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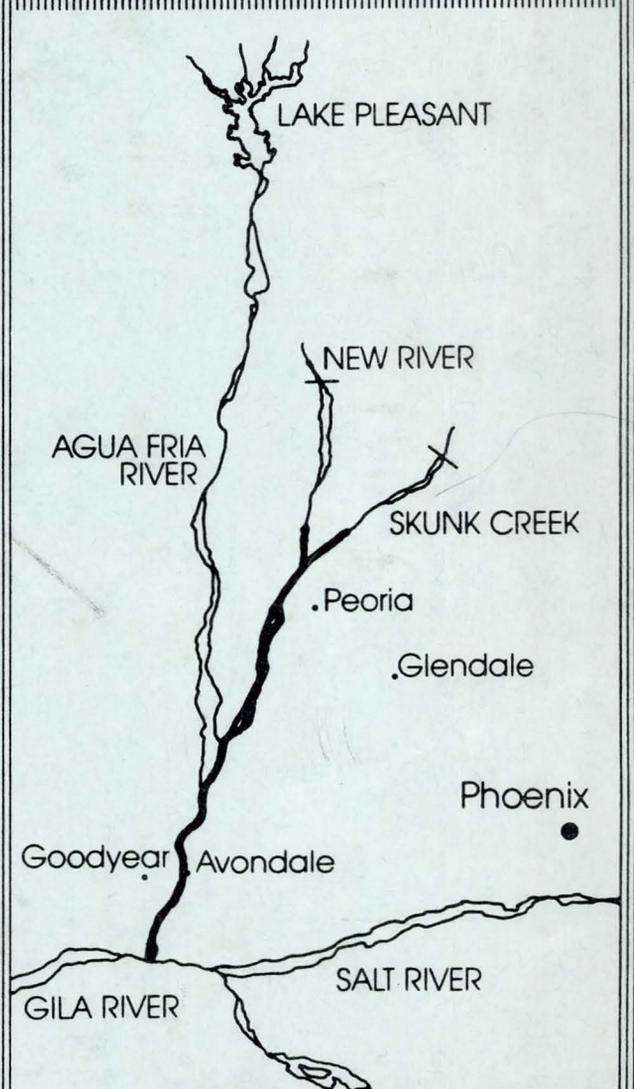
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**NEW RIVER  
SKUNK CREEK  
AGUA FRIA RIVER  
FLOOD CONTROL  
MASTER PLAN**

prepared by the  
FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY

MAY 1983

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NEW RIVER/SKUNK CREEK/AGUA FRIA RIVER  
FLOOD CONTROL MASTER PLAN

prepared by the  
FLOOD CONTROL DISTRICT  
OF MARICOPA COUNTY  
May 1983

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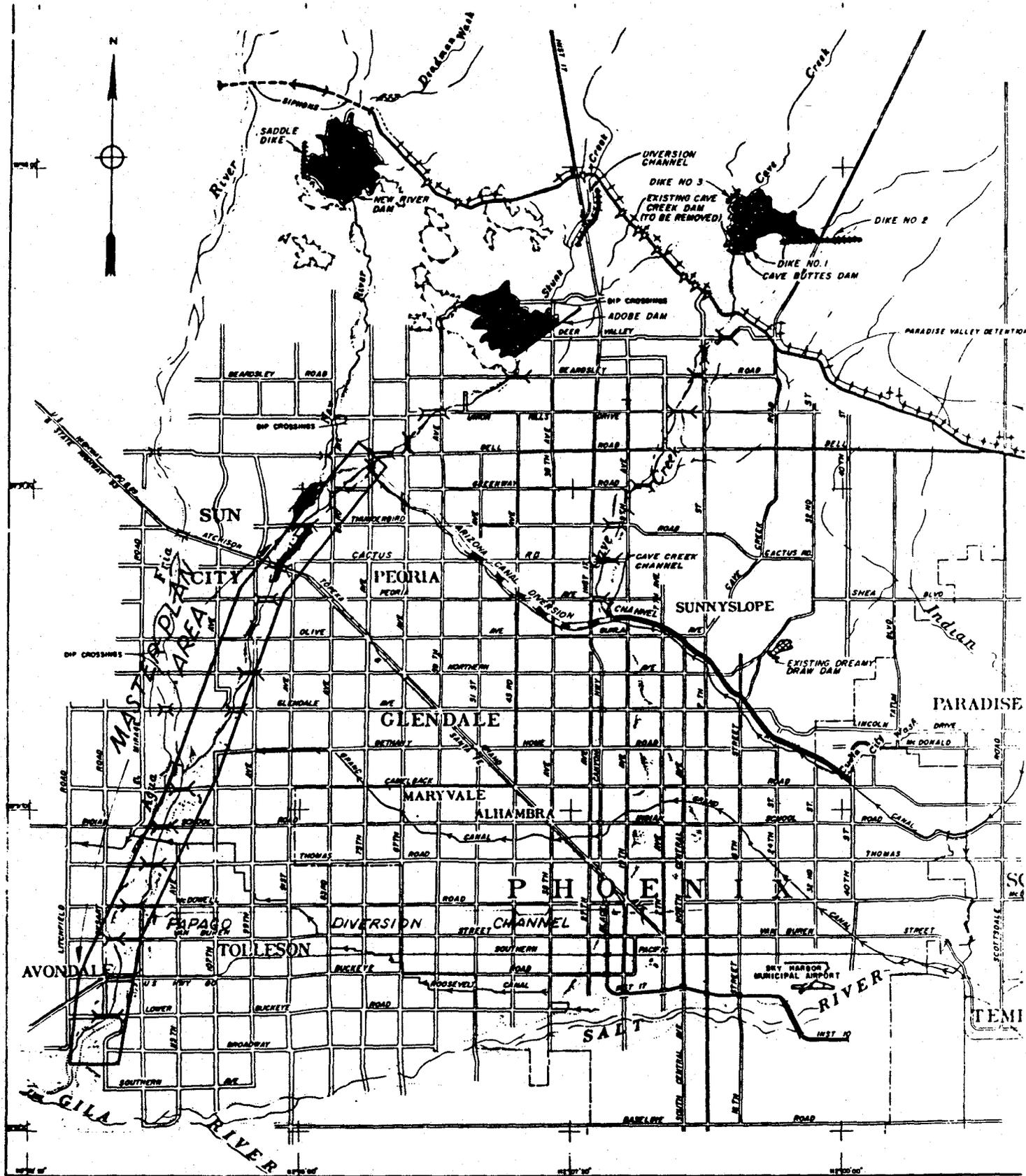
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MASTER PLAN AREA  
FIGURE # 1

## I. INTRODUCTION AND PURPOSE

The New River, Skunk Creek and Agua Fria River Master Plan has been developed by the Flood Control District of Maricopa County as an alternative method to acquiring flowage easements for providing positive flood control in a rapidly developing area. Recent developments, expressed local municipal desires and reanalysis of the flood control problems of the area led to the development of this master plan. The plan has evolved from conceptual projects for specific locations to the present systems concept for the three watercourses.

This master plan document describes the proposed project plan. Other studies and reports, referenced at the end of this document, should be reviewed for more detailed information and discussion of the area. The purpose of this master plan is to describe the proposed flood control project and is to be used as a vehicle to attain agency and public acceptance and support for the project.

