51,741.00	11,941.44	39,799.56
28	898,595.27	51,741.00	12,463.40	39,277.60
29	886,131.87	51,741.00	13,008.18	38,732.82
30	873,123.69	51,741.00	13,576.76	38,164.24
31	859,546.93	51,741.00	14,170.20	37,570.80
32	845,376.73	51,741.00	14,789.58	36,951.42
33	830,587.15	51,741.00	15,436.04	36,304.96
34	815,151.11	51,741.00	16,110.74	35,630.26
35	799,040.37	51,741.00	16,814.95	34,926.05
36	782,225.42	51,741.00	17,549.93	34,191.07
37	764,675.49	51,741.00	18,317.03	33,423.97
38	746,358.46	51,741.00	19,117.67	32,623.33
39	727,240.79	51,741.00	19,953.31	31,787.69
40	707,287.48	51,741.00	20,825.46	30,915.54
41	686,462.02	51,741.00	21,735.75	30,005.25
42	664,726.27	51,741.00	22,685.81	29,055.19
43	642,040.46	51,741.00	23,677.41	28,063.59
44	618,363.05	51,741.00	24,712.35	27,028.65
45	593,650.70	51,741.00	25,792.53	25,948.47
46	567,858.17	51,741.00	26,919.92	24,821.08
47	540,938.25	51,741.00	28,096.59	23,644.41
48	512,841.66	51,741.00	29,324.69	22,416.31
49	483,516.97	51,741.00	30,606.47	21,134.53
50	452,910.50	51,741.00	31,944.28	19,796.72

EXHIBIT E CONT'D

PAYMENT SCHEDULE FOR THE EXHIBIT PLAZA

PAYMENT #	BALANCE	PAYMENT	INTEREST	PRINCIPAL
1	160,439.53	7,616.00	0	7,616.00
2	152,823.53	7,616.00	936.08	6,679.92
3	151,887.45	7,616.00	977.00	6,639.00
4	150,910.45	7,616.00	1,019.70	6,596.30
5	149,890.75	7,616.00	1,064.28	6,551.72
6	148,826.47	7,616.00	1,110.79	6,505.21
7	147,715.68	7,616.00	1,159.35	6,456.65
8	146,556.33	7,616.00	1,210.02	6,405.98
9	145,346.31	7,616.00	1,262.91	6,353.09
10	144,083.40	7,616.00	1,318.11	6,297.89
11	142,765.29	7,616.00	1,375.73	6,240.27
12	141,389.56	7,616.00	1,435.86	6,180.14
13	139,953.70	7,616.00	1,498.62	6,117.38
14	138,455.08	7,616.00	1,564.13	6,051.87
15	136,890.95	7,616.00	1,632.50	5,983.50
16	135,258.45	7,616.00	1,703.85	5,912.15
17	133,554.60	7,616.00	1,778.33	5,837.67
18	131,776.27	7,616.00	1,856.06	5,759.94
19	129,920.21	7,616.00	1,937.19	5,678.81
20	127,983.02	7,616.00	2,021.86	5,594.14
21	125,961.16	7,616.00	2,110.24	5,505.76
22	123,850.92	7,616.00	2,202.48	5,413.52
23	121,648.44	7,616.00	2,298.75	5,317.25
24	119,349.69	7,616.00	2,399.23	5,216.77
25	116,950.46	7,616.00	2,504.10	5,111.90
26	114,446.36	7,616.00	2,613.55	5,002.45
27	111,832.81	7,616.00	2,727.79	4,888.21
28	109,105.02	7,616.00	2,847.02	4,768.98
29	106,258.00	7,616.00	2,971.46	4,644.54
30	103,286.54	7,616.00	3,101.35	4,514.65
31	100,185.19	7,616.00	3,236.91	4,379.09
32	96,948.28	7,616.00	3,378.39	4,237.61
33	93,569.89	7,616.00	3,526.06	4,089.94
34	90,043.83	7,616.00	3,680.18	3,935.32
35	86,363.65	7,616.00	3,841.04	3,774.96
36	82,522.61	7,616.00	4,008.94	3,607.06
37	78,513.67	7,616.00	4,184.17	3,431.83
38	74,329.50	7,616.00	4,367.06	3,248.94
39	69,962.44	7,616.00	4,557.94	3,058.06
40	65,404.50	7,616.00	4,757.17	2,858.83
41	60,647.33	7,616.00	4,965.11	2,650.89
42	55,682.22	7,616.00	5,182.13	2,433.87
43	50,500.09	7,616.00	5,408.64	2,207.36
44	45,091.45	7,616.00	5,645.05	1,970.95
45	39,446.40	7,616.00	5,891.80	1,724.20
46	33,554.60	7,616.00	6,149.33	1,466.67
47	27,405.27	7,616.00	6,418.12	1,197.88
48	20,987.15	7,616.00	6,698.65	917.35
49	14,288.50	7,616.00	6,991.45	624.55
50	7,297.05	7,616.00	318.95	7,297.05

