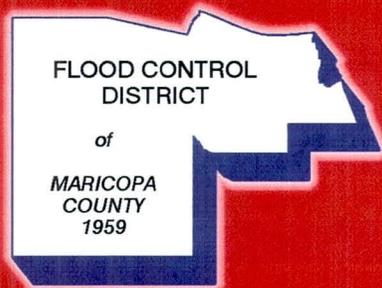


Higley Area Drainage Master Plan

Administration Report

FCD #98-13
November, 2000

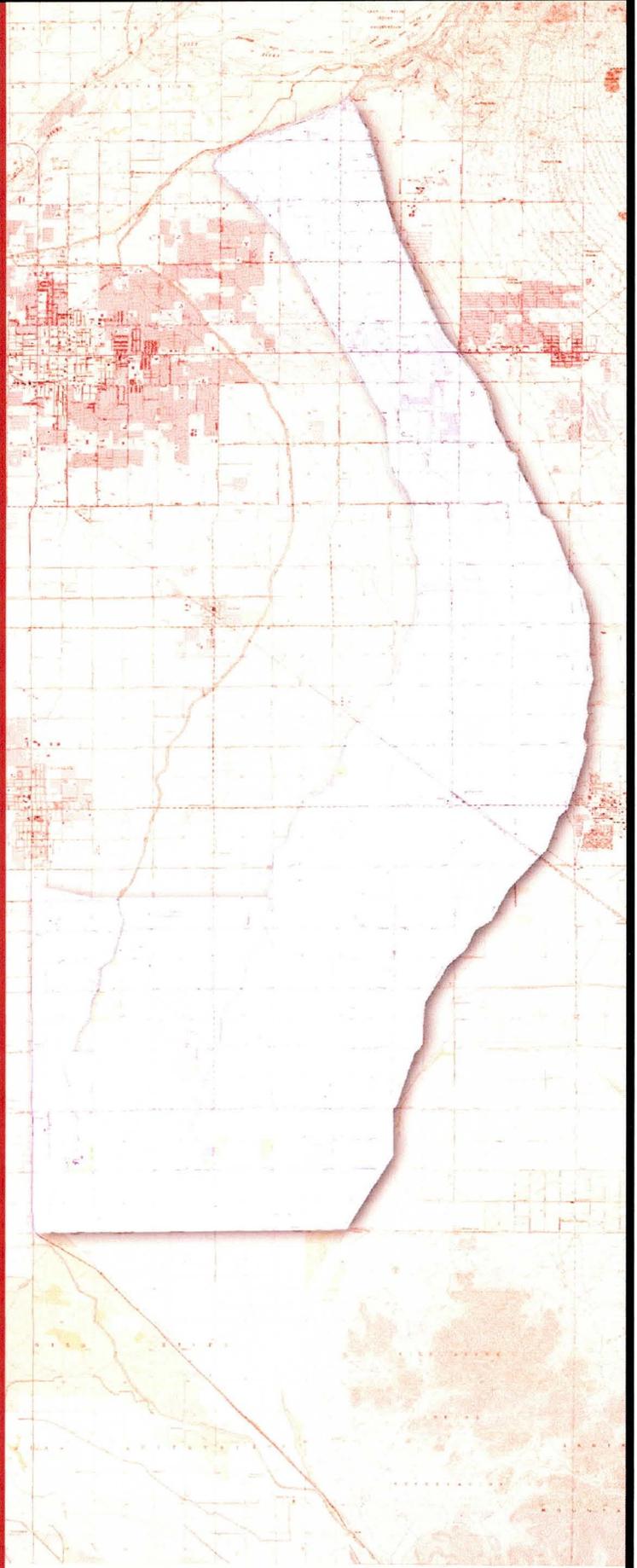
prepared for:
**FLOOD CONTROL DISTRICT OF
MARICOPA COUNTY**



prepared by:



DIBBLE & ASSOCIATES
CONSULTING ENGINEERS





DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

Since 1962

2633 East Indian School Road, Suite 40
Phoenix, Arizona 85016-676
Tel. (602) 957-115
Fax (602) 957-283

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

LETTER OF TRANSMITTAL

TO: **DMJM**
2777 E. Camelback
Suite 200
Phoenix, AZ 85016-4302

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Jeff Minch

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

Copies	Date	I.D. Number	Description
1	Oct/2000		Recommended Design Report

These are transmitted as checked below:

- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

REMARKS:

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copy: Daily
9829 Letter

Sincerely,
DIBBLE & ASSOCIATES

Dan C. Frank, E.I.T.



FLOOD CONTROL DISTRICT

of

Maricopa County

2801 West Durango Street • Phoenix, Arizona 85009-6399
Telephone (602) 506-1501
Fax (602) 506-4601
TT (602) 506-5897

RECEIVED
DEC 03 1998

DIBBLE & ASSOC
BOARD OF DIRECTORS
Jan Brewer
Fulton Brock
Andrew Kunasek
Don Stapley
Mary Rose Garrido Wilcox

November 24, 1998 _____

Mr. Fred Ringlero, Jr.
Director, Land Use Planning & Zoning
Department of Land and Water Resources
Gila River Indian Community
192 S. Skill Center Road, #200
Sacaton, Arizona 85247

Property of
Flood Control District of MC Library
Please Return to
2801 W. Durango
Phoenix, AZ 85009

RE: Higley Area Drainage Master Plan

Dear Mr. Ringlero:

The purpose of this letter is to first extend my appreciation for meeting with me and Brian Fry of Dibble and Associates, on November 20, 1998 at your offices to discuss the upcoming Higley Area Drainage Master Plan. We were encouraged with your comments and that of Glenn Stark, regarding the nature of advance planning that we are attempting to complete.

Based on your comments, I certainly recognize the need to have the Gila River Indian Community as well as the other key participants involved in the project early to facilitate discussion and to communicate direction.

As you explained, in order for the Indian Community to participate in the study and before rights-of-entry are issued, approval must be provided by the Natural Resources Committee (NRC) and the Tribal Council. We discussed scheduling a presentation before the NRC on January 12, 1999 with subsequent presentation to the Tribal Council on January 20, 1999. The Flood Control District and Dibble & Associates will prepare the required materials and submit them to you by January 5, 1999.

You further indicated that you might have available mapping of the area north of the Eastern Maricopa Floodway (EMF) on the Gila River Indian Community. The scope of work for the project calls for mapping of this area to allow for analysis of alternatives for potential outfalls. Any mapping that you have available would reduce this effort and would be most appreciated. Please let me know how we should obtain this information from you.

Once your participation in the study effort is endorsed by the NRC and Tribal Council, I hope you will be able to participate actively on the review team throughout preparation of the study.

Again, thank you for the opportunity to meet and discuss this project. If you have any questions, please do not hesitate to contact me at 506-4718.

Sincerely,

Timothy S. Phillips, P.E.
Senior Project Manager

cc: Brian Fry

MEETING MINUTES

DATE: December 3, 1998

LOCATION: Dibble & Associates

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Diane Simpson-Colebank, Logan Simpson Design
Brian Fry, Dibble & Associates

PURPOSE: Project Kick-Off Meeting

DISCUSSION:

1. The Kick-off Meeting Agenda is attached.
2. The Scope of Work, Deliverables, and Project Schedule were reviewed together in the sequence that each task and deliverable will be completed. The project schedule and list of deliverables was distributed and are attached.
3. Scope of Work: The Scope of Work for Logan Simpson Design (LSD) will be clarified according to the letter attachment to their fee proposal.

ACTION: **Diane** will prepare a "Change 1 to Scope of Work" document showing changes to the scope. A place for signatures will be included at the bottom of the page with "Recommended By:", "Approved:", and "Financial Impact:"

4. Project Schedule: **Site Visit #1 was scheduled for Friday December 18, 1998.**

ACTION: **Tim** will send a letter to the Review Committee members notifying them of the scheduled site visit and inviting them to participate.

ACTION: **Tim** will contact Joe Munoz, FCDMC Public Involvement person, to schedule and plan Public Meeting #1.

A presentation to the **Gila River Indian Community (GRIC) Natural Resource Standing Committee (NRC)** is scheduled for **January 12, 1999**. A follow-up presentation to the Tribal Council is scheduled for January 20, 1999. **Information must be submitted to Mr. Fred Ringlero of the GRIC by January 5, 1999** to get on the January 12 agenda. The purpose of the meeting is for GRIC staff to obtain authority to cooperate and participate with the Higley ADMP project. Following NRC and Council

approval, Rights of entry may be requested to proceed with field surveys.

5. List of Contacts: Brian distributed a list of contacts which includes the Review Committee, Flood Control District Staff, and Consultant Project Team. The list is attached.
6. Field Work & Rights-of-Entry: FCDMC will acquire all Rights-of-Entry for the project.

ACTION: **Dibble & Associates (D&A)** to provide FCDMC with a list of required Rights-of-Entry.

Data collection will begin right away with meetings scheduled with agencies and municipalities with interests in the study area. We will try to combine meetings with the recreational contacts being made by LSD.

ACTION: **Diane** to provide Brian with a list of recreational contacts to be made so that meeting schedules can be coordinated.

7. Data Needs from FCDMC: Tim Phillips provided a CD with hydrology files from the Gilbert Chandler ADMS.

ACTION: **FCDMC** will provided the data items identified in the Agenda and the Scope of Work. Additionally, FCDMC will provide a digital base map file similar to that used in the East Mesa ADMP with coverage of the entire study area.

Tim also mentioned that the District has 1993 and 1996 aerial digital images of aerial photographs and images of the USGS maps of the study area which are available for the Consultant upon request.

8. Project Management: Tim distributed a packet of materials for project management.

ACTION: Pertinent monthly report forms to be submitted by D&A will be provided by **Tim Phillips** in a spreadsheet format via e-mail.

D&A will send originals of monthly invoices to FCDMC Accounts Payable and a copy of the monthly invoice submittal directly to Tim.

ACTION: **D&A** to provide FCDMC a monthly estimation of projected billings by December 14, 1998.

Meeting Minutes
Higley Area Drainage Master Plan
December 3, 1998
Page 3

Tim emphasized the importance of **identifying problems** right away so they can be dealt with rather than hoping they go away. When approaching Tim with a problem, give a recommended solution and report any impact the problem/solution may have on the project cost and schedule.

Respectfully Submitted,

Brian J. Fry, P.E.
Project Manager

cc: Dibble project file 9829



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

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HIGLEY AREA DRAINAGE MASTER PLAN OPEN HOUSE MEETING MINUTES

DATE: February 17, 1999

LOCATION: Higley Elementary School
1502 South 170th Street
Higley, Arizona 85236

TIME: 6:30 PM - 8:00 PM

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

**PROJECT TEAM
ATTENDEES:** Tim Phillips, FCDMC
Kathryn Gross, FCDMC
Dan Carroll, FCDMC
Brian Fry, Dibble & Associates
Rich Perry, Dibble & Associates
Debra Thompson, Dibble & Associates

PURPOSE: Public Information Meeting

The following were in attendance at the above referenced public information meeting:

- ▶ Shane M. Leonard, P.O. Box 100 Higley, Arizona 85236, 602-988-9586
- ▶ Mike Rhodes, Landmark Engineering, 13430 N. Scottsdale Road, Suite 202, Scottsdale, Arizona 85254, 602-922-1100

The public meeting was held at the above referenced date, time and location. Two interested parties, listed above, attended the meeting for further information regarding the Higley project. Nothing further to report.

Respectfully Submitted,

DIBBLE & ASSOCIATES

Debra Thompson
Vice President
Marketing & Business Development

cc: Dibble project file 9829



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS
HIGLEY AREA DRAINAGE MASTER PLAN
OPEN HOUSE MEETING MINUTES

2633 East Indian School Road, Suite 407
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

DATE: February 18, 1999

LOCATION: Entz Elementary School
4132 E. Adobe Street
Mesa, Arizona 85205

TIME: 6:30 PM - 8:00 PM

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PROJECT TEAM
ATTENDEES: Tim Phillips, FCDMC
Kathryn Gross, FCDMC
Dan Carroll, FCDMC
Brian Fry, Dibble & Associates
Rich Perry, Dibble & Associates
Robin Thompson, Dibble & Associates

PURPOSE: Public Information Meeting

The following were in attendance at the above referenced public information meeting:

- ▶ Peter Knudsen, Engineering Design Director for the City of Mesa, 602-644-2627
- ▶ Guy Carpenter, Town of Gilbert, 1025 S. Gilbert Road, Gilbert, Arizona, 602-503-6840
- ▶ Jan Bush, South River Drive, Tempe
- ▶ Ernie Pentek, 4220 E. Ellis Circle, Mesa, Arizona, (602) 854-6850
- ▶ Ann Pentek, 4220 E. Ellis Circle, Mesa, Arizona, (602) 854-6850

The public meeting was held at the above referenced date, time and location. Five interested parties, listed above, attended the meeting for further information regarding the Higley project. Nothing further to report.

Respectfully Submitted,

DIBBLE & ASSOCIATES

Debra Thompson
Vice President
Marketing & Business Development

cc: Dibble project file 9829



DIBBLE & ASSOCIATES

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Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

February 24, 1999

City of Chandler
200 East Commonwealth Avenue
Chandler, AZ 85225-5595

Ms. Sandy Storyl

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

Dibble & Associates is commencing with the study and inventory of existing drainage related elements for the study area shown on the attached exhibit. We have developed the following checklist for your use. Please take a moment to complete this checklist and provide us with any of the information you may have. Brian Fry, from our office, will be contacting you shortly to schedule a meeting time when we can go over these issues.

If you have any questions, please do not hesitate to call.

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Very truly yours,

DIBBLE AND ASSOCIATES


Dan C. Frank, E.I.T.



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

February 24, 1999

Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85234

Mr. Lonnie Frost

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



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CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

February 24, 1999

Salt River Project Mail Station PAB103
P.O. Box 52025
Phoenix, AZ 85072-2025

Mr. Paul Cherrington

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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Very truly yours,

DIBBLE AND ASSOCIATES


Dan C. Frank, E.I.T.



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2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

February 24, 1999

Roosevelt Water Conservation District
P.O. Box 100
Higley, AZ 85236

Mr. Shane Leonard

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



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2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

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February 24, 1999

City of Mesa
20 East Main, Suite 500
Mesa, AZ 85211-1466

Ms Anna Leyva

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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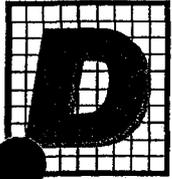
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Very truly yours,

DIBBLE AND ASSOCIATES


Dan C. Frank, E.I.T.



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February 24, 1999

Arizona Department of Transportation
205 South 17th Avenue Mail Drop 614E
Phoenix, AZ 85007

Mr. Javier Guana

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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Very truly yours,

DIBBLE AND ASSOCIATES


Dan C. Frank, E.I.T.



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February 24, 1999

Maricopa County Department of Transportation
2901 W. Durango Street
Phoenix, AZ 85009-6357

Mr. David DeWeese

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
CONTRACT FCD 98-13

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Very truly yours,

DIBBLE AND ASSOCIATES


Dan C. Frank, E.I.T.



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CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 10, 1999

Cox Cable
115 N. 51st Ave
Phoenix, AZ, 85043

Mr. Carl McKay

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

Please call when the maps are ready any we will arrange to have them picked-up.

If you have any questions, please call.

Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



DIBBLE & ASSOCIATES
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Since 1962

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2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

March 10, 1999

El Paso Natural Gas Company
7815 South 48th Street
Phoenix, AZ 85044

Mr. Larry Gayle

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

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Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 10, 1999

Southwest Gas Corp.
9 South 43rd Ave., Mailstop 420586
Phoenix, AZ 85009

Mr. Dominic Mitchel

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

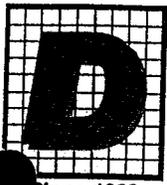
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Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ **Transportation** ■ **Airports** ■ **Drainage/Flood Control** ■ **Water Resources** ■ **Land Development** ■ **Surveying**

March 10, 1999

Salt River Project
P.O. Box 52025
Phoenix, AZ 85072-2025

attn: Cheryl Olmstead

RE: **HIGLEY AREA DRAINAGE MASTER PLAN**
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

Please call when the maps are ready any we will arrange to have them picked-up.

If you have any questions, please call.

Very truly yours,

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Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 10, 1999

Arizona Public Service
P.O. Box 53933 Station 3162
Phoenix, AZ 85072-3933

Mr. Steve Goodman

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

Please call when the maps are ready any we will arrange to have them picked-up.

If you have any questions, please call.

Very truly yours,

DIBBLE AND ASSOCIATES

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Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 10, 1999

Salt River Project - Irrigation
P.O. Box 52025
Phoenix, AZ 85072-2025

Mr. Robert Maurer

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

Please call when the maps are ready any we will arrange to have them picked-up.

If you have any questions, please call.

Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.



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Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 10, 1999

U.S. West
FAX REQUEST
Fax # 395-2412

RE: HIGLEY AREA DRAINAGE MASTER PLAN
FCD CONTRACT #98-13

Dibble & Associates is entering the data collection phase of the above referenced project and would therefore like to obtain any atlas maps for utilities located within project limits. This project ranges from Hunt Highway to the Salt River and is bounded by the RWCD Canal on the east and the Eastern canal and Arizona Ave. on the west. Please refer to the attached figure for more specifics on the study limits.

Please call when the maps are ready any we will arrange to have them picked-up.

If you have any questions, please call.

Very truly yours,

DIBBLE AND ASSOCIATES

Dan C. Frank, E.I.T.

MEETING MINUTES

DATE: March 17, 1999

LOCATION: Dibble & Associates

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Richard Lewis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Environmental Issues Coordination**

DISCUSSION:

1. 200 scale mapping (south of US60) and 3000 scale Study Area map was distributed to FCDMC & LSD. Tim would prefer to have ½ sizes of all plots at this time. **Dan** will send plots to Tim as soon as possible.
2. Richard requested digital files of base mapping. **Dibble** will transmit (on CD) when all mapping is compiled.
3. Floodplain should be added to 200 scale mapping. **Tim** will get AutoCAD or DXF file to Dibble.
4. All of the Consolidated Canal is owned by SRP.
5. There are two IGA's delineating the agreed upon future annexation boundaries:
 - Gilbert and Queen Creek
 - Gilbert and Chandler
6. Environmental coordination on the Reservation should be conducted with George Brooks (GRIC).
7. **Dibble** should develop a list of standard questions for use in the agency meetings scheduled for next week with the City of Mesa, Town of Gilbert, City of Chandler, Salt River Project, Roosevelt Water Conservation District, Gila River Indian Community. Some Examples of possible questions include;
 - what recharge issues are there?
 - what annexations are planned?
 - what park facilities are planned?
 - what will happen to the canals when the agriculture use goes away?

8. LSD requested a letter of authorization from the FCD for access to SRP and RWCD rights of way. **Tim** will provide.
9. It would be a good idea (although not req'd) to coordinate with Tim Wade - Habitat Evaluation Specialist w/Az Dept. of Game & Fish.
 - Leopard Frogs are a concern for the District
10. It is important to note that improvements may not necessarily be along the canal. We all need to plan for this possibility and be flexible with the concepts. Also it may be necessary to get additional mapping if improvements fall outside of the existing strip map.
11. Richard will examine the study area for potential habitat sites not along the canals.
12. One of the goals should be to provide a wildlife corridor which would serve as a link between the Salt and Gila River basins.

DELIVERABLES:

1. Drawings shall be in AutoCAD format, text will be in Wordperfect.

SCHEDULE:

1. Deadline for the Data Collection Report is April 16th.

Respectfully Submitted,

Dan Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 17, 1999

LOCATION: Dibble & Associates

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Tim Phillips, FCDMC
Kathryn Gross, FCDMC
Brian Fry, Dibble & Associates
Frank Brown, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Hydrology Coordination**

DISCUSSION:

1. Currently there are three hydrology models for the Highly ADMP study area:
 - Eastern Canal FIS (Primatech)
 - Gilbert Chandler ADMS (we have but it's not final)
 - Gilbert Chandler ADMS Addendum (FCDMC)

The Eastern Canal FIS hydrology should be finalized by the end of April (100-yr exist. Conditions). However, pending results from the HEC-2 study may require modifications of some of the HEC-1 results.

The Gilbert-Chandler ADMS Addendum model is being completed by the FCDMC. The Gilbert-Chandler ADMS in its final form will be submitted by FCDMC.

2. Drainage alternatives will be developed based on 100-yr protection. If cost prohibitive, lower levels of protection may be considered.
3. **Kathryn** will examine how best to model retention for future developments.
 - RTIMP revision.
 - Diversions based on simple volume calculations.
4. **FCDMC** will decide what design storm to be used and how it will be modeled.
 - Will it use JD records?
 - How will area reduction be accounted for?
 - What happens to the watershed area associated with diverted flows?
5. The entire area along Hunt Highway from Eastern Canal to the RWCD is already planned for development. – will this be modeled as existing conditions?

DELIVERABLES:

1. All hydrology will be delivered to Dibble in a "ready-to-use" state no later than **May 3rd**. This includes updating the models to reflect current land use and to breakdown the sub-basins to reflect the San Tan Freeway align and ADOT drainage system.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 22, 1999

LOCATION: 1) City of Mesa
2) Maricopa County Department of Transportation
3) Salt River Project

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City of Mesa - 9:30 am

Attendees:

Frank Mizner, City of Mesa Planning
Tim Phillips, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Frank presented a zoning map mosaic and list of recent zoning cases. **Dibble** will access City files and review zoning cases at COM.
2. Frank presented a current land use map for the city.
3. Gene Larson, COM Development Services is the best person to contact re: drainage & utilities - (ph# 644.2558).
4. Most of the City of Mesa within the Higley ADMP study area is already developed and leaves little opportunity for flood control improvements.
5. There are few parks within the city. Joe Holmwood, COM Director of Parks & Recreation (ph# 644.2190) is the best person to call re: park information and the possibility of having a green-belt along the canal. Liability of a green-belt has been a concern of COM and SRP in the past.
6. For GIS information, Lisa Johnson is the best person to contact - (ph# 644.2609).

2) Maricopa County Department of Transportation - 11:00 am

Attendees:

Dave Deweese, MCDOT
Andy Wojakiewicz, MCDOT
Tom Sonnemann, MCDOT
Amir Masowdi, MCDOT
Gary Lasham, MCDOT
Mike Smith, MCDOT
Chris Hassert, MCDOT
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tom - there are at least 3 structures within the study limits that have been annexed. MCDOT's structure inventory is a sub-set of ADOT's bridge management system. All structures over 20' in span are listed in this inventory. MCDOT keeps a list of box culverts smaller than 20' span
2. Tom presented a list of existing MCDOT bridges and box culverts within the Higley ADMP study area. There are also plans for 3 new Eastern Canal crossing improvements. (14x7 box culverts). RWCD is planning to underground their channels along Riggs Road.
3. Andy asked if there was a way to estimate the size of the future culverts so that they could incorporate them into their ongoing design. Tim's answer was "not yet - but soon...could the culvert crossings be designed for future expansion?"
4. Dave - Where are the areas of flooding?
 - Gary - the area along the eastern canal is a floodplain
5. Tim - is there a record of complaints of flooding on the roads?
 - Gary - yes, Flood Control should have that information.
6. Dave - as for planned private developments, Gerrald Toscano could provide information on County development permits. It may be better to go directly to County Planning and Zoning, talk to Neil Urban.
7. Mike - Other planning data could come from the Riggs Road Corridor Study by Lee Engineering. Also, talk to the Town of Gilbert re: plans for Guadalupe Road. Ann Blech, from MCDOT Planning, may be able to provide information about the proposed light rail system through Chandler. There is also the potential that Riggs Rd. will be re-aligned at Arizona Ave.
8. There is also a project under design by Carter/Burgess for McQueen Rd. from Pecos to Queen Creek. It uses linear retention basins for storm water drainage. Also the Queen

Creek road profile should be modified. Why build something that will flood? But by raising the road, we would cause a barrier to flow thus causing a potential for flooding up-stream. This needs to be addressed.

9. **Dave** will provide a copy of the draft DCR for Queen Creek Road.
10. **Mike** will provide a copy of the Southwest Planning Study.
11. **Dave** - There is also a MCDOT in-house design for Val Vista from Riggs to ½ mile south.

3) Salt River Project - 1pm

Attendees:

Paul Cherrington, SRP
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Paul - There are injection wells north of Queen Creek @ McQueen Rd.
2. There are culverts under the SPRR @ Ryan. These culverts are assumed to be full for the purposes of hydraulics.
3. Paul - the canals are manually drained during storm events to allow flood water to enter their canals. However, historically SRP doesn't provide Flood Control.
4. Paul - It sounds feasible to have a joint-use facility for both flood control and irrigation. However, further discussion on this is required. **Paul** will discuss internally about this.
5. A HEC-2 is available for the consolidated canal. (Paul provided after mtg).
6. Since, the agriculture use for the canal is diminishing, the City of Chandler may be a potential customer to handle treated effluent.
7. It is SRP's charter to be able to deliver water to the high-point of every quarter section in the service area.
8. As part of the GRIC water adjudication process, SRP is looking for ways to deliver water to the GRIC.
9. The Town of Gilbert is planning a water treatment plant at Guadalupe Rd. No stormwater should be admitted to the canal upstream of the plant.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 23, 1999

LOCATION: 1) Town of Gilbert
2) City of Chandler
3) Roosevelt Water Conservation District

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) Town of Gilbert - 9:00 am

Attendees:

Lonnie Frost, Town of Gilbert
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. There is a drainage study for Gilbert by Franzoy/Corry (1989)
2. The Purpose of Crossroads Park is to take as much area out of the floodplain as possible. It took all of the downtown area out of the floodplain.
3. There is nothing published yet on the San-Tan Area Plan. Right now, it only addresses zoning.
4. Gilbert's retention requirements are; 50-yr, 24-hr which roughly equates to the FCDMC 100-yr, 2-hr. Retention requirement (3" of rain). Developers are also required to retain runoff from all adjacent ½ streets. Gilbert uses drywells exclusively and they work well. It is also enforced that the basins drain in 36-hr. If they don't, it is up the HOA's to take corrective measures.
5. Currently stormwater is pumped from Crossroads Park. It is proposed by Gilbert that something be worked out so that ADOT could aid in the disposal of water from Crossroads Park.