## II. BACKGROUND

The Flood Control District of Maricopa County (FCD) is the local sponsor for the Corps of Engineers' Phoenix, Arizona and Vicinity (including New River) Project. Channelization of Skunk Creek downstream of the Arizona Canal Diversion Channel; New River downstream from Skunk Creek; and the Agua Fria River from New River to the Gila River were features of the Corps project authorized by Congress in 1965. The acquisition of flowage easements, with certain

local structural measures, was substituted for the channelization features for economic reasons. Environmental considerations were also involved in this decision. When the flowage easement alternative was accepted in the early 1970's, the area was outside of the urbanized Phoenix metropolitan area, was primarily agricultural and had abundant vacant land along the watercourses. The acquisition of flowage easements on relatively inexpensive or uneconomically useable land was an attractive feature of this alternative. An expressed added benefit was the maintenance of open space along the rivers.

Subsequent to the February 1980 floods, interest in providing flood control for the area increased. Proposed local development plans, construction of new bridges and rapidly increasing land values have made the acquisition of flowage easements less attractive. Wildlife habitat identified in the 1976 Environmental Impact Statement (EIS) for the Corps' Project has either been destroyed or adversely altered. Revised hydrology for the Agua Fria River has increased the areal extent of the required flowage easements. A more complete background discussion can be found in the New River/Skunk Creek/Agua Fria River Flood Control Plan, dated October 1982, by Willdan Associates.

### III. EXISTING ENVIRONMENTAL CONDITIONS

Refer to Chapter V, of the New River/Skunk Creek/Agua Fria River Flood Control Plan, dated October 1982, by Willdan Associates.

#### IV. PHYSICAL PLAN

##### (A) New River and Skunk Creek Channelization Plan

Since completion of the Phase I GDM, in 1976, we have seen many changes occur along New River and Skunk Creek, some of which are enumerated below.

The reach of New River beginning at Northern Avenue upstream to the confluence with Skunk Creek and Skunk Creek to the confluence with the proposed Arizona Canal Diversion Channel are within the corporate limits of the City of Peoria. During the past five to six years, there has been a substantial amount of both residential and commercial development along the banks of New River south of Grand Avenue. In this same area the City of Peoria has constructed an Operations Center for its Public Works Department. North of Grand Avenue on New River to the confluence with Skunk Creek, the City of Peoria has zoned and approved two residential/commercial and industrial park developments. At Thunderbird Road, a new bridge has been constructed which will pass the pre-project 100-year flood. The major changes along Skunk Creek are the development by the City of Peoria of a recreational baseball complex, a large horse breeding farm with a training track and a new sand and gravel mining operation.

The City of Peoria has taken a strong position towards more positive flood control measures through the City than were proposed by the Phase I GDM. The Flood Control District has been made aware that it is the desire and intent of the City to vigorously pursue the development of flood control

features as described in this master plan. In its effort to promote this plan, the City has acquired title to property in the New River and Skunk Creek floodway districts and propose to zone the proposed channelization rights-of-way as a major drainage way. Following are more detailed discussions of the proposed channelization plan by reaches.

1. Skunk Creek - ACDC to New River Confluence

Almost immediately downstream of the Diversion Channel confluence along the north bank of Skunk Creek, the City of Peoria has constructed a baseball complex with additional recreational facilities. The natural channel of Skunk Creek from 83rd Avenue and upstream to near 75th Avenue has been enlarged. The channel invert was lowered by approximately four feet with sloping banks and a levee was constructed along the north bank adjacent to the sports complex. The levee and channel modification, however, is not adequate to contain a post-project 100-year flow of 31,000 cfs downstream of the Arizona Canal Diversion Channel confluence. Peoria has placed a high priority on protecting the sports facility, and the future development of additional recreational facilities on property the City owns downstream to 83rd Avenue. The bridge at 83rd Avenue does not have the capacity to pass the post-project 100-year flow and lengthening of the bridge, plus measures to protect the foundation are required. Downstream of 83rd Avenue to the confluence with New River, some shaping of the banks has occurred, but again the channel is not capable of containing the post-project 100 year flow.

At this location, there is a 20-acre parcel of land which is owned by Maricopa County.

The channelization concept being proposed by this master plan is for a fully entrenched earth channel with an approximate 200-foot bottom and 2-to-1 (horizontal to vertical) side slopes. The invert is to be unlined with stabilized banks. The channel section will be excavated prior to 1985 to provide fill for two developments that are being planned for the area. A drop structure will be constructed downstream of the Arizona Canal Diversion Channel confluence in the vicinity of the baseball complex. This drop structure along with the bridge lengthening at 83rd Avenue is the responsibility of the Flood Control District. The City of Peoria will acquire the required rights-of-way by dedication and the Flood Control District will operate and maintain the completed channels.

## 2. New River - Skunk Creek Confluence to Grand Avenue

At the confluence of Skunk Creek and New River is a residential development known as Desert Harbor. The boundaries of the development extend from the east bank of New River to the easterly boundary of Sun City and from Greenway Road to Thunderbird Road. This development was approved by the City of Peoria and includes the channelization of New River from Greenway Road to a point about 1200 feet south of Thunderbird Road. The channel and the new bridge at Thunderbird Road were designed to convey the pre-project 100-year flow of approximately 58,000 cfs. The grading of this development

was initiated in 1981 but was suspended with the decline in demand for housing and the high rate of interest that has been experienced during the past four years. With the increased activity of new developments in the area, there is reason to believe that the project will be completed within the next two years. South from Thunderbird Road, along the west bank of New River, is the Plaza Del Rio Development. The City of Peoria has recently approved the master plan for this commercial and residential development, and engineering is underway for the first phase of development. Construction on this development is scheduled to start in early 1984. The southern boundary of this development is about one-quarter mile north of Grand Avenue or approximately at the upstream end of the three hundred foot bottom channel proposed in the Phase I GDM. The first and second phases of this development will require large quantities of fill material, and the Developers have expressed a desire to excavate a channel section in New River as a source of borrow. Since the Developers do not control the east bank for the entire length of this development, the City of Peoria will have to acquire the necessary dedications from the east bank owner to allow the excavation of the channel section. This coordination by the City will be in the City's interest in order to insure the desired fully channelized section. Industrial park development has been occurring along the east bank of New River and east of the proposed Arizona Department of Transportation "outer loop" freeway alignment. The earliest construction is contemplated on the outer loop, in this area, in the mid 1990's. With the excavation of a fully entrenched channel section by the Desert Harbor and

Plaza Del Rio Developments, the channelization of New River, from its confluence with Skunk Creek to the upstream end of the COE channel at Grand Avenue, can be realized by mid 1985.

3. New River - Grand Avenue to Olive Avenue

This reach of New River has seen considerable commercial and residential development along the east and west banks since the publication of the Phase I GDM. Developments now exist along both banks from Grand Avenue south to one-half mile south of Peoria Avenue. There are signs of new development being considered in the near future on the west bank north of Olive Avenue. Because there is existing development, a request will be made to the COE to study the present conditions and fully stabilize both banks of New River for this reach.

