

Landscape Aesthetics Design Guidelines & Corridor Master Plan

Bethany Home / Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II
FCD CONTRACT NO. 98-46

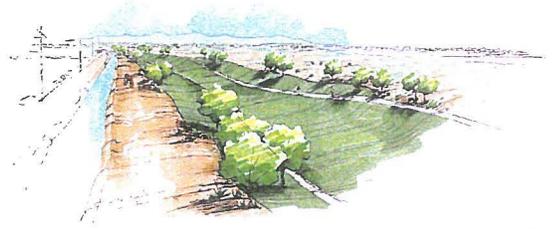
Prepared for:



Prepared by:

DMJM HARRIS

December 2002



Landscape Aesthetics Design Guidelines & Corridor Master Plan

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FCD Project No. 98-46, PCN NO. 620 03 32

Prepared for:
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Project No. 98-46

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PAAC Member	Representing
Ronald Arellanes	La Buena Vida Neighborhood
Carina Cost	Holiday Park Block Watch
Jim Duncan	Salt River Project
Charles Hoyt	Heatherbrae Neighborhood Association
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Richard Schwartz	West Glendale Community Collation
Elayne Taylor-Tyler	Maryvale Village Planning Committee
Tom Traw	Double T Ranch Neighborhood
Gary York	Maryvale Village Planning Committee

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- A. Corridor Master Plan
- B. Recreation Amenity Checklist
- C. Landscape, Aesthetics & Multi-Use Assessment & Goals and Objectives
- D. Site Analysis
- E. Visual Assessment



I. INTRODUCTION

The Bethany Home / Grand Canal Flood Control Project (BH/GCFCP) parallels diverse neighborhoods and properties. These properties have been developed over a long period of time and consequently have a diverse character. In order to maintain a cohesive project, these design guidelines have been developed to ensure that future development of the corridor is compatible with previous development and the adjacent SRP Grand Canal. The Design Guidelines are intended to direct the development of the design aesthetics along the entire project ensuring that the final product responds to the adjacent communities as well as the internal structure of the flood control project. These guidelines have been developed in cooperation with the Flood Control District of Maricopa County, the City of Glendale, the City of Phoenix and through community input from public meetings and the involvement of the Project Aesthetics Advisory Committee (PAAC).

These guidelines have been divided into three sections. The first section introduces the project, summarizes the research and analysis used to define the guidelines and defines the purpose and philosophy behind the development of the guidelines. The second section describes the specific areas within the corridor and what elements are to be developed within those areas. The final section describes the specific standards that should be followed in the final design process to ensure a cohesive development at final implementation. At the conclusion of the guidelines are a series of appendices that support the recommendations of these guidelines. These documents are an integral part of the overall master plan as they provide the background information used to prepare the guidelines and master plan documents. They include:

- Appendix "A" is the corridor master plan, which depicts the location of the various treatment types (character areas) that are described in this document.
- Appendix "B" a recreation amenity checklist that was developed by the cities as a guide to the type of recreation elements to be developed with this project.
- Appendix "C" describes the assessment of the landscape, aesthetic and recreation needs for the project and establishes a series of goals and objectives to be implemented with the project.
- Appendix "D" is a site analysis of the project area, which describes the physical features found in and around the corridor.
- Appendix "E" is a visual assessment of the project area in which the visual resources were documented and recommendations made to enhance or mitigate areas along the corridor.

As a result of these studies the following key conclusions were derived that guided the development of the design guidelines and master plan. These conclusions include:

- The primary purpose of this project is to convey storm water from the developed urban areas adjacent to the Grand Canal west to the New River. Complimentary to this purpose is the desire to integrate other open space and passive recreation uses into the flood control facility. The elements are intended to compliment the physical aspects of the flood control facility by providing a natural feel through meandering trails, informal planting arrangements and landform grading in scale with the suburban character of the surrounding area.
- The general character of the corridor is that of suburban development with a mix of existing agricultural uses that in the future will be developed similar to the existing developed areas. As a result, it is necessary that the design of this facility respect the context in which it resides. This can be achieved by utilizing the landscape types that are currently found adjacent to the corridor.



- The Grand Canal provides an opportunity to connect existing and future neighborhoods without the need to utilize the existing street network. In some cases the Grand Canal acts as a barrier from one neighborhood to another. The design of the multi-use aspects of the project will allow enhancement of this connection through the implementation of a trail system supported by under-crossings and bridges and key locations along the corridor.

Therefore, the landscape, aesthetics and multi-use aspects of the design shall be guided by the principal that all of these elements shall provide for connectivity along the entire corridor that is in scale and character with the surrounding context.

A. PURPOSE

The purpose of this document is to provide the framework to guide the design and implementation of the landscape, aesthetic and multi-use aspects of this project. These guidelines are not all inclusive and do not provide solutions for every situation that may be encountered during the final design of the various segments of the this project. They are however intended to provide the frame work in which the design of the various elements of the project can be achieved to ensure that the overall character of the project has a consistent look and feel at the conclusion of all of the various development phases.

These guidelines are divided into three sections. The first section introduces the project and defines the purpose and philosophy behind the development of the guidelines. The second section describes the specific areas within the corridor and what elements should be developed within those areas. The final section describes the specific standards that should be followed in the final design process to ensure a cohesive project upon final implementation.

B. PROJECT DESCRIPTION

The BH/GC FCP consists of a 4.5-mile long flood control facility adjacent to the Grand Canal within the Cities of Glendale, Phoenix and Unincorporated Maricopa County. The drainage facility varies in size, shape, and form along its entire length. It begins at approximately 63rd Avenue and Indian School Road at the Sunset Detention Basin and travels north and west eventually connecting to the existing drainage channel along the Bethany Home Road alignment east at the Loop 101 (Agua Fria) Freeway.

The flood control facility is as diverse as the communities it traverses. The facility ranges from an underground box culvert to a vertical concrete lined channel to an open grass lined channel. This diversity has provided multiple opportunities to develop multi-use activities with different landscape characters linked together with unifying elements and a multi-use path system for pedestrians, bicyclists, equestrians and other users.

The City of Glendale has designated the corridor between the Loop 101 and 75th Avenue the "Grand Canal Linear Park", the segment between 75th Avenue and 83rd Avenues is already partially developed for recreation uses. The City of Phoenix desires to see the facility that is within their city limits developed as a passive open space with trail connections between the segments.

C. RESEARCH & ANALYSIS

Prior to development of the corridor master plan and associated design guidelines, a site analysis, visual assessment and needs assessment of the project was undertaken to determine the opportunities and constraints found within and along the corridor that would influence the physical features to be included in the



final design of the facility. Detailed information can be found within these documents and are included as appendices to this document. This section is intended to summarize the results of the studies and their relevance to the outcomes of the corridor master plan and design guidelines.

1. **Site Analysis:** The Site Analysis for this project researched the features along the corridor that primarily related to issues of existing and future land use, transportation and access and other physical or cultural elements found within and surrounding the corridor. As a result of the site analysis, it was determined that the predominate land use, both existing and future, was primarily residential in nature. There are however pockets of commercial land uses located primarily at the intersections of arterial streets. The predominance of residential uses creates the opportunity for the local community to benefit from a multi-use vision for the corridor due to its close proximity to the adjacent neighborhoods.
2. **Visual Assessment:** The purpose of the visual assessment is that it provided an effective basis for integrating landscape aesthetics into the planning and design of the Bethany Home / Grand Canal Linear Park Project (BHGCLP). The objectives are to identify opportunities and treatment options to:
 - Design the channel facility and linear park corridor to blend with and complement the local character of the urban, suburban, park and agricultural landscapes in which it is situated;
 - Preserve and enhance valued scenic features within and adjacent to the linear park corridor;
 - Provide positive aesthetic enhancements and restoration of existing conditions within or adjacent to the linear park corridor;
 - Preserve and enhance important views, sight lines and focal point areas visible from and within the linear park corridor;
 - Establish an overall design theme that will unify desired features and characteristics, and provide the linear park corridor with a distinctive identity.

D. DESIGN THEME/PHILOSOPHY

The BH/GCFCP is unique in the sense that the overall goal of providing flood control is being integrated with the goal of providing a facility that has added benefits for passive recreational uses. The intent of the design is to enhance the open space and multi-use experience while tying design elements into the adjacent communities and responding to the distinct character areas with unifying elements. To achieve this design theme, these guidelines propose to:

- Unify structural elements with common treatments with regards to materials, colors, textures and patterns;
- Present a landscape pallet that responds to the adjacent community while at the same time provide consistency through the use of predominate tree species;
- Utilize the landscape pallet to enhance the facility edge, screen undesirable areas, bring attention to focal or decision points, and to frame near or distant views

E. DESIGN OBJECTIVES

1. Site Utilization

The BH/GCFCP is primarily a flood control facility. As such, the design and form are driven by hydrologic and hydraulic requirements. However, the project forms a linear open space for public use along and within the flood control channel. The objective here is to seize the opportunity to develop multi-use aspects of the facility for enjoyment by the community when not functioning in its drainage capacity.



2. Landscape

The BH/GCFCP should exhibit a cohesive and integrated landscape. The landscape within the project is key to establishing an identity for the project. This will primarily consist of a turf-lined channel bordered by arid zone (drought tolerant) plants. Since the project passes through a number of distinct communities, the nodes and transition areas that occur in each community will reflect the planting character of that neighborhood.

Spatial Relationships

The design of the channel and adjacent areas shall vary the spatial relationships through slope manipulation, channel width and landform grading at the channel periphery. This can be achieved by varying the channel side slopes, meandering of the channel bottom width and transitioning the channel sides into the adjacent areas through the use of additional landforms.

Visual Integration

The landscape design within the BH/GCFCP shall relate to the Grand Canal. Therefore, the design of the periphery should integrate the Grand Canal as a feature of the project and not just a boundary edge. This can be achieved by varying the edge of the landscape plantings at the edge of the canal maintenance road so that a hard edge is not perceived.

Preservation & Enhancement

The landscape design shall consider that preservation and enhancement of unique or distant features along the corridor such as distant views to the White Tank Mountains, Estrella Mountains and other landmarks. The landscape placement in relationship to the trail design shall take the opportunity to frame these prominent features when traveling in either direction.

3. Pedestrian Environment

The design should provide a safe recreational facility for pedestrians and bicyclists that choose to use the BH/GCFCP. It should promote accessibility, connectivity and continuity with regional open spaces such as the West Valley Recreation Corridor along the Agua Fria River. Throughout the project there is a multi-use trail that is shared by pedestrians, joggers, and bicyclists. This trail is separated from vehicular traffic with the exception of emergency vehicles. It is designed to meander up and down the slopes of the channel to provide an enjoyable recreation experience taking advantage of the topographical changes and significant on-site and off-site views. It should also have security lighting and meet all codes and requirements for accessibility.

The trail also provides connections to adjacent roads and trails that interface with the project. These access points should be distinctive, inviting a sense of entry and easily identifiable from within and outside the BH/GCFCP.

In addition to the multi-use trail, there are provisions to accommodate equestrian users through the use of the adjacent SRP Grand Canal maintenance road. This will accommodate equestrians with minimal conflicts with the users of the multi-use path.



4. Site Amenities and Special Features

The BH/GCFCP provides opportunities for active and passive recreational uses within different segments of the corridor. Amenities that may be developed include playgrounds, basketball courts, par courses, and other informal recreation activities requiring open grass areas. Other amenities, such as drinking fountains, benches, and picnic tables, should be located at convenient intervals along the corridor.



II. CHARACTER AREAS

As previously discussed, the corridor is made up of areas of diverse character. There is however one element along the entire corridor that remains constant. This element is the Grand Canal. In all instances the following "character areas" need to be integrated with this element. This can be achieved by softening the edge of the flood control facility through variations in the planting arrangements and the use of landforms where sufficient right-of-way exists.

In response to the site analysis, visual assessment and needs assessment, the corridor has been divided into distinct "character areas". These areas are defined by either specific activities or linkages to the corridor or differences in the character of the flood control facility. These "character areas" are described in the following paragraphs.

A. MAJOR NODES

These nodes provide a formal entry or gateway into the BH/GC FCP. Additionally, they may offer opportunities for the city to create a visual and physical entry element. The nodes along the BH/GC FCP provide the critical interface between the linear open space and the community. As such, they are designed to be visual and physical landmarks that draw people to the amenities found there as well as to the trail system.

The nodes also reflect the adjacent neighborhood's values and preferences. Structural and recreation elements as well as textured and colored concrete are encouraged in the node areas to set them apart from the rest of the project.

Within the project corridor two areas have been identified as major nodes. The elements which may be included at each node are identified below (See Figures 1 and 2 for conceptual examples).

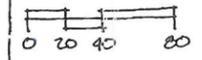
1. 83rd Avenue & Bethany Home Road Node

- Play area
- Shade structures / Ramadas / Seating
- Major Entry Feature with Signage
- Equestrian staging area
- Parking
- Picnic areas
- Drinking fountain
- Pet waste disposal dispensers
- Directional signage

2. 75th Avenue & Camelback Road Node

- Play area
- Shade structure / ramadas / seating
- Major Entry Feature
- Directional signage
- Parking
- Court sports - basketball, volleyball
- Drinking fountain
- Pet waste disposal dispensers
- Sculpture garden

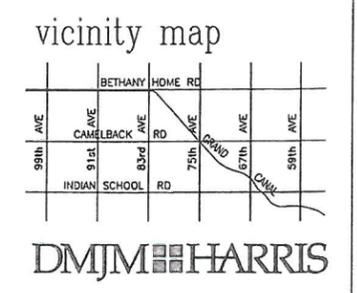


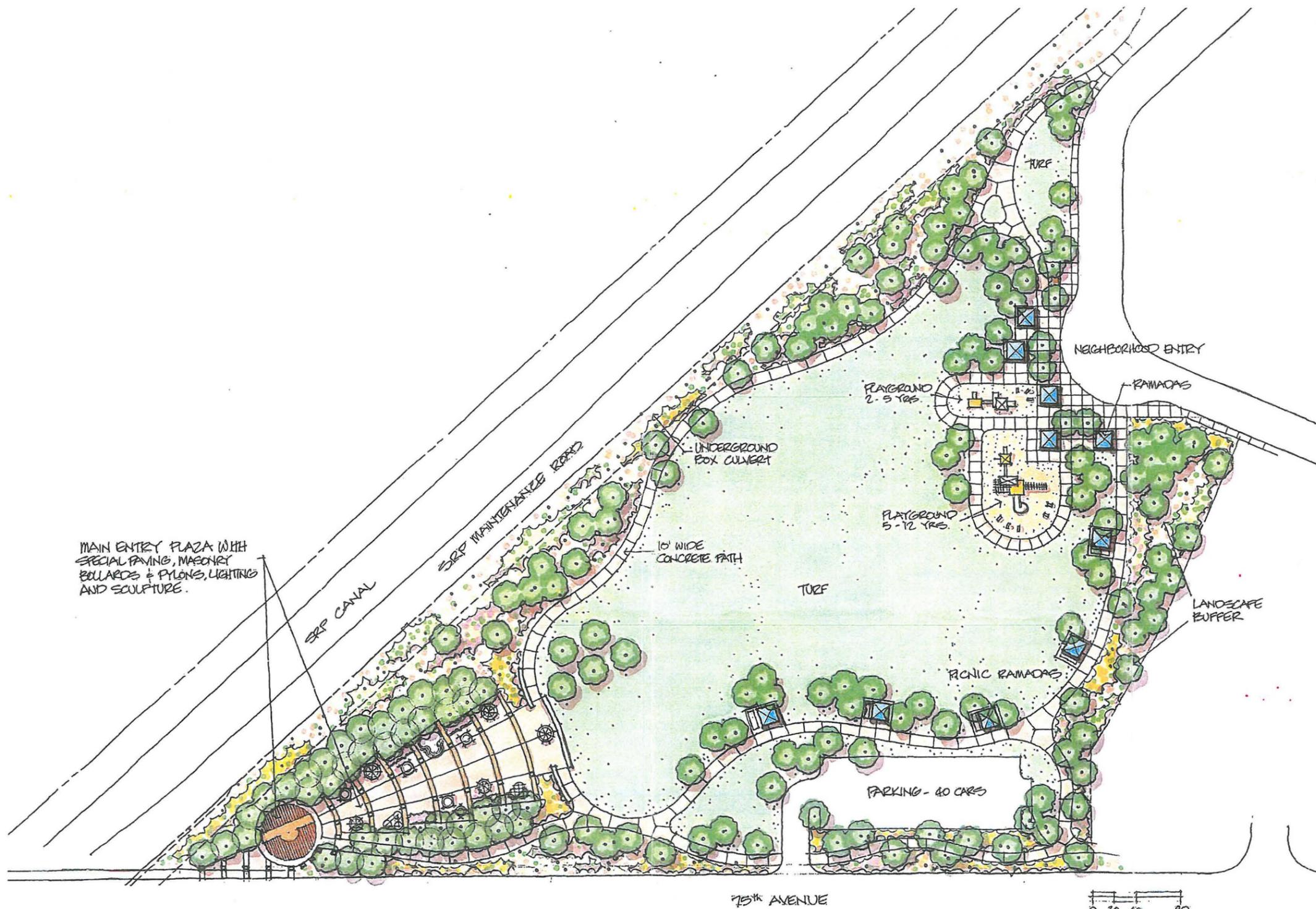


bethany home / grand canal
flood control project

Corridor Master Plan

Scale: 1"=50'
September 2001





MAIN ENTRY PLAZA WITH SPECIAL PAVING, MASONRY BOLLARDS & PYLONS, LIGHTING AND SCULPTURE.

SRP CANAL

SRP MAINTENANCE ROAD

UNDERGROUND BOX CULVERT

10' WIDE CONCRETE PATH

TURF

PLAYGROUND 2-5 YRS.

PLAYGROUND 5-12 YRS.

PICNIC RAMADAS

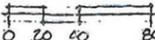
PARKING - 40 CARS

NEIGHBORHOOD ENTRY

RAMADAS

LANDSCAPE BUFFER

75th AVENUE




bethany home / grand canal
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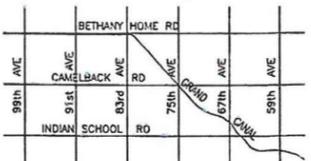
Corridor Master Plan



Scale: 1"=50'
September 2001



vicinity map



DMJM HARRIS

B. MINOR NODES

Minor nodes occur at key intervals along the length of the project and offer entry points for the adjacent neighborhoods into the corridor. They differ from the major nodes in terms of size and scale. These are small-scale nodes offering resting points that provide seating, shade, and drinking water. These nodes provide an opportunity to display community aesthetics and design preferences and may range from informal gathering areas to a formalized urban space. They should be designed to identify a point of entry or exit to and from the corridor for those traveling within and to the facility. Along the corridor two types of minor nodes have been defined. They are identified as "Community Link Nodes" and "Neighborhood Link Nodes". The locations of these type of nodes are identified on the "Corridor Master Plan" in Appendix A.

1. Community Link Nodes

These nodes occur at arterial street crossings and vehicular bridge crossings. They provide a visual landmark for people driving by the corridor and also provide an entry into facility via the arterial street system.

Community link nodes may contain the following amenities:

- a. Shaded seating bench or seatwall.
- b. Drinking fountain
- c. Accent paving using colors and textures.
- d. Visual element, such as an accent tree, walls, or art to create a landmark for passing motorists.
- e. Clear access to the multi-use trail.
- f. Pet waste disposal dispensers
- g. Trash/ash urns.
- h. Area lighting
- i. Directional Signage

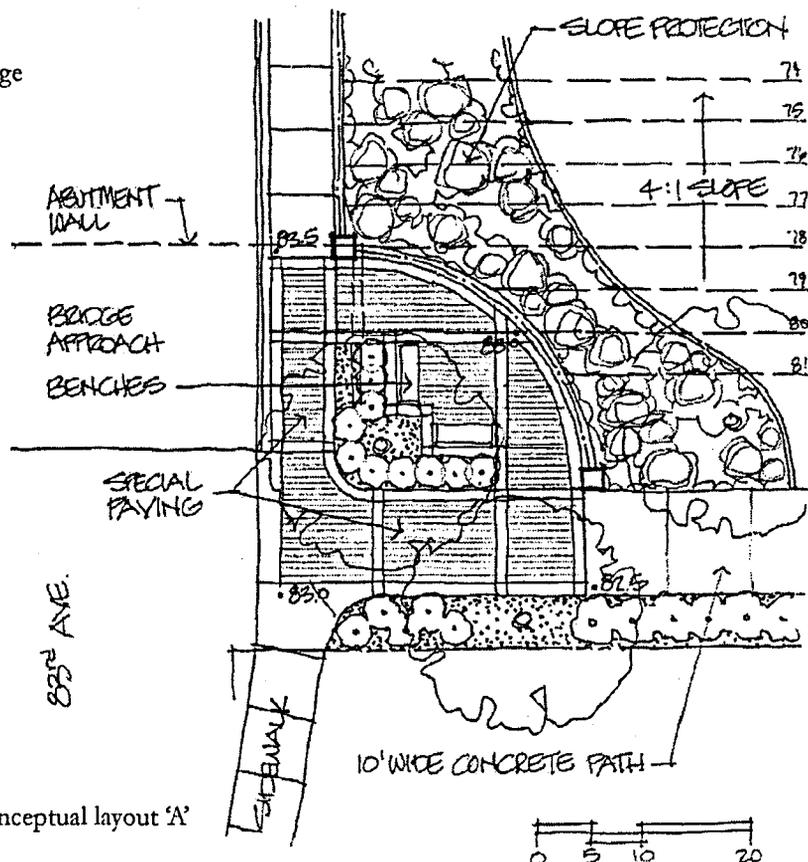


Figure 3
 Community Link Node conceptual layout 'A'

Figure 4
 Community Link Node conceptual
 layout 'B'

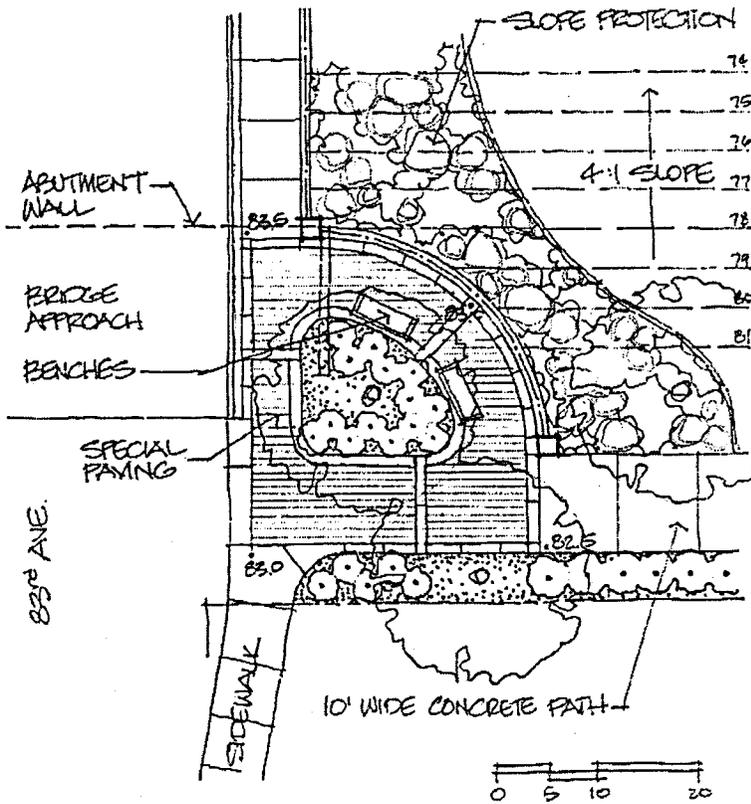
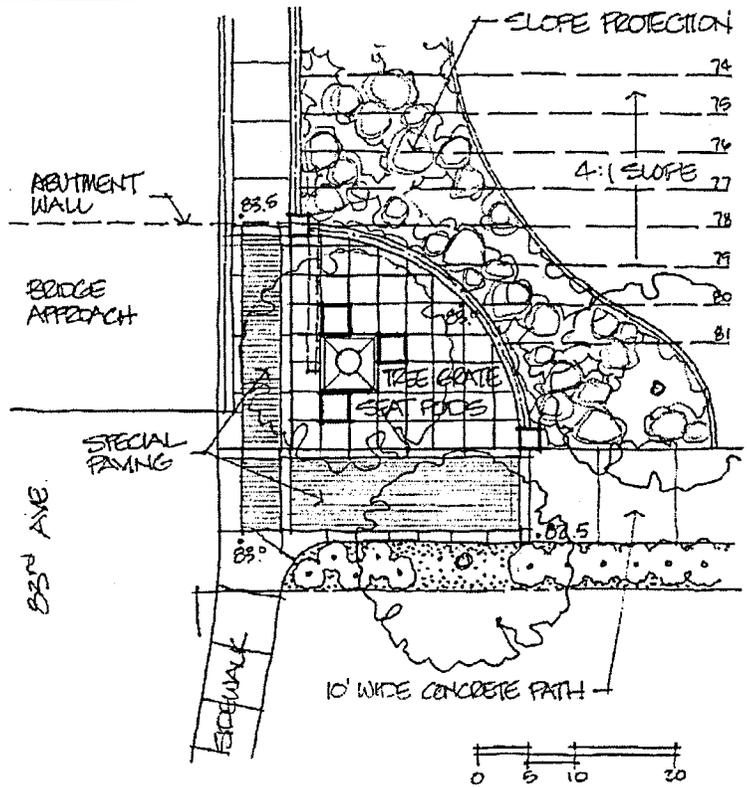


Figure 5
 Community Link Node conceptual
 layout 'C'



2. Neighborhood Link Nodes

Neighborhood link nodes are a similar scale node along neighborhood streets. They provide a visual and physical connection to the adjacent neighborhood.

These nodes should contain the following amenities:

- a. Shaded seating bench or seatwall.
- b. Drinking fountain
- c. Accent paving using colors and textures.
- d. Visual element, such as an accent tree, walls, or art to create a landmark for the neighborhood.
- e. Clear access to the multi-use trail.
- f. Pet waste disposal dispensers
- g. Trash/ash urns.
- h. Area lighting.

Optional elements that may be provided within a Neighborhood Link Node are:

- a. Shade Structure / Ramada
- b. Picnic tables.
- c. Barbecue grills.
- d. Small play areas
- e. Directional signage

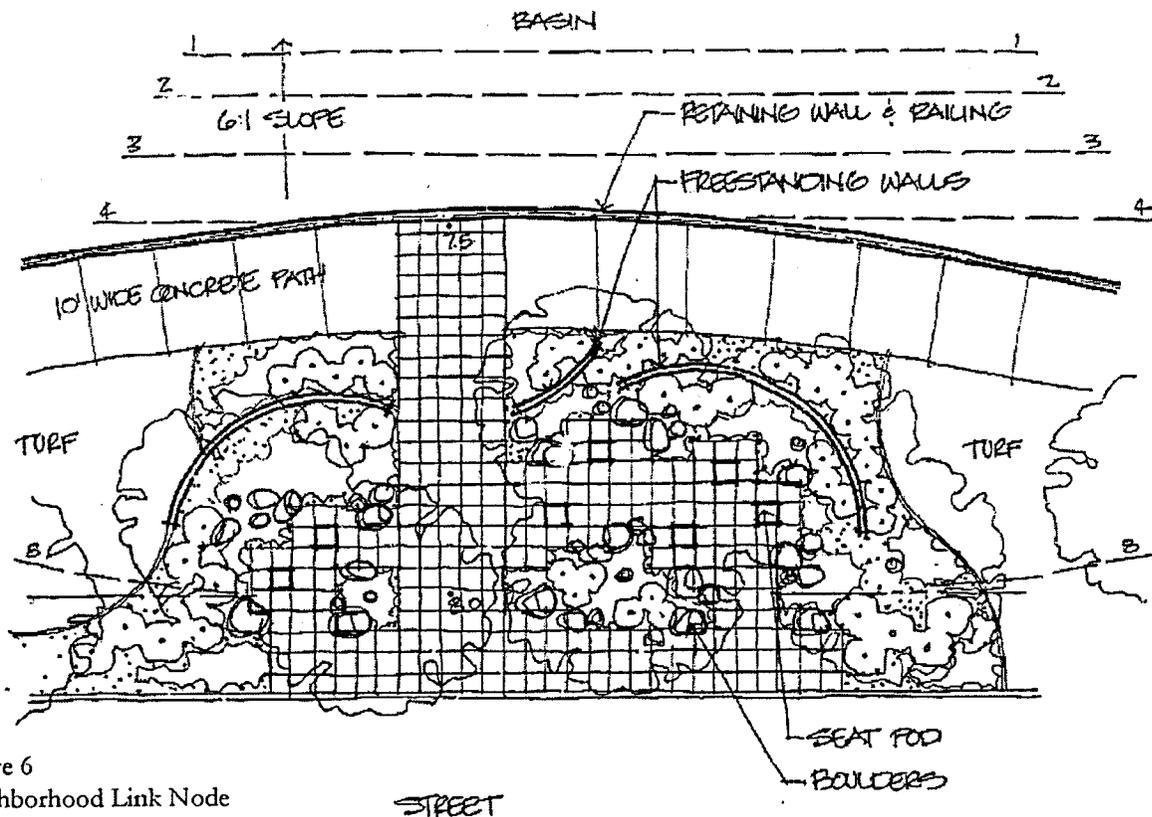


Figure 6
Neighborhood Link Node
conceptual layout 'A'

Figure 7
 Neighborhood Link
 Node conceptual
 layout 'B'

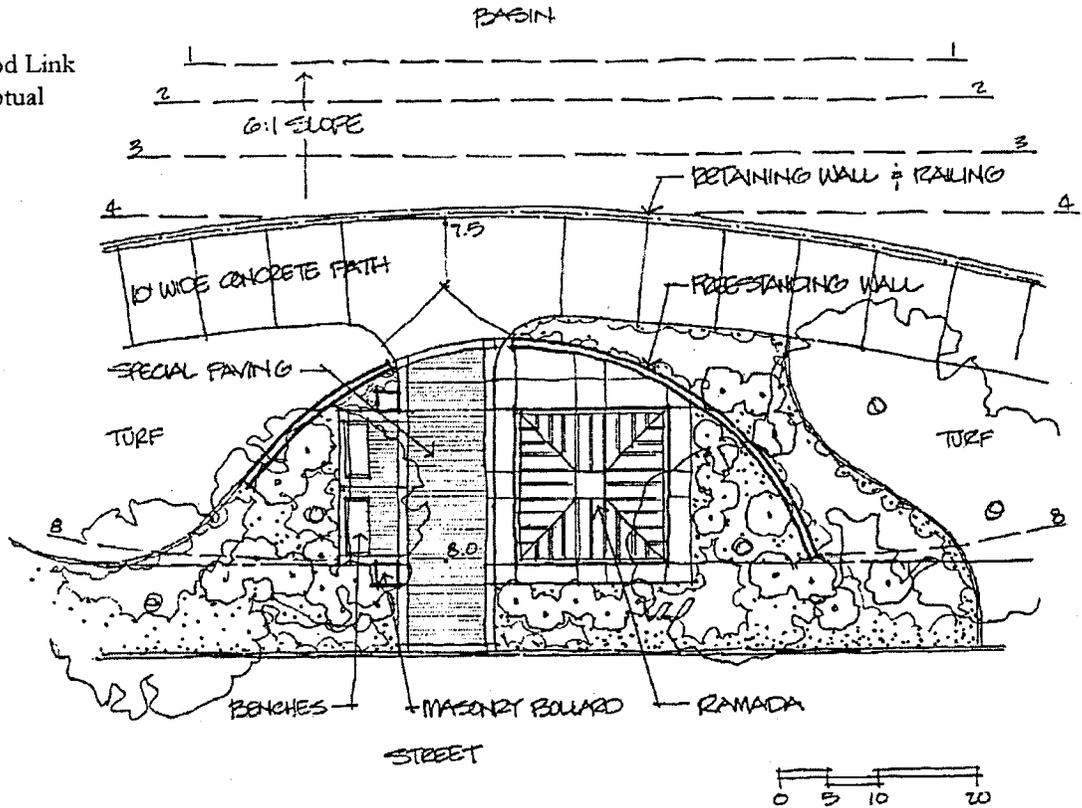
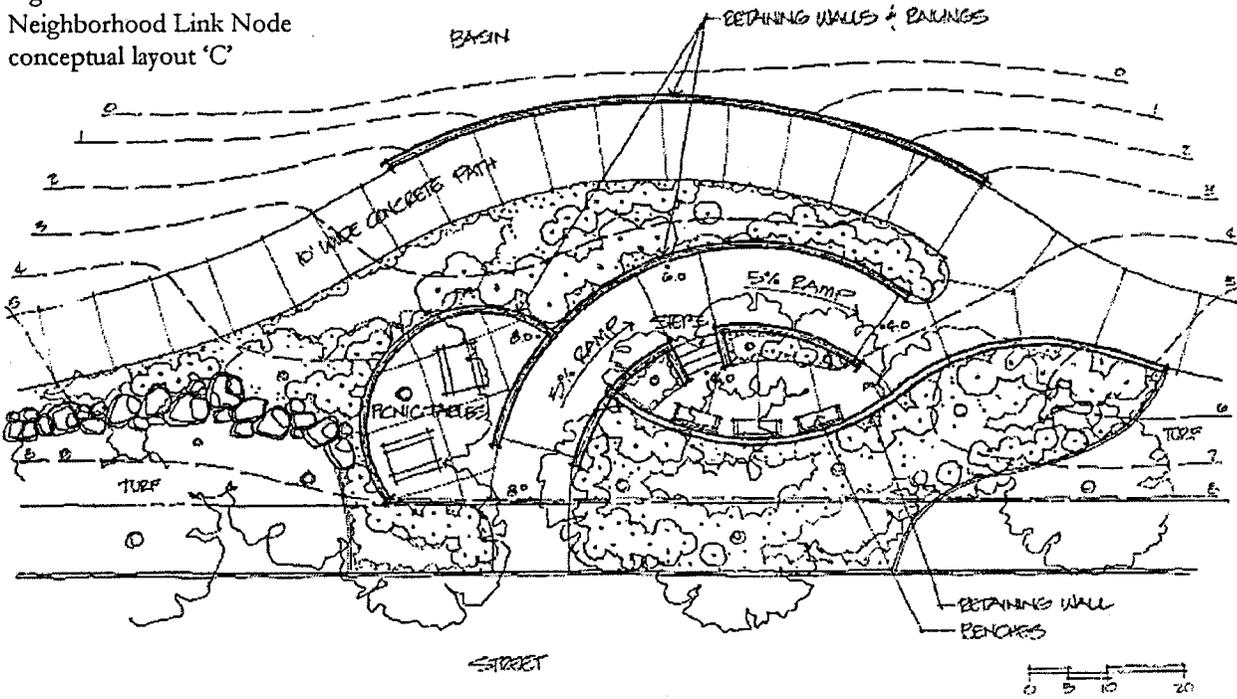


Figure 8
 Neighborhood Link Node
 conceptual layout 'C'



C. UNDERGROUND BOX CULVERT

With the culvert buried and out of sight, this is the most unobtrusive form of the flood control facility. Within the City of Phoenix an underground box culvert is located between Indian School Road and 67th Avenue. The corridor is typically narrow with minimal room for the multi-use trail to meander above the culvert. Due to the close proximity of the trail to the adjacent residential properties, the landscape should be a buffer between the trail users and adjacent residences. The existing residential property fencing separating the corridor from the residential rear yards is a mixture of fence and wall types. Replacement of this fence to one type of masonry wall should be considered during the final design of this segment.

The underground culvert within the City of Glendale are contained in a wider corridor, which allows the multi-use path to meander and permits opportunities for Neighborhood Link Node connections within the linear park. However, between 75th Avenue and 83rd Avenue care should be taken to avoid obstructing drainage inlets.

D. OPEN CONCRETE CHANNEL

Open vertical walled channels occur in a few areas along the BH/GC FCP. These areas are characterized by limited right-of-way or transitions from an open grass lined channel into a box culvert. This type of facility limits the opportunity to develop a meandering landscaped trail system. As a result, the path is situated beside the channel with safety fences along the top of the channel walls or it is located away from the facility for safety considerations. In either case, a safety fence is to be provided for this condition.

Opportunities for aesthetic treatments along these sections exist in the fence design and wall treatments. Refer to the fencing and wall treatment sections in the Site Development Standards section of this report for design options of these elements.

E. GRASS LINED CHANNEL

The grass-lined channel provides the opportunity for creating a linear open space within major areas of the corridor. The banks of the channel are designed with varied slopes ranging from 4:1 to a gentle 8:1 in certain locations. In locations of sufficient right-of-way widths, the channel bottom and associated low flow channel will be designed to meander. This will add a more natural and less rigid feel to the facility and provide a better experience to the trail user.

F. CHANNEL TRANSITIONS

Several types of transitions occur along the project alignment. They occur at:

1. Vertical open concrete channel walls to open grass lined channel slopes.
2. Changes in channel elevation (drop structure)
3. Grass lined channel to concrete slope paving under bridges, box culvert inlets and outlets, or concrete lined channel.
4. Pedestrian underpasses to open grass channel or adjacent natural grade.
5. Areas outside of the channel and within the right-of-way.

There are opportunities at these transitions to design a varied ground plane, wall, and slope treatments that provide continuity and visual interest between the different channel segments. Where right-of-way is available outside of the channel, landforms such as berms and swales should be integrated into and form a transition from the channel to the existing grades.



G. BRIDGES AND UNDERPASSES

Bridges and pedestrian underpasses occur at specific points along the corridor and require special attention. Bridges are classified into two types; vehicular and pedestrian.

1. Vehicular Bridges

Vehicular bridges are located at:

- 83rd Avenue
- 91st Avenue
- 95th Avenue (future)

Vehicular Bridges and associated areas include the following design elements:

- a. Minimum clearance for equestrian access, see Section IV for trail requirements.
- b. Incorporate unifying aesthetic treatments
- c. Incorporate City logos to signify community identity
- d. Provide channel slope paving treatments that discourage vandalism and scour
- e. Provide connections to the multi-use and equestrian trail system

2. Pedestrian Bridges

Pedestrian bridges over the Grand Canal are proposed to be located at:

- 71st Avenue and the Grand Canal at Heatherbrae Elementary School (existing) and potentially a pedestrian structure over the BH/GC FCP
- 75th Avenue west side north of Camelback Road (existing)
- 79th Avenue and Missouri Avenue (proposed)
- At 82nd Avenue where the channel crosses under the Grand Canal (proposed)
- 87th Avenue alignment where the channel crosses under the Grand Canal (proposed)
- At 95th Avenue (future) (this pedestrian crossing may be combined with the proposed vehicular bridge at this location)

Pedestrian Bridges should be designed to:

- a. Allow for vehicular crossing of maintenance and emergency vehicles
- b. Incorporate unifying aesthetic treatments.
- c. Provide a safety rail at the appropriate height for pedestrians and equestrians
- d. Not impede the use of maintenance vehicles along the Grand Canal.

3. Pedestrian Underpasses

Pedestrian underpasses are proposed at:

- Indian School Road at the Sunset Detention Basin
- 67th Avenue and the Grand Canal

Pedestrian underpasses should incorporate the following elements

- a. Security lighting (vandal resistant) at the entrances, exits, and throughout the underpass
- b. Retaining wall finishes that deter graffiti
- c. Meet ADA accessibility requirements
- d. Maintain a clear line of sight from one end to the other



H. SURFACE CROSSINGS

Continuity of the trail is an essential design theme for the BH / GC FCP. This is especially important where the trail crosses the major arterial streets that intersect the corridor. Continuity is maintained through the use of underpasses at Indian School Road and 67th Avenue in the southern reaches of the corridor. At 83rd and 91st Avenues, vehicular bridges will cross over the flood control facility allowing for the trail to cross underneath. In addition, the existing Loop 101 overpass at the Grand Canal allows for trail connectivity by providing for a trail crossing underneath the freeway. There are two locations along the corridor where the trail will cross an arterial street without the benefit of a bridge or under crossing. These locations are the intersection of 75th Avenue & Camelback Road and at 99th Avenue where it crosses over the Grand Canal. At these locations it is proposed that the trail continuity be provided via an at grade crossing at an existing or proposed signalized intersection. There is an existing traffic signal at 75th Avenue and Camelback Road and the potential for a traffic signal at the future connection at 99th Avenue and Bethany Home Road in general proximity to the Grand Canal. To enhance the connectivity of the trail system at these locations it is proposed that the pedestrian/equestrian crossings of the streets incorporate the use of special paving at the crosswalks. This paving can be in the form of concrete pavers or integral colored stamped concrete that allows safe crossing for pedestrian and equestrian users. In addition, "Community Link Nodes" should be provided in the area(s) where the trail comes up to the street intersection. These nodes will further enhance the pedestrian/equestrian trail connection(s) while defining entry to the corridor from the adjacent street system.



III. LANDSCAPE ZONES

Along the length of the BH/GC FCP, differences in the channel character and the adjacent landscape context provide opportunities to create and/or enhance distinct landscape zones. Most of the plants along the corridor will consist of low-water consuming plants. The exceptions to this rule are turf in the channel and recreation areas, traditional landscape areas, and occasional node areas that specifically tie into adjacent traditional planting character. The following paragraphs describe the different landscape character zones to be utilized within the corridor. The specific locations of these zones are defined on the Corridor Master Plan provided in Appendix A of these guidelines. A plant material matrix, which contains the plant types to be utilized in each specific landscape zone, can be found in Figure 9.

A. RIPARIAN

The "riparian" landscape zone consists of plant material and groupings that can be found along natural desert washes. This type of landscape character is used to strengthen the connection between the man-made character of the flood control facility with the natural environment. The use of this landscape zone type should be incorporated in selected areas along the low-flow channel at the channel bottom to take advantage of the wet location where appropriate without interfering with the function of the flood control facility. It also occurs at drop structures for the channel and other areas of similar character outside the channel.

B. TRADITIONAL

The "traditional" landscape zone is defined by the plantings that were introduced to desert southwest from East Coast and Midwest influences. They are typical of the residential landscapes that were planted from the early 1900's until the mid 1980's. These landscapes are characterized by the use of trees such as Elm, Ash, Pine and various species of Palms.

Traditional areas occur along most of the channel banks where the suburban neighborhoods of the 1950's through the 1970's were developed and abut the corridor. This zone will tie into the existing neighborhood landscape character.

C. ARID

The "arid" landscape zone is defined by the use of plant material that is drought tolerant and adapted to the desert environment. It is characteristic of the landscape design of the late 1980's to the present. Dominant tree types include Mesquite, Acacia and Palo Verde. This landscape type characterizes newer residential developments and the corridor landscape shall respond to these areas. This should be the predominate landscape zone where no adjacent development exists. Typically, this zone occurs along the top of the slopes created by the channel banks and along the Grand Canal right-of-way.



Figure 9
Plant Material Matrix

DESCRIPTION		THEME				USES		
		ARID	TRADITIONAL	RIPARIAN	NODES	TRANSITION	SCREENING	ACCENTS
BOTANICAL NAME	COMMON NAME							

TREES

<i>Acacia salicina</i>	Willow Acacia	X		X		X		
<i>Acacia smallii</i>	Sweet Acacia	X		X		X		
<i>Cercidium floridum</i>	Blue Palo Verde	X			X	X		
<i>Cercidium praecox</i>	Palo Brea	X			X			
<i>Cercis canadensis 'Mexicana'</i>	Mexican Redbud	X	X					X
<i>Chilopsis linearis</i>	Desert Willow	X		X		X		
<i>Dalbergia sissoo</i>	Sissoo Tree		X	X	X			X
<i>Eucalyptus papuana</i>	Ghost Gum		X					X
<i>Eucalyptus populnea</i>	Poplar Box		X	X				X
<i>Fraxinus velutina</i>	Velvet Ash		X			X		
<i>Gleditsia triacanthos inermis</i>	Honeylocust		X		X			
<i>Lagerstroemia indica</i>	Crape Myrtle		X					X
<i>Olea europaea</i>	Swan Hill Olive		X		X			
<i>Pinus halepensis</i>	Aleppo Pine		X				X	X
<i>Pistacia chinensis</i>	Chinese Pistache		X					X
<i>Pithecellobium flexicaule</i>	Texas Ebony	X		X		X		
<i>Platanus wrightii</i>	Arizona Sycamore	X		X		X		
<i>Populus sp.</i>	Cottonless Cottonwood		X	X		X		
<i>Prosopis sp.</i>	Thornless Mesquite	X		X	X	X		
<i>Quercus virginiana</i>	Heritage Live Oak		X		X			
<i>Ulmus parvifolia</i>	Evergreen Elm		X		X		X	

SHRUBS

<i>Bougainvillea sp.</i>	Bougainvillea	X	X		X	X		X
<i>Caesalpinia pulcherrima</i>	Red Bird of Paradise	X	X		X			X
<i>Calliandra californica</i>	Baja Fairy Duster	X				X		
<i>Cassia sp.</i>	Cassia	X		X	X	X		
<i>Dalea pulchra</i>	Indigo Bush	X				X		
<i>Dodonaea viscosa</i>	Purple Hopbush	X					X	
<i>Justicia ovata (candicans)</i>	Red Justicia			X				X
<i>Leucophyllum sp.</i>	Texas Sage varieties	X	X		X	X	X	
<i>Nerium oleander</i>	Dwarf Oleander 'Petite Pink'		X		X	X	X	
<i>Penstemon sp.</i>	Penstemon	X			X	X		
<i>Rosa banksiae</i>	Lady Banks Rose		X			X	X	
<i>Ruellia peninsularis</i>	Baja Ruellia	X				X		
<i>Simonsia chinensis</i>	Jojoba	X	X	X		X		
<i>Tecoma stans</i>	Yellow Bells	X	X	X	X			X

DESCRIPTION		THEME			USES			
		ARID	TRADITIONAL	RIPARIAN	NODES	TRANSITION	SCREENING	ACCENTS
BOTANICAL NAME	COMMON NAME							

GROUND COVERS

Aristida sp.	Three-awn			X				X
Acacia redolens	Prostrate Acacia	X	X			X		
Baccharis x 'Centennial'	Centennial Baccharis	X				X		
Convolvulus cneorum	Silver Bush Morning Glory	X			X			
Cynadon dactylon	Bermuda Grass	X	X			X		
Dalea greggii	Trailing Indigo Bush	X				X		
Drosanthemum sp.	Rocky Point Ice Plant	X	X		X			X
Lantana sp.	Gold, Purple Varieties	X	X		X			X
Verbena peruviana	Peruvian Verbena	X	X		X			

ACCENTS & VINES

Agave sp.	Agave	X		X		X		X
Dasyliion longissimum	Toothless Desert Spoon	X			X			X
Fouquieria splendens	Ocotillo	X				X		X
Hesperaloe parviflora	Red Yucca	X		X	X	X		
Jasminum mesnyi	Primrose Jasmine		X			X		X
Macfadyena unguis-cati	Cats Claw Vine	X	X			X		
Muhlenbergia rigens	Deer Grass	X		X	X	X		X
Nolina microcarpa	Bear Grass	X		X		X		
Pennisetum setaceum 'Cupreum'	Purple Fountain Grass	X	X	X		X		
Phoenix dactylifera	Date Palm		X		X			X
Washingtonia sp.	Fan Palms (California, Mexican)		X	X	X			X



IV. SITE ELEMENT DEVELOPMENT STANDARDS

This section of the design guidelines defines the recommended standards for the various multi-use, aesthetic and landscape elements that have been identified for use in the corridor. A major element that is to be incorporated into the project is the use of the various forms of the BH/GC FCP logo. Examples of the interpretation of this logo can be found throughout the various graphic examples provided below:

A. SITE GRADING

The primary concept for landform grading is to soften the channel and eliminate the angular and rigid forms of grading. To accomplish this, it is essential to vary the vertical and horizontal slopes and landforms of the channel and adjacent areas. Where feasible, the low-flow channel shall be designed to meander and the channel side slopes shall be varied to provide interest and meandering effects.

The landforms should also provide a degree of screening through the use of berms, boulders, walls and landscaping.

1. Maximum slopes:
 - a. Open Turf Channel slopes: 4:1.
 - b. Multi-use trail: 5% longitudinal, 2% cross slope.
 - c. Equestrian trail: 10% longitudinal, 2% cross slope.
 - d. Parking lot: 5%.
 - e. Nodal Paving Areas: 2%.

2. Typical berm height:
 - a. 2.5 foot height maximum where views and visibility are desired.
 - b. 4 foot height maximum for screening, with the additional height of plants.
 - c. 4:1 maximum side slope for non-turf areas.
 - d. 4:1 maximum slope for turf areas.

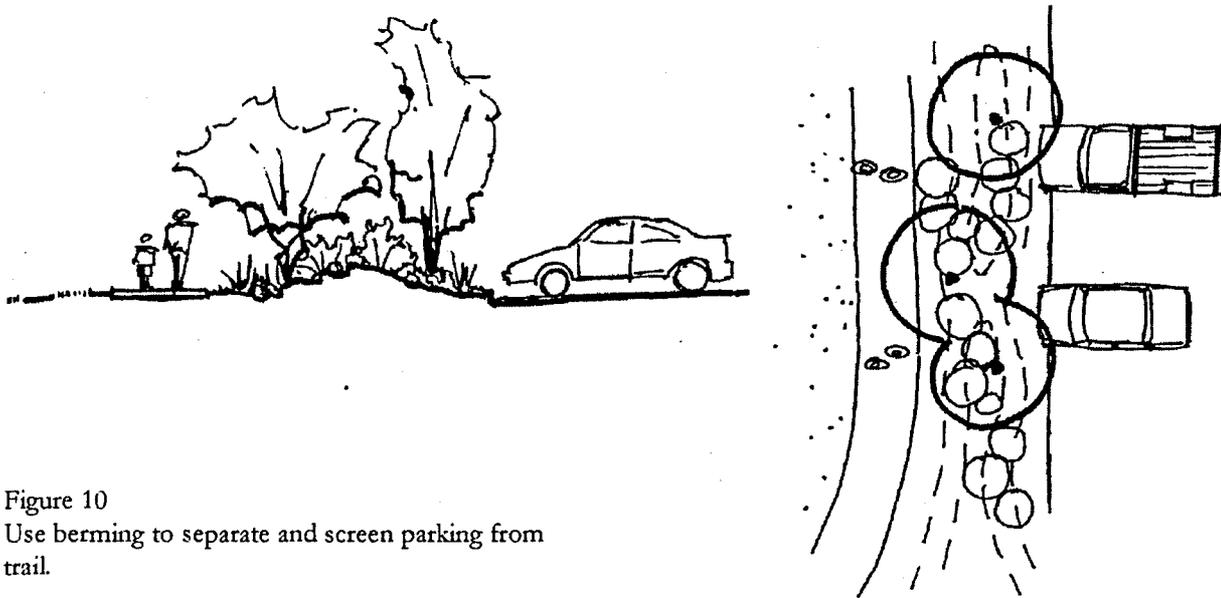


Figure 10
Use berming to separate and screen parking from trail.



B. MULTI-USE PEDESTRAIN/BICYCLE TRAILS & NODES

The trail runs through the entire length of BH/GC FCP linking the nodes and entries together as it meanders along the banks of the channel to create a pleasant experience to the users. The trail alignment shall meander to compliment the varied sideslopes of the channel. Trail radii shall be of a length to permit easy transition for cyclists to maneuver from tangent sections into the curves. The trail should be designed to sustain wheel loads of emergency, patrol, and maintenance vehicles without damage.

1. Multi-Use Trail

- a. The multi-use trails shall conform to ADA accessibility requirements.
- b. The multi-use trail shall be reinforced concrete with a surface treatment as follows:
 - Color shall be natural gray concrete.
 - A minimum of 6-inches thick with 12-inch turndowns
 - Finish shall be a medium broom finish, refer to Figure 11 for surface pattern.
 - Connections to other surfaces and materials (for example, existing sidewalks, equestrian trail, and underpasses) shall be flush.
- c. The tread width shall be a minimum of 10' with a 2' level shoulder on each side. Where the shoulder cannot be provided and the slope exceeds 8:1, or there is more than a 12-inch vertical drop, a safety railing shall be installed.
- d. Where an unpaved trail intersects the paved trail, provide a 10' concrete apron along the unpaved trail to minimize dirt drag-out.
- e. The maximum running slope shall be 1:20 (5%).
- f. The maximum cross slope shall be 2%.
- g. Minimum height of a railing along the trail is 54" (equestrian trail) and 42" (pedestrian trail).
- h. At the intersection of two trails, the following shall be provided:
 - Maintain a sight distance triangle extending 30' back from the intersecting trails. This area is restricted to low plants that grow to a maximum height of 30" high.
 - Locate plants and/or boulders to discourage people who may cut the corners.
 - Provide opportunities for directional signage.
 - Provide circular transition radii equal to the width of the trail or walk.
- i. Removable bollards shall be utilized to control vehicular access where multi-use trail opens to roadways. Maintain a 5' opening with a maximum 6' opening between bollards.

