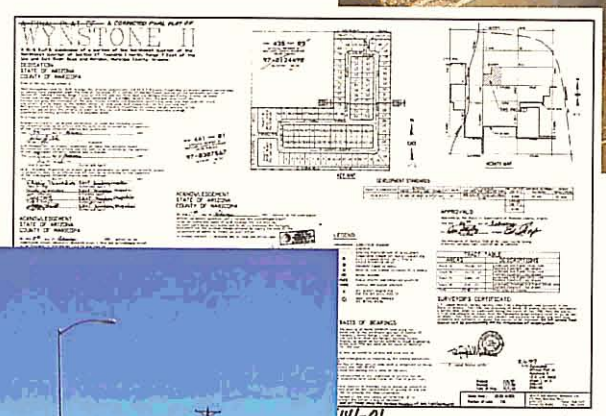
EAST MESA DRAINS
CANDIDATE ASSESSMENT REPORT



April 29, 2004

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EAST MESA DRAINS
CANDIDATE ASSESSMENT REPORT

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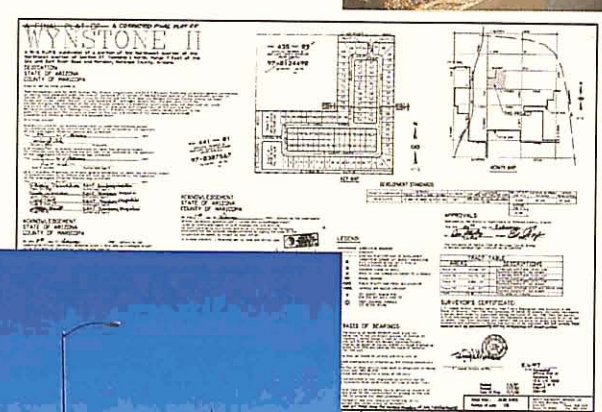

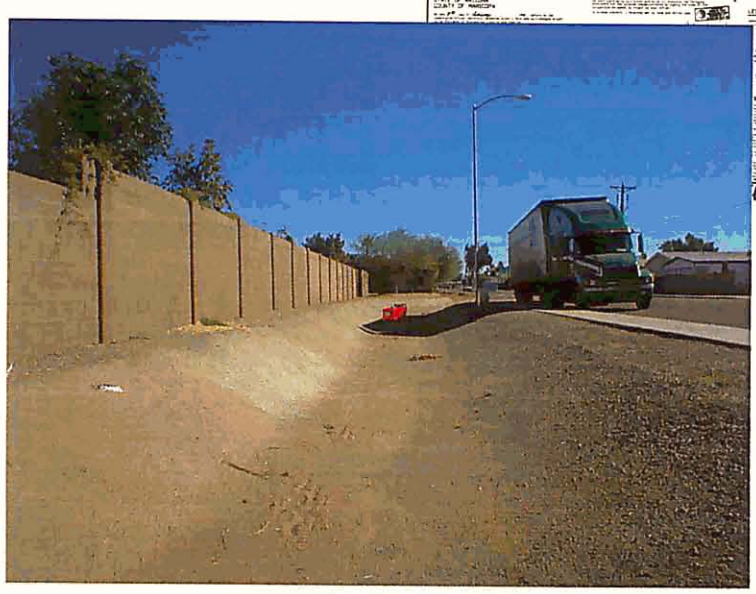

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ARIZONA U.S.A.

April 29, 2004

HDR

EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
APRIL 27, 2004

EXECUTIVE SUMMARY

PURPOSE

HDR Engineering has prepared the East Mesa Drains Candidate Assessment Report (CAR) for the Flood Control District of Maricopa County (District) to determine ownership, maintenance responsibility, existing capacity, and proposed improvements to several drainage ways in the study area (**Exhibits 1 & 2**).

Several subdivision drainage easements were dedicated to "the public" prior to the Subdivision Regulations of 1972. Pursuant to Resolution FCD 93-17, the District maintains seven drainage easements in the east valley for Maricopa County. There are other drainage ways the District has been maintaining that are not part of the Resolution. These drainage ways require routine maintenance due to flow events, illegal dumping, and slope drainage from adjacent property owner discharges.

Included in this CAR are determinations of easement drainage capacities, and if necessary, recommendations for improvements. **Appendices A1 through A12** include the following information for each reach: aerial figures; existing drainage easements and drainage ways; proposed drainage easements and drainage ways; drainage improvements (specific reaches needing improvements); site photos: parcel documentation; plat maps; parcel maps; deed information; parcel support documentation; adjacent parcel documentation; channel cross sections; and channel cross sections required for Q-100.

SUMMARY OF FINDINGS

The Flood Control District of Maricopa County is empowered under Arizona Revised Statues, Chapter 21, Article 1, Title 48, Sections 3601 through 3628. The District and Maricopa County operate as separate political subdivisions of the State of Arizona, thus, the District's authority is distinct from Maricopa County's powers to enforce drainage regulations and enter upon easements accepted by the County.

Several subdivision drainage easements are located within a Maricopa County island in the east valley. These were "dedicated to the public" prior to the subdivision regulations of 1972. Counties accepting plats with parcels "dedicated to the public" *after* 1972 are owned by the county. Those parcels accepted *prior* to 1972 are not the responsibility of the county unless the county was providing maintenance prior to 1972. The only reference to the subdivision regulation of 1972 was obtained from the City of Mesa where it was enacted as "Ordinance number 755"on August 21, 1972. The District, per resolution FCD 93-17, has assumed the maintenance of drainage rights-of-way and easement for Maricopa County for the specific reaches in the study area.

The drainage easements in the study area appear to meet the statutory dedication requirements as fee, and give the County a fee interest in the drainage ways. This finding

is based upon the creation of recorded plats containing a survey, signatures, recorded acknowledgments, and the drainage areas used by the public.

The public governing authority cannot convey away the dedicated drainage way unless specifically authorized by the legislature. Dedicating property to public use is an established principle of common law. Selling lots with reference to a plat results in an immediate and irrevocable common law dedication of areas delineated for public purposes. In 1895 the Arizona Supreme Court case of *Evans v. Blankenship* held that simply surveying land when associated with the sale of land referenced to plat or map results in an irrevocable dedication.

Utilities may pose conflicting uses of the dedicated drainage ways and may present maintenance problems associated with future projects. Utilities installed prior to the dedication of the drainage ways, may result in the County assuming responsibility for the expense of necessary facility relocation. Additional research to determine utility rights and uses will be necessary before significant construction or maintenance work can occur.

Construction within easements on the plat reading "dedicated to the public" will require authorization from Maricopa County. Ownership of drainage ways for public improvements is complex, due to issues such as: 1) Utilities in the drainage ways that include dedications for both drainage and utilities, and 2) Drainage way parcels share the same designation as roads in the Maricopa County Assessor's office interactive Geographic Information Systems (GIS) data base. For this reason, a review of the GIS data base for general data, valuation data, and property data produced no tax code information for the specific reach drainage right of ways. Hydrologic and hydraulic analysis of each reach is presented in **Table EX1.**

Table EX1 Hydrologic and Hydraulic Findings

Reach	Reach Name	Channel Capacity (cfs)	Return Frequency Capacity (years)	Q100 Peak Discharge (cfs)
1	Apache Paradise Units 1 & 2	500	100	456
2	Newman Park	140	10	456
3	Valley View # 4	137	100	137
4	Cherokee Mobil Estates 1 & 2	500	25	751
Broadway	Broadway	800	100	836
5	Crisway Estates Units 2 & 3	10	10	116
5A	Coralbell Channel	150	10	440
7	Knolls Estates	60	2	517
8	Knolls Mobile	10	2	71
10	Cherokee Mobil Estates Unit 3	100	5	321
11	~~Cherokee Mobil Estates Unit 3~~	120	10	247
12	Superstition View PhaseI	100	2	792

DESERT VISTAS ESTATES

Table EX2 presents an operational and maintenance ranking. **Table EX3** presents a summary of reach specific findings.

Table EX2 Ranking System

Operational Rankings	
Functional	1
Borderline	2
Flood prone	3
Maintenance Rankings	
Routine maintenance	1
Routine maintenance and frequent inspections	2
Periodic repair	3
Immediate repair	4
Reconstruct	5

Table EX3 Summary of Reach Specific Findings

Reach Name	Operational Ranking	Maintenance Ranking	Comments
Reach 1-Apache Paradise Units 1 & 2	2	2	•Upstream and downstream ends of reaches 1 and 3 abut unplatted property. •After storm events erosion repair is needed. •Residential trees are affecting channel capacity. • Local residents improve stabilization on channel banks.
Reach 2-Newman Park	3	1	•Abuts property recorded pre-1972 on the upstream side and post-1972 on the downstream side. • Upstream from bridge is the location of flooding at 140 cfs. •Maintenance problems are minimal and can be addressed with routine inspections and maintenance. • Residents have performed some improvised bank stabilization. •Limited access to provide maintenance is a problem.

Reach Name	Operational Ranking	Maintenance Ranking	Comments
Reach 3-Valley View # 4	2	2	•Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water (i.e. washing machine water) into the channel. This may be a violation of County codes.
Reach 4 - Cherokee Mobil Estates 1 & 2	3	4	• After storm events erosion repair is needed. •Residents have improperly stabilized channel banks. •Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of County codes. •Limited access into the channel and no equipment access.
Broadway Channel	3	5	•ADOT is planning on constructing a culvert to divert flows to the proposed Santan East Channel. •The Broadway Channel has the same maintenance problems as Reach 4. •Significant erosion repair is needed. •The channel has uplifted in many areas. •Residents have improperly stabilized the banks of the channel. •Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water into the channel. This may be violation of County codes. •Limited access into the channel and no equipment access.

Reach Name	Operational Ranking	Maintenance Ranking	Comments
Reach 5-Crisway Estates Units 2 & 3	2	2	•Construction of a conveyance system for flows to the Coralbell Channel may alleviate residential flooding. • Residential trees are affecting channel capacity. • Residents have improperly stabilized the banks of the channel. •Both upstream and downstream ends of reaches 5A and 8A abut platted property recorded prior to 1972. •After storm events, erosion repair is needed.
Reach 5A-Coralbell Channel	2	4	•Significant erosion from residential trees.
Reach 7-Knolls Estates	3	2	•Significant erosion on the west bank of the channel that is undermining some mobile home park resident's fences. • Illegal discharges of gray water into the channel may be a violation of County codes. • There are low power lines, which makes impedes heavy equipment access. • Gas and cable lines are in the channel bottom and are affecting maintenance operations.
Reach 8-Knolls Mobile Estates	3	2	•Residents frequently park in the channel impeding flow during storm events. •The drainage channel discharges into property in the 34 Palms subdivision.
Reach 10-Cherokee Mobil Estates Unit 3	3	2	•Severe erosion and undercutting problems in and around the area of Alder Avenue. • Illegal dumping into the channel may be a violation of County codes.
Reach 11-Desert Vista Estates	3	2	•Erosion problems along the fence line. •Residents are planting vegetation on the slopes of the channel.
Reach 12-Superstition View Phase I	3	2	•There is no maintenance agreement for the drainage channel for Ellsworth Avenue. •There is significant sediment accumulation upstream of each culvert.

RECOMMENDATIONS

A formal Intergovernmental Agreement may be required to formalize maintenance responsibilities between the District and the County.

The Maintenance division of the District should be provided direction in the form of a written directive from the Board of Directors regarding construction and maintenance in drainage ways "dedicated to the public, and the maintenance responsibilities of the District as distinguished from the County.

In general, the recommendations for each easement are for spot improvements to limit erosion, access restrictions with removable bollards, routine maintenance and inspections, and notices to residents explaining responsibilities and consequences of noncompliance with County codes on dumping and discharge of grey water. Options for proposed cross sections to accommodate the 100-year event can be found in **Appendices D**. Cost associated with recommended improvements are contained in Table EX 4.

EX-4 Cost Estimates

Reach	Improvement/Structure	Quantity	Unit	Unit Cost	Extended Cost
1	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
1	Riprap to prevent erosion	40	CY	$ 50	$ 2,000
2	Removable Bollards - one location[2]	3	EA	$ 300	$ 900
2	Shotcrete Channel- one location	40	SY	$ 31	$ 1,240
2	Shotcrete Channel- two locations	40	SY	$ 31	$ 1,240
3	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
4	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
4	Shotcrete channel	370	SY	$ 31	$ 11,470
4	Install high wall (to limit dumping)[3]	1,600	LF	$ 150	$ 240,000
Broadway Channel	Reconstruct Channel Invert[6]	16,000	SF	$ 12	$ 192,000
Broadway Channel	Future Box culvert and east channel		LS		$ -
5	Removable Bollards - four locations[2]	12	EA	$ 300	$ 3,600
5	Catch Basins[7]	1	EA	$ 2,400	$ 2,400
5	Storm Drain[7]	2,000	LF	$ 46	$ 92,000
5	Floodproof structure[7]	1	LS	$ 15,000	$ 15,000
5A (Coralbell)	Shotcrete portion of channel	444	SY	$ 31	$ 13,764
5A (Coralbell)	Removal of Trees	1	LS	$ 1,000	$ 1,000
7	Shotcrete channel	75	SY	$ 31	$ 2,325
7	Relocate overhead power lines[8]	1	LS	$ 50,000	$ 50,000
7	Disconnect or plug pipes[5]	50	EA	$ 10	$ 500
7	Provide maintenance access[4]	315	SY	$ 25	$ 7,875
8 and 8A	Removable Bollards - four locations[2]	12	EA	$ 300	$ 3,600
10	Removable Bollards - three locations[2]	9	EA	$ 300	$ 2,700
10	Install high wall (to limit dumping)[3]	3,000	LF	$ 150	$ 450,000
10	Riprap in Low Flow Channel	40	CY	$ 50	$ 2,000
11	Riprap in Low Flow Channel	74	CY	$ 50	$ 3,700
11	Remove vegetation	1	LS	$ 1,000	$ 1,000
12	Remove sediment - two locations	100	CY	$ 10	$ 1,000

ASSUMPTIONS

1. *ADOT (State of Arizona) Standard Specifications for Costs was used to estimate improvement costs*
2. *Bollard and sleeve: steel 7 feet in length (4.5 feet above ground surface, 2.5 feet below ground surface), set in 5-inch O.D. steel sleeve; Bollard size: 4-inches O.D., concrete filled and painted yellow; 4 feet between each removable bollard, and 3 bollards for each location needed. Bollard costs include delivery of materials and installation*
3. *High wall is a 8-foot high block wall with 18" screening on top to block view and limit illegal dumping.*
4. *Does not include real estate costs. Only includes providing dirt road to channel.*
5. *Disconnecting of pipes is assumed to be capping a 4-inch discharge line.*
6. *Reconstruct channel lining at uplifted area. Recommendation is to saw cut existing channel and inlet to Broadway Channel from off-site flows.*
7. *These items are options and may be broken out separately. The storm drain and catch basin shall collect the downstream flow and route to the Coralbell Channel. Floodproofing consists of a short wall to blck the flow from entering the residents property.*
8. *Relocating the overhead electric lines may be at the cost of the SRP and not the County, depending upon prior rights.*

EX-4 Cost Estimates
Summary

Reach Totals	Reach 1	$3,800
	Reach 2	$3,380
	Reach 3	$1,800
	Reach 4	$253,270
	Broadway	$192,000
	Reach 5	$113,000
	5A (Coralbell)	$14,764
	Reach 7	$60,700
	Reach 8	$3,600
	Reach 10	$454,700
	Reach 11	$4,700
	Reach 12	$1,000

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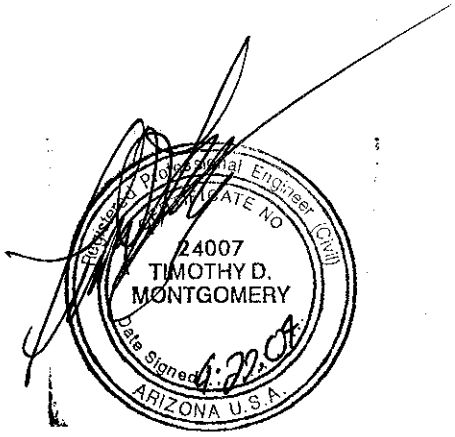


APPENDIX A Reach Specific Background Data, Collected Data, Figures
[Each of the Appendices (A-1 through A-12) contain the following]

Summary of Reach Findings
Existing Drainage Easements and Drainage Ways (each reach)
Proposed Drainage Easements and Drainage Ways (each reach)
Drainage Improvements (specific reaches needing improvements)
Site Photos
Parcel Documentation
Plat Maps
Parcel Maps
Deed Information
Parcel Support Documentation
Adjacent Parcel Documentation
Channel Cross Sections
Channel Cross Sections Required for Q-100 (specific reaches)

A-1 Reach 1
A-2 Reach 2
A-3 Reach 3
A-4 Reach 4 and Broadway Channel
A-5 Reach 5
A-6 Reach 5A (Coralbell Channel)
A-7 Reach 7
A-8 Reach 8
A-9 Reach 8A
A-10 Reach 10
A-11 Reach 11
A-12 Reach 12

APPENDIX B Survey Report

APPENDIX C Meeting Minutes and Contact Logs

APPENDIX D Hydrology and Hydraulics

APPENDIX E "As-Builts"

APPENDIX F Utility Maps

EXHIBIT 1 Vicinity Map

EXHIBIT 2 East Mesa Drains Candidate Assessment Report Study Area Map

EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
APRIL 27, 2004

PART 1 PROJECT PURPOSE AND NEED

INTRODUCTION

The East Mesa Drains Candidate Assessment Report (CAR) was developed as part of the Flood Control District of Maricopa County's responsibility (District) as stewards of the public trust for current conditions and future generations. The East Mesa Drains CAR studied select easements and drainage ways as illustrated in the vicinity map found in **Exhibit 1 and Exhibit 2.**

The District is charged with floodplain management and flood control responsibilities under Arizona Revised Statutes, Chapter 21, Article 1, Title 48, Sections 3601 through 3628. This responsibility to the public includes efforts to prevent loss of life and reduce potential for property damage from flooding. The District endeavors to reduce the risks of flood loss; minimize the impacts of floods on human safety, health, and welfare; and restore and preserve the natural and beneficial values served by floodplains.

A properly functioning and empowered maintenance program is required by the Community Rating System (a Federal Emergency Management Agency (FEMA) sponsored rating program); under which residents of Maricopa County receive significantly reduce flood insurance rates. The District has performed with distinction in this national program, as evidenced by annual ratings. The District has shown its dedication to accomplishing its mission by responding to its clients in an efficient, effective, and fiscally responsible manner.

Each functional division within the District has some stake or interest in the CAR:

- Drainage Administration regarding local development requirements;
- Environmental because of the enhance protection of the environment incidental to good floodplain management practices;
- Flood Detection & Data Collection due to the undersized channel capacity in the area;
- Operations & Maintenance because of the facilities owned by the District;
- Floodplain Management due to the significant floodplain extent and concerns;
- Planning because the basic charge to be stewards of the public trust, for current conditions and future generations;
- Property Management due to land ownership issues and potential District right-of-way, or facilities; and
- The Capital Improvement Program should conditions be identified that are particularly adverse requiring some future structural solution.

The need to execute the District's duties in a professional manner requires ownership identification and authorization to access property for operations and maintenance. The CAR identifies ownership and responsibility for maintenance of drainage easements and drainage ways, which are depicted in the Study Area Map found in **Exhibit 2.** Included in the CAR are determinations of drainage way capacity of these easements and recommendations for improvements, if necessary. Also included, is documentation of

existing flooding problems, current drainage and topographic features, existing flood plains (according to FEMA Federal Insurance Rate Maps (FIRM) documentation), and current plans for facilities by others.

1.1 Project Participation

The development of the CAR was funded and managed by the District and details numerous improvements within the study area as proposed by the Arizona Department of Transportation (ADOT). Potential funding sources for future projects include the Maricopa County Department of Transportation (MCDOT) and the City of Mesa. Additionally improvements could be constructed through an improvement district.

1.2 Interagency Coordination

Agencies contacted during the development of the CAR included the District, ADOT, MCDOT, Maricopa County Planning and Development Services, and the City of Mesa.

1.3 Project Overview & History

The Operations and Maintenance Division of the District requested a CAR for the East Mesa Drains. There are seven of these drainage easements located in the east valley (County island). Several subdivision drainage easements were dedicated to the County prior to the subdivision regulations of 1972. The only reference found to the subdivision regulations of 1972 was obtained from the City of Mesa. The City of Mesa enacted the subdivision regulations as "Ordinance number 755" on August 21, 1972. Per Resolution FCD 93-17, the District has taken over the maintenance of these easements for the County. There are other drainage ways the Resolution did not cover, but that the District maintains. These were analyzed to determine if they should be part of the District's maintenance program. These drainage easements are in need of repair, and the District receives numerous complaints from the surrounding residents on an annual basis. Routine maintenance of these drainage ways was observed as being performed in a timely and professional manner.

Seven out of eleven of these drainage easements are conveyance channels recognized in the East Mesa Area Drainage Master Plan (EMADMP). This CAR presents information and recommendations to determine ownership and maintenance responsibility, drainage capacity, improvements recommended for easements and drainage ways, cost of these improvements, and a priority ranking of which easements/drainage ways to improve.

1.4 Project Location

The legal location of the project is Township 1 North, Range 7 East, Sections 15, 20, 21 22, 27, and 28. There are 12 drainage easements and drainage ways included in this CAR. These drainage easements/ways are shown in the Study Area Map found in **Exhibit 2**.

1.5 Project Authorization

The Flood Control District of Maricopa County is empowered under Arizona Revised Statutes, Chapter 21, Article 1, Title 48, Sections 3601 through 3628. Under its authority to conduct maintenance and construction within drainage channels and to enter into contracts, the District initiated this CAR to determine hydraulic condition, and ownership and responsibility for the previously described drainage ways and easements.
This study was compiled under contract number 2003C018 between the District and HDR. Task order Number 2 issued October 21, 2003 provided "notice to proceed."

PART 2 EXISTING CONDITIONS

2.1 Data Collection

Data collected for this report was obtained from various technical reports, telephone conversations, e-mails, and hydrology models. The two documents most pertinent to the project are the EMADMP and the Red Mountain Freeway (202L) Initial Drainage Report. Data/reports collected include materials relevant to the project such as:

- Flooding reports, reports of drainage complaints, previous hydrology studies, and computer models completed within the study area;
- Existing topographic mapping;
- "As-Built" plans for existing drainage structures;
- FEMA Flood Hazard Boundary Maps, sub-division drainage reports, site plans, future drainage improvement plans, and other pertinent information.

This information can be found in **Appendix A, D, and E**.

Inspections and subsequent surveyed cross sectioning of the drainage ways was conducted to assess the existing conditions and to facilitate the preparation of the inventory of the existing drainage facilities within the watershed. The Figures found in **Appendices A1 through A12** depict existing conditions within or impacting the area, and include the location of major natural washes and man-made drainage facilities in the area. The condition, capacity, and ownership of man-made facilities are noted. The District provided the digital aerial data for use as the base for these exhibits.

2.2 Parcel Research

The Maricopa County Assessors web site was accessed and the interactive Geographic Information Systems (GIS) database used to locate plat maps, property tax information, parcel information, and deed information for each subject reach. The following methodology was utilized to obtain right-of-way information for each reach within the CAR study area:

- Located existing and available plat maps for each reach using the interactive GIS database.
- Utilized GIS database to query drainage rights-of-way associated with each plat. The Maricopa County Assessors parcel tax data was accessed for parcels abutting each drainage right-of way to determine if any easements were granted to the County, or if there was drainage right-of-way information available.
- Copied and queried sets of individual parcel maps with associated tax related parcel numbers for the CAR.
- Queried tract or individual parcel data for tax related information when plat maps did not exist for reaches, or portions of reaches. Any associated and available deed information was also reviewed and copied for the CAR.
- Reviewed each available plat map to obtain exact right-of-way dedication language.

Information obtained from parcel research is summarized in **Table 1.** Plat maps, parcel maps, and available deed information is found in **Appendix A.**

A progress meeting with the District was held on February 19, 2004. Subsequently, upstream and downstream drainage channel reach review was conducted to determine ownership and maintenance responsibility of drainage channels draining into each subject reach and those receiving water from each subject reach.

Interactive GIS on the Maricopa County Assessors web site was used to locate plat maps, property tax information, parcel information, and deed information for each subject reach. The following methodology was utilized to obtain right-of-way information for the upstream and downstream end of each reach within the CAR study area:

- Located existing and available plat maps for the upstream and downstream ends of each reach using the interactive GIS database. Documented the plat recording date for comparison to the "subdivision regulations of 1972.
- Accessed the Maricopa County Assessors parcel tax database for parcels or tracts which were located on the upstream and downstream end of each drainage reach to determine if easements were granted to the County, or if there was drainage right-of-way information available.
- Queried tract and/or individual parcel data for tax related information when plat maps did not exist for upstream and downstream ends of each reach. Associated and available deed information was also reviewed and copied for the CAR.

Information obtained from the upstream and downstream reach ownership and tax data related research is summarized in **Table 2**. Plat maps, parcel/tract maps, and available deed information are found in **Appendix A**.

2.3 Utility Research

Utility research was conducted in conjunction with the survey for each reach. Survey research was initiated by contacting Blue Stake. Blue Stake identified the utilities in the area and follow-up was conducted by a surveyor. Further research consisted of identifying and reviewing each system map and identifying the effects on each reach.

The drainage affects on each reach depend on whether scour in the channel impacts the utility and if the utility needs to be relocated. HDR found conflicting information while researching utility relocations. Through researching the relocation of utilities, HDR has found conflicting information. An e-mail dated April 7, 2004 to the District's Project Manager from Richard Wallace of MCDOT stated:

> *"A franchise is the authority granted by the county to the utility to serve a specified area and allows them to use public ways for their facilities. The franchise does obligate the utility to relocate at their expense if/when in conflict with authorized county uses.*
>
> *It is most likely (with the exception of some telecommunications facilities, municipal services or SRP water), that the utility is franchised. If not, they are probably in there "illegally" anyway.*
>
> *It is important to distinguish between easements that are "dedicated" vs. "provided" on the plat. "Dedicated" should give us the authority to regulate/manage the easement. We typically take a "hands-off" position on "provided" and defer to the Corp. Commission."*

In a telephone conversation with Amir Motamedi of the District, however, Mr. Motamedi (see **Appendix C**) stated that the determination of prior rights for payment of utility relocations depends on when the County began ownership of the channel and when the utilities were constructed in the channel or adjacent to the channel.

not there

In summary, the District needs to coordinate with utility companies in order to relocate conflicting utilities. A review of which entity pays for the relocation is also necessary.

2.4 Hydrology / Hydraulics

Existing hydrologic and hydraulic studies and models were reviewed. The capacities and approximate frequency storm conveyance of the drainage easements/ways were determined. Surveyed cross sections were needed to determine the capacity.

2.5 East Mesa Area Drainage Master Plan

The EMADMP, prepared by Dibble & Associates for the District, was reviewed for the CAR. The EMADMP study area encompasses 90 square miles, extending east into Pinal County, north to the Central Arizona Project (CAP) Canal, and south to the Superstition Freeway. The hydrology within this study was performed for the 100-year, 2-hour storm event.

The EDADMP provided information on flows for reaches 1, 2, 4, 7, 10, 12, and the Broadway Channel. A discussion on flows for the other reaches is presented later in this report. Also obtained were the improvements proposed in the EMADMP.

Specific facilities presented in the EMADMP and effecting this assessment are listed below. Exhibits in **Appendix A1 through A12**, per reach, illustrate these improvements.

- CAP Detention Basin 1 (existing)
- CAP Detention Basin 2 & Outlet (existing)
- CAP Detention Basin 3 & Outlet existing)
- CAP Detention Basin 4 & Outlet (existing)
- Apache Channel (proposed)
- Broadway Channel (proposed)
- Hawes Channel (proposed)

2.6 Red Mountain Freeway Initial Drainage Report

The Red Mountain Freeway (202L) Initial Drainage Report was provided to HDR by the District. The 202L Initial Drainage Report was prepared by DMJM-Harris and reflects the preliminary design for the University Drive to Southern Avenue Portion of the 202L Freeway. The drainage report discusses both on-site and off-site improvements along the alignment of the 202L Freeway from University Drive to Southern Avenue.

The information used for this assessment was the proposed offsite improvements; specifically the East Channel running from University Drive to Southern Avenue, paralleling 202L, the Broadway Culvert, and replacement of a portion of the existing Broadway Channel.

The Hydrologic Models for the Red Mountain Freeway (202L) Initial Drainage Report were HEC-1 with the 100-year, 24 hour storm. This HEC-1 was not used for analyzing the 12 drainage ways.

TABLE 1 PARCEL INVENTORY

Area 1

Reach	Plat Names	Parcel Map Title and Descriptions (*)	Location	Plat Map Right-Of-Way Information	Resolution FCD 93-17 (Maintenance of Dedicated Drainage Rights-Of-Way and Easements)	Maricopa County Assessor Tax Information
3	Valley View # 4	R-3_Valley4_124-13maps(2): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s)	East of CAP Canal, east of 76th Street, and south. of Culver Drive	• Dedication: "dedicates to the Public for use as such, the streets and drainage rights of way as shown on said plat. "(Plat map covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Area 2

Reach	Plat Names	Parcel Map Title and Descriptions	Location	Plat Map Right-Of-Way Information	Resolution FCD 93-17 (Maintenance of Dedicated Drainage Rights-Of-Way and Easements)	Maricopa County Assessor Tax Information
1	Apache Paradise Units 1 & 2	R-1_ApachePI_97-15maps(2); R-1_ApachePII_107-34map(1): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s)	North of Broadway, off 96th Street	• Dedication (Apache Paradise Unit I): "dedicates to the public for use as such, the streets and drainage rights of way as shown on said plat." •Dedication (Apache Paradise Unit II): "dedicates to the public, the streets and rights of way and easements to the purposes shown on said plat." (Plat maps covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
2	Newman Park	R-2_NewmanP_109-8map(1) and Reach2SW_map(1): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s). One "Reach-2" deed document is also included for support of parcel maps.	South of Apache Trail, off Crismon Road	• Dedication: "dedicate to the public for use as such, the streets as shown on plat, the drainage rights of way, and the easement to the purpose designated on said plat." Note: reference to FCDMC is crossed out. (Plat map did not cover entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for the portion of this reach located within the Newman Park Plat.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Reach	Plat Names	Parcel Map Title and Descriptions	Location	Plat Map Right-Of-Way Information	Resolution FCD 93-17 (Maintenance of Dedicated Drainage Rights-Of-Way and Easements)	Maricopa County Assessor Tax Information
4	Cherokee Mobil Estates, and Cherokee Mobile Estates II, Glenmar, Broadway Manor	R-4BroadwayM449-34map(1), R-4GlenmarMap(1), R-4_EofGlenmar_map(1), R-4_MapW-90th_maps(2), R-4_MapEofHawes_maps(2), R-4_CheroME_128-5map(1), R-4_CherokeeMEullmaps(2): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s). One "Reach-4" deed document is also included for support of parcel maps.	North of Broadway and west Ellsworth. Includes "Broadway Channel."	• Dedication (Cherokee Mobile Estates): "Easements are dedicated for the purposes shown." •Dedication (Cherokee Mobile Estates II): "Easements are dedicated for the purposes shown." •Dedication (Glenmar Plat): "The easements shown hereon are for the use shown." • Dedication (Broadway Manor): "dedicates to the public for use as such the streets and provides the easements for the purposes shown on said plat. " Tract A is for drainage, Tract B is for retention, and Tracts C & D are for landscaping purposes. All tracts are to be provided to and maintained by a homeowners association. (Plat maps did not cover entire drainage reach)	Not Applicable	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
5	Crisway Estates Units 2 & 3	R-5_CriswayEII_116-5map(1), R-5_CriswayEIII_118-48map(1): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s)	North of Coralbell, off Crismon (Drainage way alignment is from the northeast to the southwest).	• Dedication (Crisway Estates Unit II): "dedicated to the Public for use as such, the streets and drainage rights of way as shown on the plat." •Dedication (Crisway Estates Unit III): "dedicated to the public for use as such, the streets and drainage rights of way as shown on the plat." (Plat maps covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Reach	Plat Names	Parcel Map Title and Descriptions	Location	Plat Map Right-Of-Way Information	Resolution FCD 93-17 (Maintenance of Dedicated Drainage Rights-Of-Way and Easements)	Maricopa County Assessor Tax Information
5A	Wynstone II	R5A_WynstoneII_441-01map(1), R-5A_Tract-A_WofEllswMap(1), R-5A_Wof96thMap(1): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s). One "Reach-5" deed document (Tract-A) is also included for support of parcel maps.	North of Corabell Avenue between Ellsworth Road. and 96th Street.	• Dedication: "dedicate to the public for use as such the streets as shown on this plat and included in the above described premises easements are hereby granted for the purposes shown." (Plat maps did not cover entire drainage reach)	Not Applicable	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
7	Knolls Estates	R-7_KnollsEst_98-15map(4): Parcel map showing individual parcel numbers of lots which abut drainage right-of-way(s)	Running south along 85th Street into Reach 4	• Dedication: "dedicates to the public for use as such, the streets, drainage utility right-of-way, and alleys as shown on said plat." (Plat map covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
8	Knolls Mobile	R-8_KnollsMob_98-3map(1): Parcel map showing individual parcel numbers of lots which abut drainage right-of-way(s)	South of University Drive, west of Hawes Road	• Dedication: "dedicates to the public for use as such, the streets and drainage right of way as shown on said plat." (Plat map covered entire drainage reach)	Resolution lists Parcel 98-05-01. This map number may be in error. The Knolls Mobile Homes Plat discussed in the resolution matches Parcel 98-03-01. Resolution assumes maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
8A	34 Palms	R-8A_34Palms107-19map(1): Parcel map showing individual parcel numbers of lots which abut drainage right-of-way(s). Two "Reach-8A" deed documents are also included for support of parcel map.	South of University Drive, West of Hawes Road, and west of Reach 8.	• Dedication: "dedicates to the public for use as such, the streets as shown on said plat, and included in the above described premises, easements are dedicated for purposes shown." (Plat map covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Reach	Plat Names	Parcel Map Title and Descriptions	Location	Plat Map Right-Of-Way Information	Resolution FCD 93-17 (Maintenance of Dedicated Drainage Rights-Of-Way and Easements)	Maricopa County Assessor Tax Information
10	Cherokee Mobil Estates Unit 3	R-10_CherokeeMEuIII_164-44maps(2): Parcel maps showing individual parcel numbers of lots which abut drainage right-of-way(s)	South of Apache Trail, off Ellsworth	• Dedication: "dedicates to the public for use as such, the streets as shown on said plat and included in the above described premises. Easements are hereby provided for the purposes shown." (Plat map covered entire drainage reach)	Assumed maintenance of Drainage Right-of-Way for this reach.	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
11	Desert Vista Estates, Paradise Village II	R-11_DesertV239-25map(1): Parcel map showing individual parcel numbers of lots which abut drainage right-of-way(s)	North of the CAP Canal, east of Ellsworth	• Dedication (Desert Vista Estates): "dedicates to the public for use as such, the streets as shown on said plat and included in the above described premises. Easements are provided for the purpose shown." Note on plat states "Drainage easements owned and maintained by Neidhart Enterprises, Inc." • Dedication (Paradise Village II): "dedicates to the public for use as such the streets as shown on said plat. Easements are provided for the purposes indicated"	Not Applicable	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts. Drainage way has the same designation as the public streets.
12	Superstition View Phase-I	R-12_SuperstVnearEll-CAP249-19map(1): Parcel map showing individual parcel numbers of lots which abut drainage right-of-way(s)	North of the CAP Canal, adjacent to Ellsworth	• Dedication: "dedicates to the public for use as such, the streets as shown on said plat are included in the herein described premises. Easements are show for the purposes shown." (Plat map covered entire drainage reach)	Not Applicable	No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

(*) DISCLAIMER: In cases where drainage reaches (or sections of reaches) do not have plat information, specific parcel or tract information, if available in Maricopa County Assessor's database, was reviewed (**Appendix A**).

Table 2 Candidate Assessment Report
Reach Upstream and Downstream Plat Inventory

Area 1

Reach	Main Reach Plat Name	Upstream Plat Name(s)	Date Plat Recorded	Downstream Plat Name(s)	Date Plat Recorded	Parcel information	Location
3	Valley View # 4	East- no plat	N/A	West- no plat	N/A	• Private unplatted tracts exist on both upstream and downstream ends of reach. • Copied parcel maps and available deed information for reference.	East of CAP Canal, east of 76th Street, and South of Culver Drive.

Area 2

Reach	Main Reach Plat Name	Upstream Plat Name(s)	Date Plat Recorded	Downstream Plat Name(s)	Date Plat Recorded	Parcel information	Location
1	Apache Paradise Units 1 & 2	East- no plat	N/A	West-no plat	N/A	• The east end (upstream) of reach receives drainage from "Tract-A" which has a right-of-way deed as an easement for public utilities. • Private unplatted tract exists on downstream end of reach. • Copied parcel maps and available deed information for reference.	North of Broadway, off 96th Street.
2	Newman Park	East- Desert Village No. 2 Plat 77-25	5/21/1958	West- Crimson Corner Plat 286-19	8/8/1985	Upstream and downstream reaches within platted area.	South of Apache Trail, off Crismon.
4	Cherokee Mobil Estates, and Cherokee Mobile Estates II, Glenmar, Broadway Manor	East- Mary Francis Estates Replat 132-31	8/10/1970	West- No plat	N/A	• Private unplatted tracts exists on downstream end of reach. • Copied parcel map and available deed information for reference.	North of Broadway, West of Ellsworth. Includes the Broadway Channel.
5	Crisway Estates Units 2 & 3	East- Sunrise at Parkwood Ranch Plat 490-34	3/19/1999	Downstream reach is still within Crisway Estates Unit 2 Plat 116-5	10/17/1967	Upstream and downstream reaches (North of Corabeli Ave.) within platted areas.	North of Coralbell, off Crismon (Drainage way alignment is from the northeast to the southwest.)

Reach	Main Reach Plat Name	Upstream Plat Name(s)	Date Plat Recorded	Downstream Plat Name(s)	Date Plat Recorded	Parcel information	Location
5A	Wynstone II	East- Golden Crest Terrace Plat 126-44	11/19/1969	West- Apache Trails Plat 82-50	6/8/1960	Upstream and downstream reaches within platted areas.	North of Corabell Avenue between Ellsworth Road. and 96th Street.
7	Knolls Estates	North- No Plat	N/A	South- Downstream end of reach 7 terminates at reach 4 along Broadway road.	N/A	• Private unplatted tracts exist on upstream end of reach. • Copied parcel map and available deed information for reference.	Running south along 85th Street into Reach 4.
8	Knolls Mobile	East- No Plat	N/A	West- Drains to 34 Palms Plat 107-19	12/30/1964	• Private unplatted tracts exist on upstream end of reach. • Copied parcel map and available deed information for reference.	South of University Drive, West of Hawes Road.
8A	34 Palms	East- drainage from Knolls Estates Plat 98-15	2/2/1962	West- 34 Palms Plat 107-19	12/31/1964	Upstream and downstream reaches within platted areas.	South of University Drive, West of Hawes Road and west of Reach 8.
10	Cherokee Mobil Estates Unit 3	North- No Plat	N/A	South- Drains to Broadway Manor Plat 449-34	9/15/1997	• Upstream Tract 218-41-363 had no available deed information in GIS database.	South of Apache Trail, off Ellsworth
11	Desert Vista Estates, Paradise Village II	North- Collects drainage from Superstition View Phase I Plat 249-19	2/2/1983	South- No Plat. Drainage intersects with CAP canal.	N/A	Downstream end of drainage intersects CAP canal tract 220-21-003F. •There was no information available for this tract in the GIS database	North of the CAP Canal, east of Ellsworth
12	Superstition View Phase-I	North- Upstream end of reach originates in Superstition View Plat 249-19	2/2/1983	South- No Plat. Drainage intersects with CAP canal	N/A	• Downstream end of drainage intersects CAP canal tract 220-21-002W. • There was no information available for this tract in the GIS database	North of the CAP Canal, adjacent to Ellsworth

2.7 Hydrologic Analysis

SOUTHEAST MESA ADMP, AREA NORTH OF SUPERSTITION FREEWAY

HDR received two current hydrology models; one from the District and one from ADOT. The hydrology model from the District was for the ~~Queen Creek/Sanokai Wash HMP and East Maricopa Floodway Capacity Mitigation Study.~~ The hydrology model from ADOT assisted in identifying the projected flows east and west the proposed Loop 202 Freeway alignment.

The model from the District was used to evaluate specific drainage channels in reaches 1, 2, 4, 7, 12, and the Broadway Channel. The concentration points were clearly identified in the model and in the schematic for theses reaches.

Flows for the 100-year, 24 hour storm were used for the channels, which were clearly identified in the District's HEC-1 model as the concentration points associated with our assessment. The channels that lacked information or for which there was no definitive concentration point underwent a topographical evaluation using existing GIS data, site visits, and photos. If the basin area was less than 160 acres, then rational method was used. The rational method is based on the District's Hydrology – Drainage Design Manual for Maricopa County. **Table 3** presents this data.

Table 3 100-Year Peak Discharges

Drainage Area	Plat Name	Q-100-yr (cfs)
Reach 1	Apache Paradise Units 1 & 2	456
Reach 2	Newman Park	456
Reach 3	Valley View # 4	137
Reach 4	Cherokee Mobil Estates 1 & 2	751
Broadway	Existing Reach 4A	836
Broadway	Downstream after L202 (C24a)	135
Reach 5	Crisway Estates Units 2 & 3	116
Reach 5A	Coralbell	440
Reach 7	Knolls Estates	517
Reach 8	Knolls Mobile	71
Reach 10	Cherokee Mobil Estates Unit 3	321
Reach 11	Desert Vista Estates	247
Reach 12	Superstition View Phase I	792

2.8 Hydraulic Analysis

HDR conducted a hydraulic analysis of the 12 drainage ways using HEC-RAS. Surveyed spot elevation point data was provided for several cross-section locations within channel reaches. Additional structures data within the channels was also included.

Survey point data was imported into ArcView 3.3 for use with the HEC-GeoRAS extension. A Triangulated Irregular Network (TIN) was generated from the point data and cross sections were cut from it and imported into HEC-RAS. Once in HEC-RAS, cross-sections were manually corrected in the model for geometric anomalies and Manning's n values were assigned to the channel and overbank regions based on photographs from the survey crew. An analysis of channel capacity was performed by inputting larger and larger discharge values until water surface elevations overtopped channel banks for the lowest capacity cross section within a given reach. **Table 4** presents the results of the hydraulic analysis. In all channels, a sensitivity analysis was performed to find if changing downstream boundary conditions from normal depth to a known water surface affected water surface profiles. The channels in this study area were not affected by changing downstream boundary conditions, so the default condition used was normal depth. Some underlying assumptions or modifications to the individual channels were made and are outlined in the following text (HEC-RAS plan names are in parentheses):

2.9 Existing Facilities

Reach 1: Apache Paradise Units 1 & 2 (apache_steady) - No modifications, the lowest flow yielding flood conditions was 500 cfs. Manning's n = 0.03 for earthen channel.

Reach 2: Newman Park (newman) - Point data included bridge deck info, photo indicated bridge chord to be approximately 2' below the deck. Input bridge into HEC-RAS model at XS 290. Upstream of bridge is the location of flooding at 140 cfs. Manning's n = 0.03 for earthen channel. Channel capacity is limited by structure.

Reach 3: Valley View # 4 - No modifications, the lowest flow yielding flood conditions was 137 cfs. Manning's n = 0.03 for earthen channel.

Reach 4: Cherokee Mobil Estates Units 1 & 2 (cherokee1_2) - Possible modifications, the lowest flow yielding flood conditions was 500 cfs. Manning's n = 0.03 for earthen channel.

Reach 4A (Broadway Channel): Extension of Cherokee Mobil Estates Units 1 & 2 (cherokee1_2) - Possible modifications, the lowest flow yielding flood conditions was 800 cfs. Manning's n = 0.015 for concrete lined channel.

Reach 5: Crisway Estates Units 2 & 3 (crisway) - No modifications, the lowest flow yielding flood conditions was 10 cfs. Manning's n = 0.03 for earthen channel.

Reach 5A: Coralbell (coral) - TIN had a slight anomaly near the downstream end, hand entered in cross-section (XS) 8 based on original points and deleted XS 97, then interpolated between XS 8 and XS 246 to create XS 127. The lowest flow yielding flood conditions was 150 cfs. Manning's n upstream of XS 1034 is 0.03 for earthen channel; downstream of XS 1034 is 0.015 for concrete channel.

Reach 7: Knolls Estates (knolls) - Upstream XS 2079 surveyors only shot the channel bottom with 0.5' relief, photos showed 3' high vertical walls extending from the channel bottom. Added vertical walls to the cross section then interpolated between XS 2079 and XS 1856 to create 4 new cross sections. The lowest flow yielding flood conditions was 60 cfs. Manning's n = 0.03 for earthen channel.

Reach 8: Knolls Mobil (knolls mobile) - The lowest flow yielding flood conditions was 6 cfs. Manning's n = 0.03 for earthen channel, 0.035 for over bank areas.

Reach 10: Cherokee Mobil Estates Unit 3 (cherokee3) - No modifications, the lowest flow yielding flood conditions was 100 cfs. Manning's n = 0.03 for earthen channel.

Reach 11: Desert Vista Estates - Upstream cross section 783, the left side was not surveyed, hand entered additional points to mirror the right side. The lowest flow yielding flood conditions was 60 cfs. Manning's n = 0.03 for earthen channel, 0.035 for over bank areas. The lowest flow yielding flood conditions was 120 cfs.

Reach 12: Area 1: Superstition View Phase-I (Reach 12) - Manning's n = 0.03 for earthen channel, 0.035 for over bank areas. The lowest flow yielding flood conditions was 100 cfs.

Table 4 Channel Capacity

Reach	Channel	Capacity (cfs)
1	Apache Paradise	500
2	Newman Park	140
3	Valley View # 4	137
4	Cherokee Units 1 & 2	500
5	Crisway Estates	10
5A	Coralbell	150
10	Cherokee Unit 3	100
7	Knolls Estates	60
8	Knolls Mobile	10
11	Desert Vista Estates	120
12	Area 1; Superstition View	100

2.10 FIRM Designation

Reaches 1, 2, and 5:
The FEMA FIRM designation for the study area is found in FIRM Panel 2240 of 4350, Map Number 04013C2240E (Map revised July 19, 2001) for Maricopa County. The FIRM designation is "Zone X." Zone X is defined as "Areas of 500-year; areas of 100-

year flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 100-year flood."

Reach 3:
The FEMA FIRM designation for the study area is found in FIRM Panel 2210 of 4350, Map Number 04013C2210E (Map revised July 19, 2001) for Maricopa County. The FIRM designation is "Zone X."

Reaches 4, 5A, 7, 8, 8A, 10, 11, and 12:
The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) designation for the study area is found in FIRM Panel 2220 of 4350, Map Number 04013C2220E (Map revised July 19, 2001) for Maricopa County. The FIRM designation is "Zone X."

PART 3 FINDINGS AND RECOMMENDATIONS

3.1 Findings

3.1.1 Hydraulic Analysis

After using HEC-RAS to analyze the existing conditions and existing capacities, the 100-year storm event flows generated from the hydrologic analysis were input into the existing hydraulic models. Below is a summary of each of the 100-year storm effects on the12 drainage ways.

Reach 1 - Apache Paradise Units 1 & 2: The HEC-1 generated flows of 456 cfs. The 100-year, 24-hour storm is at the top of the banks of the drainage way.

Reach 2 - Newman Park: The HEC-1 generated flows of 456 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Reach 3 - Valley View # 4: Computed flows of 137 cfs. The 100-year, 2-hour storm overtops the banks of the drainage way.

Reach 4 - Cherokee Mobil Estates 1 & 2: The HEC-1 generated flows of 751 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Broadway Channel - The HEC-1 generated flows of 836 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Reach 5 - Crisway Estates Units 2 & 3: Computed flows of 116 cfs. The 100-year, 2-hour storm overtops the banks of the drainage way.

Reach 5A - Coralbell Channel: Computed flows of 440 cfs. The 100-year, 2-hour storm overtops the banks of the drainage way.

Reach 7 - Knolls Estates: The HEC-1 generated flows of 517 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Reach 8 - Knolls Mobile: Computed flows of 71 cfs. The 100-year, 2-hour storm overtops the banks of the drainage way.

Reach 10 - Cherokee Mobil Estates Unit 3: The HEC-1 generated flows of 321 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Reach 11 - Desert Vista Estates: The HEC-1 generated flows of 247 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

Reach 12 - Superstition View Phase-I: The HEC-1 generated flows of 792 cfs. The 100-year, 24-hour storm overtops the banks of the drainage way.

3.1.2 Assessor Parcel Data

- The subdivision regulations of 1972 set a date-based precedent. If the County accepts a plat with parcels as "dedicated to the Public" after 1972, then the County has ownership. Several subdivision drainage easements were dedicated to the County prior to the subdivision regulations of 1972, and these drainage easements are located in the east valley (Maricopa County island). The only reference to the subdivision regulations of 1972 was obtained from the City of Mesa. The City of Mesa enacted the subdivision regulations as "Ordinance number 755" on August 21, 1972. Per Resolution FCD 93-17, the District has taken over the maintenance of these easements for the County.

- Construction in easements with the dedication on the plat reading "dedicated to the Public" will require authorization from the County. Ownership of the drainage ways for public improvements is complex, due to issues such as: 1) Utilities in the drainage ways that include dedications for both drainage and utilities; and 2) Tax code research reveals that drainage ways parcels have the same designation as public roads in the GIS database.

- Subdivision dedications "to the public" that occur prior to 1972 are not the responsibility of the County, unless the County was providing maintenance in these areas before 1972.

- Review of the Maricopa County Assessors office interactive GIS database (general data, valuation data, and property data) resulted in no tax code information for the specific reach drainage right-of-ways.

3.1.3 Adjacent Parcel Data

At the request of the District, an upstream and downstream drainage channel reach review was conducted to determine ownership and maintenance responsibility of drainage channels which drain into each subject reach, and drainage channels which receive water from each subject reach. Details supporting the following summary of upstream and downstream reach drainage right-of-way findings are provided in **Appendix A.**

Reach 1 - Apache Paradise Units 1 & 2 and **Reach 3** – Valley View # 4: Upstream and downstream ends of reaches 1 and 3 abut unplatted property.

Reach 2 – Newman Park and Reach 5 - Crisway Estates Units 2 & 3: Both the upstream and downstream ends of reaches 2 and 5 abut platted property. Reach 2 abuts pre-1972 recorded property on the upstream side, and post-1972 on the downstream side. Reach 5 abuts into post-1972 platted property on the upstream end, and pre-1972 platted property on the downstream end.

Reach 4 - Cherokee Mobil Estates 1 & 2 and Reach 7 - Knolls Estates: Upstream end of Reach 7 abuts unplatted property, and the downstream end terminates into Reach 4.

Reach 4 - Cherokee Mobil Estates 1 & 2: The upstream end of **Reach 4** receives water from platted property which was recorded prior to 1972. The downstream end of this reach terminates into unplatted property.

Reach 5A- Coralbell and Reach 8A- 34 Palms: Both upstream and downstream ends of reaches 5A and 8A abut platted property recorded prior to 1972.

Reach 8 - Knolls Mobile and Reach 10 - Cherokee Mobil Estates Unit 3: Upstream ends of reaches 8 and 10 receive water from unplatted property. Both downstream ends of these reaches terminate into platted property; reach 8 into pre-1972 platted property, and Reach 10 into post-1972 platted property.

Reach 11 - Desert Vista Estates and Reach 12 - Superstition View Phase-I: Upstream ends of reaches 11 and 12 receive water from platted property which were recorded after 1972. The downstream ends of these reaches terminate into unplatted property.

3.1.4 Easement Dedications

- The drainage easements in the study area appear to meet the statutory dedication requirements as fee, and give the County a fee interest in the drainage ways. This finding is based upon the creation of plats containing a survey, signatures, recorded acknowledgments, and the drainage areas used by the public.
- In 1895 the Arizona Supreme Court case of *Evans v. Blankenship* held that the act of surveying land when associated with the sale of land referenced to plat or map results in an irrevocable dedication.
- Dedicating property to public use is an established principle of common law. The act of selling lots with reference to a plat results in an immediate and irrevocable common law dedication of areas delineated for public purposes.
- The public governing authority cannot convey away the dedicated drainage way unless specifically authorized by the legislature.
- Utilities may pose conflicting uses of the dedicated drainage ways and may present maintenance problems associated with future projects. Utilities installed prior to the dedication of the drainage ways, may result in the County assuming responsibility for the expense of necessary facility relocation. Additional research to determine utility rights and uses will be necessary before significant construction or maintenance work can occur.

3.2 Recommendations

3.2.1 Reach Specific

The recommendations have been divided into two categories; operational and maintenance. Operational recommendations will address the functionality of the drainage ways and the feasibility of reconstructing the drainage way in order to meet District criteria. Maintenance recommendations will address the condition of the drainage way and its need for repairs. **Table 5** is a ranking system to better quantify the need for reconstruction and/or maintenance. Proposed and recommended facilities are presented in **Appendix A,** specific to each reach (**A1 through A12**). **Table 6** presents a summary of reach specific findings. **Table 7** presents the channel capacity of each reach.

Table 5 Ranking System

Operational Rankings	
Functional	1
Borderline	2
Flood prone	3
Maintenance Rankings	
Routine Maintenance	1
Routine Maintenance and Frequent Inspections	2
Periodic Repair	3

Immediate Repair	4
Reconstruct	5

Table 6 Summary of Reach Specific Findings

Reach Name	Operational Ranking	Maintenance Ranking	Comments
Reach 1-Apache Paradise Units 1 & 2:	2	2	• Upstream and downstream ends of reaches 1 and 3 abut unplatted property. •After storm events, erosion repair is needed. • Residential trees are affecting channel capacity. • Local residents improve stabilization on channel banks.
Reach 2 - Newman Park	3	1	• Abuts pre-1972 recorded property on the upstream side, and post-1972 on the downstream side. • Upstream of bridge is the location of flooding at 140 cfs. • Maintenance problems are minimal and can be addressed with routine inspections and maintenance. • Residents have performed some improvised bank stabilization. • Limited access to provide maintenance is a problem.
Reach 3 - Valley View # 4:	2	2	• Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of County codes.
Reach 4 - Cherokee Mobil Estates 1 & 2:	3	4	• Reach 4 has quite a few maintenance problems. • After storm events, erosion repair is needed. • Residents have improperly stabilized the banks of the channel. • Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of County codes. • There is limited access into the channel and no equipment access.
Broadway Channel:	3	5	• ADOT is planning on constructing a culvert, diverting flows to the proposed Santan East Channel. • The Broadway Channel has the same maintenance problems as Reach 4. •Significant erosion repair is needed. •The channel has uplifted in many areas. •Residents have improperly stabilized the banks of the channel. • Residential trees are affecting channel capacity and private property. • Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of County codes.

Reach Name	Operational Ranking	Maintenance Ranking	Comments
			• There is limited access into the channel and no equipment access.
Reach 5 - Crisway Estates Units 2 & 3:	2	2	• Construction of a conveyance system for flows to the Coralbell Channel may alleviate residential flooding. • Residential trees are affecting channel capacity. • Local residents improvise stabilization on channel banks. • Both upstream and downstream ends of reaches 5A and 8A abut platted property recorded prior to 1972. • Reach 5 has some typical maintenance problems. • After storm events, erosion repair is needed. • Residential trees are affecting channel capacity. • Local residents improvise stabilization on channel banks.
Reach 5A - Coralbell Channel:	2	4	• Reach 5 has significant erosion occurring from residential trees.
Reach 7 - Knolls Estates:	3	2	• Reach 7 has significant erosion on the east bank of the channel that is undermining mobile home park resident's fences. • There are many illegal discharges of gray water into the channel, which is a violation the County's NPDES Phase II Permit. • Reach 7 has low power lines, making it difficult for heavy equipment access the area. • Gas and cable lines in the channel bottom are affecting maintenance operations.
Reach 8 - Knolls Mobile Estates	3	2	• Residents frequently park in the channel impeding flow during storm events. • The drainage channel discharges into property in 34 Palms subdivision.
Reach 10 - Cherokee Mobil Estates Unit 3:	3	2	• Severe erosion and undercutting problems in and around the area of Alder Avenue. • There is illegal dumping into the channel, which is a violation the County's NPDES Phase II Permit.
Reach 11 - Desert Vista Estates:	3	2	• Erosion problems along the fence line •Residents are planting vegetation on the slopes of the channel.
Reach 12 - Superstition View Phase I:	3	2	• There is no agreement for maintenance responsibility for the drainage channel fro Ellsworth Avenue. • There is significant sediment accumulation upstream of each culvert.

Table 7 Hydrologic and Hydraulic Findings

Reach	Reach Name	Channel Capacity (cfs)	Return Frequency of Capacity (years)	Q100 Peak Discharge
1	Apache Paradise Units 1 & 2	500	100	456
2	Newman Park	140	10	456
3	Valley View # 4	137	100	137
4	Cherokee Mobil Estates 1 & 2	500	25	751
Broadway	Broadway	800	100	836
5	Crisway Estates Units 2 & 3	10	10	116
5A	Coralbell Channel	150	10	440
7	Knolls Estates	60	2	517
8	Knolls Mobile	10	2	71
10	Cherokee Mobil Estates Unit 3	100	5	321
11	~~Cherokee Mobil Estates Unit~~ B	120	10	247
12	Superstition View Phase I	100	2	792

DESERT VISTA ESTATES

3.2.2 General Recommendations

- Formal IGA may be required to formalize maintenance responsibilities between the District and the County.
- The Maintenance division of the District should be provided direction in the form of a written directive from the Board of Directors regarding construction and maintenance in drainage ways that are "dedicated to the public and the maintenance responsibilities of the District as distinguished from the County.

Table 8 Cost Estimates

Reach	Improvement/Structure	Quantity	Unit	Unit Cost	Extended Cost
1	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
1	Riprap to prevent erosion	40	CY	$ 50	$ 2,000
2	Removable Bollards - one location[2]	3	EA	$ 300	$ 900
2	Shotcrete Channel- one location	40	SY	$ 31	$ 1,240
2	Shotcrete Channel- two locations	40	SY	$ 31	$ 1,240
3	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
4	Removable Bollards - two locations[2]	6	EA	$ 300	$ 1,800
4	Shotcrete channel	370	SY	$ 31	$ 11,470
4	Install high wall (to limit dumping)[3]	1,600	LF	$ 150	$ 240,000
Broadway Channel	Reconstruct Channel Invert[6]	16,000	SF	$ 12	$ 192,000
Broadway Channel	Future Box culvert and east channel		LS		$ -
5	Removable Bollards - four locations[2]	12	EA	$ 300	$ 3,600
5	Catch Basins[7]	1	EA	$ 2,400	$ 2,400
5	Storm Drain[7]	2,000	LF	$ 46	$ 92,000
5	Floodproof structure[7]	1	LS	$ 15,000	$ 15,000
5A (Coralbell)	Shotcrete portion of channel	444	SY	$ 31	$ 13,764
5A (Coralbell)	Removal of Trees	1	LS	$ 1,000	$ 1,000
7	Shotcrete channel	75	SY	$ 31	$ 2,325
7	Relocate overhead power lines[8]	1	LS	$ 50,000	$ 50,000
7	Disconnect or plug pipes[5]	50	EA	$ 10	$ 500
7	Provide maintenance access[4]	315	SY	$ 25	$ 7,875
8 and 8A	Removable Bollards - four locations[2]	12	EA	$ 300	$ 3,600
10	Removable Bollards - three locations[2]	9	EA	$ 300	$ 2,700
10	Install high wall (to limit dumping)[3]	3,000	LF	$ 150	$ 450,000
10	Riprap in Low Flow Channel	40	CY	$ 50	$ 2,000
11	Riprap in Low Flow Channel	74	CY	$ 50	$ 3,700
11	Remove vegetation	1	LS	$ 1,000	$ 1,000
12	Remove sediment - two locations	100	CY	$ 10	$ 1,000

ASSUMPTIONS

1. *ADOT (State of Arizona) Standard Specifications for Costs was used to estimate improvement costs*
2. *Bollard and sleeve: steel 7 feet in length (4.5 feet above ground surface, 2.5 feet below ground surface), set in 5-inch O.D. steel sleeve; Bollard size: 4-inches O.D., concrete filled and painted yellow; 4 feet between each removable bollard, and 3 bollards for each location needed. Bollard costs include delivery of materials and installation*
3. *High wall is a 8-foot high block wall with 18" screening on top to block view and limit illegal dumping.*
4. *Does not include real estate costs. Only includes providing dirt road to channel.*
5. *Disconnecting of pipes is assumed to be capping a 4-inch discharge line.*
6. *Reconstruct channel lining at uplifted area. Recommendation is to saw cut existing channel and inlet to Broadway Channel from off-site flows.*
7. *These items are options and may be broken out separately. The storm drain and catch basin shall collect the downstream flow and route to the Coralbell Channel. Floodproofing consists of a short wall to blck the flow from entering the residents property.*
8. *Relocating the overhead electric lines may be at the cost of the SRP and not the County, depending upon prior rights.*

Table 8 Cost Estimates Summary

Reach Totals	Reach 1	$3,800
	Reach 2	$3,380
	Reach 3	$1,800
	Reach 4	$253,270
	Broadway	$192,000
	Reach 5	$113,000
	5A (Coralbell)	$14,764
	Reach 7	$60,700
	Reach 8	$3,600
	Reach 10	$454,700
	Reach 11	$4,700
	Reach 12	$1,000

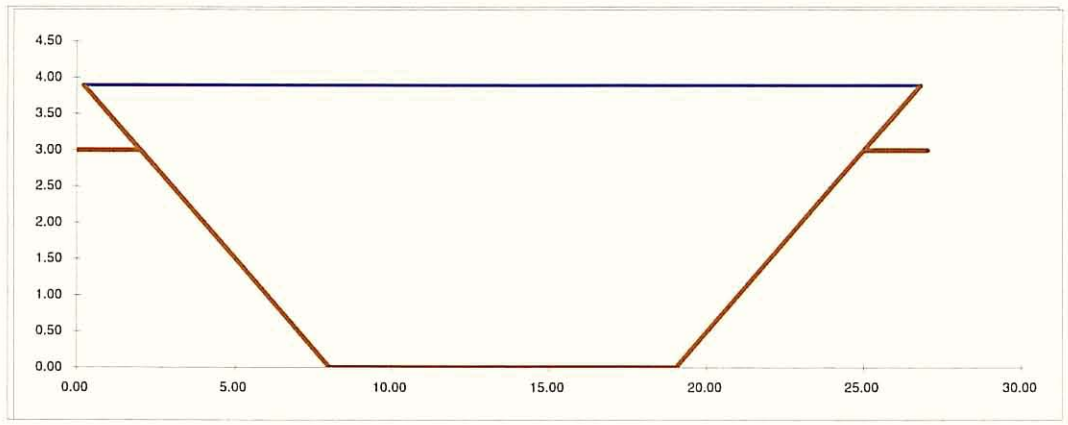
Reach 1: Apache Paradise Units 1 & 2
Location: N. of Broadway Road, off 96th Street.
Parcel Research: Dedication (Apache Paradise Unit I): "dedicates to the Public for use as such, the streets and drainage rights of way as shown on said plat. Dedication (Apache Paradise Unit II): "dedicates to the public, the streets and rights of way and easements to the purposes shown on said plat. (Plat maps covered entire drainage reach).
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 1 has telephone lines on the north side of the drainage right-of-way; gas lines are located in the street, at the upstream and downstream of the channel, not within the right-of-way; 6" ACP water line at the upstream and downstream of the channel, not within the right-of-way; and 8" PVC sewer at the downstream end, not within the right-of-way.
Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC, the Q100 = 456 cfs.
Hydraulic Analysis: No modifications, the lowest flow yielding flood conditions are 500 cfs. Manning's n = 0.03 for natural channel. Operational – (1): Reach 1's 100 year storm event is not overtopping the banks; however these flows were generated from a previous HEC-1 model for the FCDMC and should be revised if improvements are considered.
Recommendation: Maintenance – (2): Reach 1 has some typical maintenance problems. After storm events, erosion repair is needed. Residential trees are affecting channel capacity. Local residents improvise stabilization on channel banks. HDR recommends routine maintenance and inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit requirements. Installation of removable bollards are reccommended at the upstream and downstream terminus of the channel.
Opinion of Improvement Cost: $3,800

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 1	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 1



Design Discharge Q = 456 cfs
Channel Section 1
Right-of-Way Width 60 ft

Calculate Flow Depth

Estimated Flow Depth	3.89	ft
Channel Depth	3.00	ft
Estimated Q =	455.8	cfs
Average V =	6.24	ft/sec

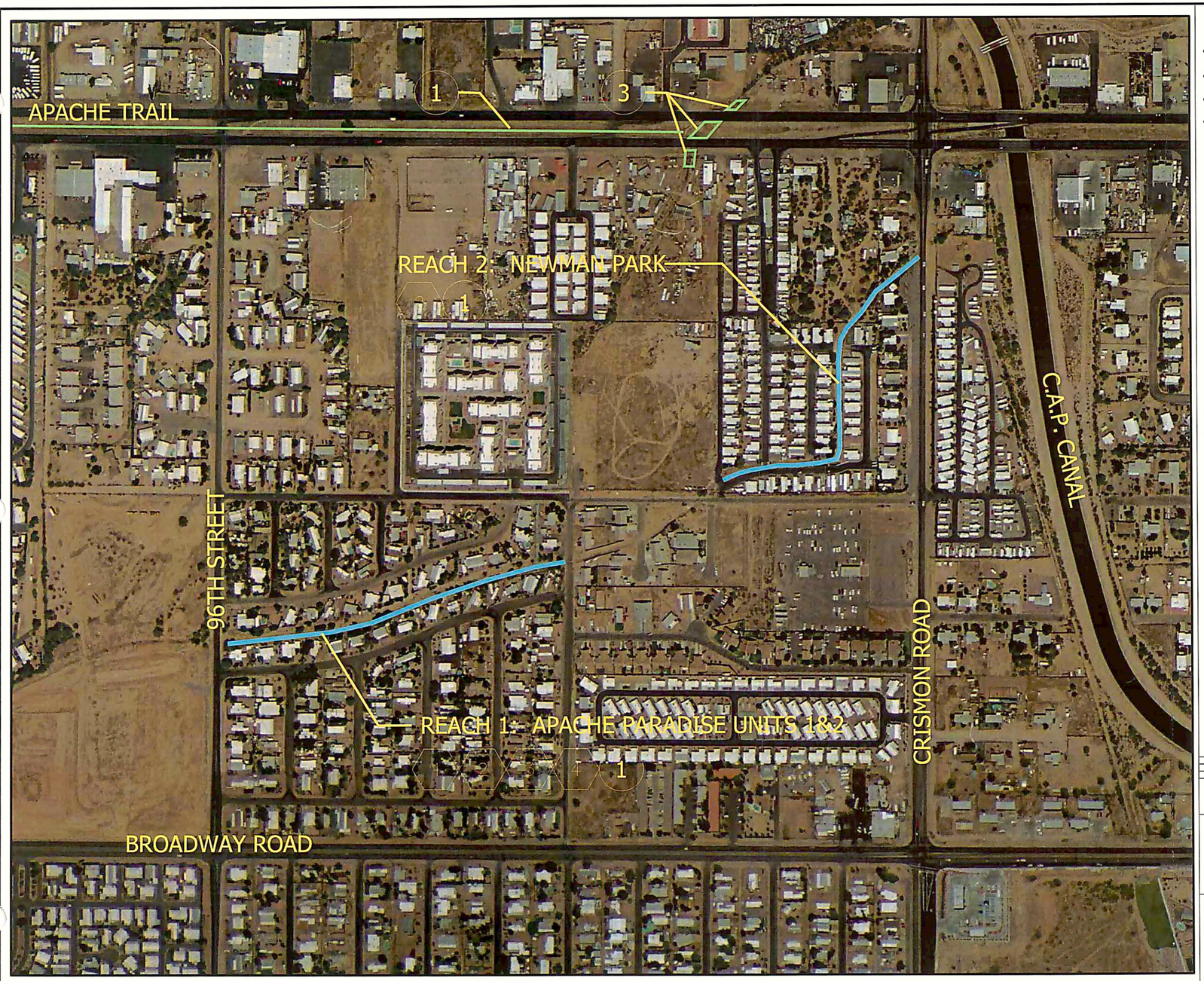
Channel Parameters

Bottom Width =	11.00	ft
Side Slope =	2.00	:1
Manning n =	0.040	
Channel Slope	0.008	ft/ft
Flow Area =	73.05	ft^2
Wet Perimeter	28.40	ft
Hyd. Radius R	2.57	ft
Top Width =	26.56	ft
Hydraulic depth	2.75	ft
Froude No. =	0.66	

Calculate Freeboard Requirement

Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.25 ft

Available Freeboard
Channel Depth - Flow Depth = -0.89 ft Available Fb > Fb req'd



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED
2. IMPROVISED BANK STABILIZATION
3. OVERHEAD POWERLINES ARE TOO LOW
4. TREES IN CHANNEL AFFECTING PRIVATE PROPERTY

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 1 AND 2
F.C.D. CONTRACT NO. 2003C018

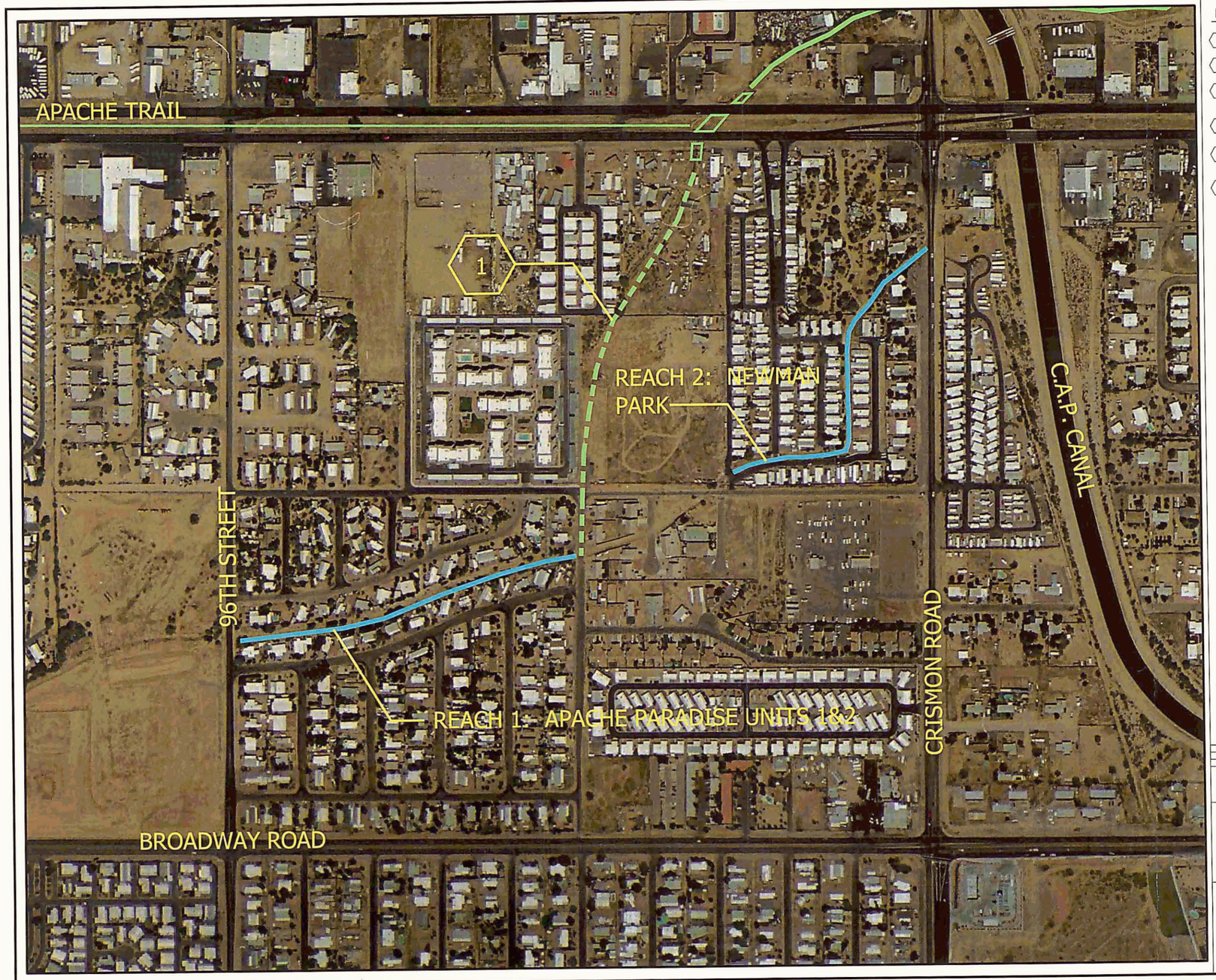
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Existing Facilit ibits\exh-04_REACH 1 2.dwg, Layout1, 4/22/2004 10:32:03 AM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 1 AND 2
F.C.D. CONTRACT NO. 2003C018

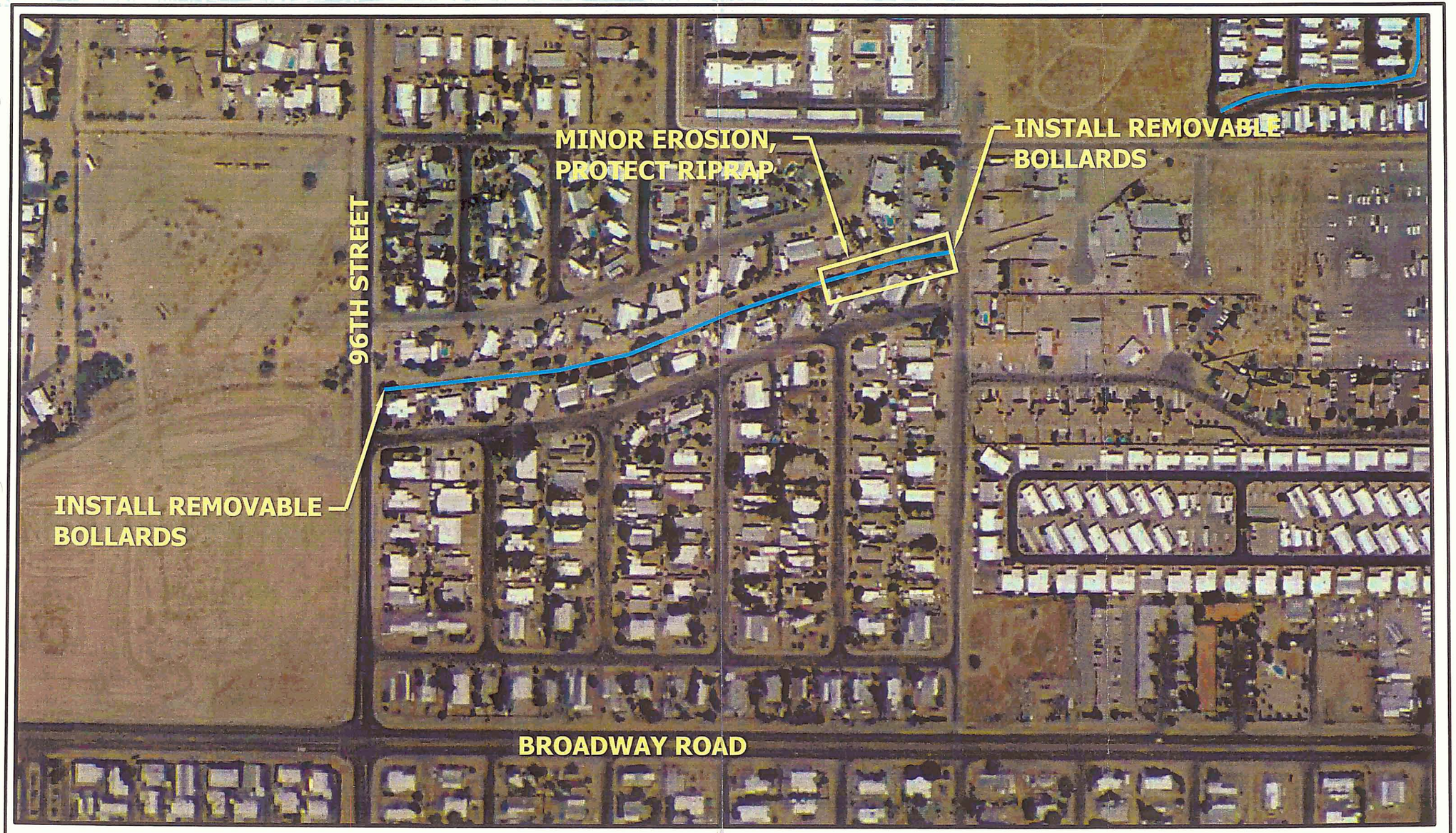
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07165 AC.Eng.On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Proposed Facili chibits\exh-12_REACH 1-2.dwg, Layout1, 4/22/2004 1:00:00 PM, akuchars



LEGEND

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

EXISTING NON-FCDMC DRAINAGE FACILITIES
PROPOSED DRAINAGE FACILITIES
DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR

HDR Engineering, Inc.

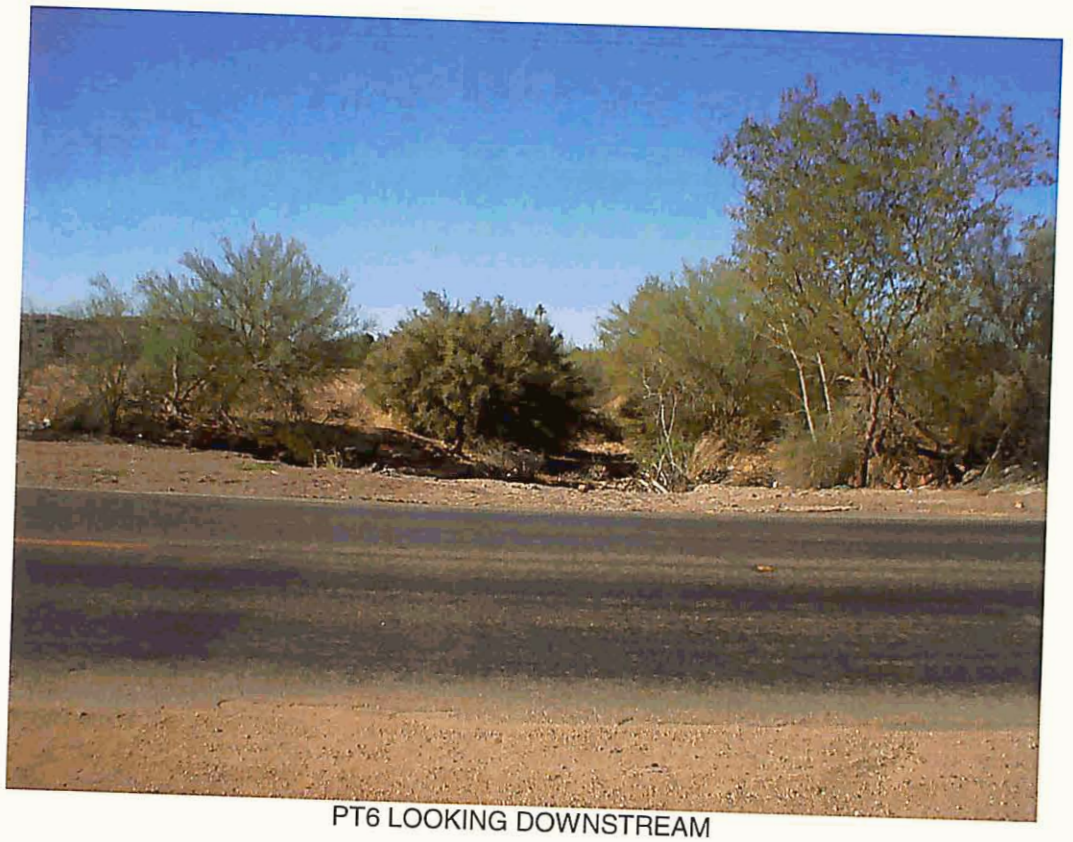
REACH 1
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

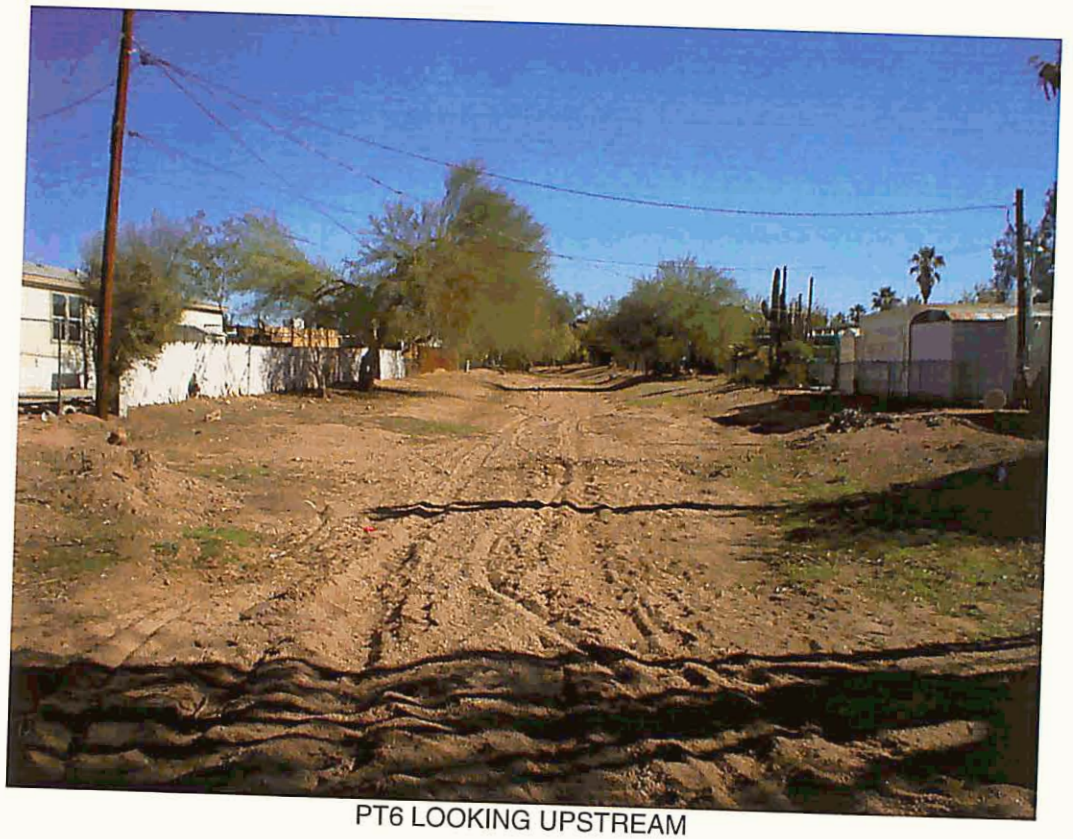
Figure

E:\07' DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 1.dwg, Layout2, 05/04/2004 04:08:48 PM, cmiranda

Reach 1 (Area 4) - Survey Points 2 - 31

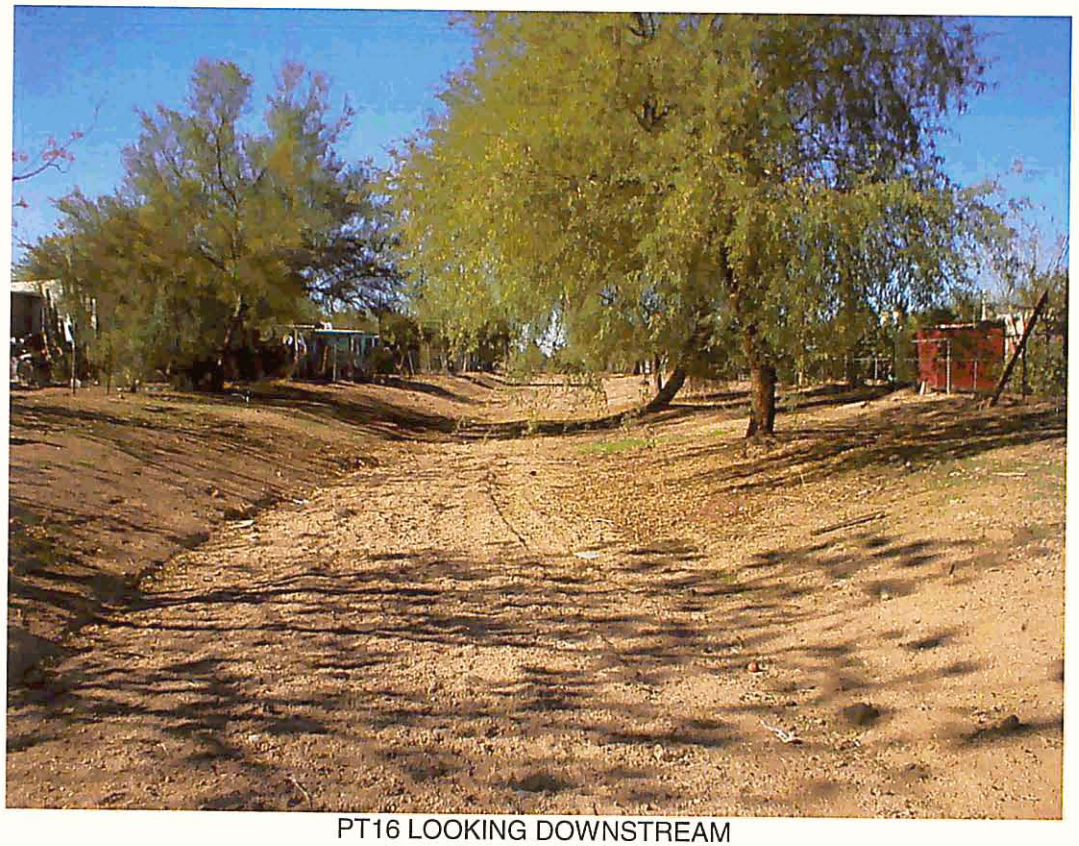


PT6 LOOKING DOWNSTREAM



PT6 LOOKING UPSTREAM

Reach 1 (Area 4) - Survey Points 2 – 31



PT16 LOOKING DOWNSTREAM

PT16 LOOKING UPSTREAM

Reach 1 (Area 4) - Survey Points 2 – 31

PT20 LOOKING DOWNSTREAM

PT20 LOOKING UPSTREAM

Reach 1 (Area 4) - Survey Points 2 – 31

PT30 LOOKING DOWNSTREAM

PT30 LOOKING UPSTREAM

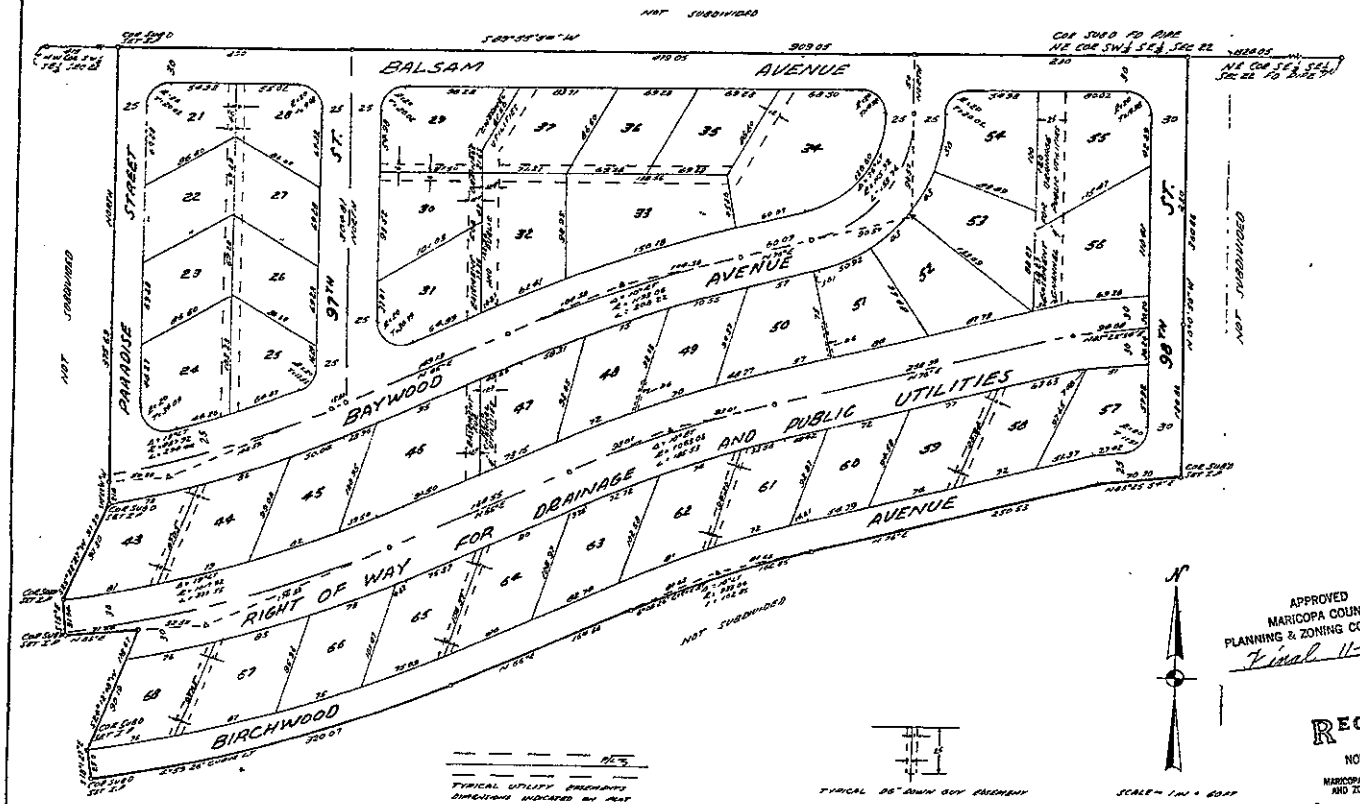
97-15

FOR MOBILE HOME USE ONLY

APACHE PARADISE UNIT ONE

97-15

A SUBDIVISION OF A PORTION OF THE SW. ¼., SE. ¼., SEC. 22., T.1N., R.7E., G.&S.R.B.&M. MARICOPA COUNTY, ARIZONA



TYPICAL UTILITY EASEMENT DIMENSIONS INDICATED ON PLAT

TYPICAL 25' DRAIN OUT EASEMENT

SCALE = 1 IN = 100 FT

APPROVED MARICOPA COUNTY PLANNING & ZONING COMMISSION
Final 11-16-61

RECEIVED
NOV 7 1961
MARICOPA COUNTY PLANNING AND ZONING COMMISSION
By 51387

a 204242 INDEXED PAGED

STATE OF ARIZONA } ss
County of Maricopa
I hereby certify that the within instrument was filed and recorded at the request of Phoenix Title and Trust Co.
NOV 27 61-8 00 AM
Witness my hand and official seal the day and year aforesaid.
Fred Hill
Deputy Recorder

ALL LOTS ARE RESTRICTED TO MOBILE HOMES ONLY
EACH LOT IS LIMITED TO ONE MOBILE HOME FOR USE AS A SINGLE FAMILY RESIDENCE
SEE RECORDED DEED RESTRICTIONS

DEDICATION

STATE OF ARIZONA } ss
COUNTY OF MARICOPA

KNOW ALL MEN BY THESE PRESENTS: THAT THE PHOENIX TITLE AND TRUST CO. AN ARIZONA CORPORATION, TRUSTEE WAS SUBDIVIDED UNDER THE NAME OF APACHE PARADISE UNIT ONE, THAT PART OF SW¼ SE¼ SEC 22., T.1N., R.7E. G&SRB&M DESCRIBED AS FOLLOWS, FROM THE N.E. COR SW¼ SE¼ SEC 22 POINT OF BEGINNING, THENCE S89°55'W 909.05 FEET, THENCE SOUTH 375.69 FEET, THENCE S 10°52'01"W 21.10 FEET, THENCE S 25°35'[illegible] FEET, THENCE S15°E 31.04 FEET, THENCE 71.64 FEET, THENCE S28°12'48"W 110.07 FEET, THENCE S18°01'27"E 250.0 FEET, THENCE NORTH [illegible] ALONG 4°59'28" CURVE LEFT 320.07 FEET, THENCE [illegible] 188.66 FEET, THENCE NORTH EASTERLY ALONG [illegible] CURVE RIGHT 162.85 FEET, THENCE [illegible] FEET, THENCE N80°55'48"E 70.70, THENCE N0°6'50"W 360.06 FEET TO POINT OF BEGINNING AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, R/W'S, STREETS AND EASEMENTS, CONSTITUTING SAME AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN TO EACH RESPECTIVELY ON SAID PLAT AND THAT THE PHOENIX TITLE AND TRUST COMPANY AS TRUSTEE HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH, THE STREETS AND DRAINAGE RIGHTS OF WAY AS SHOWN ON SAID PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. [illegible]

IN WITNESS WHEREOF THE PHOENIX TITLE AND TRUST COMPANY, AS TRUSTEE HAS THIS 6th DAY OF November 1961 HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICERS, THEREUNTO DULY AUTHORIZED

PHOENIX TITLE AND TRUST COMPANY
TRUSTEE
ATTEST Alfred Carter, ASST SECRETARY — B W O'Brien, ASST VICE PRESIDENT

ACKNOWLEDGEMENT

STATE OF ARIZONA } ss
COUNTY OF MARICOPA

ON THIS 6th DAY OF November 1961, BEFORE ME, THE UNDERSIGNED OFFICER PERSONALLY APPEARED B W O'Brien ASST VICE PRESIDENT AND Alfred Carter ASST SECRETARY OF THE PHOENIX TITLE AND TRUST COMPANY, TRUSTEE WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THAT THEY BEING AUTHORIZED SO TO DO EXECUTED SAME FOR THE PURPOSE THEREIN CONTAINED.

IN WITNESS WHEREOF I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL

Neal Ammon
NOTARY PUBLIC

MY COMMISSION EXPIRES 1-8-64

APPROVAL

THE SUBDIVISION OF APACHE PARADISE UNIT ONE AS SHOWN HEREON, IS HEREBY APPROVED BY THE MARICOPA COUNTY BOARD OF SUPERVISORS ON THIS 20 DAY OF November 1961

ATTEST John Gunselle, CLERK — BY: B.W. Brown, CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THE SUBDIVISION SHOWN HEREON, WAS SURVEYED AND PLATTED BY ME DURING 1960 & 1961 AND THAT IT CONFORMS TO THE SURVEY NOTES THEREOF

Rollandd Whitten
REGISTERED LAND SURVEYOR & CIVIL ENG. 7400

Registered Professional Engineer (Civil) CERTIFICATE EXPIRES DEC. 31, 19[illegible] ARIZONA U.S.A.

97-15

97-15

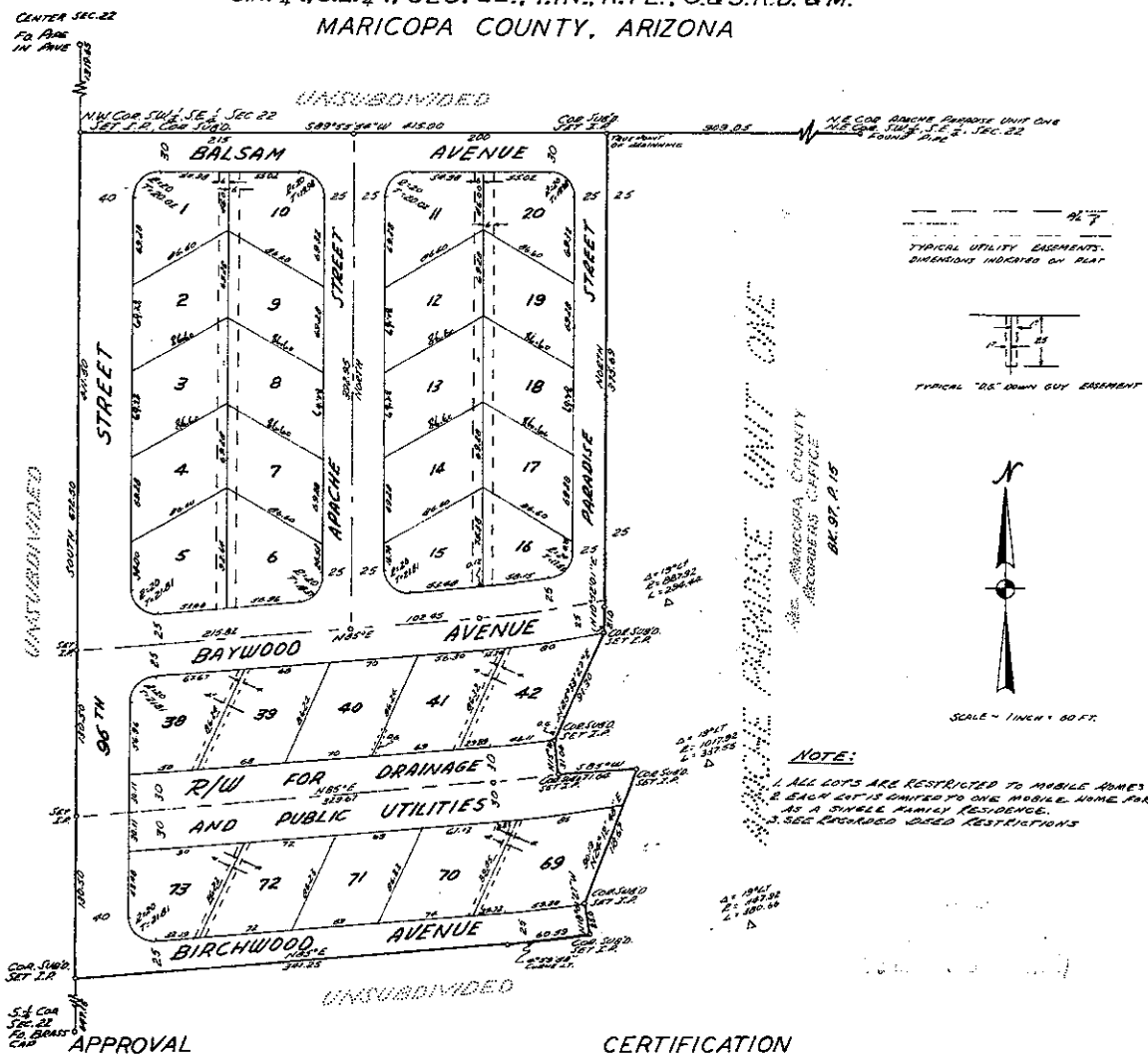
107-34

APACHE PARADISE UNIT TWO

A SUBDIVISION OF A PORTION OF THE

S.W. $\frac{1}{4}$., S.E. $\frac{1}{4}$., SEC. 22., T.1N., R.7E., G.&S.R.B.&M.

MARICOPA COUNTY, ARIZONA



NOTE:

1. ALL LOTS ARE RESTRICTED TO MOBILE HOMES ONLY.
2. EACH LOT IS LIMITED TO ONE MOBILE HOME FOR USE AS A SINGLE FAMILY RESIDENCE.
3. SEE RECORDED DEED RESTRICTIONS

DEDICATION

STATE OF ARIZONA }
COUNTY OF MARICOPA } S.S.

KNOW ALL MEN BY THESE PRESENTS:

THAT THE PHOENIX TITLE AND TRUST COMPANY, AN ARIZONA CORPORATION, TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF APACHE PARADISE UNIT TWO, THAT PART OF THE S.E. $\frac{1}{4}$ SEC. 22, T.1N., R.7E., G&S.R.B&M., DESCRIBED AS FOLLOWS; FROM THE N.E. COR. S.W. $\frac{1}{4}$, S.E. $\frac{1}{4}$, SEC. 22, S 89°55'54"W 909.05 FEET TO THE TRUE POINT OF BEGINNING, THENCE S 89°55'54"W 415.00 FEET, THENCE SOUTH 672.50 FEET, THENCE N 85°E 391.25 FEET, THENCE 60.59 FEET ALONG A 4°59'28" CURVE LT., THENCE N 18°01'27"W 25.00 FEET, THENCE N 24°12'08"E 103.67 FEET, THENCE S 85°W 71.84 FEET, THENCE N 15°W 31.04 FEET, THENCE N 25°38'27"E 91.30 FEET, THENCE N 10°52'01"E 21.0 FEET, THENCE NORTH 335.89 FEET BACK TO TRUE POINT OF BEGINNING, HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF APACHE PARADISE UNIT TWO, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, RIGHTS OF WAY, STREETS AND EASEMENTS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY THE NUMBER OR NAME GIVEN TO EACH ON SAID PLAT, AND THAT THE PHOENIX TITLE AND TRUST COMPANY AS TRUSTEE, HEREBY DEDICATES TO THE PUBLIC, THE STREETS AND RIGHTS OF WAY AND EASEMENTS TO THE PURPOSES SHOWN ON SAID PLAT NOW INCLUDED IN THE ABOVE DESCRIBED PREMISES.

IN WITNESS WHEREOF, THE PHOENIX TITLE AND TRUST COMPANY, AS TRUSTEE, HAS THIS 20th DAY OF November 1964 HEREONTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICERS, THEREONTO DULY AUTHORIZED.

PHOENIX TITLE AND TRUST COMPANY
TRUSTEE

ATTEST: Alfred Cantu ASST SECRETARY BY: [illegible] VICE PRESIDENT

ACKNOWLEDGEMENT

STATE OF ARIZONA }
COUNTY OF MARICOPA } S.S.

ON THIS 20th DAY OF November 1964 BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED VICE PRESIDENT B.A. Jitek AND ASST. SECRETARY Alfred Cantu, OF THE PHOENIX TITLE AND TRUST COMPANY, TRUSTEE, WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT THEY BEING AUTHORIZED SO TO DO, EXECUTED SAME FOR THE PURPOSE THEREIN CONTAINED.

IN WITNESS WHEREOF I HAVE HEREONTO SET MY HAND AND OFFICIAL SEAL.

[illegible] NOTARY PUBLIC

MY COMMISSION EXPIRES 9-10-65

RECEIVED
JAN 18 1965
MARICOPA COUNTY PLANNING AND ZONING COMMISSION

APPROVAL

THE SUBDIVISION OF APACHE PARADISE UNIT TWO AS SHOWN HEREON, IS HEREBY APPROVED BY THE MARICOPA COUNTY BOARD OF SUPERVISORS ON THIS 8th DAY OF February 1965.

ATTEST: [illegible] CLERK BY: L. Allen Pyle CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THE SUBDIVISION SHOWN HEREON WAS SURVEYED AND PLATTED BY ME DURING THE YEAR 1960, AND THAT IT CONFORMS TO THE SURVEY NOTES THEREOF.

Registered Professional Engineer (Civil) REGISTERED ARIZONA NATIVE WATSON Dec. 31, 19 ARIZONA U.S.A.

Rolland U. Watson
REGISTERED LAND SURVEYOR & CIVIL ENG. #4489

107-34

107-34 11-2-64

Recorded at the request of:
COURTESY RECORDING; NO TITLE LIABILITY

Unofficial Documents

When recorded, mail to:

AL L. PENSE & DONNA M. PENSE
16395 SW BELL RD
SHERWOOD OREGON
97140

MA

94-[illegible]

REACH I; TA-220-40-054

TAPE 64 OF 96

423742-35
STRAW DEED 4
EXEMPT ARS 42-1614
B9

Joint Tenancy Quit Claim Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we, CAROLYN GALLAGHER, an unmarried woman

do hereby convey to AL L. PENSE and DONNA M. PENSE, husband and wife, as to an undivided one half interest

not as tenants in common and not as community property estate, but as joint tenants with right of survivorship, the following real property situated in the County of Maricopa State of Arizona:
an undivided one-half interest in the following described property:

SEE LEGAL DESCRIPTION ATTACHED HERETO AND BY REFERENCE MADE A PART HEREOF.

The grantees by signing the acceptance below evidence their intention to acquire said premises as joint tenants with the right of survivorship, and not as community property or as tenants in common.

Dated this 21st day of September, 19 94.

Accepted and approved:

AL L. PENSE

DONNA M. PENSE

Grantees

CAROLYN GALLAGHER

Grantors

STATE OF ARIZONA
County of MARICOPA } ss.

OFFICIAL SEAL
Katy Cunningham
Notary Public - State of Arizona
MARICOPA COUNTY
My Comm. Expires Oct. 27, 1995

This instrument was acknowledged before me this 22nd day of SEPTEMBER, 19 94 by CAROLYN GALLAGHER

Katy Cunningham
Notary Public

My commission will expire 10-27-95

STATE OF OREGON
County of Washington } ss.

OFFICIAL SEAL
MARTI HUNT
NOTARY PUBLIC-OREGON
COMMISSION NO. 035029
MY COMMISSION EXPIRES JUNE 21, 1998

This instrument was acknowledged before me this 27th day of September, 19 94 by AL L. PENSE and DONNA M. PENSE

Marti Hunt
Notary Public

My commission will expire 6-21-98

FORM E-20A (REV. 1/91)

LEGAL DESCRIPTION

PARCEL 1: (as to a Fee Simple Interest)
Lots One (1) through Eighteen (18) inclusive and Tracts A and B, CRISMON CORNER, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona in Book 286 of Maps, page 19; and Affidavit of Correction dated January 17, 1986, recorded January 23, 1986 in Document No. 86-035591; and thereafter re-recorded February 28, 1986 in Document No. 86-098090.

PARCEL 2: (as to a Easement Interest)
An Easement for Roadway over the North 16.5 feet of the North half of the Southeast quarter of the Southeast quarter as created in Book 455 of Deeds, page 521 of Section Twenty-two (22), Township One (1) North, Range Seven (7) East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona;

EXCEPT the South half of the Northeast quarter of the Southeast quarter of the Southeast; and

Unofficial Document

EXCEPT the West half of the North half of the Southeast quarter of the Southeast quarter.

OFFICIAL RECORDS OF
Unofficial Documents
ER
14:48
G

CHICAGO TITLE INSURANCE COMPANY

WHEN RECORDED, RETURN TO:

Coolidge Apartments Corp., an Arizona corporation
c/o Mesa Broadway Property Limited Partnership
1201 South Alma School Road
Suite 3400
Mesa, Arizona 85210
9919239-45 ?12

REACH 1; PARCEL 220-36-002D

SPECIAL WARRANTY DEED

For and in consideration of Ten Dollars ($10.00) and other good and valuable consideration, Madeline Hamblin, a single woman ("Grantor"), do hereby convey to Coolidge Apartments Corp., an Arizona corporation, that real property described on Exhibit "A" attached hereto.

SUBJECT ONLY TO: Current taxes not yet due and payable, assessments and any other liens arising therefrom, all reservations in patents, deed restrictions, all easements, rights-of-way, covenants, conditions, restrictions, encroachments, liens, encumbrances, obligations and liabilities as may appear of record, and all other matters that can be determined by a visual inspection or a survey.

Grantor warrants and defends title only against its own acts, and not the acts of any others, subject only to the matters referred to above.

DATED this 9 day of June, 2000.

Madeline Hamblin
Madeline Hamblin, a single woman

Acknowledgment on Following Page

List of Exhibits:

Exhibit "A" Legal Description

STATE OF MICHIGAN)
) ss.
County of WAYNE)

The foregoing instrument was acknowledged before me this 9 day of JUNE, 2000, by Madeline Hamblin, a single woman.

Notary Public

My commission expires:

STEPHEN PAUL MATUS, JR.
Notary Public, Wayne County, MI
ACTING IN WAYNE CO.
My Commission Expires Feb 29, 2004

Unofficial Document

Exhibit "A"

LEGAL DESCRIPTION

As to a 34.375% undivided interest in that property described as follows:

PARCEL NO. 1

That portion of the East Three-Quarters of the West One-Half of the Southeast One-Quarter of the Southwest One-Quarter of the Section 22, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, described as follows:

Beginning at the Southeast corner of said East Three-Quarters of the West One-Half of the Southeast One-Quarter of the Southwest One-Quarter of Section 22;

thence due West, 496.61 feet along the South line of said East Three-Quarters of the West One-Half of the Southeast One-Quarter of the Southwest One-Quarter of Section 22;

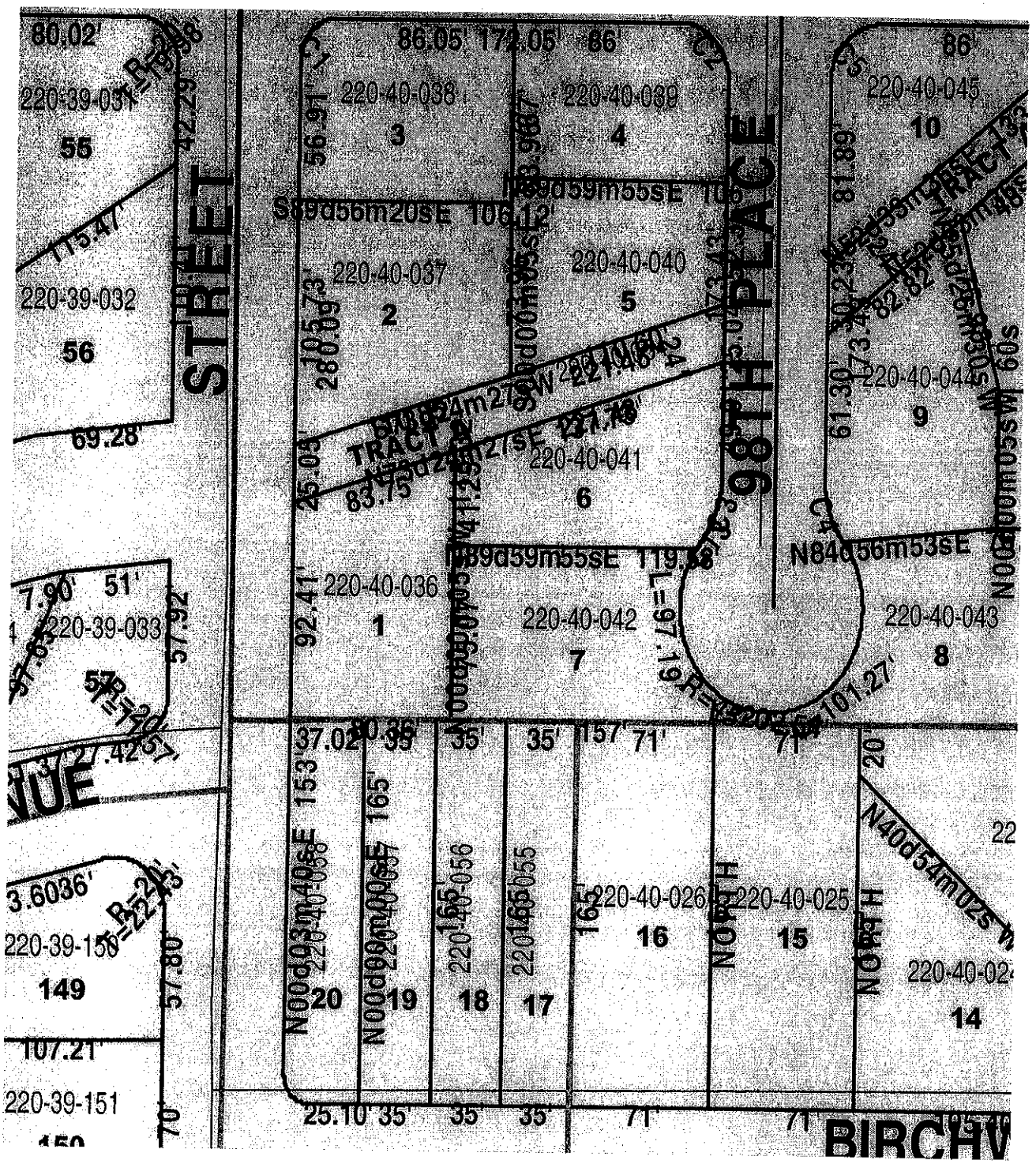
thence North 00 degrees 05 minutes 51 seconds East, 389.00 feet along the West line of said East Three-Quarters of the West Unofficial Document E the Southeast quarter of the Southwest quarter of Section 22;

thence North 61 degrees 45 minutes 12 seconds East, 564.16 feet;

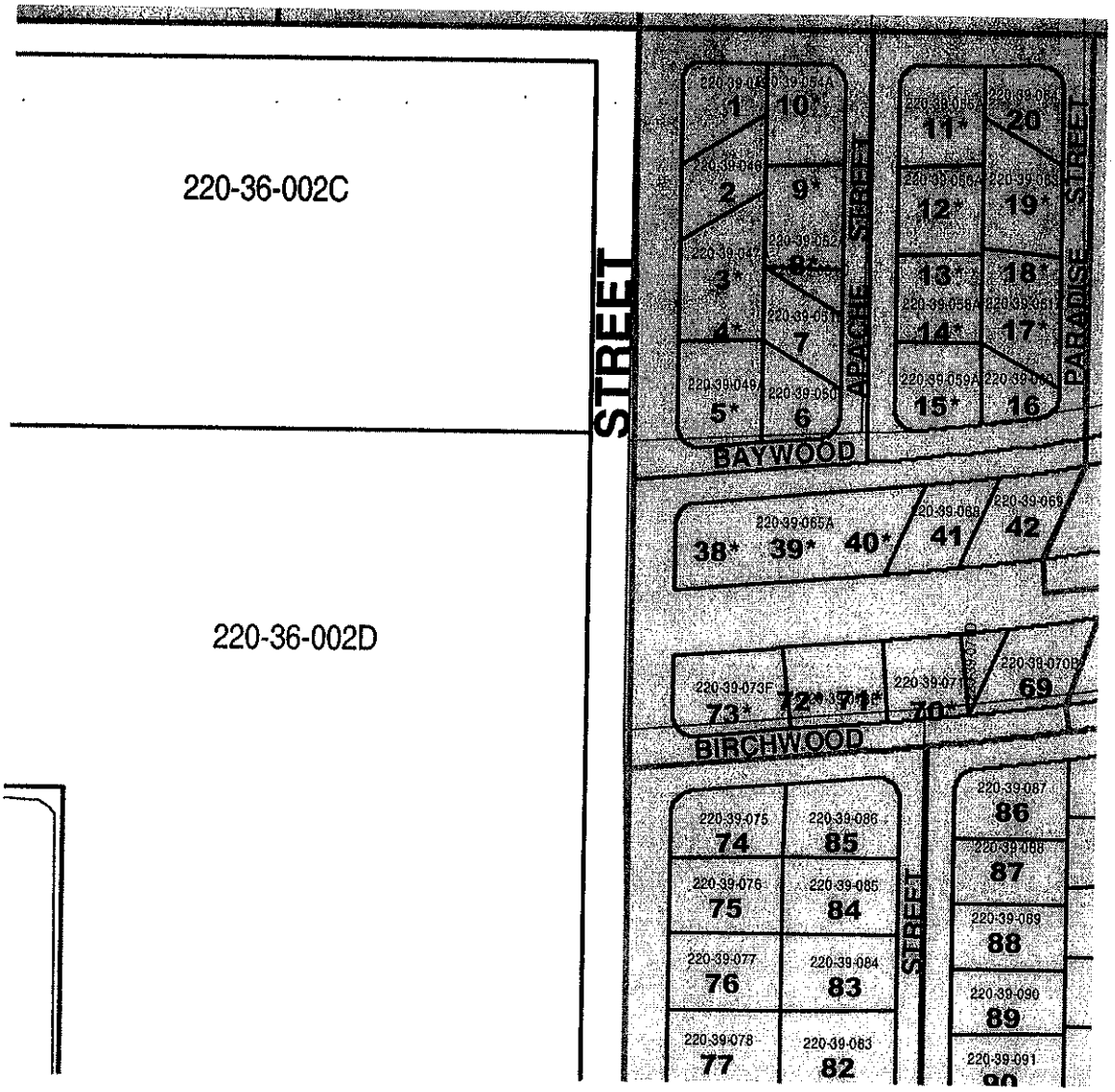
thence South 00 degrees 05 minutes 25 seconds West, 656.00 feet along the East line of said East Three-Quarters of the West One-Half of the Southeast One-Quarter of the Southwest One-Quarter of Section 22 to the Point of Beginning.

PARCEL NO. 2

The East One-Half of the Southeast One-Quarter of the Southwest One-Quarter of Section 22, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona.