4. New River - Olive Avenue to Glendale Avenue

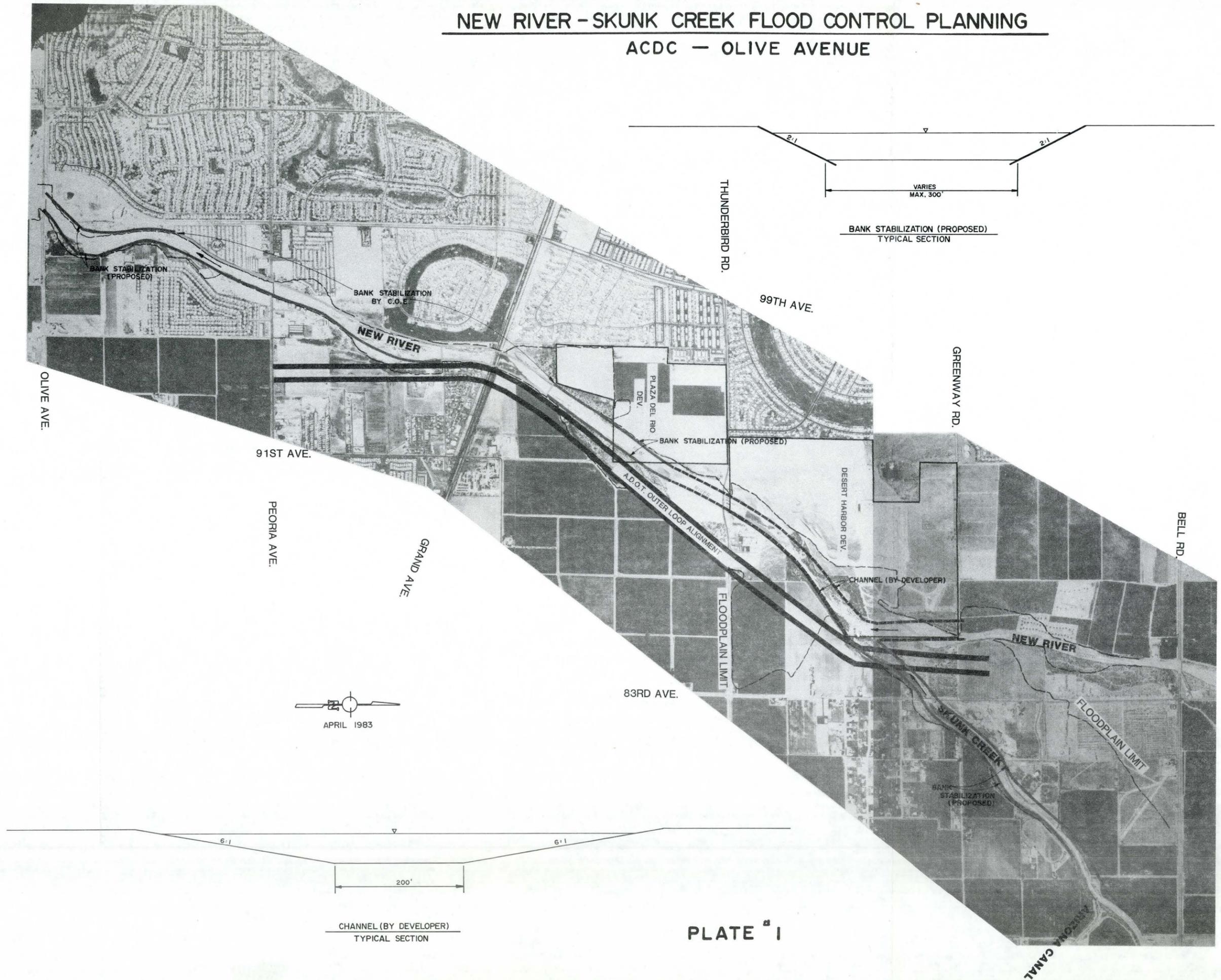
South of Olive Avenue along New River, there is presently only one residential development along the east bank of New River. This is a small ranchette type of development, and the rest of the area is still in agricultural use. Generally, the floodplain/floodway is within the natural banks of New River in this reach except where shallow flow breakouts occur and the floodway fringe district extends over widespread agricultural areas. The master plan for this reach is to provide freeboard levees with some minor low flow channel excavation. The main purpose is to prevent the widespread shallow flooding and to allow the area within the levees to remain natural with existing vegetation.

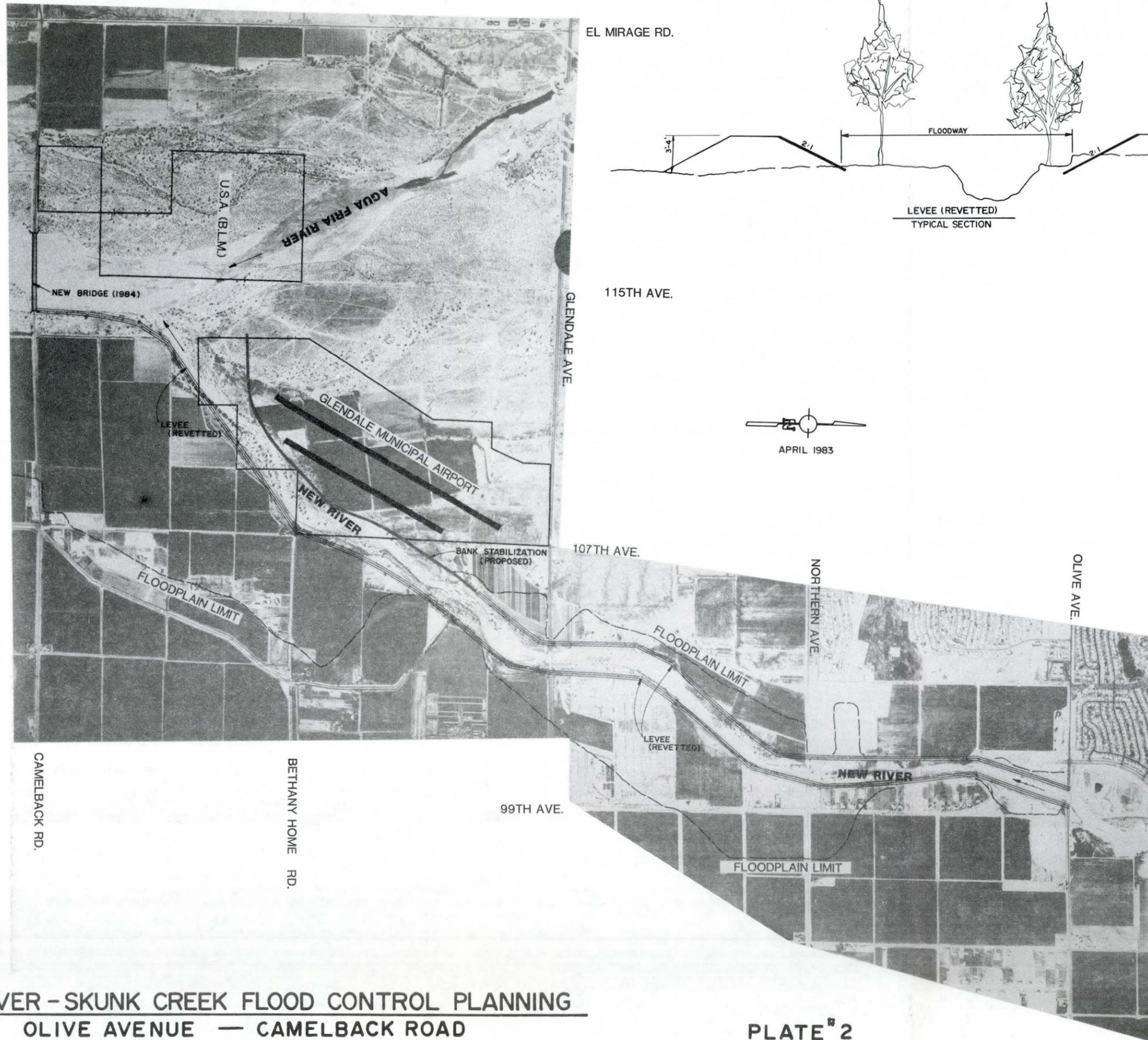
5. New River - Glendale Avenue to Camelback Road