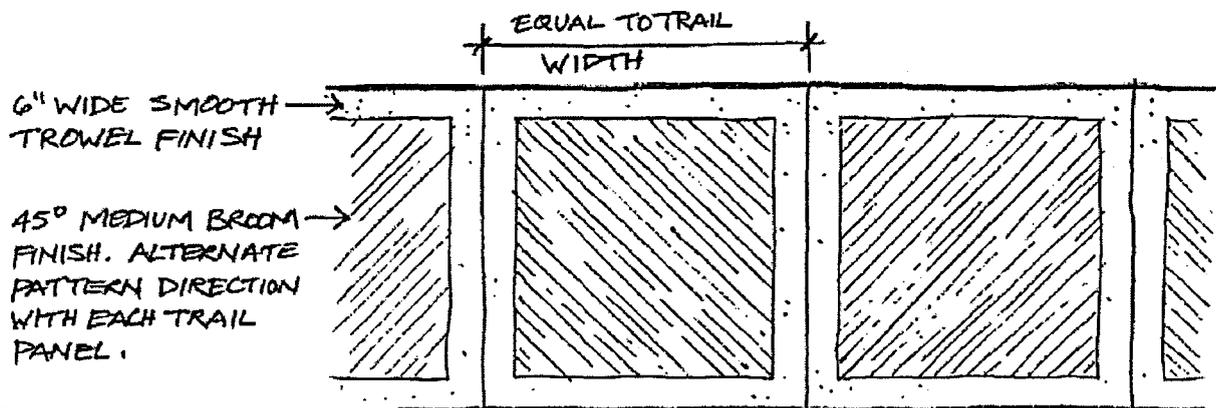


Figure 11
Multi-use trail finish pattern.



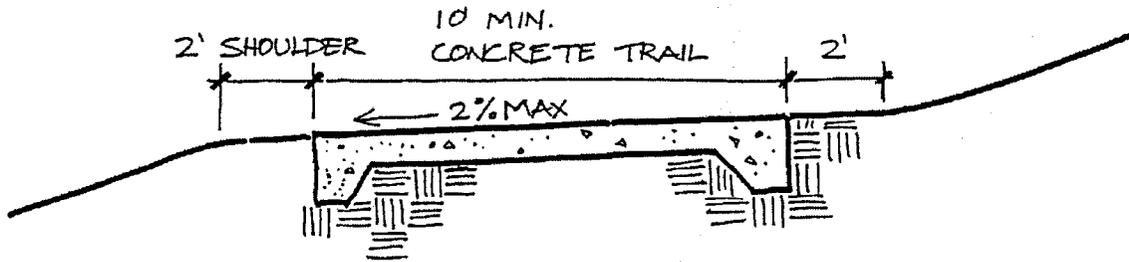


Figure 12
Multi-use trail dimensions and slope requirements.

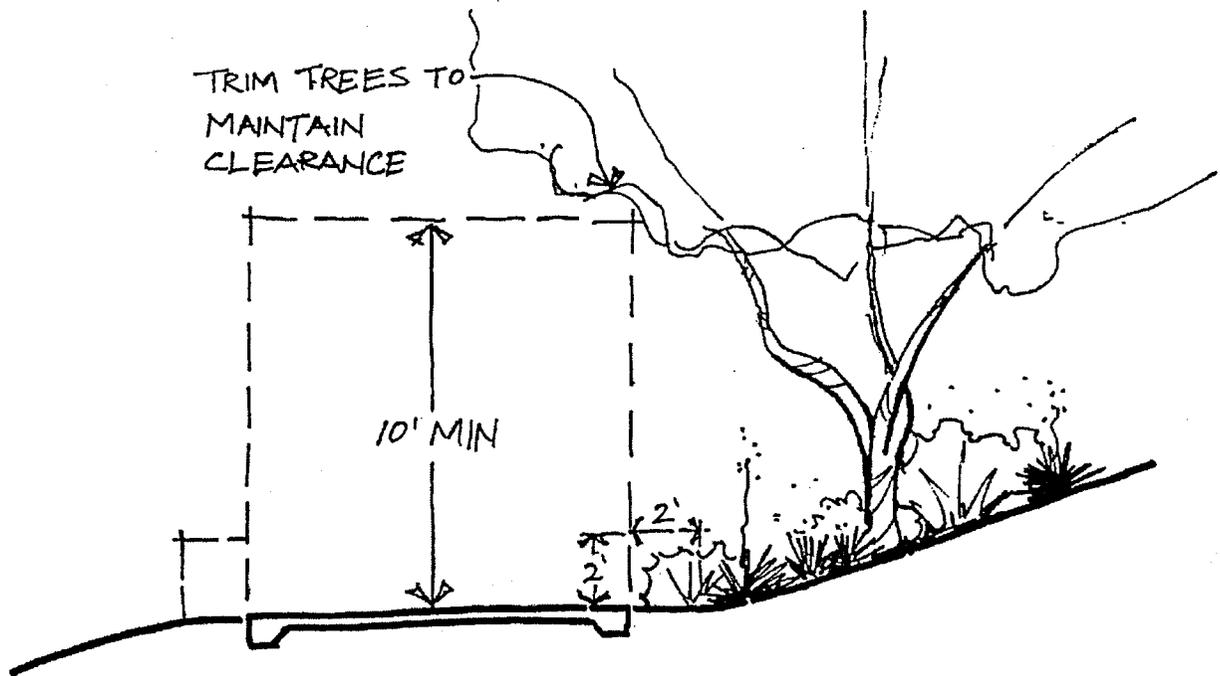


Figure 13
Multi-use trail clearance requirements.



2. Nodes:

- a. Paving at node areas will be a mix of regular concrete, colored interlocking pavers and/or integral colored concrete a minimum of 6-inches in depth with 12-inch turndowns
- b. Safety railing shall be installed where the node pavement edge is adjacent to a grade that exceeds a 8:1 slope or a vertical drop of greater than 12-inches

C. EQUESTRIAN TRAILS

The equestrian trail is provided along the Grand Canal bank. It is separated from the multi-use trail to minimize conflicts between user groups. However, at road crossings (vehicular bridges) or signalized at-grade intersections, the equestrian and multi-use trails are located adjacent to one another or are combined.

1. The equestrian trail alignment is recommended to use the existing maintenance road along the canal banks.
2. The surface of the trail, where it deviates from the canal bank should be as follows:
 - a. Concrete under bridges.
 - b. Stabilized decomposed granite along slopes and channel bottom outside the limits of bridges.
 - c. Concrete at low-flow channel crossings. Provide flush access ramps at edge of low-flow channel.
3. The trail width shall be a minimum of 10' with 2' level shoulders.
4. The slope of the trail shall be a maximum of 10% with a 2% cross-slope.
5. Where pedestrian bridges will be utilized for equestrian use, they shall be designed with a railing a minimum of 54" in height.

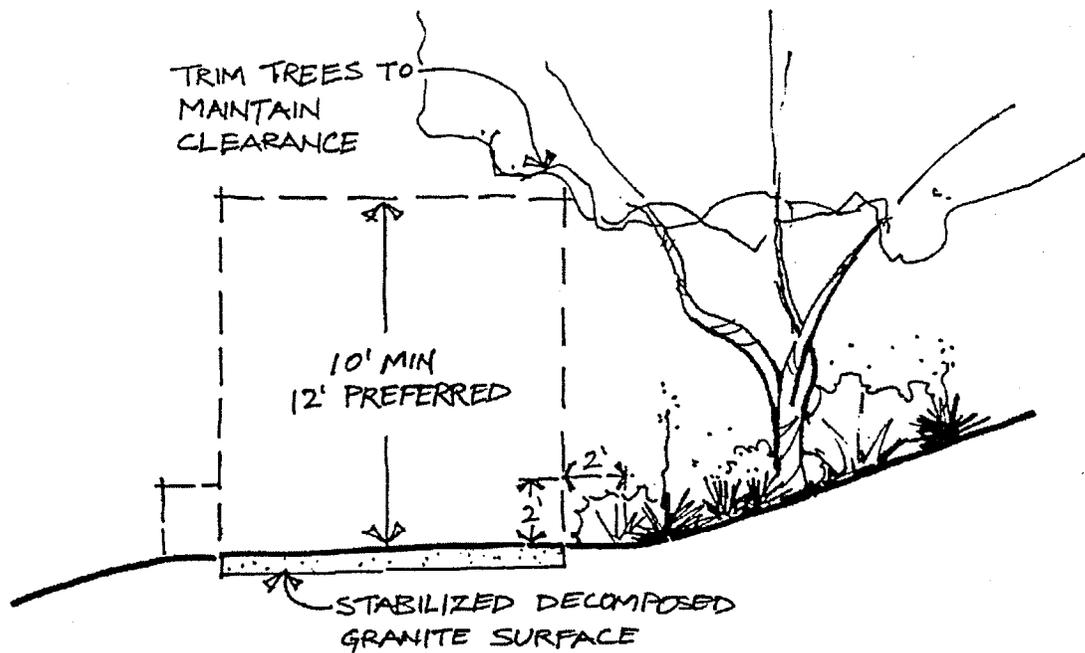


Figure 14
Equestrian trail requirements.



D. ARCHITECTURAL ELEMENTS

1. Shade Structure / Ramada (See example as shown in Figure 15)
Located in Major Nodes and Minor Nodes
Classic Recreation Systems, or approved equal
 - a. Steel columns
 - b. Lighting capability
 - c. 16' X 16' standard size If larger size is needed, consult with City for acceptable types
2. Gateway Entry Features (major nodes)
See example as shown in Figure 16.

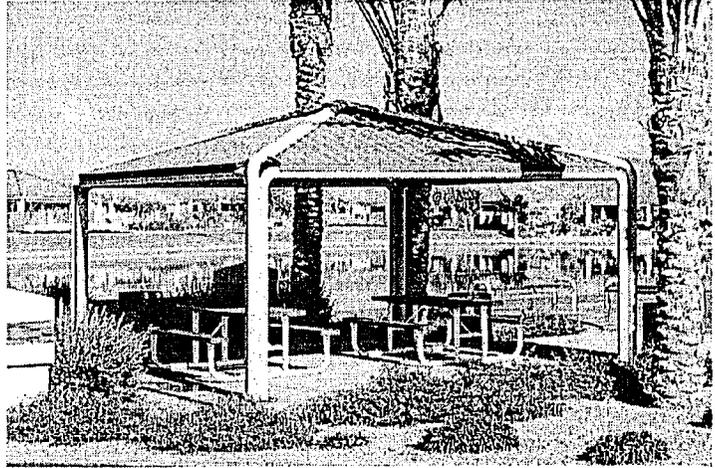


Figure 15
Prescott model ramada by
Classic Recreation Systems.

E. PLAY AREA(S)

1. Utilize standard City approved manufacturers. Glendale: Little Tykes or Playworld Systems
2. Size, type and equipment style to be determined by the location and City requirements
3. Play area facilities shall conform to ADA access requirements and shall be implemented with a rubberized surface over concrete pavement
4. Fibar or equivalent at a depth to comply with city and CSPC guidelines shall cover the remaining play surface area.
5. The safety surfacing shall be of sufficient area to conform to all required clearance and safety zones

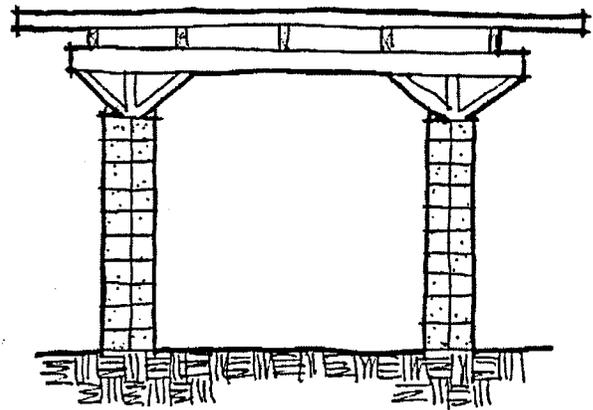


Figure 16
Gateway Entry Feature
concept.



F. BRIDGES

1. Pedestrian

It is acceptable to consider pre-manufactured and custom bridges. Send catalog cuts of recommended bridge manufacturers to the Cities of Glendale and Phoenix for review and approval. Size the bridge (width, vertical clearance and structural design) appropriately for access by maintenance vehicles, security and ambulance vehicles, and equestrian use.

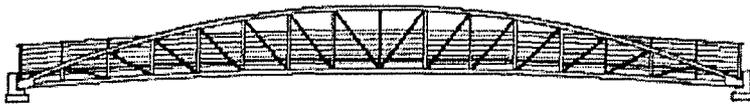
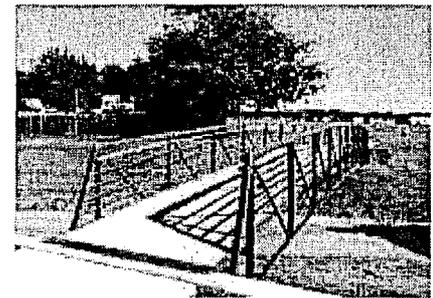


Figure 17
'Keystone' bridge by Steadfast Bridges.



Figure 18
'Connector' bridge by Steadfast Bridges.



2. Vehicular

For bridge parapet and railing treatment see Figure 19.

Slope paving under the bridge shall be a combination of natural or colored concrete, colored concrete pavers, or grouted riprap patterns as defined in Figures 20 and 21. Bridge abutment walls shall be treated with a fluted form liner with the concrete to be painted/stained to match the parapet wall.

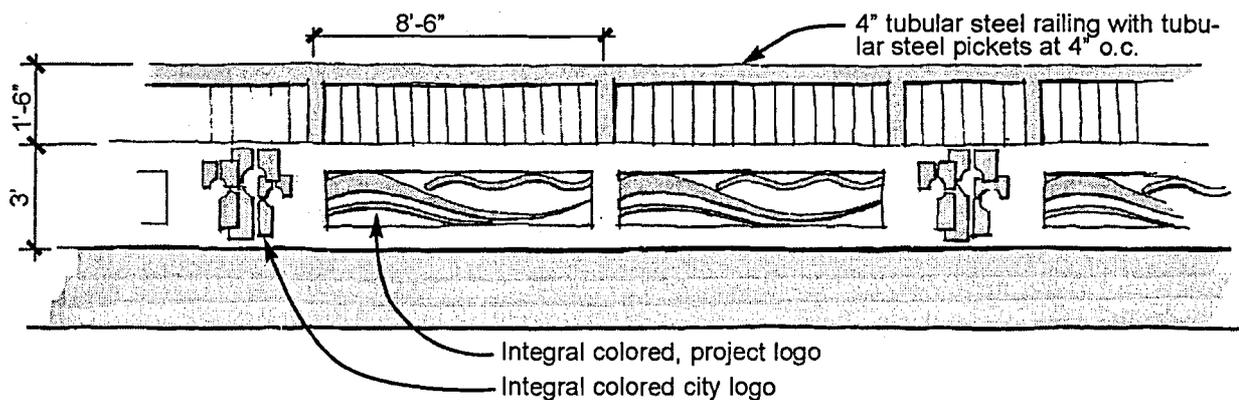


Figure 19
Safety rail and parapet design for vehicular bridges.



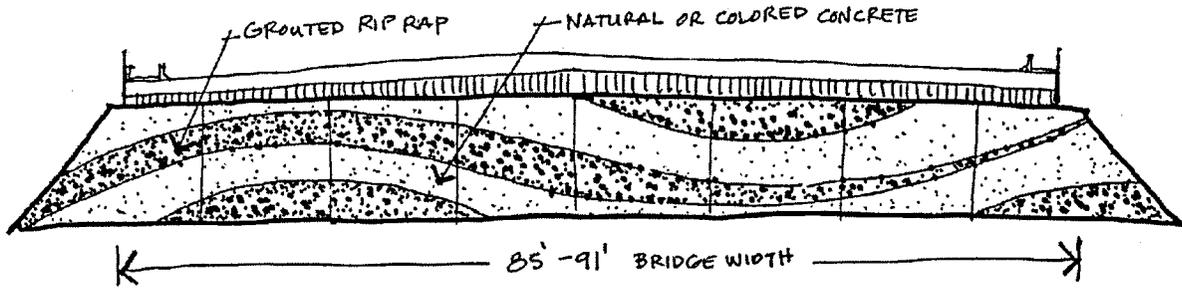


Figure 20
Naturalistic bridge slope paving pattern.

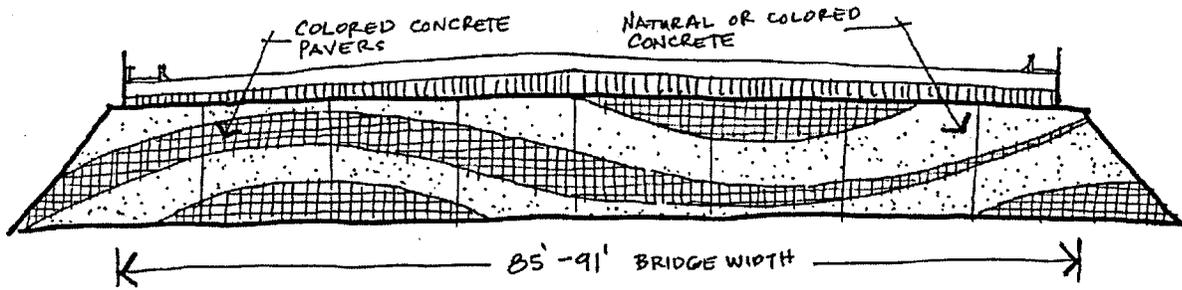


Figure 21
Formalized bridge slope paving pattern.



G. WALLS

Walls have many uses along the BH/GC FCP. The most apparent and critical are retaining walls. These occur at bridges, culvert transition areas, nodes, and along the trail system. Site walls also serve important functions such as space delineation and screening. At the nodes the use of seat walls is also encouraged. These may be combined with retaining walls to create a more enclosed space.

1. Materials:

- a. Concrete
- b. Stone
- c. Masonry

2. Finishes:

Finishes on walls for drainage structures, underpasses, retaining and seating should be as follows:

- a. The final finish should be of a type to deter graffiti.
- b. Smooth finish for community art where appropriate
- c. Formliner or stamped patterns as defined in figure 22
- d. Rich earth tone colors (red-brown, brown, brown-purple). Avoid using muted and light colors.

When using low seat walls, retaining walls or freestanding walls, provide impediments in the top edges of the walls to inhibit use by skateboarders and rollerbladers.

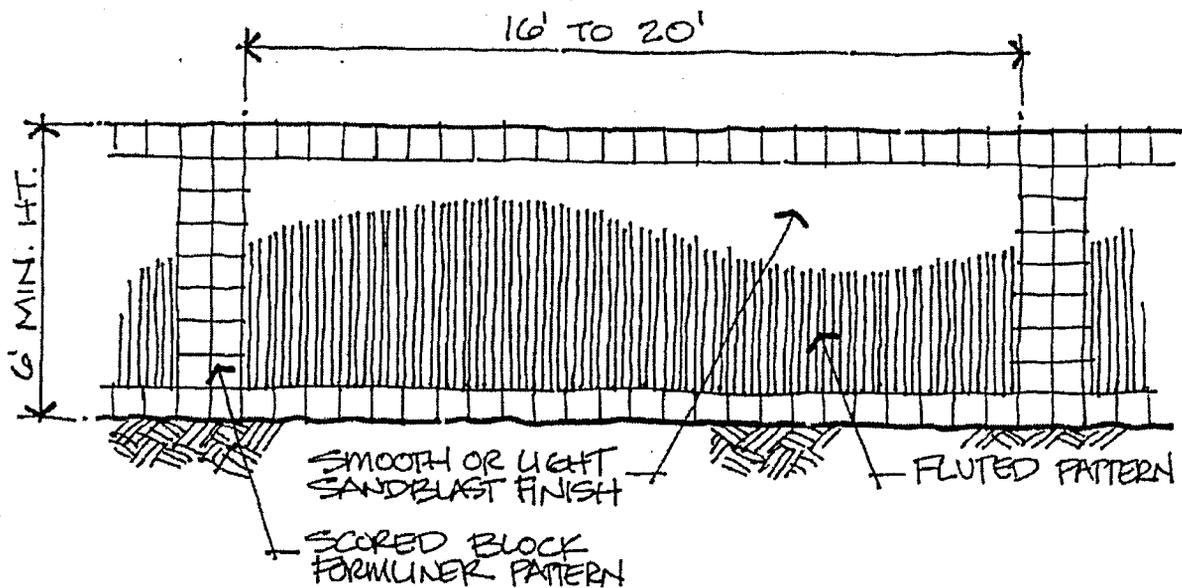


Figure 22

Cast in place concrete wall with inscribed pattern.

See Figures 23 through 25 for alternative wall systems for the BH/GCFCP.



Figure 23
Use of boulders to take up
grade differential and main-
tain a naturalistic landscape.



Figure 24
Terraced retaining walls create
planting areas and low wall heights.

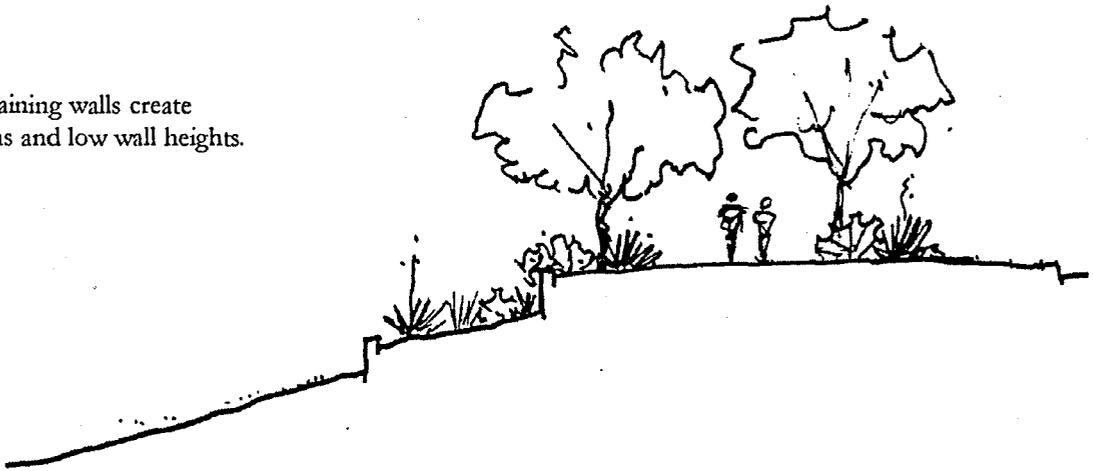
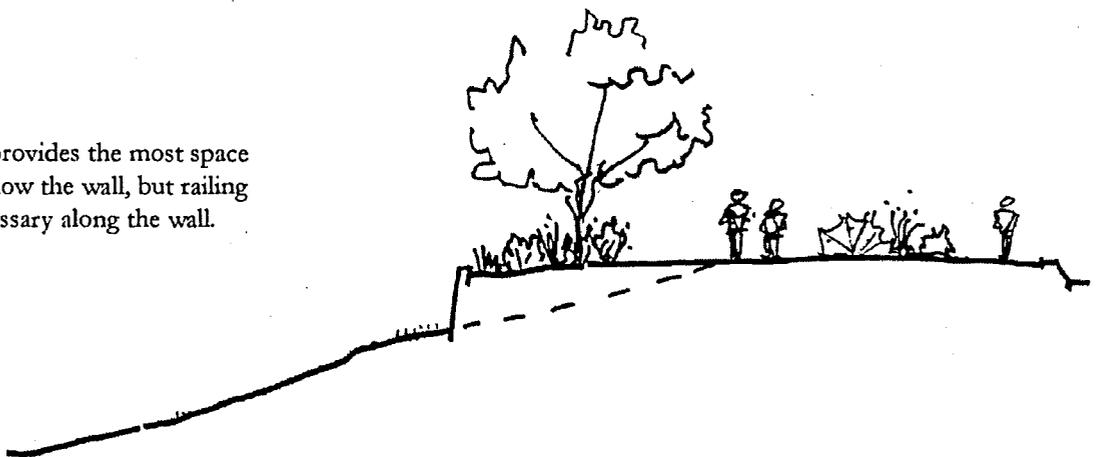


Figure 25
Single wall provides the most space
above or below the wall, but railing
may be necessary along the wall.



H. SITE FURNITURE

The following manufacturers, or approved equals, should be used for any site furnishings installed along the corridor.

1. Benches
8' 'Deluxe Player Bench' by Wabash Valley (Figure 26).
2. Picnic Tables
8' Wabash Valley or Concrete 'Park Series Table' by Design Cast both standard and ADA accessible types. (Figure 27).
3. Trash/ash urns
Wabash Valley (Figure 28).
4. Drinking fountains
MDF or Haws with chillers and pet watering feature. (Figure 29).
5. Bike racks
Wabash Valley (Figure 30).
6. Water spigot
At equestrian staging areas and community link nodes where equestrians interface at these areas.
7. Grills
Dumor, Inc Model 21 for single grill and Model 24 for dual level grill (Figure 31).

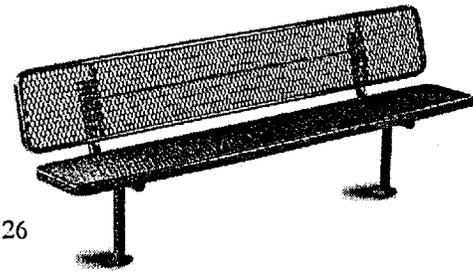


Figure 26

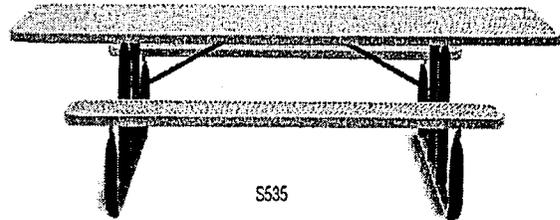


Figure 27

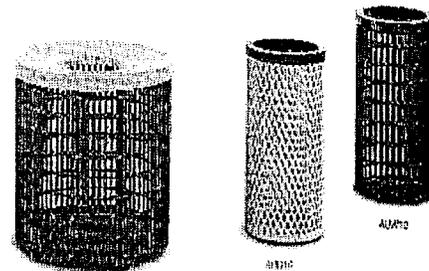


Figure 28



Figure 29

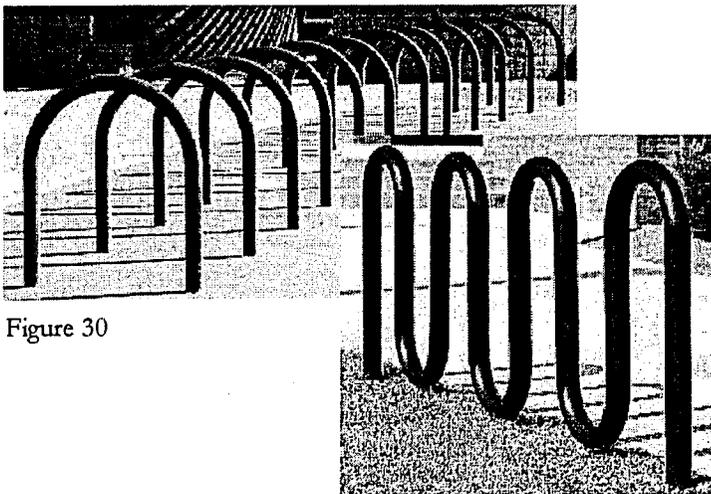


Figure 30

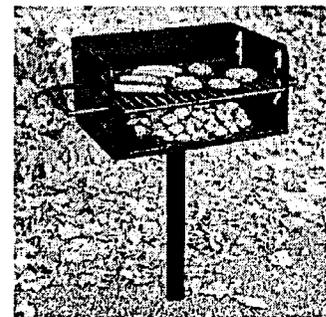


Figure 31

I. PLANTING

The overall form, type and scale of the landscaping shall be complimentary to the existing adjacent areas and shall respond to the following:

Placement: Tree plantings should occur in masses adjacent to pedestrian and node areas. The plantings along the edge of the right-of-way adjacent to the Grand Canal should vary so as to not accentuate the linear aspects of the flood control channel interface with the Grand Canal. Trees shall not be planted such that they overhang maintenance access areas or create an interference to the maintenance operations of the Grand Canal.

Shrubs and ground covers should be limited to top-of-slope areas in channel sections, node areas and areas where the flood control facility is located underground.

All non-turf-planting areas should be covered with a minimum 2-inch depth of decomposed granite. Color and size to be approved by the Cities.

Turf areas are to be seeded or hydroseeded with Common Bermuda grass.

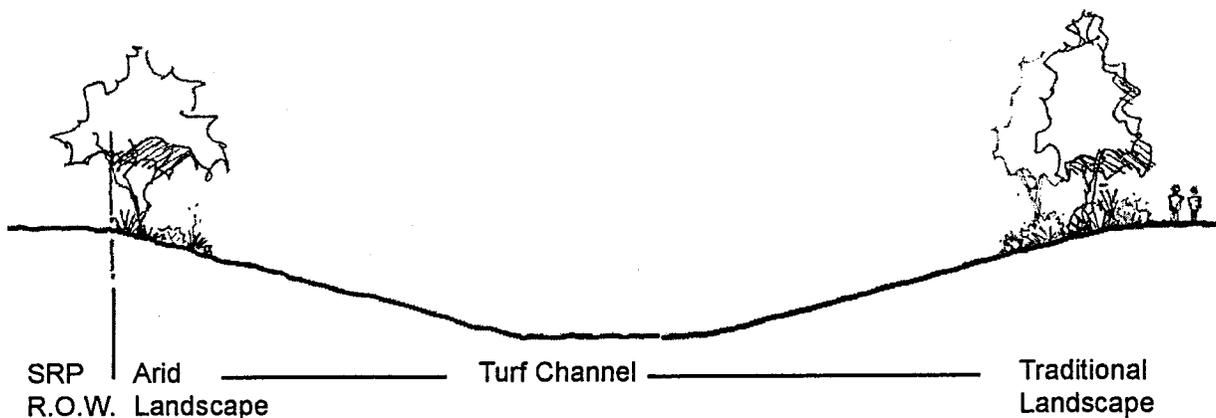


Figure 32
Typical cross section of the project illustrating
the use of arid and traditional planting.

J. IRRIGATION

All planting areas shall be irrigated with an automatic underground irrigation system that meets the requirements of the City of Phoenix or the City of Glendale. The irrigation system shall be designed for possible future conversion to a reclaimed water source. Trees and shrubs in the City of Glendale shall be irrigated with a hard line drip emitter system. Trees and shrubs in the City of Phoenix shall be irrigated with a bubbler system. Trees planted in turf areas shall not have the emitter or bubbler, but shall receive water from the turf spray system. For specific equipment type and details, refer to Appendix 'B' of these guidelines.



K. LIGHTING

1. Overhead Path Lighting: Lighting should consist of Aquaform Two HID Cut-Off Luminare by Pappi Lighting, as shown in Figure 33.
2. Overhead lighting should be located along the path at appropriate intervals, not exceeding 150' and at all node areas to provide security.
3. Underpass/bridge lighting shall be vandal resistant type ceiling mounded where possible and should achieve a minimum lighting level of 5 foot candles.
4. Recreational lighting as required shall be provided for any sport court or play areas as requested by the city.

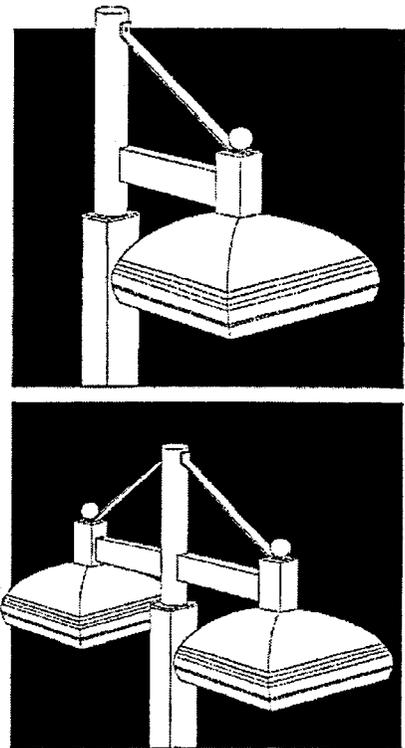


Figure 33
Area light

L. SIGNAGE

1. Park rules signage shall conform to the standards for the City of Glendale and the City of Phoenix.
2. Trail distance signage should consist of a 1 foot wide by 1.5 foot tall sign face made of aluminum with brown background and project logo at bottom. Sign shall read "Mile X.XX" horizontally and shall be located every 1/4 mile along the corridor.
3. For City of Glendale Grand Canal Linear Park monument signage see Figure 34.
4. Regulatory signs: Regulatory signs noting dangerous conditions will be displayed at all entrances to the corridor. The sign text, size, shape and color shall be approved by the Flood Control District and appropriate City risk management staff.
5. Facility identification signage shall incorporate the use of the Flood Control District of Maricopa County logo as well as the appropriate City of Glendale or City of Phoenix logo.

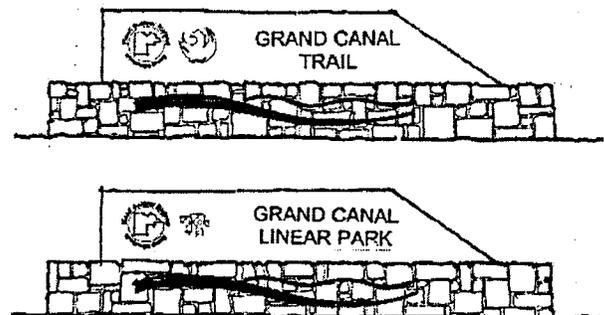


Figure 34
Thematic signage



M. FENCING AND RAILING

1. Fencing - Security fencing shall be of a steel mesh type as manufactured by Legi or approved equal. The fence shall be a minimum of 8-feet in height with a curved top outbound of the channel or drop in elevation. See Figure 35 for elevation and section description.
2. Safety Railing: See Figure 36 for rail design.
3. Rail heights shall be a minimum of 42-inches in pedestrian only areas and a minimum of 54-inches in height where both pedestrians and equestrians are present.

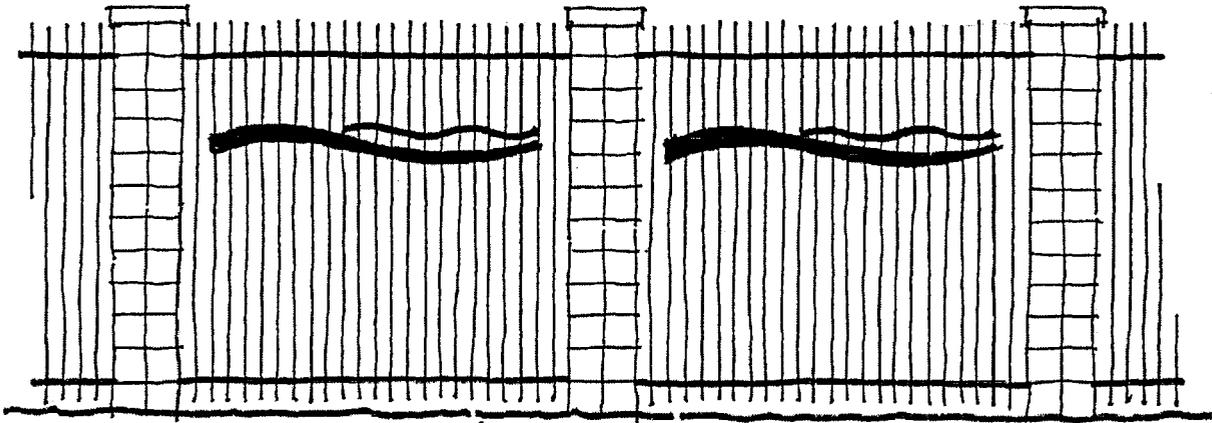


Figure 35
Fencing and pillar designs along open channels. Fence pickets spacing at 4" o.c. maximum.

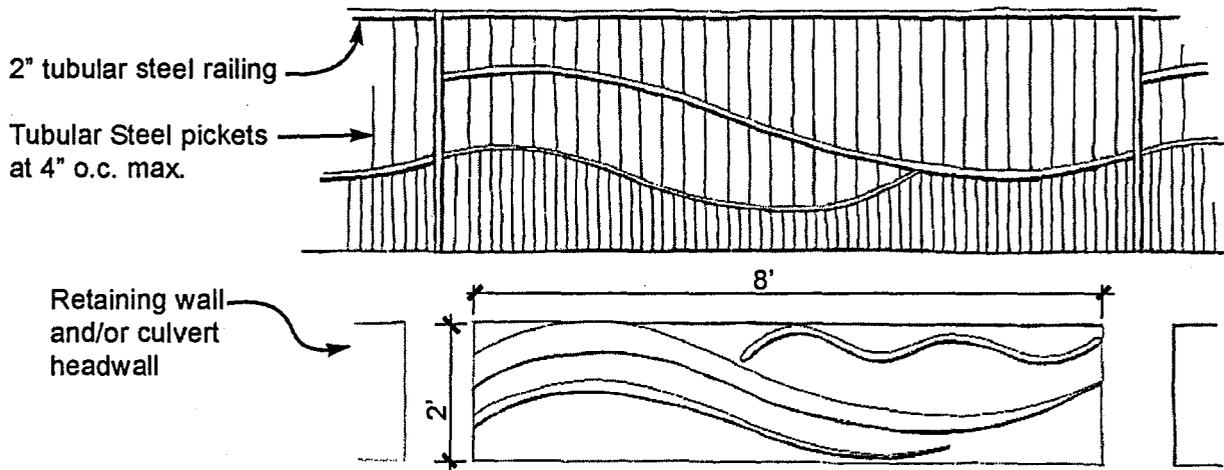


Figure 36
Pedestrian safety railing design at retaining walls and culvert headwalls.



Appendix A

Corridor Master Plan

Bethany Home/Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II

FCD Project No. 98-46, PCN No. 620 03 32

Prepared for:

Flood Control District of Maricopa County

2801 West Durango Street

Phoenix, Arizona 85009

Project No. 98-46

Prepared by:

DMJM+HARRIS

2777 East Camelback Road, Suite 200

Phoenix, Arizona 85016

Project No. 6888

Prepared in Cooperation with:

The City of Glendale

5850 West Glendale Avenue

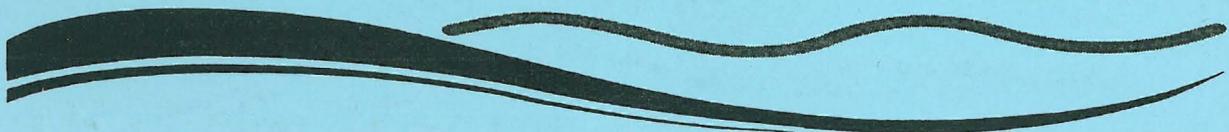
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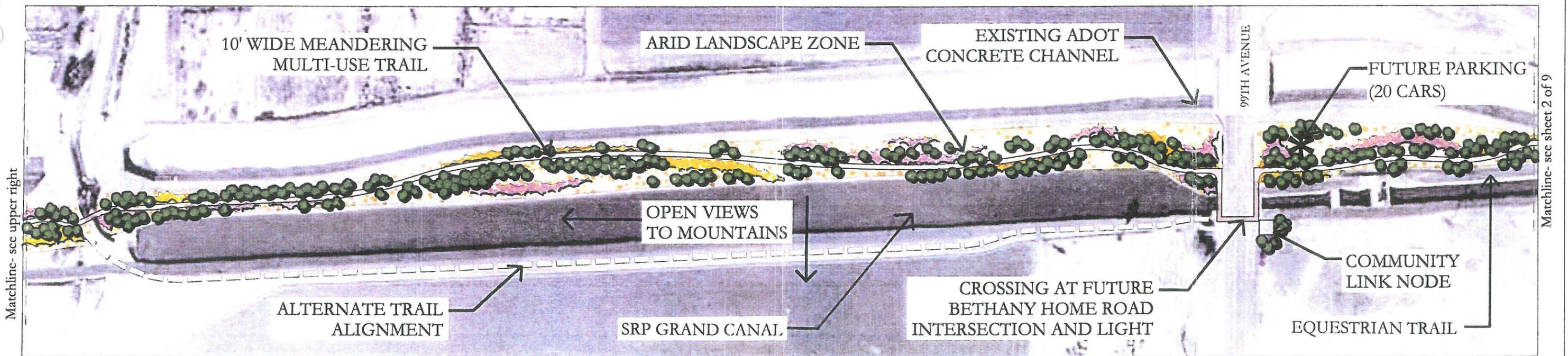
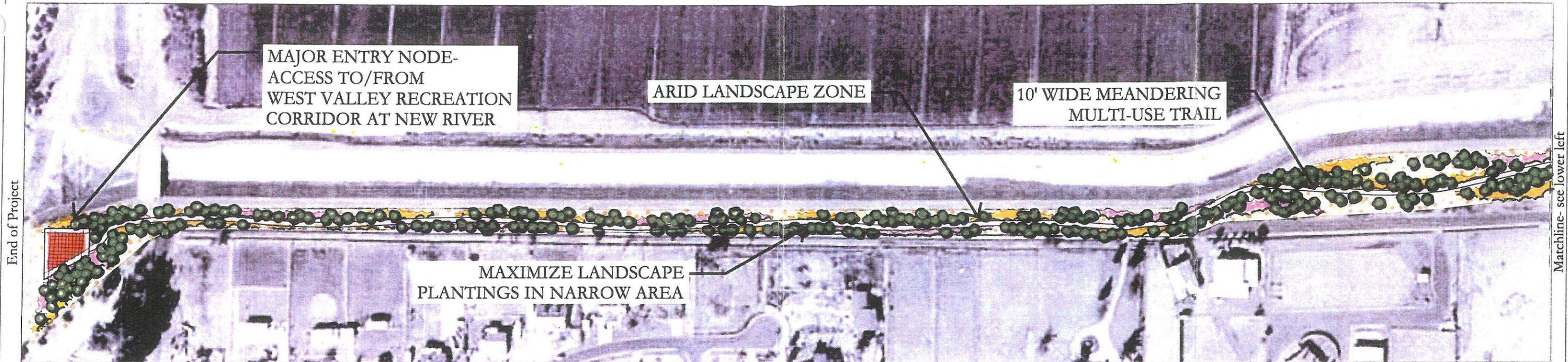
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Phoenix, Arizona 85003

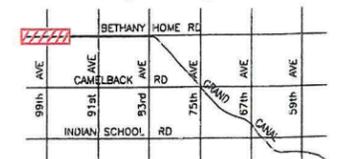




Corridor Master Plan

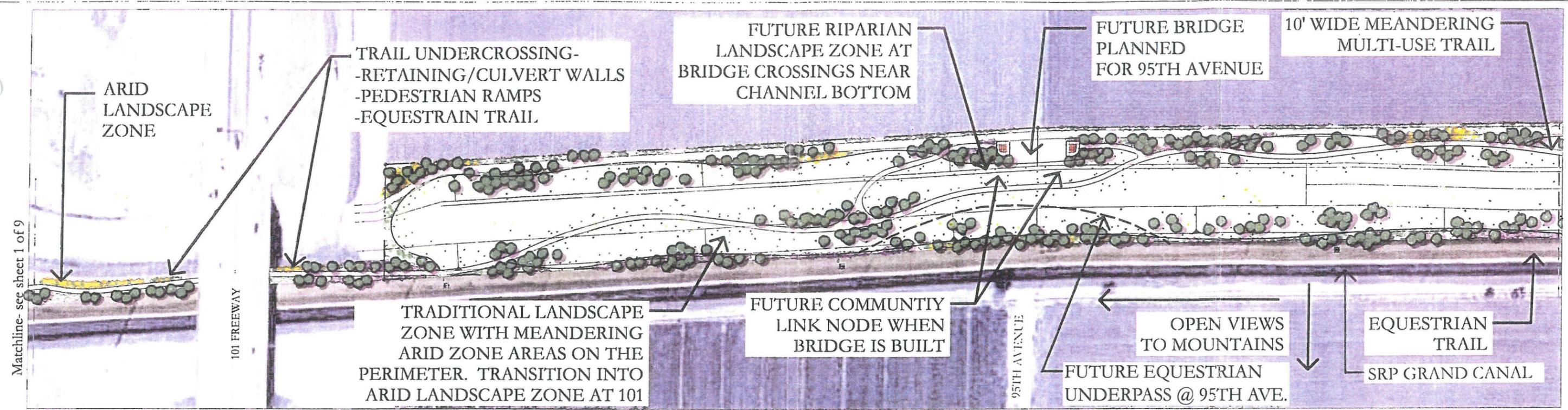


vicinity map



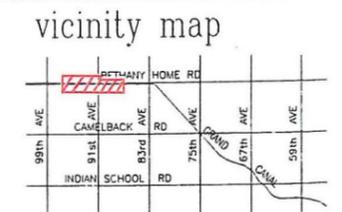
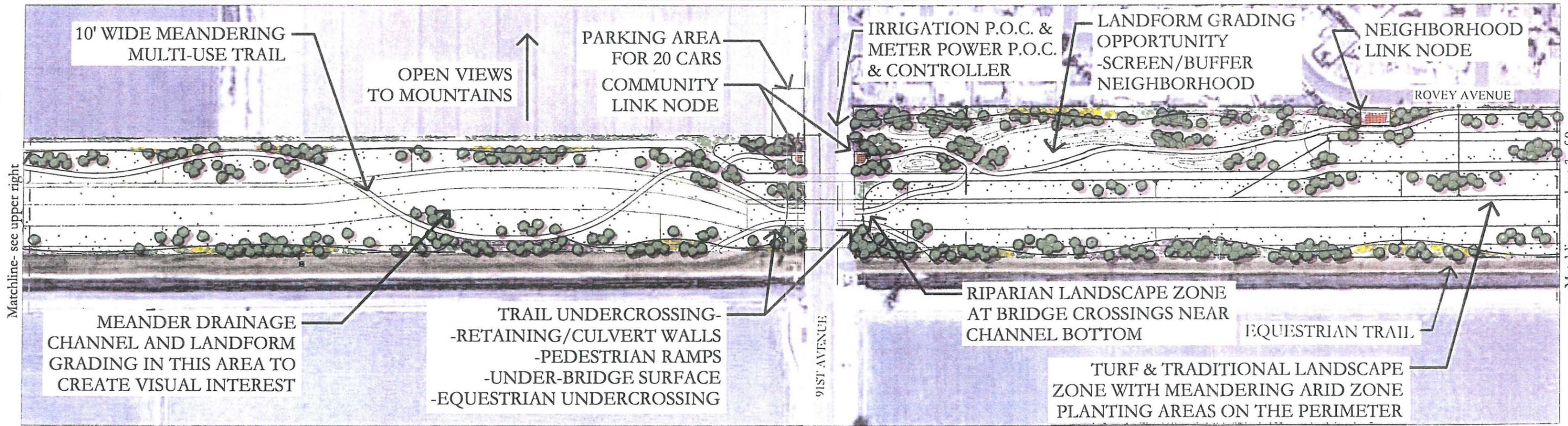
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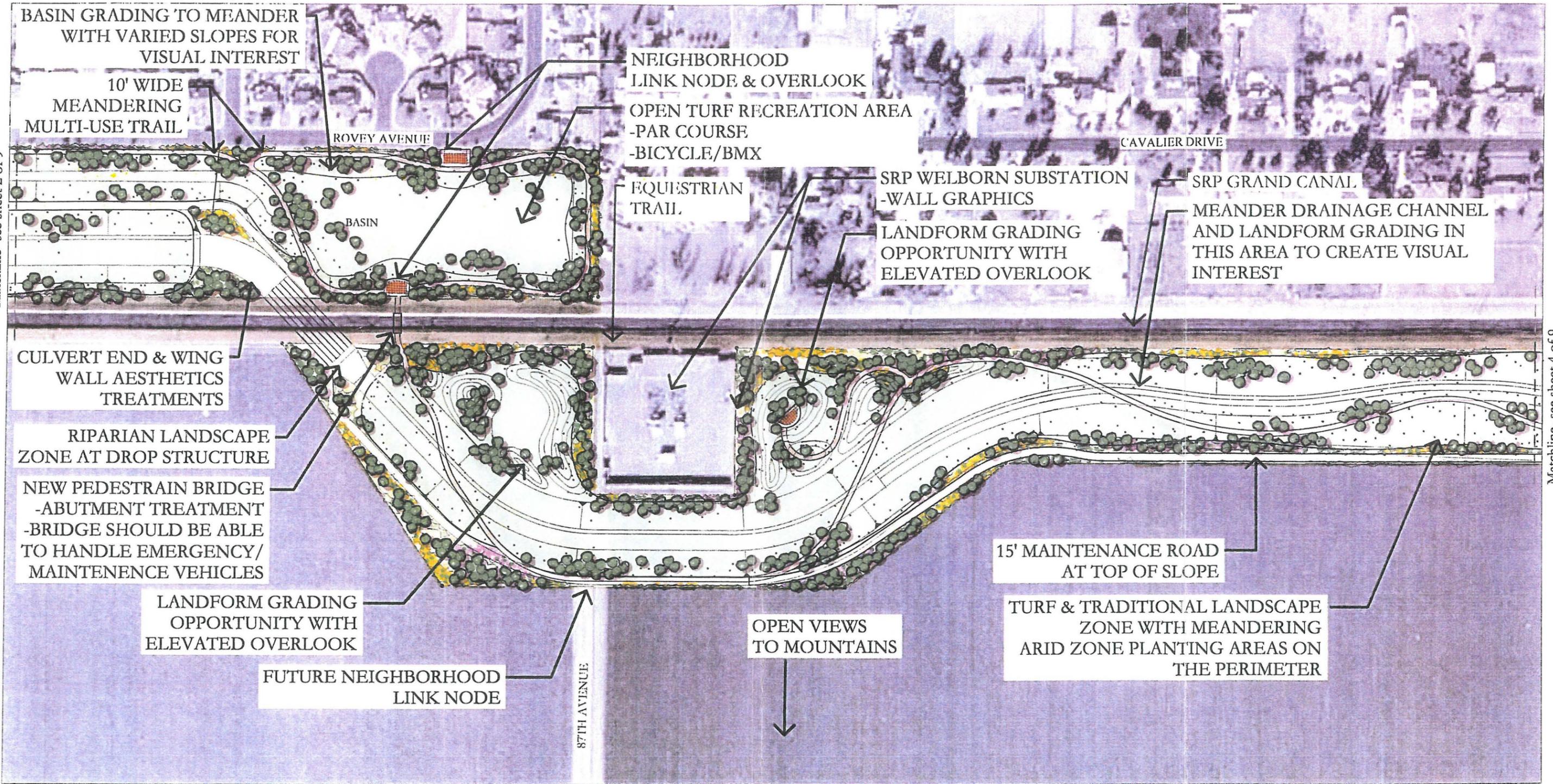
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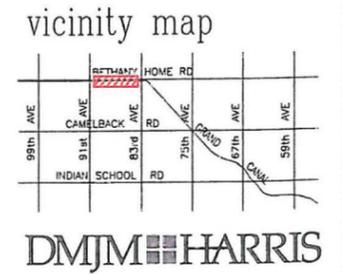
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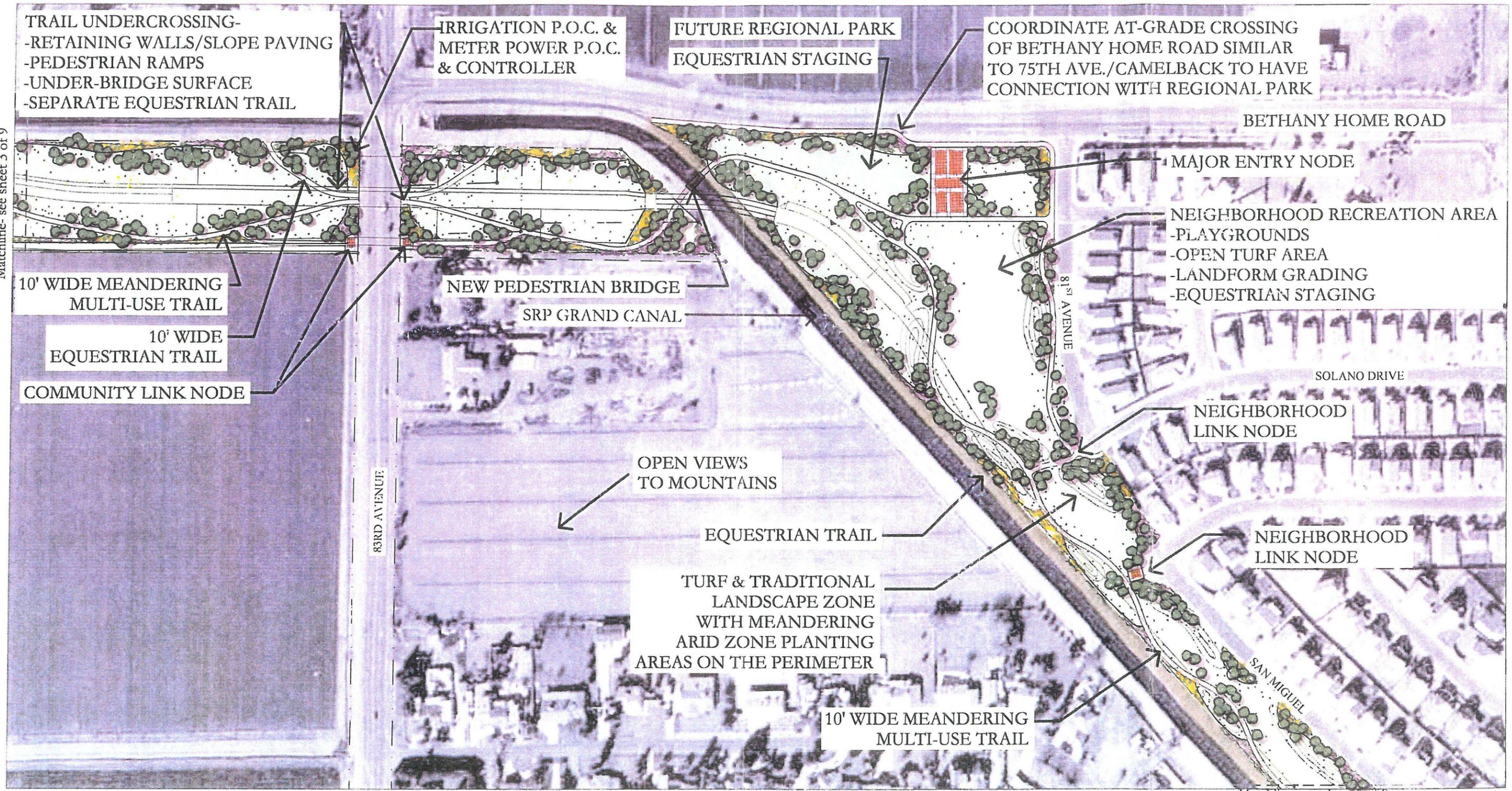
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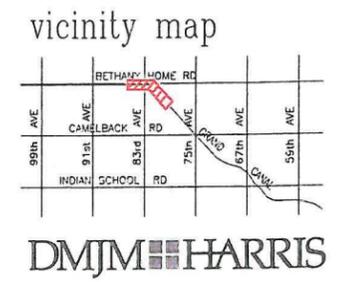
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 bethany home / grand canal
 flood control project