2) City of Chandler - 11:00 am

Attendees:

Sandy Story, City of Chandler
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Ashley Kowallis, Logan Simpson Design
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Meeting was canceled - but we planned for the next meeting.
2. **Sandy** will schedule another meeting, or series of meetings with; Tom Little - Development Services Director, Carl Doak - Street Supervisor, Karen Barfoot - Water Resources Director.
3. We will also need someone representing Parks & Recreation.
4. **Tom Little** will be able to furnish plans for new developments.
5. **Sandy** will compile the following; 1) CDM Drainage Master Plan, 2) Parks Plan, 3) Land-use Master Study
6. **Sandy** will try to schedule meetings for next week.

3) Roosevelt Water Conservation District

Attendees:

Mike Leonard, RWCD
Shane Leonard, RWCD
Tim Phillips, FCDMC
Theresa Hoff, FCDMC
Brian Fry, Dibble & Associates

1. RWCD is willing to cooperate and share their irrigation facilities to reach a solution to the flooding problems within the area.
2. Mr. Leonard's priorities for the drainage project are as follows.
 - Take out the bottlenecks in the system and improve road crossings.
 - Utilize 60 acres of available land for retention basins
 - Develop a drainage outfall along the GRIC.
3. The RWCD is concerned with potential damage to residential subdivisions downstream from the Eastern Canal Extension. Historically, during flood events, runoff that drained into the Eastern Canal Extension was discharged into the agricultural fields west of the canal to disburse the runoff and reduce downstream canal overtopping. With new

developments replacing the fields, the runoff cannot be released from the canal in a planned manner.

4. With the current water rights adjudication with the GRIC, there is a unique opportunity for a creative solution to meet multiple needs within the area. The need for a flood control outfall, coupled with the need for a means to deliver water to the GRIC may provide a flood control opportunity. A number of agencies may have a strong enough interest in the project to provide the impetus to develop agreements and cost sharing in a way that may not otherwise be possible.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: March 31, 1999
LOCATION: City of Chandler
PROJECT: FCD 98-13, Higley Area Drainage Master Plan
PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City Of Chandler Public Works - 1:00 pm

Attendees:

Sam Sherrill, COC
Charles Higginson, COC
Tom Little, COC
Carl Doak, COC
Sandy Story, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Brian inquired about the drainage master plan for the city. Dibble would be interested in obtaining a copy of it.
 - COC provided a copy but it has some minor items to address before it is finalized.
3. There is a DCR for Riggs Road from Arizona Ave to Val Vista Dr. The first phase of which is from Arizona Ave. to Gilbert Rd.
4. There is an IGA between Gilbert and Chandler delineating the agreed future annexation boundary.
5. Brian inquired about information pertaining to the new/planned developments.
 - **Sam** said he would provide a map that shows the new developments.
6. COC retention requirement is for the 100-yr, 2-hr storm.
 - Tom is concerned about the area east of Chandler contributing to the flooding problem downstream. How is this area being handled?
 - The City is also concerned about "wild-cat" subdivisions and how they are dealing with storm water retention.

7. There is very little, if any, available land for regional retention facilities. A better choice for retention sites would be up-stream from planning area.
8. Another concern for the City is that of the RWCD conveying storm water to Chandler.
9. Charles asked if we would be revising the floodplain.
 - Tim- if it is warranted, yes.
 - Tom- shouldn't we revisit the east valley MP due to development?
 - Tim- it is the goal of FCD to get rid of the floodplain if possible.
10. According to Carl, Pinal County is in the process of a corridor study along the county line (Hunt Highway) from Val Vista eastward..
11. Contact CDM for more information regarding the Drainage Master Plan.
 - Jim Folton, Kathy Hendricks, Judd Hunemuller
12. Other IGA's w/MCDOT include; McQueen Rd from Queen Creek to Pecos. And Queen Creek Rd from Arizona Ave to Mc Queen.
13. Contact Stanley Consultants (Bret Olsen) for information on Riggs Rd DCR.

2) City of Chandler Parks Department - 2:00 pm

Attendees:

Sandy Story, COC
 Mickey Ohland, COC
 Tim Phillips, FCDMC
 Brian Fry, Dibble & Associates
 Dan Frank, Dibble & Associates
 Diane Simpson-Colbank, Logan Simpson Design

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Brian- What plans does City of Chandler have for parks in the area?
 - Mike- the Consolidated Canal (Con) is the main focus of the city right now. The City is planning a multi-use trail system from Riggs Rd to Galveston St.
 - They are planning on developing the canal in 1-1/2 mile per year increments starting at the north end for a total of 6.5 miles.
 - Development on the Con is planned to take place within SRP ROW per a licensing agreement w/SRP.
 - City of Chandler is working with the developers to build "pocket-parks" in conjunction with on-site retention.
 - The trail will be a multi-use system with equestrian and pedestrian uses. The west

side of the canal will be equestrian (DG trail) and the east side will have a 10' concrete sidewalk.

- This plan is called the Paseo System (copy was presented after the meeting)
 - Carter/Burgess is currently developing a plan for the Con as well as a set of design guidelines.
3. One of the questions/concerns the City has is to identify an east/west link between the Con and the eastern canal as well as a link to the Santan Mountains.
 4. The Park Department is in need of park sites in the south area. They would like the following;
 - 10 acres each for neighborhood parks (1 per sq. mi.)
 - 30 acres for a community park
 5. **Mickey** will provide a copy of the park guidelines.
 6. Tumbleweed park will be 154 acres and will have a trail connecting it to the Con.
 - Dave McDowell 786.2786 will provide information on this park.
 7. The parks department would definitely want to work with us to find good locations for detention-parks.
 8. Riggs Rd may be a good alignment for an east/west link between the Con and the Eastern Canal.

3) City of Chandler Planning Department - 3:00 pm

Attendees:

Sandy Story, COC
Robert Pazera, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates
Diane Simpson-Colebank, Logan Simpson Design

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Bob mentioned that the Chandler Airpark Plan has been updated.
3. Bob inquired if we could have basins adjacent to agriculture fields (micro farms)
4. **Bob** will provide a copy of the Southeast Chandler Area Plan and an updated Chandler Airpark Plan
5. The city would be interested in using the floodplain for open-space.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: April 1, 1999
LOCATION: City of Chandler
PROJECT: FCD 98-13, Higley Area Drainage Master Plan
PURPOSE: **Project Coordination/Data Collection**

DISCUSSION:

1) City of Chandler Engineering - 2:00 pm

Attendees:

Karen Barfoot, COC
Jacqueline Strong, COC
Bob Pazera, COC
Sandy Story, COC
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

1. Tim opened the meeting with a brief description of the project and what the "100%" view of the project involves. (multi use, linear parks, water delivery, flood control, recharge...)
2. Karen- one of the concerns is "how much water can the GRIC take without flooding St. Johns?"
 - Dr. Mock (geo-hydrologist) is currently reviewing this situation
3. The concept out right now is that of a dual pipeline from the RWCD canal which will deliver water to the Consolidated Canal (Con) along the Hunt Highway Alignment. This will be a mixture of 50% A+ effluent water and 50% surface supply to be used for GRIC irrigation.
4. The GRIC will probably have their own standard for water quality which will most likely be higher than ADWR.
5. Currently, COC used dry-wells for retention disposal and developments aren't connected to the stormdrain system.
6. We must keep bird attractants away from the airport (2 mile radius).
7. The idea of a linear park along the Eastern Canal is acceptable and could be irrigated with reclaimed water.
8. The Con will be kept "wet"

9. In SRP "staff-level" talks Chandler may participate in the expansion of the Con to deliver water to the GRIC.
10. Since a precedent has been set in the construction of a water quality wetland at the Gila Drain, a similar feature may need to be constructed at the end of the Con. & Eastern Canals before discharging to the GRIC
11. Groundwater in the area is fairly shallow (30')
12. There is a hazardous materials contamination site within the study area (near Arizona Ave, look on the WEB.)
13. Contact Stanley Consultants (Bret Olsen) for info on Riggs Rd DCR.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

Since 1962

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Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

FAX TRANSMITTAL

TO: Flood Control District
of Maricopa County

DATE: April 4, 2000
RE: Higley ADMP
Crossroads Park Basin

ATTENTION: Tim S. Phillips, P.E.

FAX TO: 602.506.8561

Transmitted herewith are the following items:

Copies	Date	I.D. Number	Description
1	04.04.00		Crossroads Park Expansion Plan (2pgs)
1	04.04.00		Crossroads Park Armory Plan

These are transmitted as checked below:

- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

REMARKS: Tim, In a meeting yesterday with Maury Ahlman and Kenny Martin with the Town of Gilbert Parks and Recreation department, it was discovered that Gilbert has plans which conflict with our plan to expand Crossroads Park. Please find with this transmittal two exhibits which show the respective plans.

Hydrology for the preliminary plan indicates that we need to store 656 ac-ft at this location. This will require expanding the existing basin as well as having another "linked" basin across the re-aligned Greenfield Rd.

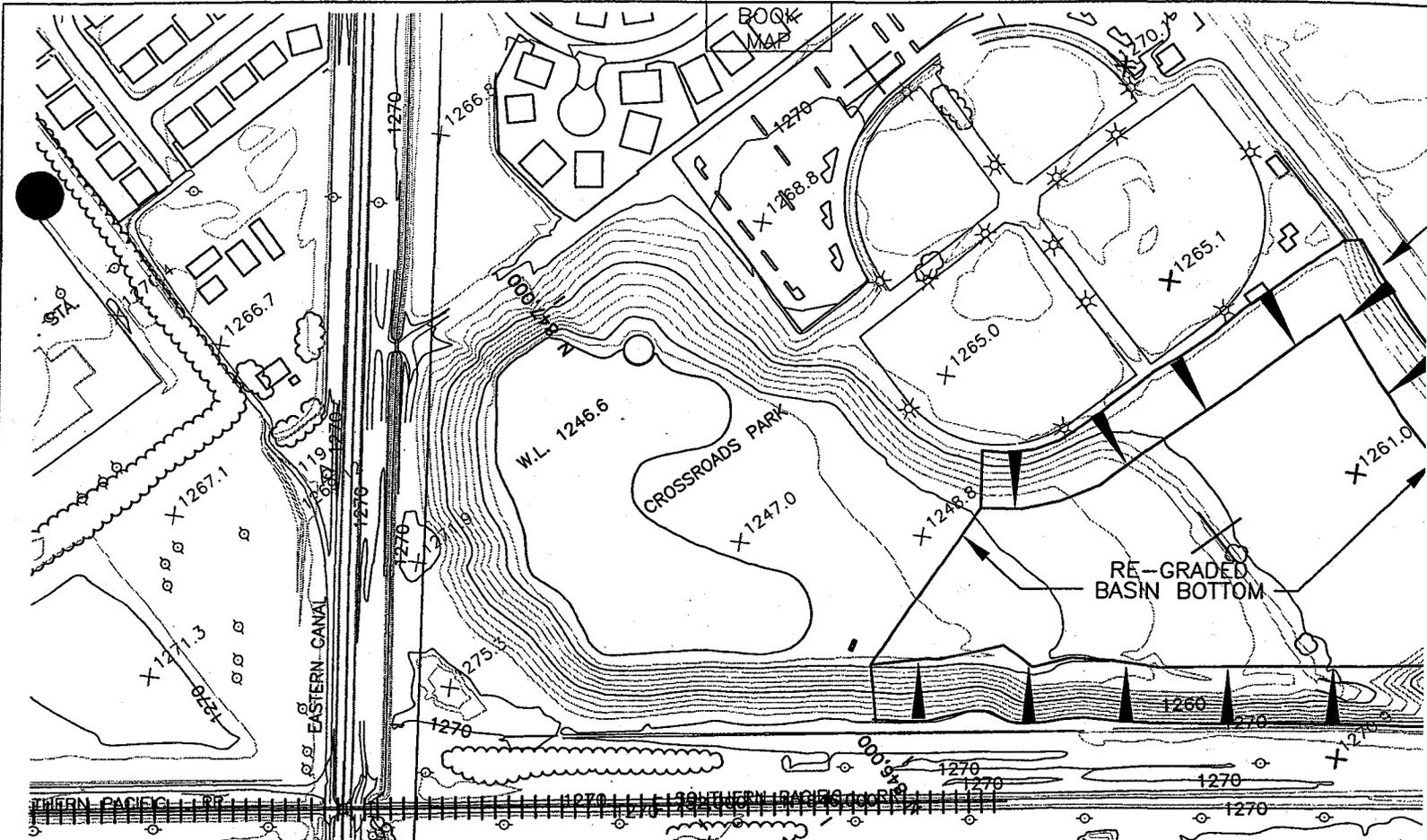
I guess the question for you is; Is this land available? or Can we get it?...let me what you think.

Number of Pages (including transmittal cover page): 4 Originals to be: Mailed Filed Del'd

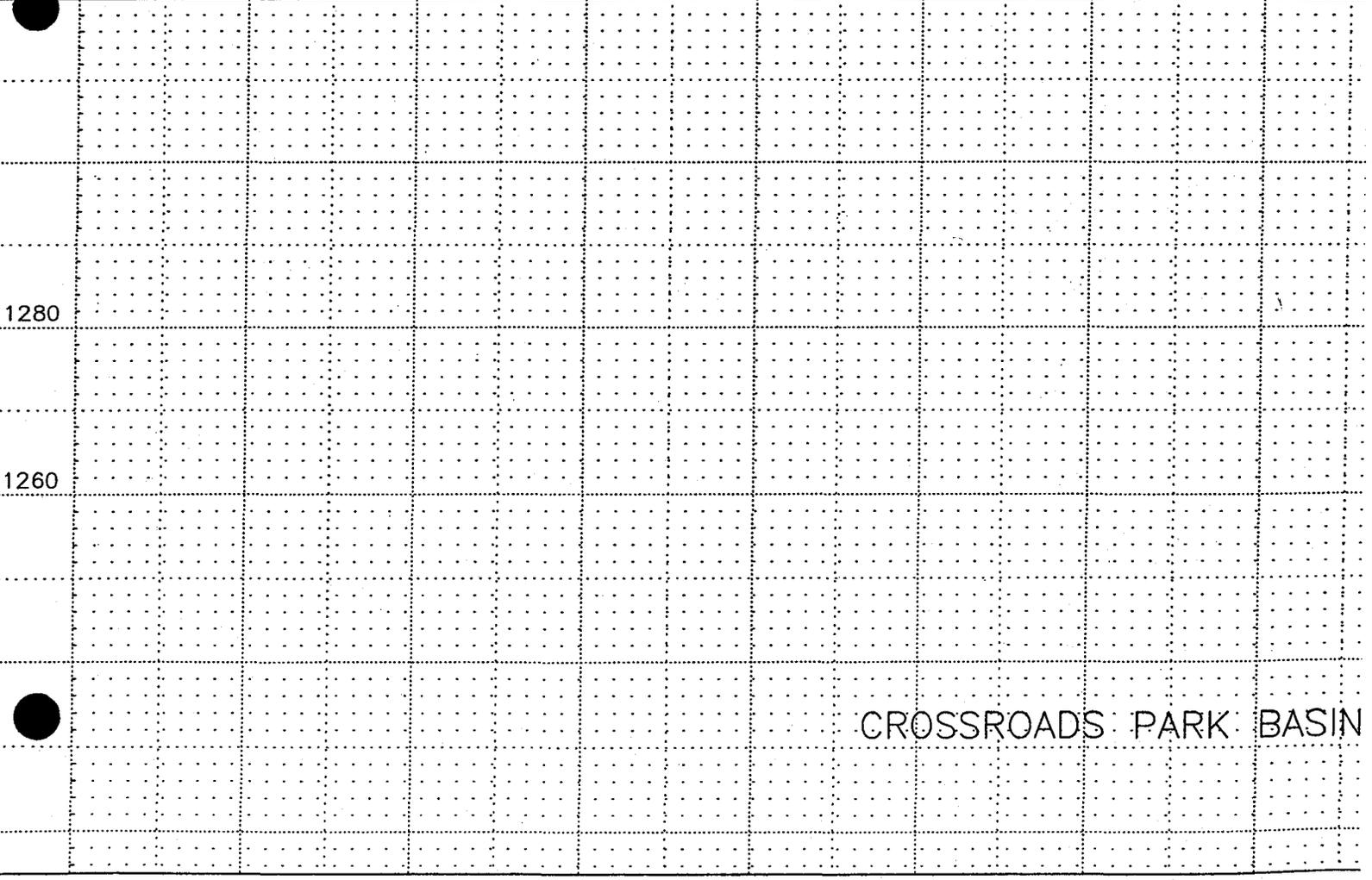
copy: 9829 Letter File
Daily

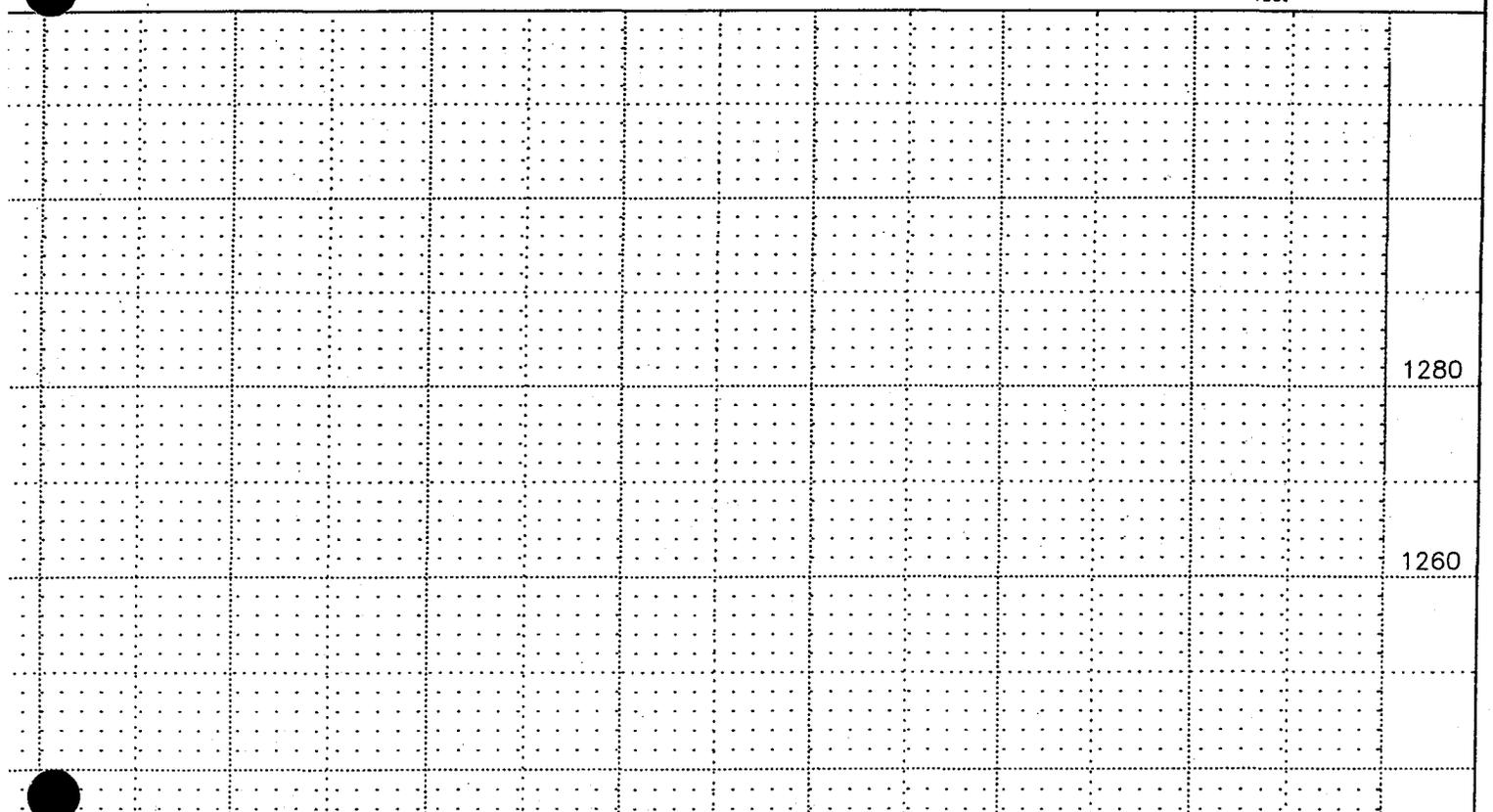
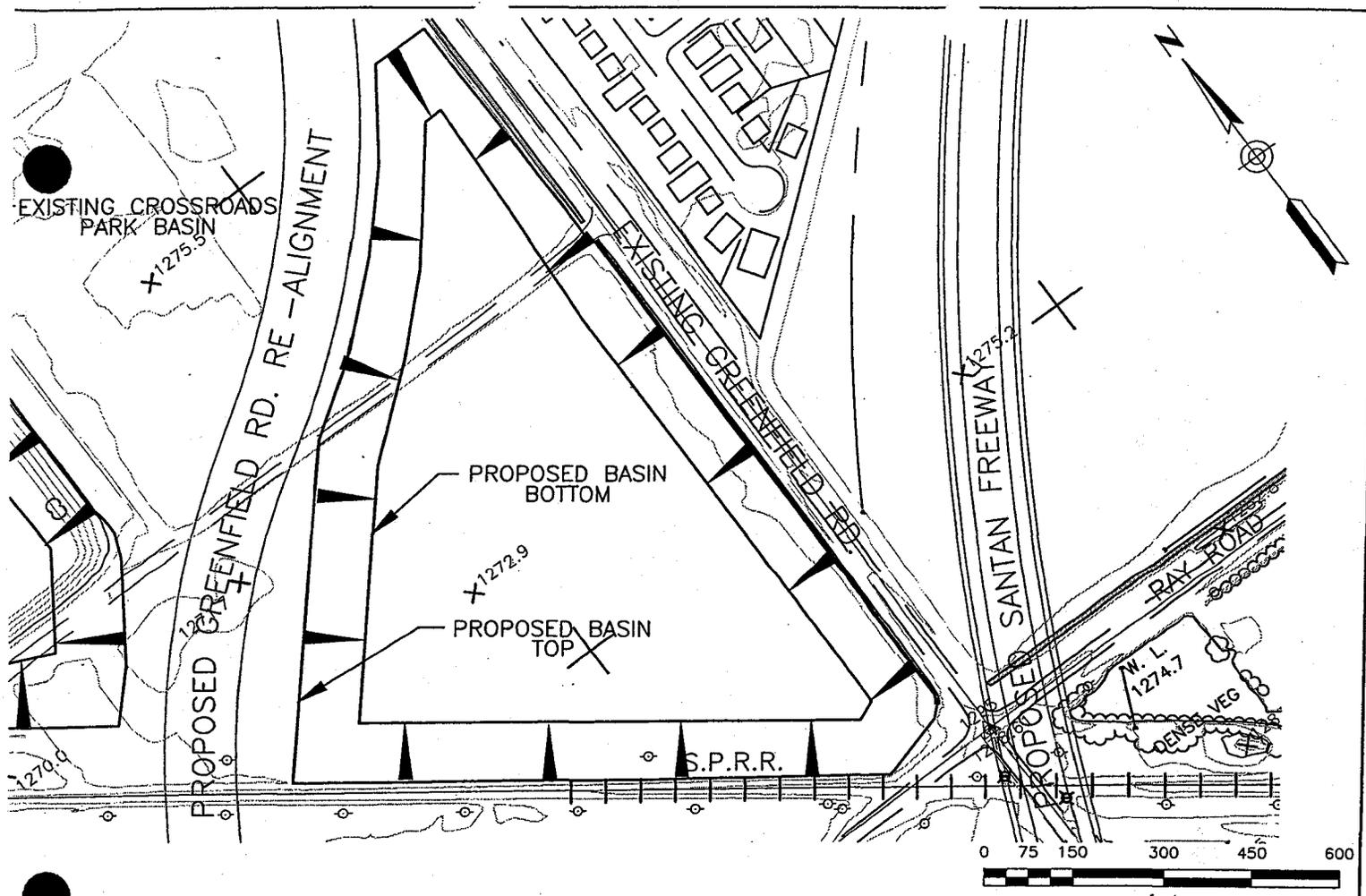
Sincerely,
DIBBLE & ASSOCIATES

Dan C. Frank, E.I.T.