New River south of Glendale Avenue to its confluence with the Agua Fria River is confined by its natural west bank; however, on the east bank, there is a shallow flow breakout of the 100-year post-project flow across agricultural lands. The most recent development in this reach is the approval of the City of Glendale's Municipal Airport site at the confluence of New River and the Agua Fria River. Engineering planning and design is presently underway so that construction of the airport can be started in early 1984. It is anticipated that all phases of the airport construction will be completed by 1986. The first phase of the site grading will require approximately one million yards of borrow which will be taken from the New River and Agua Fria River floodplains. The west bank of New River will be revetted as part of the airport development. The construction of the new Camelback Road Bridge over the Agua Fria River will require channelization for a short distance upstream of the bridge. This master plan concept proposes the construction of a levee along the east bank of New River that will tie into the east abutment of the Camelback Road Bridge. This levee will confine flows to the natural channel and prevent shallow flow breakouts along the east bank. This master plan will provide the criteria to be used in coordinating the excavating to be done for the Camelback Road Bridge and the airport development to insure a channelized section from Glendale Avenue to Camelback Road.

# NEW RIVER - SKUNK CREEK FLOOD CONTROL PLANNING

## ACDC - OLIVE AVENUE





**NEW RIVER - SKUNK CREEK FLOOD CONTROL PLANNING**  
**OLIVE AVENUE — CAMELBACK ROAD**

**PLATE # 2**

(B) Agua Fria River Channelization Plan

The proposed channelization in the Agua Fria River extends from Camelback Road downstream to the Gila River floodplain, approximately 2,000 feet south of Broadway Road. The length of the channelization is approximately 7.5 miles. All segments presently being designed are sized to contain and convey the 100-year flood. See Figure #2 for the proposed design/construction schedule. Recent discussions with the Los Angeles District, Corps of Engineers may result in using the Standard Project Flood criteria for designing the channel levees. The proposed channelization project will be described in the following five subsections. In the following discussions, the term channelization is meant to include the construction of levees.

(1) Camelback Road to Indian School Road

The Maricopa County Highway Department (MCHD) will construct a 1725 foot bridge at Camelback Road. Construction of this 95,000 cfs bridge will begin in July 1983 and be completed by March 1984. The MCHD is presently rebuilding the damaged portions of the Indian School Road Bridge and should be completed by July 1983. In order to improve the flow characteristics through the two bridges, an earth bottom trapezoidal channel is planned with stabilized side slopes. This channel will serve to control the flow between the bridges, improve the capacity and structural safety of the bridges, and reduce the width of the floodplain in this reach.

The MCHD has agreed to share the cost of the channelization with the FCD. Simons, Li and Associates (SLA) from Fort Collins, Colorado is presently designing the channel for the FCD. The channel invert will vary in width from 1725 to 1600 feet, and have three to one (horizontal to vertical) side slopes stabilized with soil cement or riprap. The channel being designed to FEMA standards, will safely convey the 100-year flow equal to 95,000 cfs with a minimum three foot freeboard. It is anticipated that at least two drop structures will be required. Property identification for acquisition is underway.

(2) Indian School Road to Thomas Road

As the result of an out of court settlement of a lawsuit initiated by Maricopa County and the Roosevelt Irrigation District against three sand and gravel companies and the City of Avondale, more than \$1.2 million and 150 acres of right-of-way have been given to the FCD for the construction of a channel between Indian School Road and Thomas Road. This channel is necessary to protect the rebuilt Indian School Road Bridge and the Roosevelt Irrigation District (RID) flume. The reconstructed bridge will have a capacity of 90,000 cfs. The MCHD has agreed to cost share this project with the FCD. The channel being designed will safely convey the 100-year flow equal to 95,000 cfs with a three foot freeboard. The trapezoidal earth bottom channel will vary in width from 1600 to 1100 feet at Thomas Road, have three to one side slopes with soil cement or riprap protection and will include a drop structure downstream from the RID flume. Presently, the channel is constricted to a 500 foot width

upstream of the flume by levees constructed by the sand and gravel companies. Simons, Li and Associates should complete design of this channel by late summer 1983 and construction is scheduled to begin during the fourth quarter of 1983.

(3) Thomas Road to Interstate Ten

The Agua Fria River, between Thomas Road and I-10 is a unique stretch of the river. Within this mile and a half reach, the low flow channel is constricted to a 400 foot width and takes two ninety degree turns before passing under the interstate bridges. The location of the interstate bridges was based partially on a channel proposed by the Corps of Engineers during the mid-1960's. The proposed Corps' channel was not constructed. The MCHD is planning to construct a bridge at McDowell Road, however, because of the width of the floodplain in this vicinity, it is not economically feasible to construct a bridge with a 100-year capacity.

In 1982, the FCD was authorized by its Board of Directors to construct a realigned channel in this reach providing a superior bridge site and increase the hydraulic efficiency of the river by eliminating the ninety degree bends. The channel rights-of-way have been acquired by the FCD and approximately half the channel excavation has been accomplished, by a contractor working on the construction of I-10. The MCHD has scheduled construction of the designed McDowell Road Bridge for the spring of 1984 and is in the process of acquiring

the required private property for the bridge and channel between McDowell Road and I-10. The MCHD and FCD have agreed to cost share the construction of the channel in this reach.

The earth bottom, trapezoidal channel will have an 1100 foot wide bottom and three to one side slopes stabilized with riprap. South of McDowell Road the channel will widen to the 1500 foot width of the I-10 Bridges. A grade control structure is required south of Thomas Road. The channel is designed to contain the 100-year flood (91,000 cfs) with three feet of freeboard.

Dibble and Associates, Phoenix, Arizona has designed the McDowell Road Bridge and will finalize design of the channel upon completion of a sediment transport analysis of the Agua Fria River being conducted by Simons, Li and Associates. It will be necessary to carefully coordinate the construction in 1984 of the McDowell Road Bridge and the channel.

(4) Interstate Ten to Buckeye Road (State Route 85)

The I-10 embankment across the Agua Fria River floodplain has been constructed, thus forcing all river flows through its bridges. A well defined natural channel, approximately 1000 feet wide, exists from the bridges to Van Buren Street. Even with the freeway embankment in place, the floodplain between I-10 and Buckeye Road approaches a mile in width. The central business district and residential neighborhoods of Avondale are located within a quarter of a mile west of the floodplain in this reach.