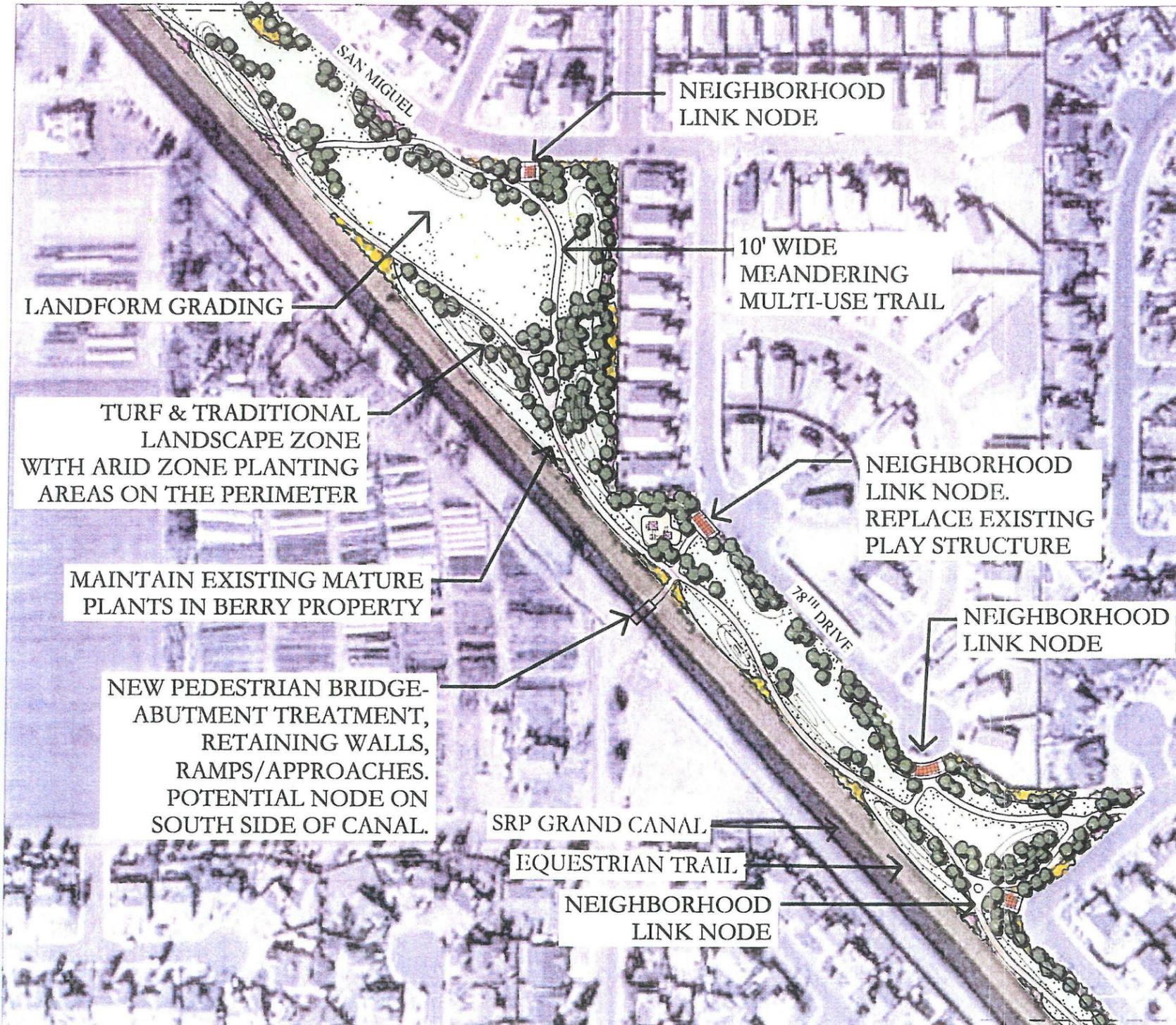
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 bethany home / grand canal
 flood control project

Corridor Master Plan



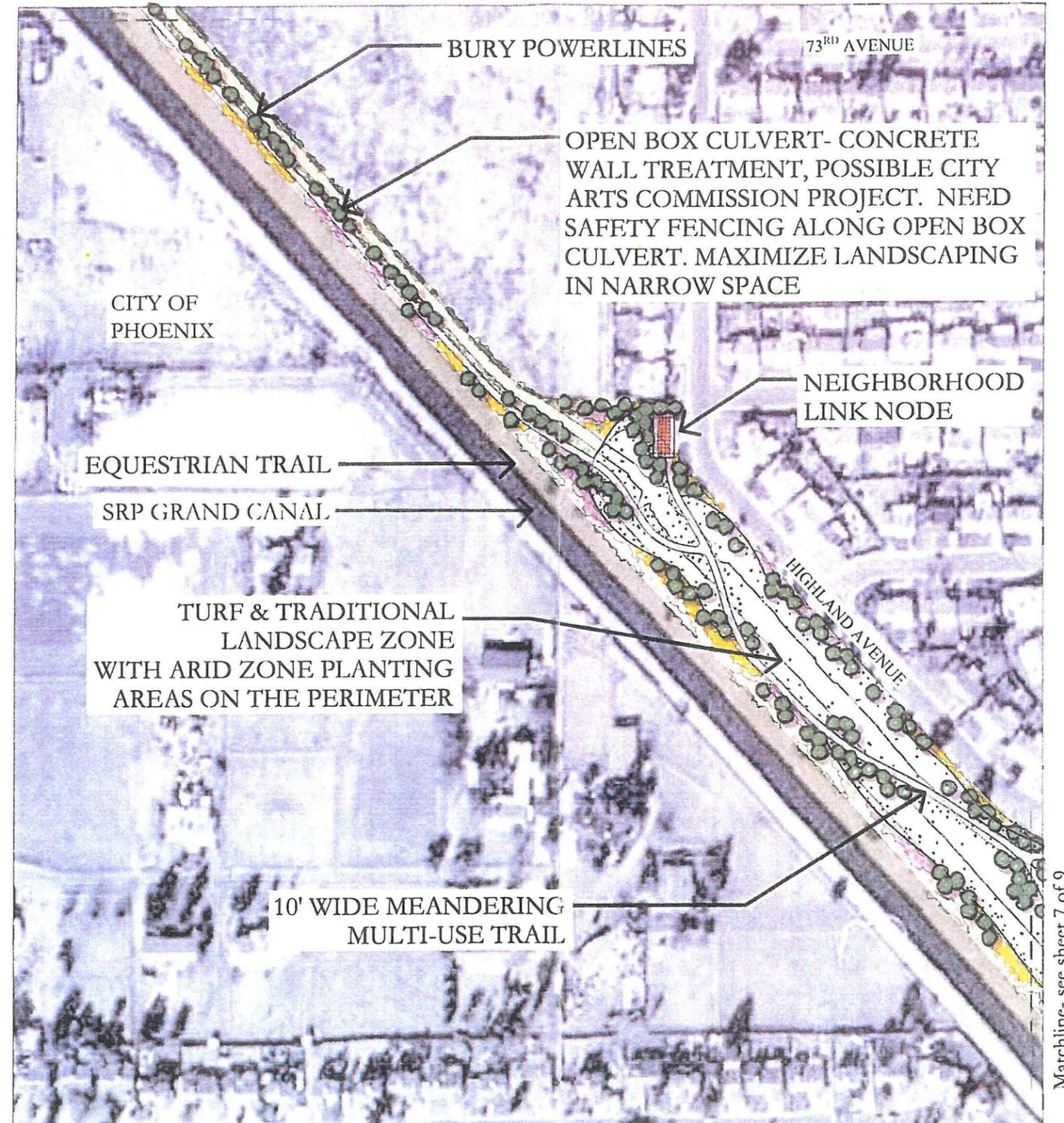
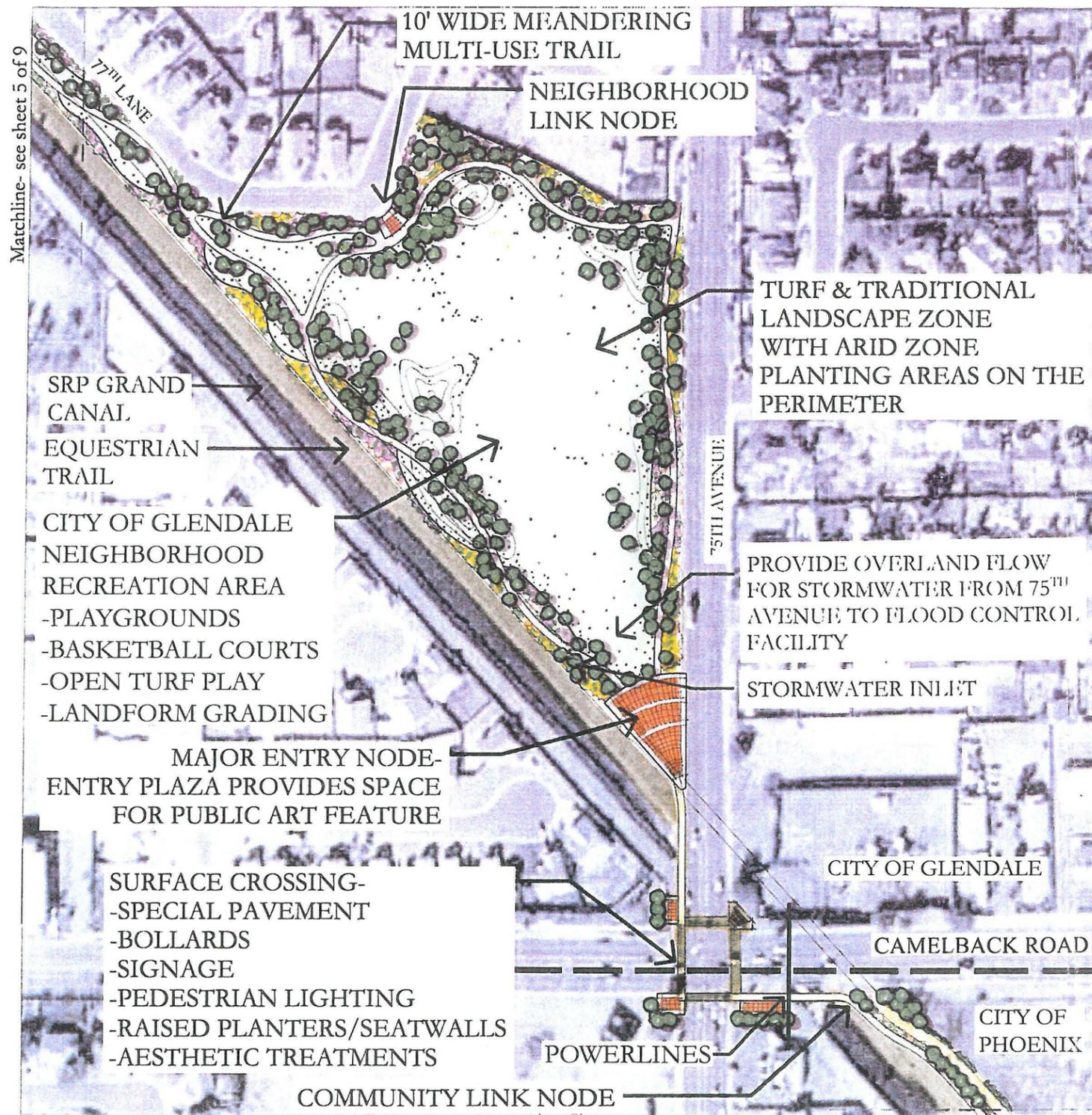
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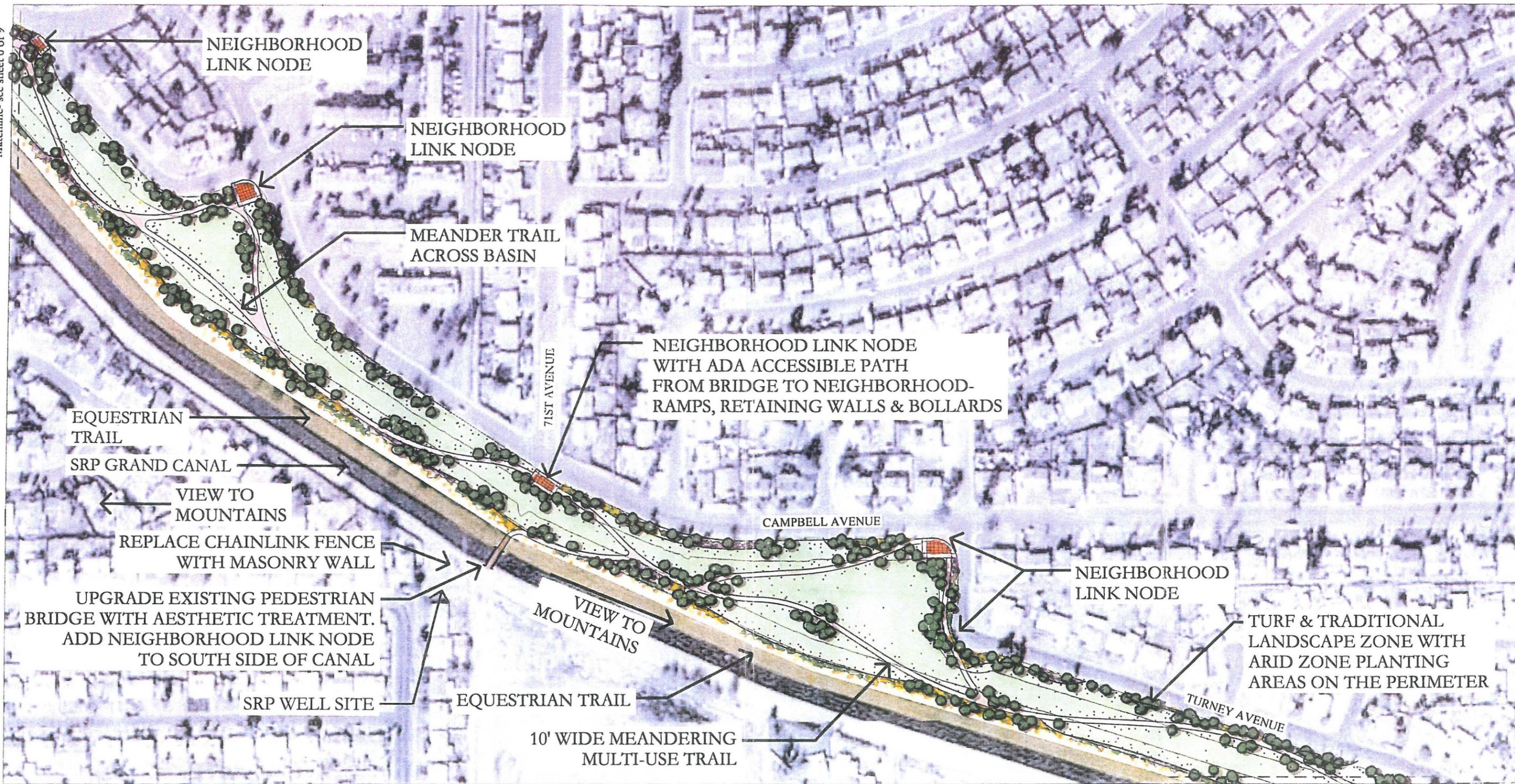
vicinity map



DMJM HARRIS



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Matchline- see sheet 8 of 9



bethany home / grand canal flood control project

Corridor Master Plan



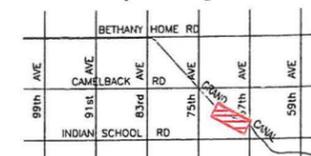
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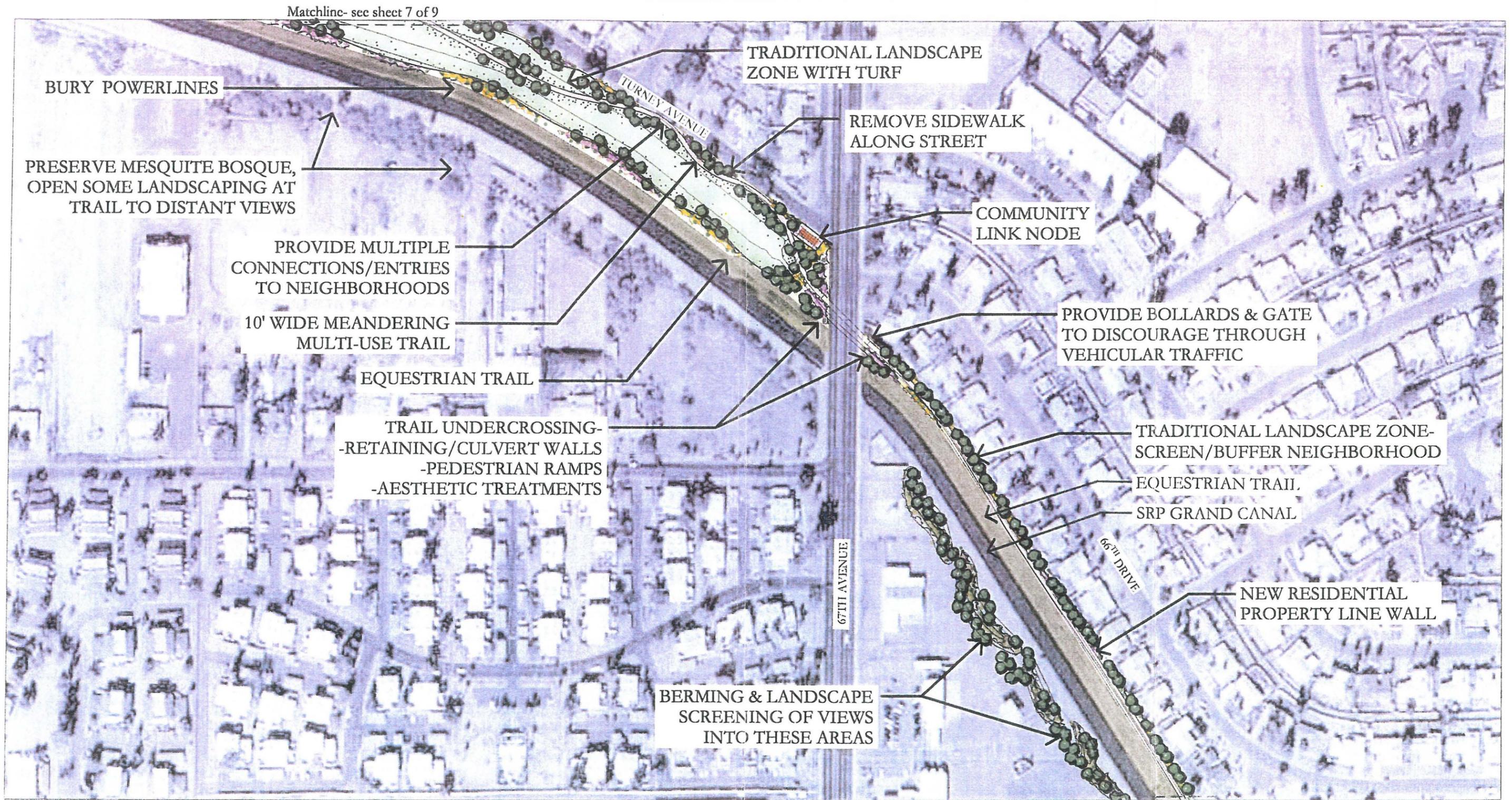
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vicinity map



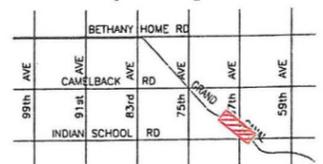
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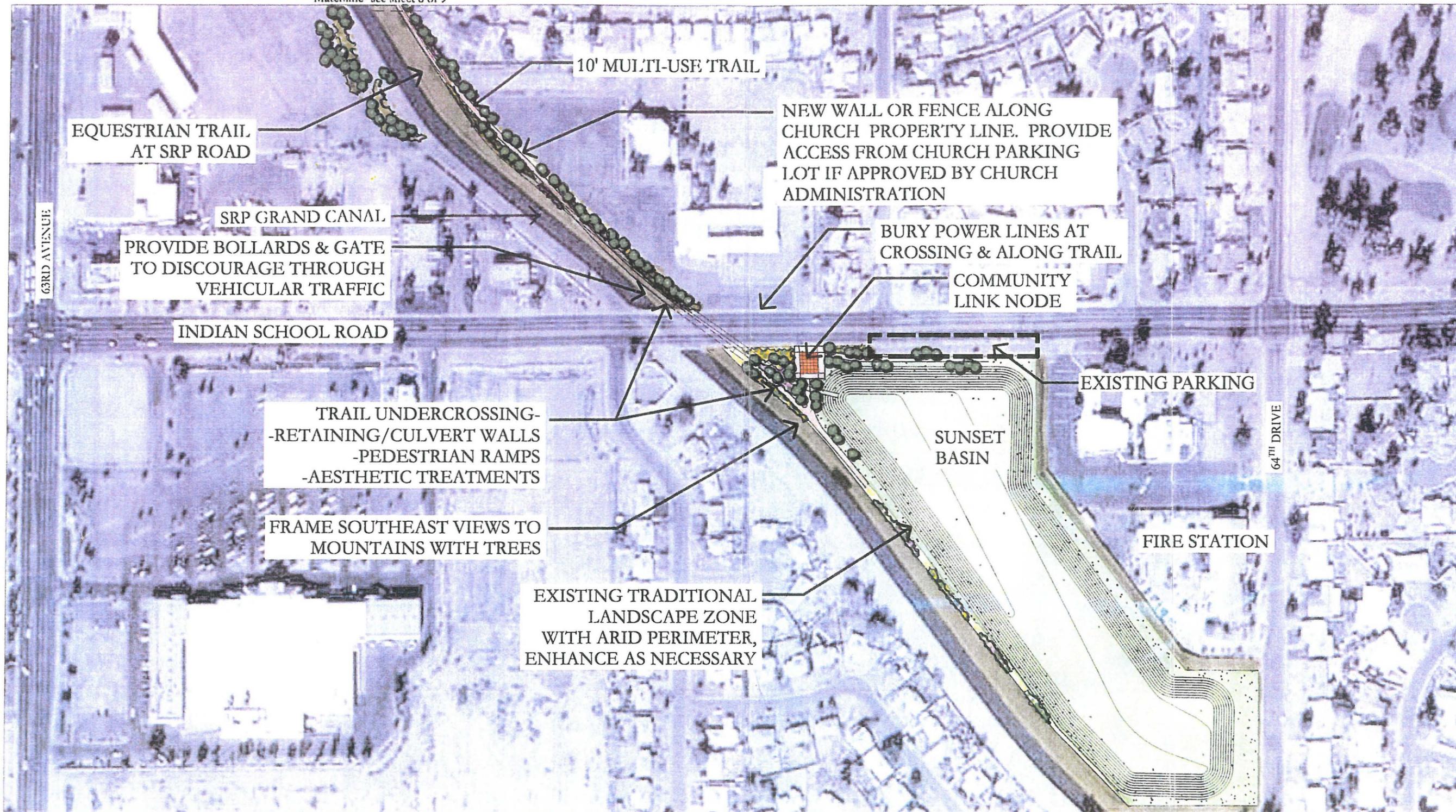
Corridor Master Plan



vicinity map



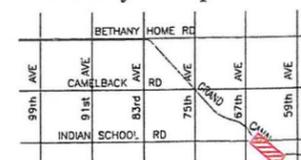
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Corridor Master Plan



vicinity map



Appendix B

Recreation Amenity Checklist

Bethany Home / Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II

FCD Project No. 98-46, PCN No. 620 03 32

Prepared for:

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
Project No. 98-46

Prepared by:

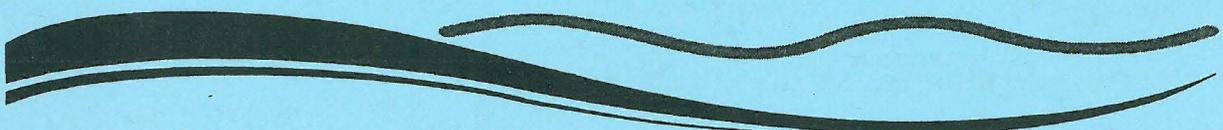
DMJM+HARRIS
2777 East Camelback Road, Suite 200
Phoenix, Arizona 85016
Project No. 6888

Prepared in Cooperation with:

The City of Glendale
5850 West Glendale Avenue
Glendale, Arizona 85301

Prepared in Cooperation with:

The City of Phoenix
200 West Washington
Phoenix, Arizona 85003



**BETHAN HOME / GRAND CANAL FLOOD CONTROL PROJECT
RECREATION AMENITY CHECKLIST**

Equipment or Material	Manufacturer or Description		Remarks / Model Number
	1st Priority	2nd Priority	
Site Furnishings			
Trash Container	Wabash Valley	Wausau Tile	
Ash Urn	Wabash Valley	Wausau Tile	
Bench - with back	Wabash Valley	Wausau Tile	
Bench - without back	Wabash Valley	Wausau Tile	
Drinking Fountain	Haws	MDF Most Dependable Fountain	With chiller and pet watering option
Picnic Table & Benches	Wabash Valley	Wausau Tile	
Overhead Security Lighting			
Bollard Lighting			
Ramada with Steel Columns	Classic Recreation Systems	Shelter Design	Prescott Model 16' X 16' size
Ramada with Masonry Columns	N/A		
Basketball Pole & Backboard	Playworld Systems	Patterson - Williams	#1527 with aluminum backboard
Bicycle Rack	Wabash Valley	Wausau Tile	
Park / Trail Signs	City of Glendale	Carsonite International	
Playground Equipment	Little Tykes	Playworld Systems	
Pedestrian Bridges	TBD		
BBQ Grill	Dumor, Inc.		Model 21 - single, Model 24 - Dual Level
Pet Waste Disposal	Dogi Pot		
Irrigation Components			
Irrigation Control System	Motorola 5000i	N/A	Motorola onlt Scorpio ready
Electric Control Valve -shrub & tree	Hardie 700 Series/ Flow Control	Rainbird EFB-CP Series	Ag Products Filters/ Senninger Presure Regulators
Electric Control Valve -turf	Hardie 700 Series/ Flow Control	Rainbird EFB-CP Series	
Bubbler - Shrub & Tree	Toro	Rainbird	
Drip Emitter	Bowsmith	N/A	L Series
Turf Spray -small area	Rainbird 1880's SAM	N/A	for pop-ups
Turf Spray - medium area	Hunter	N/A	I-20 and I-25
Turf Spray - large area	Hunter	N/A	I-40
Quick Coupler Valve	Rainbird	N/A	
Construction Materials			
CIP Wall Color & Finish			Integral color preferred with rough texture to deter graffiti
Form Finish - natural finishes			
Form Liner - standard designs			
Form Liner - new designs			
CMU Masonry - color & finishes			
Smooth, split face, fluted, fractured fin			
Concrete Flatwork Color & Finish			
TS Safety Railing			
TS Security Fence			
Bollard			Concrete fixed, steel removable

**BETHAN HOME / GRAND CANAL FLOOD CONTROL PROJECT
RECREATION AMENITY CHECKLIST**

Equipment or Material	Manufacturer or Description		Remarks / Model Number
	1st Priority	2nd Priority	
Site Furnishings			
Trash Container	Wabash Valley		LRW22 welded wire, ground mounted with RPL32 liner and FTL32W lid
Ash Urn	Wabash Valley		AUW10 Welded Wire
Bench - with back	Wabash Valley		Inground, 3/4-inch #9 steel mesh, color brown
Bench - without back	N/A		
Drinking Fountain	MDF Most dependale Fountain	Haws	With chiller and pet water option
Picnic Table & Benches	Design Cast - Conc, Wabash		Conc. 90" long, graffiti sealer, Portable -Wabash - 8' brown color
Overhead Security Lighting	Pappi Lighting		
Bollard Lighting			
Ramada with Steel Columns	Classic Recreation		Prescott Model 16' X 16' standard size
Ramada with Masonry Columns	N/A		Indicate sizes and masonry type, score, split face, etc. integral, or painted
Basketball Pole & Backboard	N/A		
Bicycle Rack	Landscape Structures	Kay Park	LS Model 100102A Powdercoat, KP Model 613CIG or 621CIG Powdercoat
Park / Trail Signs	Phoenix Standard		Rules sign
Pedestrian Bridges	TBD		
BBQ Grill	Dumor, Inc. Models 21 & 24		Model 21 - single, Model 24 - Dual Level
Pet Waste Disposal	Dogi Pot		
Irrigation Components			
Irrigation Control System	See Phoenix Standard Details		
Electric Control Valve -shrub & tree	See Phoenix Standard Details		
Electric Control Valve -turf	See Phoenix Standard Details		
Bubbler - Shrub & Tree	See Phoenix Standard Details		
Drip Emitter	N/A		
Turf Spray -small area	See Phoenix Standard Details		
Turf Spray - medium area	See Phoenix Standard Details		
Turf Spray - large area	See Phoenix Standard Details		
Quick Coupler Valve	See Phoenix Standard Details		
Construction Materials			
CIP Wall Color & Finish			
Form Finish - natural finishes			
Form Liner - standard designs			
Form Liner - new designs			
CMU Masonry - color & finishes			
Smooth, split face, fluted, fractured fin			
Concrete Flatwork Color & Finish			
TS Safety Railing			
TS Security Fence			
Bollard			Concrete fixed, steel removable

Appendix C

Landscape, Aesthetics & Multi-Use Needs Assessment & Goals and Objectives

Bethany Home/Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II

FCD Project No. 98-46, PCN No. 620 03 32

Prepared for:

Flood Control District of Maricopa County

2801 West Durango Street

Phoenix, Arizona 85009

Project No. 98-46

Prepared by:

DMJM+HARRIS

2777 East Camelback Road, Suite 200

Phoenix, Arizona 85016

Project No. 6888

Prepared in Cooperation with:

The City of Glendale

5850 West Glendale Avenue

Glendale, Arizona 85301

Prepared in Cooperation with:

The City of Phoenix

200 West Washington

Phoenix, Arizona 85003

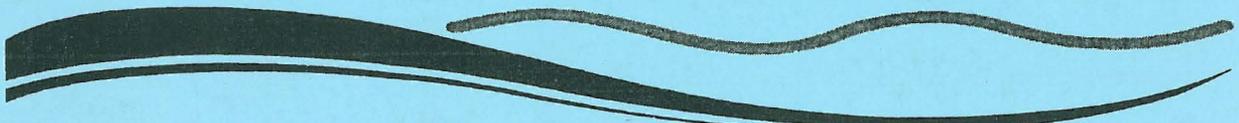


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I INTRODUCTION

A. PURPOSE:

To ensure that the design of the landscape, aesthetic and multi-use elements meet the needs of the Cities of Glendale and Phoenix and its citizens through staff coordination and citizen participation.

B. PROCESS:

The inventory and assessment of landscape, aesthetic and multi-use elements of the linear park corridor was developed through meetings with Glendale and Phoenix Parks Departments, the Project Aesthetics Advisory Committee (PAAC) and the public. The first needs assessment meeting occurred on May 3, 2001 with representatives of the City of Glendale Parks Department, the Flood Control District of Maricopa County (District) and the consultant team. During the discussion of recreation needs, the City presented their vision of the corridor development.

On May 10, 2001, representatives of the District and the consultant team met with the City of Phoenix Parks and Street Transportation Departments and discussed the general needs of the trail corridor facility as it passes through Phoenix.

The first PAAC meeting was held on May 21, 2001. At this meeting, representatives from adjacent neighborhoods, land owners, the Cities of Glendale and Phoenix, the District and the consultant team assembled to review the scope of the project including committee responsibilities and public involvement to be followed by an open discussion about the corridor. A list of needs and issues was generated from the comments that were expressed during the discussion period.

Finally, on May 23 and 31, 2001, two public meetings were held in the City of Glendale. During the question and answer discussions about the Glendale reach for the Grand Canal Linear Park, a final list of recreation and landscape needs was created. These needs are found in part IV, Section 6.

The City of Phoenix is not conducting public meetings specifically to obtain input about recreation needs. It is the City's desire that the corridor through Phoenix be simply developed as a multi-use trail corridor, equestrian trail and passive facilities supporting trail users.



II NEEDS ASSESSMENT:

A. CITY OF GLENDALE - GRAND CANAL LINEAR PARK

1. Trail System

The overall development goal is to develop a linear park greenbelt similar to Thunderbird Paseo with the primary amenities being the greenbelt, equestrian trail and multi-use trails. Equestrians will continue to use the SRP canal maintenance road for horseback riding. Walkers, joggers and bicyclists will travel along a meandering, ten-foot wide concrete path system located within the greenbelt. Linear park entry nodes will be located at major traffic intersections and at key access points along adjacent residential neighborhoods. These entry nodes will be passive in nature, consisting of expanded paving, benches, bike racks, signage and shade trees.

2. Recreation Elements

Recreation nodes are to be active in nature, and developed along the standards of Glendale's typical program for neighborhood parks. These elements might include 1 to 2 basketball courts, a large ramada, drinking fountain and 2 playground features, one for toddlers and one for older kids. The following is a descriptive list of desired recreation elements:

75th Avenue to 83rd Avenue

The northwest corner of 75th Avenue and Camelback Road is currently an 11-acre Glendale park site. This site is envisioned as a major entry node for the Grand Canal Linear Park. The existing detention basin is to be filled to provide for the following amenities and improvements:

- A major arts component (Heritage Grant)
- Parking, trailhead & horse access
- Lighted basketball court
- Fully accessible play area (Heritage Grant)
- Security lighting
- Other items of public interest
- Potential dog park area

The linear park connection between Glendale and Phoenix at 75th Avenue and Camelback Road will not be underground. This culvert or tunnel would be nearly 500' long, much too long for a trail in terms of safety and security. All trail users will have to cross on the surface at the intersection traffic light(s).

North and west of this entry and recreation node, Glendale would like to maintain the ten-foot wide meandering concrete trail with rest areas, benches and security lighting up to the Berry property limits. The existing linear park trail then moves to the street, around the Berry property, then back to the linear park. In the master plan, the Berry property was identified as a future park node. There is an existing park with a tot-lot and benches near 79th Avenue and Missouri. Glendale envisioned a pedestrian bridge at this location and is considering funding it with federal ISTEA funds.

81st Avenue and Bethany Home Road

At the southeast corner of 81st Avenue and Bethany Home Road, the City owns a nine-acre parcel, which currently functions as a subdivision retention basin and open space park. This area should be developed as a major entry and neighborhood recreation node with amenities similar

to the feature at 75th Avenue, with potential for a public art component. The District is considering the purchase or license agreement for an adjacent federally owned parcel at 83rd Avenue south of Bethany Home Road for the flood control project. Additional land may be available at this location to expand the node. This location will also serve as a key linkage to the Glendale West Area Regional Facility located at the northeast corner of Bethany Home Road at 83rd Avenue.

83rd Avenue to 91st Avenue

From 83rd to 87th Avenues, the linear park amenities are envisioned to be more pastoral consisting of the multi-use trail, benches, signage, mile markers and a par-course along the trail or adjacent to the Wellborn SRP substation site. Other passive and open play opportunities will be considered at the retention basin between 87th and 91st Avenues. There is potential for a dog park within this segment of the project. In general the predominant feature of the park corridor west of 83rd Avenue and the area around Wellborn Substation will be a continuation of the passive open space of the greenbelt. A ten-acre school and park site is planned for the area near the 87th Avenue and Missouri Road alignments. The master plan will consider this part of the linear park as a potential connection from the future school, park and neighborhoods.

91st Avenue to Loop 101 (Agua Fria Freeway)

Two ten-acre school and park sites are planned for the north and south sides of the corridor. They are planned to be located approximately one half-mile north and south of the linear park. The City of Glendale suggested that there is probably no need for any additional entry nodes west of the 95th Avenue alignment. At 95th Avenue, there may be a future need for a pedestrian bridge to cross the canal, however Glendale is also planning a future vehicle and pedestrian road crossing of the Grand Canal and linear park at this location. The master plan will address this future 95th Avenue underpass and to the extent possible, the design of the trail will reflect this future alignment and structure of the bridge

3. Landscape Elements

Should the District acquire the Berry property for the flood control project, the existing trees, and possibly the buildings, should be preserved to the extent possible. These site assets have the potential to be incorporated into and enhance the linear park entry node planned for this location.

Design of new plantings in the linear park will address four major objectives. These objectives are:

- a. Screen unsightly views and buffer project edges
- b. Enhance positive views
- c. Provide shade for linear park users
- d. Create visual interest, aesthetics and diversity in the environment.

4. Irrigation Elements

The City of Glendale Parks Maintenance staff has provided a list of recommended irrigation equipment for use within the project. This information is contained in the Design Guidelines document.

5. Other Elements

- a. Use the City of Glendale's "*Design Guidelines for Site Development and Infrastructure Construction*" as the standard for the recreation and trail development.

- b. The 88-acre regional park on the northeast corner of 83rd Avenue and Bethany Home Road will remain open until 11:00 PM.
 - c. The master plan will incorporate pedestrian bridges over the Grand Canal at 79th Avenue & Missouri; 83rd Avenue and Bethany; 87th Avenue and Bethany; and 95th Avenue and Bethany.
 - d. Along the Glendale portion of the corridor, sports lighting is to be on a timer and should go off at 10:00 PM. Security lighting may be on later or all night, depending on public input.
6. Glendale Public Meeting s
- A series of two public meetings were held to allow the public to discuss the issues related to the development of the Grand Canal Linear Park. The combined results of these meetings are as follows. The specific responses and comments follow the combined results.

**Summary Results of Grand Canal
Linear Park Public Survey
City of Glendale**

Public Input Meetings - May 23 and 31, 2001
Desert Mirage School

PERCENTAGE OF RESPONSES TO THE
FOLLOWING QUESTIONS.

WHAT TYPES OF RECREATIONAL AND
SOCIAL FACILITIES WOULD YOU USE?

	Total Responses	LEAST LIKELY	SOMEWHAT LIKELY	MOST LIKELY
Use of the Multi-use Trail for:				
Walking	68	0%	3%	97%
Jogging	63	8%	21%	71%
Bicycling	62	8%	10%	82%
Rollerblading	62	44%	19%	37%
Skateboarding	62	58%	18%	24%
Use of the SRP Canal bank for Horseback Riding	65	45%	28%	28%
Sitting and Resting at Shaded Trail Nodes	66	5%	15%	80%
Picnicking	64	19%	38%	44%
Open, Informal Play on Turf Areas	63	13%	43%	44%
Playgrounds with Play Equipment for:				
Toddlers - Up to Age 3	59	32%	19%	49%
Older Children - Ages 3 to 10	64	23%	28%	48%
Trailside Fitness Course (Par Course)	61	18%	39%	43%
Dog Park	62	42%	23%	35%
How would you access this park? (Check all that apply)			44%	Walking
			38%	Bicycle
			7%	Horse
			11%	Automobile
Would you like to see public art incorporated into the linear park?			68%	Yes
			11%	No
			21%	No Preference
If yes, in what manner?				
Stand alone features such as sculpture, etc.			35%	

Features that are incorporated within park elements such as walls, paving, fencing, railings, etc.	32%
Both	40%

Glendale Public Meeting # 1

On May 23, 2001, from 7:00 to 9:00 PM, the first of two public information meetings was held at the Desert Mirage School. The public suggested the following linear park needs:

- a. Maintain all current storm water drainage flows during construction.
- b. All existing SRP irrigation water will continue to be delivered to residents and farmers during construction.
- c. Protect the existing pedestrian bridge at 79th and Missouri and provide a small playground for children on the north side of the crossing. Discourage recreational use along the south side.
- d. There should be public input for any art program.
- e. Consider the use of recycled materials for art elements.
- f. Continue the current bicycle activities (bike trail, jumping, BMX) in the basin west of the Wellborn Substation.
- g. The City of Glendale Parks Department needs will provide on-going maintenance.
- h. Provide lots of trees for shade.
- i. Access and rest nodes should have shade and drinking water.
- j. Provide night lighting for security. Do not adversely impact neighboring residences.
- k. Provide trash cans.
- l. Consider water features in the node areas.
- m. Provide adequate parking in the 88-acre regional park for use by corridor users.
- n. Limit in-corridor parking areas to larger recreation sites such as at 75th and Camelback. Some street parallel parking is OK on the corridor side of the street – not on the residential side.
- o. Separate equestrian trail use from the multi-use trail.
- p. Consider an underpass from the corridor to the 88-acre regional park at 83rd Avenue and Bethany Home Road.



RESULTS OF THE PUBLIC INPUT SURVEY
 Public Meeting at Desert Mirage School

May 23, 2001

WHAT TYPES OF RECREATIONAL AND SOCIAL FACILITIES WOULD YOU USE?	LEAST LIKELY	SOMEWHAT LIKELY	MOST LIKELY
Use of the Multi-use Trail for:			
Walking		2	37
Jogging	1	4	30
Bicycling	1	4	32
Rollerblading	14	8	14
Skateboarding	21	9	7
Use of the SRP Canal bank for Horseback Riding	16	12	10
Sitting and Resting at Shaded Trail Nodes	1	1	35
Picnicking	4	12	20
Open, Informal Play on Turf Areas	3	14	17
Playgrounds with Play Equipment for:			
Toddlers - Up to Age 3	9	5	18
Older Children - Ages 3 to 10	7	8	22
Trailside Fitness Course (Par Course)	3	15	17
Dog Park	13	10	13

How would you access this park? (Check all that apply)	33	Walking Bicycle Horse Automobile
	33	
	5	
	11	

Would you like to see public art incorporated into the linear park?	25	Yes
	3	No
	8	No Preference
If yes, in what manner? Stand alone features such as sculpture, etc.	10	
Features that are incorporated within park elements such as walls, paving, fencing, railings, etc.	11	
Both	14	



OTHER COMMENTS:

Do not want facilities that would promote/encourage non-local or excessive public parking and traffic along linear park.

No parking facilities

I think that the Linear Park should be intended primarily for local residents who can get to the park by bicycle or on foot. Non-local residents should access the park via attached/adjacent (sp) "Regular Public Parks". Do not want to encourage use of the park areas for large organized gathering such as "Church Picnics", birthday parties, etc. where cars would be parking in residential neighborhoods. Do not want to end up with a "Hangout" or place to loiter.

Artist's renderings are exactly what I would like to see.

Additional comment for a "yes" answer to public art: "only if publicly supported and approved!"

I would like to see some kind of connectivity (bridge, underpass) from linear park below Bethany Home to Regional Park. Parking at Regional would then have walking or riding access to entire Linear Park as well without additional parking or street crossing issues.

Maintenance? Security? Drinking Water? Park & ride in non-populated area?

Be sure to leave trash or garbage cans frequently placed.

Small parking lots.

No parking - park in regional park.

No parking lots.

No parking.

Art & Sculptures. No parking facilities. Trees, flowers, nice settings, fountains.

Water feature.

Use recycled materials in art. Trailside Fitness Course - great idea.

Resting areas with large shade trees and drinking water.

Limited parking at entry nodes with drop-off areas.

Parking not appropriate!

Parking is not appropriate in the area, should be able to walk to access park.

Would like input in public art incorporated into the linear park.

Large trees. Safety lighting that is not intrusive to neighbors.

If skateboard area?

Neighborhood park only. No parking.

Parking would not be appropriate for linear areas.

If Bethany Home is connected south of canal park from 83rd to 91st how do residents south of Missouri access park?

Public art incorporated into the linear park – make it interesting.

Glendale Public Meeting #2

The second public meeting was held on May 31, 2001 from 7:00 to 9:00 PM, also at the Desert Mirage School. The public suggested the following needs:

- a. Keep the horse trail on the SRP maintenance road, separate from the multi-use trail.
- b. Provide horse staging areas for equestrian access.
- c. Provide lots of public art (outdoor sculpture) along the canal.
- d. Provide enhanced security at the underpasses (panic buttons, call boxes).
- e. Provide night security lighting and good daytime visibility.
- f. Provide trail lights.
- g. Provide adequate parking at the regional park and a safe crossing for trail users.
- h. Provide a skateboard park in the wider corridor areas west of 83rd Avenue.
- i. Police and Park Ranger patrols are highly desired.
- j. A connection from the linear park to the regional park is desired.
- k. Consider a fishing lake, basketball courts and soccer fields.
- l. Provide barbecues.
- m. Provide a Frisbee golf course.
- n. Provide life preserver rings along the canal edge.
- o. Provide security between 87th and 91st Avenues, in the basin. Keep the trail away from residential back yard walls.
- p. Provide lots of shade trees and shrubs.
- q. The multi-use trail will be concrete, 10' wide.
- r. Provide benches in the rest areas and along the trail.
- s. Maintain vacant land prior to construction.
- t. Provide bathroom facilities in the corridor.

RESULTS OF THE PUBLIC INPUT SURVEY
 Public Meeting at Desert Mirage School

May 31, 2001

WHAT TYPES OF RECREATIONAL AND SOCIAL FACILITIES WOULD YOU USE?	LEAST LIKELY	SOMEWHAT LIKELY	MOST LIKELY
Use of the Multi-use Trail for:			
Walking			29
Jogging	4	9	15
Bicycling	4	2	19
Rollerblading	13	4	9
Skateboarding	15	2	8
Use of the SRP Canal bank for Horseback Riding	13	6	8
Sitting and Resting at Shaded Trail Nodes	2	9	18
Picnicking	8	12	8
Open, Informal Play on Turf Areas	5	13	11
Playgrounds with Play Equipment for:			
Toddlers - Up to Age 3	10	6	11
Older Children - Ages 3 to 10	8	10	9
Trailside Fitness Course (Par Course)	8	9	9
Dog Park	13	4	9

How would you access this park? (Check all that apply)	27	Walking Bicycle Horse Automobile
	19	
	5	
	4	

Would you like to see public art incorporated into the linear park?	18	Yes
	4	No
	5	No Preference
If yes, in what manner?		
Stand alone features such as sculpture, etc.	12	
Features that are incorporated within park elements such as walls, paving, fencing, railings, etc.	9	
Both	11	



OTHER COMMENTS:

Connection to part at Bethany and 83rd – safe crossing for children, adults and horses (tunnel)

Public art incorporated into the linear park – just something else for them to paint on!!

Public art incorporated into the linear park – just something else to spray paint. No stand alone features such as sculpture. Only lighting incorporated within park elements.

Art is a must and so is security. Please ensure that the development is well coordinated for the entire area.

Owners being responsible for pets, e.g. on leash and handle dog waste, keep parks clean for everyone.

Stand alone features – sculpture.

SHADE

Stand alone features – sculpture. Features incorporated within park elements – walls.

Features incorporated within park elements – if you must.

Stand alone features – sculpture.

Stand alone features – climbable sculptures. Would also like to see hard courts – tennis, basketball, racquetball and tetherball.

Lots of trees, bushes, etc. Grass lined path looks great.

B. CITY OF PHOENIX – LINEAR OPEN SPACE

1. Trail System

It is the City's desire to retain the flood control facility as an open space greenbelt with a multi-use trail. The trail must meet ADA accessibility requirements and should meander along the channel's north slope area with intermittent street contact points. Trail crossings to the south side of the channel will be limited in frequency with the exception being to access pedestrian bridges. The path should be 10' wide, constructed of integrally colored and/or textured concrete instead of asphalt. The multi-use trail concrete depth should accommodate use by maintenance and emergency vehicles, including larger trucks for light fixture repair or replacement.

2. Surface Connections and Entry Nodes

ADA accessible connections from underpasses up to the surface street or canal bank are required. There will be no continuation of the trail beyond the Sunset Basin. Trail users will continue to use the Grand Canal maintenance road.

Trail nodes should be more formalized areas located along the corridor, especially where intersecting or parallel streets meet the corridor. Entry node elements could include benches, raised planters or seating cut into raised berms, signage and bike racks. Off-site storm conveyance through or under these nodes must be considered.