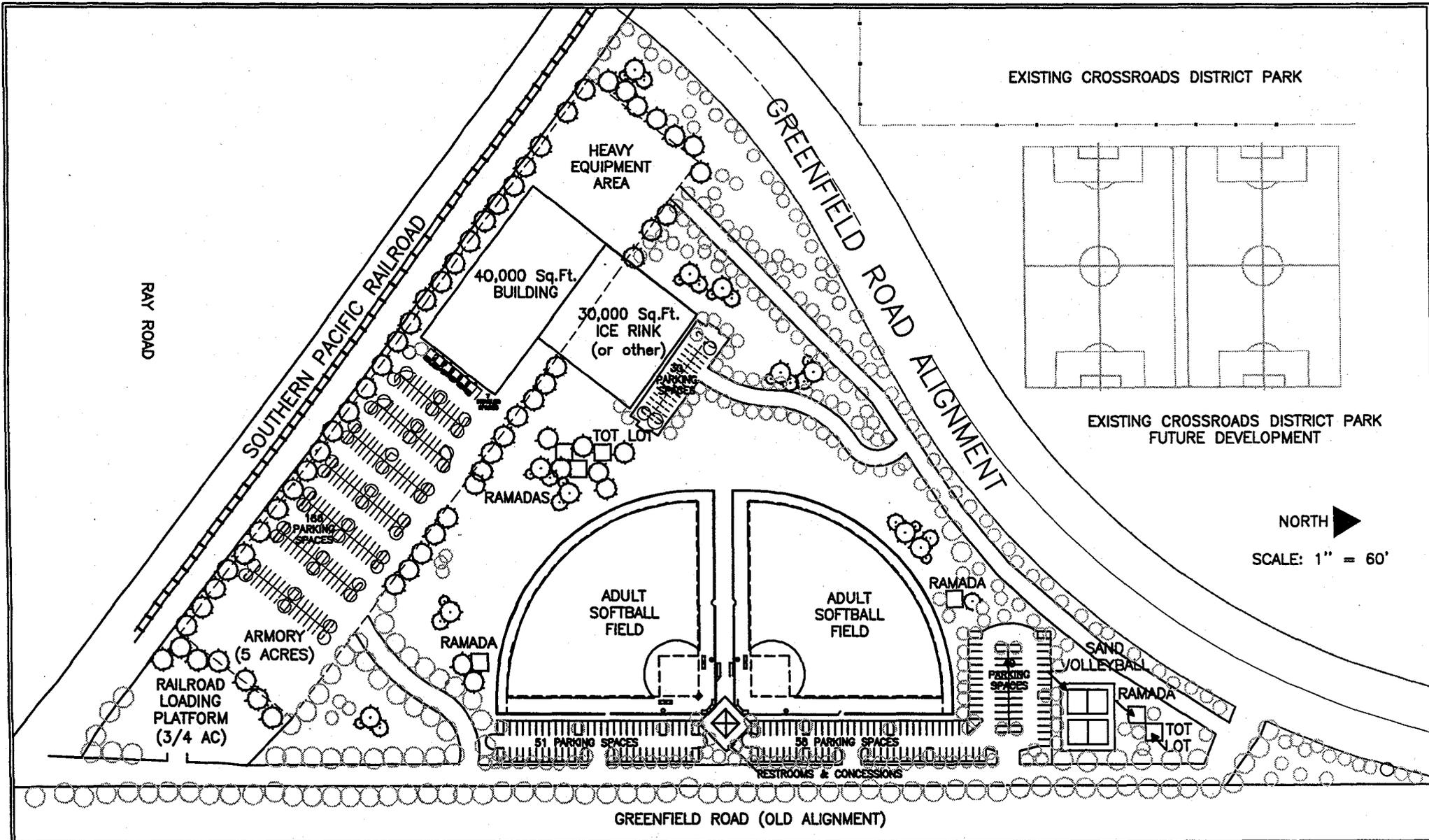
NOTE: SEE FACING PAGE FOR DESIGN INFORMATION





EXPANSION

 <p>FLOOD CONTROL DISTRICT OF MARICOPA COUNTY</p>	COUNTY PROJECT NO. 98-13	HIGLEY AREA DRAINAGE MASTER PLAN	
	PROJECT DESCRIPTION CROSSROADS PARK BASIN EXPANSION		
 <p>DIBBLE & ASSOCIATES CONSULTING ENGINEERS</p>	DRN. AAA DATE: 00.00.00	SCALE	SHEETS
	DES. BBB DATE: 00.00.00	1"=300'	HORIZONTAL
	CKD. CCC DATE: 00.00.00	1"=20'	VERTICAL



CROSSROADS ARMORY CONCEPT DESIGN

TOWN OF GILBERT
 PARKS & RECREATION
 DATE: 2/00
 APPROVED BY: K. MARTIN
 AND BY: ENGLE
 DESIGNED BY: ENGLE

MEETING MINUTES

DATE: May 10, 1999

LOCATION: Dibble & Associates

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Tim Phillips, FCDMC
Kathryn Gross, FCDMC
Brian Fry, Dibble & Associates
Frank Brown, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Hydrology Coordination Meeting - 9:00 am**

DISCUSSION:

1. Kathryn presented the hydrology for the southern and mid study areas. Valerie Swick still needs to check the Green-Ampt parameters for these models but Kathryn feels confident about them.
- South Study Area**
2. Hydrology for the southern area comes from the Gilbert-Chandler ADMS Addendum-Existing Conditions model and uses the 100-yr, 24-hr storm. The DDMS files have also been included for this model.
 3. There are three storms in this model: 1) East of the Eastern Canal, 2) From the Southern Pacific Railroad to the Eastern Canal, and 3) the area west of Arizona Avenue. If DDMS is run, these three storms will be eliminated and will need to be re-inserted. Kathryn will try to put together another exhibit that shows how these storms are distributed.
 4. Dibble will use the existing conditions models for the alternatives analysis phase. However, the question is how to model future conditions in regards to land-use. MAG says low-density residential, while it appears that medium to high density residential is being built/planned.
 5. The FCD will prepare a Developed Conditions model for use during the Preliminary Design phase.
 6. Dibble will check the preferred alternative with existing conditions flows for FEMA. Freeboard will be used for conveyance under this analysis.
 7. The GCADMS.DSS file is needed for the Eastern and Consolidated flows entering the area.

Mid Study Area

8. Hydrology for the mid study area comes from the Gilbert-Chandler ADMS- 1998 existing conditions model and covers the area from US60 to Queen Creek Rd. This is a 2000 ordinate model (newer HEC-1 version). There is a DOS batch file that will run all of the files and update the DSS files for each.
9. Both the original model and the modified model were delivered on diskette as well as in a May 7th memo. However, we still need a narrative describing the latest changes and the future conditions scenario 2 sub-basin map.
10. No DDMS file is available for this HEC-1 model. We will need to use the spreadsheet if we need to modify any of the sub-basin parameters.
11. The hydrology uses the 1988 ADOT alignment for the Santan freeway. Dibble should identify required changes to sub-basins, if any, from the June 1995 HDR report.

North Study Area

12. The hydrology for this area is from the Eastern Canal North FIS Study and isn't finalized yet (preliminary draft).
13. Only the existing conditions model will be used for this study area.
14. This area uses the 100-yr, 24-hr model and utilizes JD records.
15. Dibble is to examine the critical storm for structures in mid and southern area.
16. Kathryn would like Dibble & Associates to re-run the model for each structure based on areal reduction for the drainage area reaching the structure.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: May 10, 1999

LOCATION: Dibble & Associates

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Tim Phillips, FCDMC
Kathryn Gross, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Data Collection Report Review/Coordination Meeting - 10:00 am**

DISCUSSION:

1. Tim presented a copy of the FCD review comments on the Data Collection Report (DCR).
2. **Dibble** will check with the Maricopa County Planning & Zoning Department for new developments in the area.
3. **Dibble** will include all agency coordination meeting minutes in the appendix of the DCR.
4. **Dibble** will include an existing constraints exhibit
5. The DCR will be distributed 2 weeks before the brainstorming session (out by May 19)
6. **Tim** will send out a letter to the agencies announcing the meeting.
7. **Brian** will prepare an agenda for the meeting.
8. **Tim** will check on the availability of lunch.

Respectfully Submitted,

Dan C. Frank, E.I.T.
Project Engineer

c: Dibble project file 9829
Attendees

MEETING MINUTES

DATE: May 13 1999

LOCATION: Arizona Department of Transportation

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES: Javier O. Guana, ADOT
Jeff Minch, DMJM
Thomas M. Monchak, DMJM
Tim Phillips, FCDMC
Brian Fry, Dibble & Associates
Dan Frank, Dibble & Associates

PURPOSE: **Project Coordination/Data Collection Meeting - 1:30 pm**

DISCUSSION:

1. The Higley ADMP presents a unique opportunity to partner with various agencies in order to achieve a common goal. We are currently looking for project partners & opportunities for identifying a regional drainage outfall, environmental enhancement, and community detention basin parks.
2. According to Javier, ADOT isn't expecting to do too much within this study area until 2002 when DMJM is scheduled to begin 30% design of that reach of the Santan Freeway. It is expected that the Gilbert reach of the Santan freeway will be completed in 2007.
3. ADOT & DMJM are invited to attend a "brain-storming" session scheduled for June 2, 1999 at the Flood Control District of Maricopa County offices. This session should be attended by the project review committee to aid in the formulation of drainage concepts withing the study area. — **Javier** indicated that ADOT would participate.
4. ADOT is currently in the EIS phase for this reach of the Santan Freeway and nothing has changed since the 1988 HDR report.
5. Phase III of the Santan Channel to Price Rd. will be completed by the end of the year.

Respectfully Submitted,

Dan C. Frank, E.I.T.

Project Engineer

c: Dibble project file 9829

Attendees

**HIGLEY AREA DRAINAGE MASTER PLAN
OPEN HOUSE MEETING MINUTES**

DATE:	January 4, 2000	January 5, 2000
LOCATION:	Brimhall Junior High Cafeteria 4949 E. Southern Avenue Mesa, Arizona	Mesquite Junior High School 130 W. Mesquite Gilbert, Arizona
TIME:	6:00 PM - 8:00 PM	6:00 PM - 8:00 PM
PROJECT:	Higley Area Drainage Master Plan Project No. 98-13	
PROJECT TEAM ATTENDEES:	Tim Phillips, FCDMC Kathryn Gross, FCDMC Chris Baxter, FCDMC Brian Fry, Dibble & Associates Rich Perry, Dibble & Associates Debra Thompson, Dibble & Associates Diane Simpson-Colebank, Logan Simpson Design	
PURPOSE:	Public Information Meeting	

The public meetings were held at the above referenced date, time and locations. The meeting was conducted in an open house format with the public speaking directly to the Project Team for questions, comments and concerns. Attached is a record of those in attendance. Comments have been documented and are attached for record.

Respectfully Submitted,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager

cc: Dibble project file 9829

SIGN-IN SHEET
FCDMC HIGLEY ADMP
1/4/00

<i>Name</i>	<i>Address</i>	<i>Phone</i>
Ramon Martin	Resident of Sunland Village East	480-983-3314
Richard Oxen	East Mesa Independent Newspaper	480-982-7799
Debbie Benedict		480-373-8650
Mel Benedict		480-373-8650

MEETING MINUTES

DATE: February 1, 2000

LOCATION: Gilbert Library

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES:

Tim Phillips, FCDMC

Kathryn Gross, FCDMC

Mike Smith, MCDOT

Dave DeWeese, MCDOT

Fred Ringlero, Gila River Indian Community

Harry Millsaps, Gila River Indian
Community

Anna Leyva-Easton, City of Mesa

Peter Knudson, City of Mesa

Steve Lohide, Logan-Simpson Design

Diane Simpson-Colebank, Logan-Simpson
Design

Ashley Kowallis, Logan-Simpson Design

Paul Cherrington, SRP

Gary LaForge, City of Chandler

Lonnie Frost, Gilbert

Brian Fry, Dibble & Associates

Dan Frank, Dibble & Associates

PURPOSE: **Review Committee Meeting No. 2**

DISCUSSION:

1. Visual Analysis presentation by Diane and Ashley. Presentation concentrated on the visual character of the watershed and how we can integrate flood control improvements into the surroundings with a minimum visual impact. Presentation also touched on how we have the opportunities for a multi-use system of equestrian/pedestrian/cyclist and general recreation uses all integrated into a flood control system.
2. Brian gave an overview of the alternatives and the evaluation process. After the overview, a question and answer session was held.
 - Peter expressed concern about the new (not-yet-approved) floodplain versus the old floodplain and if there was an agreement with SRP to not raise the canal banks.
 - Paul agreed that the canal banks should not be raised and the SRP had an informal policy to that effect.
 - Lonnie mentioned that usually the canal banks are held to about 1 foot above the canal liner.
 - Kathryn stated that if the canal banks or the roads within the floodplain are elevated, then the FCD must be notified.
3. The evaluation matrix was distributed for the committee to fill out and a break was taken while the results were input into the computer.

4. The results of the evaluation matrix were presented (see included matrix) and a final discussion was held. The results are summarized as follows:

- **North Area**, concept 2 - purchase flood-prone homes.
 - **Mid Area**, concept 2 - Channels along the Eastern Canal with a shared ADOT outfall to the west.
 - **South Area**, Concept 1 – Channels along the Eastern and Consolidated canals with an outfall across the Gila River Indian Community
-
- One of the issues of concern for the Indian Community is that of water quality. Water quality basins will need to be designed as part of the outfall across the Community.
 - Partnerships and cost sharing opportunities will also be explored during the next phase.
 - One of the key elements in getting approval from the Indian Community is that we must demonstrate that this project has a positive benefit to the Community.
 - Additional Exhibits may be required to show the landscape character for the channels across the Community.

Respectfully Submitted,

Dan C. Frank, E.I.T.

Project Engineer

c: Dibble project file 9829
Attendees



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

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Fax (602) 957-2838

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FAX TRANSMITTAL

TO: SRP Power
.....
.....
.....

DATE: 3/27/2000
.....
RE: Higley ADMP
Facility Maps
.....
.....

ATTENTION: Mapping
.....
FAX TO: 602-236-3196
.....

Transmitted herewith are the following items:

Copies	Date	I.D. Number	Description
1	3/27		1/4 section listing

These are transmitted as checked below:

- | | | |
|--|--|--|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> For Review and Comment | <input type="checkbox"/> Approve |
| <input checked="" type="checkbox"/> For Your Use | <input type="checkbox"/> For Information Only | <input type="checkbox"/> Disapprove |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> For Use as Guideline Only | <input type="checkbox"/> Approve with Comments |
| <input type="checkbox"/> Returned | <input type="checkbox"/> Other | |

REMARKS: Dibble and Associates is entering the preliminary design phase of the above referenced project, and we would therefore like to obtain quarter section maps for utilities located along the proposed drainage corridor. Attached is a list of township, range, and quartersections of the requested maps. Thankyou very much for your time. Please call when the maps are ready, and we will arrange to have them picked up.

Number of Pages (including transmittal cover page): 2 Originals to be: Mailed Filed Del'd

copy: 9829 Letter File
.....

Daily

Sincerely,
DIBBLE & ASSOCIATES

Josh Papworth, E.I.T.



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DIBBLE & ASSOCIATES

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FAX TRANSMITTAL

TO: Southwest Gas Corp

DATE: 3/27/2000
RE: Higley ADMP
Facility Maps

ATTENTION: Mapping
FAX TO: 602-484-5353

Transmitted herewith are the following items:

Copies	Date	I.D. Number	Description
1	3/27		1/4 section listing

These are transmitted as checked below:

- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

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Number of Pages (including transmittal cover page): 2 Originals to be: Mailed Filed Del'd

copy: 9829 Letter File
Daily

Sincerely,
DIBBLE & ASSOCIATES

Josh Papworth, E.I.T.

Frank, Dan

From: Minch, Jeff [MinchJ@dmjm.com]
Sent: Wednesday, March 01, 2000 12:03 PM
To: 'Javier Guana'
Cc: 'Tim Phillips'; 'Brian Fry'; 'Daniel Frank'; Gerometta, John; Gilliland, Mark; Waung, Paul; Monchak, Tom; Wilcox, Steve; 'Jeff Holzmeister'; Lyles, Judy
Subject: Santan Freeway Drainage - FCDMC Coordination
Importance: High

Javier,

We had a productive meeting with the FCDMC & Dibble regarding their ADMS. We identified the following discharge constraints for the ADMS concept development:

- * Santan Freeway Channel at Arizona Avenue (37 cfs) - Interim target
- * Siphon capacity under the Price T.I. (764 cfs) - Ultimate constraint

Dibble will be developing concepts which possibly use the Santan Freeway channel as a regional drainage facility. One of the concepts they are considering is routing flows along the Eastern Canal into the Santan Freeway channel. They are also looking at the Consolidated and Eastern Canal corridors south of the Santan Freeway as regional flood control facilities that outfall to the GRIC. The FCDMC indicated that they would also like to develop these facilities with multi-use purposes in mind if it is compatible with adjacent facilities. The FCDMC was also invited to attend the regular Santan Freeway Monthly Coordination meetings to maintain communication regarding pursuing the goal of providing a regional drainage system in coordination with the ADOT/MAG freeway drainage systems.

Other issues discussed regarding the Santan Freeway corridor from Guadalupe to the East Maricopa Floodway (EMF):

- * EMF capacity for the freeway drainage
- * Corps 404 Permit considerations
- * Dibble ADMS concept hydrology assumes routing south along the freeway corridor

There are two outstanding issues that still need to be resolved and they are hydrology methodology and model consistency for the remaining Santan and Red Mountain Freeway corridors. This is a design issue that relates to sizing shared facilities. The bottom line issue is the difference between precipitation and time of concentration methods. We need to set up a meeting with the appropriate ADOT and FCDMC staff to coordinate this issue for the remainder of the freeway corridors in the East Valley. Do you want DMJM to assist in scheduling this meeting? Just let me know. Thanks.

Jeff

9829



DIBBLE & ASSOCIATES

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March 27, 2000

Mr. Gary LaForge
Public Works Engineer
City of Chandler
P.O. Box 4008, Mail Stop 408
Chandler, AZ 85244-4008

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. LaForge:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

We are now proceeding with development of the Preliminary Plans for the preferred alternative. Prior to completion of the preliminary design plans, the District will present the preferred alternative to the Gila River Indian Community (GRIC) to obtain concurrence on the selected outfall across the GRIC to the East Maricopa Floodway (EMF). The project schedule is being adjusted to allow time for coordination with the GRIC.

Upon concurrence from the GRIC, the *Preliminary Design Plans* and the *Recommended Design Report* will be submitted for your review and comment. During the review period, another set of Neighborhood Meetings will be held to present the plan to the public. A Review Committee Meeting will then be held to discuss any review comments and to prioritize the project elements as part of the implementation plan.

A revised project schedule will be distributed to the Review Committee as soon as it is completed. If you have any questions, please give me a call at (602)957-1155.

Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager

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March 27, 2000

Mr. Lonnie Frost
Public Works Director
Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85296

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Frost:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager

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March 27, 2000

Mr. Fred Ringlero
Director - Land Use Planning & Zoning
Gila River Indian Community
Post Office Box E
Sacaton, AZ 85247

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Ringlero:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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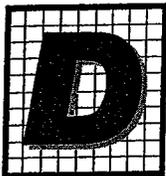
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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



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March 27, 2000

Mr. Paul Cherrington
Manager - Water Engineering & Transmission
Salt River Project Mail Station PAB103
P.O. Box 52026
Phoenix, AZ 85072-2025

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Cherrington:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



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March 27, 2000

Mr. Michael Leonard
General Manager
Roosevelt Water Conservation District
P.O. Box 100
Higley, AZ 85236

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Leonard:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



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March 27, 2000

Ms Anna Leyva
Civil Engineer
City of Mesa
20 East Main St., 5th Floor
Mesa, AZ 85211-1466

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Ms Leyva:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager

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March 27, 2000

Mr. Javier Guana
Project Manager - Santan Freeway
Arizona Department of Transportation
205 South 17th Avenue, Mail Drop 614E
Phoenix, AZ 85007-3212

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Guana:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



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Fax (602) 957-2833

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March 27, 2000

Mr. David DeWeese
Project Manager
Maricopa County Department of Transportation
2901 W. Durango Street
Phoenix, AZ 85009-6357

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. DeWeese:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Upon concurrence from the GRIC, the *Preliminary Design Plans* and the *Recommended Design Report* will be submitted for your review and comment. During the review period, another set of Neighborhood Meetings will be held to present the plan to the public. A Review Committee Meeting will then be held to discuss any review comments and to prioritize the project elements as part of the implementation plan.

A revised project schedule will be distributed to the Review Committee as soon as it is completed. If you have any questions, please give me a call at (602)957-1155.

Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

2633 East Indian School Road, Suite 4
Phoenix, Arizona 85016-67
Tel. (602) 957-11
Fax (602) 957-28

Since 1962

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 27, 2000

Mr. Timothy Wade
Habitat Specialist
Arizona Game & Fish Department
7200 East University Dr.
Mesa, AZ 85207

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Wade:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 40
Phoenix, Arizona 85016-676
Tel. (602) 957-1155
Fax (602) 957-2833

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

March 27, 2000

Mr. Timothy Phillips
Senior Project Manager
Flood Control District of Maricopa County
2801 W. Durango St.
Phoenix, AZ 85009-6399

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Mr. Phillips:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager

0



DIBBLE & ASSOCIATES
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2633 East Indian School Road, Suite 4
Phoenix, Arizona 85016-67
Tel. (602) 957-11
Fax (602) 957-28

March 27, 2000

Ms. Diane Simpson-Colebank
Principal
Logan Simpson Design Inc.
51 West 3rd Street, Suite 450
Tempe, AZ 85281

Re: FCD 98-13, Higley Area Drainage Master Plan
Final Alternatives Analysis Report

Dear Ms. Simpson-Colebank:

Enclosed please find the final *Alternatives Analysis Report* for the above referenced project. The report documents the development of alternative drainage concepts through the brainstorming meeting, the screening process used to identify the 3 most promising alternatives, the analysis of the three screened alternatives, and finally the selection of the preferred alternative using a matrix evaluation process completed by the Review Committee. The report also includes the visual analysis and development of landscape themes to be included in the project development.

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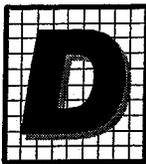
Upon concurrence from the GRIC, the *Preliminary Design Plans* and the *Recommended Design Report* will be submitted for your review and comment. During the review period, another set of Neighborhood Meetings will be held to present the plan to the public. A Review Committee Meeting will then be held to discuss any review comments and to prioritize the project elements as part of the implementation plan.

A revised project schedule will be distributed to the Review Committee as soon as it is completed. If you have any questions, please give me a call at (602)957-1155.

Very truly yours,

DIBBLE & ASSOCIATES

Brian J. Fry, P.E.
Project Manager



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

Since 1962

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

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FAX TRANSMITTAL

TO: Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85296

DATE: June 20, 2000
RE: FCD 98-13, Higley ADMP

ATTENTION: Mr. Lonnie Frost
FAX TO: 497-4923 503.6842

Transmitted herewith are the following items:

Copies	Date	I.D. Number	Description
1			New Basin Location

These are transmitted as checked below:

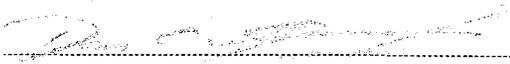
- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

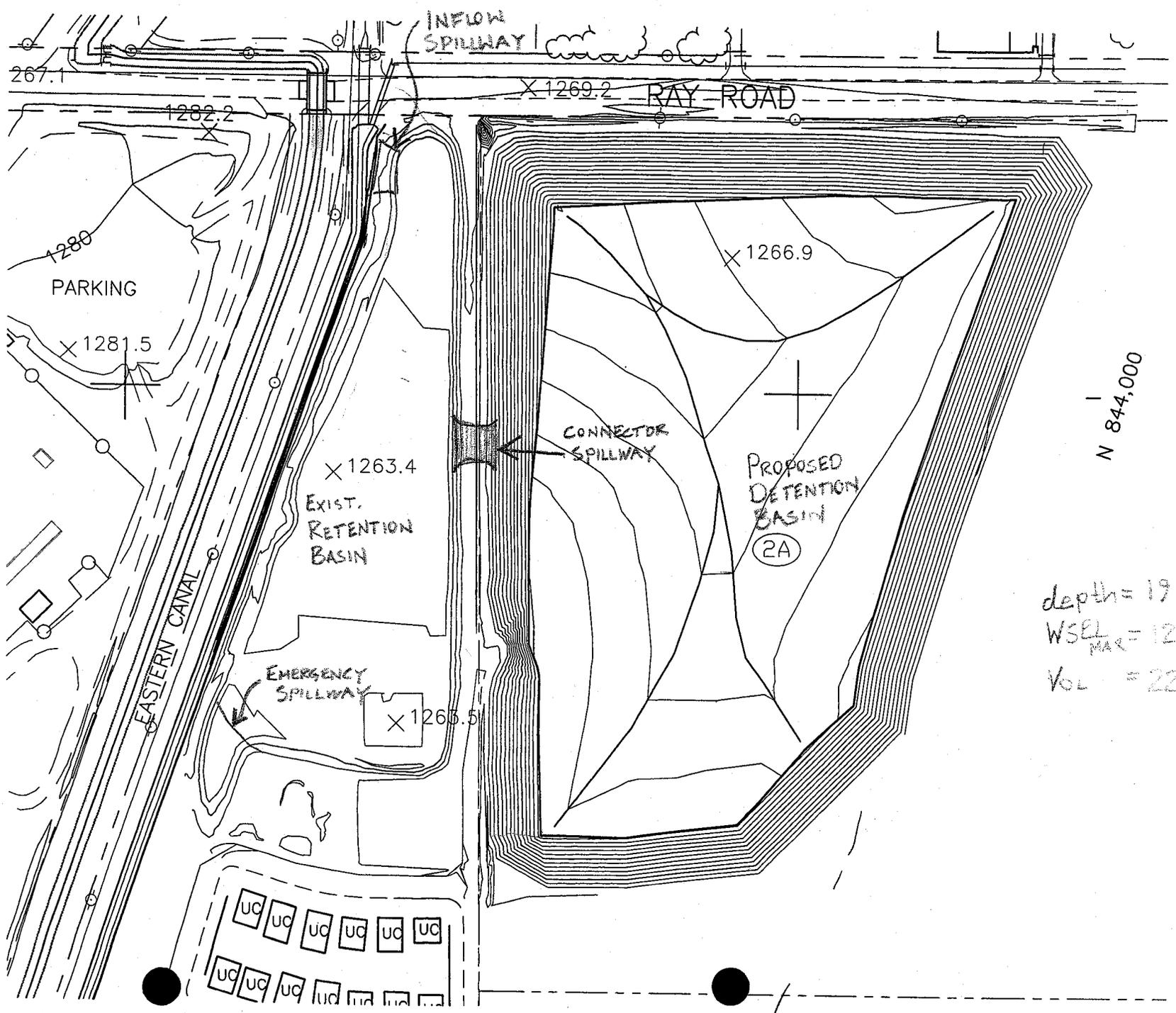
REMARKS: Lonnie, Due to all of the constraints at Crossroads Park, we propose that we provide a detention basin approximately 1/2 mile south at Ray Road. Please take a look at the following sketch. I will give you a call later today to discuss this site. According to aerial photos, this and Crossroads are the only viable sites for a detention basin of this size.
Do you know is this site is still available?

Thanks,
Dan

Number of Pages (including transmittal cover page): 2
copy: 9829

Originals to be: Mailed Filed Del'd
Sincerely,
DIBBLE & ASSOCIATES


Dan C. Frank, E.I.T.



N 844,000

depth = 19'
WSEL_{MAR} = 1267'
VOL = 224 AF



*Town of Gilbert, Arizona
A Community of Excellence
Community Development
1025 South Gilbert Road
Gilbert, Arizona 85296*

June 20, 2000

Mr. Dan Frank, EIT
Dibble & Associates
Sent Via FAX Transmittal to 602-957-2838, 1 Page

RE: Retention Basin Siting

Dear Mr. Frank:

The retention basin you proposed at the SEC of the intersection of the Eastern Canal and Ray Road is not viable. I just received the latest freeway alignment plans from ADOT. The plans indicate a basin in the SW1/4, SW1/4 of Section 22, T1S, R6E that is approximately 14 acres in size (by my scaling). Has this basin been considered in your analysis?