R1-East_map.doc



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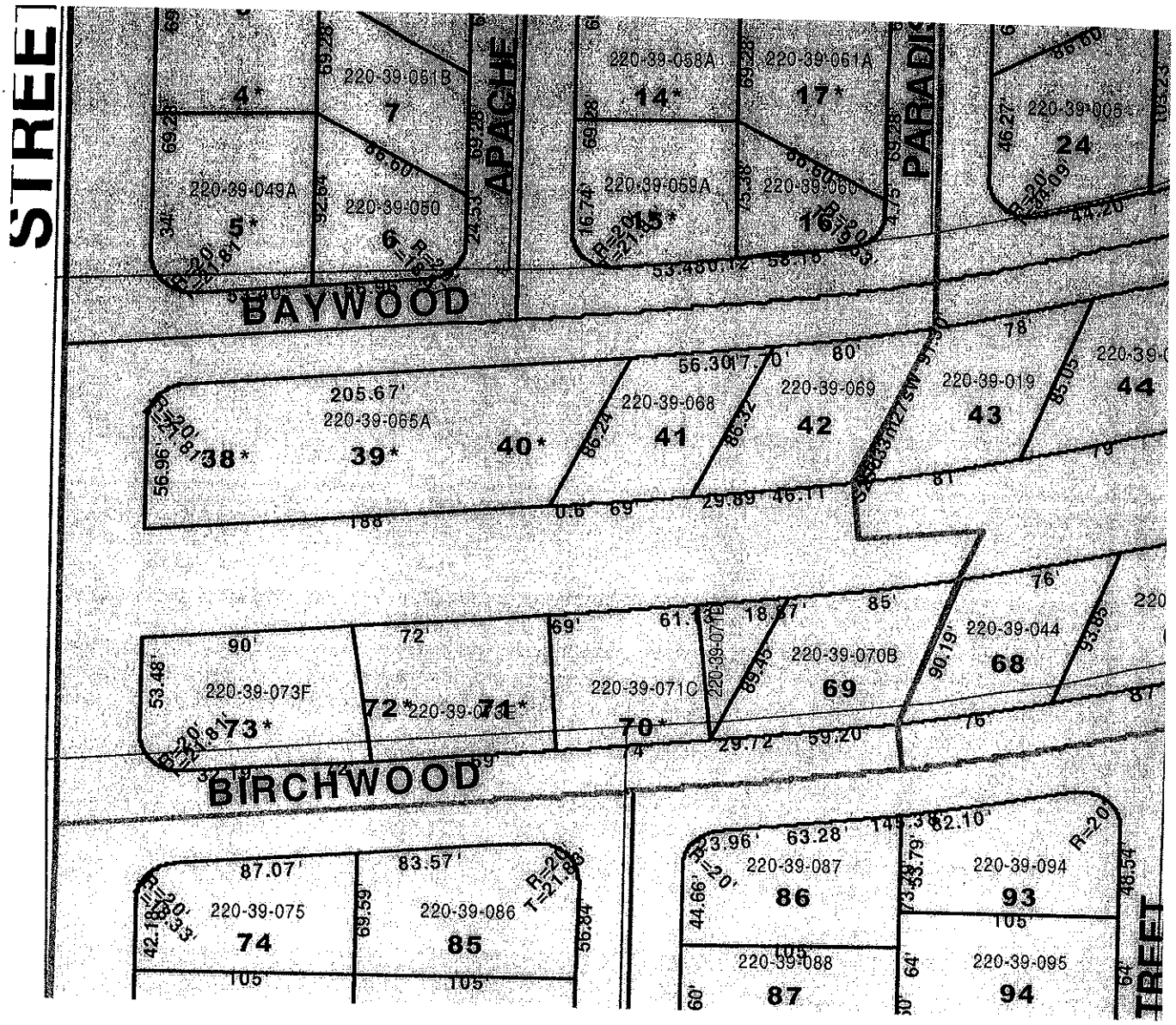
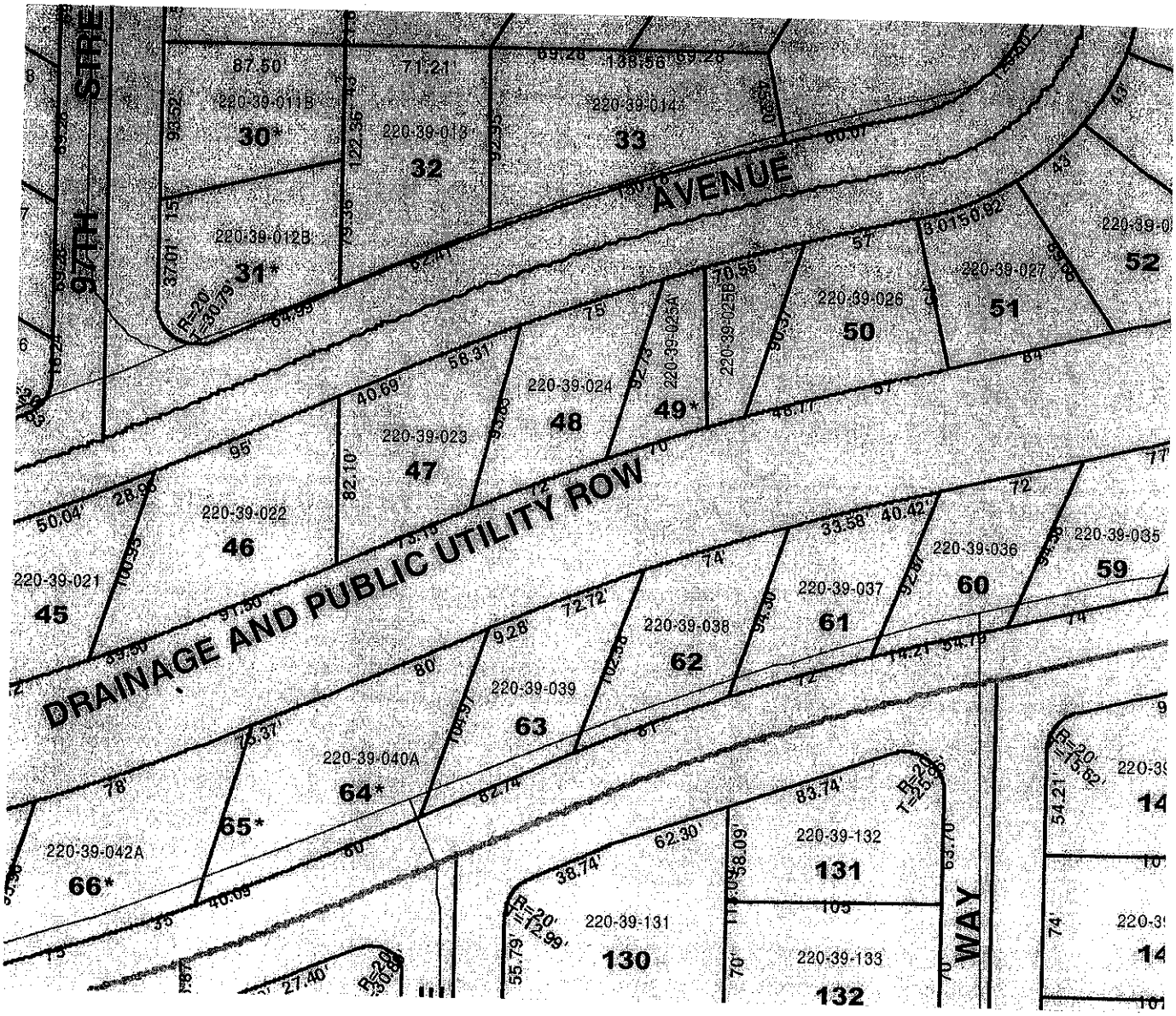


R-1_ApachePII_107-34map.doc



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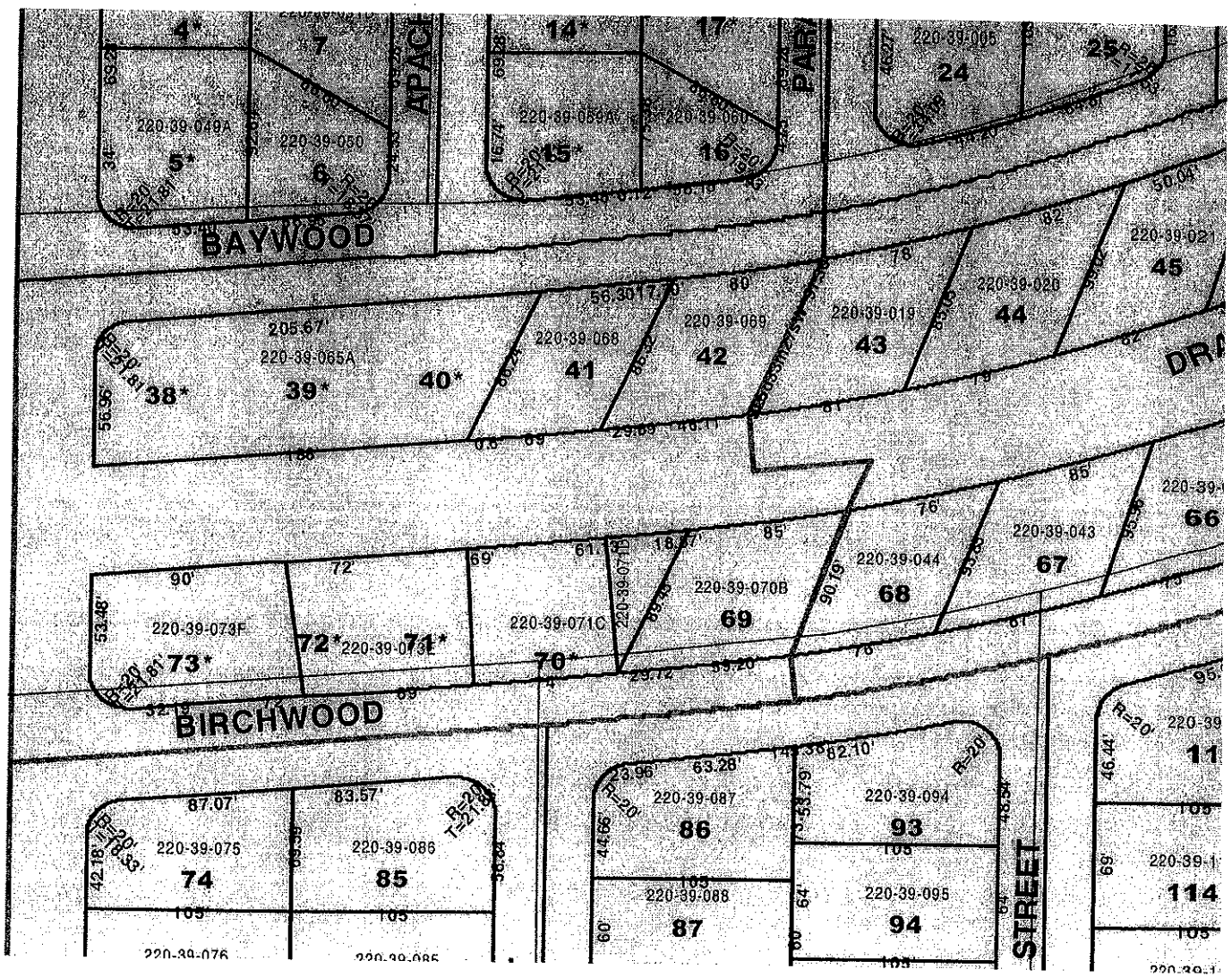

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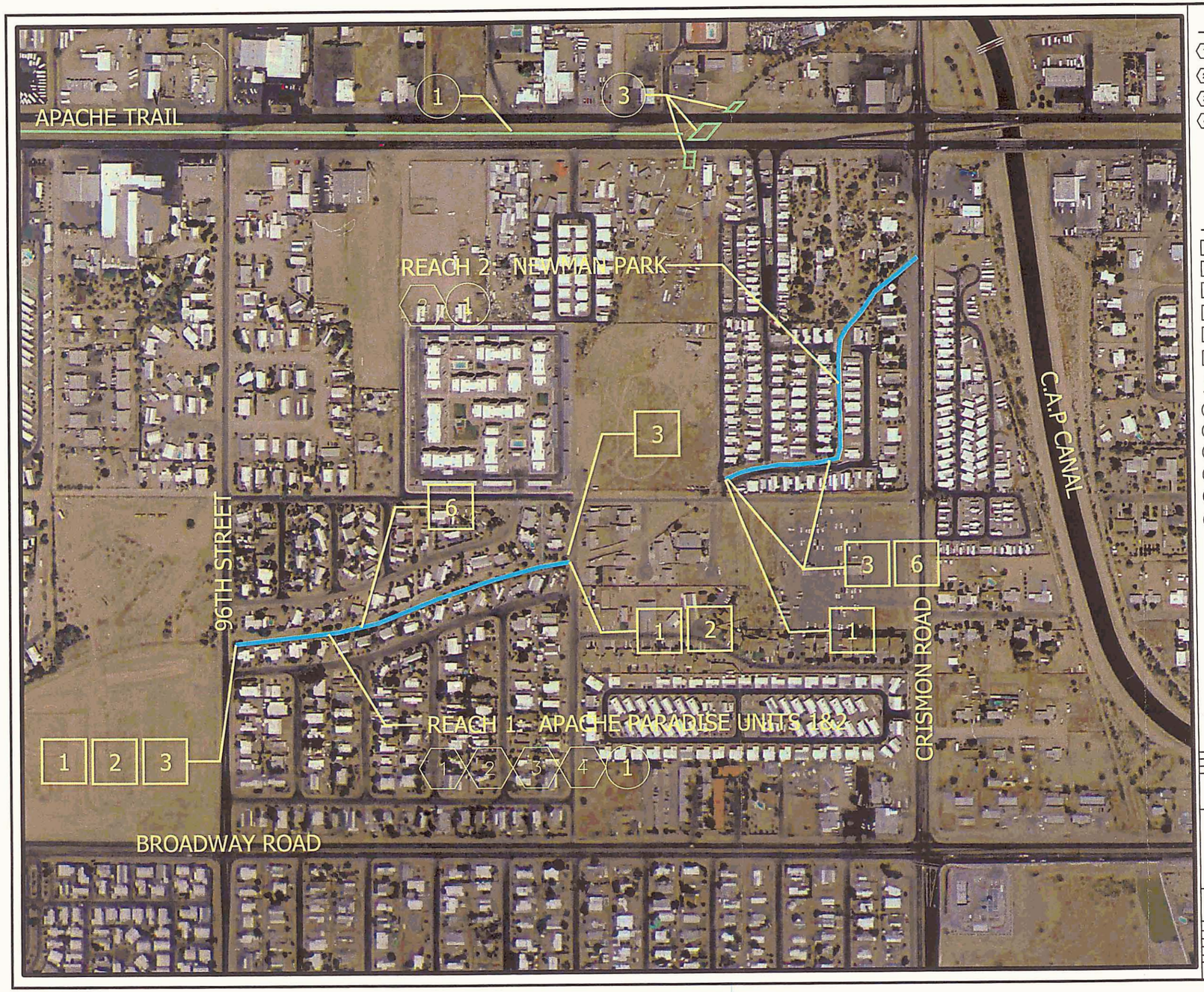


EXISTING CONDITIONS

1. EROSION REPAIR NEEDED.
2. IMPROVISED BANK STABILIZATION
3. OVERHEAD POWERLINES ARE TOO LOW.
4. TREES IN CHANNEL AFFECTING PRIVATE PROPERTY.

UTILITIES

1. WATER
2. SEWER
3. GAS
4. OVERHEAD ELECTRIC
5. UNDERGROUND ELECTRIC
6. TELEPHONE

EXISTING CHANNEL STRUCTURES

1. EARTH LINED CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 1 & 2

F.C.D. CONTRACT NO. 2003C018

HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 D xisting Facilities Exhibits\exh.04_REACH 1 2.dwg, Layout1, 05/26/2004 03:35:32 PM, cmiranc

Reach 2: Newman Park
Location: S. of Apache Trail, off Crismon Road
Parcel Research: Dedication: "dedicate to the Public for use as such, the streets as shown on plat, the drainage rights of way, and the easement to the purpose designated on said plat. Note: reference to FCDMC is crossed out. (Plat map did not cover entire drainage reach)
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 2 has telephone lines crossing the right-of-way at the downstream end of the drainage channel and through the adjacent subdivision; 2 gas lines are crossing the drainage channel within the subdivision; and an 8" ACP water line is within the subdivision downstream of the channel, not within the right-of-way.
Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC, the Q = 456 cfs.
Hydraulic Analysis: The lowest flow yielding flood conditions is 140 cfs. Manning's n = 0.03 for earthen channel. Operational – (3): 100 year storm is 2 feet above the bank elevation in some areas. These are flows from Apache Trail Boulevard via Crimson Road. Limited ROW prevents channel widening.
Recommendation: Maintenance – (1): maintenance problems are minimal and can be addressed with routine inspections and maintenance. Residents have performed some improvised bank stabilization and limited access to provide maintenance are a problem. Recommendations include inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit Requirements. Obtain an easement for maintenance access. Install bollards at the channel upstream and downstream terminus, and concrete/shotcrete lined channel at points of continuing erosion.
Opinion of Improvement Cost: $3,380

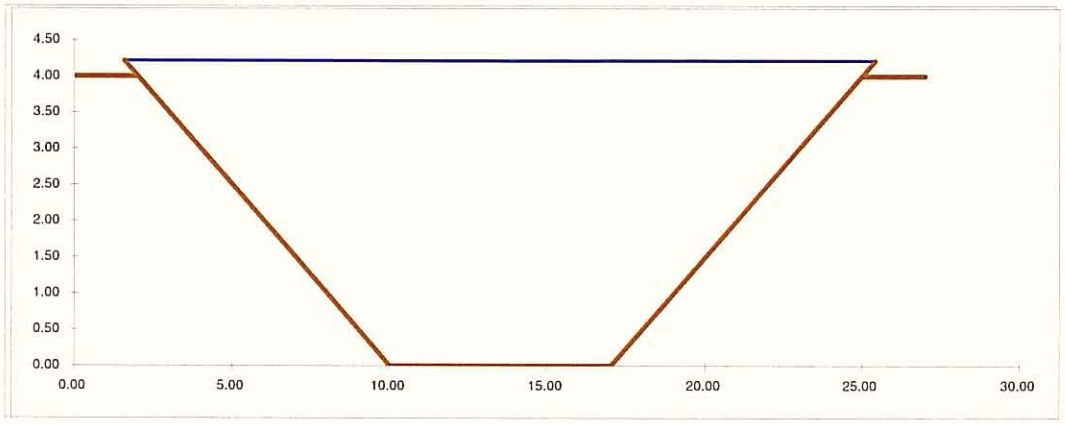
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 2	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 2



Design Discharge Q = 456 cfs
Channel Section 2
Right-of-Way Width 40 ft

Calculate Flow Depth
Estimated Flow Depth 4.21 ft
Channel Dept 4.00 ft

Estimated Q = 456.9 cfs
Average V = 7.04 ft/sec

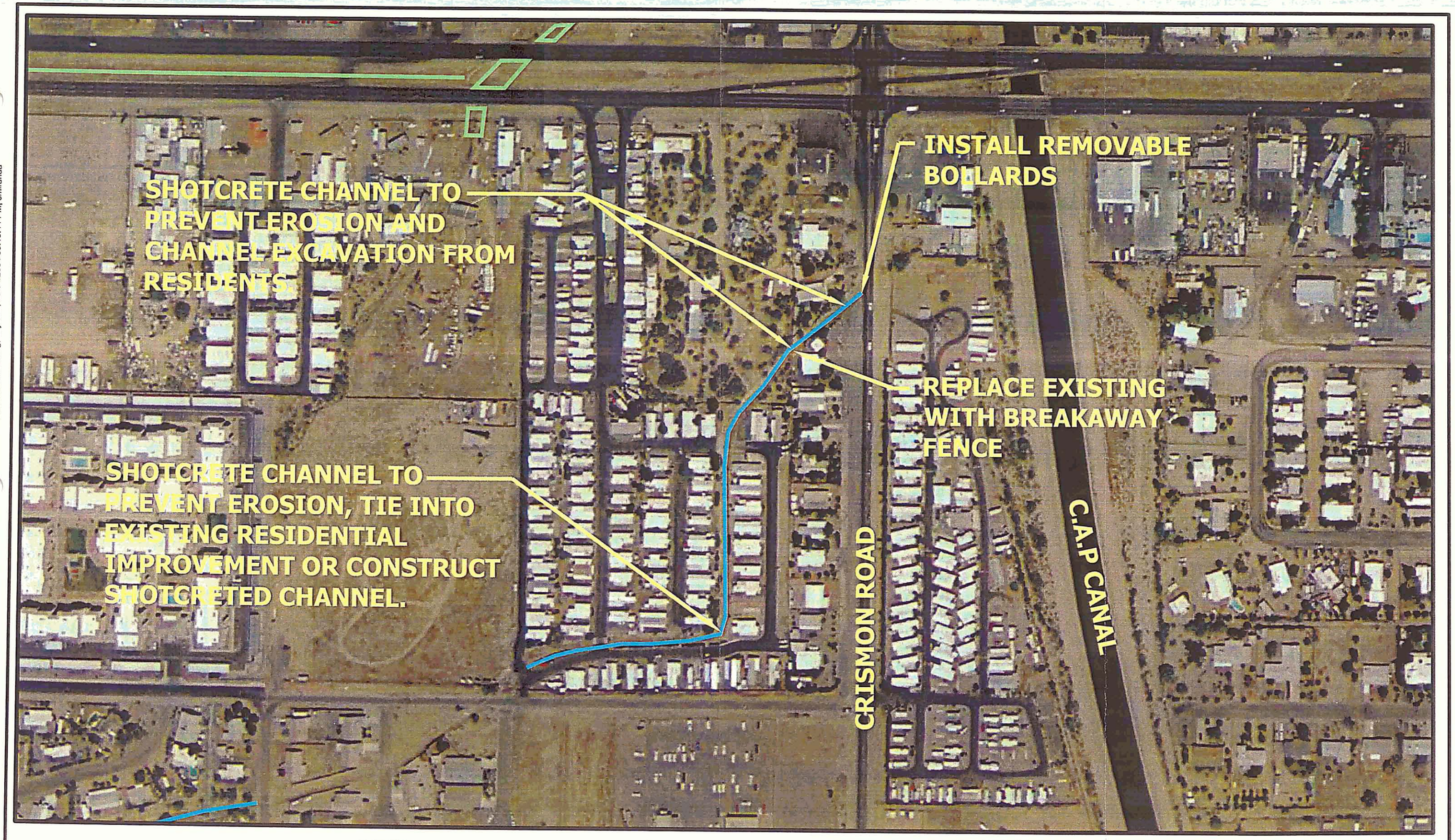
Channel Parameters

Bottom Width =	7.00	ft
Side Slope =	2.00	:1
Manning n =	0.040	
Channel Slope	0.011	ft/ft
Flow Area =	64.92	ft^2
Wet Perimeter	25.83	ft
Hyd. Radius R	2.51	ft
Top Width =	23.84	ft
Hydraulic depth	2.72	ft
Froude No. =	0.75	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.28 ft

Available Freeboard
Channel Depth - Flow Depth = -0.21 ft

Available Fb > Fb req'd



200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

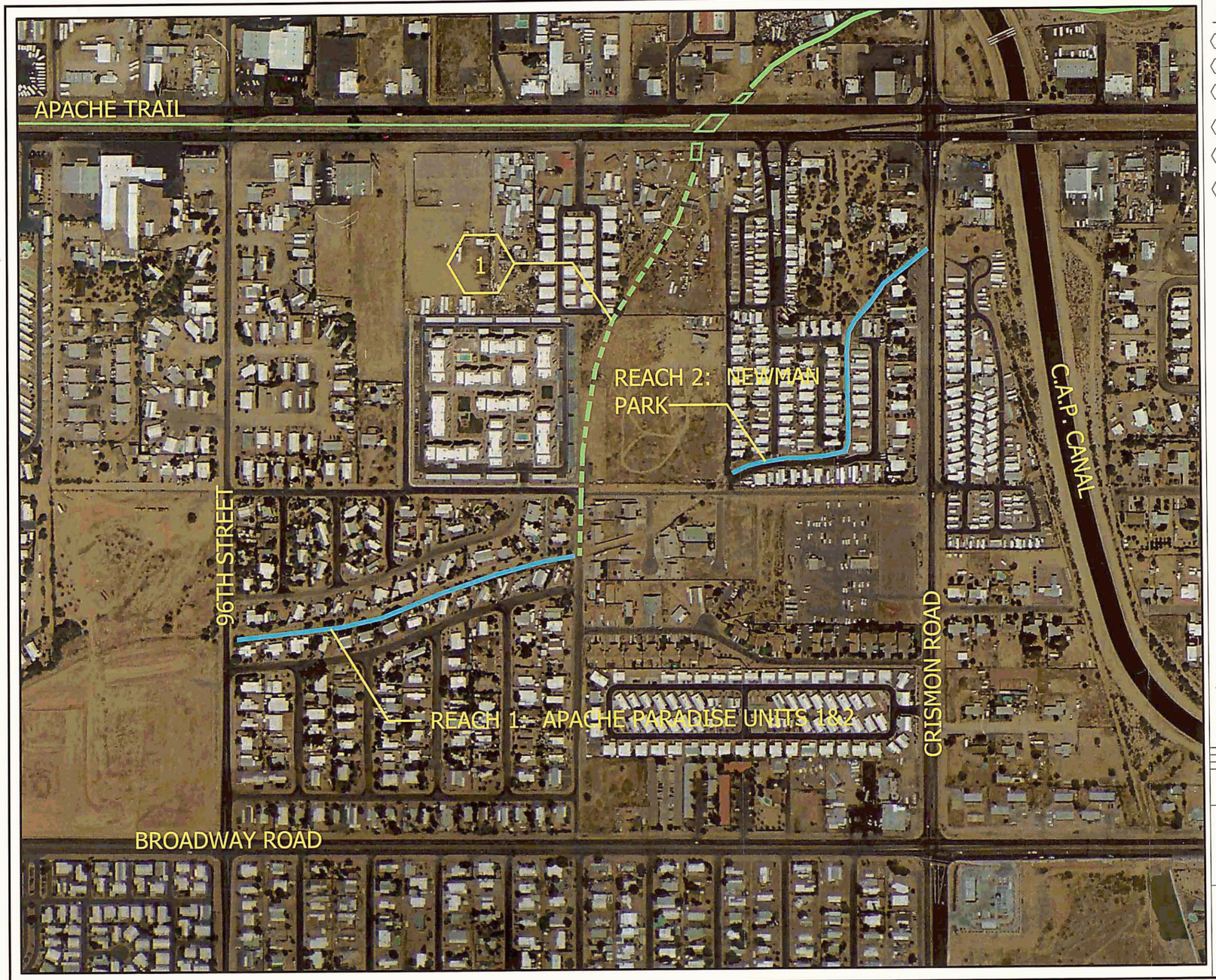
HDR Engineering, Inc.

REACH 2
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\07' DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 2.dwg, Layout2, 05/04/2004 03:10:44 PM, cmiranda



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 1 AND 2
F.C.D. CONTRACT NO. 2003C018

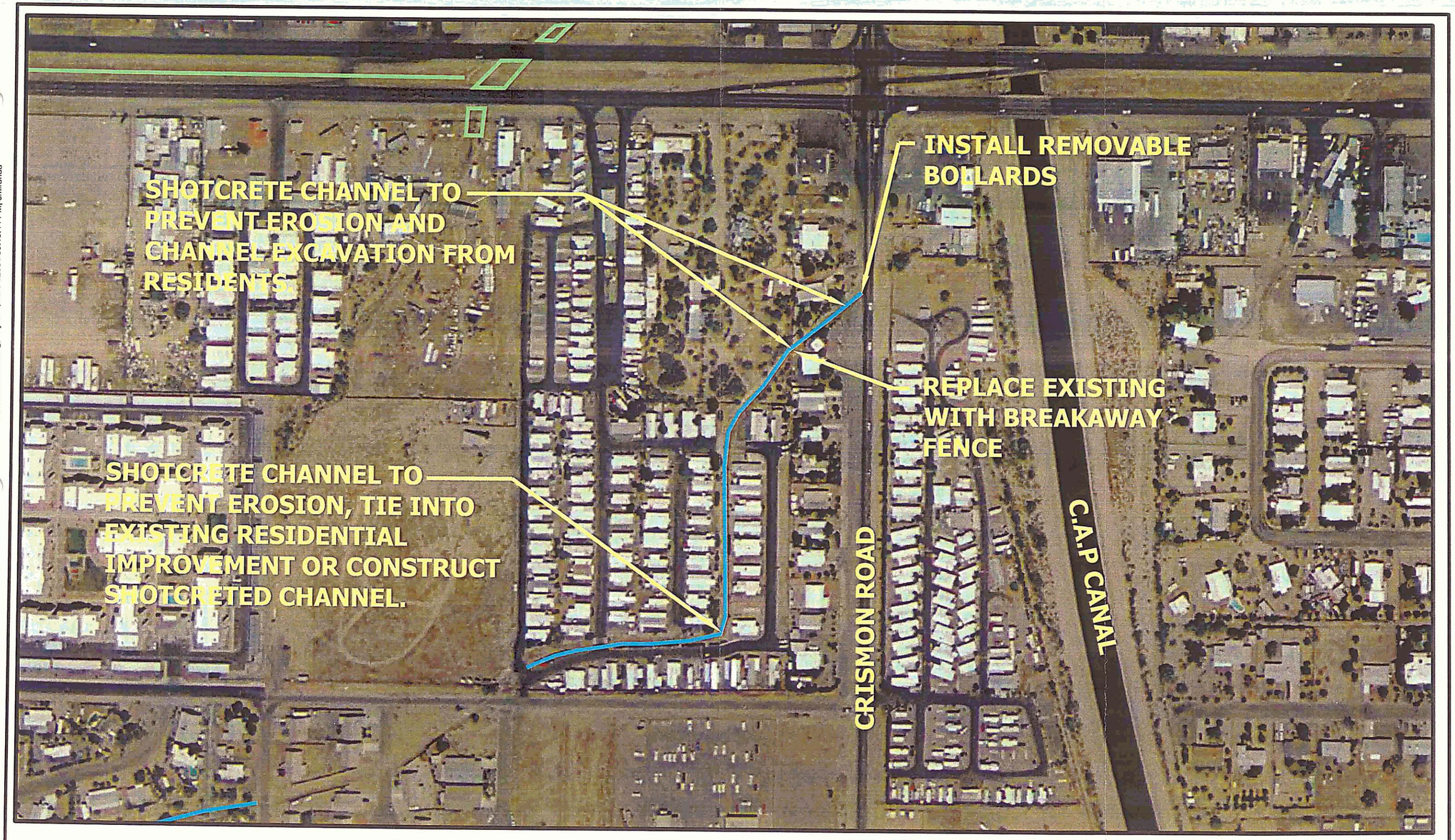
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC.Eng.On-Call\East.Mesa.Drains.CAR\6.0.Hydrology.&.Hydraulics\6.1.DWG\Proposed.Faci exhibits\exh-12_REACH.1.2.dwg,Layout1,4/22/2004 1:00:57 PM, akuchars



200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR Engineering, Inc.

REACH 2
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\07' DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 2.dwg, Layout2, 05/04/2004 03:10:44 PM, cmiranda

Reach 2 - Survey Points 32 – 82 Newman Park

PT33 LOOKING DOWNSTREAM

PT33 LOOKING UPSTREAM

Reach 2 - Survey Points 32 – 82 Newman Park

PT44 LOOKING DOWNSTREAM

PT44 LOOKING UPSTREAM

Reach 2 - Survey Points 32 – 82 Newman Park

PT54 LOOKING DOWNSTREAM

PT54 LOOKING UPSTREAM

Reach 2 - Survey Points 32 – 82 Newman Park

PT63 LOOKING DOWNSTREAM

PT63 LOOKING UPSTREAM

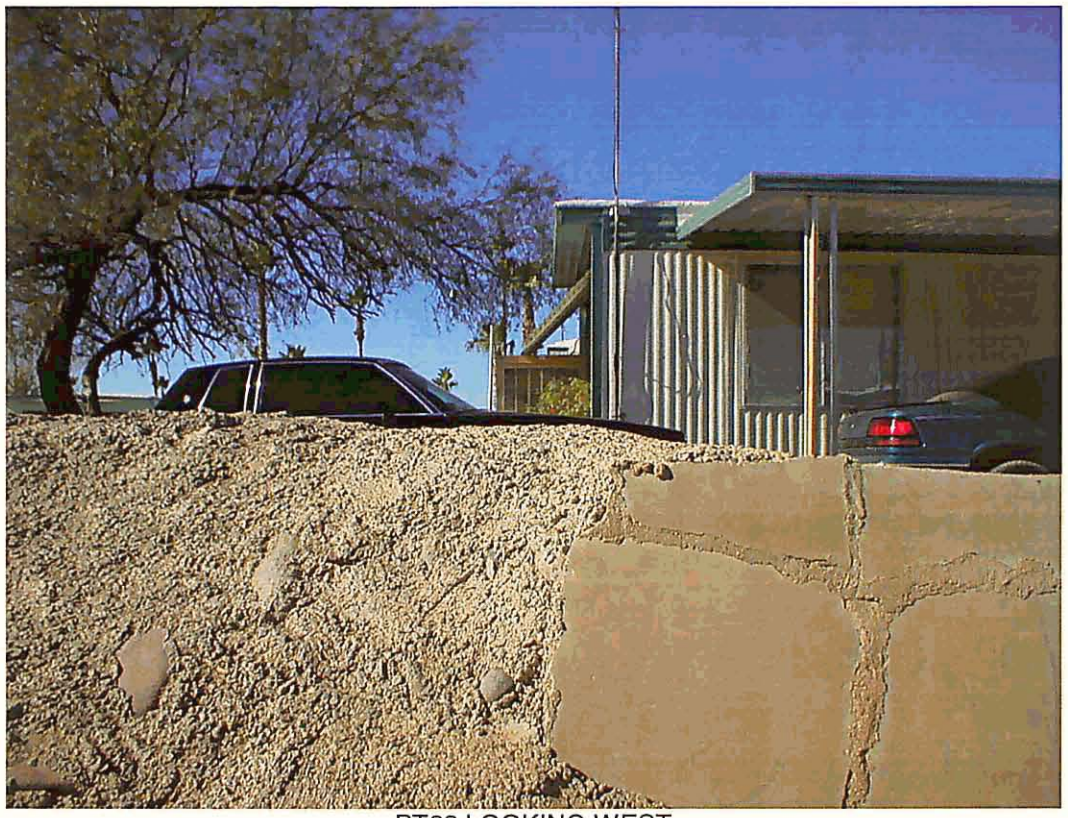
Reach 2 - Survey Points 32 – 82 Newman Park

PT68 LOOKING DOWNSTREAM

PT68 LOOKING EAST

Reach 2 - Survey Points 32 – 82 Newman Park

PT68 LOOKING UPSTREAM



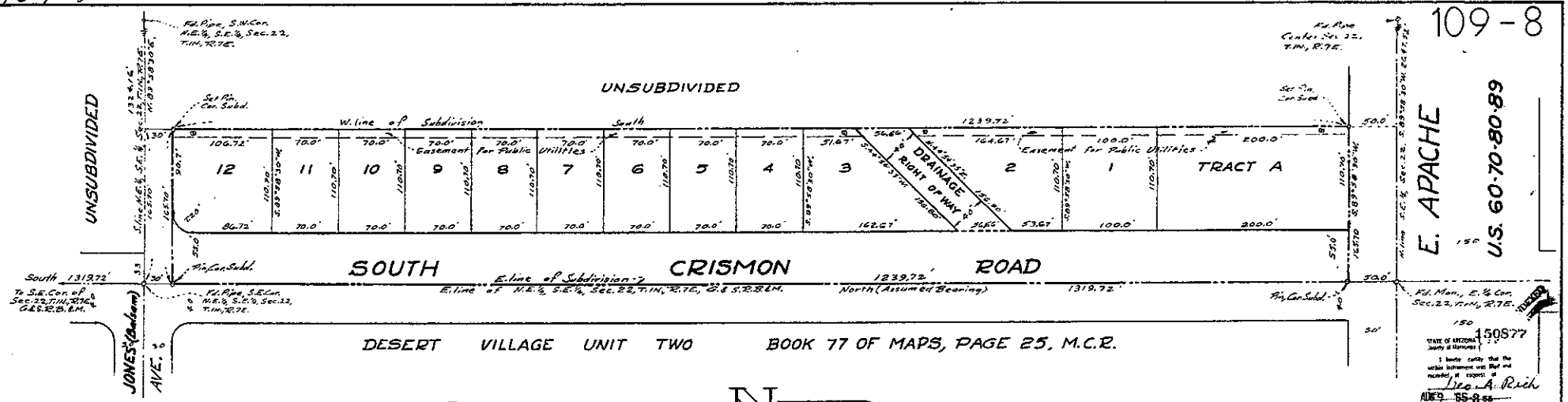
PT68 LOOKING WEST

Reach 2 - Survey Points 32 – 82 Newman Park

PT77 LOOKING DOWNSTREAM

PT77 LOOKING UPSTREAM

109-8



109-8

NEWMAN PARK

A SUBDIVISION OF PART OF THE EAST 165.7' OF THE N.E.¼ OF THE S.E.¼ OF SEC. 22, T.1N., R.7E., G&S.R.B&M.

Scale 1" = 60'

DEDICATION

STATE OF ARIZONA }S.S.
COUNTY OF MARICOPA}

Know all men by these presents, that M.H. NEWMAN and LOUISE B. NEWMAN, husband and wife, as owners, have subdivided under the name of NEWMAN PARK, the premises as platted hereon and hereby publish this plat as and for the plat of NEWMAN PARK and hereby declare that said plat sets forth the location and gives the dimensions of the lots, tract, drainage right of way, street and easement constituting same and that each lot, tract or street shall be known by the number, letter or name given to each respectively on said plat and hereby dedicate to the public for use as such, the street as shown on plat, the drainage right of way ~~[illegible]~~ and the easement to the purpose designated on said plat.

In witness whereof M.H. Newman and Louise B. Newman, as owners, hereunto set their hands this 28 day of April, 1965.

M.H. Newman
M.H. Newman

Louise B. Newman
Louise B. Newman

ACKNOWLEDGEMENT

STATE OF ARIZONA }S.S.
COUNTY OF MARICOPA}

On this, the 28 day of April, 1965, before me, the undersigned officer, personally appeared M.H. Newman and Louise B. Newman who, as owners, executed the foregoing instrument for the purpose therein contained by signing their names, as such owners.

In witness whereof I hereunto set my hand and official seal.

Richard C. Carlson
Notary Public

My commission expires My Commission Expires June 11, 1967

CERTIFICATION

This is to certify that the Survey and subdivision of the premises as platted hereon was done under my hand and direction during the month of April, 1965.

Registered Land Surveyor
#2217

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona on this, the 9th day of August, 1965.

By: L. Allen Rigg
Chairman

Attest: Rhea Wooldridge

MESA LAND SURVEYING CO.
D65-8A

150877
STATE OF ARIZONA } ss.
County of Maricopa }
I hereby certify that the within instrument was filed and recorded at request of
Geo. A. Rich
AUG 9 65-8 55
in Book 109 of Maps, Page 8
Ex Castle
APPROVED

RECEIVED
APR 30 1965
MARICOPA COUNTY ENGINEER AND SURVEYOR
BY

109-8

109-8

FINAL PLAT
CRISMON CORNER
A SUBDIVISION IN A PORTION OF THE W.1/2, N.1/2, N.1/2, S.E.1/4, S.E.1/4, OF SECTION22, T 1 N , R 7 E G&SRB&M, MARICOPA COUNTY, ARIZONA

85 372207

286-19
8-8-85

BUILDING SET BACKS

FRONT	30'
REAR	35'
SIDE (CORNER)	15'
SIDE (INTERIOR)	5'

CURVE DATA TABLE

CURVE NO.	DELTA	RADIUS	ARC	TANGENT	CHORD	CHORD BRG
1	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
2	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
3	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
4	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
5	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
6	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
7	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
8	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
9	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
10	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
11	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E
12	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"W
13	90°00'00"	20.00	31.42	20.00	28.28	S 45°00'00"E

LINE TABLE

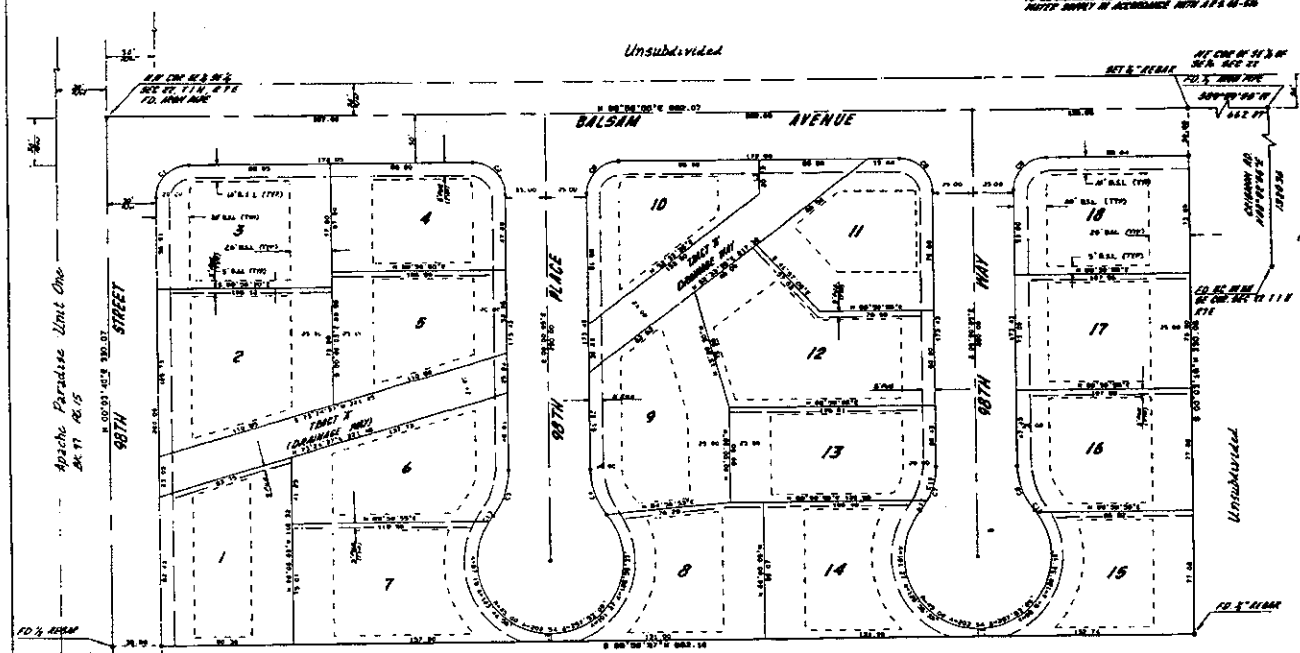
LINE	BEARING	DISTANCE
1	N 00°00'00"E	5.00'
2	N 00°00'00"E	5.00'
3	N 00°00'00"E	30.00'

SCALE: 1" = 50'

THE PROVISIONS OF SECTION 2[illegible] OF THE MARICOPA COUNTY ZONING ORDINANCE (ZONING CODE) WILL BE ADHERED TO

DRINKING WATER SUPPLY

THIS IS TO CERTIFY THAT THE DRINKING WATER WITHIN LESS NATIVE THE DRINKING WATER WITHIN AREA OF THE CITY OF MESA WHICH IS DETERMINED AS DRINK AS DRINKING WATER SUPPLY IN ACCORDANCE WITH A.R.S. 48-506



CRISMON COVE
(BOOK 276 PAGE 16)

GROSS AREA = 5.07 AC
NET AREA = 3.670 AC

STATE OF ARIZONA }
COUNTY OF MARICOPA }SS

KNOW BY ALL MEN BY THESE PRESENTS: THAT J.E.H. ENTERPRISES, A JOINTLY-OWNED ARIZONA PARTNERSHIP, AS OWNER, HAS SUBDIVIDED UNDER THE NAME OF "CRISMON CORNER" A PORTION OF THE SOUTHEAST 1/4 OF THE SOUTHEAST 1/4 OF SECTION 22, TOWNSHIP 1 NORTH, RANGE 7 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, AS SHOWN PLATTED HEREON AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID "CRISMON CORNER" AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREETS, AND EASEMENTS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY THE NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND THAT J.E.H. ENTERPRISES, A JOINTLY-OWNED ARIZONA PARTNERSHIP, AS OWNER, HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH, ALL STREETS, AS SHOWN. TRACTS A & B ARE PROVIDED AS DRAINAGE WAYS. EASEMENTS ARE PROVIDED FOR THE PURPOSES AS SHOWN.

IN WITNESS WHEREOF:
J.E.H. ENTERPRISES, A JOINTLY-OWNED PARTNERSHIP, AS OWNER, HAS HEREUNTO CAUSED ITS NAME TO BE AFFIXED AND THE SAME TO BE ATTESTED BY THE SIGNATURE OF THE UNDERSIGNED OFFICER, THEREUNTO DULY AUTHORIZED THIS 1st DAY OF June, 1985.

BY: [signature]
PARTNER

ACKNOWLEDGEMENT

STATE OF ARIZONA }
COUNTY OF MARICOPA }SS

ON THIS 6 DAY OF June, 1985, BEFORE ME, THE UNDERSIGNED, PERSONALLY APPEARED [illegible] AND ACKNOWLEDGED HIMSELF TO BE A PARTNER OF J.E.H. ENTERPRISES, A JOINTLY-OWNED ARIZONA PARTNERSHIP, AND THAT HE AS A PARTNER, BEING DULY AUTHORIZED TO DO SO EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED BY SIGNING THE NAME OF THE PARTNERSHIP, AS OWNER, BY HIMSELF AS A PARTNER.

IN WITNESS WHEREOF I HEREUNTO SET MY HAND AND OFFICIAL SEAL.

[signature]
NOTARY PUBLIC
MY COMMISSION EXPIRES [illegible]

ASSURANCE STATEMENT: SATISFACTORY ASSURANCE IN THE FORM OF Bond FROM Western Surety Company IN THE AMOUNT OF $ 124,000.00 HAS BEEN PROVIDED TO SUBSTITUTE PAVEMENT, WATER AND SEWER SERVICES IN THIS SUBDIVISION. ELECTRIC SERVICE HAS BEEN ASSURED BY [illegible]

[signature] 7-12-85
THE COUNTY ENGINEER DATE

CERTIFICATE OF COUNTY RECORDER: I, THE UNDERSIGNED AS A DEPUTY COUNTY RECORDER, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE THE RECORDS OF THIS OFFICE REFLECT THAT J.E.H. ENTERPRISES AS DESIGNATED ON THE PLAT IS OWNER OF THE PROPERTY AS SHOWN ON THE PLAT AND HAVE PARTICULARLY DESCRIBED AS ASSESSOR'S PARCEL NUMBER 300-66-[illegible]

[signature] 7-12-85
DEPUTY COUNTY RECORDER DATE

CERTIFICATE OF COUNTY TREASURER: I, THE UNDERSIGNED AS A DEPUTY COUNTY TREASURER, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE THE RECORDS OF THIS OFFICE REFLECT THAT THERE ARE NO TAX LIENS ON ANY OF THE PARCELS CONTAINED IN THE PLAT AS LISTED IN THE ASSESSOR'S CERTIFICATION, WITH THE FOLLOWING EXCEPTIONS:

[signature] 7-8-85
DEPUTY COUNTY TREASURER DATE

CERTIFICATION: THIS IS TO CERTIFY THE SURVEY AND SUBDIVISION OF THE PREMISES DESCRIBED AND PLATTED HEREON WERE MADE UNDER MY DIRECTION DURING THE MONTH OF June, 1985, THAT THE PLAT IS CORRECT AND ACCURATE, THAT THE MONUMENTS SHOWN HEREON WERE SECU LOCATED OR ESTABLISHED AS DESCRIBED AND THE LOT CORNERS PERMANENTLY SET.

STEVEN L. NORTHRUP, R.L.S. [illegible]

APPROVED BY THE CO[illegible] BOARD OF THE MARICOPA COUNTY BOARD OF SUPERVISORS [illegible] BY THE CLERK OF THE BOARD.

BY: [illegible] 7-8-85
CHAIRMAN DATE

ATTESTED BY: [illegible]
CLERK DATE

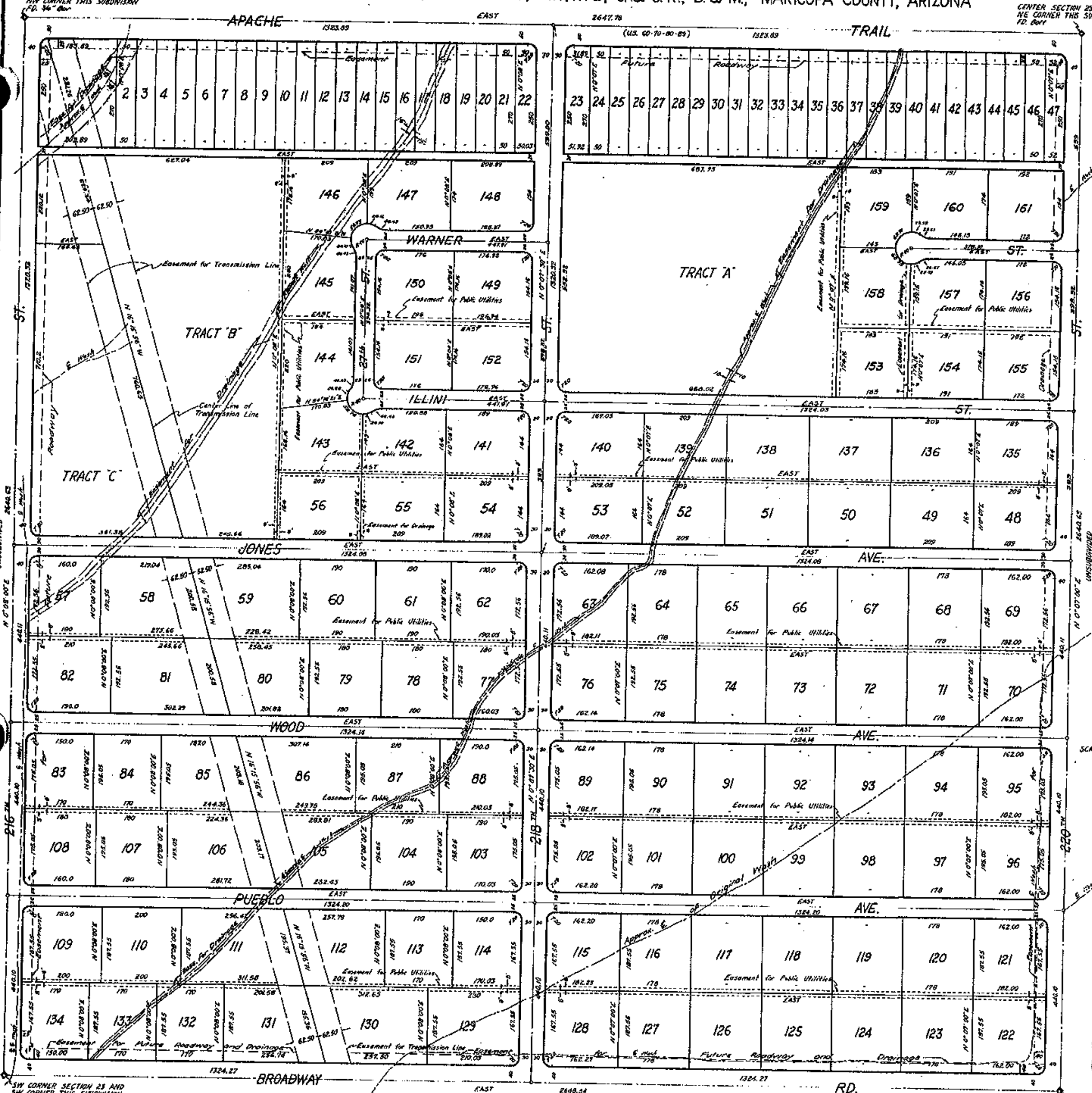
CRISMON CORNER
FINAL PLAT

DRAWN BY: DLS	SCALE: 1"=50'	6-23-85	84087
REVISED BY: TJB		1 OF 1	

77-25
*106,075 RB

DESERT VILLAGE NO. 2

A SUBDIVISION OF THE SW¼, SECTION 23, T1N, R7E, G.& S.R., B.& M., MARICOPA COUNTY, ARIZONA



DEDICATION

KNOW ALL MEN BY THESE PRESENTS That the Lane Title & Trust Company, An Arizona Corporation, Trustee, has subdivided under the name of DESERT VILLAGE NO. 2, the SW¼, Section 23, T1N, R7E, G.&S.R., B.& M., Maricopa County, Arizona, and hereby publishes this plat as and for the plat of said DESERT VILLAGE, and hereby declares that said plat sets forth the location and gives the dimensions of the lots, tracts, streets, and alleys constituting same, and that each lot, tract, and street shall be known by the number, letter or name given each respectively on said plat, and hereby dedicates to the public for use as such, the streets and alleys as shown on said plat, and included in the above described premises. Easements are dedicated for the purposes shown.

IN WITNESS WHEREOF, The Lane Title & Trust Company, as Trustee, has hereunto caused its corporate name to be signed and its corporate seal to be affixed and the same to be attested by the signatures of John D. Keller, its Vice President, and Dommas Myers, its Assistant Secretary, thereunto duly authorized.

LANE TITLE & TRUST COMPANY
TRUSTEE

BY: John D. Keller — VICE PRESIDENT
ATTEST: Dommas Myers — ASST. SECRETARY

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

On this the 2nd day of MAY, 1958, before me, the undersigned officer, personally appeared John D. Keller and Dommas Myers, who acknowledged themselves to be Vice President and Assistant Secretary, respectively, of the Lane Title & Trust Company, a corporation, and that they, as such officers, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as trustee, by themselves as such officers respectively.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

My commission expires 3-12-62 — NOTARY PUBLIC

APPROVAL

Approved by the Planning and Zoning Commission of Maricopa County, Arizona, this 21st day of May, 1958

DIRECTOR

CERTIFICATE

This is to certify that the survey and subdivision of the premises described and platted hereon were made under my direction during the month of March, 1958

Frank Maddock
REGISTERED CIVIL ENGINEER

FRANK MADDOCK — Registered Professional Engineer (Civil) — ARIZONA, U.S.A.

S-1003
1-5-81

ENGINEERED BY

Maddock & Associates
ENGINEERS ARCHITECTS SURVEYORS
JOB NO. 580301

FEE NUMBER 73100
MAY 27 1958
LANE TITLE & TR. CO.

77-25.

REACH 2: PARCEL 220-38-011

Unofficial Documents

After recording, please return to:

Thomas E. Koniuszy
Quindry & Koniuszy
4447 E. Broadway #109
Mesa, AZ 85206

F
DER
2000 0705014 10/05/2000 12:48
MESA1 1 OF 2

QUIT CLAIM DEED FROM TRUSTEE

For the consideration of Ten Dollars ($10.00) and other valuable considerations, **JOEL ALLEN COPLIN as Successor Trustee of THE KATHERINE HAWKINS LEEGATE REVOCABLE TRUST DATED SEPTEMBER 28, 1987,** hereby conveys to **JOEL ALLEN COPLIN and JO-ANN LOWNEY-COPLIN,** as community property with rights of survivorship, all right, title or interest in the following real property situated in Maricopa County, State of Arizona:

The West Half of the East Half (W1/2E1/2) and the East Half of the West Half (E1/2W1/2) of the Northeast Quarter of the Northeast Quarter of the Southeast Quarter (NE1/4NE1/4SE1/4) of Section Twenty-two (22), Township One (1) North, Range Seven (7) East, of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, EXCEPT the North Fifty (50) feet thereof.

Pursuant to **A.R.S. § 11-1134(B) (8)**, no affidavit and filing fee are required to be filed herewith.

Pursuant to **A.R.S. § 33-404**, the name and address of the beneficiaries under **THE KATHERINE HAWKINS LEEGATE REVOCABLE TRUST dated September 28, 1987** are as follows:

During her lifetime: **Katherine Hawkins Leegate**
9919 E. Apache Trail
Mesa, Arizona 85207

Since the death of the primary beneficiary:

Joel Allen Coplin and Jo-Ann Coplin
9919 E. Apache Trail
Mesa, Arizona 85207

Subject to current taxes and assessments, reservations and all easements, rights of way, covenants, conditions, restrictions, liens and encumbrances of record.

DATED this 29 day of September, 2000.

JOEL ALLEN COPLIN
Successor Trustee

JOEL ALLEN COPLIN AND JO-ANN LOWNEY-COPLIN, each individually hereby indicate their acceptance of title as community property with rights of survivorship by signing a copy of this Deed.

DATED this 29 day of September, 2000.

JOEL ALLEN COPLIN

JO-ANN LOWNEY-COPLIN

STATE OF ARIZONA)
)ss.
County of Maricopa)

The foregoing instrument was acknowledged before me this 29th day of September, 2000, by **JOEL ALLEN COPLIN, Successor or Trustee of the KATHERINE HAWKINS LEEGATE REVOCABLE LIVING TRUST DATED SEPTEMBER 28, 1987.**

Unofficial Document

My Commission Expires:

Constance A. Rollins
Notary Public

NOTARY PUBLIC
STATE OF ARIZONA
County of Maricopa
CONSTANCE A. ROLLINS
My Appointment Expires 07-14-04

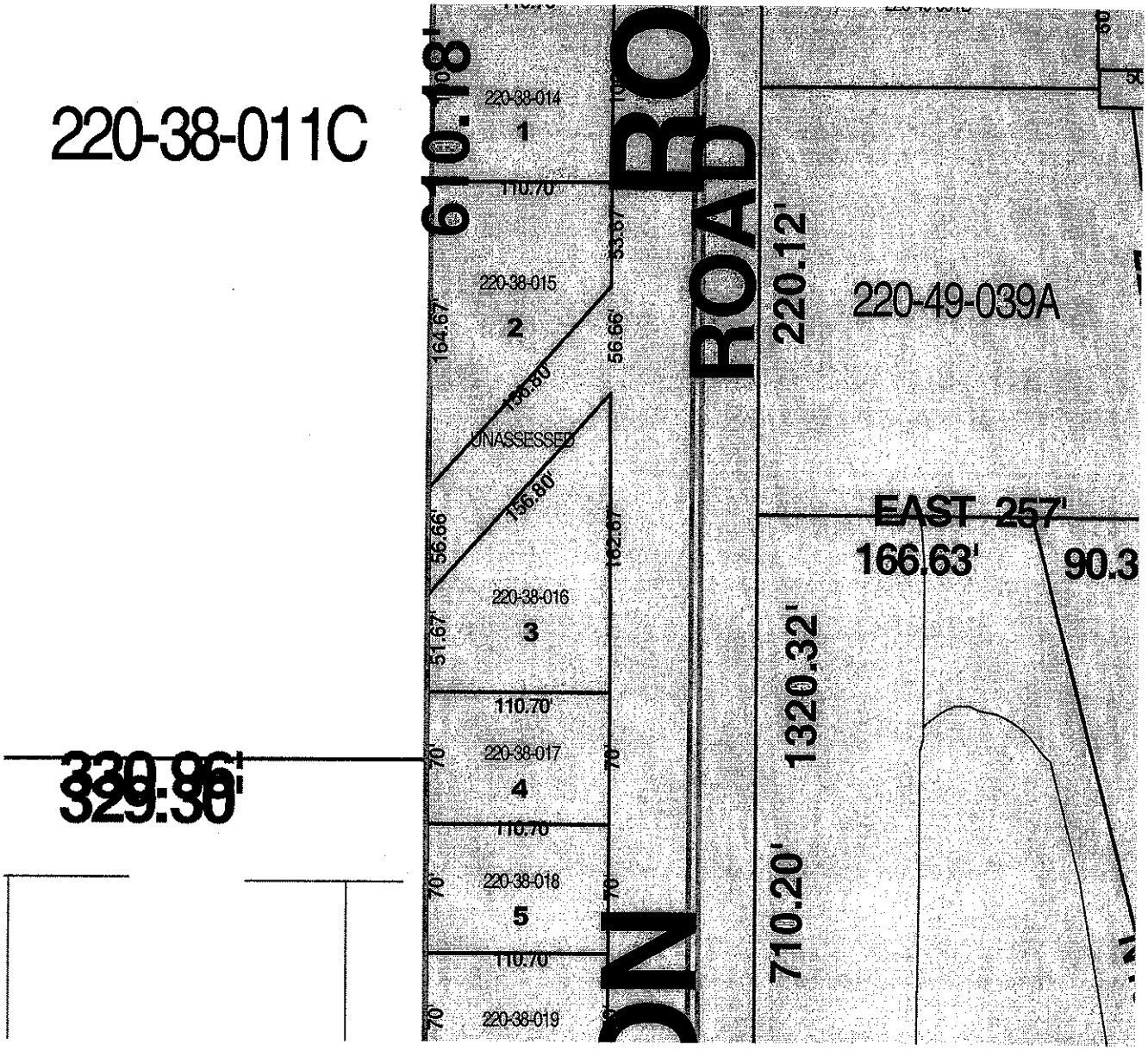
STATE OF ARIZONA)
)ss.
County of Maricopa)

The foregoing instrument was acknowledged before me this 29th day of September, 2000, by **JOEL ALLEN COPLIN and JO-ANN LOWNEY COPLIN.**

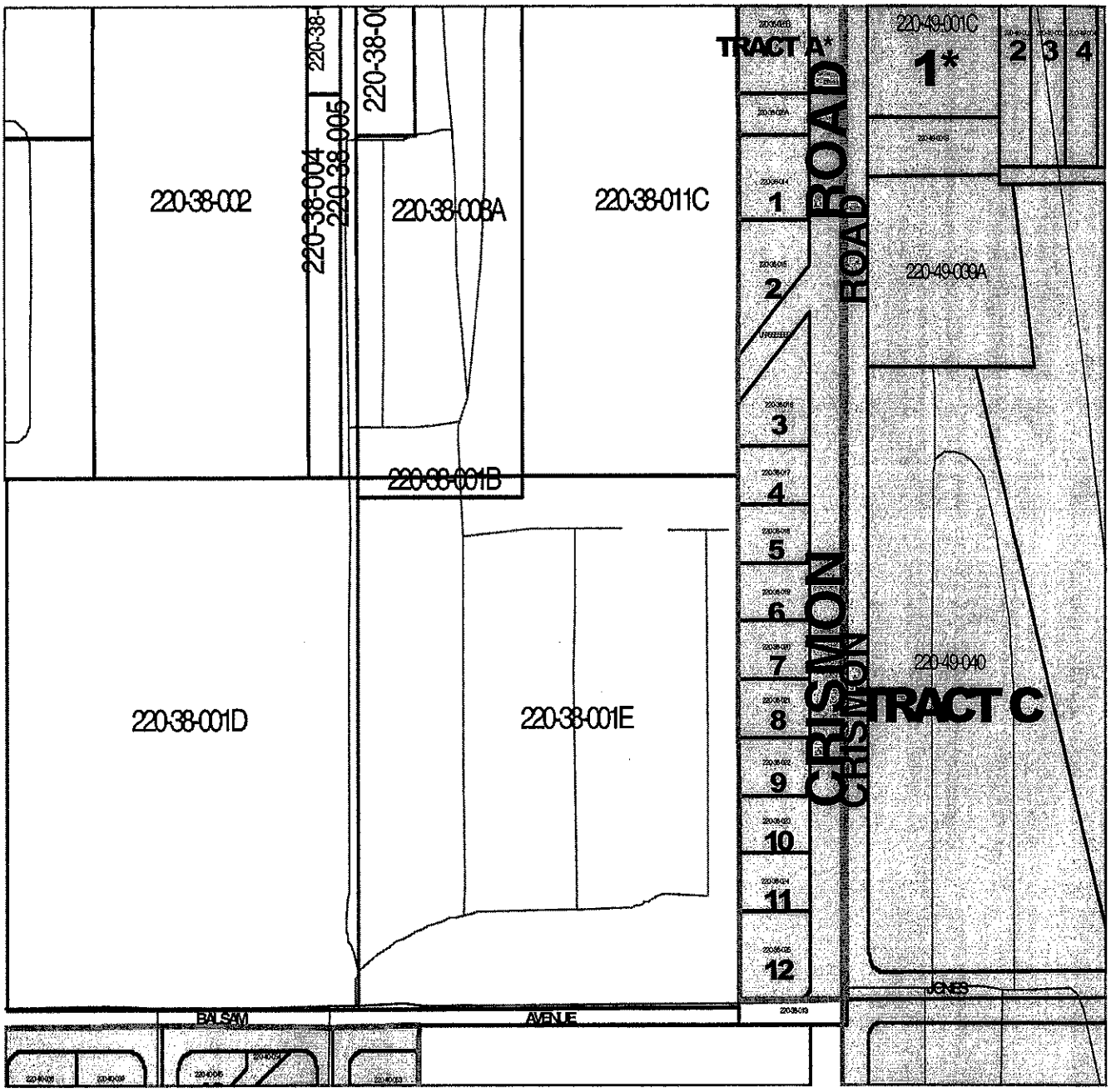
My Commission Expires:

Constance A. Rollins
Notary Public

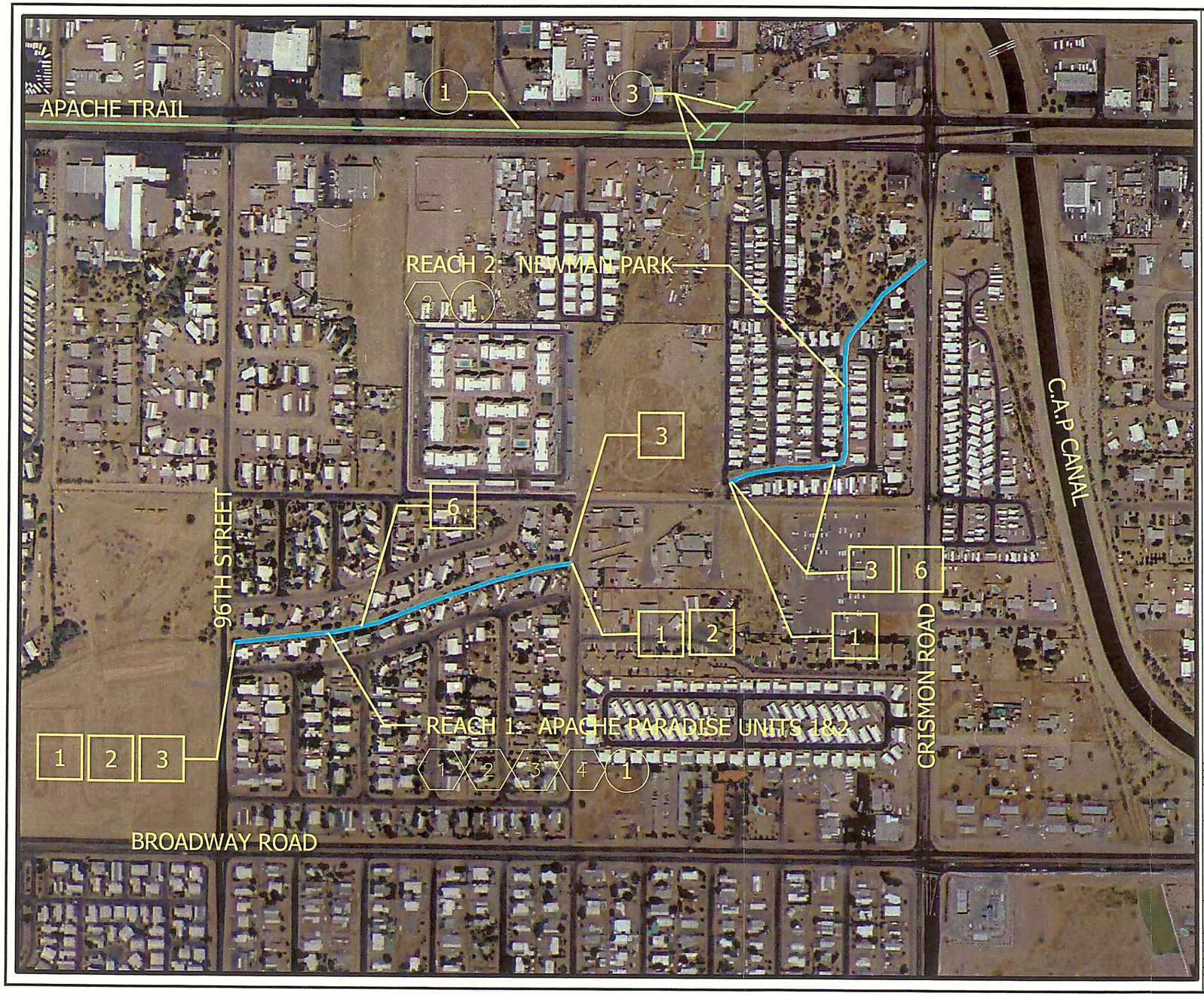
NOTARY PUBLIC
STATE OF ARIZONA
County of Maricopa
CONSTANCE A. ROLLINS
My Appointment Expires 07-14-04



R-2_NewmanP_109-8map.doc



Reach2SW_map-no_plat.doc



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED.
2. IMPROVISED BANK STABILIZATION
3. OVERHEAD POWERLINES ARE TOO LOW.
4. TREES IN CHANNEL AFFECTING PRIVATE PROPERTY.

UTILITIES

1. WATER
2. SEWER
3. GAS
4. OVERHEAD ELECTRIC
5. UNDERGROUND ELECTRIC
6. TELEPHONE

EXISTING CHANNEL STRUCTURES

1. EARTH LINED CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 1 & 2

F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 8

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\07162_C-Eng.On.Call\East Mesa Drains-CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Ctl\re 4-15\6.1 DW...sting Facilities Exhibits\exh.04_REACH 1-2.dwg, Layout1, 05/26/2004 03:35:32 PM, cmiranda

Reach 3: Valley View
Location: E. of CAP Canal, east of 76th Street, south of Culver Drive.
Parcel Research: Dedication: "dedicates to the Public for use as such, the streets and drainage rights of way as shown on said plat. (Plat map covered entire drainage reach)
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: No utility research conducted.
Hydrologic Analysis: The watershed area was identified through site visits and GIS topographic data and calculated using the rational method, Q100 = 137 cfs.
Hydraulic Analysis: the lowest flow yielding flood conditions is 20 cfs. Manning's n = 0.03 for earthen channel. Operational – (2): The 100 year flows overtops the banks. Limited ROW prevents increasing the channel top width.
Recommendation: Maintenance – (2): Reach 3 has some typical maintenance problems. Residential trees are affecting channel capacity and private property. Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of the County's Codes. HDR recommends routine maintenance and inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit Requirements.
Opinion of Improvement Cost: $1,800

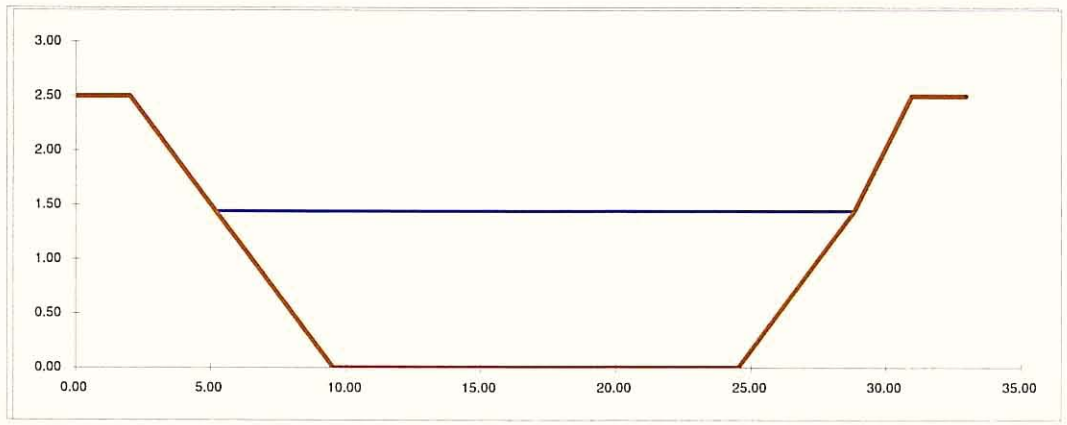
Job No.	000000000009522	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 3	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - REACH 3



Design Discharge Q = 137 cfs
Channel Section 3.00
Right-of-Way Width 30 ft

Calculate Flow Depth
Estimated Flow Depth 1.44 ft
Channel Depth 2.50 ft

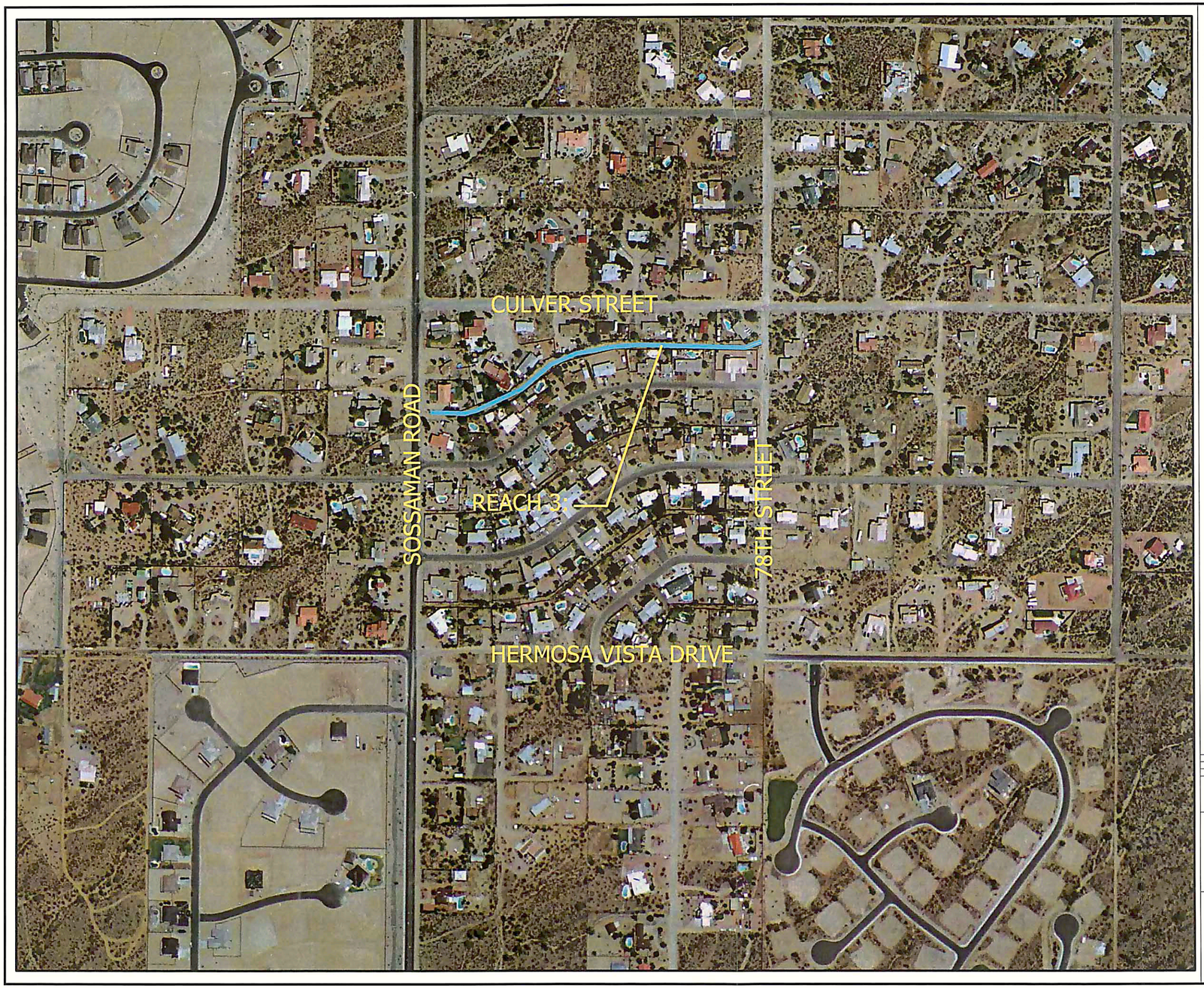
Estimated Q = 136.5 cfs
Average V = 4.90 ft/sec

Channel Parameters

Bottom Width =	15.00	ft
Side Slope =	3.00	:1
Manning n =	0.040	
Channel Slope	0.014	ft/ft
Flow Area =	27.82	ft^2
Wet Perimeter	24.11	ft
Hyd. Radius R	1.15	ft
Top Width =	23.64	ft
Hydraulic depth	1.18	ft
Froude No. =	0.80	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.14 ft

Available Freeboard
Channel Depth - Flow Depth = 1.06 ft Available Fb > Fb req'd



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 3

F.C.D. CONTRACT NO. 2003C018

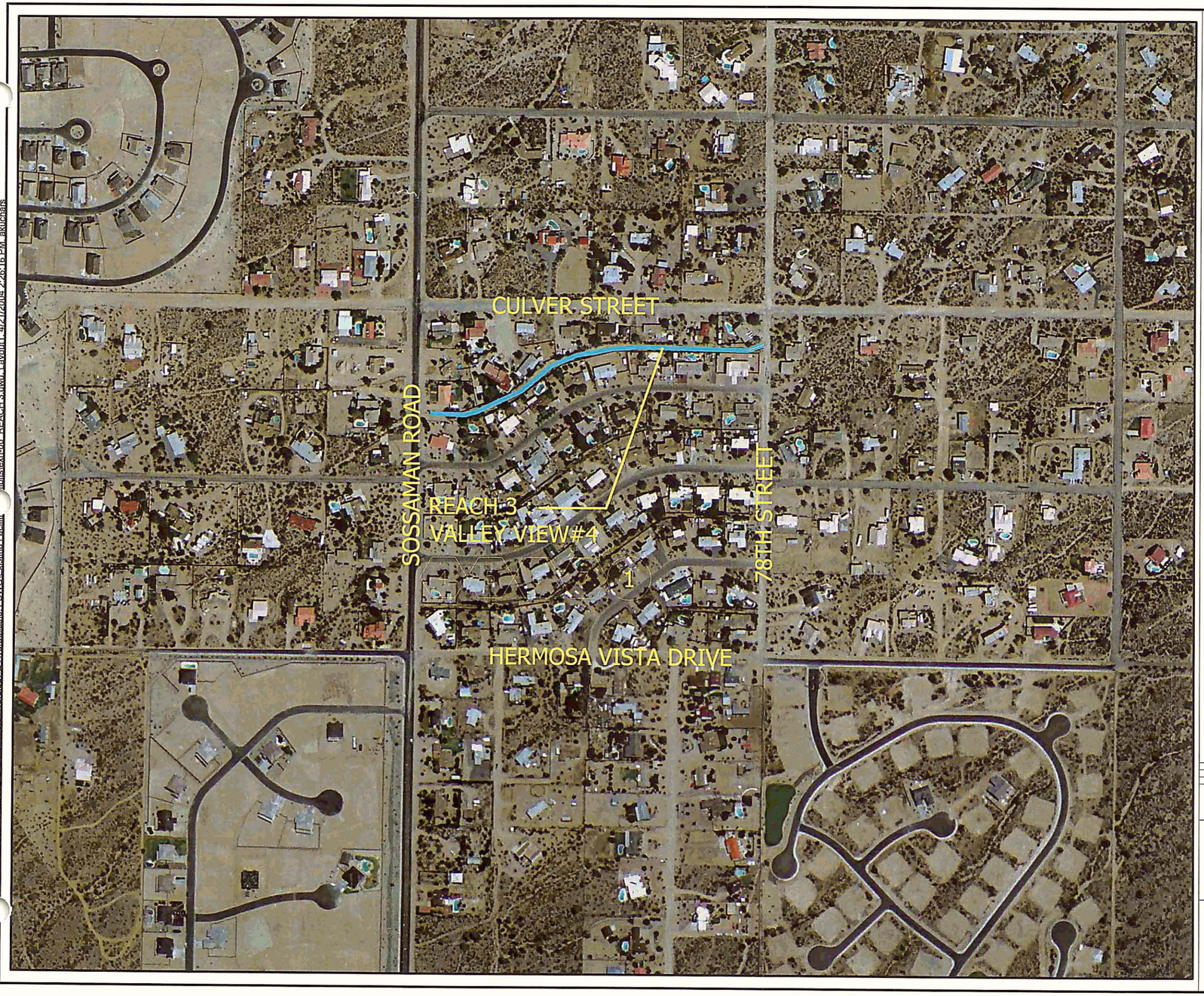
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC.Eng.On-Call\East.Mesa.Drains.CAR\6.0.Hydrology.&.Hydraulics\6.1.DWG\Proposed.Faci xhibits\exh-14_REACH.3.dwg,Layout1,4/21/2004.3:38:51 PM,akuchars



EXISTING CONDITIONS

4. TREE MAINTENANCE NEEDED
5. PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS
6. ILLEGAL DISCHARGES
7. ILLEGAL DUMPING

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 3

F.C.D. CONTRACT NO. 2003C018

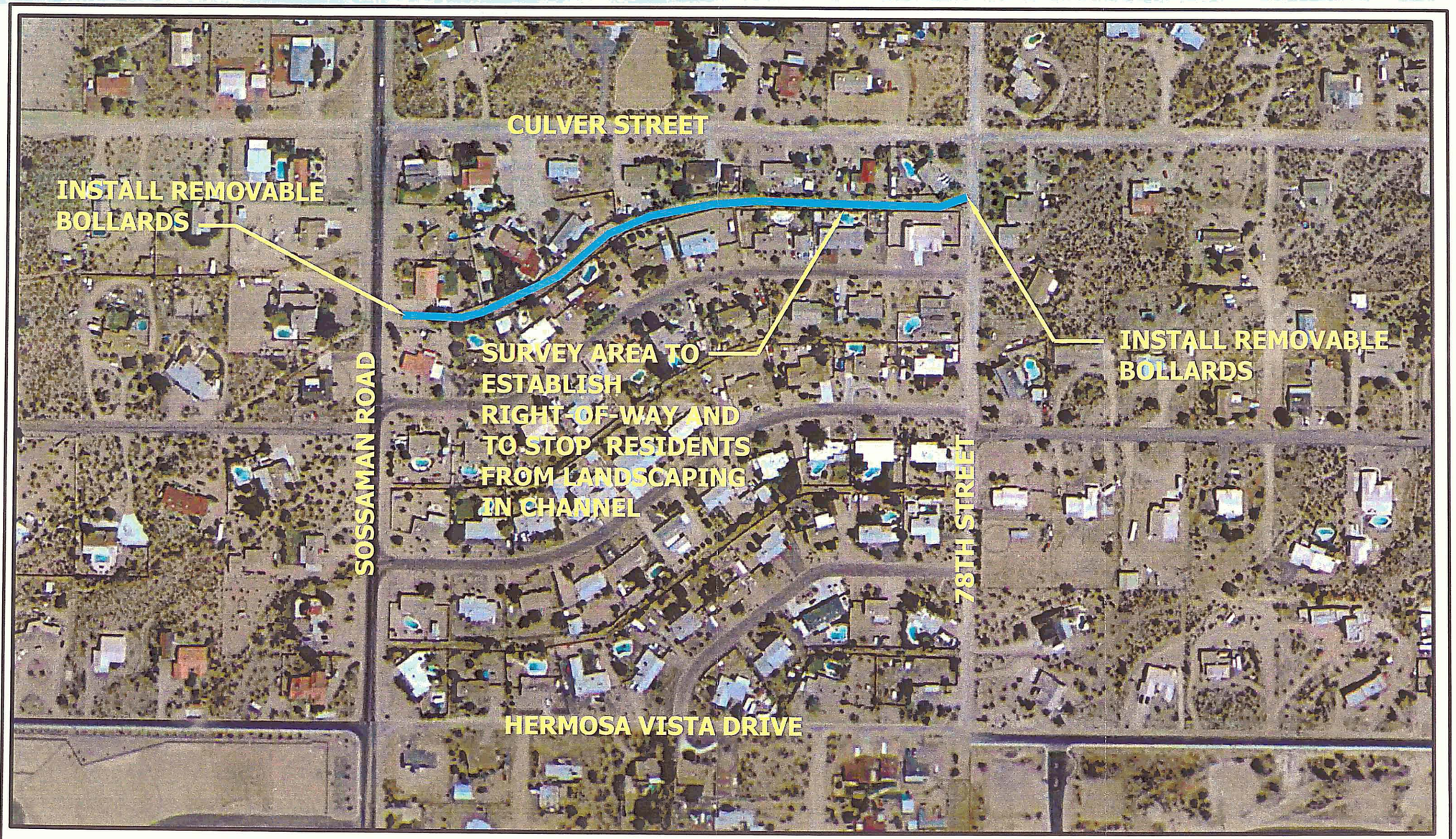
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6-1 DWG\Existing Facilit jlbinstexh-06_REACH 3.dwg, Layout1, 4/21/2004 2:26:16 PM, akuchars



LEGEND

200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

EXISTING NON-FCDMC DRAINAGE FACILITIES
PROPOSED DRAINAGE FACILITIES
DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR
HDR Engineering, Inc.

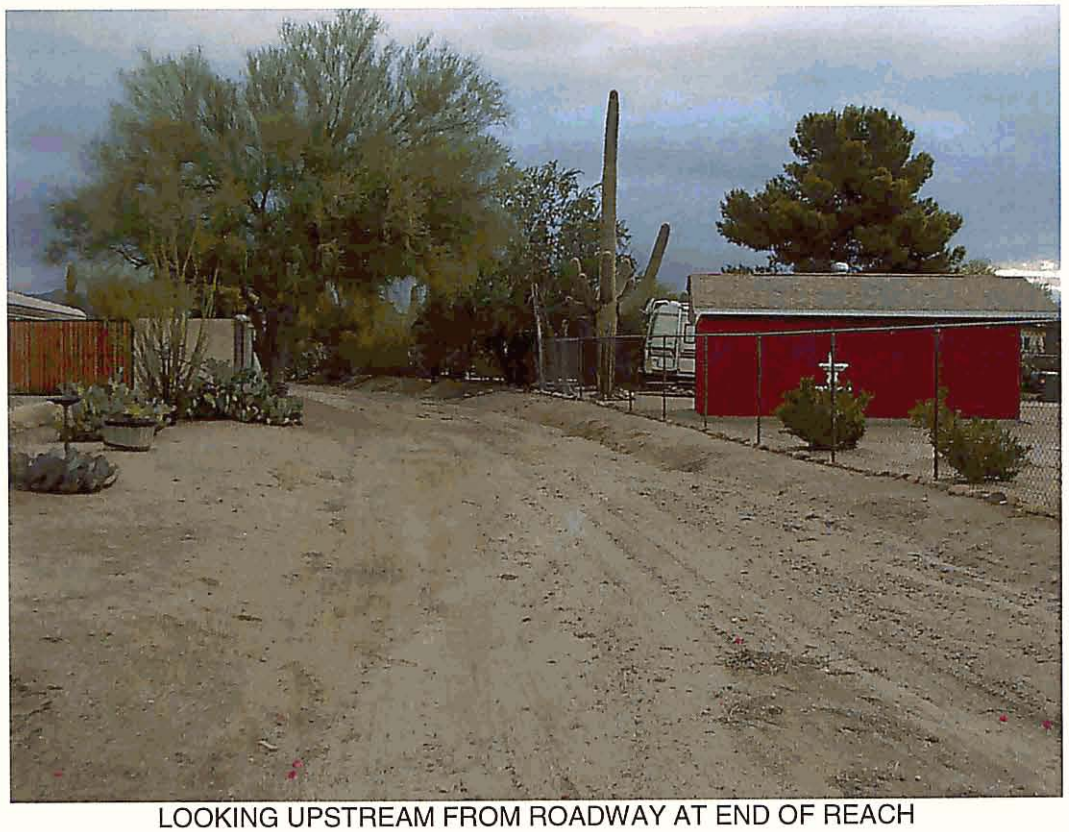
REACH 3
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

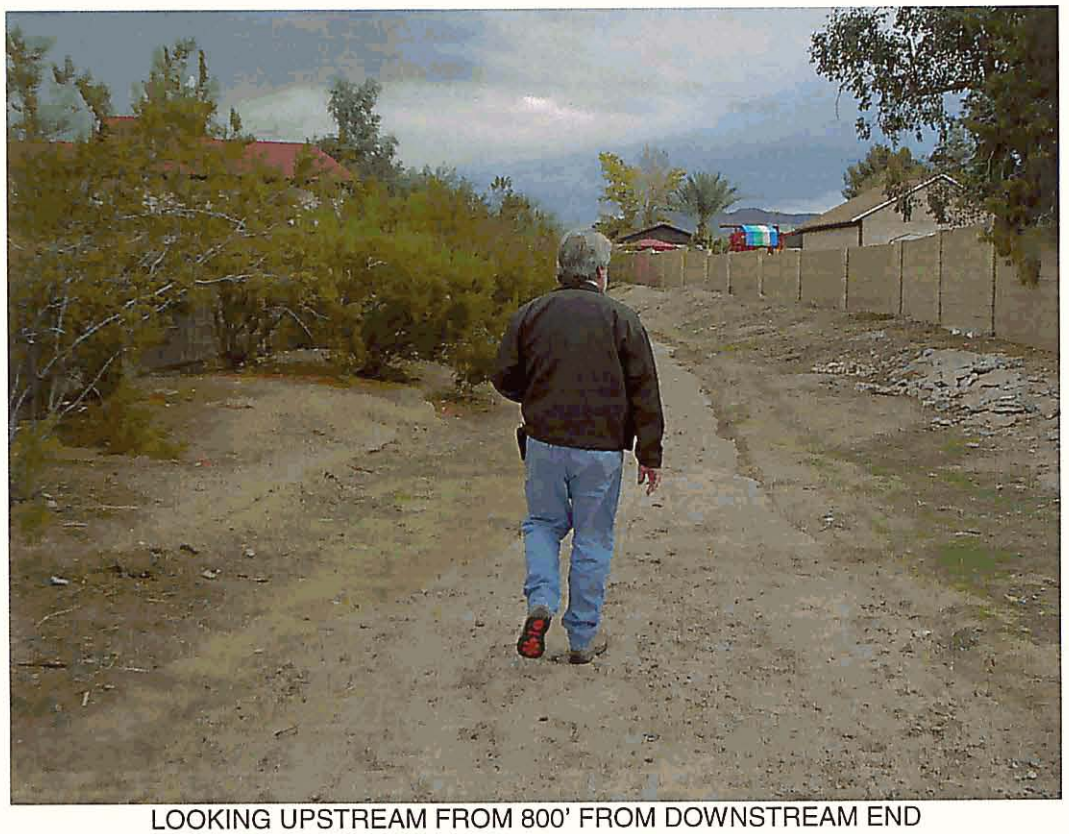
Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 I Recommendations\REACH 3.dwg, Layout2, 05/04/2004 03:12:16 PM, cmiranda

Reach 3 – Valley View #4



LOOKING UPSTREAM FROM ROADWAY AT END OF REACH



LOOKING UPSTREAM FROM 800' FROM DOWNSTREAM END

Reach 3 – Valley View #4

LOOKING UPSTREAM FROM 1500' UPSTREAM FROM END OF REACH

124-13

VALLEY VIEW #4

A SUBDIVISION OF THE S.W. ¼, N.W. ¼ SECTION 5 T.1N., R.7E., G.&S.R., B.&M., MARICOPA COUNTY, ARIZONA

103565

INDEXED
PAGED

STATE OF ARIZONA } ss
COUNTY OF MARICOPA }
I hereby certify that this instrument was filed and recorded at request of
AMERICAN TITLE INSUR. CO.
JUN 9 - 59 - 9 00
in Book 124 Page
Witness my hand and official seal the day and year aforesaid.
Fee $ 12
Fee paid
Deputy Recorder
By: E. Cole

SCALE 1"=60'

TYPICAL GUY WIRE ANCHOR EASEMENT

DEDICATION

KNOW ALL MEN BY THESE PRESENTS: That Steffey & Lawthen Desert Properties Inc., an Arizona Corporation, has subdivided under the name of VALLEY VIEW #4, the S.W.1/4, N.W. 1/4, Section 5, T.1N., R.7E., G.&S.R., B.&M., Maricopa County, Arizona, as shown platted hereon, and publishes this plat as and for the plat of said VALLEY VIEW #4 and hereby declares that said plat sets forth the location and gives the dimensions of the lots, streets and drainage R/W, constituting same and that each lot and street shall be known by number or name given each respectively, on said plat, and hereby dedicates to the public for use as such the streets & drainage R/W as shown on said plat and included in the above described premises. Easements are dedicated for public utilities and drainage.

IN WITNESS WHEREOF, Steffey & Lawthen Desert Properties Inc., has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 22nd day of April A.D., 1962.

STEFFEY & LAWTHEN DESERT PROPERTIES INC.

By: T. Dean Steffey (PRESIDENT) Attest: Robert E. Lawthen (SECRETARY)

ACKNOWLEDGMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

On this the 22nd day of April 1962, before me, the undersigned officer, personally appeared T. Dean Steffey and Robert E. Lawthen, who acknowledged themselves to be the President and Secretary, respectively, of Steffey & Lawthen Desert Properties Inc., a corporation, and acknowledged that they as such officers, respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, by themselves, as such officers, respectively.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

My commission expires December 22, 1963 Floyd A. Grant NOTARY PUBLIC

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona this 7th day of May 1962.

By: Ruth A. O'Neil ATTEST: Phil Greene

CERTIFICATE

This is to certify that the survey and subdivision of the premises described and platted hereon was made under my direction during the month of March 1962.

REGISTERED LAND SURVEYOR

• Indicates corner this subdivision. Ariz. Reg. # 986

Indicates Drainage & Utility Easements

A. J. WOLF
REGISTERED LAND SURVEYOR
CHANDLER, ARIZONA

RECEIVED
APR 26 1962

APPROVED
MARICOPA COUNTY
PLANNING & ZONING COMMISSION
Date: 11 May 1962

REACH 3; PARCEL 219-26-001L

Unofficial Documents

THIS INSTRUMENT IS RECORDED AT THE REQUEST OF:

William J. Curosh
Attorney at Law
Suite 101
7227 N. 16th Street
Phoenix, Arizona 85020-5256

MAI

96-0573914 08/14/96 02:52

TONY 8 OF 30

WARRANTY DEED

Effective Date: July 8, 1996	**County and State where property is located:** Maricopa County, Arizona
GRANTORS: GARY ALLEN LUCHT and WANDA RUTH LUCHT, his wife, as joint tenants with right of survivorship and not as tenants in common 7805 E. Culver Mesa, Arizona 85207	**GRANTEE:** GARY & WANDA LUCHT FAMILY TRUST AGREEMENT 7805 E. Culver Mesa, Arizona 85207

Subject Real Property (Address or Location) 7805 E. Culver Mesa, Arizona 85207	LEGAL DESCRIPTION PROOFED BY PERSON WHOSE INITIALS APPEAR TO THE RIGHT	1.	2.	3.

SUBJECT REAL PROPERTY:

The West half of the North 264.05 feet of the following described property: The West half of the Northwest quarter of the Southeast quarter of the Northwest quarter of Section Five (5), Township One (1) North, Range Seven (7) East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona

EXEMPT PER A.R.S. SECTION 42-1614 B8

The beneficiaries of the trust are Gary Allen Lucht and Wanda Ruth Lucht, husband and wife.

For Valuable Consideration, Grantors:

Convey to Grantee all rights, title and interest of Grantors in Subject Real Property together with all rights and privileges appurtenant or to become appurtenant thereto on the effective date;

Subject to current taxes and other assessments. reservations in patents and all easements, rights-of-way, encumbrances, liens, covenants, condit igations and liabilities as may appear of record.

Unofficial Document

Covenant that Grantors are seized of Subject Real Property and that Grantee shall quietly enjoy Subject Real Property;

Warrant the title against all persons whomsoever, subject to matters above set forth and warrant that Grantors will execute or procure any further necessary assurance of title.

Grantors further covenant for Grantors and successors of Grantors their further assurance of this grant and of the aforesaid warranties and covenants.

Gary Allen Lucht — Gary Allen Lucht

Wanda Ruth Lucht — Wanda Ruth Lucht

Signatures of Grantors

STATE OF ARIZONA COUNTY OF MARICOPA Date of this Acknowledgment: 7/8/96	Acknowledgment: On this date before me a Notary Public, personally appeared Gary Allen Lucht, known to me or satisfactorily proven to be the person whose name is subscribed to this instrument and acknowledged that they executed the same.	Jonnie C. Hunsaker NOTARY PUBLIC JONNIE C. HUNSAKER NOTARY PUBLIC STATE OF ARIZONA MARICOPA COUNTY My Comm Expires Nov. 30, 1998 Notary Expiration Date:
STATE OF ARIZONA COUNTY OF MARICOPA Date of this Acknowledgment: 7/8/96	Acknowledgment: On this date before me a Notary Public, personally appeared Wanda Ruth Lucht, known to me or satisfactorily proven to be the person whose name is subscribed to this instrument and acknowledged that they executed the same.	Jonnie C. Hunsaker NOTARY PUBLIC JONNIE C. HUNSAKER NOTARY PUBLIC STATE OF ARIZONA MARICOPA COUNTY My Comm Expires Nov. 30, 1998 Notary Expiration Date:

Recorded at the request of: United Title Agency of Arizona,

Unofficial Documents

When recorded, mail to:

JOSEPH EDWIN HENKELS
2504 N. 76th Street
Mesa, Az. 85207

(2) REO #911392

REACH 3; PARCEL 219-25-073A

Tax Code # 219-25-073A
319681- 38 EJ

"SPECIAL"

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we, FEDERAL NATIONAL MORTGAGE ASSN., a U.S. corporation

do hereby convey to JOSEPH EDWIN HENKELS and ELINOR M. HENKELS, husband and wife

the following real property situated in Maricopa County, Arizona:

* See Attached for Legal Description *

Subject to current taxes and assessments, reservations and all easements, rights of way, covenants, conditions, restrictions, liens and encumbrances of record, The Grantor hereby binds itself and its successors in interest to warrant and defend the title as against all acts of the Grantor herein and no other.

~~And I or we do warrant the title against all persons whomsoever subject to the matters above set forth.~~

Dated this 1 day of November, 1991.

FEDERAL NATIONAL MORTGAGE ASSN., a U.S. corporation

By: Maurice J. Ferrell
VICE-PRESIDENT

STATE OF ~~ARIZONA~~ TEXAS
County of ~~Maricopa~~ Dallas } ss.

RUTH E. SELF
Notary Public
State of Texas
My Comm. Exp. Feb. 21, 1992

This instrument was acknowledged before me

this 4 day of Nov, 1991, by Maurice J. Ferrell, VICE-PRESIDENT FEDERAL NATIONAL MORTGAGE ASSN., a U.S. corporation

Ruth E. Self
Notary Public

My commission will expire 2/21/92

STATE OF _____
County of _____ } ss.

This instrument was acknowledged before me

this _____ day of _____, 19____ by

Notary Public

My commission will expire

FORM E-19 (REV. 1/91)

Acceptance of Joint Tenancy

91 552440

KNOW ALL MEN BY THESE PRESENTS:

THAT JOSEPH EDWIN HENKELS and ELINOR M. HENKELS
each being duly sworn upon oath for himself or herself and jointly but not one for the other deposes and says:

Unofficial Document

THAT I am one of the Grantees, Mortgagees, or Beneficiaries named in that certain Special Warranty Deed
Type of Instrument
which is dated November 1, 1991, and executed by FEDERAL NATIONAL MORTGAGE ASSN., a U.S. corporation as Grantor, Mortgagor or Trustor

and JOSEPH EDWIN HENKELS and ELINOR M. HENKELS, husband and wife

as Grantee, Mortgagee or Beneficiary

and which instrument concerns the following described property:

* See Attached for Legal Description *

THAT the interests of the undersigned are being taken by them as Joint Tenants with right of survivorship.

THAT each of us individually and jointly hereby assert and affirm that it is our intention to accept said instrument as such Joint Tenants and to acquire any interest in, or any proceeds arising out of said property, not as tenants in common and not as community property but as Joint Tenants with right of survivorship.

State of Arizona)
) ss.
County of Maricopa)

Joseph Edwin Henkels
JOSEPH EDWIN HENKELS

Elinor M. Henkels
ELINOR M. HENKELS

This instrument was acknowledged before me this 6th day of November, 19 91, by JOSEPH EDWIN HENKELS and ELINOR M. HENKELS, husband and wife

My commission expires: My Commission Expires Dec. 7, 1993

Cheryle S. Morgan
Notary Public

F 82 (REV. 9/81)

91 552440

Parcel No. 1:
The South half of the South half of the East half of the Northeast quarter of the Southeast quarter of the Northeast quarter of Section Six (6), Township One (1) North, Range Seven (7) East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona;

EXCEPT the South 25 feet thereof for roadway;
EXCEPT the East 40 feet thereof for roadway; and
EXCEPT the following described parcel;

The North 5 feet of the South half of the East half of the Northeast quarter of the Southeast quarter of the Northeast quarter of Section 6, Township 1 North, Range 7 East of the Gila and Salt River Base;

EXCEPT the East 185 feet thereof.

Unofficial Document

Parcel No. 2
The South 5 feet of the East 185 feet of the North half of the South half of the East half of the Northeast quarter of the Southeast quarter of the Northeast quarter of Section Six (6), Township One (1) North, Range Seven (7) East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona;

EXCEPT the East 40 feet thereof for roadway.

REACH 3; PARCEL 219-25-074A

Unofficial Documents

Recording Requested by:
First American Title Insurance Company Lenders Advantage

When recorded mail to:
J. EDWARD HAMLIN and TERRI J. HAMLIN
2526 North Sossaman Road
Mesa, AZ 85207

MARICOPA COUNTY RECORDER
HELEN PURCELL
2003-1331531 09/23/03 09:39
5 OF 13
BLOCKNUMBERS

FIRST AMERICAN TITLE **WARRANTY DEED**

Escrow No. **1845-3323157** () 1/3

For the consideration of TEN AND NO/100 DOLLARS, and other valuable considerations, I or we,

TERRI J. HAMLIN, wife of J. EDWARD HAMLIN, the GRANTOR does hereby convey to

J. EDWARD HAMLIN and TERRI J. HAMLIN, husband and wife, the GRANTEE

The following described real property situate in **Maricopa** County, **AZ** with the title being conveyed to the grantee as set forth in the attached acceptance by the grantee:

PARCEL NO. 1: THE NORTH HALF OF THE SOUTH HALF OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA; EXCEPT THE SOUTH 5 FEET OF THE EAST 185 FEET THEREOF. PARCEL NO. 2: THE NORTH 5 FEET OF THE SOUTH HALF OF THE SOUTH HALF OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA; EXCEPT THE EAST 185 FEET THEREOF.

SEE ATTACHED EXHIBIT "A" FOR FULL LEGAL DESCRIPTION

Subject To: Existing taxes, assessments, covenants, conditions, restrictions, rights of way and easements of record.

And the GRANTOR binds itself and its successors to warrant the title as against its acts and none other, subject to the matters set forth.

This Deed is exempt from an Affidavit of Value pursuant to ARS #11-1134, B-3.

DATED: August 04, 2003

× Terri J. Hamlin

J. E. Hamlin

J. EDWARD HAMLIN

SEE ACCEPTANCE ATTACHED HERETO

AND BY REFERENCE MADE A PART HEREOF.

A.P.N.:

Escrow No. **1845-3323157**

WARRANTY DEED - CONTINUED

STATE OF AZ)
)ss.
County of Maricopa)

On September 16, 2003 me, before me, the undersigned Notary Public, personally appeared **J. EDWARD HAMLIN**, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

* Personally appeared Terri J. Hamlin

WITNESS my hand and official seal.

Mary E. Holly
Notary Public

My Commission Expires: 7-19-2003

Unofficial Document

OFFICIAL SEAL
MARY E. HOLLY
NOTARY PUBLIC - STATE OF ARIZONA
MARICOPA COUNTY
My Comm. Expires July 19, 2003

A.P.N.:

Escrow No. **1845-3323157**

WARRANTY DEED - CONTINUED

PLEASE INDICATE HOW YOU WOULD LIKE TO HOLD TITLE *(Mark One)*:

[ ] AN UNMARRIED PERSON

[ ] MARRIED MAN/WOMAN-AS SOLE & SEPARATE PROPERTY

IF YOU ARE ACQUIRING PROPERTY WITH ANOTHER PERSON:

[ ] COMMUNITY PROPERTY
[ ] COMMUNITY PROPERTY WITH RIGHT OF SURVIVORSHIP

[✓] JOINT TENANTS WITH RIGHT OF SURVIVORSHIP
[ ] TENANCY IN COMMON (Please specify percentage of interest for each party:_____

Buyer: ✓ Edward Hamlo

Buyer: ✓ Terri J. Hamlo

PLEASE RETURN THIS FORM IN THE ENCLOSED ENVELOPE

FILE NO. 1845-3323157 ()

Ways to Take Title in Arizona: A Comparison

Community Property	*Community Property with Right of Survivorship*	*Joint Tenancy with Right of Survivorship*	Tenancy in Common
▪ Requires a valid marriage.	▪ Requires a valid marriage	▪ Parties need not be married; may be more than two Joint Tenants.	▪ Parties need not be married; may be more than two tenants in common.
▪ *Each Spouse holds an undivided* one-half interest in the estate.	▪ Each spouse holds an undivided one-half interest in the estate	▪ Each joint tenant holds an equal and undivided interest in the estate, unity of interest.	▪ Each tenant in common holds an undivided fractional interest in the estate. Can be disproportionate, e.g., 20% and 80%; 60% and 40%; 20%, 20%, 20% and 40%; etc.
▪ One spouse cannot partition the property by selling his or her interest.	▪ One spouse cannot partition the property by selling his or her joint interest.	▪ One joint tenant can partition the property be selling his or her joint interest.	▪ Each tenant's share can be conveyed, mortgaged or devised to a third party.
▪ Requires signatures of both spouses to convey or encumber.	▪ Requires signatures of both spouses to convey or encumber.	▪ Requires signatures of all joint tenants to convey or encumber the whole.	▪ Requires signatures of all tenants to convey or encumber the whole.
▪ Each spouse can devise (will) one-half of the community property.	▪ Estate passes to the surviving spouse outside of probate.	▪ Estate passes to surviving tenant(s) outside of probate.	▪ Upon death the tenant's proportionate share passes to his or her heirs by will or intestacy.
▪ Upon death the estate of the decedent must be "cleared" through probate, affidavit or adjudication.	▪ No court action required to "clear" title upon death.	▪ No court action required to "clear" title upon the death of joint tenant(s).	▪ Upon death the estate of the decedent must be "cleared" through probate, affidavit or adjudication.
▪ Both halves of the community property are entitled to a "stepped up" tax basis as of the date of death.	▪ Both halves of the community property are entitled to a "stepped up" tax basis as of the date of death.	▪ Deceased tenant's share is entitled to a "stepped up" tax basis as of the date of death.	▪ Each share has its own tax basis.

Note: Arizona is a community property state. Property acquired by a husband and wife is presumed to be community property unless legally specified. Title may be held as "Sole and Separate". If a married person acquires title as sole and separate property, his or her spouse must execute a disclaimer deed to avoid the presumption of community property. Parties may choose to hold title in the name of an entity, e.g., a corporation; a limited liability company; a partnership (general or limited), or a trust. Each method of taking title has certain legal and tax consequences. Therefore, you are encouraged to obtain advice from an attorney or other qualified professional.

WE LOOK FORWARD TO HELPING YOU WITH ALL YOUR TITLE AND ESCROW NEEDS.

FIRST AMERICAN

First American Title Insurance Company Lenders Advantage

Unofficial Document

A.P.N.:

Escrow No. **1845-3323157**

WARRANTY DEED - CONTINUED

ACCEPTANCE OF JOINT TENANCY

This Acceptance is to be attached to: Warranty Deed dated 08/04/2003 by and between J. EDWARD HAMLIN and J. EDWARD HAMLIN and TERRI J. HAMLIN.

That each of the undersigned individually and jointly as such Grantees hereby declare that it is their intention to accept such conveyance as joint tenants with right of survivorship and not as a community property estate and not as tenants in common, and to acquire any interest in said real property under said deed as joint tenants with right of survivorship, and not as a community property estate and not as tenants in common.

That by the execution and delivery to the Escrow Agent of this "Acceptance of Joint Tenancy" the undersigned intend to evidence their acceptance of said deed as joint tenants, and hereby direct and authorize the Escrow Agent to attach this "Acceptance of Joint Tenancy" to such deed upon its execution and delivery and to record this "Acceptance of Joint Tenancy" together with such deed.

Unofficial Document

Date: 08/04/2003

J Edward Hamlin
J. EDWARD HAMLIN

Terri J. Hamlin
TERRI J. HAMLIN

STATE OF AZ)
)ss.
County of Maricopa)

On September 16, 2003, before me, the undersigned Notary Public, personally appeared **J. EDWARD HAMLIN and TERRI J. HAMLIN,** personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

My Commission Expires: 7-19-2007

Mary E Holly
Notary Public

OFFICIAL SEAL
MARY E. HOLLY
NOTARY PUBLIC - STATE OF ARIZONA
MARICOPA COUNTY
My Comm. Expires July 19, 2007

20031331531

20031331531

EXHIBIT "A"

Commitment No. 3323157

PARCEL NO. 1:

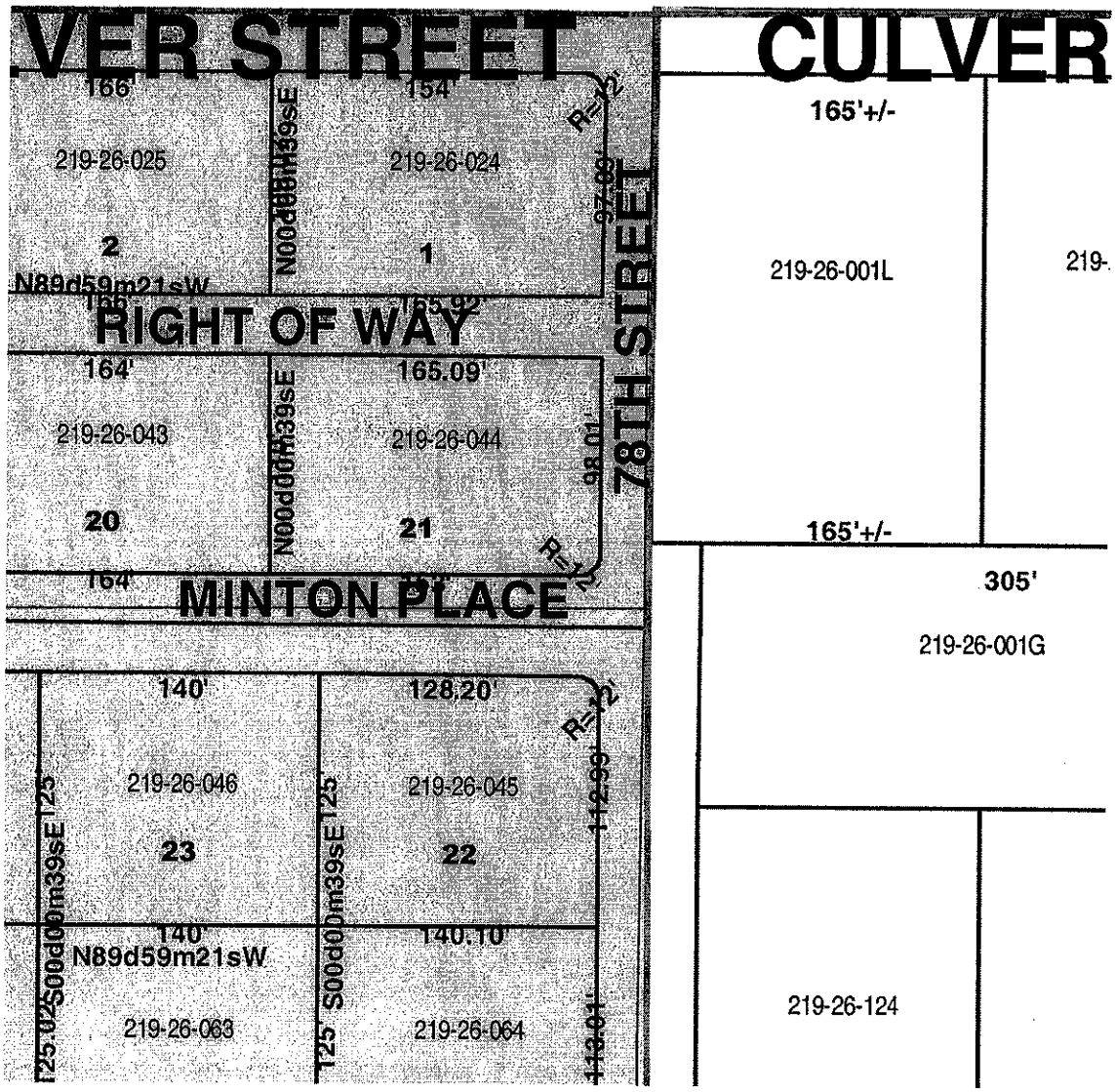
THE NORTH HALF OF THE SOUTH HALF OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA;

EXCEPT THE SOUTH 5 FEET OF THE EAST 185 FEET THEREOF.

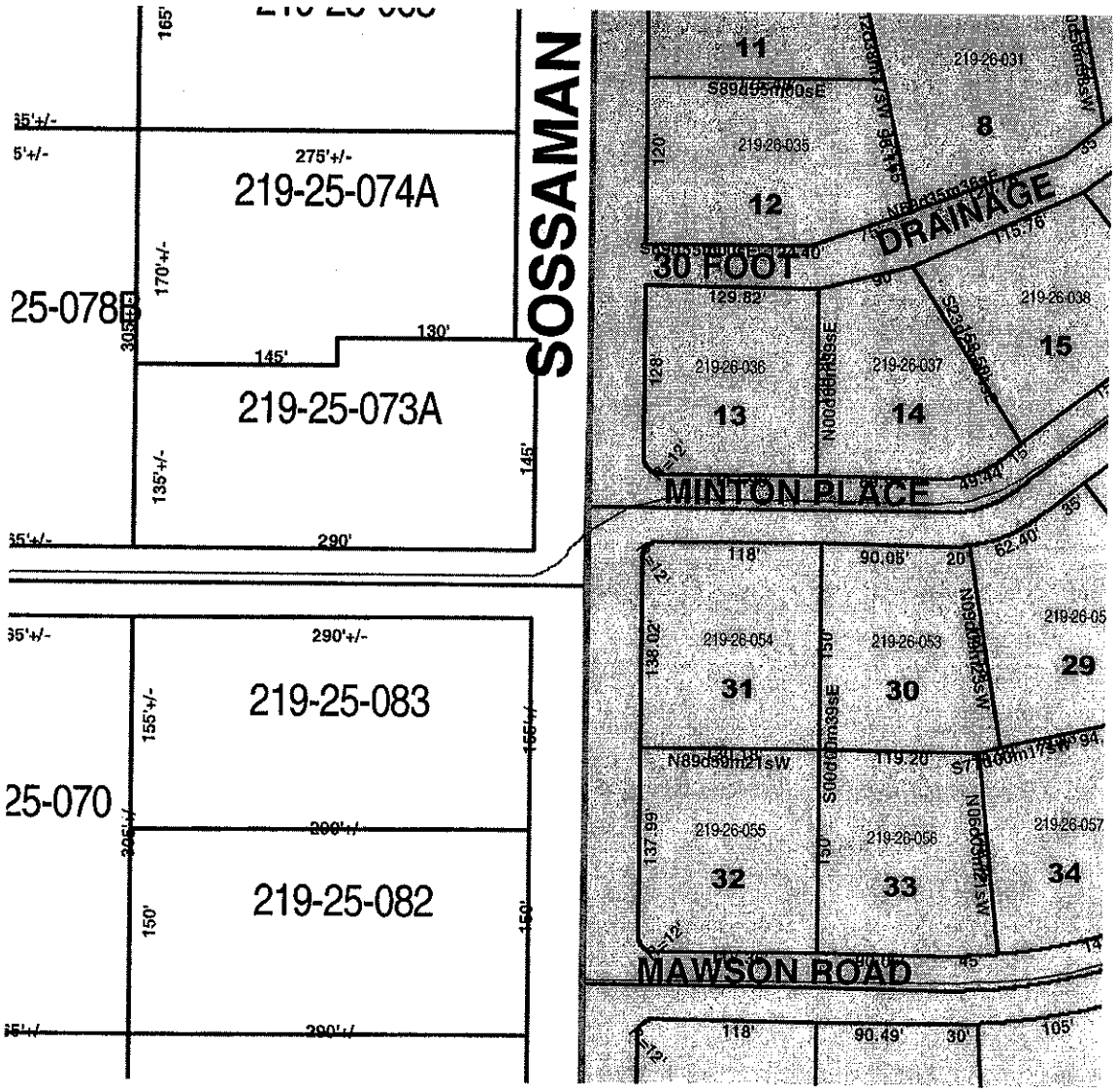
PARCEL NO. 2:

THE NORTH 5 FEET OF THE SOUTH HALF OF THE SOUTH HALF OF THE EAST HALF OF THE NORTHEAST QUARTER OF THE SOUTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 6, TOWNSHIP Unofficial Document NGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA;

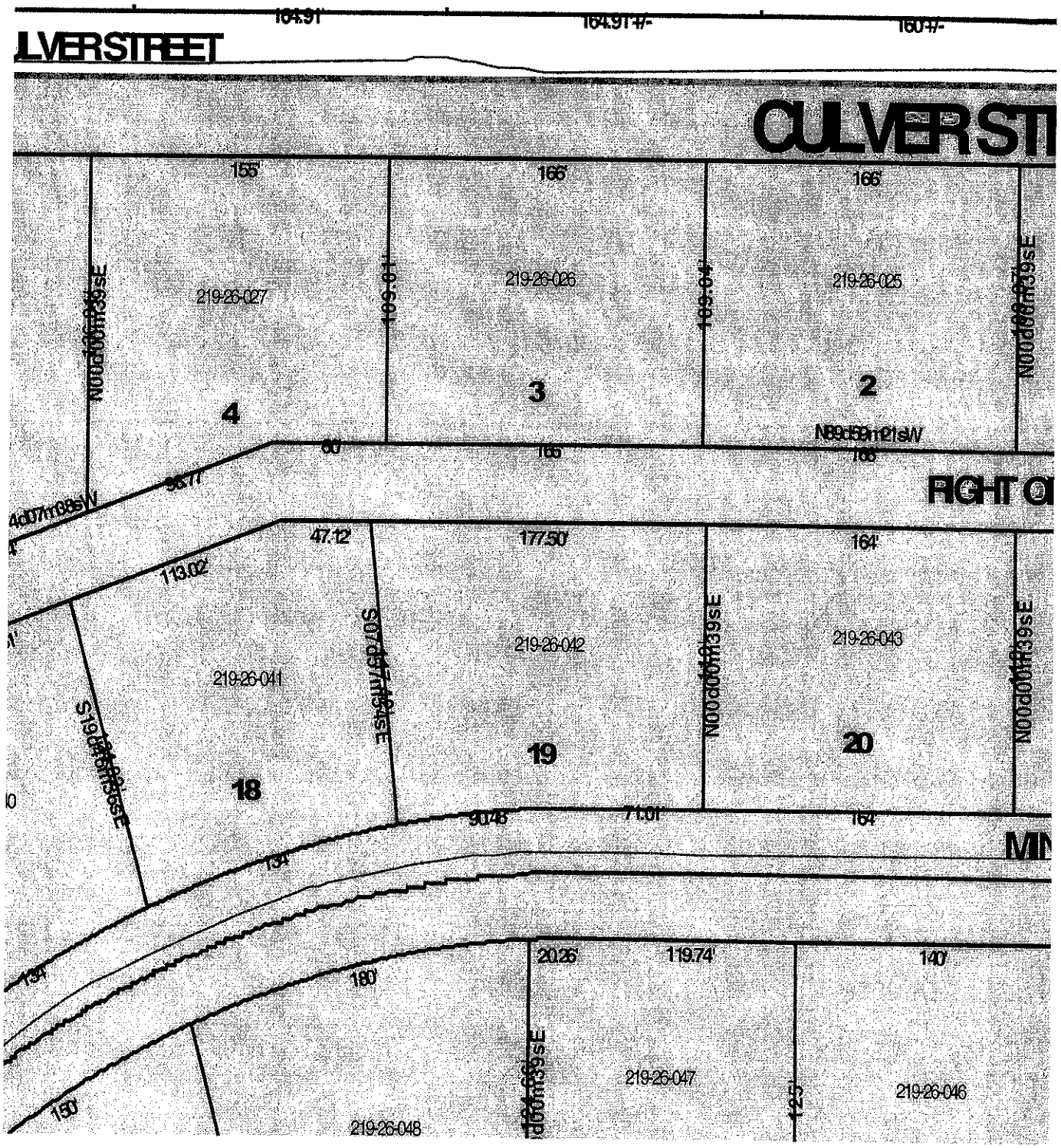
EXCEPT THE EAST 185 FEET THEREOF.