3. **Culvert Under Crossings**
These underpasses must be lighted with wall mounted, vandal resistant lights in cages. 67th Avenue and Indian School Road are recommended locations for this type of underpass. As previously stated, the trail crossing at 75th Avenue and Camelback Road will not be underground as this tunnel would be nearly 500' long. Trail users will have to cross at the intersection traffic light(s).
4. **Lighting**
Trail lights are generally 24' high, shoebox-type fixtures, on concrete pedestals. The pedestals should be approximately 36" high in turf areas and approximately 6" high in non-turf areas. Any new installation or modification of city street lighting along the north edge of the facility should be appropriately modified to serve the adjacent trail and entry nodes, thus reducing the need for separate trail lights. To minimize turf mowing and trimming maintenance, trail lights should be located in non-turf, granite areas wherever possible.
5. **Channel Slopes**
The side slopes of the new channel can reflect the slope conditions at the Sunset Basin, as they are mowable. To the extent possible the degree of slope (steepness) should be varied to simulate a meandering bottom. To further enhance this meandering appearance, the use of single and terraced retaining walls will be considered. These walls will also create flat areas necessary for construction of facility entry nodes. Wall materials include poured in place concrete with a form liner finish or the dry set "Keystone" block type wall. Wall surfaces will receive an anti-graffiti treatment. Public safety considerations will require the use of safety railings or fencing along the top of walls and along steps and ramps.
6. **Low Flow**
An underground pipe with inlets for the nuisance water is preferred over a concrete low-flow channel if it is cost effective.
7. **Vertical Concrete Channel**
Where this channel type occurs, it will be highly visible from the adjacent multi-use trail, the equestrian trail and perhaps from adjacent private property. Various aesthetic treatments should be considered for mitigating the visual impacts of this structure including painted and/or murals, faux rock applications and decorative form liners.
8. **Channel Transitions**
Channel transitional areas that direct storm water flows from open turf channels to open boxes to closed boxes and visa-versa, will require special safety and decorative treatment. These treatments may consist of aesthetic design modifications to walls, drop structures, energy dissipating devices, concrete and rock aprons, and hardscape slope protection. Safety fencing can also be decoratively treated and may have to be hinged with shear pin hardware to permit unimpeded storm flows.
9. **Recreation Elements**
Only passive recreation elements are desired. These elements include seating, bike racks, trail signage, expanded concrete paving and shade trees. If there is sufficient space, larger turf areas could be used for informal recreation activities such as Frisbee tossing, pick-up games, etc. No formal or organized active recreation uses would be provided.

10. Landscape Elements

Concentrate shrub and ground cover plantings at the trail entry nodes and thin out their use in between nodes. Use tree masses to provide shade at all entry nodes, intermittent shade along the trail and visual interest in areas with no shrubs and ground covers. Tree masses will be arranged to maintain and enhance good views to nearby and distant features. Screening of unsightly views will be created by the combination of trees, shrubs, earth mounds and walls.

SRP will not permit encroaching landscaping into their right of way. Meandering desert landscape edge treatments along the channel/SRP maintenance road edge will have to occur on the channel side of the boundary. This will permit periodic masses of desert tree and shrub plantings and decomposed granite surfacing along the SRP edge. The intent is to obscure the long straight line of this edge. The landscape edge along the north side, between the linear park trail and the street curb will be also be comprised of desert landscape plantings with decomposed granite surface material and will serve as a buffer between neighborhood residences and the linear park.

11. Irrigation Elements

Use bubblers, not emitters, in the desert landscape areas. Trees planted in turf areas should not be irrigated separately with bubblers. The turf spray system will irrigate the trees.

C. PROJECT AESTHETICS ADVISORY COMMITTEE (PAAC)

The needs and issues expressed at the first PAAC meeting are summarized below:

1. Needs

- a. 95th Ave. underpass - plan for an eventual vehicle and pedestrian bridge, making an easy, well-coordinated construction effort later.
- b. Provide an underpass at 67th Ave. & Indian School Road adjacent to the Grand Canal.
- c. Provide pedestrian crossings of the Grand Canal at half mile points where possible.
- d. Phoenix:
 - Greenbelt
 - Trail
 - Seating
 - Decorative treatments
- e. Glendale:
 - Active Linear Park
 - Provide playgrounds at 75th Ave. and 83rd Ave.
 - Consider a Dog Park
 - Consider an Equestrian Park
 - Multi-Purpose Trail

2. Issues

- a. Concrete channel treatment & safety - Safety considerations for the use and location of the multi-use trail along vertical open concrete channel sections was identified as an extremely important issue. Consider safety railings and fences along the channel edge.
- b. SRP maintenance practices - SRP maintenance practices are a considerable concern to adjacent neighborhoods. Specifically, the practice of depositing dredged canal material and

- trash along the north edge of the right-of-way should be discussed with SRP to see if other maintenance accommodations can be made.
- c. Appearance of radio towers – There are aesthetic issues at the radio transmission towers, including the presence of guy wires and operating licenses that makes acquisition of additional land in this parcel difficult. Additionally, the towers can't be moved. This horizontal constraint requires the use of the vertical concrete channel.
 - d. SRP edge – Try to buffer the edge of the maintenance road with meandering pockets of trees and shrubs.
 - e. Pedestrian bridge side improvements - Provide linear park trail connections to all proposed pedestrian bridges.
 - f. Maintenance - Facility maintenance, including removal of graffiti, will be the responsibility of each City.
 - g. Lighting and security - Lighting and security are very important concerns and are desired, however the lighting should not become a nuisance to adjacent homes.
 - h. SRP future improvements - SRP should coordinate the design of any new improvements to their facility with the District in order to maintain a complimentary design solution.
 - i. Maintain agricultural irrigation systems – Irrigation delivery and drainage systems should not be impeded or blocked during construction.
 - j. Path location - To the extent possible, concentrate the location of the path away from residential property lines.
 - k. Equestrian crossings – To the extent possible, avoid surface street equestrian crossings.
 - l. Crossing at 83rd Ave. - Consider placing the Grand Canal in an aqueduct over the park.
 - m. Trail continuance - In the master plan, show how the linear park and trail system continues along the ADOT channel, under the Loop 101 bridge and connects with the West Valley Recreation Corridor.

D. SALT RIVER PROJECT (SRP)

1. General: Any proposed improvements adjacent to the SRP canal right-of-way should be installed as to not impede operations and maintenance of the Grand Canal. This would include the installation of vertical improvements in the canal right-of-way (R.O.W.) or the installation of landscape that would overhang the R.O.W. Specific SRP needs would be addressed once a preliminary design of the proposed facilities has been completed and submitted to SRP for their review.

IV GOALS AND OBJECTIVES

A. MULTI-USE

Goal

TO ENHANCE THE FLOOD CONTROL PROJECT BY PROVIDING MULTI-USE OPPORTUNITIES ON THE SURFACE OF THE BETHANY HOME / GRAND CANAL FLOOD CONTROL PROJECT, FROM 67TH AVENUE TO LOOP 101. THESE FACILITIES SHOULD BE FULLY INTEGRATED WITH THE FLOOD CONTROL FUNCTIONS OF THE FACILITY. THESE AMENITIES WILL BE FULLY ACCESSIBLE TO ALL PEOPLE, ACCOMMODATE MULTIPLE MODES OF TRANSPORTATION AND PROVIDE LINKAGES WITH THE ADJACENT COMMUNITY.

Objectives:

Design a trail that is ADA accessible, serves multiple modes of use and is, to the extent possible, an all-weather surface.

Design the width of the trail to be wide enough to accommodate multi-modal trail users as well as maintenance and emergency vehicles.

Link the trail to adjacent neighborhoods, public facilities, commercial areas and community bicycle paths. Design trail entry nodes with seating, information signage and landscape shade. Provide landscape and hardscape design solutions that announce the nodal entry point to people approaching the corridor.

Maintain the existing equestrian use of the SRP Grand Canal maintenance road and, if possible provide joint pedestrian/equestrian under crossings to minimize surface street crossings.

Design the widest open space greenbelt possible to maximize informal recreation potential.

Provide amenities that address our personal comfort and relaxation, and that stimulate the perception, interaction and creativity for all users.

B. AESTHETICS

Goal

TO CREATE AESTHETICALLY PLEASING ELEMENTS (INCLUDING LANDSCAPING, DECORATIVE HARDSCAPE TREATMENTS AND PUBLIC ART ELEMENTS) THAT ARE ALSO SAFE, SECURE AND VANDAL-RESISTANT.

Objectives:

Design durable, non-skid pavements for trail use that move smoothly through the horizontal and vertical landscape. Provide gradual transitions at grade changes and gentle horizontal curves at directional changes. Maintain good visibility in both trail directions.

Design park elements (grading, landscaping and park structures) such that open visibility is maintained throughout the park. Eliminate places of hiding and threatening environments. Coordinate the design with municipal CPTED groups.



Use materials and equipment that are durable and vandal-resistant. Work with the municipal Parks Department maintenance staff to determine appropriate materials. Choose materials and treatments that discourage graffiti and inappropriate use.

Provide a site and landscape design that supports and enhances the adjacent residential neighborhoods by incorporating significant elements from these areas where appropriate.

Design aesthetic treatments to the facility elements that respond the surround neighborhood character(s) and provide a unifying theme throughout the entire length of the corridor.

Provide security lighting or utilize existing street lighting to provide visibility into the corridor during nighttime hours.

C. LANDSCAPE

Goal

TO PROVIDE LANDSCAPE IMPROVEMENTS THAT ARE IN CHARACTER WITH THE SURROUNDING AREA OR FUTURE DEVELOPMENT OF THE AREA AND THAT WILL ENHANCE THE PROJECT AND MINIMIZE MAINTENANCE.

Objectives:

Provide an environmental site design that provides for the enhancement and/or mitigation of climatic conditions. Mitigate the heat of summer with shade trees, and the cold of winter with deciduous trees and open areas for sunlight penetration. Enhance the more moderate conditions of spring and fall with plants having seasonal interest including flowers and fall color.

Concentrate high contrast landscapes at areas where the most people congregate, such as entry nodes, recreation nodes and rest nodes. Simplify the design palette in areas between these higher interest, nodal areas.

Design the landscape elements with an experience that awakens the senses and engages the visitor. Incorporate color, contrast, repetition, horizontal and vertical spatial changes, and enhancement of positive off-site views.

D. RECREATION

Goal

TO PROVIDE RECREATIONAL OPPORTUNITIES THAT ARE DESIRED BY THE COMMUNITY, APPROPRIATE TO THE AREA AND INTEGRATED WITH THE OVERALL RECREATIONAL OPPORTUNITIES PROVIDED BY THE RESPECTIVE MUNICIPALITIES.

Objectives:

Provide recreational amenities that are in scale with the adjacent community and are desired by the municipality and residents.

Provide varied recreational opportunities that can be utilized by users of all ages and abilities.

APPENDIX
PAAC Meeting Minutes

N:/6888/docs/report/needsasses/Needs Assessment Text



MEETING MINUTES

Date: May 16, 2001

To: File

From: Wade Gendreau
Bob Gladwin
Jeff Minch

Re: Bethany Home Outfall Channel, Phase II
Bethany Home/Grand Canal (BH/GC) Flood Control Project
Flood Control District of Maricopa County (FCD)
Contract No.: FCD 98-46
DMJM+HARRIS Project No. 6888

Subject: Project Aesthetics Advisory Committee (PAAC) Meeting No. 1
May 16, 2001 (7:00 p.m. to 9:00 p.m.)
City of Glendale City Hall,

Attendees: See attached list.

The following meeting minutes set forth our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments please contact the author immediately at (602) 337-2777. If we do not hear from you within 10 days, we will assume that our understandings are the same. We are proceeding based upon the contents of these meeting minutes.

Action Items are identified in bold italics.

- I. Introductions: The meeting participants made self-introductions. DMJM+HARRIS (D+H) identified the goals and objectives as outlined below:
 - A. Meeting Goal

To ensure that the PAAC participants understand the project parameters, process, methodology and resultant outcomes as it relates to the research, documentation, analysis, concept development and final design of the landscape, aesthetic and multi-use elements and to make sure that they are integrated with the flood control facility along the entire length of the corridor.
 - B. Objectives
 - Discuss the project overview
 - Review project tasks completed to date, current project status and future tasks
 - Review the project scope of work for the landscape, aesthetic and multi-use tasks.
 - Define the process and methodology of the tasks and their interrelationship to one another
 - Define the resultant outcomes of the different tasks.
 - Define the roles and responsibilities of the PAAC participants

II. PROJECT OVERVIEW – Jeff Minch, Wade Gendreau (DMJM+HARRIS)

- A. Jeff Minch reviewed the over-all project goals both from a linear park and storm water management perspective. Examples of previous flood events in the area and damages caused by the flooding were shown to the Committee, and reasons for the design and implementation of the project were established.
- B. Wade Gendreau presented an overview of the linear park element of the pre-design study. The exhibits with oblique aerial photos, perspective sketch and photo examples of intended improvements were presented. Discussion and questions from the Committee accompanied each slide. These included the removal of houses in Segment 6, the direction of flow of the canal and stormwater, and the source of stormwater that enters Sunset Basin.
- C. Wade then reviewed the PAAC Mission Statement and responsibilities.
- D. Additional discussion occurred regarding the construction schedule and sequence. Jeff reviewed the contents of the handout material (maps, sketches, flow chart, PAAC membership) and presented the schedule as follows:
- Loop 101 to east of 83rd Avenue: 6/02 – 1/04
 - 73rd Avenue to 67th Avenue: 6/04 – 6/05
 - 83rd Avenue to 73rd Avenue: 6/05 – 1/06
 - 67th Avenue to 64th Avenue: 6/07 – 6/08
 - Camelback Road storm drain: 6/08 – 6/09

(ISSUE) drainage flows through unimproved segments should not be impeded or blocked by the construction of Segment A.

- E. Project funding was discussed. The first phase is presently funded and although the funding amount is adequate, there is not much “wobble room”. Funding for the entire project is in the Capital Plan and funds are expected to be available. The Bethany Home storm drain project funding has not yet been established in the City of Glendale’s 5-year plan Capital Improvement Plan.
- F. The Committee’s concerns then focused upon the various trail crossings. One member stated that the trail underpass crossings are a great idea and these crossings should be constructed all over Phoenix.
- *(ISSUE) The trail crossing at 75th and Camelback will not be underground as this tunnel would be nearly 500’ long, much too long for a trail in terms of safety and security. Trail users will have to cross at the intersection traffic light(s).*
 - *(NEED) At 95th Avenue, the trail design should reflect the future alignment and structure of the vehicular bridge. It should be properly planned to minimize disruption to the current corridor improvements during bridge construction.*

IV. LANDSCAPE, AESTHETICS AND MULTI-USE PROJECT PROCESS & ELEMENTS – Wade Gendreau (DMJM+HARRIS)

- A. The project flow chart was briefly presented, and the Committee was advised that the design team will be looking to them for review and guidance regarding the design process and products.
- B. The Committee was advised that the design team is currently working on the Site Analysis, the Visual Analysis and the Needs Assessment. Following the completion of these three tasks, the team will complete Design Alternatives, Design Guidelines, the Corridor Master Plan and Construction Documents for Segment A.

V. PAAC MEETING SCHEDULE AND OBJECTIVES - Wade Gendreau (DMJM+HARRIS)

The Committee reviewed the schedule of the five proposed PAAC meetings and the anticipated agenda items for each meeting.

VI. PUBLIC INVOLVEMENT COORDINATION – Wade Gendreau (DMJM+HARRIS)

There was a significant public involvement process as a part of the Pre-design Study contract. As a part of this final design process, there will be general, project-wide public information meetings, public information meetings within the City of Glendale regarding the recreation component of the corridor, and five PAAC meetings.

VII. OPEN DISCUSSION – Wade Gendreau, Jeff Minch, Bob Gladwin (DMJM+HARRIS) & Scott Vogel (FCDMC)

- *(ISSUE) There was considerable concern about the maintenance practices by SRP. Specifically, the practice of depositing canal dredged material along the north edge of the right-of-way. The Committee would like to discuss these practices with SRP and see if other maintenance accommodations can be made.*
- The County's design consultant, DMJM+HARRIS is under contract to provide a master plan for the entire corridor and construction documents for the project from the Loop 101 to east of 83rd Avenue.
- There are no specific public meetings for the Phoenix Segments schedule at this time. It is anticipated that public meetings will be scheduled during the design of the Phoenix segments of the project.
- Each Partner City will perform Linear Park maintenance for their Segments.
- Use landscaping to buffer the SRP maintenance road.

The following needs and issues list was generated at the meeting's open forum.

NEEDS

1. 95TH Ave. underpass plan up front, easy construction later.
2. Underpass at 67th Ave. & Indian School Road.
3. Pedestrian crossings at the half-mile points.
4. Phoenix:
 - Greenbelt
 - Trail
 - Seating
 - Decorative treatments
5. Glendale:
 - Active L. Park
 - Playgrounds (75th Ave. and 83rd Ave.)
 - Dog Park
 - Equestrian Park
 - Multi-Purpose Trail

ISSUES

1. Concrete Channel treatment, safety.
2. SRP maintenance practices.
3. Appearance of towers.
4. SRP edge.
5. Pedestrian bridge side improvements.
6. Maintenance by who? (Graffiti)
7. Lighting and security.
8. SRP – blending improvements with corridor.
9. Maintain agricultural drainage.
10. Keep path away from residential property lines.
11. Equestrian crossings – not on surface.
12. Crossing at 83rd Ave. (corridor under canal).
13. How does the trail continue to New River?

Cc: Attendees

Files 6888 – 200.2, 3, 4, 400.17, 400.20, 600.3



Attendees of the May 16, 2001 PAAC Meeting:

ORGANIZATION	NAME	PHONE/FAX	E-MAIL
FDCMC	Scott Vogel	602-506-4771 / 602-506-8561	csv@mail.maricopa.gov
FDCMC	Dennis Holcomb	602-506-4074 / 602-506-4601	dbh@mail.maricopa.gov
City of Glendale	Jennifer Sokol	623-930-2043 / 623-931-9651	jsokol@ci.glendale.az.us
City of Phoenix	Ray Dovalina	602-262-4026 / 602-262-7322	rdovalina@ci.phoenix.az.us
City of Phoenix	Joe Cascio	602-262-4897 / 602-534-3787	jcascio@ci.phoenix.az.us
DMJM+HARRIS	Jeff Minch	602-337-2540 / 602-337-2620	jeff.minch@dmjmharris.com
DMJM+HARRIS	Wade Gendreau	602-337-2565 / 602-337-2620	wade.gendreau@dmjmharris.com
DMJM+HARRIS	Bob Gladwin	602-337-2591 / 602-337-2620	bob.gladwin@dmjmharris.com
Glendale Parks & Recreation Commission	John Kolodziej		
Heatherbrae Neighborhood Association	Charles Hoyt		
Holiday Park Block Watch	Carina Cost		
John F. Long Properties	Jacob F. Long		
Pendergast Properties	Clarence Pendergast		
Pendergast Properties	Colleen Pendergast		
Larry Rovey Farms	Larry Rovey		
Joe Martinez	Citizen		

MEETING MINUTES

Date: June 14, 2001

To: File

From: Wade Gendreau, Bob Gladwin & Jeff Minch

Re: Bethany Home Outfall Channel, Phase II
Bethany Home/Grand Canal (BH/GC) Flood Control Project
Flood Control District of Maricopa County (FCD)
Contract No.: FCD 98-46
DMJM+HARRIS Project No. 6888

Subject: Project Aesthetics Advisory Committee (PAAC) Meeting No. 2
June 14, 2001 (7:00 p.m. to 9:00 p.m.)
City of Phoenix, West Human Services Center
3454 North 51st Avenue
Phoenix, Arizona

Attendees: See attached list.

The following meeting minutes set forth our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments please contact the author immediately at (602) 337-2777. If we do not hear from you within 10 days, we will assume that our understandings are the same. We are proceeding based upon the contents of these meeting minutes.

Action Items are identified in bold italics.

I INTRODUCTION – Scott Vogel (FCD)

The meeting participants made self-introductions. DMJM+HARRIS identified the goals and objectives as outlined below:

- A. Review the status of the landscape/aesthetic analyses
- B. Present examples of landscape/aesthetic/multi-use treatments
- C. Obtain feedback on the treatment options

II APPROACH - Wade Gendreau (DMJM+HARRIS)

- A. Overview - Wade updated the committee as to the current status of our analysis effort. The update of the Pre-Design Study Site Analysis is nearly complete, and the fieldwork for the Visual Analysis has been completed. The exhibits to be shown in the Power Point presentation represents a work in progress; final documentation including graphic exhibits will be given to committee members when complete.

- B. Site Analysis - A presentation of the Opportunities & Constraints Plan served to review the site analysis efforts of the Pre-Design Study and to include new information currently observed.
- C. Visual Analysis – The presentation of the Visual Analysis field inventory included a description of the method and rationale for identifying the Visual Character Units along the project's length. The criteria for establishing these units include the physical condition of the proposed flood control structure (turf channel, open concrete box, buried/closed concrete box) and the general character of the adjacent land uses. Following the review of the over-all project character units, each unit was highlighted, shown in an aerial photograph, and represented by several photographs indicating typical or representative character elements and distant focal points and views. The following items were discussed by the committee:
- a. There are three drainage corridors in at the Maryvale Detention Basin site where storm water enters the drainage channel. These major drainage features should be identified on the Opportunities and Constraints plan
 - b. The property acquisition limits were identified and discussed.
 - c. It appeared that the plan was in error regarding the location of the proposed turf channel west of the SRP substation. DMJM+HARRIS will check into this and will correct the plan if necessary.
 - d. Feature views should include the pedestrian bridges (as a foreground feature).
 - e. There was significant discussion about the overhead power lines that run with and across the corridor. Each city receives some level of SRP aesthetics money and prioritizes its expenditure. It could be used to bury power lines. U.S. West should be contacted regarding any overhead telephone lines in the corridor, and requests for funding assistance made. It was suggested that the consultant should identify where we want to bury these lines, examine the costs for this treatment, and examine funding sources and mechanisms that are available in Maricopa County, including Federal funds. This research should be reported back at the next PAAC meeting. The consultants project manager will discuss this request with the FCDMC. SRP representatives should be encouraged to attend these meetings – it was noted that they are always invited. Other contacts with appropriate City utility engineers should also be considered.
 - f. A committee member mentioned that a 900 unit residential development might be planned for an area south of the canal, near Heatherbrae and 67th Avenue.
 - g. SRP's practice of leaving canal dredging material, including trash was discussed. Continuing efforts to work with SRP are desired to minimize impact to the proposed park and trail corridor.
 - h. Graffiti removal in the open concrete channel at the radio towers will be an important maintenance consideration for both the designer and the City of Phoenix.
 - i. The Heatherbrae School principal has been actively involved in neighborhood issues and might want to be a part of the PAAC. It was suggested that she be invited to the next meeting.
 - j. Design tree locations to be grouped along the trail to provide intermittent shade.
 - k. Turf and desert planting irrigation resources may be limited. The designers should coordinate this effort with each municipality. Glendale indicated that reclaimed water from their newly constructed water reclamation plant might be available for use in the future.
 - l. Phoenix uses bubblers for irrigating trees and shrubs in planting beds, and relies on turf spray systems to irrigate trees in turf areas. Glendale uses a combination of bubblers and emitters for plants in beds. Jim Keeler (Glendale) would be a good contact.

- m. Joe Cascio mentioned that SRP requires both vertical and horizontal clearance (20') along their lines and poles. Locate trees outside of these clear zones or extensive pruning will occur. Also, no trees were permitted over the box culvert at the Old Cross-Cut Canal Park Canal Park.
 - n. DMJM+HARRIS will coordinate with the City of Glendale consultant regarding a connection from the trail system to the regional park.
- D. Needs Assessment – This item in the program was eliminated from the presentation because of time constraints. These slides will be printed out and included with the meeting minutes to the committee. The entire Power Point slide show will be put on the DMJM+HARRIS FTP site for review and downloading by committee members.
- E. Goals & Objectives – This item was also eliminated from the program discussion and will be made available in the minutes and on the FTP site.

IV. OPEN DISCUSSION – Wade Gendreau (DMJM+HARRIS)

1. Photographs of the different categories of treatment alternatives for landscape, aesthetics and multi-use facilities were shown and discussed. The following comments were received:
 - a. Check to see if there is any transit opportunities at the major and/or minor linear park nodes. **Ray Dovalina will review this issue with City of Phoenix staff and identify potential funding sources.** Federal and City funding may be available to build these areas. Bus stops could enhance the park nodes.
 - b. Consider skateboarding activities on our hardscape design elements. Low retaining and seat walls are popular with skateboarders. Design the facilities to discourage skateboarding on these hardscape elements.
 - c. Consider inviting a member of the Tucson urban artist group to a PAAC meeting. This group works with kids to develop urban art material in public spaces.
 - d. Develop a definite continuity all along the corridor. Create unifying elements, logos or themes that are continually appearing along the trail system.
 - e. Consider alternatives to the typical shoebox light fixture.
 - f. Work with City representatives with regard to safety, crime prevention (CPTED) and ADA issues.
 - g. Consider dog bag boxes.
 - h. Pleasing trash receptacles.
 - i. Maintenance commitment from each City is important.
 - j. Consider water features at major entry nodes. Reclaimed water (non-contact) and the canal could be a water source.
 - k. Stagnant water and mosquitoes need to be addressed by the FCD. Maintain positive low flow drainage and/or a buried pipe.

Cc: Attendees

Files 6888 – 200.2, 3, 4, 400.17, 400.20, 600.3

**BETHANY HOME / GRAND CANAL FLOOD CONTROL PROJECT
NEEDS ASSESSMENT SUMMARY
(Predominant Responses)**

A. LANDSCAPE

Glendale & Phoenix:

- Irrigated turf greenbelt with lots of trees for shade
- Buffered SRP maintenance road with meandering desert adapted tree and shrub masses

Phoenix:

- Desert adapted trees, shrubs, ground covers and decomposed granite between the trail and curb and around entry and rest nodes
- Bubblers to irrigate trees, shrubs and ground covers in desert planting areas
- Trees in turf areas shall not have the bubbler added.

B. AESTHETICS

Glendale:

- Incorporate public art within the linear park, with a preference for freestanding sculpture.
- Major linear park entries should provide for a significant artistic feature.
- The use of recycled materials in the art element was suggested.
- Care and maintenance of art features including graffiti removal is a concern.

Phoenix:

- Utilize landform (variable slope gradients) to meander the channel bottom.
- Provide decorative treatments to hardscape and flood control structures (retaining walls, culvert walls, slope protection, fences, railings, etc.) to incorporate aesthetics within the corridor.

C. MULTI-USE FACILITY

MULTI-USE TRAIL

Glendale & Phoenix:

- A ten-foot wide concrete multi-use trail
- Security lighting along the trail; not intrusive on neighboring homes

Phoenix:

- Integrally colored concrete

Glendale:

- Benches along the trail, signs and mile markers
- Police and park ranger security patrols, rescue equipment along the canal edge
- Connection to the new linear park at 83rd Avenue and Bethany Home Road

EQUESTRIAN TRAIL

Glendale & Phoenix:

- Use the existing SRP maintenance road for horseback riding
- Surface street crossings should be avoided

Glendale:

- Equestrian staging areas at primary trail entry points
- Consider a horse "park"

STREET UNDERCROSSINGS

- Underpasses to accommodate equestrians, pedestrians and bicyclists
- Security is very important - crossings to be lighted, call boxes / panic buttons recommended
- Plan for future vehicular bridges and desired community linkages

PEDESTRIAN BRIDGES

- Non-vehicular bridges for pedestrians, skaters and bicyclists at trail / canal crossings
- Non-vehicular bridges for community access paths at canal crossings

TRAIL NODES

- Passive entry and rest nodes along the trail system
- Entry nodes located at convenient neighborhood access points
- Seating, drinking water, shade from trees, trash cans and signage
- Decorative water features in the node areas.

RECREATION FACILITIES

Phoenix:

- No active recreation facilities
- Provide large open turf areas, where available, for informal recreation

Glendale:

- Neighborhood scale park improvements at the larger, open node areas
- Park facilities include fully accessible playgrounds for different age groups, lighted basketball courts, a large ramada, drinking fountains, small parking area and security lighting
- Other trail activities include a dog park, Par Course, Frisbee Golf, Bicycle trail and BMX facility, skate park, fishing lake, soccer fields, picnic and barbecue facilities and restrooms
- Parking for recreation and trail use preferred within the regional park
- Some suggested that parallel parking on the trailside of adjacent streets would be acceptable as long as no parking was permitted on the residential side of the street.

BETHANY HOME / GRAND CANAL FLOOD CONTROL PROJECT DRAFT GOALS AND OBJECTIVES

GOAL (Multi-Use)

To enhance the flood control project by providing multi-use opportunities on the surface of the Bethany Home / Grand Canal Flood Control Project, from the Sunset Detention Basin (64th Avenue) to the Loop 101. These facilities shall integrate with the flood control functions of the facility. This system shall be fully accessible to all people, shall accommodate multiple modes of transportation and shall provide linkages with the adjacent community.

Objectives:

- ADA accessible, multi-modal, and to the extent possible, an all-weather surface.
- Trail width to accommodate multi-modal trail users and maintenance vehicles.
- Linkages to adjacent neighborhoods, public facilities, commercial areas and bicycle paths.
- Entry nodes with seating, information signage, landscape shade and visual recognition.
- Equestrians to use the SRP maintenance road; provide underpasses - minimize surface street crossings.
- Wide greenbelt to maximize informal recreation potential; amenities for comfort, relaxation and creativity.

GOAL: (Aesthetics)

To create aesthetically pleasing elements (including landscaping, decorative hardscape treatments and public art) that are safe, secure and vandal-resistant.

Objectives:

- Durable, non-skid trail moving through the landscape; grading transitions; gentle horizontal curves.
- Park design for safety; eliminate hiding places; coordinate with CPTED groups.
- Durable and vandal-resistant materials; materials and treatments to discourage graffiti.
- Site and landscape design that enhances adjacent residential neighborhoods.
- Aesthetic treatments to provide a unifying theme throughout the corridor.
- Security lighting and good visibility into the corridor.

GOAL: (Landscape)

To provide landscape improvements that are in character with the surrounding area or future development of the area and that will enhance the project and minimize maintenance concerns.

Objectives:

- Enhance and/or mitigate climatic conditions with plants; enhance seasonal interest with flowering plants.
- Concentrate landscape in nodes where the people congregate; simplify plantings in areas between nodes.
- Landscaping should engage the visitor; incorporate color, contrast, and enhancement of off-site views.

GOAL: (Recreation)

To provide recreational opportunities that are desired by the community and that are appropriate to the area and are integrated with the overall recreational facilities provided by the respective municipalities.

Objectives:

- Recreational amenities in scale with the adjacent community; desired by the municipality and residents.
- Varied recreational opportunities that can be utilized by users of all ages and abilities.



Attendees of the May 16, 2001 PAAC Meeting:

ORGANIZATION	NAME	PHONE/FAX	E-MAIL
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Heatherbrae Neighborhood Association	Charles Hoyt	623-846-7237	choyt@ade.az.gov
Holiday Park Block Watch	Carina Cost		cost@qwest.net
Larry Rovey Farms	Larry Rovey		azmilk@att.net
West Valley Community Collation	Richard Schwartz		sdgras@msn.com

MEETING MINUTES

Date: July 23, 2001

To: File

From: Wade Gendreau, Bob Gladwin & Jeff Minch

Re: Bethany Home Outfall Channel, Phase II
Bethany Home/Grand Canal (BH/GC) Flood Control Project
Flood Control District of Maricopa County (FCD)
Contract No.: FCD 98-46
DMJM+HARRIS Project No. 6888

Subject: Project Aesthetics Advisory Committee (PAAC) Meeting No. 3
July 19, 2001 (7:00 p.m. to 9:00 p.m.)
City of Glendale City Hall, Conference Room B3

Attendees: See attached list.

The following meeting minutes set forth our understanding of the discussions and decisions made at this meeting. If you have any questions, additions or comments please contact the author immediately at (602) 337-2777. If we do not hear from you within 10 days, we will assume that our understandings are the same. We are proceeding based upon the contents of these meeting minutes.

Action Items are identified in bold italics.

- I. Introductions: The meeting participants made self-introductions. DMJM+HARRIS (D+H) identified the meeting objectives as outlined below:
- Present the Concept Alternatives for the Landscape & Aesthetic Treatments
 - Obtain feedback on the alternatives presented
- II. Concept Alternatives:
- A. Bob Gladwin presented to the committee the overall plan of the proposed recreation and multi-use elements by corridor segment. Comments that were generated by the PAAC members for each of the corridor segments are summarized as follows.
- Sunset Basin
1. Parking provisions at Sunset Basin
 2. How does south side parking at basin integrate with node?
 3. Underground power at Indian School Road crossing Grand Canal cost \$300,000 to \$400,000
- Indian School Road to 67th Avenue
1. Meet with church to allow parking for public access

2. Coordinate trail/canal/Indian School Road intersection on how it effects parking access to church
3. Discourage traffic on canal back to avoid 67th Avenue and Indian School Road intersection through use of gates and bollards
4. Is length of residential privacy wall a safety issue?
5. Costly to underground power along canal due to power drops to houses. Would require that all residential service drops be placed underground
6. Screening with landscaping along south side of canal along former SRP operations facility a low priority with the City of Phoenix
7. Add landscape berming to south side screening option, contingent upon SRP ownership status of property
8. Power crossing at 67th Avenue and the Grand Canal under grounding cost \$350,000 to \$450,000

67th Avenue to 75th Avenue

1. Add pedestrian under crossing label at 67th Avenue
2. Low Flow Alternatives:
 - Pipe (Phoenix preference)
 - Bridge trail over
3. Remove existing sidewalk adjacent to street to construct basin
4. Under grounding of 12Kv power along canal cost \$200,000 to \$300,000
5. Parking issues along adjacent streets
6. Meander trail across basin
7. Possible bridge enhancement at Heatherbrae School
8. Add node to south side of canal at pedestrian bridge
9. Opportunity with City of Phoenix Arts Commission for vertical wall channel at radio tower site (City of Phoenix contact – Greg Esser)
10. Keep mature landscape from overhanging SRP maintenance road. It interferes with operations may be a problem at the vertically lined channel segment

75th Avenue to 83rd Avenue

1. A "big scupper" is needed in the northwest corner of the 75th Avenue and Camelback intersection. This facility needs to be considered when designing nodal elements at this location.
2. Add small staging area for equestrians at 75th and Camelback (note this was revised to be located at 83rd & Bethany Home Road)
3. Consider vehicle parking in 5 acre dry area
4. Parking lot off of 75th Avenue may be too close to intersection – consider other alternatives
5. 15-foot sewer easement on the south side of canal may be used for access to proposed pedestrian bridge at 79th Avenue and Missouri Avenue alignments
6. Potential node site on south side of canal at 79th Avenue/Missouri Avenue
7. Berry property opportunities for parking and save mature existing trees
8. Consider at-grade crossing of Bethany Home Road to Regional Park, Coordinate this with the park designer

83rd Avenue to 91st Avenue

1. Show equestrian connection under 83rd Avenue bridge
2. Show entry node on the south side of the drainage facility at the 87th Avenue alignment
3. Consider treatment of box culvert crossing under the Grand Canal to discourage use by people
4. Add trail by-pass around nodes to avoid conflicts between bicyclists and pedestrians
5. Keep pedestrians away from residential back walls on the north side of the basin area at 91st Avenue

91st Avenue to Loop 101

1. Show equestrian crossing under 91st Avenue bridge

Loop 101 to New River

1. Consider southern alternate trail crossing of 99th Avenue at future Bethany Home Road intersection
2. Second trail alternate location south of the Grand Canal
3. Check ADOT R/W for surplus on the north side of the existing outlet channel
4. There is a sewer force main easement on the south side of the Grand Canal west of the Roosevelt Irrigation District canal crossing of the Grand Canal

- B. Wade Gendreau presented to the committee two "themes" that were developed for the landscape, aesthetics and multi-use elements of the corridor. These themes were identified as the "natural" and the "urban" themes. The specific elements of each of these themes were depicted on presentation boards. The boards illustrated the various treatments for walls, fencing, railing, vehicular bridges and site furnishings. The committee was invited to review the boards in greater detail and make specific comments using post-it-notes placed directly on the boards. The general comments were that the urban treatments were preferred for the major entry nodes, the use of the project logo and it's various interpretations on the walls fencing and railing also received favorable comments.

Comments received on "Theme" Boards

Landform Grading / Bridge Concepts Board

1. Like the variety of slope treatments where appropriate (channel grading slope with rock retaining wall treatment)
2. Like to see pedestrian trail to wander through the slopes and bottom of channel (photo of grass channel with path in bottom and on sides)
3. Wing wall treatment that form to slopes – very nicely transitions from built form to landscape (photo of path through landform held back by keystone retaining wall)
4. Like meandering form, don't like blocks (photo of path through landform held back by keystone retaining wall)
5. Urban better (graphic of wing wall treatment with swoosh pattern at top and score pattern columns)
6. Nice detail and form (photo of stone bridge abutment)
7. This one (graphic of under bridge slope paving with swoosh pattern in differing textures)

Natural Theme Description Board

1. Like this nodal treatment (graphic of freeform play area)
2. Glendale expressed preference for monument sign with rock base
3. Like the "swoosh"(channel vertical wall treatment graphic)
4. Like treatment for drainage way (photo of drainage channel with large rock rip-rap in bottom)
5. Nice slope treatment (photo of retaining wall with DG slope and large boulders and concrete paver plaza)
6. Like the "Santa Fe" style rock forms (photo of gateway to Tempe Beach Park)
7. Retaining walls and partial walls (as barriers) would be good to incorporate seating (photo of stone retaining wall in turf area)
8. Nice simple detail (photo of boulder in turf)
9. Like this floor treatment for inside box culvert to discourage pedestrians (photo of rock sculpture garden with rock pavement)

Natural Theme Details Board

1. Nice to see this grading level at nodes to create visual interest (graphic of minor entry node)
2. Warren preferences – Urban Gateway, Natural sign/entry, natural seat walls, boulders/bollards
3. Great for graffiti control (photo of stone retaining wall)
4. Like seat wall retaining walls (photo of curving retaining wall set into slope)
5. No/OK (no – photo of steel bollard, OK – photo of exposed aggregate concrete bollard)

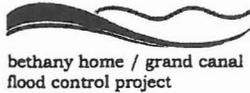
Urban Theme Description Board

1. Equestrian staging area (graphic of node area at 83rd Avenue & Bethany Home Road use of triangular SRP parcel)
2. Location of potential Bethany Home Road extension needs to be accommodated and considered (graphic of node area at 83rd Avenue & Bethany Home Road)
3. Glendale preferred urban for gateway graphic

Urban Theme Details Board

Nice (graphic of node area with ramada)
Don't like (photo of stainless steel bench)
Good (photo of round light fixture with round steel pole Mesa – Countryside Park)

Cc: Attendees, Files 6888 – 200.2, 3, 4, 400.17, 400.20, 600.3



Attendees of the July 19, 2001 PAAC Meeting:

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Glendale Parks & Recreation Commission	John Kolodziej		

Appendix D

Site Analysis

Bethany Home/Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II

Project No. 98-46, PCN No. 620 03 32

Prepared for:

Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009
Project No. 98-46

Prepared by:

DMJM+HARRIS
2777 East Camelback Road, Suite 200
Phoenix, Arizona 85016
Project No. 6888

Prepared in Cooperation with:

The City of Glendale
5850 West Glendale Avenue
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Prepared in Cooperation with:

The City of Phoenix
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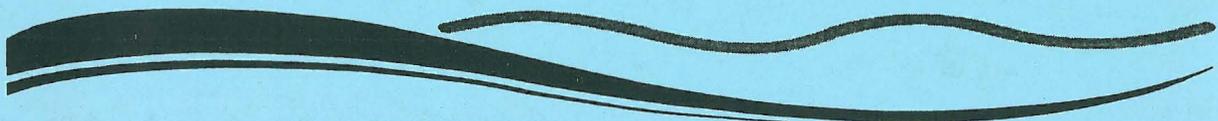


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I INTRODUCTION

A. PURPOSE

Identify and prepare an analysis of the present and (to the extent possible) future physical and cultural conditions within and adjacent to the project corridor. Having an understanding of these existing conditions will assist with the development of project opportunities and constraints. Ultimately, the development of the landscape, hardscape and feature design options will be directly related to these site conditions.

B. PROCESS

During the Pre-Design Study phase of this project, the identification and assessment of existing site conditions was performed. This evaluation process resulted in the preparation of opportunities and constraints exhibits, on both a regional and segmented basis. These documents were used in the public participation process and set the stage for the identification of public issues and needs. Finally, these exhibits were used to identify alternative floodwater conveyance systems for evaluation.

To begin the site analysis, the corridor was divided into seven segments that were based upon similar characteristics including adjacent land use and constraints such as utilities, the canal feature and street crossings. Extensive document research produced land use and development elements including land use (general plans and zoning information), as-built information concerning utilities and roads and the SRP right-of-way.

A field survey confirmed and supplemented the research documentation performed in the pre-design study. The regional scale and segmented corridor opportunities and constraints exhibits were prepared and utilized for presentation to the public and concept development efforts. The opportunities and constraints were updated to note potential impacts within and adjacent to the corridor. An overall regional opportunities and constraints exhibit is included at the end of this report. (Figure 1)

This subsequent phase of corridor development includes a review and verification of the previous work and incorporation of new or revised data that may have occurred since the Pre-design Study.



II SITE ANALYSIS

Research and observations of the existing areas within and adjacent to the project corridor were conducted for the following elements:

Land Use – Residential, Commercial, Industrial, Public Facilities, Schools and Parks

Circulation – Pedestrian Trails, Bicycle Trails/Paths, Equestrian Trails and Vehicular Circulation (including traffic signals and adjacent parking)

Utilities – Water, Sewer, Power (overhead and buried), Gas, Telecommunications

Natural Features – Topography / Landform (including the macro scale and the site specific scale along the corridor), Existing Vegetation, Drainage Patterns, Significant Features

Corridor Flood Control Feature - Open grass-lined channel, closed box culvert, open box culvert, transition structures (head walls, wing walls, slope protection, energy dissipaters, etc.)

A. SEGMENT DESCRIPTIONS

1. INDIAN SCHOOL ROAD AT THE SUNSET BASIN (SEE FIGURE 2)

Land Use: The predominant land use within this segment is single family residential with some commercial uses west of this area at the intersection of 67th Avenue and Indian School Road. The Sunset basin is a public land use with an adjacent fire station to the east. Across Indian School Road to the north is a church.

Circulation: Vehicular circulation within this segment is defined by Indian School Road (major arterial) street on the north, residential street on the east side of the Sunset basin and an SRP dirt maintenance road (restricted vehicular access) to the west along the Grand Canal. Currently pedestrian and bicycle traffic utilizes the sidewalks and roadways for travel. The canal bank can also be used in this area.

Utilities: Water and sewer infrastructure is located within the Indian School Road right-of-way (R.O.W.) and adjacent residential street R.O.W. There is overhead electrical, phone and cable utilities crossing the corridor at Indian School Road and within the Grand Canal R.O.W.

Natural Features: The natural features of this segment consist of the slopes of the retention basin and the linear water feature of the Grand Canal. The landscape type is common with the development of the later 1950's and early 1960's with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees.

Corridor Flood Control Feature: This segment constitutes the beginning of the Bethany Home/Grand Canal Flood Control Project. The existing Sunset Basin is currently designed to drain storm water flows from the 10-year flood event and discharge this water to the City storm drain in Indian School Road.

2. INDIAN SCHOOL ROAD TO 67TH AVENUE (SEE FIGURE 2)



Land Use: The predominant land use within this segment is single family residential with commercial uses west of the Grand Canal at the intersection of 67th Avenue and Indian School Road. At the southeast end of this segment is a church.

Circulation: Vehicular circulation within this segment is defined by Indian School Road (major arterial) street on the south, 67th Avenue (major arterial) to the west, residential streets within the adjacent residential neighborhoods on the east side of the canal and an SRP dirt maintenance road (restricted vehicular access) to the west along the Grand Canal. There is an existing alley along the east side of the canal adjacent to the residential houses. Currently pedestrian and bicycle traffic utilizes the sidewalks and roadways for travel. The canal bank can also be used in this area as a pedestrian, bicycle and equestrian path.

Utilities: Water and sewer infrastructure is located within the Indian School Road and 67th Avenue right-of-way (R.O.W.) and adjacent residential street R.O.W. There is overhead electrical, phone and cable utilities crossing the corridor at Indian School Road and 67th Avenue and within the Grand Canal R.O.W.

Natural Features: The natural features of this segment consist flat terrain and the linear water feature of the Grand Canal. The landscape type is common with the development of the later 1950's and early 1960's with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees.

Corridor Flood Control Feature: The flood conveyance system in this segment consists of an underground box culvert located within the alley behind the residential housing on the east side of the Grand Canal.

3. 67TH AVENUE TO 75TH AVENUE (SEE FIGURE 3 & 4)

Land Use: The predominant land use within this segment is single family residential on both the north and south sides of the canal. There is a church located on the south side of the canal at approximately the 69th Avenue alignment. Heatherbrae Elementary School is located on the south side of the canal at the 71st Avenue alignment. At the southeast corner of 75th Avenue and Camelback Road is an existing radio tower transmission site.

Circulation: Vehicular circulation within this segment is defined by 67th Avenue (major arterial) street on the east, 75th Avenue (major arterial) to the west, residential streets within the adjacent residential neighborhoods to the north and south. An SRP dirt maintenance road (restricted vehicular access) on both sides of the canal along the entire length is located to the west along the Grand Canal. Currently pedestrian and bicycle traffic utilizes the sidewalks and roadways for travel. The canal bank can also be used in this area. There is an existing pedestrian bridge over the Grand Canal located at 71st Avenue for access to Heatherbrae Elementary School. The City of Phoenix has designated a bike route along Sells Drive west of the canal, along 71st Avenue north of the canal and along Campbell Avenue east of the canal.

Utilities: Water and sewer infrastructure is located within the 67th Avenue and 75th Avenue R.O.W. and adjacent residential street R.O.W. There is overhead electrical, phone and cable utilities crossing the corridor at 67th Avenue and 75th Avenue and within the Grand Canal R.O.W. There is an existing SRP well site located on the south side of the canal at 71st Avenue.

Natural Features: The natural features of this segment consist of flat terrain and the linear water feature of the Grand Canal. The landscape type is common with the development of the later 1950's and early



1960's with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees. There is an existing stand of native Mesquite trees located on the south side of the Grand Canal west of 67th Avenue.

Corridor Flood Control Feature: The flood control facility for this segment consists of an open grass lined detention basin coming out of a closed box culvert from under 67th Avenue. The facility transitions into a vertical lined concrete channel from 73rd Avenue to 75th Avenue.

4. 75TH AVENUE & CAMELBACK ROAD INTERSECTION (SEE FIGURE 4)

Land Use: The land use within this segment are a mixture of single family residential on the northwest corner, commercial uses on the southeast corner, SRP substation and well site on the northeast corner and vacant land use on the southwest corner.

Circulation: Vehicular circulation within this segment is defined by the intersection of 75th Avenue and Camelback Road. To the north and south is a SRP dirt maintenance road (restricted vehicular access) along the Grand Canal. Currently pedestrian and bicycle traffic utilizes the sidewalks and roadways for travel. The canal bank can also be used in this area. Pedestrians, bicyclists and equestrians have to cross this intersection at grade.

Utilities: Water and sewer infrastructure is located within the 75th Avenue and Camelback Road R.O.W. There is overhead and underground electrical, phone and cable utilities crossing the corridor at Indian School Road and within the Grand Canal R.O.W.

Natural Features: The natural features of this segment consist of level terrain and the linear water feature of the Grand Canal. The landscape type is limited with a mixture of Elm, Ash and Pine trees.

Corridor Flood Control Feature: The flood control facility for this segment constitutes a transition from the open vertical concrete channel to a closed box culvert crossing under the 75th Avenue and Camelback Road intersection and continuing to the northwest into the next segment.

5. 75TH AVENUE TO 83RD AVENUE (SEE FIGURE 4 & 5)

Land Use: The predominant land use within this segment is single family residential with mixture of large lot residential and open land uses south of the Grand Canal. The existing Grand Canal Linear Park is located north of the Grand Canal and consists of large open retention areas at 75th and 83rd Avenues connected by a multi-use path between them. There is an existing play area located at the Grand Canal at approximately Missouri Avenue.

Circulation: Vehicular circulation within this segment is defined by 75th Avenue & Camelback Road (major arterial) street on the south, residential streets on the north and south sides connecting into the corridor. Currently pedestrian and bicycle traffic utilizes the sidewalks, multi-use path and roadways for travel. The canal bank can also be used in this area for equestrians. The City of Glendale has designated proposed bike routes along Missouri Avenue and 79th Avenue north and south of the Grand Canal.

Utilities: Water and sewer infrastructure is located within the 75th Avenue right-of-way (R.O.W.) and adjacent residential street R.O.W. There are overhead electrical utilities within the Grand Canal R.O.W. north of the 79th Avenue and Missouri Avenue intersection.

Natural Features: The natural features of this segment consist of the slopes of the retention basins and the linear water feature of the Grand Canal. The landscape type in the large lot residential areas that is



common with the development of the later 1950's and early 1960's with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees. The newer residential development of the 1980's and 1990's is characterized by the use of drought tolerant materials consisting of Mesquite and Palo Verde trees.

Corridor Flood Control Feature: The flood control facility in this segment consists of an underground box culvert placed under the existing Grand Canal Linear Park improvements.

6. 83RD AVENUE & BETHANY HOME ROAD INTERSECTION (SEE FIGURE 5)

Land Use The land uses within this segment is large lot single family residential located on the northwest and southeast corners. The is vacant agricultural uses on the northeast and southwest corners. The future land use for the southwest corner is residential while the northeast corner is planned for the City of Glendale West Area Regional Facility. This development will consist of public recreation and public safety uses.

Circulation: Vehicular circulation within this segment is defined by intersection of Bethany Home road and 83rd Avenue. At this location Bethany Home Road terminates at 83rd Avenue and is replaced by the Grand Canal west of 83rd Avenue. There is a future planned extension of Bethany Home Road south of the Grand Canal west of 83rd Avenue that may be continuous or discontinuous. The location of Bethany Home Road has not been determined and will be subject to future development plans south of the Grand Canal. An SRP dirt maintenance road (restricted vehicular access) is located to the south along the Grand Canal. Currently pedestrian, equestrian and bicycle traffic utilizes the canal bank.

Utilities: Water and sewer infrastructure is located within the 83rd Avenue and Bethany Home Road R.O.W. There are overhead electrical utilities along the corridor at Bethany Home Road, 83rd Avenue and within the Grand Canal north R.O.W.

Natural Features: The natural features of this segment consist of a five-foot grade difference between Bethany Home Road and the Grand Canal. The landscape type is common with the development of the 1960's with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees. The vacant agricultural land uses consist of row crops of primarily alfalfa or cotton fields depending upon seasonal requirements.

Corridor Flood Control Feature: The flood control facility in this segment consists of a vertical concrete channel lined channel that crosses under the Grand Canal in a box culvert east of 83rd Avenue that discharges to a grass lined channel south of the Grand Canal. The facility then goes under 83rd Avenue at a vehicular bridge with pedestrian sidewalks on each side.

7. 83RD AVENUE TO 91ST AVENUE (SEE FIGURE 5 & 6)

Land Use: The predominant land use within this segment is single family residential with larger lots east of 87th Avenue north of the Grand Canal and medium density lots west of 87th Avenue north of the Grand Canal. The land use south of the Grand Canal is agricultural and is planned for future residential uses.

Circulation: Vehicular circulation within this segment is defined by residential streets within the adjacent neighborhoods to the north and 83rd Avenue on the east side and 91st Avenue on the west. There are SRP maintenance roads on the north and south banks of the Grand Canal. Currently pedestrian and bicycle traffic utilizes the sidewalks and roadways for travel. The canal bank can also be used in this area.

Utilities: Water and sewer infrastructure is located within the 83rd and 91st Avenue R.O.W. and adjacent residential street R.O.W. There is overhead electrical, phone and cable utilities crossing the corridor at 83rd and 91st Avenues and within the Grand Canal south R.O.W. There is an existing SRP electrical substation (Wellborn) located on the southeast corner of the Grand Canal and the 87th Avenue alignment.

Natural Features: The natural features of this segment consist level terrain of the farm fields, an existing storm water retention basin between 78th and 91st Avenues on the north side of the Grand Canal and the linear water feature of the Grand Canal. The landscape type is common with the development of the later 1960's and early 1970's for the area east of 87th Avenue with the predominate use of Elm, Ash and Pine trees with a mixture of Palm trees. The newer residential areas west of 87th Avenue consists of landscaping made up of Mesquites and Palo Verde trees.