EXHIBIT E

PAYMENT SCHEDULE FOR THOMAS ROAD REST  
AREA, INTERCEPTOR CHANNEL AREA,  
AND THE GREENBELT TRAIL SYSTEM

Payment	Balance	Payment	Interest	Principal
1	334,150.72	15,862.00	0	15,862.00
2	318,288.72	15,862.00	1,949.00	13,912.40
3	316,339.12	15,862.00	2,034.82	13,827.18
4	314,304.30	15,862.00	2,123.76	13,738.24
5	312,180.54	15,862.00	2,216.59	13,645.41
6	309,963.95	15,862.00	2,313.48	13,548.52
7	307,650.47	15,862.00	2,414.60	13,447.40
8	305,235.87	15,862.00	2,520.14	13,341.86
9	302,715.73	15,862.00	2,630.30	13,231.70
10	300,085.43	15,862.00	2,745.27	13,116.73
11	297,340.16	15,862.00	2,865.26	12,996.74
12	294,474.90	15,862.00	2,990.50	12,871.50
13	291,484.40	15,862.00	3,121.22	12,740.78
14	288,363.18	15,862.00	3,257.65	12,604.35
15	285,105.53	15,862.00	3,400.04	12,461.96
16	281,705.49	15,862.00	3,548.65	12,313.35
17	278,156.84	15,862.00	3,703.76	12,158.24
18	274,453.08	15,862.00	3,865.66	11,996.34
19	270,587.42	15,862.00	4,034.62	11,827.38
20	266,552.80	15,862.00	4,210.98	11,651.02
21	262,341.82	15,862.00	4,395.04	11,466.96
22	257,946.78	15,862.00	4,587.15	11,274.85
23	253,359.63	15,862.00	4,787.65	11,074.35
24	248,571.98	15,862.00	4,996.92	10,865.08
25	243,575.06	15,862.00	5,215.33	10,646.67
26	238,359.73	15,862.00	5,443.30	10,418.70
27	232,916.43	15,862.00	5,681.22	10,180.78
28	227,235.21	15,862.00	5,929.55	9,932.45
29	221,305.66	15,862.00	6,188.73	9,673.27
30	215,116.93	15,862.00	6,459.24	9,402.76
31	208,657.69	15,862.00	6,741.57	9,120.43
32	201,916.12	15,862.00	7,036.25	8,825.75
33	194,879.87	15,862.00	7,343.80	8,518.20
34	187,536.07	15,862.00	7,664.80	8,197.20
35	179,871.27	15,862.00	7,999.83	7,862.17
36	171,871.44	15,862.00	8,349.50	7,512.50
37	163,521.94	15,862.00	8,714.46	7,147.54
38	154,807.48	15,862.00	9,095.37	6,766.63
39	145,712.11	15,862.00	9,492.92	6,369.08
40	136,219.19	15,862.00	9,907.86	5,954.14
41	126,311.33	15,862.00	10,340.93	5,521.07
42	115,970.40	15,862.00	10,792.93	5,069.07
43	105,177.47	15,862.00	11,264.69	4,597.31
44	93,912.78	15,862.00	11,757.07	4,104.93
45	82,155.71	15,862.00	12,270.97	3,591.03
46	69,884.74	15,862.00	12,807.34	3,054.66
47	57,077.40	15,862.00	13,367.15	2,494.85
48	43,710.25	15,862.00	13,951.42	1,910.58
49	29,758.83	15,862.00	14,561.24	1,300.76
50	15,197.59	15,862.00	15,197.59	664.41

EXHIBIT E (CONT'D)