Sincerely,

Lonnie K. Frost
Director of Public Works



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

FAX TRANSMITTAL

TO: Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85296

DATE: July 12, 2000
RE: FCD 98-13, Higley ADMP
Ray Rd. Basin site

ATTENTION: Mr. Lonnie Frost

FAX TO: 480-503-6842

Transmitted herewith are the following items:

Copies	Date	I.D. Number	Description
1			Soccer Fields and Basin

These are transmitted as checked below:

- | | | |
|--|--|--|
| <input type="checkbox"/> For Approval | <input type="checkbox"/> For Review and Comment | <input type="checkbox"/> Approve |
| <input checked="" type="checkbox"/> For Your Use | <input type="checkbox"/> For Information Only | <input type="checkbox"/> Disapprove |
| <input type="checkbox"/> As Requested | <input type="checkbox"/> For Use as Guideline Only | <input type="checkbox"/> Approve with Comments |
| <input type="checkbox"/> Returned | <input type="checkbox"/> Other | |

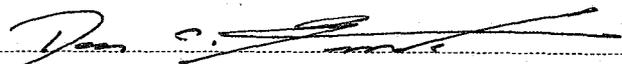
REMARKS: Lonnie,
take a look at this sketch to see if you agree with it in concept. Also, note the size of the soccer fields...
they are seemingly large. However, this is what the City of Mesa uses in their parks. We will proceed
with this lay-out unless we hear otherwise.

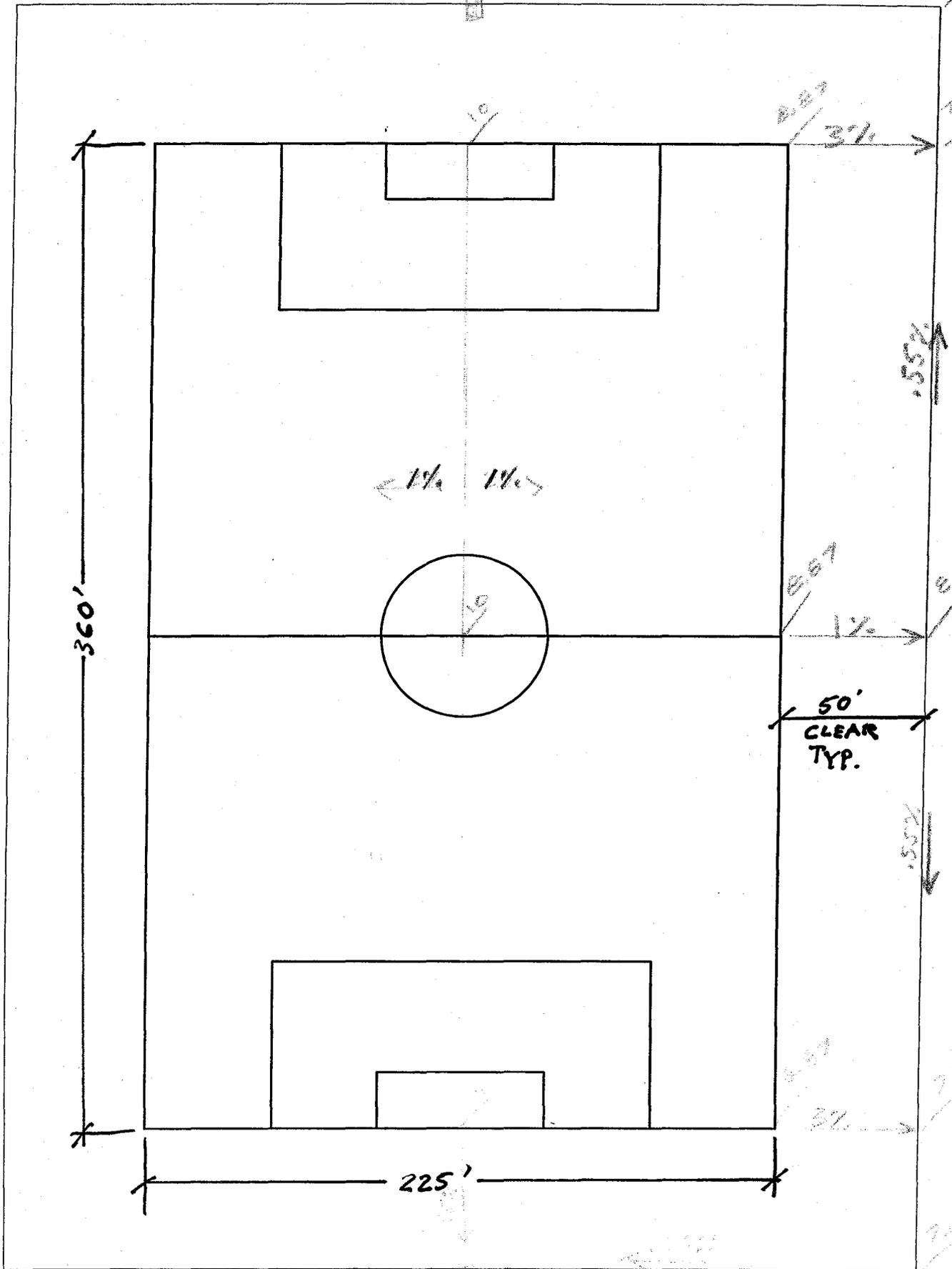
Thanks,
Dan

Number of Pages (including transmittal cover page): 3 Originals to be: Mailed Filed Del'd

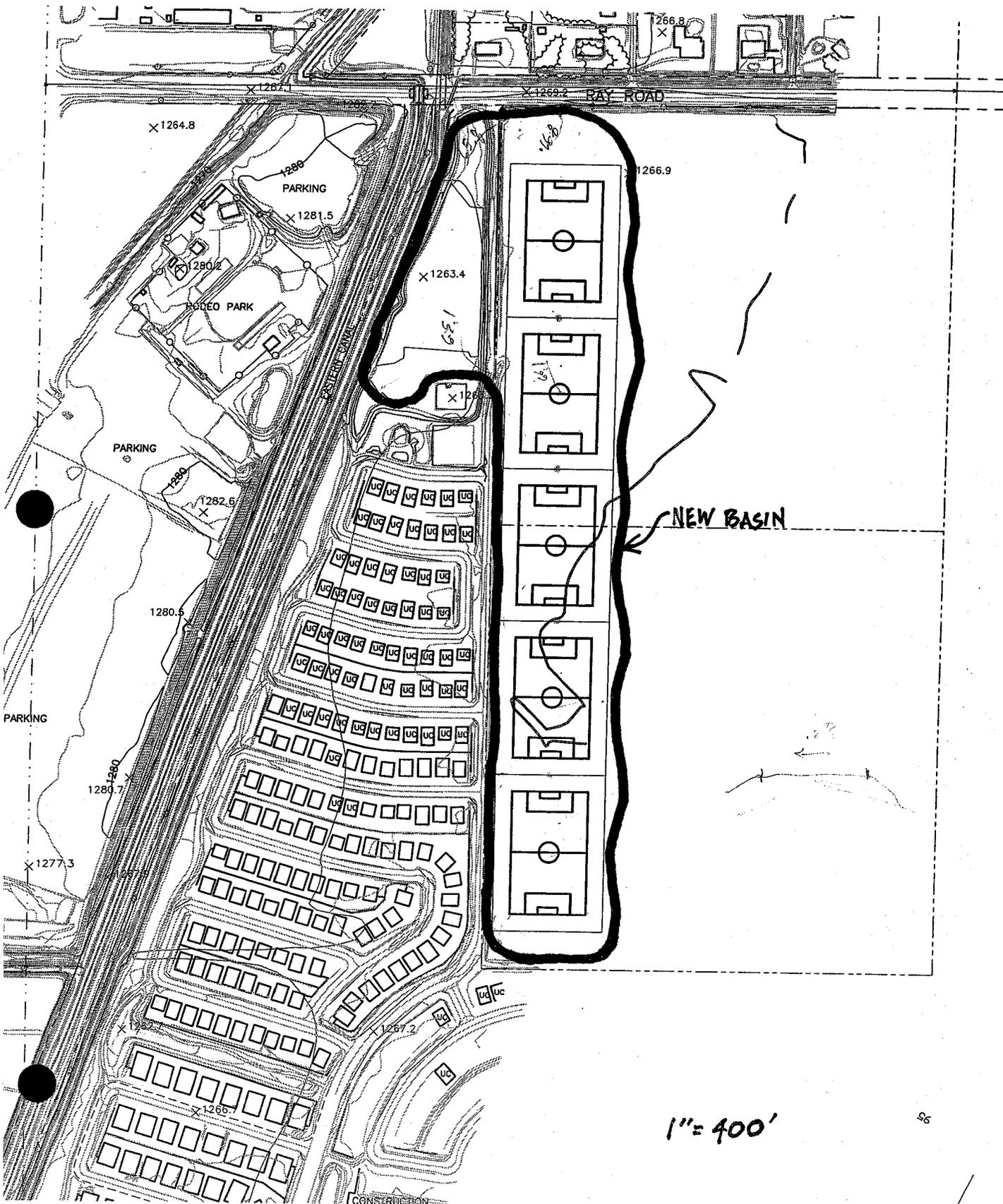
copy: 9829 letter file
Maury Ahlman 480.503.6204

Sincerely,
DIBBLE & ASSOCIATES


Dan C. Frank, E.I.T.



1" = 50'



1" = 400'



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

Since 1962

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

9829 letter
2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

LETTER OF TRANSMITTAL

TO: Parsons Transportation Group
3875 N. 44th St., Suite 250
Phoenix, Arizona 85018

DATE: 14 July 2000
RE: Higley ADMP

Hydrology Coordination with your project
736782 (WBS 12040)

ATTENTION: Renee M. Schwecke, E.I.T.

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

Copies	Date	I.D. Number	Description
1	13 July 2000	82000084	Letter from David T. Phelps
1	06/30/00	82000084	24 by 36 inch, Figure 2, Offsite Drainage, existing conditions

These are transmitted as checked below:

- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

REMARKS: Renee,

Here is a copy of the Stantec map.

Let us know when you have a copy of the JMA report, and we will have a runner pick it up.

copy: 9829 letter file

Sincerely,
DIBBLE & ASSOCIATES

Frank Edward Brown
Frank Edward Brown, P.E.

Transmittal

Stantec Consulting Inc.
8211 South 48th Street
Phoenix, AZ 85044-5355 USA
Tel: (602) 438-2200 Fax: (602) 431-9562
www.stantec.com



Stantec

RECEIVED

JUL 14 2000

DIBBLE & ASSOC.

To:	Dibble & Associates	Sender:	David Phelps
Attention:	Frank Brown	<input checked="" type="checkbox"/>	For Your Information
Date:	13 July 2000	<input type="checkbox"/>	For Your Approval
File:	82000084	<input type="checkbox"/>	For Your Review
		<input checked="" type="checkbox"/>	As Requested

Reference: Lone Butte Drainage Study

Per our phone conversation yesterday, I am enclosing a copy of Figure 2. It contains the current 50- and 5-yr discharges. It should help you to see the assumptions I have made for our off-site model. Please note that the canal we are designing is to the west of I-10. The HEC-1 model results show that the local sub basin runoff controls the peak discharge passing I-10, thus the areas denoted as "modeled by others" are no longer a significant concern to our canal cross drainage facilities.

STANTEC CONSULTING INC.

David T. Phelps
Project Engineer
dphelps@stantec.com

dtp p:\28900084\canal\word\transmittal-dibble&associates7-12-00.doc

PARSONS ENGINEERING SCIENCE, INC.

3875 N. 44th Street, Suite 250

Phoenix, Arizona 85018

FACSIMILE COVER SHEET

Date: July 14, 2000
Total Pages: 15 (Including cover sheet)

To: Daniel C. Frank & Frank E. Brown
Company: Dibble & Associates
Phone: 602.957.1155
Fax: 602.957.2838

From: Renee M. Schwecke
Company: Parsons Engineering Science, Inc./Phoenix
Phone: 602/852-9110
Fax: 602/852-9112

Job No: 736782 (WBS 12040)

Comments:

This fax includes meeting minutes from the July 12, 2000 meeting at Parsons Engineering Science. Please contact me, at the number listed above, with comments and/or questions.

**P-MIP Reach ST-IC Hydrology
Meeting with Parsons and Dibble & Associates
July 12, 2000**

Location: Parsons Engineering Science

Time: 1:00 PM

Date: July 12, 2000

Attendees:

Dibble & Associates

Frank E. Brown (FB)

Daniel C. Frank (DF)

Parsons Engineering Science

Renee M. Schwecke (RS)

DISCUSSION ITEMS:

The meeting was held with Dibble & Associates (DA), at Parsons Engineering Science (PES), to review the Reach ST-IC Hydrology Study performed by PES. The major issues discussed during the meeting are summarized as follows:

1. Reach ST-IC Hydrology Overview:

- (RS) The ST-IC Watershed map was used to review hydrologic assumptions used to develop the ST-IC Hydrology Report.
- (FB/DF) The locations of the proposed Consolidated Canal Floodway (CCF) and Eastern Canal Floodway (ECF) were identified.
- (RS) Changes made since submittal of the draft report (see [Ref 1]):
 - Culverts N, M, and L will be bermed and have no contributing flow.
 - Flow from Culvert O is conveyed through an existing wash, and intercepted by the drainage channel north of Reach ST-ID/WS-VA.
 - The drainage channel north of Reach ST-ID/WS-VA will be extended eastward, to intercept and convey runoff collected between Reach ST-IC and SR 87.

Reference materials provided during the meeting include copies of the following, which have been labeled [Ref X] for the purpose of these meeting minutes:

By PES:

- [Ref 1] Current ST-IC Hydrology Study Watershed Map
- [Ref 2] Stantec's Lone Butte Drainage Study Map (Plot date: 11/9/99)
- [Ref 3-6] Santan ID/Lone Butte WS-VA Drainage Assessment, Figures 1-4 (by PES)
- [Ref 7] Santan Vista Preliminary Drainage Report, Drainage Exhibit 1 (by JMA)
- [Ref 8-9] ST-IC&ST-ID/WS-VA Storage Analysis Documentation (figures by RS)

By DA:

- Exhibit 16 of the Higley Area Drainage Master Plan (by DA)
 - [Ref 10] Exhibit 16 – South Area Recommended Plan
 - [Ref 11] Channel Capacities and Costs associated with Exhibit 16

NOTES:

- Reference materials included in the meeting minutes have been sized down and/or edited by RS to illustrate items discussed during the meeting.
- Documentation of the meeting has been arranged according to specific locations.

2. Proposed ECF at the East Maricopa Floodway (EMF) – Circle A [Ref 1]

- (FB/DF) The proposed alignment of the ECF is adjacent to Gilbert Road, preferably east of the road.
- (RS) The large amount of storage, northeast of Gilbert Road and the EMF, was identified as an area of concern. This existing, natural storage is created by raised concrete irrigation ditches east of Gilbert Road and north of the EMF.
- (FB/DF) The proposed ECF would most likely be at grade through this storage area.
- RS suggested that the ECF be designed to intercept and convey contributing runoff into the EMF, eliminating the need for the existing natural storage.

3. Intersection of ST-ID/WS-VA, Proposed CCF, & SR 587 – Circle B [Ref 1-3, 8-9]

- (RS) The location of the proposed ST-ID/WS-VA canal alignment was identified.
- (RS) The ST-ID/WS-VA canal alignment design includes a 532 cfs drainage channel along the north side of the canal. The capacity was determined by PES from the contributing watershed, shown on [Ref 4], with upstream runoff conveyed through the large, multiple-barrel culvert under SR 587, south of Goodyear Road [Ref 8&9].
- (FB/DF) The proposed CCF will "cut-off" the existing SR 587 culvert located south of Goodyear Road (see **Circle B**), preventing runoff east of SR 587 from contributing to the proposed drainage channel north of the ST-ID/WS-VA canal alignment.
- (RS) Reach ST-ID/WS-VA includes a drainage channel, north of the alignment, designed to convey 265 cfs of runoff from SR 87 into the Santan Canal. [Ref 1]

4. Santan Vista & Effective Gilbert-Chandler FIS – Circle C [Ref 1, 8-9], [Ref 7]

- (RS) The Santan Vista Residential Development, shown on [Ref 7], was identified. The development is currently under construction. A channel and weir were designed to convey the published FIS discharge of 885 cfs at the railroad trestle identified on [Ref 7]. Runoff is conveyed around the development, over Hunt Highway, and into storage areas as shown on [Ref 9], with continuing drainage patterns shown on [Ref 8].
- (FB/DF) The proposed alignment of the CCF is east of the existing Consolidated Canal, and east of SR 587. DA was unaware of the Santan Vista development.
- (RS) All developers in the Gilbert-Chandler area must develop according to the Effective Gilbert-Chandler FIS.
- (RS) The "in-house" Gilbert-Chandler FIS Addendum, being developed by the FCDMC, creates the following discrepancies:

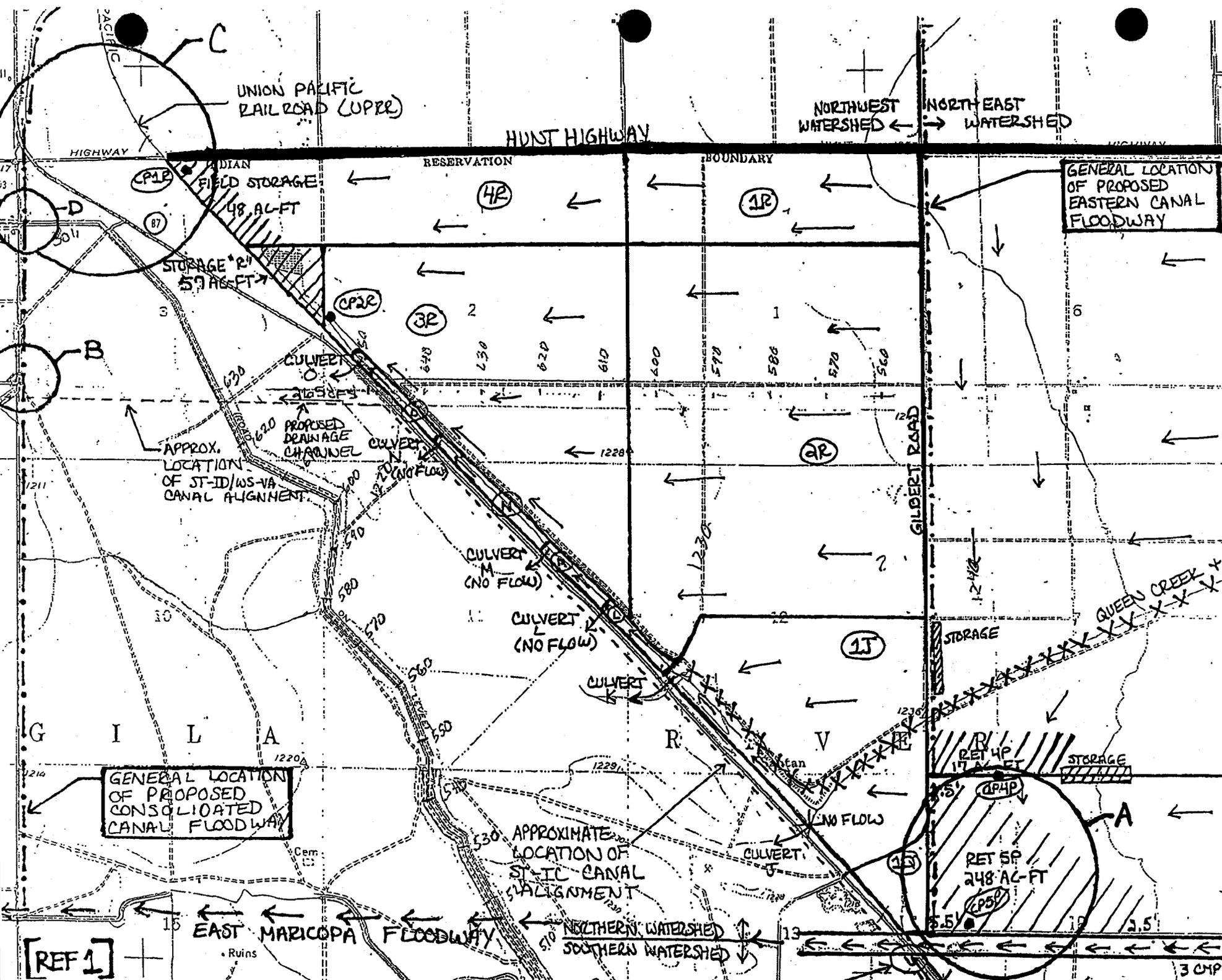
- The Effective FIS shows a large floodplain north of Hunt Highway and east of the railroad, with 885 cfs conveyed through a trestle and south, over Hunt Highway.
- The "in-house" FIS Addendum reduces the discharge at the trestle to 333 cfs. However, this flow is shown as conveyed along Hunt Highway.
- The future/developed condition model of the FIS Addendum identifies Santan Vista as "industrial." (The Santan Vista report is dated 1998, and is currently being constructed)
- (FB/DF) According to the Higley Area Drainage Master Plan, proposed channeling of canals, northwest of the railroad and Hunt Highway, will produce a concentrated discharge greater than 700 cfs.
- (RS) **Circle D [Ref 1]** and **[Ref 8]** identify drainage patterns if overtopping of the Santan Canal were to occur.

5. Deliverables:

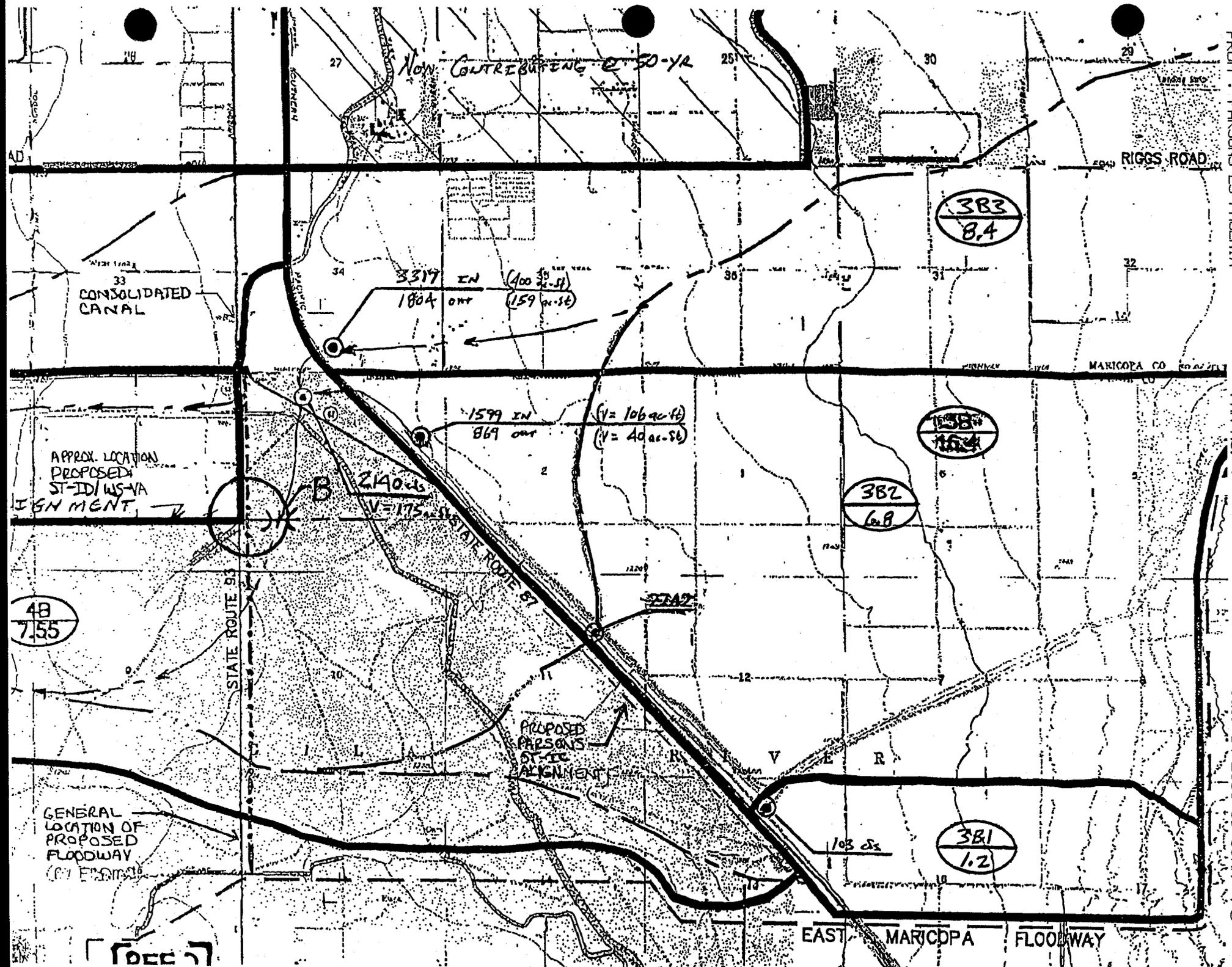
- PES is to supply DA with CAD files of the proposed ST-ID/WS-VA and ST-IC canal alignments.
- PES is to supply DA with a copy of the soil survey for the area east of HGWY 587 and west of the EMF.
- DA will contact Stantec to request two (2) copies of the most recent Lone Butte Drainage Study watershed map.