Corridor Flood Control Feature: The flood control facility in this segment consists of an open grass lined channel approximately 230-feet in width. The facility is located south of the Grand Canal, goes around the Wellborn substation, crosses under the Grand Canal to the north and continues westward. The facility continues under a vehicular bridge at 91st Avenue.

8. 91ST AVENUE TO LOOP 101 (AGUA FRIA FREEWAY) (SEE FIGURE 6)

Land Use: The predominant land use within this segment is open agricultural fields on both the north and south sides of the canal. The future land uses are residential north and south of the Grand Canal from 91st Avenue to the 95th Avenue alignment and commercial from the 95th Avenue alignment west to the Loop 101 (Agua Fria) Freeway.

Circulation: Vehicular circulation within this segment is defined by 91st Avenue (major arterial) street on the east, the Loop 101 Freeway to the west and an SRP dirt maintenance roads (restricted vehicular access) along the Grand Canal. There are future plans to extend Bethany Home Road south of the Grand Canal from 83rd Avenue west under the Loop 101 Freeway to connect to 99th Avenue. There is also planned the future development of 95th Avenue to separate the future residential and commercial uses. The canal bank can also be used in this area for pedestrian and equestrian users.

Utilities: Water and sewer infrastructure is located within the 91st Avenue R.O.W. There is overhead electrical utilities crossing the corridor at 91st Avenue and within the Grand Canal south R.O.W.

Natural Features: The natural features of this segment consist of level terrain and the linear water feature of the Grand Canal. The landscape type consists of agricultural crops within the adjacent fields.

Corridor Flood Control Feature: The flood control facility in this segment consists of an open grass lined channel approximately 230-feet in width that connects to the existing concrete lined channel at approximately the 97th Avenue alignment east of the Loop 101 Freeway.



9. LOOP 101 TO NEW RIVER (SEE FIGURE 7)

Land Use: The predominant land use within this segment is open agricultural uses with scattered large lot single family residential on the north and south sides of the Grand Canal. The future planned land uses for the undeveloped areas adjacent to this segment will consist of business park and light industrial uses north of the Grand Canal and east of 99th Avenue to the Loop 101. The existing and future land uses south of the Grand Canal and west of 99th Avenue comprise of a mixture of low to high density residential moving west (low) to east (high).

Circulation: Vehicular circulation within this segment is defined by Loop 101 Freeway on the east and limited residential streets to access the adjacent neighborhoods. An SRP dirt maintenance road (restricted vehicular access) is located on the north and south side of the Grand Canal.

Utilities: Water and sewer infrastructure is located within the 99th Avenue R.O.W. and adjacent residential street R.O.W south of the Grand Canal at approximately 107th Avenue. There is overhead electrical, phone and cable utilities crossing the corridor at 99th Avenue and within the Grand Canal R.O.W.

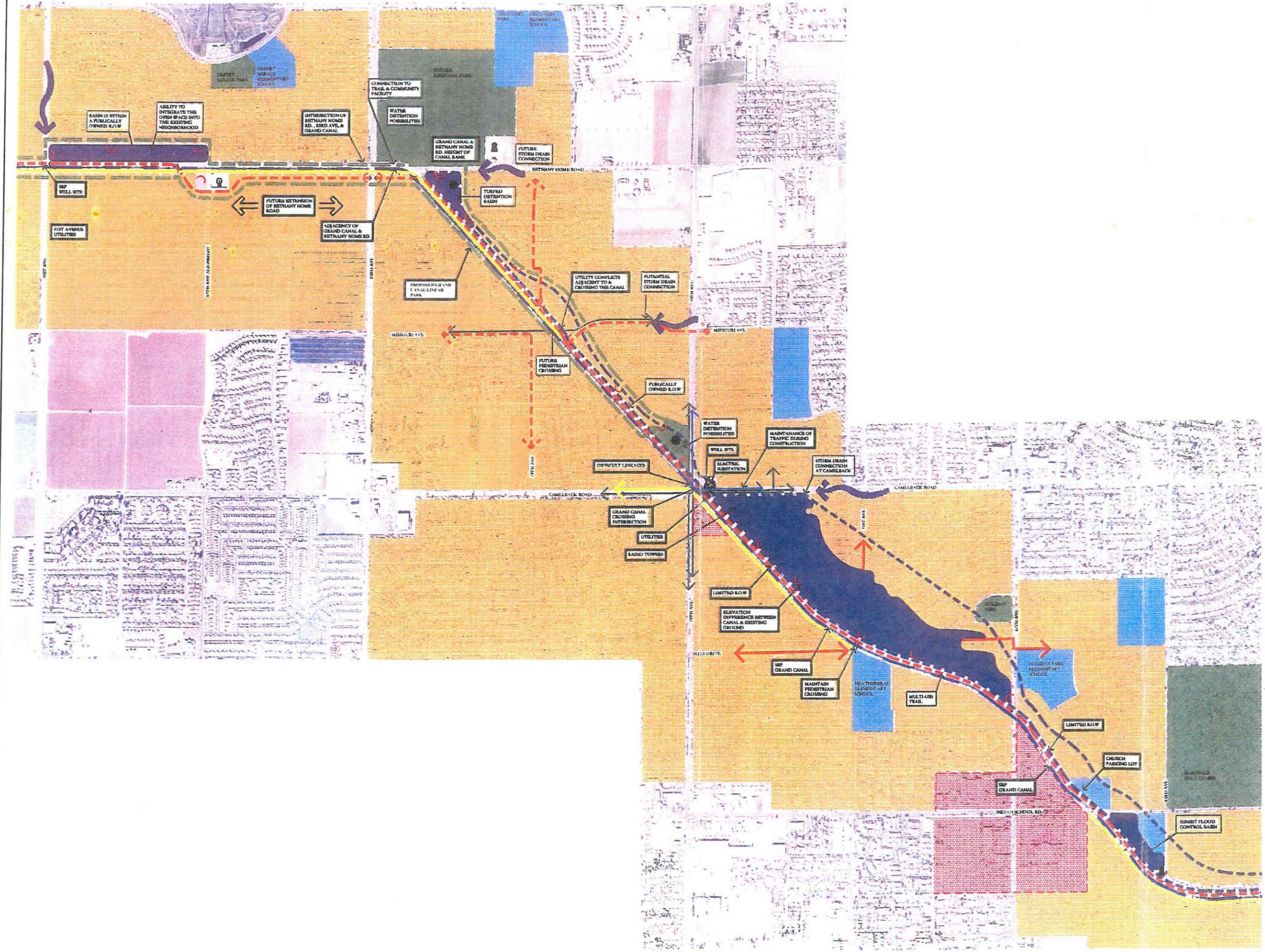
Natural Features: The natural features of this segment consist of level terrain of the adjacent agricultural fields terminating at the New River to the west.

Corridor Flood Control Feature: The flood control facility in this segment consists of the existing concrete lined trapezoidal channel that goes from east of the Loop 101 Freeway west to New River.



III REFERENCES

- 1) City of Phoenix General Plan
- 2) City of Phoenix Bicycle Plan
- 3) City of Phoenix Quarter Section Utility Maps
- 4) City of Glendale General Plan - Land Use & Transportation Elements
- 5) City of Glendale Utility Maps
- 6) City of Glendale Subdivision Maps
- 7) Aerial Mapping
- 8) Bethany Home/Grand Canal Flood Control Project Pre-Design Study - DMJM September 2000



LEGEND

- GRAND CANAL
- FLOODPLAIN
- PONDING AREAS
- POTENTIAL STORM WATER SYSTEMS
- WATER LINE
- SANITARY SEWER LINE
- ELECTRIC LINE
- EXISTING BIKE ROUTE
- EXISTING MULTI-USE TRAIL
- PROPOSED MULTI-USE TRAIL
- WELL SITE
- WATER TANK
- ELECTRIC SUBSTATION
- MAJOR TRAIL ENTRY NODE
- MINOR TRAIL ENTRY NODE
- TRAIL RECREATION NODE
- BRIDGE CROSSING
- TRAIL UNDERPASS
- RESIDENTIAL
- PUBLIC/PSEUDO-PUBLIC
- COMMERCIAL
- PARKS/OPEN SPACE

vicinity map

Figure 1

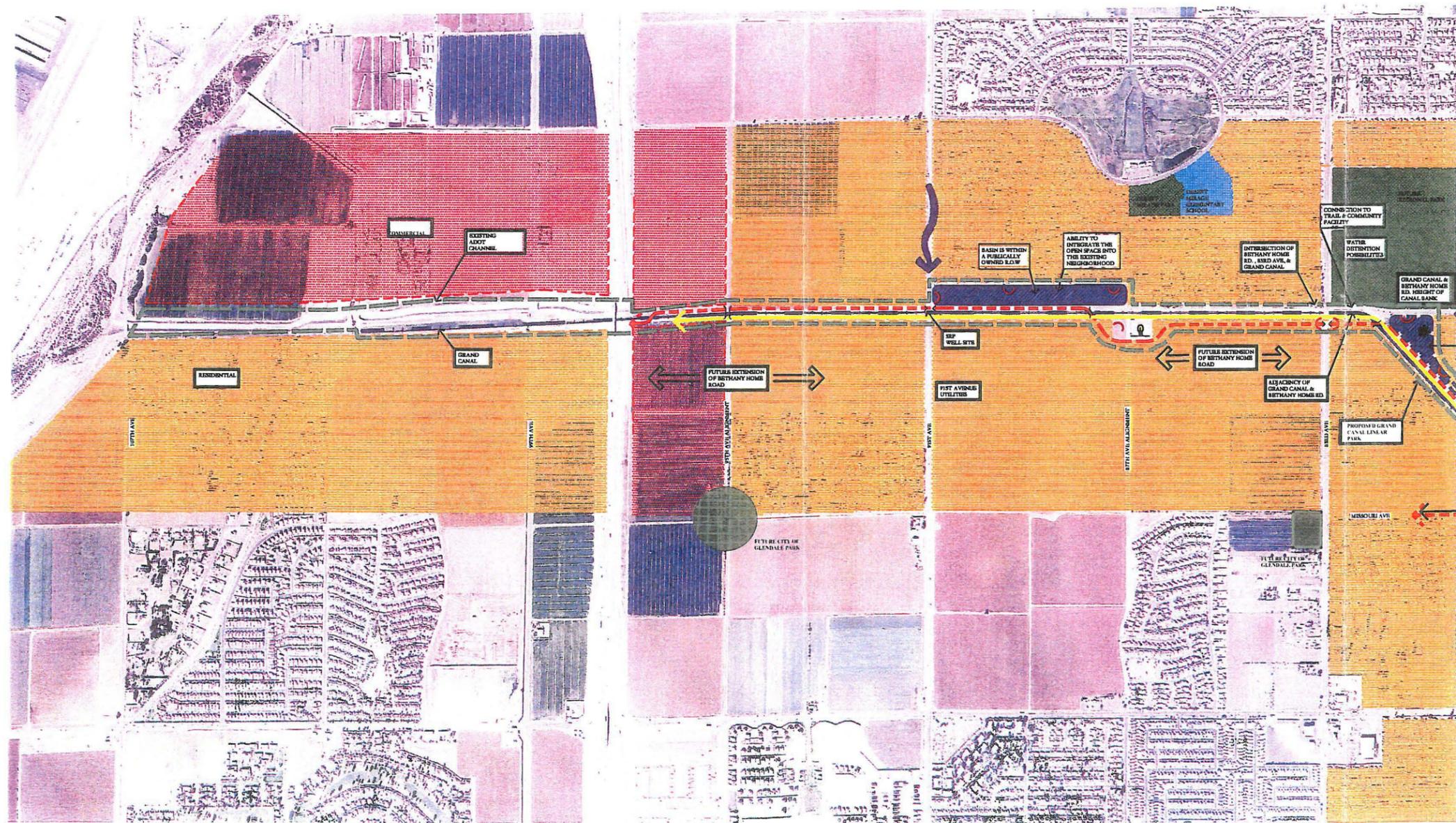
bethany home / grand canal flood control project

opportunities & constraints

SCALE: N.T.S.
August 2001



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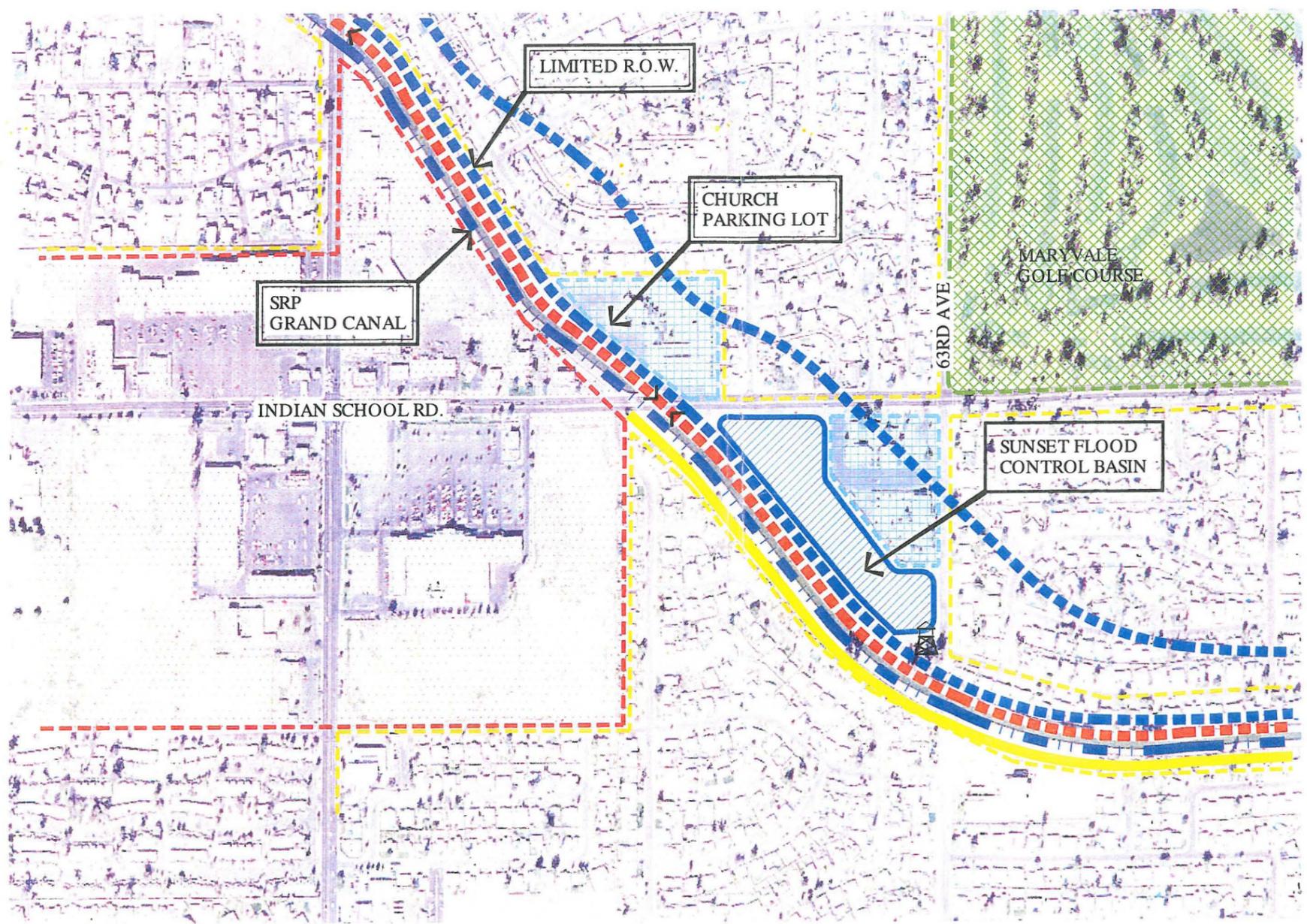


LEGEND

- GRAND CANAL
- FLOODPLAIN
- PONDING AREAS
- POTENTIAL STORM WATER SYSTEMS
- WATER LINE
- SANITARY SEWER LINE
- ELECTRIC LINE
- EXISTING BIKE ROUTE
- EXISTING MULTI-USE TRAIL
- PROPOSED MULTI-USE TRAIL
- WELL SITE
- WATER TANK
- ELECTRIC SUBSTATION
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- MINOR TRAIL ENTRY NODE
- TRAIL RECREATION NODE
- BRIDGE CROSSING
- TRAIL UNDERPASS
- RESIDENTIAL
- PUBLIC/PSEUDO-PUBLIC
- COMMERCIAL
- PARKS/OPEN SPACE

vicinity map

Figure 1a



- LEGEND**
- GRAND CANAL
 - FLOODPLAIN
 - PONDING AREAS
 - POTENTIAL STORM WATER SYSTEMS
 - WATER LINE
 - SANITARY SEWER LINE
 - ELECTRIC LINE
 - EXISTING BIKE ROUTE
 - EXISTING MULTI-USE TRAIL
 - PROPOSED MULTI-USE TRAIL
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 - PARKS/OPEN SPACE

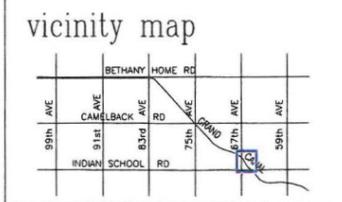
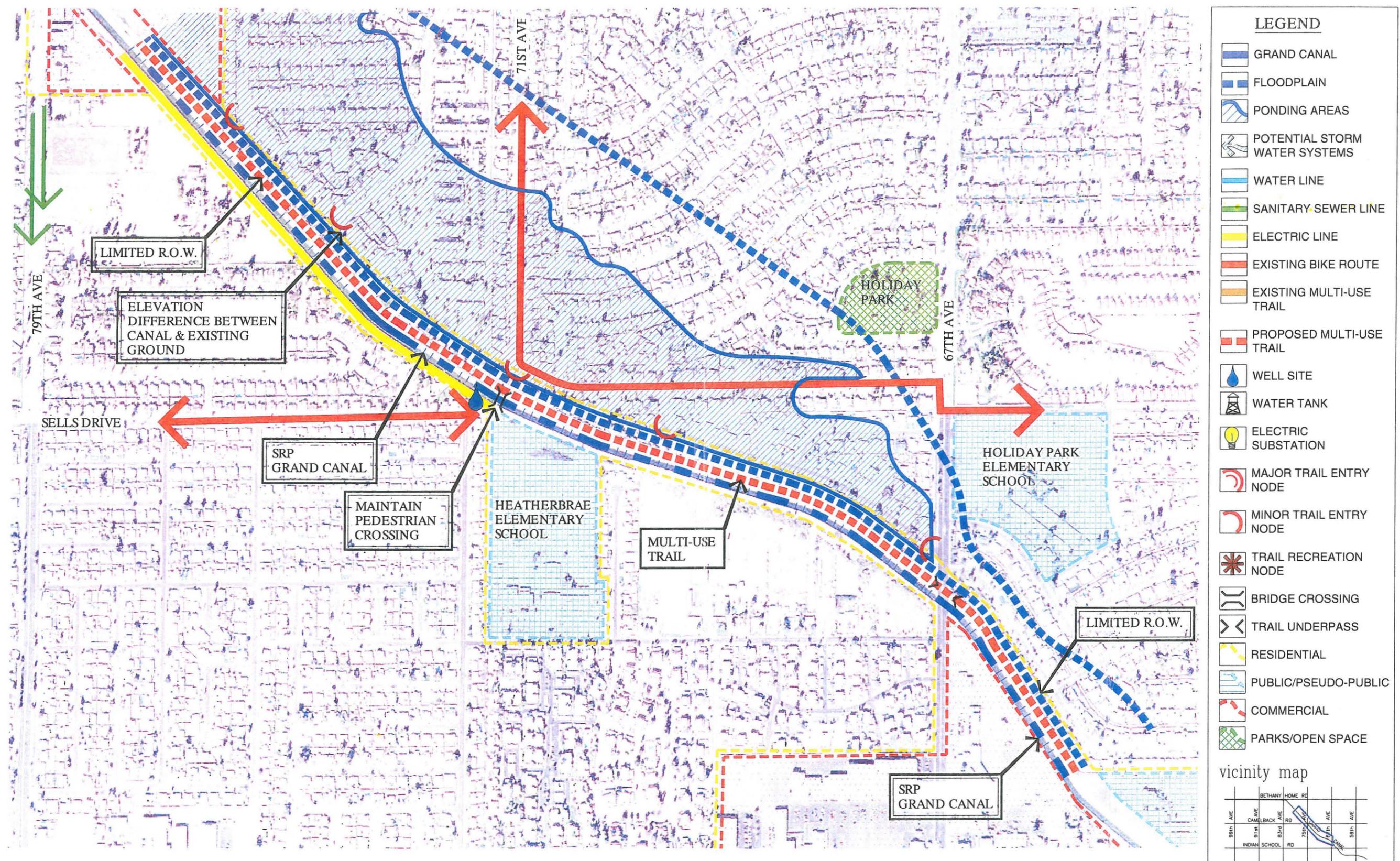


Figure 2

opportunities & constraints






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flood control project

opportunities & constraints

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August 2001

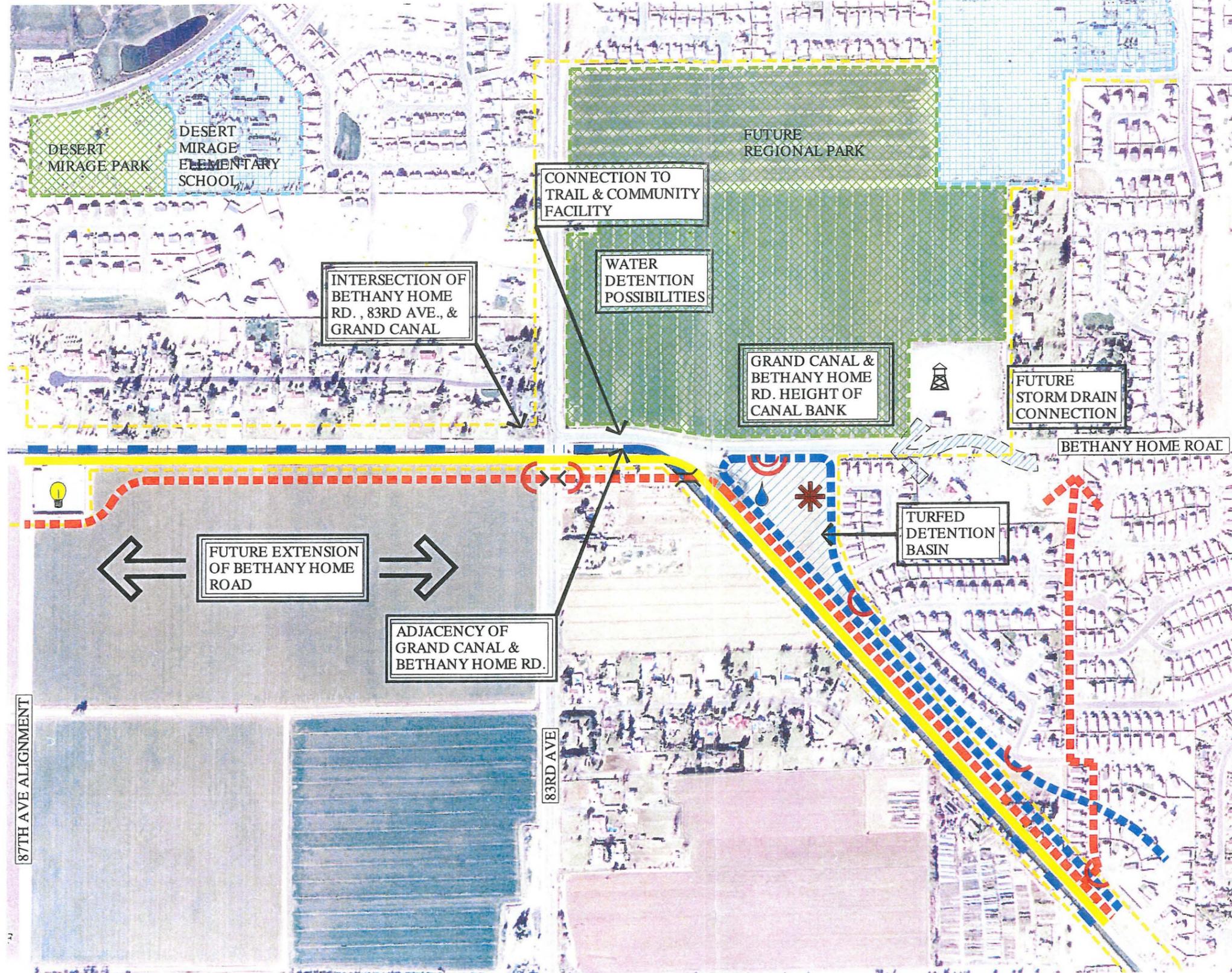


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Figure 3



Figure 4



LEGEND

- GRAND CANAL
- FLOODPLAIN
- PONDING AREAS
- POTENTIAL STORM WATER SYSTEMS
- WATER LINE
- SANITARY SEWER LINE
- ELECTRIC LINE
- EXISTING BIKE ROUTE
- EXISTING MULTI-USE TRAIL
- PROPOSED MULTI-USE TRAIL
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- BRIDGE CROSSING
- TRAIL UNDERPASS
- RESIDENTIAL
- PUBLIC/PSEUDO-PUBLIC
- COMMERCIAL
- PARKS/OPEN SPACE

vicinity map

Figure 5

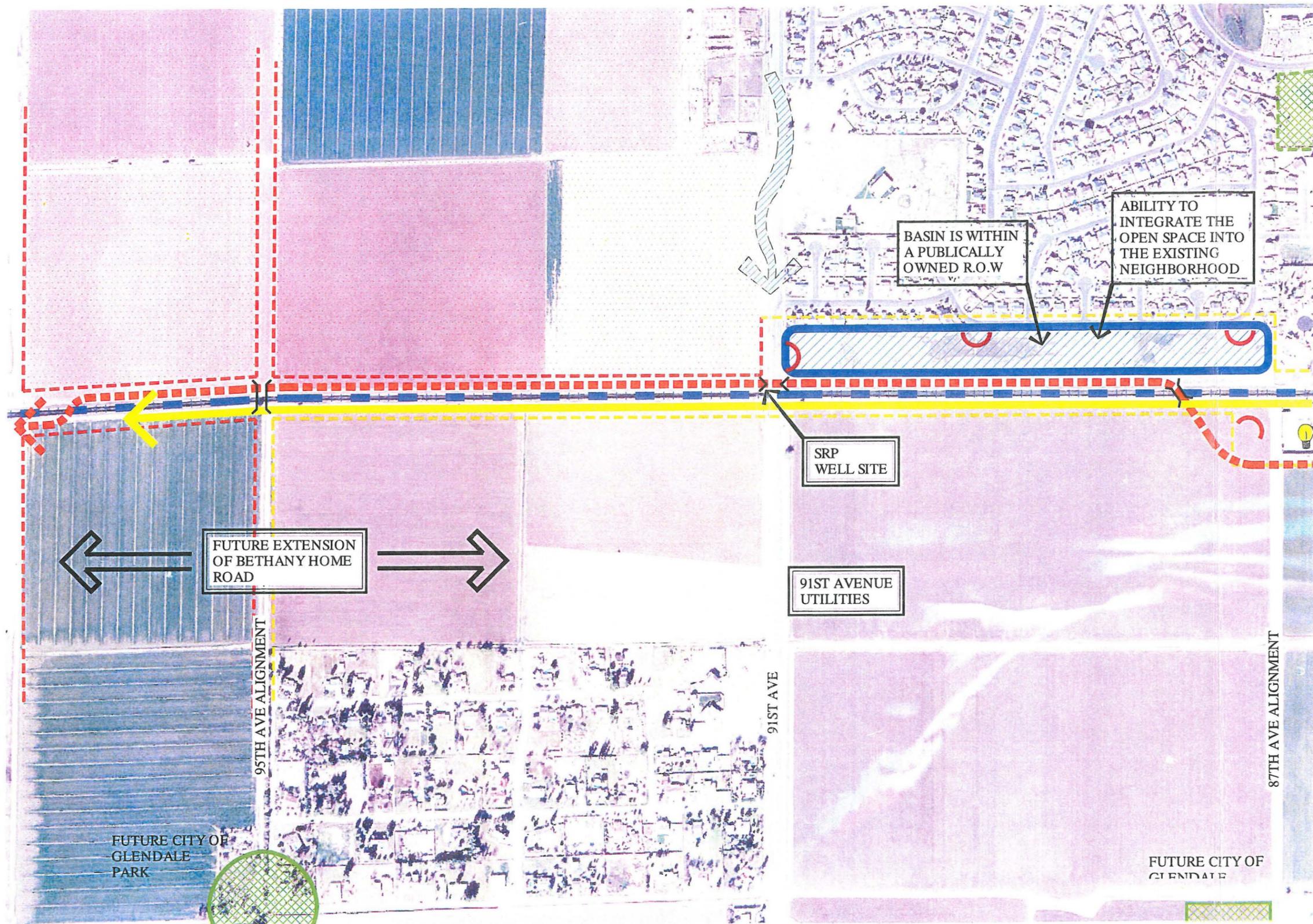

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flood control project

opportunities & constraints

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LEGEND

- GRAND CANAL
- FLOODPLAIN
- PONDING AREAS
- POTENTIAL STORM WATER SYSTEMS
- WATER LINE
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- ELECTRIC LINE
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- TRAIL RECREATION NODE
- BRIDGE CROSSING
- TRAIL UNDERPASS
- RESIDENTIAL
- PUBLIC/PSEUDO-PUBLIC
- COMMERCIAL
- PARKS/OPEN SPACE

vicinity map

Figure 6

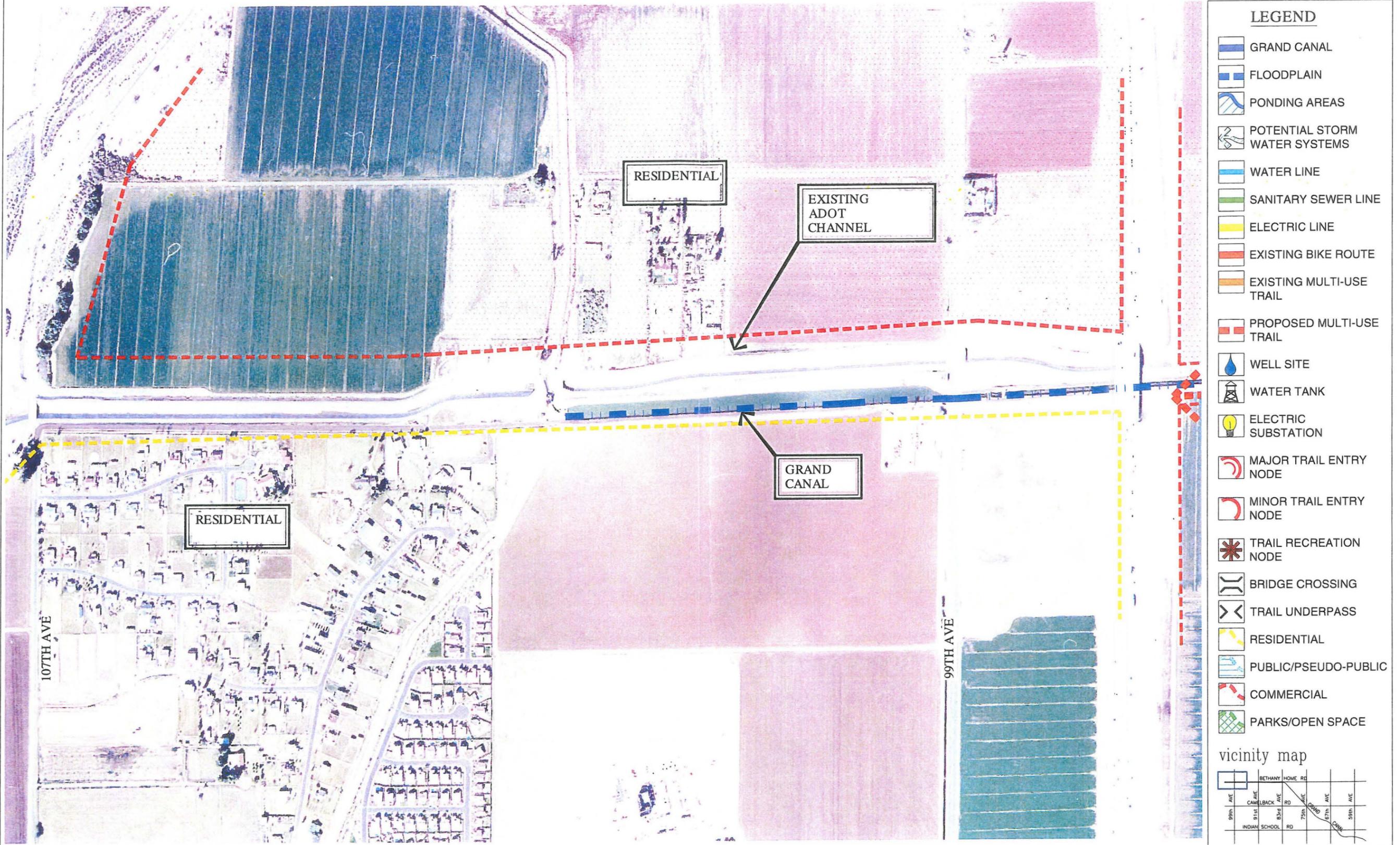
bethany home / grand canal flood control project

opportunities & constraints

SCALE: N.T.S. August 2001



DMJM HARRIS



Appendix E

Visual Assessment

Bethany Home/Grand Canal Flood Control Project

Bethany Home Outfall Channel, Phase II

FCD Project No. 98-46, PCN No. 620 03 32

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IV. APPENDIX33



I. PURPOSE & SCOPE

The purpose of this task is to prepare a visual assessment that will serve as an effective basis for integrating landscape aesthetics into the planning and design of the Bethany Home / Grand Canal Flood Control Project (BH/GC FCP). Our objectives are to identify opportunities and treatment options to:

- Design the channel facility and corridor to blend with and complement the local character of the urban, suburban, park and agricultural landscapes in which it is situated;
- Preserve and enhance valued scenic features within and adjacent to the corridor;
- Provide positive aesthetic enhancements and restoration of existing conditions within or adjacent to the corridor;
- Preserve and enhance important views, sight lines and focal point areas visible from and within the corridor;
- Establish an overall design theme that will unify desired features and characteristics, and provide the corridor with a distinctive identity.

II. METHODOLOGY

The consultant reviewed other visual assessment plans and reports and incorporated appropriate tasks and activities into the BH/GC FCP assessment process. Base plans at a scale of 1" = 200' showing the plan of the flood control improvements superimposed on an aerial photo of the corridor were prepared. Landscape Character Units were identified and added to the base plan. These Character Units are based on:

1. Major differences in Channel Design characteristics, and
2. Major differences in adjacent property visual characteristics

The landscape character units have been delineated as separate and continuous segments of the corridor. Other visual components such as scenic, discordant and focal point features have been noted as points or sub-areas with each character unit. Using the aerial photo, we identified the intersections of all arterial streets, other major nodal areas and landscape focal points on the base map overlay.

From the information developed above, preliminary field observation points were identified to be used for recording site observations. These observation points were located within and outside the project area, and included arterial street crossings, quarter mile points between arterials, at other locations where visual characteristics change significantly, and at points of special interest or impact. Finally, a checklist was developed for use in documenting the field observations at each viewpoint.

Members of the consultant team visited the site to record and photo-document our field observations. We included existing landscape and structural character, visual composition and quality of foreground, middle ground and background views and focal points. With a digital camera, the team photographed the visual conditions at each viewpoint. These stations are identified in the Appendix. The Photographs were taken generally looking North, South, East and West. These photos are numbered and identified (by number) on the plan for each of the areas for that particular character unit. The plan and text discusses the direction of view and the feature or view represented in the picture identified. The viewpoint inventory describes the key

visual findings for each viewpoint location.

Finally, a visual resource inventory map at 1"=200' scale was prepared depicting the landscape character units. The following additional information is also displayed within each character unit:

1. Scenic features that require special treatment
2. Key focal point features and areas
3. Important viewpoints, views and sight lines
4. Features with opportunities for enhancement or restoration, including discordant features and areas
5. Other constraints and opportunities as appropriate.

Five major visual assessment components (which are described in Part III) were then observed and recorded. These components include:

- Existing Landscape Character Assessment - which includes an assessment of the channel corridor and the adjacent landscapes.
- Desired Future Landscape Character Assessment - which refers to the future landscape character that is desired in the vicinity of the project by communities within the Cities of Glendale and Phoenix.
- Existing Visual Conditions Assessment - which refers to the extent to which the visual characteristics (line, form, color and texture) of the landscape attributes (landform, vegetation, rock formations, water forms, and cultural features) within and adjacent to the channel corridor appear to be visually unified.
- Scenic Quality Assessment - which refers to the overall scenic attractiveness of the landscape based upon the degree of positive feature variety and visual dominance displayed by its attributes.
- Visual Sensitivity Assessment - which includes the identification of important views, site lines and critical focal point areas from and to the linear park corridor.

III. DEFINITION OF TERMS

Existing Landscape Character Assessment - This component includes an assessment of the corridor and the adjacent landscapes. Landscape character refers to the overall visual impression of the landscape based upon its physical and cultural attributes...the physical appearance and cultural context of a landscape that gives it an identity and "sense of place". The attributes that contribute to landscape character include landforms, rock formations, vegetation, water forms, and cultural forms and materials (human built). The character of these attributes can be described in terms of the visual dominance elements of line, form, color and texture; and landscape composition types.

The purpose of the landscape character assessment is to serve as a baseline for developing aesthetic design guidelines for channel and features to complement and enhance existing local community character.

The description of the existing visual character of the corridor and adjacent areas at each viewpoint (or over a series of viewpoints) includes the dominant lines, forms, colors and textures displayed by the physical and cultural attributes of the landscape; the observer position, landscape composition type; scale and



density. To understand local landscape themes, existing street trees were identified and each City was contacted about any planned street tree program in the corridor area. The predominant architectural style and character of existing cultural features (structures) that are visible within the corridor was also identified and described where applicable.

The landscape character units map was refined based upon the field observations. These landscape character units form the basic physical unit for summarizing the description of landscape character and the other visual assessment components in the visual analysis report.

Desired Future Landscape Character Assessment - This component refers to the future landscape character of adjacent areas affected by the project that is desired by communities within the Cities of Glendale and Phoenix. The purpose of the future desired landscape character assessment is to identify the difference between existing landscape character and the desired future landscape character within and adjacent to the corridor. The types of aesthetic features and treatments that will be needed in portions of the channel where the existing character is expected to change in the near future will also be considered. The assessment of Future Desired Character will include:

1. A summary of the preliminary aesthetic concepts and sketches developed through discussions with the Cities of Phoenix and Glendale Parks Departments during the Pre-Design Study for the corridor.
2. The desired future character reflected in the Pre-Design Study aesthetic concepts was refined and extended based upon a review of any existing cultural and historical studies and reports. Approved development plans were reviewed for insight into the landscape and structural aesthetic requirements of future planned developments.
3. Desired future Landscape Character was further refined through discussions with City and local community representatives during the PAAC meetings.

A summary description of the desired future landscape character is provided in the visual analysis report for each landscape character unit within the corridor.

Existing Visual Conditions Assessment - This component refers to the extent to which the visual characteristics (line, form, color and texture) of the landscape attributes (landform, vegetation, rock formations, waterforms, and cultural features) within and adjacent to the corridor appear to be visually unified. The purpose of this component is twofold:

1. To identify the key characteristics of visually unified landscapes that should be incorporated into the channel corridor to maintain visual unity, and
2. To identify opportunities and measures for rehabilitation, restoration or mitigation of visually discordant landscape features and areas within the channel corridor. Restoration measures may include screening, burial, camouflage or redesign of existing features within the corridor.

Existing visual conditions have been identified and described at each observation point using the following visual condition classes:

Visual Condition Class 1 (VC-1) - Unified Landscapes:

Landscape and cultural attributes are visually complimentary to each other and the proposed development.

Visual Condition Class 2 (VC-2) - Partially Unified Landscapes:

Landscape and cultural attributes include some discordant features. The discordant features are noticeable



but are not a major distraction.

Visual Condition Class 3 (VC-3) - Discordant Landscapes:

Landscape and cultural attributes contain significant discordant features. The discordant features are noticeable and are major distractions within or adjacent to the corridor.

Visual conditions are summarized in the visual analysis report for each landscape character unit. The treatment measures necessary for maintaining the visual unity of VC-1 areas, and for rehabilitating or restoring discordant features within VC-2 & VC-3 areas are also identified, described and located on the visual resource inventory map for the landscape and structural components of the channel corridor project within each character unit.

Scenic Quality Assessment - This component refers to the overall scenic attractiveness of the landscape based upon the degree of positive feature variety and visual dominance displayed by its attributes. The assessment of scenic quality includes the identification of unique features that require special attention. These features include community landmarks or attractions located within or adjacent to the corridor. Each of the features or significant views have been evaluated and assigned quality rating as follows:

Class A - High:

Class A landscapes contain a relatively high degree of positive feature variety and visual contrast in line, form, color and texture. Landscape attributes combine to form landscape compositions that attract and hold viewer attention.

Class B - Medium:

Class B landscapes contain positive feature variety and contrast in line, form, color and texture that is average or commonly found within the general region of the community. Landscape attributes combine to form landscape compositions that are somewhat interesting.

Class C - Low:

Class C landscapes contain low feature variety and visual contrast compared with that which commonly occurs within the general region of the corridor. Landscape attributes combine to form landscape compositions that generally provide little or no visual interest and are generally seen as visually monotonous areas.

The special measures required to preserve, retain or treat Class A features and areas are described for each observation point, where applicable, and summarized in the visual analysis report for each landscape character unit.

Measures required to enhance Class C landscape areas via the introduction of positive feature variety are described for each observation point, where applicable, and summarized in the visual analysis report for each landscape character unit.

Visual Sensitivity Assessment - This component includes the identification of important views, site lines and critical focal point areas to and from the corridor. The purpose of the visual sensitivity assessment is to identify measures in the site plan and landscape design for the facility and corridor to maintain and enhance



opportunities for landscape viewing and the quality of the recreation user visual experience.

The visual sensitivity assessment will include both the identification of important off-site focal point features visible from within the corridor, as well as sensitive focal point features and areas within the corridor that are visible either from within the corridor or from major off site viewpoints. The visual sensitivity assessment also includes identification of opportunities for establishing entry nodes or special treatments at critical focal point locations along the corridor. Views are investigated from streets that intersect or terminate at the corridor, streets that run parallel with the corridor, from major arterial intersections and from pedestrian bridges providing corridor access.

IV. VISUAL ANALYSIS EXHIBITS

- Corridor Landscape Character Units Map
- Individual Character Units with photos, aerial reference map and summary of the field observations

V. CHARACTER UNIT NARRATIVE

The following is a narrative description of each landscape character unit summarizing the findings of the viewpoint inventory, including existing landscape character, desired future landscape character, existing visual conditions, scenic quality and visual sensitivity. Included with the text are: the location of the character unit on an aerial photograph, and representative digital photos that illustrate the summary findings for each landscape character unit.



UNIT 'A'

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'A' consists of the Sunset Basin area and is bounded by Indian School Road to the north. The flood control facility in Unit 'A' is a grass lined basin surrounded by young elm trees. The northern edge of the basin will transition into a new box culvert that drains to the north under Indian School Road. The multi-use path is also in a culvert and parallels the drainage culvert under the road.

Landscape Character - Adjacent to the basin the landscape is predominantly horizontal, consisting of low buildings and traditional, green landscape plantings. This landscape is punctuated by vertical power poles and some mature trees such as elm, eucalyptus and pine. To the east are public use facilities including a fire station and church. Along the west side of the basin is the future southerly continuation of the multi-use trail. Established single family residential areas occur west of the canal and to the northeast of the basin, across Indian School Road.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The area that surrounds this landscape character unit is currently built out. The City of Phoenix indicated that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The adjacent buildings include existing single story residential housing, a well-maintained church property, and a relatively new fire station. Generally, the housing is in fair condition with chain link, wood, and block wall fencing. The church property and public facilities are attractive and well maintained. There are views from the corridor to the southwest into residential rear yards, some of which are unkempt.

Landscape - The plantings adjacent to the corridor are a mixture of drought tolerant mesquite and Palo Verde with traditional plants such as pine, mulberry, palm and Italian cypress. They reflect a mix of landscape planting styles, including native arid species and a green, mid-west vernacular.

Classification - Generally speaking, the landscape and cultural features in this character unit are complimentary and

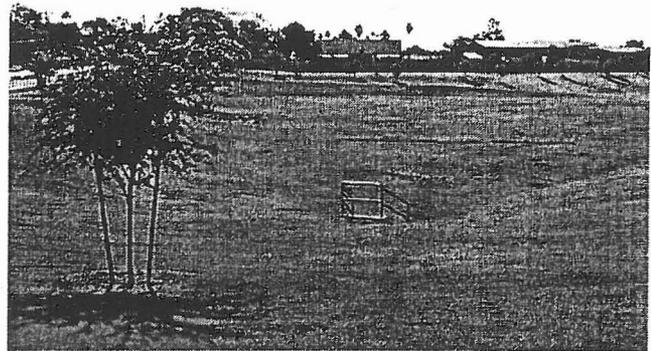


Photo A 1

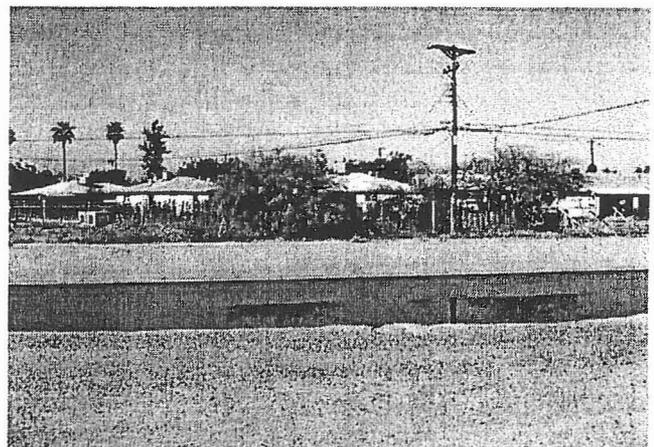
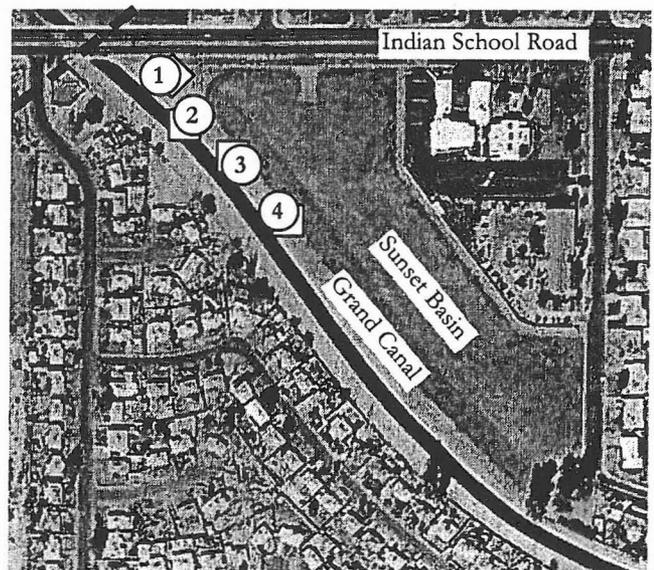


Photo A 2



unified, with discordant views to one area of unkempt yards being the only distraction. This character unit is described as a Visual Condition Class 2 - Partially Unified Landscape.

SCENIC QUALITY ASSESSMENT:

Significant, good views exist to South Mountain and the Estrella Mountains, which should be preserved. The park-like basin and new public facilities are attractive and inviting and the established residential neighborhoods appear to be sustaining the traditional, older style of the Phoenix landscape. However, the existing power poles along the corridor alignment and Indian School Road are negatively significant. These poles and transmission lines impact and interfere with the views along the corridor and are distracting to the viewer. This character unit is a Class B - Medium landscape.

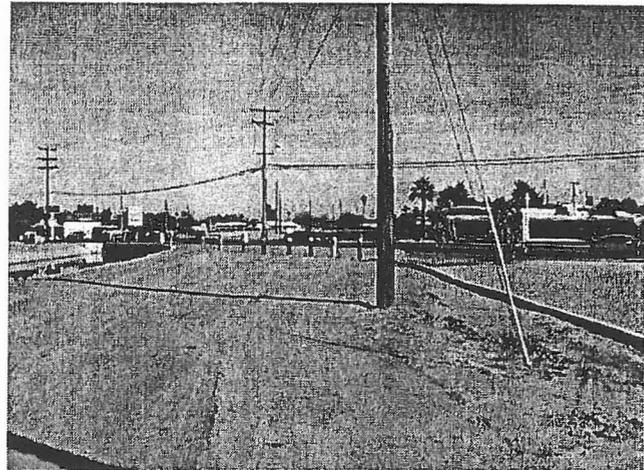


Photo A 3

VISUAL SENSITIVITY ASSESSMENT:

Upon entering this character area, from the south, the long distance views are of South Mountain and the Estrella Mountains. These views will be most prominent if the facility user is located at a vantage-point that is at or above the existing grade of the canal bank where a nodal feature can be placed in conjunction with the underpass under Indian School Road. The linear aspects of the canal further strengthen the view, which lead your eye to the long distance view.

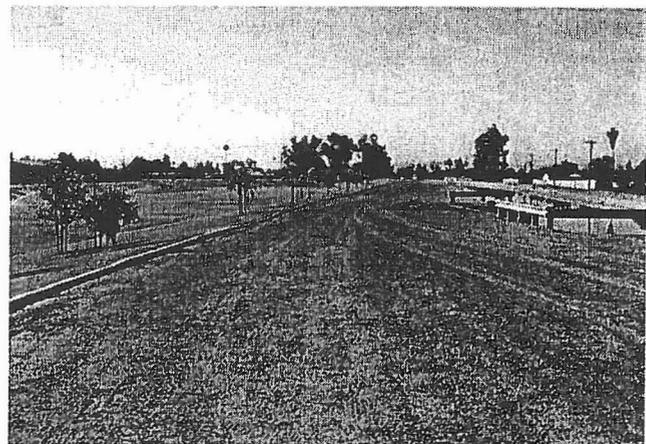


Photo A 4

TREATMENT OPPORTUNITIES:

The viewer will be in an inferior position when entering the basin from the underpass rising to a normal position as the viewer climbs out of the basin. The residential yards across the canal should be screened from the canal maintenance road position with eye-level plantings. The landscape design should make every effort to preserve and enhance the southern views to the mountains.

Additionally, we recommend that the overhead power lines be buried to remove the visual obstruction and enhance the continuity from Unit 'A' to Unit 'B', across Indian School Road. There is an opportunity to provide an entry node at this location to announce the trail entry point and to provide a resting spot.



UNIT 'B'

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'B' occurs between Indian School Road on the south and the northern property line of the church on the north. The proposed facility drains from Sunset Basin as an underground box under Indian School Road. It remains underground through Unit 'B'. The proposed multi-use trail emerges from under Indian School Road, and meanders at ground level above the flood control facility, between the SRP right-of-way and the church property. The canal is very close to the trail through this area.

Landscape character - This is a predominantly horizontal landscape with the power poles providing a vertical element. The church parking lot is paved in asphalt and is immediately adjacent to the trail corridor and is relatively accessible from the trail. The colors occurring along the corridor are predominantly gray, blue and green.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The area that surrounds this landscape character unit is currently built out. The City of Phoenix indicated that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - Adjacent buildings include single story residential housing, a well-maintained church building and grounds, and parking lots and back door facades of commercial buildings.

Landscape - There is minimal landscaping adjacent to the corridor due to the narrow space and the proximity of the church parking lot. The commercial sites have some mature landscape plantings on site edges.

Classification - With a mix of residential back yards, church parking lot and commercial property back yards, the landscape tends to be discordant rather than unified. It is a Visual Condition Class 3 - Discordant Landscape.