The expected opening of the I-10 crossing to traffic in 1983 has accelerated development plans in the area and has caused land values to increase dramatically. In 1982, an intergovernmental agreement was signed by the Arizona Department of Transportation (ADOT), the City of Avondale, the City of Phoenix, MCHD and FCD. Under the provisions of this agreement, ADOT will provide \$5 million to the FCD to construct flood control measures along the river within the City of Avondale. It is proposed by the FCD to construct a channel from I-10 downstream using these funds which must be spent or obligated by September 1986. A private development group, representing the majority of the owners of the floodplain in this reach, has indicated that it would be willing to dedicate the channel rights-of-way.

The proposed trapezoidal channel will have an earthen bottom varying in width from 1500 feet at I-10 to approximately 1200 feet wide at the Southern Pacific Railroad and Buckeye Road Bridges. The three to one side slopes would be protected with soil cement or riprap. A grade control structure would be built downstream from the I-10 bridges and possibly one or more would be required between Van Buren Street and Buckeye Road. The channel will be designed to convey 91,000 cfs with three feet of freeboard.

Simons, Li and Associates will make a preliminary recommendation for the channel design based on the results of their sediment transport analysis. It is anticipated that a final design

contract will be awarded in late 1983 with construction to start during the second half of 1984.

(5) Buckeye Road to the Gila River

The Phase I General Design Memorandum for the Corps of Engineers' Phoenix, Arizona and Vicinity (including New River) Project identifies three areas that are to be protected by Corps built structures. Two residential areas, one west of Dysart Road and the other in the east floodplain north of Lower Buckeye Road would be protected by earthen dikes. Avondale's wastewater treatment plant on the west bank, south of Lower Buckeye Road would also be protected from the 100-year flood. Changes in topography and hydrology since the GDM was published in 1976 may require a different approach by the Corps for the protection of these areas.

FCD's proposed plan for this reach includes a stabilized constructed channel from Buckeye Road to Lower Buckeye Road and bank stabilization of the west bank and a levee on the east bank south of Lower Buckeye Road to the Gila River. If this proposed plan is implemented, it would preclude the necessity of building the proposed Corps structures.

The 100-year capacity channel from Buckeye Road to Lower Buckeye Road would be an earth bottom trapezoidal channel varying in width from 1200 feet at Buckeye Road to approximately 2000 feet at Lower Buckeye Road. The two subdivisions would be protected by this

APRIL 1983

PRELIMINARY AGUA FRIA RIVER CONSTRUCTION SCHEDULE

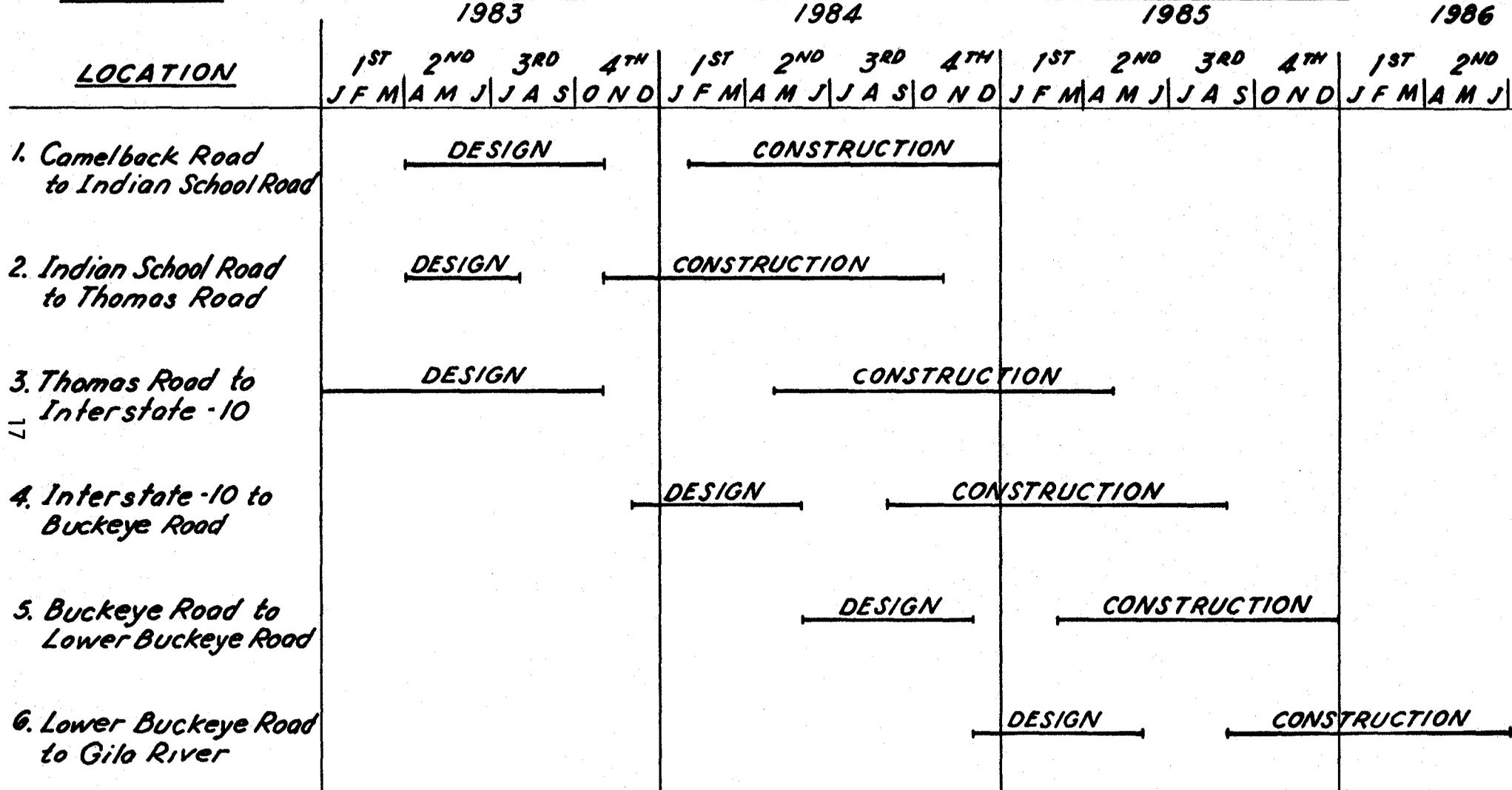
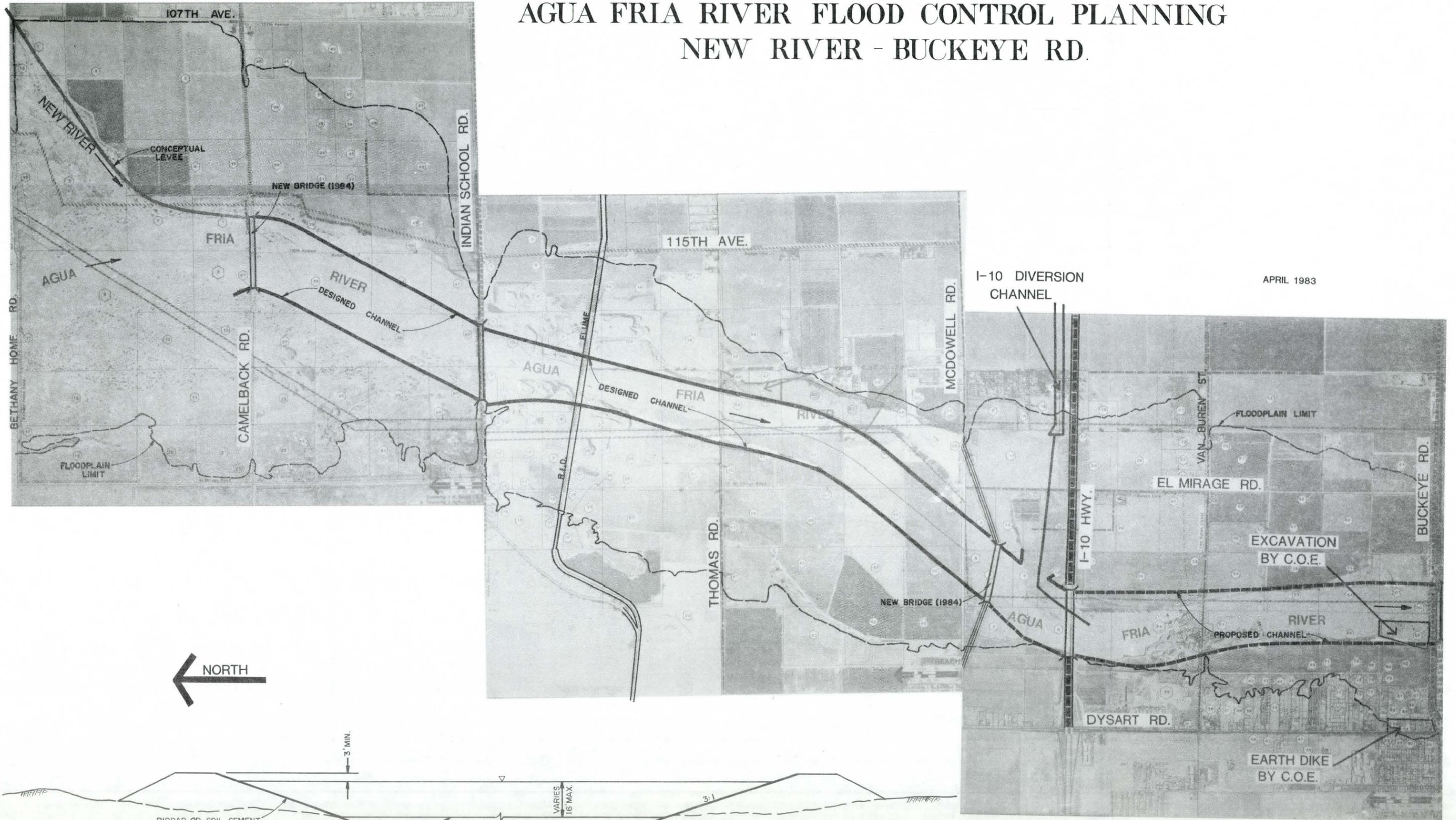
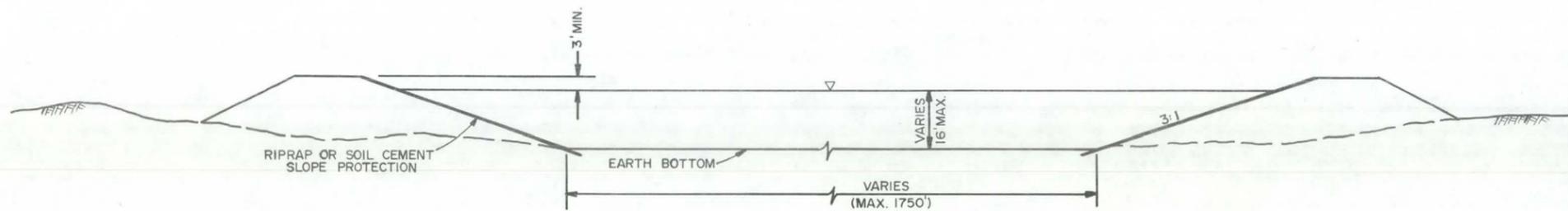