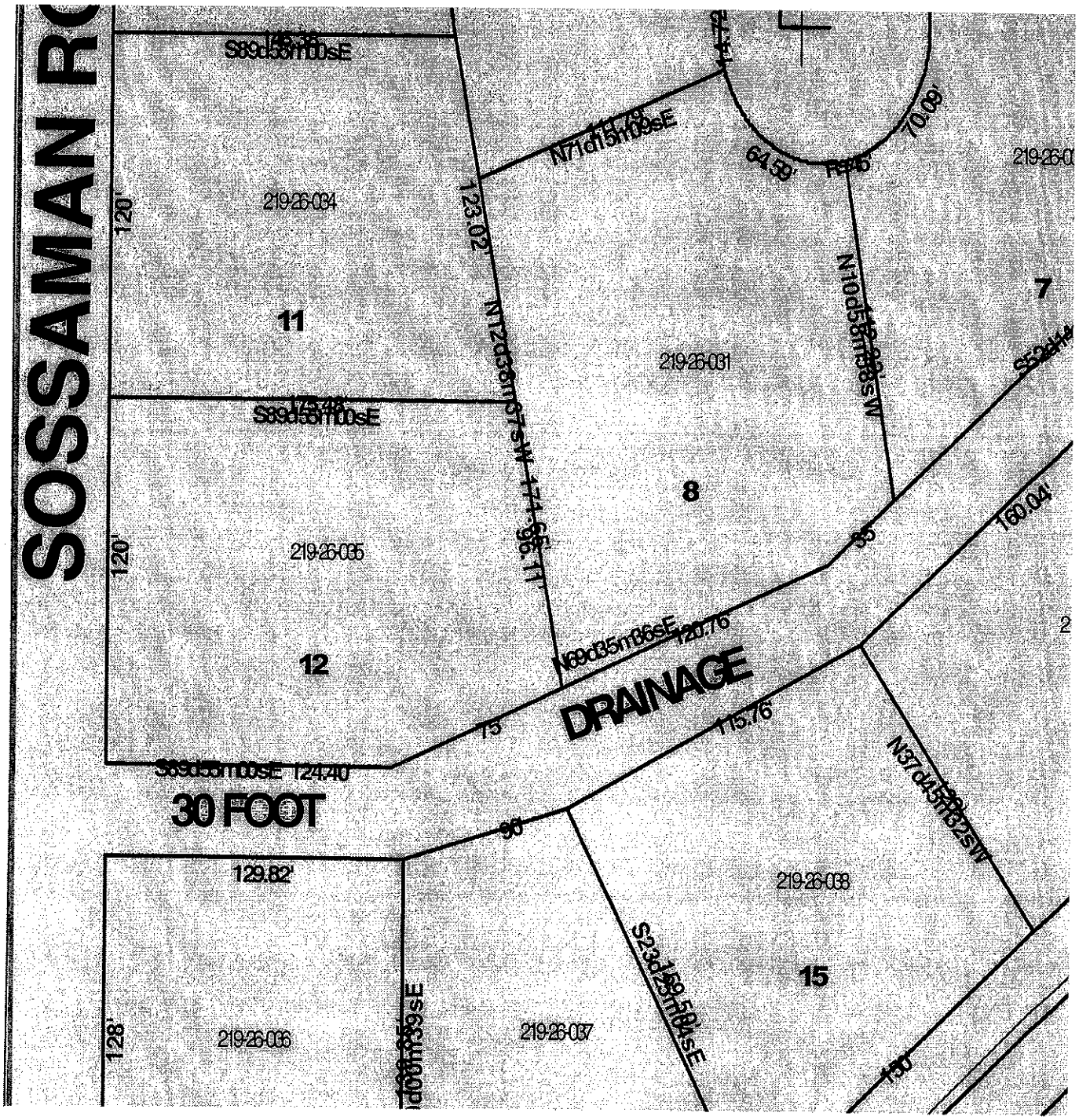
R3-East-map.doc



R3-west_map.doc



R-3_Valley4_124-13map2of2.doc



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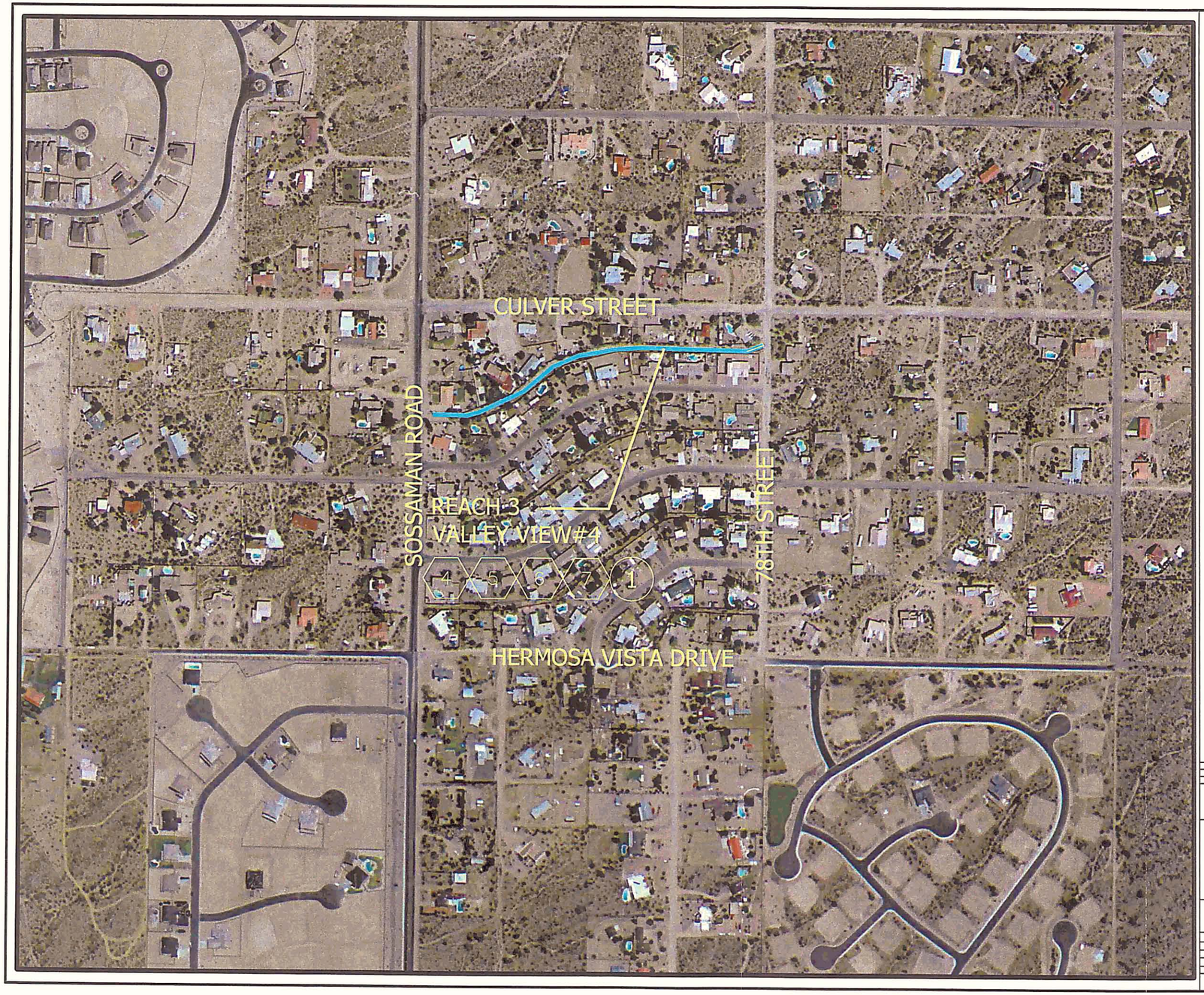


EXISTING CONDITIONS

- (4) EXCESSIVE TREE MAINTENANCE NEEDED.
- (5) PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS.
- (6) ILLEGAL DISCHARGES
- (7) ILLEGAL DUMPING

UTILITIES

- [1] WATER
- [2] SEWER
- [3] GAS
- [4] OVERHEAD ELECTRIC
- [5] UNDERGROUND ELECTRIC
- [6] TELEPHONE

EXISTING CHANNEL STRUCTURES

- (1) EARTH LINED CHANNEL
- (2) CONCRETE CHANNEL.
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 3

F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 8

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 \MC-Eng-On-Call\East Mesa Drains-CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Fig A-1516.1 D isting Facilities-Exhibit\exh-06_REACH 3.dwg, Layout1, 05/26/2004 04:06:49 PM, cmiranda

Broadway Channel

Location: Parallel with Broadway Road, upstream end connects to Reach 4.

Parcel Research: The Broadway Channel is within the right-of-way of Broadway Road. This portion of Broadway Road is a County road and the channel was built by MCDOT, see attached "as-built" drawings.

Tax Information: Within Broadway Road right-of-way.

Utility Research: Reach 4 has telephone lines both on the north and south sides of the drainage channel; there are no gas lines, water lines and no sewer lines in or near the channel according to the utility maps.

Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC, the modeled flow, Q is 836 cfs.

Hydraulic Analysis: The minimum allowable flow for this channel is 500 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (3): The Broadway Channel is connected to Reach 4 and has the same flows that overtop the banks of the channel. These flows were generated from a previous HEC-1 model for the East Mesa ADMP. Downstream of this reach, ADOT is planning on constructing a culvert, diverting flows to the proposed Santan East Channel.

Recommendation: Maintenance – (5): The Broadway Channel has the same maintenance problems as Reach 4. The channel has uplifted in many areas. Residents have improperly stabilized the banks of the channel. Residential trees are affecting channel capacity and private property and appear to be illegally dumping. This may be a violation of the County's Codes. Also, there is limited access into the channel and no equipment access. HDR recommends doing a temporary fix of the uplifted area and assessing any repairs after ADOT constructs their improvements. The temporary fix of the uplifted area would include saw cutting the uplifted area and placing an inlet in the channel where incoming flows were causing the lining to uplift and providing weep holes where required. Provide routine maintenance, inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit requirements and obtain an easement of maintenance access.

Opinion of Improvement Cost: $192,000

Reach 4: Cherokee Mobil Estates I & II
Location: North of Broadway, West Ellsworth Road
Parcel Research: Dedication (Cherokee Mobile Estates I): "Easements are dedicated for the purposes shown." Dedication (Cherokee Mobile Estates II): "Easements are dedicated for the purposes shown."
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 4 has telephone lines both on the north and south sides of the drainage channel; there are no gas lines, water lines and no sewer lines in or near the right-of-way.
Hydrologic Analysis: The HEC-1 provided by FCDMC, Q = 751 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 500 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (3): 100 year storm event overtops the banks; Downstream of this reach, ADOT is planning on constructing a culvert, diverting flows to the proposed Santan East Channel.
Recommendation: Maintenance – (4): Reach 4 has quite a few maintenance problems. After storm events, erosion repair is needed. Residents have improperly stabilized the banks of the channel. Residential trees are affecting channel capacity and private property. Residents appear to be illegally dumping and discharging gray water into the channel. This may be a violation of the County's Codes. Also, there is limited access into the channel and no equipment access. HDR recommends repair erosion damaged areas, routine maintenance, and inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit Requirements. Also, to mitigate illegal dumping, HDR recommends building an 8-foot high wall with an 18-inch screen wall to prevent residents dumping trash over the wall and obtain an easement of maintenance access.
Opinion of Improvement Cost: $253,270

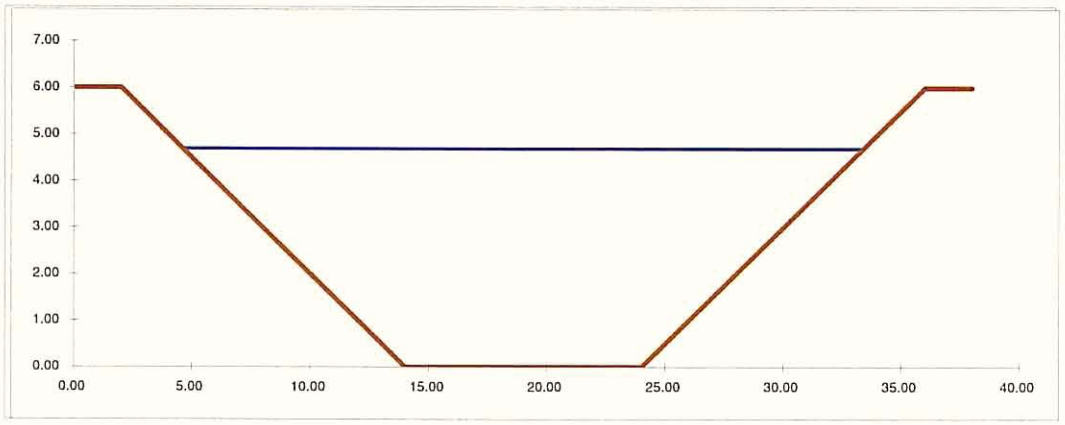
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 4	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 4



Design Discharge Q = 751 cfs
Channel Section 4
Right-of-Way Width 60 ft

Calculate Flow Depth

Estimated Flow Depth	4.69	ft
Channel Dept	6.00	ft
Estimated Q =	705.8	cfs
Average V =	7.77	ft/sec

Channel Parameters

Bottom Width =	10.00	ft
Side Slope =	2.00	:1
Manning n =	0.040	
Channel Slope	0.010	ft/ft
Flow Area =	90.89	ft^2
Wet Perimeter	30.97	ft
Hyd. Radius R	2.93	ft
Top Width =	28.76	ft
Hydraulic depth	3.16	ft
Froude No. =	0.77	

Calculate Freeboard Requirement

Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.32 ft

Available Freeboard
Channel Depth - Flow Depth = 1.31 ft Available Fb > Fb req'd

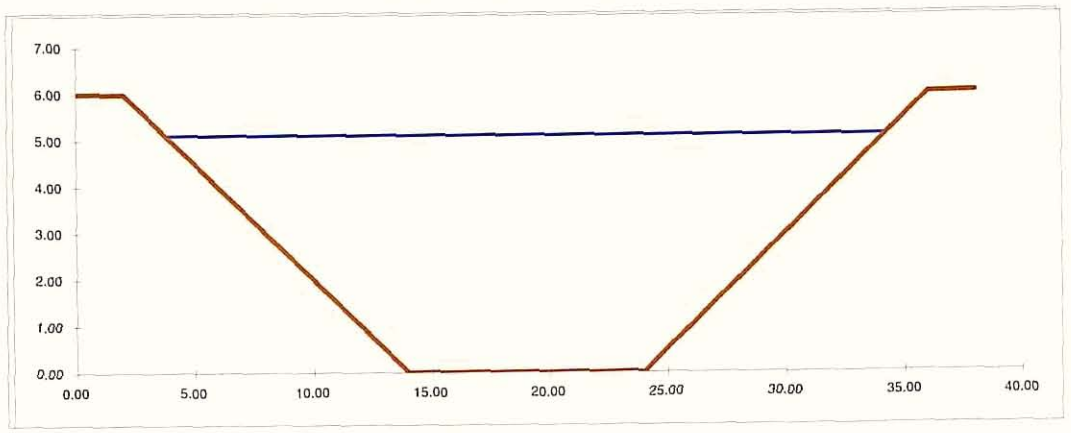
Job No. | No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Broadway Channel	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Broadway Channel



Design Discharge Q = 836 cfs
Channel Section Broadway
Right-of-Way Widtl n/a* ft **Part of County Road Right-of-Way*

Calculate Flow Depth
Estimated Flow Depth 5.10 ft
Channel Dept 6.00 ft

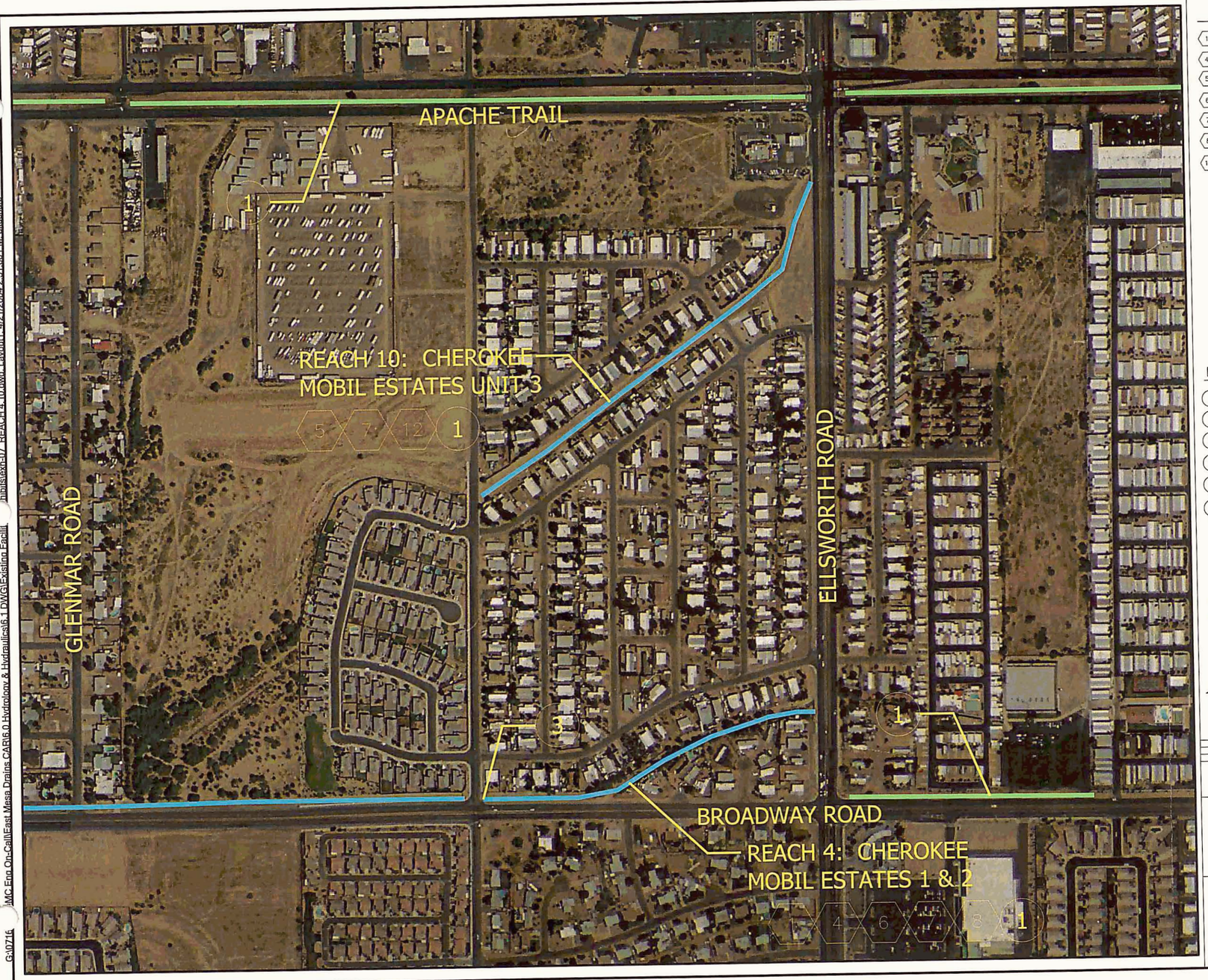
Estimated Q = 836.9 cfs
Average V = 8.12 ft/sec

Channel Parameters

Bottom Width =	10.00	ft
Side Slope =	2.00	:1
Manning n =	0.040	
Channel Slope	0.010	ft/ft
Flow Area =	103.02	ft^2
Wet Perimeter	32.81	ft
Hyd. Radius R	3.14	ft
Top Width =	30.40	ft
Hydraulic deptl	3.39	ft
Froude No. =	0.78	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.35 ft

Available Freeboard
Channel Depth - Flow Depth = 0.90 ft Available Fb > Fb req'd



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED
4. EXCESSIVE TREE MAINTENANCE NEEDED
5. PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS
6. ILLEGAL DISCHARGES
7. ILLEGAL DUMPING
8. DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE
12. UNDERCUTTING

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4, 10 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

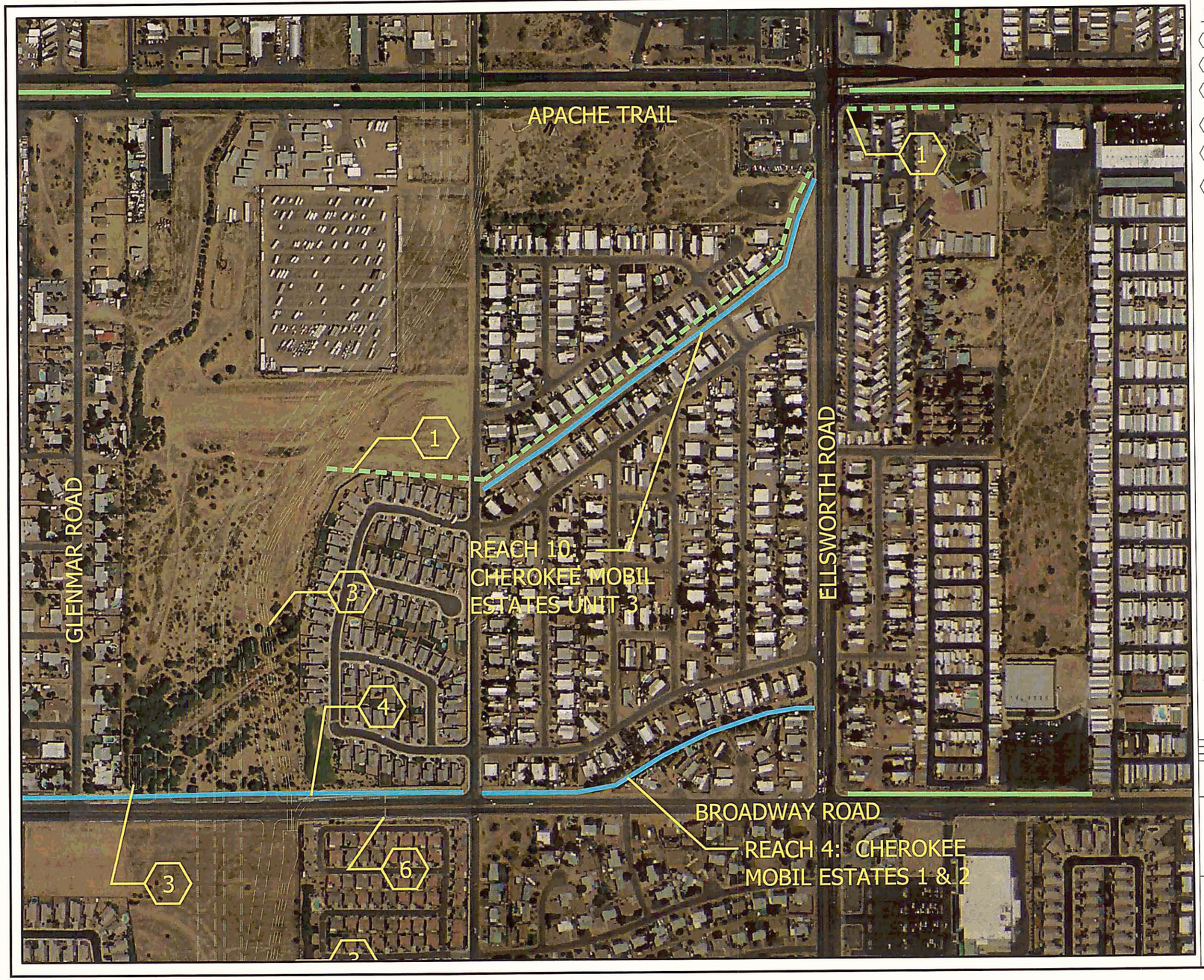
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07716 MC Fcn On-Call\East Mesa Drains CARG 0 Hydrology & Hydraulics\6.1 DWG\Existing Facilit hibits\exh-07 REACH 4 10.dwg, Layout1, 4/21/2004 2:31:06 PM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4, 10 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

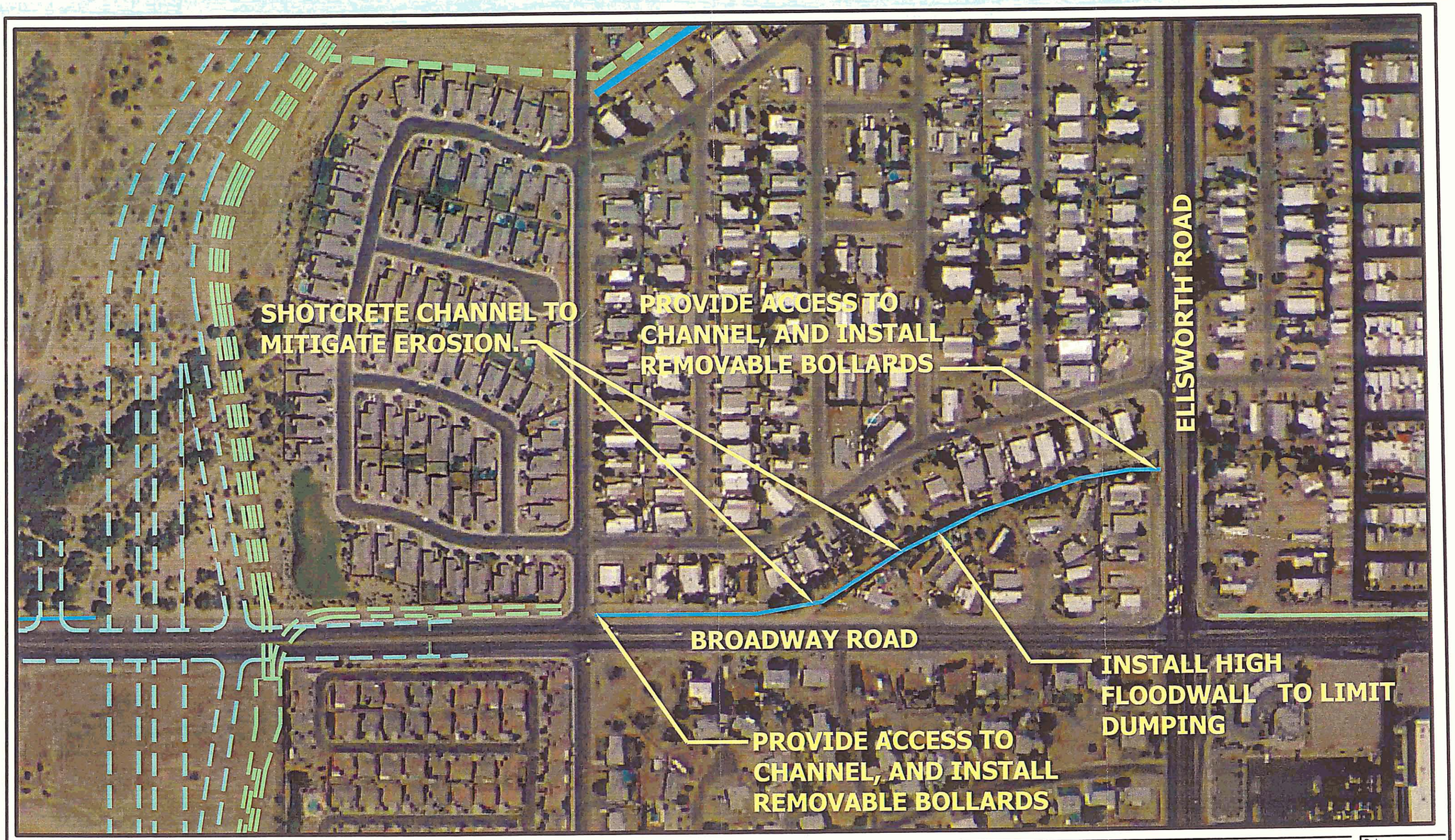
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC-Eng-On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Proposed Faci xhibits\exh-15_REACH 4,10.dwg,-Layout1, 4/21/2004 4:12:56 PM, akuchars



200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR

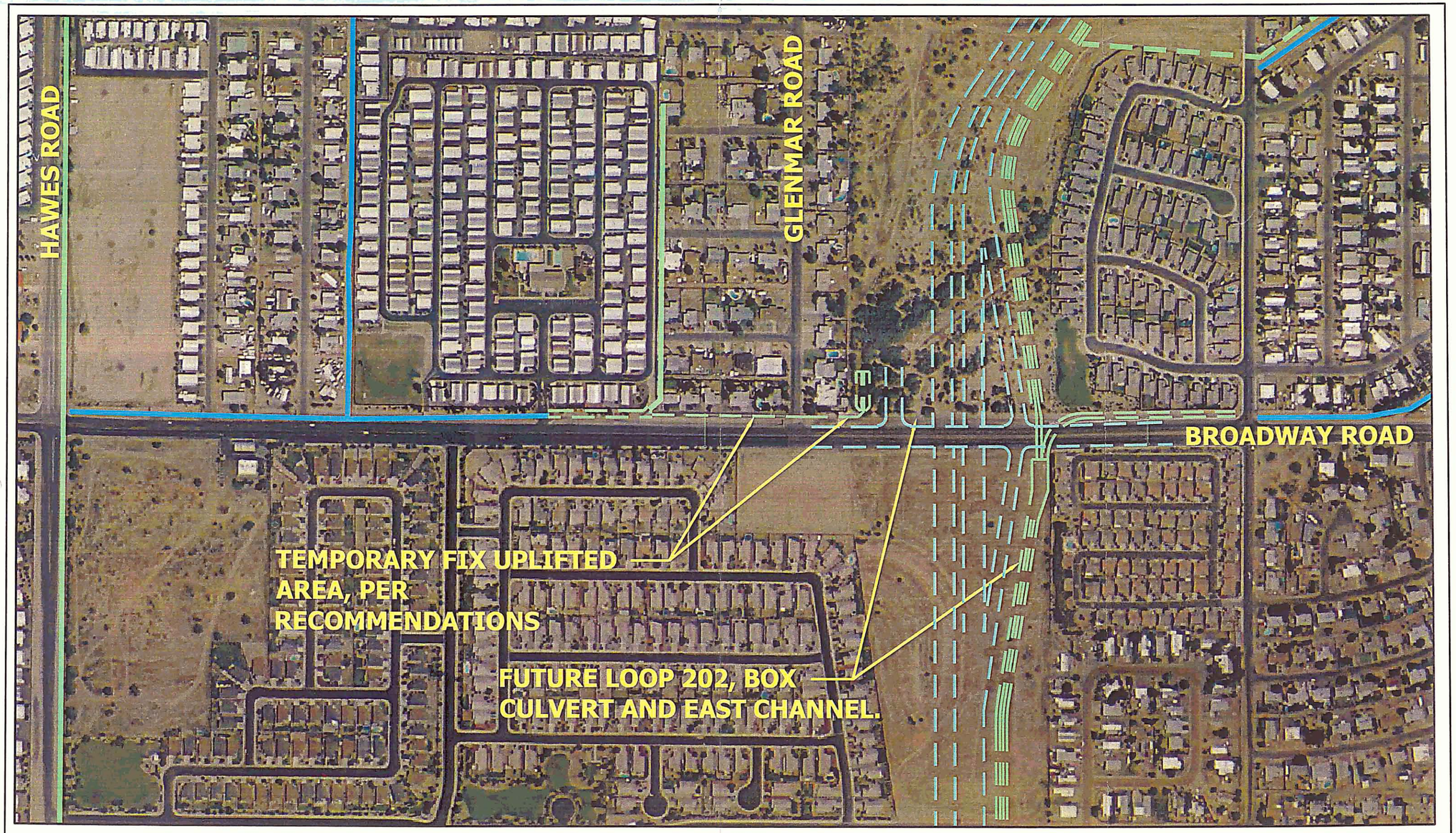
HDR Engineering, Inc.

REACH 4
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1. Recommendations\REACH 4.dwg, Layout2, 05/04/2004 03:14:23 PM, cmiranda



LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

300 0' 300 600

SCALE: 1"= 300 FEET
FLIGHT DATE: AUGUST 2001

HDR Engineering, Inc.

BROADWAY CHANNEL
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\BROADWAY.dwg, Layout2, 05/04/2004 03:18:20 PM, cmiranda

Reach 4 - upstream of Broadway Channel @ Ellsworth Road

PT2095 LOOKING DOWNSTREAM

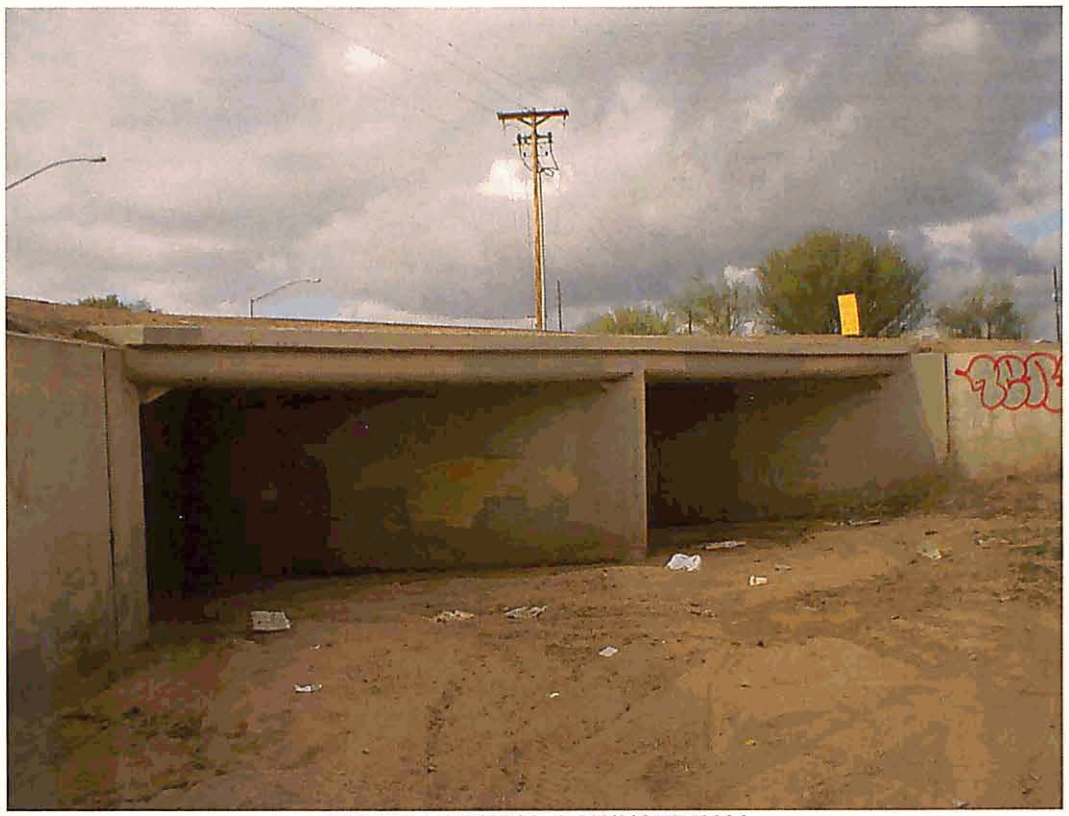
PT2095 LOOKING UPSTREAM

Reach 4 & Broadway Channel - Survey Points 2000 – 2113 (Area 2)

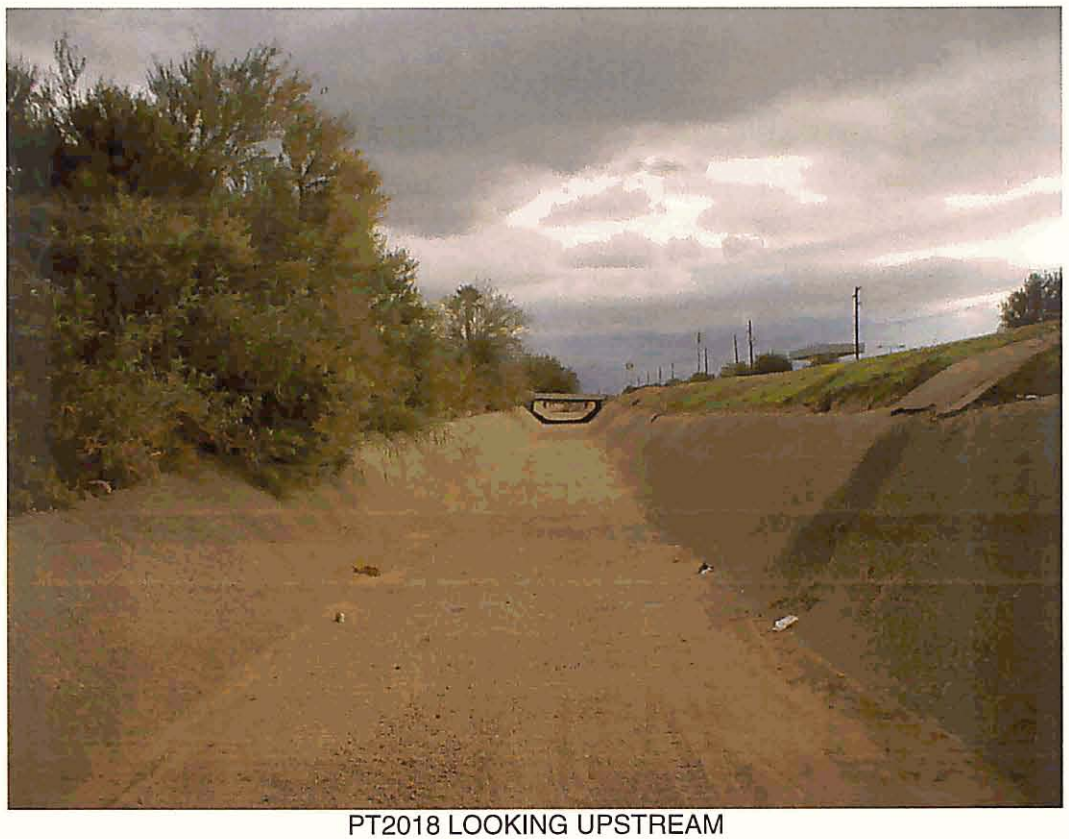
PT2088 LOOKING DOWNSTREAM

PT2088 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)



PT2018 LOOKING DOWNSTREAM



PT2018 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2025 LOOKING DOWNSTREAM

PT2025 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2032 LOOKING DOWNSTREAM

PT2032 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2039 LOOKING DOWNSTREAM

PT2032 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2039 LOOKING DOWNSTREAM

PT2039 LOOKING UPSTREM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2046 LOOKING DOWNSTREAM

PT2046 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2053 LOOKING DOWNSTREAM

PT2053 LOOKING UPSTREAM

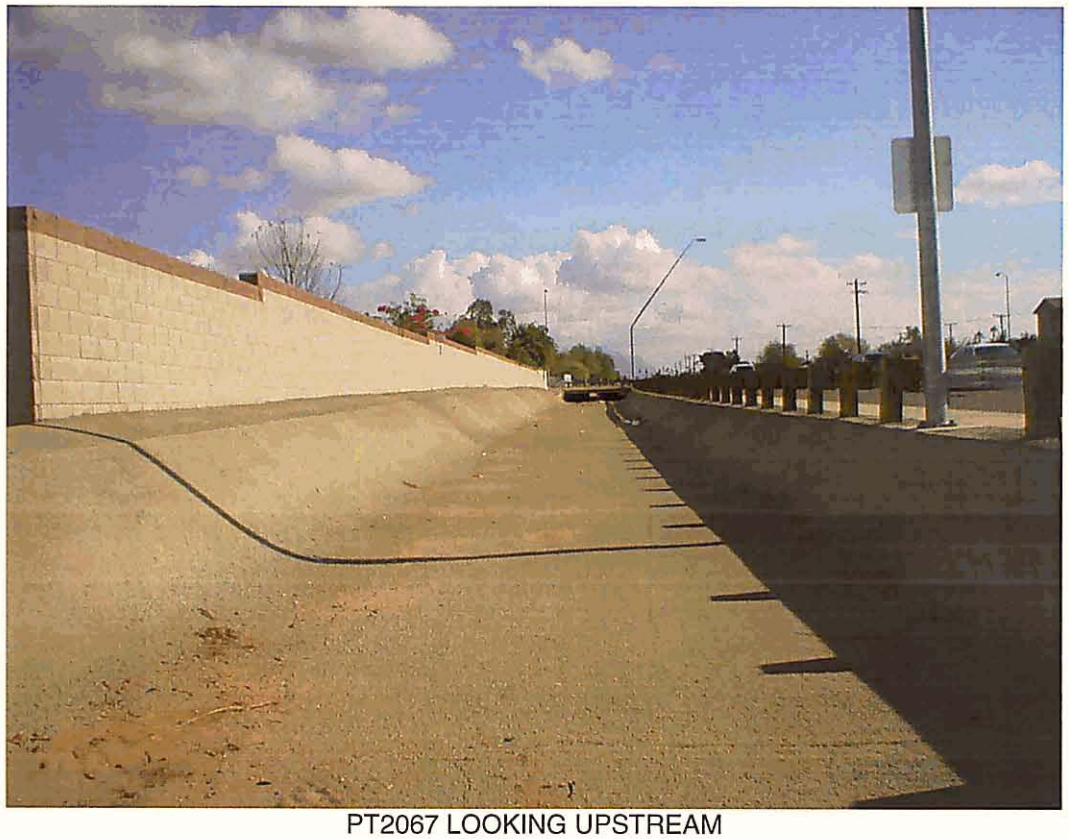
Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2060 LOOKING DOWNSTREAM

PT2060 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2067 LOOKING DOWNSTREAM



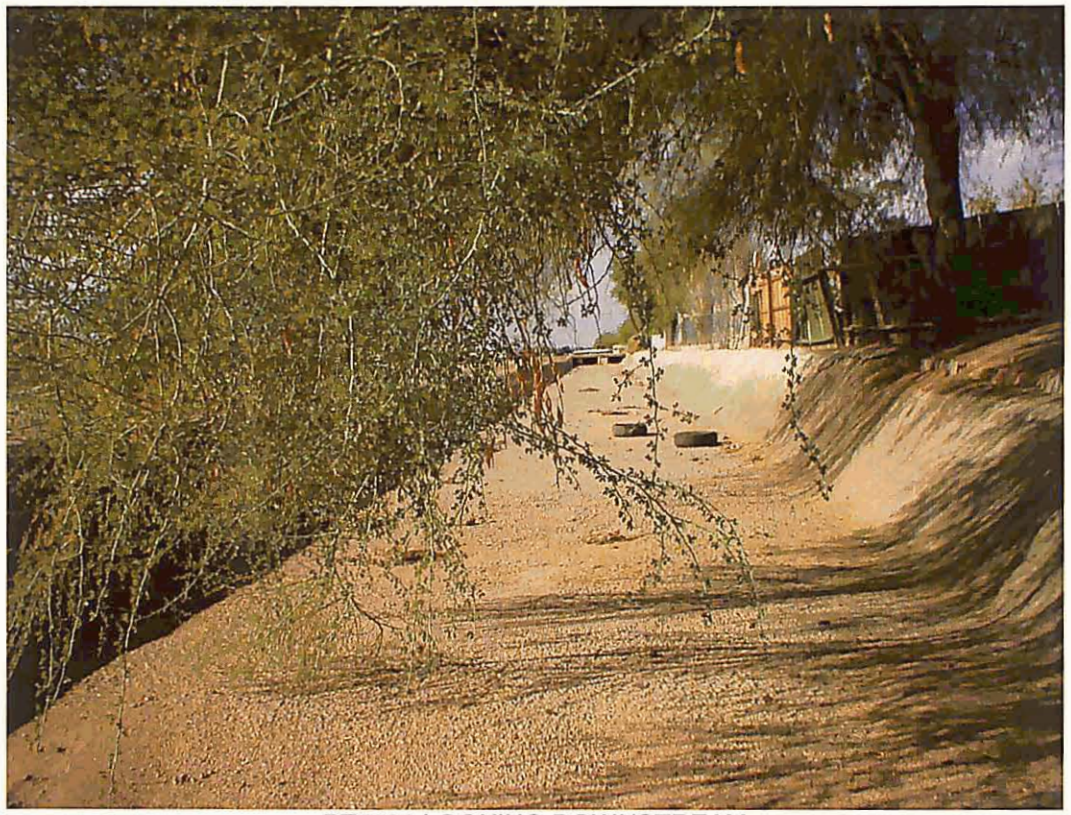
PT2067 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)

PT2074 LOOKING DOWNSTREAM

PT2074 LOOKING UPSTREAM

Broadway Channel - Survey Points 2000 – 2113 (Area 2)



PT2081 LOOKING DOWNSTREAM

PT2081 LOOKING UPSTREAM

58-11

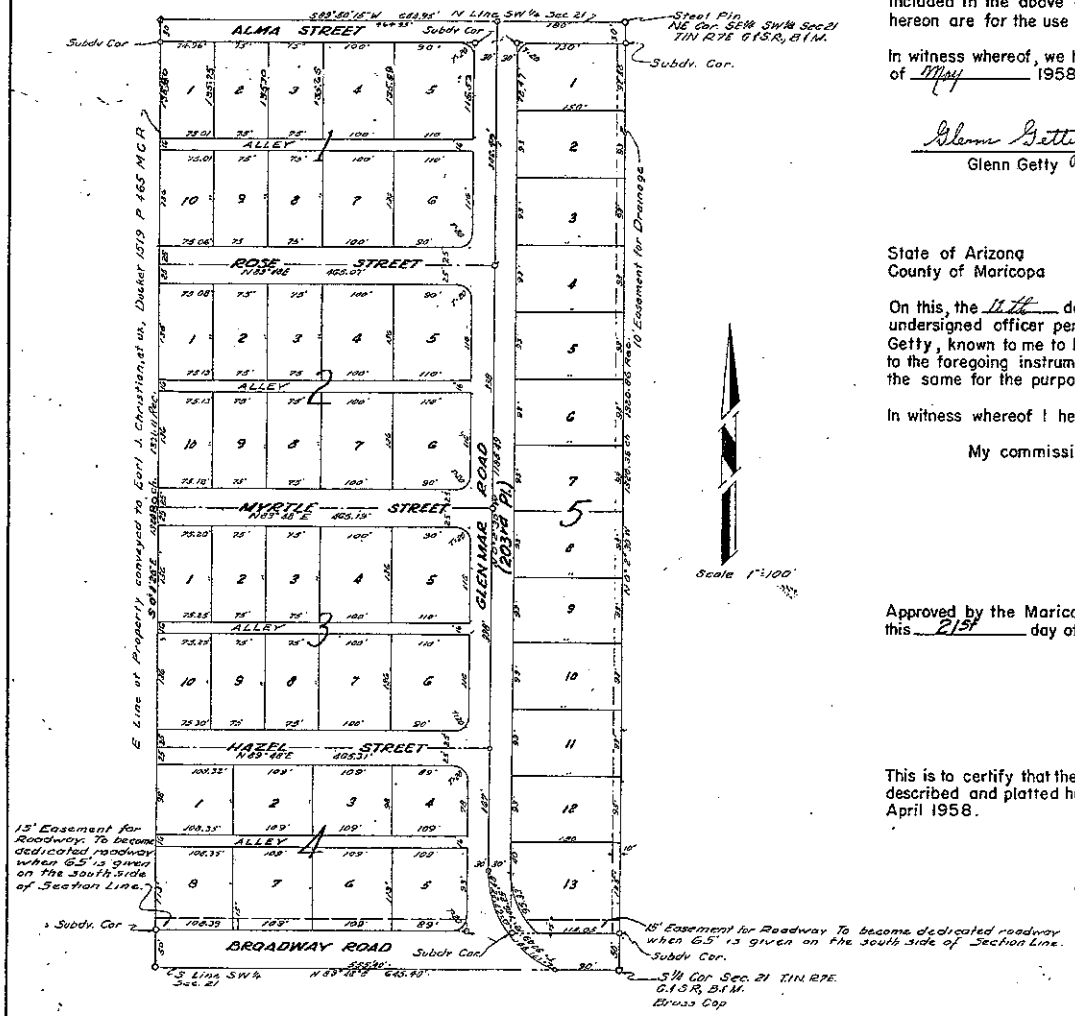
GLENMAR PLAT I
AMENDED
A SUBDIVISION OF A PORTION OF THE SE 1/4 SW 1/4 SEC. 21 T.1N., R.7E., G. & S.R.B. & M.

78865

Date of last current _____
Date of _____
Date _____
Time _____ min. _____ secs. Fraded _____
Fee _____ Reps time _____

STATE OF ARIZ. }
County of Maric } ss

I hereby certify that the within instrument was filed and recorded at request of Glenn Getty
JUN 9 1958 / 11:00
in Docket Bk 77 maps
on page 35
Witness my hand and official seal the day and year aforesaid.
H. C. "Kelly" Moore
By Edward W. Carr
County Recorder
Deputy Recorder



State of Arizona
County of Maricopa

77-35

Know all men by these presents:
That Glenn Getty and Martha Getty, husband and wife have subdivided under the name of GLENMAR PLAT I AMENDED the following described properties:
Beginning at a point 210' W and 1350.93' S of the center of Sec.21, T.1N., R.7E., G.&S.R.B.&M., Maricopa County, Arizona; thence S 1240.93'; thence W 435.39' to a point on the E line of property conveyed to Earl J. Christian, et ux, Docket 1519, page 465; thence N along said E line 1241.11' thence E 434.96' m or l to p.o.b. and commencing for a tie at the center of said Sec.21 thence S along the N-S center line 1350.86' to p.o.b., thence W 150'; thence S 1240.91, thence E 150' to said N-S mid section line; thence N 1240.86' m or l along said mid section to p.o.b., which includes the property previously recorded as GLENMAR PLAT I Bk.73 P.30 M.C.R. and hereby publishes this plat as and for the plat of said GLENMAR PLAT I AMENDED and hereby declares that said plat sets forth the location and gives the dimensions of the lots, blocks, streets and alleys constituting same and that each lot and block shall be known by the number and each street by the name given to each respectively on said plat and we hereby dedicate to the public for use as such the streets and alleys as shown on said plat and included in the above described premises. The easements shown hereon are for the use shown.

In witness whereof, we have hereunto set our hands this 12th day of May 1958.

Glenn Getty
Glenn Getty

Martha Getty
Martha Getty

State of Arizona
County of Maricopa

On this, the 12th day of May 1958, before me the undersigned officer personally appeared Glenn Getty and Martha Getty, known to me to be the persons whose names are subscribed to the foregoing instrument, and acknowledged that they executed the same for the purpose therein contained.

In witness whereof I hereunto set my hand and official seal.

My commission expires My Commission Expires Aug. 15, 1960

R. N. Pearson
Notary Public

Approved by the Maricopa County Planning and Zoning Commission this 21st day of May 1958.

D. W. Hutton
Director

This is to certify that the survey and subdivision of the premises described and platted hereon were made under my direction during April 1958.

Albert J. Wolf, Registered Land Surveyor

REGISTERED LAND SURVEYOR CERTIFICATE EXPIRES ALBERT J. WOLF DEC. 31, 1958 ARIZONA

77-35

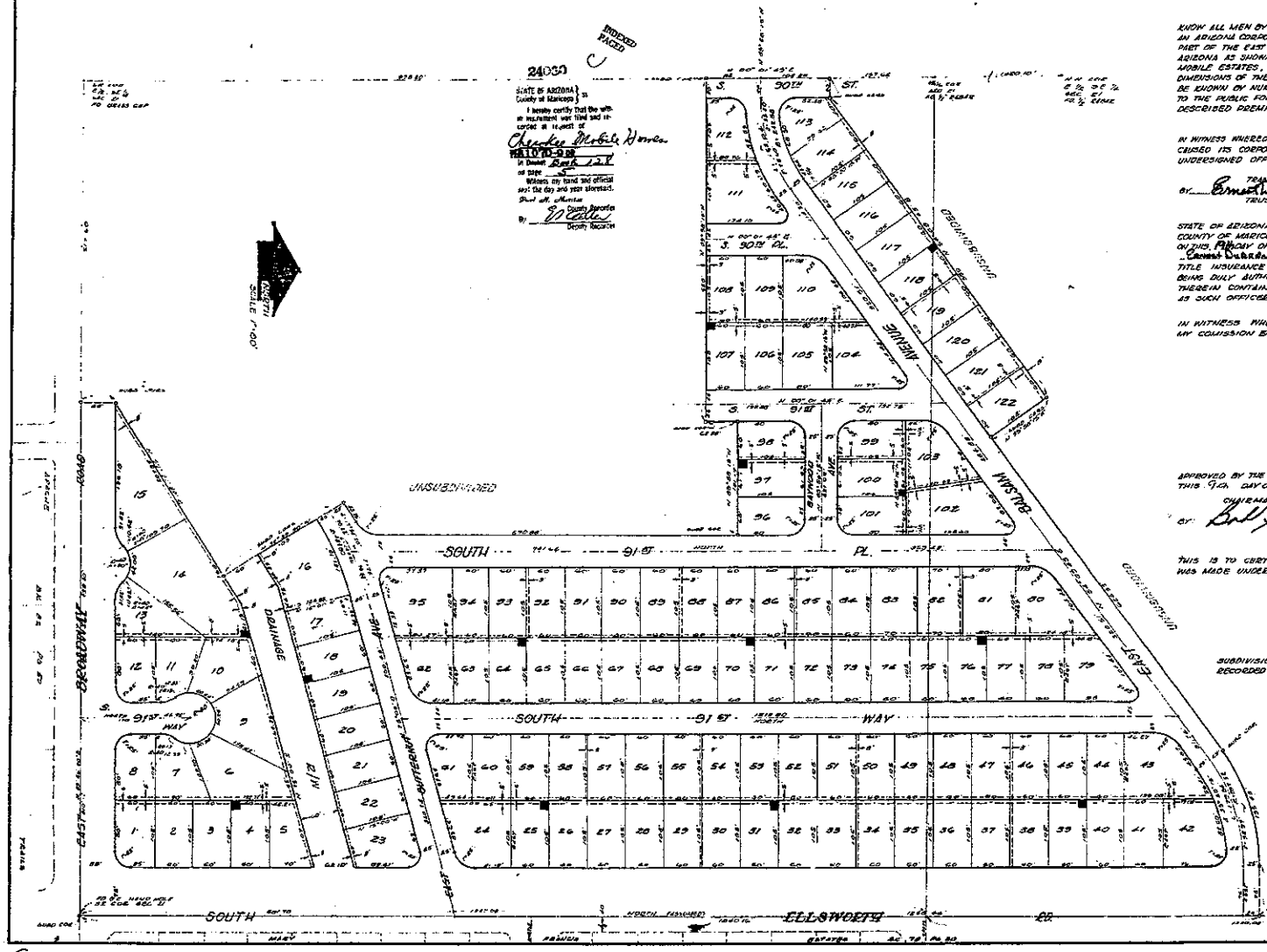
77-35

S-821

CHEROKEE MOBILE ESTATES

A SUBDIVISION OF PART OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 21, T.1 N. R.7 E. G&S.R. B&M., MARICOPA COUNTY, ARIZONA

128-5



- DEDICATION -

KNOW ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF CHEROKEE MOBILE ESTATES, PART OF THE EAST ½ OF THE SOUTHEAST ¼ OF SECTION 21, T1N R7E, G&S.R. B&M., MARICOPA COUNTY, ARIZONA AS SHOWN PLATTED HEREON AND HEREBY PUBLISHES AS AND FOR THE PLAT OF SAID CHEROKEE MOBILE ESTATES, AND HERE BY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS AND STREETS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH, THE STREETS AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA AS TRUSTEE, HAS CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THERE UNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA - TRUSTEE.
BY: Ernest Barrera
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS 9th DAY OF January 1970 BEFORE ME THE UNDERSIGNED OFFICER PERSONALLY APPEARED Ernest Barrera WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL
MY COMISSION EXPIRES May 14, 1972. Mary H. Ernest
NOTARY PUBLIC

- APPROVAL -

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 9th DAY OF Feb. 1970
CHAIRMAN BY: Bill Stark ATTEST: CLERK Robert Wooldridge

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF JULY 1969.

Arnold W. Harris
ARNOLD W. HARRIS, P.E.

SUBDIVISION DEED RESTRICTIONS RECORDED IN BOOK 195 PAGE 576

DEVELOPER: ROBERT L. BYLER
10540 E. APACHE TRAIL
APACHE JUNCTION, ARIZONA

S 16 69
T 1 N R 7 E

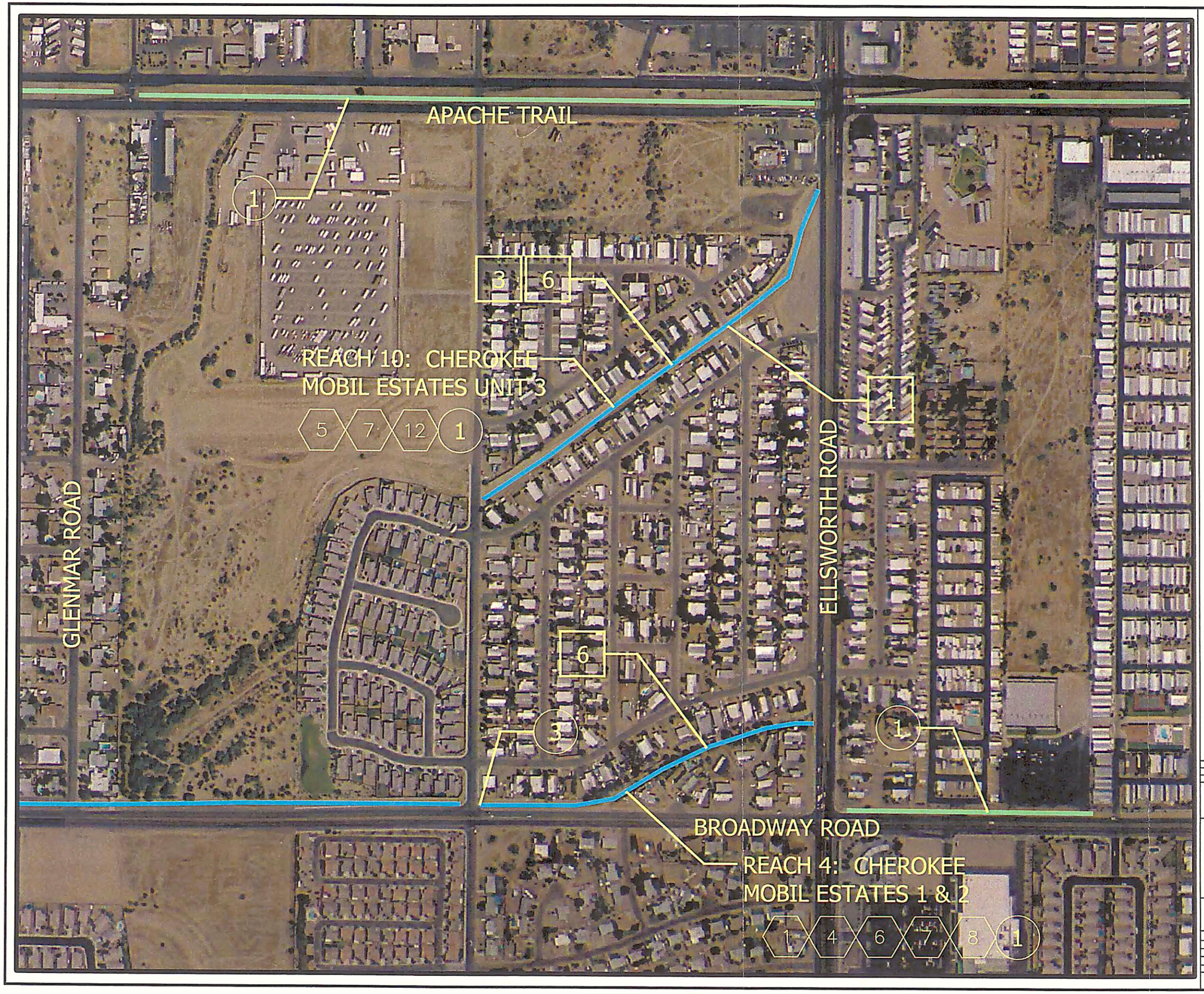
RECEIVED
JAN 21 1970
MARICOPA COUNTY PLANNING AND ZONING COMMISSION

- TYPICAL EASEMENT -

NO WALL OR OTHER OBSTRUCTION TO BE BUILT ACROSS EASEMENT SIDE OF 7'x7' TRANSFORMER EASEMENT.

128-5

128-5



EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED.
- (4) EXCESSIVE TREE MAINTENANCE NEEDED.
- (5) PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS.
- (6) ILLEGAL DISCHARGES
- (7) ILLEGAL DUMPING
- (8) DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE.
- (12) UNDERCUTTING.

UTILITIES

- [1] WATER
- [2] SEWER
- [3] GAS
- [4] OVERHEAD ELECTRIC
- [5] UNDERGROUND ELECTRIC
- [6] TELEPHONE

EXISTING CHANNEL STRUCTURES

- (1) EARTH LINED CHANNEL
- (2) CONCRETE CHANNEL
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4 & 10
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0714f MC-Eng-On-Call\East-Mesa-Drains-CAR\6.0-Hydrology-&-Hydraulics\6.1-DWG\Ele-A-1516-1-C xisting-Facilities-Exhibits\exh-07_REACH-4-10.dwg,-Layout1,-05/26/2004-04:09:47-PM,-cmirac

133-50

CHEROKEE MOBILE ESTATES UNIT TWO

A SUBDIVISION OF PART OF THE EAST HALF OF THE SOUTHEAST QUARTER OF SECTION 21, T.1 N. R.7 E. G&S.R. B&M., MARICOPA COUNTY, ARIZONA.

133-50

- DEDICATION -

KNOW ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF CHEROKEE MOBILE ESTATES UNIT 2, PART OF THE EAST ½ OF THE SOUTHEAST ¼ OF SECTION 21, T.1 N. R. 7 E., G&S.R. B&M., MARICOPA COUNTY, ARIZONA AS SHOWN PLATTED HEREON AND HEREBY PUBLISHES IN AND FOR THE PLAT OF SAID CHEROKEE MOBILE ESTATES UNIT 2, AND HERE BY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS AND STREETS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH, THE STREETS AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THERE UNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA – TRUSTEE.

BY Maurice K. Lind
ASST TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS 22 DAY OF Sept. 1970 BEFORE ME THE UNDERSIGNED OFFICER, PERSONALLY APPEARED Maurice K. Lind WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL
MY COMMISSION EXPIRES May 14, 1973 Mary D. Adams
NOTARY PUBLIC

- APPROVAL -

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 9th DAY OF November 1970

CHAIRMAN
BY Ball Stack ATTEST: CLERK Rhe Wendell

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF JANUARY 1970

PLAT PREPARED SEPT. 1970

Arnold W. Harris
ARNOLD W. HARRIS, R.E. #3548

SUBDIVISION DEED RESTRICTIONS RECORDED IN BOOK 839A PAGE 374-376

DEVELOPER
MOHAWK CREDIT CORP
9149 E. APACHE TRAIL
MESA, ARIZONA 85207
964-2872 & 964-4171

TRUSTED

STATE OF ARIZONA
County of Maricopa } ss
I hereby certify that the within instrument was filed and recorded at request of
Mohawk Credit Corp
NOV 1 0 '70-8 13
in Docket Book 133
on page 50
Witness my hand and official seal the day and year aforesaid.
Paul W. Houston
County Recorder
By Alice Esther

- TYPICAL EASEMENT -

NO WALL OR OTHER OBSTRUCTION TO BE BUILT ACROSS EASEMENT SIDE OF 7'x7' TRANSFORMER EASEMENT

RECEIVED
OCT 15 1970
MARICOPA COUNTY PLANNING AND ZONING COMMISSION
BY

133-50

133-50

S 16-69
F 1101

FINAL PLAT OF BROADWAY MANOR

BEING THE E 1/2 OF THE SW 1/4 OF THE SE 1/4 OF SECTION 21, T. 1 N., R. 7 E., G. & S. R. B. & M., MARICOPA COUNTY, ARIZONA

BOOK 449 PAGE 34
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0629217
09/15/97 10:43

DEDICATION

STATE OF ARIZONA } SS
COUNTY OF MARICOPA }

KNOW ALL MEN BY THESE PRESENTS:

THAT MARWEST ENTERPRISES, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY, HAS SUBDIVIDED UNDER THE NAME OF "BROADWAY MANOR", A SUBDIVISION LOCATED IN THE EAST ONE HALF OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 21, TOWNSHIP 1 NORTH, RANGE 7 EAST, OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA AS SHOWN HEREON AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID BROADWAY MANOR AND HEREBY DECLARES THAT THIS PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREET, TRACTS, AND EASEMENTS CONSTITUTING SAME AND THAT EACH LOT, STREET, AND TRACT SHALL BE KNOWN BY THE NUMBER, NAME OR LETTER GIVEN EACH RESPECTIVELY ON THIS PLAT AND THAT MARWEST ENTERPRISES, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY, HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH THE STREETS AND PROVIDES THE EASEMENTS FOR THE PURPOSES SHOWN ON SAID PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES.

TRACT A IS FOR DRAINAGE PURPOSES, TRACT B IS FOR RETENTION PURPOSES. TRACTS C & D ARE FOR LANDSCAPING PURPOSES. ALL TRACTS ARE TO BE PROVIDED TO AND MAINTAINED BY A HOMEOWNERS ASSOCIATION.

IN WITNESS WHEREOF, MARWEST ENTERPRISES, L.L.C., AS OWNER HAS HEREUNTO CAUSED ITS NAME TO BE APPIXED AND THE SAME TO BE ATTESTED BY THE SIGNATURE OF THE UNDERSIGNED MANAGING MEMBER THEREUNTO DULY AUTHORIZED, THIS THE 5TH DAY OF AUGUST 1997

BY: MARWEST ENTERPRISES, L.L.C.,

BY: _____
PETER MARTENS, MANAGING MEMBER

MARWEST ENTERPRISES
4801 E. GREENWAY ROAD
SCOTTSDALE, ARIZONA 85254

ACKNOWLEDGMENT

STATE OF ARIZONA } SS
COUNTY OF MARICOPA }

ON THIS THE 5TH DAY OF AUGUST, 1997, BEFORE ME PETER MARTENS APPEARED WHO ACKNOWLEDGED HIMSELF TO BE MANAGING MEMBER OF MARWEST ENTERPRISES, L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY, AND ACKNOWLEDGED THAT HE AS MANAGING MEMBER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES CONTAINED THEREIN BY SIGNING THE NAME OF THE COMPANY.

IN WITNESS WHEREOF:

I HEREUNTO SET MY HAND AND OFFICIAL SEAL.

BY: _____ 11/20/99
NOTARY PUBLIC MY COMMISSION EXPIRES

CERTIFICATION OF COUNTY ENGINEER

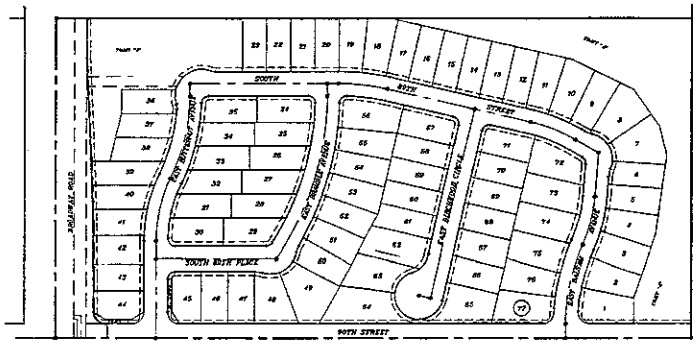
SATISFACTORY ASSURANCE IN THE FORM OF AN ASSURANCE FOR SUBDIVISION IMPROVEMENTS FROM FIRST SECURITY BANK, N.A. IN THE AMOUNT OF $1,250,000.00 HAS BEEN PROVIDED TO GUARANTEE PAVEMENT, SEWER, DRAINAGE AND WATER SERVICES IN THE SUBDIVISION. ELECTRIC SERVICE HAS BEEN ASSURED BY ARIZONA PUBLIC SERVICE.

_____ AUG. 15, 1997
FOR ASSISTANT COUNTY ENGINEER DATE

CERTIFICATE OF COUNTY TREASURER

I, THE UNDERSIGNED, AS DEPUTY COUNTY TREASURER, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE THE RECORDS OF THIS OFFICE REFLECT THAT THERE ARE NO TAX LIENS ON ANY OF THE PARCELS COMPRISING THE PLAT, AS LISTED IN THE ASSESSOR'S CERTIFICATION WITH THE FOLLOWING EXCEPTIONS: 1997 TAXES ARE A LIEN NOT YET DUE AND PAYABLE.

_____ 8/18/97
DEPUTY COUNTY TREASURER DATE

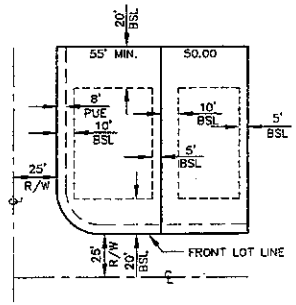


KEY MAP
N.T.S.

LEGEND

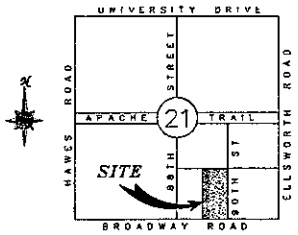
— — —	EASEMENT LINE
———	RIGHT OF WAY LINE
———	CENTERLINE
⊠	INDICATES FOUND MARICOPA COUNTY BRASS CAP IN HAND HOLE UNLESS OTHERWISE NOTED
•	INDICATES FOUND MONUMENT AS NOTED
◡	SET MAG 120-1 TYPE C MONUMENT
⊙	SET MAG 120-1 TYPE B MONUMENT
PUE	PUBLIC UTILITY EASEMENT
VNAE	VEHICULAR NON-ACCESS EASEMENT
(R)	INDICATES RADIAL BEARING LINE
(NR)	INDICATES NON-RADIAL BEARING LINE

ALL INDIVIDUAL LOT PROPERTY CORNERS SHALL BE SET WITH 1/2" REBAR



TYPICAL LOT SETBACKS
N.T.S.

FRONT.....20' SIDE....5' & 10' (15' TOTAL)
REAR .....20' STREET SIDE....10'



VICINITY MAP
N.T.S.

NOTES:

1. ALL PROVISIONS OF THE MARICOPA COUNTY ZONING ORDINANCE SECTION 2318 CONCERNING OUTDOOR STREET LIGHTING WILL BE ADHERED TO WITHIN THIS SUBDIVISION.
2. CONSTRUCTION WITHIN EASEMENTS EXCEPT BY PUBLIC AGENCIES AND UTILITY COMPANIES SHALL BE LIMITED TO UTILITIES AND WOOD, WIRE OR REMOVABLE SECTION TYPE FENCING.
3. ALL UTILITIES SHALL BE INSTALLED UNDERGROUND.
4. ALL ELECTRIC AND COMMUNICATION LINES TO BE CONSTRUCTED UNDERGROUND AS REQUIRED BY THE ARIZONA CORPORATION COMMISSION.
5. NO STRUCTURES SHALL BE CONSTRUCTED IN OR ACROSS, NOR SHALL OTHER IMPROVEMENTS OR ALTERATIONS BE MADE TO THE DRAINAGE TRACTS AND FACILITIES THAT ARE A PART OF THIS SUBDIVISION WITHOUT WRITTEN AUTHORIZATION BY MARICOPA COUNTY.
6. THIS DEVELOPMENT IS LOCATED WITHIN THE CITY OF MESA WATER SERVICE AREA AND HAS BEEN DESIGNATED AS HAVING AN ASSURED WATER SUPPLY.

APPROVALS

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY, ARIZONA, THIS 10 DAY OF Sept. 1997.

BY: _____ CHAIRMAN ATTEST: _____ CLERK

CERTIFICATE OF COUNTY ASSESSOR

I, THE UNDERSIGNED, AS DEPUTY ASSESSOR, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE THE RECORDS OF THIS OFFICE REFLECT THAT MARWEST ENTERPRISES L.L.C., AN ARIZONA LIMITED LIABILITY COMPANY, IS THE OWNER OF THE PROPERTY AS SHOWN ON THIS PLAT AND MORE PARTICULARLY DESCRIBED AS ASSESSOR'S NUMBER: 218-21-006A

BASIS OF BEARINGS

BEING THE SOUTH LINE OF THE SOUTHWEST QUARTER OF THE SOUTHEAST QUARTER OF SECTION 21, T. 1 N., R. 7 E., G. & S. R. B. & M., MARICOPA COUNTY, ARIZONA (A.K.A. THE CENTERLINE OF BROADWAY ROAD)

SAID LINE BEARS : N. 90°00'00" W.

PER THE ASSUMED BEARING AS SHOWN ON AN "ALTA\ACSM SURVEY", PREPARED BY GREGORY L. ALLEN, R.L.S. 16097, DATED 2/10/97.

SURVEYOR'S STATEMENT

THIS IS TO CERTIFY THAT (1) THE SURVEY AND SUBDIVISION OF THE PREMISES DESCRIBED AND PLATTED HEREON WERE MADE UNDER MY DIRECTION DURING THE MONTH OF FEBRUARY, 1996, AND (2) THIS PLAT IS CORRECT AND ACCURATE, (3) THE MONUMENT OR MONUMENTS SHOWN HEREON HAVE BEEN LOCATED AS DESCRIBED, AND (4) ALL LOT CORNERS HAVE BEEN/OR WILL BE PERMANANTLY SET BY COMPLETION OF CONSTRUCTION.

_____
PETER M. ROSS, RLS
REGISTRATION #26831

SURVEYOR'S SEAL

No.	REVISIONS	Date	Init.	Appr.	Date

POST, BUCKLEY, SCHUH & JERNIGAN
CIVIL ENGINEERS • PLANNERS • SURVEYORS • CONSTRUCTION SERVICES

FINAL PLAT OF BROADWAY MANOR

Job Number	Drawn by	Scale
54094	MT	1"=60'
Sheet Number	Checked by	File No.
1 OF 2	PMR	94FP-CVR
	Date 4/97	

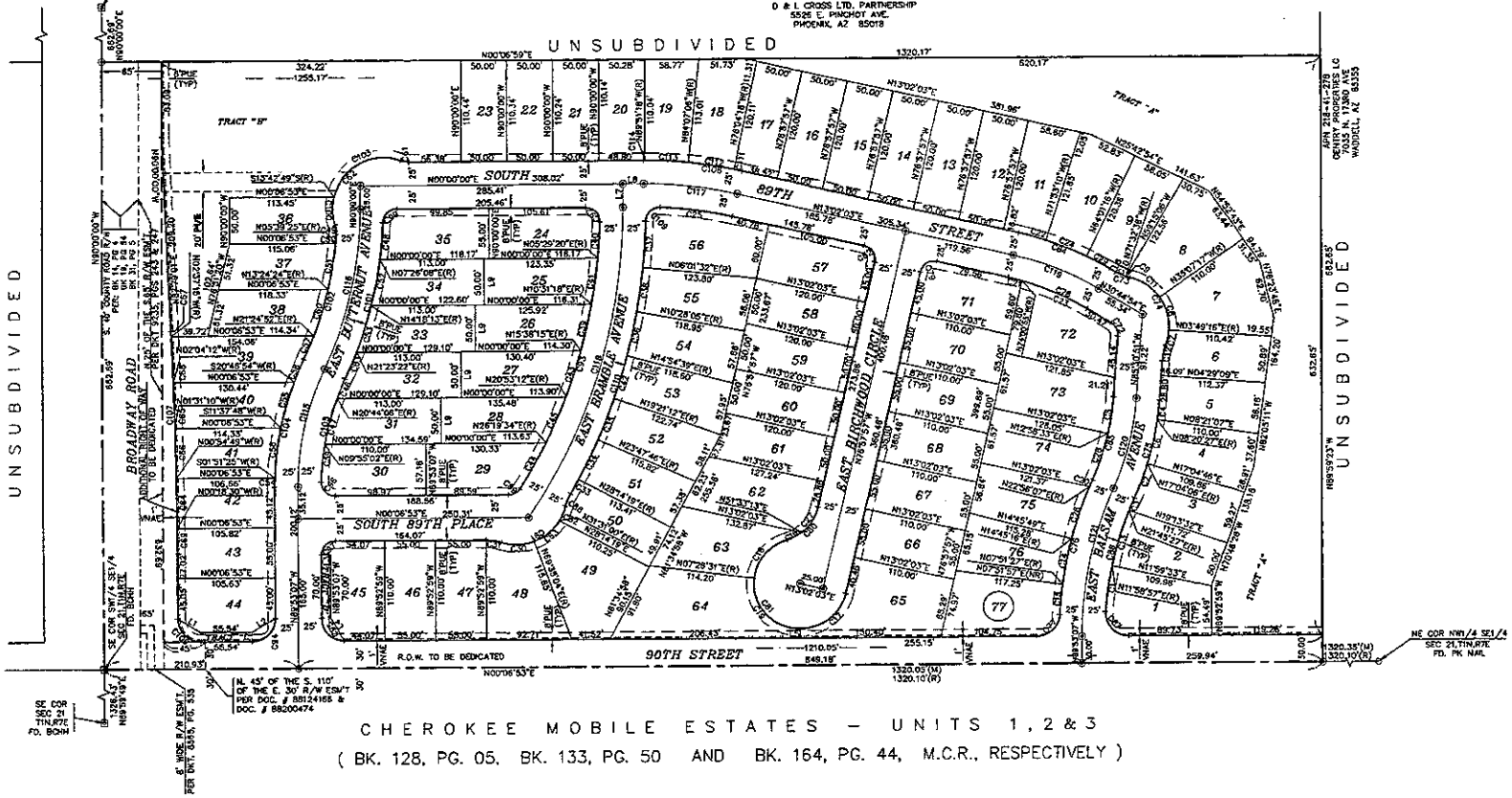
449-34

FINAL PLAT OF BROADWAY MANOR

BEING THE E 1/2 OF THE SW 1/4 OF THE SE 1/4 OF SECTION 21, T. 1 N., R. 7 E., G. & S. R. B. & M., MARICOPA COUNTY, ARIZONA

BOOK 449 PAGE 34
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER
HELEN PURCELL
97-0629217
09/15/97 10:43

GRAPHIC SCALE
(IN FEET)
1 inch = 60 ft.



CHEROKEE MOBILE ESTATES – UNITS 1, 2 & 3

(BK. 128, PG. 05, BK. 133, PG. 50 AND BK. 164, PG. 44, M.C.R., RESPECTIVELY)

CURVE TABLE

CURVE	RADIUS	LENGTH	TANGENT	DELTA
C1	375.00'	30.82'	25.47'	07°46'18"
C2	325.00'	39.80'	19.97'	07°01'57"
C3	375.00'	19.94'	7.67'	02°20'37"
C4	325.00'	21.87'	10.94'	03°51'18"
C5	375.00'	40.72'	20.41'	06°29'21"
C6	325.00'	49.51'	24.80'	08°43'39"
C7	55.00'	17.28'	8.71'	18°00'22"
C8	55.00'	37.38'	19.46'	38°56'13"
C9	55.00'	4.85'	2.42'	05°02'51"
C10	55.00'	11.80'	5.92'	12°17'32"
C11	55.00'	39.81'	20.82'	41°28'18"
C12	55.00'	18.65'	9.39'	17°20'29"
C13	375.00'	63.98'	32.07'	09°46'30"
C14	425.00'	50.10'	25.61'	06°53'50"
C15	425.00'	33.81'	16.91'	04°33'28"
C16	50.00'	18.75'	9.48'	21°28'49"
C17	50.00'	67.27'	38.83'	77°04'40"
C18	50.00'	57.24'	32.22'	65°36'51"
C19	50.00'	84.93'	56.84'	97°19'38"
C20	425.00'	8.65'	4.32'	01°09'57"
C21	300.00'	15.45'	7.73'	02°57'02"
C22	350.00'	31.02'	15.53'	05°04'48"
C23	300.00'	27.30'	13.67'	05°12'47"
C24	350.00'	48.04'	24.06'	07°51'54"
C25	425.00'	78.84'	39.53'	10°37'44"
C26	425.00'	60.68'	30.39'	08°10'51"
C27	50.00'	33.61'	17.47'	38°51'11"
C28	275.00'	53.40'	26.78'	11°07'31"
C29	350.00'	29.13'	14.58'	04°46'09"
C30	55.00'	36.45'	18.87'	37°52'19"
C31	55.00'	16.85'	8.39'	17°20'29"
C32	50.00'	16.82'	8.47'	17°31'11"
C33	625.00'	18.11'	9.06'	01°39'37"
C34	625.00'	48.46'	24.24'	04°26'34"
C35	625.00'	48.46'	24.24'	04°26'34"
C36	625.00'	48.46'	24.24'	04°26'34"
C37	625.00'	50.72'	25.38'	04°39'00"
C38	625.00'	48.46'	24.24'	04°26'34"
C39	575.00'	59.35'	25.69'	05°27'00"
C40	575.00'	39.68'	19.86'	03°57'14"
C41	575.00'	50.51'	25.27'	05°01'56"
C42	625.00'	48.46'	24.24'	04°26'34"
C43	575.00'	52.67'	26.35'	05°14'54"
C44	575.00'	57.65'	28.85'	05°44'40"
C45	325.00'	54.59'	27.37'	09°16'21"
C46	275.00'	23.31'	11.66'	04°51'22"
C47	275.00'	51.92'	26.04'	10°49'03"
C48	425.00'	40.65'	20.35'	05°28'58"
C49	25.00'	9.83'	4.98'	22°31'53"
C50	325.00'	9.95'	4.98'	01°31'13"
C51	375.00'	50.72'	25.40'	07°44'59"
C52	425.00'	50.94'	25.50'	06°52'03"
C53	425.00'	52.56'	26.31'	07°05'09"
C54	325.00'	9.86'	4.94'	01°44'32"
C55	325.00'	52.10'	26.11'	09°11'05"
C56	325.00'	55.44'	27.79'	09°46'24"
C57	375.00'	27.34'	13.67'	04°10'36"
C58	325.00'	27.09'	13.55'	04°46'34"
C59	275.00'	41.89'	20.95'	08°43'37"
C60	375.00'	52.41'	26.25'	08°00'28"
C61	25.00'	8.89'	4.49'	20°21'31"
C62	53.00'	120.60'	114.69'	128°45'37"
C63	55.00'	36.54'	18.97'	38°04'34"
C64	325.00'	55.00'	27.50'	09°36'20"
C65	325.00'	50.03'	25.01'	08°33'02"
C66	325.00'	55.04'	27.51'	09°36'20"
C67	325.00'	5.65'	2.83'	00°37'44"
C68	325.00'	50.05'	25.02'	08°48'03"
C69	325.00'	27.06'	13.53'	00°18'26"
C70	NOT ASSIGNED			
C71	NOT ASSIGNED			
C72	15.00'	16.69'	9.33'	63°44'15"
C73	55.00'	16.85'	8.39'	17°20'29"
C74	55.00'	94.47'	63.74'	98°25'33"
C75	325.00'	111.25'	56.18'	19°36'55"
C76	425.00'	154.30'	78.01'	20°48'06"
C77	25.00'	37.88'	23.65'	86°48'53"
C78	300.00'	92.75'	46.75'	17°42'51"
C79	15.00'	23.56'	15.00'	90°00'00"
C80	50.00'	52.36'	28.82'	60°00'00"
C81	50.00'	209.44'	85.60'	240°00'00"
C82	15.00'	23.56'	15.00'	90°00'00"
C83	425.00'	31.17'	15.59'	04°12'06"
C84	350.00'	108.21'	54.54'	17°42'51"
C85	275.00'	94.15'	47.54'	19°36'55"
C86	375.00'	130.19'	65.75'	19°53'25"
C87	25.00'	41.06'	26.85'	94°05'46"
C88	55.00'	15.26'	7.68'	15°54'08"
C89	15.00'	15.20'	8.32'	58°02'39"
C90	NOT ASSIGNED			
C91	55.00'	89.71'	58.43'	93°27'33"
C92	15.00'	23.88'	15.41'	91°32'06"
C93	575.00'	308.44'	156.95'	30°32'08"
C94	25.00'	39.27'	25.00'	90°00'00"
C95	25.00'	39.27'	25.00'	90°00'00"
C96	15.00'	23.84'	15.28'	91°36'32"
C97	15.00'	23.56'	15.00'	90°00'00"
C98	NOT ASSIGNED			
C99	15.00'	23.02'	14.50'	88°02'47"
C100	55.00'	30.82'	15.83'	32°06'30"
C101	425.00'	175.33'	88.93'	23°38'13"
C102	375.00'	140.42'	71.04'	21°27'16"
C103	55.00'	92.28'	61.72'	96°39'01"
C104	325.00'	144.51'	73.47'	25°28'35"
C105	275.00'	117.12'	59.46'	24°24'03"
C106	25.00'	39.27'	24.99'	89°93'06"
C107	5205.22'	243.32'	121.69'	02°40'56"
C108	475.00'	108.06'	54.26'	13°02'03"
C109	15.00'	23.83'	15.27'	91°01'46"
C110	525.00'	311.14'	158.87'	28°31'25"
C111	475.00'	9.17'	4.58'	01°05'20"
C112	475.00'	50.13'	25.09'	06°03'48"
C113	475.00'	47.56'	23.80'	05°44'12"
C114	475.00'	1.20'	0.60'	00°08'42"
C115	300.00'	133.38'	67.02'	25°28'35"
C116	400.00'	170.68'	86.85'	23°33'28"
C117	450.00'	102.37'	51.41'	13°02'03"
C118	600.00'	358.30'	184.67'	34°12'55"
C119	325.00'	100.48'	50.64'	17°42'51"
C120	300.00'	102.71'	51.88'	19°36'55"
C121	400.00'	167.46'	84.97'	23°59'11"

LINE TABLE

LINE	DIRECTION	DISTANCE
L1	N30°59'38"E	29.13'
L2	N30°55'57"W	29.15'
L3	N00°06'53"E	10.00'
L4	N89°09'03"E	29.13'
L5	N89°53'07"W	9.97'(R)
L6	N30°44'54"E	7.07'
L7	N90°00'00"E	25.00'
L8	N00°00'00"E	22.61'
L9	N90°00'00"E	50.00'

SURVEYOR'S SEAL

ENGINEER'S SEAL

No.	REVISIONS	Date	Drn.	Chk.	Appr.

POSEY, WALLACE, SCHAH & JERNIGAN
PLANNING • LANDSCAPE ARCHITECTURE • CONSTRUCTION SERVICES

FINAL PLAT OF BROADWAY MANOR

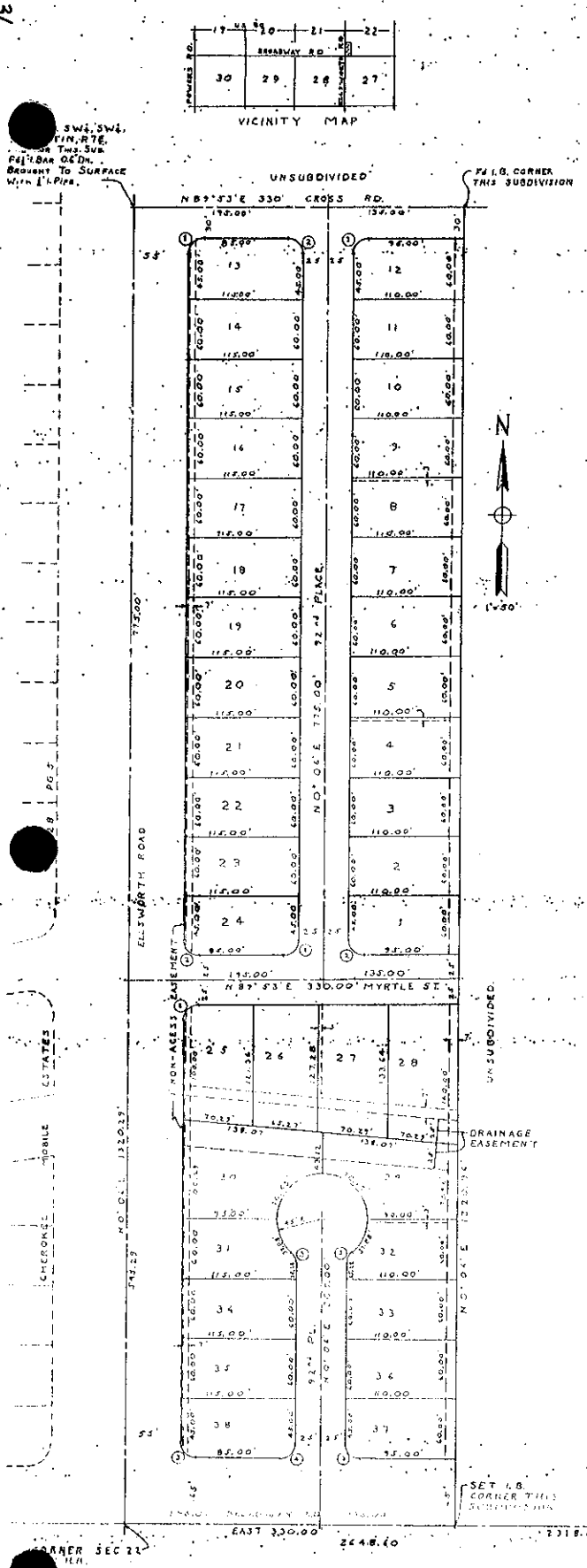
Job Number 54094 | Drawn by UKM | Checked by PWP | Scale 1"=60' | File No. 34FP-MAP | Date 4/97 | Sheet Number 2 OF 2

449-34

132-31

MARY FRANCIS ESTATES REPLAT

A RESUBDIVISION OF MARY FRANCIS ESTATES RECORDED BK 78 PG 30 M.C.R.
A SUBDIVISION OF THE WEST 330 FEET OF THE SW¼ OF THE SW¼ OF SECTION 22, T1N, R7E, G&SRB&M. MARICOPA COUNTY, ARIZONA.



DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, TRUSTEE HAS RESUBDIVIDED UNDER THE NAME OF MARY FRANCIS ESTATES REPLAT THE WEST 330 FEET OF THE SW¼ OF THE SW¼ OF SECTION 22, T1N, R7E, G&SRB&M. MARICOPA COUNTY, ARIZONA AS SHOWN PLATTED HEREON, AND HERBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID MARY FRANCIS ESTATES REPLAT, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS AND STREETS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN, EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH, THE STREETS AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE
BY [signature]
ASST. TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS, THE 10 DAY OF August 1970 BEFORE ME, THE UNDERSIGNED OFFICER PERSONALLY APPEARED Merrill E. Lloyd WHO ACKNOWLEDGED HIMSELF TO BE Asst TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL. MY COMMISSION EXPIRES July 14, 1972 [signature]
NOTARY PUBLIC

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY, ARIZONA, THIS 8th DAY OF Sept. 1970
BY: [signature] CHAIRMAN ATTEST: [signature] CLERK

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PREMISES WAS MADE UNDER MY SUPERVISION DURING THE MONTH OF APRIL 1970

[signature]
ROBERT STANLEY
REG. CIVIL ENGINEER #4757

Registered Professional Engineer (Civil) ROBERT D. STANLEY REG. NO. 4757 ARIZONA, U.S.A.
8-4-70

SEE DEED RESTRICTIONS RECORDED BK 6583 PG 548 M.C.R.

INDEXED PAGED

STATE OF ARIZONA, County of Maricopa, ss.
I hereby certify that the within instrument was filed and recorded at request of Grantor
Fee $ [illegible]
Witness my hand and official seal the day and year first above written.
By [signature]

VARIES
TYPICAL PUBLIC UTILITY EASEMENT - WIDTH SHOWN

CURVE DATA					
NUMBER	Δ	R	T	L	
1	90°13'	15'	15'	23.65	
2	89°47'	15'	15'	23.51	
3	89°54'	15'	15'	23.54	
4	90°06'	15'	15'	23.59	
5	48°11'24"	15'	7.30	12.62	

132-31

RECEIVED
AUG 11 1970
MARICOPA COUNTY PLANNING AND ZONING COMMISSION
By [signature]

S 70-6
Final

ROBERT STANLEY PE
CIVIL ENGINEER #4757
3717 W. MARYLAND
PHOENIX ARIZONA 85019
939-1664

132-31

REACH 4: PARCEL 218-41-005Y

Unofficial Documents

R

STEWART TITLE & TRUST OF PHOENIX

00-0214619 03/22/00 02:36

OSCAR 14 OF 16

WHEN RECORDED RETURN
TO ARIZONA DEPARTMENT
OF TRANSPORTATION,
R/W OPERATIONS (612E)
205 S. 17TH AVENUE
PHOENIX, AZ 85007-3212

Escrow No. 77/[illegible] /
99113557

EXEMPT FROM AFFIDAVIT
BY A.R.S. §11-1134-A-3

ARIZONA DEPARTMENT OF TRANSPORTATION

WARRANTY DEED

D & L CROSS LIMITED PARTNERSHIP, an Arizona limited partnership, dated February 14, 1986, the Grantor, for the consideration of TEN DOLLARS AND OTHER VALUABLE CONSIDERATION, does hereby grant, convey and warrant to the **STATE OF ARIZONA**, by and through its Department of Transportation, the Grantee, that certain real property situated in Maricopa County, Arizona, more particularly described as:

The West half of the Southwest quarter of the Southeast quarter of Section Twenty-one (21), Township One (1) North, Range Seven (7) East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona.

SUBJECT TO current taxes and assessments, reservations and all easements, rights of way, covenants, conditions, restrictions, liens and encumbrances of record.

PROJECT: 600-8-804 **SECTION:** Higley Rd - US60 (RED MTN) **PARCEL:** 7-8999

202L MA 020 H5401 01R CR 2/1/2000

The Grantor or the Grantor's heirs shall have the right to repurchase the property herein described (or any remaining portion thereof) pursuant to A.R.S. §28-7099.

IN WITNESS WHEREOF, this instrument is executed this 1st day of March, 20 00

Robert Duke Cross — ROBERT DUKE CROSS, GENERAL PARTNER

X Mary Louise Cross — MARY LOUISE CROSS, GENERAL PARTNER OF D & L CROSS LIMITED PARTNERSHIP

NOTARY CERTIFICATION

Capacity claimed by signer(s)

☐ INDIVIDUAL(S) ☐ ATTORNEY-IN-FACT ☐ TRUSTEE(S)
☐ CORPORATE ☒ PARTNERSHIP ☐ GOVERNMENT OFFICER(S) ☐ OTHER

D & L CROSS LIMITED PARTNERSHIP

ENTITY(IES) REPRESENTED

GENERAL PARTNERS

Unofficial Document

TITLE OF SIGNER

STATE OF ARIZONA)
) SS
COUNTY OF MARICOPA)

Before me, John R. Willson, the undersigned officer/notary

on March 1, 2000 personally appeared Robert Duke Cross and Mary Louise Cross.

☐ personally known -OR- ☒ proved to me to be the person(s) whose name (s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity on behalf of which the person(s) acted, executed the instrument.

IN WITNESS, my hand and official seal.

Signature

OFFICIAL SEAL
JOHN R. WILSON
NOTARY PUBLIC-ARIZONA
MARICOPA COUNTY
My Comm. Expires Oct 10, 2001

My commission expires:

Approved by the Director of the Arizona Department of Transportation

3-9-, 20 00

Accepted:
STATE OF ARIZONA

3-14, 20 00

By

Right of Way Manager

REACH 4: PARCEL 218-30-096J

Unofficial Documents

OF
CORDER
L
02:48
1 of 1

at the request of
when recorded mail to
JANET PIRCUCH
4711 FALCON DR #222
, AZ MESA, AZ, 85215

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we, JANET PIRCUCH

do/does hereby convey to JANET PIRCUCH

the following real property situated in Maricopa, County, Arizona:

PARCEL #5 of LOT SPLIT of ASSR. # 218 30 096A

SEE ATTACHED LEGAL

EXEMPT ARS 42-1614 B5

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

And I or we do warrant the title against all persons whomsoever, subject to the matters set forth above.

Dated 07-10-00

STATE OF ARIZONA } ss
County of Maricopa

This instrument was acknowledged before me this 10 day of July, 2000 by

NOTARY PUBLIC STATE OF ARIZONA
Notary Public
My commission will expire 5-7-2000

STATE OF ARIZONA } ss
County of Maricopa

This instrument was acknowledged before me this _____ day of _____ 19____ by

Notary Public
My commission will expire

(WDEED01.DOC 8/96RC)

PARCEL NO.5

THE SOUTH 140.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. AND THE WEST 181.00 FT. THEREOF.

Unofficial Document

20000524488

RESULTS OF SURVEY

A PORTION OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA

BOOK 523 PAGE 23
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER
HELEN PURCELL
00-0077733
02/01/00 01:39

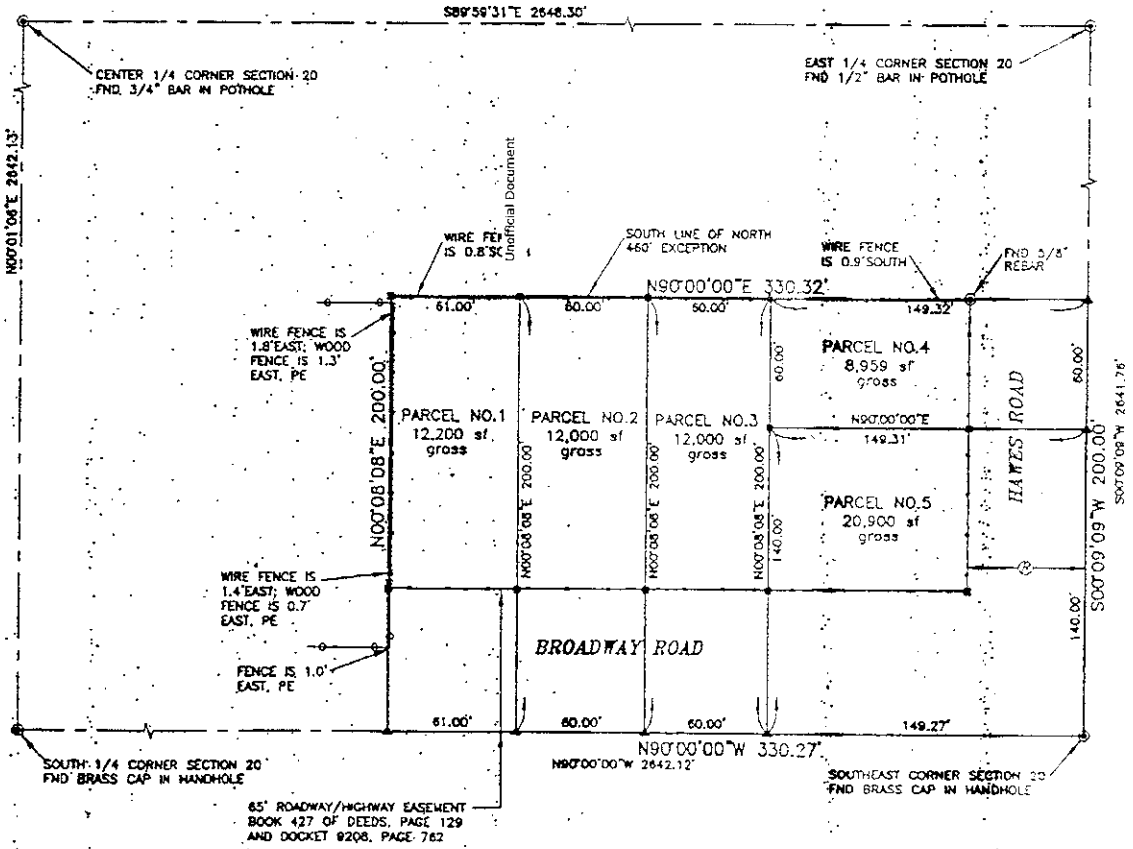
LEGEND

- 55' ROADWAY PER INFORMATION PROVIDED BY THE CLIENT
- FOUND MONUMENT AS NOTED
- SET 1/2" REBAR, LS 21773 UNLESS NOTED OTHERWISE
- SET CONCRETE NAIL, LS 21773 UNLESS NOTED OTHERWISE
- WOOD FENCE
- WIRE FENCE
- CHAIN LINK FENCE
- PE — POSSIBLE ENCROACHMENT

N

SCALE 1" = 40'

0 20 40 80



Unofficial Document

LEGAL DESCRIPTIONS

PARCEL NO.1
THE WEST 61.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. THEREOF.

PARCEL NO.2
THE EAST 60.00 FT. OF THE WEST 121.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. THEREOF.

PARCEL NO.3
THE EAST 60.00 FT. OF THE WEST 181.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. THEREOF

PARCEL NO.4
THE NORTH 60.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. AND THE WEST 181.00 FT. THEREOF.

PARCEL NO.5
THE SOUTH 140.00 FT. OF THE FOLLOWING DESCRIBED PARCEL:

THE SOUTH 660 FT. OF THE EAST 1/2 OF THE EAST 1/2 OF THE EAST 1/2 OF THE SOUTHEAST 1/4 OF SECTION 20, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA; EXCEPT THE NORTH 460 FT. AND THE WEST 181.00 FT. THEREOF.

NOTES

1—BEARINGS AND DISTANCES SHOWN ARE MEASURED OR CALCULATED. UNLESS NOTED OTHERWISE, BEARINGS ARE BASED ON ASSUMED DATUM.

2—THIS SURVEY IS BASED ON THE COMMITMENT FOR TITLE INSURANCE ISSUED BY CAPITAL TITLE AGENCY, INC., COMMITMENT NO. 11991015, DATED NOVEMBER 15, 1999, AND ON INSTRUCTIONS AND OTHER INFORMATION AS PROVIDED BY THE CLIENT.

3—THIS MAP DOES NOT PURPORT TO VERIFY THE OWNERSHIP OF ANY PROPERTY SHOWN OR INVOLVED IN THIS SURVEY. ACTUAL OWNERSHIP LINES MAY BE AFFECTED BY MONUMENTS, LINES OF OCCUPATION AND OTHER UNWRITTEN RIGHTS.

4—FOR COMPUTATION PURPOSES, PARCEL AREA LISTED HEREON WAS COMPUTED WITHOUT REGARD TO THE POSSIBLE ENCROACHMENTS SHOWN.

5—PARCEL DIMENSIONS SHOWN HEREON ARE TO GROSS PARCEL LINES.

CERTIFICATION

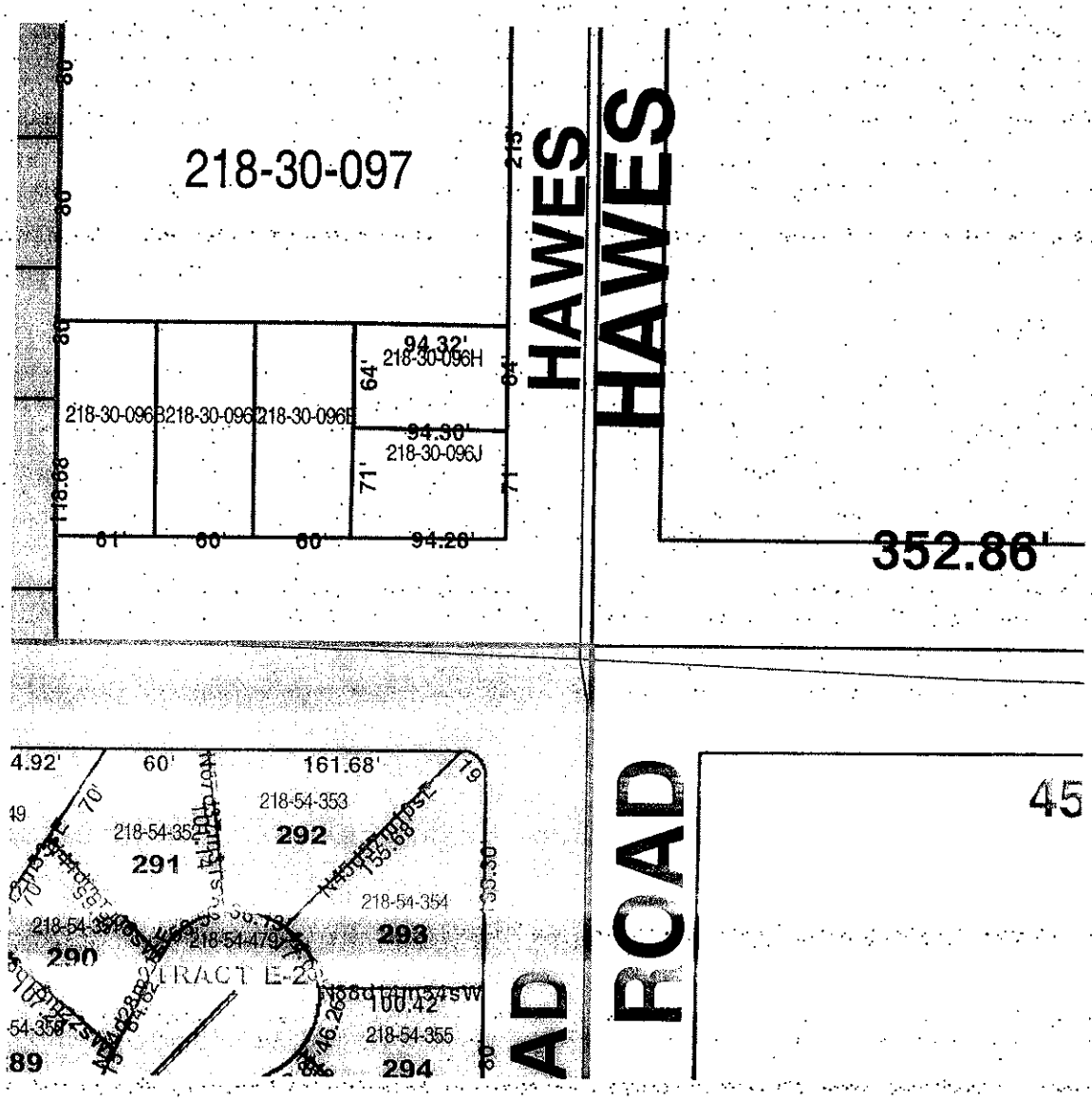
I HEREBY CERTIFY THAT THIS SURVEY WAS MADE ON THE GROUND UNDER MY SUPERVISION AND IS TRUE AND CORRECT TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR CERTIFICATE NO. 21773 JAMES A. HEWITT ARIZONA U.S.A.