Photo B 1

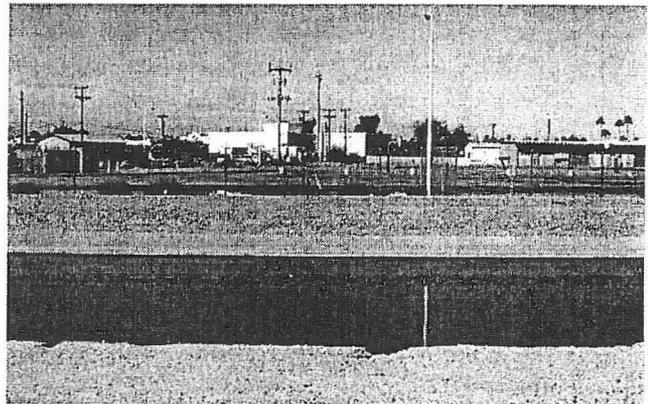
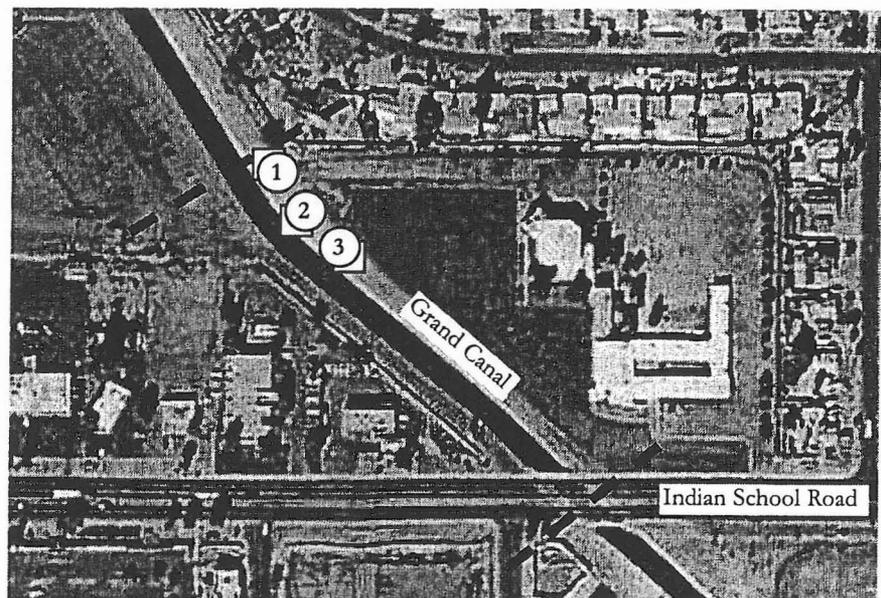


Photo B 2



SCENIC QUALITY ASSESSMENT:

Unit 'B' offers distant views of mountains to the south (South Mountain) and southeast (Estrella Mountains) which should be preserved. The nearby canal provides variety and visual interest. Power poles, which run along the eastern edge of the trail, provide a visual distraction along the corridor and the expanse of church parking paving is unattractive. This character unit is a Class B - Medium landscape.

VISUAL SENSITIVITY ASSESSMENT:

At the southern end of this unit looking south across Indian School Road, the significant features include views of South Mountain and the Estrella Mountains. Due to the limited corridor width and obstructions to long distance views, this feature is most predominant when the user is traveling south to southeast. The foreground feature from this vantagepoint is the open green space of the Sunset Basin.



Photo B 3

TREATMENT OPPORTUNITIES:

The user of the corridor will be in a normal viewing position. To enhance the experience, views to the mountains should be maintained, and the power poles removed. It is important to maintain visual continuity across Indian School Road to Unit 'A'. Further, screening should be provided to establish some level of privacy for adjacent residents and special attention should be given to the interface between the church parking lot and the trail to buffer the parking lot vehicles from trail users. The pedestrian underpass being planned for this location (under Indian School Road) will maintain connectivity of the multi-use path between Units A and B.



UNIT 'C'

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'C' extends from Unit 'B' to 67th Avenue. The flood control facility in Unit 'C' is an underground box culvert. It remains underground through the extent of Unit 'C' with the proposed multi-use trail occurring above the facility and outside the SRP right-of-way. The canal is very close to the trail through this narrow area.

Landscape Character - The landscape is predominantly horizontal, consisting of low residential buildings east of and adjacent to the corridor with green plantings in the residential back yards. Vertical elements consist of power poles and some mature trees. On the south side of the canal is a vast asphalt paved parking lot with views of commercial/industrial loading docks and rear entries. It appears that this building has been converted from an SRP Field Operations facility use to a charter school.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The area that surrounds this landscape character unit is currently built out. The City of Phoenix indicated that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The adjacent residential buildings consist of single story residences. The housing is in fair condition and is surrounded with chain link, wood, and block masonry fencing. The elevated canal bank and trail permit views into these rear yards. Although the former SRP facility buildings are several hundred feet away from the corridor, they are an imposing sight and create an industrial image to this view. The expansive asphalt pavement is inhospitable and should be mitigated if possible.

Landscape - The plantings are a mixture of drought tolerant Mesquite and Palo Verde with Pines, Mulberry, Palms, and Italian Cypress. They are concentrated in the residential back yards and along the corridor area. Planting area in this part of the corridor is at a premium. The narrow area available for landscape treatment should be planted with residential buffer plantings and consideration given to enhancing the screening and privacy features of the residential rear property line fences and walls.



Photo C 1

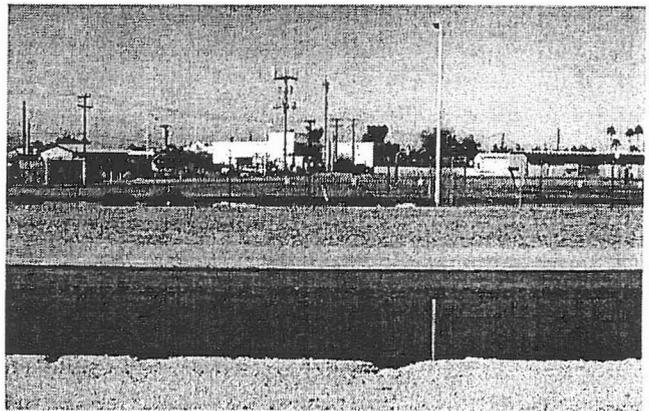
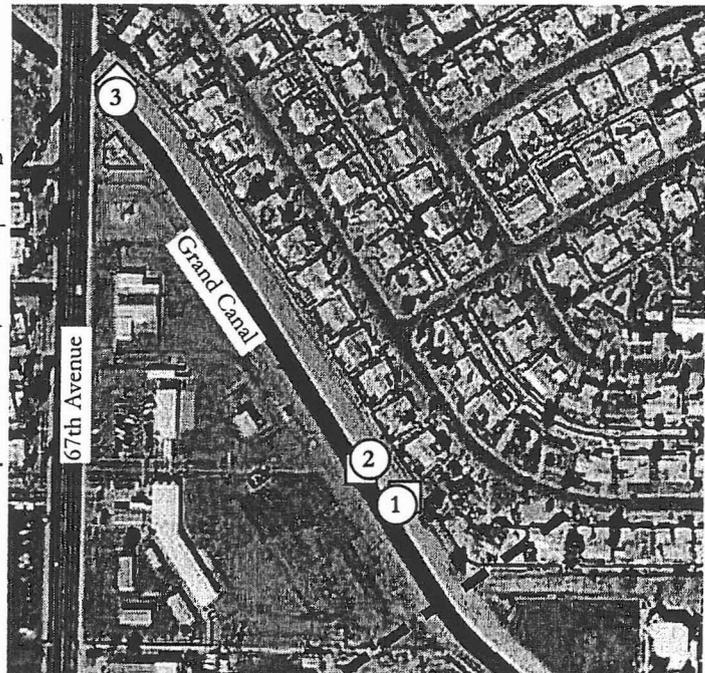


Photo C 2



Classification - The landscape and cultural features in this unit are predominantly discordant with little to compliment the trail corridor development. These features are disruptive to the desired trail environment. This unit is designated as Visual Condition Class 3 - Discordant Landscape.

SCENIC QUALITY ASSESSMENT:

Power poles are a negatively dominant feature due to the narrow space between the canal and the rear yard fences. The narrow width of the corridor exaggerates this impact. The views into adjacent yards and into the SRP facility are of little interest and tend to be discordant. The area in general is not consistent with the adjacent development along other parts of the corridor. Scenic quality is low and has a quality rating of Class C - Low.



Photo C 3

VISUAL SENSITIVITY ASSESSMENT:

There are no significant near or long distance views from this segment that should be preserved or enhanced with the corridor development.

TREATMENT OPPORTUNITIES:

In order to open up the space and create a comfortable trail environment, the power poles should be screened with landscaping to mitigate the many discordant views. The existing residential rear yard fencing should be replaced with a single material such as masonry, to enhance the continuity, unity and cohesiveness of the corridor in Unit 'C'. The space between the multi-use trail and the rear yard fences provides an opportunity to offer visual interest to the trail users, screen the view into the yards and to provide privacy for the residents. Additionally, screening and buffering methods including earth mounds and landscaping should be explored to redirect or block views from the trail into the asphalt parking area across the canal to the south.



UNIT D

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'D' extends from 67th Avenue to the 71st Avenue and Sells Drive alignments. This includes the west property boundary of Heatherbrae Elementary School. The flood control facility in Unit 'D' is a wide grass lined channel with a width that varies from 110-feet to 250-feet. A proposed multi-use trail within the open space are planned for this segment. Its size and elements make the facility the dominating landscape feature as well as a potential open space destination.

Landscape Character - The landscape is predominantly horizontal, consisting of low buildings of white, gray and beige colors and traditional green plantings. Vertical elements include power poles and some mature trees. The predominant existing plantings consist of Silk Oak, Ash, Palm, Mulberry, Elm, Bougainvillea, Cottonwood, Eucalyptus, and Oleander.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

There is currently a development proposal to build multi-unit housing on the eastern part of this area. The City of Phoenix will investigate this potential development opportunity and take the necessary action to require an adequate site and landscape design interface with the corridor improvements. No development plans were available to review. Other large lot properties south of the canal may become targets for development in the future, however there are no plans available at this time.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The north side of the Grand Canal consists of an older residential neighborhood with single-story homes. The rear yard fencing is mismatched chain link fence and masonry wall. The proposed improvements will remove the homes from the corridor edge to the



Photo D 1

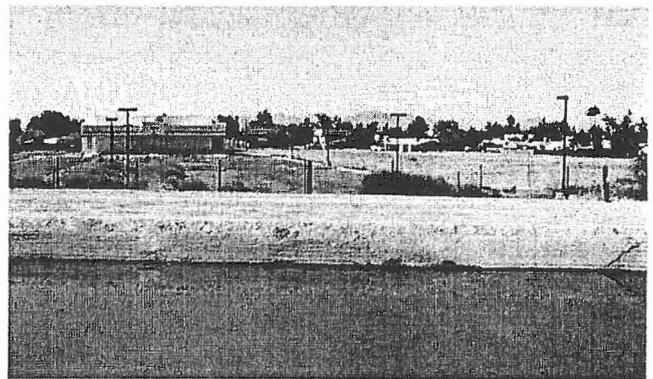


Photo D 2



adjacent street. The homes on the north side of the adjacent street will now be looking onto the facility. To the south of the Grand Canal are large lot residential properties. Some of them have horse privileges and all of the properties are well maintained. Adjacent to these large residential properties is also a striking white church building and the Heatherbrae Elementary School. An interesting contrast exists between the structure density of small lot housing and open areas provided by the larger properties.

Landscape - Along the southern bank of the Grand Canal is a beautiful natural stand of mature Mesquite trees, which should be preserved. We recommend that the City of Phoenix provide for the preservation of the bosque through the development process and zoning stipulations. The properties to the south across the canal, also provide open, pleasing views with large turf areas and mature trees. The landscape further opens up at the church property and the playfields at the school. The older neighborhood on the north side of the Grand Canal currently has discordant views into unkempt rear yards. However, the removal of these homes will eliminate this element. Several intersecting streets and a drainage way now terminate at the corridor's north edge and provide views into the neighborhood and into the proposed facility. There is a significant grade difference (approximately 5-feet) between the top of canal bank and the existing adjacent grade to the north.

Classification - With the removal of the first row of houses and the replacement with a turf flood control facility, the landscape and cultural attributes of the remaining houses and the large open lots across the canal become quite complimentary. Moving along the corridor from the southeast to the northwest, this becomes the first open park-like landscape opportunity for development. This is identified as Visual Condition Class 2 - Partially Unified Landscape.

SCENIC QUALITY ASSESSMENT:

Views open up to the Estrella Mountains to the south, and White Tank Mountains to the east.

The gentle horizontal curvature of Grand Canal in this unit provides strong visual interest. There is an existing pedestrian bridge over the Grand Canal for access to the Heatherbrae Elementary School and offers special treatment options. Because of its elevation, the canal bank as viewed from the north will be a dominant linear feature and

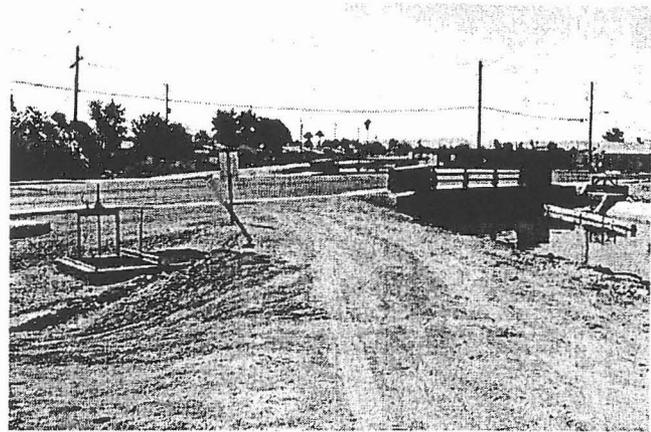


Photo D 3

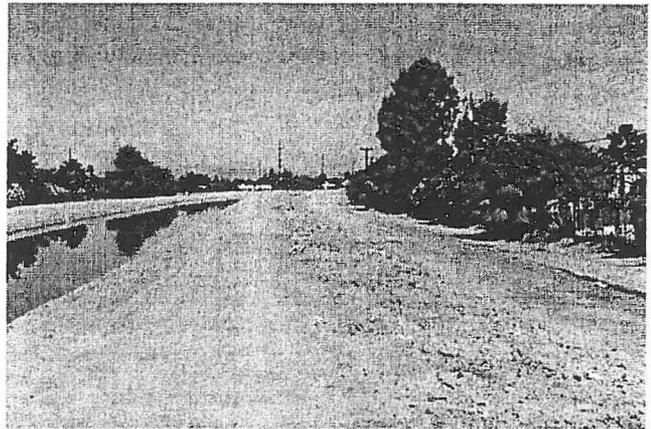


Photo D 4

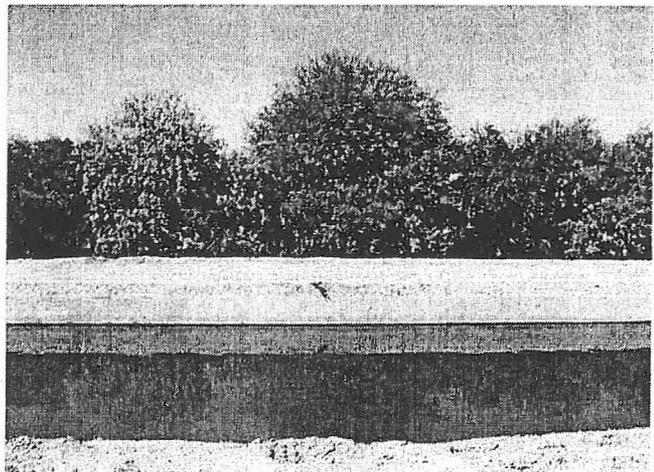


Photo D 5



will block the views to the property to the south of the Grand Canal. Views from the bridge will look down into the trail corridor. In this unit, the landscape and cultural attributes are attractive and hold our attention. This has a quality rating of Class A - High.

VISUAL SENSITIVITY ASSESSMENT:

Significant views from the corridor are to the Heatherbrae Elementary School as a community landmark. Views to this feature should not be obstructed. Other distant views include the White Tanks Mountains to the west and partial views of the Estrella Mountains to the south. These views are most prominent when the viewer is at or above the canal bank elevation.

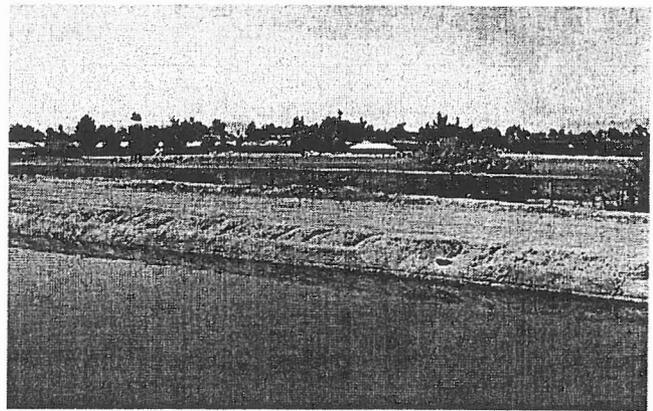


Photo D 6

TREATMENT OPPORTUNITIES:

A design priority in Unit 'D' is to integrate the facility into the remaining neighborhood housing once the homes along the Grand Canal have been removed. An important element will be the treatment of the highly visible canal bank and the need to provide an all weather crossing of the drainage facility to the existing pedestrian bridge. This area will become a primary trail access point because of the school crossing, and there is an opportunity to provide a neighborhood entry node at both sides of the bridge. In addition, the existing bridge can be improved visually by the addition of entry walls, bollards or pylons (subject to SRP access requirements), new paint and lighting.

Low level plantings are appropriate in many areas to preserve views to the mountains and the pleasing views to the large properties across the Grand Canal could be framed and/or enhanced in certain areas to add interest and a richer user experience. It is recommended that the power poles be removed and transmission line be buried.



UNIT E

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - From north boundary of Unit 'D', Unit 'E' extends to the southern limit of the radio tower property at approximately 73rd Avenue. The flood control facility is wide and grass lined and varies in width from 110-feet to 250-feet. A proposed multi-use trail and open space uses elements are designated for this segment. It is an extension of Unit 'D', however the adjacent land use is different. A distinctive factor in this unit is that the Grand Canal is raised approximately 5' above the surrounding ground level.

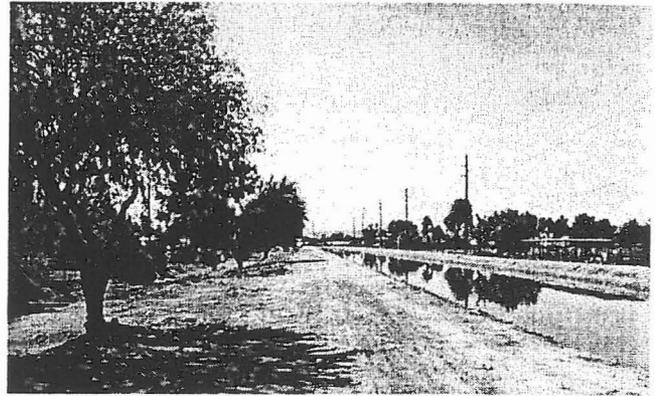


Photo E 1

Landscape Character - The landscape is predominantly horizontal, consisting of low residential buildings of gray and beige color and green plantings. Vertical elements include power poles and some mature trees. The predominant existing plants consist of Palo Verde, Cottonwood, Eucalyptus, Oleander, and Ash.

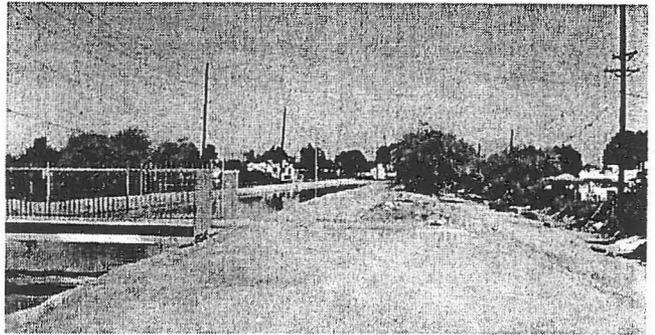


Photo E 2

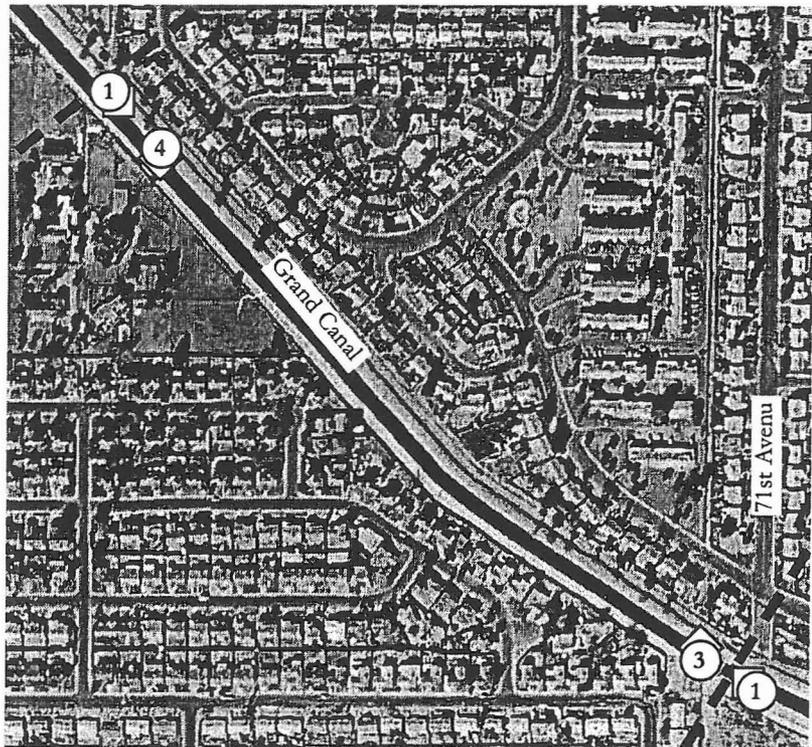
DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The area that surrounds this landscape character unit is currently built out. The City of Phoenix indicated that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The north side of the Grand Canal in this character unit consists of an older neighborhood with single-story residential buildings. The rear yard fencing is mismatched chain link and masonry. As with unit 'D', the south side of the Grand Canal contains a few large properties, but is mainly composed of higher density residential single-story and two-story homes. An SRP well site exists south of Grand Canal at the intersection of 71st Avenue and the Grand Canal. Chainlink fencing surrounds the well site and the equipment is visible from the south and the top of the north canal bank.

Landscape - The older neighborhood on the north side of the canal has discordant views into unkempt rear yards. The cross streets leading into the corridor do provide views



into the neighborhood and into the proposed flood control facility. With the existing development, there is an interesting feeling of a narrow residential-scale with the residences occurring on both sides of the corridor. The removal of the first row of houses will open up the corridor to be similar in scale to unit 'D'.

Classification - With the removal of the first row of houses and the replacement with an open turf channel, the landscape and cultural attributes of the remaining houses and the development across the canal become quite complimentary. This continues the open park-like landscape opportunity for development that is found in unit 'D'. This is identified as Visual Condition Class 1 - Unified Landscape.



Photo E 3

SCENIC QUALITY ASSESSMENT:

Selected distant views occur to the west toward the White Tank Mountains. The Grand Canal becomes a strong linear element in this unit punctuated by the vertical power poles, and the presence of single family dwellings on the south side of the canal imparts a different residential-scale image to the trail corridor. Over all, the visual nature of unit 'E' is of a residential neighborhood with a water feature (canal) and green linear park as a central common open area. This character unit is rated Class A - High quality attractiveness.



Photo E 4

VISUAL SENSITIVITY ASSESSMENT:

The predominant features within this area include the Grand Canal, which leads the viewer along the corridor that open to views of the White Tank Mountains to the west. This is most significant when the viewer is at the canal bank elevation. These views can be enhanced by providing for the opportunity for the viewer to reach this vantagepoint on the multi-use trail without potential conflicts with the equestrian users on the canal bank.

TREATMENT OPPORTUNITIES:

The viewer will be in a subordinate position within the drainage facility and in a slightly dominant position when on the top of the Grand Canal bank. The design should take advantage of the available distant views and the linear, but open feeling of the canal. Landscape treatments should screen the SRP pump/well site. The construction of the facility will eliminate the first row of houses on the north side of the Grand Canal and will open the neighborhood to the facility and the canal. A priority is to integrate this neighborhood with the facility through the use of appropri-

ate landscape materials. Burying the power lines will also open up the corridor, eliminate visual distractions and enhance views from and into the corridor. By utilizing the intersecting residential streets, it will be possible to direct views into the corridor and provide opportunities for formal access into the facility with the placement of entry node features.



UNIT F

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'F' is located in the southeast quadrant of the Camelback and 75th Avenue intersection and runs south to approximately 73rd Avenue. The flood control facility is an open vertical concrete channel situated between the radio tower property and the Grand Canal right-of-way. The trail will pass through a very narrow space between the flood control facility, the canal and the property line fence. Provisions must be made to create a safe environment along the channel's edge for the users of the multi-use trail. Single family housing borders the east side of the radio tower property.

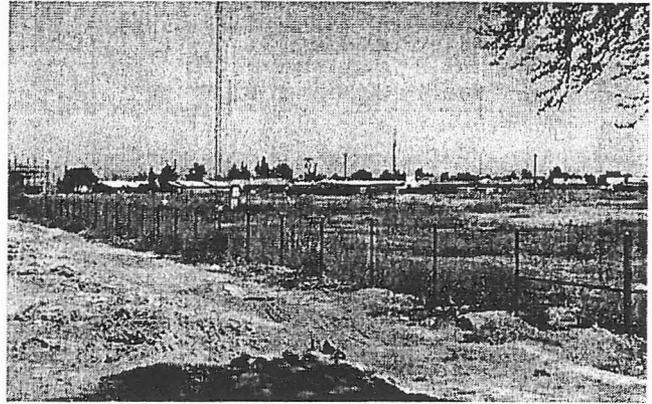


Photo F 1

Landscape Character - The vertical radio towers and open field on the north side of the Grand Canal dominate the landscape. There is little planting of value in this area except for a small stand of trees along the south side of the Grand Canal bordering a few large lot, equestrian properties. The existing trees are Pecan, Fig, and Ash.

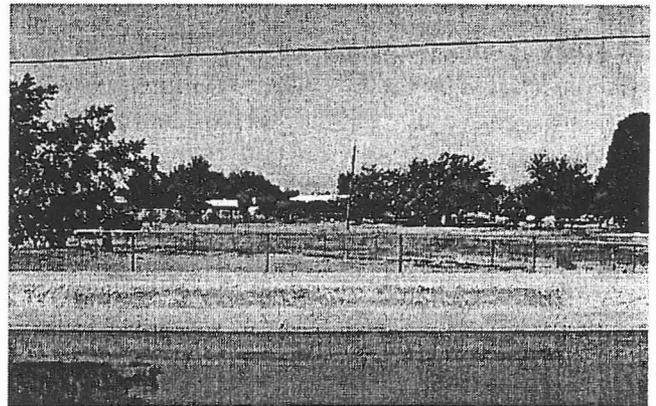


Photo F 2

DESIRED FUTURE CONDITIONS ASSESSMENT:

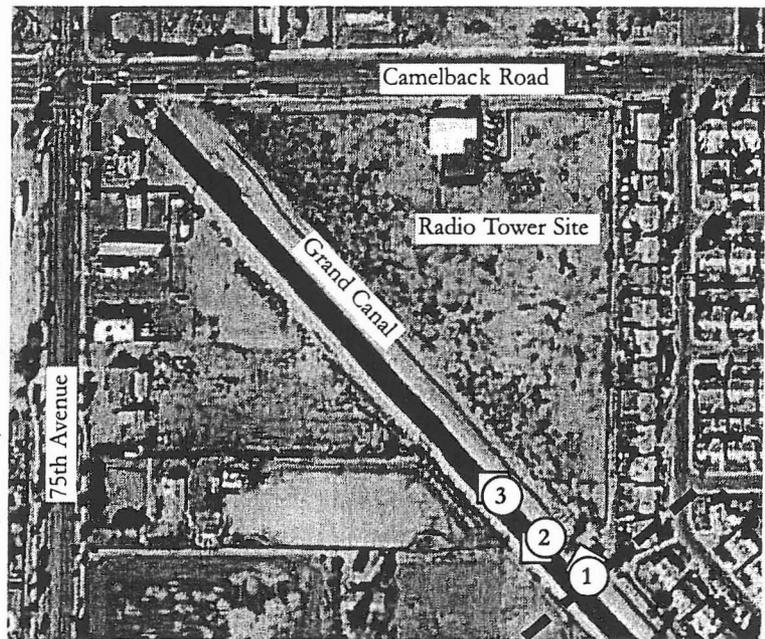
The area that surrounds this landscape character unit is currently built out. The City of Phoenix indicated that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - Larger homes on horse property are a pleasing element along the south edge of the Grand Canal with the rear facades of commercial buildings on 75th Avenue at Camelback Road. Single-story residential buildings with varying rear yard fence types in various states of disrepair are visible to the east.

Landscape - Sporadic and inconsistent planting occurs throughout the unit. At the intersection of Camelback Road and 75th Avenue there is a visible billboard and a SRP substation/well site. Even though the radio towers overshadow the power poles and lines running along the canal's bank, these poles are still quite noticeable and a significant landscape feature. There is no significant landscape material, other than grasses and weeds, underneath the radio towers.

Classification - The landscape features and attributes that are directly adjacent to the trail corridor are not unified and are widely divergent in charac-



ter. They include a mix of high-density single-family houses, an open field with very tall towers and a commercial/utility development along the north edge of the trail. The only visually unified landscape exists on the south side of the Grand Canal at the horse properties. This is a Visual Condition Class 3 - Discordant Landscape.

SCENIC QUALITY ASSESSMENT:

The radio towers and surrounding chain-link fence dominate the foreground and are a visual icon for people outside of the corridor. Wide views open up because of the open field and large properties across the Grand Canal. Some distant views of the Bradshaw Mountains exist to the north. There is a wide degree of variety and visual contrast, and some of the elements, such as the towers, hold the viewer's attention. While this satisfies the definition of a Class A landscape, the distractions of the adjacent and divergent land uses create a landscape composition that is unappealing and uncomfortable. This area has a scenic quality rating of Class C - Low.

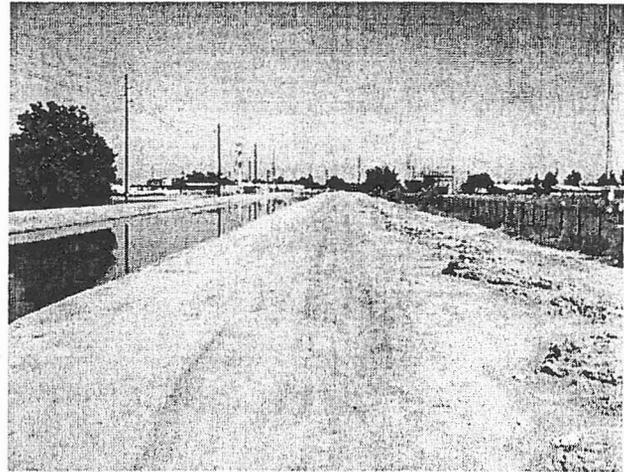


Photo F 3

VISUAL SENSITIVITY ASSESSMENT:

Due to the dominance of the radio towers in the foreground, the viewer is somewhat distracted from the more panoramic views of the distant mountains. In order to mitigate the foreground views, the design will compromise the enhancement of distant views. The opportunity here is to provide a pleasant experience that should be focused on screening of the foreground views and allow for distance mountain view experiences where the foreground elements do not dominate the visual experience.

TREATMENT OPPORTUNITIES:

The viewer will be in a normal position along this segment. Safety and security for the trail user must be a priority with the close alignment of the trail and the open channel. Accordingly, fencing along the facility and the radio towers will play a large part in the users' experience. These fences need to be designed in such a way that the users of the trail feel safe and permit views through and out of the corridor. Because the viewer will be looking down into the open channel, there is an opportunity to create visual interest through artistic endeavors and aesthetic structural wall treatments integrated or applied to the channel walls. Landscape plantings, while limited in area to a narrow planting strip, must be maximized to provide some measure of soft relief to the trail user. When driving by this unit's entry at

Camelback Road and 75th Avenue, there is an opportunity for the traffic to have a view down the trail and canal corridor while stopped at the intersection. As with other units, utility poles also have a large negative impact in the visual experience and should be screened or removed where possible.



UNIT G

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Starting at the intersection of Camelback Road and 75th Avenue, Unit 'G' extends north to the limit of the existing retention area of the Grand Canal Linear Park. This unit is the entrance to the City of Glendale's Grand Canal Linear Park. The flood control facility is an underground box culvert through this unit with a linear park and multi-use trail over it.

Landscape Character - The intersection of Camelback and 75th Avenue creates a considerable barrier for connectivity of the corridor. A SRP well and substation is located on the northeast corner of the intersection, residential properties are on the northwest corner and commercial properties are on the southwest corner. These uses create logistical problems for locating the surface crossing of the multi-use trail. After crossing 75th Avenue, the corridor widens greatly to encompass the existing retention basin and park area. Surrounding this unit is new single family housing. The City of Glendale has constructed a new pedestrian bridge across the Grand Canal along the west side of 75th Avenue.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The area that surrounds this landscape character unit is currently built out. The City of Glendale indicates that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The residential buildings to the north and east of the retention basin are relatively new and in good condition. To the south of the Grand Canal is another new development with a property line wall along the SRP right-of-way facing the corridor. Building colors reflect recent home construction preferences - light colored stucco walls and tile roofs. As a structural element, they are very unified in character.

Landscape - The open grass basin and park is surrounded by recent plantings of drought-tolerant trees and shrubs, which dominate the foreground. Two existing multi-use trails meander along the side of the Grand Canal and along 75th Avenue. The predominant existing trees consist of Palo Verde, Acacia, Mesquite, and Olive. The landscape is

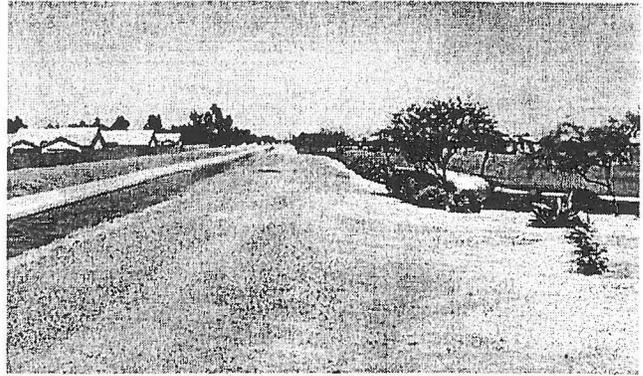


Photo G 1

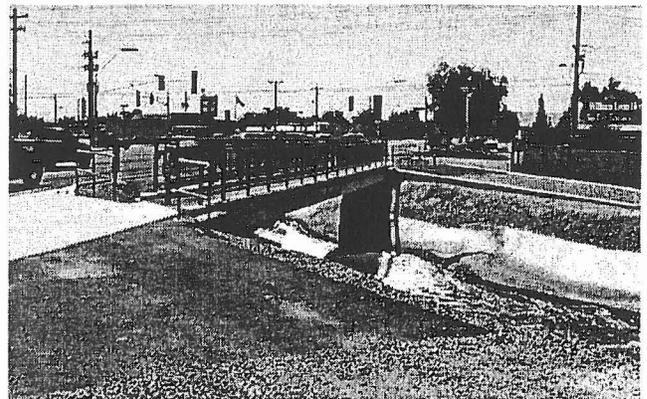
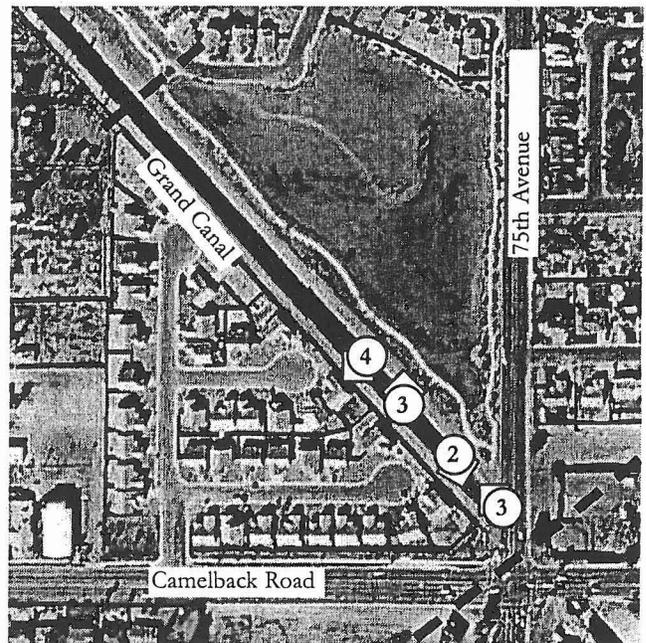


Photo G 2



rich in green and beige colors. Rear yard walls dominate the view across the south side of the Grand Canal and the radio towers and well site are strong discordant visual elements when looking east.

Classification - This unit is a Visual Condition Class 2 - Partially Unified Landscape site. The only discordant elements are located at the arterial street intersection, far enough away to be of little visual consequence.

SCENIC QUALITY ASSESSMENT:

The turf basin in the foreground is the dominant feature within this unit and it is further enhanced by the views that open into it from 75th Avenue, the neighborhood edge and the Grand Canal right-of-way. The subdivision wall located along the south side of the Grand Canal form a strong linear element along this edge of the corridor. The park environment and residential housing around it, create an attractive landscape that is pleasing and comfortable to the visitor. The broad landscape composition is appealing and inviting. The scenic quality is rated Class A - High.

VISUAL SENSITIVITY ASSESSMENT:

The significant views within this area are experience by both the users of the facility and those who pass by the area along 75th Avenue and Camelback Road. There are no dominant focal point views in this area that need to be maintained as you travel north. Treatments of this area should compliment the existing development. There are limited views of South Mountain as you travel south that may be distracted by the foreground views of the radio towers and limited commercial development at the intersection of 75th Avenue and Camelback Road.

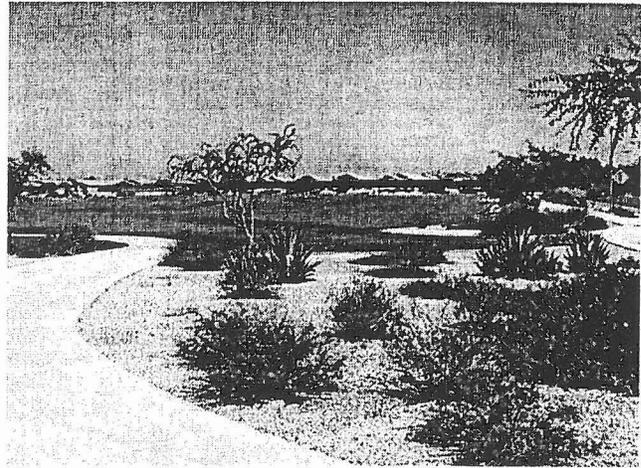


Photo G 3

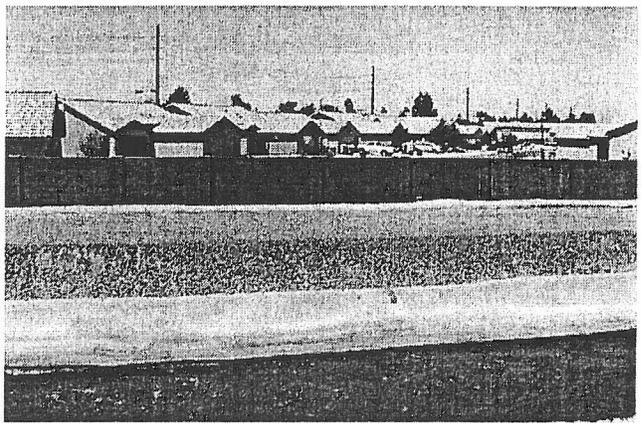


Photo G 4

TREATMENT OPPORTUNITIES:

Enhancing and maintaining the views into the park is a priority, especially because of the important urban location of Unit 'G' and its role as a gateway to the Glendale Grand Canal Linear Park. Although the views into the park need to remain open, there is also a safety issue due to the adjacency of 75th Avenue. A separation from park activities should be created and maintained along this busy street. There are opportunities for the retention area to be eliminated and regraded once the flood control facility has been constructed below ground. This would permit the development of a major entry feature with public art components

and active recreation elements in this segment. In making the surface connection from Unit 'F' to Unit 'G', significant urban design elements should be employed. Visual cues to negotiating the multiple arterial street crossings are critical wayfinding elements, and safety to pedestrians, bicyclists and equestrians is paramount. Adequate crossing times must be accommodated within the traffic control system. Special paving, street furniture, signage and landscaping elements are important to create the visual awareness needed for safe trail movement through the intersection at 75th Avenue and Camelback Road.



UNIT H

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - The extent of Unit 'H' is defined on the south by the end of the open retention basin and park in Unit 'G'. The northern boundary of this unit occurs near Bethany Home Road where the corridor turns westward and the flood control facility crosses under the Grand Canal to the south. The facility continues to run underground through this unit with a linear park and multi-use trail over it.

Landscape Character - Adjacent to the linear park, the landscape is dominated one story residential buildings. The south side of the Grand Canal is a mixture of small and large lot residential, along with some agriculture and a landscape nursery. There is a large, open turf retention area at the north end of this unit adjacent to Bethany Home Road. Located across Bethany Home Road is the planned 88-acre West Area Regional Facility. This facility will consist of recreation and civic services for the western portions of the City of Glendale. The predominant existing trees include Acacia, Mesquite, Ash, Evergreen Elm, Pine, Mulberry and Cottonwood. Power poles and transmission lines continue to run along the northern canal edge.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

With the exception of a large open plant nursery property on the south side of the Grand Canal, the area that surrounds this landscape character unit is currently built out. The City of Glendale indicates that they are unaware of any plans for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - Fairly new single-story residences that are in good condition exist along the north side of the Grand Canal. They are monochromatic beige or tan stucco with red roofs. There are



Photo H 1



older large lot/horse properties, a plant nursery and some new residential development on the south side of the Grand Canal. This unit also contains the Berry residence, a property with multiple buildings and storage structures in varying conditions. Additionally, near the 79th Avenue alignment, there are historic bridge abutments on the banks of the canal at the site of a previous Grand Canal bridge crossing and a wood gate frame.

Landscape - The linear park, with its open turf area and meandering trail, dominates the foreground and the north side of the Grand Canal. This linear park is planted with young trees and drought-tolerant, flowering shrubs. These landscape components create a rich landscape of green and beige colors. Along the north edge of the park, Bethany Home Road creates a strong boundary to the proposed regional facility and park. The street light poles also add a vertical element within the view to the north. The view is extended west across the Grand Canal to a mature landscape and large lot residences with white split rail and pipe rail fences. An existing plant nursery creates a strong mass of planting south of Grand Canal. The Berry property contains a number of mature trees and overgrown landscaping and is surrounded by a chain link fence.

Classification - In general, this unit presents a very unified landscape with the trail system, canal and drainage facilities being complimentary. It is classified as a Visual Condition Class 1 - Unified Landscape.

SCENIC QUALITY ASSESSMENT:

The eastern edge of turf and desert landscaping along the park is a major feature of Unit 'G'. It is emphasized by the linearity of the Grand Canal, which is a significant feature in itself. The residential and park-like nature of this site produces a harmonious, attractive environment offering a landscape with variety and attractive elements. Additionally, the future regional facility north of Bethany Home Road will provide a major feature or landmark for trail users. Distant mountain views to the southeast also exist. The scenic quality of this unit is rated Class A - High.

VISUAL SENSITIVITY ASSESSMENT:

The predominate features of this area is the harmony of the visual elements that dominate the foreground and middle ground views. The design of the facility should enhance and compliment these views.

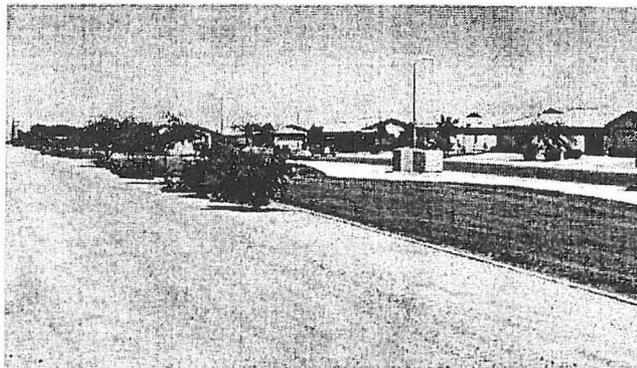


Photo H 2



Photo H 3



Photo H 4



TREATMENT OPPORTUNITIES:

The adjacent residential neighborhood interacts with the linear park for most of the length of this character unit. As such, strong nodes or entry points to the corridor should be provided at key areas of visual focus.

Plantings with lower growing material is recommended to buffer the walls that occur across Grand Canal and to leave distant views open and available mountain views enhanced. Because a portion of the Berry property is needed to construct the flood control facility, there may be an opportunity to include the entire property within the linear park as future component of this facility. If this property is acquired, care should be taken to preserve as much of the existing mature landscape as possible. At the north end of this unit, there is an opportunity to provide a major entry node into the Grand Canal Linear Park as well as a connection to the West Area Regional Facility across Bethany Home Road. Coordinate with other design consultants regarding this connection will be an important consideration in the final design.

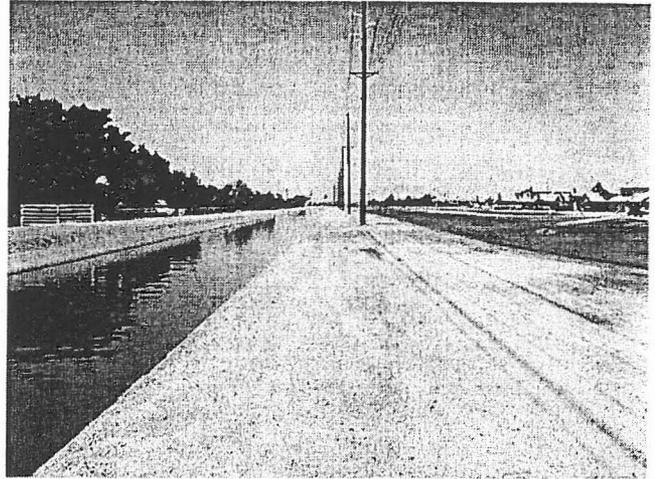


Photo H 5



UNIT I

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'I' is defined by the directional change of the Grand Canal at Bethany Home Road, west to 83rd Avenue. The flood control facility is an open turf and concrete channel along the bend and changes to an underground box culvert where it crosses under the canal. West of the canal, the box culvert transitions to an open, turf lined channel that passes under a proposed vehicular bridge at 83rd Avenue crossing over the facility. The multi-use trail will bridge over the canal and join the open turf drainage channel as it goes under 83rd Avenue.

Landscape Character - There are a few residential buildings in the foreground south of the Grand Canal with distant single family residences visible. Existing large lot residential homes are located northwest of the trail corridor west of 83rd Avenue. There is vacant land to the southwest and north (the future West Area Regional Facility) of the Grand Canal. Landscape plantings are sparse and fallow agricultural fields are located to the north and southwest.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

Existing residential and commercial horse boarding properties exist on the south side of the Grand Canal and the West Area Regional facility is being planned for the north, across Bethany Home Road. No other open areas of property are available for future development.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - South of the Grand Canal and along 83rd Avenue are large lot/horse properties. These properties are somewhat unkempt. There are no existing structures north of Bethany Home Road east of 83rd Avenue. The residential properties to the northwest are very nice and well maintained.

Landscape - Flat open fallow fields with sparse trees exist along the north side of the Grand Canal. The large turf basin in Unit 'H' is visible to the east. Sparse landscaping exists on the southern bank of the Grand Canal. The rear yards of houses with pipe rail fences and farm buildings are visible to the south. This unit begins a major character transition from urban/suburban to agriculture uses.

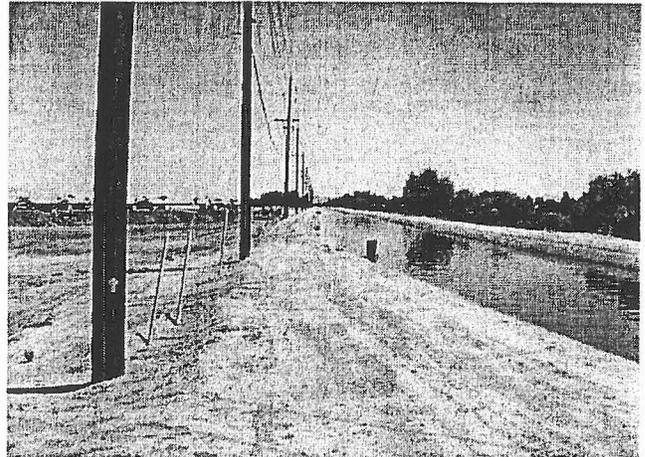


Photo I 1

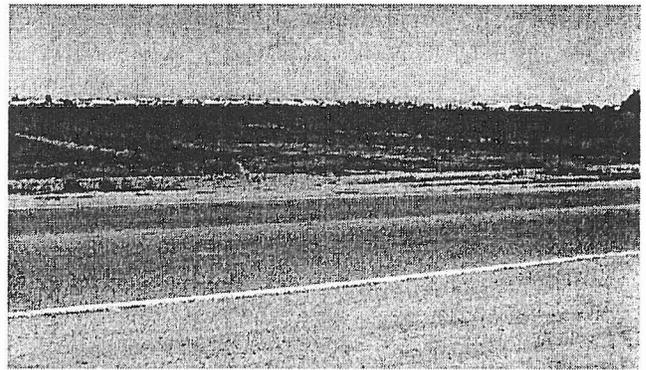
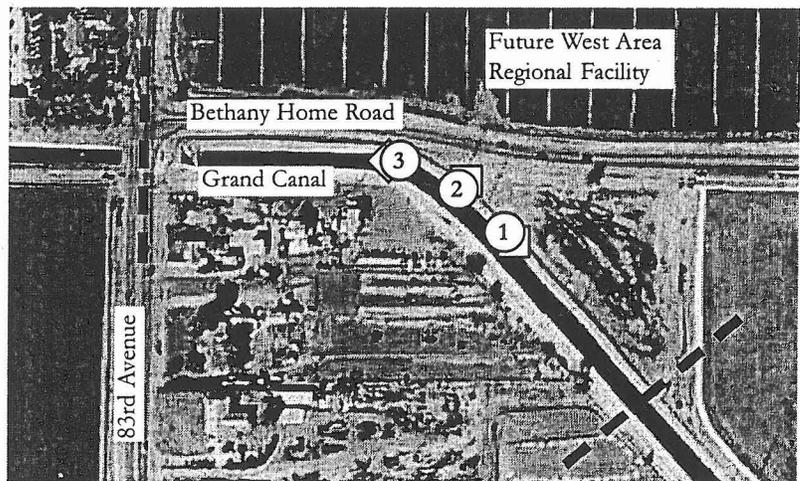


Photo I 2



Classification - This landscape character unit is considered a Visual Condition Class 2 - Partially Unified Landscape. The increasing predominance of flat, agricultural (or fallow) land uses is a unifying element.

SCENIC QUALITY ASSESSMENT:

The Grand Canal is elevated approximately 6 feet above the surrounding ground and becomes a major feature as it curves westward. Another positive feature is the view to the Bradshaw Mountains on the north, the Estrella Mountains to the southeast, and White Tank Mountains to the west. The power poles on the south side of the canal create a dominant negative linear element when combined with the Grand Canal. The landscape variety and texture in this area of the corridor is typical of the agricultural and residential land uses of the area. Accordingly, this unit's scenic quality rating is Class B - Medium.