FIGURE # 2

# AGUA FRIA RIVER FLOOD CONTROL PLANNING NEW RIVER - BUCKEYE RD.



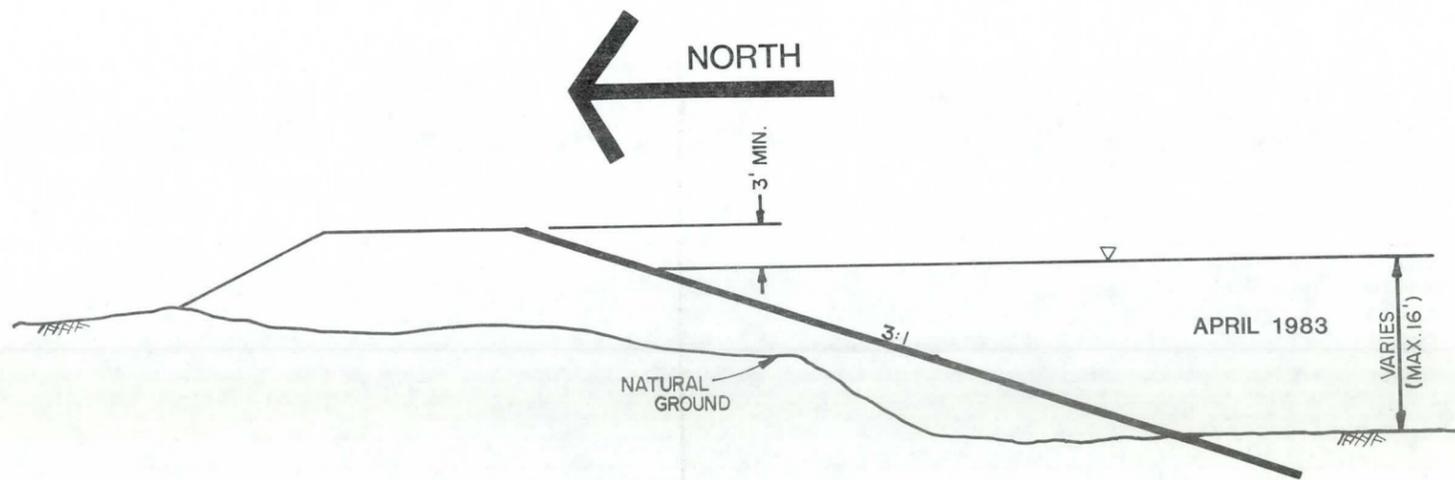
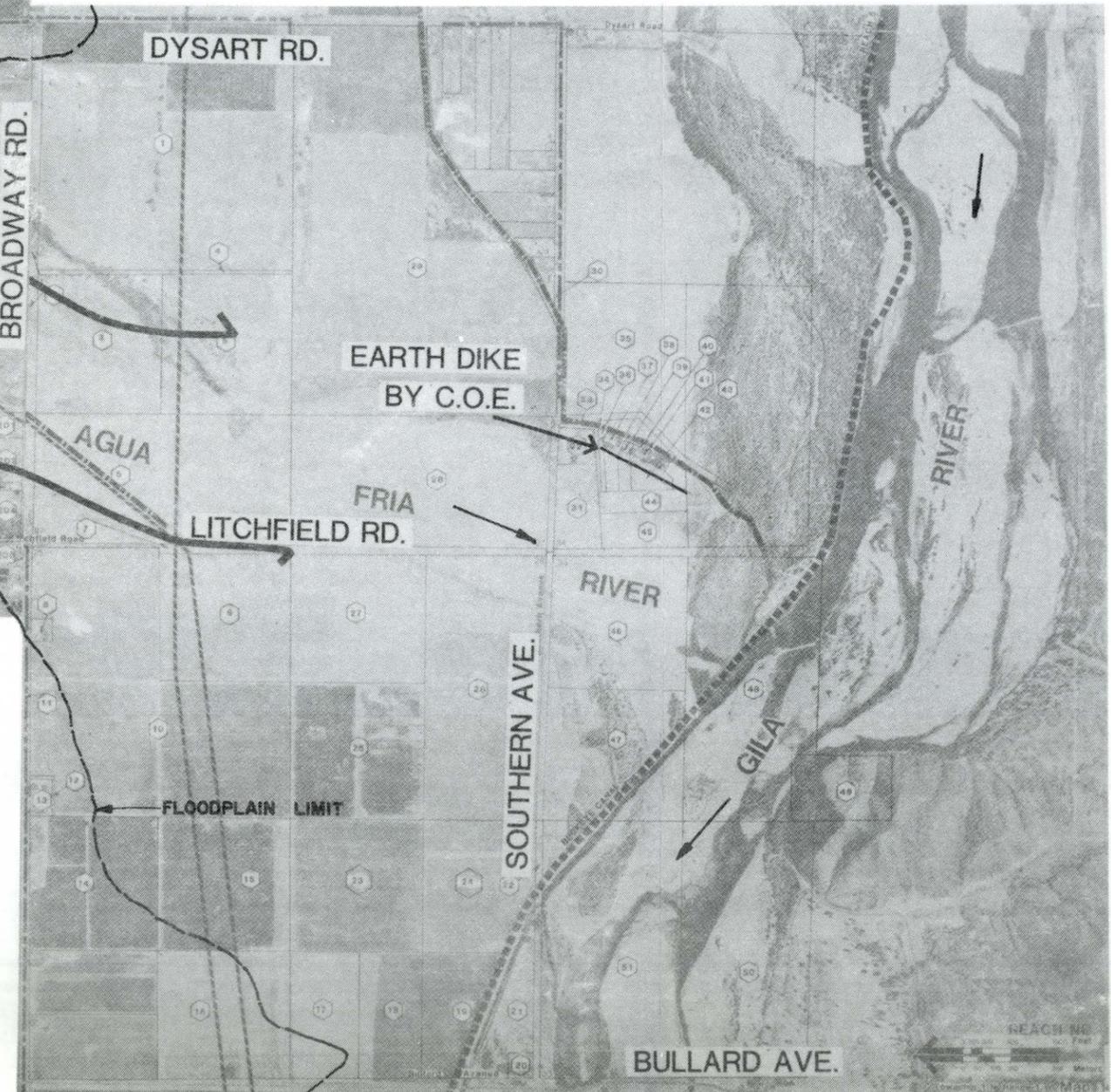
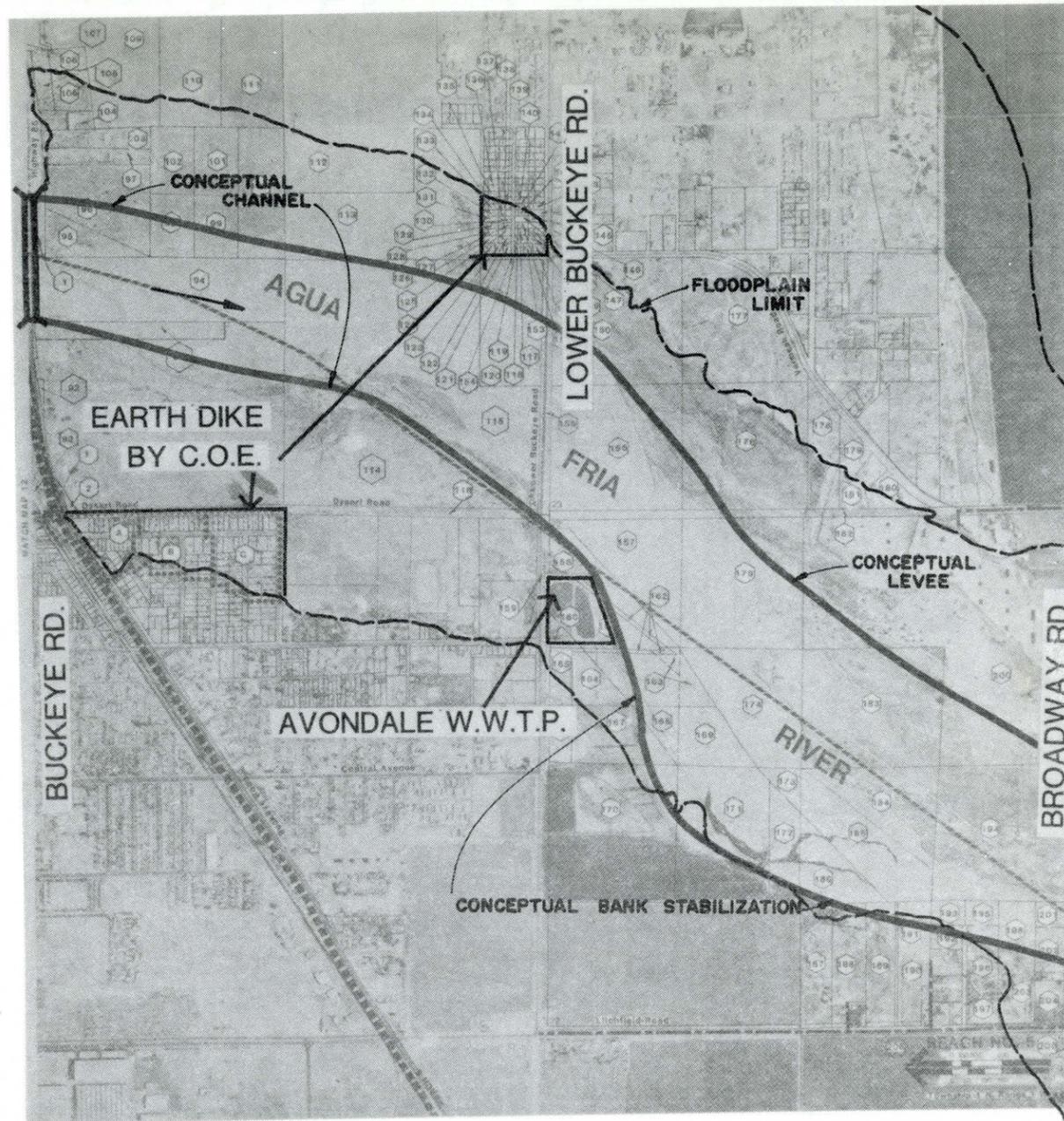
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**TYPICAL AGUA FRIA RIVER CHANNEL  
CROSS SECTION**

# AGUA FRIA RIVER FLOOD CONTROL PLANNING

## BUCKEYE RD. - GILA RIVER



TYPICAL BANK STABILIZATION  
CROSS SECTION (CONCEPTUAL)

structure. The west bank south of Lower Buckeye Road would be stabilized with riprap or soil cement and minor levees would be required on the bank to meet the freeboard requirements. This levee would protect the wastewater treatment. On the east side the proposed levee alignment has not been determined, however, it would not follow the existing natural bank. It is proposed that a flowage easement be acquired in the channel area between the levees. Acquisition of this easement will be less expensive than acquiring the right-of-way in fee and would allow for future sand and gravel operations or other acceptable open space uses. The results of Simons, Li and Associates' sediment transport analysis will be used as the basis of a design contract to be awarded in the second half of 1984. Construction will commence in 1985. Other than a potential cost sharing arrangement with the Corps, funding cooperation with other public agencies has not been identified. Private interests, owning the majority of the land south of Lower Buckeye Road, will be contacted for possible right-of-way dedications or financial participation. If construction of the levees south of Lower Buckeye Road are not economically feasible, flowage easements may be an acceptable alternative.