JAMES A. HEWITT R.L.S. # 21773

ABILITY LAND SURVEYING, INC.
185 SOUTH MOUNTAIN VIEW ROAD
APACHE JUNCTION, ARIZONA 85219
PH 480-982-0413

SHEET NO.	1 of 1
DATE	1/00
JOB NO.	99-1109



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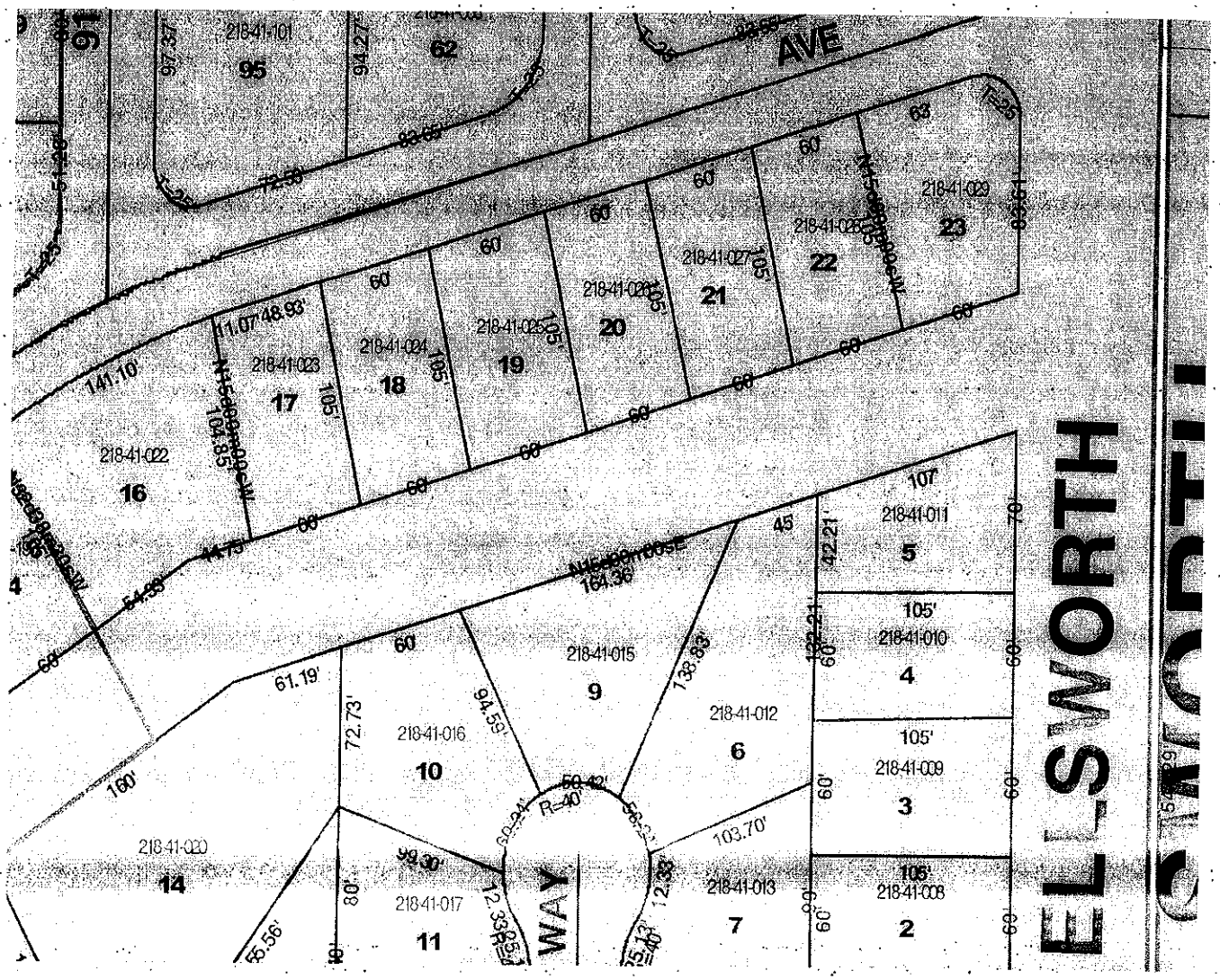

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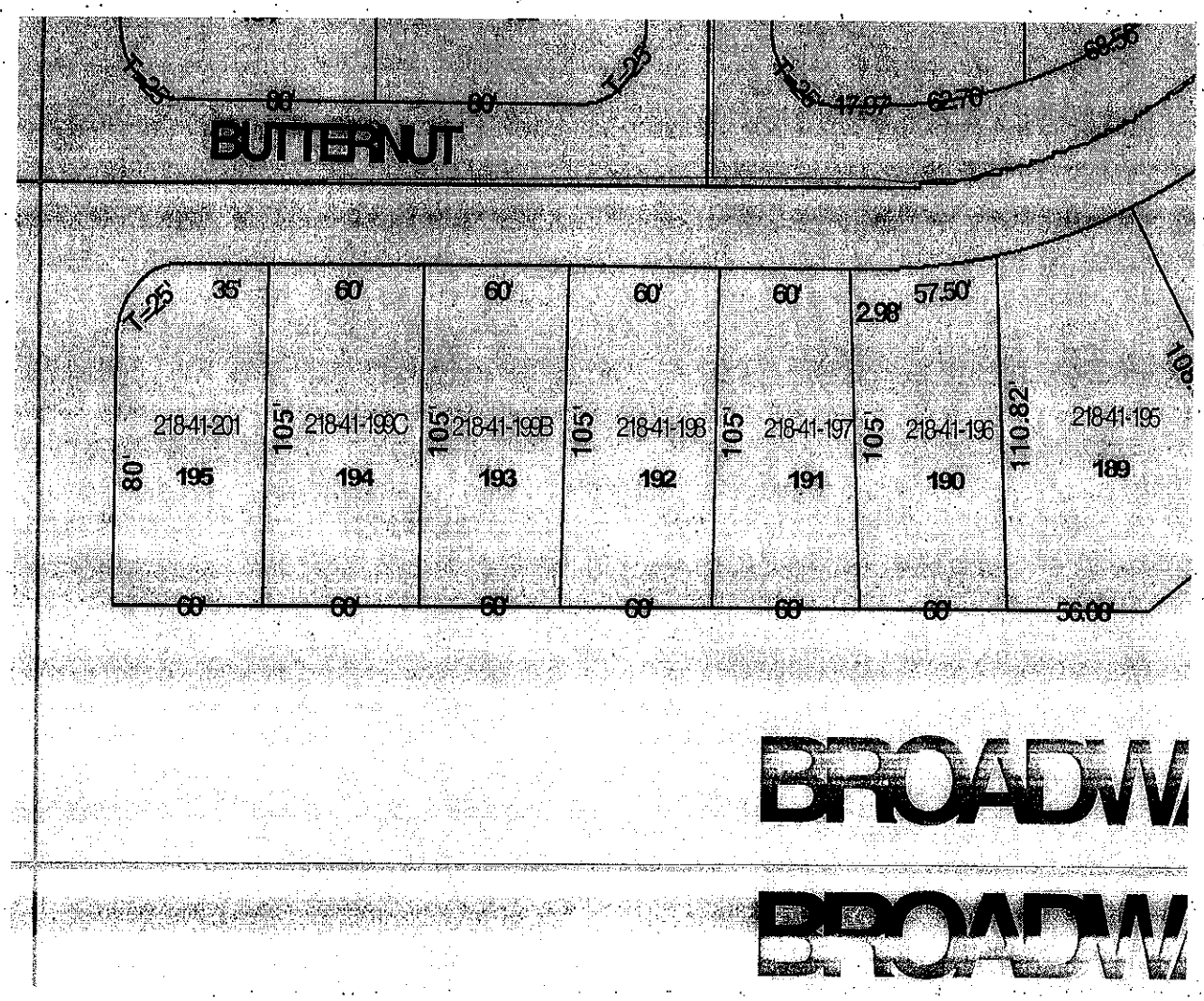
BUTTERNUT
BROADW
BROADW
35'
60'
60'
60'
60'
57.50'
2.98'
218-41-201
195
218-41-199C
194
218-41-199B
193
218-41-198
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191
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218-41-195
189
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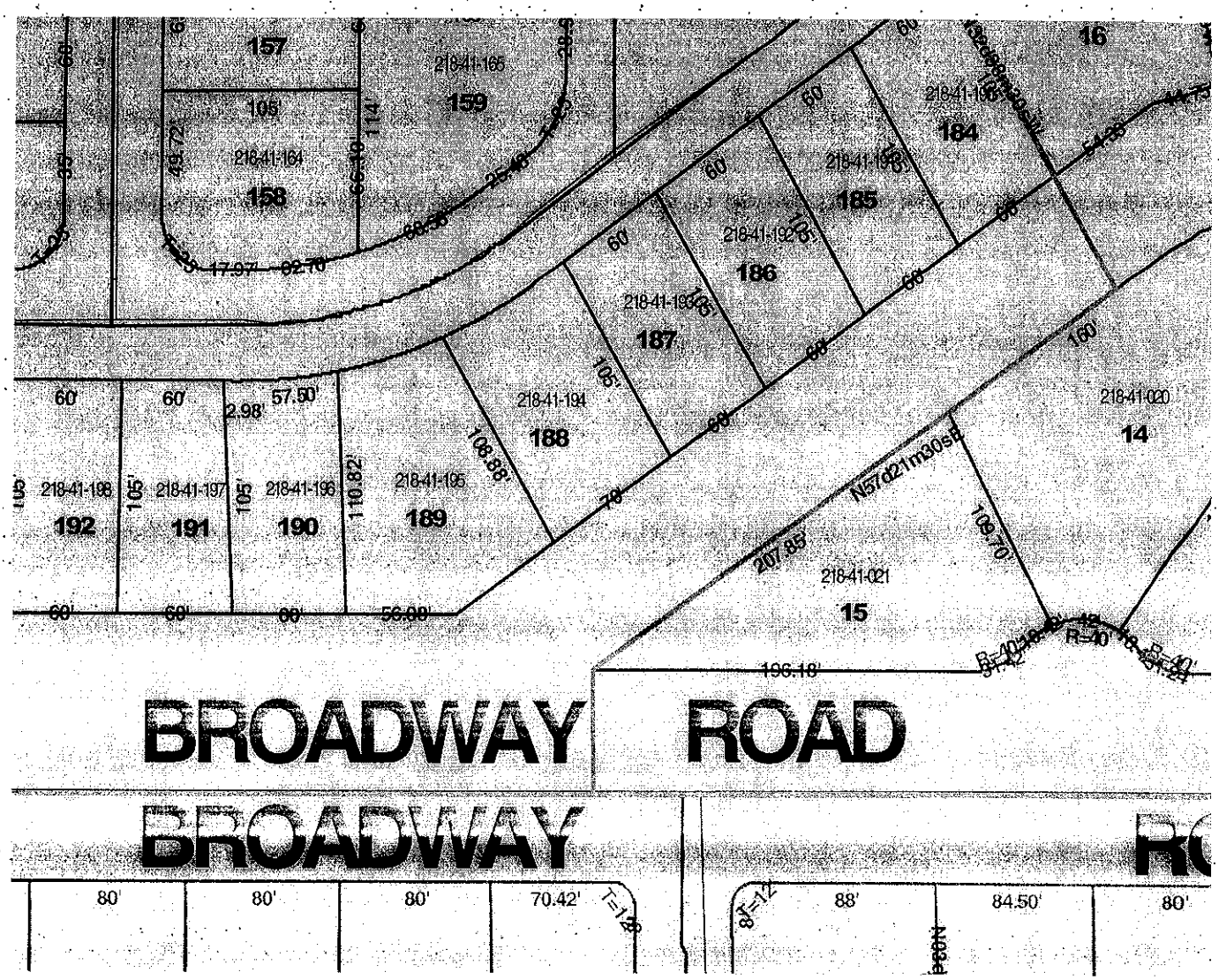
105'
110.82
68'
56.08'


157
218-41-165
159
218-41-164
158
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218-41-194
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218-41-197
191
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218-41-020
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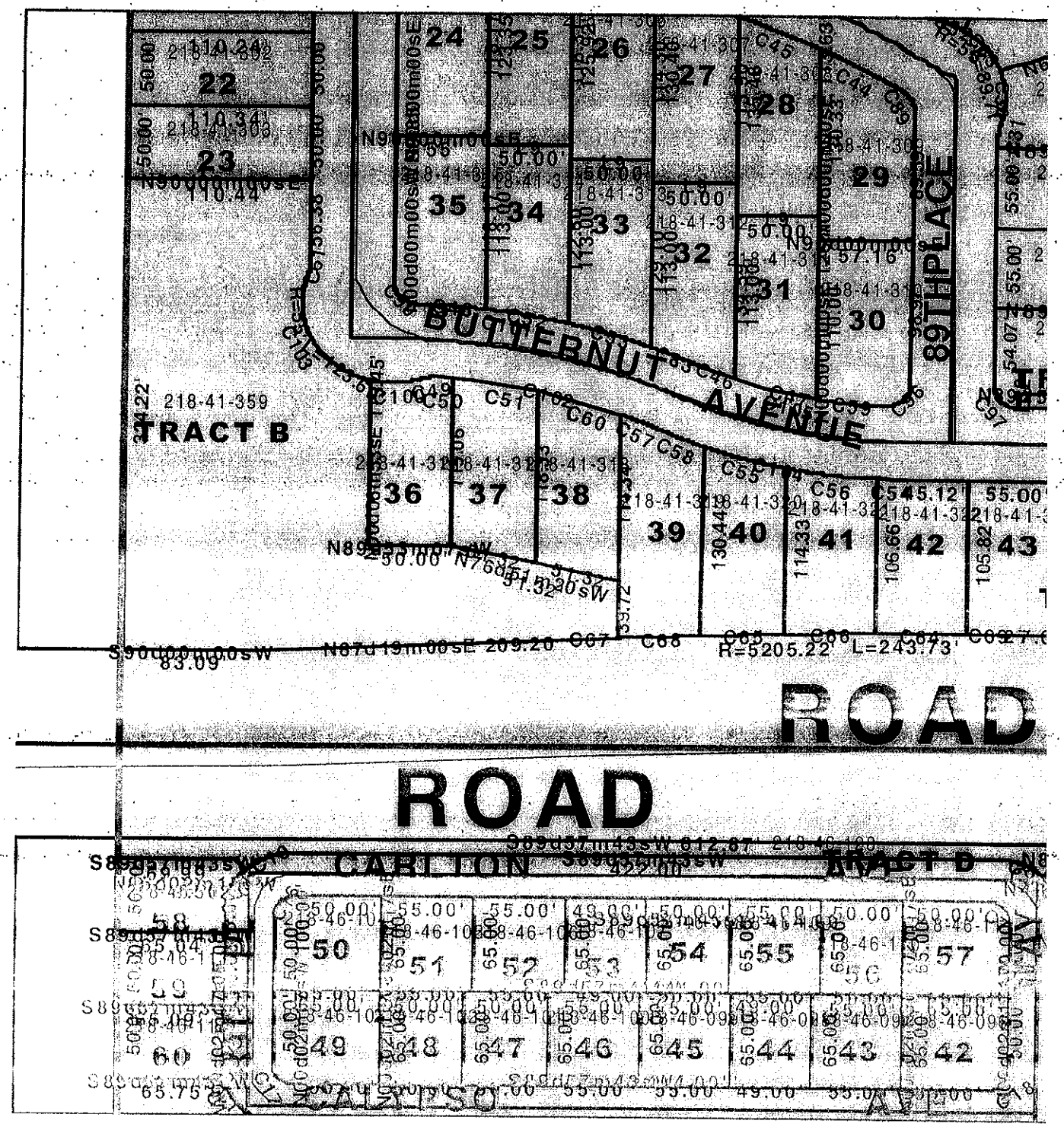
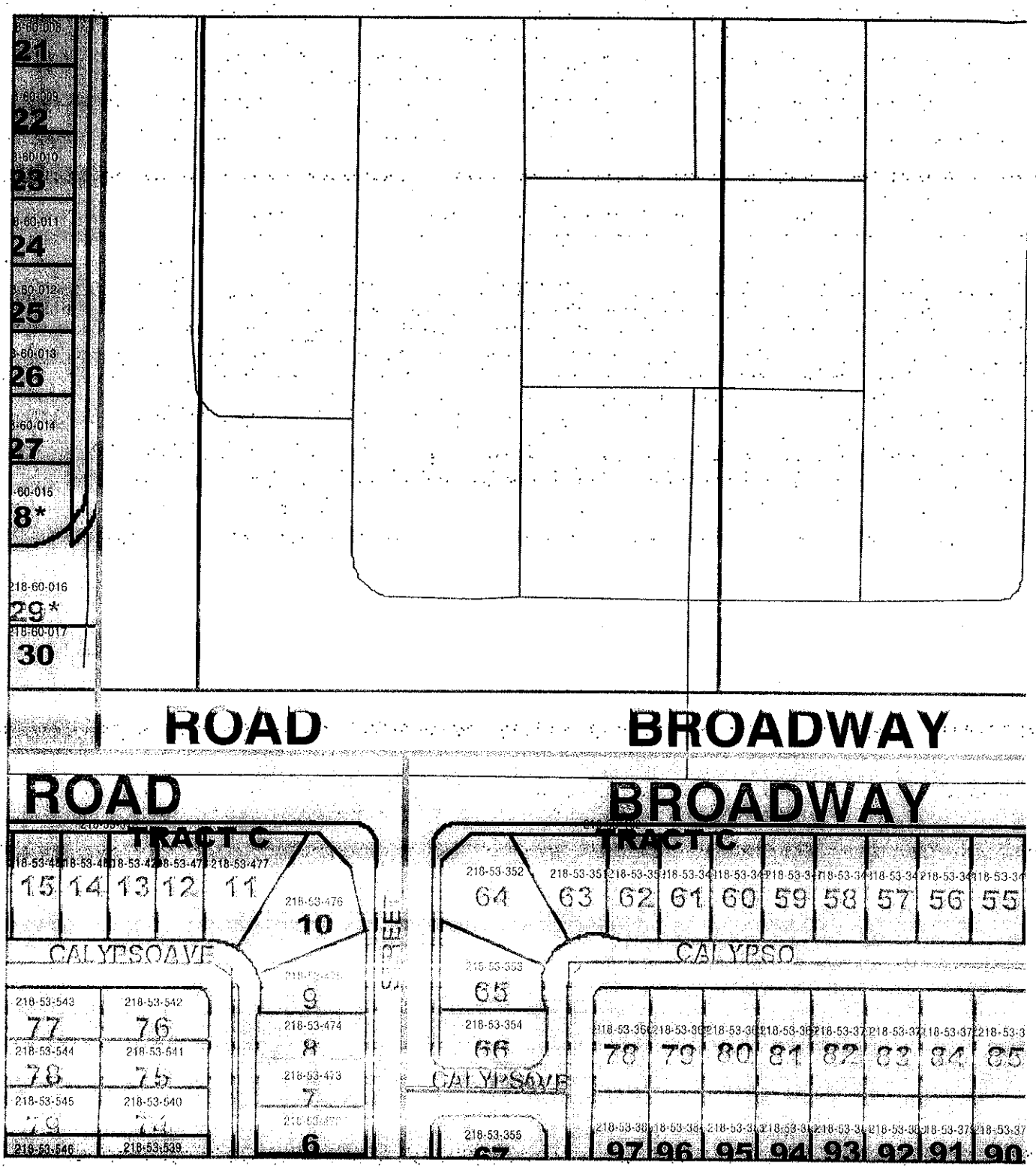
218-41-021
15
16
184
185
186
BROADWAY ROAD
BROADWAY



R-4_BroadwayM_map449-34.doc



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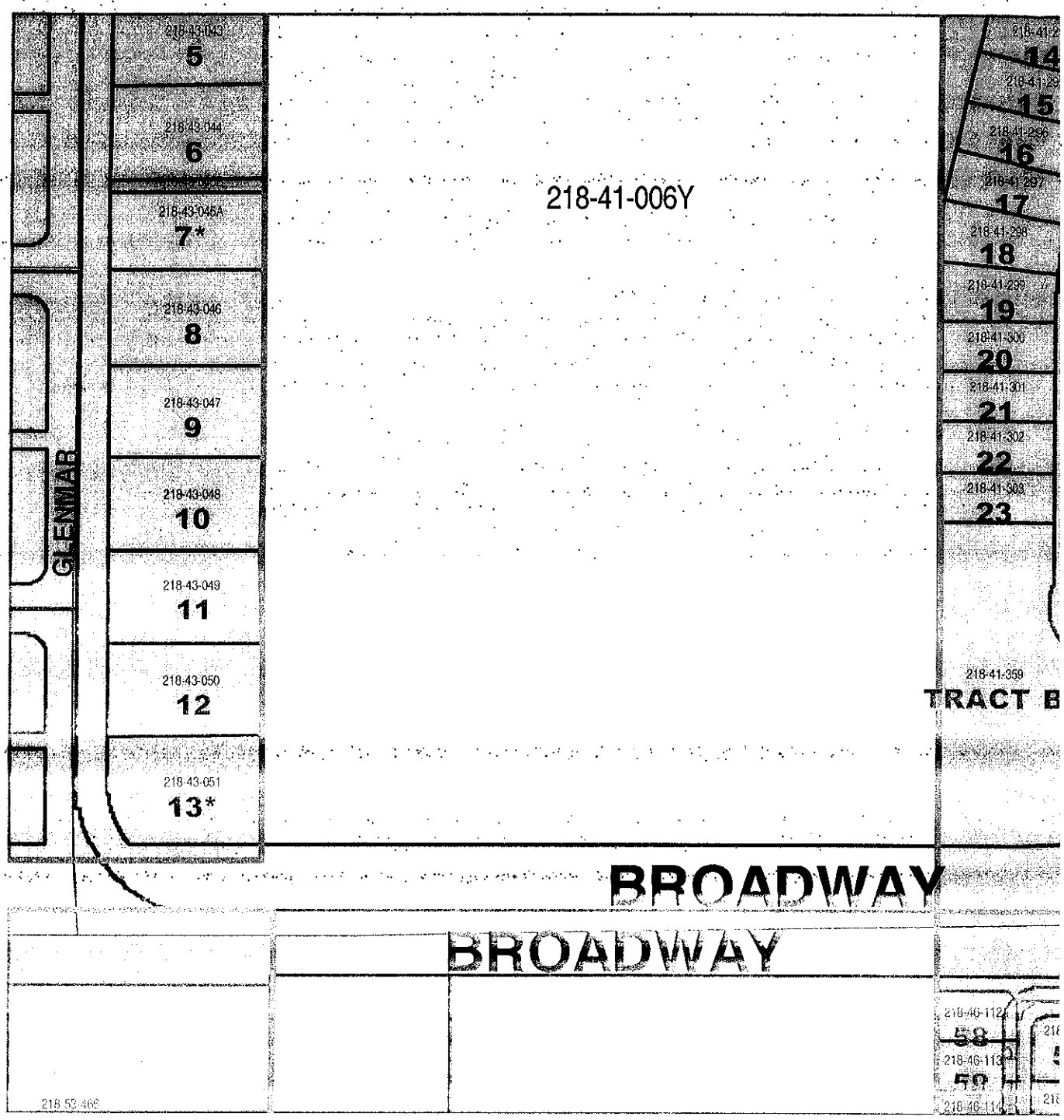

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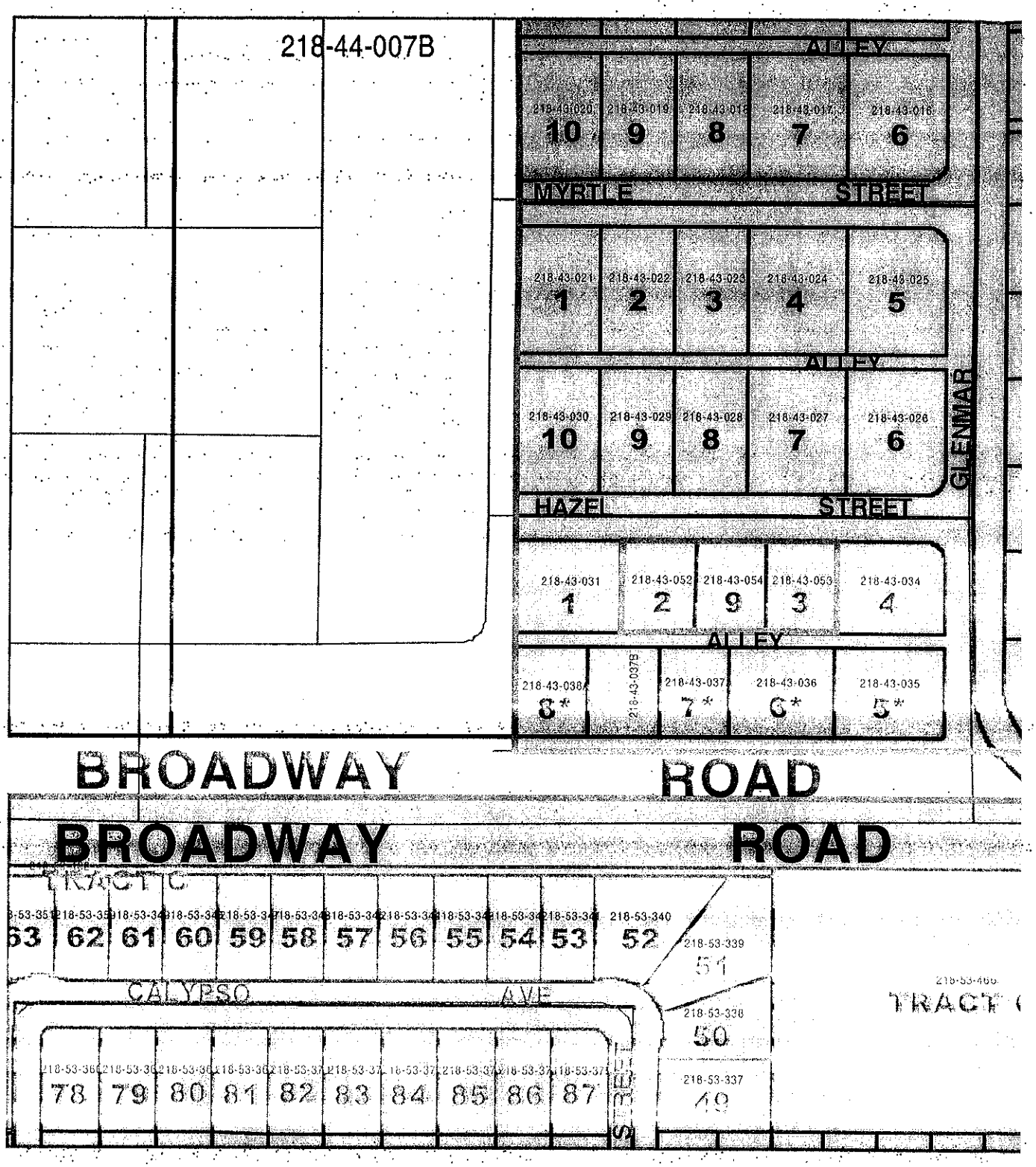
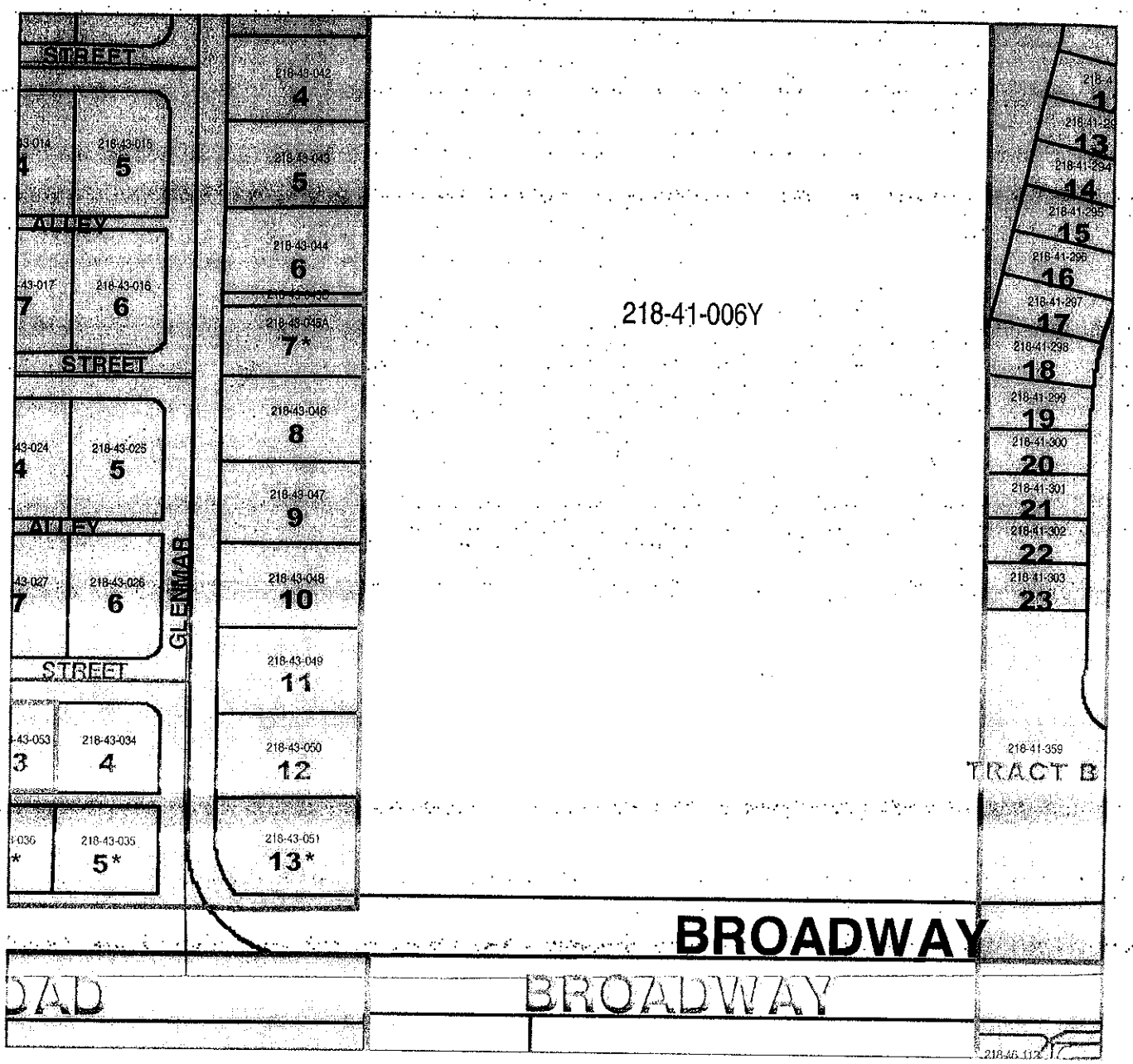


Reach4_glenmarMap.doc



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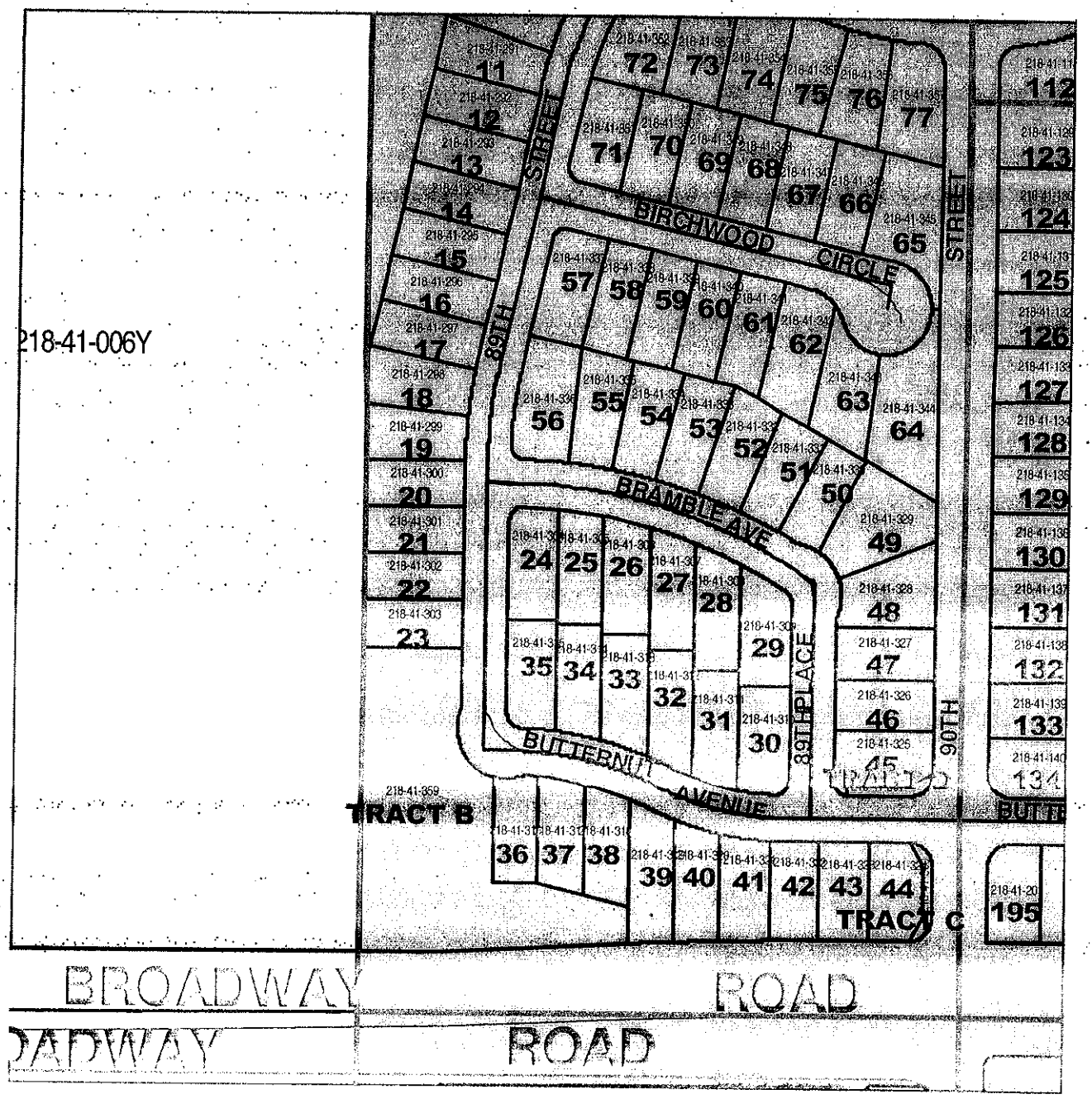
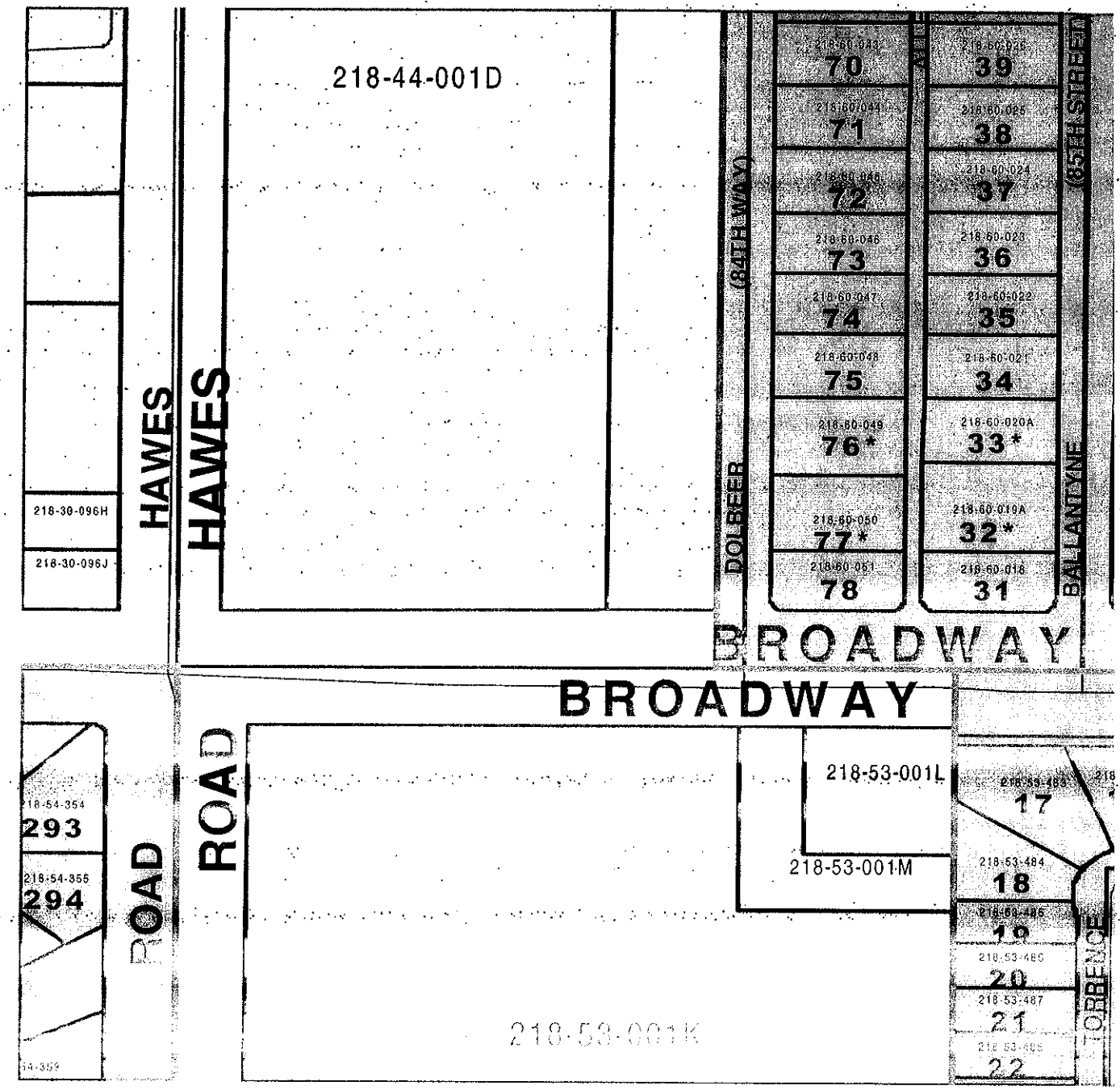


Reach4_mapWof90th_1of2.doc



Reach4mapEofHawes_1of2.doc

Reach 5: Crisway Estates Units 2 & 3

Location: N. of Coralbell Ave., off Crismon Road (Drainage way alignment is from the NE to the SW)

Parcel Research: Dedication (Crisway Estates Unit II): "dedicated to the Public for use as such, the streets and drainage rights of way as shown on the plat." Dedication (Crisway Estates Unit III): "dedicated to the Public for use as such, the streets and drainage rights of way as shown on the plat." (Plat maps covered entire drainage reach)

Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Utility Research: Reach 5 has overhead electric across the channel in 3 areas, according to SRP system maps. No other utilities affect the drainage right-of-way.

Hydrologic Analysis: The watershed area was identified through site visits and GIS topographic data and calculated using the rational method, Q100 = 116 cfs.

Hydraulic Analysis: The flows of 157 cfs were input into HEC-RAS. The minimum allowable flow for this channel is 10 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (3): The 100 year flows overtop the banks. Any storm event crosses over 98th Way and flows into private property. The construction of a culvert transporting flows to the Coralbell Channel or a floodwall surrounding the property may mitigate this problem.

Recommendation: Maintenance – (2): Reach 5 has some typical maintenance problems. After storm events, erosion repair is needed. Residential trees are affecting channel capacity. Local residents improvise stabilization on channel banks. HDR recommends providing routine maintenance, inspections, and giving notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit requirements, and installation of removable bollards.

Opinion of Improvement Cost: Storm Drain Option = $98,000; Floodproof option = $18,600

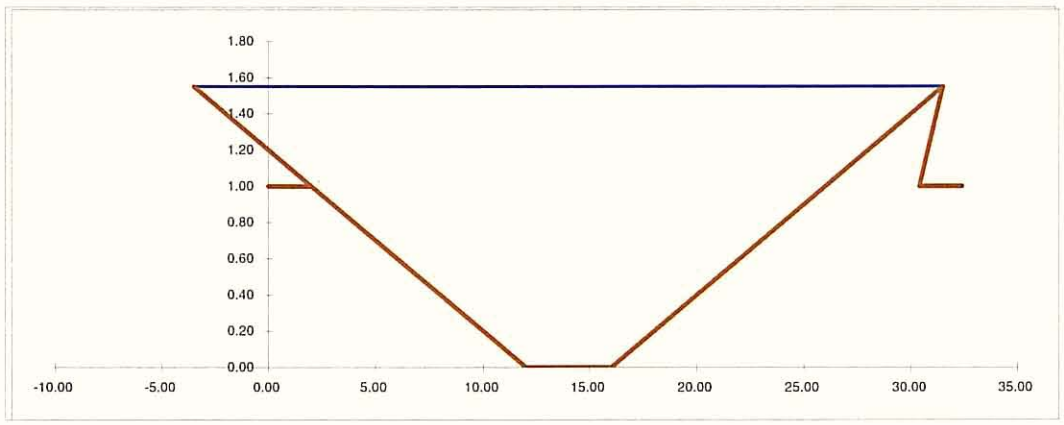
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 5	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 5



Design Discharge Q = 116 cfs
Channel Section 4
Right-of-Way Width 20 ft

Calculate Flow Depth
Estimated Flow Depth 1.55 ft
Channel Depth 1.00 ft

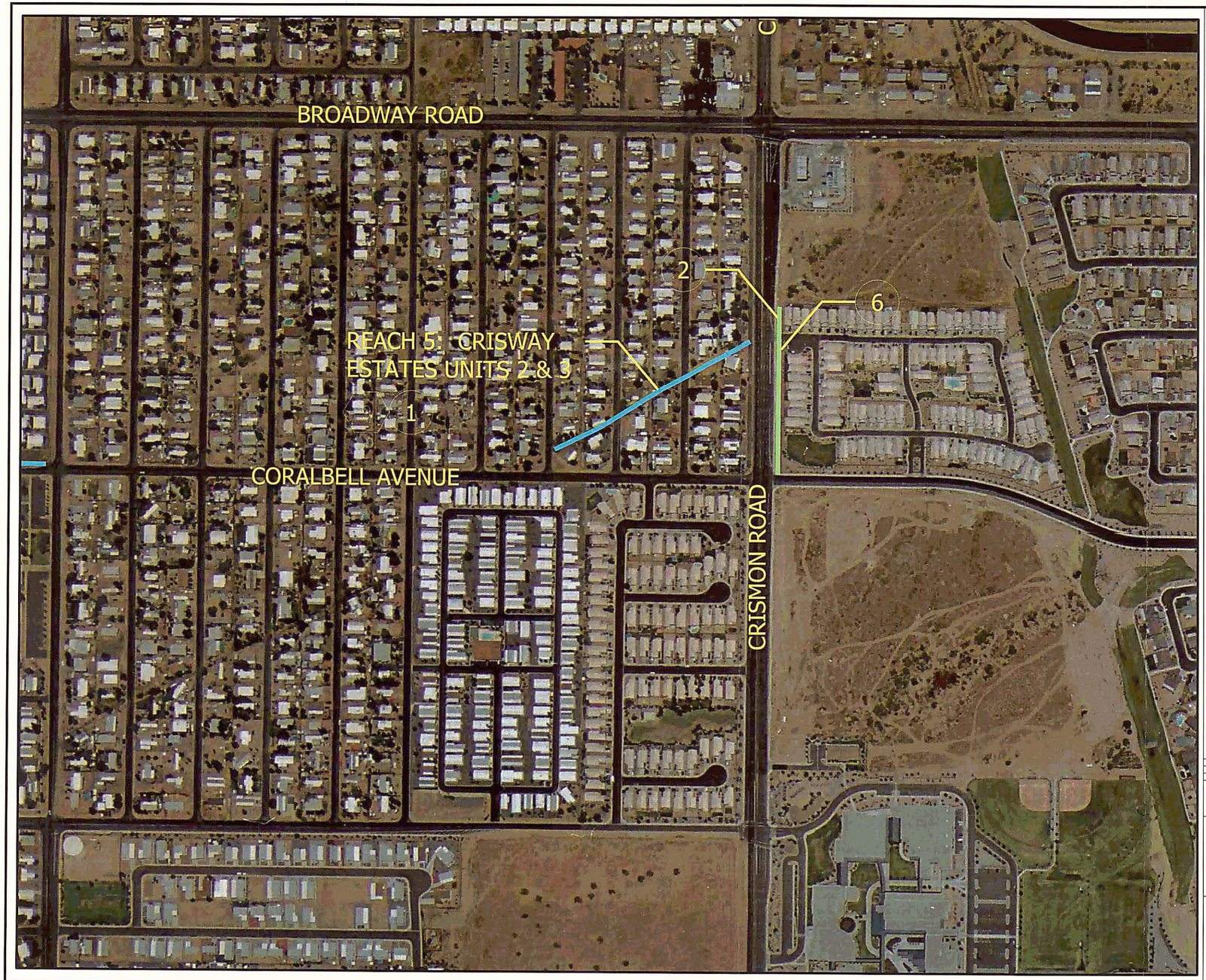
Estimated Q = 115.8 cfs
Average V = 3.83 ft/sec

Channel Parameters

Bottom Width =	4.00	ft
Side Slope =	10.00	:1
Manning n =	0.040	
Channel Slope	0.013	ft/ft
Flow Area =	30.23	ft^2
Wet Perimeter	35.15	ft
Hyd. Radius R	0.86	ft
Top Width =	35.00	ft
Hydraulic depth	0.86	ft
Froude No. =	0.73	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.11 ft

Available Freeboard
Channel Depth - Flow Depth = -0.55 ft Available Fb > Fb req'd



EXISTING CONDITIONS

(9) NO CONTINUOUS CHANNEL. DRAINS INTO PROPERTY ON 98TH WAY AND FLOODING PROPERTY

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 5

F.C.D. CONTRACT NO. 2003C018

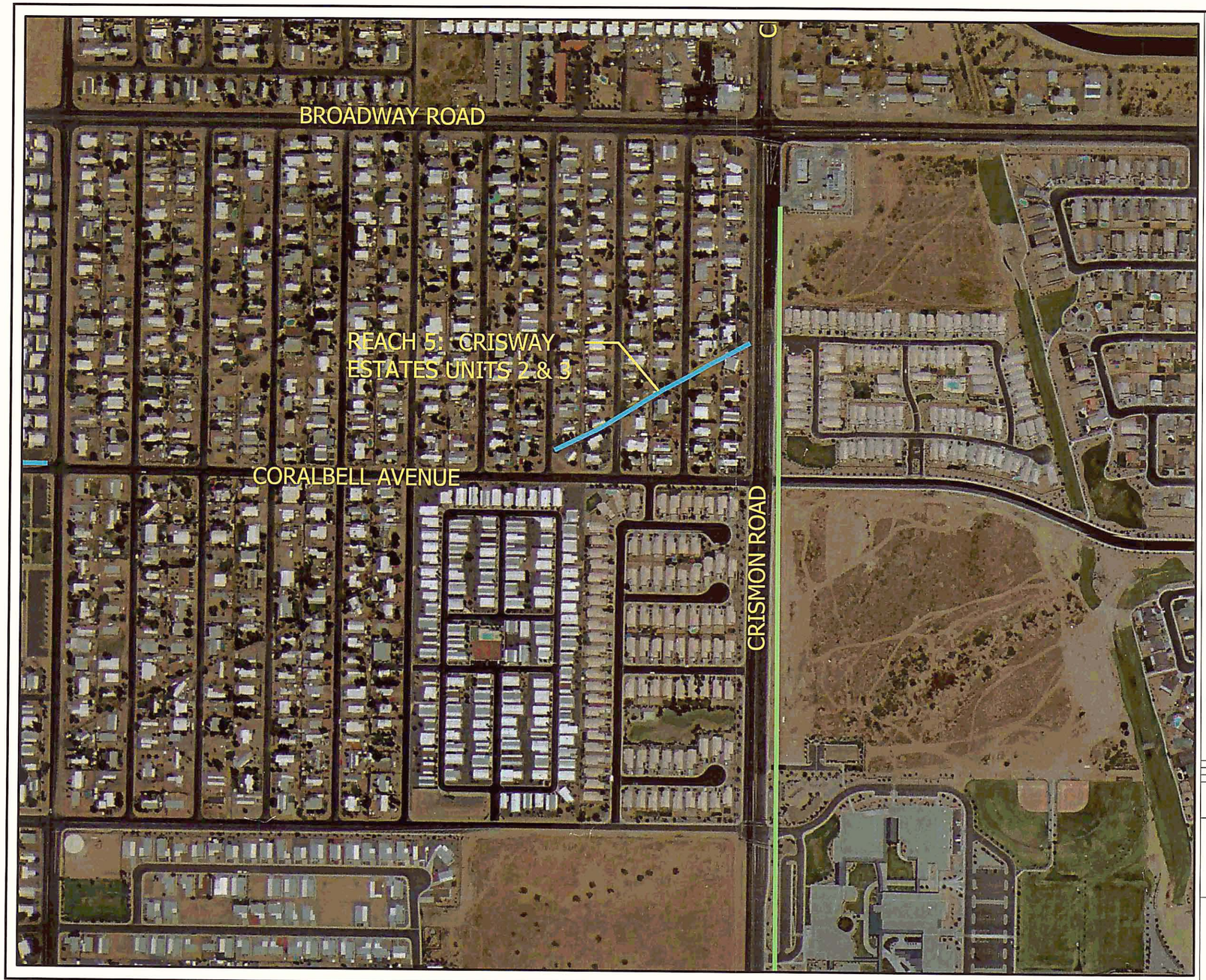
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07162 MC.Eng.On-Call\East Mesa Drains CAR\6.0.Hydrology & Hydraulics\6.1.DWG\Existing Facilitiit ibits\exh-08_REACH 5.dwg, Layout1, 4/21/2004 4:06:27 PM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 5

F.C.D. CONTRACT NO. 2003C018

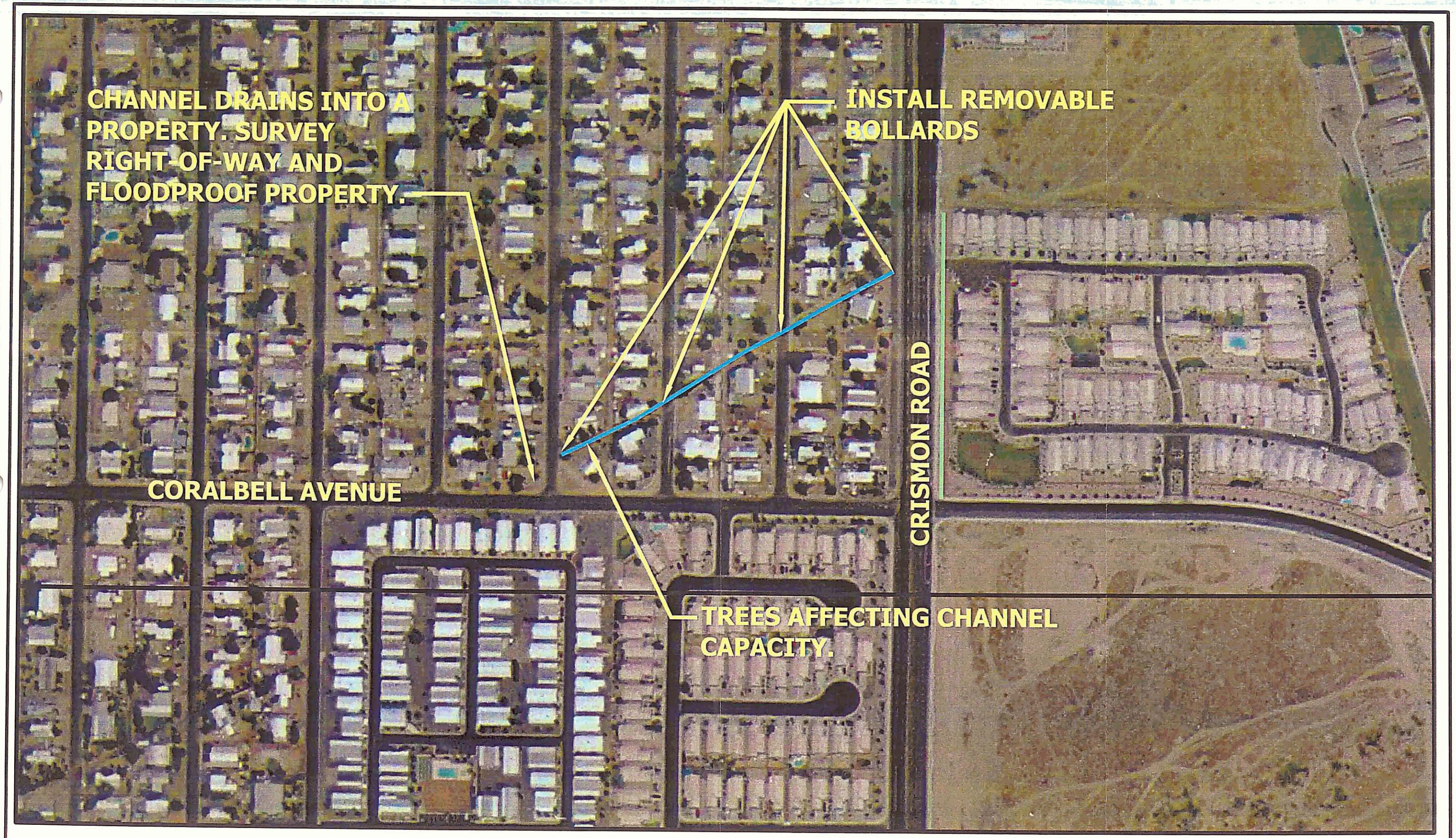
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716\MC-Eng-On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Exhibits\exh-16_REACH 5.dwg, Layout1, 4/21/2004 4:14:45 PM, akuchars, Proposed Facil.



200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR Engineering, Inc.

REACH 5
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071r DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 5.dwg, Layout2, 05/04/2004 03:28:21 PM, cmiranda

Reach 5 - Survey Points 83 – 105 Crisway Estates

PT85 LOOKING DOWNSTREAM

PT85 LOOKING UPSTREAM

Reach 5 - Survey Points 83 – 105 Crisway Estates

PT91 LOOKING DOWNSTREAM

PT91 LOOKING UPSTREAM

Reach 5 - Survey Points 83 – 105 Crisway Estates

PT97 LOOKING DOWNSTREAM

PT97 LOOKING UPSTREAM

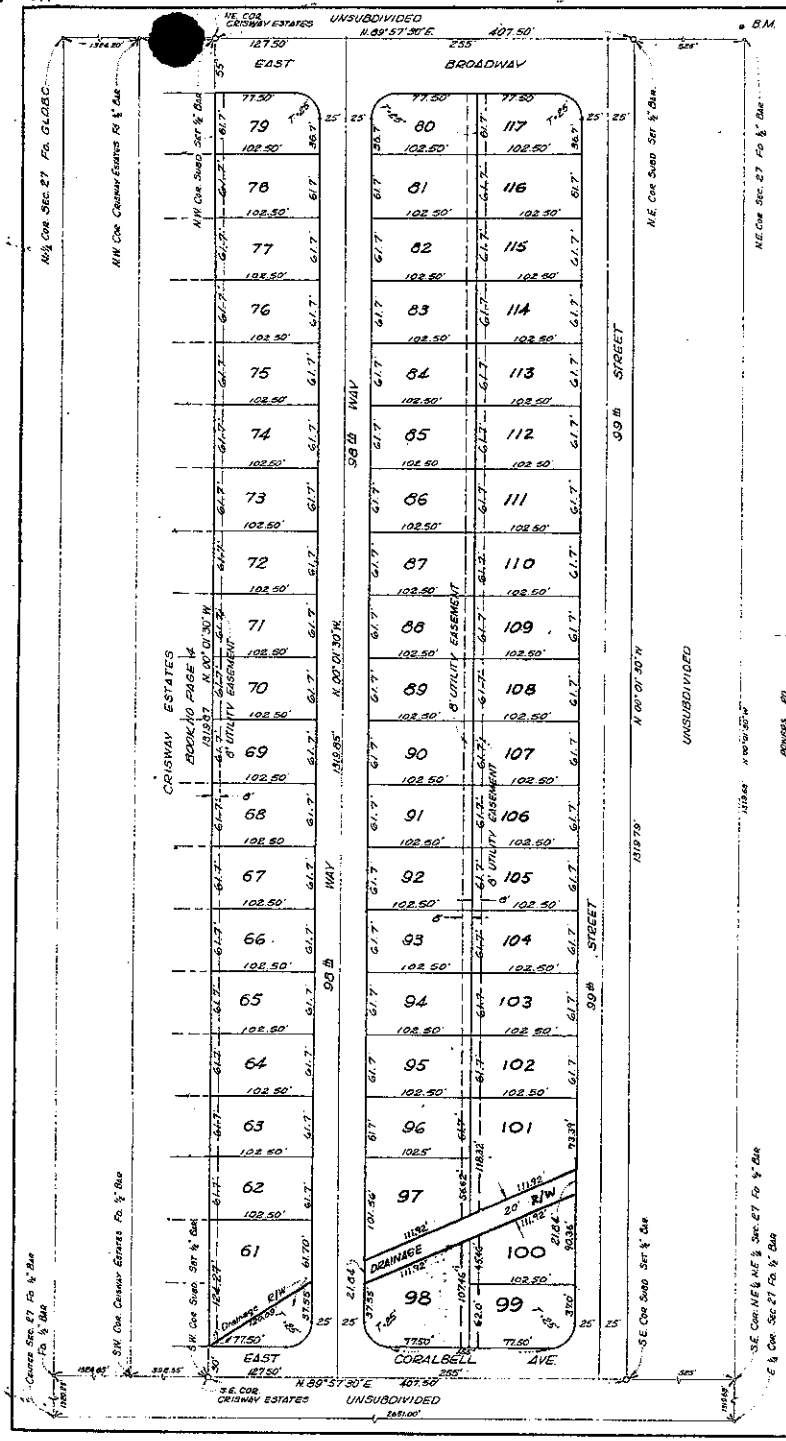
Reach 5 - Survey Points 83 – 105 Crisway Estates

PT102 LOOKING DOWNSTREAM

PT102 LOOKING UPSTREAM

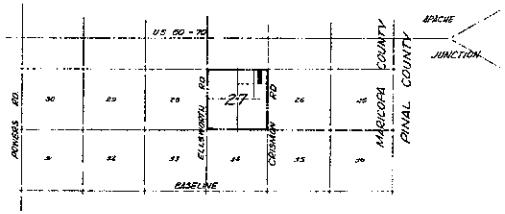
9-911

116-5



SCALE 1"=60'

B.M. NAIL IN POWER POLE
ELEV. 155147



LOCATION & VICINITY MAP

INDEXED
PAGED

205943

STATE OF ARIZONA
County of Maricopa } ss
I hereby certify that the within instrument was filed and recorded at request of
Wilfred Enterprises
NOV 6 '67 3 10
in Book 1116 Page 5
on page
Witness my hand and official seal the day and year aforesaid.
Lloyd H. Wood
County Recorder
By E. Adler
Deputy Recorder

CRISWAY ESTATES UNIT TWO

A SUBDIVISION OF PART OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 27 T.1N R.7E. G&S.R.B&M., MARICOPA COUNTY ARIZONA

DEDICATION

KNOWN ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF CRISWAY ESTATES UNIT TWO, PART OF THE NE ¼ OF THE NE ¼ OF SECTION 27 T.1N R.7E. G&S.R.B&M. MARICOPA COUNTY ARIZONA AS SHOWN PLATTED HEREON, AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID CRISWAY ESTATES UNIT TWO, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREETS, AND DRAINAGE RIGHT-OF-WAY CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH, THE STREETS AND DRAINAGE RIGHT-OF-WAY AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. UTILITY EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED, AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE

BY [signature]
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS, THE 12th DAY OF October 1967, BEFORE ME THE UNDERSIGNED OFFICER, PERSONALLY APPEARED Robert Carter WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION, AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL
MY COMISSION EXPIRES June 28 [illegible]
Kathryn [illegible]
NOTARY PUBLIC.

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 6th DAY OF Nov, 1967

CHAIRMAN
BY: [signature] ATTEST: [signature] CLERK

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF Oct. 1967
[signature]
REGISTERED ENGINEER

RECEIVED
OCT 17 1967
MARICOPA COUNTY PLANNING AND ZONING COMMISSION
BY

SUBDIVISION DEED RESTRICTIONS RECORDED IN BOOK 5825 PAGE 196

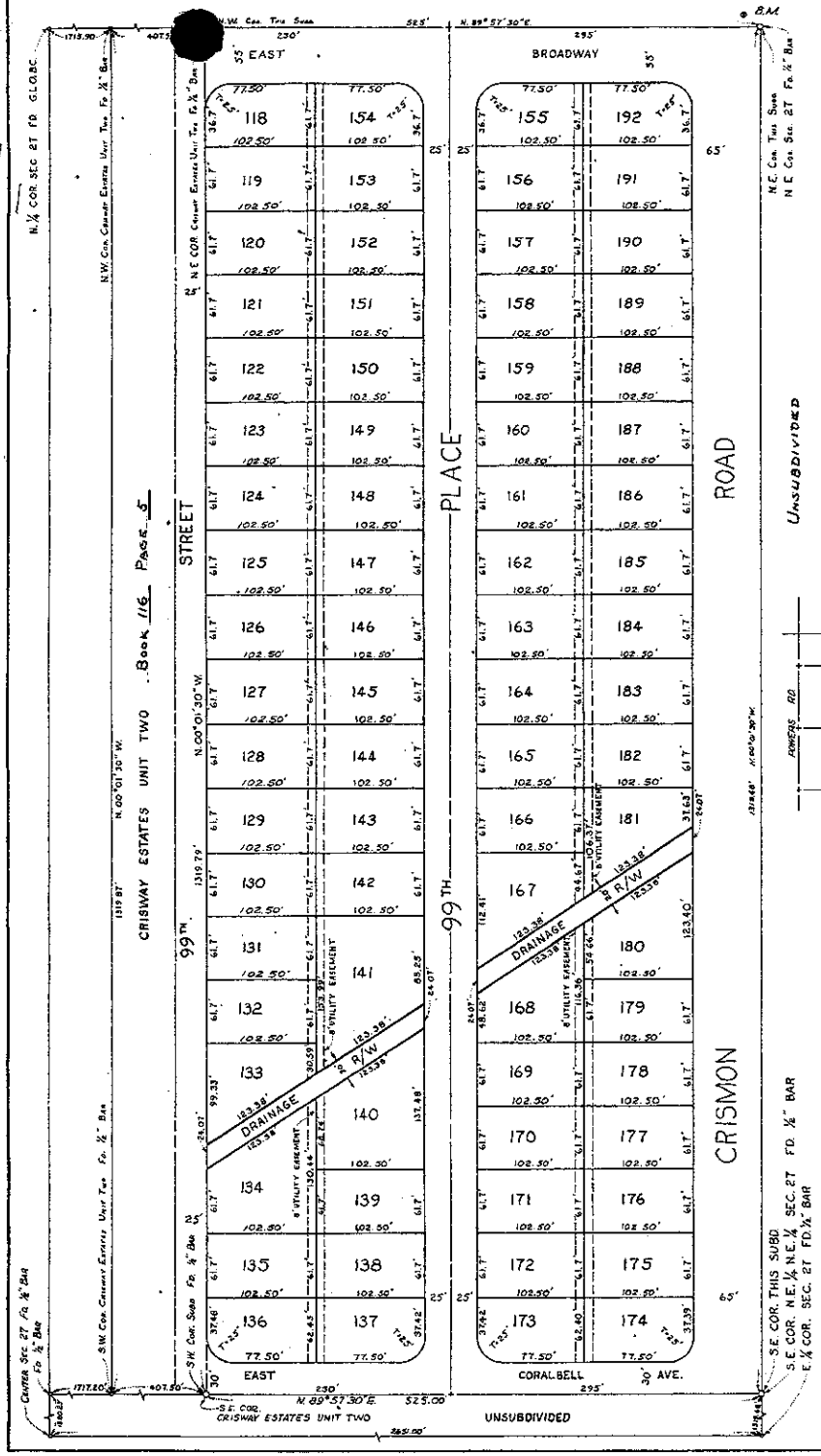
Final - October 26, 1967

116-5

87-811

118-48

CRISWAY ESTATES UNIT THREE



CRISWAY ESTATES UNIT TWO . Book 116 Page 5

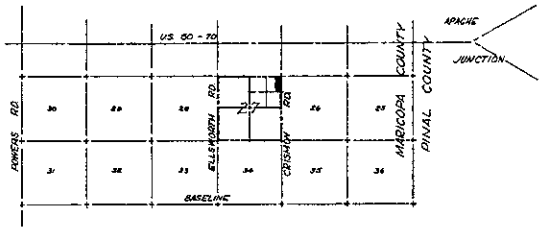
105958

STATE OF ARIZONA
County of Maricopa
I hereby certify that the within instrument was filed and recorded at request of
Desert Eliot Realty
JUN 25 '68 -3 PM
in Docket 778
on page 46
Witness my hand and official seal the day and year aforesaid.
Clerk of the Board
By Deputy Recorder

INDEXED
PAGED

SCALE 1"=60'

B.M. NAIL IN POWER POLE
ELEV. 1551.47



LOCATION & VICINITY MAP

A SUBDIVISION OF PART OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 27 T.1N. R.7E. G.&S.R.B.&M., MARICOPA COUNTY ARIZONA.

DEDICATION

KNOWN ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF CRISWAY ESTATES UNIT THREE, PART OF THE NE ¼ OF THE NE ¼ OF SECTION 27 T.1N. R.7E. G.&S.R.B.&M. MARICOPA COUNTY ARIZONA AS SHOWN PLATTED HEREON, AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID CRISWAY ESTATES UNIT THREE, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREETS, AND DRAINAGE RIGHT-OF-WAY CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH THE STREETS AND DRAINAGE RIGHT-OF-WAY AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. UTILITY EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED, AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE

BY Alfred Canter
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS, THE 18TH DAY OF June 1968, BEFORE ME THE UNDERSIGNED OFFICER, PERSONALLY APPEARED Alfred Canter, WHO ACKOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION, AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL
MY COMISSION EXPIRES 2-18-69. Katherine Cannadon
NOTARY PUBLIC

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 24 DAY OF June 1968.

CHAIRMAN
BY: [illegible]

ACTING CLERK
ATTEST: [illegible]

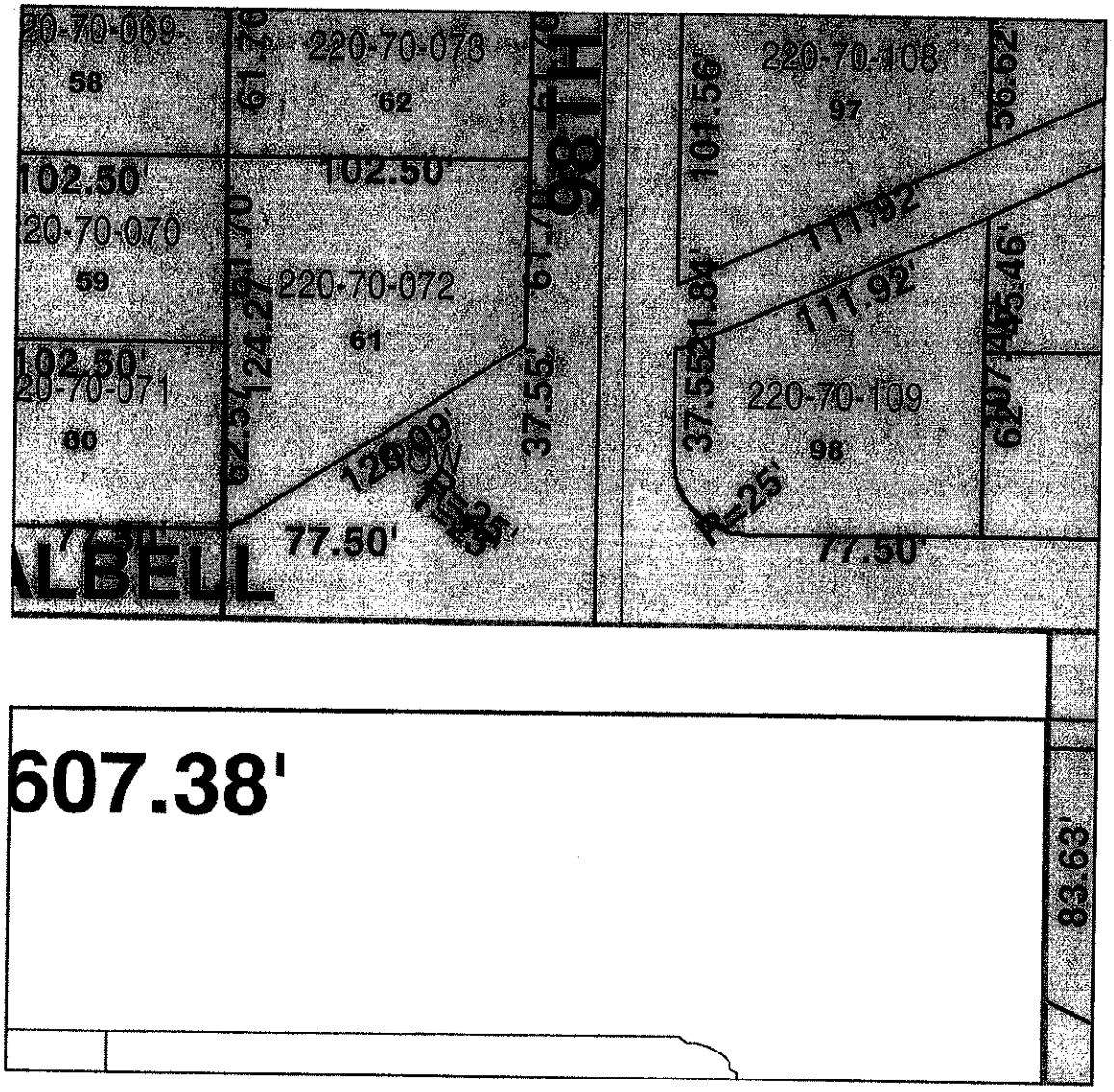
THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF June 1968.

Arnold W. Harring
ARNOLD W. HARRING
REGISTERED ENGINEER
620 FREESTONE CIRCLE
MESA, ARIZONA

RECEIVED
JUN 10 1968
MARICOPA COUNTY PLANNING AND ZONING COMMISSION

SUBDIVISION DEED RESTRICTIONS
RECORDED IN BOOK 7152 PAGE 367.

118-48



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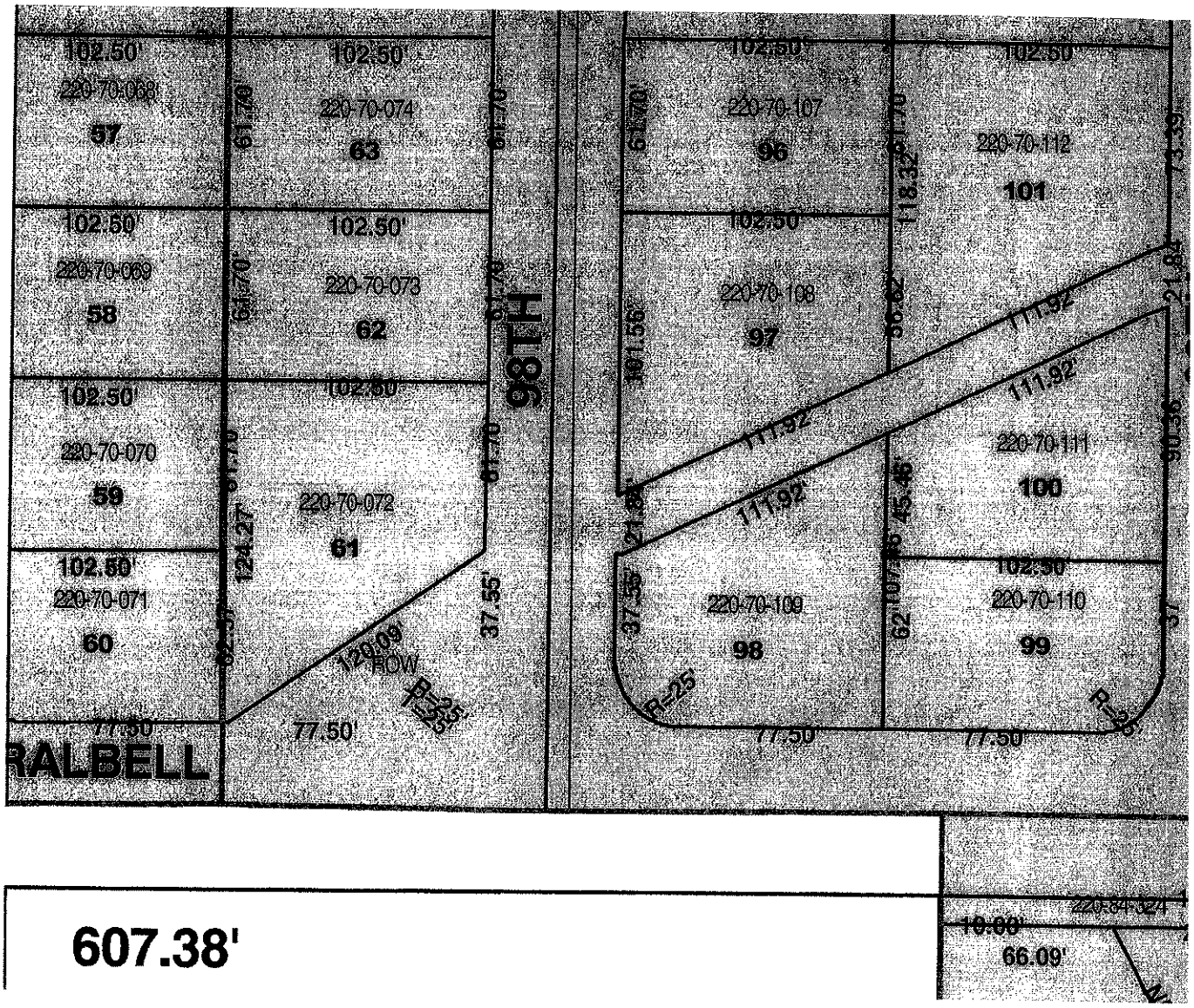

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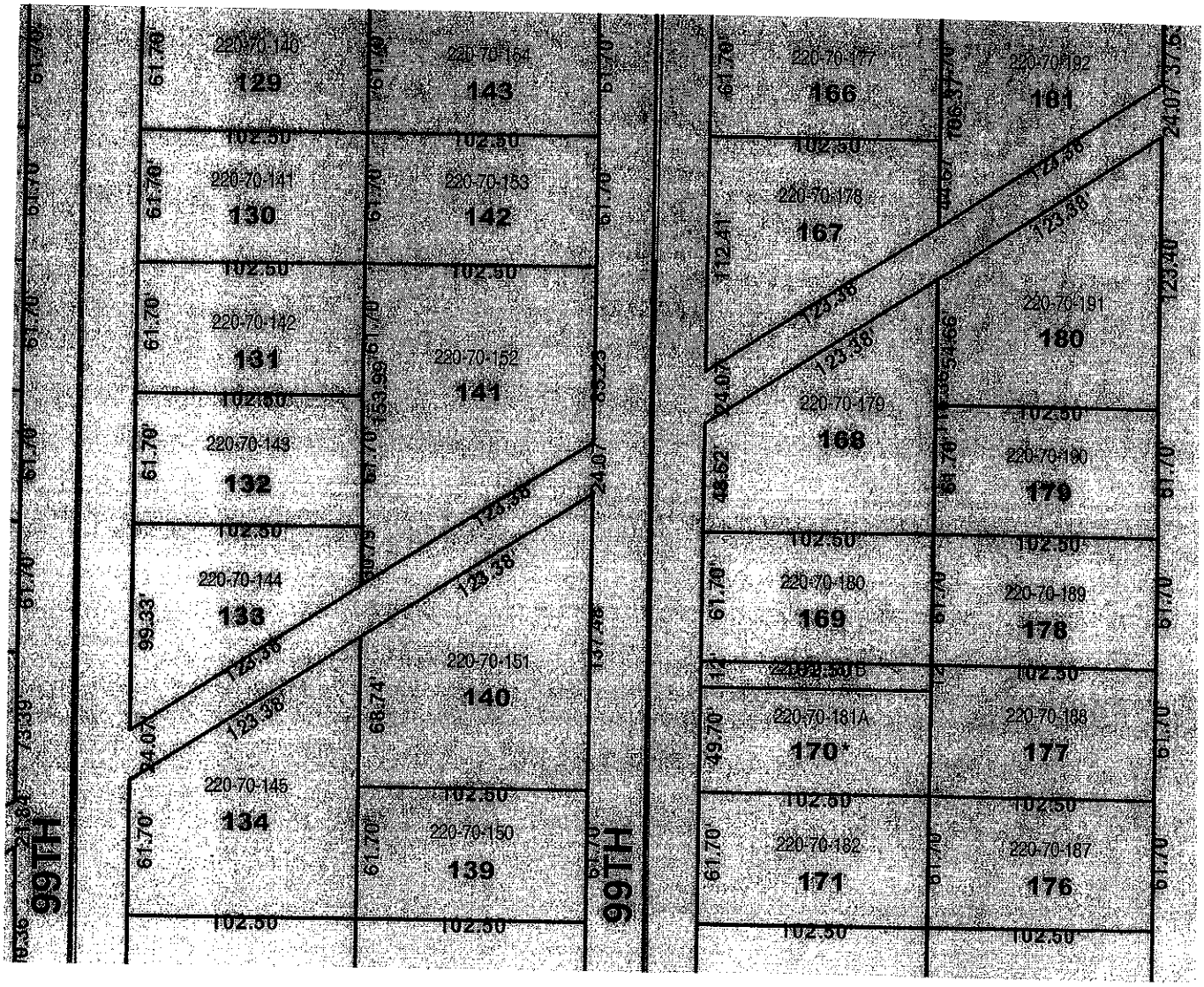
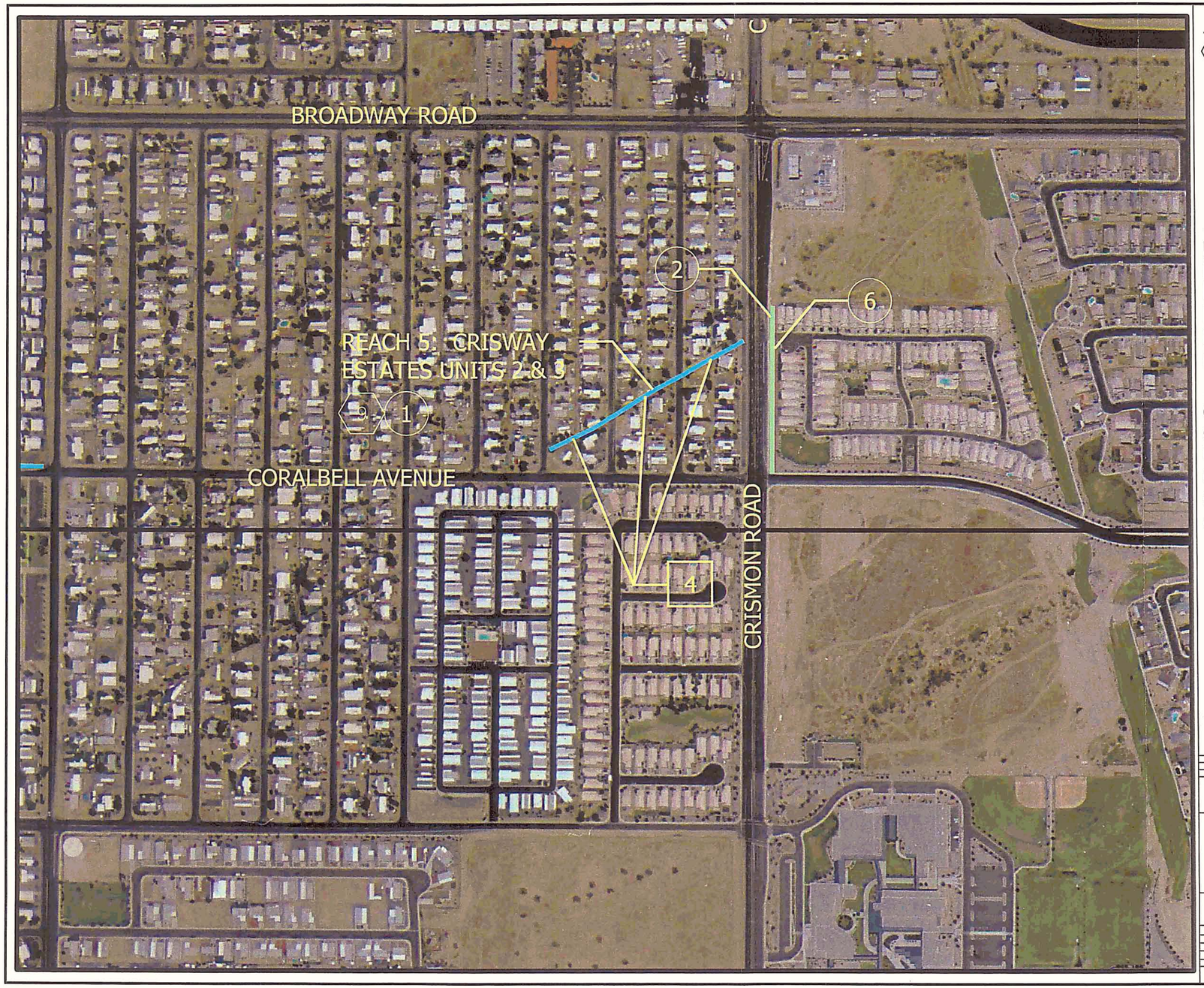
R-5_CriswayEII_116-5map.doc



R-5_CriswayEIII_118-48map.doc



EXISTING CONDITIONS

9 NO CONTINUOUS CHANNEL. DRAINS INTO PROPERTY ON 98TH WAY AND FLOODING PROPERTY.

UTILITIES

1 WATER
2 SEWER
3 GAS
4 OVERHEAD ELECTRIC
5 UNDERGROUND ELECTRIC
6 TELEPHONE

EXISTING CHANNEL STRUCTURES

1 EARTH LINED CHANNEL
2 CONCRETE CHANNEL
3 CONCRETE BOX CULVERT
4 CMP CULVERT
5 RESIDENT-MADE BRIDGE
6 DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES
DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 5
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 MC.Eng.On-Call\East Mesa Drains-CAB\6.0 Hydrology & Hydraulics\6.1 DWG\Proj 4-15\6.1 D' isting Facilities-Exhibits\exb-08_REACH 5.dwg, Layout1, 05/26/2004 04:11:21 PM, cmiranda-

Coralbell Channel
Location: Parallel Corabell Ave. between Ellsworth Rd. and 96th St.
Parcel Research: The Coralbell Channel is within the right-of-way of Coralbell Avenue. This portion of Coralbell Avenue is a County road.
Tax Information: Within Coralbell Avenue right-of-way.
Utility Research: Corabell Channel has underground electric cross the channel in 4 areas, according to SRP system maps; telephone lines parallel the channel on the north side of the channel and a 8-inch PVC sewer that crosses the channel between the downstream end of the unlined channel and upstream end of the lined channel.
Hydrologic Analysis: The watershed area was identified through site visits and GIS topographic data and calculated using the rational method, the Q100 = 440 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 150 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (2): The 100 year flows overtop the banks and if any channel improvements are to be made, additional hydraulic analysis will be needed.
Recommendation: Maintenance – (4): Reach 5A has significant erosion is occurring from residential trees. HDR recommends stabilizing half of the channel with concrete lining and provide routine maintenance and routine inspections.
Opinion of Improvement Cost: $14,764

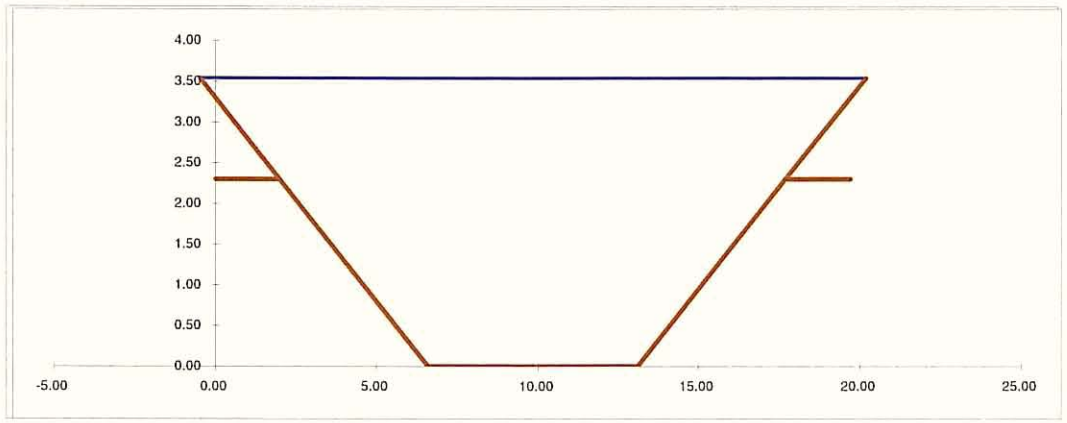
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Coralbell Channel (Reach 5A)	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 5A



Design Discharge Q = 270 cfs
Channel Section 5A
Right-of-Way Width n/a* ft *Part of County Road Right-of-Way

Calculate Flow Depth
Estimated Flow Depth 3.54 ft
Channel Depth 2.30 ft

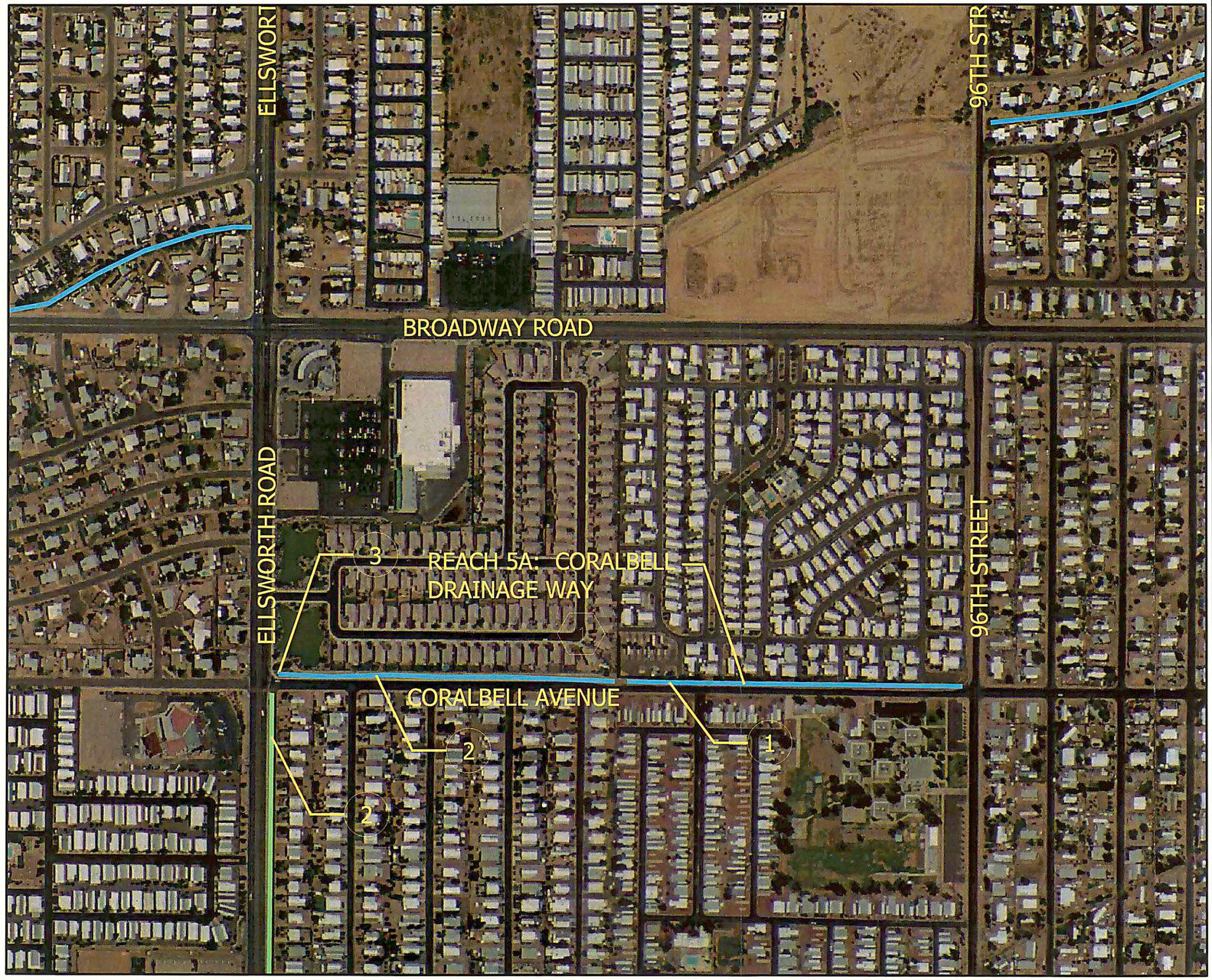
Estimated Q = 270.1 cfs
Average V = 5.62 ft/sec

Channel Parameters

Bottom Width =	6.50	ft
Side Slope =	2.00	:1
Manning n =	0.040	
Channel Slope	0.008	ft/ft
Flow Area =	48.07	ft^2
Wet Perimeter	22.33	ft
Hyd. Radius R	2.15	ft
Top Width =	20.66	ft
Hydraulic depth	2.33	ft
Froude No. =	0.65	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.21 ft

Available Freeboard
Channel Depth - Flow Depth = -1.24 ft Available Fb > Fb req'd



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 5-A CORALBELL
F.C.D. CONTRACT NO. 2003C018

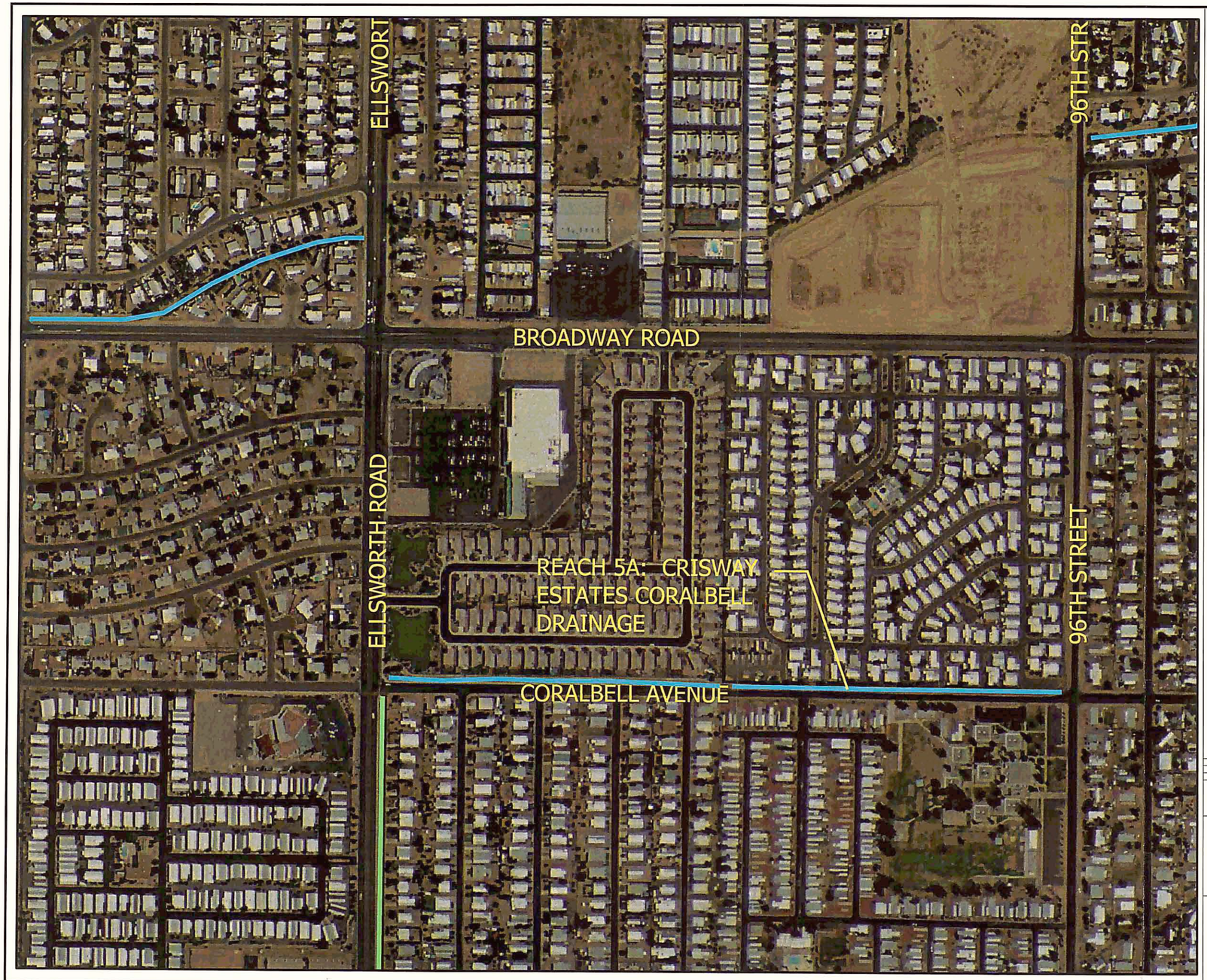
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07716\MC.Eng.On-Call\East.Mesa.Drains.CAR\6.0.Hydrology.&.Hydraulics\6.1.DWG\Existing.Facilities\Exhibits\exh-03_CORALBELL.DRAIN.dwg,Layout1,4/22/2004.10:19:23 AM,akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 5A CORALBELL
F.C.D. CONTRACT NO. 2003C018

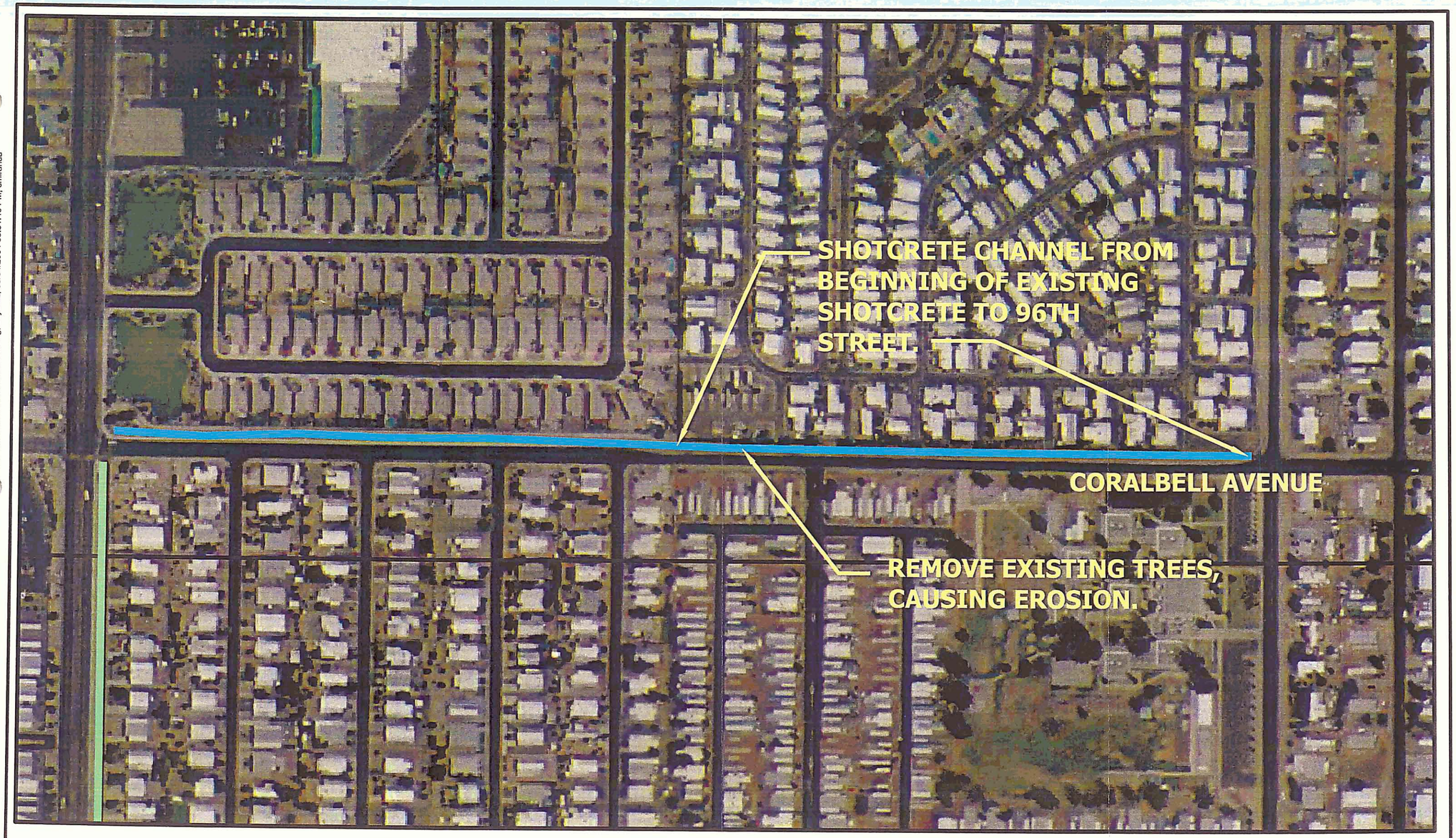
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07716\MC-Eng-On-Call\East-Mesa-Drains-CAR\6.0-Hydrology-&-Hydraulics\6.1-DWG\Exhibits\exh-11_CORALBELL DRAIN.dwg, Layout1, 4/22/2004 11:10:27 AM, akuchars, Proposed Faci.



LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

HDR Engineering, Inc.

CORALBELL CHANNEL
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\07-DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\CORALBELL.dwg, Layout2, 05/04/2004 03:31:40 PM, cmiranda

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1160 LOOKING DOWNSTREAM

PT1160 LOOKING UPSTREAM

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1133 LOOKING DOWNSTREAM

PT1133 LOOKING UPSTREAM

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1138 LOOKING DOWNSTREAM

PT1138 LOOKING UPSTREAM

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1143 LOOKING DOWNSTREAM

PT1143 LOOKING UPSTREAM

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1150 LOOKING DOWNSTREAM

PT1150 LOOKING UPSTREAM

Reach 5A - Survey Points 1131 – 1176 (Area 3) Coralbell Avenue

PT1155 LOOKING DOWNSTREAM

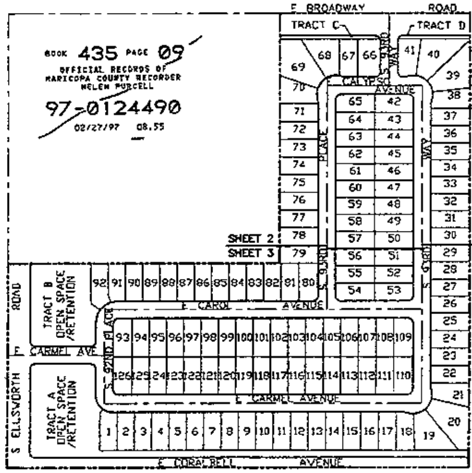
PT1155 LOOKING UPSTREAM

~~A FINAL PLAT OF~~ A CORRECTED FINAL PLAT OF

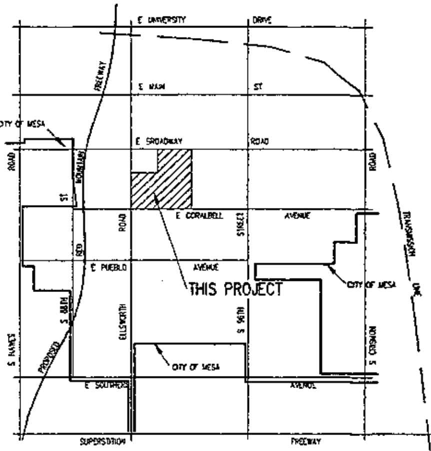
WYNSTONE II

A R1-6 R.U.P.D. subdivision of a portion of the Northwest quarter of the Northwest quarter of Section 27, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona.

BOOK 435 PAGE 09
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0124490
02/27/97 08.55



KEY MAP



VICINITY MAP

DEDICATION:

STATE OF ARIZONA
COUNTY OF MARICOPA

Know all men by these presents

That Metropolitan Land Co. SLHC Holdings, Inc, Arizona corporations, and CD & T Broadway Properties, an Arizona general partnership, as owners, have subdivided under the name of "Wynstone II", a portion of the Northwest quarter of the Northwest quarter of Section 27, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, as shown hereon and hereby publish this plat of said "Wynstone II" and hereby declare that this plat sets forth the location and gives the dimensions of the lots, tracts, streets and easements constituting same, and that each lot, tract, and street shall be known by the number, letter, or name given each respectively on this plat and that Metropolitan Land Co SLHC Holdings, Inc, and CD & T Broadway Properties, as owners, hereby dedicate to the public for use as such the streets as shown on this plat and included in the above described premises Easements are hereby granted for the purposes shown

In witness whereof

Metropolitan Land Co an Arizona corporation, as owner has hereunto caused its corporate name to be affixed and the same to be attested by the signature of the undersigned officer(s) thereto duly authorized

This 7th day of February, 1997

William J Mine — President

SLHC Holdings, Inc, an Arizona corporation, as owner has hereunto caused its corporate name to be affixed and the same to be attested by the signature of the undersigned officer(s) thereto duly authorized

This 7th day of February, 1997

Lee V London — Authorized Agent

CD & T Broadway Properties, an Arizona general patnership, as owner has hereunto caused its corporate name to be affixed and the same to be attested by the signature of the undersigned officer(s) thereto duly authorized

This ____ day of ____, 1997

Philip Barkdoll — CD&T Broadway Properties, Authorized Agent
Linda J Barkdoll — CD&T Broadway Properties, Authorized Agent
Clyde B Smith — CD&T Broadway Properties, Authorized Agent
Peggy Smith — CD&T Broadway Properties, Authorized Agent

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

On this 7th day of February, 1997 before me the undersigned officer, personally appeared William J Mine who acknowledged himself to be President of Metropolitan Land Co and that he, as such officer being duly authorized to do so, executed the foregoing instrument for the purpose therein contained by signing the name of the corporation as owner, by himself as such officer

In witness whereof, I hereunto set my hand and official seal

My commission expires 2-26-97 Notary Public

CERTIFICATE OF ASSURANCE:

Satisfactory Assurance in the Form of Subdivision Improvement Bond

From The American Insurance Company in the amount of $627,303.00 has been provided to gurantee pavement, drainage, water and sewer services in this subdivision Electric service has been assured by Arizona Public Service

Richard A. Wallace — 2-10-97
ASSISTANT COUNTY ENGINEER — DATE

CERTIFICATE OF COUNTY ASSESSOR:

I, the undersigned as a Deputy County Assessor, Maricopa County, Arizona do hereby certify that as of this date, the records of this office reflect that____

as designated on the plat is owner of the property as shown on the plat and more particularly described as assessor's parcel numbers 220-70-1E, 1J and a portion of 220-70-1K

Brad Kelly — 2-10-97
DEPUTY COUNTY ASSESSOR — DATE

CERTIFICATE OF COUNTY TREASURER:

I, the undersigned as a Deputy County Treasurer, Maricopa County, Arizona do hereby certify that as of this date, the records of this office reflect that there are no tax liens on any of the parcels comprising the plat, as listed in the assessor's certification with the following exceptions

2nd Half 1996 Property Taxes

DEPUTY COUNTY TREASURER — February 7, 1997 — DATE

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

On this 7th day of February, 1997 before me the undersigned officer, personally appeared Lee V London who acknowledged himself to be an authorized agent of SLHC Holdings, Inc and that he, as such agent being duly authorized to do so, executed the foregoing instrument for the purpose therein contained by signing the name of the corporation as owner, by himself as such officer

In witness whereof, I hereunto set my hand and official seal

My commission expires 2-26-97 Notary Public

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

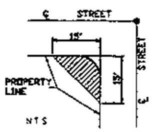
On this 6th day of February, 1997 before me the undersigned officers, personally appeared Philip Barkdoll, Linda J Barkdoll, Clyde B Smith and Peggy Smith who acknowledged themselves to be authorized agents of CD & T Broadway Properties and that they, as such agents being duly authorized to do so, executed the foregoing instrument for the purpose therein contained by signing the name of the partnership as owner, by themselves as such agents

In witness whereof, I hereunto set my hand and official seal

OFFICIAL SEAL DON BARKDOLL NOTARY PUBLIC-ARIZONA MARICOPA COUNTY

My commission expires 1-15-98 Notary Public

BOOK 441 PAGE 01
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0307567
05/08/97 09 26



① SIGHT DISTANCE TRIANGLE DETAIL

Area must be clear of landscaping, signs and other visibility obstructions above Two (2) Feet in height

DEVELOPMENT STANDARDS:

ZONING CLASSIFICATION	SETBACKS FRONT	REAR	SIDE	STREET	LOT WIDTH	LOT COVERAGE / LOT AREA PER DWELLING UNIT	MIN LOT SIZE (SQ FT)	DISTANCE BETWEEN BUILDINGS	HEIGHT REGULATIONS
R1-6 R U P D	18' MIN	15' MIN	5' & 10'	10' MIN	50'	45% MAX OF TOTAL LOT AREA / 5,500	5,500	10' MIN	30' MAX
							AVERAGE (SQ FT)		
							6,785		

LEGEND:

- SUBDIVISION BOUNDARY
- EASEMENT
- EXISTING RIGHTS-OF-WAY OF DEVELOPMENT
- ▲ SUBDIVISION CORNER SET SURVEY MARKER PER MAG STANDARD DETAIL 120-1, TYPE B, UNLESS OTHERWISE NOTED
- ● MONUMENT FOUND AS NOTED
- • RIGHT OF WAY CORNER OR CHANGE OF ALIGNMENT
- (R) RADIAL BEARING
- PUFE PUBLIC UTILITY AND FACILITIES EASEMENT
- VNAE VEHICLE NON ACCESS EASEMENT
- o SET SURVEY MARKER PER MAG STD DET 120-1, TYPE "D"
- ① SIGHT DISTANCE TRIANGLE SEE DETAIL BELOW

BASIS OF BEARINGS:

The bearing of North 89°59'17" West along the North line of the Northwest quarter of Section 27, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona, as shown on Survey #15386 by Keogh Engineering dated June 1994 was used as the basis of bearings for this plat

NOTES

1. Construction within utility easements shall be limited to utilities and wood, wire or removable section type fencing
2. Communication lines to be constructed underground as required by the Arizona Corporation Commission general order R (42) 33
3. This subdivision is located within the City of Mesa service area which is designated as having an assured water supply in accordance with "ARS 45-576"
4. Each lot in this subdivision is permitted one dwelling for a total of 126 units
5. No structure of any kind shall be constructed or any vegetation be planted, nor be allowed to grow within the drainage easements which would impede the flow of water over, under or through the easements
6. A representative of the Flood Control District of Maricopa County should be present at the preconstruction meeting to held prior to the commencement of grading on the site contact Mr Chuck Feuquay at 506-1501 to arrange for their attendance
7. A homeowners association shall be formed of the lots owners of "WYNSTONE II" to enforce subdivision CC&R'S and to maintain the common areas as necessary
8. This plat is being recorded to add a 1' VNAE along the southern boundary of lots 1-20 (See Sheet 3)

APPROVALS:

Approved by the Board of Supervisors of Maricopa County, Arizona

This the 26th day of February 1997

by Don Stapley, CHAIRMAN — Attest Ed Keyes, CLERK

The provisions of Section 2318 of Maricopa County Zoning ordinance (outdoor light control) will be adhered

TRACT TABLE		
AREAS		DESCRIPTIONS
Tract "A" -	74,299 SF	Landscape and Public Utility and Facilities Easement (as shown)
Tract "B" -	43,775 SF	Landscape and Public Utility and Facilities Easement (as shown)
Tract "C" -	2,806 SF	Landscape and Public Utility and Facilities Easement (as shown)
Tract "D" -	2,001 SF	Landscape, Drainage and Public Utility and Facilities Easement (as shown)
Total -	122,881 SF	Total area of Tracts

SURVEYOR'S CERTIFICATE:

I, F Joseph Mechan, hereby certify, that I am a Registered Land Surveyor in the State of Arizona That this map consisting of three (3) sheets, correctly represents a survey done under my supervision during the month of Dec 1996 That the survey is true and complete as shown, that the monuments shown actually exist or will be set as shown That their positions are correct and accurate as shown and that said monuments are sufficient to enable the survey to be retraced All lot corners have been or will be permanently set by completion of construction

REGISTERED LAND SURVEYOR CERTIFICATE NO 11754 F JOSEPH MECHAM ARIZONA

F Joseph Mechan #11754 — 2.6.97 Date

Corrected A Final Plat of Wynstone II
I.E.S. JN 0803
Sheet 1 of 3
S96-17
Z96-46

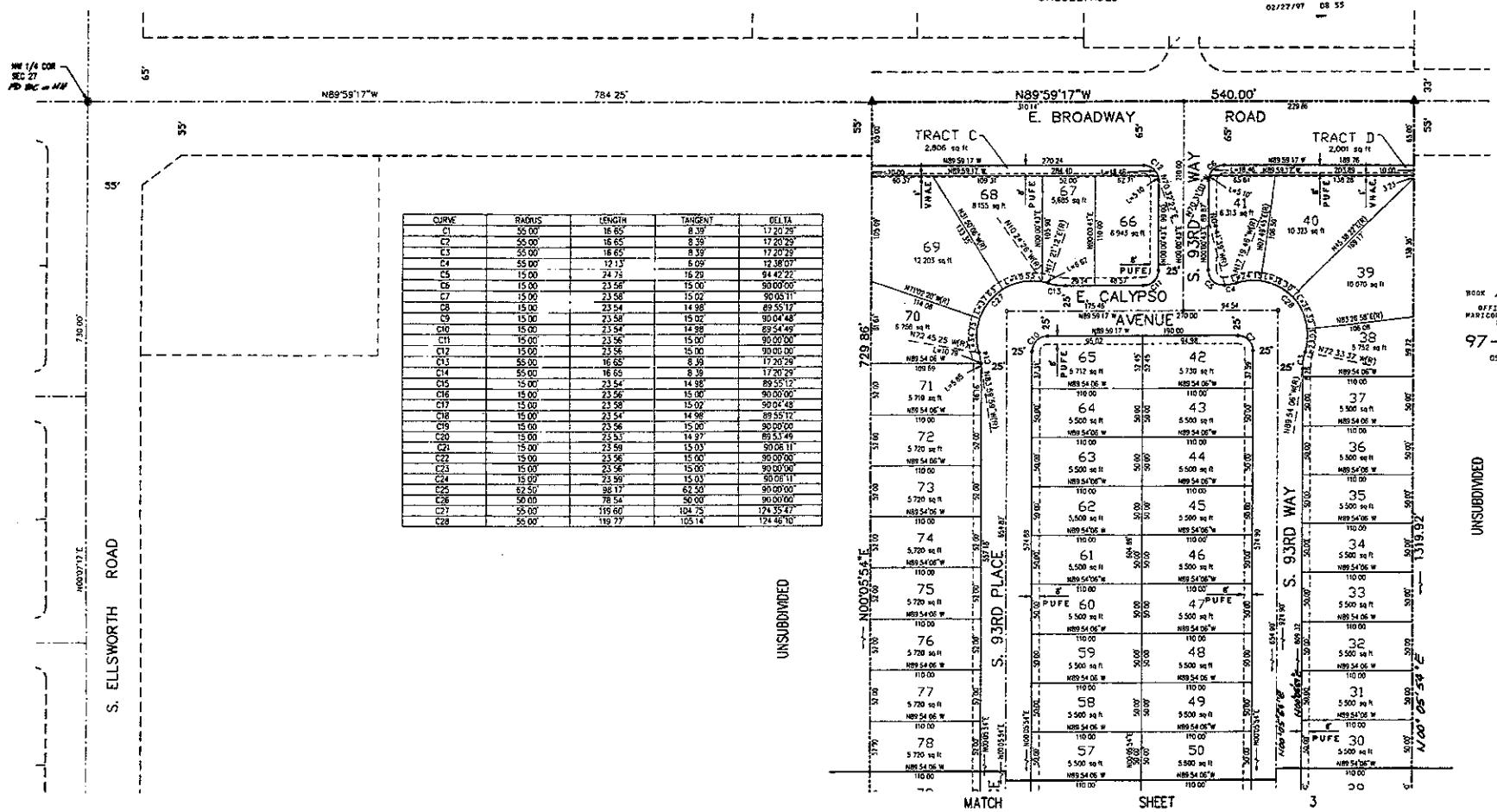
Revised 2/6/97
Revised 1/17/97
Date Of Prep. 11/1/96

Gross Area : 26.99 ACRES Number of Lots: 126	INFINITY ENGINEERING SERVICES, LTD 610 West Broadway Road Suite 215 Tempe, AZ 85282 Phone 902-0571 Fax 902-0594

441-01

BOOK 435 PAGE 09
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0124490
02/27/97 08 55

BOOK 441 PAGE 01
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0307567
05/08/97 09 26



CURVE	RADIUS	LENGTH	TANGENT	DELTA
C1	55.00'	16.65'	8.39'	17°20'29"
C2	55.00'	16.65'	8.39'	17°20'29"
C3	55.00'	16.65'	8.39'	17°20'29"
C4	55.00'	12.13'	6.09'	12°38'07"
C5	15.00'	24.73'	16.29'	94°42'22"
C6	15.00'	23.56'	15.00'	90°00'00"
C7	15.00'	23.58'	15.02'	90°05'11"
C8	15.00'	23.54'	14.98'	89°55'12"
C9	15.00'	23.58'	15.02'	90°04'48"
C10	15.00'	23.54'	14.98'	89°54'49"
C11	15.00'	23.56'	15.00'	90°00'00"
C12	15.00'	23.56'	15.00'	90°00'00"
C13	55.00'	16.65'	8.39'	17°20'29"
C14	55.00'	16.65'	8.39'	17°20'29"
C15	15.00'	23.54'	14.98'	89°55'12"
C16	15.00'	23.56'	15.00'	90°00'00"
C17	15.00'	23.58'	15.02'	90°04'48"
C18	15.00'	23.54'	14.98'	89°55'12"
C19	15.00'	23.56'	15.00'	90°00'00"
C20	15.00'	23.53'	14.97'	89°53'49"
C21	15.00'	23.58'	15.03'	90°06'11"
C22	15.00'	23.56'	15.00'	90°00'00"
C23	15.00'	23.56'	15.00'	90°00'00"
C24	15.00'	23.58'	15.03'	90°06'11"
C25	62.50'	98.17'	62.50'	90°00'00"
C26	50.00'	78.54'	50.00'	90°00'00"
C27	55.00'	119.60'	104.75'	124°35'47"
C28	55.00'	119.77'	105.14'	124°46'10"

SCALE 1"=50'

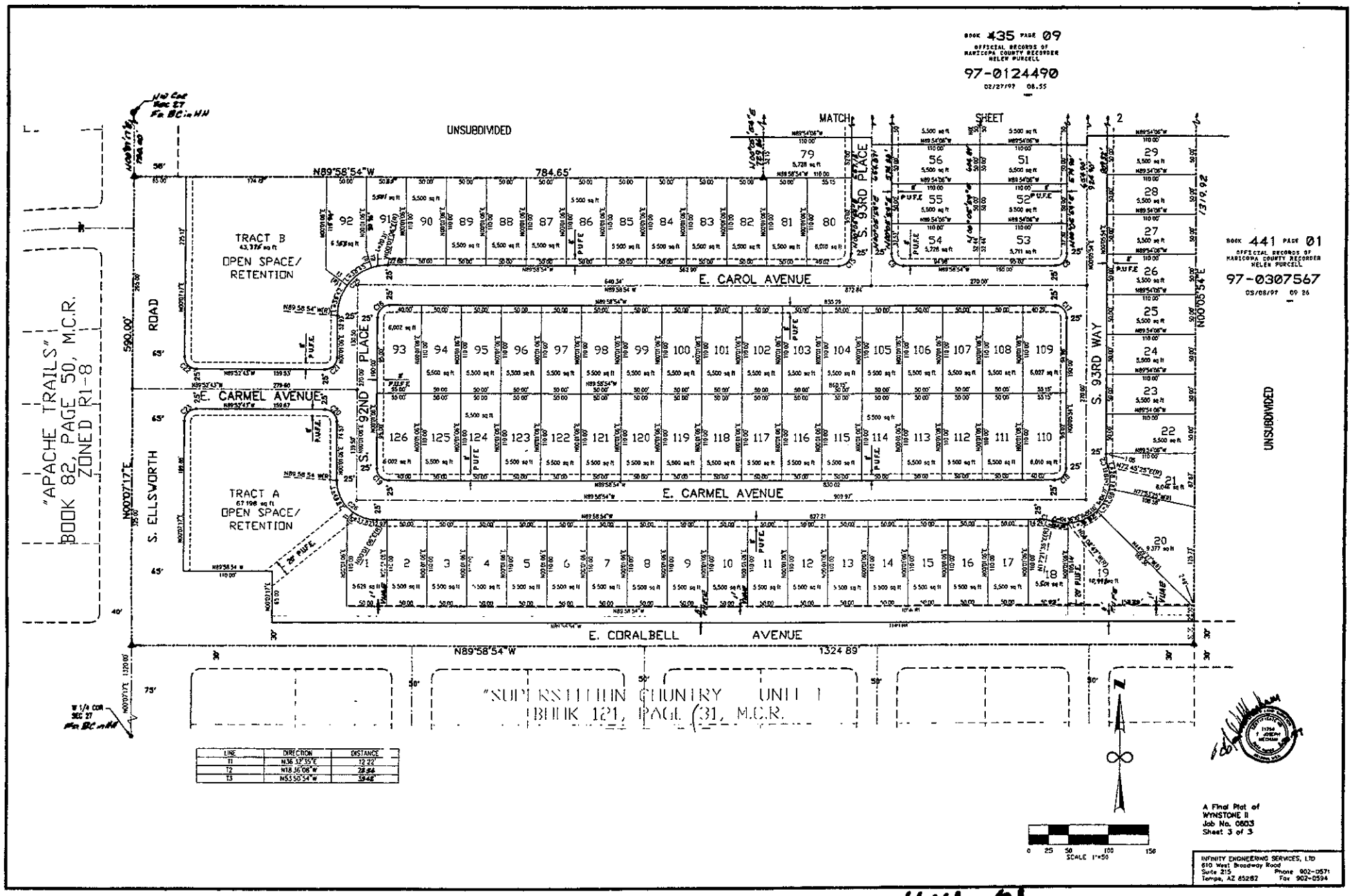
A Final Plat of
WYNSTONE II
Job No 0803
Sheet 2 of 3

INFINITY ENGINEERING SERVICES, LTD
610 West Broadway Road
Suite 215
Tempe, AZ 85282
Phone 902-0571
Fax 902-0594

441-01

BOOK 435 PAGE 09
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0124490
02/27/97 08.55

BOOK 441 PAGE 01
OFFICIAL RECORDS OF MARICOPA COUNTY RECORDER HELEN PURCELL
97-0307567
03/08/97 09 26



LINE	DIRECTION	DISTANCE
T1	N36°32'35"E	12.22'
T2	N18°36'06"W	28.84
T3	N55°50'54"W	39.48'

A Final Plat of
WYNSTONE II
Job No. 0803
Sheet 3 of 3

INFINITY ENGINEERING SERVICES, LTD
610 West Broadway Road
Suite 215
Tempe, AZ 85282
Phone 902-0571
Fax 902-0594

441-01

126-44

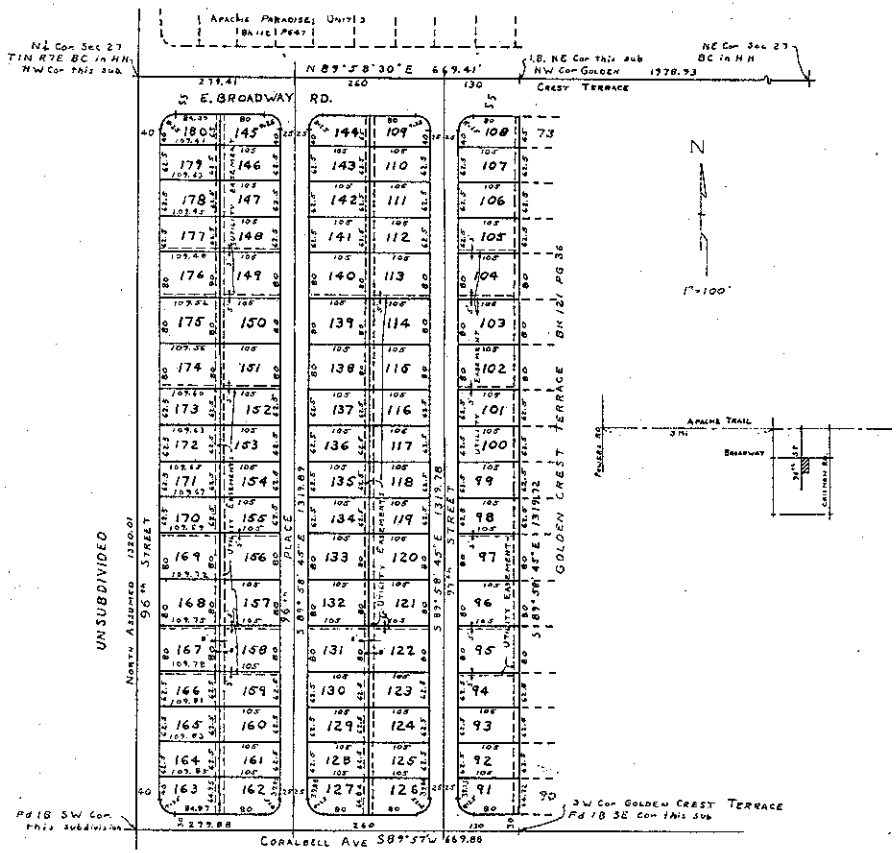
GOLDEN CREST TERRACE

UNIT 2

227365 A INDEXED
STATE OF ARIZONA
County of Maricopa
I hereby certify that the within instrument was filed and recorded at request of
Allen Barton Realty
in Docket 6912 Page 98
on Date Nov 19
Witness my hand and official seal the day and year aforesaid.
Fred Hill Maricopa County Recorder
By Delly Long Deputy Recorder

126-44

A SUBDIVISION OF PART OF THE WEST HALF OF THE NORTHEAST QUARTER OF SECTION 27, T1N, R7E, G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA.



DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF GOLDEN CREST TERRACE UNIT 2, PART OF THE W½ OF THE NE¼ OF SEC 27, T1N, R7E, G.&S.R.B.&M. MARICOPA COUNTY, ARIZONA, AS SHOWN PLATTED HEREON, AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID GOLEN CREST TERRACE UNIT 2, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS AND STREETS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH, THE STREETS AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHERIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE

BY Ernest Durrant
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA.
ON THIS, THE 18th DAY OF November, 1969. BEFORE ME THE UNDERSIGNED OFFICER PERSONALLY APPEARED Ernest Durrant WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FORGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER

IN WITNESS WHEREOF I HEREBY SET MY HAND AND OFFICAL SEAL
MY COMMISSION EXPIRES May 14, 1972 Mary H. Barnet
NOTARY PUBLIC

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY THIS 8th DAY November 1969.

BY: Acting CHAIRMAN ATTEST: CLERK

CERTIFICATION

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY SUPERVISION DURING THE MONTH OF OCT. 1969.

ROBERT STANLEY P.E.
REG. CIVIL ENGINEER #4757

SEE DEED RESTRICTIONS RECORDED DEC-8 1969
BK PG M.C.R.
DOCKET 7908 PAGE 98-99

Registered Professional Engineer (Civil) Robert E. Stanley Date 31 1962 Arizona U.S.A.

RECEIVED
NOV 19 1969
MARICOPA COUNTY PLANNING AND ZONING COMMISSION

DRAWN 11-5-69

ROBERT STANLEY
ENGINEERING & SURVEYING
3940 W. MARYLAND AVENUE
PHOENIX 19, ARIZ. PH: 939-1064

126-44

126-44

REACH 5A; PARCEL 220-84-226

Unofficial Documents

at the request of Lawyers Title of Arizona, Inc.

when recorded mail to
WYNSTONE CROSSING HOA
P.O. BOX 965
GILBERT, AZ 85299-0965

00852277-004-AJB

2/2 Special Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we,

BEAZER HOMES SALES ARIZONA INC., A DELAWARE CORPORATION

do/does hereby convey to

WYNSTONE CROSSINGS HOMEOWNERS ASSOCIATION INC., AN ARIZONA NONPROFIT CORPORATION

the following real property situated in **Maricopa**, County, Arizona:

Tracts A, B, C, and D, WYNSTONE II, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona, in Book 435 of Maps, page 9, and Corrected at Book 441 of Maps, page 1.

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

And the Grantor hereby binds itself and its successors to warrant and defend the title, against all acts of the Grantor herein, and no other, subject to the matters set forth.

Dated this day of AUGUST, 1997

BEAZER HOMES SALES ARIZONA INC.
SEE ATTACHED FOR SIGNATURE/ACKNOWLEDGMENT

STATE OF
County of } ss

This instrument was acknowledged before me this _____ day of _____, 19____ by **BEAZER HOMES SALES ARIZONA INC.**

Notary Public
My commission will expire_____

STATE OF
County of } ss

This instrument was acknowledged before me this _____ day of _____, 19____ by

Notary Public
My commission will expire_____

LTA
Lawyers Title of Arizona, Inc.