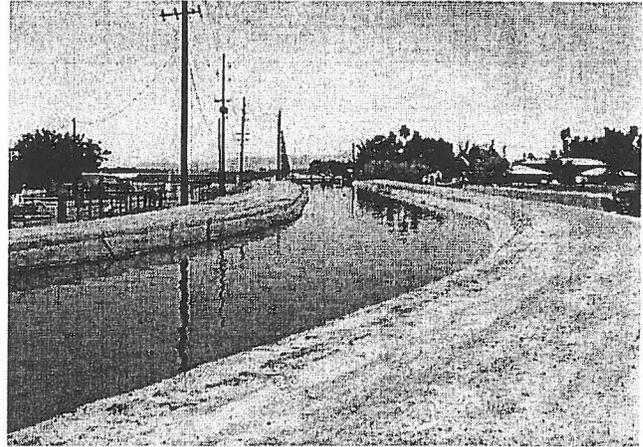


Photo I 3

VISUAL SENSITIVITY ASSESSMENT:

As the corridor turns to the west as it approaches 83rd Avenue, distant views of the White Tank Mountains appear. The visual experience at this location should be preserved to provide a visual landmark. At 83rd Avenue, the views open up to the south across vacant agricultural fields. As these areas become developed the long distance views will be diminished and will no longer play a significant role in the overall long distant view experience.

TREATMENT OPPORTUNITIES:

Preserve and enhance selected mountain views along the Grand Canal. Maintain views to local streets and provide access into the corridor from these adjacent streets. Enhance the existing landscape on south side of the Grand Canal by planting similar plant types to supplement what's there, and connect the turf entry node area with the corridor landscaping. Screen existing properties to the south but leave distant views open. Coordinate the design of the major entry node and it's strong sense of entry and visual linkage to the corridor from the future West Regional Facility and Bethany Home Road/83rd Avenue street frontages.



UNIT J

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'J' occurs between 83rd Avenue and 91st Avenue. The flood control facility is an open, turf-lined channel on south side of the Grand Canal with a width of approximately 180-feet. It proceeds around the south side of the SRP Wellborn substation and crosses under and to the north side of the canal where it runs parallel to an existing retention area. A pedestrian bridge over the Grand Canal is proposed in this area to provide connectivity for the multi-use trail. The change in direction of the facility creates two triangular shaped remnant parcels on both the east and west sides of the Wellborn substation. There is a proposed vehicular bridge over 91st Avenue that allows for the multi-use trail to cross under the roadway.

Landscape Character - Large-lot, single family residences exist on the north side of the Grand Canal from 83rd Avenue to 87th Avenue. West of these homes, there are existing medium density single family residential homes fronting an existing retention area between 87th Avenue and 91st Avenue. Currently there is agriculture use on the south.

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

The agricultural lands that are located south of the Grand Canal and trail corridor are zoned for residential use and will eventually be converted to that use. The City of Glendale reported no submittal of development plans at this time. We recommend that the City require the future developers to interact positively with the Grand Canal Linear Park and support the opportunities for recreation

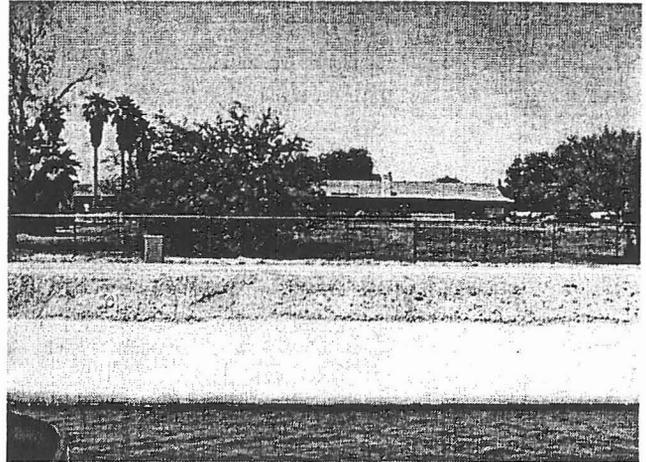


Photo J 1

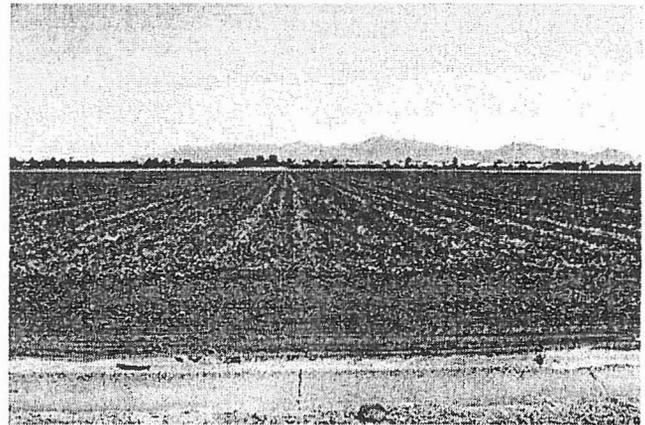
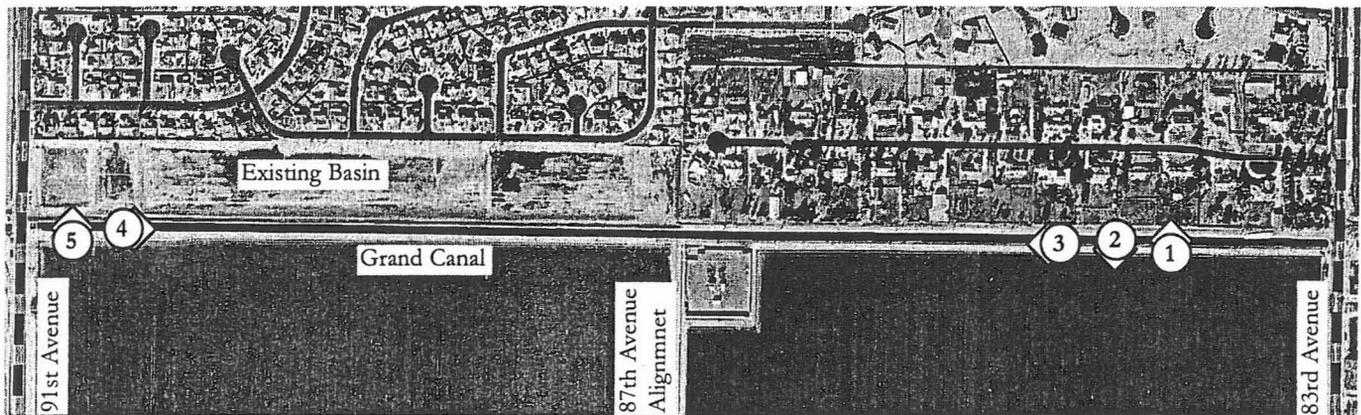


Photo J 2



linkages from within their development. The Grand Canal Linear Park is an asset to these future residential properties and their site plans should reflect this amenity by opening up the site plans and directly interacting with the facility.

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - The residences on the north side of the Grand Canal are well maintained. They are single family homes, typically one story; on large to medium sized lots. The only structure existing on the south side of the Grand Canal is the SRP Welborn substation, of which only the exterior wall is visible.

Landscape - Existing turf lawns and variety of trees on the north side of the Grand Canal creates an interesting landscape. The fencing is variable, usually chain-link, and some of the properties hold horses. The existing trees consist of Palm, Pine, Palo Verde, and Mesquite - all of which are fairly mature. Agricultural fields dominate south of the Grand Canal with residences visible in the distance.

Classification - Through this section of the corridor, the relationship between the residences on the north side of the Grand Canal and or trail corridor and the open proposed turf-lined flood control facility are complimentary. The green open space amenity clearly enhances the residential neighborhood. There is also no loss of harmony with the corridor and the agricultural uses on the south side. The Classification is Visual Condition Class 1 - Unified Landscape.

SCENIC QUALITY ASSESSMENT:

With the open agricultural lands extending along the southern boundary of the corridor, the linear canal is emphasized as a major feature. The open fields display the distant view of mountains to the south (Estrella Mountains), and the west (White Tanks). Distant views of Squaw Peak and Camelback Mountain can be seen to the east. The over-all environment is reasonably attractive but not necessarily to a high degree. The landscape variety and contrast is typical for this area, and the scenic quality rating is Class B - Medium.

VISUAL SENSITIVITY ASSESSMENT:

The off-site views are dominated by distant views of the mountains to the east, west and south. Foreground views to the north are oriented towards the existing residential areas. Mountain views where not obstructed by future



Photo J 3



Photo J 4

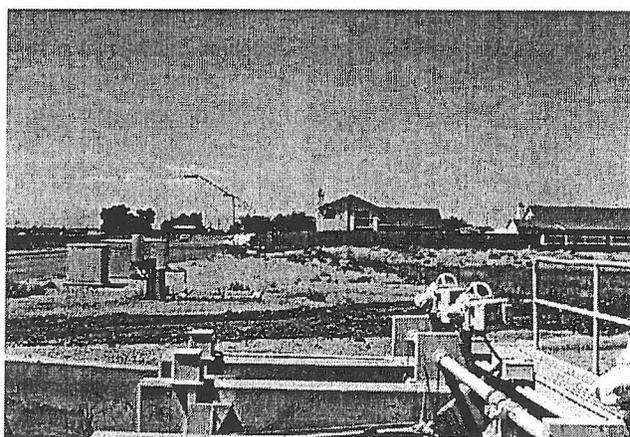


Photo J 5



development should be preserved by orienting the trail towards these views where possible.

TREATMENT OPPORTUNITIES:

Enhance mountain views along the Grand Canal by providing landscape-planting masses to frame and direct the visitor's view. Provide a visual landscape connection from the adjacent residences to the trail corridor in order to create the feeling of a larger, cohesive space surrounding both sides of the Grand Canal. Create formal entries from the adjacent residential areas through the use of neighborhood linkages or nodal features; and develop minor community entry features to the facility at 83rd Avenue and 91st Avenue. With available spaces remaining after the flood control facility is constructed, increase the visual impacts of the vertical landform by adding earth mounds in the landscape above the drainage elevations, and vary the horizontal alignment of the flood control facility bottom and the degree of slope on the channel sides.



UNIT K

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'K' occurs between 91st Avenue and Loop 101. The flood control facility is an open, turf-lined channel located on north side of the Grand Canal and is approximately 230 feet wide. At the western end of this unit, it narrows and merges with the existing concrete lined ADOT drainage channel.

Landscape Character - Currently there are agriculture uses on both sides of the Grand Canal. There are scattered Palo Verde, Mesquite, Pine, and Eucalyptus trees existing along the Grand Canal. There is a proposed vehicular bridge crossing planned at the 95th Avenue alignment.

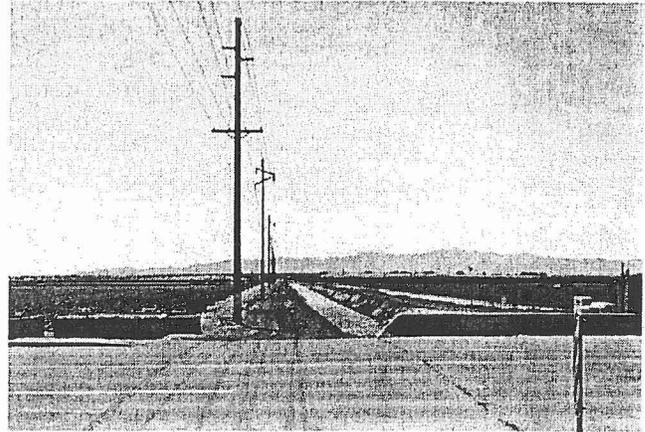


Photo K 1

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

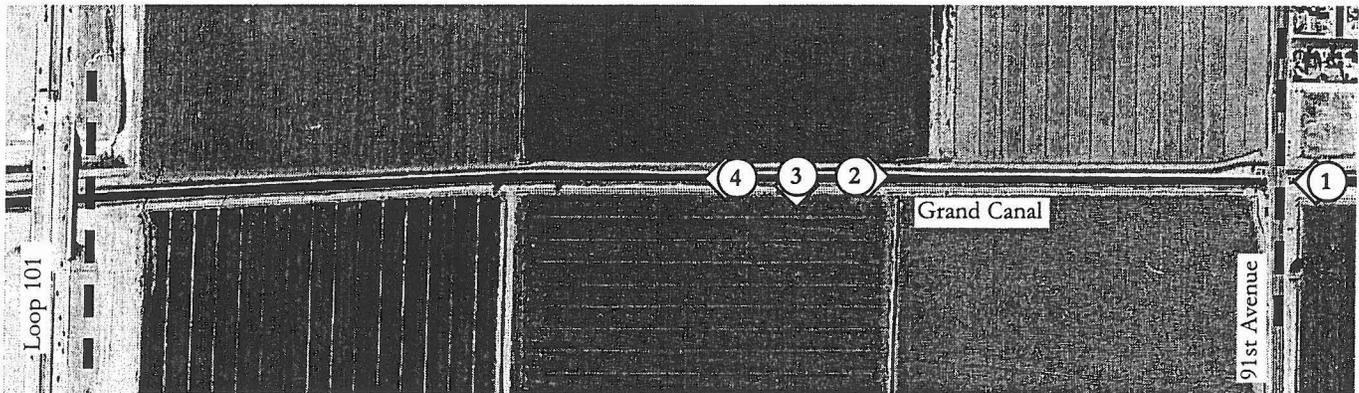
The agricultural lands that are located south of the Grand Canal and trail corridor are anticipated to become residential and commercial uses. Residential uses will most likely occur across the southern edge of the corridor up to 95th Avenue, with commercial uses occurring between 95th Avenue and the Loop 101. The City of Glendale reported no submittal of development plans at this time. We recommend that the City require the future developers to interact positively with the Grand Canal Linear Park and support the opportunities for recreation linkages from within their development. The Grand Canal Linear Park is an asset to these future developments and their site plans should reflect this amenity by opening up the site plans and directly interacting with the linear park.



Photo K 2

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - There are no existing structures immediately adjacent to the Grand Canal, however some distant farm



buildings are visible to the north and a large lot residential development to the south.

Landscape - Agricultural fields dominate both sides of the Grand Canal and power poles run along the side of the canal.

Classification - The visual landscape characteristics are unified in the sense that all elements are flat and open with expansive views. At its current condition the setting is complimentary with the proposed facility development, however there are no cultural edges or anchors to complete the composition. There are little or no discordant features within this corridor context. This unit is designated as Visual Condition Class 1 - Unified landscape.

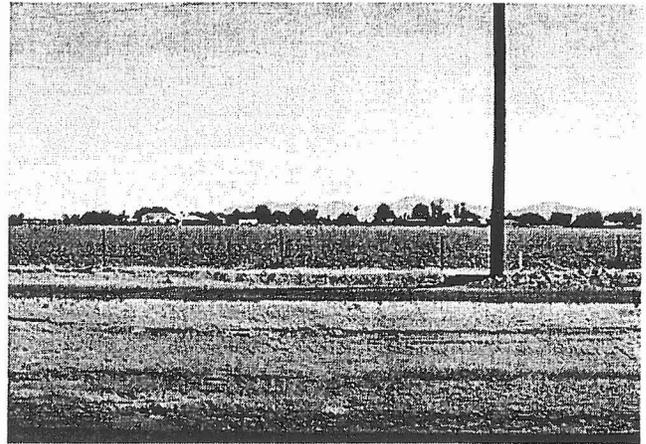


Photo K 3

SCENIC QUALITY ASSESSMENT:

With the open agricultural lands and the line of power poles, the linear canal remains as the only major landscape feature. The open fields display the wide-spread and distant views of mountains to the south (Estrella Mountains), and the west (White Tanks). Also the Loop101 overpass becomes a visual feature in Unit 'K' as seen to the west. Distant views of Squaw Peak and Camelback Mountain can be seen to the east but are partially obscured by the powerlines. Distant views of the Bradshaw Mountains can be seen to the north. This landscape character unit displays little variety and visual contrast to the observer. Although this landscape is common to this area, it tends to be monotonous and of little visual interest. This area has a scenic quality rating of Class C - Low.



Photo K 4

VISUAL SENSITIVITY ASSESSMENT:

Significant views of the mountains are dominant to the south and east. The Bethany Home Road alignment freeway overpass is the dominant view to the west. Visibility into the corridor occurs from 91st Avenue going northbound and from the Loop 101 overpass looking east. The views to the mountains should be maintained wherever possible to create landmarks for the user.

the best opportunity for viewing. However these views may be eliminated once the adjacent agricultural open land uses are developed.

Provide recognizable community entry nodes and neighborhood entry points that can be used as the residential and commercial uses develop in the future. Provide visual connection from Loop 101 into corridor. Opportunities exist to provide an entry node into the facility on the west side of 91st Avenue.

TREATMENT OPPORTUNITIES:

When designing landscape improvements for this unit provide opportunities to frame and enhance the distant mountain views along the Grand Canal. Care should be taken to anticipate or consider future development patterns where possible. Perhaps elevated areas of the corridor will offer



UNIT L

EXISTING LANDSCAPE CHARACTER ASSESSMENT:

Flood Control Facility Character - Unit 'L' occurs between Loop 101 and New River. The flood control facility in this location is an existing concrete trapezoidal facility. The Grand Canal terminates its westerly course and turns north approximately one-half mile west of 99th Avenue.

Landscape Character - Generally, there is agriculture on both sides of the Grand Canal and channel. There are a few scattered trees existing along the Grand Canal and residential property boundary and native tree clusters along the east edge of New River.

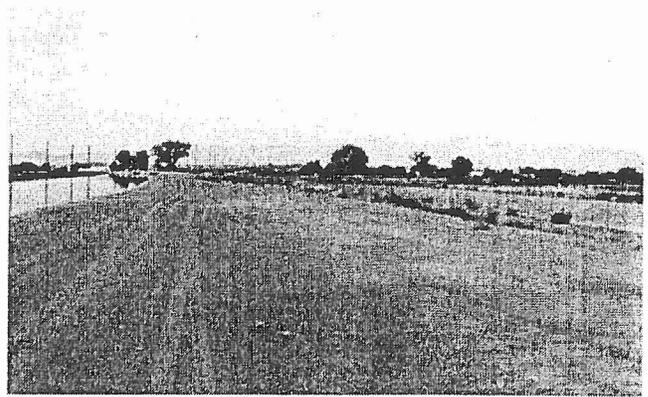


Photo K 1

DESIRED FUTURE LANDSCAPE CHARACTER ASSESSMENT:

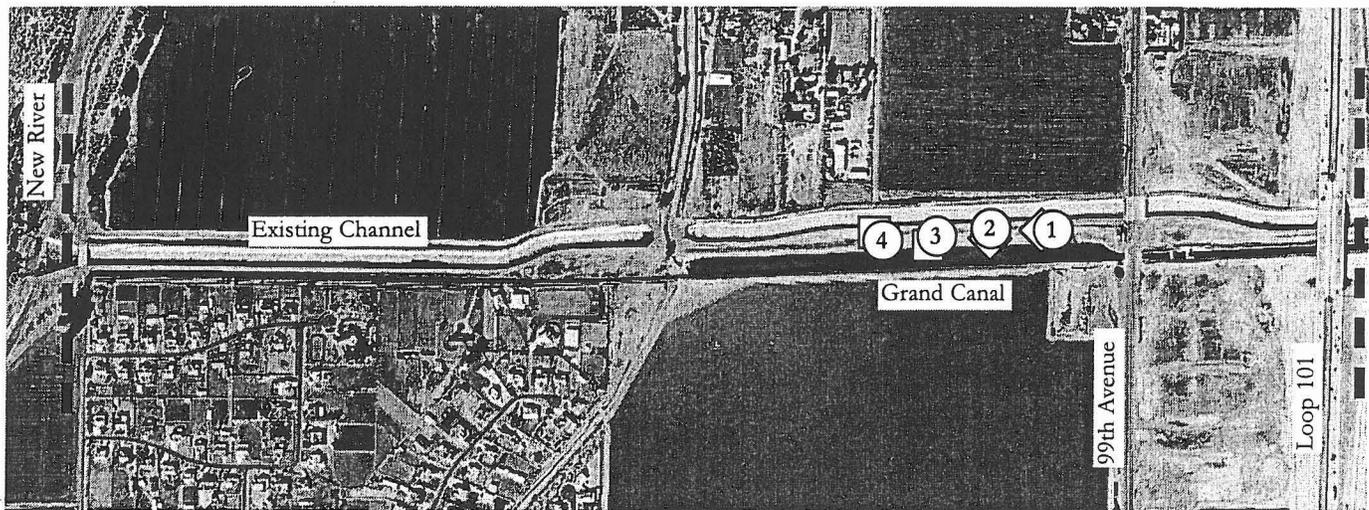
It is anticipated that the existing agricultural lands will be developed into other land uses, most likely residential and commercial. The City of Glendale is planning a river trail system along the New River / West Valley Recreation Corridor, the western boundary of the Grand Canal Linear Park. This trail system will link with the park trail at a major trail connection node. Similar landscape planting materials should be considered for use in transitioning from the river trail to the park trail.



Photo K 2

EXISTING VISUAL CONDITIONS ASSESSMENT:

Buildings - There are existing large lot residential structures adjacent to the Grand Canal on the north side mid-way between 99th Avenue and New River, and along the south channel boundary from the mid-point of this unit to New River.



Landscape - Agricultural fields dominate both sides of the Grand Canal with large lot residences near the corridor and visible to the southwest and north. The Loop 101 bridge crosses the channel at the eastern end of this character unit and dominates the view to the east, restricting long corridor views. An SRP well facility is located at the southwest corner of the corridor and 99th Avenue. The ADOT drainage channel is north of the Grand Canal and trail corridor and it is constructed of concrete. This drainage feature is a stark, hard surfaced element in this landscape. The adjacency of the Grand Canal and the ADOT channel severely limits the location and alignment choices for the trail. There are possible routes to the New River along the north and south sides of the Grand Canal. After the canal terminates, the trail will run through a narrow area between the concrete channel and the residential properties to the south.

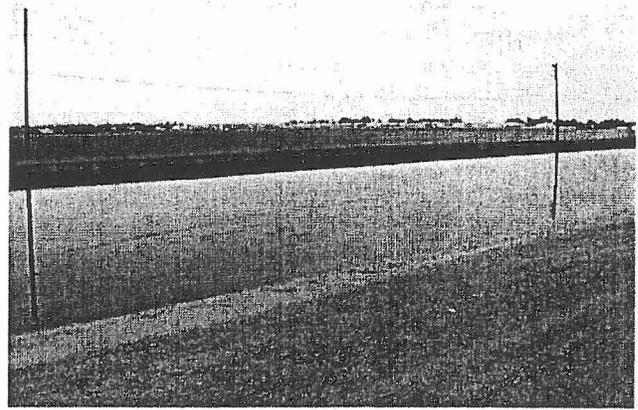


Photo K 3

Classification - The visual landscape characteristics are not unified and are discordant. The concrete channel is massive and severely distracts from any other positive experience in this unit. The opportunities for a comfortable, well landscaped trail experience are quite limited. The most positive aspect of this section of the corridor is the interface with the river environment and its trail system. This is a Visual Condition Class 3 - Discordant Landscape.

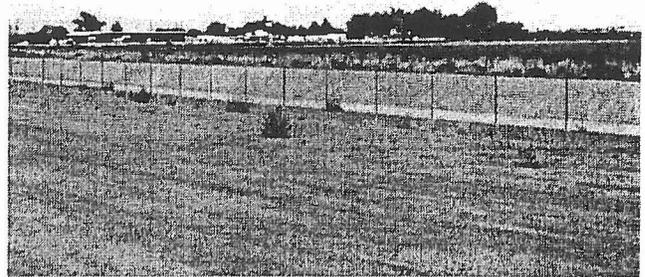


Photo K 4

SCENIC QUALITY ASSESSMENT:

This landscape tends to be inharmonious, uncomfortable and of little visual interest. This area has a scenic quality rating of Class C - Low.

VISUAL SENSITIVITY ASSESSMENT:

The dominate view in this area is to the west looking towards the White Tank Mountains and to the east looking at the Bethany Home Road overpass at the Loop 101 freeway. The limited trail corridor width at this location allows for a linear path that will focus upon these views over its entire length.

Corridor at New River) as well as smaller entry points that relate to existing residential uses and future commercial land development. Maintain a visual connection into corridor from off-site land uses.

TREATMENT OPPORTUNITIES:

Mitigate the stark and uninviting nature of this segment with heavy landscape plantings utilizing all available space. Transition this planting scheme into the river trail experience. Enhance appropriate mountain views along the Grand Canal route by framing and directing the viewer's eye with tree masses. Provide a strong and substantial entry node at the river trail connection (the West Valley Recreation



APPENDIX

I. PHOTOGRAPH LOCATION MAP34

II. PHOTOGRAPHS BY LOCATION37

 Location 138

 Location 239

 Location 340

 Location 441

 Location 542

 Location 643

 Location 744

 Location 845

 Location 946

 Location 1047

 Location 1148

 Location 1249

 Location 1350

 Location 1451

 Location 1552



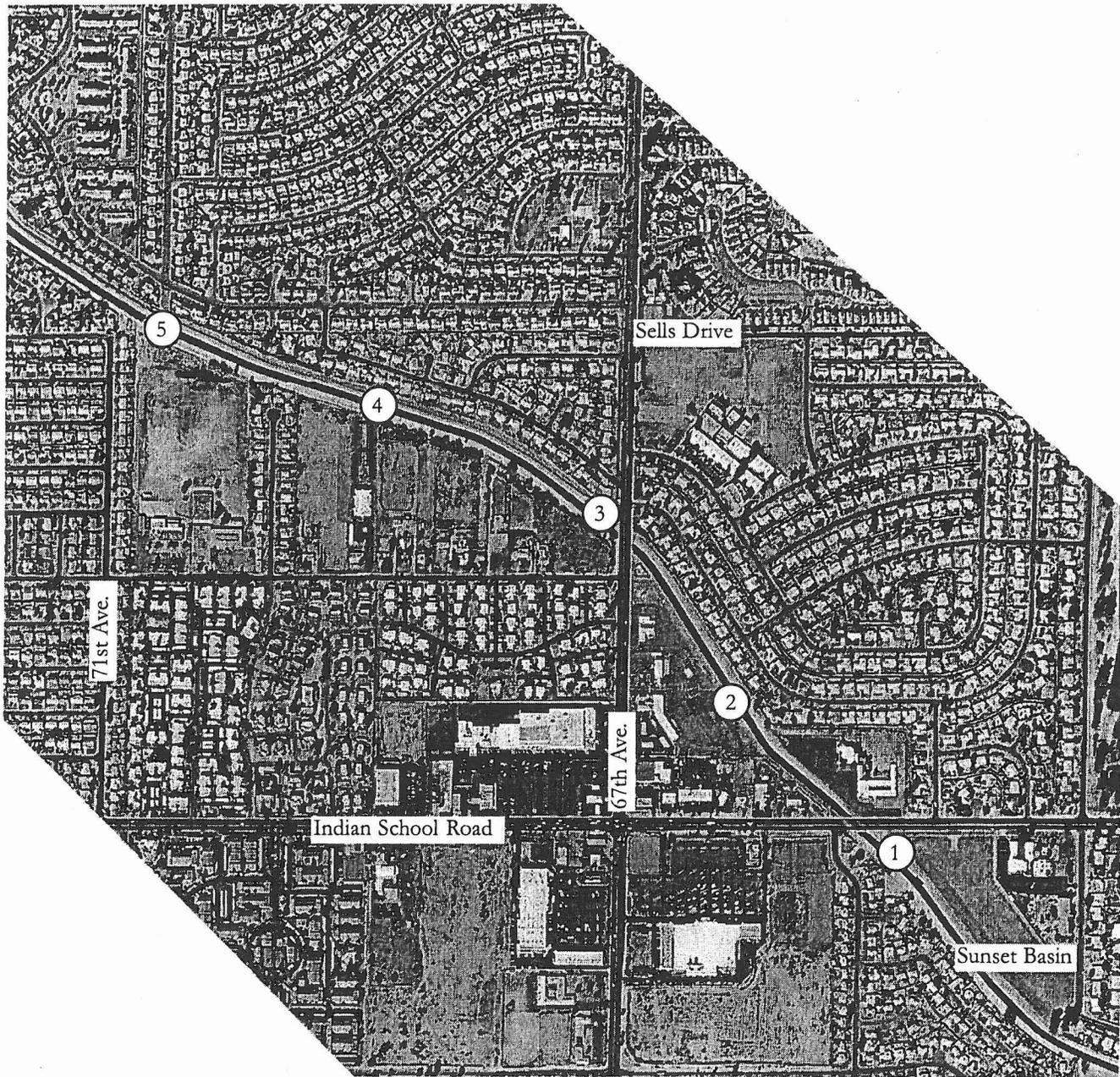


Photo locations between Sunset Basin and 71st Avenue.

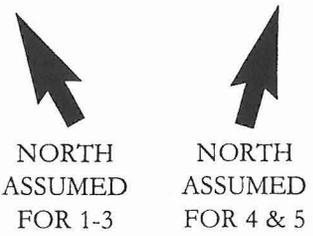




Photo locations between 71st Avenue and Missouri Avenue.



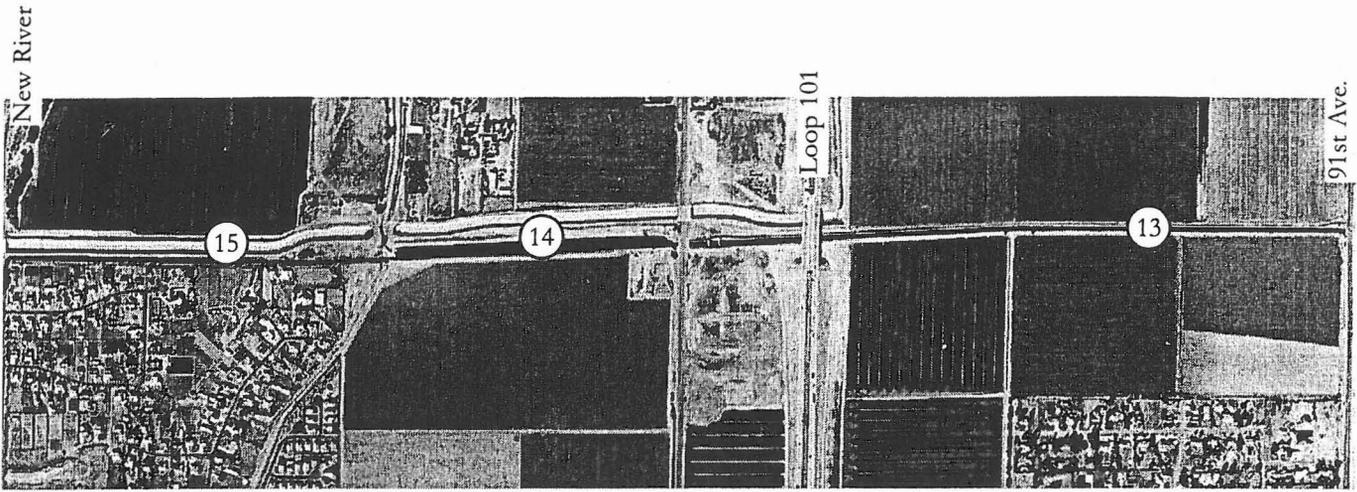


Photo locations between 91st Avenue and New River.

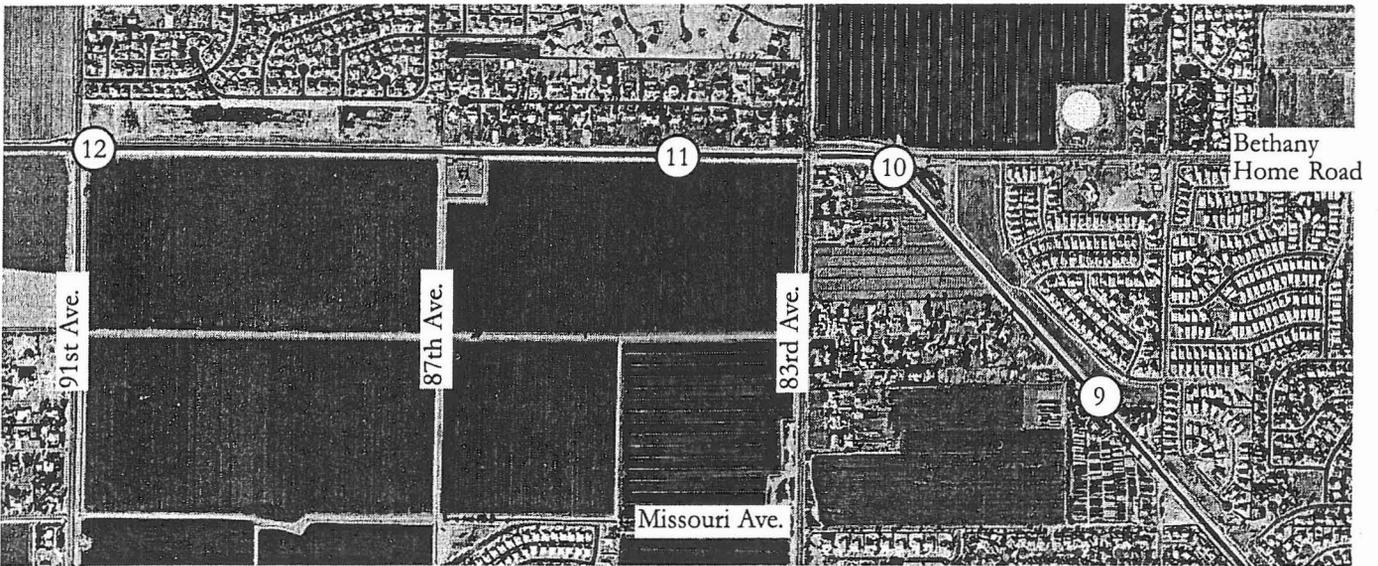


Photo locations between Missouri Avenue and 91st Avenue.