X
done

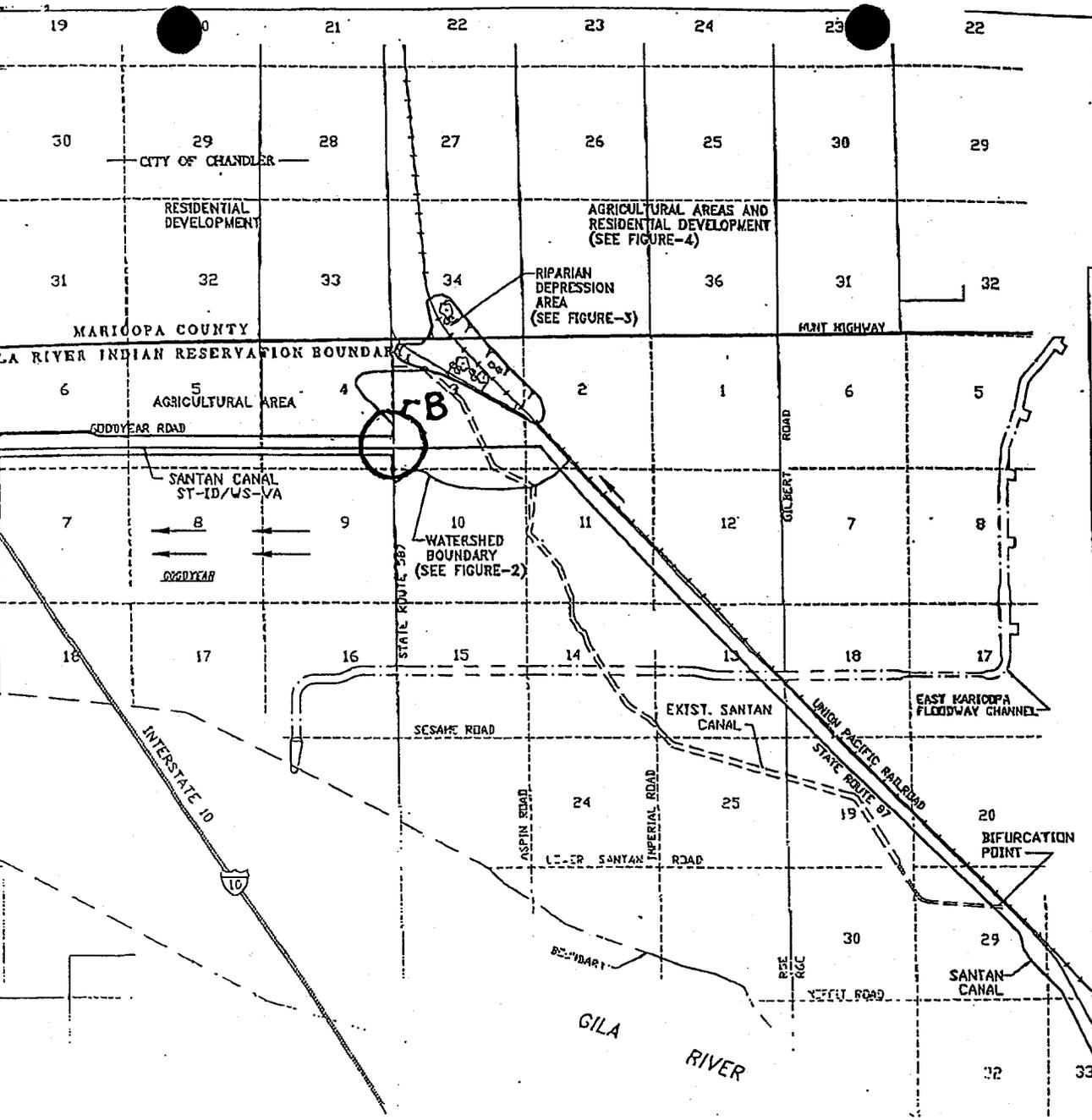
CC: All Attendees, Larry Gene (P-MIP), Harry Millsaps (P-MIP).



[REF 1]

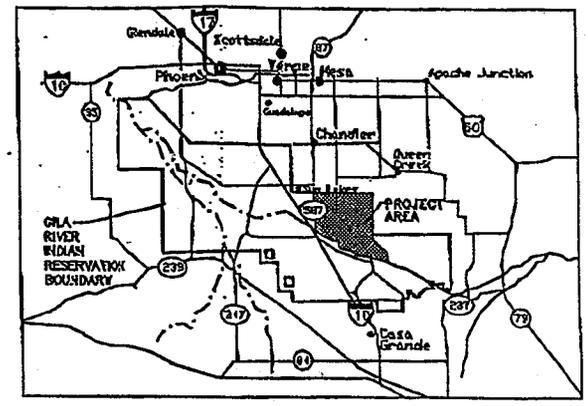


DEC 7



LEGEND

PROPOSED CANAL



VICINITY MAP

FIGURE - 1
PIMA-MARICOPA IRRIGATION PROJECT
SANTAN ID/LONE BUTTE WS-VA-DRAINAGE
LOCATION MAP
 PARSONS ENGINEERING SCIENCE, INC.

[REF 3]

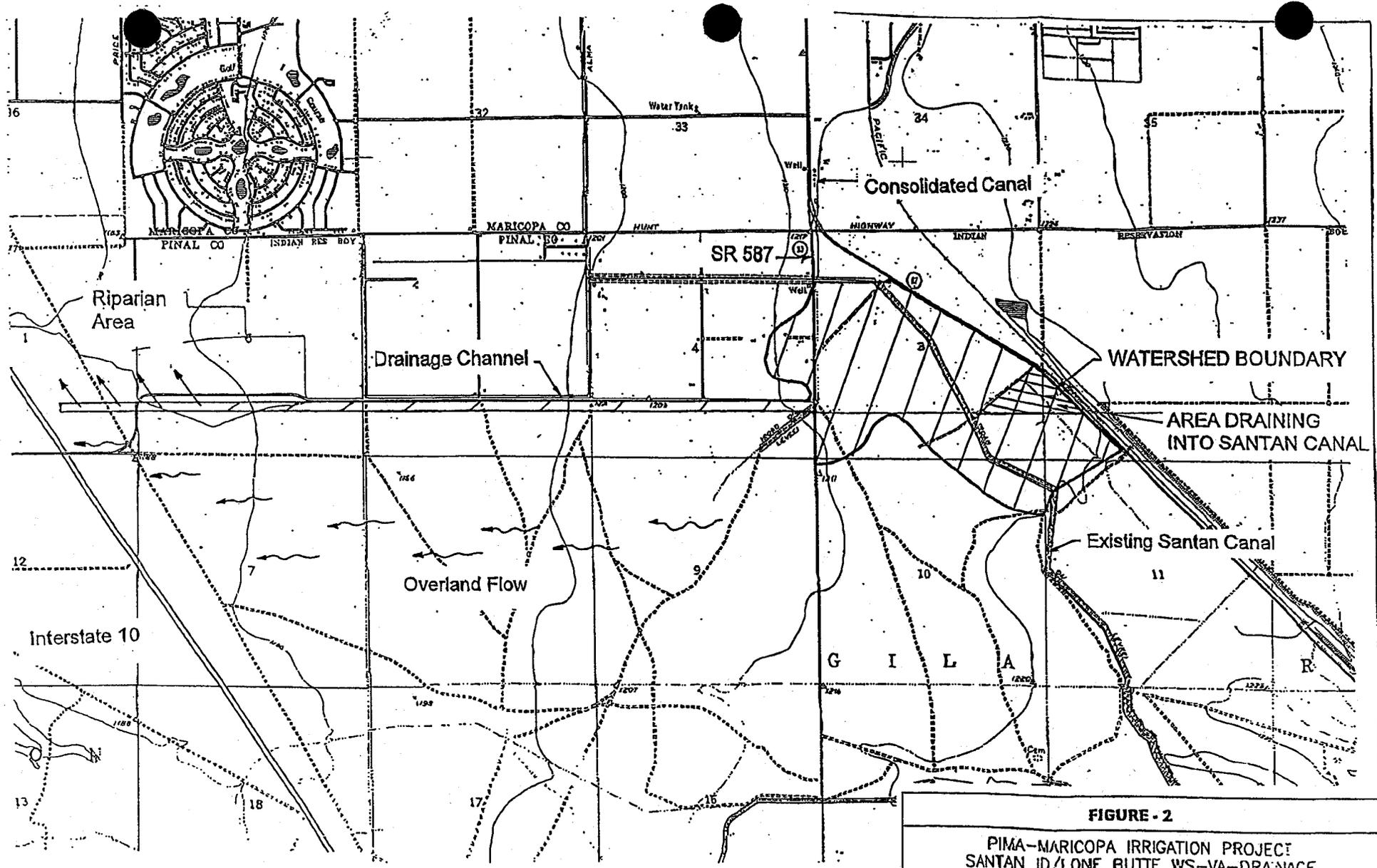
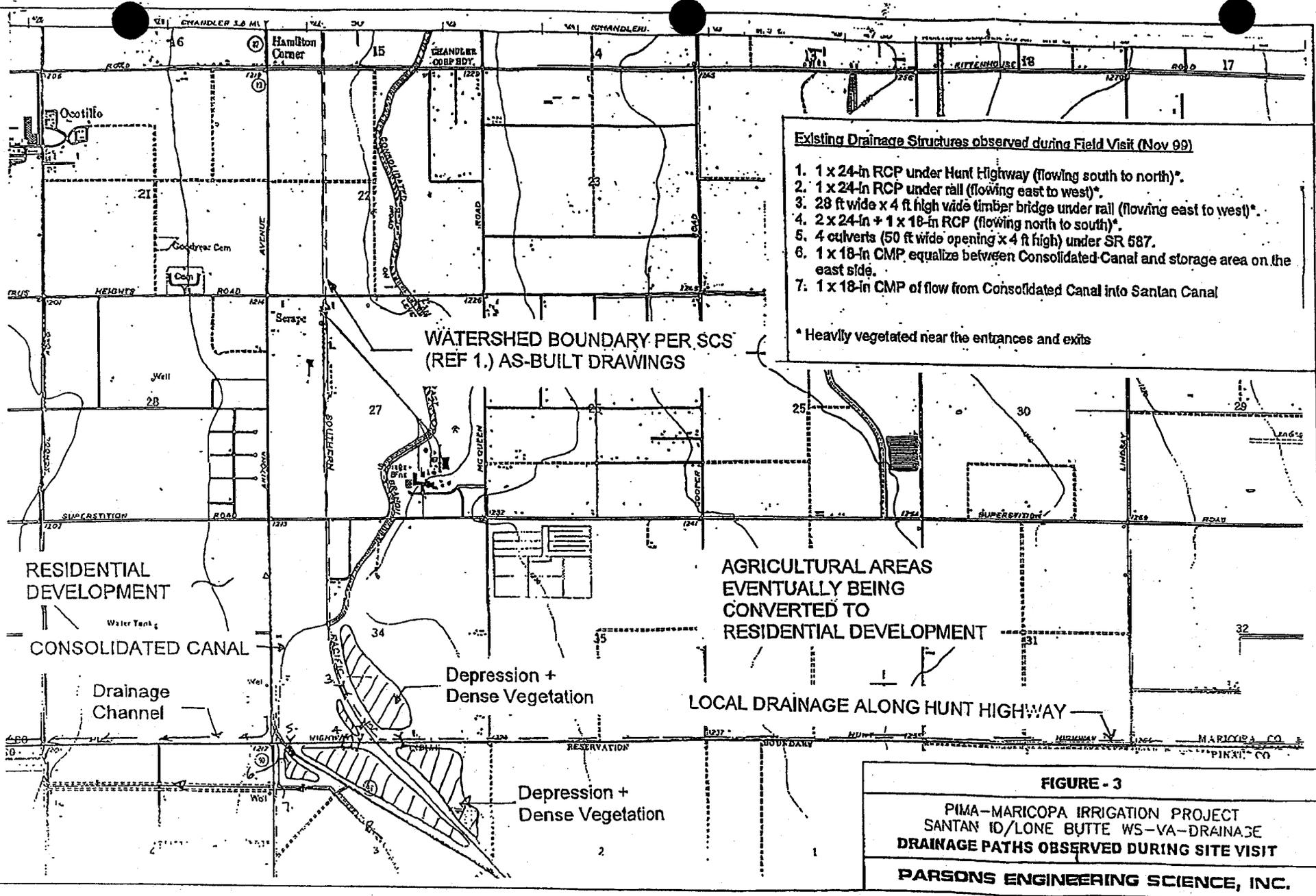


FIGURE - 2
PIMA-MARICOPA IRRIGATION PROJECT
SANTAN ID/LONE BUTTE WS-VA-DRAINAGE
DRAINAGE BOUNDARY
PARSONS ENGINEERING SCIENCE, INC.

[REF 4]



[REF 5]

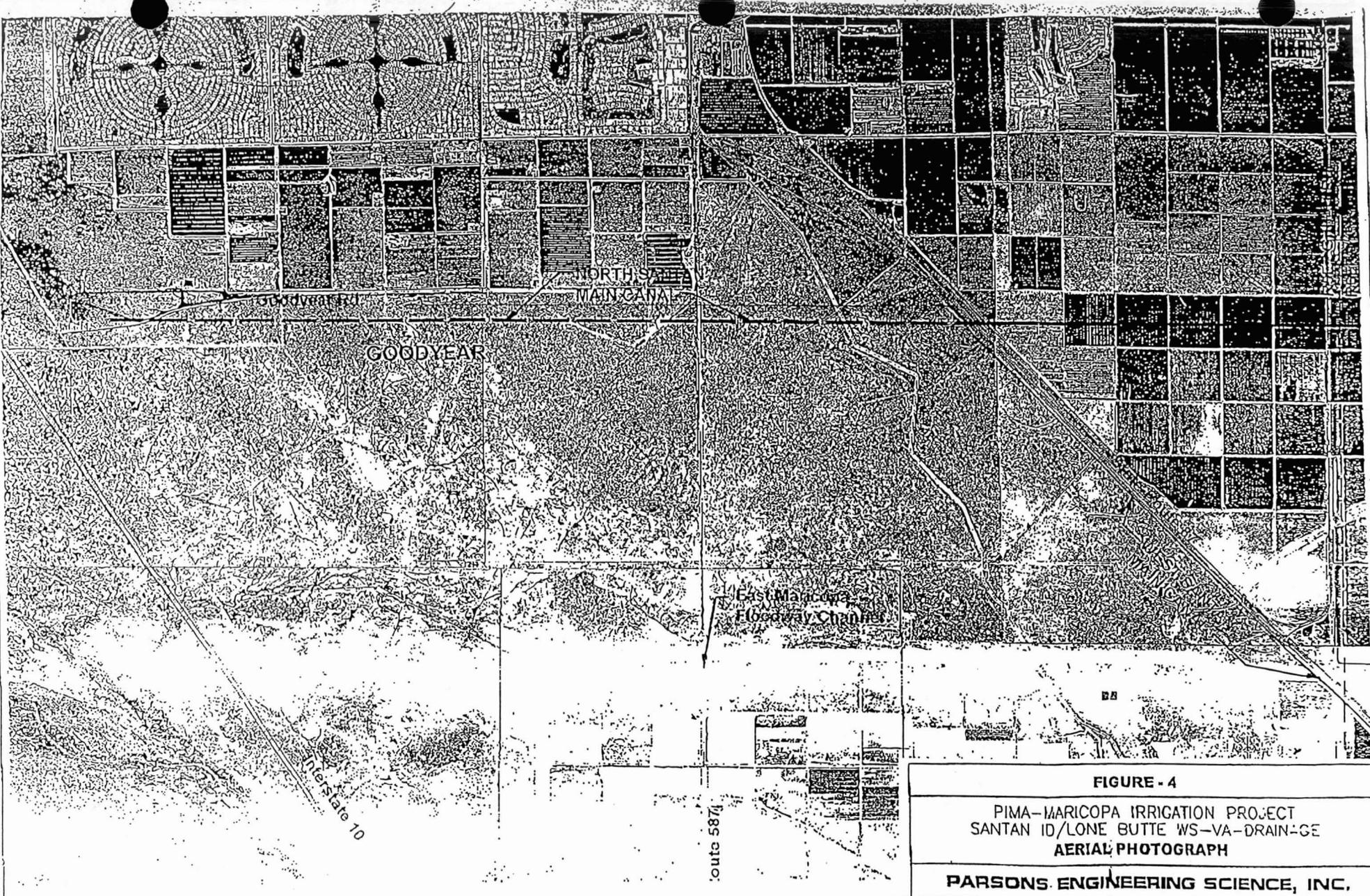


FIGURE - 4

PIMA-MARICOPA IRRIGATION PROJECT
SANTAN ID/LONE BUTTE WS-VA-DRAIN-GE
AERIAL PHOTOGRAPH

PARSONS ENGINEERING SCIENCE, INC.

[REF 6]

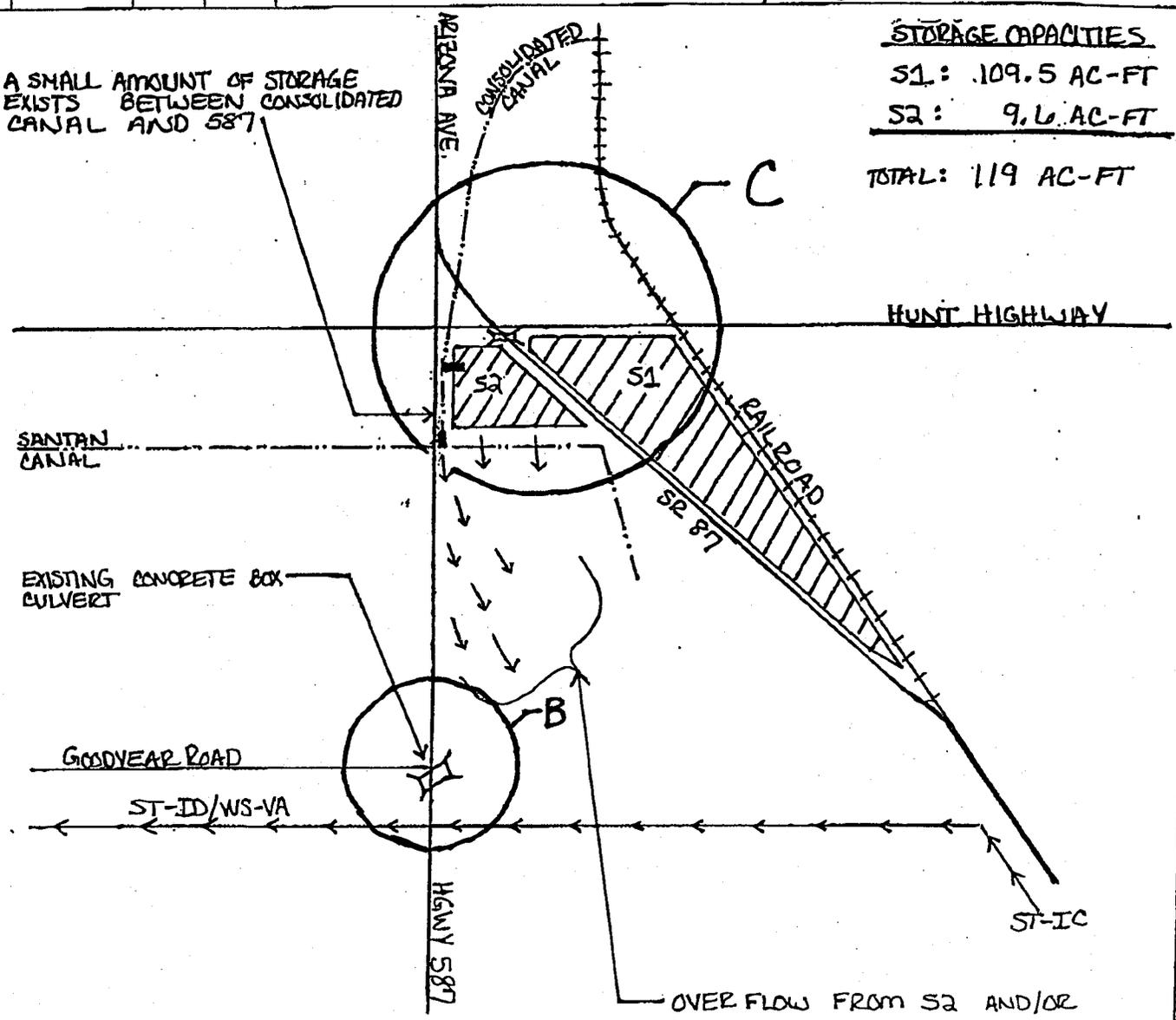
 PARSONS Calculation Sheet		Job Number 736782	WBS Number	Page Number	Sheet of
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Rev	Date	By	Ck	Title
	5/25/00	RMS		P-MIP REACH IC AND ST-ID/WS-VA

VOLUME/STORAGE ANALYSIS OF GILBERT-CHANDLER FIS/ADMS/ADDENDUM

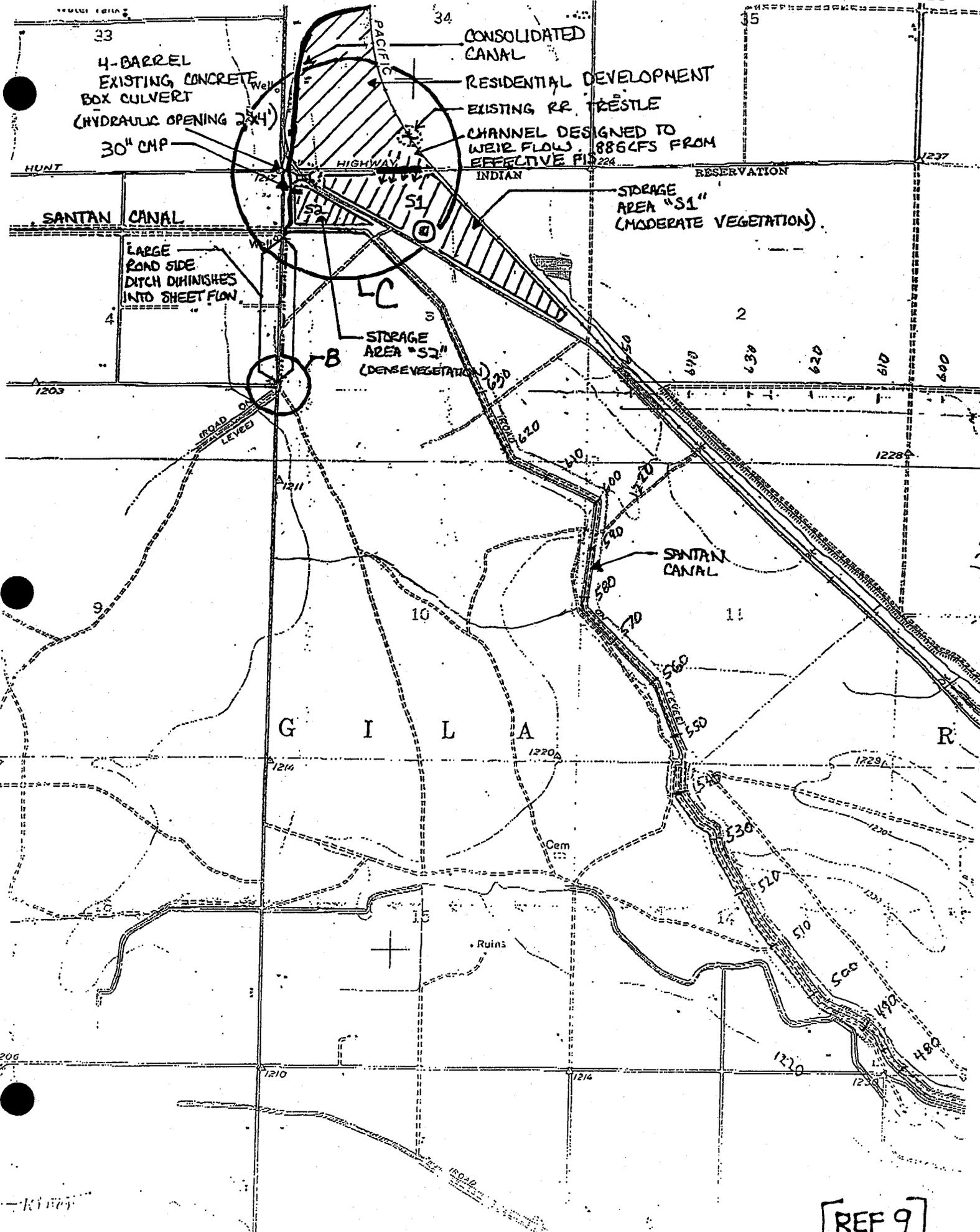
A SMALL AMOUNT OF STORAGE EXISTS BETWEEN CONSOLIDATED CANAL AND 587

STORAGE CAPACITIES
 S1: 109.5 AC-FT
 S2: 9.6 AC-FT
 TOTAL: 119 AC-FT



OVER FLOW FROM S2 AND/OR CONSOLIDATED CANAL WILL BECOME UN-CHANNALIZED AND SHEET FLOW INTO AREA E ST OF 587 AND SOUTH OF SANTAN CANAL

[REF8]



[REF 9]

9829



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite
Phoenix, Arizona 85016-6
Tel. (602) 957-1
Fax (602) 957-2

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

September 13, 2000

Mr. Timothy Phillips
Senior Project Manager
Flood Control District of Maricopa County
2801 W. Durango St.
Phoenix, AZ 85009-6399

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Phillips:

Review Committee Meeting No. 3 is scheduled for Thursday September 28, 2000 from 1:00 to 4:00 at the Flood Control District of Maricopa County.

Review Committee Meeting No. 3
When: Thursday September 28, 2000
1:00 to 4:00 PM
Where: **Flood Control District of Maricopa County**
2801 W Durango St., Phoenix

The purpose of the meeting is to prioritize the recommended plan projects and to discuss implementation of the plan.

The *Recommended Design Report, Initial Submittal*, is transmitted with this letter for your use in preparing for the meeting. The report contains written descriptions of the projects as well as *Preliminary Design Plans* showing the projects in plan and profile with required right-of-way and utility conflicts. The channel and detention basin sizes and estimated costs are also presented.

The report is in draft form and will be completed following selection of project priorities. Please provide any written comments on the report to Tim Phillips or Brian Fry at, or prior to, the meeting.



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite
Phoenix, Arizona 85016-6
Tel. (602) 957-1
Fax (602) 957-2

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Survey

September 13, 2000

Mr. Javier Guana
Project Manager - Santan Freeway
Arizona Department of Transportation
205 South 17th Avenue, Mail Drop 614E
Phoenix, AZ 85007-3212

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Guana:

Review Committee Meeting No. 3 is scheduled for Thursday September 28, 2000 from 1:00 to 4:00 at the Flood Control District of Maricopa County.

Review Committee Meeting No. 3

When: Thursday September 28, 2000
1:00 to 4:00 PM

Where: **Flood Control District of Maricopa County**
2801 W Durango St., Phoenix

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The report is in draft form and will be completed following selection of project priorities. Please provide any written comments on the report to Tim Phillips or Brian Fry at, or prior to, the meeting.



Since 1962

DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite
Phoenix, Arizona 85016-6
Tel. (602) 957-1
Fax (602) 957-2

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Survey

September 13, 2000

Mr. David DeWeese
Project Manager
Maricopa County Department of Transportation
2901 W. Durango Street
Phoenix, AZ 85009-6357

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. DeWeese:

Review Committee Meeting No. 3 is scheduled for Thursday September 28, 2000 from 1:00 to 4:00 at the Flood Control District of Maricopa County.