380 (11/4/94)

SIGNATURE BLOCK and NOTARY ACKNOWLEDGEMENT FOR BEAZER HOMES SALES ARIZONA INC., A DELAWARE CORPORATION

Unofficial Document

BEAZER HOMES SALES ARIZONA INC.
A DELAWARE CORPORATION

BY: Lindy K. Auten
LINDY K. AUTEN, Assistant Secretary

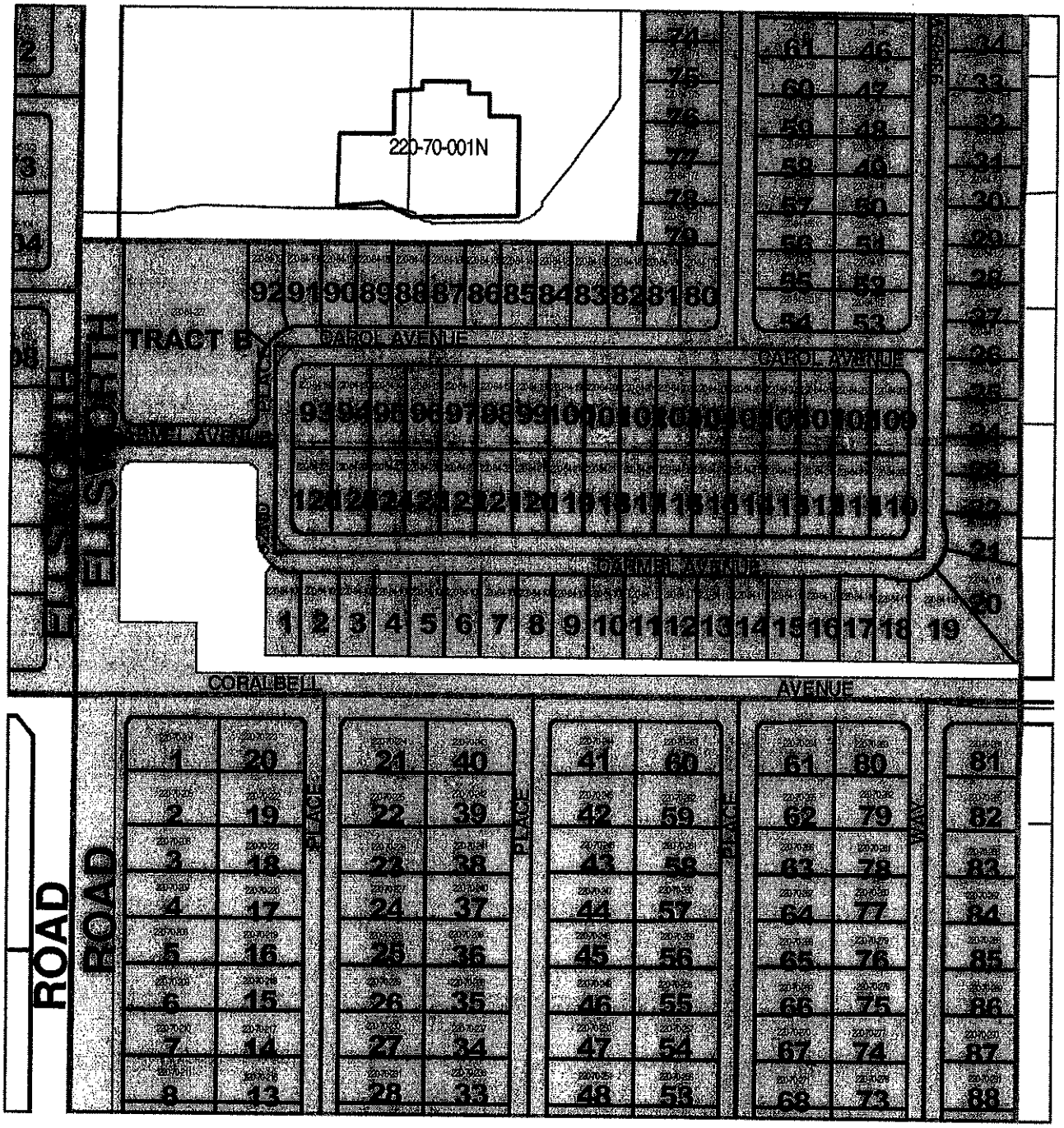
STATE OF ARIZONA)
) ss
COUNTY OF MARICOPA)

On this 7th **day of** August**, 1997, personally appeared before me LINDY K. AUTEN, known to me to be Assistant Secretary, of Beazer Homes Sales Arizona Inc., a Delaware Corporation and acknowledged to me that she executed this instrument in her capacity and on behalf of the above named corporation.**

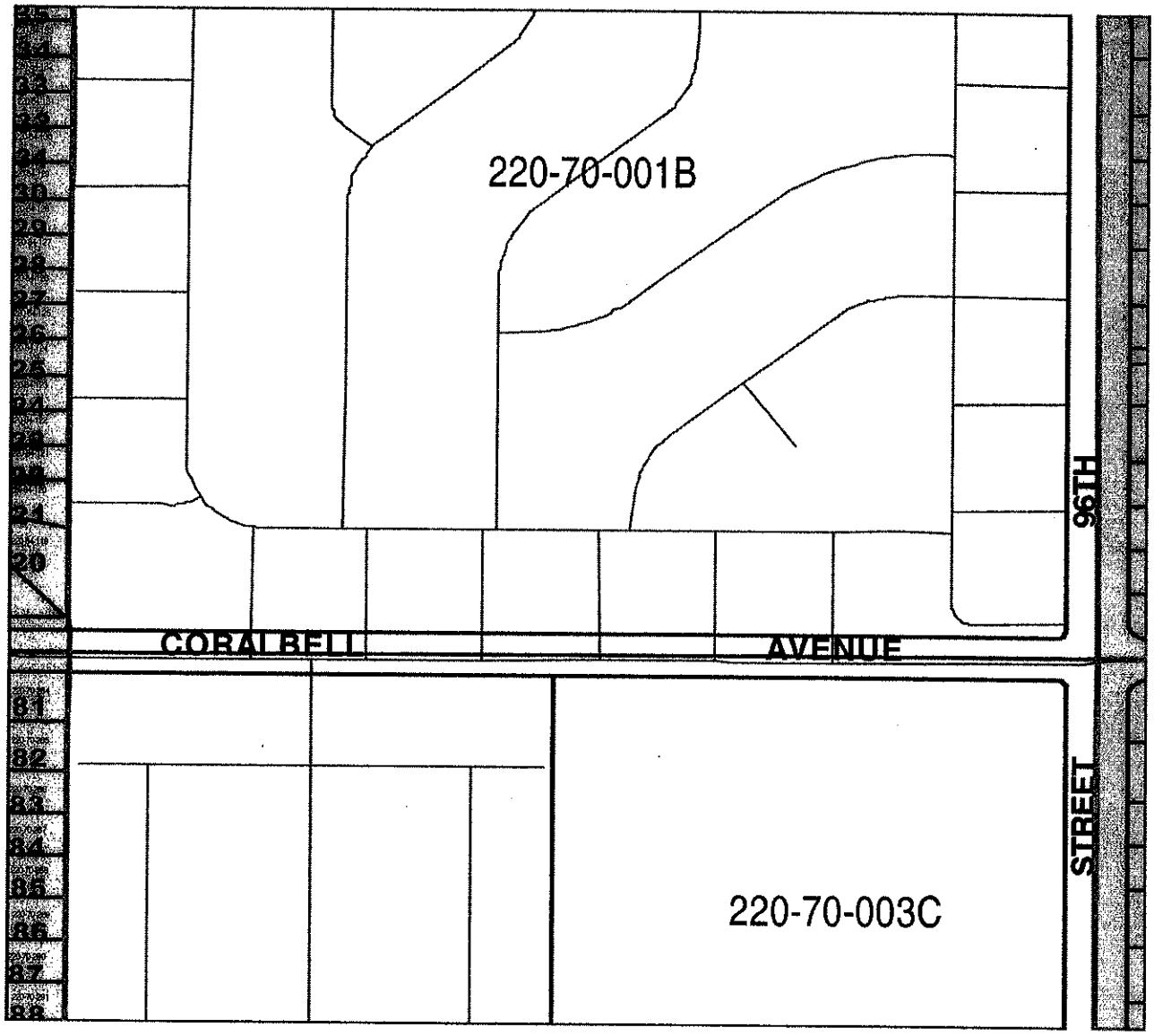
OFFICIAL SEAL
ARLENE BEJARANO
NOTARY PUBLIC-ARIZONA
MARICOPA COUNTY
My Comm. Expires Nov. 1, 2000

Notary Public

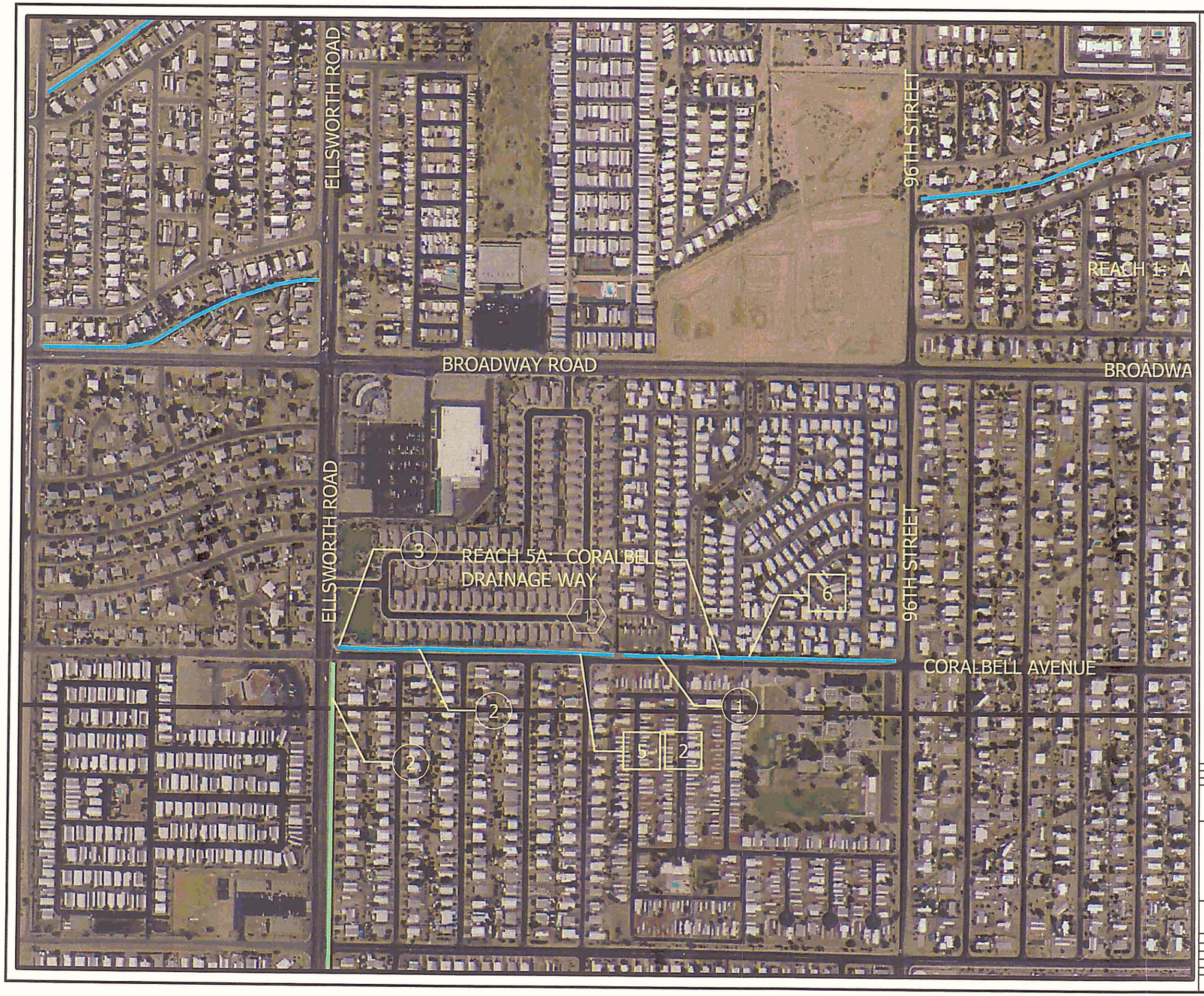
my commission expires: 11/1/2000



R-5A_Tract-A_WofEllsw_map.doc



R-5A_Wof96thmap.doc



EXISTING CONDITIONS

1 EROSION REPAIR NEEDED.

UTILITIES

1 WATER
2 SEWER
3 GAS
4 OVERHEAD ELECTRIC
5 UNDERGROUND ELECTRIC
6 TELEPHONE

EXISTING CHANNEL STRUCTURES

1 EARTH LINED CHANNEL
2 CONCRETE CHANNEL
3 CONCRETE BOX CULVERT
4 CMP CULVERT
5 RESIDENT-MADE BRIDGE
6 DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES
DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 5A
CORABELL CHANNEL
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 8

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 MC-Eng-On-Call\East-Mesa-Drains-CAR\6.0-Hydrology-&-Hydraulics\6.1-DWG\Prg-4-15\6.1-D isting-Facilities-Exhibits\exh-03_CORALBELL-DRAIN.dwg-Layout1-05/26/2004-03:54:41-PM-

Reach 7: Knolls Estates

Location: Running south along 85th St. into the Broadway Channel.

Parcel Research: Dedication: "dedicates to the Public for use as such, the streets, drainage utility R/W, and alleys as shown on said plat." (Plat map covered entire drainage reach)."

Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.

Utility Research: Reach 7 has overhead electric that parallels and crosses the channel; a 6-inch water line that parallels the west bank of the channel; underground electric that parallels the east bank of the channel; and a 2-inch gas line that parallels the west bank of the channel.

Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC, Q100 = 517 cfs.

Hydraulic Analysis: The minimum allowable flow for this channel is 60 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (3): The channel provides drainage for the Knolls Estates subdivision and the 100-year flows overtop the banks significantly.

Recommendation: Maintenance – (3): Reach 7 has significant erosion on the west bank of the channel that is undermining a couple of mobile home park resident's fences. Also, there may be discharges of gray water (i.e. washing machines) discharging into the channel, which is a violation the County's NPDES Phase II Permit. Reach 7 has low power lines, which makes it difficult for heavy equipment access. Also, utility lines are in the channel bottom that is affecting the maintenance operations. HDR recommends stabilizing channel with concrete lining and coordinating with the respective utility company to establish prior rights and have them relocate their utilities outside of the drainage channel. Provide monthly maintenance, monthly inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit Requirements.

Opinion of Improvement Cost: $60,700

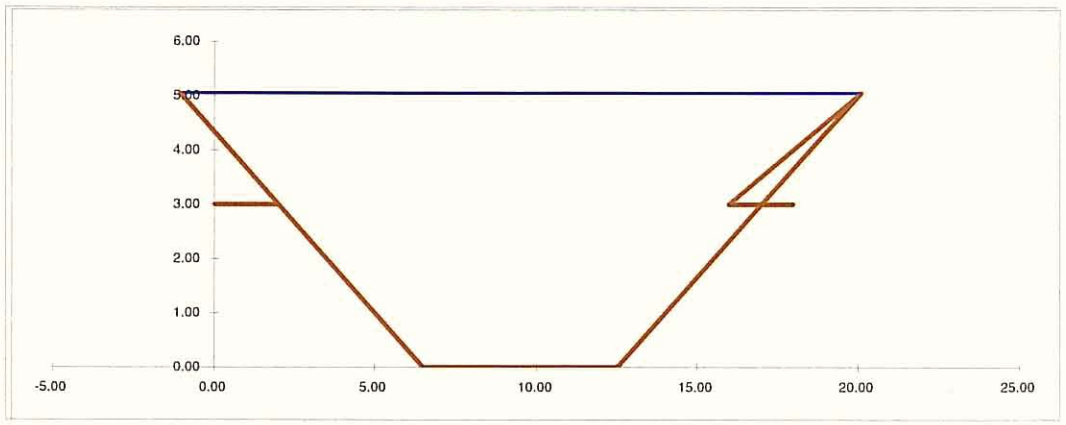
Job No.		No.	

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 7	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 7



Design Discharge Q = 517 cfs
Channel Section 7
Right-of-Way Width 30 ft

Calculate Flow Depth
Estimated Flow Depth 5.05 ft
Channel Depth 3.00 ft

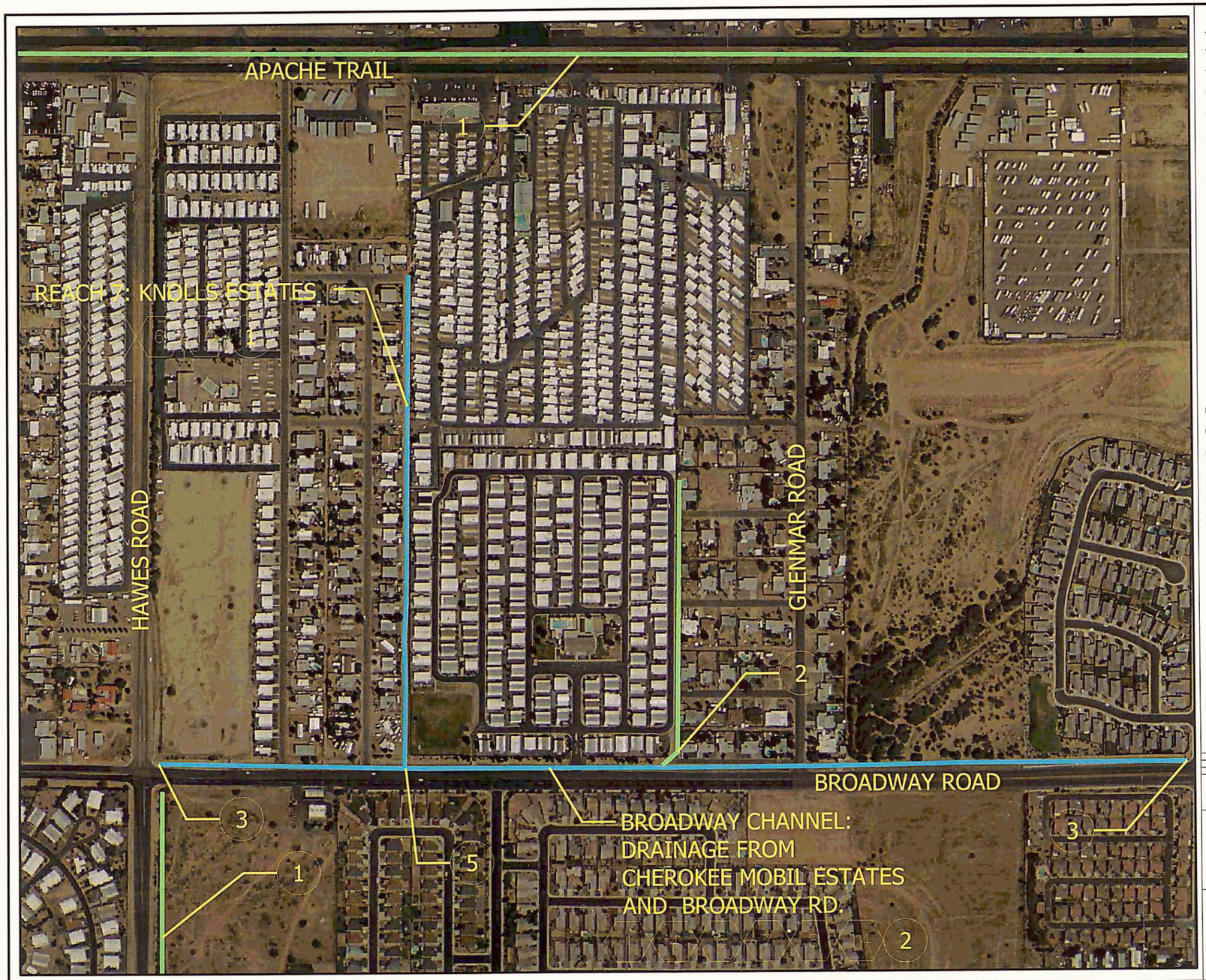
Estimated Q = 517.4 cfs
Average V = 7.55 ft/sec

Channel Parameters

Bottom Width =	6.00	ft
Side Slope =	1.50	:1
Manning n =	0.040	
Channel Slope	0.010	ft/ft
Flow Area =	68.55	ft^2
Wet Perimeter	24.21	ft
Hyd. Radius R	2.83	ft
Top Width =	21.15	ft
Hydraulic depth	3.24	ft
Froude No. =	0.74	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.32 ft

Available Freeboard
Channel Depth - Flow Depth = -2.05 ft Available Fb > Fb req'd



EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED
- (3) OVERHEAD POWERLINES TOO LOW
- (4) EXCESSIVE TREE MAINTENANCE NEEDED
- (6) ILLEGAL DISCHARGES
- (7) ILLEGAL DUMPING
- (8) DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE
- (10) COMMUNICATION AND GAS LINES IN CHANNEL BOTTOM AFFECTING DISTRICT'S ABILITY TO PERFORM EROSION REPAIR
- (14) IMPROPER BANK STABILIZATION

EXISTING CHANNEL STRUCTURES

- (1) EARTHEN CHANNEL
- (2) CONCRETE CHANNEL
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 7 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

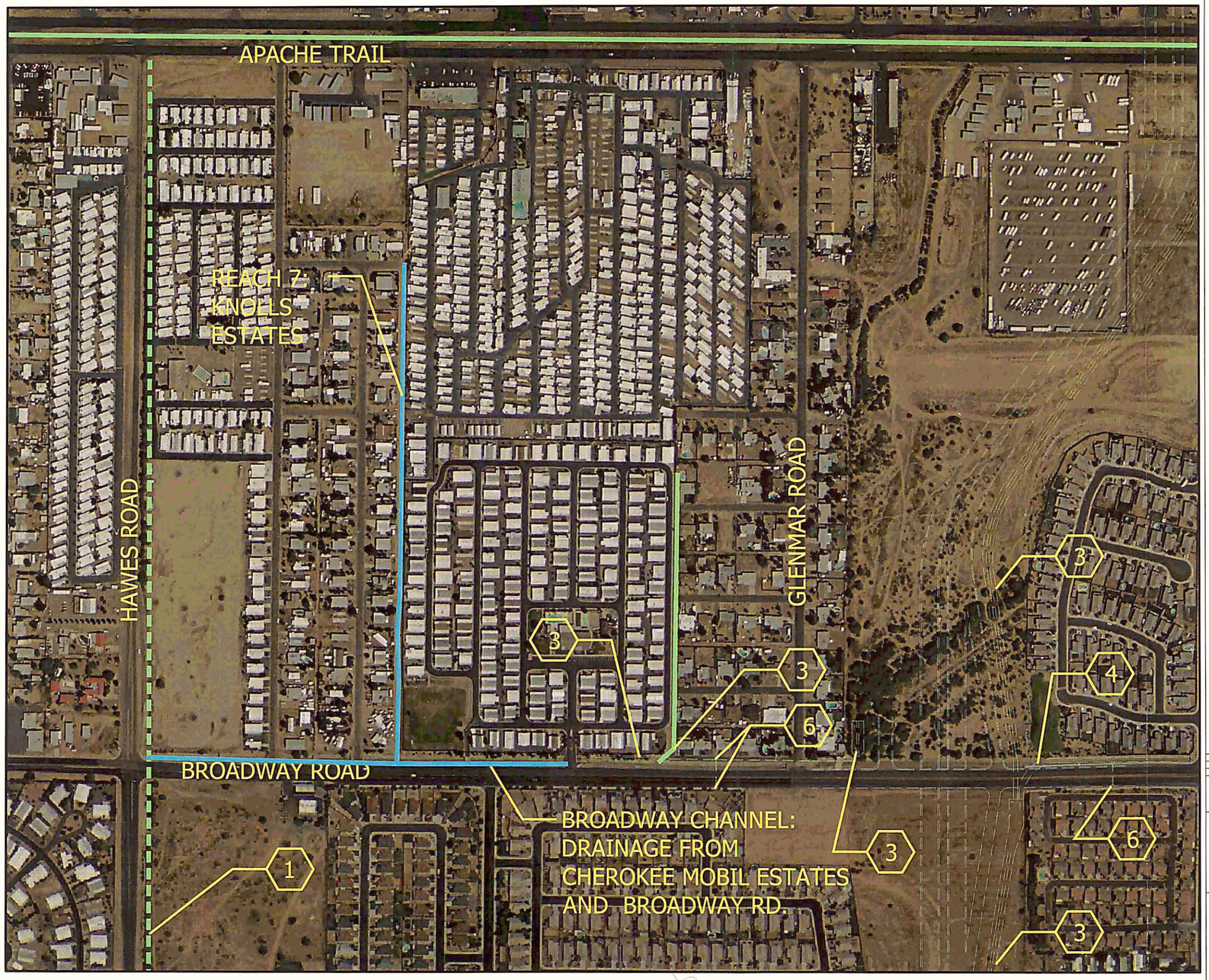
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\10711 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Existing Facili hibits\exh-09_REACH 7.dwg, Layout1, 4/21/2004 4:08:42 PM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 7 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0710MC-Eng-On-Call\East Mesa Drains CAR\6.0-Hydrology & Hydraulics\6-1.DWG\Proposed Fac exhibits\exh-17_REACH 7.dwg, Layout1, 4/21/2004 3:48:12 PM, akuchars

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR

HDR Engineering, Inc.

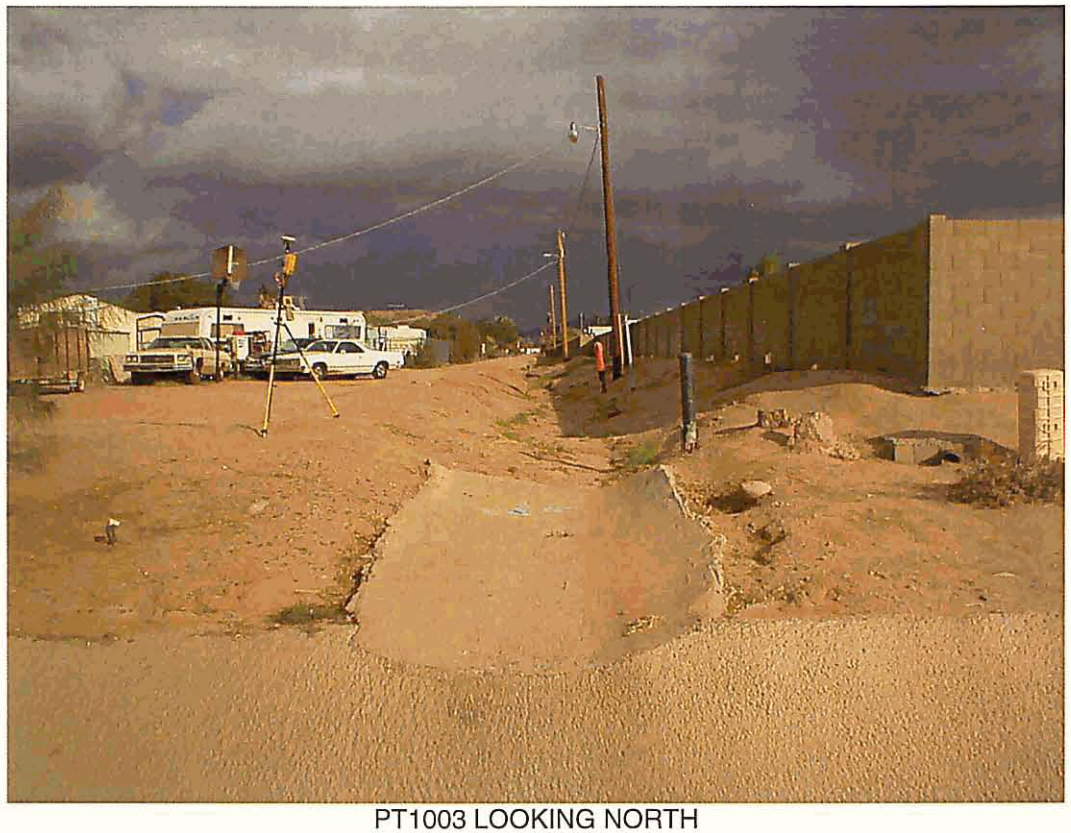
REACH 7
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 7.dwg, Layout2, 05/04/2004 03:33:42 PM, cmiranda

Reach 7 - Survey Points 1000 – 1049 Knolls Estates

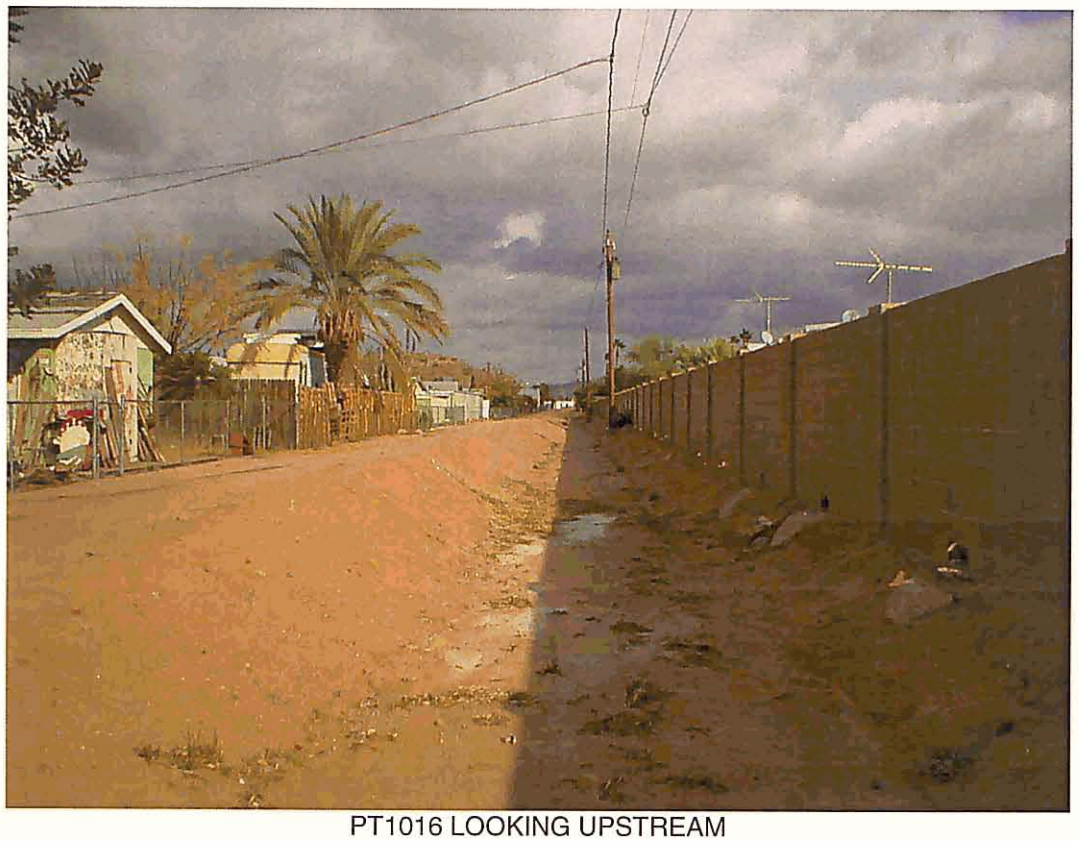


PT1003 LOOKING NORTH

PT1010 LOOKING SOUTH

Reach 7 - Survey Points 1000 – 1049 Knolls Estates

PT1016 LOOKING DOWNSTREAM



PT1016 LOOKING UPSTREAM

Reach 7 - Survey Points 1000 – 1049 Knolls Estates

PT1021 LOOKING DOWNSTREAM

PT1021 LOOKING UPSTREAM

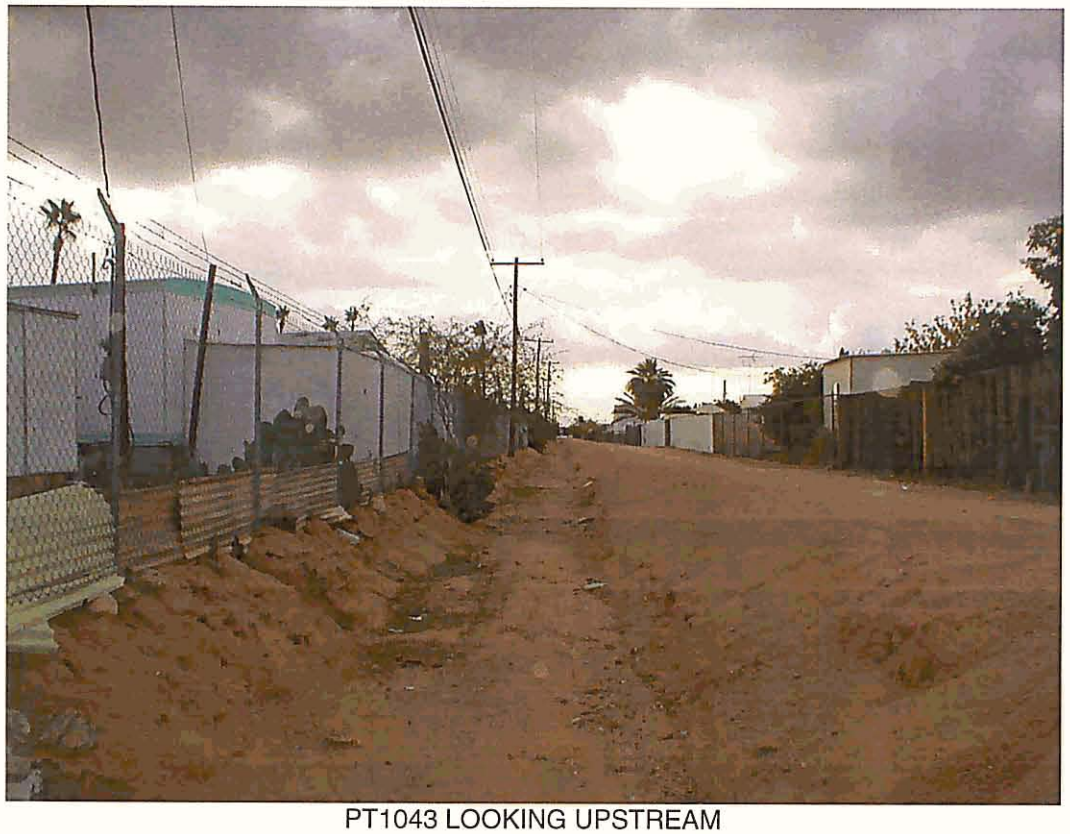
Reach 7 - Survey Points 1000 – 1049 Knolls Estates

PT1033 LOOKING DOWNSTREAM

PT1033 LOOKING UPSTREAM

Reach 7 - Survey Points 1000 – 1049 Knolls Estates

PT1043 LOOKING DOWNSTREAM



PT1043 LOOKING UPSTREAM

Reach 7 - Survey Points 1000 – 1049 Knolls Estates

PT1047 LOOKINGDOWNSTREAM

PT1047 LOOKING UPSTREAM

98-15

KNOLLS ESTATES

A SUBDIVISION OF A PORTION OF W1/2 SW1/4 SEC21 T1N R7E G&SRB&M MARICOPA COUNTY ARIZONA

DEDICATION

State of Arizona } ss
County of Maricopa

KNOW ALL MEN BY THESE PRESENTS: That the Arizona Title Insurance and Trust Company, an Arizona Corporation, Trustee, has subdivided under the name of KNOLLS ESTATES a portion of the W1/2 SW1/4 Sec 21 T1N R7E G&SRB&M Maricopa County, Arizona, as shown plotted hereon and hereby publishes this plat as and for the plat of said KNOLLS ESTATES and hereby declares that said plat sets forth the location, and gives the dimensions of the lots, tract, streets and alleys constituting same and that each tract, lot and street shall be known by number, name or letter given each respectively on said plat and hereby dedicates to the public, as such the streets, drainage, utility ways and alleys as shown on said plat and included in the above described premises. Easements are dedicated for purposes shown.

IN WITNESS WHEREOF the Arizona Title Insurance and Trust Company as Trustee, has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 2nd day of February 1962.

ARIZONA TITLE INSURANCE and TRUST COMPANY ---- TRUSTEE.

By [signature] VICE PRESIDENT ATTEST [signature] ASST SECRETARY

ACKNOWLEDGEMENT

State of Arizona } ss
County of Maricopa

On this the 2nd day of February 1962 before me, the undersigned officer, personally appeared [signature] and [signature] who acknowledged themselves to be Vice President and Asst Secretary respectively of the Arizona Title Insurance and Trust Company, an Arizona Corporation and acknowledged that they as such officers respectively being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as Trustee, by themselves, as such officers, respectively.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

[signature] NOTARY PUBLIC

My Commission Expires 1-25-65

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona this 12 day of February 1962.

By [signature] Chairman Attest [signature] Clerk

CERTIFICATE

This is to certify that the survey and subdivision of the premises described and platted hereon was made under my direction during the month of April 1961

[signature]
Registered Land Surveyor.

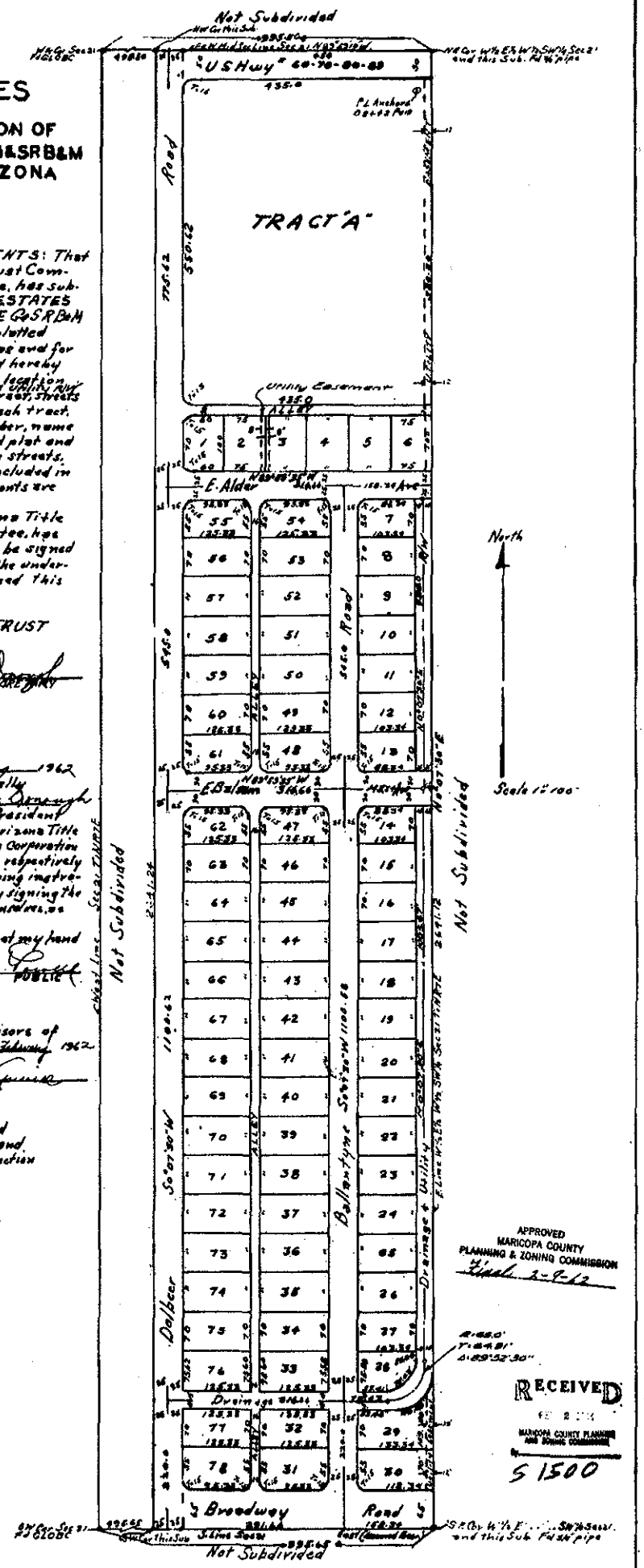
REGISTERED LAND SURVEYOR CERTIFICATE NUMBER ALBERT J. WOLF ARIZONA

Ariz. Reg # 986

26507

RECORDED PAGE 98

STATE OF ARIZONA County of Maricopa ss
I hereby certify that the within instrument was filed and recorded at request of ARIZONA TITLE INSURANCE and TRUST COMPANY
in Docket 98 Page 15
Witness my hand and official seal the day and year aforesaid.
R. C. "ELLY" MOORE County Recorder
By [signature] Deputy Recorder



TRANSNATION TITLE INS. CO.

OFFICIAL RECORDS OF

Unofficial Documents

DER

11:29

NG

RECORDING REQUESTED BY
Transnation Title Insurance Company

AND WHEN RECORDED MAIL TO:

VERL LEE WILLIAMS
PAT L. WILLIAMS
17077 240TH AVENUE
NEW RICHLAND, MN 56072

ESCROW NO.: 01290800 - 256 - MH1

REACH 7; PARCEL 218-59-006

SPACE ABOVE THIS LINE FOR RECORDER'S USE

Joint Tenancy Deed

For consideration of Ten Dollars, and other valuable considerations, I or we,

Jane E. Shisler, Personal Representative for the Estate of Helen M. Gray , Deceased.

do/does hereby convey to

Verl Lee Williams and Pat L. Williams, Husband and Wife as joint tenants with right of survivorship

not as tenants in common and not as community property estate, but as joint tenants with right of survivorship, the following described property in the County of **Maricopa**, State of **ARIZONA**.

Lot 6, Knolls Estates, according to Book 98 of Maps, page 15, records of Maricopa County, Arizona.

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

And I or we do warrant the title against all persons whomsoever, subject to the matters above set forth.

The Grantees by signing the acceptance below or attached evidence their intention to acquire said premises as joint tenants with the right of survivorship, and not as community property nor as tenants in common.

Escrow No.: **01290800 - 256 - MH1**

Dated this 18th day of August, 2003

Accepted and approved:

Grantees:

See attached for signature
Verl Lee Williams

See attached for signature
Pat L. Williams

Grantors:

Jane E. Shisler Pers. Rep.
Jane E. Shisler, Personal Representative for the Estate of Helen M. Gray, deceased.

Unofficial Document

State of Oklahoma
County of Oklahoma } SS

This instrument was acknowledged before me this 20th day of August, 2003 by **Jane E. Shisler, Personal Representative for the Estate of Helen M. Gray, deceased.**

Candace Sorrell
Notary Public

My commission will expire May 1, 2004

NOTARY SEAL PUBLIC
CANDACE SORRELL
Oklahoma County
Notary Public in and for
State of Oklahoma
My commission expires May 1, 2004.

ESCROW NO.: **01290800 - 256 - MH1**

ACCEPTANCE OF JOINT TENANCY WITH RIGHT OF SURVIVORSHIP

THAT CERTAIN DEED DATED 18th day of August, 2003 , Wherein

Jane E. Shisler, Personal Representative for the Estate of Helen M. Gray , Deceased.

as Grantors, convey to

Verl Lee Williams and Pat L. Williams, Husband and Wife as joint tenants with right of survivorship

not as tenants in common and not as community property, but as joint tenants with right of survivorship, the property legally described as:

Lot 6, Knolls Estates, according to Book 98 of Maps, page 15, records of Maricopa County, Arizona.

Is hereby accepted and approved by the undersigned grantees, therein, it being their intention to acquire said property as joint tenants with right of survivorship, and not as communit Unofficial Document t as Tenants in Common.
Dated this August 18, 2003

BUYERS:

Verl Lee Williams
Verl Lee Williams

Pat L. Williams
Pat L. Williams

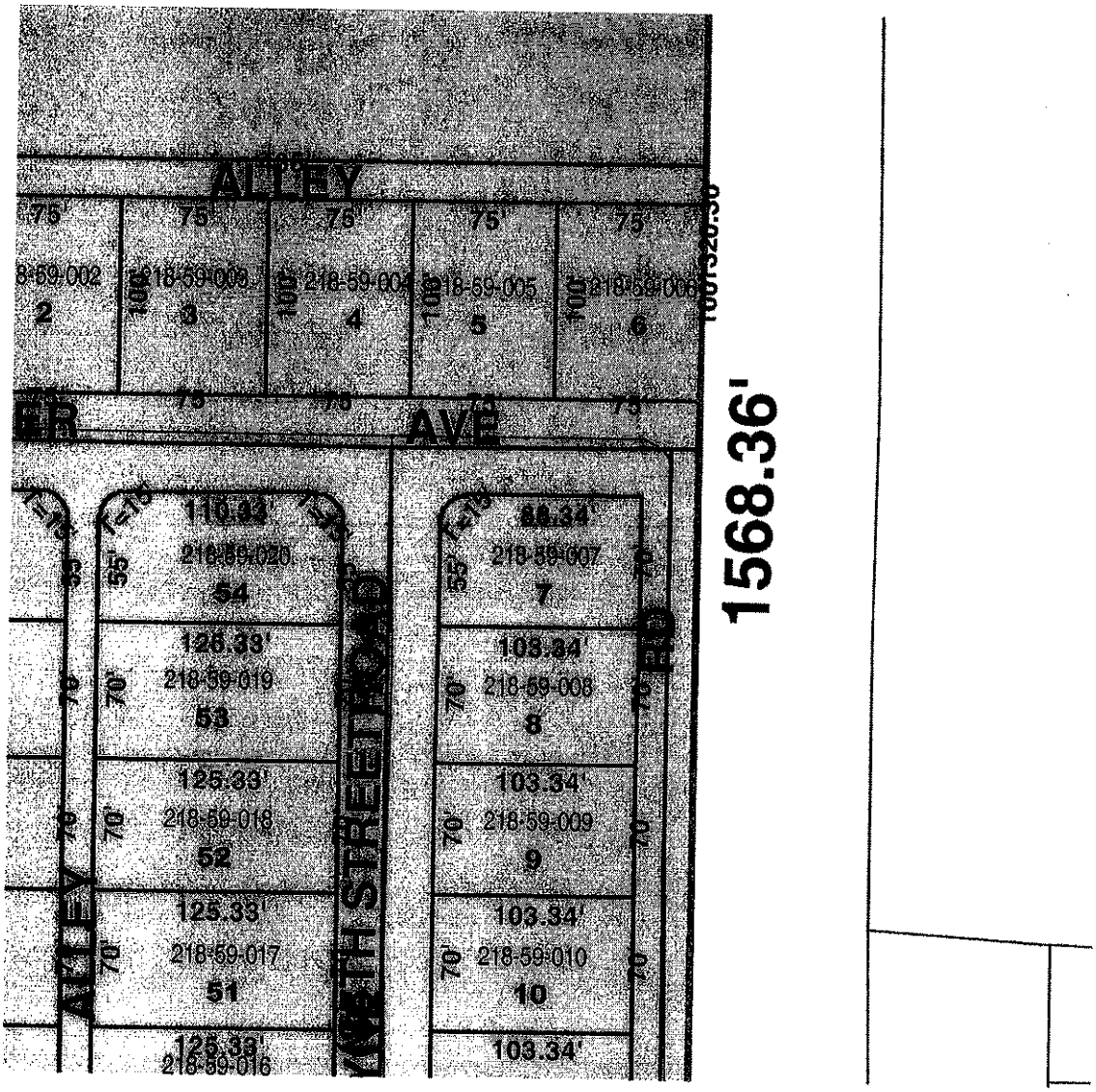
State of Arizona
County of Maricopa } SS

This instrument was acknowledged before me this 26
day of August, 2008
by. **Verl Lee Williams and Pat L. Williams**

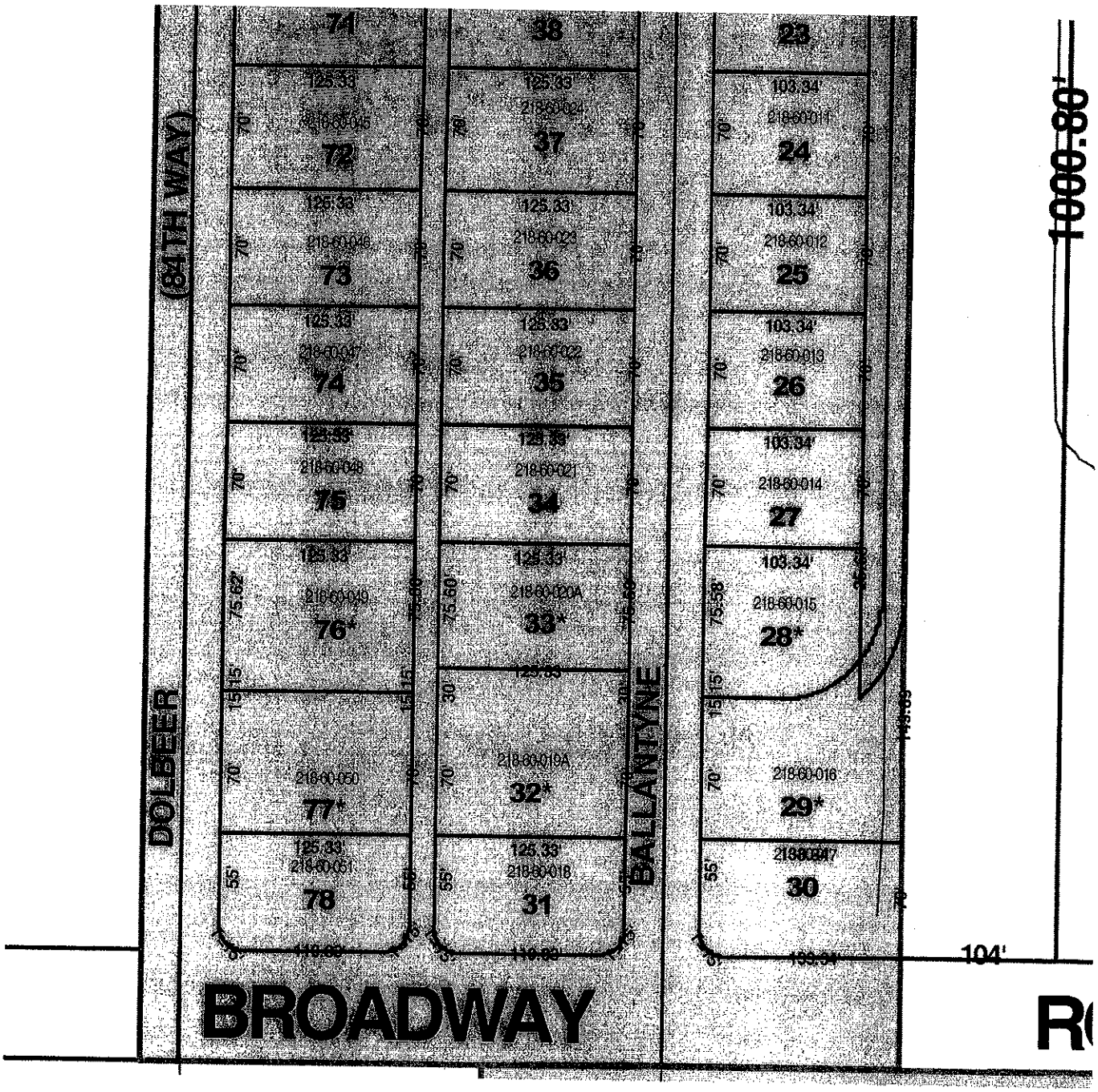
OFFICIAL SEAL
MYRNA HICKCOX
NOTARY PUBLIC - State of Arizona
MARICOPA COUNTY
My Comm. Expires July 19, 2007

Myrna Hickcox
Notary Public

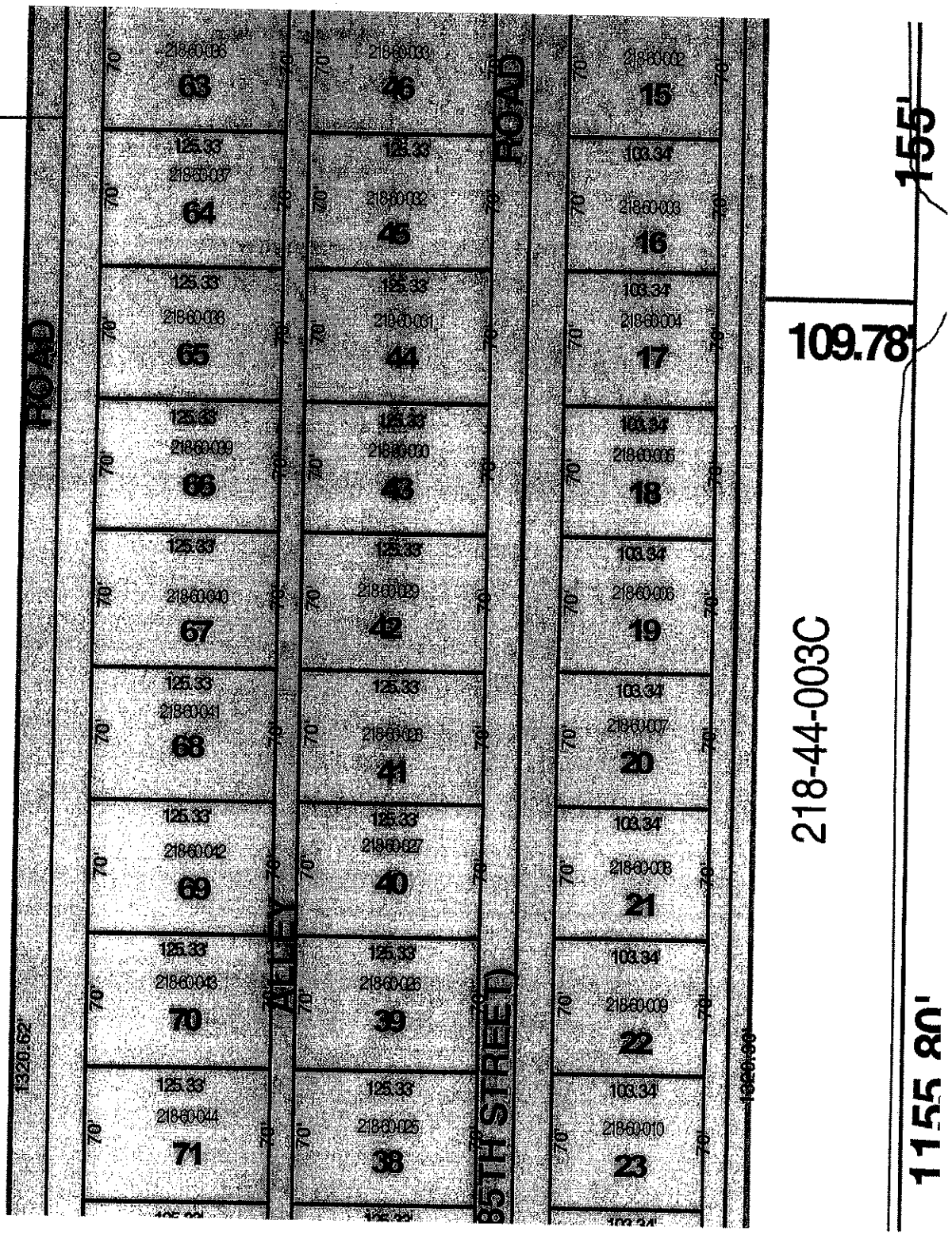
My commission will expire 7/19/2007



R7-North-map.doc



R-7_KnollsEst_98-15map1of4.doc



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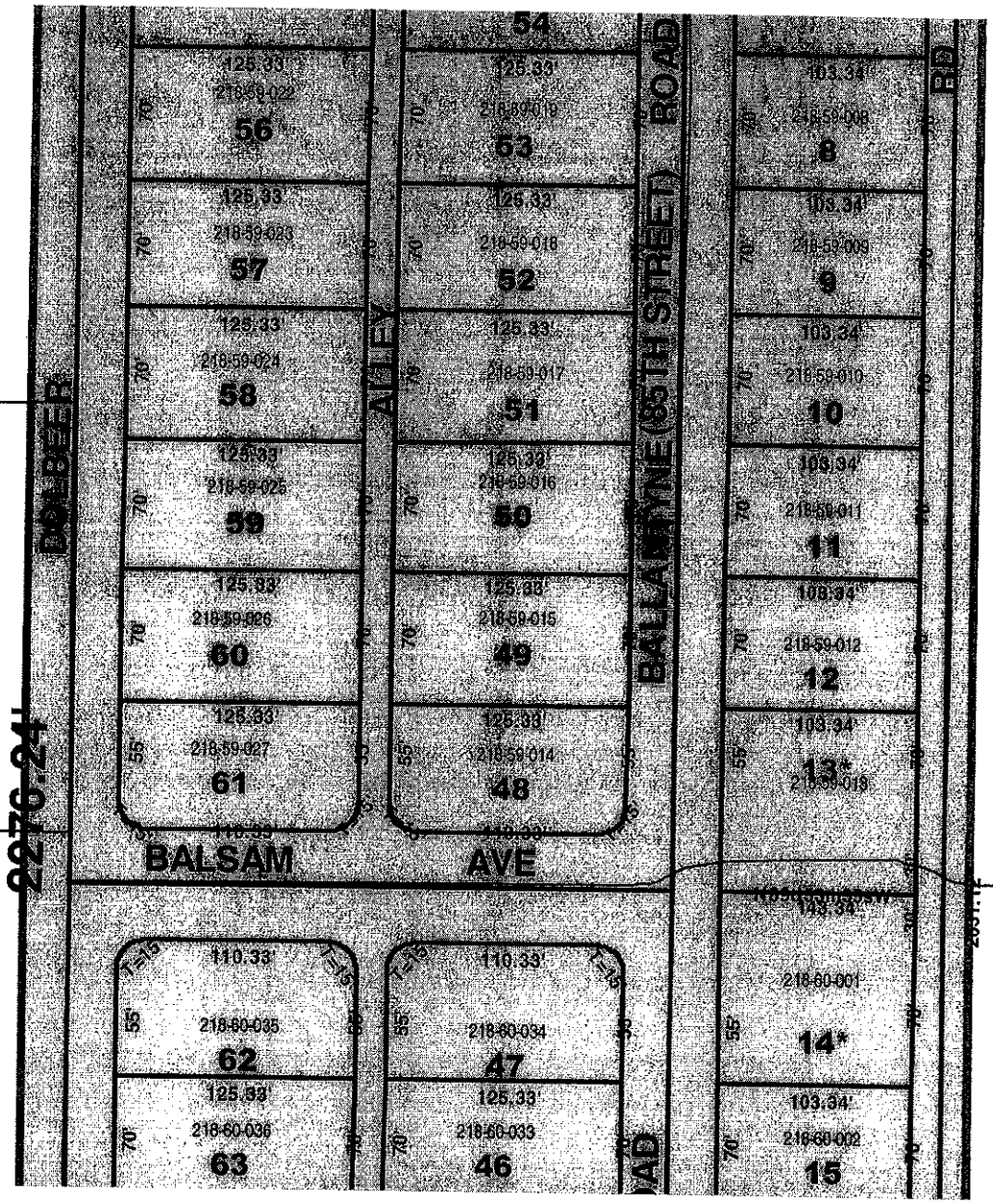

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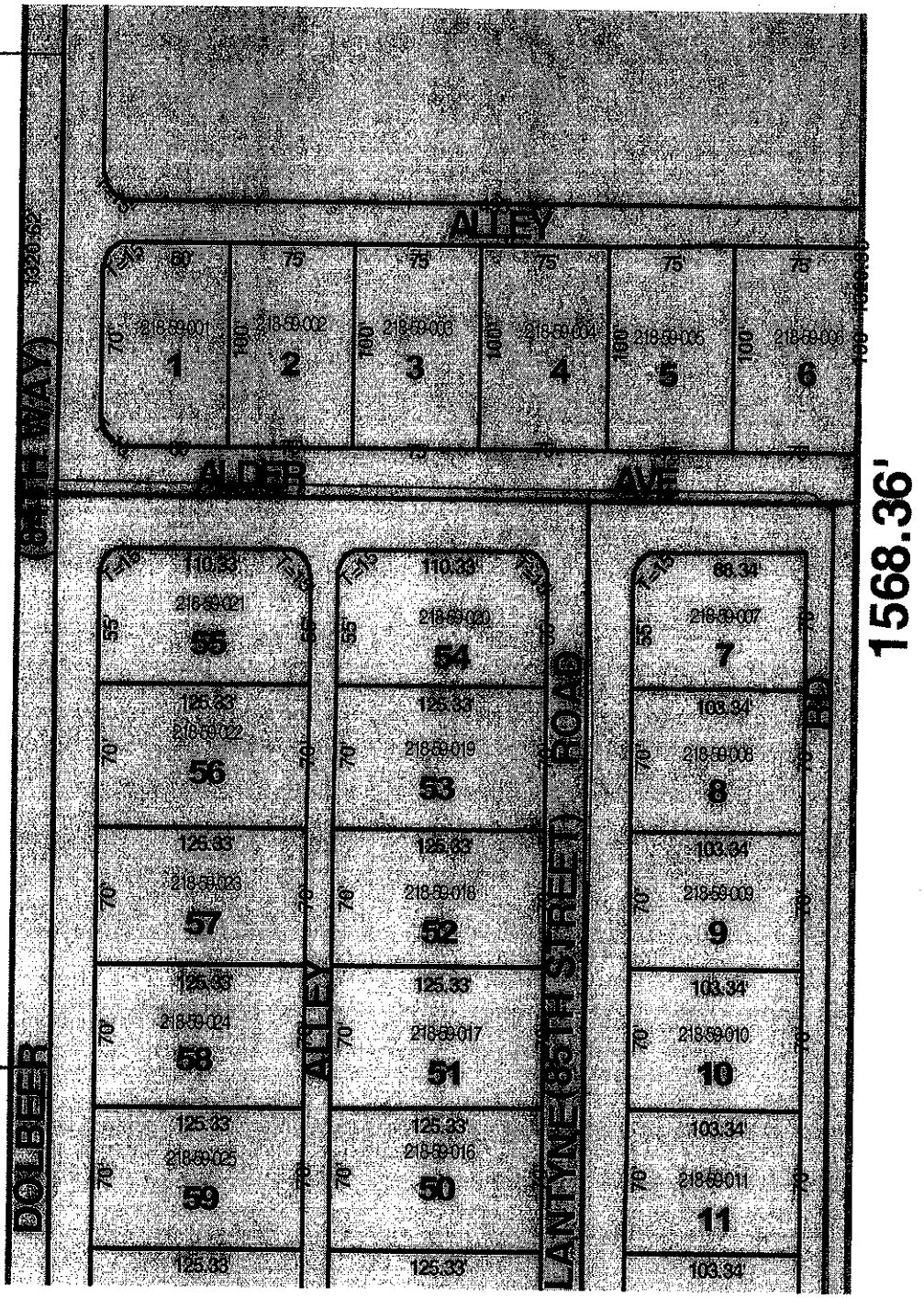

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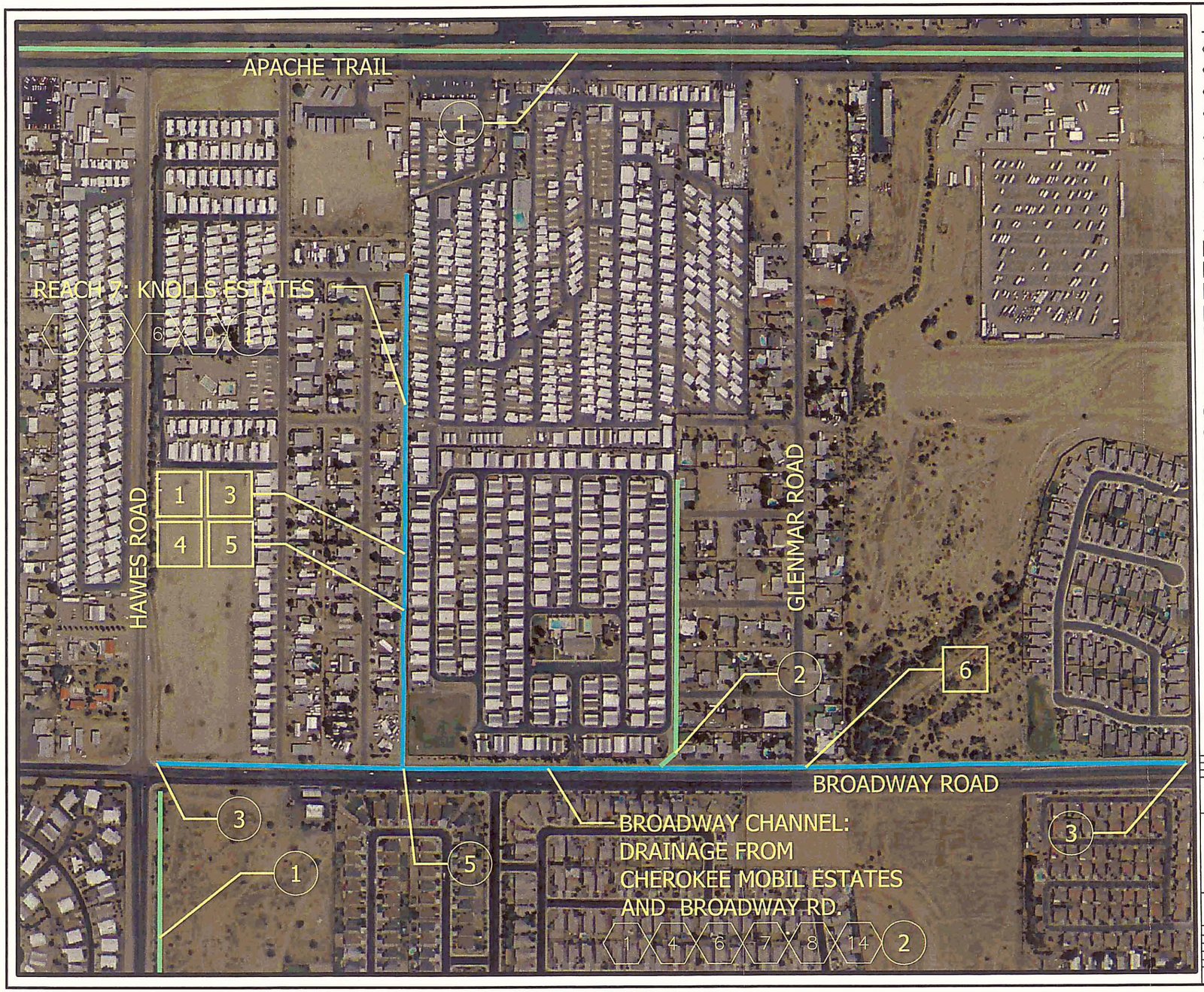


EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED.
- (3) OVERHEAD POWERLINES TOO LOW.
- (4) EXCESSIVE TREE MAINTENANCE NEEDED.
- (6) ILLEGAL DISCHARGES
- (7) ILLEGAL DUMPING
- (8) DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE.
- (10) COMMUNICATION AND GAS LINES IN CHANNEL BOTTOM AFFECTING DISTRICT'S ABILITY TO PERFORM EROSION REPAIR.
- (14) IMPROPER BANK STABILIZATION.

UTILITIES

- [1] WATER
- [2] SEWER
- [3] GAS
- [4] OVERHEAD ELECTRIC
- [5] UNDERGROUND ELECTRIC
- [6] TELEPHONE

EXISTING CHANNEL STRUCTURES

- (1) EARTH LINED CHANNEL
- (2) CONCRETE CHANNEL.
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACH 7 AND THE
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Existing Facilities Exhibits\exh-09_REACH 7.dwg, Layout1, 05/26/2004 04:12:36 PM, cmiranda

Reach 8: Knolls Mobile
Location: N. of Coralbell Ave., off Crismon Road (Drainage way alignment is from the NE to the SW)
Parcel Research: Dedication: "dedicates to the Public for use as such, the streets and drainage right of way as shown on said plat." (Plat map covered entire drainage reach)
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 8 had no identifiable utilities in the area.
Hydrologic Analysis: The watershed area was identified through site visits and GIS topographic data and calculated using the rational method, the Q100 = 71 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 10 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Limited ROW prevents channel enlargement.
Recommendation: Maintenance – (2): Residents frequently park in the channel, which will impede flow during a storm event. Also, the drainage channel discharges into property in 34 Palms subdivision. HDR recommends providing monthly maintenance, monthly inspections and sending notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit requirements. In addition, removable bollards should be provided to limit unauthorized access.
Opinion of Improvement Cost: $3,600

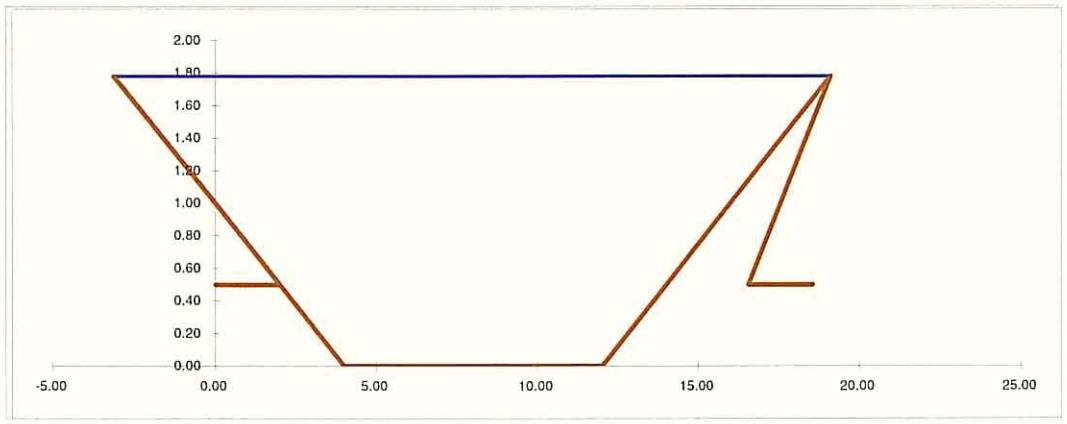
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 8	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 8



Design Discharge Q = 71 cfs
Channel Section 8
Right-of-Way Widtl 16 ft

Calculate Flow Depth
Estimated Flow Depth 1.78 ft
Channel Dept 0.50 ft

Estimated Q = 93.6 cfs
Average V = 3.48 ft/sec

Channel Parameters

Bottom Width =	8.00	ft
Side Slope =	4.00	:1
Manning n =	0.040	
Channel Slope	0.007	ft/ft
Flow Area =	26.91	ft^2
Wet Perimeter	22.68	ft
Hyd. Radius R	1.19	ft
Top Width =	22.24	ft
Hydraulic deptl	1.21	ft
Froude No. =	0.56	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.11 ft

Available Freeboard
Channel Depth - Flow Depth = -1.28 ft Available Fb > Fb req'd

EXISTING CONDITIONS

9 DRAINS INTO PROPERTY, RESTRICTED ACCESS AND FLOODING DAMAGE

11 CHANNEL USED AS PARKING LOT FOR RESIDENTS

EXISTING CHANNEL STRUCTURES

1 EARTHEN CHANNEL

2 CONCRETE CHANNEL

3 CONCRETE BOX CULVERT

4 CMP CULVERT

5 RESIDENT-MADE BRIDGE

6 DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS

REACHES 8 AND 8A

F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0716 MC.Eng.On-Call\East.Mesa.Drains.CAR\6.0.Hydrology.&.Hydraulics\6.1.DWG\Existing.Facilit hibits\exh-10_REACH.8.dwg,Layout1,4/21/2004 4:11:02 PM,akuchars

PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS

REACHES 8 AND 8A

F.C.D. CONTRACT NO. 2003C018

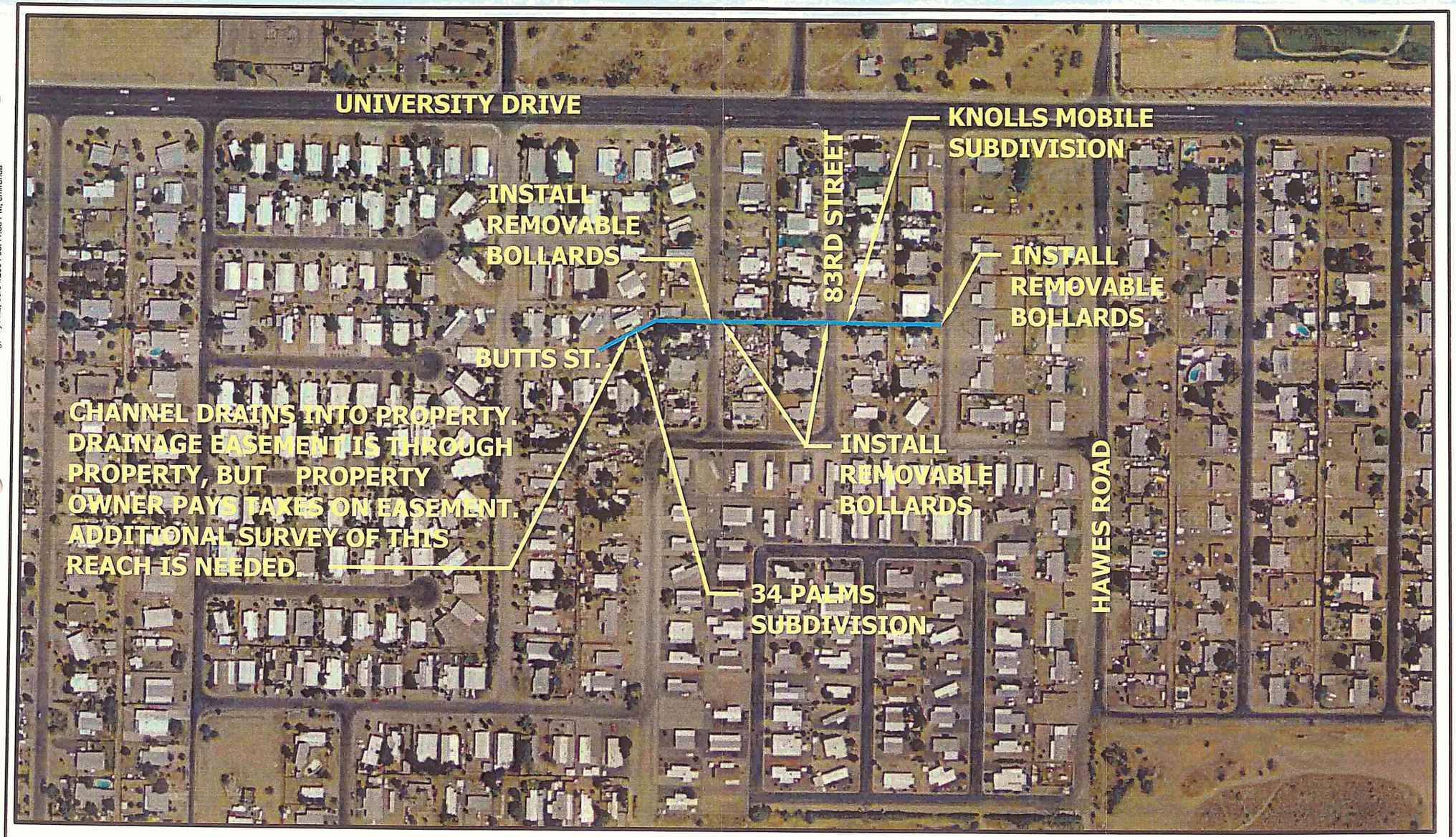
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0711 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6-1 DWG\Proposed Fac Exhibits\exh-18_REACH 8.dwg, Layout1, 4/21/2004 3:51:51 PM, akuchars



LEGEND

200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR Engineering, Inc.

REACH 8
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 8.dwg, Layout2, 05/04/2004 03:41:33 PM, cmiranda

Reach 8 - Survey Points 3000 – 3097 Knolls Mobile Estates

PT3008 LOOKING DOWNSTREAM

PT3008 LOOKING UPSTREAM

Reach 8 - Survey Points 3000 – 3097 Knolls Mobile Estates

PT3025 LOOKING DOWNSTREAM

PT3025 LOOKING UPSTREAM

Reach 8 - Survey Points 3000 – 3097 Knolls Mobile Estates

PT3057 LOOKING DOWNSTREAM

PT3057 LOOKING UPSTREAM

Reach 8 - Survey Points 3000 – 3097 Knolls Mobile Estates

PT3080 LOOKING DOWNSTREAM

PT3080 LOOKING UPSTREAM

Reach 8 - Survey Points 3000 – 3097 Knolls Mobile Estates

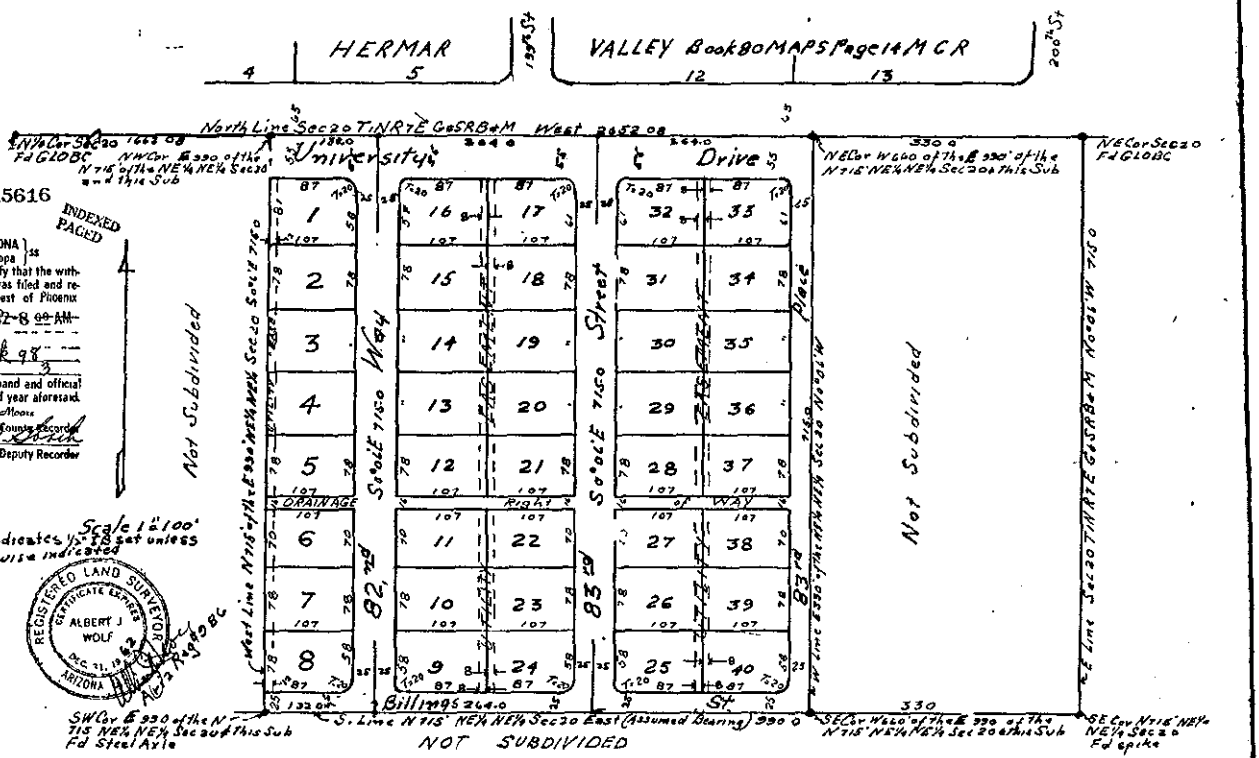
PT3091 LOOKING DOWNSTREAM

PT3091 LOOKING UPSTREAM

98-3

KNOLLS MOBILE HOMES SUBDIVISION 98-3

A SUBDIVISION OF A PORTION OF THE NE1/4 NE1/4 SEC20 T1N R7E G&SR B&M MARICOPA COUNTY ARIZONA



K 15616

INDEXED
PAGED

STATE OF ARIZONA
County of Maricopa ss
I hereby certify that the within instrument was filed and recorded at request of Phoenix Title and Trust Co.
JAN 26 62-8 00 AM
In Docket 98
on page 3
Witness my hand and official seal the day and year aforesaid.
Fully Moore County Recorder
Deputy Recorder

REGISTERED LAND SURVEYOR
CERTIFICATE EXPIRES
ALBERT J WOLF
DEC. 31, 1962
ARIZONA

DEDICATION

LOTS 1 THRU 32 for Mobile Homes only
LOTS 33 THRU 40 for Single Family Residences Only

KNOW ALL MEN BY THESE PRESENTS That the Phoenix Title and Trust Company, an Arizona Corporation, Trustee, has subdivided under the name of KNOLLS MOBILE HOMES SUBDIVISION, a portion of the NE¼ NE¼ Section 20, T1N R7E G&SR B&M, Maricopa County, Arizona, as shown platted hereon and hereby publishes this plat as and for the plat of said KNOLLS MOBILE HOMES SUBDIVISION and hereby declares that said plat sets forth the location and gives the dimensions of the Lots, Streets and Drainage Right of Way constituting same and that each Lot and Street shall be known by the number or name given each respectively on said plat and hereby dedicates to the Public for use as such the Streets and Drainage Right of Way as shown on said plat and included in the above described premises. Easements are dedicated for purposes shown.

IN WITNESS WHEREOF the Phoenix Title and Trust Company, an Arizona Corporation, as Trustee, has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 4TH day of JANUARY 1962

PHOENIX TITLE and TRUST COMPANY As TRUSTEE

BY [signature] ASST VICE PRESIDENT

ATTEST [signature] ASST SECRETARY

ACKNOWLEDGEMENT

State of Arizona
County of Maricopa
On this 4TH day of JANUARY 1962 before me the undersigned officer personally appeared B. W. O'BRIEN and MYRON HOWARD respectively who acknowledged themselves to be Asst Vice President and Asst Secretary, of the Phoenix Title and Trust Company, an Arizona Corporation and acknowledged that they as such officers respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as Trustee, by them as such officers, respectively.
In Witness Whereof I hereunto set my hand and official seal
My commission expires 9-10-65

Phyllis J. Berryk
NOTARY PUBLIC

APPROVED
MARICOPA COUNTY
PLANNING & ZONING COMMISSION
final 1-18-62

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona this 22 day of January 1962
By [signature] Chairman
Attest [signature] Clerk

CERTIFICATE

This is To certify that the survey and subdivision of the premises described and platted hereon was made under my direction during the month of November 1961

[signature]
Registered Land Surveyor

RECORDED
JAN
MARICOPA
AND ZO
By

S1508

98-3

CAPITAL TITLE AGENCY INC.

REACH 8; PARCEL 218-26-009K

Unofficial Documents

Recorded at the request of Capital Title Agency, Inc.

when recorded mail to
LARRY BEGAY
321 N. 83rd Place
Mesa, AZ 85207

06980060--006-MJW

Warranty Deed

For the consideration of Ten Dollars, and other valuable considerations, I or we,

ARNOLD G. GOUPIL and ROBERTA L. GOUPIL, husband and wife

do/does hereby convey to

LARRY BEGAY, an unmarried man

the following real property situated in **Maricopa**, County, Arizona:

See Exhibit A attached hereto and made a part hereof.

SUBJECT TO: Current taxes and other assessments, reservations in patents and all easements, rights of way, encumbrances, liens, covenants, conditions, restrictions, obligations, and liabilities as may appear of record.

And I or we do warrant the title against all persons whomsoever, subject to the matters set forth above.

Dated **01/19/98**.

ARNOLD G. GOUPIL

ROBERTA L. GOUPIL

STATE OF **ARIZONA**
County of **Maricopa** } ss

This instrument was acknowledged before me this 4/13 day of Apr., 1998 by **ARNOLD G. GOUPIL and ROBERTA L. GOUPIL by Dean M. Goupil as their attorney in fact.**

OFFICIAL SEAL
MICHAEL J. WINTERS
Notary Public - State of Arizona
MARICOPA COUNTY
My Comm. Expires Feb. 23, 2001

Notary Public
My commission will expire_____

STATE OF **ARIZONA**
County of **Maricopa** } ss

This instrument was acknowledged before me this _____ day of _____ 19____ by

Notary Public
My commission will expire_____

CTA
CAPITAL TITLE AGENCY

(WDEED01.DOC 8/96RC)

Exhibit A

The South 87 feet of the North 261 feet of the South 435 feet of the following described property:

Beginning at the Northeast corner of Section 20, Township 1 North, Range 7 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona;

Thence West 165 feet to the Point of Beginning;

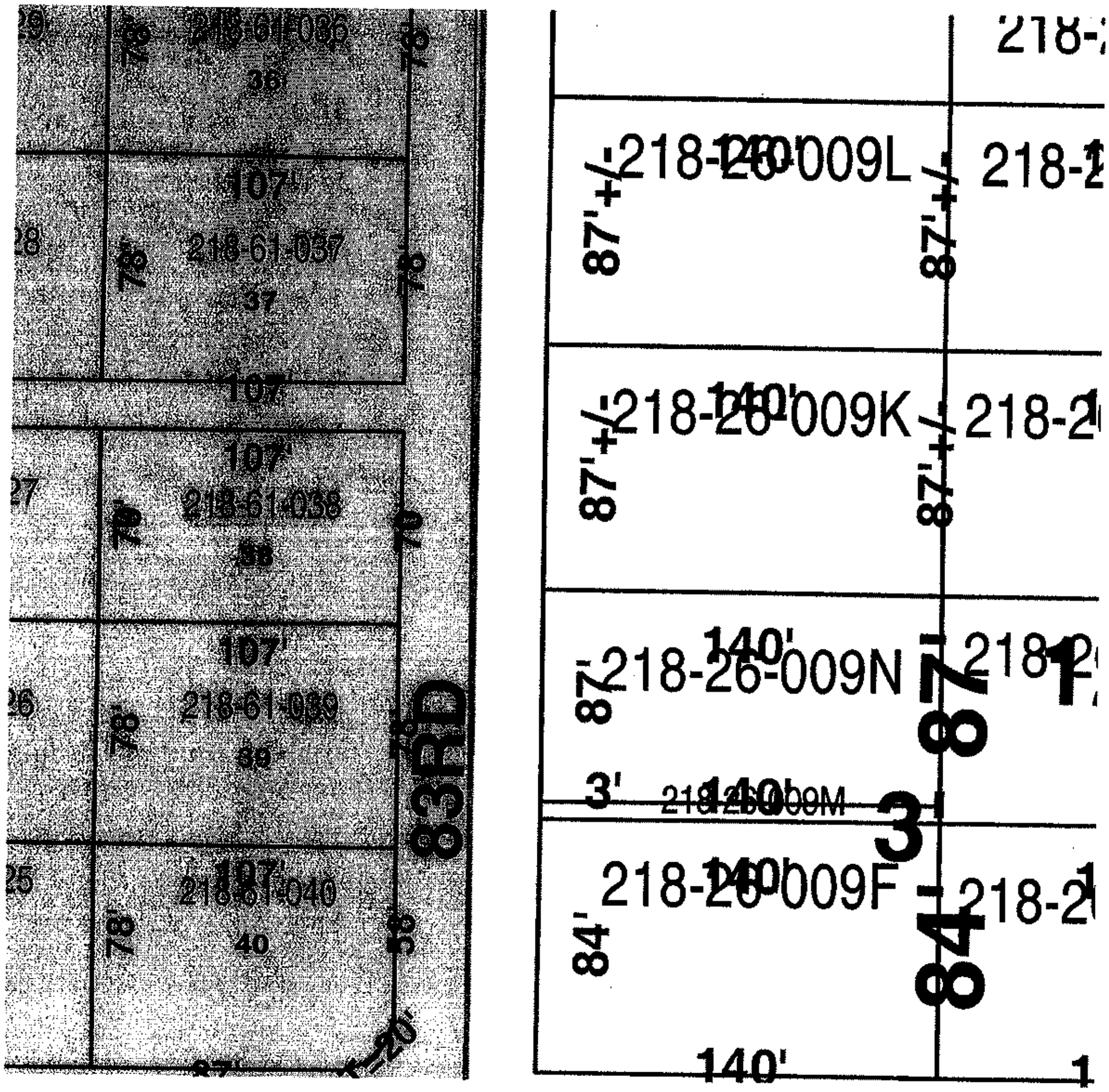
Thence South 693 feet;

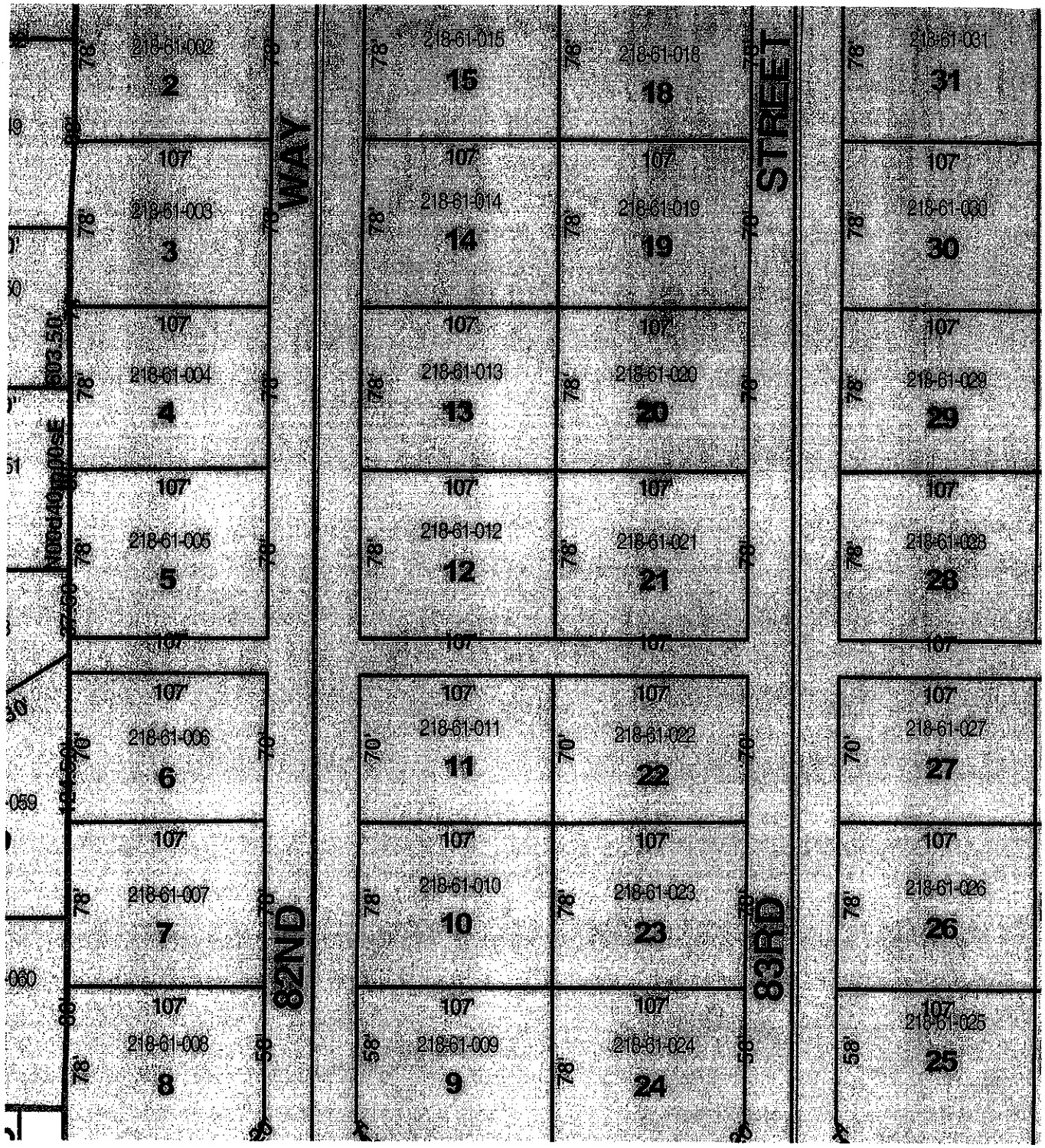
Thence West 165 feet;

Thence North 693 feet;

Unofficial Document

Thence East 165 feet to the Point of Beginning.


218-61-037
37
107'
78'
218-61-038
107'
218-61-039
39
218-61-040
40
83RD
218-26-009L
87'+/-
218-26-009K
140'
218-26-009N
87'
3'
218-26-009M
218-26-009F
84'



R-8_KnollsMob_98-3map.doc

EXISTING CONDITIONS

9 DRAINS INTO PROPERTY, RESTRICTED ACCESS AND FLOODING DAMAGE.

11 CHANNEL USED AS PARKING LOT FOR RESIDENTS.

UTILITIES

1 WATER

2 SEWER

3 GAS

4 OVERHEAD ELECTRIC

5 UNDERGROUND ELECTRIC

6 TELEPHONE

EXISTING CHANNEL STRUCTURES

1 EARTH LINED CHANNEL

2 CONCRETE CHANNEL

3 CONCRETE BOX CULVERT

4 CMP CULVERT

5 RESIDENT-MADE BRIDGE

6 DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 8 & 8A

F.C.D. CONTRACT NO. 2003C018

HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 8

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0721 MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Dra 4-15\6-1 C isting Facilities Exhibits\exh-10_REACH 8.dwg, Layout1, 05/26/2004 04:14:35 PM, cmiranda

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FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 8 AND 8A
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

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PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

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PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
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LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACHES 8 AND 8A

F.C.D. CONTRACT NO. 2003C018

HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

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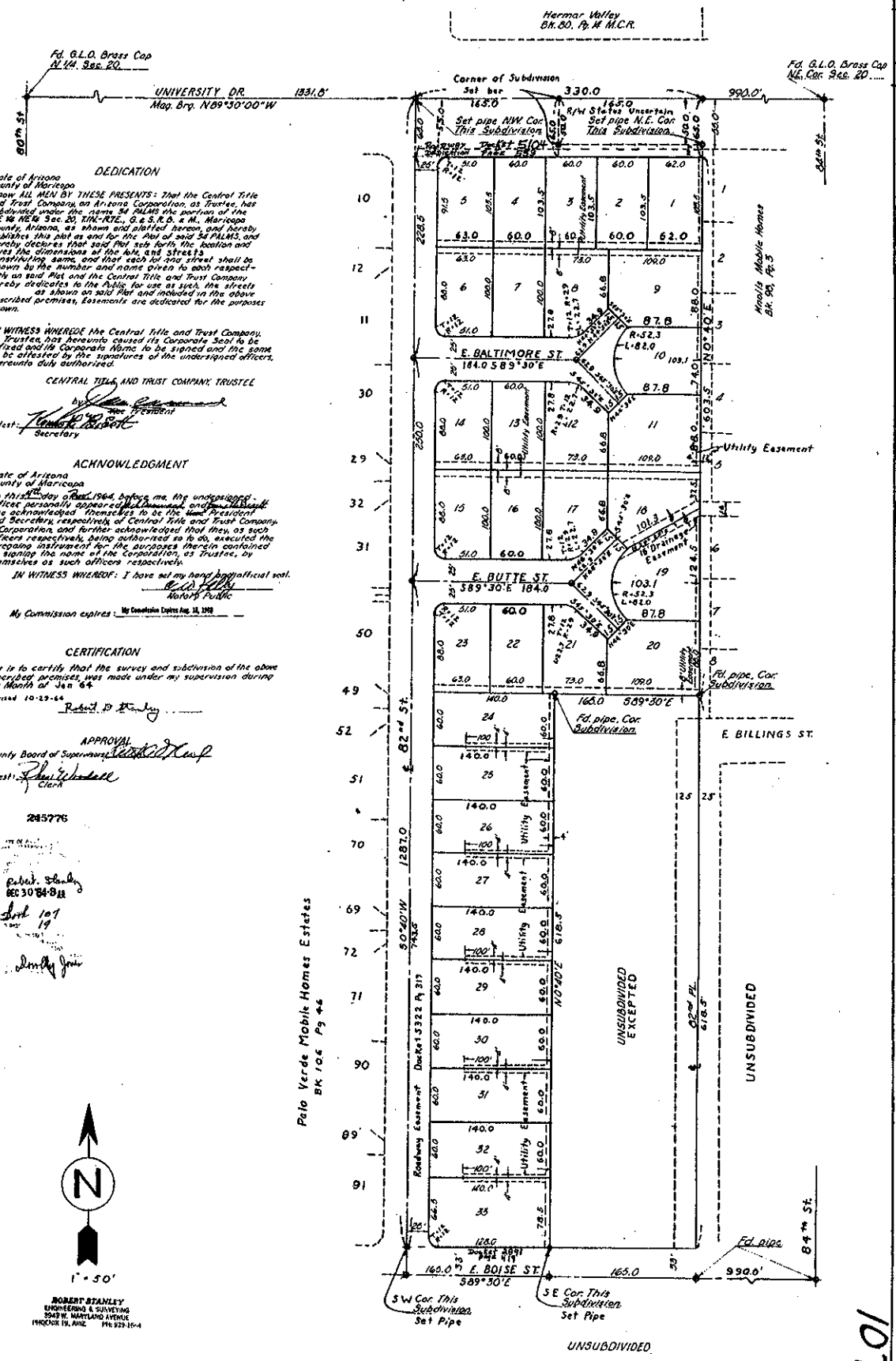
107-19

34 PALMS

A SUBDIVISION OF A PORTION OF THE
NE ¼ NE ¼, SEC. 20 T1N-R7E G.&
S.R.B. & M. MARICOPA COUNTY, ARIZONA



DEDICATION

State of Arizona
County of Maricopa

Know ALL MEN BY THESE PRESENTS: That the Central Title and Trust Company, an Arizona Corporation, as Trustee, has subdivided under the name 34 PALMS the portion of the NE ¼ NE ¼ Sec 20, T1N-R7E, G.&S.R.B. & M., Maricopa County, Arizona, as shown and platted hereon, and hereby publishes this plat as and for the Plat of said 34 PALMS, and hereby declares that said Plat sets forth the location and gives the dimensions of the lots and streets constituting same, and that each lot and street shall be known by the number and name given to each respectively as said Plat and the Central Title and Trust Company hereby dedicates to the Public for use as such, the streets as shown on said Plat and included in the above described premises, Easements are dedicated for the purposes shown.

IN WITNESS WHEREOF the Central Title and Trust Company, as Trustee, has hereunto caused its Corporate Seal to be affixed and its Corporate Name to be signed and the same to be attested by the signatures of the undersigned officers, thereunto duly authorized.

CENTRAL TITLE AND TRUST COMPANY, TRUSTEE

by _____ Vice President

Attest: _____ Secretary

ACKNOWLEDGMENT

State of Arizona
County of Maricopa

On this 7th day of Sept 1964, before me, the undersigned officer personally appeared _____ and _____ who acknowledged themselves to be the Vice President and Secretary, respectively, of Central Title and Trust Company, a Corporation, and further acknowledged that they, as such officers respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the Corporation, as Trustee, by themselves as such officers respectively.

IN WITNESS WHEREOF: I have set my hand and official seal.

_____ Notary Public

My Commission expires: My Commission Expires Aug. 18, 1968

CERTIFICATION

This is to certify that the survey and subdivision of the above described premises, was made under my supervision during the Month of Jan 64

Revised 10-29-64

Robert B. Stanley

APPROVAL

County Board of Supervisors _____

Attest: _____ Clerk

245776

Robert Stanley
DEC 30 '64-8 11

Bk 107
Pg 19

ROBERT STANLEY
ENGINEERING & SURVEYING
3943 W. MARYLAND AVENUE
PHOENIX 19, ARIZ. PH. 939-1614

RECEIVED
NOV 8 PM
MARICOPA COUNTY PLANNING AND ZONING DEPARTMENT

107-19

When Recorded Mail To:

Bernice Lozin
Rt 1 Box 1511
Pine, AZ 85544

9

Unofficial Documents

REACH 8A; 34 PALMS PLAT, LOT 18

A

CAPTION HEADING: Contract

DO NOT REMOVE
This is part of the official document.

In accordance with Arizona Revised Statutes §11-480, Requirements for form of instruments, this instrument should have been rejected for recording for the following reason(s). However, as a courtesy, this cover sheet has been added to allow recording. Future instruments presented for recording that do not comply will be rejected:

☐ Effective January 1, 1991, each instrument shall be no larger than eight and one-half inches in width and no longer than fourteen inches and shall have a print size no smaller than ten point type.

☐ The first page shall have a top margin of at least two inches which shall be reserved for recording information. The left three and one-half inches of the top margin of the first page or sheet may be used by the public to show the name of the person requesting recording and the name and address to which the document is to be returned following recording. IF THE FIRST PAGE OF THE INSTRUMENT DOES NOT COMPLY WITH THE TOP MARGIN REQUIREMENTS, A SEPARATE SHEET THAT MEETS THE REQUIREMENTS AND THAT REFLECTS THE TITLE OF THE DOCUMENT AS REQUIRED BY ARS §11-480.A.1, SHALL BE ATTACHED TO THE FRONT OF THE DOCUMENT **BY THE PARTY REQUESTING RECORDING.**

We, Phillip K. Morgan and Glynda M. Morgan, agree to sell the lot located at 8222 E. Butte St. in Mesa, Az. to Larry Loflin and Bernice Loflin for the sum of $15,345. 58, of which $1,345.58 will be a down payment, leaving a balance of $14,000.00 to be financed by seller at 12% interest. There will be a $5.00 per day late charge assessed for each day past a 3 day grace period given by sellers.

Unofficial Document

This note is amortized over a period of 209 months, and shall carry a prepayment penalty of 6 months interest if paid off prior to Jan. 1, 2003.

If property is sold, transferred, or conveyed in any manner, the note shall become immediatly due and payable.

This note shall be paid in monthly installments of $160.00, or more, on or before the 1st day of every month , beginning Jan. 1, 1998. Interest to be first deducted and the balance applied to the principal.

Legal description of property is as follows;

Parcel #218-61-058-2
lot #18 Thirty four Palm.

Seller's

Phillip K. Morgan

Glynda Morgan

Buyer's

Larry D Loflin

Bernice Loflin

Notary: Anita Carol Loflin
My Commission expires: 11-26-99

REACH 8A: 34 PALMS PLAT, LOT 19

Recording Requested by:
First American Title Insurance Company

When recorded mail to:
MAGDALENA R. SCHELLENBERG
8226 E. BUTTE
MESA, AZ 85207

FIRST AMERICAN
LENDERS ADVANTAGE

Unofficial Documents

HELEN PURCELL
2003-0332439 03/18/03 16:40
101 OF 136
BLOCKNUMBERS

WARRANTY DEED

2/3

Escrow No. **208-3279651 (mmg)**

For the consideration of TEN AND NO/100 DOLLARS, and other valuable considerations, I or we,

MAGDALENA R. SCHELLENBERG, an unmarried woman, the GRANTOR does hereby convey to

MAGDALENA R. SCHELLENBERG, an unmarried woman and BERNARD M. SCHELLENBERG, a single man, the GRANTEE

The following described real property situate in **MARICOPA** County, **AZ** with the title being conveyed to the grantee as set forth in the attached acceptance by the grantee:

Lot 19, of 34 PALMS, according to the plat of record in the office of the County Recorder of Maricopa County, Arizona, recorded in Book 107 of Maps, Page 19.

Subject To: Existing taxes, assessments, covenants, conditions, restrictions, rights of way and easements of record.

And the GRANTOR binds itself and its successors to warrant the title as against its acts and none other, subject to the matters set forth.

This Deed is exempt from an Affidavit of Value pursuant to ARS #11-1134, B-3.

DATED: December 27, 2002

SEE ACCEPTANCE ATTACHED HERETO

AND BY REFERENCE MADE A PART HEREOF.

Magdalena R. Schellenberg
MAGDALENA R. SCHELLENBERG

20030332439

A.P.N.:

Escrow No. **208-3279651**

WARRANTY DEED - CONTINUED

STATE OF AZ)
)ss.
County of Maricopa)

On JANUARY 17, 2003, before me, the undersigned Notary Public, personally appeared **MAGDALENA R. SCHELLENBERG**, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

My Commission Expires: NOV 6, 2003

Marilyn P. Wagner
Notary Public

Unofficial Document

OFFICIAL SEAL
MARILYN P. WAGNER
NOTARY PUBLIC-ARIZONA
MARICOPA COUNTY
My Comm. Expires Nov. 6, 2003

20030332439

A.P.N.:

Escrow No. **208-3279651**

WARRANTY DEED - CONTINUED

ACCEPTANCE OF JOINT TENANCY

This Acceptance is to be attached to: Warranty Deed dated 12/27/2002 by and between MAGDALENA R. SCHELLENBERG and MAGDALENA R. SCHELLENBERG and BERNARD M. SCHELLENBERG.

That each of the undersigned individually and jointly as such Grantees hereby declare that it is their intention to accept such conveyance as joint tenants with right of survivorship and not as a community property estate and not as tenants in common, and to acquire any interest in said real property under said deed as joint tenants with right of survivorship, and not as a community property estate and not as tenants in common.

That by the execution and delivery to the Escrow Agent of this "Acceptance of Joint Tenancy" the undersigned intend to evidence their acceptance of said deed as joint tenants, and hereby direct and authorize the Escrow Agent to attach this "Acceptance of Joint Tenancy" to such deed upon its execution and delivery and to record this "Acceptance of Joint Tenancy" together with such deed.

Date: 12/27/2002

Unofficial Document

Magdalena R. Schellenberg
MAGDALENA R. SCHELLENBERG

Bernard M. Schellenberg
BERNARD M. SCHELLENBERG

STATE OF AZ)
)ss.
County of Maricopa)

On January 17, 2003, before me, the undersigned Notary Public, personally appeared **MAGDALENA R. SCHELLENBERG**, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

My Commission Expires: Nov 6, 2003

Marilyn P. Wagner
Notary Public

OFFICIAL SEAL
MARILYN P. WAGNER
NOTARY PUBLIC-ARIZONA
MARICOPA COUNTY
My Comm. Expires Nov. 6, 2003

STATE OF AZ)
)ss.
County of Maricopa)

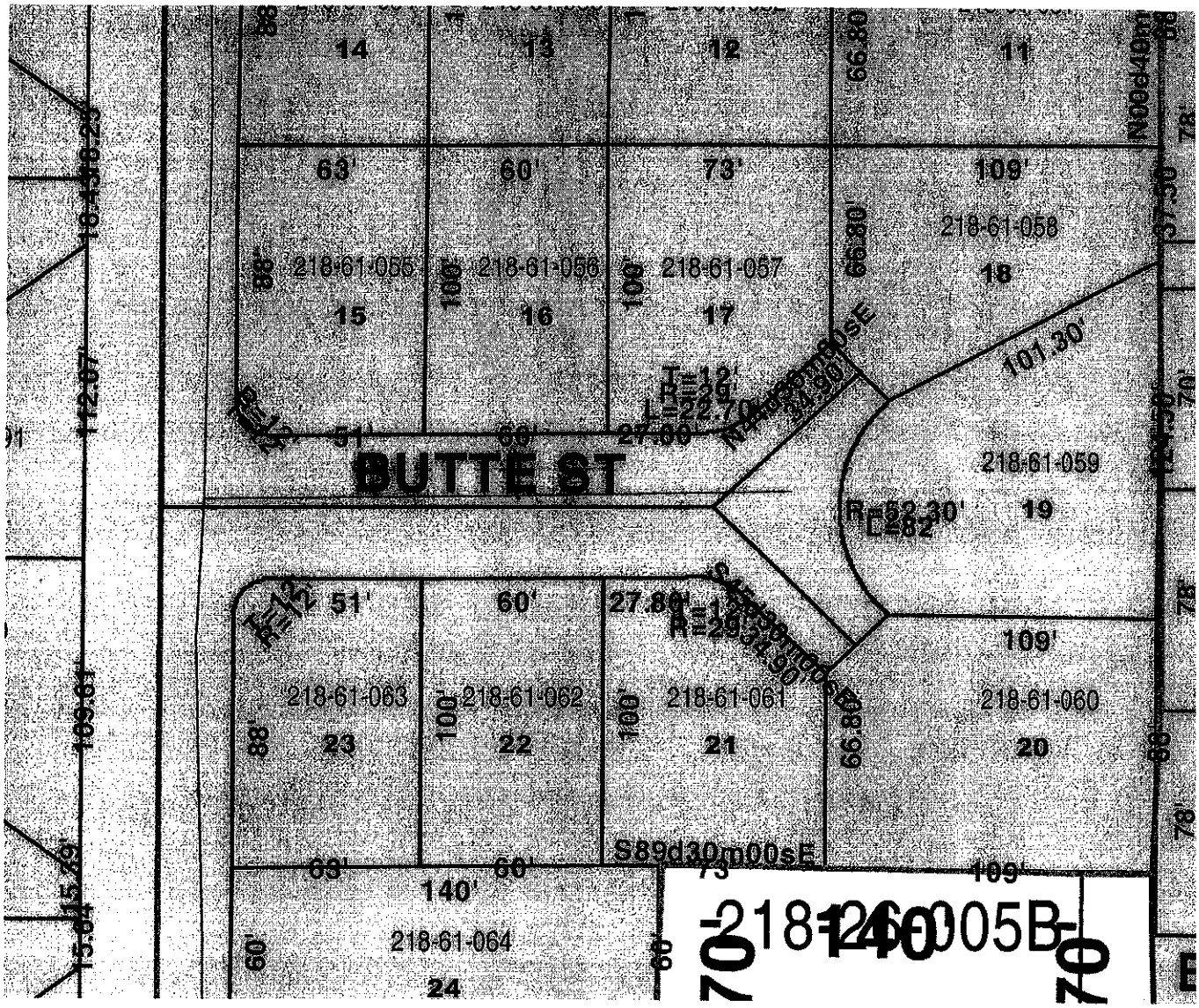
On January 17, 2003, before me, the undersigned Notary Public, personally appeared **BERNARD M. SCHELLENBERG**, personally known to me (or proved to me on the basis of satisfactory evidence) to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies) and that by his/her/their signature(s) on the instrument the person(s) or the entity upon behalf of which the person(s) acted, executed the instrument.

WITNESS my hand and official seal.

My Commission Expires: Nov 6, 2003

Marilyn P. Wagner
Notary Public

OFFICIAL SEAL
MARILYN P. WAGNER
NOTARY PUBLIC-ARIZONA
MARICOPA COUNTY
My Comm. Expires Nov. 6, 2003



R8A_34Palms_107-19map.doc

EXISTING CONDITIONS

9 DRAINS INTO PROPERTY, RESTRICTED ACCESS AND FLOODING DAMAGE.

11 CHANNEL USED AS PARKING LOT FOR RESIDENTS.

UTILITIES

1 WATER

2 SEWER

3 GAS

4 OVERHEAD ELECTRIC

5 UNDERGROUND ELECTRIC

6 TELEPHONE

EXISTING CHANNEL STRUCTURES

1 EARTH LINED CHANNEL

2 CONCRETE CHANNEL

3 CONCRETE BOX CULVERT

4 CMP CULVERT

5 RESIDENT-MADE BRIDGE

6 DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 8 & 8A

F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 8

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716 MC.Eng.On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Exs 4-15\6.1 D Existing Facilities Exhibits\exh-10_REACH 8.dwg, Layout1, 05/26/2004 04:14:35 PM, cmiranda

Reach 10: Cherokee Mobil Estates III
Location: S. of Apache Trail, off Ellsworth Road
Parcel Research: Dedication: "dedicates to the public for use as such, the streets as shown on said plat and included in the above described premises. Easements are hereby provided for the purposes shown." (Plat map covered entire drainage reach)
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 10 has a gas line on the north side of the right-of-way; a 6-inch ACP water line crosses the channel at Alder Avenue; and a telephone line is on the north side of the right-of-way.
Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC Q100 = 321 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 100 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel. Operational – (3):
Recommendation: Maintenance – (3): Reach 10 has severe erosion and undercutting problems in and around the area of Alder Avenue. Also, there is dumping into the channel, which may be a violation the County's NPDES Phase II Permit. HDR recommends stabilizing the channel with riprap and building an 8-foot high block wall with an 18-inch screen to mitigate illegal dumping. Also, provide monthly maintenance, monthly inspections and notices to residents explaining their responsibilities and consequences of not complying with the County NPDES Permit requirements, and installation of removable bollards.
Opinion of Improvement Cost: $454,700

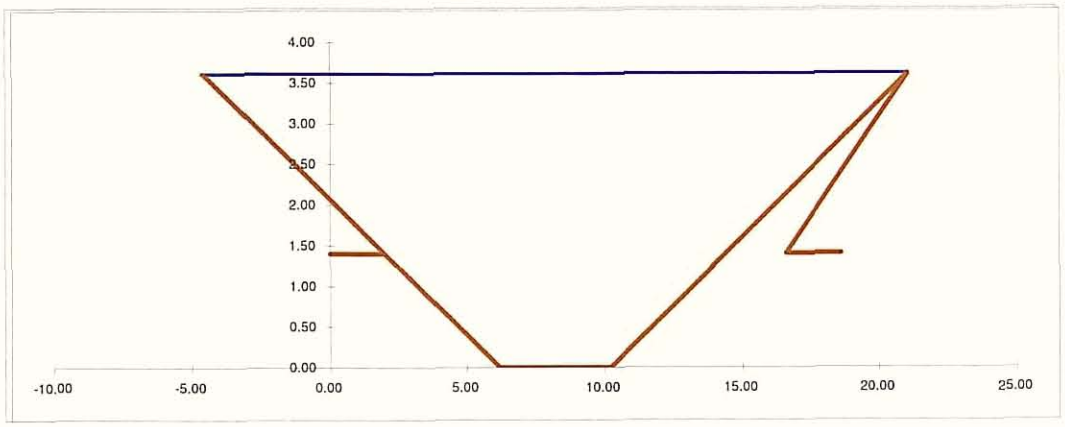
Job No.		No.	

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 10	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 10



Design Discharge Q = 321 cfs
Channel Section 10
Right-of-Way Width 60 ft

Calculate Flow Depth
Estimated Flow Depth 3.61 ft
Channel Depth 1.40 ft

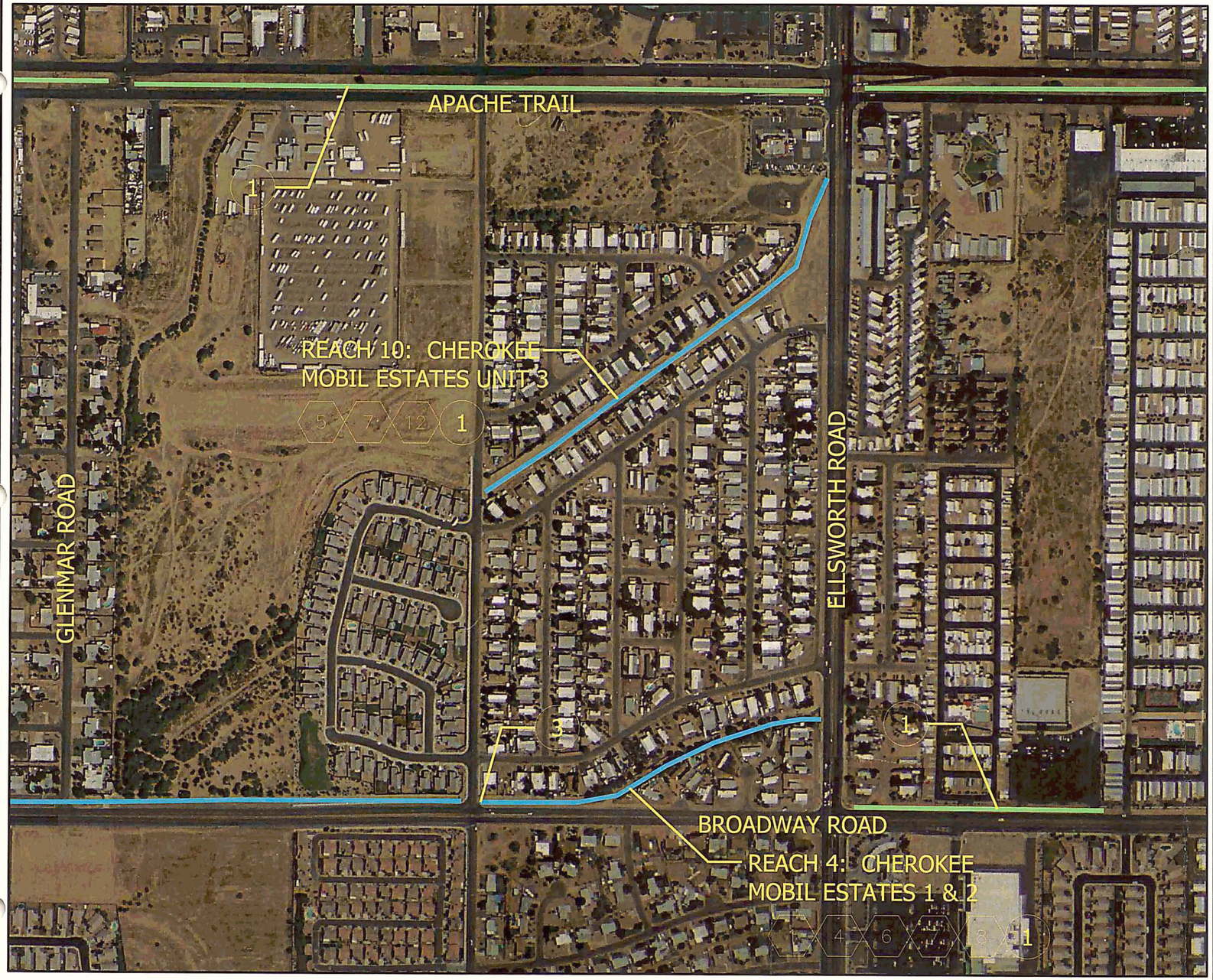
Estimated Q = 321.5 cfs
Average V = 6.00 ft/sec

Channel Parameters

Bottom Width =	4.00	ft
Side Slope =	3.00	:1
Manning n =	0.040	
Channel Slope	0.010	ft/ft
Flow Area =	53.54	ft^2
Wet Perimeter	26.83	ft
Hyd. Radius R	2.00	ft
Top Width =	25.66	ft
Hydraulic depth	2.09	ft
Froude No. =	0.73	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.23 ft

Available Freeboard
Channel Depth - Flow Depth = -2.21 ft Available Fb > Fb req'd



EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED
- (4) EXCESSIVE TREE MAINTENANCE NEEDED
- (5) PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS
- (6) ILLEGAL DISCHARGES
- (7) ILLEGAL DUMPING
- (8) DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE
- (12) UNDERCUTTING

EXISTING CHANNEL STRUCTURES

- (1) EARTHEN CHANNEL
- (2) CONCRETE CHANNEL
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4, 10 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

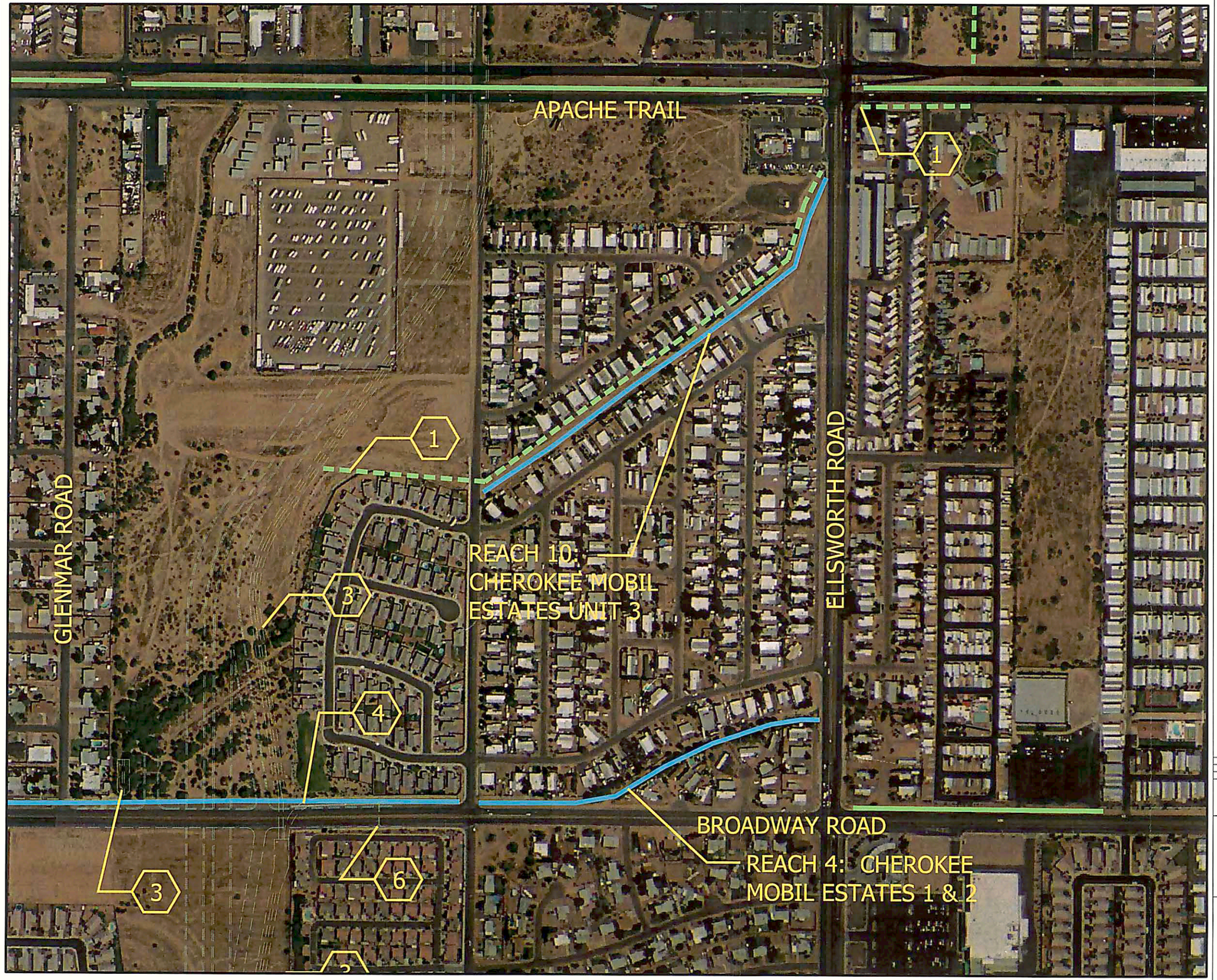
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07715\ MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Existing Facilitii ibitsexh-07 REACH 4 10.dwg, Layout1, 4/21/2004 2:31:06 PM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4, 10 AND
BROADWAY CHANNEL
F.C.D. CONTRACT NO. 2003C018

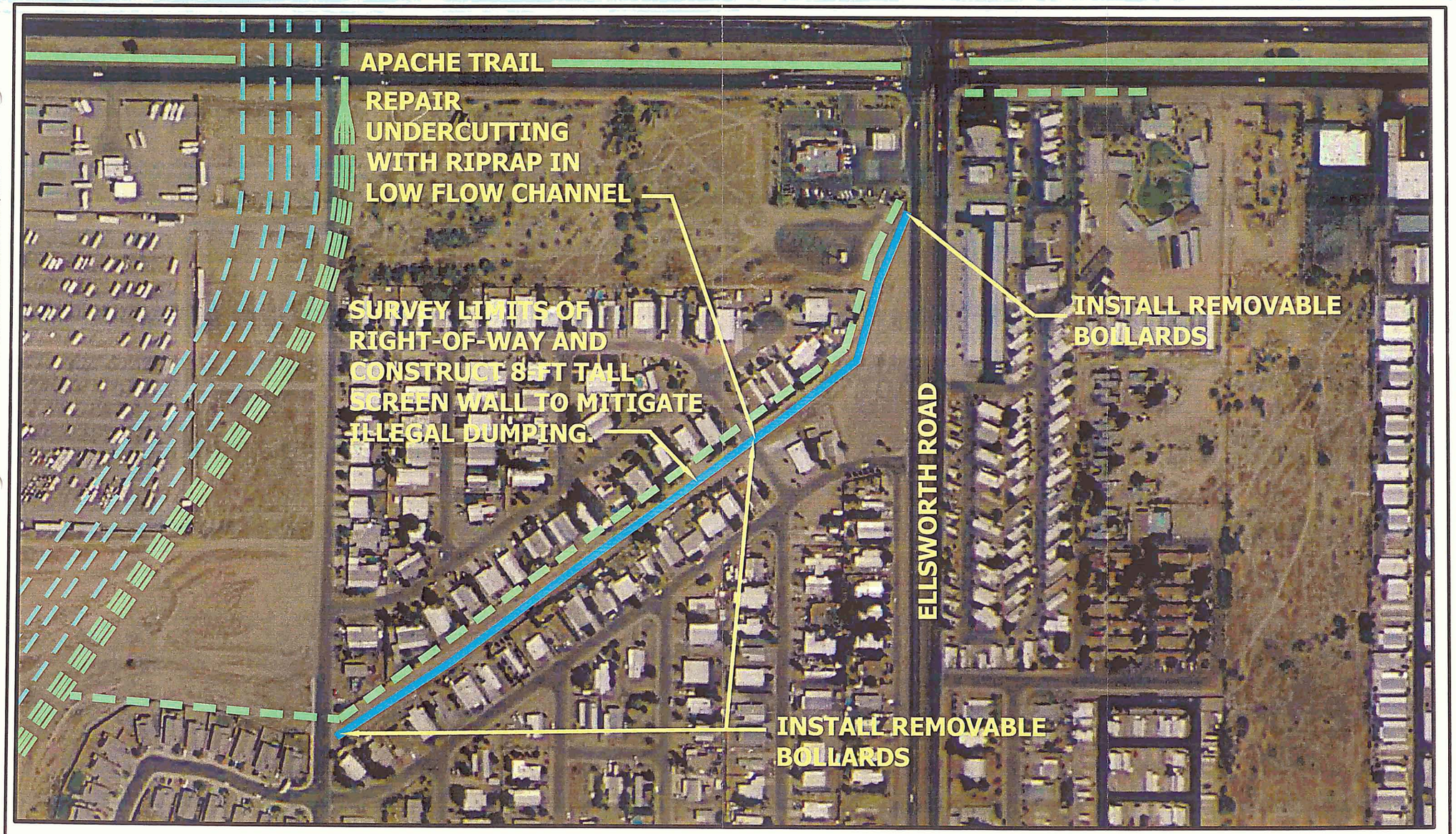
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\07716\MC.Eng.On-Call\East.Mesa.Drains.CAR\6.0.Hydrology & Hydraulics\6.1.DWG\Exhibits\Proposed.Facili...exh-15_REACH.4.10.dwg, Layout1, 4/21/2004 4:12:56 PM, akuchars



N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR

HDR Engineering, Inc.