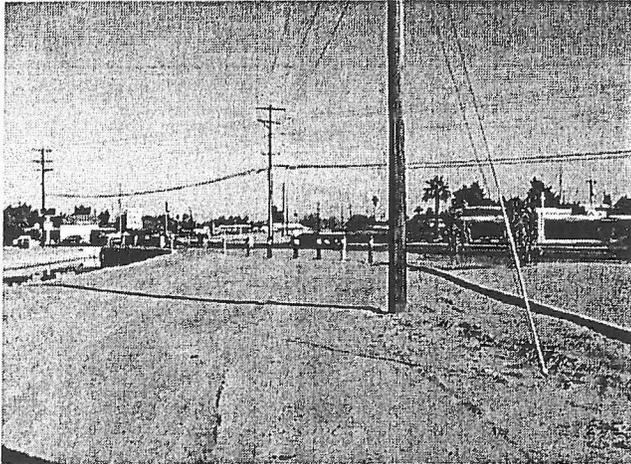


Photo 1-North



Photo 1-East

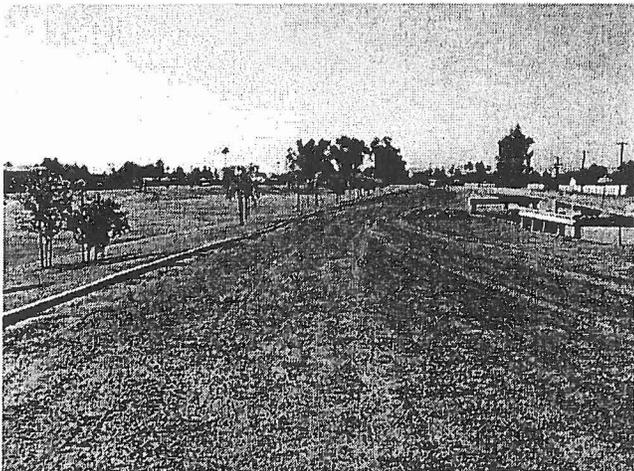


Photo 1-South

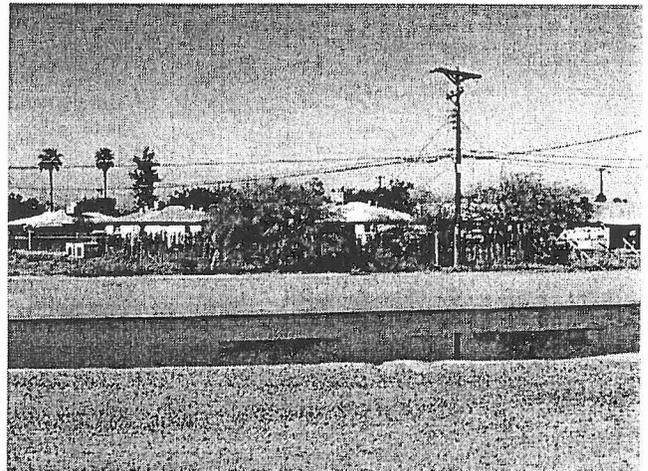


Photo 1-West

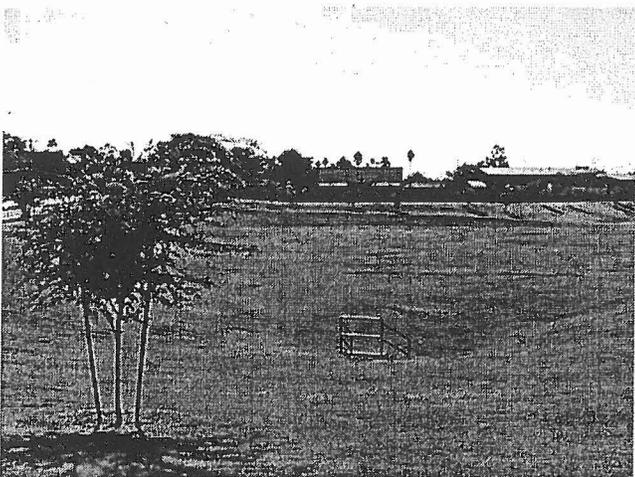


Photo 1-Southeast

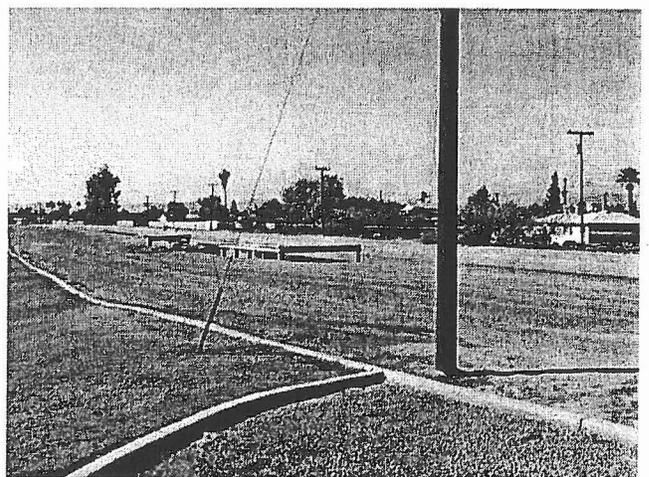


Photo 1-Southwest





Photo 2-North

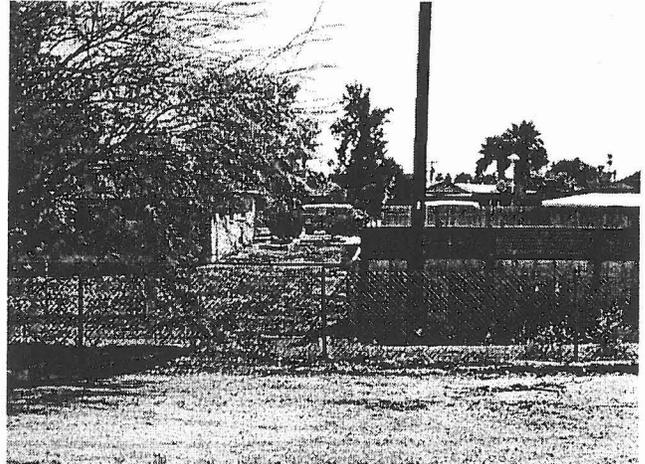


Photo 2-East

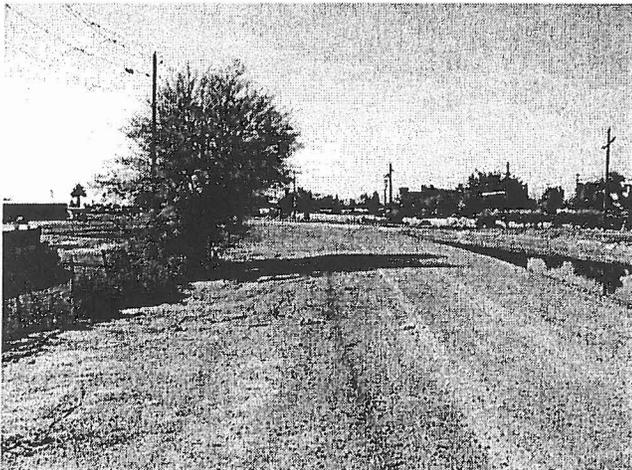


Photo 2-South

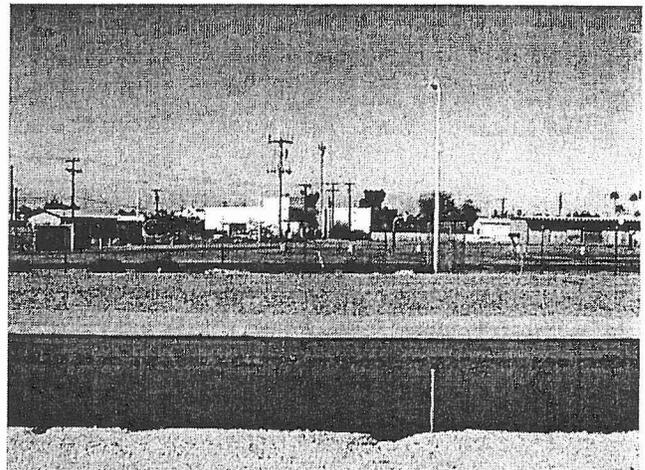


Photo 2-West



Photo 2-Northeast



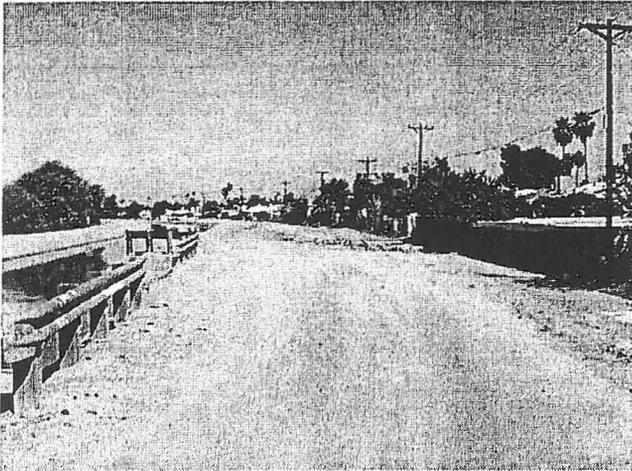


Photo 3-North

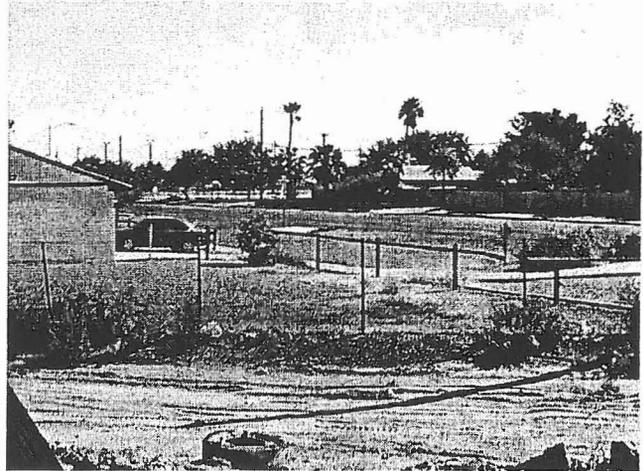


Photo 3-East

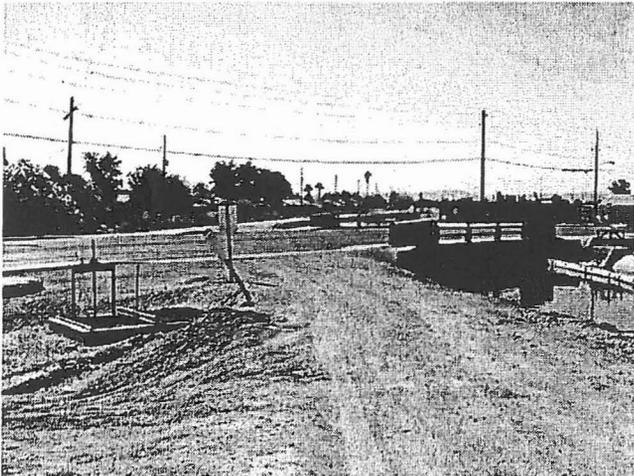


Photo 3-South

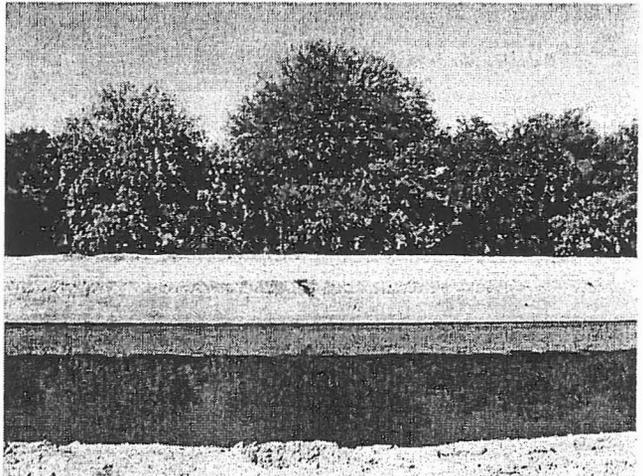


Photo 3-West

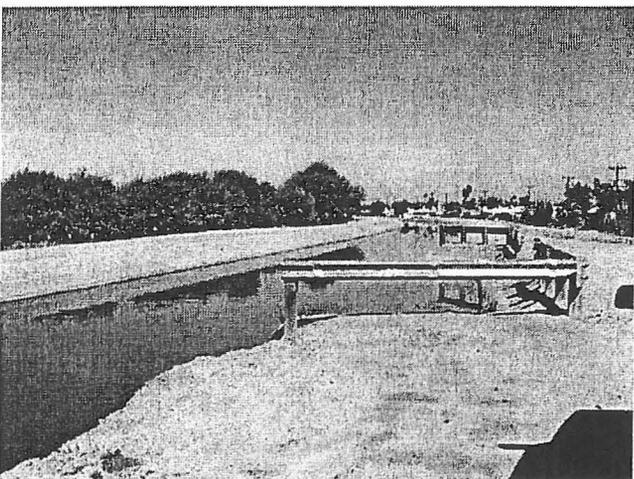


Photo 3-Northwest



Photo 3-Southeast



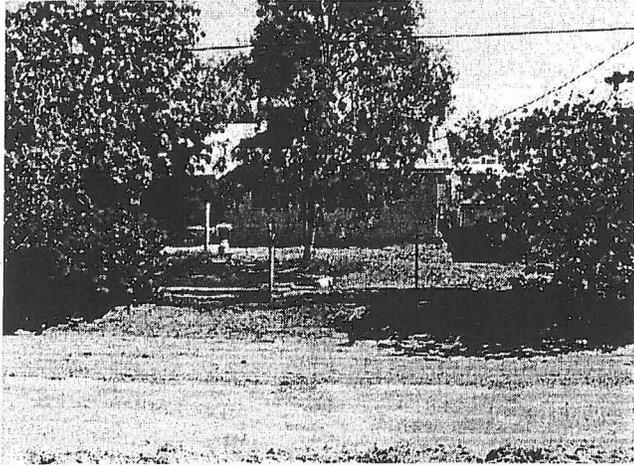


Photo 4-North



Photo 4-East



Photo 4-South



Photo 4-West

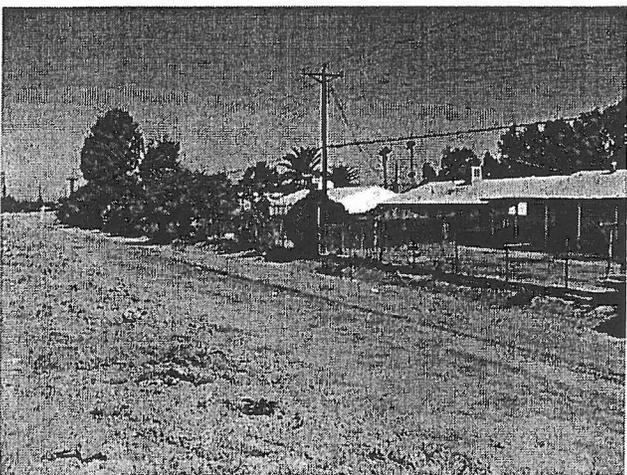


Photo 4-Southeast





Photo 5-North



Photo 5-East

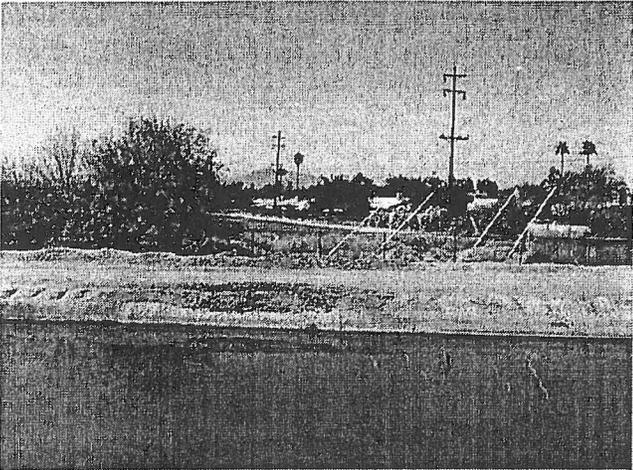


Photo 5-South



Photo 5-West

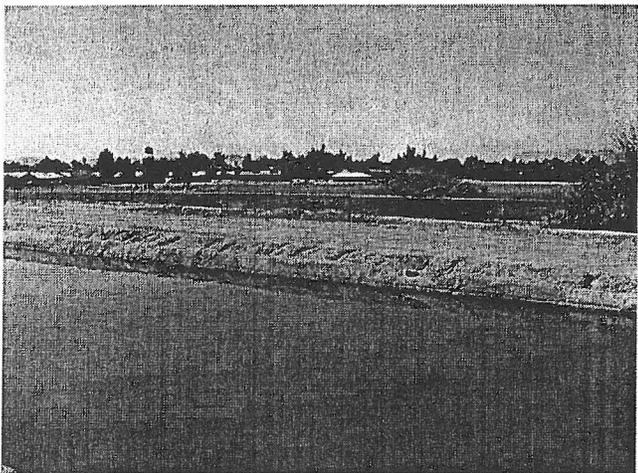


Photo 5-Southeast

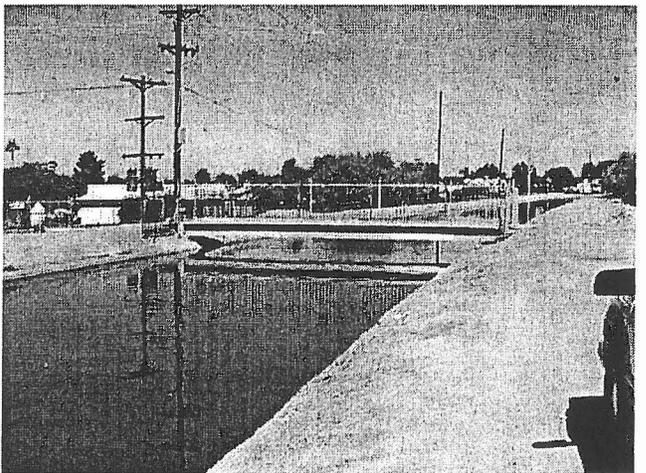


Photo 5-Southwest



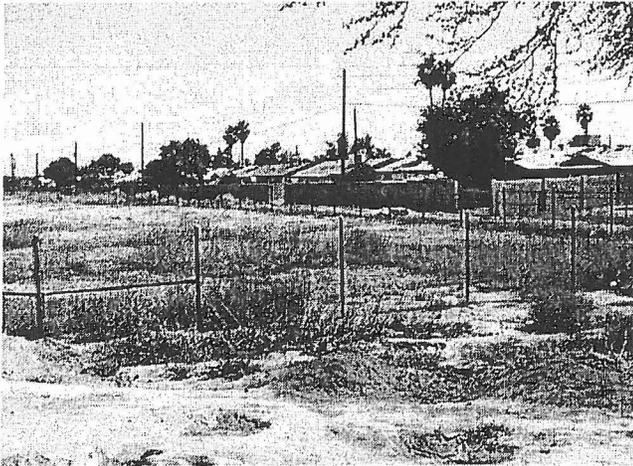


Photo 6-North

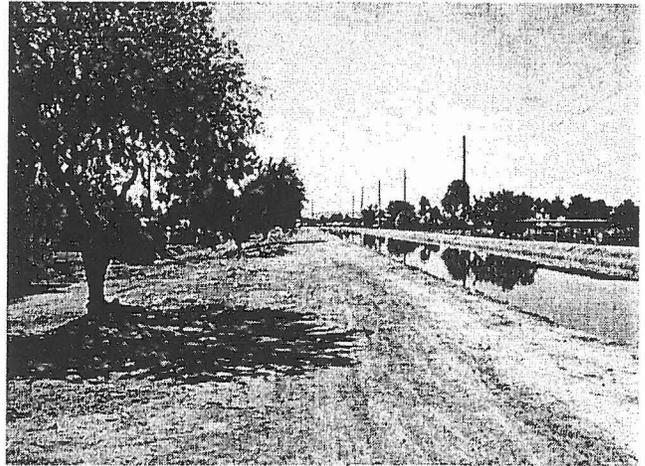


Photo 6-East

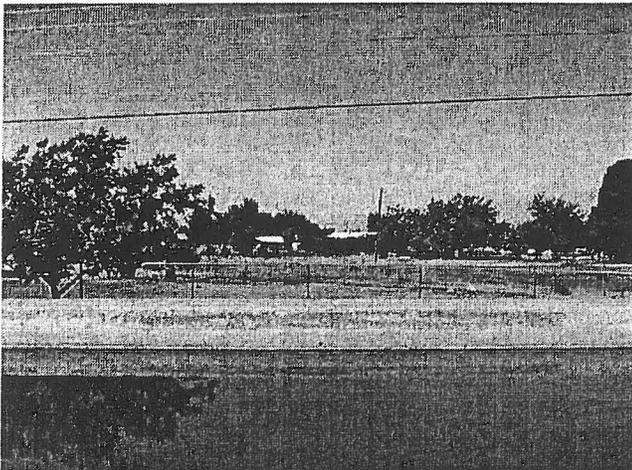


Photo 6-South



Photo 6-West

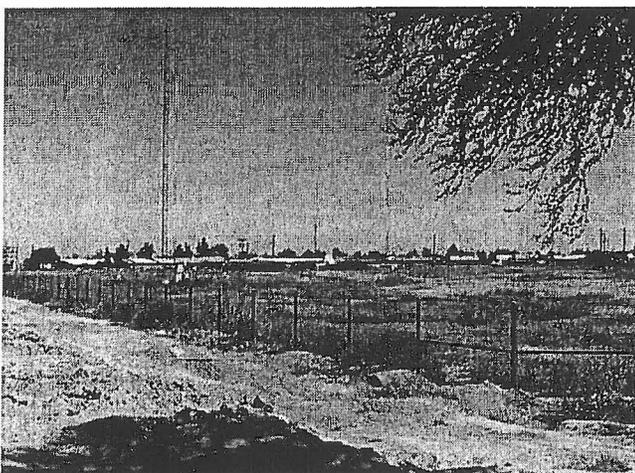


Photo 6-Northwest

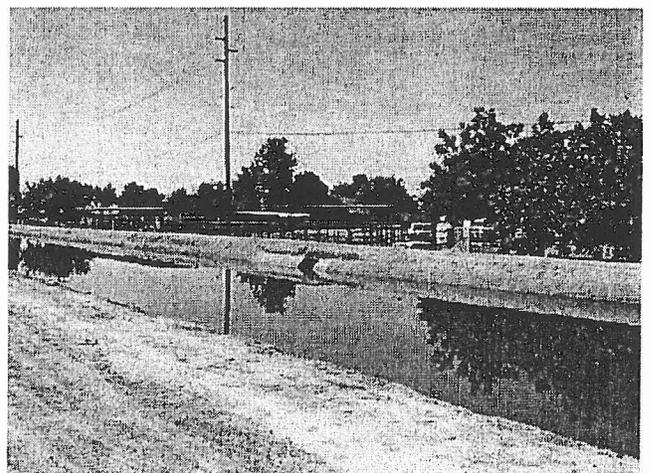


Photo 6-Southwest





Photo 7-North

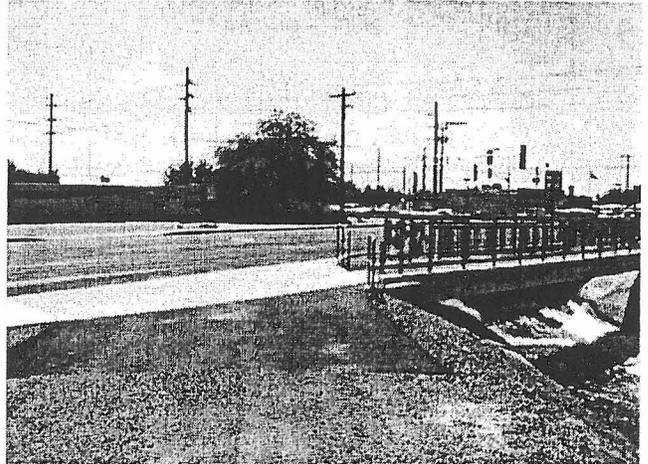


Photo 7-East



Photo 7-South

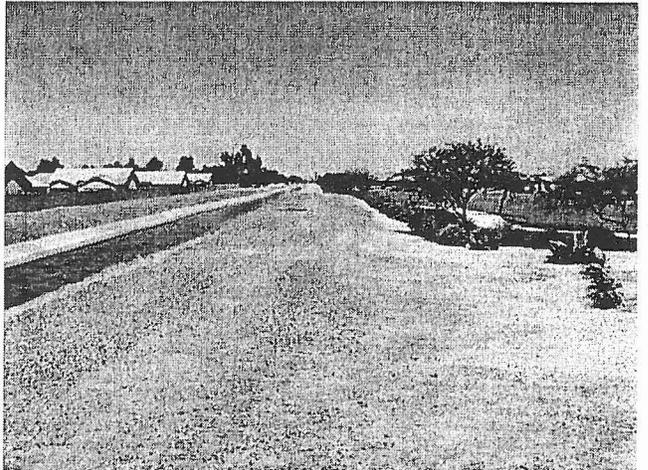


Photo 7-West



Photo 7-Northwest

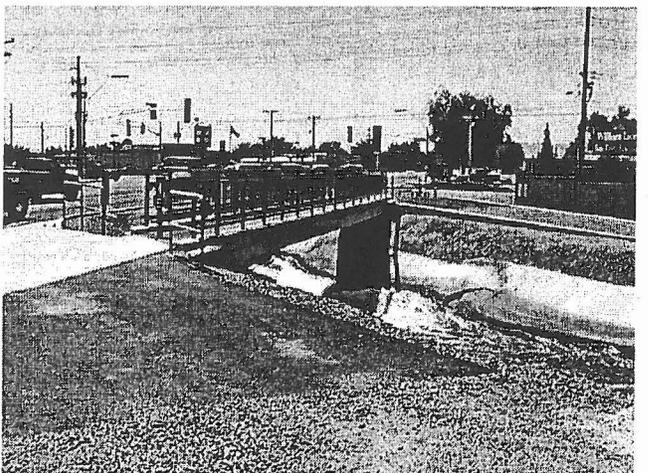


Photo 7-Southeast



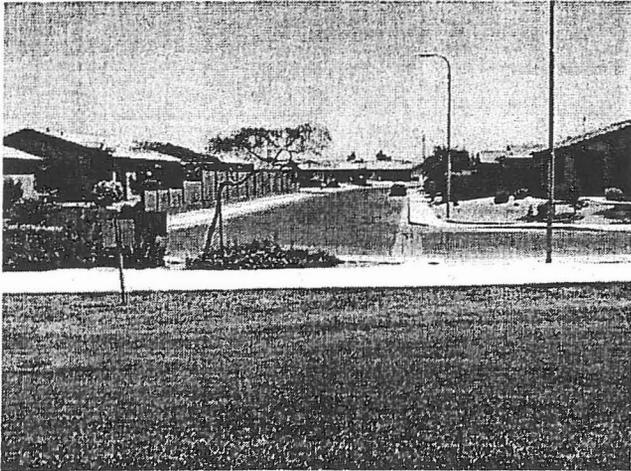


Photo 8-North



Photo 8-East

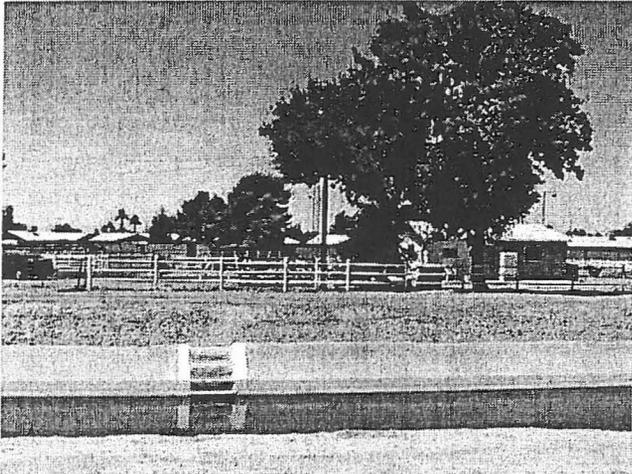


Photo 8-South

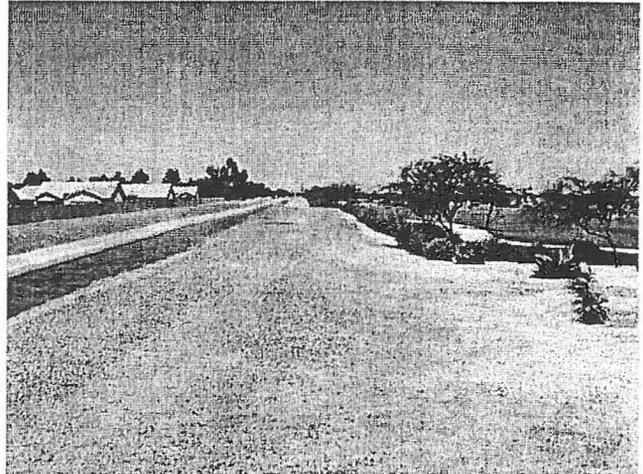


Photo 8-West



Photo 8-Northwest

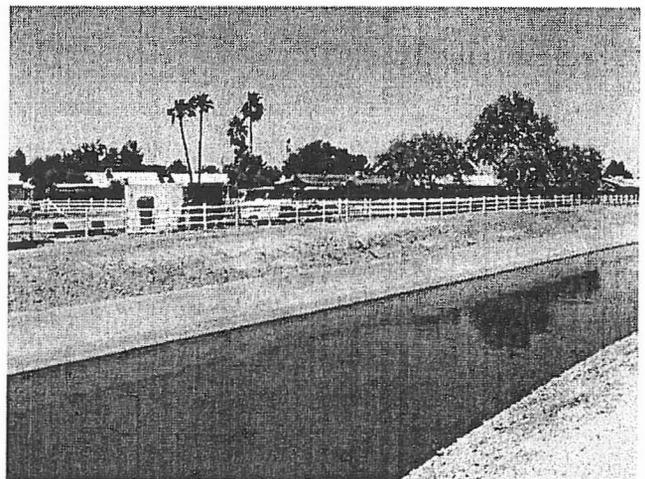


Photo 8-Southwest



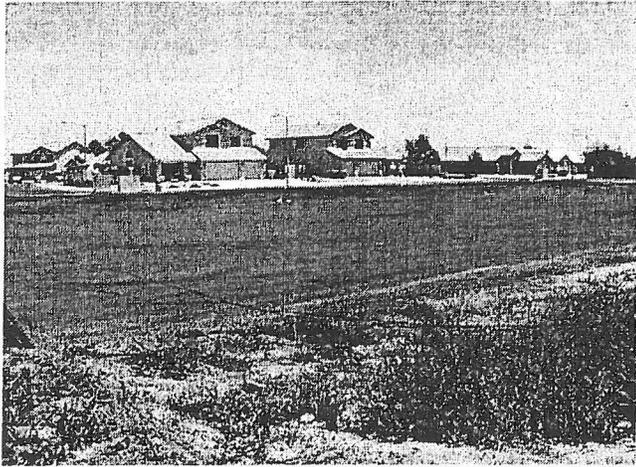


Photo 9-North

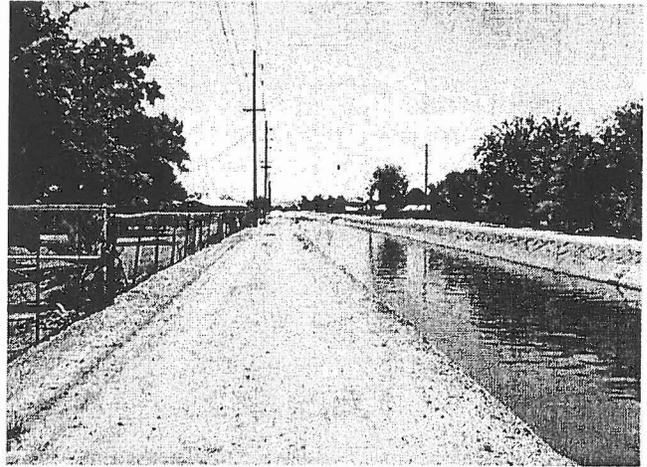


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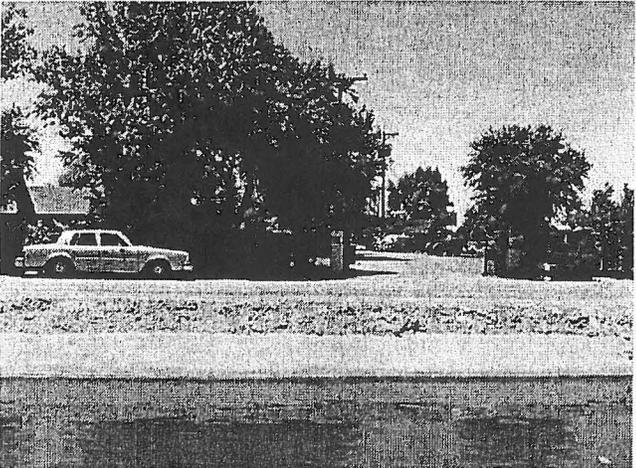


Photo 9-South



Photo 9-West

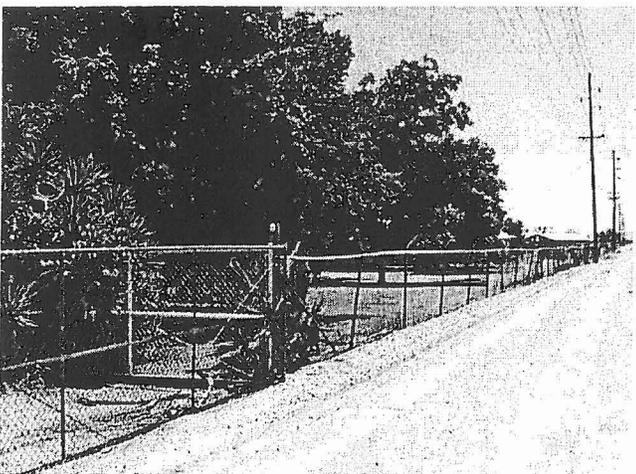


Photo 9-Northeast



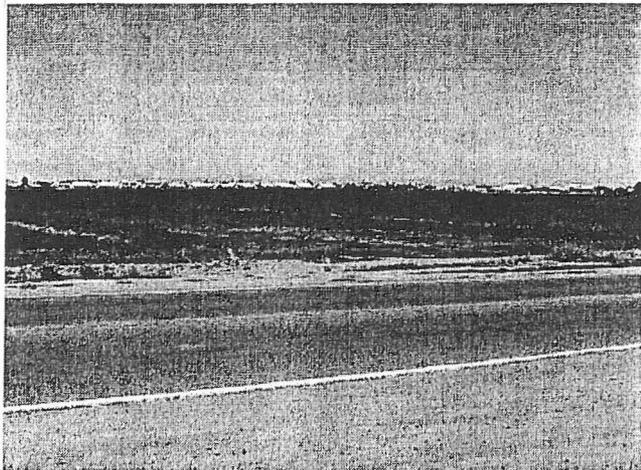


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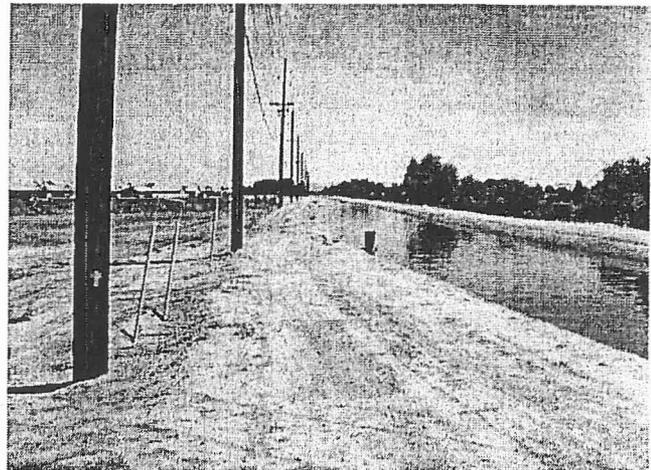


Photo 10-East



Photo 10-Southwest

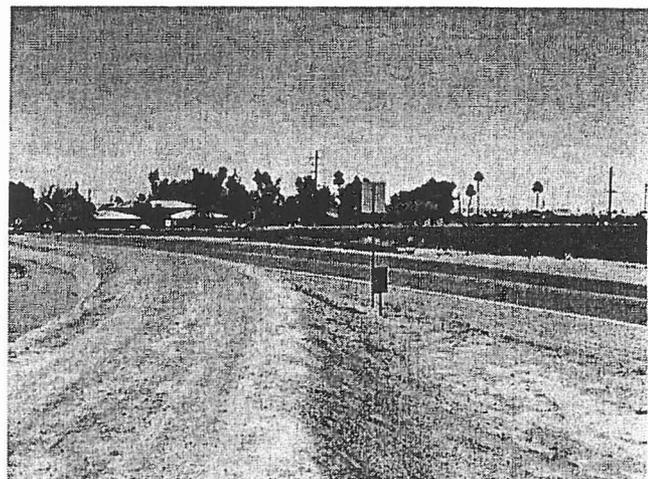


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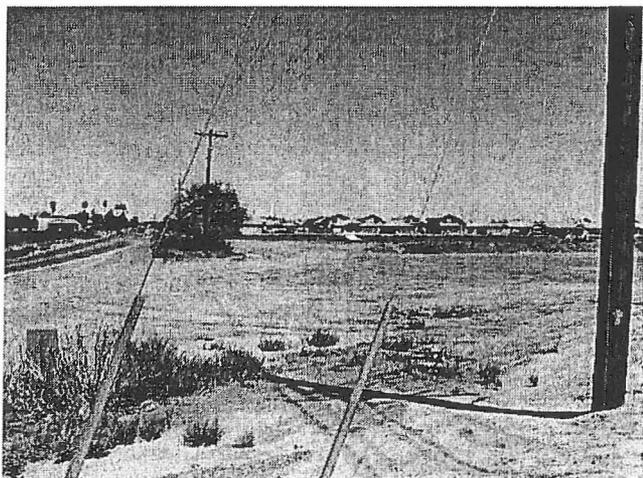


Photo 10-Northeast



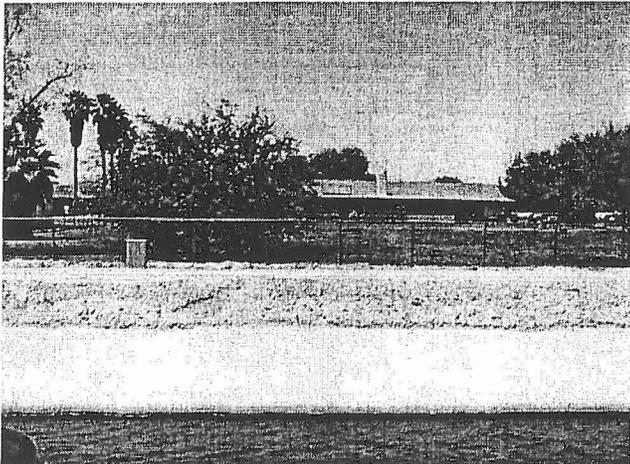


Photo 11-North



Photo 11-East

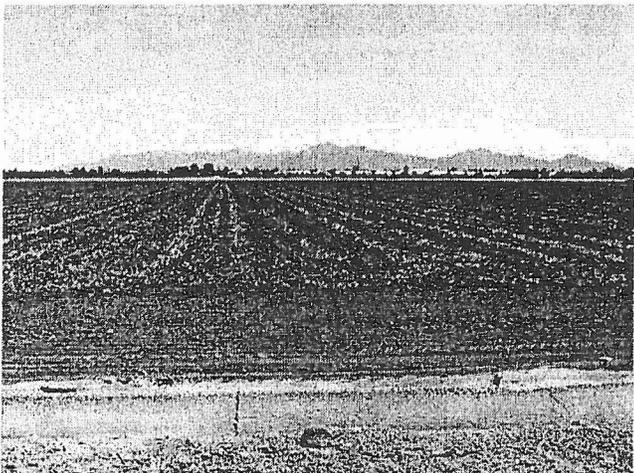


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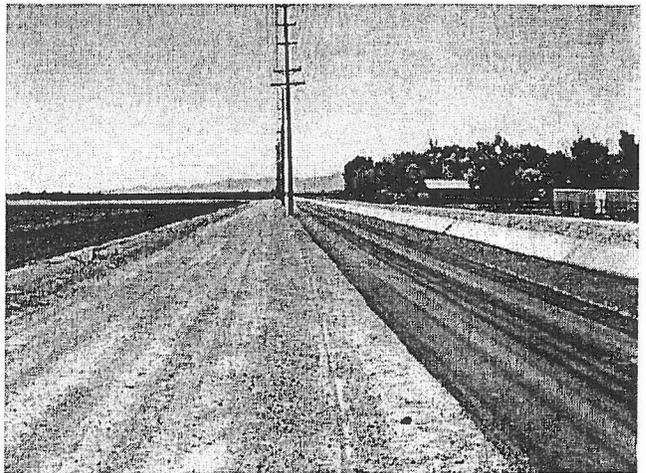


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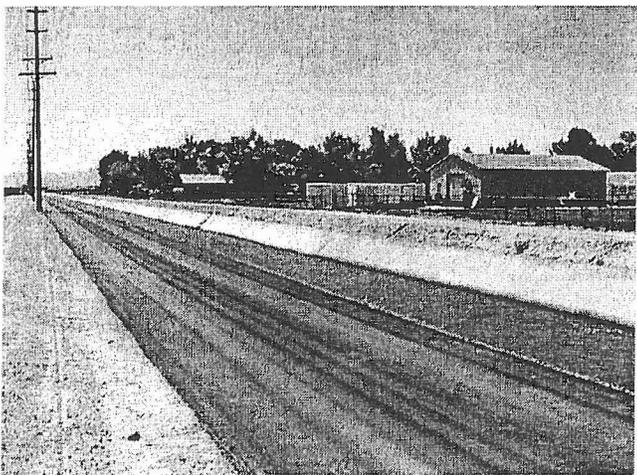


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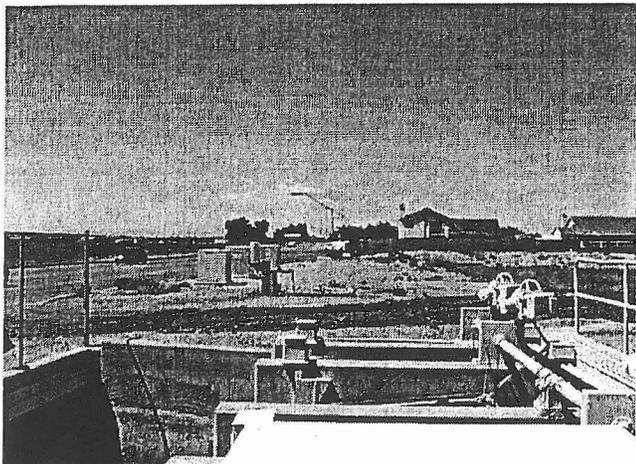


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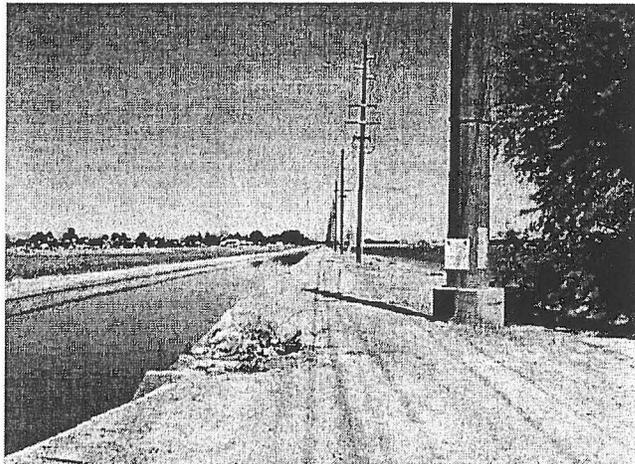


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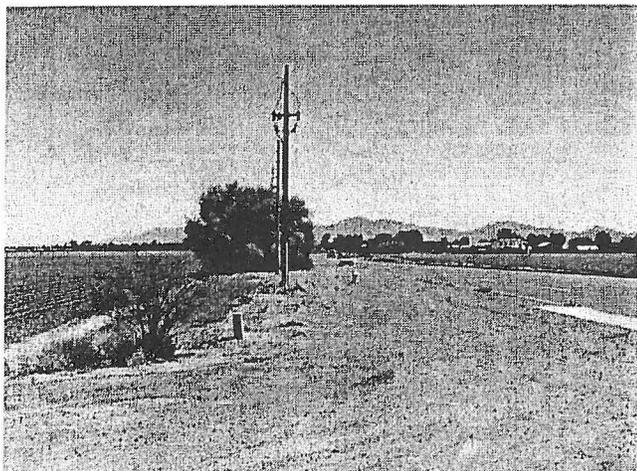


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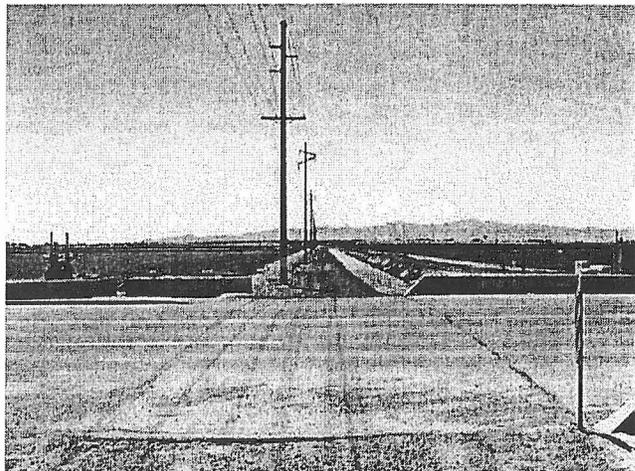


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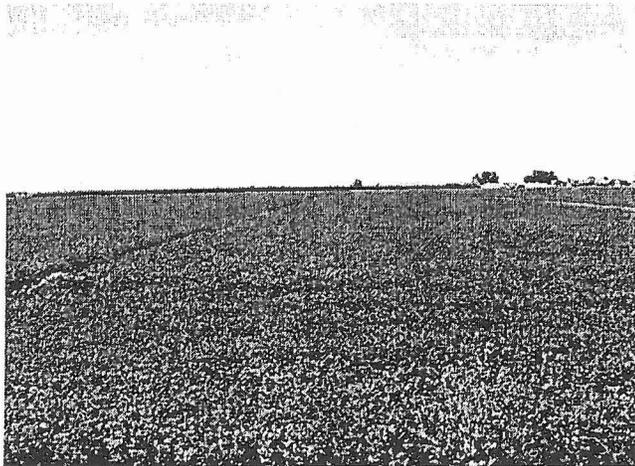


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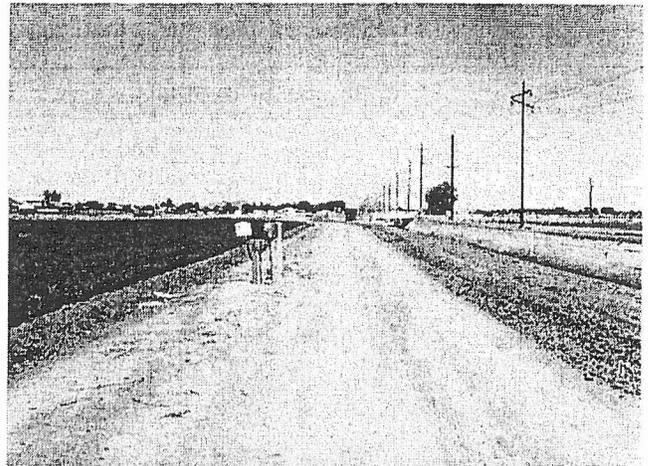


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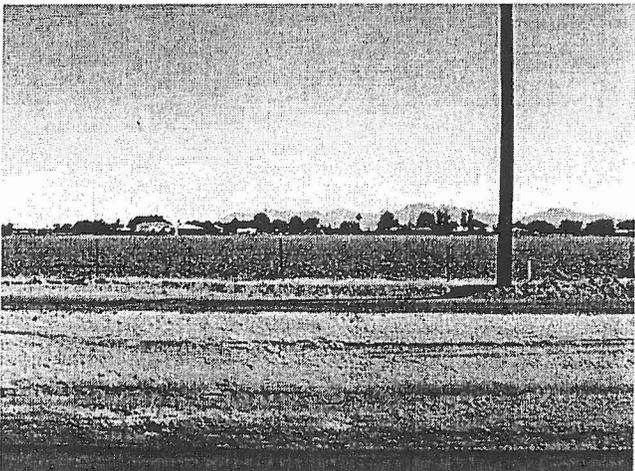


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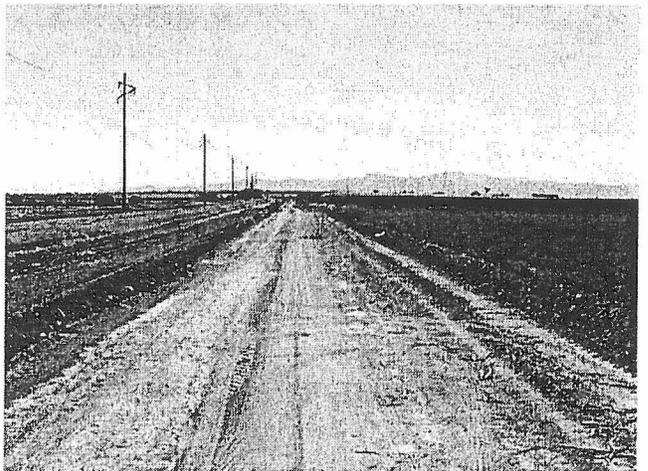


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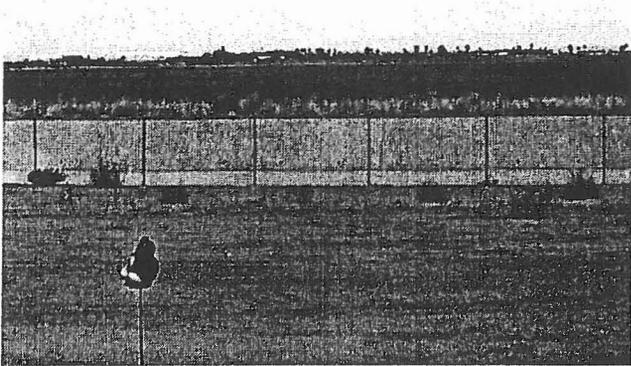


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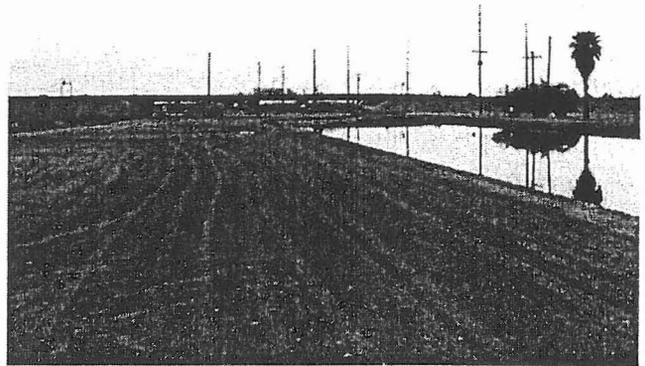


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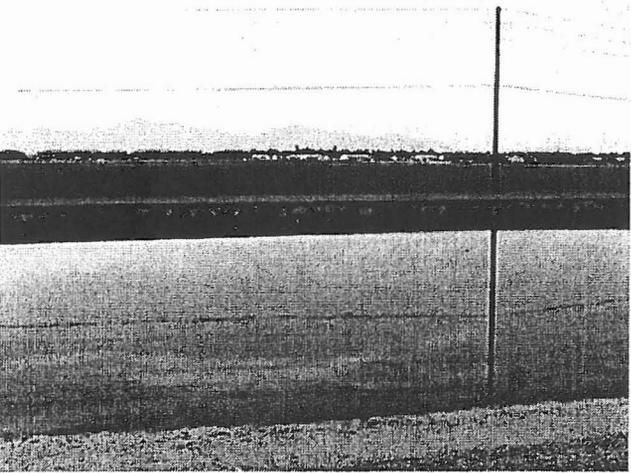


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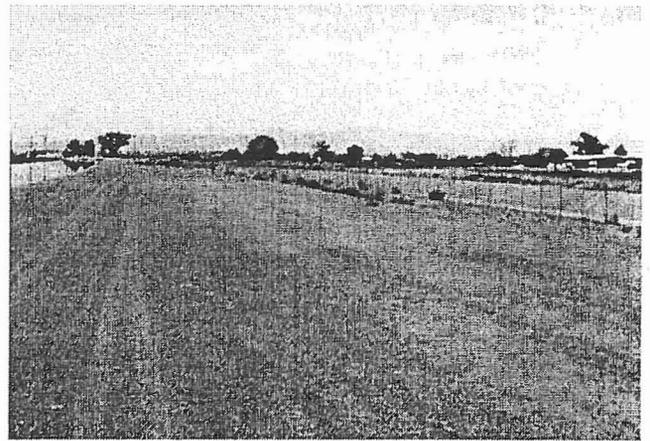


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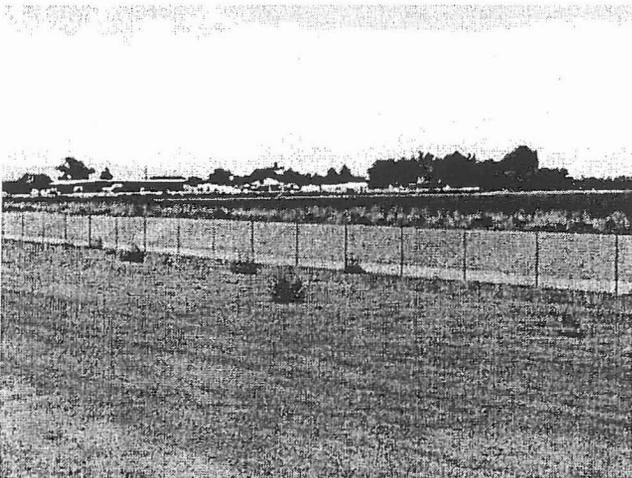


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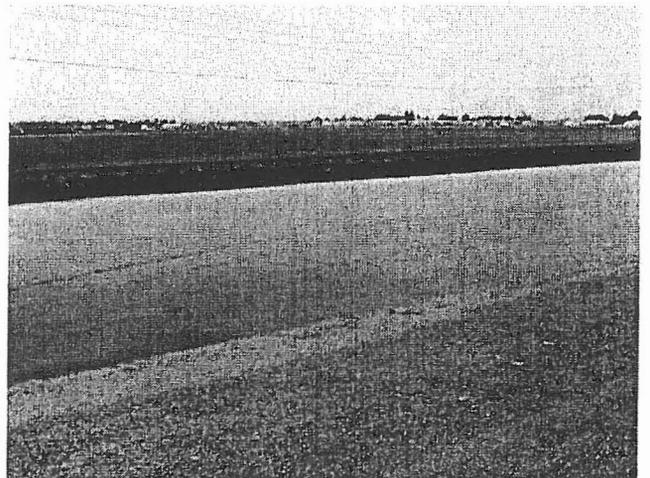


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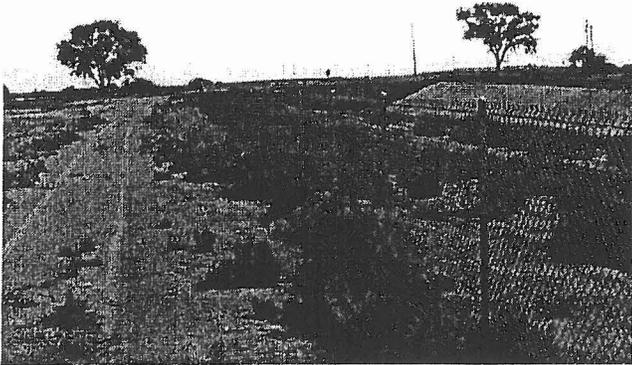


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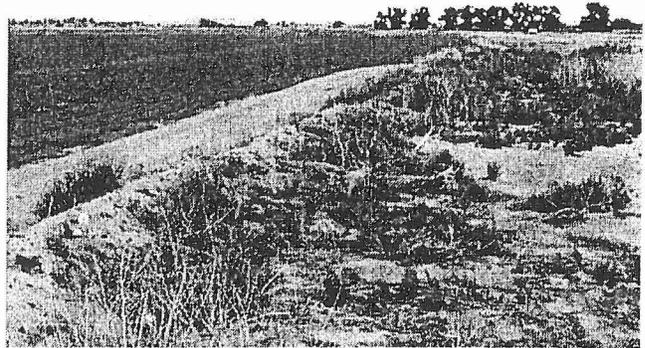


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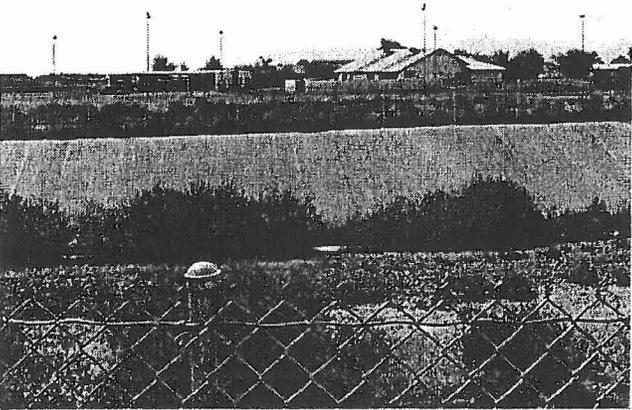


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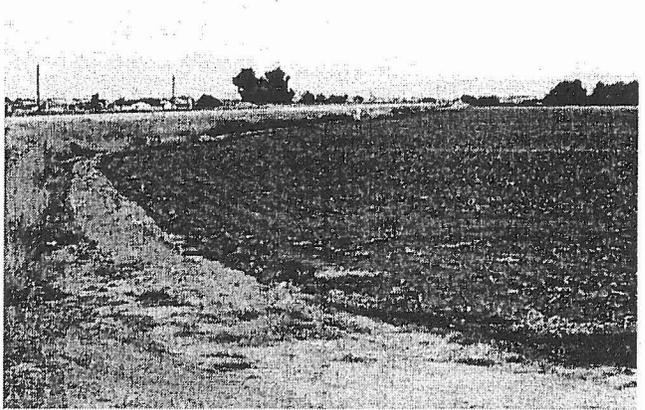
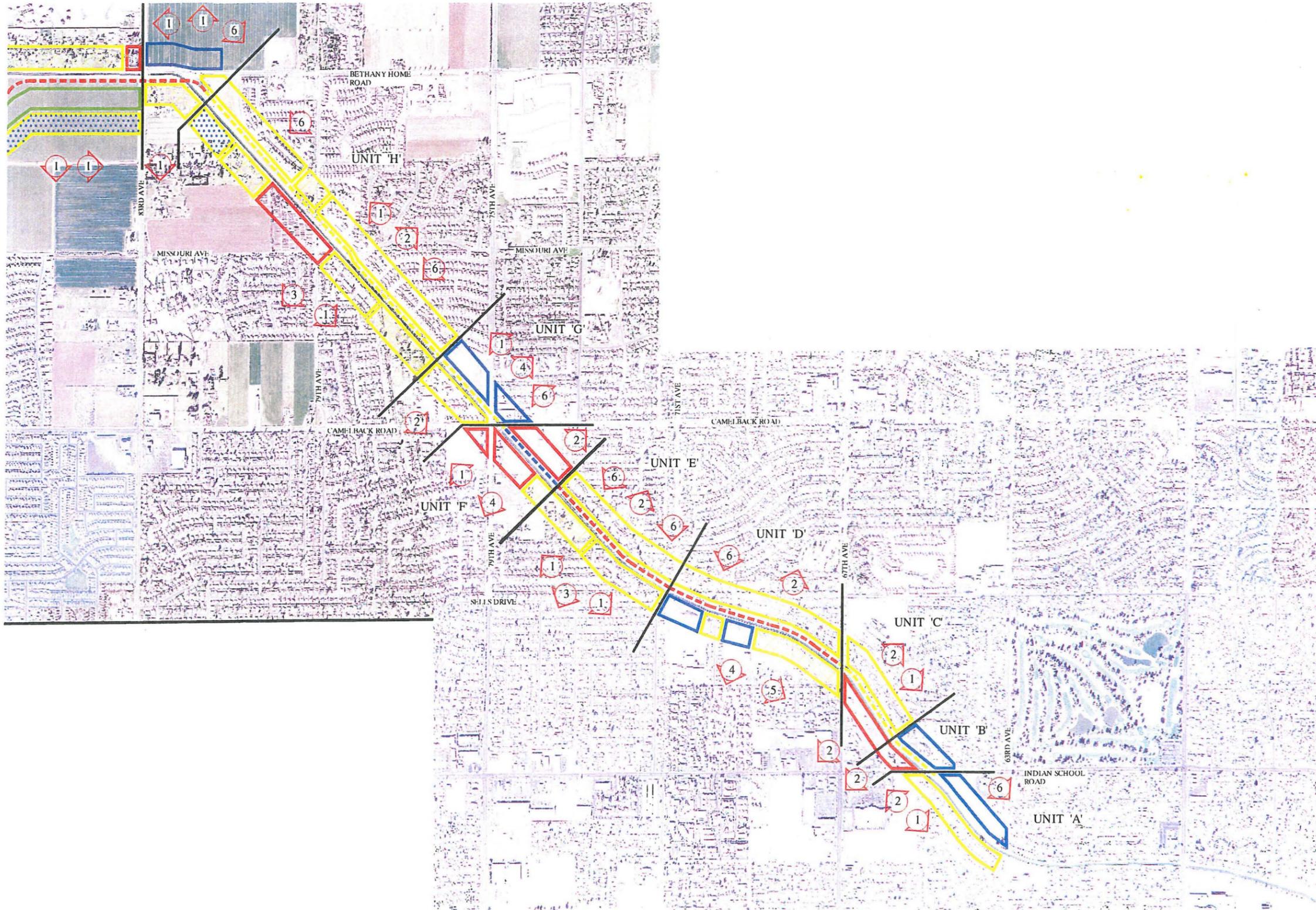


Photo 15-West





LEGEND

CHANNEL TYPE

-  OPEN - GRASS LINED
-  OPEN- CONCRETE CHANNEL
-  CLOSED BOX

ADJACENT LAND USE CHARACTER

-  LARGE LOT RESIDENTIAL
-  SMALL LOT RESIDENTIAL
-  COMMERCIAL
-  PUBLIC
-  AGRICULTURAL

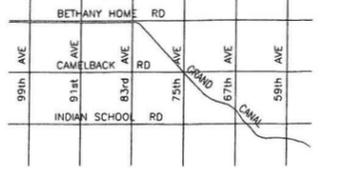
FUTURE LAND USE CHARACTER

-  FUTURE RESIDENTIAL
-  FUTURE COMMERCIAL

FOR VIEW DESCRIPTIONS, SEE VISUAL SENSITIVITY ASSESSMENT IDENTIFICATION IN INDIVIDUAL UNIT DESCRIPTIONS-

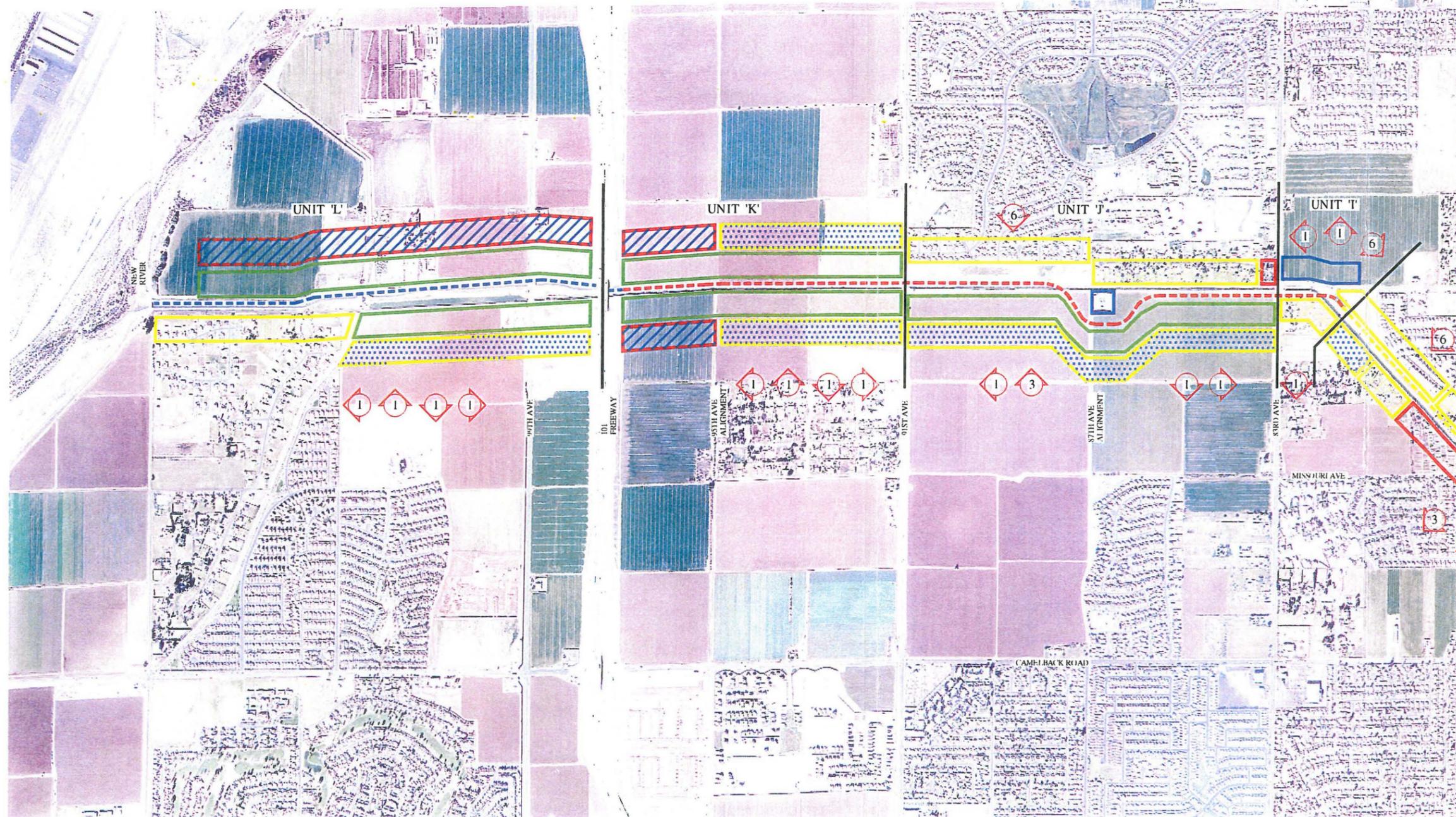
-  1. MOUNTAIN VIEWS
- 2. DISCORDANT VIEWS
- 3. HARMONIOUS VIEWS
- 4. OPEN VIEWS
- 5. FOCAL POINT
- 6. VIEWS INTO CORRIDOR FROM ROADWAY/ SIDEWALK

vicinity map



Visual Character Units

SCALE: 1" = 800'
 August 2001
 Sheet 1 of 2



LEGEND

CHANNEL TYPE

-  OPEN - GRASS LINED
-  OPEN- CONCRETE CHANNEL
-  CLOSED BOX

ADJACENT LAND USE CHARACTER

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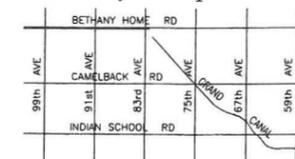
FUTURE LAND USE CHARACTER

-  FUTURE RESIDENTIAL
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FOR VIEW DESCRIPTIONS, SEE VISUAL SENSITIVITY ASSESSMENT IDENTIFICATION IN INDIVIDUAL UNIT DESCRIPTIONS-

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- 6. VIEWS INTO CORRIDOR FROM ROADWAY/ SIDEWALK

vicinity map



Visual Character Units



DMJM HARRIS

2777 East Camelback Road, Suite 200
 Phoenix, Arizona 85016-4302
 Tel: (602) 337-2777
 Fax: (602) 337-2620

FLOOD CONTROL DISTRICT	
RECEIVED	
DEC 23 '02	
CHIEF ENGR	FINANCE
PER	PLANNING
ADMN	INSPECTION
IRREG	FILE
ICOM	ROUTING

LETTER OF TRANSMITTAL

TO: Scott Vogel
 Senior Project Manager
 Maricopa County Flood Control District
 2801 West Durango
 Phoenix, Arizona 85009

DATE: December 23, 2002

FROM: Jeff Minch

PROJECT No.: FCD 98-46, D+H 6888

SUBJECT: Landscape/Aesthetics

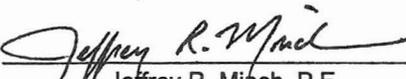
PROJECT NAME: Bethany Home Outfall Channel, Phase II

- | | | | |
|----------------|--|--|--|
| We Transmit: | <input checked="" type="checkbox"/> herewith | <input type="checkbox"/> under separate cover | <input type="checkbox"/> as requested |
| Via: | <input type="checkbox"/> mail | <input checked="" type="checkbox"/> messenger | <input type="checkbox"/> federal express |
| For your: | <input checked="" type="checkbox"/> use | <input type="checkbox"/> review and comment | <input type="checkbox"/> information |
| | <input checked="" type="checkbox"/> distribution | <input type="checkbox"/> approval/acceptance | <input type="checkbox"/> signature |
| The Following: | <input type="checkbox"/> drawings | <input type="checkbox"/> specifications | <input type="checkbox"/> calculations |
| | <input type="checkbox"/> copy of letter | <input type="checkbox"/> shop drawing/product data | <input type="checkbox"/> diskettes |
| | <input type="checkbox"/> originals | | <input type="checkbox"/> change order |

Copies	Reference no.	Description	Action code
1		Bethany Home/Grand Canal Flood Control Project	D
		Bethany Home Outfall Channel, Phase II	
		Landscape Aesthetics Design Guidelines & Corridor Master Plan	

Action codes: A - sign and return B - Forward as noted C - Resubmit D - Refer to remarks below

Remarks:
 Scott,
 Attached please find our Final Landscape Aesthetics Design Guidelines & Corridor Master Plan for the Bethany Home Grand Canal Flood Control Project (Bethany Home Outfall Channel, Phase II). If you have any questions on this submittal, please do not hesitate to call me at (602) 337-2540. Thank you for your assistance on the development of these guidelines.

Signed: 
 Jeffrey R. Minch, P.E.,
 Project Manager

cc: Dan Sherwood, R.J. Cardin (City of Glendale); Hasan Mushtaq (City of Phoenix), JRM, WOG
 File: 6888.500.7

Note: If enclosures are not as noted, please inform the sender immediately.

N:\6888\docs\trans\csv 12-23-02.doc