CONTRACT BETWEEN  
THE UNITED STATES OF AMERICA  
AND  
THE CITY OF TEMPE  
FOR  
RECREATION DEVELOPMENT  
AT THE  
INDIAN BEND WASH FLOOD CONTROL PROJECT  
GILA RIVER BASIN, ARIZONA

THIS CONTRACT entered into this \_\_\_\_\_ day of \_\_\_\_\_, 1975 by and between the UNITED STATES OF AMERICA (hereinafter called the "Government"), represented by the Contracting Officer executing this contract and the City of Tempe (hereinafter called the "City"),  
WITNESSETH THAT:

WHEREAS, construction of the Indian Bend Wash Flood Control Project (hereinafter called the "Project") was authorized by the Flood Control Act approved 27 October 1965 (Public Law 89-298, 89th Congress); and

WHEREAS, said Project was subsequently modified by Design Memorandum No. 1 (GDM-Phase I) approved by the Chief of Engineers 3 April 1974;  
and

WHEREAS, the City is authorized to administer the portion of Project land and water areas for recreational purposes from the centerline of Van Buren Street (McKellips Road) to the Salt River, and operate, maintain, and replace facilities provided for such purposes and is empowered to contract for such purposes, and is empowered to contract in these respects;  
and

WHEREAS, pursuant to Section 4 of the 1944 Flood Control Act, as amended by Section 207 of the 1962 Flood Control Act, as amended

(16 U.S.C. 460d), the Government is authorized to make contracts with non-Federal public bodies for development, management and administration of the recreation resources of Federal water resources projects;

WHEREAS the Office of the Chief of Engineers has established certain policy for recreation development at Federal non-reservoir water resources projects consistent with Congressional intent as expressed in the Federal Water Project Recreation Act of 1965 (Public Law 89-72).

NOW, THEREFORE, the parties agree as follows:

ARTICLE 1 - DEFINITION OF TERMS. For the purpose of this contract certain terms are defined as follows:

(a) First costs, used interchangeably with the terms "capital costs" and "project costs," are the initial capital costs of the recreation features of Project, including: engineering, design, supervision and administration and construction.

(b) Recreation facilities: Those facilities for recreation which may be installed pursuant to this agreement.

ARTICLE 2 - FACILITIES.

(a) The Government agrees to design and construct the Project to provide for optimum enhancement of general recreation consistent with other authorized Project purposes. Details on facilities necessary for such enhancement are shown in Exhibit A, as concurred in by the City and incorporated herein by reference.

(b) Title to all facilities specifically acquired, developed, or constructed by or with Government assistance to enhance the recreation potential of the project shall at all times be in public ownership.

(c) The performance of any obligation or the expenditure of any funds by the Government under this contract is contingent upon Congress making the necessary appropriations and funds being allocated and made available for the work required hereunder.

ARTICLE 3 - CONSIDERATION AND PAYMENT. Each party hereto will pay or contribute in kind fifty percent (50%) of the first costs of recreation development and fifty percent (50%) of the costs of future development.

(a) Initial Development. Fifty percent (50%) of the estimated first costs of initial recreation development is estimated to be \$75,000. Prior to the advertisement of the first construction contract hereunder and again prior to the advertisement of each subsequent construction contract thereafter, the Government Contracting Officer shall calculate the estimated expenditures which each party shall have made through the end of such contract. If the total estimated expenditures by the Government shall exceed those of the City, the City shall pay to the Government such sum as will equalize the expenditures of both parties, prior to award of such contract. In computing expenditures, there shall be considered, in addition to cash expenditures, contributions in kind such as facilities, at the fair market value thereof at the time such facilities are provided, which value shall not include enhancement due to the project. Upon completion of initial recreation development, an adjustment will be made on the basis of actual costs incurred. It is understood and agreed that the City's share of the cost of the construction shall be computed on the basis of actual costs to the Government of the work included in the

Government construction contract above and on the basis of unit prices in the Government contract and final quantities covering labor, materials, and equipment required for the work under the Government construction contract plus the amount of 15 percent to cover Government's costs for engineering, design, supervision and administration and not on the basis of prior estimates.