#### V. ENVIRONMENTAL EFFECTS OF CHANNELIZATION

Refer to Chapter VIII of the New River/Skunk Creek/Agua Fria River Flood Control Plan, published in October 1982 by Willdan Associates.

#### VI. OPEN SPACE PLANNING

The Final Environmental Impact Statement (EIS) for the Corps' project stated that an added benefit of the acquisition of flowage

SKINK CREEK/NEW RIVER OPEN SPACE ANALYSIS

APRIL 1983

| LOCATION  | CORPS OF ENGINEERS<br>OPEN SPACE<br>ESTIMATE (1981) | FLOODWAY<br>EASEMENT<br>(DIVERTED FLOWS)<br>(31,000 - 45,000) | PROPOSED CHANNEL/LEVEE<br>RIGHT-OF-WAY | REMARKS                      |
|---|---|---|--|------------------------------|
| ACDC/SKUNK CREEK CONFLUENCE<br>TO<br>NEW RIVER CONFLUENCE | 51  | 140   | 65                                     |                              |
| NEW RIVER/SKUNK CREEK CONFLUENCE<br>TO<br>GRAND AVENUE    | 177   | 295   | 126                                    | +12 Ac<br>FCD PARCEL @ GRAND |
| GRAND AVENUE<br>TO<br>1/2 MILE SOUTH OF PEORIA AVENUE     | 75  | 92  | 76                                     |                              |
| 1/2 MILE SOUTH OF PEORIA AVENUE<br>TO<br>OLIVE AVENUE     | 60  | 25  | 25                                     |                              |
| OLIVE AVENUE<br>TO<br>GLENDALE AVENUE                     | 94  | 195   | 147                                    |                              |
| GLENDALE AVENUE<br>TO<br>CAMELBACK ROAD                   | 600   | 510   | 265                                    | +100 Ac<br>USA (BLM)         |
| TOTALS  | 1057  | 1257  | 704                                    | +112 Ac = 818 Ac             |

FIGURE # 3

AGUA FRIA RIVER OPEN SPACE ANALYSIS

APRIL 1983

| LOCATION   | FLOODWAY 1.<br>(90,000 CFS)<br>W/NEW BRIDGES & I-10 | CORPS<br>OPEN SPACE<br>ESTIMATE (1981) | FLOODWAY 1.<br>(45,000 CFS)<br>W/NEW BRIDGES & I-10 | PROPOSED<br>CHANNEL<br>R/W | REMARKS  |
|--|---|--|---|----------------------------|--|
| CAMELBACK ROAD<br>TO INDIAN SCHOOL ROAD                    | 405 Ac  | 360 Ac                                 | 268 Ac  | 240 Ac                     | +40.0 Ac (USA)                                   |
| INDIAN SCHOOL ROAD<br>TO THOMAS ROAD                       | 182 Ac  | 266 Ac                                 | 149 Ac  | 150 Ac                     | +15.5 Ac (BLM)                                   |
| THOMAS ROAD<br>TO McDOWELL ROAD                            | 395 Ac <sup>2.</sup>                                | 301 Ac                                 | 203 Ac <sup>2.</sup>                                | 178 Ac                     |  |
| McDOWELL ROAD<br>TO VAN BUREN ROAD.                        | 350 Ac <sup>2.</sup>                                | 427 Ac                                 | 239 Ac <sup>2.</sup>                                | 380 Ac *                   | *Includes ADOT<br>R/W between<br>McDowell & I-10 |
| VAN BUREN ROAD<br>TO BUCKEYE ROAD                          | 355 Ac  | 299 Ac                                 | 139 Ac  | 179 Ac.                    | +2.0 Ac (M.C.)                                   |
| BUCKEYE ROAD<br>TO LOWER BUCKEYE ROAD                      | 388 Ac  | 221 Ac                                 | 305 Ac  | 204 Ac                     | +7.0 Ac (AZ)<br>+2.0 Ac Remnant                  |
| LOWER BUCKEYE ROAD<br>TO BROADWAY ROAD                     | 478 Ac  | 321 Ac                                 | 445 Ac  | 336 Ac                     |  |
| BROADWAY ROAD<br>TO GILA FLOODPLAIN<br>(TO BULLARD AVENUE) | 95 Ac   | 82 Ac<br>(716 Ac)                      | 83 Ac   | 100 Ac                     |  |
| TOTAL  | 2648 Ac <sup>2.</sup>                               | 2277 Ac (2911 Ac)                      | 1831 Ac <sup>2.</sup>                               | 1767 Ac                    | +66.5 Ac=1833.5 Ac                               |

1. USING 1981 TOPO
2. WILL BE REDUCED IF NEW McDOWELL ROAD BRIDGE IS CONSTRUCTED AS PLANNED

FIGURE # 4

easements along New River, Skunk Creek and the Agua Fria River would be the preservation of open space for the region. Acceptable uses of the open space are agriculture, recreation, sand and gravel extraction or natural wildlife usage. The FCD has analyzed open space requirements by comparing the channel rights-of-way to the delineated floodway for the 1975 hydrology and to a preliminary open space estimate made by the Corps in 1981. The floodway was modified using HEC-2 analysis to take into account the new bridges on the Agua Fria River and the completion of Interstate 10. See Figures 3 and 4.

The proposed channelization plan provides less open space than that indicated by the floodway delineation or the Corps estimate, however, the differences are minor if adjacent public lands are included. Additional open space can be provided if local municipalities require developers to upgrade landscaping and provide set-backs from the channels and locate public parks or recreational facilities adjacent to the channels. The channelization plan is compatible with the planned county-wide Sun Circle Trail system. A more detailed discussion of open space planning can be found in Chapter III of the New River/Skunk Creek/Agua Fria River Flood Control Plan.

## VII. PUBLIC INVOLVEMENT

This flood control master plan is the result of the stated desires of and discussions with officials from the municipalities along the rivers and from local public agencies with interests in this area. It is

realized that public acceptance of this plan will include meeting environmental requirements addressed in the federal project's EIS. Meetings with environmental groups and public meetings may be necessary to achieve total public support of the plan.

#### VIII. CONCLUSIONS AND RECOMMENDATIONS

Implementation of this master plan is vital to providing effective flood control and guiding the rapid development of the area. The importance of the available nonflood control funding sources should not be overlooked. Time is of the essence since development of the area is occurring now and because of funding time constraints. It is strongly recommended that this plan be reviewed and accepted by the various interested groups and agencies so that implementation of the plan can proceed.

IX. REFERENCES

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