REACH 10
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 L Recommendations\REACH 10.dwg, Layout2, 05/04/2004 03:44:40 PM, cmiranda

Reach 10 - Survey Points 1050 – 1130 Cherokee Mobile Estates Unit 3

PT1067 LOOKING DOWNSTREAM

PT1067 LOOKING UPSTREAM

Reach 10 - Survey Points 1050 – 1130 Cherokee Mobile Estates Unit 3

PT1087 LOOKING DOWNSTREAM

PT1087 LOOKING UPSTREAM

Reach 10 - Survey Points 1050 – 1130 Cherokee Mobile Estates Unit 3

PT1093 LOOKING DOWNSTREAM

PT1093 LOOKING UPSTREAM

Reach 10 - Survey Points 1050 – 1130 Cherokee Mobile Estates Unit 3

PT1124 LOOKING DOWNSTREAM

PT1124 LOOKING UPSTREAM

164-44

CHEROKEE MOBILE ESTATES UNIT 3

A SUBDIVISION OF PART OF THE E.1/2 S.E.1/4 SECTION 21 T.1N.R.7E. G.& S.R.B.& M.
MARICOPA COUNTY, ARIZONA

DEDICATION

KNOW ALL MEN BY THESE PRESENTS:

That Mohawk Credit Corporation, a New York Corporation, as Owner, has subdivided under the name of CHEROKEE MOBILE ESTATES UNIT THREE a portion of the E ½ SE ¼ Section 21, T.1N., R.7E., G.&S.R.B.&M., Maricopa County, Arizona as shown platted hereon, and hereby publishes this plat as and for the plat of said CHEROKEE MOBILE ESTATES UNIT THREE and hereby declares that said plat sets forth the location and gives the dimensions of the lots and streets constituting same and that each lot and street shall be known by the number or name given to each respectively on said plat and that Mohawk Credit Corporation, a New York Corporation, hereby dedicates to the public, for use as such, the streets as shown on said plat and included in the above described premises.

Easements are hereby provided for the purposes shown.

IN WITNESS WHEREOF:
Mohawk Credit Corporation, a New York, Corporation, as Owner, has caused its Corporate name to be signed and its Corporate seal to be affixed and the same to be attested to by the signatures of its President and Secretary respectively, thereunto duly authorized, this ___ day of April, 1973.

MOHAWK CREDIT CORPORATION - - - - - - - OWNER

By: Nelson W. Collamer, Vice President Attest: Thal H. Beets, Secretary

ACKNOWLEDGMENT

State of Arizona
County of Maricopa

On this the 30th day of April, 1973 before me, the undersigned officer, personally appeared Nelson W. Collamer and Thal H. Beets, who acknowledged themselves to be the President and Secretary of Mohawk Credit Corporation, a New York Corporation, and acknowledged that they as such officers, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the Corporation, as Owner, by themselves, as such officers.

IN WITNESS WHEREOF:
I hereunto set my hand and official seal.

My commission expires March 14, 1975

Dorothy C. Collins
Notary Public

APPROVAL

Approved by the Maricopa County Board of Supervisors, Maricopa County, Arizona, this 6th day of August, 1973.

By: [illegible] Chairman Attest: [illegible] Clerk of the Board

CERTIFICATION OF ASSURANCES BY COUNTY ENGINEERS

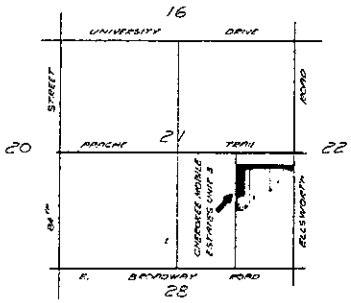
Satisfactory assurance to guarantee improvements in this subdivision has been provided.

Asst COUNTY ENGINEER 6-18-73 Date

CERTIFICATION

This is to certify that the survey and subdivision of the premises described and platted hereon, was made under my direction during the month of April, 1973.

Otto E. Fort



LOCATION MAP
NO SCALE

CERTIFICATION BY COUNTY ASSESSOR

I, the undersigned, as a Deputy County Assessor, Maricopa County, Arizona, do hereby certify that on this date the records of said County reflect that Mohawk Credit Corp. are owners of the property as shown on this plat; that the taxes for the year 1972 and prior years have been paid; and that there are no outstanding tax sale certificates, tax deeds, or other tax assessments on the property.

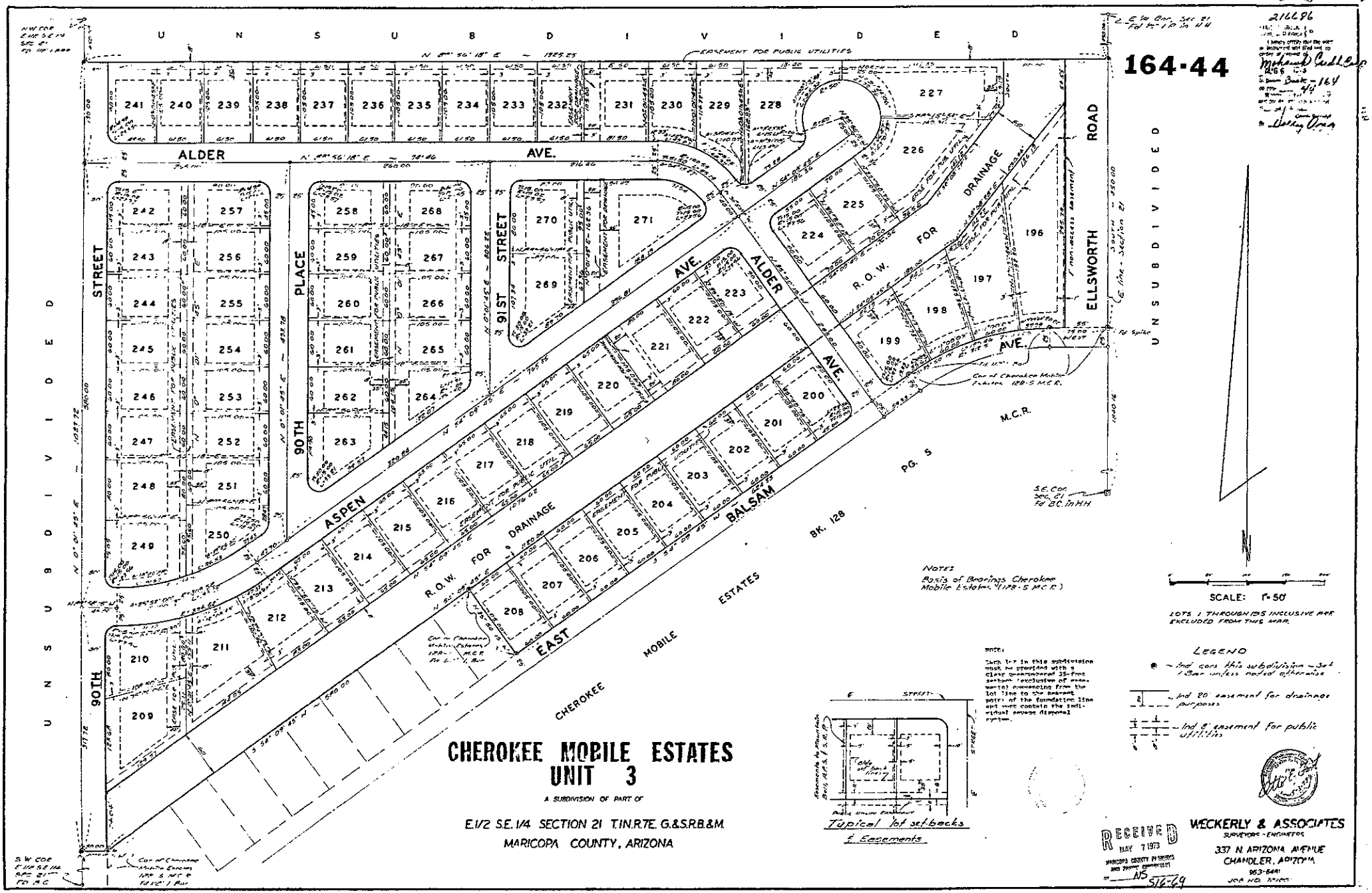
DEPUTY COUNTY ASSESSOR 3 July 1973 Date

RECEIVED MAY 7 1973

NS 5419 00 NO 721001

WECKERLY & ASSOCIATES
SURVEYORS - ENGINEERS
337 N. ARIZONA AVENUE
CHANDLER, ARIZONA
963-6481

SHEET 1 OF 2

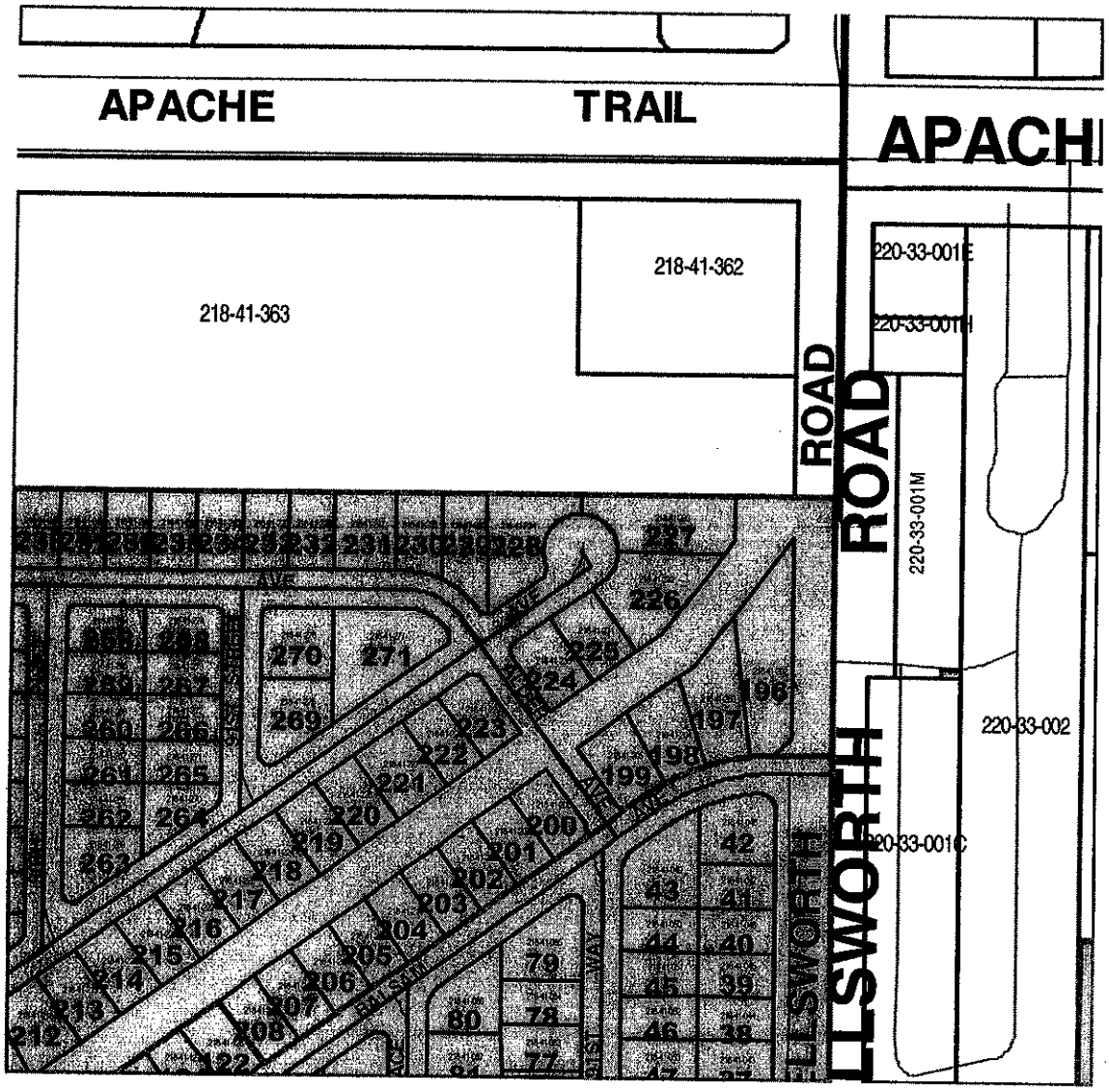


CHEROKEE MOBILE ESTATES UNIT 3

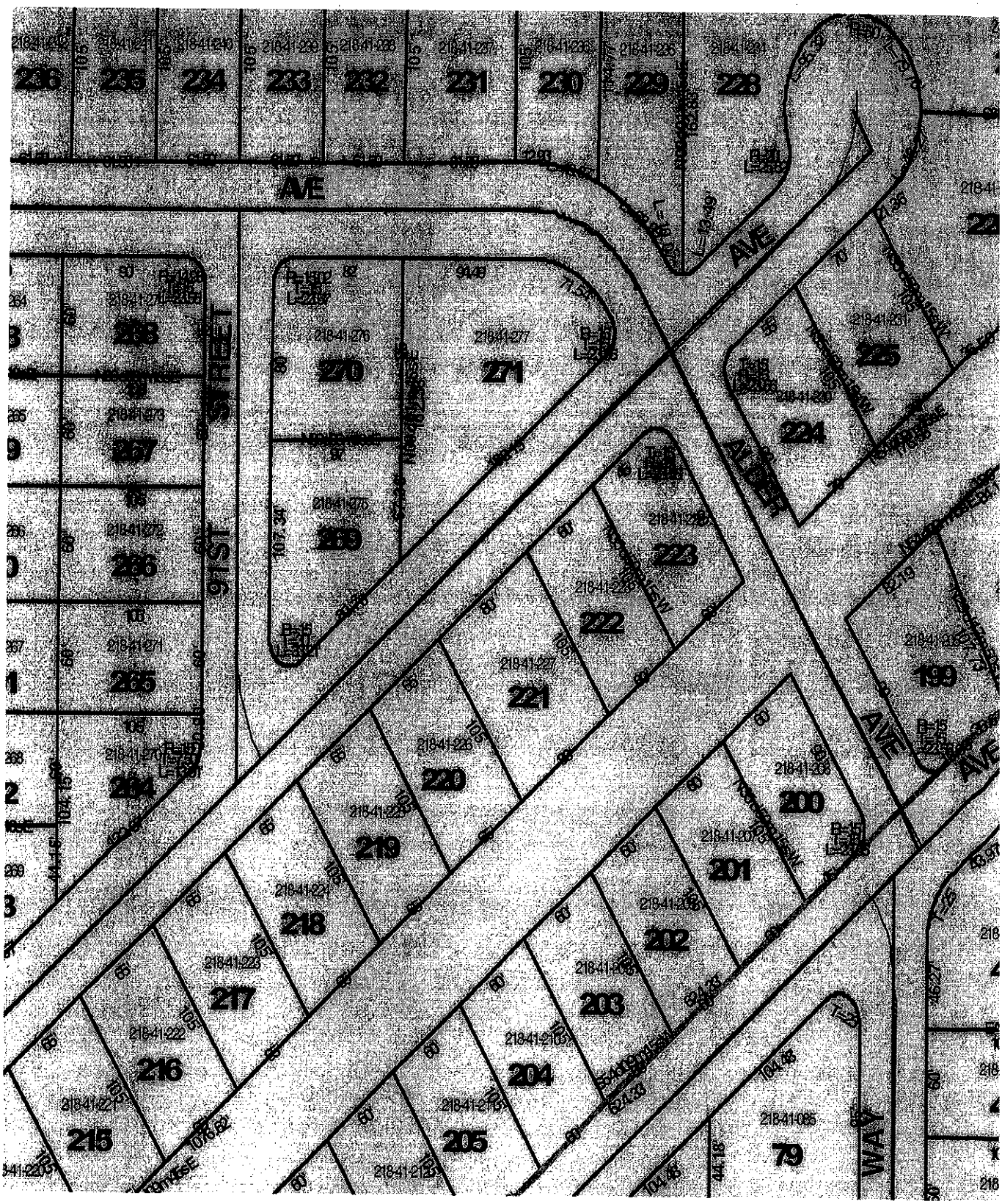
A SUBDIVISION OF PART OF

E.1/2 S.E.1/4 SECTION 21 T.1N.R.7E. G.&S.R.B.&M.

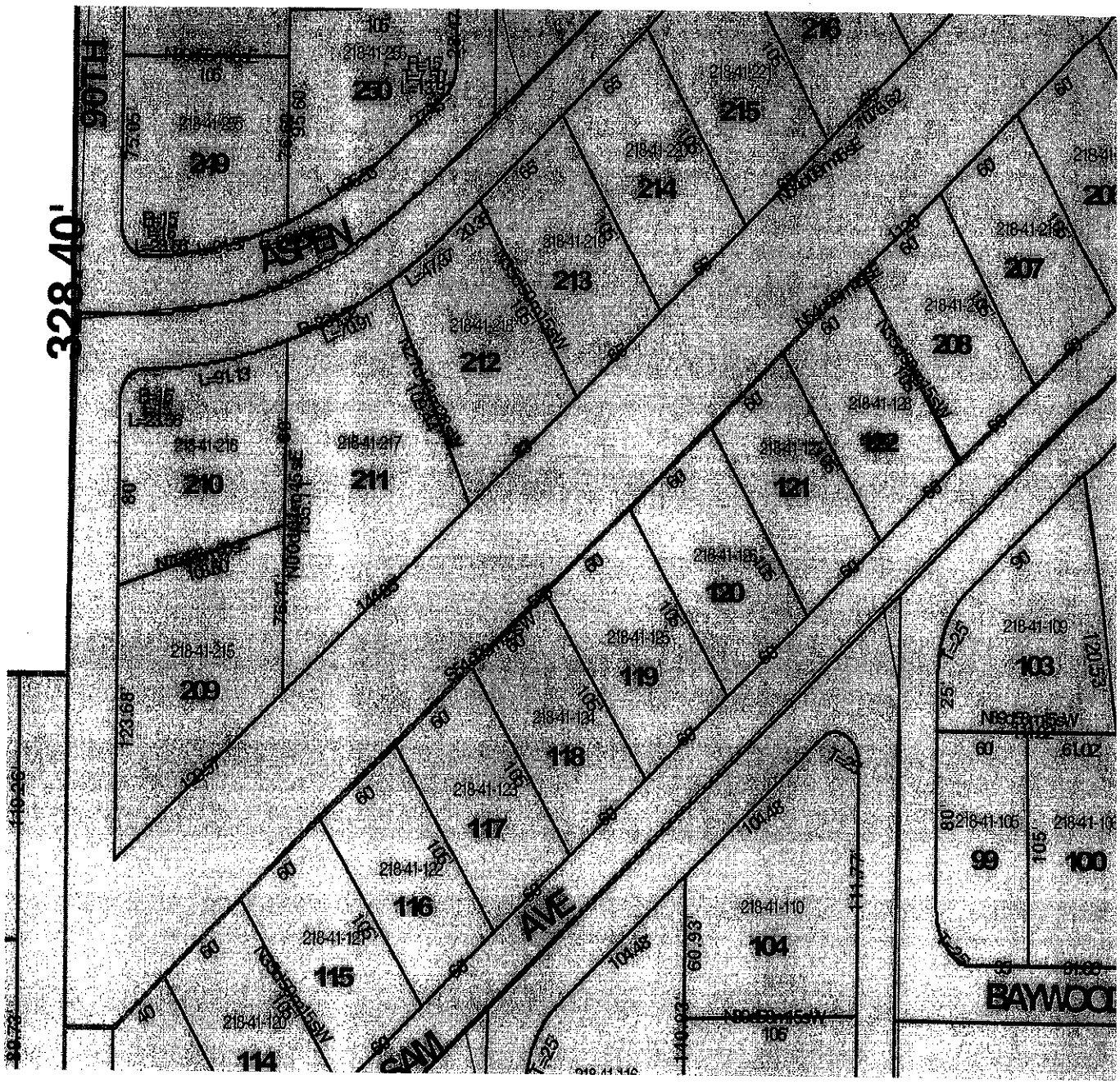
MARICOPA COUNTY, ARIZONA



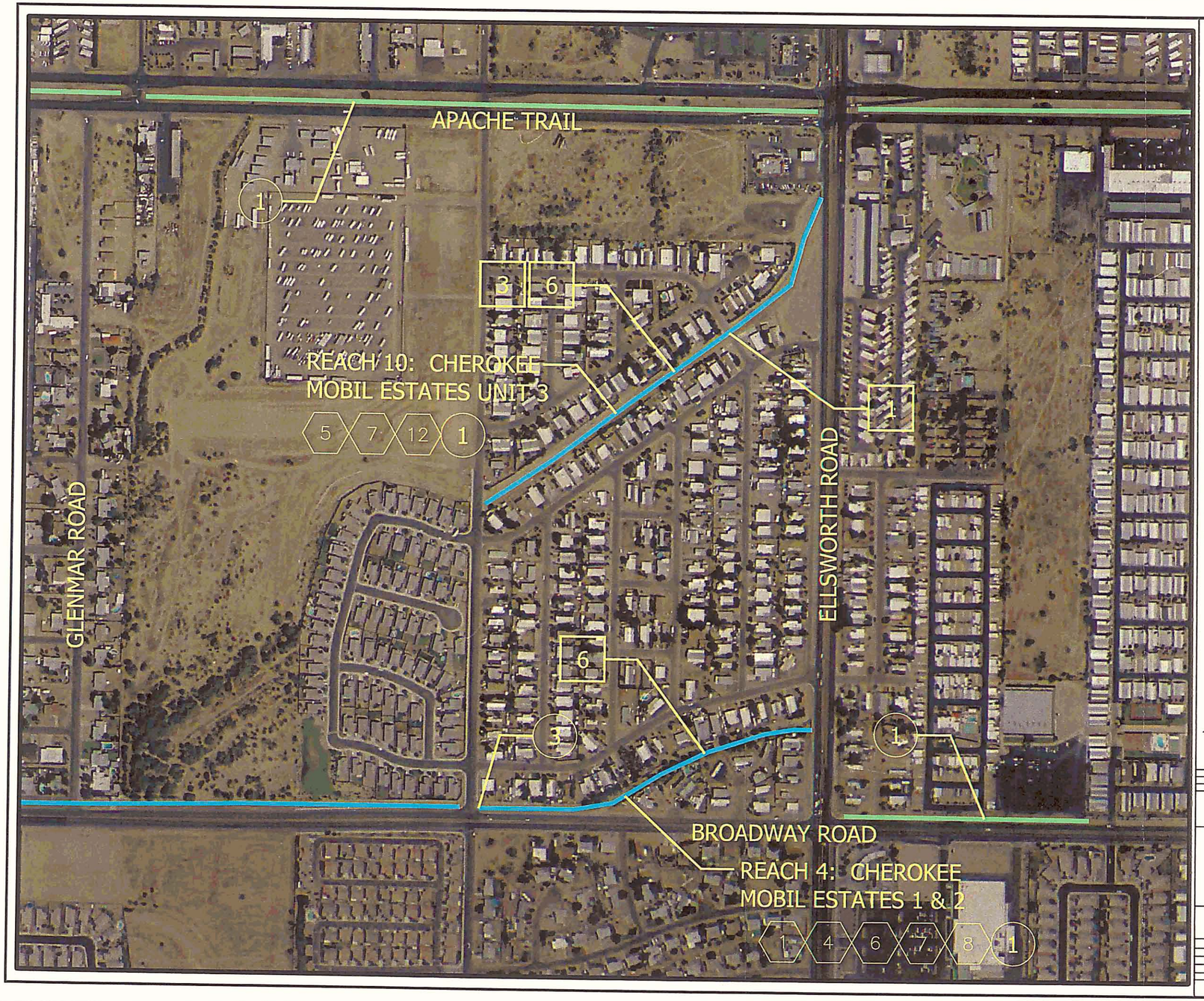
R10-North-map.doc



R-10_CherokeeMEuIII_164-44map2of2.doc



R-10_CherokeeMEuIII_164-44map1of2.doc



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED.
4. EXCESSIVE TREE MAINTENANCE NEEDED.
5. PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS.
6. ILLEGAL DISCHARGES
7. ILLEGAL DUMPING
8. DUMPING OF LANDSCAPING CUTTINGS AND HOUSEHOLD WASTE.
12. UNDERCUTTING.

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1. EARTH LINED CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 4 & 10
F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0716_ MC.Eng.On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Ele.4-15\6.1 D. xisting Facilities Exhibits\exh.07_REACH 4.10.dwg, Layout1, 05/26/2004 04:09:47 PM, cmiran...

Reach 11: Desert Vista
Location: N. of the CAP Canal, E. of Ellsworth Road
Parcel Research: Dedication (Desert Vista Estates): "dedicates to the public for use as such, the streets as shown on said plat and included in the above described premises. Easements are provided for the purpose shown." Dedication (Paradise Village II): "dedicates to the public for use as such the streets as shown on said plat. Easements are provided for the purposes indicated." (Plat maps covered entire drainage reach)
Tax Information: No drainage reach right-of-way responsibility information in the interactive GIS parcel database (general data, valuation data, and property data) for specific lots or tracts.
Utility Research: Reach 11 has no identifiable utilities within the right-of-way.
Hydrologic Analysis: The watershed area was identified through site visits and GIS topographic data and calculated using the rational method, Q = 247 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 120 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel.
Recommendation: Maintenance – (2): Reach 11 has erosion problems along the fence line and residents are planting vegetation on the slopes of the channel. HDR recommends that the District survey the drainage right-of-way and notify residents of their responsibilities and consequences of not complying with the County NPDES Permit Requirements. Also HDR recommends stabilizing the channel with riprap and removing the trees after a survey is completed. .
Opinion of Improvement Cost: $4,700

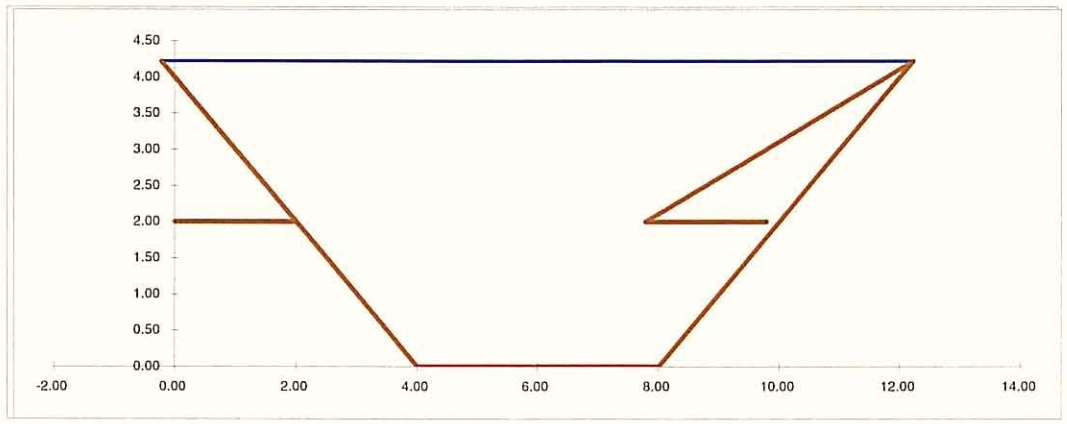
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 11	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 11



Design Discharge Q = 247 cfs
Channel Section 11
Right-of-Way Width 30 ft

Calculate Flow Depth
Estimated Flow Depth 4.22 ft
Channel Depth 2.00 ft

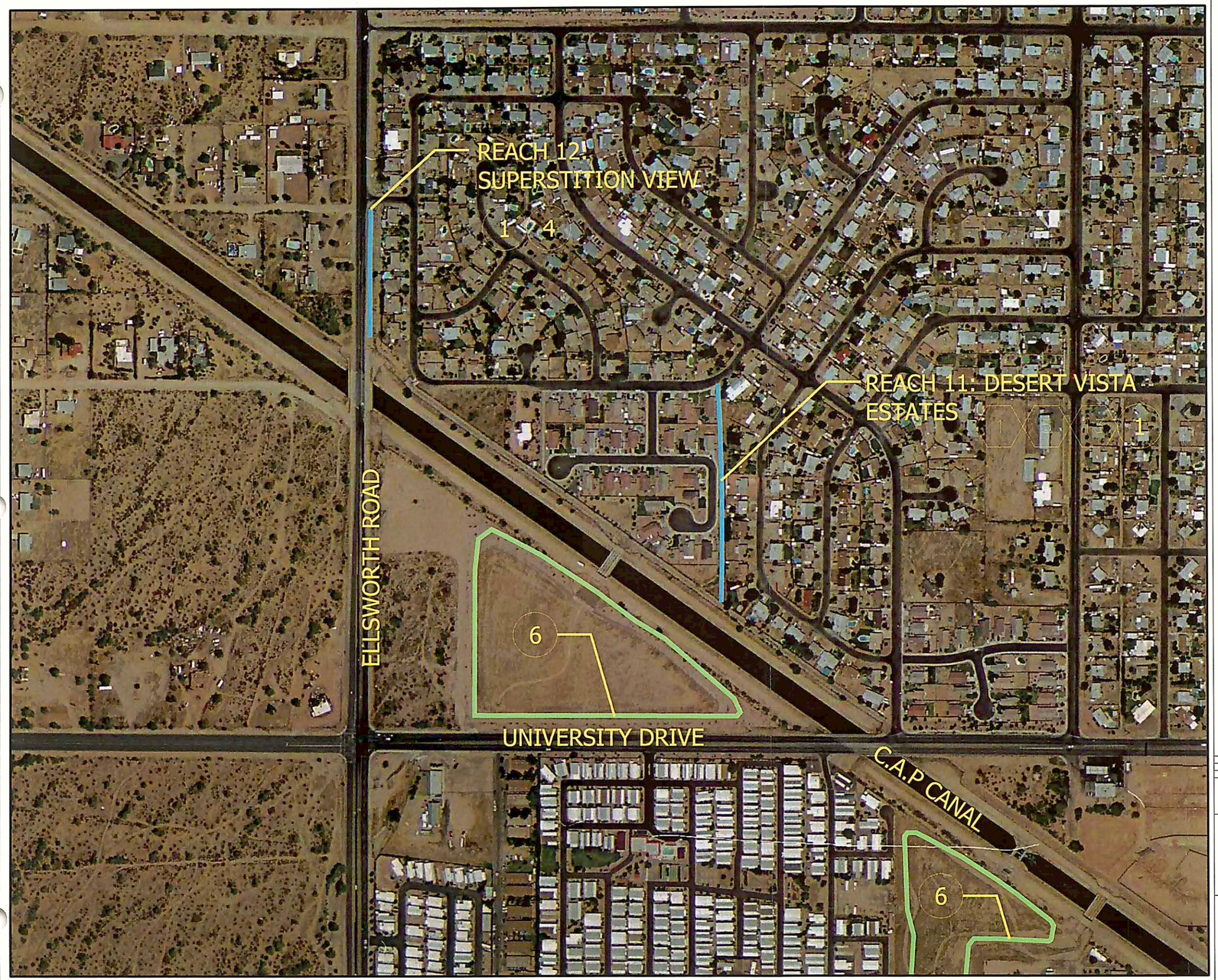
Estimated Q = 246.6 cfs
Average V = 7.11 ft/sec

Channel Parameters

Bottom Width =	4.00	ft
Side Slope =	1.00	:1
Manning n =	0.040	
Channel Slope	0.013	ft/ft
Flow Area =	34.69	ft^2
Wet Perimeter	15.94	ft
Hyd. Radius R	2.18	ft
Top Width =	12.44	ft
Hydraulic depth	2.79	ft
Froude No. =	0.75	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.29 ft

Available Freeboard
Channel Depth - Flow Depth = -2.22 ft Available Fb > Fb req'd



EXISTING CONDITIONS

1. EROSION REPAIR NEEDED
5. PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS
13. LIMITED ACCESS

EXISTING CHANNEL STRUCTURES

1. EARTHEN CHANNEL
2. CONCRETE CHANNEL
3. CONCRETE BOX CULVERT
4. CMP CULVERT
5. RESIDENT-MADE BRIDGE
6. DETENTION BASIN

LEGEND

EXISTING NON-FCDMC DRAINAGE FACILITIES

DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 11 AND 12
F.C.D. CONTRACT NO. 2003C018

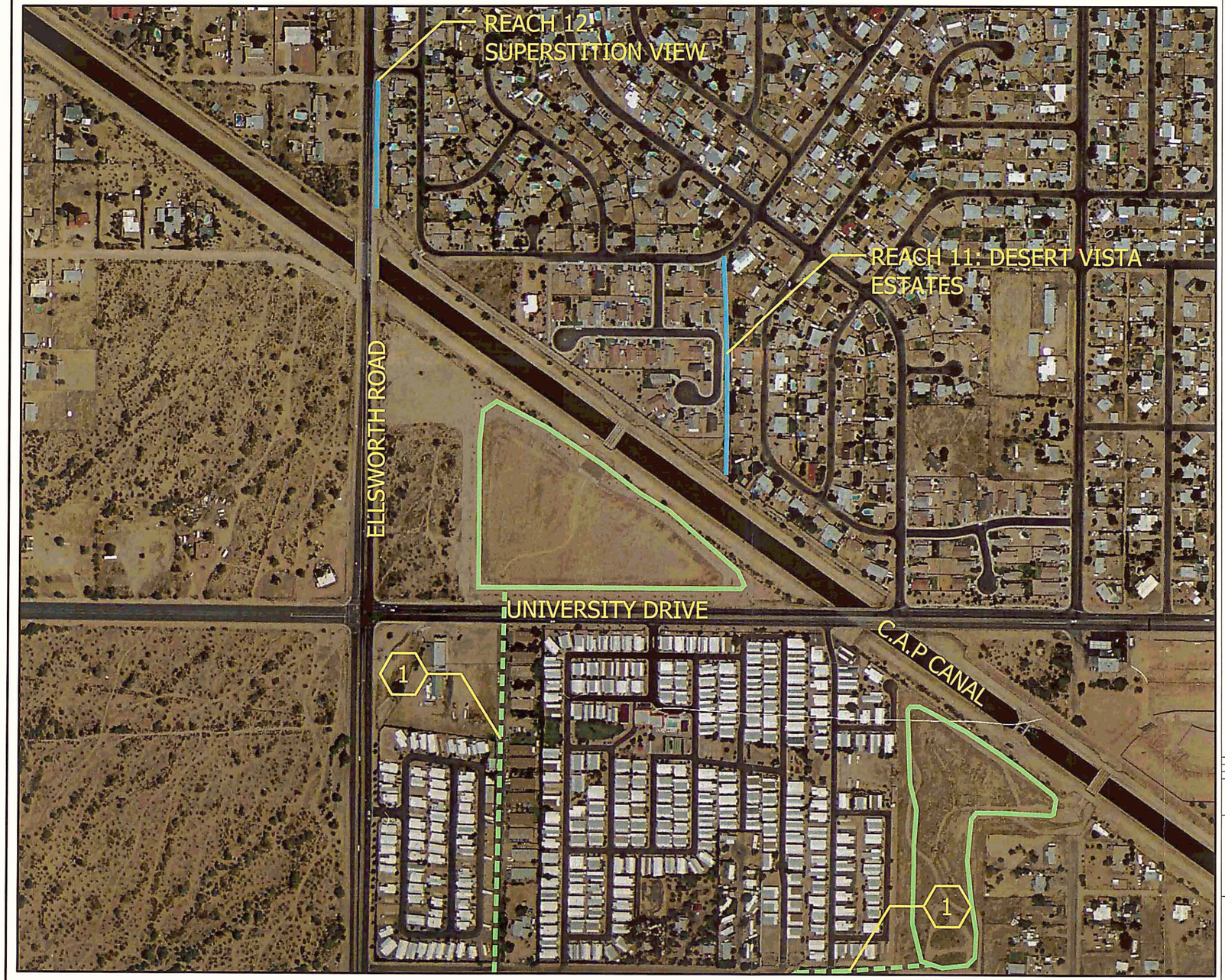
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\0721 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Existing Facili hibits\exh-05_REACH 11.dwg, Layout1, 4/21/2004 2:22:39 PM, akuchars



PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 11 AND 12
F.C.D. CONTRACT NO. 2003C018

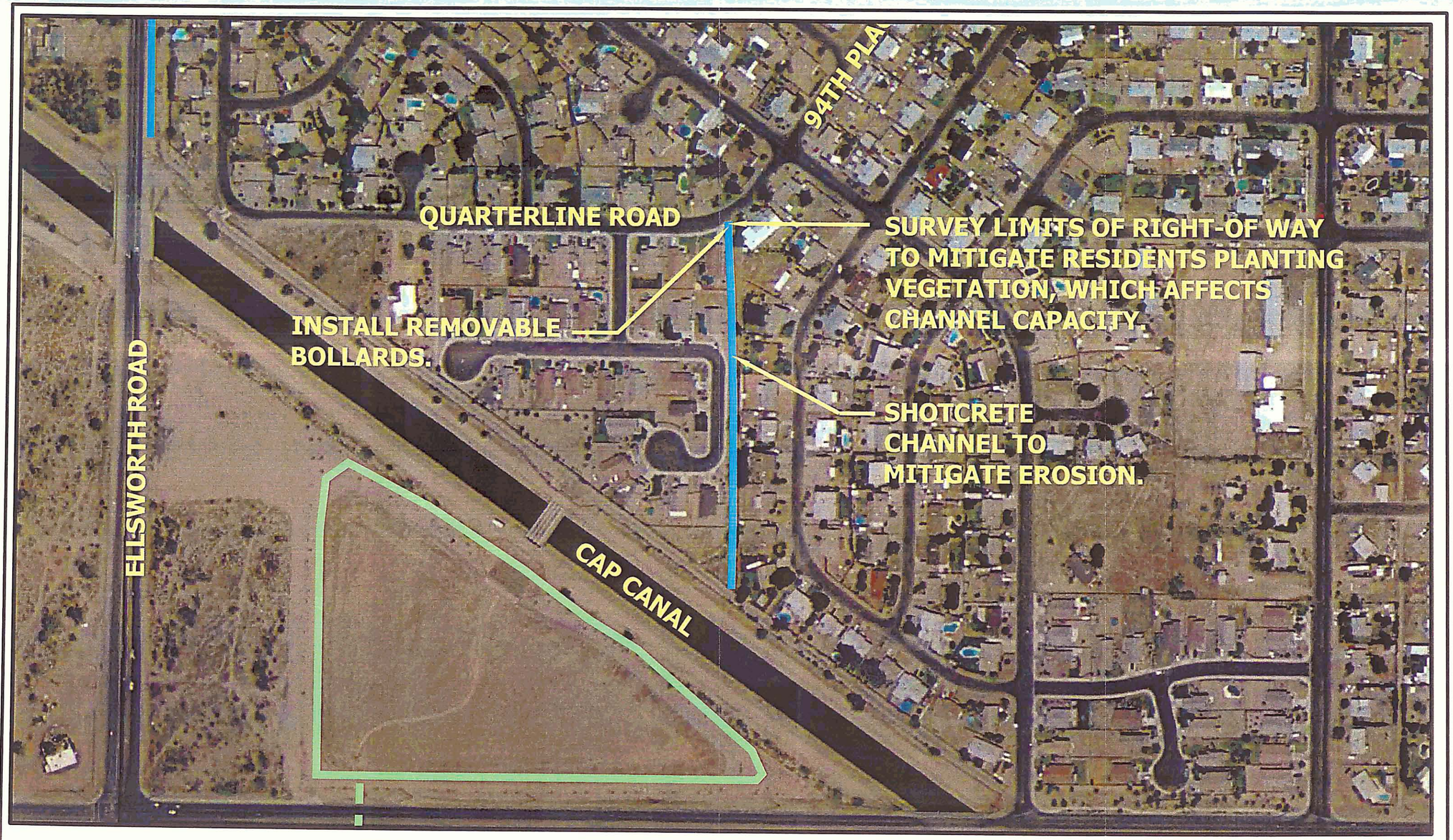
HDR
HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA
PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

G:\071I DMC.Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Proposed Fac Exhibits\exh-13_REACH 11.dwg, Layout1, 4/21/2004 3:30:30 PM, akuchars



200 0' 200 400
SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

HDR Engineering, Inc.

REACH 11
RECOMMENDED IMPROVEMENTS
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT
FCD CONTRACT NO. 2003C018

Date

Figure

E:\071 DMC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Pre 4-15\6.1 Recommendations\REACH 11.dwg, Layout2, 05/04/2004 03:47:48 PM, cmiranda

Reach 12 - Survey Points 3172 – 3221 (Desert Vista Estates)

PT3183 LOOKING DOWNSTREAM

PT3183 LOOKING UPSTREAM

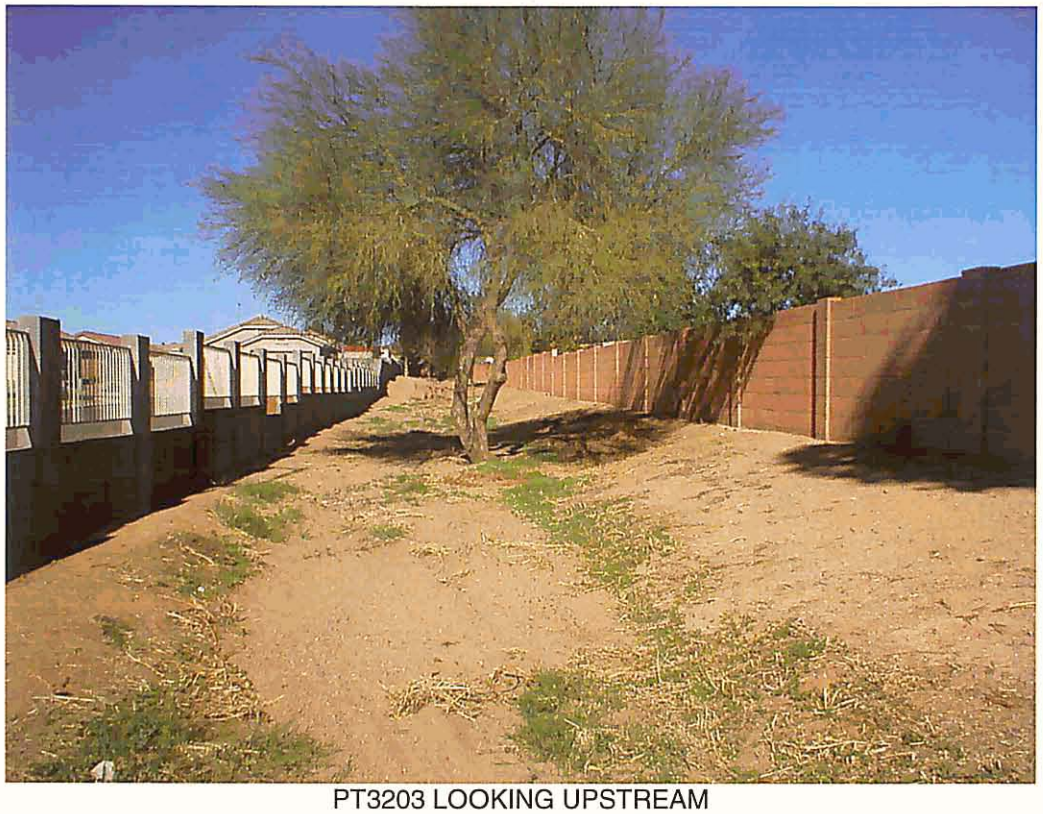
Reach 12 - Survey Points 3172 – 3221 (Desert Vista Estates)

PT3196 LOOKING DOWNSTREAM

PT3196 LOOKING UPSTREAM

Reach 12 - Survey Points 3172 – 3221 (Desert Vista Estates)

PT3203 LOOKING DOWNSTREAM



PT3203 LOOKING UPSTREAM

Reach 12 - Survey Points 3172 – 3221 (Desert Vista Estates)

PT3216 LOOKING DOWNSTREAM

PT3216 LOOKING UPSTREAM

25891.

DESERT VISTA ESTATES

A SUBDIVISION OF PART OF THE SW1/4, SECTION 15.
T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA.

SHEET 1 OF 2

239-25

1-26-82

STATE OF ARIZONA } ss
County of Maricopa }
I hereby certify that the within instrument was filed and recorded at request of Commonwealth Title
JAN 25 1982 - 10 - 11
in Book 239 of Maps, page 25
Witness my hand and official seal the day and year first above written
Carl Kunz, County Recorder
By Darlene Dong, Deputy

DEDICATION

State of Arizona
County of Maricopa

Know all men by these presents:
That Commonwealth Title of Arizona, an Arizona Corporation, as trustee, has subdivided under the name of DESERT VISTA ESTATES, situated in the E1/2, section 15, T.1N., R.7E., G.&S.R.B.&M., Maricopa County, Arizona, as shown and platted hereon and hereby publishes this plat as and for the plat of said DESERT VISTA ESTATES and hereby declares that said plat sets forth the location and gives the dimensions of the lots, easements, and streets constituting same, and that each lot and street shall be known by the number or name given each, respectively, on said plat and that Commonwealth Title of Arizona, an Arizona Corporation, as trustee, hereby dedicates to the public, for use as such, the streets as shown on said plat and included in the above described premises. Easements are provided for purpose shown.

In witness whereof, Commonwealth Title of Arizona, an Arizona Corporation, as trustee, has hereunto caused its corporate name to be signed by the undersigned trust officer, thereunto duly authorized this 5TH day of JANUARY, 1982.

COMMONWEALTH TITLE OF ARIZONA, AS TRUSTEE

BY: Roy Gerson — 1-5-82
SENIOR TRUST OFFICER — DATE

ACKNOWLEDGEMENT

State of Arizona
County of Maricopa

On this the 5TH day of JANUARY, 1982, before me the undersigned notary public personally appeared, Roy Gerson, who acknowledged himself to be senior trust officer of Commonwealth Title of Arizona, an Arizona corporation, and that he, as a trust officer being duly authorized so to do executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as trustee, by himself, as senior trust officer.

In witness whereof: I hereunto set my hand and official seal.

My Commission expires 11-22-82 (Date) — Linda K. Gerson (Notary Public)

NOTES

"All Utilities to be installed underground"

"Construction within utility easements shall be limited to utilities, and wood, wire, or removable section type fencing."

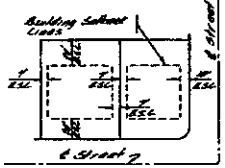
"Water service to be provided by the Desert Cove Water Company."

• indicates corner of this subdivision, all 1/2" rebar unless otherwise indicated

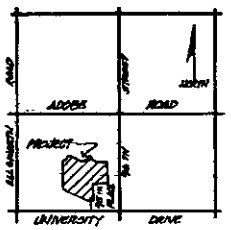
"Indicates - Public Utility Easement"
10' B.S.L. Indicates - 10' Building Setback Line
20' B.S.L. Indicates - 20' Building Setback Line
7' B.S.L. Indicates - 7' Building Setback Line
25' B.S.L. Indicates - 25' Building Setback Line

Thus we to certify that this subdivision plat as shown hereon was prepared ready for recordation.

Registered Land Surveyor #19562 — 10-26-81 Date



TYPICAL



Vicinity Map
NO SCALE

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona this 25 day of January, 1982.

Chairman — Attest — Clerk

COUNTY ENGINEER

Satisfactory assurance in the form of APSI from UNITED BANK in the amount of $190,000.00 has been provided to guarantee pavement, street and water service in this subdivision. Electrical service has been assured by Salt River Project.

Henry R. Kellar — 1-11-82
For County Engineer — Date

COUNTY ASSESSOR

I, the undersigned, as a Deputy County Assessor, Maricopa County, Arizona, do hereby certify that as of this date the records of this office reflect that COMMONWEALTH TITLE OF ARIZONA as designated on the plat is trustee of the property as shown on the plat and more particularly described as Assessor's parcel numbers 300-51-001, 002, 003 & 004.

Mark A. Poole — 1-12-82
Deputy County Assessor — Date

COUNTY TREASURER

I, the undersigned, as a Deputy County Treasurer, Maricopa County, Arizona, do hereby certify that as of this date the records of this office reflect that there are no tax liens on any of the property comprising this plat, as listed in the Assessor's certification, with the following exceptions: _____

Deputy County Treasurer — 1/25/82
Date

CERTIFICATE

I, David B. Wall, hereby certify that I am a Registered Land Surveyor of the State of Arizona; that this map, consisting of two sheets, correctly represents a survey made under my supervision during the month of May, 1981; that the survey is true and correct as shown; that all the monuments are sufficient to enable the survey to be retraced; and that I have permanently set

Registered Land Surveyor #19562 — 10-26-81
Date

Note: "Drainage easements owned and maintained by Hardhart Enterprises, Inc."

Note: "Certification of Assured Water Supply received November 23, 1981."

AMWEST ENGINEERING COMPANY
PHOENIX ARIZONA

DESERT VISTA ESTATES
JOB NO. 80025 — SHEET 1 OF 2

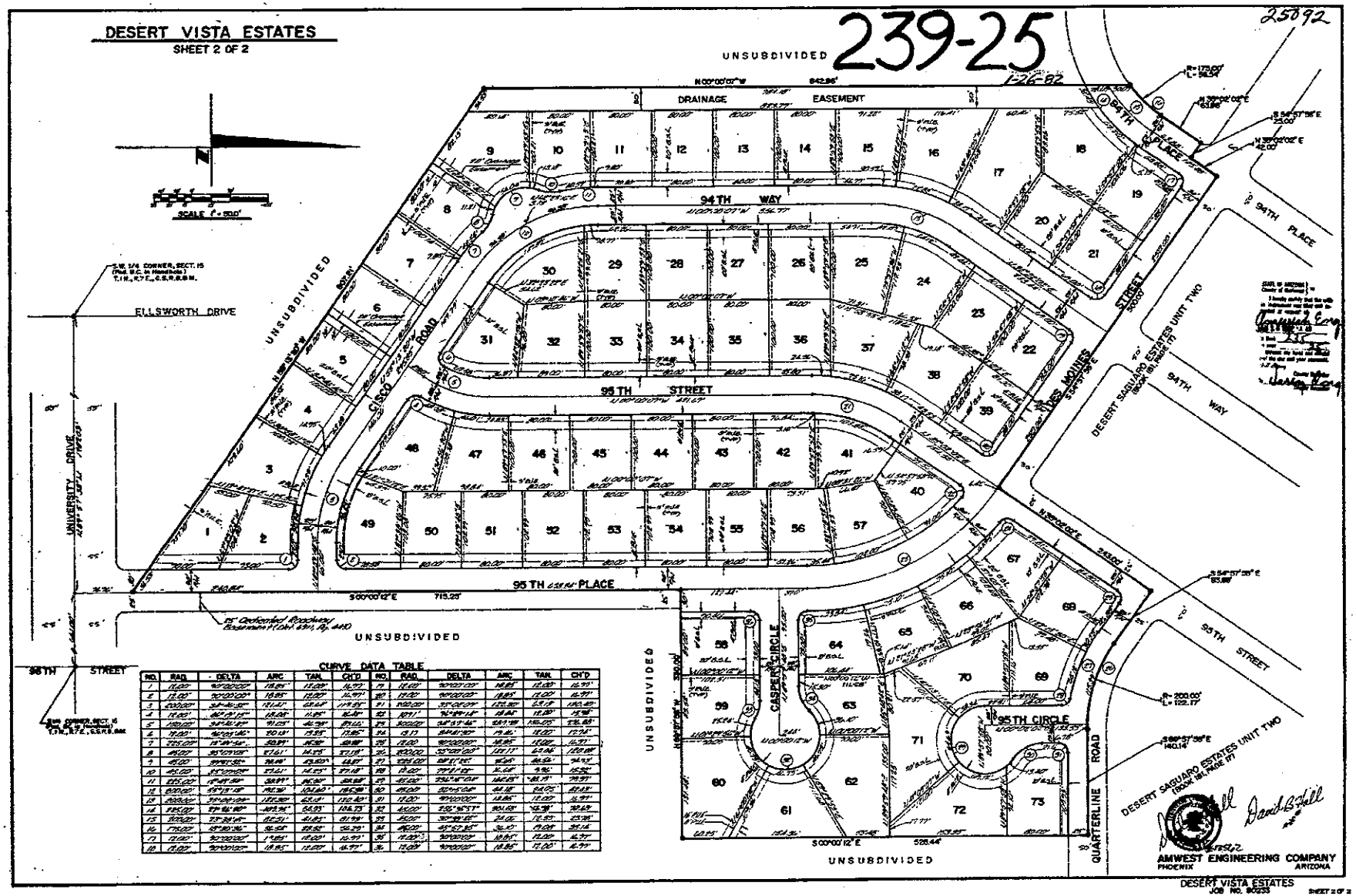
DESERT VISTA ESTATES

SHEET 2 OF 2

239-25

25092

126-82



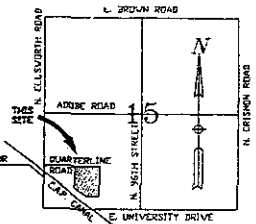
CURVE DATA TABLE

NO.	RAD.	DELTA	ARC	TAN.	CH'D	NO.	RAD.	DELTA	ARC	TAN.	CH'D
1	15.00'	90°00'00"	18.85'	12.00'	16.97'	19	15.00'	90°00'00"	18.85'	12.00'	16.97'
2	15.00'	90°00'00"	18.85'	12.00'	16.97'	20	15.00'	90°00'00"	18.85'	12.00'	16.97'
3	200.00'	34°46'55"	121.41'	62.64'	119.59'	21	200.00'	35°00'00"	122.30'	63.10'	120.40'
4	15.00'	86°13'15"	18.85'	11.81'	17.11'	22	15.00'	36°49'15"	19.30'	10.20'	18.96'
5	150.00'	34°46'55"	91.07'	46.98'	89.66'	23	150.00'	34°49'55"	91.07'	46.98'	89.66'
6	15.00'	86°13'15"	22.57'	13.95'	20.50'	24	15.00'	86°49'30"	19.46'	12.00'	17.74'
7	225.00'	19°49'55"	77.91'	39.38'	77.54'	25	15.00'	90°00'00"	18.85'	12.00'	16.97'
8	45.00'	35°00'00"	27.61'	14.25'	27.18'	26	200.00'	35°00'00"	122.17'	63.16'	120.28'
9	45.00'	39°51'55"	31.31'	16.50'	30.69'	27	225.00'	39°51'55"	156.54'	81.59'	153.43'
10	45.00'	35°00'00"	27.61'	14.25'	27.18'	28	15.00'	79°51'55"	20.91'	12.92'	19.26'
11	225.00'	19°49'55"	77.91'	39.38'	77.54'	29	45.00'	234°14'50"	184.15'	181.17'	79.97'
12	200.00'	59°51'55"	209.00'	114.60'	199.59'	30	45.00'	50°15'00"	39.47'	21.05'	38.21'
13	200.00'	30°00'00"	104.72'	53.61'	103.53'	31	15.00'	90°00'00"	23.56'	15.00'	21.21'
14	225.00'	59°51'55"	235.06'	129.53'	224.73'	32	15.00'	232°36'57"	60.89'	16.38'	28.49'
15	200.00'	23°36'55"	82.21'	41.83'	81.59'	33	15.00'	30°00'00"	7.85'	4.00'	7.76'
16	175.00'	19°36'55"	59.90'	30.22'	59.59'	34	15.00'	45°07'55"	12.10'	6.38'	11.79'
17	15.00'	90°00'00"	18.85'	12.00'	16.97'	35	15.00'	90°00'00"	18.85'	12.00'	16.97'
18	15.00'	90°00'00"	18.85'	12.00'	16.97'	36	15.00'	90°00'00"	18.85'	12.00'	16.97'

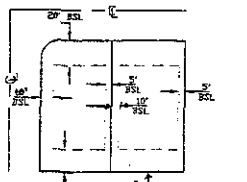
DESERT VISTA ESTATES
JOB NO. 90233
SHEET 2 OF 2

A CORRECTIVE FINAL PLAT FOR PARADISE VILLAGE II

A PORTION OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA & SALT RIVER BASE & MERIDIAN, MARICOPA COUNTY, ARIZONA.



VICINITY MAP



TYPICAL LOT (B.S.L.)

(ZONING: R1-8 RUPD)

OWNER/DEVELOPER

RODGER R. LARSEN
8837 E. ALTA DENA
SCOTTSDALE, AZ 85260
PHONE: (602) 607-2252
MOBILE: (602) 541-4150

SITE DATA

GROSS AREA: 8.1668 ACRES, 355,745 S.F.
NET AREA: 6.3685 ACRES, 268,766 S.F.
STREET R/W AREA: 90,217 S.F.
NUMBER OF LOTS: 28
GROSS AREA - R/W AREA/ 28 LOTS= AVG LOT SIZE
AVERAGE LOT SIZE: 9,460 S.F.
EXISTING ZONING: RURAL-43
PROPOSED ZONING: R1-8 RUPD
TRACT "A": 25,039 S.F., 0.5748 AC.
TRACT "B": 5,841 S.F., 0.1341 AC.

LEGEND

- SET BRASS CAP FLUSH
- MONUMENT LINE
- CENTER LINE
- R/W RIGHT-OF-WAY
- P.U.E. PUBLIC UTILITY EASEMENT
- ESMT. EASEMENT
- B.C. BRASS CAP
- ▲ SET 1/2" REBAR & CORNER OF THIS SUBDIVISION.

SATISFACTORY ASSURANCE IN THE FORM OF I.L.O.C. FROM RODGER R. LARSEN REAL ESTATE SERVICES, INC. HAS BEEN PROVIDED TO GUARANTEE PAVEMENT, DRAINAGE, WATER & SEWER IN THIS SUBDIVISION. TOTAL BOND AMOUNT = $99,979.69

ELECTRIC SERVICE HAS BEEN ASSURED BY SALT RIVER PROJECT.

ASST. COUNTY ENGINEER — DATE 10/14/98

STATE OF ARIZONA } SS
County of Maricopa }

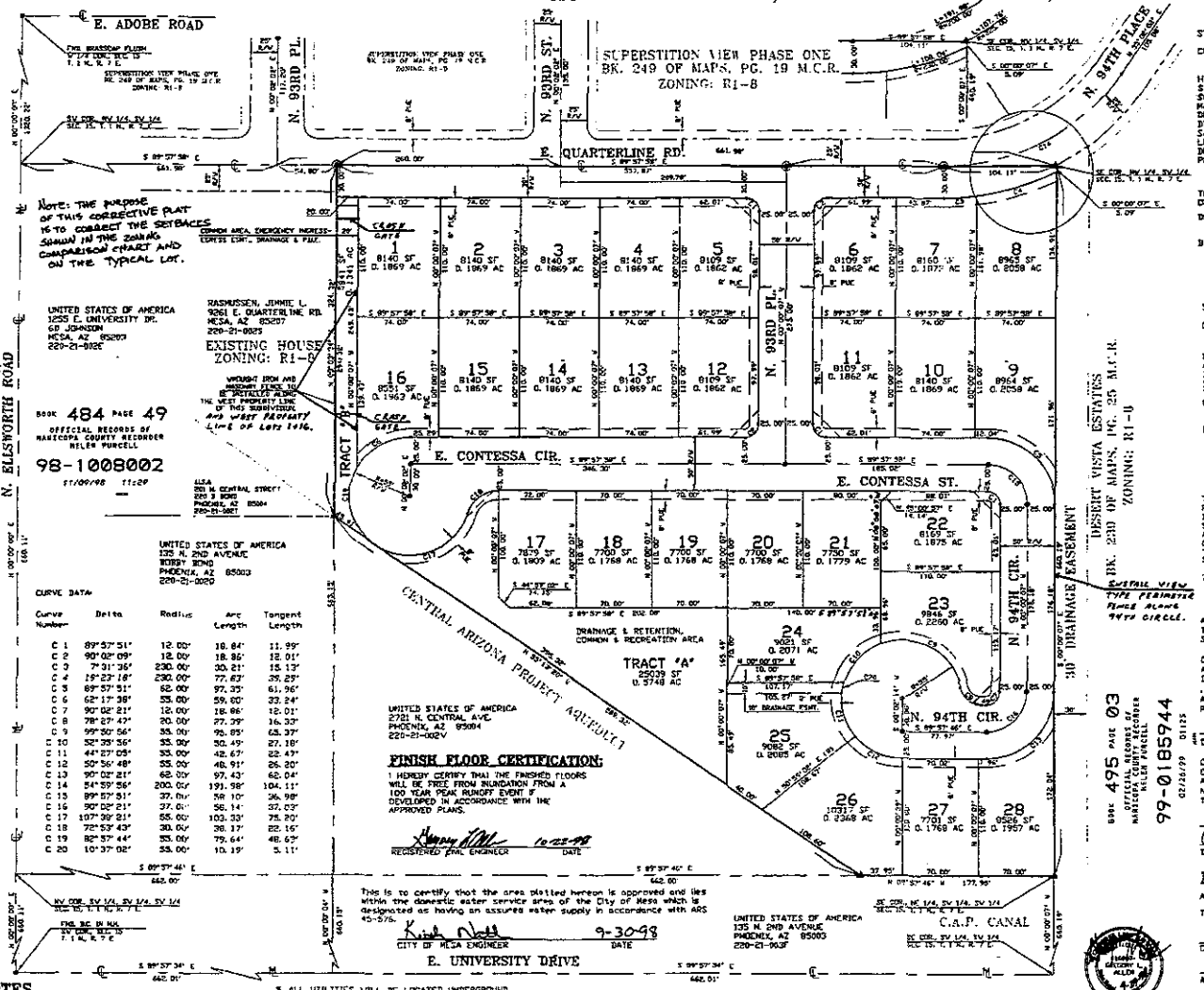
I HEREBY CERTIFY THAT THE WITHIN INSTRUMENT WAS FILED AND RECORDED AT THE REQUEST OF: RODGER R. LARSEN

IN BOOK _____
IN PAGE _____
WITNESS MY HAND AND OFFICIAL SEAL THE DAY AND YEAR AFORESAID.

Helen Purcell
COUNTY RECORDER

BY _____ DEPUTY RECORDER

RECORDING NUMBER



CURVE DATA

Curve Number	Delta	Radius	Arc Length	Tangent Length
C 1	89°57'51"	12.00'	18.84'	11.99'
C 2	90°02'09"	12.00'	18.86'	12.01'
C 3	7°31'36"	230.00'	30.21'	15.13'
C 4	19°23'16"	230.00'	77.82'	39.29'
C 5	89°57'51"	62.00'	97.35'	61.96'
C 6	62°17'38"	55.00'	59.80'	33.24'
C 7	90°02'21"	12.00'	18.86'	12.01'
C 8	78°27'47"	20.00'	27.39'	16.33'
C 9	99°30'56"	35.00'	95.85'	65.37'
C 10	52°35'56"	35.00'	30.49'	27.18'
C 11	44°27'05"	35.00'	42.67'	22.43'
C 12	50°56'48"	35.00'	46.91'	26.20'
C 13	90°02'21"	62.00'	97.43'	62.04'
C 14	54°59'56"	200.00'	191.98'	104.11'
C 15	89°57'51"	37.00'	58.10'	36.98'
C 16	90°02'21"	37.00'	58.14'	37.03'
C 17	197°39'21"	55.00'	189.33'	75.90'
C 18	72°53'43"	30.00'	38.17'	22.16'
C 19	82°37'44"	55.00'	79.64'	48.63'
C 20	10°37'02"	55.00'	10.19'	5.11'

FINISH FLOOR CERTIFICATION:

I HEREBY CERTIFY THAT THE FINISHED FLOORS WILL BE FREE FROM INUNDATION FROM A 100 YEAR PEAK RUNOFF EVENT IF DEVELOPED IN ACCORDANCE WITH THE APPROVED PLANS.

REGISTERED CIVIL ENGINEER — DATE 10-22-98

This is to certify that the area platted hereon is approved and lies within the domestic water service area of the City of Mesa which is designated as having an assured water supply in accordance with ARS 45-576.

CITY OF MESA ENGINEER — DATE 9-30-98

NOTES

1. CONSTRUCTION WITHIN EASEMENT, EXCEPT BY PUBLIC AGENCIES AND UTILITY COMPANIES, SHALL BE LIMITED TO UTILITIES, AND WOOD, WIRE OR REMOVAL SECTION TYPE FENCING.
2. THIS SUBDIVISION IS LOCATED WITHIN THE CITY OF MESA WATER SERVICE AREA AND HAS BEEN DESIGNATED AS HAVING AN ASSURED WATER SUPPLY.
3. ALL OUTDOOR LIGHTING WILL CONFORM WITH THE M.C.Z.O. SECTION 2318.
4. STRUCTURES AND LANDSCAPING WITHIN A TRIANGLE MEASURING 25' x 25' FROM THE POINT OF INTERSECTION OF STREETS WILL BE MAINTAINED AT A MAXIMUM HEIGHT OF 3'.
5. ALL UTILITIES WILL BE LOCATED UNDERGROUND.
6. ALL LOTS & TRACT CORNERS WILL BE SET WITH 1/2" REBAR AND SURVEYORS CAP.
7. ALL STATE REQUIREMENTS FOR ENDANGERED PLANTS WILL BE ADHERED TO PRIOR TO GRADING OF THIS SITE.
8. THIS PROJECT IS A SINGLE FAMILY RESIDENTIAL SUBDIVISION WITH 28 LOTS AND 28 SINGLE FAMILIES. APPROXIMATE POPULATION IS 2.5 PEOPLE PER LOT WITH A TOTAL POPULATION OF 70 PEOPLE.
9. TRACTS "A & B" WILL BE OWNED AND MAINTAINED BY THE PARADISE VILLAGE II HOME OWNERS ASSOCIATION.
10. THE FINAL PLAT IS IN SUBSTANTIAL COMPLIANCE WITH THE APPROVED PRELIMINARY PLAT.

TRACT DATA CHART

TRACT	SIZE/AREA	PURPOSE/USE
A	0.5748 AC.	DRAINAGE & RETENTION, COMMON AREA AND RECREATION AREA.
B	0.1341 AC.	COMMON AREA, EMERGENCY INGRESS-EGRESS ESMT., DRAINAGE AND PUBLIC UTILITY ESMT.

ZONING COMPARISON CHART

ZONING CLASS	SETBACKS FRONT	SETBACKS BACK	SETBACKS LOT SIDE	SETBACKS STREET SIDE	MINIMUM LOT WIDTH	MAXIMUM LOT COVER	MINIMUM LOT SIZE	MAXIMUM BLDG. HT.	AVERAGE LOT AREA
R1-8	20'	25'	7'	10'	60'	35%	8,000 S.F.	30'	9,000 S.F.
R1-8 RUPD	20'	20'	5'/10'	10'	60'	35%	7,700 S.F.	30'	9,460 S.F.

495-03

DEDICATION

STATE OF ARIZONA }
COUNTY OF MARICOPA } SS.

KNOWN ALL MEN BY THESE PRESENTS: THAT RODGER R. LARSEN, AS OWNER, HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF PARADISE VILLAGE II, A SUBDIVISION OF A PORTION OF THE SOUTHWEST QUARTER OF SECTION 15, TOWNSHIP 1 NORTH, RANGE 7 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, MARICOPA COUNTY, ARIZONA, AS SHOWN PLATED HEREON, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATIONS AND GIVES THE DIMENSIONS AND MEASUREMENTS OF THE LOTS, TRACTS AND STREETS CONSTITUTING SAME AND THAT EACH LOT, TRACT AND STREET SHALL BE KNOWN BY THE NUMBER, LETTER, OR NAME GIVEN TO EACH RESPECTIVELY ON SAID PLAT AND HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH THE STREETS AS SHOWN ON SAID PLAT. EASEMENTS ARE PROVIDED FOR THE PURPOSES INDICATED.

IN WITNESS WHEREOF: RODGER R. LARSEN, HAS HEREUNTO CAUSED ITS NAME TO BE SIGNED AND THE SAME TO BE ATTESTED BY THE SIGNATURE OF ITS AUTHORIZED OWNER, RODGER R. LARSEN, THEREUNTO AUTHORIZED.

DONE THIS 24TH DAY OF SEPTEMBER 1998, AT MESA, ARIZONA.

BY: _____
RODGER R. LARSEN, AUTHORIZED OWNER

ACKNOWLEDGEMENT

STATE OF ARIZONA }
COUNTY OF MARICOPA } SS.

ON THIS THE 24TH DAY OF SEPTEMBER 1998, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED RODGER R. LARSEN, WHO ACKNOWLEDGED HIMSELF TO BE THE AUTHORIZED OWNER OF RODGER R. LARSEN DEVELOPMENT, L.L.C., A LIMITED LIABILITY COMPANY, THAT AS SUCH, BEING AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE THEREIN CONTAINED BY SIGNING THE NAME, RODGER R. LARSEN DEVELOPMENT, L.L.C., A LIMITED LIABILITY COMPANY, BY HIMSELF AS AUTHORIZED OWNER.

IN WITNESS WHEREOF: I HEREUNTO SET FORTH MY HAND AND OFFICIAL SEAL.

OFFICIAL SEAL A. Thyrle Shepley Jr. NOTARY PUBLIC-ARIZONA MARICOPA COUNTY My Commission Expires Jan. 13, 2001

NOTARY PUBLIC

CERTIFICATION

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE PREMISES DESCRIBED AND PLATTED HEREON WERE MADE UNDER MY DIRECTION DURING THE MONTH OF NOVEMBER 1997, AND THAT THE SURVEY IS TRUE AND COMPLETE AS SHOWN, THAT ALL MONUMENTS SHOWN ACTUALLY EXIST AS SHOWN, THAT THEIR POSITIONS ARE ACCURATE AND CORRECTLY SHOWN AND THAT SAID MONUMENTS ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED. ALL LOT CORNERS HAVE BEEN PERMANENTLY SET.

GREGORY L. ALLEN, REGISTER LAND SURVEYOR #16097 — DATE 9-24-98

APPROVALS

ASSURANCE IN THE FORM OF A _____ HAS BEEN DEPOSITED WITH THE COUNTY ENGINEER TO GUARANTEE CONSTRUCTION OF THE REQUIRED SUBDIVISION IMPROVEMENTS.

CERTIFICATE OF COUNTY ASSESSOR: I, THE UNDERSIGNED AS A DEPUTY COUNTY ASSESSOR, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE, THE RECORDS OF THIS OFFICE REFLECT THAT RODGER R. LARSEN, AS DESIGNATED ON THE PLAT IS THE OWNER OF THIS PROPERTY AS SHOWN ON THE PLAT AND MORE PARTICULARLY DESCRIBED AS ASSESSOR'S PARCEL NUMBER 220-21-002H

DEPUTY COUNTY ASSESSOR — DATE 10-22-98

CERTIFICATE OF COUNTY TREASURER: I, THE UNDERSIGNED AS A DEPUTY COUNTY TREASURER, MARICOPA COUNTY, ARIZONA, DO HEREBY CERTIFY THAT AS OF THIS DATE THE RECORDS OF THIS OFFICE REFLECT THAT THERE ARE NO TAX LIENS ON ANY OF THE PARCELS COMPRISING THE PLAT, AS LISTED IN THE ASSESSOR'S CERTIFICATION, WITH THE FOLLOWING EXCEPTIONS:

220-21-002H - 1998

R.L. Davis
DEPUTY COUNTY TREASURER — DATE 10-22-98

MARICOPA COUNTY BOARD

APPROVED BY THE BOARD OF SUPERVISERS OF MARICOPA COUNTY, ARIZONA, THIS 4TH DAY OF NOVEMBER 1998

CHAIRMAN

ATTESTED BY CLERK

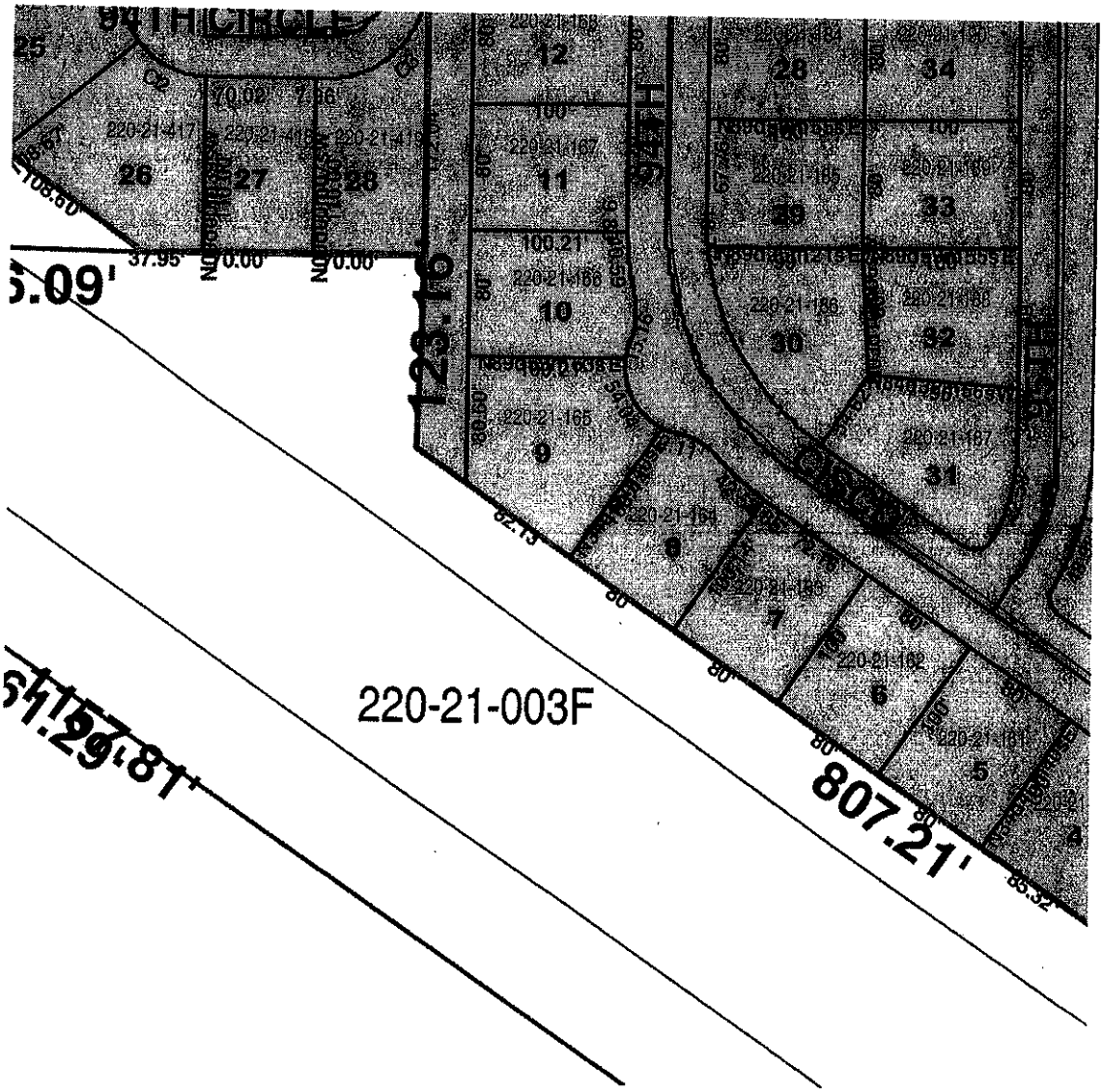
(Z98-13) (S97-43)

REVISIONS	DATE
1	
2	
3	
4	

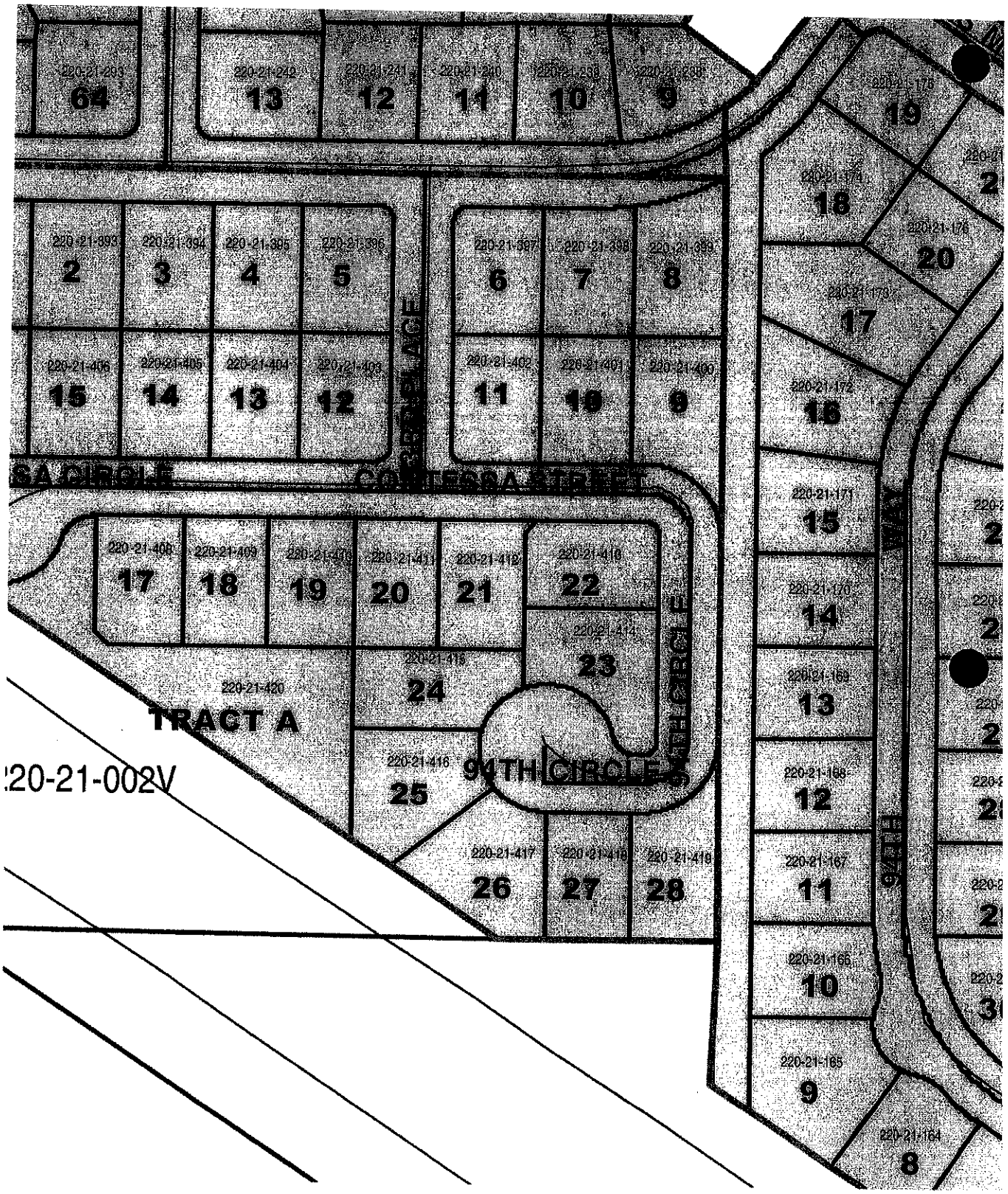
ALLEN CONSULTING ENGINEERS, INC.
127 W. JUANITA AVE. #212
MESA, ARIZONA 85210
PHONE (602) 844-1066
FAX (602) 464-5711

FINAL PLAT FOR
PARADISE VILLAGE II
93RD STREET AND QUARTERLINE ROAD
MARICOPA COUNTY, ARIZONA

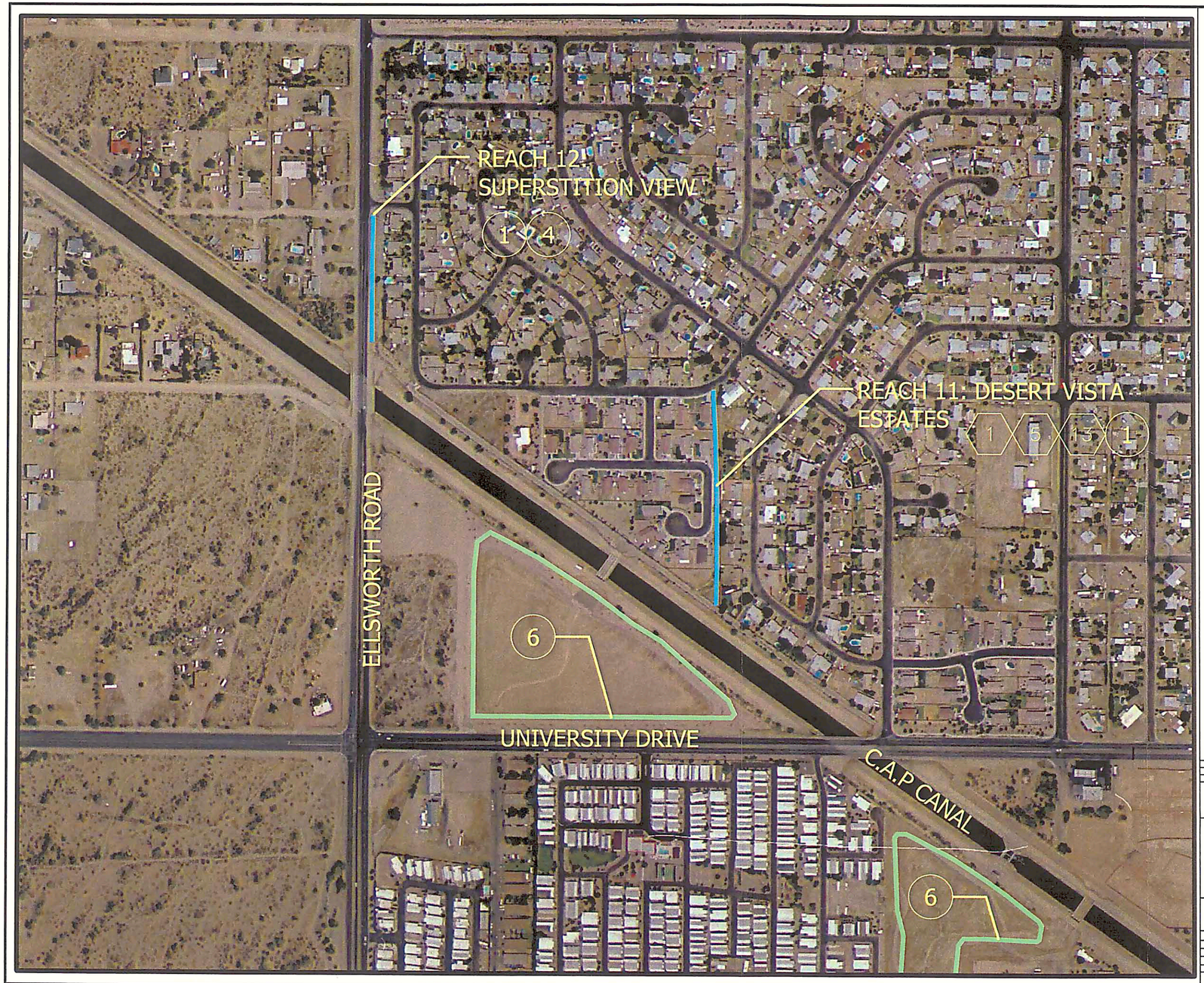
JOB NUMBER	91282	SHEET 1	OF 1
DRAWING	FINAL		
DRAFTSMAN		CHECKED BY	DATE 03-28-98



R11-South-map.doc



R-11_DesertV_map239-25.doc



EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED.
- (5) PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS.
- (13) LIMITED ACCESS.

UTILITIES

- 1 WATER
- 2 SEWER
- 3 GAS
- 4 OVERHEAD ELECTRIC
- 5 UNDERGROUND ELECTRIC
- 6 TELEPHONE

EXISTING CHANNEL STRUCTURES

- (1) EARTH LINED CHANNEL
- (2) CONCRETE CHANNEL.
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

NOTES

UTILITIES SHOWN ON THIS MAP ARE APPROXIMATE AND ARE NOT TO BE USED FOR RECORDING OR CONSTRUCTION.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

N

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACH 11 & 12

F.C.D. CONTRACT NO. 2003C018

HDR
HDR Engineering, Inc.

ACTION	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

E:\0714f MC Eng On-Call\East Mesa Drains CAR\6.0 Hydrology & Hydraulics\6.1 DWG\Fig 4-15\6.1 D xisting Facilities Exhibits\exh-05_REACH 11-12.dwg, Layout1, 05/26/2004 04:04:08 PM, cmir

Reach 12: Ellsworth Channel
Location: N. of the CAP Canal, adjacent to Ellsworth Road
Parcel Research: The Ellsworth Channel is within the right-of-way of Ellsworth Road. This portion of Ellsworth Road is a County road and the channel was built by MCDOT.
Tax Information: Within Ellsworth Road right-of-way..
Utility Research: Reach 12 has utilities within the street right-of-way, but not near the channel.
Hydrologic Analysis: The watershed area was developed from the HEC-1 provided by the FCDMC, the Q100 = 792 cfs.
Hydraulic Analysis: The minimum allowable flow for this channel is 100 cfs. The 100-year, 24-hour storm overtops the banks of the drainage channel.
Recommendation: Maintenance – (1): Reach 12 is a drainage channel for Ellsworth Avenue, there is no agreement between any parties for maintenance responsibilities. There is significant sediment accumulation upstream of each culvert. The street is in design to be widened and the channel to be removed and a pipe put in place. HDR recommends removing the sediment, then reassessing this area after construction is complete.
Opinion of Improvement Cost: $1,000

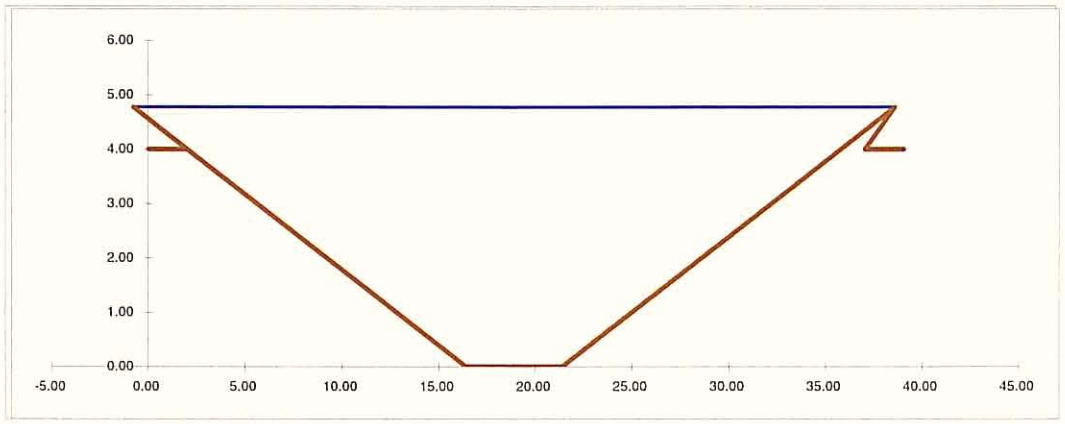
Job No.	No.

Computation

HDR

Project	East Mesa Drains Candidate Assessment Report	Computed	CAM	Date	4/30/2004
Subject	Reach 12	Checked	TDM	Date	5/4/2004
Task	Cross-section	Sheet	1	Of	1

CHANNEL SECTION - Reach 12



Design Discharge Q = 792 cfs
Channel Section 12
Right-of-Way Widtl n/a* ft **Part of County Road Right-of-Way*

Calculate Flow Depth
Estimated Flow Depth 4.78 ft
Channel Dept 4.00 ft

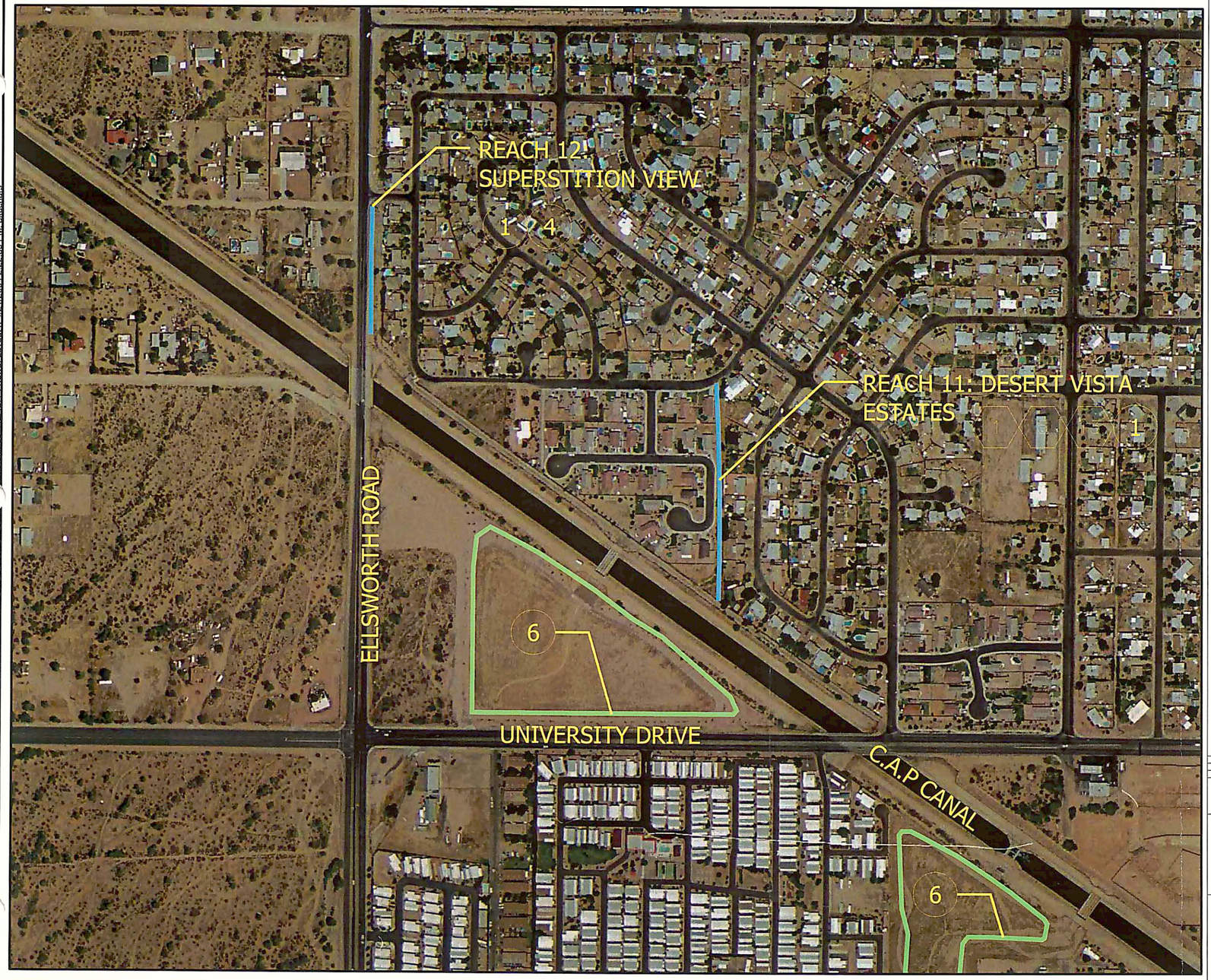
Estimated Q = 792.9 cfs
Average V = 7.48 ft/sec

Channel Parameters

Bottom Width =	5.00	ft
Side Slope =	3.60	:1
Manning n =	0.040	
Channel Slope	0.011	ft/ft
Flow Area =	105.96	ft^2
Wet Perimeter	40.68	ft
Hyd. Radius R	2.60	ft
Top Width =	39.38	ft
Hydraulic deptl	2.69	ft
Froude No. =	0.80	

Calculate Freeboard Requirement
Fb = 1.0 + 0.025 * Average V * Depth ^(1/3)
Fb req'd = 1.32 ft

Available Freeboard
Channel Depth - Flow Depth = -0.78 ft Available Fb > Fb req'd



EXISTING CONDITIONS

- (1) EROSION REPAIR NEEDED
- (5) PLANTING VEGETATION IN CHANNEL/ON SLOPES BY HOMEOWNERS
- (13) LIMITED ACCESS

EXISTING CHANNEL STRUCTURES

- (1) EARTHEN CHANNEL
- (2) CONCRETE CHANNEL
- (3) CONCRETE BOX CULVERT
- (4) CMP CULVERT
- (5) RESIDENT-MADE BRIDGE
- (6) DETENTION BASIN

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

200 0' 200 400

SCALE: 1"= 200 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS
REACHES 11 AND 12
F.C.D. CONTRACT NO. 2003C018

HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

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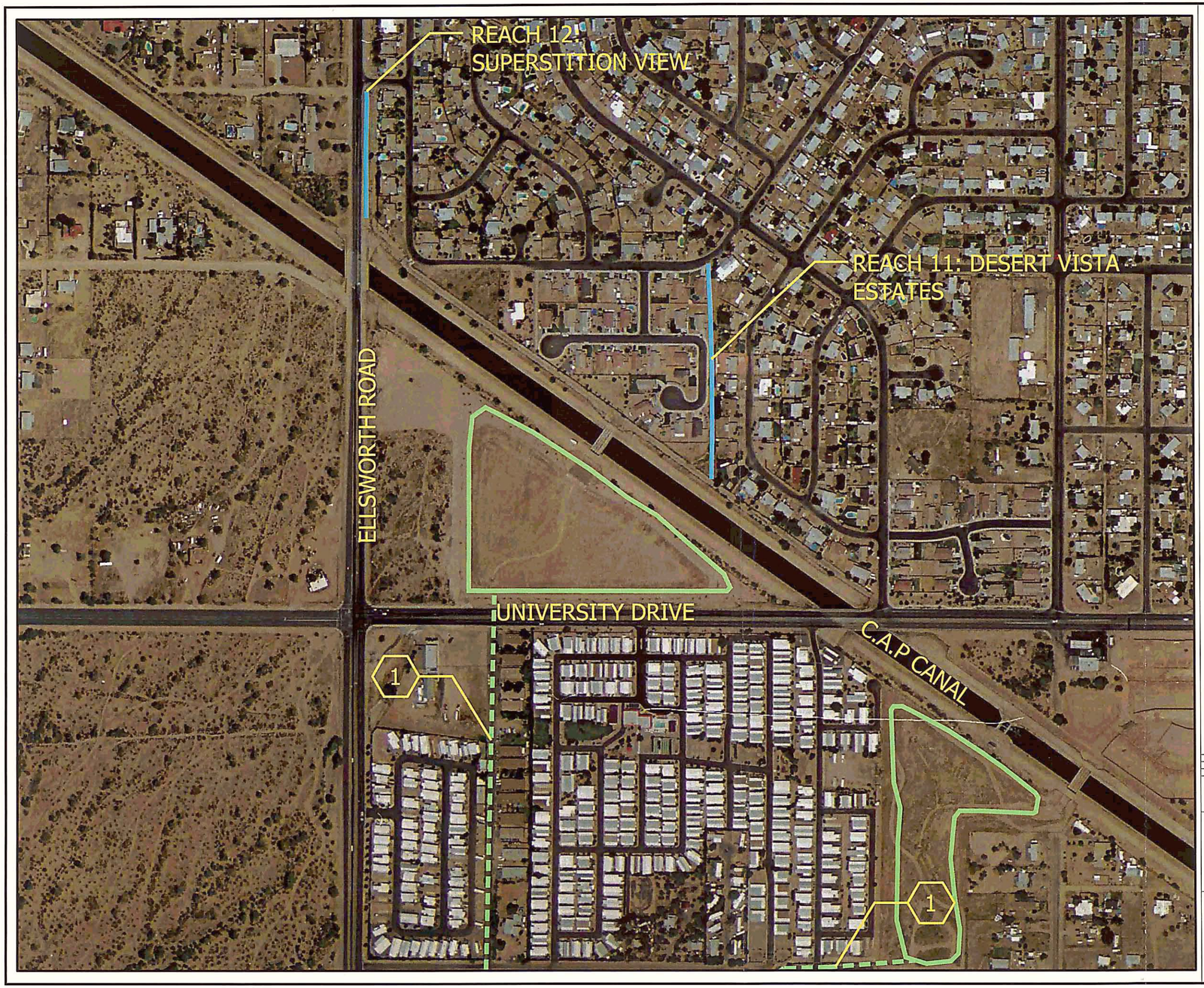


PROPOSED DRAINAGE FACILITIES

1. DRAINAGE CHANNEL PER EAST MESA AREA DRAINAGE MASTER PLAN
2. DETENTION BASIN PER EAST MESA AREA DRAINAGE MASTER PLAN
3. DRAINAGE CHANNEL PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
4. BOX CULVERT PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
5. DETENTION BASIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.
6. STORM DRAIN PER ADOT'S RED MOUNTAIN FREEWAY (202L), INITIAL DRAINAGE REPORT (STAGE II DESIGN), UNIVERSITY TO SOUTHERN.

LEGEND

- EXISTING NON-FCDMC DRAINAGE FACILITIES
- PROPOSED DRAINAGE FACILITIES
- DRAINAGE WAYS CURRENTLY UNDER STUDY

2000 0' 2000 4000

SCALE: 1"= 2000 FEET
FLIGHT DATE: AUGUST 2001

NO.	REVISION	BY	DATE
2			
1			

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY

EAST MESA DRAINS

REACHES 11 AND 12

F.C.D. CONTRACT NO. 2003C018

HDR Engineering, Inc.

	BY	DATE
DESIGN	CM	1-12-04
DESIGN CHK.	TM	1-23-04
PLANS	CM	1-15-04
PLANS CHK.	TM	1-23-04

SHEET OF 6

GROUND CONTROL SURVEY DATA PROVIDED BY: A-TEAM PROFESSIONAL ASSOCIATES, INC.

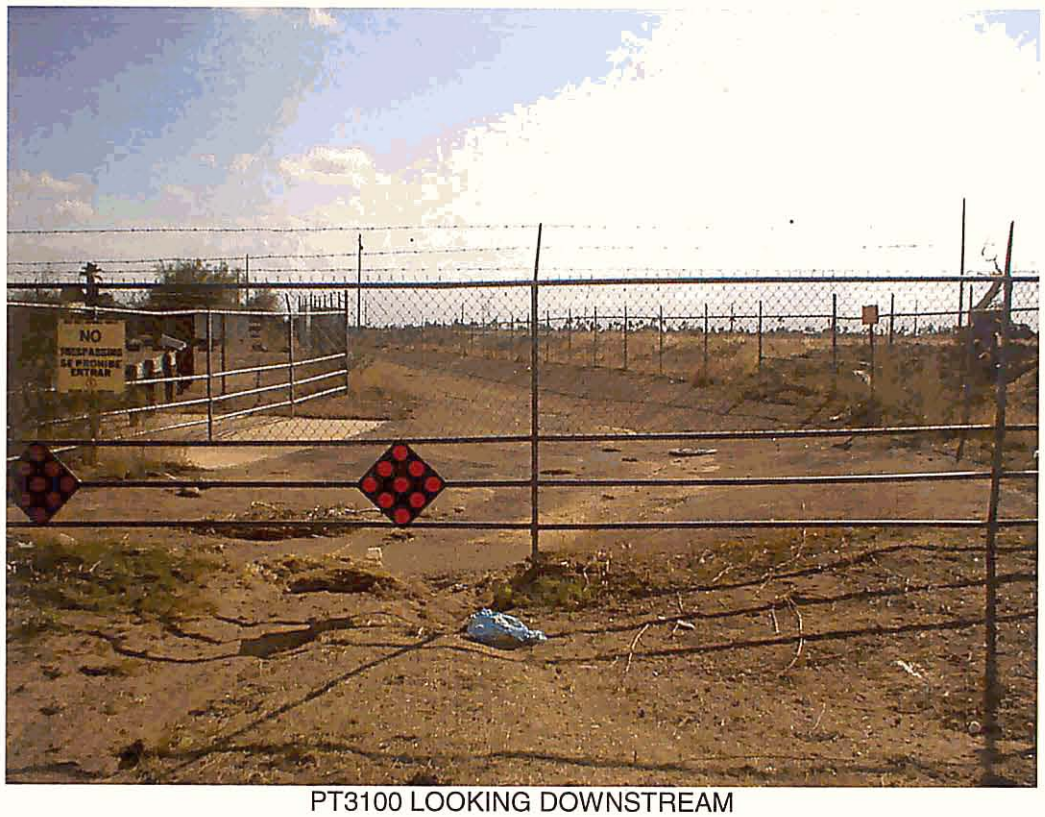
G:\0716 MC-Eng-On-Call\East Mesa Drains CAR\6.0-Hydrology & Hydraulics\6.1 DWG\Proposed Faci. xhibits\exh-13_REACH 11.dwg, Layout1, 4/21/2004 3:30:30 PM, akuchars

Reach 12 - Survey Points 3098 – 3171 (Area 1)

PT3160 LOOKING DOWNSTREAM

PT3160 LOOKING UPSTREAM

Reach 12 - Survey Points 3098 – 3171 (Area 1)



PT3100 LOOKING DOWNSTREAM

PT3100 LOOKING UPSTREAM

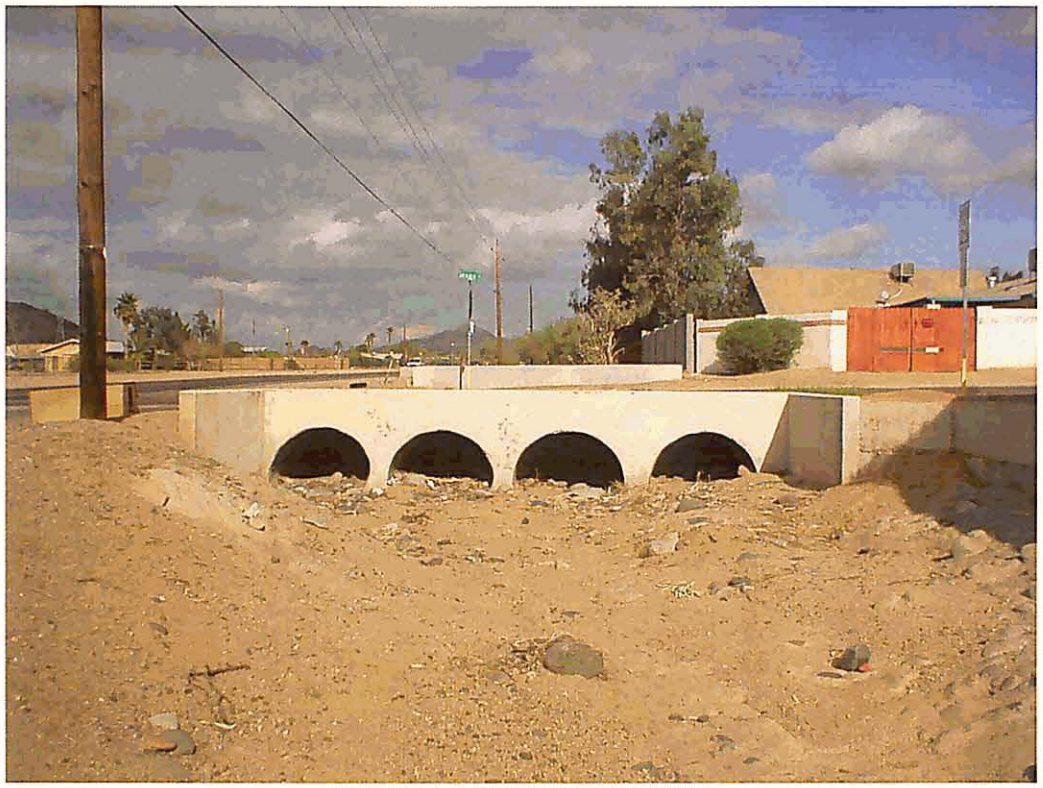
Reach 12 - Survey Points 3098 – 3171 (Area 1)

PT3107 LOOKING DOWNSTREAM

PT3107 LOOKING UPSTREAM

Reach 12 - Survey Points 3098 – 3171 (Area 1)

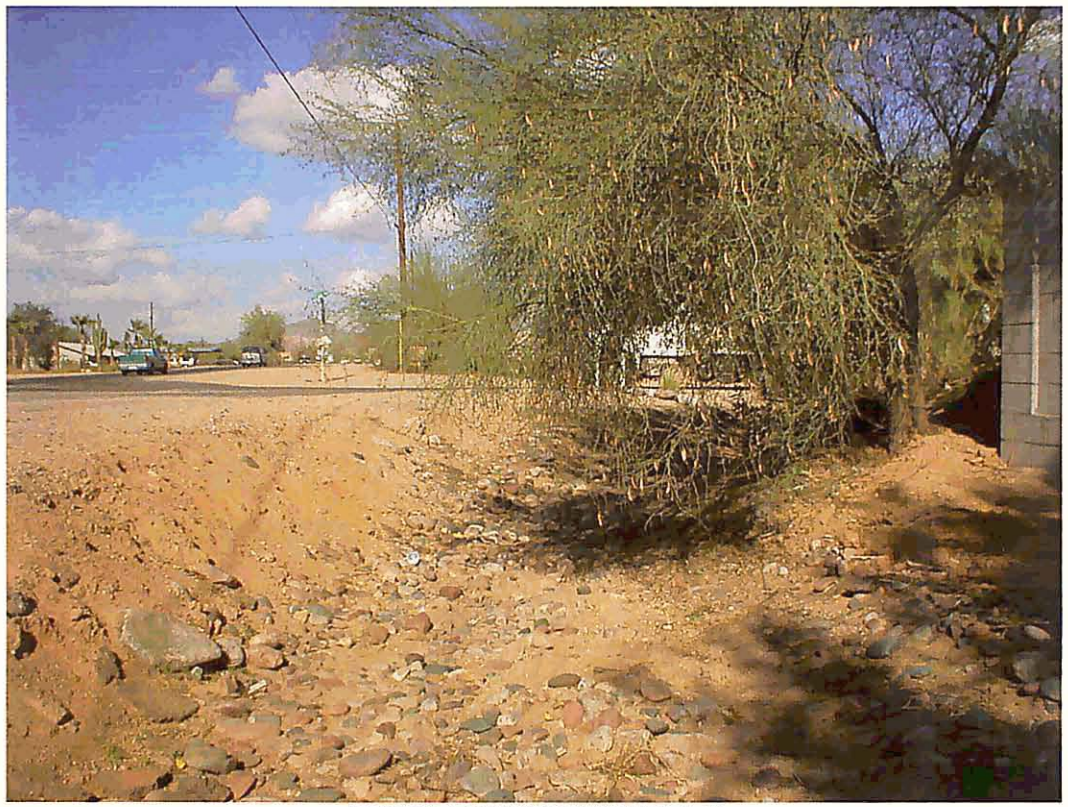
PT3129 LOOKING DOWNSTREAM



PT3129 LOOKING UPSTREAM

Reach 12 - Survey Points 3172 – 3221 (Desert Vista Estates)

PT3171 LOOKING DOWNSTREAM



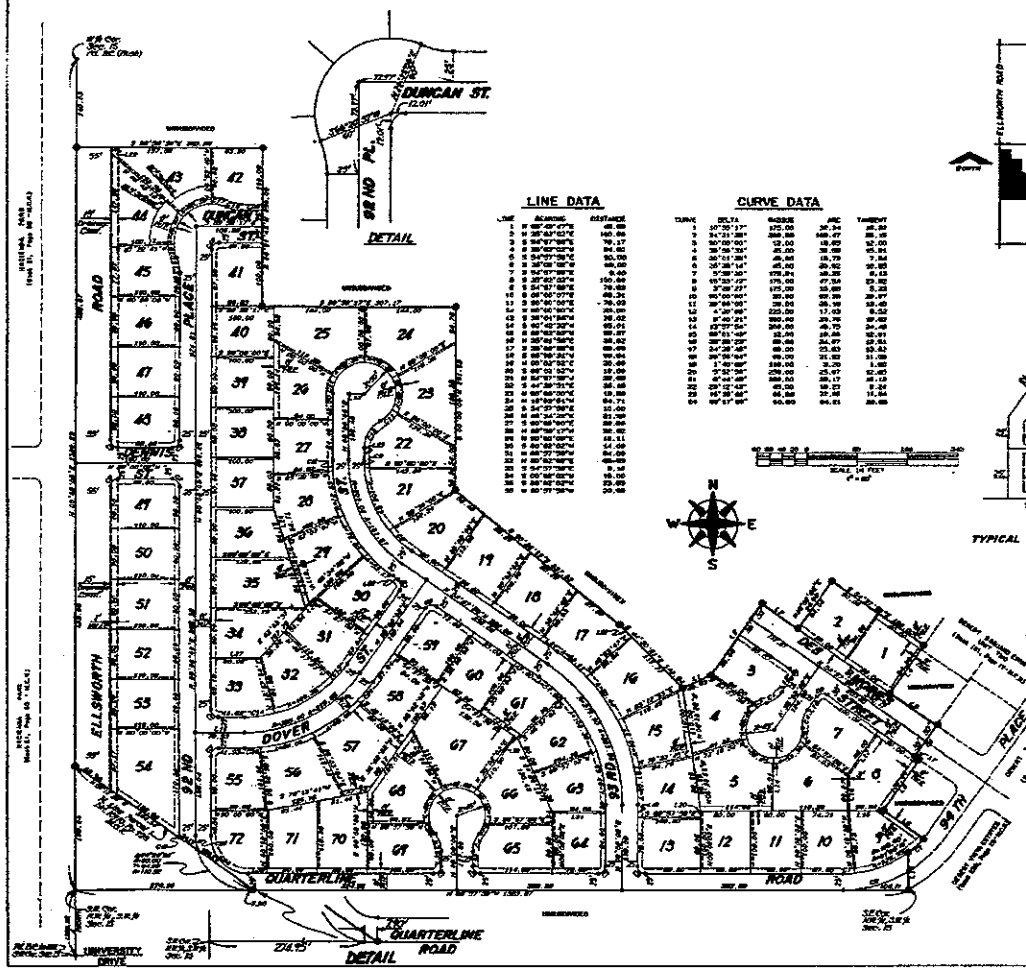
PT3171 LOOKING UPSTREAM

83-040836

249-19 2-2-83

SUPERSTITION VIEW · PHASE ONE

A SUBDIVISION OF A PORTION OF THE N.W. 1/4, S.W. 1/4 & N.E. 1/4, S.W. 1/4, SECTION 15, T.1N., R.7E., G.&S.R.B.&M., MARICOPA COUNTY, ARIZONA



LINE DATA

LINE	BEARING	DISTANCE
1	N 00°00'00"E	100.00
2	N 00°00'00"E	100.17
3	N 00°00'00"E	100.00
4	N 00°00'00"E	100.00
5	N 00°00'00"E	100.00
6	N 00°00'00"E	100.00
7	N 00°00'00"E	100.00
8	N 00°00'00"E	100.00
9	N 00°00'00"E	100.00
10	N 00°00'00"E	100.00
11	N 00°00'00"E	100.00
12	N 00°00'00"E	100.00
13	N 00°00'00"E	100.00
14	N 00°00'00"E	100.00
15	N 00°00'00"E	100.00
16	N 00°00'00"E	100.00
17	N 00°00'00"E	100.00
18	N 00°00'00"E	100.00
19	N 00°00'00"E	100.00
20	N 00°00'00"E	100.00
21	N 00°00'00"E	100.00
22	N 00°00'00"E	100.00
23	N 00°00'00"E	100.00
24	N 00°00'00"E	100.00
25	N 00°00'00"E	100.00
26	N 00°00'00"E	100.00
27	N 00°00'00"E	100.00
28	N 00°00'00"E	100.00
29	N 00°00'00"E	100.00
30	N 00°00'00"E	100.00
31	N 00°00'00"E	100.00
32	N 00°00'00"E	100.00
33	N 00°00'00"E	100.00
34	N 00°00'00"E	100.00
35	N 00°00'00"E	100.00
36	N 00°00'00"E	100.00
37	N 00°00'00"E	100.00
38	N 00°00'00"E	100.00
39	N 00°00'00"E	100.00
40	N 00°00'00"E	100.00
41	N 00°00'00"E	100.00
42	N 00°00'00"E	100.00
43	N 00°00'00"E	100.00
44	N 00°00'00"E	100.00
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55	N 00°00'00"E	100.00
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59	N 00°00'00"E	100.00
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66	N 00°00'00"E	100.00
67	N 00°00'00"E	100.00
68	N 00°00'00"E	100.00
69	N 00°00'00"E	100.00
70	N 00°00'00"E	100.00
71	N 00°00'00"E	100.00
72	N 00°00'00"E	100.00

CURVE DATA

CURVE	DELTA	RADIUS	ARC	TANGENT
1	90°00'00"	25.00	39.27	25.00
2	90°00'00"	300.00	471.24	300.00
3	90°00'00"	25.00	39.27	25.00
4	90°00'00"	25.00	39.27	25.00
5	90°00'00"	25.00	39.27	25.00
6	90°00'00"	25.00	39.27	25.00
7	90°00'00"	25.00	39.27	25.00
8	90°00'00"	25.00	39.27	25.00
9	90°00'00"	25.00	39.27	25.00
10	90°00'00"	25.00	39.27	25.00
11	90°00'00"	25.00	39.27	25.00
12	90°00'00"	25.00	39.27	25.00
13	90°00'00"	25.00	39.27	25.00
14	90°00'00"	25.00	39.27	25.00
15	90°00'00"	25.00	39.27	25.00
16	90°00'00"	25.00	39.27	25.00
17	90°00'00"	25.00	39.27	25.00
18	90°00'00"	25.00	39.27	25.00
19	90°00'00"	25.00	39.27	25.00
20	90°00'00"	25.00	39.27	25.00
21	90°00'00"	25.00	39.27	25.00
22	90°00'00"	25.00	39.27	25.00
23	90°00'00"	25.00	39.27	25.00
24	90°00'00"	25.00	39.27	25.00
25	90°00'00"	25.00	39.27	25.00
26	90°00'00"	25.00	39.27	25.00
27	90°00'00"	25.00	39.27	25.00
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31	90°00'00"	25.00	39.27	25.00
32	90°00'00"	25.00	39.27	25.00
33	90°00'00"	25.00	39.27	25.00
34	90°00'00"	25.00	39.27	25.00
35	90°00'00"	25.00	39.27	25.00
36	90°00'00"	25.00	39.27	25.00
37	90°00'00"	25.00	39.27	25.00
38	90°00'00"	25.00	39.27	25.00
39	90°00'00"	25.00	39.27	25.00
40	90°00'00"	25.00	39.27	25.00
41	90°00'00"	25.00	39.27	25.00
42	90°00'00"	25.00	39.27	25.00
43	90°00'00"	25.00	39.27	25.00
44	90°00'00"	25.00	39.27	25.00
45	90°00'00"	25.00	39.27	25.00
46	90°00'00"	25.00	39.27	25.00
47	90°00'00"	25.00	39.27	25.00
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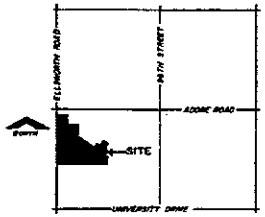
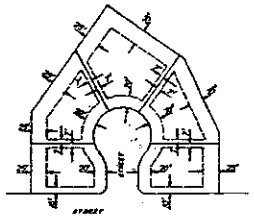
50	90°00'00"	25.00	39.27	25.00
51	90°00'00"	25.00	39.27	25.00
52	90°00'00"	25.00	39.27	25.00
53	90°00'00"	25.00	39.27	25.00
54	90°00'00"	25.00	39.27	25.00
55	90°00'00"	25.00	39.27	25.00
56	90°00'00"	25.00	39.27	25.00
57	90°00'00"	25.00	39.27	25.00
58	90°00'00"	25.00	39.27	25.00
59	90°00'00"	25.00	39.27	25.00
60	90°00'00"	25.00	39.27	25.00
61	90°00'00"	25.00	39.27	25.00
62	90°00'00"	25.00	39.27	25.00
63	90°00'00"	25.00	39.27	25.00
64	90°00'00"	25.00	39.27	25.00
65	90°00'00"	25.00	39.27	25.00
66	90°00'00"	25.00	39.27	25.00
67	90°00'00"	25.00	39.27	25.00
68	90°00'00"	25.00	39.27	25.00
69	90°00'00"	25.00	39.27	25.00
70	90°00'00"	25.00	39.27	25.00
71	90°00'00"	25.00	39.27	25.00
72	90°00'00"	25.00	39.27	25.00



LOCATION MAP
Scale: 1" = 1/4 Mile



TYPICAL MINIMUM BUILDING SETBACK LINES

- Indicates corners of subdivision (Set 1/2" Iron Pipe unless otherwise noted)
- Public Utilities Easement (PUE)
- Typical Side Yard Public Utilities Easement
- Vehicular Non-Access Easement (VNAE)

APPROVALS

[illegible]

[illegible]

[illegible] AN AGES [illegible]

Harry P. Keller 1-19-83

DEDICATION

STATE OF ARIZONA
COUNTY OF MARICOPA

KNOW ALL MEN BY THESE PRESENTS: That First American Title Insurance Company of Arizona, an Arizona Corporation, as Trustee, and Superstition View, [illegible] as Superstition View owner and [illegible] a portion of the N.W. 1/4, of the S.W. 1/4 & a portion of the N.E. 1/4 of the S.W. 1/4, of Section 15, T.1N., R.7E., G.&S.R.B.&M., Maricopa County, Arizona as shown disclosed hereon and hereby subdivides said land as said Superstition View Phase One and hereby declares that said plat sets forth the dimensions of the lots, streets, and easements constituting same, and that each lot and street shall be known by the number and name given each respectively on said plat, and hereby dedicates to the public for use as such, the streets as shown of said plat and included in the hereon described premises. Easements are dedicated for the purposes shown.