(b) Future Development. Neither party is obligated by this contract to undertake any future development of the project, except to the extent this contract may be so modified by future supplemental agreement signed by the parties and approved by the Secretary of the Army or his authorized representative. If at any time the City wishes to undertake further development of the facilities hereunder, it may do so at its expense provided prior approval of the Contracting Officer is obtained, but the Government shall not be obligated to reimburse the City for any portion of such expense in the absence of a supplemental agreement hereto as aforesaid.

(c) Other Federal Funds. No repayment credit of any kind whatsoever will be allowed the City for expenditures financed by, involving, or consisting of, either in whole or in part, contributions or grants of assistance received from any Federal agency in providing any lands or facilities for recreation enhancement hereunder.

(d) Adjustments to Reflect Costs. The dollar amounts set forth in this Article are based upon the Government's best estimates, and are subject to adjustments based on the costs actually incurred. Such

estimates are not to be construed as representations of the total financial responsibilities of each of the parties.

ARTICLE 4 - CONSTRUCTION AND OPERATION OF ADDITIONAL FACILITIES. Certain types of facilities may be constructed by the City or third parties and may be operated by the City or by third parties on a concession basis. Any such construction and operation of these types of facilities shall be compatible with all project purposes and shall be subject to the prior approval of the Contracting Officer. However, the City shall not receive credit for costs of such facilities against amounts due and payable under Article 3 and such facilities shall not be deemed to be developed or constructed with Government assistance for purpose of Article 2(c).

ARTICLE 5 - FEES AND CHARGES. The City may assess and collect fees for entrance to developed recreation areas and for use of the project facilities and areas, in accordance with a fee schedule mutually agreed to by the parties. Not less often than every five (5) years, the parties will review such schedule and upon request of either, renegotiate the schedule. The renegotiated fee schedule shall, upon written agreement thereto by the parties, supersede prior schedules without the necessity of modifying this contractual document.

ARTICLE 6 - FEDERAL AND STATE LAWS.

(a) In acting under its rights and obligations hereunder, the City agrees to comply with all applicable Federal and State laws and regulations, including but not limited to the provisions of the Davis-Bacon Act (40 U.S.C. 276 a-a(7)); the Contract Work Hours and Safety Standards

Act (40 U.S.C. 327-333); and part 3 of Title 29, Code of Federal Regulations.

(b) The City furnishes, as part of this contract, its assurance that it will comply with Title VI of the Civil Rights Act of 1964 (78 Stat. 241, 42 U.S.C. 2000d, et seq) and Department of Defense Directive 5500.11 issued pursuant thereto and published in Part 300 of Title 32, Code of Federal Regulations. The City agrees also that it will obtain such assurances from all its concessionaires.

(c) The City furnishes as part of this contract its assurance that it will comply with Sections 210 and 305 of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646).

ARTICLE 7 - OPERATION AND MAINTENANCE. The City shall be responsible for operation, maintenance, and replacement without cost to the Government, of all facilities developed to support Project recreation opportunities. The City shall maintain all Project lands, waters, and facilities in a manner satisfactory to the Contracting Officer.

ARTICLE 8 - RELEASE OF CLAIMS. The Government and its officers and employees shall not be liable in any manner to the City for or on account of damage caused by the development, operation, and maintenance of the recreation facilities of the Project. The City hereby releases the Government and agrees to hold it free and harmless and to indemnify it from all damages, claims, or demands that may result from development, operation, and maintenance of the recreation areas and facilities.

ARTICLE 9 - TRANSFER OR ASSIGNMENT. The City shall not transfer or assign this contract nor any rights acquired thereunder, nor grant any interest, privilege or license whatsoever in connection with this contract without the approval of the Secretary of the Army or his authorized representative except as provided in Article 4 of this contract.

ARTICLE 10 - DEFAULT. In the event the City fails to meet any of its obligations under this agreement, the Government may terminate the whole or any part of this contract. The rights and remedies of the Government provided in this Article shall not be exclusive and are in addition to any other rights and remedies provided by law or under this contract.

ARTICLE 11 - EXAMINATION OF RECORDS. The Government and the City shall maintain books, records, documents, and other evidence pertaining to costs and expenses incurred under this contract, to the extent and in such detail as will properly reflect all net costs, direct and indirect, of labor, materials, equipment, supplies, and services, and other costs and expenses of whatever nature involved therein. The Government and City shall make available at their offices at reasonable times, the accounting records for inspection and audit by an authorized representative of the parties to this contract during the period this contract is in effect.