Review Committee Meeting No. 3

When: Thursday September 28, 2000
1:00 to 4:00 PM

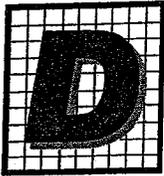
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September 13, 2000

Mr. Fred Ringlero
Director - Land Use Planning & Zoning
Gila River Indian Community
Post Office Box E
Sacaton, AZ 85247

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Ringlero:

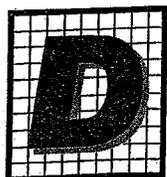
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September 13, 2000

Mr. Paul Cherrington
Manager - Water Engineering & Transmission
Salt River Project Mail Station PAB103
P.O. Box 52026
Phoenix, AZ 85072-2025

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Cherrington:

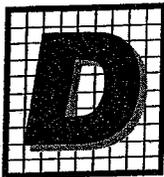
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2633 East Indian School Road, Suite 4
Phoenix, Arizona 85016-6777
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Fax (602) 957-2828

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September 13, 2000

Mr. Timothy Wade
Habitat Specialist
Arizona Game & Fish Department
7200 East University Dr.
Mesa, AZ 85207

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Wade:

Review Committee Meeting No. 3 is scheduled for Thursday September 28, 2000 from 1:00 to 4:00 at the Flood Control District of Maricopa County.

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When: Thursday September 28, 2000
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September 13, 2000

Ms. Diane Simpson-Colebank
Principal
Logan Simpson Design Inc.
51 West 3rd Street, Suite 450
Tempe, AZ 85281

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Ms. Simpson-Colebank:

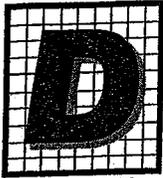
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September 13, 2000

Mr. George Selvia
Public Works Director
City of Chandler
P.O. Box 4008, Mail Stop 408
Chandler, AZ 85244-4008

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Selvia:

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September 13, 2000

Mr. Michael Leonard
General Manager
Roosevelt Water Conservation District
P.O. Box 100
Higley, AZ 85236

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Leonard:

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2633 East Indian School Road, Suite 4
Phoenix, Arizona 85016-67
Tel. (602) 957-11
Fax (602) 957-28

September 13, 2000

Mr. Lonnie Frost
Public Works Director
Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85296

Re: FCD 98-13, Higley Area Drainage Master Plan
Review Committee Meeting No. 3

Dear Mr. Frost:

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September 13, 2000

Mr Ron Taylor
City of Mesa
20 East Main St., 5th Floor
Mesa, AZ 85211-1466

Re: FCD 98-13, Higley Area Drainage Master Plan
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Dear Mr Taylor:

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Fry, Brian

From: Tim Phillips - FCDX [tsp@mail.maricopa.gov]
Sent: Wednesday, September 27, 2000 7:53 AM
To: 'Brian J. Fry, Dibble & Associates Consulting Engineers'
Subject: FW: Higley ADMP Study Report Review

Brian, note Theresa's comments. Thx

> -----Original Message-----

> From: Theresa Hoff - FCDX
> Sent: Wednesday, September 27, 2000 7:33 AM
> To: Tim Phillips - FCDX
> Subject: RE: Higley ADMP Study Report Review

>
> Hi Tim - the report and projects looks good. I was pleased to see that
> one of the solutions is non-structural (i.e., demolishing the houses)
> because it means that we're seriously evaluating and considering that type
> of solution now. The only comment I have is that for several of the
> projects, Dibble is vague about the area the area that the project would
> benefit. For example, the benefits for the Ray Detention Basin on page 27
> are general and not specific as some of the other project benefits are
> described (e.g. 0.36 square miles and xx number of structures will be
> removed from the floodplain). If they could be specific for all of the
> projects with respect to the area and structures removed from the
> floodplain, it would be helpful for the project implementation and to
> "sell" the project.

> Also, it would be great if the Riggs and Chandler Heights detention basins
> are built soon so we could get some nice habitat established before the
> area is completely surrounded by development. I realize that the order of
> the project implementation depends on many factors - but I just wanted to
> give my two cents :-).

> -----Original Message-----

> From: Tim Phillips - FCDX
> Sent: Tuesday, September 19, 2000 2:42 PM
> To: John Palmieri - FCDX; Theresa Hoff - FCDX; Kathryn Gross-
> FCDX; Dennis Holcomb - FCDX
> Cc: Scott Vogel - FCDX
> Subject: Higley ADMP Study Report Review

>
> Dibble & Assoc & I will be finalizing the report on Sept 28. I
> would appreciate any comments you have by Sept 26th. Thx

RECEIVED

2027
Brian [Signature]

SEPT 4 2000

DMJM & ASSOC.



Daniel, Mann, Johnson, & Mendenhall
2777 E. Camelback Rd., Suite 200
Phoenix, Arizona 85016-4302
Telephone: 602/337-2777
Fax: 602/337-2624

**REGIONAL FREEWAY SYSTEM
ADOT GENERAL CONSULTANT**

memorandum

Dn: 6270
Fn: 500.4.12, 500.4.4, 500.4.5,
600

Date: September 29, 2000
To: File
From: Jeff Minch
Re: Regional Freeway System
Subject: Regional Drainage System Coordination (202L)
Thursday September 21, 2000 at ADOT Arizona Conference Room (9:00 a.m.)
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 indicated in bold italics.

I. Introduction and Purpose

The meeting attendees made self-introductions. The purpose of this meeting was to initiate discussions between ADOT and the Flood Control District of Maricopa County (FCDMC) relating to freeway construction and regional drainage system coordination. Tim Phillips volunteered to be the point of contact at the FCDMC regarding East Valley regional drainage system coordination. Jeff Minch of DMJM will coordinate for ADOT.

II. Drainage Design Segments

The FCDMC has provided DMJM with numerous hydrologic models, supporting databases, electronic files, and reports for the 202L corridor. Even though the hydrologic models are interconnected, DMJM recommended that the freeway drainage design be segmented based on the following major watershed divides:

1. Southern Pacific Railroad to the Consolidated Canal.
2. Consolidated Canal to the Eastern Canal.
3. Eastern Canal to East Maricopa Floodway (EMF).
4. EMF to US 60.
5. US 60 to the Spookhill Flood Retarding Structure (FRS).
6. Spookhill FRS.

DMJM realizes that the freeway design segments do not directly correspond with the drainage divides and that some of these drainage design concepts will need to be defined concurrently to meet the ADOT Regional Freeway System design and construction schedule.

III. Federal Emergency Management Agency (FEMA) Floodplains

At several locations along the remaining freeway corridor in the East Valley, DMJM identified the following FEMA floodplains that could be impacted by the proposed regional drainage systems:

- Southern Pacific Railroad
- Eastern Canal
- Consolidated Canal
- East Maricopa Floodway
- Spookhill FRS

In general, the freeway and/or regional drainage systems will have to address potential impacts on these regulatory floodplains.

IV. FCDMC Hydrology

DMJM could not definitively identify the "baseline" hydrologic models that should be used to quantify existing hydrologic conditions along the freeway corridor without concurrence from FCDMC and ADOT. ***The FCDMC indicated they would define the baseline hydrologic models for the freeway corridor and provide them to DMJM.*** These models should document the land use assumptions for each drainage design segment. Some of the models (i.e. Higley ADMP) were updated for 1998 existing land uses. Others models assume year 2002 land uses (EMF Capacity Study) due to the scheduling of the proposed improvements. ***The FCDMC (Catherine Gross) will schedule a meeting with ADOT/DMJM to review the baseline hydrologic models within the next couple of weeks. The FCDMC committed to providing clearinghouse services for all East Valley hydrologic models.*** All proposed modifications to baseline and future condition models will be provided to the FCDMC for review and concurrence.

DMJM questioned how the FCDMC is addressing the existing versus future conditions as it relates to the design of their regional drainage systems. The FCDMC indicated they too struggle with this issue but in general are following the criteria outlined below:

1. If the existing conditions generate a larger design discharge than future conditions, the conveyance facility would be designed for the greater capacity of existing without freeboard or future with freeboard.
2. If future conditions generate a greater design discharge than existing conditions, the conveyance facility would be designed for future conditions with freeboard.

ADOT concurred with the FCDMC criteria. It was agreed that freeboard design criteria should be defined based on the agency that ultimately owns the facility. The freeboard criteria for both agencies is provided below for comparison:

ADOT Freeboard Criteria:

- The minimum freeboard for facilities with a design water-surface elevation below natural ground is one foot. For facilities with design Froude Numbers exceeding 0.86, the minimum freeboard shall be the greater of one foot or the freeboard computed according to the following formula:

$$FB = 0.20\left(y + \frac{V^2}{2g}\right)$$

where: FB = Design freeboard, ft
y = Dept of flow, ft
V = Average flow velocity, ft/sec
g = acceleration due to gravity, 32.2 ft/sec²

- For design water-surface elevations above natural ground, the facility shall be designed for the below ground freeboard requirements plus one additional foot.

FCDMC Freeboard Criteria:

- Freeboard shall be computed according to the following formula:

$$FB = 0.25\left(y + \frac{V^2}{2g}\right)$$

- The minimum freeboard value for rigid channels shall be one foot for subcritical and two feet for supercritical design flow conditions.
- Additional freeboard may be required for locations where aggradation is substantial during a single flow event.

Another difficulty arises when trying to define future conditions as it relates to not only land use but also proposed capital improvement projects (CIP). ***The FCDMC will review their CIP and ADOT's freeway construction schedule and define construction schedules for their planned regional drainage systems. DMJM will then schedule a meeting with ADOT and the FCDMC to define which regional drainage facilities will be included in the definition of future conditions.***

DMJM had performed a comparison of a four square mile mixed land use urban watershed north of US 60. The results indicated that existing conditions generated a 10% greater design discharge than future land use with retention. Considering the issues outlined above and the watershed complexities, it is difficult to apply a blanket percentage decrease to future conditions for the remaining Regional Freeway drainage systems.

V. Design Concept Comparisons

A. Drainage Systems

DMJM provided a copy of the drainage concepts along the Santan Freeway developed for ADOT (HDR, 1995) and the FCDMC (Dibble, 2000). These concept exhibits are provided as attachments. DMJM noted that the FCDMC system is significantly larger than the ADOT system. The major difference between the two systems is that the ADOT system was designed to mitigate the freeway impacts on the existing drainage pattern while the FCDMC system mitigates the existing floodplain. Dibble indicated that they recently submitted a Recommended Design Report for the Higley ADMP. The details of the FCDMC proposed design concept are outlined in this document. ***The FCDMC indicated they would provide a copy of this document to both ADOT and DMJM.***

Because of the downstream discharge limitation in the ADOT drainage system at the SPRR, the FCDMC proposed retention basins to mitigate the floodplain. ***DMJM will define the basis of the***

discharge limitation from Basin K at the SPRR and the Santan Freeway. The FCDMC would like to see if there is an opportunity to increase the outfall to the west and thereby reduce the size of the detention/retention basins. **DMJM will investigate the possibility of increasing the discharge from Basin K.**

The FCDMC indicated that the recommended alternative retention basin concept was developed along the Santan Freeway corridor to downsize the regional drainage systems south of the freeway. DMJM questioned whether the FCDMC had considered a conveyance system to the south rather than a retention basin system. The FCDMC indicated that matching funding and right-of-way acquisition were key issues in selecting the recommended regional drainage systems at the Santan Freeway corridor.

B. Environmental Considerations

The Environmental Assessment (EA) for the Santan Freeway changed the general plan design concept in the vicinity of Guadalupe Road. The general plan called for a pass-through system of culverts, but the EA reflects a depressed mainline at Guadalupe Road. The off-site drainage system will have to be reevaluated with the upcoming DCR for this section of the Santan Freeway. Coordination will be required with the US60/202L T.I. design concept. DMJM believes the EA for the Santan Freeway is still valid west of the East Maricopa Floodway.

VI. Santan Freeway 15% Concept (Arizona Avenue to Gilbert Road)

DMJM presented the 15% drainage concept for the Santan Freeway from Arizona Avenue to Gilbert Road. This concept is similar to the one originally developed by HDR for ADOT in 1995. The only difference between the DMJM and HDR concepts is the location of Basins K and L. Basin K was located east of the existing floodplain at the Southern Pacific Railroad north of the freeway. New development immediately north to the freeway right-of-way prompted DMJM to move Basin L to the east. Dibble indicated that their concept recommended that Basin L be sited on the south side of the freeway on agricultural land. **DMJM will review this concept for incorporation into the freeway design.**

VII. Joint Project Coordination/Funding

DMJM questioned whether the FCDMC would be interested in partnering and joint funding the Santan Freeway drainage system. The FCDMC indicated they are interested in working with ADOT to implement the proposed regional drainage system in this part of the East Valley. **DMJM will initiate an Intergovernmental Agreement between ADOT and the FCDMC.**

VIII. Santan Freeway Schedule (Arizona Avenue to Gilbert Road)

DMJM is submitting the 15% design to ADOT for review at the end of September 2000. DMJM will be submitting the 30% design to ADOT at the end of March 2001. DMJM's goal is to have the Intergovernmental Agreements and final design concept defined by the 30% submittal. The FCDMC indicated a willingness to work towards this common goal.

Please refer any comments or clarifications of the meeting minutes to Jeff Minch at 602-337-2540.

Attachments:

1. ADOT Regional Freeway System (July 2000 Certification)
2. Drainage Concepts, Santan Freeway (Price Road to Gilbert Road), Figure 4 (HDR, 1995)
3. Drainage Concepts, Santan Freeway (Gilbert Road to Baseline Road), Figure 5 (HDR, 1995)
4. Higley Area Drainage Master Plan, Middle Area Recommended Plan, Exhibit 15 (Dibble, 2000)
5. Higley Area Drainage Master Plan, South Area Recommended Plan, Exhibit 16 (Dibble, 2000)

Attendees of the September 21, 2000 meeting:

AGENCY/FIRM	NAME	PHONE/FAX (602)	E-MAIL
ADOT - VPM	Bill Evans	712-6660 / 712-7630	Bevans@dot.state.az.us
ADOT - Roadway Drainage	Dennis Crandall	712-7197 / 712-3161	Dcrandall@dot.state.az.us
FCDMC	Tim Phillips	506-4718 / 506-8561	Tsp@mail.maricopa.gov
FCDMC	Cathrine Gross	506-4837 /	Kag@mail.maricopa.gov
Dibble & Associates	Brian Fry	957-1155 / 957-2838	Bfry@dibblecorp.com
Dibble & Associates	Dan Frank	957-1155 / 957-2838	Dfrank@dibblecorp.com
DMJM	Jeff Minch	337-2540 / 337-2620	Minchj@dmjm.com
DMJM	Paul Waung	337-2607 / 337-2624	Waungp@dmjm.com
DMJM	John Gerometta	337-2608 / 337-2624	Geromettaj@dmjm.com
DMJM	Dave Lutzky	337-2529 / 337-2620	Lutzkyd@dmjm.com
DMJM	Alan Morrice	337-2533 / 337-2620	Morricea@dmjm.com

Cc: Attendees, Steve Jimenez (ADOT), Vince Li (ADOT), File, TMM, SDW

Regional Freeway System

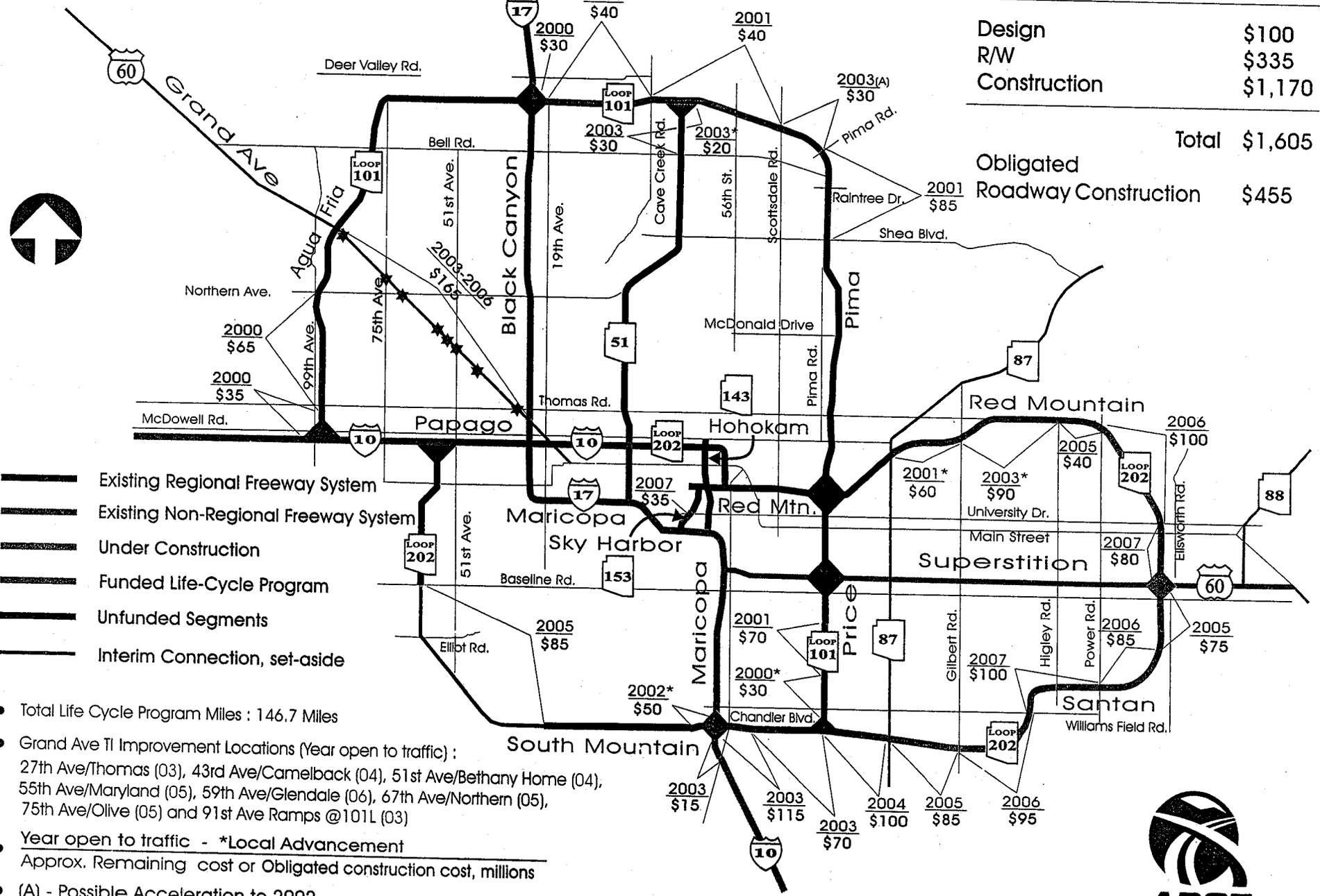
July 2000 Certification

Remaining Life Cycle Cost
(Millions) 2001 - 2007

Design	\$100
R/W	\$335
Construction	\$1,170

Total \$1,605

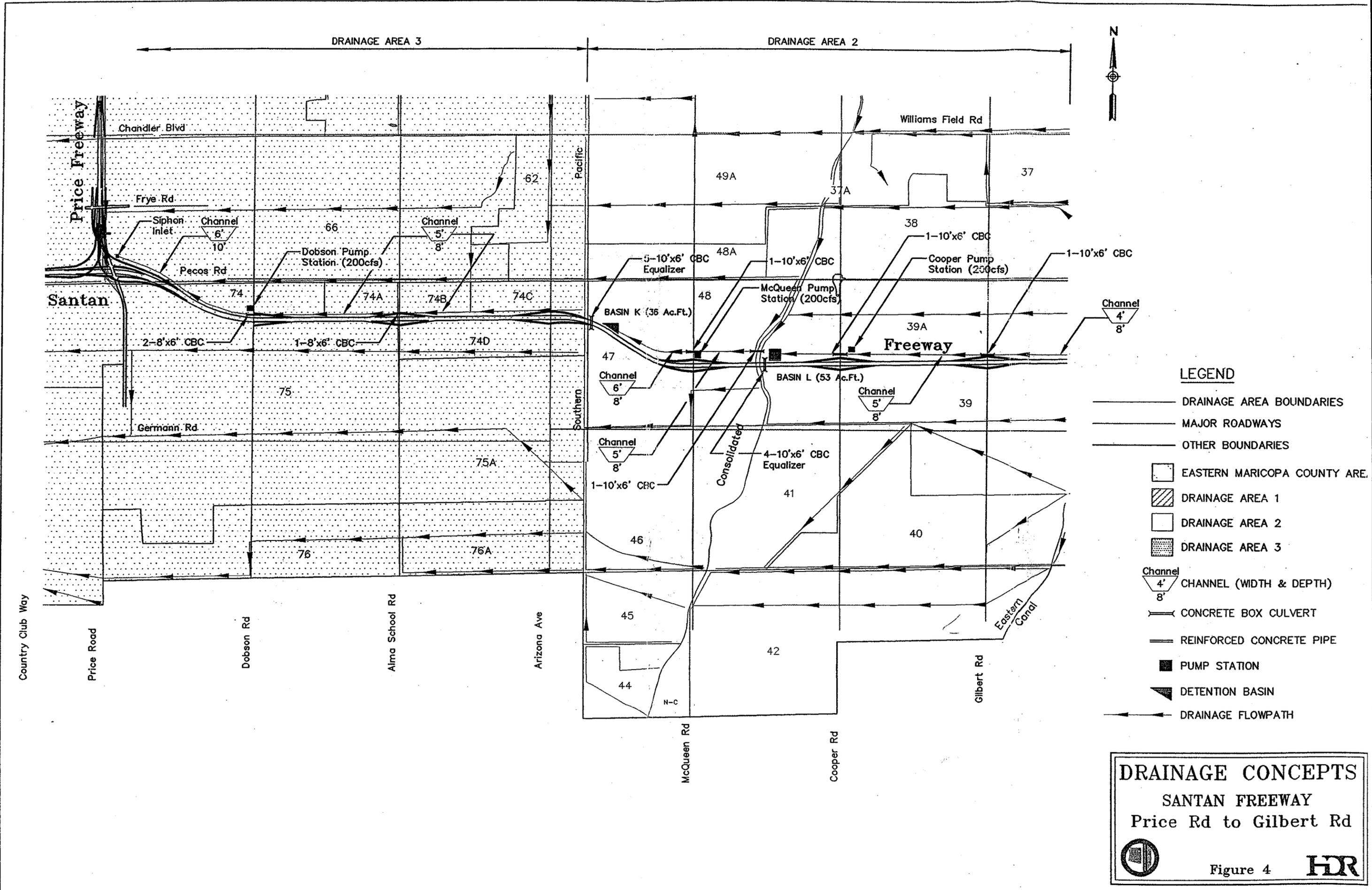
Obligated Roadway Construction \$455



- Existing Regional Freeway System
- Existing Non-Regional Freeway System
- Under Construction
- Funded Life-Cycle Program
- Unfunded Segments
- Interim Connection, set-aside

- Total Life Cycle Program Miles : 146.7 Miles
- Grand Ave TI Improvement Locations (Year open to traffic) :
27th Ave/Thomas (03), 43rd Ave/Camelback (04), 51st Ave/Bethany Home (04),
55th Ave/Maryland (05), 59th Ave/Glendale (06), 67th Ave/Northern (05),
75th Ave/Olive (05) and 91st Ave Ramps @ 101L (03)
- Year open to traffic - *Local Advancement
- Approx. Remaining cost or Obligated construction cost, millions
- (A) - Possible Acceleration to 2002

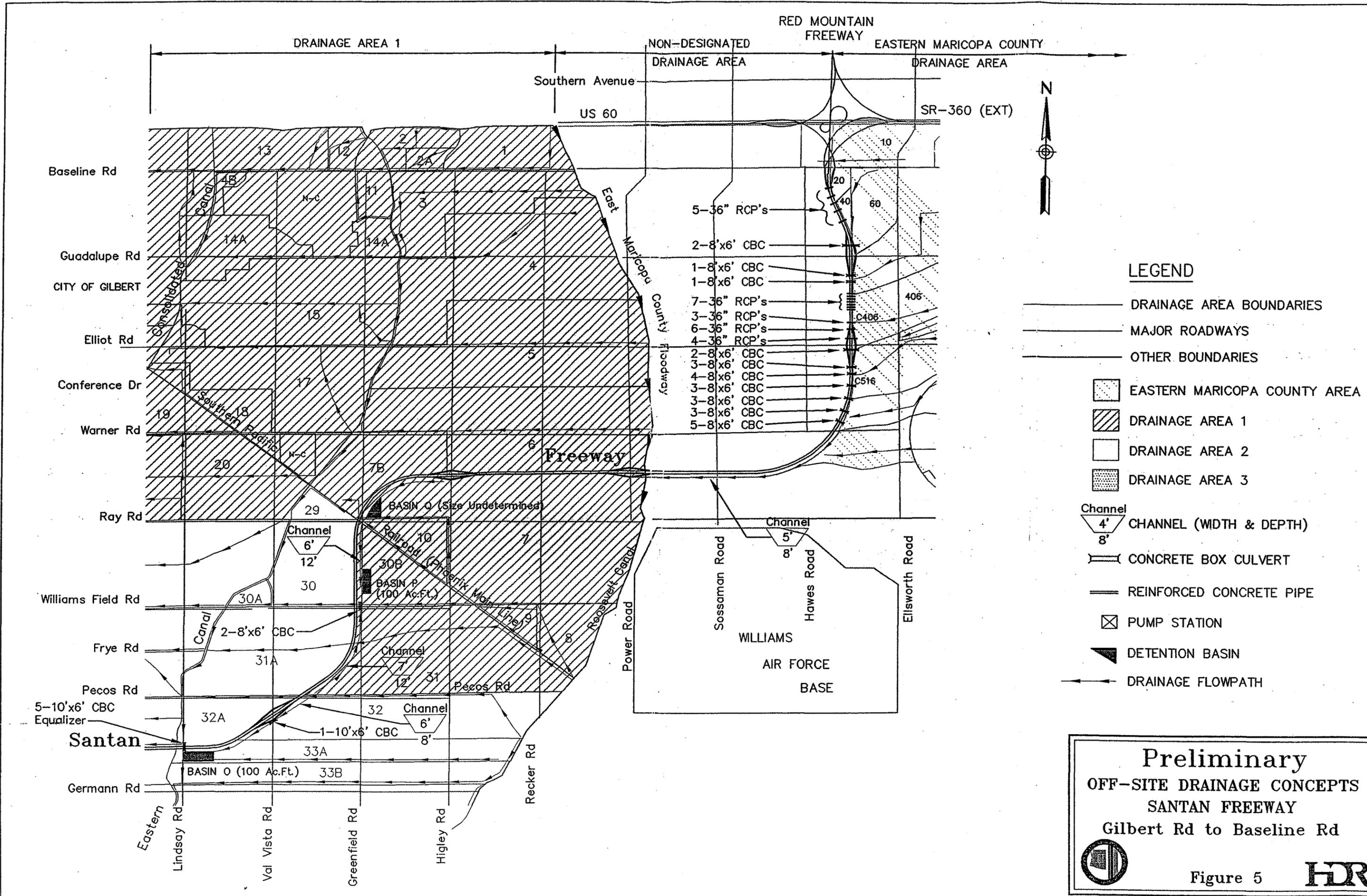




- LEGEND**
- DRAINAGE AREA BOUNDARIES
 - MAJOR ROADWAYS
 - OTHER BOUNDARIES
 - EASTERN MARICOPA COUNTY ARE.
 - ▨ DRAINAGE AREA 1
 - DRAINAGE AREA 2
 - ▤ DRAINAGE AREA 3
 - Channel 4' 8" CHANNEL (WIDTH & DEPTH)
 - CONCRETE BOX CULVERT
 - REINFORCED CONCRETE PIPE
 - PUMP STATION
 - ▴ DETENTION BASIN
 - DRAINAGE FLOWPATH