FIRST AMERICAN TITLE INSURANCE COMPANY OF ARIZONA
By [illegible]
TRUST OFFICER

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

On this the 19th day of January, 1983 before me, the undersigned officer, personally appeared [illegible] who acknowledged himself to be the trust officer for the FIRST AMERICAN TITLE INSURANCE COMPANY OF ARIZONA, an Arizona Corporation, and that he, as such officer, being duly authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, by himself, as such officer.

In witness whereof, I hereby set my hand and official seal.

Beverly Bentley
NOTARY PUBLIC

MY COMMISSION EXPIRES

CERTIFICATION OF SURVEY

I hereby certify that the survey of land shown on this plat was made under my direction and that the monuments actually exist as shown hereon, and that all lot measurements are correct.

TRUMAN E. STEELE
REGISTERED PROFESSIONAL ENGINEER
ARIZONA REG. NO. 7164

CERTIFICATE OF COUNTY ASSESSOR

I, the undersigned, as a DEPUTY COUNTY ASSESSOR, Maricopa County, Arizona, do hereby certify that as of this date the records of this office reflect that [illegible] as assessed on the plat are owners of the property as shown on the plat and are properly identified by assessor's parcel number [illegible]

[illegible]
County Assessor

[illegible]
Date

CERTIFICATE OF COUNTY TREASURER

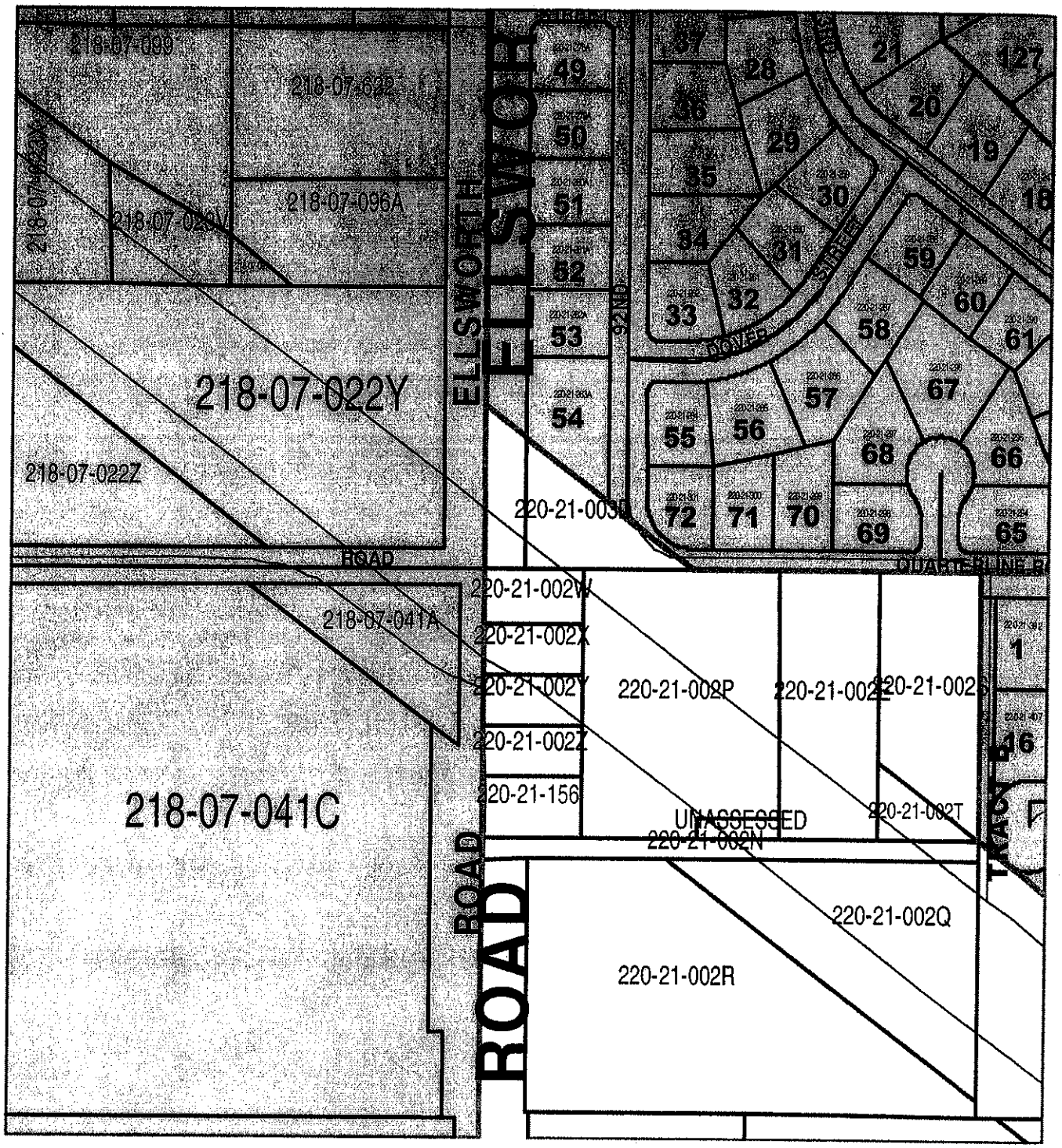
I, the undersigned, as a DEPUTY COUNTY TREASURER, Maricopa County, Arizona, do hereby certify that as of this date the records of this office reflect that there are no tax liens on any of the parcels comprising the plat, as listed in the Assessor's certification, with the following exceptions:

[illegible]
Deputy County Treasurer

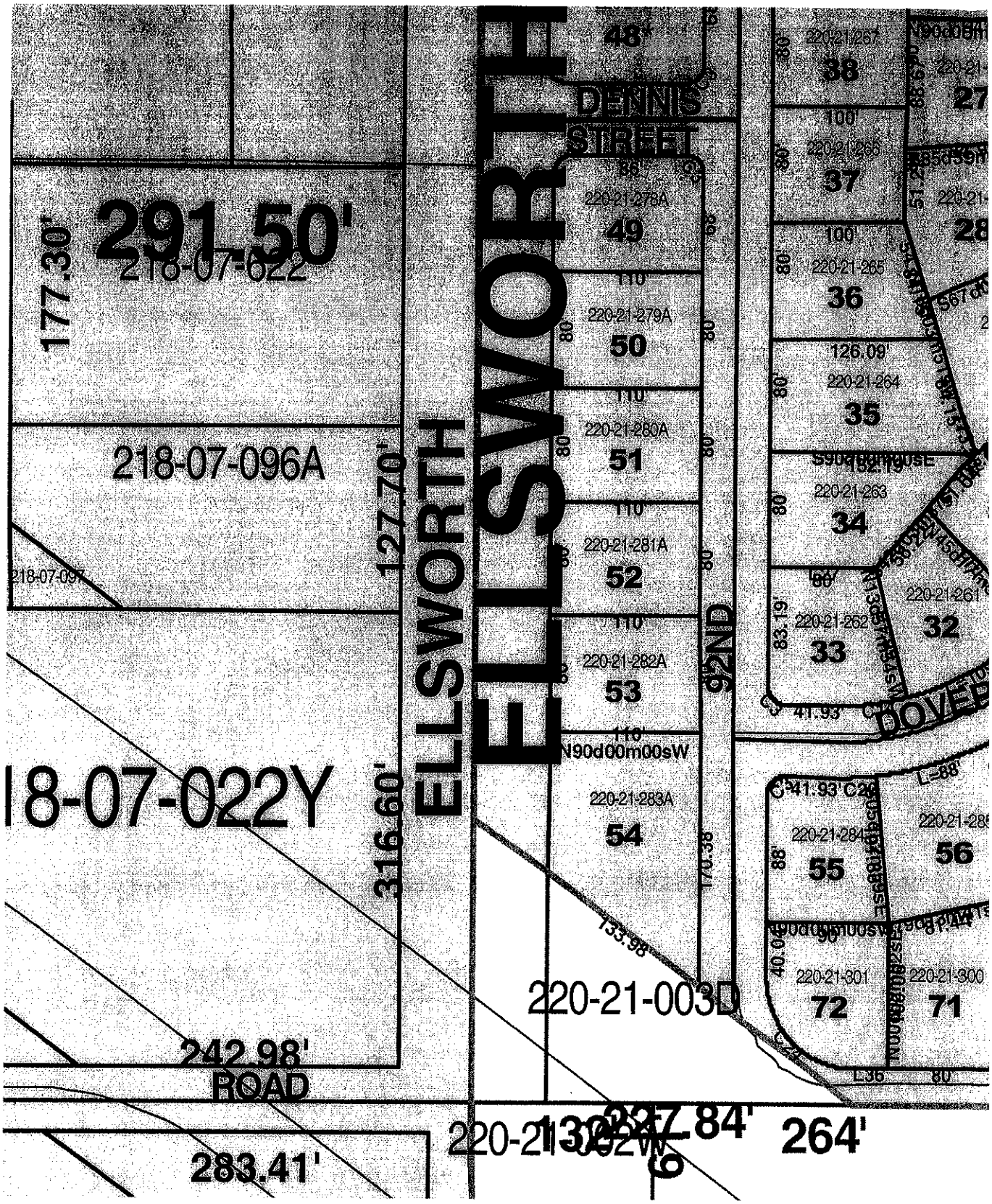
1/20/83
Date

STEELE & JENSEN, INC.
3015 E. THOMAS RD. NO. 10
PHOENIX, ARIZONA (602) 957-7920

Job No. 35-01



R12-South-map.doc



R-12_SuperstV_nearELL-CAP 249-19MAP.doc

1920 WEST PEORIA AVENUE ■ PHOENIX, AZ 85029 ■ TEL (602) 906-0020 ■ FAX (602) 906-0019
4854 N. SHAMROCK PLACE, STE. 100 ■ TUCSON, AZ 85705 ■ TEL (520) 623-8503 ■ FAX (520) 623-8504

Loretta G. Wahl
President, CEO

Stone E. Wahl, PRLS
Executive Vice President

Harold N. Epperson, PRLS
Executive Vice President

Mr. David Buras, PE, LS
Vice President
HDR Engineering
3200 E. Camelback Road, Suite 350
Phoenix, AZ 85018-2311
602-522-7700
602-522-7707 fax

February 7, 2004

RE: Professional Opinion for East Mesa Drains

Dear Mr. Buras:

Mr. Christopher Miranda EIT, of your office asked to provide information which I base my professional opinion on. My letter to you dated December 17, 2003, stated my opinion. This letter is to expand on my opinion and to share documents utilized to render my opinion.

While I have attended numerous Boundary, Legal and Survey seminars over my 26 year career; and have many handouts for the presentations, the following books serve as the foundation for my professional opinions:

Boundary Control and Legal Principles (Brown 2nd Edition)
Writing Legal Descriptions (Wattles)
Arizona Surveying & Boundary Law (Platt)

In quoting Brown, Chapter 2, Transfer of Real Property, "The laws of all jurisdictions recognize and accept the type of transfer known as a dedication to public use. Dedication is defined as "appropriation of land to some public use, made by the owner, and accepted for such use on behalf of the public." Dedications are broadly classified either as "statutory" or "common law". Statutory laws provide that where an owner has had his land surveyed and platted on a map or plat which designates certain areas as streets, parks, and/or other areas intended for public use, and records the map or plat, that owner has irrevocably dedicated such area so designated for public use."

In quoting Wattles, Chapter 12, Easements and Rights-of-Ways, "Although a right-of-way is technically an easement, it is peculiar in that it is expressly for "passage" purposes; it may be for a railroad, pipe lines, pedestrians, vehicles, a canal, etc."

In quoting Platt, Chapter 4, Common Law Dedications, "Once intent to dedicate is shown, acceptance by the public (acceptance may be demonstrated in many ways) will be required to complete the dedication. Usage by the public and maintenance by a governing body is most common." See Collins v. City of Phoenix, 269 F. 219. Also see 23 Am.Jur.2d., Dedication, section 3, page 6.

Statutory law covers dedications "to the public" for most subdivisions recorded after 1972. I feel however, most of the areas that we are dealing with are clearly covered by common law dedications.

Should you have any questions please contact me at 602-906-0020 (office), or my mobile 602-882-2371.

Respectfully:

Hal

Harold N. "Hal" Epperson, PRLS
Executive Vice President
X:\projects\1478\HDR Mesa Drains3.doc
02/08/04

Harold N. Epperson
REGISTERED LAND SURVEYOR
CERTIFICATE NO. 21705
HAROLD N. EPPERSON
Date Signed 02-07-04
ARIZONA U.S.A.

1920 WEST PEORIA AVENUE ■ PHOENIX, AZ 85029 ■ TEL (602) 906-0020 ■ FAX (602) 906-001
4854 N. SHAMROCK PLACE, STE. 100 ■ TUCSON, AZ 85705 ■ TEL (520) 623-8503 ■ FAX (520) 623-850

Loretta G. Wahl
President, CEO

Stone E. Wahl, PRLS
Executive Vice President

Harold N. Epperson, PRLS
Executive Vice President

Mr. David Buras, PE, LS
Vice President
HDR Engineering
3200 E. Camelback Road, Suite 350
Phoenix, AZ 85018-2311
602-522-7700
602-522-7707 fax

December 17, 2003

RE: **Professional Opinion of ownership and maintenance responsibilities for East Mesa Drains**

Dear Mr. Buras:

A TEAM Professional Associates, Inc. has performed the required field ties. We have researched and reviewed recorded deeds, plats and title information for the seven drainage areas shown on the highlighted exhibit. These areas were dedicated to Maricopa County or the "public" prior to the Subdivision Regulations of 1972. The subject Plats reviewed are as follows:

"Apache Paradise Unit One", Book 97 Page 15.
"Knolls Mobile Homes Subdivision", Book 98 Page 3.
"Knolls Estates", Book 98 Page 15.
"Apache Paradise Unit Two", Book 107 Page 34.
"Newman Park", Book 109 Page 8.
"Crisway Estates Unit Two", Book 116 Page 5.
"Crisway Estates Unit Three", Book 118 Page 48.
"Cherokee Mobile Estates" , Book 128 Page 5.
"Cherokee Mobile Estates Unit Two", Book 133 Page 50.
"Cherokee Mobile Estates Unit Three", Book 164 Page 44.

All of the above subdivisions have "Dedication to the public" verbiage for streets, easements, drainage and rights-of-way. They all clearly "Dedicate" the drainage areas as right-of-way. They do not define and/or designate them as an "easement"; they give the areas up in fee. In my professional opinion, these drainage areas in the above subdivisions are "owned" and should be maintained by the county.

Recorded in 1982, and also reviewed was "Desert Vista Estates", Book 239 Page 25. This subdivision also has "Dedication to the public" verbiage and is signed off by the Maricopa County Board of Supervisors. The area along the westerly boundary is designated as a 30' Drainage Easement. This declaration of easement is the intentional appropriation of land by the owner to some proper public use. Based on case law and the acceptance of the subdivision plat by the county, my professional opinion is, the rights for this area are owned by the county and should be maintained by the county.

The additional four areas reviewed were:

Area 1. Along the east side of Ellsworth Road, north of CAP Canal to Adobe Road.
Area 2. Along the north side of Broadway Road, from Hawes Road, east to 90th Street.
Area 3. Along the north side of Coralbell Avenue, from Ellsworth Road, east to 96th Street.
Area 4. Through mobile home park, starting at 98th Way and Balsam Avenue, northeasterly through Parcels 220-38-001E and 220-38-011C to the westerly boundary of "Newman Park".

In Area 1: two subdivision plats; "Superstition View Phase One", Book 249 Page 19 and "Superstition View Phase Two", Book 266 Page 45, created the right-of-way for Ellsworth Road and the Drainage Easements. This declaration of right-of-way and easement is the intentional appropriation of land by the owner to some proper public use. Based on case law and the acceptance of the subdivision plat by the

county, my professional opinion is, the rights for this area are owned by the county and should be maintained by the county.

In Area 2: three subdivision plats; "Knolls Estates", Book 98 Page 15, "Glenmar Plat 1 Amended", Book 77 Page 35 and "Broadway Manor", Book 449 Page 34, created a portion of the right-of-way for Ellsworth Road and the Drainage Easements. In addition, Parcels 218-44-001D, 218-44-001E, 218-44-003C, 218-44-005C, 218-44-007B and 218-44-006Y "Except" the South 65' from their Deed Descriptions. The 65' "Exceptions" show the "intent" to dedicate, and the existing improvements to the road and drainage way are the clear usage and acceptance by the public. The declarations of rights-of-way and easements are the intentional appropriation of land by the owner to some proper public use. Based on case law and the acceptance of the subdivision plat by the county, my professional opinion is, the rights for this area are owned by the county and should be maintained by the county.

In Area 3: the subdivision plat; "Wynstone II", Book 435 Page 9 created the right-of-way for Coralbell Avenue and Ellsworth Road. It also created Tract A, for Open Space and Retention along the southerly 20' of the boundary. This declaration of right-of-way and retention area is the intentional appropriation of land by the owner to some proper public use. The existing improvements to the road and drainage way are the clear usage and acceptance by the public. Based on case law and the acceptance of the subdivision plat by the county, my professional opinion is, the rights for this area are owned by the county and should be maintained by the county. In addition, Parcel 220-70-001B, Cielo Grande Mobile Home Park (east of Wynstone II"), has an aliquot legal description (Deed #000091543) and does not "except" any portion, however, the Assessor's "Property Description" shows that the North 55', the East 40' and the South 30' as Exceptions. The existing improvements to the roads and drainage ways along the areas of said "Exceptions", indicate the clear usage and acceptance by the public. My professional opinion is, the rights for this area are owned by the county and should be maintained by the county.

In Area 4: Parcel 220-38-001E has a metes and bounds deed description and 220-38-001C has an aliquot description. Neither parcel allows for and/or grants easements or rights-of-way for drainage to the public. Although there are drainage improvements done, there is no instrument conveying any "intent" to dedicate the drainage way to the public. My professional opinion is, this area is owned and should be maintained by the property owners. The County has no ownership or maintenance responsibilities for this area.

Should you have any questions please contact me at 602-906-0020 (office), or my mobile 602-882-2371.

Respectfully:

Hal

Harold N. "Hal" Epperson, PRLS
Executive Vice President

REGISTERED LAND SURVEYOR
CERTIFICATE NO.
21765
HAROLD N.
EPPERSON
Date Signed 12-17-03
ARIZONA U.S.A.

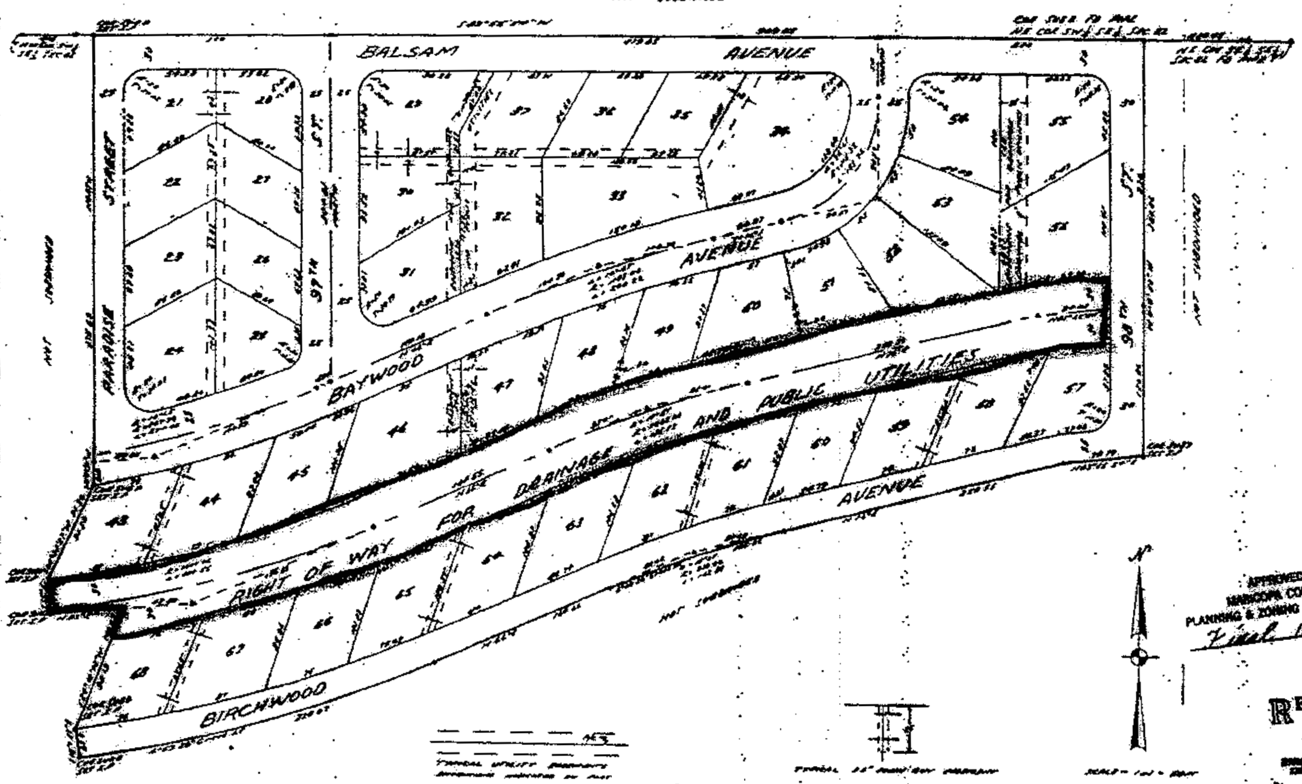
X:\projects\1478\HDR Mesa Drains2.doc
12/17/03

97-15

APACHE PARADISE UNIT ONE

97-15

A SUBDIVISION OF A PORTION OF THE
SW. 1/4, S.E. 1/4, SEC. 22., T.1N., R.7E., G.&S.R.B.&M.
MARICOPA COUNTY, ARIZONA



APPROVED
MARICOPA COUNTY
PLANNING & ZONING COMMISSION
Final 11-16-61

RECEIVED
NOV 7 1961
MARICOPA COUNTY PLANNING AND ZONING COMMISSION

S1387

a 204242 INDEXED PAGED

ALL LOTS ARE RESTRICTED TO MOBILE HOMES ONLY. EACH LOT IS LIMITED TO ONE MOBILE HOME FOR USE AS A SINGLE FAMILY RESIDENCE.
SEE RECORDED DEED RESTRICTIONS.

DEDICATION

STATE OF ARIZONA } ss
COUNTY OF MARICOPA }

KNOW ALL MEN BY THESE PRESENTS:
THAT THE PHOENIX TITLE AND TRUST CO., AN ARIZONA CORPORATION, TRUSTEE, HAS SUBDIVIDED UNDER THE NAME OF APACHE PARADISE UNIT ONE THAT PART OF THE [illegible] SEC. 22, T.1N., R.7E. DESCRIBED AS FOLLOWS: FROM THE NE COR. [illegible] SEC. 22 POINT OF BEGINNING [illegible] FEET, THENCE SOUTH [illegible] FEET [illegible] TO POINT OF BEGINNING AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, [illegible], STREETS AND EASEMENTS CONSTITUTING SAME AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN TO EACH RESPECTIVELY ON SAID PLAT, AND THAT THE PHOENIX TITLE AND TRUST COMPANY AS TRUSTEE HEREBY DEDICATES TO THE PUBLIC FOR USE AS SUCH THE STREETS AND DRAINAGE RIGHTS OF WAY AS SHOWN ON SAID PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES.

IN WITNESS WHEREOF, THE PHOENIX TITLE AND TRUST COMPANY, AS TRUSTEE, HAS THIS 6th DAY OF November 1961 HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICERS, THEREUNTO DULY AUTHORIZED.

PHOENIX TITLE AND TRUST COMPANY
TRUSTEE
ATTEST [signature] ASST. SECRETARY [signature] ASST. VICE PRESIDENT

ACKNOWLEDGEMENT

STATE OF ARIZONA } ss
COUNTY OF MARICOPA }

ON THIS 6th DAY OF November 1961, BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED [illegible] AND [illegible] OF THE PHOENIX TITLE AND TRUST COMPANY, TRUSTEE, WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT AND ACKNOWLEDGED THAT THEY BEING AUTHORIZED SO TO DO EXECUTED SAME FOR THE PURPOSE THEREIN CONTAINED.
IN WITNESS WHEREOF I HEREUNTO SET MY HAND AND OFFICIAL SEAL.

[signature]
NOTARY PUBLIC

MY COMMISSION EXPIRES 7-8-64

APPROVAL

THE SUBDIVISION OF APACHE PARADISE UNIT ONE AS SHOWN HEREON IS HEREBY APPROVED BY THE MARICOPA COUNTY BOARD OF SUPERVISORS ON THIS 3rd DAY OF December 1961

ATTEST [signature] CLERK BY: B.W. Brown CHAIRMAN

STATE OF ARIZONA } ss
County of Maricopa }
I hereby certify that the within instrument was filed and recorded at request of Phoenix [illegible]
NOV 27 61-8 22 AM
[illegible] County Recorder

CERTIFICATION

I HEREBY CERTIFY THAT THE SUBDIVISION SHOWN HEREON WAS SURVEYED AND PLATTED BY ME DURING [illegible] AND THAT IT CONFORMS TO THE SURVEY NOTES THEREOF.

[signature]
REGISTERED LAND SURVEYOR / CIVIL ENG. [illegible]

97-15

97-15

10-34

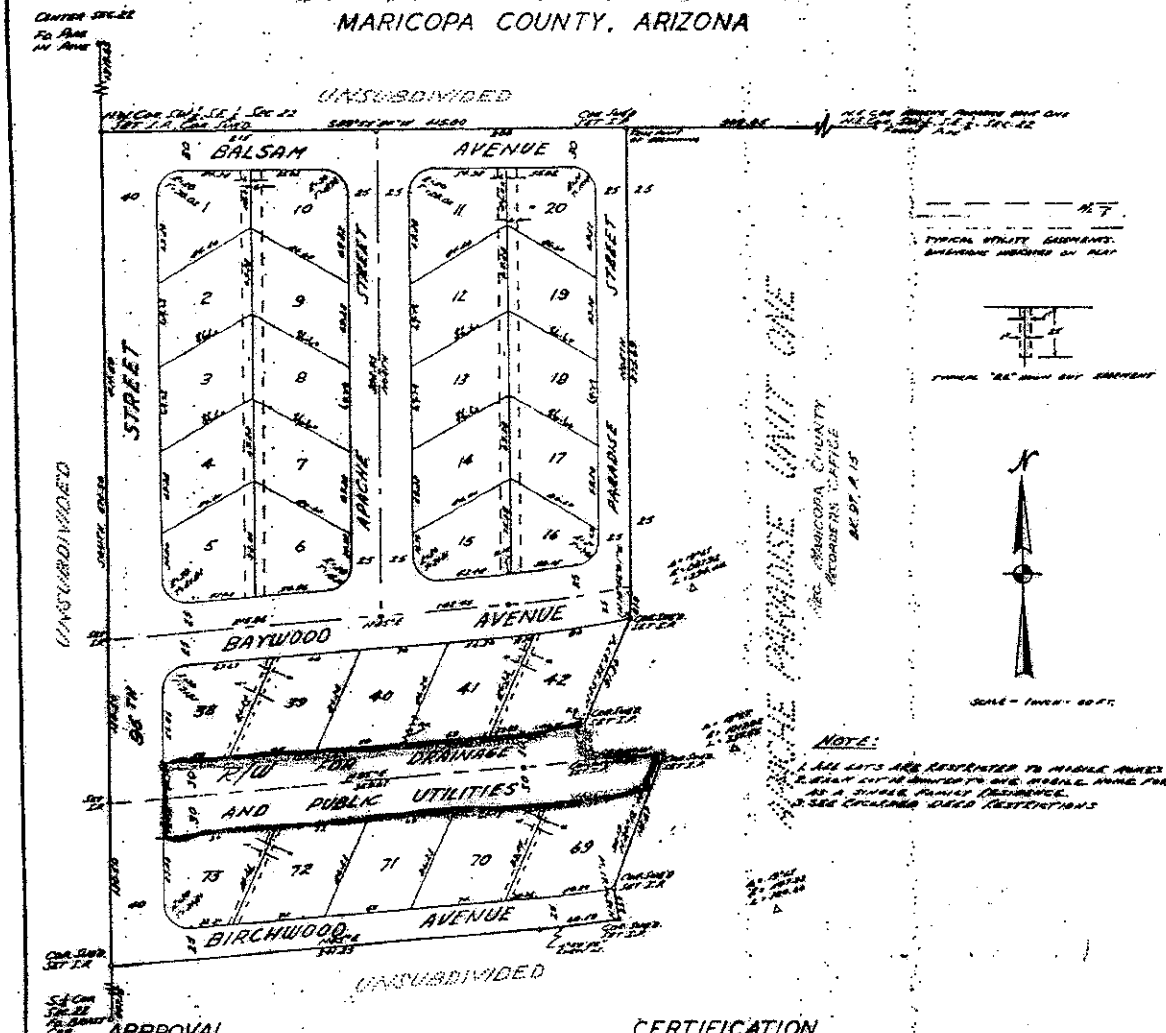
107-34

APACHE PARADISE UNIT TWO

A SUBDIVISION OF A PORTION OF THE

S.W. ¼, S.E. ¼, SEC. 22, T.1N., R.7E., G.&S.R.B.&M.

MARICOPA COUNTY, ARIZONA



NOTE:

1. ALL LOTS ARE RESTRICTED TO RESIDENCE PURPOSES ONLY.
2. ALLEY LOT IS DEDICATED AS PUBLIC NAME FOR USE AS A SURFACE DRAINAGE EASEMENT.
3. SEE COUNTRY DEED RESTRICTIONS

DEDICATION

STATE OF ARIZONA
COUNTY OF MARICOPA } S.S.

KNOW ALL MEN BY THESE PRESENTS:

THAT THE PHOENIX TITLE AND TRUST COMPANY, AN ARIZONA CORPORATION, TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF APACHE PARADISE UNIT TWO, THAT PART OF THE S.E.¼ SEC. 22, T.1N., R.7E., G&S.R.B&M., DESCRIBED AS FOLLOWS; FROM THE N.E. COR. S.W.¼, S.E.¼, SEC. 22, S 89°55'54"W 909.05 FEET TO THE TRUE POINT OF BEGINNING, THENCE S 89°55'54"W 415.00 FEET, THENCE SOUTH 672.80 FEET, THENCE N 85°E 341.25 FEET, THENCE 60.00 FEET ALONG A 4°30'00" CURVE LT., THENCE N 18°01'27"W 25.00 FEET, THENCE N 24°16'00"E 1183.7 FEET, THENCE S 85°W 1168 FEET, THENCE N 15°W 310.0 FEET, THENCE N 25°00'7"E 94.30 FEET, THENCE N 40°55'00"E 210 FEET, THENCE NORTH 375.00 FEET BACK TO THE POINT OF BEGINNING, HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF APACHE PARADISE UNIT TWO, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, RIGHTS OF WAY, STREETS AND EASEMENTS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY THE NUMBER OR NAME GIVEN TO EACH ON SAID PLAT, AND THAT THE PHOENIX TITLE AND TRUST COMPANY AS TRUSTEE, HEREBY DEDICATES TO THE PUBLIC, THE STREETS AND RIGHTS OF WAY AND EASEMENTS TO THE PURPOSES SHOWN ON SAID PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES.

IN WITNESS WHEREOF, THE PHOENIX TITLE AND TRUST COMPANY, AS TRUSTEE, HAS THIS 20th DAY OF November 1964 HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICERS, THEREUNTO DULY AUTHORIZED.

PHOENIX TITLE AND TRUST COMPANY
TRUSTEE

ATTEST: [illegible] SECRETARY BY [illegible] VICE PRESIDENT

ACKNOWLEDGEMENT

STATE OF ARIZONA
COUNTY OF MARICOPA } S.S.

ON THIS 20th DAY OF November 1964 BEFORE ME, THE UNDERSIGNED OFFICER, PERSONALLY APPEARED VICE PRESIDENT B.B. Utick AND ASS'T. SECRETARY [illegible], OF THE PHOENIX TITLE AND TRUST COMPANY, TRUSTEE, WHOSE NAMES ARE SUBSCRIBED TO THE FOREGOING INSTRUMENT, AND ACKNOWLEDGED THAT THEY BEING AUTHORIZED SO TO DO, EXECUTED SAME FOR THE PURPOSE THEREIN CONTAINED.

IN WITNESS WHEREOF I HAVE HEREUNTO SET MY HAND AND OFFICIAL SEAL.

NOTARY PUBLIC

MY COMMISSION EXPIRES [illegible]

RECEIVED
JAN 18 1965

APPROVAL

THE SUBDIVISION OF APACHE PARADISE UNIT TWO AS SHOWN HEREON, IS HEREBY APPROVED BY THE MARICOPA COUNTY BOARD OF SUPERVISORS ON THIS 8th DAY OF January 1965

ATTEST: [illegible] CLERK BY: [illegible] CHAIRMAN

CERTIFICATION

I HEREBY CERTIFY THAT THE SUBDIVISION SHOWN HEREON WAS SURVEYED AND PLATTED BY ME DURING THE YEAR 1960, AND THAT IT CONFORMS TO THE SURVEY NOTES THEREOF.

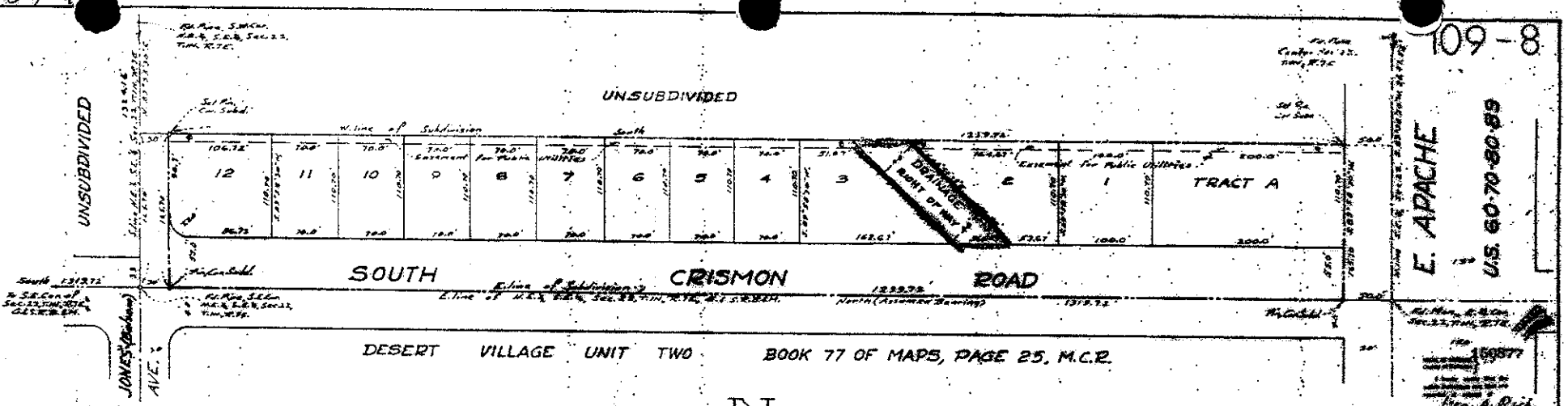
Registered Professional Engineer (Land Surveyor) Certificate No. 11 Sec. 21, 1959 ARIZONA U.S.A.

[illegible] REGISTERED LAND SURVEYOR & CIVIL ENG. ARIZ.

107-34

107-34

109-8



NEWMAN PARK

A SUBDIVISION OF PART OF THE EAST 165.7' OF THE N.E.¼ OF THE S.E.¼ OF SEC. 22, T.1N., R.7E., G&S.R.B&M.

Scale 1"=60'

DEDICATION

STATE OF ARIZONA }S.S.
COUNTY OF MARICOPA}

Know all men by these presents, that M.H. NEWMAN and LOUISE B. NEWMAN, husband and wife, as owners, have subdivided under the name of NEWMAN PARK, the premises as platted hereon and hereby publish this plat as and for the plat of NEWMAN PARK and hereby declare that said plat sets forth the location and gives the dimensions of the lots, tract, drainage right of way, street and easement constituting same and that each lot, tract or street shall be known by the number, letter or name given to each respectively on said plat and hereby dedicate to the public for use as such, the street as shown on plat, the drainage right of way [redacted] and the easement to the purpose designated on said plat.

In witness whereof M.H. Newman and Louise B. Newman as owners, hereunto set their hands this 27 day of April, 1965.

M.H. Newman
M.H. Newman

Louise B. Newman
Louise B. Newman

ACKNOWLEDGEMENT

STATE OF ARIZONA }S.S.
COUNTY OF MARICOPA}

On this, the 27 day of April, 1965, before me, the undersigned officer, personally appeared M.H. Newman and Louise B. Newman who, as owners, executed the foregoing instrument for the purposes therein contained by signing their names, as such owners.

In witness whereof I hereunto set my hand and official seal.

Richard C Carlson
Notary Public

My commission expires My Commission Expires June 11, 1967

CERTIFICATION

This is to certify that the Survey and subdivision of the premises as platted hereon was done under my hand and direction during the month of April, 1965.

Registered Land Surveyor #2217

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona on this, the 9th day of August, 1965.

By: L. Allen Rogers
Chairman

Attest: [illegible]

MESA LAND SURVEYING CO.
265-8A

109-8

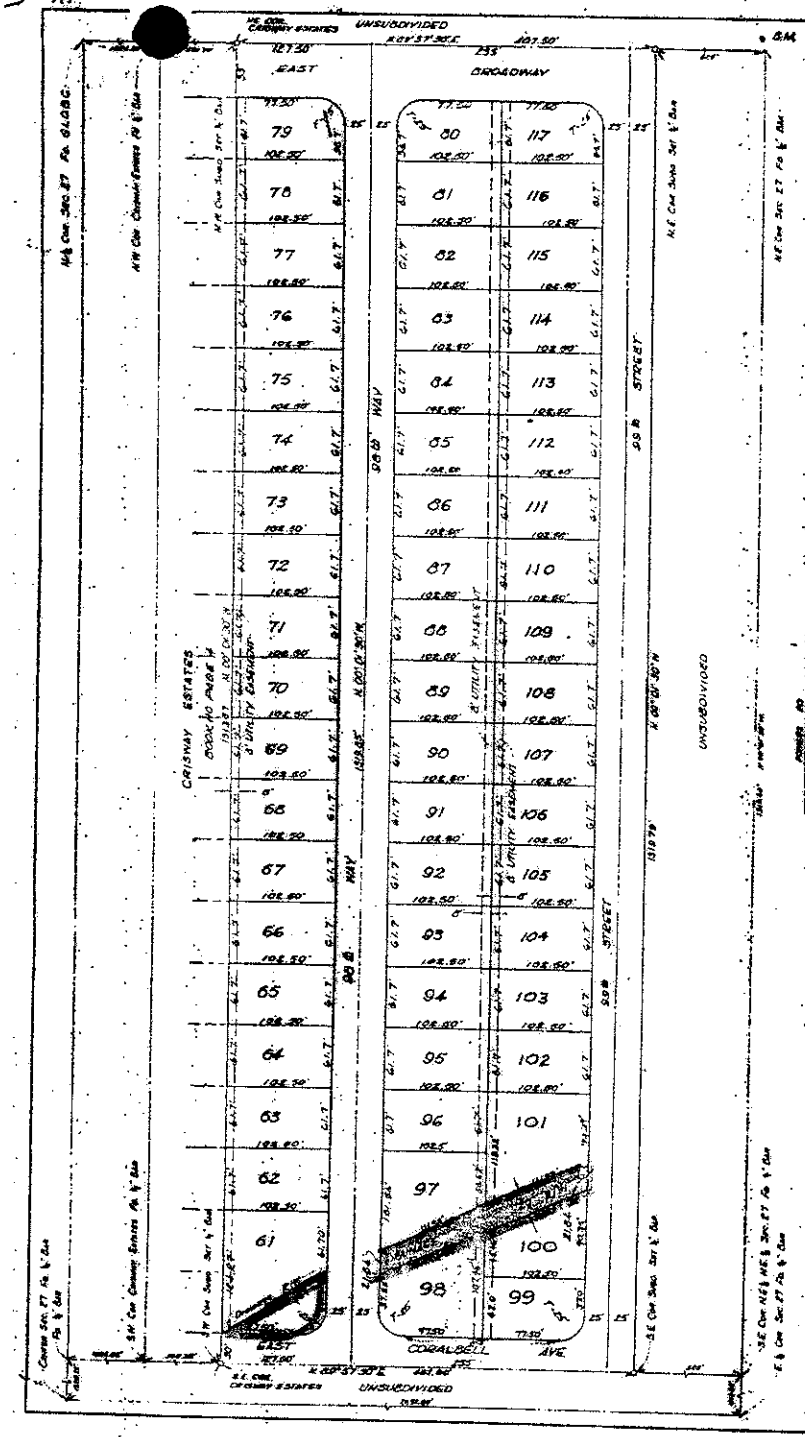
109-8

9-911

116-5

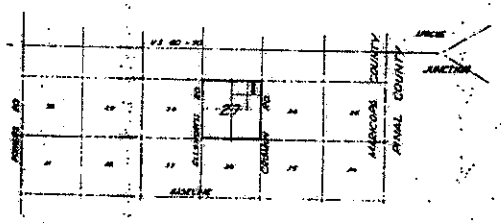
CRISWAY ESTATES UNIT TWO

A SUBDIVISION OF PART OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 27 T1N R7E G&SRB&M, MARICOPA COUNTY ARIZONA



SCALE 1"=60'

B.M. NAIL IN POWER POLE ELEV 1631.47



LOCATION & VICINITY MAP

DEDICATION

KNOW ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE, HAS SUBDIVIDED UNDER THE NAME OF CRISWAY ESTATES UNIT TWO, PART OF THE NE ¼ OF THE NE ¼ OF SECTION 27 T1N R7E G&SRB&M (A.K.A. MARICOPA COUNTY, ARIZONA) AS SHOWN PLATTED HEREON AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID CRISWAY ESTATES UNIT TWO, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREETS AND EASEMENTS CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH, THE STREETS AND DRAINAGE RIGHT-OF-WAY AS SHOWN ON THE PLAT AND INCLUDED IN THE PROPERTY DESCRIBED HEREON. UTILITY EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SUBSCRIBED AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE

BY _____
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS, THE 3RD DAY OF [illegible] 1967, BEFORE ME THE UNDERSIGNED OFFICER PERSONALLY APPEARED [illegible] WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL.
MY COMMISSION EXPIRES _____
NOTARY PUBLIC

RECORD PAGED
265943

STATE OF ARIZONA
County of Maricopa } ss.
I hereby certify that the within instrument was duly filed and recorded at request of
Stewart Title & Trust of Phoenix
NOV 13 1967
at page 5
Witness my hand and official seal this the day and year aforesaid.
Clerk of the County
By _____
Deputy Recorder

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 6th DAY OF Nov, 1967

CHAIRMAN
BY: William Rudnick ATTEST: [illegible]

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF Oct. 1967

[illegible]
ARNOLD W. [illegible]
REGISTERED ENGINEER

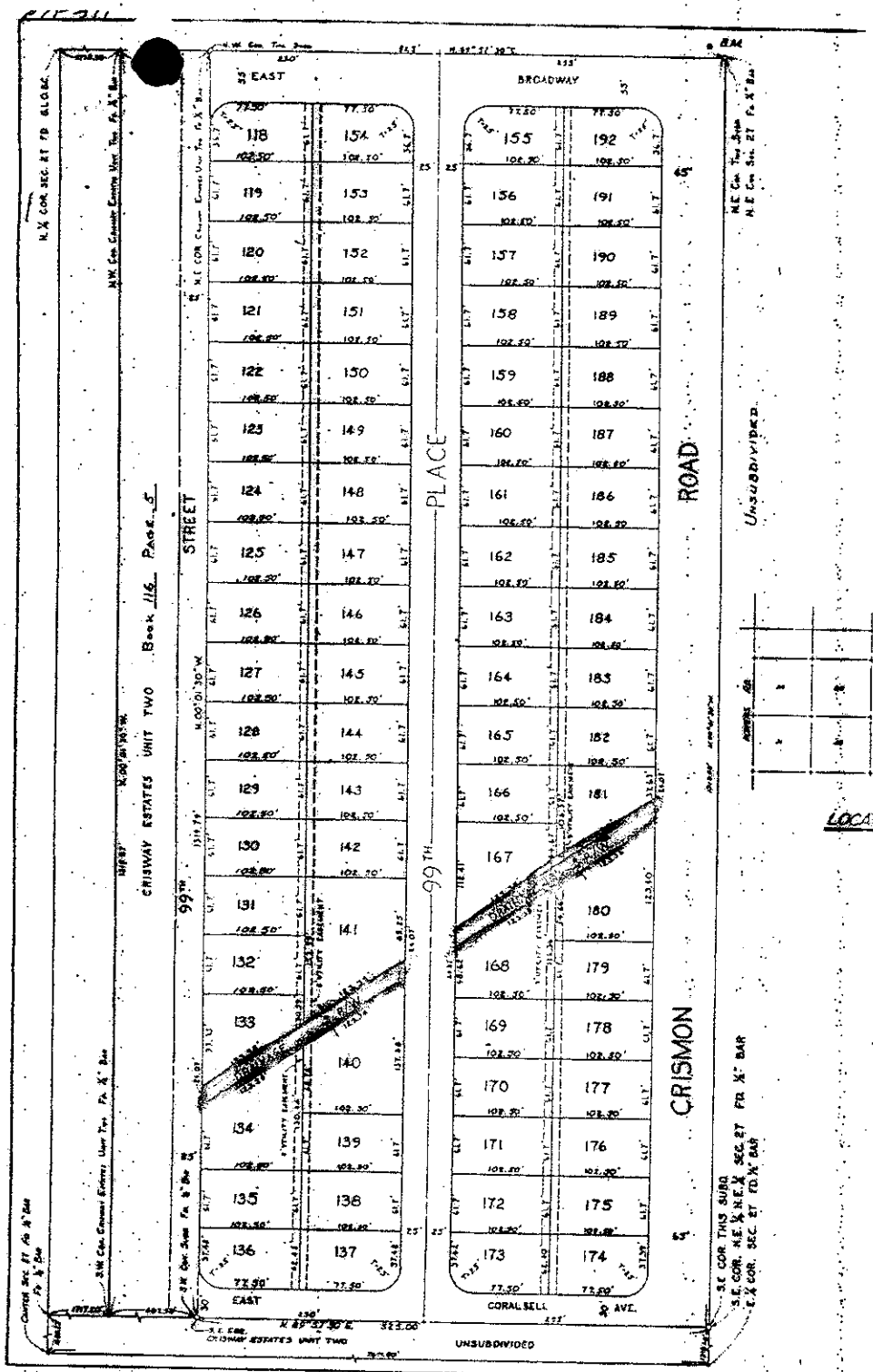
RECEIVED
OCT 12 1967

SUBDIVISION DEED RESTRICTIONS
RECORDED IN BOOK 8223 PAGE 276
8223

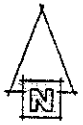
Final - October 26, 1967

116-5

116-5

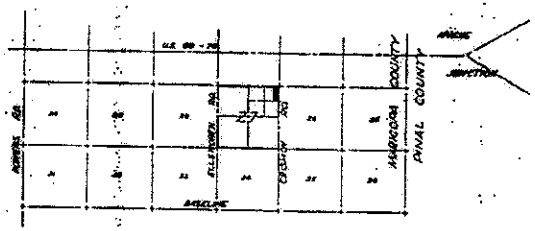


118-48



SCALE 1"=60'

B.M. VAR. IN POWER POLE
ELEV. 1551.47



LOCATION & VICINITY MAP

118-48

CRISWAY ESTATES UNIT THREE

A SUBDIVISION OF PART OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF SECTION 27 T1N. R.7E., G.&S.R.B.&M., MARICOPA COUNTY ARIZONA.

DEDICATION

KNOWN ALL MEN BY THESE PRESENTS THAT TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION TRUSTEE HAS SUBDIVIDED UNDER THE NAME OF CRISWAY ESTATES UNIT THREE, PART OF THE NE ¼ OF THE NE ¼ OF SECTION 27 T1N. R7E. G.&S.R.B.&M. MARICOPA COUNTY ARIZONA AS SHOWN PLATTED HEREON, AND HEREBY PUBLISHES THIS PLAT AS AND FOR THE PLAT OF SAID CRISWAY ESTATES UNIT THREE, AND HEREBY DECLARES THAT SAID PLAT SETS FORTH THE LOCATION AND GIVES THE DIMENSIONS OF THE LOTS, STREETS, AND DRAINAGE RIGHT-OF-WAY CONSTITUTING SAME, AND THAT EACH LOT AND STREET SHALL BE KNOWN BY NUMBER OR NAME GIVEN EACH RESPECTIVELY ON SAID PLAT, AND HEREBY DEDICATES TO THE PUBLIC, FOR USE AS SUCH THE STREETS AND DRAINAGE RIGHT-OF-WAY AS SHOWN ON THE PLAT AND INCLUDED IN THE ABOVE DESCRIBED PREMISES. UTILITY EASEMENTS ARE DEDICATED FOR THE PURPOSES SHOWN.

IN WITNESS WHEREOF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AS TRUSTEE, HAS HEREUNTO CAUSED ITS CORPORATE NAME TO BE SIGNED, AND ITS CORPORATE SEAL TO BE AFFIXED BY THE UNDERSIGNED OFFICER THEREUNTO DULY AUTHORIZED.

TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, TRUSTEE

BY _____
TRUST OFFICER

STATE OF ARIZONA
COUNTY OF MARICOPA
ON THIS, THE 21st DAY OF June, 1968, BEFORE ME THE UNDERSIGNED OFFICER, PERSONALLY APPEARED, Gleason Mecham, WHO ACKNOWLEDGED HIMSELF TO BE A TRUST OFFICER OF TRANSAMERICA TITLE INSURANCE COMPANY OF ARIZONA, AN ARIZONA CORPORATION, AND THAT HE AS SUCH OFFICER BEING DULY AUTHORIZED SO TO DO, EXECUTED THE FOREGOING INSTRUMENT FOR THE PURPOSES THEREIN CONTAINED, BY SIGNING THE NAME OF THE CORPORATION AS TRUSTEE, BY HIMSELF AS SUCH OFFICER.

IN WITNESS WHEREOF, I HEREBY SET MY HAND AND OFFICIAL SEAL
MY COMMISSION EXPIRES 3-4-72 _____
NOTARY PUBLIC

APPROVAL

APPROVED BY THE BOARD OF SUPERVISORS OF MARICOPA COUNTY ARIZONA THIS 27 DAY OF June 1968.

CHAIRMAN
BY: _____

ATTEST: _____
ACTING CLERK

THIS IS TO CERTIFY THAT THE SURVEY AND SUBDIVISION OF THE ABOVE DESCRIBED PROPERTY WAS MADE UNDER MY DIRECTION DURING THE MONTH OF June 1968.

ARNOLD W. HERRINGER
REGISTERED ENGINEER
520 PRESERVE CIRCLE
MESA, ARIZONA

RECEIVED

SUBDIVISION DEED RESTRICTIONS
RECORDED IN BOOK 7152 PAGE 268

118-48

124-13

VALLEY VIEW #4

A SUBDIVISION OF THE S.W. ¼, N.W. ¼ SECTION 5
T.1N., R.7E., G.&S.R., B.&M., MARICOPA COUNTY, ARIZONA

SCALE 1"=60'

TYPICAL GUY WIRE ANCHOR EASEMENT

DEDICATION

STEFFEY & LANTHER DESERT PROPERTIES INC.

ACKNOWLEDGMENT

STATE OF ARIZONA
COUNTY OF MARICOPA

APPROVAL

CERTIFICATE

A. J. WOLF
REGISTERED LAND SURVEYOR
CHANDLER, ARIZONA

RECEIVED

MARICOPA COUNTY
PLANNING & ZONING COMMISSION

107-19

34 PALMS

A SUBDIVISION OF A PORTION OF THE
NE ¼ NE ¼ SEC. 20 T1N-R7E G.&
S.R.B.&M. MARICOPA COUNTY, ARIZONA

DEDICATION

State of Arizona
County of Maricopa
Know ALL MEN BY THESE PRESENTS: That the Central Title and Trust Company, an Arizona Corporation, as Trustee, has subdivided under the name 34 PALMS the portion of the NE ¼ NE ¼ Sec. 20, T1N-R7E, G.&S.R.B.&M., Maricopa County, Arizona, as shown and platted hereon, and hereby publishes this plat as and for the Plat of said 34 PALMS, and hereby declares that said Plat sets forth the location and gives the dimensions of the lots, and streets constituting same, and that each of the streets shall be known by the number and name given to each respectively on said Plat and the Central Title and Trust Company hereby dedicates to the Public for use as such the streets as shown on said Plat and platted in the above described premises. Easements are dedicated for the purposes shown.

IN WITNESS WHEREOF the Central Title and Trust Company, as Trustee, has hereunto caused its Corporate Seal to be affixed and its Corporate Name to be signed and the same to be attested by the signature of the undersigned officers, thereunto duly authorized.

CENTRAL TITLE AND TRUST COMPANY, TRUSTEE

President

Attest: Secretary

ACKNOWLEDGMENT

State of Arizona
County of Maricopa
On this 4th day of April 1964, before me, the undersigned officer personally appeared [illegible] who acknowledged themselves to be the Vice President and Secretary, respectively, of Central Title and Trust Company, a Corporation, and further acknowledged that they, as such officers respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the Corporation, as Trustee, by themselves as such officers respectively.

IN WITNESS WHEREOF: I have set my hand and official seal.

Notary Public

My Commission expires [illegible]

CERTIFICATION

This is to certify that the survey and subdivision of the above described premises was made under my supervision during the Month of Jan 64

Revised 10-29-64

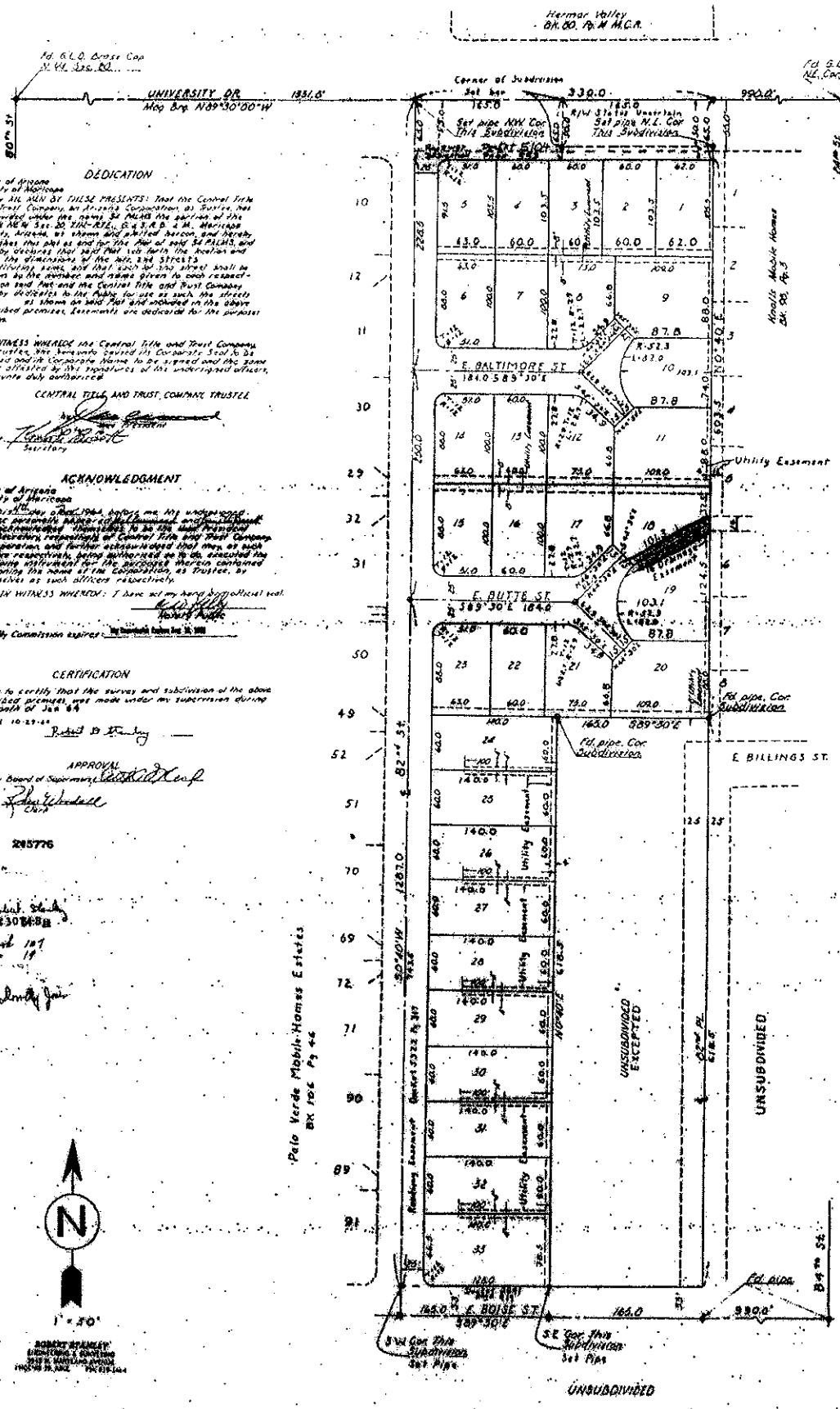
Robert B. Stanley

APPROVAL

County Board of Supervisors

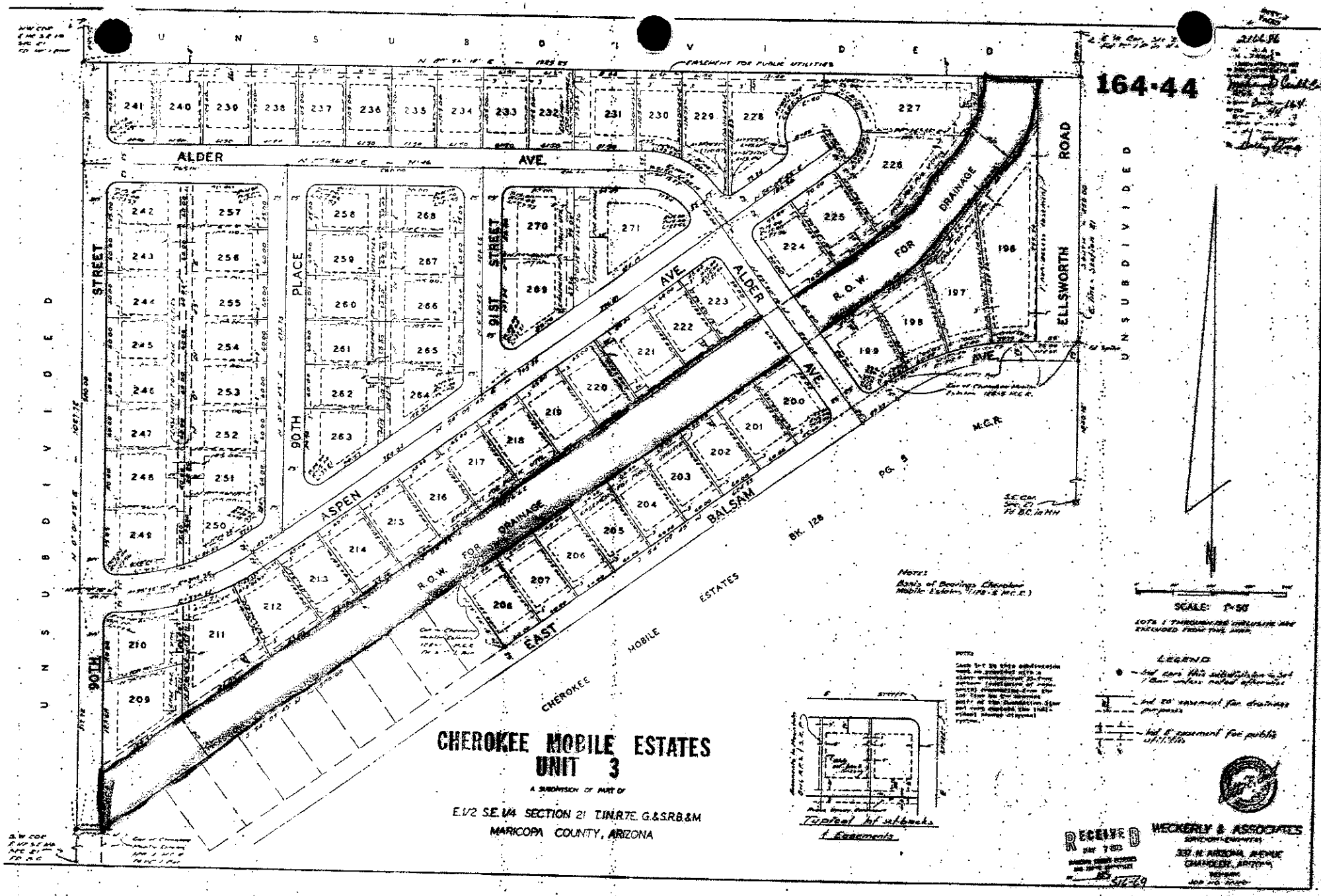
Attest: Clerk

215776



RECEIVED

107-19


164-44
UNSUBDIVIDED
ALDER AVE.
ASPEN AVE.
BALSAM AVE.
ELLSWORTH ROAD
91ST STREET
90TH STREET
90TH PLACE
90TH EAST
R.O.W. FOR DRAINAGE
M.C.R.
PG. 9
BK. 128
CHEROKEE MOBILE ESTATES
Note:
Basis of Bearings Chandler Mobile Estates (128-6 M.C.R.)
SCALE: 1"=50'
LEGEND
Typical lot setbacks & Easements
CHEROKEE MOBILE ESTATES
UNIT 3
A SUBDIVISION OF PART OF
E.1/2 S.E.1/4 SECTION 21 T.1N.R.7E. G.&S.R.B.&M
MARICOPA COUNTY, ARIZONA
RECEIVED
WECKERLY & ASSOCIATES
337 N. ARIZONA AVENUE
CHANDLER, ARIZONA
SHEET 2 OF 2

98-15

KNOLLS ESTATES

A SUBDIVISION OF A PORTION OF
W½ SW¼ SEC 21 T1N R7E G&SRB&M
MARICOPA COUNTY ARIZONA

DEDICATION

State of Arizona }ss
County of Maricopa

KNOW ALL MEN BY THESE PRESENTS: That the Arizona Title Insurance and Trust Company, an Arizona Corporation, Trustee, has subdivided under the name of KNOLLS ESTATES a portion of the W½ SW¼ Sec 21 T1N R7E G&SRB&M Maricopa County, Arizona, as shown platted hereon and hereby publishes this plat as and for the plat of said KNOLLS ESTATES and hereby declares that said plat sets forth the location and gives the dimensions of the lots, streets, alleys and alleys constituting same and that each street, lot and street shall be known by number, name or letter given each respectively on said plat and hereby dedicates to the Public, all such streets, and alleys as shown on said plat and included in the above described premises. Easements are dedicated for purposes shown.

IN WITNESS WHEREOF the Arizona Title Insurance and Trust Company as Trustee, has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this [illegible] day of February 1962.

ARIZONA TITLE INSURANCE and TRUST COMPANY ---- TRUSTEE.

By [illegible] PRESIDENT ATTEST [illegible] SECRETARY

ACKNOWLEDGEMENT

State of Arizona }ss
County of Maricopa

On this the [illegible] day of February 1962 before me the undersigned officer personally appeared [illegible] who acknowledged themselves to be the President and Asst Secretary respectively of the Arizona Title Insurance and Trust Company, an Arizona Corporation and acknowledged that they as such officers respectively being authorized so do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as Trustee, by themselves as such officers, respectively.

IN WITNESS WHEREOF I hereunto set my hand and official seal.

[illegible] NOTARY

APPROVAL

Approved by the Board of Supervisors of Maricopa County, Arizona this [illegible] day of February 1962

By [illegible] CHAIRMAN ATTEST [illegible]

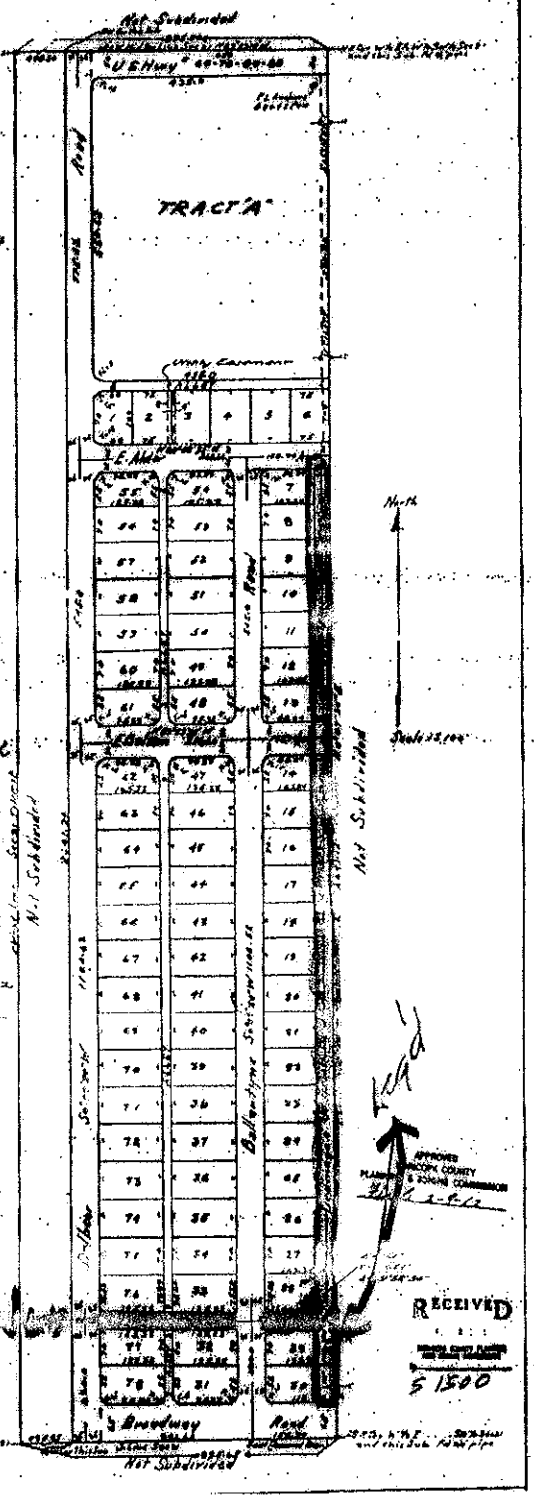
CERTIFICATE

This is to certify that the survey and subdivision of the premises described and platted herein was made under my direction during the month of April 1961

[illegible] Registered Land Surveyor

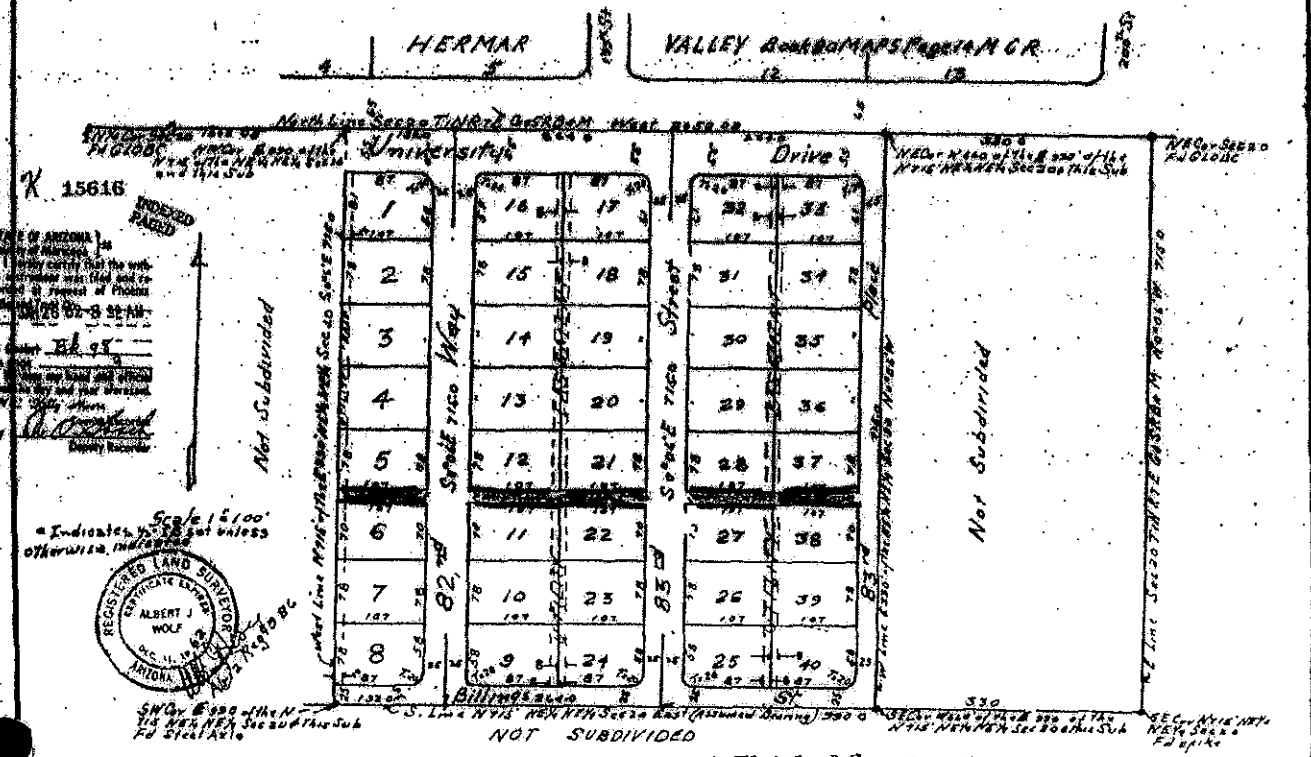
Ariz. Reg. # 3361

ABANDONED



KNOLLS MOBILE HOMES SUBDIVISION 98-3

A SUBDIVISION OF A PORTION OF THE NE1/4 NE1/4 SEC20 T1NR7E G&SR B&M MARICOPA COUNTY ARIZONA



LOTS 1 THRU 32 for Mobile Homes only
LOTS 33 THRU 40 For Residences Only

DEDICATION

KNOW ALL MEN BY THESE PRESENTS That the Phoenix Title and Trust Company, an Arizona Corporation, Trustee, has subdivided under the name of KNOLLS MOBILE HOMES SUBDIVISION, a portion of the NE¼NE¼ Section 20, T1NR7E G&SR B&M, Maricopa County, Arizona, as shown platted hereon and hereby publishes this plat as and for the plat of said KNOLLS MOBILE HOMES SUBDIVISION and hereby declares that said plat sets forth the location and gives the dimensions of the Lots, Streets and Drainage Right of Way constituting same and that each Lot and Street shall be known by the number or name given each respectively on said plat and hereby dedicates to the Public for use as such the Streets and Drainage Right of Way as shown on said plat and included in the above described premises. Easements are dedicated for purposes shown.

IN WITNESS WHEREOF the Phoenix Title and Trust Company, an Arizona Corporation, as Trustee has hereunto caused its corporate name to be signed and its corporate seal to be affixed by the undersigned officers thereunto duly authorized this 4TH day of JANUARY 1962

PHOENIX TITLE and TRUST COMPANY- AS TRUSTEE

By _____ ASST VICE PRESIDENT

ATTEST _____ ASST SECRETARY

ACKNOWLEDGEMENT

State of Arizona
County of Maricopa

On this 4th day of JANUARY 1962 before me the undersigned officer personally appeared B. W. O'BRIEN and MYRON HOWARD who acknowledged themselves to be Asst Vice President and Asst Secretary, respectively, of the Phoenix Title and Trust Company, an Arizona Corporation and acknowledged that they as such officers respectively, being authorized so to do, executed the foregoing instrument for the purposes therein contained by signing the name of the corporation, as Trustee, by themselves as such officers, respectively.

In Witness Whereof I hereunto set my hand and official seal.

My commission expires 9-10-65

Phyllis J. Burnyk
NOTARY PUBLIC

APPROVED
MARICOPA COUNTY
PLANNING & ZONING COMMISSION
Final 1-18-62

APPROVAL

Approved by Board of Supervisors of Maricopa County, Arizona this 22 day of January 1962

By _____ Chairman

Attest _____

CERTIFICATE

This is To certify that the survey and subdivision of the premises described and platted hereon was made under my direction during the month of November 1961

_____ Registered Land Surveyer

RECORDED JAN 18 1962 MARICOPA COUNTY ARIZONA

51508

HDR | ONE COMPANY *Many Solutions*℠

Telephone Record

Project:	East Mesa Drains	Project No:	0000000009522
Date:	4/9/04	Subject:	Utility Relocation
Call to:	Amir Motamedi	Phone No:	602-506-4871
Call from:	Chris Miranda	Phone No:	602-522-4348

Discussion, Agreement and/or Action:

Amir stated that relocating utilities depends on the when the County has began ownership of the channel and when the utilities were constructed in the channel or adjacent to the channel, in order to have prior rights for payment of relocating utilities.

His reference was Jon Palmieri (602-506-4875) in the right-of-way section of FCDMC.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
ENGINEERING ON-CALL SERVICES CONTRACT
EAST MESA DRAINS CANDIDATE ASSESSMENT REPORT

MEETING
Meeting Date and Time: 19 February, 2004 at 8:30 AM
Meeting Location: FCDMC, 2801 W. Durango

MEETING PURPOSE
Progress Meeting

ATTENDEES

Ed Loy, FCDMC	Felicia Terry, FCDMC	Chris Miranda, HDR
Charles Klenner, FCDMC	Tim Montgomery, HDR	Julie Lemmon
Russ Miracle, FCDMC	Dave Buras, HDR	

MINUTES

1) Results from meeting with Julie Lemmon regarding legal issues.

After 1972, if the County accepts a plat with parcels as "dedicated to the public", then the County has ownership. This is distinguished from the FCDMC as the District is a separate political subdivision of the State of Arizona. Pre 1972 subdivisions are not the responsibility of the county, unless they were providing maintenance in these areas before 1972. Formal IGA may be required to formalize maintenance responsibilities between the FCDMC and the County. Board of Directors of the FCDMC directive might be helpful as well. Russ Miracle suggested that we look at upstream and downstream parcels and plats to determine what county responsibility might exist there as well. He suggested this in the context that any recommendation or discussion with the County needs some backup information on the extent of the issues. Ownership of the drainage ways for public improvements is still clouded, because of other issues such as the presence of utilities in the drainage ways that included dedications for drainage and utilities. Tax Code research reveals that drainage ways parcels have the same designation as public roads do in the GIS system. The Surveyor's opinion (letter of 17 December 2004) was discussed and thought to be substantially correct.

2) Revised Existing Facilities Exhibit

Delivered, pending comments

3) Proposed Facilities Exhibit

Delivered, pending comments

4) Schedule

Discussion, extension of time offered by Felicia should HDR need it to incorporated additional comments, work effort and new information collected today.

Other Items

Check on utility maps and facilities, especially if under a County franchise.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
ENGINEERING ON-CALL SERVICES
EAST MESA DRAINS, ASSIGNMENT #2

MEETING NOTES

Meeting Date: January 14, 2004
Time: 8:30 – 9:30 AM
Location: FCDMC
Subject: East Mesa Drains Progress Meeting #1
Prepared by: Chris Miranda
Attachments: None

Attendees:

FCDMC
Felicia Terry

HDR Engineering
Tim Montgomery
Chris Miranda

Distribution: Attendees Listed
Dave Buras

Meeting Purpose
Review progress, information collected and reviewed

Decisions
HDR will present draft technical data along with the Proposed Drainage Facilities Exhibit.

Actions
1. HDR will submit the Existing Facilities Exhibit for review on 1/29/04.
2. HDR will contact Regulatory Review for future developments.

Discussion
1. ***Survey Data Review*** – Chris Miranda stated that he has received and reviewed all the information in from the surveyor. The information HDR has received was property information, as-built information, utility information, survey data of drainage facilities, photos of the drainage facilities and a legal opinion of the properties/easements.
2. ***Hydrology & Hydraulic Review*** – Chris Miranda stated that he has received and reviewed the information within the Red Mountain Initial Drainage Report and the East Mesa ADMP. Felicia Terry stated that if the HEC-1 information for that area was not readily available, that we can contact Kathy Register at FCDMC.
3. ***Exhibits*** – Tim Montgomery and Felicia Terry outlined their ideas for the Existing Facilities Exhibit; identifying the condition, current capacity, and ranking of O&M problems.
4. ***Schedule & Deliverables*** – Minor changes were made to the schedule, meetings and schedule of deliverables. See enclosed updated schedule.

East Mesa Drains
Candidate Assessment Report
Meeting With Julie Lemon
February 2, 2004

10:30 AM - Agenda

Background and EMDCAR Briefing Document

County and Public versus Flood Control District

EMDCAR Briefing Document

1. Surveyor's Letter

2. Report Outline

3. Scope of Work

4. East Mesa Drains Power Point Presentation (by FCDMC)

5. Meeting and Field Trip Minutes

6. Proposed Existing Conditions Exhibit

East Mesa Drains Site Visit

General observations

- Excessive illegal dumping and illegal drainage.
- Need to find property boundary limits.
- Need to find where flow begins and ends.
- Utility easements

Reach 3 (McKellips & 76th Street)

- Street Drainage from the east portion of channel
- Drains into another wash that might be City property.
- Problems with erosion and illegal drainage and dumping from property owners.

Reach 6 (On Ellsworth, between CAP and Brown)

- 4 CMPs that are silted and block flow.

Reach 11 (E. of Ellsworth, N. of CAP)

- Property owner's vegetation encroaching into channel.
- Limits of drainage easement unknown.

Reach 8 (University and 82nd)

- Drainage channel drains into trailer home property.

Reach 10 (Apache Trail & Ellsworth)

- Box culvert on downstream end that is half full with silt.

Reach 4 (Parallel with Broadway Road)

- Uplift of shot-crete
- Erosion underneath of channel lining.
- Illegal discharge from properties.
- Illegal dumping of construction materials.
- Might be MCDOT's responsibility.

Reach 7 (E. of Hawes Road Drains into Reach 4)

- Erosion is digging up overhead power lines and gas lines.
- Property owners have built pipes into side slopes.

Reach 5 (Ellsworth & Corbabell, South of Broadway)

- Weeds & sediment build up.
- Drainage begins at Crimson and stops at 98th Way and then begins again at 96th Street and parallels Corabell Street.

Reach 2 (Crimson, South of Broadway)

- Reach begins at Crimson and ends at fence line, which is end of FCDMC's responsibility.
- Problems with erosion and illegal dumping from Crimson.

Reach 1 (N. of Broadway, from 98th Street to 96th Street)

- Drainage enters from Reach 2 (that is part of the City of Mesa property).
- Laterals effect flow
- Armored area 100 feet from beginning of channel.

HDR | ONE COMPANY *Many Solutions*℠

Telephone Record

Project:	East Mesa Drains- CAR	Project No:	
Date:	3-8-04	Subject:	Enactment date of "1972 Subdivision Regulation"
Call to:	Mr. Rich McCallister, City Of Mesa, Subdivision Planning Dept.	Phone No:	(480) 644-2167
Call from:	Scott Mars, HDR	Phone No:	(602) 522-4347

Discussion, Agreement and/or Action:

Mr. McCallister returned my call regarding two questions:

1) What was the exact date the City of Mesa enacted the "1972 Subdivision Regulation" (Ordinance number 755 for the City of Mesa)?

2) Confirm that the regulation was a Maricopa County Regulation.

Answers via phone conversation on 3-8-04:

1) The City of Mesa enacted the regulation as Ordinance 755 on August 21, 1972 (data from City of Mesa, City Clerks Office).

2) Rich Stated that they believe the regulation was a Maricopa County regulation.

2 00

[redacted]

Post-It™ brand fax transmittal memo 7671 | # of pages ▸ 3

To Scott Mars	From Rich McAllister
Co.	Co. City of Mesa
Dept.	Phone # 480-644-2167
Fax # 602-522-7707	Fax #

[redacted]

INDEX

Section	Page
9-6-1 Purpose and Intent, Definitions	1
9-6-2 Platting Procedures and Requirements	5
9-6-3 Subdivision Design Principles and Standards	10
9-6-4 Street and Utility Improvement Requirements	20
9-6-5 Modifications	22

"SUBDIVISION REGULATIONS"

"9-6-1. Purpose and Intent, Definitions.

A. **Purpose and Intent.** The purpose of these regulations is to provide for the orderly growth and harmonious development of the City of Mesa; to insure adequate traffic circulation through coordinated street systems with relation to major thoroughfares, adjoining subdivisions, and public facilities; to achieve individual property lots of reasonable utility and livability; to secure adequate provisions for water supply, drainage, sanitary sewerage, and other health requirements; to insure consideration for adequate sites for schools, recreation areas, and other public facilities; to promote the conveyance of land by accurate legal description; and, to provide logical procedures for the achievement of this purpose.

In its interpretation and application, the provisions of these regulations are intended to provide a common ground of understanding and equitable working relationship between public and private interests to the end that both independent and mutual objectives can be achieved in the subdivision of land.

B. **Definitions.**

1. **Block:** A piece or parcel of land or group of lots entirely surrounded by public streets, streams, railroads, or parks, or a combination thereof.

2. **Board:** The Planning and Zoning Board of the City of Mesa.

3. **Street Classification Plan:** A plan which provides for the development of a system of major streets and highways, including the location, width, and alignment of existing and proposed thoroughfares.

4. **Conditional Approval:** An affirmative action by the Board or the Council indicating that approval will be forthcoming upon satisfaction of certain specified stipulations.

5. **Council:** The City Council of the City of Mesa.

6. **Department:** The Planning Department of the City of Mesa.

7. **Development Master Plan (DMP):** A preliminary master plan for the development of a large or complicated land area, the platting of which is expected in progressive stages. A Development Master Plan may be designed by the Subdivider or by the Department and shall be subject to Board approval.

8. **Easement:** A grant by the owner of the use of a strip of land by the public, a corporation, or persons, for specific uses and purposes and so designated.

9. **Engineering Plans:** Plans, profiles, cross sections, and other required details for the construction of public improvements, prepared by a registered engineer in accordance with the approved Preliminary Plat and in compliance with standards of design and construction approved by the Council.

10. **Exception:** Any parcel of land which is within the boundaries of the subdivision which is not owned by the Subdivider.

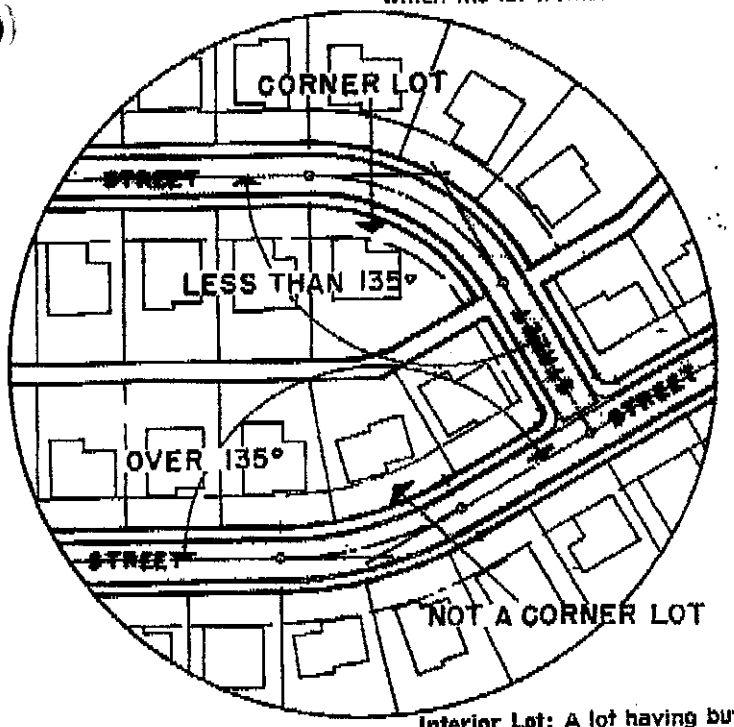
11. **Final Approval:** Unconditional approval of the Final Plat by the Council as evidenced by certification on the plat by the Mayor of the City of Mesa constitutes authorization to record a plat.

12. **General Plan:** A comprehensive plan, or part thereof, providing for the future growth and improvement of the City of Mesa, and for the general location and coordination of streets and highways, schools and recreation areas, public building sites, and other physical development (Sometimes referred to as the 'Master Plan').

13. **Irrigation Facilities:** Includes canals, laterals, ditches, conduits, gates, pumps, and allied equipment necessary for the supply, delivery, and drainage of irrigation water and the construction, operation, and maintenance of such.

14. **Lot:** A piece or parcel of land separated from other pieces or parcels by description, as in a subdivision or on a record survey map or by metes and bounds, for purposes of sale, lease, or separate use.

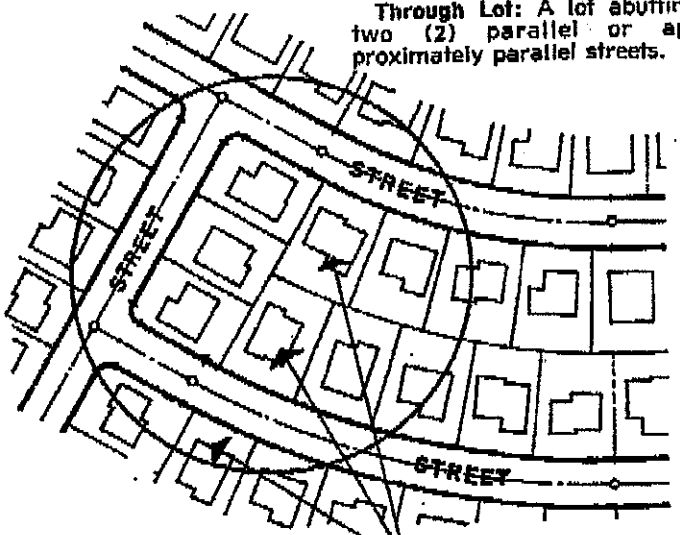
Corner Lot: A lot abutting on two (2) or more intersecting streets where the interior angle of intersection does not exceed one hundred thirty-five (135) degrees. A corner lot shall be considered to be in that block in which the lot fronts.

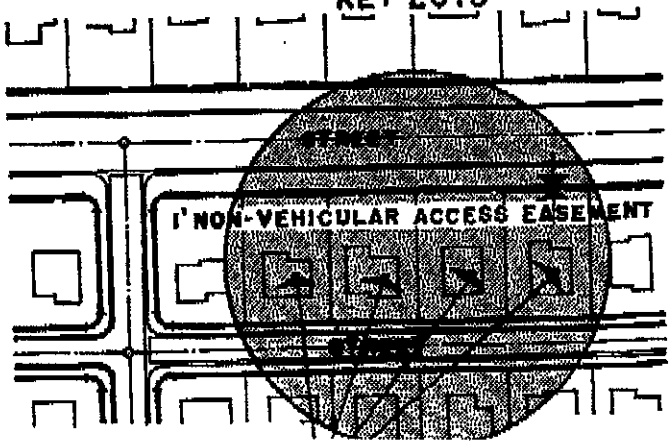


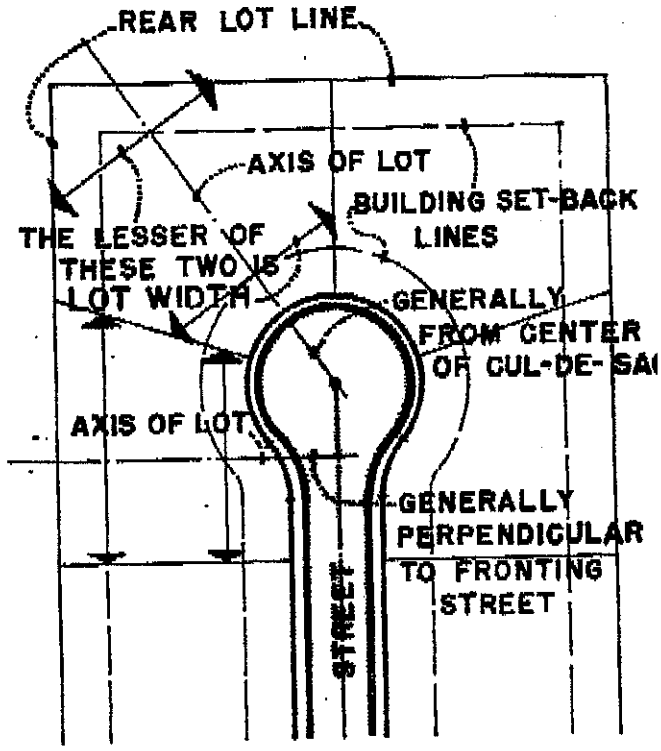
Interior Lot: A lot having but one (1) side abutting on a street.

Key Lot: An interior lot, one (1) side of which is contiguous to the rear line of a corner lot.

Through Lot: A lot abutting two (2) parallel or approximately parallel streets.







15. **Lot Width:** The width of a lot shall be:

a. If the side property lines are parallel, the shortest distance between these side lines.

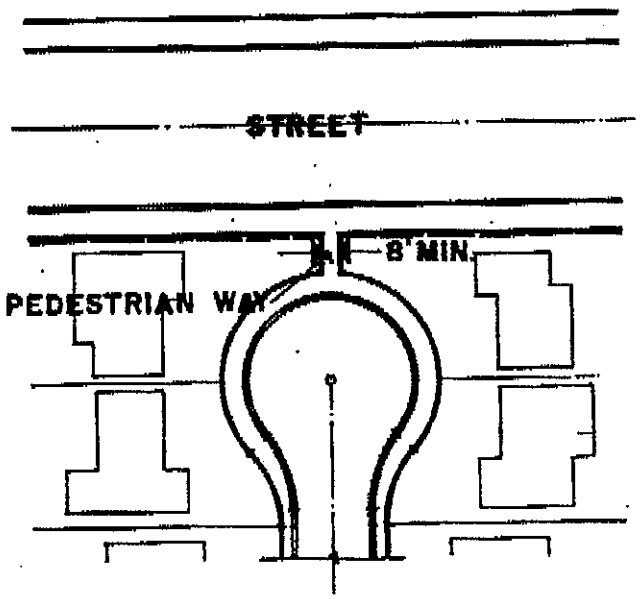
b. If the side property lines are not parallel, the width of the lot shall be the length of a line at right angles to the axis of the lot, at a distance equal to the required front or rear building setback line, whichever is the lesser. The axis of a lot shall be a line generally perpendicular to the fronting street which divides the lot into two (2) equal parts.

16. **Neighborhood Plan:** A designed by the Departme guide the platting of remai vacant parcels in a part built-up neighborhood so a make reasonable use of all correlate street patterns, achieve the best possible use relationships.

17. **Owner:** The perso persons holding title by de land, or holding title as ver under land contract, or ho any other title of record.

18. **Pedestrian Way:** A p walk dedicated entirely thr a block from street to street or providing access to a s park, recreation area shopping center.

SCHOOLS - SHOPPING CENTERS PARKS ETC.



19. **Plat:** A map of a subdivision.

a. **Preliminary Plat:** A preliminary map, including supporting data, indicating a proposed subdivision development, prepared in accordance with Section 9-6-2 of this Chapter.

b. **Final Plat:** A map of all or part of a subdivision providing substantial conformance to an approved Preliminary Plat, prepared by a registered land surveyor or registered civil engineer in accordance with Section 9-6-2 of this Chapter.

c. ***Recorded Plat:*** *A Final Plat* bearing all of the certificates of approval required in Section 9-6-2 of this Chapter and duly recorded in the Maricopa County *Recorder's Office.*

20. **Preliminary Approval:** Approval of the Preliminary Plat by the Board as evidenced in its meeting minutes constitutes authorization to proceed with final Engineering Plans and Final Plat Preparation.

21. **Public Improvement Standards:** A set of regulations setting forth the details, specifications, and instructions to be followed in the planning, design, and construction of certain public improvements in the City of Mesa, formulated by the City Engineer, the County Health Department, and other City Departments.

22. **Reverse Frontage:** A lot having frontage on two (2) non-intersecting streets. The front of the lot shall be considered facing the interior street.

24. **Street:** Any street, avenue, boulevard, road, lane, parkway, place, viaduct, easement for access, or other way which is an existing state, county, or municipal roadway; or a street or way shown in a plat heretofore approved pursuant to law or approved by official action; or, a street or way in a plat duly filed and recorded in the County Recorder's Office. A street includes the land between the right-of-way lines whether improved or unimproved, and may compromise pavement, shoulders, curbs, gutters, sidewalks, parking areas, and lawns.

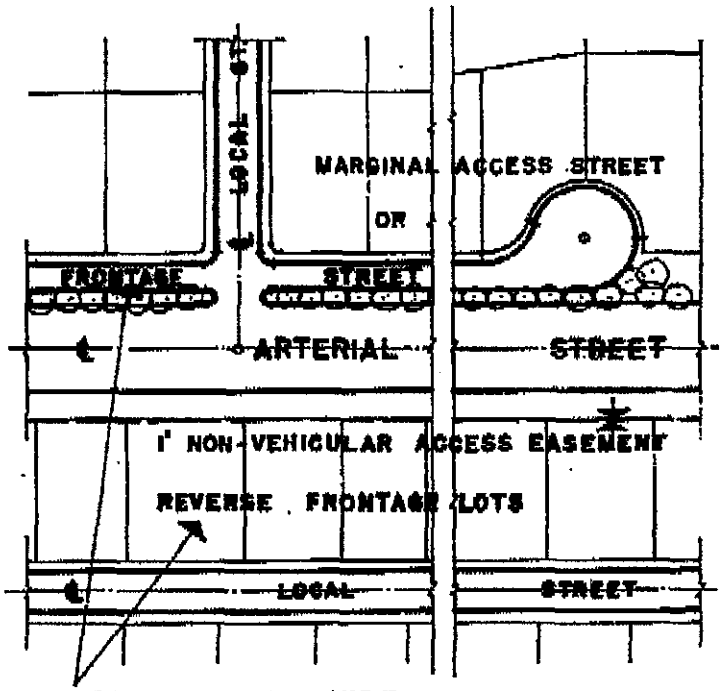
a. **Arterial Street:** A general term including freeways, expressways, and major arterial streets; and interstate, state, or county highways having regional continuity.

b. **Collector Street:** Provides the traffic movement within neighborhoods of the City and between major streets and local streets and for direct access to abutting property.

c. **Local Street:** Provides for direct access to residential, commercial, industrial, or other abutting land or for local traffic movements and connects to collector and-or major streets.

1. **Frontage Street:** A local street parallel and adjacent to an arterial route that intercepts minor residential streets and controls access to an arterial route.

2. **Cul de Sac Street:** A short local street permanently terminated in a vehicular turn-around.



BOARD MAY REQUIRE MARGINAL ACCESS STREET OR REVERSE FRONTAGE LOTS WITH NON-VEHICULAR ACCESS EASEMENTS ON ARTERIAL STREETS.

23. **Secretary of the Board:** The Secretary of the Board is the

d. *Alley: A public service way* used to provide secondary

25. **Subdivider:** A Subdivider shall be deemed to be the individual, firm, corporation, *partnership,* association, syndication, trust, or other legal entity that files the application and initiates proceedings for the subdivision of land in accordance *with the provisions of* this Chapter; and said Subdivider need not be the owner of the property as defined by this Chapter.

26. **Subdivision:** *"Subdivision"* or "subdivided lands" means improved or unimproved land or lands divided or proposed to be divided for the purpose of sale, lease, or for cemetery purposes, whether immediate or future, into four or more lots, parcels, or fractional interests. This paragraph shall not apply to the division or proposed division of land into lots or parcels each of which is, or will be, thirty-six acres or more in area including to the center line of dedicated roads or easements, if any, contiguous to the lot or parcel.

27. **Usable Lot Area:** That portion of a lot usable for or adaptable to the normal uses made of residential property, excluding any areas which may be covered by water, excessively steep, or included in certain types of easements.

"9-6-2. Planning Procedu
and Requirements.

A. Outline of Procedures.
preparation, submittal, revi
and approval of all subdivis
plats located inside the limit
the City of Mesa shall proc
through the follow
progressive stages:

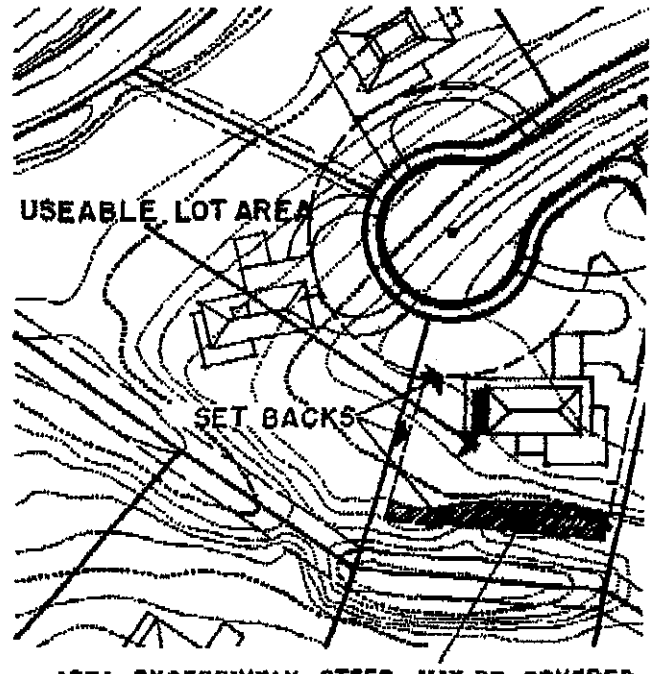
Stage I Pre-Applica
Confere
Stage II Preliminary
Stage III Final

B. *Actions by the Subdivi*
The Subdivider shall meet
formally with the Departmer
present a general outline of
proposal, including but
limited to:

1. Sketch plans and i
regarding land use, street
lot arrangement, tentative
sizes.

2. Tentative *propo*
regarding water supply, sew
disposal, surface drainage,
street improvements.

C. Actions by the Departm
The Department shall dis
the proposal with the Subdiv
and advise him of proced
steps, design, and improver
standards, and general
requirements. Then, depen
upon the scope of the prop
development, the Departr
shall proceed with the follo
investigations:



AREA EXCESSIVELY STEEP, MAY BE COVERED BY WATER OR CERTAIN TYPE OF EASEMENT

28. **Utilities:** Installations or facilities, underground or overhead, *furnishing for* the use of the public: electricity, gas, steam, communication, water, drainage, sewage disposal, or flood control, owned and operated *by any person, firm,* corporation, municipal department, board, duly authorized by state or municipal regulations. Utility or utilities as used herein may *also refer to* such persons, firms, cor-

1. Check existing zoning
tract and make r
mendations if a zoning cha
necessary or desirable.

2. Determine the adequ
existing or proposed s
parks, and other public s

3. Inspect the site or oth
determine its relationsh
major streets, utility sy
and adjacent land uses
determine any u
problems such as topog
utilities, flooding, etc.

4. *Determine the nee*
preparation and review
Development Master Pla

Chapter 21	**FLOOD CONTROL DISTRICTS**
Article 1	**County Flood Control Districts**
48-3601	Definitions
48-3602	Organization of county flood control district
48-3603	Powers, duties and immunities of district and board; exemption
48-3604	Establishing zones in the district
48-3605	Assistance for floodplain delineations; duties of director
48-3606	Assistance for topographic mapping
48-3607	Director may contract for work
48-3608	Assistance in flood insurance program
48-3609	Floodplain delineation; regulation of use
48-3609.01	Watercourse master plans; definition
48-3610	Assumption of powers and duties by cities and towns; resolution; definitions
48-3611	Citizens' flood control advisory board; qualification; functions
48-3612	Board of review
48-3613	Authorization required for construction in watercourses; exceptions; enforcement
48-3614	Declaration of public nuisance; abatement
48-3615	Violation; classification
48-3616	Survey and report of flood control problems and facilities; comprehensive program; adoption by board; hearing
48-3617	Development of flood control plan by director of water resources
48-3618	Resolution calling for bond election; notice; manner of conducting election
48-3619	Form, issuance and sale of bonds; limitation on bonded indebtedness; payment of bonds and interest
48-3620	Certification and levy of taxes; limitation
48-3620.01	Joint projects by zones
48-3620.02	Authority for zone projects
48-3621	Right-of-way
48-3622	Permission required to connect to storm water drain; fee; violation; classification
48-3623	Authority to issue refunding bonds; procedure; disposition of proceeds
48-3624	Cooperation in flood control projects
48-3625	Limitation on powers
48-3626	Compliance; enforcement
48-3627	Reimbursement for county services
48-3628	Condemnation actions; interest

Job No. 9522

Computation

HDR

Project	East Mesa Drains	Computed	TDM	Date	5/5/2004
Subject	Ratios	Checked		Date	
Task					

Frequency	Study %	City of Tucson
100	100%	100%
50	83%	85%
25	65%	65%
10	46%	45%
5	36%	25%
2	25%	15%

* Moderately Urban

Reach	Channel Capacity (cfs)	Freq. Capacity	Q100 Peak Discharge (cfs)	
1	500	100	456	110%
2	140	10	456	31%
3	137	100	137	100%
4	500	25	751	67%
Broadway	800	100	836	96%
5	10	2	116	9%
5A (Coralbell)	150	10	270	56%
7	60	2	517	12%
8	10	2	71	14%
10	100	5	321	31%
11	120	10	247	49%
12	100	2	792	13%

Job No. 9522

Computation

Project	East Mesa Drains	Computed	CAM	Date	4/23/2004
Subject	Hydrologic Analysis with Rational Method - Reach 3	Checked		Date	
Task	DRAINAGE AREA 28.36 acres				

Drainage Area 11.48 ha 28.36 acre

Rational Equation Parameters

Time of Concentration

Tc=18.44*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38) Tc=11.4*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38)

10 -year return period		METRIC	ENGLISH	
C value for 10-year			0.55	From Figure 2-6
6-hour 10-year precip. Depth	=	48.26 mm	1.9 in	2.07 Phoenix Metro Area
Watercourse length (L)	=	0.404774 km	1328 ft	0.25 mi
Upstream Elevation	=	502.92 m	1650 ft	
Downstream Elevation	=	496.5192 m	1629 ft	
Kb Type (use alpha **A,B,C,D**)	=	B	B	Table 3.1 Type
Resistance Coefficient (Kb)	=	0.060	0.060	
Watercourse slope (S)	=	15.81 m/km	83.49 ft/mi	
10-year rainfall intensity (i)	=	106.73 mm/hr	4.20 in/hr	Phoenix Metro Area
Assumed Tc for rainfall intensity	=	12 min	12 min	
Calculated Tc	=	12 min	12 min	

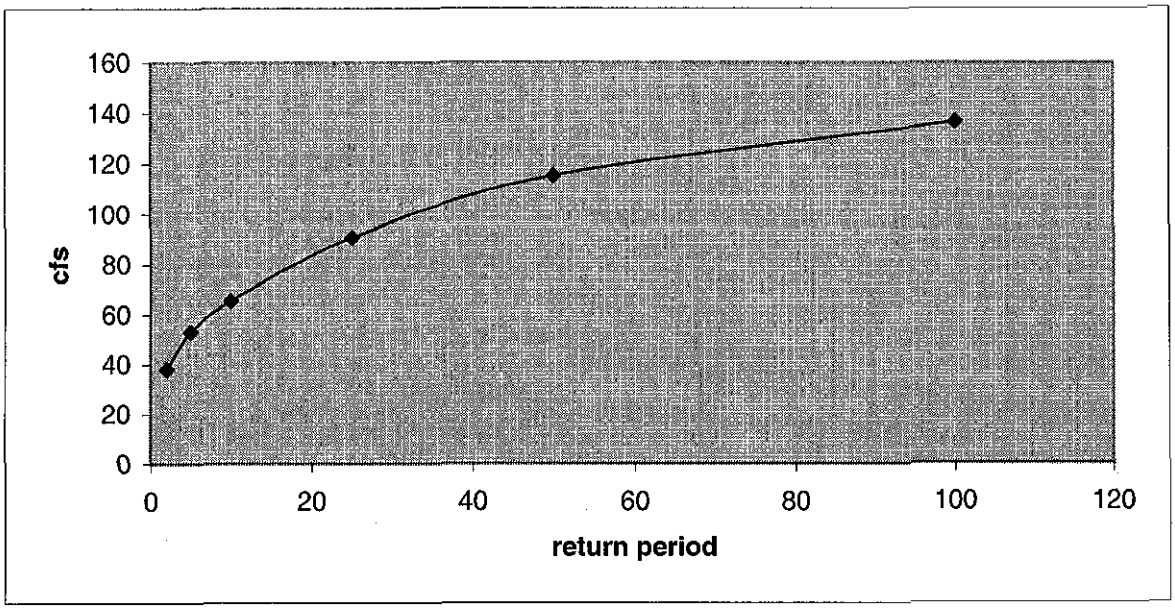
Discharge Calculation

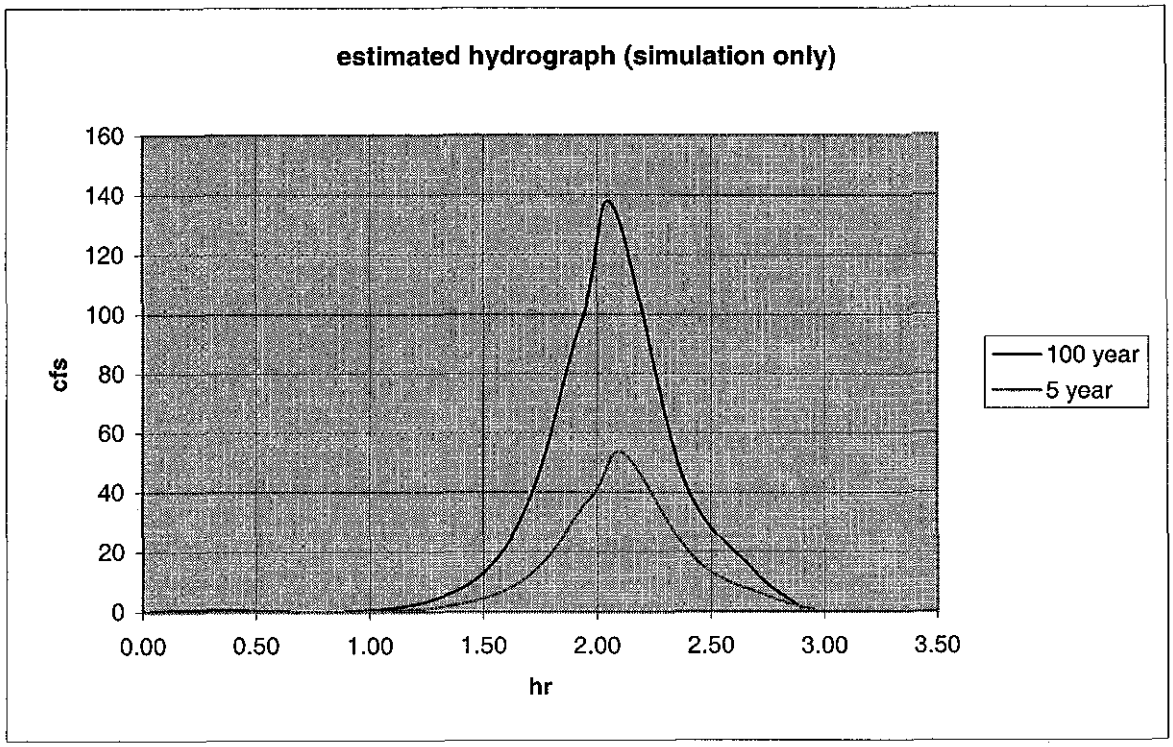
Return Period	2	5	10	25	50	100	
English CiA = cfs	**38**	**53**	**66**	**91**	**115**	**137**	
C	0.550	0.550	0.550	0.605	0.660	0.688	
I in/hr	2.45	3.41	4.20	5.29	6.16	7.01	
Tc min	14.4	12.6	11.7	10.7	10.1	10.0	Valid 10 min to 120 min

Volume Calculation

V=C(P/12)A acre ft

1 hr acre ft	1.0	1.5	1.8	2.2	2.9	3.4
1 hr depth	0.8	1.2	1.5	1.7	2.0	2.3
2 hr acre ft						3.2
2 hr depth						2.5


160
140
120
100
80
60
40
20
0
cfs
0
20
40
60
80
100
120
return period


estimated hydrograph (simulation only)
160
140
120
100
80
60
40
20
0
cfs
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
hr
100 year
5 year

Job No. 9522

Computation

Project	East Mesa Drains	Computed	CAM	Date	4/23/2004
Subject	Hydrologic Analysis with Rational Method - Reach 5	Checked		Date	
Task	DRAINAGE AREA 24.17 acres				

Drainage Area 9.79 ha 24.17 acre

Rational Equation Parameters

Time of Concentration

Tc=18.44*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38) Tc=11.4*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38)

10 -year return period		METRIC	ENGLISH	
C value for 10-year			0.55	From Figure 2-6
6-hour 10-year precip. Depth	=	48.26 mm	1.9 in	2.07 Phoenix Metro Area
Watercourse length (L)	=	0.260909 km	856 ft	0.16 mi
Upstream Elevation	=	471.5256 m	1547 ft	
Downstream Elevation	=	468.4776 m	1537 ft	
Kb Type (use alpha **A,B,C,D**)	=	B	B	Table 3.1 Type
Resistance Coefficient (Kb)	=	0.061	0.061	
Watercourse slope (S)	=	11.68 m/km	61.68 ft/mi	
10-year rainfall intensity (i)	=	113.38 mm/hr	4.46 in/hr	Phoenix Metro Area
Assumed Tc for rainfall intensity	=	10 min	10 min	
Calculated Tc	=	10 min	10 min	

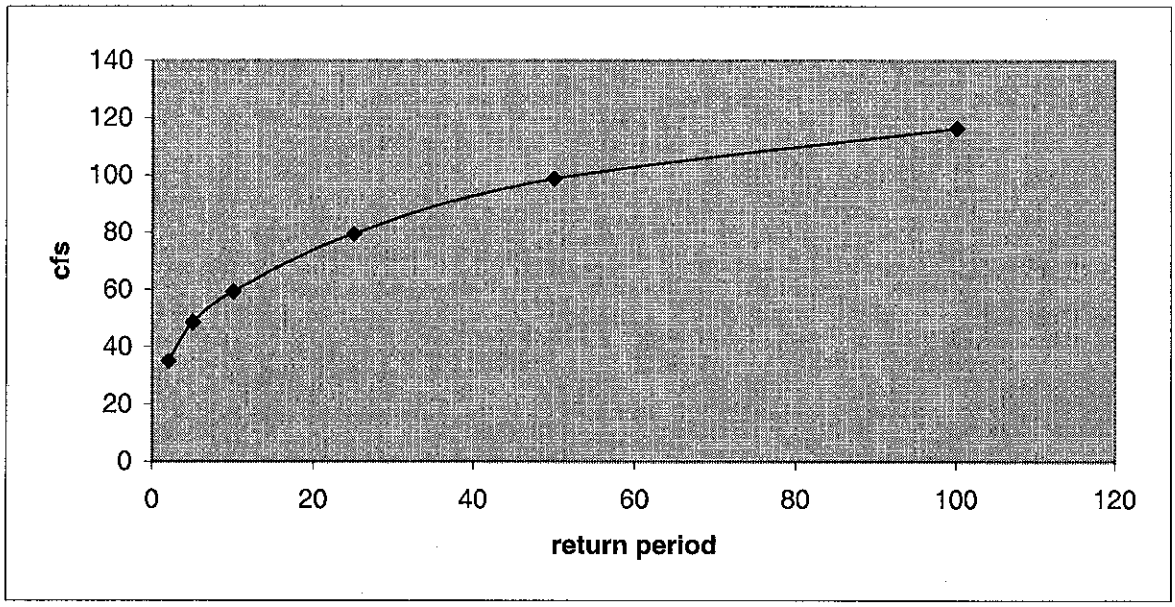
Discharge Calculation

Return Period	2	5	10	25	50	100	
English CiA = cfs	**35**	**49**	**59**	**80**	**99**	**116**	
C	0.550	0.550	0.550	0.605	0.660	0.688	
I in/hr	2.64	3.66	4.46	5.44	6.19	7.01	
Tc min	12.4	11.0	10.2	10.0	10.0	10.0	Valid 10 min to 120 min

Volume Calculation

V=C(P/12)A acre ft

1 hr acre ft	0.8	1.3	1.5	1.9	2.5	2.9
1 hr depth	0.8	1.2	1.5	1.7	2.0	2.3
2 hr acre ft						2.7
2 hr depth						2.5


140
120
100
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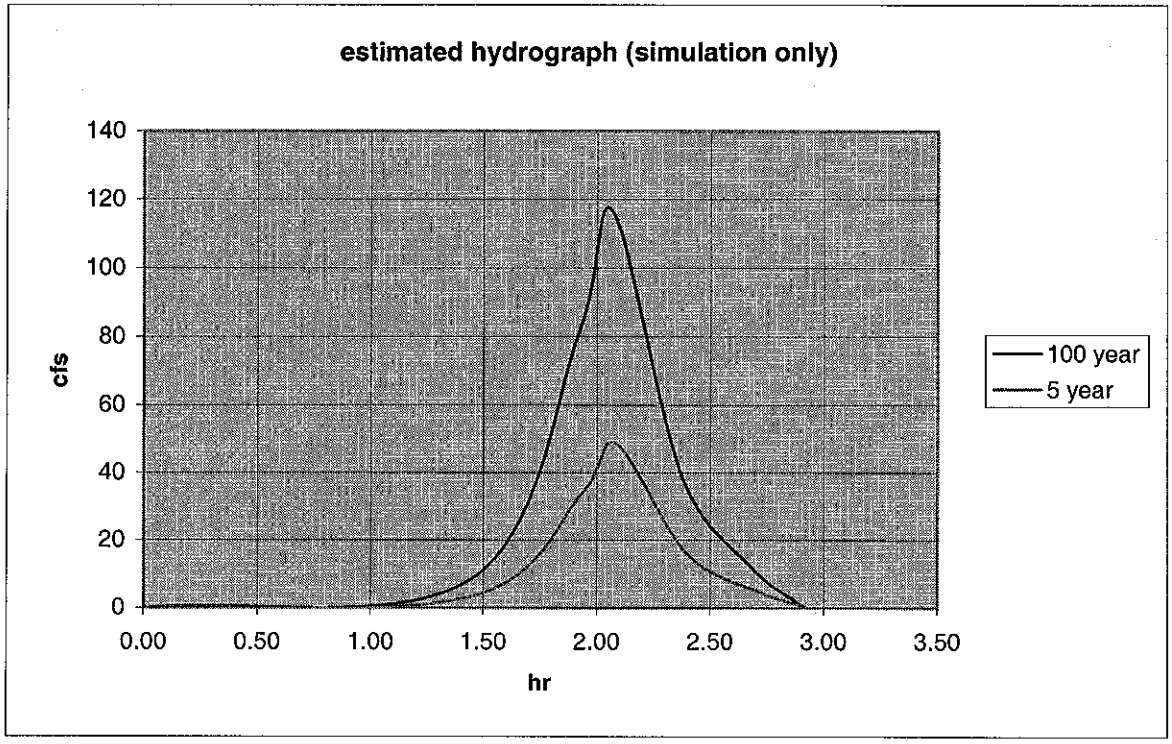
60
40
20
0
cfs
0
20
40
60
80
100
120
return period


estimated hydrograph (simulation only)
140
120
100
80
60
40
20
0
cfs
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
hr
100 year
5 year

Job No. 9522

Computation

Project	East Mesa Drains	Computed	CAM	Date	4/23/2004
Subject	Hydrologic Analysis with Rational Method - Corabell Channel	Checked		Date	
Task	DRAINAGE AREA 115 acres				

Drainage Area 46.56 ha 115 acre

Rational Equation Parameters

Time of Concentration

Tc=18.44*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38) Tc=11.4*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38)

10 -year return period		METRIC	ENGLISH	
C value for 10-year			0.55	From Figure 2-6
6-hour 10-year precip. Depth	=	48.26 mm	1.9 in	2.07 Phoenix Metro Area
Watercourse length (L)	=	0.77785 km	2552 ft	0.48 mi
Upstream Elevation	=	463.296 m	1520 ft	
Downstream Elevation	=	457.2 m	1500 ft	
Kb Type (use alpha **A,B,C,D**)	=	B	B	Table 3.1 Type
Resistance Coefficient (Kb)	=	0.052	0.052	
Watercourse slope (S)	=	7.84 m/km	41.38 ft/mi	
10-year rainfall intensity (i)	=	81.23 mm/hr	3.20 in/hr	Phoenix Metro Area
Assumed Tc for rainfall intensity	=	21 min	21 min	
Calculated Tc	=	21 min	21 min	