ARTICLE 12 - RELATIONSHIP OF PARTIES. The parties to this contract act in an independent capacity in the performance of their respective

functions under this contract and neither party is to be considered the officer, agent, or employee of the other.

ARTICLE 13 - INSPECTION. The Government shall at all times have the right to make inspections concerning the operation and maintenance of the facilities to be provided hereunder.

ARTICLE 14 - OFFICIALS NOT TO BENEFIT. No member of or delegate to the Congress, or Resident Commissioner, shall be admitted to any share or part of this contract, or to any benefit that may arise therefrom; but this provision shall not be construed to extend to this contract if made with a corporation for its general benefit.

ARTICLE 15 - COVENANT AGAINST CONTINGENT FEES. The City warrants that no person or selling agency has been employed or retained to solicit or secure this contract upon agreement or understanding for a commission, percentage, brokerage, or contingent fee, excepting bona fide employees or bona fide established commercial or selling agencies maintained by the City for the purpose of securing business. For breach or violation of this warranty, the Government shall have the right to annul this contract without liability or in its discretion to add to the contract price or consideration, or otherwise recover, the full amount of such commission, percentage, brokerage, or contingent fee.

ARTICLE 16 - ENVIRONMENTAL QUALITY.

(a) In furtherance of the purpose and policy of the National Environmental Policy Act of 1969 (Public Law 91-190, 42 U.S.C. 4321, 4331-4335)

and Executive Order 11514, entitled "Protection and Enhancement of Environmental Quality," March 5, 1970 (35 Federal Register 4247, Mar. 7, 1970) the Government and the City recognize the importance of preservation and enhancement of the quality of the environment and the elimination of environmental pollution. Actions by either party will be after consideration of all possible effects upon the Project environmental resources and will incorporate adequate and appropriate measures to insure that the quality of the environment will not be degraded or unfavorably altered.

(b) During construction and operation undertaken by either party, specific actions will be taken to control environmental pollution which could result from their activities and to comply with applicable Federal, State, and local laws and regulations concerning environmental pollution. Particular attention should be given to (1) reduction of air pollution by control of burning, minimization of dust, containment of chemical vapors, and control of engine exhaust gases and smoke from temporary heaters; (2) reduction of water pollution by control of sanitary facilities, storage of fuels and other contaminants, and control of turbidity and siltation from erosion; (3) minimization of noise levels; (4) on- and offsite disposal of waste and spoil activities; and (5) prevention of landscape defacement and damage.

ARTICLE 17 - EFFECTIVE DATE. This contract shall take effect upon approval by the Secretary of the Army or his authorized representative.

IN WITNESS WHEREOF, the parties hereto have executed this contract  
as of the day and year first above written.

THE UNITED STATES OF AMERICA

THE CITY OF TEMPE

By \_\_\_\_\_  
Colonel, Corps of Engineers  
District Engineer  
Contracting Officer

By \_\_\_\_\_  
Mayor, City of Tempe

DATE \_\_\_\_\_

ATTEST:

APPROVED:

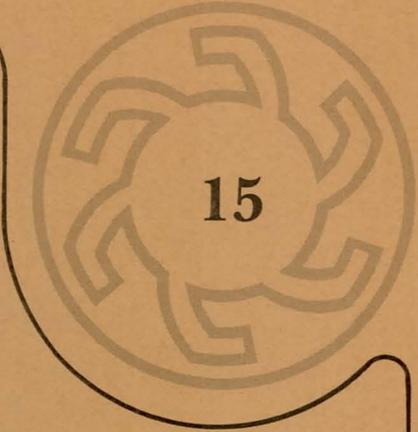
By \_\_\_\_\_  
City Clerk, City of Tempe

By \_\_\_\_\_

DATE \_\_\_\_\_

The undersigned, as chief legal officer for the City of Tempe, approves the foregoing agreement as to form and legality this \_\_\_ day of \_\_\_\_\_, 1974. I have reviewed the contract in the light of the requirements of Section 221 of Public Law 91-611. I further find that the City of Tempe is a legally constituted body having full legal authority to enter into the foregoing agreement and to respond in damages in the event that it fails to fulfill its contractual obligations.

\_\_\_\_\_  
City Counsel  
City of Tempe



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**PERTINENT  
CORRESPONDENCE**