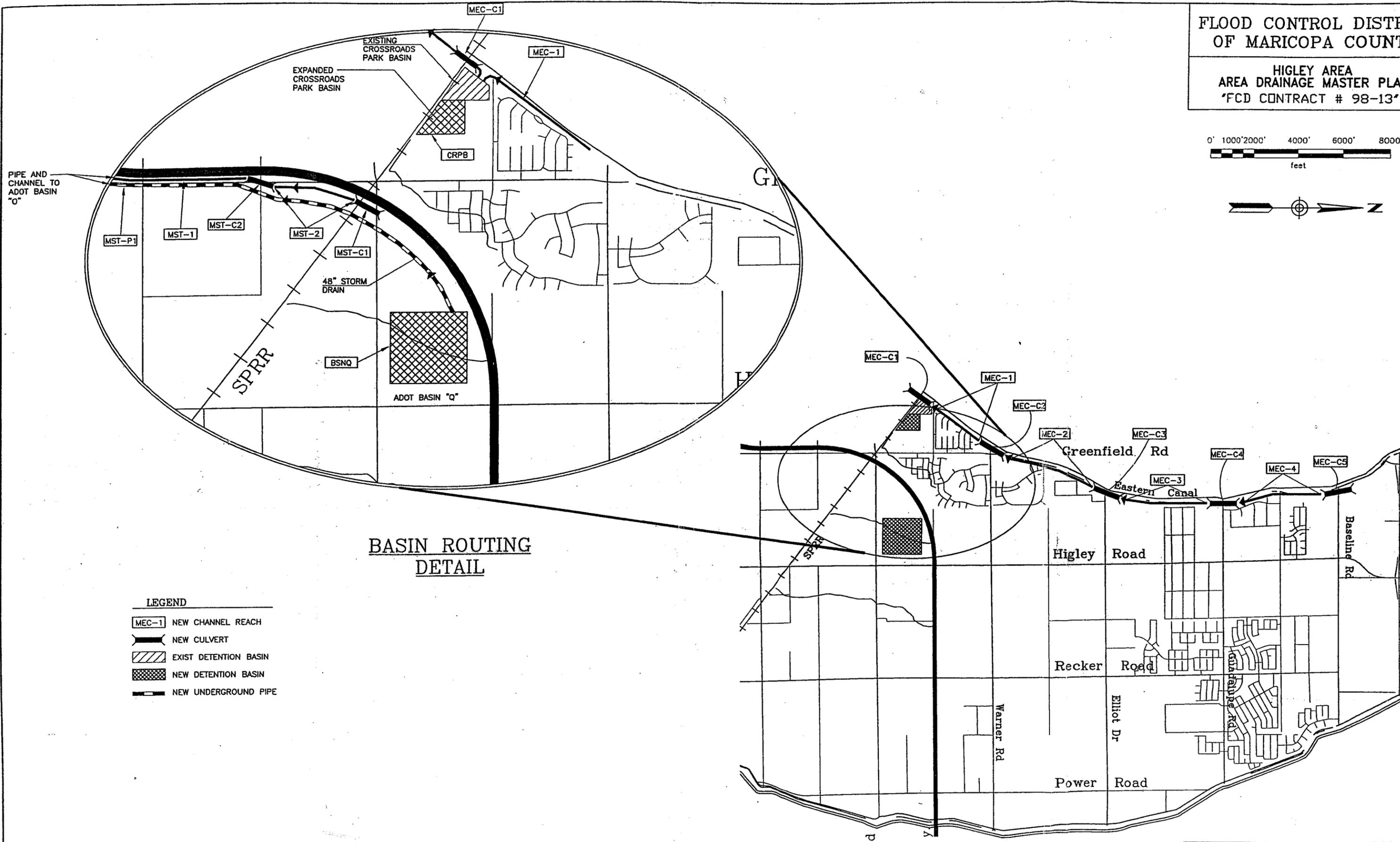
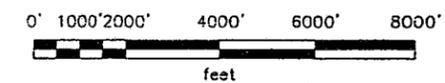
DRAINAGE CONCEPTS
SANTAN FREEWAY
 Price Rd to Gilbert Rd

Figure 4 **HDR**



FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'



BASIN ROUTING
DETAIL

- LEGEND**
- MEC-1 NEW CHANNEL REACH
 - NEW CULVERT
 - EXIST DETENTION BASIN
 - NEW DETENTION BASIN
 - NEW UNDERGROUND PIPE

PROJECT DESCRIPTION: MIDDLE AREA
RECOMMENDED PLAN

CONSULTANT: DIBBLE & ASSOCIATES
CONSULTING ENGINEERS

Middle Area, Recommended Plan

CHANNEL CAPACITIES AND COSTS

ID.	Design Q (cfs)	Q (cfs)	Downstream Elevation	Upstream Elevation	Length (ft)	Slope (ft/ft)	Material Type	Manning's "n" Value	Bottom Width (ft)	Depth of Flow (ft)	Shoal Depth (ft)	Area of Flow (sq ft)	Perimeter (ft)	Friction Headloss	Type of Flow	Velocity (ft/s)	Friction Loss (ft)	Design Depth (ft)	Estimated Volume (cy)	Unit Cost (\$/cy)	Excavation Cost	Concrete Volume (cy)	Unit Cost (\$/cy)	Concrete Cost	Fence Length (ft)	Unit Cost (\$/ft)	Fence Cost	Riprap Volume (cy)	Unit Cost (\$/cy)	Riprap Cost	Landscape Restoration (\$)	Unit Cost (\$/sq ft)	Landscape Cost	Required Land Acquisition (Ac)	Zoning	Unit Cost (\$/Ac)	Land Acquisition Cost	Total Construction Cost	Total Landscape Cost	Total Cost, Land and Landscape Costs
MEC-1	2242	2242	-	-	4100	0.00087	E	0.0400	100	5.8	6	753.7	168.5	0.22	Sub	3.9	1.4	7.1	184426	\$11	\$2,028,691	0	\$310	90	8200	\$12	\$98,400	0	\$35	50	668,071	\$2.20	\$1,465,356	19.3	Res.	\$0.60	\$504,085	\$2,127,091	\$1,465,356	\$4,096,531
MEC-2	1133	1133	-	-	5684	0.00087	E	0.0400	75	4.4	6	449.5	128.8	0.21	Sub	2.5	1.1	5.8	160805	\$11	\$1,768,835	0	\$310	90	11368	\$12	\$136,416	0	\$35	50	729,508	\$2.20	\$1,604,818	21.1	Res.	\$0.60	\$551,422	\$1,905,271	\$1,604,818	\$4,061,511
MEC-3	892	892	-	-	5400	0.00037	E	0.0400	80	4.5	6	327.4	144.8	0.14	Sub	1.7	1.1	5.6	175379	\$11	\$1,929,171	0	\$310	90	10600	\$12	\$129,600	0	\$35	50	776,853	\$2.20	\$1,709,077	22.0	Res.	\$0.60	\$575,824	\$2,058,771	\$1,709,077	\$4,343,672
MEC-4	484	484	-	-	5412	0.00043	E	0.0400	45	4.2	6	298.8	96.2	0.14	Sub	1.6	1.1	5.3	106974	\$11	\$1,178,711	0	\$310	90	10624	\$12	\$129,888	0	\$35	50	523,412	\$2.20	\$1,151,506	16.0	Res.	\$0.60	\$417,026	\$1,306,599	\$1,151,506	\$2,875,132
MST-1	499	499	-	-	2400	0.00050	E	0.0400	35	4.5	6	281.2	90.0	0.15	Sub	1.8	1.1	5.7	45714	\$11	\$502,854	0	\$310	90	4800	\$12	\$57,600	0	\$35	50	213,614	\$2.20	\$468,852	6.8	Res.	\$0.60	\$177,137	\$560,454	\$468,852	\$1,297,543
MST-2	499	499	-	-	8600	0.00050	E	0.0400	35	4.5	6	281.2	90.0	0.15	Sub	1.8	1.1	5.7	167816	\$11	\$1,843,799	0	\$310	90	17600	\$12	\$211,200	0	\$35	50	783,253	\$2.20	\$1,721,156	24.9	Res.	\$0.60	\$649,503	\$2,054,909	\$1,721,156	\$4,427,559

CULVERTY CAPACITIES AND COSTS

ID.	Design Q (cfs)	Q (cfs)	R/W Width (ft)	Slope Angle (Degrees)	Length (ft)	Slope (ft/ft)	Material Barrel Type	Manning's "n" Value	Number of Barrels	Culvert Diameter/Height	Width	Barrel Material	Thickness Depth (ft)	Compressed Headwater	Compressed Tailwater	Concrete	Length of Pipe Box Culvert (ft)	Unit Cost (\$/ft)	Pipe Box Culvert Cost	Head Headwall	Unit Cost (\$/ft)	Head Headwall Cost	Outlet Headwall	Unit Cost (\$/ft)	Outlet Headwall Cost	Required Land Acquisition (Ac)	Zoning	Unit Cost (\$/Ac)	Land Acquisition Cost	Total Construction Cost	Total Landscape Cost	Total Cost, Land and Landscape Costs
MEC-C1	255	255	110	90	110	0.01000	C	0.012	1	6	6	RCBC	5.6	6.18	1.03	IC	110	\$800	\$88,000	1	\$5,700	\$5,700	1	\$8,500	\$8,500	0.0	N/A	\$0.00	\$0	\$102,200	\$0	\$102,200
MEC-C2	1133	1133	110	90	220	0.01000	C	0.012	4	6	6	RCBC	5.6	5.43	0.90	IC	220	\$1,500	\$330,000	1	\$5,500	\$5,500	1	\$8,800	\$8,800	0.0	N/A	\$0.00	\$0	\$344,700	\$0	\$344,700
MEC-C3	892	892	110	90	127	0.01000	C	0.012	3	4	10	RCBC	4.4	4.89	1.22	IC	127	\$1,400	\$177,824	1	\$4,900	\$4,900	1	\$8,800	\$8,800	0.0	N/A	\$0.00	\$0	\$191,524	\$0	\$191,524
MEC-C4	484	484	110	90	110	0.01000	C	0.012	2	4	4	RCBC	4.5	5.40	1.35	IC	110	\$800	\$88,000	1	\$2,900	\$2,900	1	\$7,000	\$7,000	0.0	N/A	\$0.00	\$0	\$98,800	\$0	\$98,800
MEC-C5	130	130	110	90	110	0.01000	C	0.012	1	4	6	RCBC	4.2	3.83	0.94	IC	110	\$800	\$88,000	1	\$3,200	\$3,200	1	\$5,700	\$5,700	0.0	N/A	\$0.00	\$0	\$96,900	\$0	\$96,900
MST-C1	499	499	110	90	110	0.01000	C	0.012	2	4	6	RCBC	4.5	5.54	1.39	IC	110	\$800	\$88,000	1	\$3,600	\$3,600	1	\$7,000	\$7,000	0.0	N/A	\$0.00	\$0	\$98,800	\$0	\$98,800
MST-C2	499	499	110	70	117	0.01000	C	0.012	2	4	6	RCBC	4.5	6.54	1.39	IC	117	\$800	\$93,648	1	\$3,000	\$3,000	1	\$7,000	\$7,000	0.0	N/A	\$0.00	\$0	\$104,548	\$0	\$104,548

DRY, IRON BISH QUANTITIES AND COSTS

ID.	Q in (ft)	Q Out (ft)	Length (ft)	Material Type	Manning's "n" Value	Outlet Pipe Diameter (ft)	Volume (Ac-ft)	Division Basin Excavation (cy)	Unit Cost (\$/cy)	Division Basin Excavation Cost	Landscape Restoration (\$)	Unit Cost (\$/ft)	Landscape Cost	Headwall	Unit Cost (\$/ft)	Headwall Cost	Emergency Spillway Length (ft)	Concrete Volume (cy)	Unit Cost (\$/cy)	Concrete Cost	Compert Pipe (ft)	Unit Cost (\$/ft)	Compert Pipe Cost	Fence Length (ft)	Unit Cost (\$/ft)	Fence Cost	Required Land Acquisition (Ac)	Zoning	Unit Cost (\$/Ac)	Land Acquisition Cost	Total Construction Cost	Total Landscape Cost	Total Cost, Land and Landscape Costs
DRPB	2900	255	0	-	-	-	548	129,066	\$6	\$774,396	290400	\$2.12	\$626,040	0	\$1,100	\$0	350	311	\$310.00	\$96,410	349	\$35.00	\$12,315.00	0	\$12.00	\$0	0	Res.	\$0.99	\$258,746	\$884,421	\$638,840	\$1,782,047
BSNQ	1196	195	0	-	-	4	142.2	319,047	\$6	\$1,914,282	1206819	\$2.23	\$2,654,563	0	\$1,100	\$0	170	151	\$310.00	\$48,810	189	\$35.00	\$6,615.00	5,710	\$12.00	\$68,520	27.7	Res.	\$0.99	\$1,194,546	\$2,038,227	\$2,654,563	\$5,845,336

STORM DRAIN QUANTITIES AND COSTS

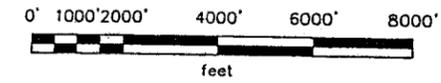
ID.	Q In (cfs)	Q Out (cfs)	Downstream Elevation	Upstream Elevation	Compresion, K	V-M	Length (ft)	Slope (ft/ft)	Material Type	Manning's "n" Value	Number of Pipe/Boxes	Pipe or Box	Pipe Diameter (ft)	Box Height (ft)	Box Width (ft)	Length of Pipe (ft)	Unit Cost (\$/ft)	Pipe/Box Cost	Headwall	Unit Cost (\$/ft)	Headwall Cost	Headwall Cost	Manhole	Unit Cost (\$/ft)	Manhole Cost	Required Land Acquisition (Ac)	Zoning	Unit Cost (\$/Ac)	Land Acquisition Cost	Total Construction Cost	Total Landscape Cost	Total Cost, Land and Landscape Costs
MST-P1							22500	0	0.0120	1	Pipe	4				30000	\$120	\$3,600,000	2	\$1,100	\$2,200	\$2,420,000	45	\$3,000	\$135,000				\$6,155,000	\$0	\$6,155,000	

TOTALS	147.0	Ac.	\$4,328,290	\$20,105,505	\$11,417,408	\$35,851,202
CONTINGENCIES AT 30%						\$6,031,651
GRAND TOTAL						\$41,882,854

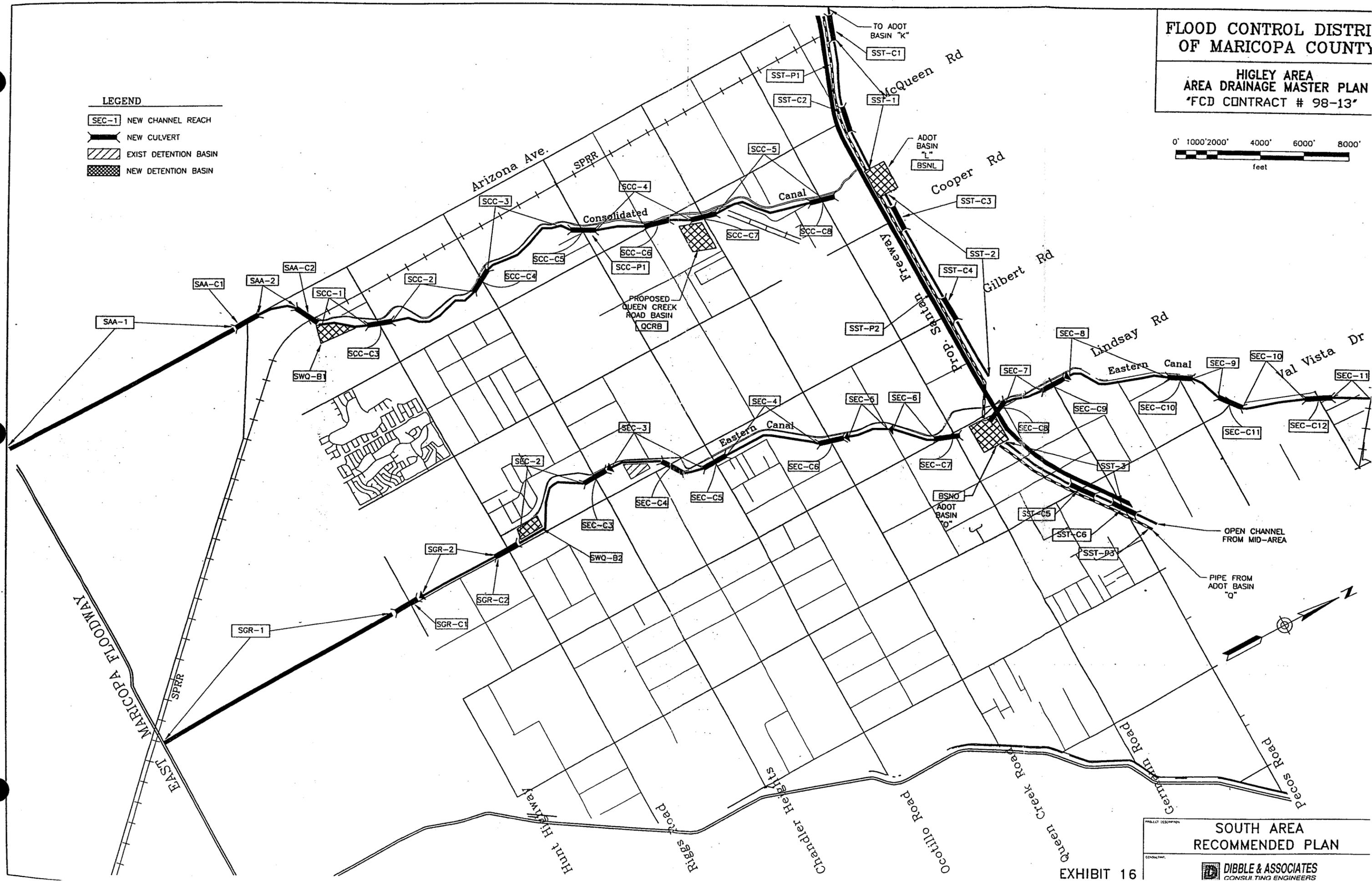
* NOTE: Slopes Obtained Directly From HEC-1 Output
30% Contingency is applied to the Total Construction Cost Only

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

HIGLEY AREA
AREA DRAINAGE MASTER PLAN
'FCD CONTRACT # 98-13'



- LEGEND**
- SEC-1 NEW CHANNEL REACH
 - NEW CULVERT
 - EXIST DETENTION BASIN
 - NEW DETENTION BASIN



**SOUTH AREA
RECOMMENDED PLAN**

PROJECT DESCRIPTION:
CONSULTANT:
DIBBLE & ASSOCIATES
CONSULTING ENGINEERS



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

Since 1962

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

LETTER OF TRANSMITTAL

TO: Flood Control District
of Maricopa County
2801 W. Durango
Phoenix, AZ

DATE: October 5, 2000
RE: Higley ADMP
FCD Contract # 98-13

ATTENTION: Tim Phillips

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

Copies	Date	I.D. Number	Description
2	10.4.00		Change Order

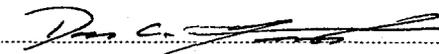
These are transmitted as checked below:

- For Approval
- For Your Use
- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

REMARKS: _____

copy: Daily
9829 Letter

Sincerely,
DIBBLE & ASSOCIATES


Dan C. Frank, E.I.T.

CONSULTANT CHANGE ORDER - FCD APPROVAL

Flood Control District of Maricopa County

Date:	10/4/00	Change Order Number:	5	Amount:	\$ (10,834.00)	File No:	
Contract No:	FCD 98-13					PCN No:	491.00.00
Consultant Name:	Dibble & Associates						
Contract Title:	Higley Area Drainage Master Plan						
Initial Amount:	\$718,531.00	Contract Award	11/4/98	Total Previous Change Orders:	\$16,438.76		

By mutual agreement of the parties, the following contract change(s) are incorporated into the above contract. All other contract terms and conditions remain unchanged.

This change order authorizes elimination of Optional Task 3.5, Environmental Permits & Approvals thereby reducing the contract amount by \$10,834.00. Further, this change order authorizes a time extension of 45 days, at the District's request, to close the project.

By reason of this proposed change 45 days extension of time will be allowed.

The contract completion date is: 12/8/00 Previous Contract Completion Date: 10/24/00

The following financial information is submitted:

Initial Contract Amount	\$ 718,531.00
Amended Contract Amount w/ previous change orders	\$ 734,969.76
Current Change Order Request	\$ (10,834.00)
<u>Amended Contract Amount w/ current change order</u>	<u>\$ 724,135.76</u>
Change Order Authorization Limit	\$ 20,000.00
Total Requested Change Orders	\$ 18,594.00
Change Order Authorization Remaining	\$ 1,406.00

We, the undersigned Consultant, hereby agree that upon execution of this change order we will perform all services as identified above, and will accept the above specified amount(s) as full payment therefor.

Consultant Name: Dibble & Associates
 Consultant Address: 2633 E. Indian School Road
Suite 401
Phoenix, AZ 85016

By: Richard J. Perry
 Printed Name: RICHARD J. PERRY
 Title: PRESIDENT
 Date: 10.04.00

DISTRICT APPROVAL

I certify that this change is required to accomplish the overall task for which this contract is initiated.	Division Concurrence
Project Manager _____ Date _____	Division Manager _____ Date _____
Funds are available to accomplish this Change Order	I certify that this change is within the limits authorized by the County Procurement Code.
Controller _____ Date _____	Contracts Branch Manager _____ Date _____
General Manager Approval	Chief Public Works Officer Approval
Chief Engineer & General Manager _____ Date _____	Signature Not Required
	Chief Public Works Officer _____ Date _____

Copy to: Contract File, Controller, Division Manager, Project Manager



DIBBLE & ASSOCIATES

CONSULTING ENGINEERS

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

FAX DISTRIBUTION LIST

DISTRIBUTION DATE: October 6, 2000

FAX NO.

TO:

Timothy Phillips, Flood Control District of Maricopa County	(602) 506-8561
Kathryn Gross, FCDMC	(602) 506-4601
George Selvia, City of Chandler	(480) 782-3415
Beth Huning, City of Chandler	(480) 782-3415
Bryan Patterson, City of Chandler	(480) 782-3415
Lonnie Frost, Town of Gilbert	(480) 503-6842
Fred Ringlero, Gila River Indian Community	(520) 562-4008
Paul Cherrington, Salt River Project	(602) 302-9798
Tom Sands, Salt River Project	(602) 236-2737
Michael Leonard, Roosevelt Water Conservation District	(480) 988-9589
Ron Taylor, City of Mesa	(480) 644-3392
Anna Leyva-Easton, City of Mesa	(480) 644-3392
Bill Evans, Arizona Department of Transportation	(602) 712-7630
David DeWeese, Maricopa County Department of Transportation	(602) 506-5969
Timothy Wade, Arizona Game & Fish Department	(602) 255-3941
Diane Simpson-Colebank, Logan Simpson Design Inc.	(480) 966-9232
Brad Remme, Logan Simpson Design Inc.	(480) 966-9232
Ashley Kowallis, Logan Simpson Design Inc.	(480) 966-9232

MEETING MINUTES
(revised)

DATE: September 28, 2000

LOCATION: Flood Control District

PROJECT: FCD 98-13, Higley Area Drainage Master Plan

ATTENDEES:

Tim Phillips, FCDMC	Ashley Kowallis, Logan-Simpson Design
Kathryn Gross, FCDMC	Brad Remme, Logan-Simpson Design
Dave DeWeese, MCDOT	Bryan Patterson, City of Chandler
Fred Ringlero, Gila River Indian Community	Beth Hunning, City of Chandler
Anna Leyva-Easton, City of Mesa	Brian Fry, Dibble & Associates
Tom Sands, Salt River Project	Dan Frank, Dibble & Associates

PURPOSE: Review Committee Meeting No. 3

DISCUSSION:

1. Recommended Plan

Brian gave a brief overview of the recommended alternative and the operation of the system after which the floor was opened to discussion.

- The limitation imposed by ADOT of 37cfs must be verified to determine if the basins can be down-sized and drained faster. We may be able to drain our system at a higher rate after the storm has passed.
- The City of Chandler is concerned about the basins near the airport (Queen Creek Basin & Basin "L"). These basins will need to drain faster and minimize bird habitat.
- The City of Chandler is concerned about the operation and maintenance of the water quality basins as well as the pollutant constituents in the basins.

2. Project Priorities & Phasing

Priority 1 projects will begin within 5 years.

- Due to the rapid growth of the area, it was decided that advanced land acquisition for all basin sites should be rated as priority 1.
- The City of Chandler expressed their concern that, because of rapid development, the Consolidated Canal Diversion Channel should also be rated as priority 1.
- The reach from Hunt Highway to Riggs Road along Gilbert Road was identified as a critical priority 1 element. Without that link, the entire Eastern Canal Diversion Channel – South system could be in jeopardy.
- The Santan Channel–West from Arizona Avenue to Lindsay Road was identified as a priority 1 element due to the immediacy of the Santan freeway design.

- Fred expressed his concern that the outfalls are priority 1 as far as the Indian Community is concerned and that coordination with the PMIP needs to occur in a timely manner as that project is under design.

Priority 2 projects may begin within 5 to 10 years.

- Priority 2 elements include the entire Eastern Canal Diversion Channel and the Santan Channel-East.

Priority 3 projects may begin when development patterns dictate.

- *Anna stated that the City of Mesa is opposed to the recommended plan for the north study area since there is no identified benefit. Therefore, they recommend a “do nothing” alternative for the north study area.*

3. **Implementation & Funding**

Tim lead the discussion on implementation. From this we came up with “key success factors” which are required for a successful project.

- Plan adoption – The plan needs to be adopted by the agencies involved so that development controls can be put into place.
- Advanced land acquisition – Due to rapid development, getting the land will be critical for the projects.
- Outfall link – The outfall from Riggs Road to Hunt Highway along Gilbert Road is a critical segment. Without this link, the Eastern Canal Diversion Channel may be in jeopardy.
- The outfall limitation of the Santan Freeway system must be verified and coordinated.
- Funding – Without adequate funding the projects won’t happen.
- ADOT & GRIC agreements – Agreements must be in place for these projects to move forward.

4. **Report Comments**

Written report comments were provided by City of Mesa and City of Chandler.

Respectfully Submitted,

Dan C. Frank, E.I.T.

Project Engineer

c: Dibble project file 9829

Review Committee

Attendees

-----Original Message-----

From: Kathryn Gross- FCDX [mailto:kag@mail.maricopa.gov]

Sent: Wednesday, October 04, 2000 5:19 PM

To: 'dfrank@dibblecorp.com'

Cc: Tim Phillips - FCDX

Subject: ECDC and San Tan Channel and pipe - HEC-1 model Pref-m comments

Dan,

Here are my comments regarding PREF-M model and where it applies in the conceptual design report.

Discharges

1. Please re-verify the discharges used at the following locations:

ECDC 12a and 12b and culvert ET- the channel is designed for 1017 cfs; however, HC4 only reports the discharge at 951 cfs.

ECDC 11a -11d and culverts WR, GF - the channel is designed for 1407 cfs but the routed discharge at r4-5b reports 1468 cfs and HC6 is 2263 cfs.

ECDC 10d - 10b - the channel is designed for 2191 cfs; however, the model shows HC6 as 2263 cfs and HC7a as 2402 cfs.

ECDC 10a the discharge used appears ok.

Differences between HEC-1 and Design Spreadsheet are due to iterations in channel design. Channel Design will use new flows but routing cross-section will not be updated.

Proposed channel routing comments

1. Please re-verify the lengths for the following routing reaches the lengths given in the report for these routes do not match the values listed in the HEC-1:

ECDC13a

ECDC13b - 13a & 13b combined length = 5263'

ECDC12b - 2611'

ST-8? (RT30P) revised per comment 4 below.

2. For ECDC10b through ECDC10d, is it reasonable to combine ECDC10b and 10d as one route(R6-7a) when they are actually separated by route ECDC10c(R6-7b) which occurs after the 10b/10d route?

Segment 10-c is concrete so it's channel parameters are different.

3. Should the flows from subbasin 7a have their own designed approach to Cross-roads Basin on the east of the basin or should the assumption stand that these flows would enter the basin through the developments surrounding the basin from the channel system?

Flows from development will enter the channel system north of the basin. Also, construction of the new Greenfield rd will serve to block much of the flow from the east.

4. All channel routes are modeled using RC RX RY except for RT30P why the change to RD? *This was done for simplicity but we will revise.*

5. Please re-verify the following routes bottom width between what is listed

in the RX cards and the table data:

R4-5b

R5-6c

Will check these routes but due to design iterations, channel values may not match between HEC-1 and the design spreadsheet.

6. Please re-verify channel depths between table and RY cards in HEC-1 for the following:

R3-4a (not critical difference just thought I would mention

it)

R4-5b (not critical difference just thought I would mention

it)

Will check these routes but due to design iterations, channel values may not match between HEC-1 and the design spreadsheet.

7. N values used for Landscaped Earth and concrete channel appear reasonable; however, the District recommends that the earth channel n value be increased to either .03 or .035. *n-value of .03 will be used for earth channels*

Retention Basin comments

1. Are modifications planned for Cross-roads basin? Noticed that there is a difference between the original basin modeling and the new basin modeling. The modified storage routing allows flows to exit 1.8 feet lower than the original modeling. In general the elevation/storage relationship between the old and new modeling is fairly similar; however, the outflow discharges vary significantly. Please provide supporting documentation for the storage relationship and the uneven weir program used to develop the outflow relationship. *No modifications except to inflow spillway. New stage-storage-discharge relationship is based on new aerial mapping. We will provide back-up documentation.*

2. For Basin Q please verify the following:

1. Correct the typo in the HEC-1 modeling where SV record shows the volume of 253.62 instead of 353.62. *will correct*

2. Please re-verify the outlet elevation in the SL record it does not match the elevation given in the data table in the report *will verify*

3. the District recommends the outflows be modeled using the SQ record since the weir is not based on real numbers. *The basins are modeled as retention basins. Therefore, there is no flow over the weir.*

4. please re-verify the cross-sectional area used in the SL record: it seems low. *Since the basins are retention, the outlet-pipe area needs to be small so that discharge is insignificant.*

3. For Basin P please verify the following:

1. The supporting stage storage relationship does not extend out enough to support the entire relation used in the modeling. *Will revise*

2. the storage volumes between elevations 68 to 72 in the modeling do not match the numbers provided in the data table. *Will verify*

3. The report plan shows a low level outlet draining this

basin but it was not modeled. Why? *Since the basins are retention, the outlet-pipe area needs to be small so that discharge is insignificant*

4. Again, the District recommends that SQ record instead of SL SS be used. *No flow of weir so why does it matter?*

Please submit examples supporting your culvert and channel design as discussed on 9/28/00 *Submitted on 10-9-00*

If you have any questions please feel free to call me at (602) 506-4837 or email me. The review for pref-s1 and pref-s2 should be forthcoming no later than Friday. Pref-s3 and the GRIC modeling will hopefully be completed early next week.

Thanks

Kathryn

Dan,

here are my comments regarding PREF-S1 model and where it applies in the conceptual design report.

Model Structure Comments

1. Why is there a diversion (DIVCH) after BAS O? No flows should be diverted out of Basin O since there is no channel connecting the basin to the rest of the system. there is only the outlet pipe that is opened after events. *This is a "dummy" diversion with zero flow associated with it. It is only there to ensure that all flow goes toward the west and not to the south.*
2. DIV38 needs to remain in the model. There are no improvement above Germann in the study; therefore any subbasin above the San Tan freeway will still have the potential to overtop. *OK, divert reinstated.*
3. For all flows diverted around the retention basins, it is appropriate to combine the flows in the diversion channel and the excesses out of the retention basins together. The retention basins are modeled with low level outlets that are not connected to the channel. If the excess flows from the basin are only from spilling out of the basins back into the channel I feel it would be ok but otherwise the continuing channels should only contain the diverted flows. *Low level outlets are intentionally modeled with very small area so that flows leaving them are negligible and therefore not connected back to the channel. Also, since there is no flow over the weir, the channels do contain only diverted (low)flows.*
4. Please re-think the direction of the subbasin 42 flows. Currently they are included in the Queen Creek basin. It does not appear likely that these flows would be collected into that retention basin. It may be better to include those flows in the channel below the basin. *Currently that is correct. However a collection channel will be added to the plan which will take flows north to the Queen Creek Basin.*
5. RD38, CC38, and DIVPEC need to remain in the model. These occur North of the Higley improvements. *OK, code reinstated.*
6. Some analysis needs to be done regarding Subbasin 39a and RR38. In the original modeling these flows were directed into basin L; however, basin L was located on the north side of the freeway. I do not see a way to get these flows to basin L unless a channel is extended north along consolidated here as well. *A channel or culvert will be designed to convey flows that concentrate at the intersection of the consolidated canal and the Santan Freeway to Basin "L".*
7. HC40 needs to be removed from the model. Leaving in HC40 takes the routed flow from 39 and 40 and routes it again using the 40 to 41 routing. HC41 will need to be modified to have an HC of 3. *OK, but I think this is some of your original code.*
8. CP42 should not connect to HC44. Please adjust- removing HC44 may remove the problem. *OK, we can remove HC44. We don't use the remaining code in this model for anything. We switch models after the Queen Creek Basin (CP42).*
9. RMCQ465 needs to be commented out. *OK, see response to 8 above.*
10. HCI46 needs to be included but only needs an HC of 2. *OK, see response to 8 above. I believe that an HC of 3 was in your original code.*

11. Are any of the subbasin 48 flows leaving through the RR trestle? If no than DIV48 needs to be removed. *DIV48 is coded after basin "K" so it doesn't effect the results of our model.*

12. There appears to be several modeling errors west of the consolidated canal between subbasins 44 and 49 please re-analyze this area. *The area between the Railroad and the Consolidated Canal wasn't studied as part of this effort.*

13. There is no routing modeled for ECDC-4b. CCDC-4b
Will correct

Discharges

1. Please re-verify the discharges at the following locations:

ECDC-4a - the design is based on 817 cfs while the model reports 807 cfs

ST-7 - the design is based on 571 cfs while the model reports 584 cfs for Sub32 and 551 cfs for 32BSNO

Differences to discharges are due to design iterations between HEC-1 and the design spreadsheet.

2. Does the channel for CCDC5a and 5b need to be this large along the canal? Will the airport actually block the flows instead? Does a collector channel need to be brought around the south end of the airport? *5a-Yes, 5b-No. The extra wide segment of 5b is using an existing retention area as the channel. This is justified based on the narrow concrete section downstream and the box culvert upstream. By doing this, we were hoping to "balance" things out "kinder and gentler" wise. Judging by the size of that retention basin, some flow makes it's way to this location.*

3. Are flows east of the Landfill going to be blocked from getting to the canal as well? Does a collector channel need to be designed along the southern boundary of the landfill? *Yes, we are adding a collector to route flows north to the Queen Creek Basin.*

Proposed channel routing comments

1. Please re-verify the lengths for the following routing reaches. The lengths in the report do not match the values listed in HEC-1:

ECDC-9b - 950'

ST-6 - 4004'

ST-3 - 646'

ST-2b not modeled. *Not found on plans.????*

2. All n values used look fine.

3. Please re-verify the bottom widths used for the following routing reaches. The widths in the report do not match the RX card data.

R2930b/ECDC-8b
R3941a/CCDC-5c

| ———Will verify

4. Please re-verify the depths used for the following routing reaches. The depths in the report do not match the RY card data.

R2930b/ECDC-8b
R3941b/CCDC-5b

| Will Verify

5. For R3941a, no side slope is given in the RD card. Please enter a side slope. *This is a box culvert (rectangular channel with a lid) therefore, Z=0.*

Retention Basin comments

1. For Basin K, please extend the storage routing relationship table in the report. The modeled storage relationship goes beyond the storage table provided in the report. *OK*

If you have any questions feel free to call me or email me.

Thanks,

Kathryn

Hi Dan,

Here are my comments regarding pref-s2. I have also completed pref-s3 and will send those comments in a separate email.

Discharges

1. Please look over the discharges for the following locations. This is more for your information. The numbers are only a couple cfs off so it is not critical to modify these. I just wanted to bring them to your attention.

ECDC-3 - designed for 1155 cfs while the model reports 1140 cfs at OC2

ECDC -2c and 2b - designed for 1155 cfs while the model reports 1140 cfs at OC2

ECDC 2a - designed to 618 cfs while the model reports 615 cfs at OCCHb

ECDC 1b - designed to 702 cfs while the model reports 696 at CH2

The discharges are off due to iterations in design. The Channels were revised in HEC-1 based on the 8-point cross sections from the Design Spreadsheet but the new flows weren't taken back to the spreadsheet. The current flows will be placed in the spreadsheet but the HEC-1 cross sections will not be updated.

2. There was a change in this model from the other models for what discharges are used for channel design. For both ECDC 2a and ECDC 1b, the channel discharge was not the concentrated flow. Subbasin 2 and subbasin 3 flows were left out of each channel design. Please verify if this is the desired approach for this model.

Will Verify

Routing Comments

1. All lengths were correct.

2. All n values were reasonable.

3. Please verify the bottom width for ECDC2b and routing OCCha. The report has a bottom width of 40 ft while the combined routing for 2b and 2c has a bottom width of 65 feet.

Will verify/correct

4. Please verify the depth for CHSRPB and ECDC1b. The model depth is 5.9 feet while the report used a design depth of 6.4 feet. *See response to discharge Comment 1*

Basin Comments

1. For the Chandler Heights Basin, please verify the volume for elevation 55. There is a discrepancy between the model (vol = 102.4) and the report table (vol = 150.66).

Will verify

Those are all the comments I have regarding pref-s2. Let me know if you have any questions.

Thanks,

Kathryn

Dan,

Here are my comments regarding model pref-s3.

Model Structure Comments

1. If possible, subbasin 8 should be broken into two subbasins where the channel will come through the subbasin. Some of the subbasin 8 flows will flow to subbasin 9 and the way it is currently modeled no flow from subbasin 8 drains to subbasin 9.

This subbasin has been divided into two subbasins SUB8A and SUB8B. Only the areas were changed and the new subbasin was placed upstream of basin SUB9 and combined. This will require further attention during final design.

2. Please verify and where needed re-name and re-comment routings whose name and or comment do not describe what is proposed. Specifically, this comment applies to 7Ato7 and 7to9. OK

3. According to the latest plan, it appears that subbasin 9 cannot enter the channel system until Hunt Hwy at the Consolidated Canal. (1) Is there any way to get these flows into a channel east of the SPRR? (2) if the flows cannot enter the channel east of the SPRR then the stage/storage relationship from the original modeling should not be removed as subbasin 9 flows will still be leaving through the trestle.

A collector channel will be placed to route flow from the railroad Trestle to the new channel.

Discharges

1. Only one discharge comment is noted and it is more for your information. For ECDCO-4, the channel is designed for 1058 cfs while the modeling at CP8 has the discharge listed as 1060 cfs.

The discharges are off due to iterations in design. The Channels were revised in HEC-1 based on the 8-point cross sections from the Design Spreadsheet but the new flows weren't taken back to the spreadsheet. The current flows will be placed in the spreadsheet but the HEC-1 cross sections will not be updated

Routing Comments

1. All the lengths appear fine.

2. Please re-verify the n values used for ECDCO-4 and ECDCO-3a and 3b. These channels are earth with an n value of .025. This n value seems a little low for earth. An n value of .03 or .035 would be more reasonable.
.030 used and new channels designed.

3. For the following routings please verify the bottom widths in the report and model.

ECDCO-4 - the report gives a bottom width of 120 ft while the model uses 40 ft

CCDC-4a - the report give a bottom width of 10 ft while the model uses 4 ft

Will verify/Correct

4. For the following routings please verify the channel depths in the report and the model.

ECDCO-4 - the report gives a depth of 4 ft while the model uses 6.3 ft

CCDCO-3a and 3b - the report gives a depth of 5.4 ft and 5.2 ft respectively while the modeling uses 6.4 ft

Could be due to the design iterations as mentioned above...will verify and correct if necessary.

Basin Comments

1. No major basins beyond the water quality basin occur in this model. No review took place.

Those are all the comments I have regarding pref-s3. Let me know if you have any questions.

Thanks,

Kathryn

Dan,

Here are my comments regarding the GRIC model.

Routing Concerns

1. For the following routing please verify the lengths used.

RTD1C1/CCDCO-3a, 2b, 2a - the sum of the values in the tables is 4839 ft while 5000 ft is used in the model

RTC1B1/CCDCO-1b, 1a - the sum of the values in the table is 5000 ft while 4000 ft is used in the model

Will Verify lengths

2. For the following routings please modify the n values used. The n value of .025 is too low- .030 is more reasonable.

RTHHP/ECDCO-3,2

RT4P5P/ECDCO-1

RTC1B1/CCDC- 1b,1a.

Will use .030 for n-value

3. For the following routings please verify the depths used.

RTHHP/ECDCO- 3, 2 - in the table depths of 4 ft and 4.5 ft are used while the modeling uses 5 ft

RT4P5P/ECDCO-1 - in the table the depth of 4.2 ft is used while the modeling uses 5 ft

RTD1C1/CCDCO- 3a, 2b, 2a - in the table depths of 5.4 to 5.9 ft are used while the modeling uses 6.4 ft

Will verify depths

Discharges

1. Please verify the discharges used for ECDCO-3. the table reports 1058 cfs; however, GETHH1 has 1060 cfs, the end of sub 4P (CP4P2) has 1392 cfs and CP5P has 1355 cfs.

Will verify

2. For ECDCO-2 and 1, 1174 cfs should be used. *Will verify*

3. Please re-verify all discharges along the CCDCO. The majority of the channel does not match discharges in the model.

Will verify

Modeling

1. Please add LG information to subbasin E1 in the modeling. It does not appear to be included in DDMSW.

Added

2. The discharges from the portion of the modeling by Parsons appear too low while your discharges appear too high. Some of the problems appear to

stem from the different land use conditions as well as from the different s-graphs used.

(1) Please determine what condition the entire watershed should be modeled as. I think either the entire watershed should be existing condition desert or future condition Ag unless it is known that the Parsons area will become agricultural before the western portion of the study area.

Since it is unknown when this area will be "active" Ag, it is felt that the areas should be modeled as existing conditions dictate. This should result in a more conservative estimate of flows as we talked about.

(2) If the mountain s-graph is used be sure to increase the IA and decrease the Dtheta to help compensate. If the agriculture s-graph is used use a higher dtheta and a lower IA.

The mountain s-graph has been used for the development of this hydrology since DDMSW's Desert-Rangeland s-graph isn't working as of this date. However, we feel that it is more appropriate to use values for IA and Dtheta which match the soil properties as given. If at a later date, the DDMSW's s-graph problem is fixed, it will be an easy update to the model.

(3) Some discussion may be necessary to further explain the above issues. Feel free to call me.

Tim still has my report so I cannot verify the calculations you provided me with the report and the modeling. I should get it back later today and will let you know then.

Thanks

Kathryn



Flood Control District of Maricopa County
2801 West Durango Street
Phoenix, Arizona 85009-6399
(602) 506-1501
FAX: (602) 506-4601
TT: (602) 506-5897

DATE: October 18, 2000
MEMO TO: Tim Phillips, Project Manager
FROM: Kathryn Gross, Hydrologist
SUBJECT: Higley ADMP Recommended Design Report- Final HEC-1 Modeling Review

I have reviewed the 5 HEC-1 models submitted for review as part of the Higley ADMP and have the following comments.

1. Five models were submitted. Their names are as follows:
 - Pref-m.dat
 - Pref-s1.dat
 - Pref-s2.dat
 - Pref-s3.dat
 - GRIC.dat
 - Associated DSS file Links.DSS
2. For model Pref-m.dat, all my comments from my email message to Dan Frank (10/4/00) were addressed and all necessary modifications to the modeling were made. The HEC-1 model is accepted and approved for the level of detail needed for the Conceptual Design Phase.
3. For model Pref-s1.dat, all my comments from my email message to Dan Frank (10/5/00) were addressed. All necessary modifications to the modeling that impacted the Higley ADMP basin and channel design were made. However, continued modifications will be necessary in a few portions of the model that are affected by the ADMP. It was discussed with the consultant that due to time constraints, the District would complete these modifications. Items needing modification are listed below. For purposes of the Higley ADMP Conceptual Design Phase the modeling can be considered accepted.
 - HC44 needs to be removed. It is no longer necessary with the Higley improvements. Removing HC44 will allow CP42 and DIVPEC to remain as separate hydrographs and not be continued in the modeling. This leaves flows from subbasin 44 to directly connect to its ponding area. The combination of hydrographs becomes mute.

- The modeling KK block RCC-39 and CHNGBF immediately after DIVPEC needs to be re-included in the modeling. This changes the capacity of Consolidated Canal and analyzes what may be lost to the east if the capacity in the canal alone is limited.
 - KK block RQC46 immediately after R45-46 needs to be removed. This routing was for flows over Consolidated Canal. The Higley improvements have removed the over topping so the routing is no longer needed. In its current position flows from subbasin 45 are being erroneously routed again using this routing.
 - KK block HC47 needs to be re-positioned, etc. in order for flows from HC146 to be included at this combination point instead of after retention basin K.
 - KK block DIV48 and the two following Dummy KK blocks need to be removed. DIV48 models flows through the railroad trestle that occurred when flows ponded there. The Higley improvements now send all the flows to Basin K so the diversion and subsequent dummy diversions to empty the hydrograph stack are unnecessary.
4. For model Pref-s2.dat, all my comments from my email message to Dan Frank (10/6/00) were addressed and all necessary modifications to the modeling were made. This HEC-1 model is accepted and approved for the level of detail needed for the Conceptual Design Phase.
 5. For model Pref-s3.dat, all my comments from my email message to Dan Frank (10/6/00) were addressed and all necessary modifications to the modeling were made. It is understood that further analysis will be needed in the final design contract regarding the division of the original subbasin 8. The HEC-1 model is accepted and approved for the level of detail needed for the Conceptual Design Phase.
 6. For model GRIC.dat, all my comments from my email message to Dan Frank (10/11/00) were addressed and all necessary modifications to the modeling were made. It is understood that this area will need to be re-analyzed for the final design contract due to the problems with the DDMSW software and to resolve land use and soil parameters. The HEC-1 model is accepted and approved for the level of detail needed for the Conceptual Design Phase.
 7. For the final design phase for the Higley ADMP these models will need to be further modified to use critical storms for each of the facilities being planned.

I have no more comments at this time. If you have any questions please feel free to contact me at (602) 506-4837.



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LETTER OF TRANSMITTAL

TO: City of Chandler
P.O. Box 4008, Mail Stop 408
Chandler, AZ 85244-4008

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Beth Huning, P.E.

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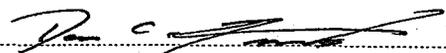
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Sincerely,
DIBBLE & ASSOCIATES


Dan C. Frank, E.I.T.



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LETTER OF TRANSMITTAL

TO: Town of Gilbert
1025 South Gilbert Road
Gilbert, AZ 85296

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Mr. Lonnie Frost

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LETTER OF TRANSMITTAL

TO: Gila River Indian Community
Post Office Box E
Sacaton, AZ 85247

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Mr. Fred Ringlero

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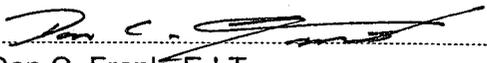
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LETTER OF TRANSMITTAL

TO: Salt River Project Mail Station PAB103
P.O. Box 52026
Phoenix, AZ 85072-2025

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Mr. Paul Cherrington

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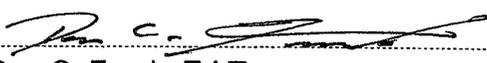
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LETTER OF TRANSMITTAL

TO: Roosevelt Water Conservation District
P.O. Box 100
Higley, AZ 85236

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Mr. Michael Leonard

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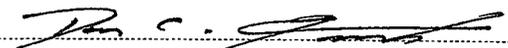
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LETTER OF TRANSMITTAL

TO: City of Mesa
20 East Main St., 5th Floor
Mesa, AZ 85211-1466

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Anna Leyva-Easton

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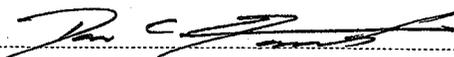
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LETTER OF TRANSMITTAL

TO: Arizona Department of Transportation
205 South 17th Avenue, Mail Drop 614E
Phoenix, AZ 85007-3212

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Mr. Bill Evans

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LETTER OF TRANSMITTAL

TO: Maricopa County Department of
Transportation
2901 W. Durango Street
Phoenix, AZ 85009-6357

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Mr. David DeWeese

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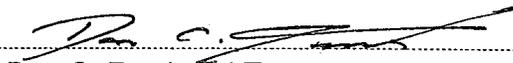
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- As Requested
- Returned
- For Review and Comment
- For Information Only
- For Use as Guideline Only
- Other
- Approve
- Disapprove
- Approve with Comments

REMARKS:

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copy: Daily
9829 Letter

Sincerely,
DIBBLE & ASSOCIATES


Dan C. Frank, E.I.T.



DIBBLE & ASSOCIATES

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Since 1962

CIVIL ENGINEERING ■ Transportation ■ Airports ■ Drainage/Flood Control ■ Water Resources ■ Land Development ■ Surveying

2633 East Indian School Road, Suite 401
Phoenix, Arizona 85016-6763
Tel. (602) 957-1155
Fax (602) 957-2838

LETTER OF TRANSMITTAL

TO: Arizona Game & Fish Department
7200 East University Dr.
Mesa, AZ 85207

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Report

ATTENTION: Mr. Timothy Wade

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

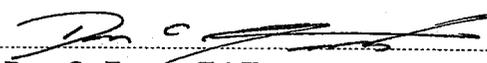
Copies	Date	I.D. Number	Description
1	Oct/2000		Recommended Design Report

These are transmitted as checked below:

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LETTER OF TRANSMITTAL

TO: Flood Control District of Maricopa
County
2801 W. Durango St.
Phoenix, AZ 85009-6399

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Mr. Timothy Phillips

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

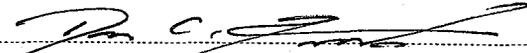
Copies	Date	I.D. Number	Description
2	Oct/2000		Recommended Design Report (bound)
1	Oct/2000		Recommended Design Report (unbound)

These are transmitted as checked below:

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Sincerely,
DIBBLE & ASSOCIATES

Dan C. Frank, E.I.T.



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Phoenix, Arizona 85016-6763
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Fax (602) 957-2838

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LETTER OF TRANSMITTAL

TO: Logan Simpson Design Inc.
51 West 3rd Street, Suite 450
Tempe, AZ 85281

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Ms. Diane Simpson-Colebank

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

Copies	Date	I.D. Number	Description
1	Oct/2000		Recommended Design Report

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Dan C. Frank, E.I.T.



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Fax (602) 957-2838

LETTER OF TRANSMITTAL

TO: **DMJM**
2777 E. Camelback
Suite 200
Phoenix, AZ 85016-4302

DATE: October 23, 2000
RE: Higley ADMP
Recommended Design Repot

ATTENTION: Jeff Minch

Transmitted herewith are the following items:

- Plans
- Reports
- Details
- Specifications
- Estimate
- Calculations
- Prints
- Change Order
- Other
- Copy of Letter
- Shop Drawings

Copies	Date	I.D. Number	Description
1	Oct/2000		Recommended Design Report

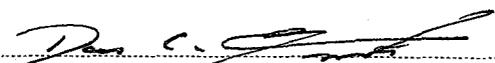
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