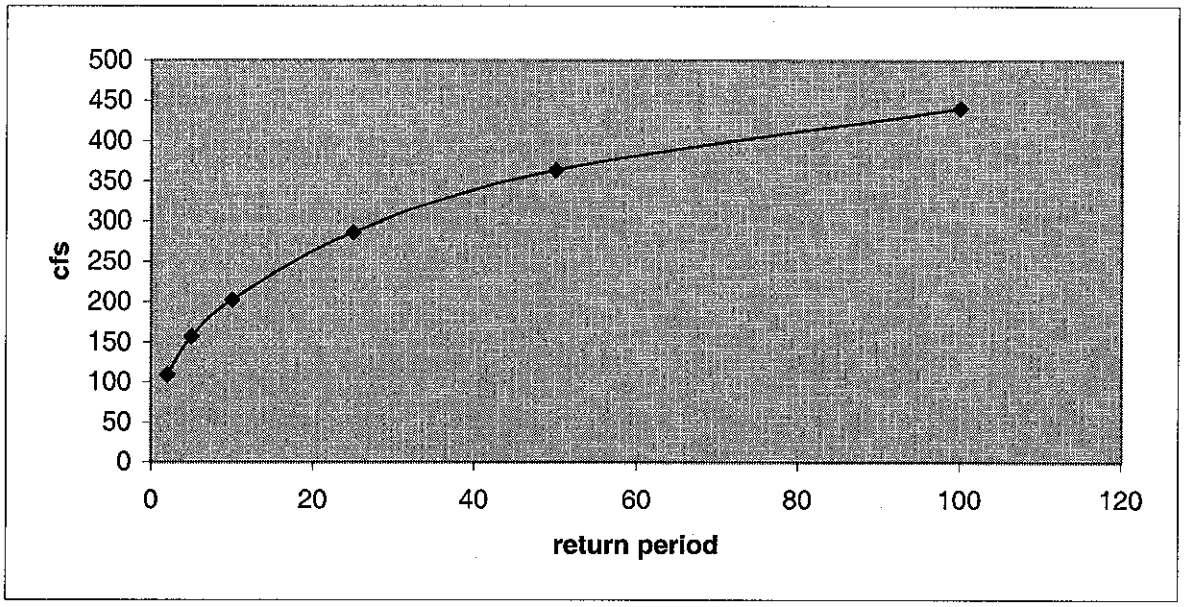
Discharge Calculation

Return Period		2	5	10	25	50	100	
English	CiA = cfs	**109**	**157**	**202**	**286**	**364**	**440**	
	C	0.550	0.550	0.550	0.605	0.660	0.688	
	I in/hr	1.73	2.49	3.20	4.11	4.79	5.57	
	Tc min	26.1	22.7	20.7	18.8	17.7	16.7	Valid 10 min to 120 min

Volume Calculation

V=C(P/12)A acre ft

1 hr acre ft	4.0	6.0	7.1	9.0	11.7	13.9
1 hr depth	0.8	1.2	1.5	1.7	2.0	2.3
2 hr acre ft						13.1
2 hr depth						2.5


500
450
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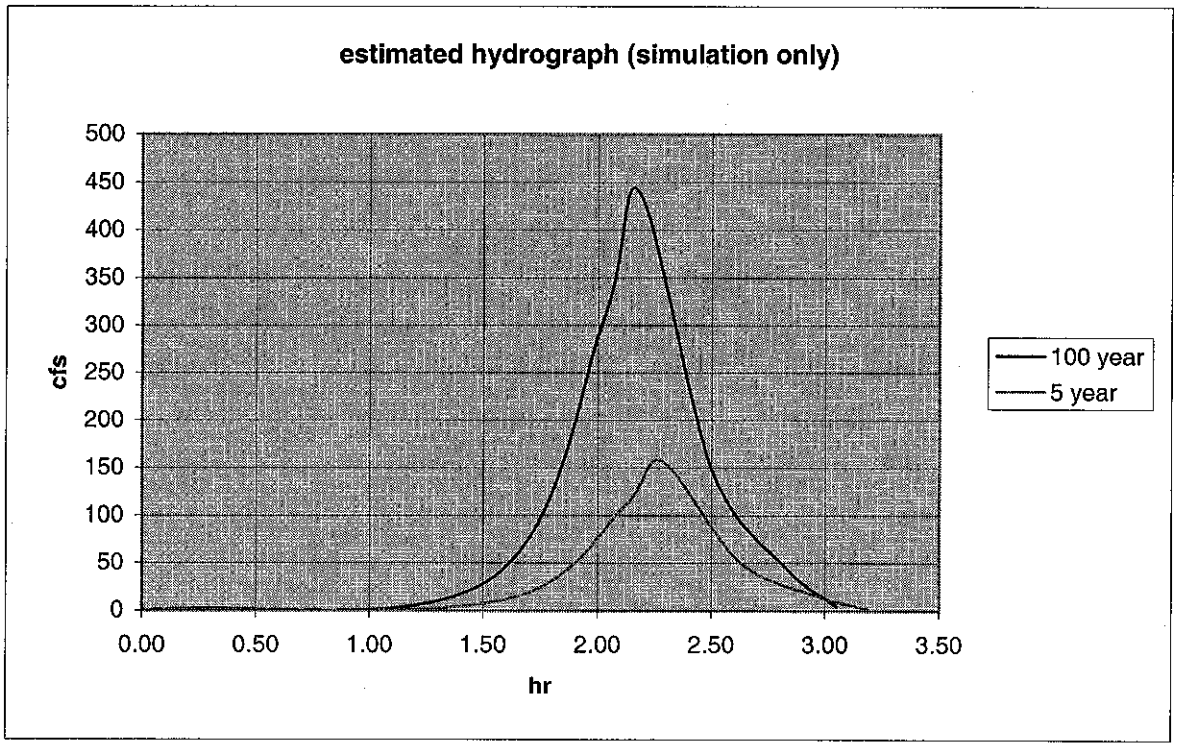
300
250
200
150
100
50
0
cfs
0
20
40
60
80
100
120
return period


estimated hydrograph (simulation only)
500
450
400
350
300
250
200
150
100
50
0
cfs
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
hr
100 year
5 year

Job No. 9522

Computation

Project	East Mesa Drains	Computed	CAM	Date	4/23/2004
Subject	Hydrologic Analysis with Rational Method - Reach 8	Checked		Date	
Task	DRAINAGE AREA 14.92 acres				

Drainage Area 6.04 ha 14.92 acre

Rational Equation Parameters

Time of Concentration

Tc=18.44*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38) Tc=11.4*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38)

10 -year return period		METRIC	ENGLISH	
C value for 10-year			0.55	From Figure 2-6
6-hour 10-year precip. Depth	=	48.26 mm	1.9 in	2.07 Phoenix Metro Area
Watercourse length (L)	=	0.239268 km	785 ft	0.15 mi
Upstream Elevation	=	458.1144 m	1503 ft	
Downstream Elevation	=	456.5904 m	1498 ft	
Kb Type (use alpha **A,B,C,D**)	=	B	B	Table 3.1 Type
Resistance Coefficient (Kb)	=	0.064	0.064	
Watercourse slope (S)	=	6.37 m/km	33.63 ft/mi	
10-year rainfall intensity (i)	=	103.86 mm/hr	4.09 in/hr	Phoenix Metro Area
Assumed Tc for rainfall intensity	=	12 min	12 min	
Calculated Tc	=	12 min	12 min	

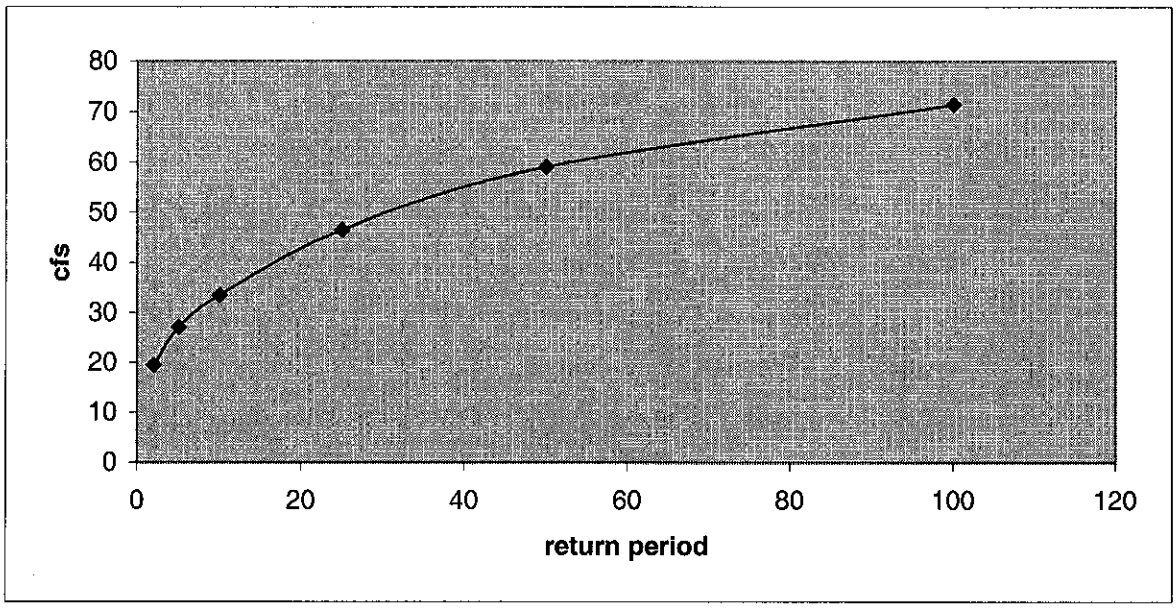
Discharge Calculation

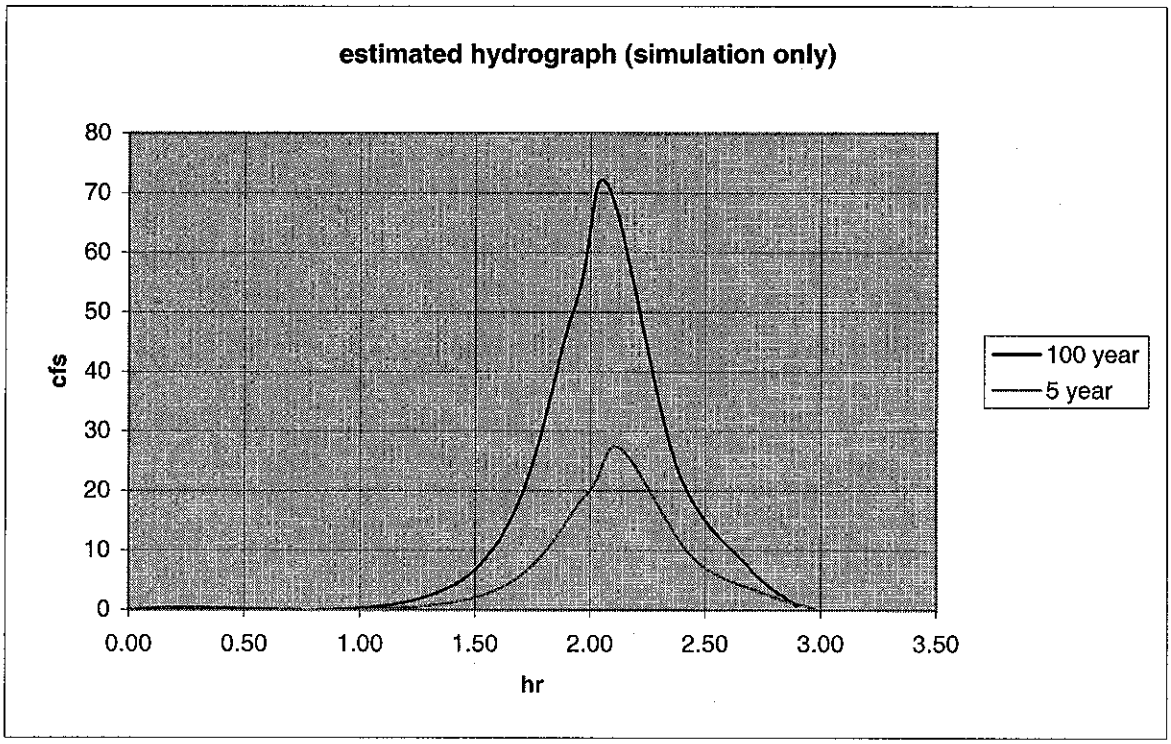
Return Period	2	5	10	25	50	100	
English CiA = cfs	**19**	**27**	**34**	**47**	**59**	**71**	
C	0.550	0.550	0.550	0.605	0.660	0.688	
I in/hr	2.36	3.31	4.09	5.16	6.01	6.97	
Tc min	15.3	13.5	12.4	11.4	10.7	10.1	Valid 10 min to 120 min

Volume Calculation

V=C(P/12)A acre ft

1 hr acre ft	0.5	0.8	0.9	1.2	1.5	1.8
1 hr depth	0.8	1.2	1.5	1.7	2.0	2.3
2 hr acre ft						1.7
2 hr depth						2.5


80
70
60
50
40
30
20
10
0
cfs
0
20
40
60
80
100
120
return period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80
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cfs
0.00
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1.00
1.50
2.00
2.50
3.00
3.50
hr
100 year
5 year

Job No. 9522

Computation

Project	East Mesa Drains	Computed	CAM	Date	4/23/2004
Subject	Hydrologic Analysis with Rational Method - Reach 11	Checked		Date	
Task	DRAINAGE AREA 51.18 acres				

Drainage Area 20.72 ha 51.18 acre

Rational Equation Parameters

Time of Concentration

Tc=18.44*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38) Tc=11.4*(L^0.5)*(Kb^0.52)*(S^-0.31)*(i^-0.38)

10 -year return period		METRIC	ENGLISH	
C value for 10-year			0.55	From Figure 2-6
6-hour 10-year precip. Depth	=	48.26 mm	1.9 in	2.07 Phoenix Metro Area
Watercourse length (L)	=	0.245059 km	804 ft	0.15 mi
Upstream Elevation	=	481.8888 m	1581 ft	
Downstream Elevation	=	478.2312 m	1569 ft	
Kb Type (use alpha **A,B,C,D**)	=	B	B	Table 3.1 Type
Resistance Coefficient (Kb)	=	0.056	0.056	
Watercourse slope (S)	=	14.93 m/km	78.81 ft/mi	
10-year rainfall intensity (i)	=	121.84 mm/hr	4.80 in/hr	Phoenix Metro Area
Assumed Tc for rainfall intensity	=	10 min	10 min	
Calculated Tc	=	9 min	9 min	

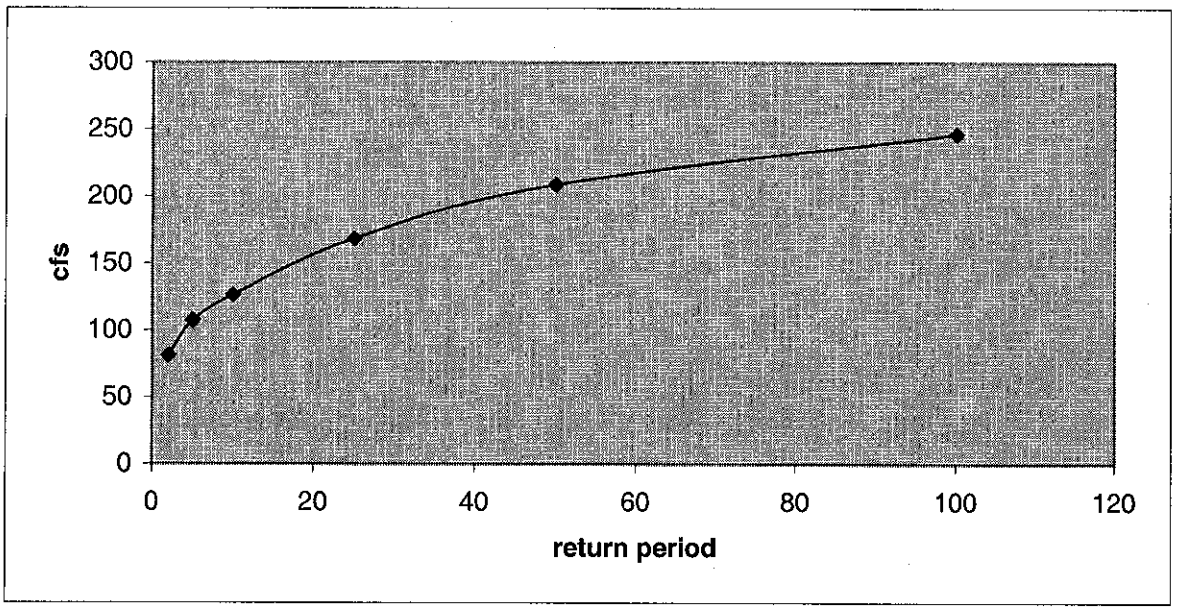
Discharge Calculation

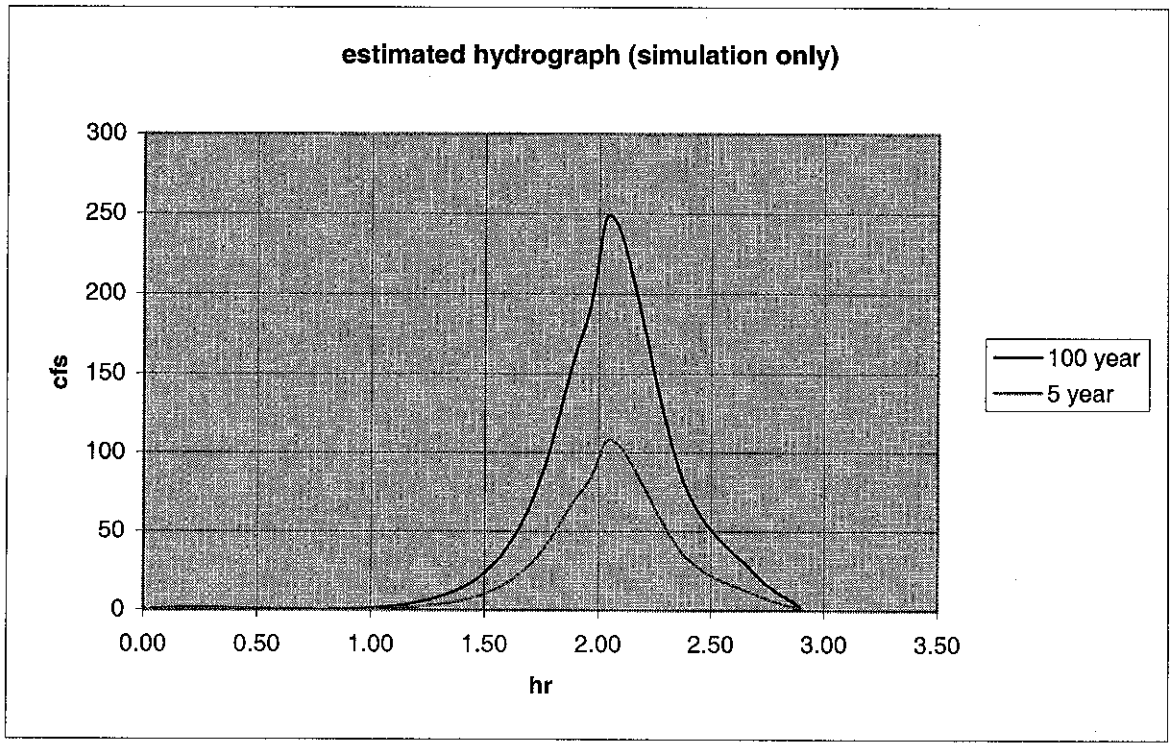
Return Period	2	5	10	25	50	100	
English CiA = cfs	**81**	**107**	**126**	**168**	**209**	**247**	
C	0.550	0.550	0.550	0.605	0.660	0.688	
I in/hr	2.88	3.82	4.49	5.44	6.19	7.01	
Tc min	10.3	10.0	10.0	10.0	10.0	10.0	Valid 10 min to 120 min

Volume Calculation

V=C(P/12)A acre ft

1 hr acre ft	1.8	2.7	3.2	4.0	5.2	6.2
1 hr depth	0.8	1.2	1.5	1.7	2.0	2.3
2 hr acre ft						5.8
2 hr depth						2.5


300
250
200
150
100
50
0
cfs
0
20
40
60
80
100
120
return period


estimated hydrograph (simulation only)
300
250
200
150
100
50
0
cfs
0.00
0.50
1.00
1.50
2.00
2.50
3.00
3.50
hr
100 year
5 year

```
1****************************************
*************************************
*                    *                    *                    *
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *                    * U.S. ARMY CORPS OF
ENGINEERS    *
*        JUN  1998        *                    * HYDROLOGIC ENGINEERING CENTER   *
*       VERSION 4.1        *                    *       609 SECOND STREET       *
*                    *                    *    DAVIS, CALIFORNIA 95616     *
* RUN DATE  28APR04  TIME  10:00:35  *                    *       (916) 756-1104        *
*                    *                    *                    *
****************************************
*************************************
```

```
X   X XXXXXXX  XXXXX      X
X   X X     X   X     XX
X   X X     X        X
XXXXXXX XXXX   X    XXXXX  X
X   X X     X        X
X   X X     X   X     X
X   X XXXXXXX  XXXXX     XXX
```

THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.

THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  1      ID
  2      ID ******************************************************************************
  3      ID ******************************************************************************
  4      ID ******************************************************************************
  5      ID  MODEL NAME: NE200245.DAT   Revised by PARSONS BRINCKERHOFF - December 2003
  6      ID
  7      ID  This model includes the following revisions to DMJM+HARRIS model
  8      ID  NE202USR.DAT dated December 2003.
  9      ID
 10      ID   1. The storage volumes for the NE-1, NE-2, NW-1, NW-2 and Southern Avenue
 11      ID      detention basins have been updated per the final basin geometry.
 12      ID
```

```
13    ID  2. The discharge rates for detention basins NW-1 and NW-2 have been revised
14    ID     to reflect the revisions to the outlet structures and emergency
15    ID     spillways.
16    ID
17    ID  3. The diversion at the box culvert system at Southern Avenue and Hawes
18    ID     Road was revised to simulate blockage of 2 barrels of the existing 3
19    ID     barrel box culvert under Southern.
20    ID
21    ID  4. The diversion at the lateral weir in the Southern Avenue Channel was
22    ID     revised to reflect the final weir geometry and rating analysis.
23    ID
24    ID ******************************************************************************
25    ID ******************************************************************************
26    ID ******************************************************************************
27    ID
28    ID  MODEL NAME: Ne2002us.DAT                Revised by DMJM+HARRIS - August 2003
29    ID
30    ID  This model includes various revisions to incorporate the Red Mountain Freeway
31    ID  in association with the University Drive to Southern Avenue.
32    ID
33    ID  CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:
34    ID
35    ID  1. In order to reflect the proposed 202 Freeway Loopand to facilitate design,
36    ID    drainage basins 18D, 18C and 24 were further subdivided.  Additional
37    ID    concentration points were added to provide discharges at more locations.
38    ID
39    ID  2. Drainage basin areas for 50 and 202A were modified to reflect design
40    ID    refinements to the Power to University segment of the Red Mountain Freeway
41    ID
42    ID ******************************************************************************
43    ID ******************************************************************************
44    ID
45    ID  MODEL NAME: Ne200235.DAT                Revised by DMJM+HARRIS - July 2002
46    ID
47    ID  This model includes various revisions to incorporate the Red Mountain Freeway
48    ID  in association with the 202L/US60 Traffic Interchange Design Concept Report.
49    ID
50    ID  CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:
51    ID
52    ID  1. In order to reflect the proposed 202 Freeway Loop, basin areas for 18C,
53    ID    23, 24, 31A and 31B were revised.  Drainage basins 18D, 202A, 202B, and
54    ID    202D were added.        Basin 38 was split into 38A and 38B due to the 202 Loop
55    ID
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

56    ID  2. Several concentration points have been added and basins have been routed
57    ID    to reflect the proposed Red Mountain Freeway alignment.
58    ID
59    ID  3. Existing detention basins (ADOT) have been removed and new detention
60    ID    basins are proposed as part of the freeway construction.
61    ID
62    ID  4. Modifications were made to the previous (Ne20030) model per the City of
63    ID    Mesa to remove the connection of the Southern Ave. Channel from the
64    ID    structure at Hawes Rd. and instead connect to the Hawes Channel south of
65    ID    the intersection.
66    ID
67    ID ******************************************************************************
68    ID ******************************************************************************
69    ID  ** Previous ** MODEL NAME: NE2002.DAT
70    ID
```

```
      71      ID  THIS MODEL COVERS THE AREA EAST OF HAWES ROAD AND THE SOSSAMAN
CHANNEL
      72      ID  MAJOR CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:
      73      ID
      74      ID   1. OLD SUBBASIN 18A HAS BEEN SPLIT INTO TWO SUBBASINS. SUBBASIN 18C
REMAINS
      75      ID     IN THIS MODEL AS PART OF THE HAWES CHANNEL INFRASTRUCTURE
      76      ID   2. OLD SUBBASIN 30 HAS BEEN SPLIT INTO SUBBASIN 30A AND SUBBASIN 30B.
      77      ID     SUBBASIN 30 GETS INTERCEPTED BY A CHANNEL ON THE NORTH SIDE OF
CORALBELL
      78      ID     AND GETS ROUTED TO SUBBASIN 31A. SUBBASIN 30B STILL GOES SOUTH
ALONG
      79      ID     ELLSWORTH ROAD
      80      ID   3. FOR THE 2002 YEAR CONDITION, ALL CAP DETENTION BASINS HAVE BEEN
PLACED IN
      81      ID     THE MODEL. THEIR OUTLET CHANNELS HAVE FOR THE MOST PART NOT BEEN
INCLUDED
      82      ID     IN THIS MODEL. THE OUTLET CHANNELS WILL BE IN THE FUTURE MODEL
      83      ID ******************************************************************************
      84      ID
      85      ID  SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
      86      ID  AREA NORTH OF SUPERSTITION FREEWAY
      87      ID
      88      ID
      89      ID  REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
      90      ID  TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS
      91      ID
      92      ID  FILENAME:  MESANE.DAT
      93      ID
      94      ID  THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
      95      ID  TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.
      96      ID
      97      ID  100-YEAR 24-HOUR FREQUENCY
      98      ID
      99      ID
     100      ID  METHODOLOGY
     101      ID  THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990
VER 4.0
     102      ID  SCS TYPE II RAINFALL DISTRIBUTION
     103      ID  S-GRAPH HYDROGRAPH
     104      ID  GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
     105      ID  NORMAL DEPTH STORAGE CHANNEL ROUTING
     106      ID  APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE
BEEN
     107      ID  EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL
SURVEYS
     108      ID  DATED 1994
     109      ID  THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
     110      ID
1                          HEC-1 INPUT                          PAGE  3

    LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

     111      ID  INITIAL STUDY PERFORMED BY LISA C. YOUNG
     112      ID  REVIEWED BY VALERIE A. SWICK
     113      ID  HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
     114      ID  DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
     115      ID
     116      ID  ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR
WASH/NATURAL
     117      ID  CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE
CHANNEL
```

```
118      ID
119      ID
120      ID   LAST UPDATED ON  3/13/98
121      ID
122      ID   UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE
FAMILY HOUSING
123      ID
124      ID  DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN
        *DIAGRAM
125      IT     5  1APR97   0000   1000
126      IO     5
127      IN    15
128      JD  3.600    .01
129      PC   .000   .002   .005   .008   .011   .014   .017   .020   .023   .026
130      PC   .029   .032   .035   .038   .041   .044   .048   .052   .056   .060
131      PC   .064   .068   .072   .076   .080   .085   .090   .095   .100   .105
132      PC   .110   .115   .120   .126   .133   .140   .147   .155   .163   .172
133      PC   .181   .191   .203   .218   .236   .257   .283   .387   .663   .707
134      PC   .735   .758   .776   .791   .804   .815   .825   .834   .842   .849
135      PC   .856   .863   .869   .875   .881   .887   .893   .898   .903   .908
136      PC   .913   .918   .922   .926   .930   .934   .938   .942   .946   .950
137      PC   .953   .956   .959   .962   .965   .968   .971   .974   .977   .980
138      PC   .983   .986   .989   .992   .995   .998  1.000
139      JD   3.58    1.0
140      JD   3.49    5.0
141      JD   3.38   10.0
142      JD   3.24   30.0
143      JD   3.10   60.0
144      JD   3.05   90.0
145      JD   3.00  120.0
146      JD   2.97  150.0
        *
        * DDM   ***** Updated *****

147      KK     42
148      KM   BASIN 42
149      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
150      KM   L=     3.1  Lca=     1.5  S=  60.9  Kn= .043  LAG= 51.6
151      KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
152      BA   1.75
153      LG    .32    .29   5.00    .31  10.00
154      UI   114.   114.   248.   441.   618.   773.   923.  1018.  1086.  1092.
155      UI  1041.   954.   806.   673.   573.   485.   415.   340.   290.   242.
156      UI   212.   175.   147.   121.   109.    78.    78.    78.    38.    28.
157      UI    28.    28.    28.    28.    28.    28.    28.     0.     0.     0.
158      UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        * DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


159      KK  42T51
160      RS    10   FLOW     -1
161      RC  0.08  0.055   0.08   7000  0.011
162      RX     0    600    700    710    720    730    830   1630
163      RY    10      5      3      0      0      3      5     10
        *
        * DDM   ***** Updated *****

164      KK     51
```

```
165     KM  BASIN 51
166     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
167     KM   L=    1.5  Lca=     .8  S=  54.4  Kn= .039  LAG=  27.3
168     KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
169     BA   1.24
170     LG   .29    .30   4.60    .37   18.00
171     UI   153.   416.   885.  1248.  1446.  1410.  1128.   817.   598.   428.
172     UI   311.   232.   163.   110.    99.    37.    37.    37.    37.    37.
173     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
174     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
      *
      * DDM   ***** Preserved *****

175     KK    C51
176     KM  COMBINE FLOWS FROM 42 AND 51
177     HC     2
      *
      * DDM   ***** Preserved *****

178     KK  51T53
179     KM   ROUTE 51 TO 53
180     RS     9   FLOW     -1
181     RC   0.08  0.055   0.08   8000   0.01
182     RX     0    100    200    210    220    230    330    430
183     RY     7      6      5      0      0      5      6      7
      *
      * DDM   ***** Updated *****

184     KK    44A
185     KM  BASIN 44A
186     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
187     KM   L=    2.8  Lca=    1.4  S=  54.5  Kn= .039  LAG=  43.6
188     KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
189     BA   1.59
190     LG   .20    .25   4.50    .45   45.00
191     UI   123.   123.   390.   597.   813.   994.  1114.  1180.  1153.  1063.
192     UI   881.   716.   588.   484.   397.   320.   259.   219.   189.   131.
193     UI   126.    84.    84.    75.    30.    30.    30.    30.    30.    30.
194     UI    30.    30.     0.     0.     0.     0.     0.     0.     0.     0.
195     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
      *
      * DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

196     KK  DIV44A
197     KM  DIVERT 80% OF THE LOW FLOWS WEST AND SOUTH TO 44B, 70% OF HIGH FLOWS
198     DT   D44A
199     DI     0    500   1000   3000
200     DQ     0    400    750   2100
      * DDM   ***** Updated *****

201     KK    43
202     KM  BASIN 43
203     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
204     KM   L=    1.9  Lca=     .9  S=  58.2  Kn= .036  LAG=  29.8
205     KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
206     BA   1.42
207     LG   .29    .30   4.70    .35   18.00
208     UI   161.   376.   827.  1212.  1470.  1531.  1375.  1047.   783.   584.
```

```
209     UI  434.  324.  251.  171.  127.  110.   59.   39.   39.   39.
210     UI   39.    0.    0.    0.    0.    0.    0.    0.    0.    0.
211     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *
       * DDM  ***** Preserved *****

212     KK   C43
213     KM   COMBINE 43 WITH DIVERTED FLOWS FROM 45A
214     HC    2
       *
       * DDM  ***** Preserved *****

215     KK  43T53
216     RS    12  FLOW    -1
217     RC  0.08  0.055  0.08  11250  0.009
218     RX     0   200   300   310   315   325   335   535
219     RY     6     3     2     0     0     2     3     6
       *
       * DDM  ***** Updated *****

220     KK    53
221     KM  BASIN 53
222     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
223     KM  L=    1.9  Lca=     .9  S=  63.5  Kn= .039  LAG= 31.8
224     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
225     BA   .78
226     LG   .29   .30  5.20   .28  20.00
227     UI   83.  189.  377.  486.  616.  903.  943.  707.  555.  428.
228     UI  291.  149.  123.   83.   38.   25.   25.   25.    0.    0.
229     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *
       * DDM  ***** Preserved *****

230     KK   C53
231     KM   COMBINE 53, 43 AND 51
232     HC    3
       *
       * DDM  ***** Updated *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

233     KK    54
234     KM  BASIN 54
235     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
236     KM  L=    1.5  Lca=     .8  S=  42.8  Kn= .044  LAG= 32.8
237     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
238     BA   .49
239     LG   .30   .29  5.40   .26  17.00
240     UI   50.  107.  221.  287.  359.  502.  603.  449.  358.  278.
241     UI  206.  110.   84.   55.   39.   15.   15.   15.   15.    0.
242     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
243     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *
       * DDM  ***** Preserved *****

244     KK   C54
245     KM  COMBINE 53 AND 54
246     HC    2
       *
       * DDM  ***** Preserved *****
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```
247      KK  DCAP12
248      KM  FLOWS SPLIT AT CAP AND SOUTHERN AVE, RATING CURVES BASED ON THREE
5X7 CBCs
249      KM  PART OF THE FLOW GOES SOUTH ACRSS SOUTHERN TO CAP 13 +14
250      DT  SOUTH
251      DI    0   450   1000   2500
252      DQ    0     0    275   1025
         *
         * DDM  ***** Preserved *****

253      KK  CAP12
254      RS    1   FLOW    -1
255      SV    0  0.238   2.72  13.37  36.82
256      SE 1563.6   1564   1566   1568   1570
257      SQ    0    30    188    574   1098
         *
         * DDM  ***** Preserved *****

258      KK  DR44A
259      KM  RETRIEVE DIVERTED FLOWS FROM 44A
260      DR  D44A
         *
         * DDM  ***** Preserved *****

261      KK  44ATB
262      KM  ROUTE 44A TO 44B, STREET AND SHEET FLOW THROUGH NEIGHBORHOODS
263      KM  NO CURB AND GUTTER
264      RS   15   FLOW    -1
265      RC  0.055  0.045  0.055   9000  0.008
266      RX    0   500   1010  1012.5  1022.5  1027.5  1532.5  2037.5
267      RY    6   5.5     3     0     0     3    5.5     6
         *
         * DDM  ***** Updated *****
1                          HEC-1 INPUT                          PAGE  7

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


268      KK   44B
269      KM  BASIN 44B
270      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
271      KM  L=    1.1 Lca=     .9  S=  64.8  Kn= .041  LAG=  26.2
272      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
273      BA  1.06
274      LG   .26    .24   6.60    .17  30.00
275      UI  136.   426.   715.   947.  1453.  1456.  1057.   775.   520.   251.
276      UI  180.   109.    42.    42.    42.     0.     0.     0.     0.     0.
277      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
         *
         * DDM  ***** Preserved *****

278      KK   C44B
279      KM  COMBINE 44A WITH 44B
280      HC    2
         *
         * DDM  ***** Preserved *****

281      KK  CAP10+
282      KM  COMBINED CAP 10 AND 11, SAME CONTRIBUTING AREA AND HYDRAULICALLY
CONNECTED
283      KM  STORAGE AND DISCHARGES WERE ADDED AT THE APPROPRIATE ELEVATIONS
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```
 284      RS     1   FLOW     -1
 285      SV     0   0.43   3.397  11.626   66.53
 286      SE  1562.4   1564   1566   1568   1570
 287      SQ     0    180    736   1684   2754
         *
         * DDM   ***** Preserved *****

 288      KK  RCAP11
 289      KM   ROUTE FLOWS FROM CAP OVERCHUTE #10 AND 11 TO ADOT WEST BASIN
 290      RK   2400  0.0003   0.013          TRAP     20      3
         *
         * DDM   ***** Preserved *****

 291      KK    C12
 292      KM   COMBINE ROUTED FLOWS FROM CAP #10 AND 11 WITH CAP #12
 293      HC      2
         *
         * DDM   ***** Preserved *****

 294      KK  ADOT-W
 295      KM   WEST ADOT DETENTION BASIN 4189, WEST OF CAP AND NORTH OF SUPERSITION
FREEWAY
 296      KM   FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
 297      KM       COUNTY
 298      KM       AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
 299      KM          A-N WEST, INC., FEBRUARY, 1987.
 300      RS     1   ELEV     36
 301      SV     0  12.35   63.5   210.3   367.5   535.1  667.85  713.55
 302      SE    36     38     40     44     48     52     55     56
 303      SL  36.0  28.27     .6     .5
 304      SS    55    200    2.6    1.5
         *
         * DDM   ***** Preserved *****
1                          HEC-1 INPUT                          PAGE  8

     LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 305      KK  RADOTW
 306      KM   ROUTE FLOWS IN CONCRETE CHANNEL TO CULVERTS UNDER SUPERSTITION
FREEWAY
 307      RS   1.75   FLOW     -1
 308      RC   .035  0.012   .035   4500   .0033
 309      RX      0    500   1000   1012   1020   1032   1532   2032
 310      RY     13   12.5     12      0      0     12   12.5     13
         *
         * DDM   ***** Updated *****

 311      KK    36B
 312      KM   BASIN 36B
 313      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 314      KM   L=     1.0  Lca=      .5  S=  45.0  Kn= .028  LAG=  15.0
 315      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 316      BA    .32
 317      LG    .30    .29   7.30    .11  16.00
 318      UI   125.   387.   715.   627.   361.   139.    58.    22.     0.     0.
 319      UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
         *
         * DDM   ***** Preserved *****

 320      KK    C36B
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```
321      KM  COMBINE FLOWS FROM ADOT BASIN W WITH SUB36
322      HC    2
323      ZW    A=ADOT WEST BASIN  B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
         *
         * DDM  ***** Preserved *****

324      KK  RSOUTH
325      KM  RETRIEVE FLOWS CROSSING SOUTHERN AT CAP
326      DR  SOUTH
         *
         * DDM  ***** Updated *****

327      KK    57
328      KM  BASIN 57
329      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
330      KM   L=     .3 Lca=     .1  S=  35.7 Kn= .044 LAG=  9.4
331      KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
332      BA   .18
333      LG   .37    .35   5.40    .25   2.00
334      UI  193.   566.   378.   149.    59.    19.    0.    0.    0.    0.
335      UI    0.     0.     0.     0.     0.     0.    0.    0.    0.    0.
         *
         * DDM  ***** Preserved *****

336      KK    C57
337      KM  COMBINE FLOWS CROSSING SOUTHERN AT CAP WITH THOSE OF SUBBASIN 57
338      HC    2
         *
         * DDM  ***** Preserved *****
1                          HEC-1 INPUT                          PAGE  9

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


339      KK  CAP13+
340      KM   CAP OVERCHUTES 13 AND 14 WERE COMBINED SINCE THY HAVE COMMON
DRAINAGE
341      KM   STORAGE AND DISCHARGES WERE ADDED AT SPECIFIED ELEVATIONS
342      RS    1   FLOW    -1
343      SV    0  1.198  2.601  5.746
344      SE   1564   1567   1568   1570
345      SQ    0    180    500   1143
         *
         * DDM  ***** Updated *****

346      KK    36A
347      KM  BASIN 36A
348      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
349      KM   L=     .3 Lca=     .2  S=  44.1 Kn= .028 LAG=  6.6
350      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
351      BA   .10
352      LG   .27    .34   6.00    .21  28.00
353      UI  201.   435.   101.     0.     0.     0.    0.    0.    0.    0.
354      UI    0.     0.     0.     0.     0.     0.    0.    0.    0.    0.
         *
         * DDM  ***** Preserved *****

355      KK   C36A
356      KM  COMBINE FLOWS FROM CAP OVERCHUTES INTO ADOT EAST DETENTION BASIN
357      HC    2
         *
         * DDM  ***** Preserved *****
```

```
358      KK  ADOT-E
359      KM  EAST ADOT DETENTION BASIN 4105, WEST OF CAP AND NORTH OF
SUPERSTITION
360      KM  FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
361      KM     COUNTY
362      KM     AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
363      KM        A-N WEST, INC., FEBRUARY, 1987.
364      RS    1   ELEV   49.5
365      SV    0   300    340
366      SE   49.5    60    61
367      SL   49.5  28.27    .6    .5
368      SS    60   200    2.6   1.5
369      ZW   A=ADOT EAST BASIN B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
         *
         * DDM   ***** Preserved *****

370      KK  CFAKE
371      KM  THIS IS JUST A FAKE CONCENTRATION POINT TO ELIMINATE THE ERROR THAT
SAYS TO
372      KM  "COMBINE HYDROGRAPHS MORE OFTEN".
373      HC    2
         *
         * DDM   ***** Updated *****
1                          HEC-1 INPUT                          PAGE 10

    LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


374      KK    52
375      KM  BASIN 52
376      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
377      KM  L=    1.6 Lca=     .7  S=  54.9 Kn= .035 LAG= 25.3
378      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
379      BA   .43
380      LG   .31   .31  6.60   .15  12.00
381      UI   58.  191.  311.  418.  657.  573.  419.  304.  176.   98.
382      UI   63.   30.   18.   18.   18.    0.    0.    0.    0.    0.
383      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
         * DDM   ***** Updated *****

384      KK    56
385      KM  BASIN 56
386      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
387      KM  L=     .9 Lca=     .5  S=  57.9 Kn= .040 LAG= 20.2
388      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
389      BA   .55
390      LG   .31   .24  7.30   .13  20.00
391      UI  106.  393.  593.  982.  870.  588.  362.  157.   97.   30.
392      UI   28.   28.    0.    0.    0.    0.    0.    0.    0.    0.
393      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
         *
         * DDM   ***** Preserved *****

394      KK   C56
395      KM   COMBINE 52 AND 56 BEHIND THE STOCK POND
396      KM   ASSUMING STOCK POND IS EFFECTIVE, DIVERTS FLOWS SOUTH ACROSS
SUPERSTITION
397      KM   STORAGE ROUTING WAS NOT PERFORMED, CHANNEL/PIPE CROSSING
398      HC    2
         *
```

```
          * DDM   ***** Preserved *****

399       KK  56T58
400       RS    3   FLOW    -1
401       RC  0.08  0.055   0.08   2500  0.004
402       RX    0   200   300   310   320   330   430   530
403       RY    6    4    3    0    0    3    4    6
          *
          * DDM   ***** Updated *****

404       KK    58
405       KM  BASIN 58
406       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
407       KM   L=    1.1  Lca=     .5  S=  50.4  Kn= .033  LAG=  18.3
408       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
409       BA   .95
410       LG   .34   .36   5.60   .22   4.00
411       UI  238.  813.  1261.  1998.  1385.  886.  384.  213.   76.   54.
412       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
413       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
          *
          * DDM   ***** Preserved *****
1                          HEC-1 INPUT                          PAGE 11

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


414       KK   C58
415       KM  COMBINE 58 WITH 56
416       KM  THE VOLUME AT THIS CONCENTRATION POINT WILL BE SPLIT BETWEEN THE
OVERCHUTES
417       KM  CAP1A AND CAP1B. THIS WILL BE MODELED AS FLAT TOP HYDROGRAPHS WITH
217 CFS
418       KM  VALUES FOR UI CARDS AT THESE OVERCHUTES
419       KM  NO DATA AVAILABLE ON CAP OVERCHUTE SIZING
420       ZW   A=CONCENTRATION POINT C58  B=FLOW TO OVERCHUTES  C=FLOW
F=OBSERVED
421       HC    2
          *

422       KK   46B
423       KM  BASIN 46B
424       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
425       KM   L=    1.4  Lca=     .7  S=  42.9  Kn= .073  LAG=  51.1
426       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
427       BA   .36
428       LG   .21   .24   4.00   .56   51.00
429       UI   24.   24.   59.   95.   118.   135.   156.   182.   232.   298.
430       UI  262.  217.   189.   161.   138.   117.   94.   61.   42.   39.
431       UI   31.   24.   21.    7.    7.    7.    7.    7.    7.    7.
432       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
433       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
          *

434       KK   D46B
435       KM   RETAIN 100 YEAR 2 HOUR, (16% FOR FUTURE DEVELOPMENT)
436       DT   D46     5
437       DI    0  10000
438       DQ    0  10000
          *

439       KK   CAP6
```

```
440     RS     1   FLOW     -1
441     SV     0  0.236  1.627  8.021
442     SE 1556.2   1558   1560   1562
443     SQ     0     52    180    350
        *

444     KK  RCAP6B
445     KM  CHANNEL PARAMETERS TAKEN FROM PLANS BY AMERICAN ENGINEERING
446     KM  FOR THE SUPERSTITION SKYLINE HIGH SCHOOL
447     KM  FLOW IS ROUTED ALONG THE TRANSMISSION LINE CORRIDOR
448     KM  ROUTE CONCENTRATION POINT CAP#6 TO SUBBASIN 29A (CRISMON CHANNEL)
449     RS     2   FLOW     -1
450     RC   .013   .013   .013   2300   .002
451     RX     0     39     40   45.5   53.5     59     60     99
452     RY   6.5    5.5    5.5      0      0    6.5    6.5    6.5
        *
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

453     KK    29A
454     KM   BASIN 29A
455     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
456     KM   L=      .9  Lca=      .4  S=  41.2  Kn= .107  LAG=  49.5
457     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
458     BA    .18
459     LG    .21    .24   4.00    .58   29.00
460     UI    12.    12.    33.    51.    63.    72.    84.    99.   131.   157.
461     UI   127.   107.    93.    78.    66.    56.    40.    24.    21.    19.
462     UI    12.    12.     5.     4.     4.     4.     4.     4.     4.     0.
463     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
464     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *

465     KK    D29A
466     KM    RETAIN 100 YEAR 2 HOUR, (73% FOR FUTURE DEVELOPMENT)
467     DT   D29A      9
468     DI     0  10000
469     DQ     0  10000
        *

470     KK    C29A
471     HC     2
        *
        * OVERTOPPING OF CRISMON ROAD CHANNEL REMOVED TO REFLECT FUTURE
CHANNEL

472     KK    45A
473     KM   BASIN 45A
474     KM    THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
475     KM   L=     2.0  Lca=     1.0  S=  70.4  Kn= .079  LAG=  66.1
476     KM    PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
477     BA    .62
478     LG    .21    .25   4.00    .60   19.00
479     UI    31.    31.    31.   101.   126.   150.   171.   187.   210.   238.
480     UI   273.   346.   409.   353.   303.   269.   243.   213.   190.   166.
481     UI   149.   120.    89.    56.    54.    52.    42.    31.    31.    22.
482     UI    10.    10.    10.    10.    10.    10.    10.    10.    10.     0.
483     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
484     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
```

```
485      KK   D45A
486      KM   RETAIN 100 YEAR 2 HOUR, (66% FOR FUTURE DEVELOPMENT)
487      DT   D29A     24
488      DI     0  10000
489      DQ     0  10000
         *

490      KK   D45A
491      KM   DIVERT 75% OF THE FLOW SOUTH,THE REMAINDER ALONG UNIVERSITY TO
NEXT SUBBASIN
492      KM   CHANNEL ALONG UNIVERSITY, SOME SHEET FLOW IS DIVERTED
493      DT  45ATB
494      DI     0   5000
495      DQ     0   4750
         *
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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


496      KK    55B
497      KM   BASIN 55B
498      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
499      KM   L=     3.5  Lca=     1.8  S=  48.6  Kn= .058  LAG=  79.5
500      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
501      BA   1.86
502      LG    .23    .25   4.10    .57   31.00
503      UI    79.    79.    79.   141.   269.   319.   374.   413.   451.   490.
504      UI   542.   600.   670.   821.   973.   999.   852.   753.   682.   628.
505      UI   569.   510.   465.   413.   376.   325.   252.   192.   139.   136.
506      UI   129.   124.    79.    79.    79.    54.    24.    24.    24.    24.
507      UI    24.    24.    24.    24.    24.    24.    24.     0.     0.     0.
508      UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
         *

509      KK   D55B
510      KM   RETAIN 100 YEAR 2 HOUR, (73% FUTURE DEVELOPMENT)
511      DT   D55B     92
512      DI     0  10000
513      DQ     0  10000
         *

514      KK   C55B
515      KM   COMBINE 55B WITH DIVERTED FLOWS FROM 45A
516      HC     2
         *

517      KK   CAP7
518      KM   ROUTE THROUGH CAP#7
519      RS     1   FLOW     -1
520      SV     0  0.167  0.309  0.539  24.52  85.75
521      SE 1560.5   1563 1564.27   1566   1568   1570
522      SQ     0     0    225    460    756   1017
         *
         * FOLLOWING ROUTING CHANGED TO REFLECT FUTURE LAND USE CHANGES FOR
         * PARKWOOD RANCH

523      KK  RD45A
524      KM  RETURN DIVERTED FLOWS FROM 45A
525      DR  45ATB
         *
```

```
526     KK  45ATB
527     KM  ROUTE REMAINDER OF FLOWS TO 45B
528     KM  STREET FLOW AND SHEET FLOW, NO DEFINED CHANNEL
529     RS    17   FLOW    -1
530     RC  0.055  0.035  0.055  10000  0.001
531     RX     0    500   1010  1012.5  1022.5  1027.5  1532.5  2037.5
532     RY     6    5.5     5     0     0     5    5.5     6
        *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

533     KK   45B
534     KM  BASIN 45B
535     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
536     KM   L=     1.9 Lca=     .9  S=  45.0  Kn= .052  LAG= 45.2
537     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
538     BA   .66
539     LG   .22    .25   6.00    .22   50.00
540     UI   49.    49.   159.   219.   266.   309.   368.   482.   614.   516.
541     UI  425.   363.   302.   252.   202.   124.    86.    80.    53.    49.
542     UI   22.    15.    15.    15.    15.    15.     0.     0.     0.     0.
543     UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *

544     KK   D45B
545     KM   RETAIN 100 YEAR 2 HOUR, (42% FOR FUTURE DEVELOPMENT)
546     DT   D45B    24
547     DI     0  10000
548     DQ     0  10000
        *

549     KK   C45B
550     KM  COMBINE FLOWS FROM 45A AND 45B
551     HC     2
        *

552     KK   CAP8
553     KM  ROUTE THROUGH CAP OVERCHUTE #8
554     RS     1   FLOW    -1
555     SV     0  1.449  9.494  43.04
556     SE  1562.1   1564   1566   1568
557     SQ     0    120    436    935
        *

558     KK   C7+8
559     KM  COMBINE FLOW FROM OVERCHUTES #7 & #8
560     KM  ROUTE FLOW FROM HERE THROUGH PARKWOOD RANCH
561     HC     2
        *

562     KK  RCAP78
563     KM  ROUTE CAP OVERCHUTE #7 & #8 TO SUBBASIN 29B, A ROUTING OF ABOUT 4000
FT
564     KM  CHANNEL DIMENSIONS FROM PARKWOOD RANCH
565     KM  (ADMP CHANNEL ID CN4)
566     RS     3   FLOW    -1
567     RC   .035   .035   .035   4000   .0033
568     RX     0    12    27    45    125    143    158    170
569     RY   6.5    4.5     3     0     0     3    4.5    6.5
```

```
*
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

570       KK   29B
571       KM   BASIN 29B
572       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
573       KM   L=     .8  Lca=     .5  S=  52.6  Kn= .092  LAG= 42.2
574       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
575       BA   .08
576       LG   .18   .25   4.00   .66   17.00
577       UI   6.    7.    23.    31.    36.    43.    53.    74.    75.    59.
578       UI   50.   41.   34.    27.    16.    11.    10.    6.     6.     2.
579       UI   2.    2.    2.     2.     2.     0.     0.     0.     0.     0.
580       UI   0.    0.    0.     0.     0.     0.     0.     0.     0.     0.
*

581       KK   D29B
582       KM   RETAIN 100 YEAR 2 HOUR, (98% FOR FUTURE DEVELOPMENT)
583       DT   D29B     5
584       DI    0  10000
585       DQ    0  10000
*

586       KK  C29B1
587       KM  COMBINE FLOWS FROM CAP #7 OVERCHUTE AND SUBBASIN 29B
588       HC    2
*

589       KK  C29B2
590       KM  COMBINE ROUTED FLOW FROM 29A WITH SUBBASIN 29B
591       HC    2
*

592       KK  TRANS
593       KM  ROUTE FLOW ALONG THE TRANSMISSION CORRIDOR
594       KM  ADJACENT TO SCHOOL SITE AND PARKWOOD RANCH
595       KM  (ADMP CHANNEL ID CN3)
596       RS    1   FLOW    -1
597       RC   .013   .013   .013   2600   .0015
598       RX    0    39    40    51    78    89    90    129
599       RY   6.5   5.5   5.5    0     0    5.5   5.5   6.5
*

600       KK   29C
601       KM   BASIN 29C
602       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
603       KM   L=     .9  Lca=     .5  S=  58.8  Kn= .074  LAG= 34.7
604       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
605       BA   .23
606       LG   .24   .25   5.70   .27   32.00
607       UI   23.   43.   95.   124.   153.   199.   280.   226.   180.   143.
608       UI   113.  77.   41.   36.    23.    15.    7.    7.    7.    7.
609       UI   0.    0.    0.    0.     0.     0.     0.    0.    0.    0.
610       UI   0.    0.    0.    0.     0.     0.     0.    0.    0.    0.
*
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LINE ID.....1.....2.....3.....4.....5.....6.....7.....8.....9.....10

```
611     KK   D29C
612     KM   RETAIN 100 YEAR 2 HOUR, (98% FOR FUTURE DEVELOPMENT)
613     DT   D29     17
614     DI    0  10000
615     DQ     0  10000
       *

616     KK  C29C2
617     KM  COMBINE ROUTED FLOWS FROM C29B2 AND C29C1
618     HC     2
       *

619     KK 29CTD1
620     KM  REACH PR-2, PR-3
621     KM  ROUTE FLOW ALONG SOUTH OF SCHOOL AND SOUTH ALONG CRISMON TO
SOUTHERN
622     KM  GRASS LINED CHANNEL
623     RS    1   FLOW    -1
624     RC  .045   .045   .045   2500  .0025
625     RX    0    20    40    69   109   139   147   155
626     RY   6.5   5.5   4.9    0    0   4.9   5.5   6.5
       *

627     KK    55
628     KM  BASIN 55
629     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
630     KM   L=     .5 Lca=     .2  S=  72.3  Kn= .081  LAG= 22.2
631     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
632     BA   .14
633     LG   .24   .24   4.60   .40  29.00
634     UI   21.   85.   128.   192.   243.   167.   116.   63.   35.   20.
635     UI   7.    7.    7.    0.    0.    0.    0.    0.    0.    0.
636     UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *

637     KK    D55
638     KM   RETAIN 100 YEAR 2 HOUR, (90% FOR FUTURE DEVELOPMENT)
639     DT   D55     9
640     DI    0  10000
641     DQ     0  10000
       *

642     KK   CAP9
643     RS    1   FLOW    -1
644     SV    0   2.03  10.075  43.569
645     SE  1562.1   1564   1566   1568
646     SQ    0   120   436   935
       *

647     KK  RCAP9
648     KM  ROUTE CAP OVERCHUTE #9 TO SUBBASIN 29D
649     KM  UNLINED CHANNEL THROUGH PARKWOOD RANCH
650     KM  DESIGN PLANS BY STANDAGE & TRUITT
651     KM  CHANNEL REVISED BY HOSKIN ENG.
652     KM  CHANNEL ID FOR THAT PART OF THE CHANNEL THAT CUT ACROSS 29D)
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

653     RS    3   FLOW    -1
654     RC  .035   .035   .035   4700  .0050
```

```
655     RX    0    16    30    40    50    60    74    90
656     RY   7.4   3.4   2.0    0    0   2.0   3.4   7.4
        *

657     KK   29D
658     KM   BASIN 29D
659     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
660     KM   L=    1.2  Lca=     .9  S=  40.7  Kn= .066  LAG= 47.8
661     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
662     BA   .65
663     LG   .21   .25   4.90   .35  43.00
664     UI   46.   46.   133.   196.   239.   275.   325.   390.   532.   552.
665     UI  439.   375.   319.   270.   225.   177.   111.   80.   75.   51.
666     UI   46.   26.   14.   14.   14.   14.   14.   14.   0.   0.
667     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *

668     KK   D29D
669     KM   RETAIN 100 YEAR 2 HOUR, (53% FOR FUTURE DEVELOPMENT)
670     DT   D29D    27
671     DI    0  10000
672     DQ    0  10000
        *

673     KK  D29D2
674     KM  DIVERT APPROXIMATLY 2/3 OF SUBBASIN 29D'S FLOW TO THE EAST. THIS
HAPPENS
675     KM  BECAUSE CHANNEL CN5 CUTS ACROSS SUBBASIN 29D. ONLY THOSE FLOWS TO
THE EAST OF
676     KM  THE CHANNEL GET INTO THE CHANNEL
677     DT  D29DE  10000
678     DI    0   100   200   500   800
679     DQ    0    66   132   330   528
        *
        *    *****KVM*****

680     KK  C29C3
681     KM  COMBINE FLOWS FROM C29C2, D29D2, AND RCAP9
682     HC    3
        *
        * RETENTION BASIN 5, OPTION 2

683     KK  BASIN5
684     KM  WITH 36-INCH OUTFALL
685     RS    1   STOR    -1
686     SA    0   3.9    11   13.7    14    14
687     SE  1518  1521  1523  1524  1528  1531
688     SL  1518  18.00   0.6   0.5
689     SS  1528   200   2.5   1.5
        *
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

690     KK  RBAS5
691     KM  REACH PR-1
692     KM  ROUTE FLOWS FORM 29D (WESTERN 1/3) TO SUBBASIN 36.  CRISMON AND
SOUTHERN TO
693     KM  THE SUPERSTITION FWY. (PREVIOUSLY CALLED 29DT36)
694     RS    1   FLOW    -1
695     RC  0.025  0.025  0.025   2150  0.0017
```

```
696     RX    0   20   25   32   44   60   68   76
697     RY  3.8  3.9    4    0    0    4  3.9  3.8
        *

698     KK  G29DE
699     KM  RECALL THE EASTERN 2/3 OF SUBBASIN 29D. THIS IS RECALLED 2600 FT EAST OF
700     KM  CRISMON RD.
701     DR  D29DE
        *
        * FOLLOWING ROUTE ADDED BY HOSKIN ENG.*

702     KK  29T36
703     KM  ROUTE FLOW FROM PARKWOOD RANCH THROUGH NEW UNLINED CHANNEL
704     KM  CROSS-SECTION MATCHES PARKWOOD RANCH CHANNEL
705     KM  (ADMP CHANNEL ID CN5)
706     RS    3  FLOW    -1
707     RC  .035  .035  .035  3000  .0050
708     RX    0   16   30   40   50   60   74   90
709     RY  7.4  3.4  2.0    0    0  2.0  3.4  7.4
        *

710     KK   36C
711     KM  BASIN 36C
712     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
713     KM   L=    1.2  Lca=     .6  S=  44.2  Kn= .020  LAG=  12.4
714     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
715     BA   .44
716     LG   .10   .25  4.65   .47  80.00
717     UI  266.  780.  1282.  724.  259.   83.   37.    0.    0.    0.
718     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *

719     KK   D36C
720     KM   RETAIN 100 YEAR 2 HOUR, (87% FOR FUTURE DEVELOPMENT)
721     DT   D36C    38
722     DI    0  10000
723     DQ    0  10000
        *

724     KK   C36
725     KM  COMBINE FLOWS IN CHANNEL ACROSS PARKWOOD RANCH (SUBBASIN 29D)
WITH SUBBASIN 3
726     HC    3
        *
        * DDM  ***** Preserved *****
1                          HEC-1 INPUT                          PAGE 19

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

727     KK  36T37
728     KM  ROUTE C36 TO C37 VIA ADOT CONCRETE CHANNEL
729     RS  1.76  FLOW    -1
730     RC  0.035  0.013  0.035  5280  0.0033
731     RX    0   500  1000  1012  1020  1032  1532  2032
732     RY   13  12.5    12    0    0    12  12.5    13
        *
        * DDM  ***** Updated *****

733     KK   30b
734     KM  BASIN 30b
735     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
```

```
736     KM   L=    1.5  Lca=     .9  S=  43.3  Kn= .060  LAG=  48.3
737     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
738     BA   .81
739     LG   .27   .27   4.00   .52  25.00
740     UI   57.   57.   161.   241.   296.   339.   400.   475.   645.   703.
741     UI  558.  475.   407.   344.   288.   236.   149.   101.    94.    71.
742     UI   57.   41.   17.   17.   17.   17.   17.   17.    0.    0.
743     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *
        * DDM   ***** Preserved *****

744     KK  30bT37
745     KM  ROUTE FLOWS FROM S30b TO C37 VIA NATURAL CHANNEL
746     RS   4.4   FLOW    -1
747     RC  0.040  0.035  0.040   2640  0.053
748     RX     0     2     3     4     7     8    28   528
749     RY     6     5     5     0     0     4   4.5     5
        * DDM   ***** Updated *****

750     KK    37
751     KM  BASIN 37
752     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
753     KM   L=    1.0  Lca=     .5  S=  45.0  Kn= .028  LAG=  15.0
754     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
755     BA   .47
756     LG   .31   .33   4.00   .49  14.00
757     UI  184.  569.  1051.   922.   531.   204.    85.    32.    0.    0.
758     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        * DDM   ***** Preserved *****

759     KK    C37
760     KM  COMBINE FLOWS FROM S37, S30, AND C36 AT C37
761     HC     3
        *
        * DDM   ***** Preserved *****

762     KK  ADOTEL
763     KM  ADOT DETENTION BASIN 4313 AT ELLSWORTH RD. AND SUPERSTITION
764     KM  FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
765     KM      COUNTY
766     KM      AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
767     KM        A-N WEST, INC., FEBRUARY, 1987.
1                          HEC-1 INPUT                          PAGE 20

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

768     RS     1   ELEV    56
769     SV     0   617   650
770     SE    56    74    75
771     SL    56  3.14   0.6   .05
772     SS    74   200   2.6   1.5
        *
        * DDM   ***** Preserved *****
        *
        * ******************************************************************************
        * Revised by DMJM to reflect Red Mountain Freeway Design Concepts
        * ******************************************************************************
        *

773     KK  37T38A
774     KM  ROUTE FLOWS FROM C37 TO C38A VIA ADOT CONCRETE CHANNEL
```

```
775     RS   1.76   FLOW    -1
       *
776     RC  0.035  0.012  0.035   3620 0.0045
777     RX     0   500   1000   1012   1020   1032   1532   2032
778     RY    13   12.5    12      0      0     12   12.5     13
       *
       * Revised by DMJM to reflect Red Mountain Freeway Design Concepts
       *
       * DDM   ***** Inserted *****

779     KK    38A
780     KM   BASIN 38A
781     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
       *   KM L=    1.1 Lca=     .8  S=  37.0 Kn= .063  LAG= 50.8
782     KM   L=    1.1 Lca=     .8  S=  37.0 Kn= .063  LAG= 43.8
783     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
784     BA  .3275
785     LG   .25   .29   4.25   .44  31.00
786     UI   25.   25.   87.   116.   141.   164.   198.   266.   316.   249.
787     UI  209.   175.   145.   121.   85.   50.   43.   34.   25.   18.
788     UI   8.   8.   8.   8.   8.   8.   0.   0.   0.   0.
789     UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *
       *   Old Parameters from the Previous Subbbasin 38
       *   BA  .47
       *   LG  .25   .29   4.25   .44  31.00
       *   UI  31.   31.   78.   127.   156.   179.   207.   242.   313.
       *   UI 340.   282.   247.   209.   179.   152.   119.   77.   55.
       *   UI  39.   31.   25.   10.   10.   10.   10.   10.   10.
       *   UI   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *   UI   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *
       * ******************************************************************************
       *   ***** Revisions by DMJM to document original design *****
       *
       * ***** Original ADOT On-line Detention Basin per URS Final Drainage Report ***
       *
       * KKHDET12
       * KM ONLINE DETENTION POND #12 - UPSTREAM FROM HAWES RD. (STA. 992+00 -
997+00)
       * RS   1.    ELEV  1439.8
       * SV   0.   0.11   1.81   5.73   8.84   9.92  10.78
       * SE1439.8  1441.8  1443.8  1445.8  1447.3  1447.8  1448.2
       * SQ          0.   52.0  100.0  132.0  152.0  209.0  285.0
       *
       * ***** Original ADOT On-line Detention Basin per URS Final Drainage Report ****
       *
       * KKHDET11
       * KM ONLINE DETENTION POND #11 - UPSTREAM FROM HAWES RD. (STA. 977+00 -
972+00)
       * RS   1.    ELEV  1427.8
       * SV   0.   0.11   1.87   5.88   7.10   7.96  10.09
       * SE1427.8  1429.8  1431.8  1433.8  1434.4  1434.8  1435.8
       * SQ          0.   52.0  100.0  132.0  140.0  162.0  279.0
       *
       * ******************************************************************************
       *
       * Revise interval to read hydrograph more accurately
       *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
790     IN    5
      *

791     KK   202D
792     KM   BASIN 202D
793     KM   Hydrograph created from onsite Rational Calulations and SCS Distribution
794     KM    A = 15.93 acres, C = 0.80, Tc = 15.33 min.
795     BA  .0249
796     QI    1    1    1    1    1    1    1    1    1    1
797     QI    1    1    1    1    1    1    1    1    1    1
798     QI    1    1    1    1    1    1    1    1    1    1
799     QI    1    1    1    1    1    1    1    1    1    1
800     QI    1    1    1    1    1    1    1    1    1    1
801     QI    1    1    1    1    1    1    1    1    1    1
802     QI    1    1    1    1    1    1    1    1    1    1
803     QI    1    1    1    2    2    2    2    2    2    2
804     QI    2    2    2    2    2    2    2    2    3    3
805     QI    3    3    3    3    4    4    4    6   10   15
806     QI   19   26   40   71  100   94   69   48   35   25
807     QI   17   11    8    6    5    4    4    3    3    3
808     QI    3    3    3    2    2    2    2    2    2    2
809     QI    2    2    2    2    2    2    2    2    1    1
810     QI    1    1    1    1    1    1    1    1    1    1
811     QI    1    1    1    1    1    1    1    1    1    1
812     QI    1    1    1    1    1    1    1    1    1    1
813     QI    1    1    1    1    1    1    1    1    1    1
814     QI    1    1    1    1    1    1    1    1    1    1
815     QI    1    1    1    1    1    1    1    1    1    1
816     QI    1    1    1    1    1    1    1    1    1    1
817     QI    1
      *

818     KK   C38A
819     KM   COMBINE FLOWS FROM BASIN 38A WITH ADOT DETENTION OUTLET     AND
FREEWAY'S 202D
820     HC    3
      *
      * **** Revised by DMJM to reflect Red Mountain Freeway 30% Design Concepts ****
      *

821     KK  202NE1
822     KM   On-line Detention Basin estimated for 202L/US60 Traffic Interchange DCR
823     KM   Basin is located Northeast of the 202L/US60 Traffic Interchange - Upper Basin
824     RS    1   ELEV  1436.2
      *
      * SV  0    0.2    2.3    6.4   14.9   29.2   36.7   44.4   52.3   60.4
      *
      * *** Revised by PB to reflect final basin geometry ****
      *
825     SV    0    0.4    2.8    6.4   14.3   28.8   36.4   44.1   52.0   60.7
826     SE  1436.2  1437.0  1438.0 1438.73  1440.0  1442.0  1443.0  1444.0  1445.0  1446.0
      *  ***** Double 30 inch dia. RCP Outlet Pipe *****
827     SQ    0    0    0    0   43   69   79   88   96  103
      *
      *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

828     KK  202NE2
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```
829     KM  On-line Detention Basin estimated for 202L/US60 Traffic Interchange DCR
830     KM  Basin is located Northeast of the 202L/US60 Traffic Interchange - Lower Basin
831     RS    1   ELEV  1433.9
        *
        * SV  0   0.7   4.2   8.9   13.9   19.0   24.3   29.7   35.4   41.3
        *
        * *** Revised by PB to reflect final basin geometry ****
        *
832     SV    0   0.9   3.7   8.1   12.8   17.8   22.8   28.2   33.5   40.1
833     SE  1433.9  1435.0  1436.0  1437.0  1438.0  1439.0  1440.0  1441.0  1442.0  1443.0
        *  ***** Single 24 inch dia. RCP Outlet Pipe *****
834     SQ    0   5.0   12.8   20.7   25.1   29.1   32.7   36.0   39.1   42.0
        *
        *
        * DDM   ***** Updated *****

835     KK   17A
836     KM  BASIN 17A
837     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
838     KM  L=     .7  Lca=     .5  S=  60.6  Kn= .042  LAG=  18.5
839     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
840     BA   .18
841     LG   .26   .28   4.00   .55  33.00
842     UI   44.   151.   233.   375.   265.   171.   77.   42.   16.   10.
843     UI   10.   0.   0.   0.   0.   0.   0.   0.   0.   0.
844     UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
        *
        * DDM   ***** Preserved *****
        * Revised by DMJM to reflect Red Mountain Freeway Design Concepts
        *   KK17AT23
        *   KM ROUTE FLOWS FROM 17 TO 23 VIA DIRT CHANNEL, THEN NATURAL WASH
        *   RS   3   FLOW    -1
        *   RC 0.045   0.032   0.045   2600   0.015
        *   RX   0   100   133   137   142   147   200   300
        *   RY   5   4   3.5   0   0   3.5   4   5
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *
        * DDM   ***** Updated *****

845     KK   49
846     KM  BASIN 49
847     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
848     KM  L=    1.6  Lca=     .8  S=  73.6  Kn= .040  LAG=  28.4
849     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
850     BA   .79
851     LG   .30   .30   4.15   .48  14.00
852     UI   94.   257.   467.   603.   836.   1129.   839.   643.   482.   296.
853     UI   161.   117.   74.   29.   29.   29.   0.   0.   0.   0.
854     UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
        *
        * DDM   ***** Preserved *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

855     KK   CAP2
856     RS    1   FLOW    -1
857     SV    0   0.02  0.538   2.545  13.729
858     SE  1565.1   1566   1568   1570   1572
859     SQ    0   60   340   807   1395
```

```
        *
860       KK  BASIN2
        * KO    1
861       KM      NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP2
862       KM      WITH 24-INCH OUTFALL     (EH1B)
863       RS     1   STOR     -1
864       SA     0    .54   1.81   4.10   5.14    6.3    6.3    6.3
865       SE    49     51     52     53     54     55     64     67
866       SL    50   3.14    .62     .5
867       SS  56.5    100    2.5    1.5
        *

868       KK  RCAP2A
869       KM  ROUTE BASIN 2 OUTFLOW THROUGH 36-INCH PIPE
870       RK   1370  0.0088  0.012          CIRC     3
        *
        * DDM   ***** Preserved *****

871       KK  RCAP2
        *
872       KM  ROUTE CAP OVERCHUTE #2 South to Broadway Road at C17A
        *
873       RS    10   FLOW     -1
        *
874       RC   .045   .040   .045   1100   .012
        *
875       RX   100    200    300    316    321    329    429    529
876       RY     6      5      3      0      0      3      5      6
        *
        *

877       KK   C17A
878       KM   COMBINE FLOWS FROM CAP OVERCHUTE #2 AND S17A
879       HC     2
        *
        * DDM   ***** Updated *****

880       KK    48
881       KM  BASIN 48
882       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
883       KM   L=     1.6 Lca=      .8  S=  80.2  Kn= .038  LAG=  26.4
884       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
885       BA   .77
886       LG   .31    .31   4.10    .49  12.00
887       UI   98.   305.   517.   682.  1035.  1076.   777.   573.   390.   190.
888       UI  136.    85.    30.    30.    30.     0.     0.     0.     0.     0.
889       UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        * DDM   ***** Preserved *****
1                              HEC-1 INPUT                              PAGE 24

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


890       KK   CAP3
891       RS     1   FLOW     -1
892       SV     0  0.934  1.222  4.303  13.13
893       SE  1564.6  1567.5   1568   1570   1572
894       SQ     0      0    143    750   1530
        *
```

```
895     KK  BASIN3
       * KO    1     2
896     KM      NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP3
897     KM      WITH 30-INCH OUTFALL    BASIN AE2B (BASIN 3)
898     RS     1   STOR     -1
899     SA     0    .5     1    1.8    3.4     4     6     6
900     SE    55    56    57    58    59    60    62    65
901     SL  56.25   4.91   .62    .5
902     SS    62   100   2.5   1.5
       *
       * DDM   ***** Preserved *****

903     KK  RCAP3A
904     KM  ROUTE CAP OVERCHUTE #3 TO APACHE TRAIL (ALONG NATURAL CHANNEL)
905     RS   3.3   FLOW    -1
906     RC   .055   .045   .055   2000   .020
907     RX    100    200    300    305    310    315    415    515
908     RY      7      6      5      0      0      5      6      7
       *
       * DDM   ***** Preserved *****

909     KK  RCAP3B
910     KM  ROUTE CAP OVERCHUTE #3 FROM APACHE TRAIL TO 17B
911     RS     1   FLOW    -1
912     RC   .045   .035   .045   2300   .01
913     RX    100    200    300    301    311    312    412    512
914     RY      3      2      1      0      0      1      2      3
       *
       * DDM   ***** Updated *****

915     KK    17B
916     KM  BASIN 17B
917     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
918     KM   L=     .8  Lca=     .6  S=  50.0  Kn= .042  LAG=  21.2
919     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
920     BA    .22
921     LG    .26    .28   4.00    .54   30.00
922     UI   37.   146.   220.   348.   372.   252.   169.    77.    47.    23.
923     UI   11.    11.     0.     0.     0.     0.     0.     0.     0.     0.
924     UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
       *
       * DDM   ***** Preserved *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

925     KK   C17B
926     KM   COMBINE FLOWS FROM CAP OVERCHUTE #3 AND S17B
927     HC     2
       *
       *   * DDM   ***** Preserved *****
       *   KK17BT22
       *   KM ROUTE FLOWS FROM S17 TO C22 VIA LINED CHANNEL
       *   RS    3   FLOW    -1
       *   RC 0.035   0.015   0.035   2700  0.0114
       *   RX    0     1     3     6    18    21    36    70
       *   RY 6.25   6.10     6     0     0     3  3.25   3.5
       *

928     KK   C17C
929     KM   COMBINE FLOWS FROM C17A AND C17B
```

```
930     HC     2
       *

931     KK  17CT23
932     KM   ROUTE FLOWS FROM C17C TO C23A
       *
933     RS     2   FLOW     -1
934     RC  0.035  0.025  0.035   3000  0.0083
935     RX     0     9    24     54    66    96   111   120
936     RY     8   5.3     5     0     0     5   5.3     8
       *
       * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
       *

937     KK    18F  BASIN
938     KM   BASIN 18F
939     KM    THIS IS THE FUTURE SUBBASIN CREATED BY 202L BISECTING 18C
940     BA   0.048
941     LG   0.14   0.32   4.00   0.43     5
942     UI   119    217    31     0     0     0     0     0     0     0
943     UI    0     0     0     0     0     0     0     0     0     0
       *

944     KK  R18FTE
945     KM   ROUTE FLOWS FROM 18F TO C18E VIA CHANNEL ON EAST SIDE OF FREEWAY
946     RS     2   FLOW     -1
947     RC  0.035  0.016  0.035   2570  0.0123
948     RX     0     9    24     36    44    56    71    80
949     RY     9   6.3     6     0     0     6   6.3     9
       *
       *

950     KK    18E  BASIN
951     KM   BASIN 18E
952     KM    THIS IS THE FUTURE SUBBASIN CREATED BY 202L BISECTING 18C
953     BA   0.082
954     LG   0.11   0.31   4.00   0.49    28
955     UI   203    371    53     0     0     0     0     0     0     0
956     UI    0     0     0     0     0     0     0     0     0     0
       *
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

957     KK  RET18E
958     KM    RETAIN THE 100 YEAR 2 HOUR VOLUME (27% OF BASIN HAS RETENTION)
959     DT    D18E   2.32
960     DI     0  10000
961     DQ     0   2700
       *

962     KK    C18E
963     KM    COMBINE FLOWS FROM BASIN 18E AND 18F
964     HC     2
       *
       *

965     KK  18ET23
966     KM   ROUTE FLOWS FROM C18E TO C23 VIA CONCRETE CHANNEL ON EAST SIDE OF
FREEWAY
967     RS     1   FLOW     -1
```

```
968      RC  0.035  0.016  0.035   1860  0.0107
969      RX     0     9    24    36    44    56    71    80
970      RY     9   6.3     6     0     0     6   6.3     9
        *

971      KK   C23A
972      KM   COMBINE FLOWS FROM C17C AND C18E
973      HC     2
        *

974      KK  R23ATB
975      KM  ROUTE FLOWS FROM C23A TO C23B VIA CONCRETE CHANNEL ON EAST SIDE OF
FREEWAY
976      RS     1   FLOW    -1
977      RC  0.035  0.016  0.035   1120  0.0086
978      RX     0     9    24    36    44    56    71    80
979      RY     9   6.3     6     0     0     6   6.3     9
        *

980      KK    23  BASIN
981      KM   BASIN 23
982      BA  0.169
983      LG   0.22   0.26   4.10   0.54    30
984      UI    38    137    206    337    257    168     82     43     20      9
985      UI     9      0      0      0      0      0      0      0      0      0
986      UI     0      0      0      0      0      0      0      0      0      0
        *  KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        *  *    KM  L=     1.0  Lca=     .3  S=  65.0  Kn= .038  LAG=  16.2
        *  KM  L=      .6  Lca=      .2  S=  58.6  Kn= .068  LAG=  19.9
        *
        *  KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
        *  BA .1750
        *  LG  .28    .30   4.00    .47  20.00
        *  UI  35.   129.   195.   325.   274.   184.   108.    50.    28.
        *  UI   9.     0.     0.     0.     0.     0.     0.     0.     0.
        *  UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
        *    BA  .28
        *    LG  .28    .30   4.00    .53  20.00
        *    UI  92.   296.   509.   595.   357.   170.    77.    28.    18.
        *    UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
        *    UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

987      KK  RET23
988      KM   RETAIN THE 100 YEAR 2 HOUR VOLUME (18% OF BASIN HAS RETENTION)
989      DT   D23   2.79
990      DI     0  10000
991      DQ     0   1800
        *

992      KK   C23B
993      KM   COMBINE FLOWS FROM C23A AND BASIN 23
994      HC     2
        *
        * DDM   ***** Updated *****

995      KK    47
996      KM   BASIN 47
```

```
997      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
998      KM   L=    3.0  Lca=    1.5  S=  51.2  Kn= .037  LAG=  44.8
999      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1000     BA   1.67
1001     LG   .32   .32   4.00   .49   8.00
1002     UI   126.  126.  418.  569.  691.  804.  959.  1272.  1579.  1302.
1003     UI  1079.  920.  765.  631.  492.  300.  218.  205.  126.  126.
1004     UI   42.   39.   39.   39.   39.   39.    0.    0.    0.    0.
1005     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *
       * DDM   ***** Preserved *****
       * KKCAP4+5
       * KM ROUTE THROUGH OVERCHUTES 4 AND 5, HUYDRAULICALLY CONNECTED
       * KM STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
       * RS    1   FLOW    -1
       * SV    0  0.081  0.483  4.779  39.02  121.88
       * SE1568.3   1570   1572   1574   1576   1578
       * SQ    0    170    575   1085   1245   1410
       *

1006     KK  BASIN4
1007     KM   ROUTE THROUGH OVERCHUTES 4 AND 5, HYDRAULICALLY CONNECTED
1008     KM   STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
1009     KM  OUTFLOW THROUGH ONE 30-INCH PIPE
1010     KM       BASIN4 (BY4B)
1011     RS     1   STOR     -1
1012     SA     0   0.64    2.3   5.28   6.88   9.41
1013     SE    68     69     70     71     72     76
1014     SL  69.75   4.91    .62     .5
1015     SS    74    200    2.5    1.5
       *
       * DDM   ***** Preserved *****

1016     KK  RCAP4
1017     KM  ROUTE CAP OVERCHUTE #4 AND #5 TO SUBBASIN 22
1018     RS    10   FLOW     -1
1019     RC   .05   .045    .05   6000   .005
1020     RX   100    200    300    304    310    314    414    514
1021     RY     6      5      4      0      0      4      5      6
       *
       * DDM   ***** Updated *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1022     KK    22
1023     KM   BASIN 22
1024     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1025     KM   L=    1.2  Lca=     .3  S=  51.3  Kn= .041  LAG=  19.5
1026     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1027     BA   .41
1028     LG   .27   .28   4.00   .54  29.00
1029     UI   86.  310.  470.  782.  624.  415.  227.  109.   56.   21.
1030     UI   21.    0.    0.    0.    0.    0.    0.    0.    0.    0.
1031     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       * DDM   ***** Preserved *****

1032     KK   C22A
1033     KM   COMBINE FLOWS FROM CAP OVERCHUTES 4 & 5 AND SUBBASIN 22
1034     HC     2
       *
```

```
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *
        *   * DDM   ***** Preserved *****
        *   KK  C22
        *   KM COMBINE S17B AND S22
        *   HC    2
        *   * DDM   ***** Preserved *****

1035      KK  22AT23
1036      KM   ROUTE C22A TO C23 VIA CONCRETE CHANNEL
1037      KM   VELOCITY = 5FT/S
1038      RS     2   FLOW     -1
        *
1039      RC  0.045  0.022  0.042   1600  0.001
        *
1040      RX     0    102    103    106   1021    124    128    270
1041      RY     7    6.5     6     0     0     3     5     7
        *
        * DDM   ***** Preserved *****
        *
        * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
        *

1042      KK    C23C
        *
1043      KM   COMBINE FLOWS FROM C22A AND C23C
1044      HC     2
        *
        *   * DDM   ***** Preserved *****
        *   KK 23T24
        *   KM ROUTE FLOWS FROM C23 TO C24 VIA CONCRETE LINED CHANNEL
        *   RS    2   FLOW     -1
        *   RC 0.045   0.022  0.045   2640  0.0117
        *   RX    0     2     3     6    21    24    26    70
        *   RY    6     6     6     0     0     3     5     6
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *
1                          HEC-1 INPUT                          PAGE 29

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1045      KK  RC23
1046      KM   ROUTE FLOWS FROM C23 TO C31a VIA CONCRETE LINED CHANNEL
1047      RS     3   FLOW     -1
1048      RC  0.035  0.016  0.035   4120  0.0054
1049      RX     0     7    19    33    47    61    73    80
1050      RY     9   7.3     7     0     0     7   7.3     9
        *
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *
        *
        * DDM   ***** Updated *****

1051      KK    30a
1052      KM   BASIN 30a
1053      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1054      KM   L=     1.2  Lca=      .7  S=  48.8  Kn= .060  LAG=  38.1
1055      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1056      BA    .30
```

```
1057      LG   .27   .28  3.91   .53  28.00
1058      UI   27.   42.  104.  138.  166.  204.  281.  329.  251.  208.
1059      UI  167.  135.   96.   54.   45.   32.   27.    9.    8.    8.
1060      UI    8.    8.    0.    0.    0.    0.    0.    0.    0.    0.
1061      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *
        * DDM   ***** Preserved *****

1062      KK  30at31
1063      KM  ROUTE SUBBASIN 30A IN VARIOUS CHANNELS UNTIL IT COMBINES WITH
SUBBASIN 31A
1064      KM  AT THE CORNER OF 88TH ST AND SOUTHERN.  IN REALITY THIS ROUTING
COULD BE
1065      KM  BROKEN UP INTO POSSIBLY 3 DIFFERENT ROUTINGS DUE TO CHANGES IN HOW
THE
1066      KM  ROUTING IS ACCOMPLISHED, IE. CEMENT CHANNEL, EARTH LINED CHANNEL
AND OPEN
1067      KM  WASH. THE PARAMETERS WILL TRY TO BE AN AVERAGE FOR THE ENTIRE
REACH
1068      RS    4  FLOW    -1
1069      RC  .038  .030  .038  5000  .005
1070      RX    0    15    25    40    60    75    85   100
1071      RY    8     6     3     2     2     3     6     8
        *
        *
        * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
        *  ** Additional Refinements were made with the University to Southern Segment
        *
        * DDM   ***** Preserved *****

1072      KK  C31A1
1073      KM   COMBINE FLOWS FROM SUBBASIN 30A, AND C23
1074      HC     2
        *
        * DDM   ***** Updated *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1075      KK    31A
1076      KM   BASIN 31A
1077      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1078      KM   L=     1.0  Lca=     .5  S=  43.3  Kn= .064  LAG=  22.5
1079      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1080      BA  .5127
1081      LG   .29   .29  4.15   .46  18.00
1082      UI   77.  299.  454.  675.  882.  614.  430.  249.  130.   78.
1083      UI   27.   24.   24.    0.    0.    0.    0.    0.    0.    0.
1084      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *   BA  .53
        *   LG  .29   .29  4.15   .46  18.00
        *   UI  80.  312.  472.  702.  919.  639.  448.  259.  135.
        *   UI  28.   25.   25.    0.    0.    0.    0.    0.    0.
        *   UI   0.    0.    0.    0.    0.    0.    0.    0.    0.
        *

1085      KK   202C
1086      KM   BASIN 202C
1087      KM   Hydrograph created from onsite Rational Calulations and SCS Distribution
1088      KM    A = 6.66 acres, C = 0.95, Tc = 13.33 min.
1089      BA  .0104
```

```
1090     QI    1    1    1    1    1    1    1    1    1    1
1091     QI    1    1    1    1    1    1    1    1    1    1
1092     QI    1    1    1    2    4    5    7    9   14   26
1093     QI   34   30   20   14   10    7    5    3    2    2
1094     QI    1    1    1    1    1    1    1    1    1    1
1095     QI    1    1    1    1    1    1    1    1    1    1
1096     QI    1    1
       *
       *
       * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
       *  ** Additional Refinements were made with the University to Southern Segment
       *
       * DDM  ***** Preserved *****

1097     KK  C31A2
1098     KM   COMBINE FLOWS FROM SUBBASIN 30A, SUBBASIN 31A, C23, AND SUBBASIN
202C
1099     HC    3
       *
       *
       * **** Revised by DMJM to reflect Red Mountain Freeway 30% Design Concepts ****
       *

1100     KK  R202S
1101     KM  On-line Detention Basin estimated for 202L/US60 Traffic Interchange DCR
1102     KM   Basin located on the east side of the 202L Freeway north of Southern Ave.
1103     KM   Principal Outlet Structure consists of 1 - 10'x6' RCB.
       *  RS   1   ELEV  1446.0
       *  SV   0   0.2   1.4   4.3   9.5  17.5  28.6  52.9  78.4
       *  SE1446.0 1447.0 1448.0 1449.0 1450.0 1451.0 1452.0 1454.0 1456.0 14
       *  SQ   0  46.3  92.6  164.1  245.7  333.9  425.9  604.9  804.7  8
       *
       * **** Revised by DMJM to reflect 202L/US60 - Phase 2 - 30% Design Concepts ****
       *
1                          HEC-1 INPUT                          PAGE 31

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1104     RS    1   ELEV  1444.0
       * SV  0   0.2   1.4   4.3   9.5  17.5  28.6  52.9  78.4  91.3
       * SE1444.01445.0 1446.0 1447.0 1448.0 1449.0 1450.0 1452.0 1454.0 1455.0
       * SQ  0  46.1  92.2  163.8  245.3  333.3  425.7  604.8  803.6  826.1
       *
       * *** Revised by PB to reflect final culvert geometry and basin geometry ***
       *
1105     SV    0   1.0   2.0   4.6   8.9  16.2  25.7  37.3  49.2  61.6
1106     SV   74.2
1107     SE 1444.0 1445.0 1446.0 1447.0 1448.0 1449.0 1450.0 1451.0 1452.0 1453.0
1108     SE 1454.0
1109     SQ    0  46.1  92.2  163.8  245.0  333.3  425.7  516.7  604.1  685.4
1110     SQ  760.8
       *
       * ***** Onsite 202L Runoff *****
       *

1111     KK   202A
1112     KM   BASIN 202A
1113     KM   Hydrograph created from onsite Rational Calulations and SCS Distribution
1114     KM    A = 56.9 acres, C = 0.76, Tc = 22.9 min.
1115     BA  .0889
1116     QI    0    0    1    1    2    2    2    3    3    3
1117     QI    3    3    3    3    4    4    4    4    4    4
```

```
1118      QI    4    4    5    5    5    5    6    6    6    7
1119      QI    8    9   14   20   28   38   55   90  137  163
1120      QI  155  127   96   73   54   39   27   20   15   12
1121      QI   10    8    7    6    6    5    5    5    5    5
1122      QI    4    4    4    4    4    4    4    3    3    3
1123      QI    3    3    3    3    2    2    1    1
        *

1124      KK  R202A
1125      KM  ROUTE FLOWS FROM Broadway Road to C202B
1126      RK  6000.  0.0016  0.013        CIRC    6.0
        *

1127      KK   202B
1128      KM   BASIN 202B
1129      KM   Hydrograph created from onsite Rational Calulations and SCS Distribution
1130      KM    A = 35.73 acres, C = 0.84, Tc = 17.67 min.
1131      BA   .0558
1132      QI    0    0    1    1    2    2    2    2    2    2
1133      QI    2    2    2    2    2    3    3    3    3    3
1134      QI    3    3    3    3    4    4    4    4    5    5
1135      QI    6    7   12   17   24   32   48   82  121  125
1136      QI  101   73   53   39   27   18   13    9    7    6
1137      QI    5    5    4    4    4    3    3    3    3    3
1138      QI    3    3    3    3    3    2    2    2    2    2
1139      QI    2    2    2    2    1    1
        *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1140      KK  C202B
1141      KM   COMBINE FLOWS FROM SUBBASIN 202A WITH SUBBASIN 202B
1142      HC     2
        *
        *

1143      KK  R202B
1144      KM  ROUTE FLOWS FROM C202B TO C202C
1145      RK  3200.  0.0010  0.013        CIRC    5.0
        *
        *

1146      KK  C202C
1147      KM   COMBINE FLOWS FROM C202B WITH C31A
        * KO  1
1148      HC     2
        *

1149      KK RT202C
1150      KM  ROUTE FLOWS ALONG SOUTHERN AVE FROM 202L TO HAWES ROAD.
1151      RS     1   FLOW    -1
1152      RC   .025   .015   .025    683  0.0010
1153      RX     0     4    16    28    44    56    68    72
1154      RY   7.3   6.3   6.0     0     0   6.0   6.3   7.3
        *
        *  *** REVISED BY DMJM+HARRIS PER CITY OF MESA COMMENTS ***
        *

1155      KK DSPILL
1156      KM  DIVERT FLOW SW TOWARD HAWES CHANNEL VIA 10x4 RCB
```

```
1157      KM   REMAINDER FLOWS SOUTH VIA SIDE CHANNEL WEIR (L=165') TO NW BASINS
1158      DT   DHAWS
        *
        * *** Flow Split rating from HEC-RAS model and channel w/ weir (L=165') ***
        * DI  0    104    185    461    527    579    618    674    719
        * DQ  0    104    140    162    189    208    217    224    225
        *
        * *** Revised by PB to reflect final lateral weir goemetry and lateral ***
        * *** weir rating analysis ***
        *
1159      DI     0   106   272   429   499   558   603   631   688   712
1160      DQ     0   106   152   172   179   190   200   205   212   216
        *
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        * DDM   ***** Inserted *****
        *

1161      KK    38B
1162      KM   BASIN 38B
1163      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        *   KM L=     1.1 Lca=     .8  S=  37.0 Kn= .063 LAG= 50.8
1164      KM   L=     .5 Lca=     .4  S=  28.0 Kn= .063 LAG= 25.6
1165      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1                          HEC-1 INPUT                          PAGE 33

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1166      BA  .0528
1167      LG   .25    .29   4.25    .44  31.00
1168      UI    7.    23.    37.    50.    78.    71.    52.    38.    23.    12.
1169      UI    8.     4.     2.     2.     2.     0.     0.     0.     0.     0.
1170      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        *   LG  .25    .29   4.25    .44  31.00
        *   UI  31.    31.    78.   127.   156.   179.   207.   242.   313.
        *   UI 340.   282.   247.   209.   179.   152.   119.    77.    55.
        *   UI  39.    31.    25.    10.    10.    10.    10.    10.    10.
        *   UI   0.
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *

1171      KK   C38B
1172      KM   COMBINE FLOWS FROM D31S with SUBBASIN 38B AT C38B
        *
1173      HC     2
        *
        *

1174      KK  202NW1
1175      KM   Off-line Detention Basin estimated for 202L/US60 Traffic Interchange DCR
1176      KM   Upper Basin of Two in Series
1177      RS     1   ELEV  1433.0
        * *  ***** Triple 48 Inch dia. RCP Outlet Pipes *****
        * SV    0    0.4    3.1    11.5    12.6    17.7    23.0    28.4    33.8
        * SE1433.0  1434.0  1435.0 1436.66  1437.0  1438.0  1439.0  1440.0  1441.0
        * SQ    0      0      0      0     125     246     343     395     438
        * **** Triple 48 Inch dia. RCP Outlet Pipes and Emergency Spillway ****
        * SV  0    0.4    3.1    11.5    12.6    17.7    23.0  23.70  32.34
        * SE1433  1434.0  1435.0 1436.66  1437.0  1438.0  1439.0 1439.13 1440.73
        * SQ  0      0      0      0     125     246     343     352    1192
```

```
          *
          * *** Revised by PB to reflect final basin geomerty and 2-8'X4" RCBC outlet ****
          *
1178        SV     0   0.7   3.5   10.5   12.9   18.1   20.8   23.4   24.5   25.6
1179        SV   26.7   28.9
1180        SE 1433.0 1434.0 1435.0 1436.5 1437.0 1438.0 1438.5 1439.00 1439.20 1439.4
1181        SE 1439.6 1440.0
1182        SQ     0     0     0     0   266   451   502   551   570   595
1183        SQ   615   650
          *
          *

1184        KK 202NW2
1185        KM  Off-line Detention Basin for 202L/US60 Traffic Interchange 30% Design
1186        KM   Lower Basin of Two in Series
1187        RS     1   ELEV 1430.4
          * *  ***** Double 48 inch dia. RCP Outlet Pipe *****
          * SV    0    0.1    1.4    5.2   10.7   16.6   22.7   29.0   35.3
          * SE1430.4 1431.0 1432.0 1433.0 1434.0 1435.0 1436.0 1437.0 1438.0
          * SQ    0    12    35    74    109    160    216    250    280
          *  **** Double 48 inch dia. RCP Outlet Pipe and Emergency Spillway ****
          * SV  0    0.1    1.4    5.2   10.7   16.6   22.7  27.42   47.9
          * SE1430.4 1431.0 1432.0 1433.0 1434.0 1435.0 1436.0 1436.75 1440.0
          * SQ  0    12    35    74    109    160    216    246   1265
          *
          * *** Revised by PB to reflect final basin geometry and 2-36" RCP outlet ****
          *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1188        SV     0   0.2    1.9    6.1   12.5   19.8   23.6   27.3   31.2   35.2
1189        SV   39.2
1190        SE 1430.3 1431.0 1432.0 1433.0 1434.0 1435.0 1435.5 1436.0 1436.5 1437.0
1191        SE 1437.5
1192        SQ     0     5    27    61    96   122   186   304   469   683
1193        SQ   946
          *
          * DDM   ***** Updated *****

1194        KK    50
1195        KM  BASIN 50
1196        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1197        KM   L=     .9 Lca=     .4  S=  81.4  Kn= .037  LAG=  15.8
1198        KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1199        BA   .28
1200        LG   .33   .31   4.00   .49   5.00
1201        UI   97.   306.   543.   575.   342.   149.   71.   21.   18.   0.
1202        UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
1203        UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
          *
          * DDM   ***** Preserved *****

1204        KK   CAP1
1205        RS     1   FLOW    -1
1206        SV     0  0.091  0.575  3.319  13.256
1207        SE   1566   1568   1570   1572   1574
1208        SQ     5    90   275   470   610
          *

1209        KK  BASIN1
          * KO    1     2
```

```
1210      KM      NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP1
1211      KM      WITH 24-INCH OUTFALL
1212      RS     1   STOR     -1
1213      SA   0.01   1.94   3.10   3.49   3.94   4.40   4.85
1214      SE     60     61     62     63     64     65     66
1215      SL   60.2   3.14    .62     .5
1216      SS     64     50    2.5    1.5
        *
        *
        * DDM   ***** Preserved *****

1217      KK  RCAP1
1218      KM  ROUTE CAP OVERCHUTE #1 TO SUBBASIN 18A
1219      RS     11   FLOW     -1
1220      RC    .05   .045    .05   7000    .02
1221      RX    100    200    300    301    303    304    404    505
1222      RY      6      5      2      0      0      2      5      6
        *
        * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
        *  ** Additional Refinements were made with the University to Southern Segment
        *
        * DDM   ***** Updated *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1223      KK    18C  BASIN
1224      KM   BASIN 18c
        *
1225      KM   THIS IS THE FUTURE SUBBASIN        WITH LESS AREA DUE TO 202L FREEWAY
        *
1226      BA  0.386
1227      LG   0.21   0.27   4.10   0.50     31
1228      UI     50    159    265    349    552    522    383    282    184     88
1229      UI     64     37     15     16     15      0      0      0      0      0
1230      UI      0      0      0      0      0      0      0      0      0      0
        *
        *  KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        *  KM  L=    1.0  Lca=     .5  S=  60.6  Kn= .071  LAG=  24.1
        *   KM  L=    1.2  Lca=     .7  S=  66.1  Kn= .061  LAG=  37.2
        *
        * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
        *
1231      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
        *  BA .4172
        *  LG  .28    .29   4.10    .48   19.00
        *  UI  58.   207.   326.   450.   691.   528.   384.   266.   127.
        *  UI  49.    18.    18.    18.     0.     0.     0.     0.     0.
        *  UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
        *   BA  .50
        *   LG  .22    .25   4.00    .57   44.00
        *   UI  45.    75.   180.   237.   287.   355.   507.   531.   407.
        *   UI 268.   214.   140.    80.    72.    45.    34.    14.    14.
        *   UI  14.    14.     0.     0.     0.     0.     0.     0.     0.
        *   UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        *  KK  D18c
        *  KM  RETAIN THE 100 YEAR 2 HOUR VOLUME (53% OF BASIN HAS RETENTION)
        *  DT  D18c     20
        *  DI    0  10000
        *  DQ    0  10000
```

```
          *
1232        KK  RET18C
1233        KM   RETAIN THE 100 YEAR 2 HOUR VOLUME (16% OF BASIN HAS RETENTION)
1234        DT   D18C   5.00
1235        DI     0  10000
1236        DQ     0   1600
          *
          * DDM   ***** Preserved *****

1237        KK   C18C
1238        KM   COMBINE FLOWS FROM ROUTED FLOW OF SUBBASIN 50 WITH FLOW FROM 18c
1239        KM   BEFORE CROSSING UNDERNEATH APACHE BLVD AND GOING INTO THE HAWES
CHANNEL
1240        HC     2
          *
          * DDM   ***** Preserved *****
1                          HEC-1 INPUT                          PAGE 36

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1241        KK  18T24
1242        KM  REACH HS-6, HS-7, HS-8
1243        KM  ROUTE FLOWS FROM SUBBASIN 18A TO SUBBASIN 24.
1244        RS     1   FLOW     -1
1245        RC   .025   .015   .025   2730  0.0017
1246        RX     0     8    16    26    46    58    65    73
1247        RY   5.0   5.1   5.2     0     0   5.2   5.1   5.0
          * THE ABOVE CHANNEL DIMS ARE BASED ON THE NARROWEST DESIGN REACH.
          *
          *

1248        KK    18D  BASIN
1249        KM  BASIN 18D
1250        BA  0.044
1251        LG   0.20   0.27   4.00   0.54    34
1252        UI    33   103   128    53    17     5     0     0     0     0
1253        UI     0     0     0     0     0     0     0     0     0     0
          *  KM  THIS IS THE FUTURE SUBBASIN CREATED BY 202L BISECTING 18C
          *  KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          *   KM  L=     1.2  Lca=     .7  S=  66.1  Kn= .061  LAG=  37.2
          *  KM  L=     .7  Lca=     .4  S=  50.0  Kn= .071  LAG=  29.7
          *  KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
          *  BA .1367
          *  LG  .28    .29   4.10    .48   19.00
          *  UI  16.    40.    75.    96.   127.   188.   152.   117.    89.
          *  UI  33.    25.    16.     8.     5.     5.     5.     0.     0.
          *  UI  0.     0.     0.     0.     0.     0.     0.     0.     0.
          *

1254        KK  18DT24
1255        KM  ROUTE FLOWS FROM SUBBASIN 18D TO C24A
1256        RS     2   FLOW     -1
1257        RC   .035   .025   .035   2820  0.0071
1258        RX     0     5    20    36    44    60    75    80
1259        RY   4.4   4.3   4.0     0     0   4.0   4.3   4.4
          *

1260        KK    24A  BASIN
1261        KM  BASIN 24A
1262        BA  0.044
```

```
1263      LG   0.11   0.30   4.00   0.52    36
1264      UI    62    179    79    16    0    0    0    0    0    0
1265      UI     0     0     0     0    0    0    0    0    0    0
        *

1266      KK   C24A
1267      KM   COMBINE FLOWS FROM 18D AND 24A
1268      HC     2
        *
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1269      KK  24ATB
1270      KM  ROUTE C24A TO C24B VIA CONCRETE CHANNEL
        * KM VELOCITY = 5FT/S
1271      RS     2   FLOW    -1
        *
1272      RC  0.045  0.022  0.042   2630  0.0095
        *
1273      RX     0   102    103    106    121    124    128    270
1274      RY     7   6.5     6     0     0     3     5     7
        *
        *
        * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
        *  ** Additional Refinements were made with the University to Southern Segment
        *
        * DDM  ***** Updated *****
        * DDM  ***** Inserted *****
        *

1275      KK    24B  BASIN
1276      KM   BASIN 24B
1277      BA  0.258
1278      LG   0.24   0.26   4.00   0.54    31
1279      UI    67    230    353    549    372    232    97    56    16    15
1280      UI     0     0     0     0     0     0     0     0     0     0
1281      UI     0     0     0     0     0     0     0     0     0     0
        * KK   24
        * KM BASIN 24
        * KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        *   KM L=     .9 Lca=     .5  S=  43.5 Kn= .047 LAG= 24.6
        * KM L=     .9 Lca=     .5  S=  43.5 Kn= .052 LAG= 30.4
        * KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
        * BA .4272
        * BA .4272
        * LG  .23    .26   4.00    .56  38.00
        * UI  47.   117.   223.   286.   373.   562.   484.   372.   285.
        * UI 116.    80.    53.    34.    15.    15.    15.    15.     0.
        * UI  0.     0.     0.     0.     0.     0.     0.     0.     0.
        *   BA  .29
        *   LG  .23    .26   4.00    .58  38.00
        *   UI  40.   138.   220.   300.   469.   376.   275.   195.   100.
        *   UI  40.    12.    12.    12.     0.     0.     0.     0.     0.
        *   UI  0.     0.     0.     0.     0.     0.     0.     0.     0.
        *

1282      KK  RET24B
1283      KM   RETAIN THE 100 YEAR 2 HOUR VOLUME (18% OF BASIN HAS RETENTION)
1284      DT   D24B   3.35
1285      DI     0  10000
```

```
1286      DQ     0   1800
        *
        * **** Revised by DMJM+HARRIS to reflect Red Mountain Freeway Design Concepts **
        *  ** Additional Refinements were made with the University to Southern Segment
        *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1287      KK   C24B
1288      KM   COMBINE FLOWS FROM C24A AND BASIN 24B
        * KK   C24
        * KM COMBINE FLOWS FROM S18C AND S24
        * ZW   A=HAWES RD @ BROADWAY RD   B=HAWES CHANNEL PROJECT  C=FLOW
F=HYDROGRA
1289      HC     2
        *


1290      KK   C24C
1291      KM   COMBINE FLOWS FROM C24B AND C18C
        * KK   C24
        * KM COMBINE FLOWS FROM S18C AND S24
1292      ZW    A=HAWES RD @ BROADWAY RD   B=HAWES CHANNEL PROJECT  C=FLOW
F=HYDROGRAPH
1293      HC     2
        *
        *
        * DDM   ***** Preserved *****

1294      KK  BRDHAW
1295      KM    DIVERT FLOW OF 360 CFS TO THE WEST PER THE CITY OF MESA FUTURE
DRAINAGE
1296      KM    SYSTEM
1297      DT  DIVBRD
1298      DI     0   200   400   500   700   1000
1299      DQ     0     0     0     0     0     0
        * DI    0   200   400   500   700   1000
        * DQ    0   200   360   360   360   360
        *


1300      KK  RT31B1
1301      KM   THIS ROUTING STEP HAS BEEN BROKEN OUT OF A LARGER SEQUENCE FOR
SIMPLICITY
1302      KM   REACH HS-5 plus culvert HSC-4
1303      KM   ROUTE FLOWS FROM HAWES ROAD AND BROADWAY ROAD (C24) TO CORAL
BELL AVENUE.
1304      KO                        21                10
1305      ZW   A=FLOW AFTER 360 CFS DIVERT TO WEST B=HAWES CHANNEL PROJECT
C=FLOW  F=HYDRO
1306      RS     1   FLOW     -1
1307      RC   .025   .015   .025   1312  0.0015
1308      RX     0     8    15    28    68    81    89    97
1309      RY    6.2   6.4   6.5     0     0   6.5   6.4   6.2
        *


1310      KK  RT31B2
1311      KM   THIS ROUTING STEP HAS BEEN BROKEN OUT OF A LARGER SEQUENCE FOR
SIMPLICITY
1312      KM   REACH HS-4A AND HS4-B plus culvert HSC-3
1313      KM   ROUTE FLOWS FROM CORAL BELL AVENUE TO EMELITA AVENUE.
1314      RS     1   FLOW     -1
```

```
1315      RC  .025  .015  .025  2080 0.0018
1316      RX    0    8  15.9    16    66  66.1    74    82
1317      RY  5.8   5.9   6.1     0     0   6.1   5.9   5.8
        *
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


1318      KK RT31B3
1319      KM  THIS ROUTING STEP HAS BEEN BROKEN OUT OF A LARGER SEQUENCE FOR
SIMPLICITY
1320      KM  REACH HS-3
1321      KM   THIS REACH IS AN EXISTING CHANNEL FOR THE CRESCENT RUN MOBILE
HOME PARK.
1322      KM   The existing channel 5.6 ft deep has no freeboard.  Overbank flows in street
1323      KM   Routing values per channel design plans,
1324      KM   Sheet 2 of 19, City of Mesa Project 97-69.
1325      KM  ROUTE FLOWS FROM EMELITA AVENUE TO SOUTHERN AVENUE (C31) WITHIN
SUBBASIN 31B.
1326      RS    1  FLOW    -1
1327      RC  .025  .015  .025  1935 0.0033
1328      RX    0  35.6  41.6    50  66.7  75.1  81.1  92.0
1329      RY  5.4   4.7   5.6     0     0   5.6   7.6   7.7
        *
        * DDM  ***** Updated *****
        *


1330      KK   31B
1331      KM  BASIN 31B
1332      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
        *   KM L=    1.2 Lca=     .5  S=  29.7 Kn= .049 LAG= 30.8
1333      KM   L=    1.2 Lca=     .5  S=  29.7 Kn= .077 LAG= 23.2
1334      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
        *
1335      BA   .44
1336      LG  0.31  0.32  4.45  0.35    11
1337      UI   31   31   88   132   162   184   218   263   356   375
1338      UI  302  254  217   187   152   124    77    54    51    36
1339      UI   31   19   10     9     9    10     9    10     0     0
1340      UI    0    0    0     0     0     0     0     0     0     0
        * BA .720
        * LG .31   .32  4.45   .35  11.00
        * UI 104.  391.  602.  859. 1236.  884.  629.  407.  187.
        * UI 59.   32.   32.    0.    0.    0.    0.    0.    0.
        * UI 0.    0.    0.    0.    0.    0.    0.    0.    0.
        *
        *   BA .47
        *   LG .24   .25  4.45   .46  37.00
        *   UI 52.  125.  240.  309.  399.  601.  544.  416.  321.
        *   UI 141.  88.   63.   44.   16.   16.   16.   16.    0.
        *   UI 0.    0.    0.    0.    0.    0.    0.    0.    0.
        *


1341      KK  D31BS
1342      KM   RETAIN 100 YEAR 2 HOUR, (66% FOR FUTURE DEVELOPMENT)
1343      DT  D31BS    23
1344      DI    0  10000
1345      DQ    0  10000
        *
        * DDM  ***** Preserved *****
        *
```

```
            *
            * ***** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
            *
1                          HEC-1 INPUT                          PAGE 40

      LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


      1346       KK  C31B
      1347       KM  COMBINE FLOWS FROM C24 AND 31B
      1348       ZW  A=FLOW SOUTHERN AND HAWES BEFORE SPLIT BOX B=HAWES CHANNEL PROJ
C=FLOW F=HYDR
      1349       HC    2
            *
            *
            * DDM  ***** Preserved *****
            *   KK  D31W
            *

      1350       KK   D31S
            *
      1351       KM   THIS DIVERT RECORD IS FOR THE BOX CULVERT SYSTEM AT SOUTHERN AVE
AND HAWES
      1352       KM   IT IS BASED UPON A HEC-RAS ANALYSIS OF THE FOLLOWING STRUCTURES:
      1353       KM   3-8'X4' CBC SOUTH,  2-10'X6' CBC TO THE WEST
      1354       KM   THE CULVERT TO THE SOUTH HAS THE TWO THAT ARE THERE NOW WITH AN
ADDITIONAL
      1355       KM   ONE CONSTRUCTED
            * KO  1
      1356       DT   D31W
            *
            * **** Revised by DMJM to reflect Red Mountain Freeway Design Concepts *****
            *
            *  * THESE NEW CARDS BASED UPON HEC-RAS ANALYSIS
            *  DI   0   144   182   252   380   454   544   671   758
            *  DI  976  1098  1184  1280  1412  1544  1646  1738  1830
            *  DQ   0    0    0   220   316   358   400   460   520
            *  DQ  640   690   740   800   860   920   980  1030  1080
            *
            *  THESE CARDS BASED UPON HEC-RAS ANALYSIS *** As Intended ***
            *
            * DI   0   144   182   252   380   454   544   671   758
            * DI  976  1098  1184  1280  1412  1544  1646  1738  1830
            * DQ   0   144   182   220   316   358   400   460   520
            * DQ  640   690   740   800   860   920   980  1030  1080
            *
            *  ** Revised to help allow proper function of NW Detention Basins (Off-line Typ
            *  *** Simulating 75% blockage of the Southern Avenue culverts ***
            *
            * DI  0    62   111   230   309   403   504   611   727   847
            * DI 971  1098  1223  1346
            * DQ  0    62   111   214   283   362   445   533   629   729
            * DQ 834   941  1049  1155
            *
            * *** Revised by PB to simulate blockage of 2 barrels leaving 1 barrel open ***
            * *** of the Southern Avenue Culverts                                  ***
            *
      1357       DI    0   62   111   229   306   401   521   636   759   887
      1358       DQ    0   62   111   214   283   362   445   533   629   730
            *
            *
1                          HEC-1 INPUT                          PAGE 41
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1359      KK 31T381  ROUTED IN TWO STEPS DUE TO CHANNEL DISSIMILARITY.
1360      KM  REACH HS-2 plus culvert HSC-2
1361      KM   ROUTE FLOWS FROM SOUTHERN AVENUE (C31) IN THE HAWES CHANNEL.
1362      KM  REACH HS-2 IS A PROPOSED CHANNEL SOON-TO-BE-CONSTRUCTED.  IT IS 4.5
FEET
1363      KM   DEEP, WITH FREEBOARD. CHANNEL CROSS-SECTION FROM DESIGN PLANS
FOR
1364      KM   SOUTHERN AVENUE DRAINAGE IMPROVEMENTS.  SHEET 28 OF 43
1365      KM   CITY OF MESA PROJECT NO. 97-56.1 DESIGN PLANS BY ENTELLUS
1366      KM   DATED 8/8/97 REV. 12/19/97
1367      RS    1   FLOW    -1
1368      RC  0.025  0.015  0.025   1248  .0022
1369      RX    0    32    37    46    56    65    73    75
1370      RY    5   7.0   4.5    0    0   4.5   9.0   9.5
        *
        *
        * **** Revised by DMJM+HARRIS at request of City of Mesa *****
        *
        *

1371      KK  RHAWS
1372      KM  RETRIEVE DIVERTED HYDROGRAPH FROM CHANNEL ALONG SOUTHERN AVE.
1373      DR  DHAWS
        *
        *

1374      KK RTHAWS
1375      KM  ROUTE FLOWS FROM SOUTHERN AVENUE TO HAWES CHANNEL.
1376      RS    1   FLOW    -1
1377      RC   .025   .015   .025   513 0.0010
1378      RX    0    4    16    28    38    50    62    66
1379      RY   7.3   6.3   6.0    0    0   6.0   6.3   7.3
        *
        *

1380      KK  C31S
1381      KM  COMBINE FLOWS FROM D31S AND RHAWS
        * KO  1
1382      HC    2
        *

1383      KK 31T382
1384      KM  REACH HS-1 plus culvert HSC-1
1385      KM  ROUTE FLOWS TO SUPERSTITION FREEWAY (C38)
1386      KM  IN THE HAWES CHANNEL.
1387      RS    1   FLOW    -1
1388      RC  0.025  0.015  0.025    810  .0017
1389      RX    0    10    16    26    51    61    77    81
1390      RY   5.3   4.8   4.9    0    0   4.9   4.6   3.6
        *
        *  * DDM  ***** Preserved *****
        *  KK31AT38
        *  KM ROUTE S31A TO 38
        *  RS   6   FLOW    -1
        *  RC  .04   .03   .04  3500   .012
        *  RX  100   200   300   302   307   309   409   509
        *  RY   4    3    2    0    0    2    3    4
        *
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          *
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1391        KK  C38C1
1392        KM  COMBINE FLOWS FROM HAWES CHANNEL WITH NW DETENTION BASINS FLOW
1393        HC    2
          *
          *

1394        KK   C38C
1395        KM   COMBINE FLOWS FROM R202NE with R202NW AT C38
1396        HC    2
          *
          * DDM   ***** Preserved *****

1397        KK  38T39
1398        KM  ROUTE FLOWS FROM C38C TO C39 VIA CONCRETE CHANNEL
1399        RS  1.32  FLOW    -1
1400        RC  0.035  0.012  0.035  3960  0.0066
1401        RX    0   500   1000   1012   1020   1032   1532   2032
1402        RY   13  12.5    12     0          12   12.5    13
          *   * ADOT DETENTION BASINS FROM URS REPORT SEPT 1988
          *   * DDM   ***** Preserved *****
          *   KK ADD10
          *   KM  BASIN #10 - OFF-LINE DETENTION POND TO ATTENUATE PEAK FLOWS
          *   KM   BUT DO NOT DELAY THE PEAK
          *   DT  DB10
          *   DI  807   879   961   1070   1190   1320
          *   DQ   0    29    61   120   190   270
          *   * DDM   ***** Preserved *****
          *   KK  ADD9
          *   KM BASIN #9 - OFF-LINE DETENTION POND
          *   DT   DB9
          *   DI  626   660   751   861   987   1128
          *   DQ   0    10    51   110   189   278
          *   * DDM   ***** Preserved *****
          *   KK  ADD8
          *   KM BASIN #8 - OFF-LINE DETENTION POND
          *   DT   DB8
          *    * ORIGINAL DESIGN PER URS FINAL DRAINAGE REPORT
          *   *   DI  464   521   627   752   898
          *   DI  464   521   627   752   898     1059     1236
          *   *   DQ   0   21   77   152   248
          *   DQ   0   21   77   152   248   359          486
          *
          * ***** Per Original Design and URS Final Drainage Report *****
          * ***** These Detention Basins occurred West of Sossaman Channel *****
          *
          *   * DDM   ***** Preserved *****
          *   KK  ADD7
          *   KM BASIN #7 - OFF-LINE DETENTION POND
          *   DT   DB7
          *   DI  770   810   892   988   1093   1207   1331   1462
          *   DQ   0    10    42    88   143   207   281   362
          *   * DDM   ***** Preserved *****
          *   KK  ADD6
          *   KM BASIN #6 - OFF-LINE DETENTION POND
          *   DT   DB6
          *   DI  685   703   781   875   978   1092   1215
```

```
*   DQ   0    3    31    75   128   192   265
*   * DDM  ***** Preserved *****
*   KK  ADD5
*   KM BASIN #5 - OFF-LINE DETENTION POND
*   DT  DB5
*   DI 1005   1063   1141   1227   1320   1421   1527
*   DQ   0    13    41    77   120   171   227
*
*
* ******************************************************************************
* End of Revisions by DMJM to reflect Red Mountain Freeway Design Concepts
* ******************************************************************************
*
*
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1403        KK   R31W
1404        KM   RETURN DIVERTED FLOW AT CORNER OF SOUTHERN AND HAWES
1405        DR   D31W
          *
          * DDM   ***** Preserved *****

1406        KK  31WT32
1407        KM   ROUTE FLOWS FROM D31A TO C32
1408        RS   1.76   FLOW    -1
1409        RC   .035   .022   .035   5280   .0027
1410        RX     0   2005   2012   2012   2106   2106   2113   3122
1411        RY    4.5    4.5    3.5      0      0    3.5    4.5    4.5
          *
          * DDM   ***** Updated *****

1412        KK    32
1413        KM   BASIN 32
1414        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1415        KM   L=     .9  Lca=     .5  S=  38.9  Kn= .055  LAG= 29.1
1416        KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1417        BA    .38
1418        LG    .23    .25   4.55    .44   27.00
1419        UI   43.   115.   212.   273.   368.   529.   407.   314.   237.   161.
1420        UI   81.    62.    43.    14.    13.    13.    13.     0.     0.     0.
1421        UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          *
          * KK  D32
          * KM  RETAIN 100 YEAR 2 HOUR, (FULLY DEVELOPED - NO RETENTION)
          * DT  D32     0
          * DI    0  10000
          * DQ    0  10000
          *
          * DDM   ***** Preserved *****

1422        KK    C32
1423        KM   COMBINE SOSSAMAN CHANNEL FLOWS WITH FLOWS FROM 32
1424        HC     2
          *
          * DDM   ***** Preserved *****

1425        KK   32T39
1426        KM   ROUTE FLOWS FROM C32 TO C39
1427        RS   0.88   FLOW    -1
```

```
1428      RC  0.012  0.012  0.012  2640  0.004
1429      RX     0     5    10    28    38    60    65    70
1430      RY    14    14    14     0     0    14    14    14
        * DDM  ***** Updated *****

1431      KK    39
1432      KM  BASIN 39
1433      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1434      KM  L=     .9  Lca=     .7  S=  38.0  Kn= .060  LAG= 32.4
1435      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
1436      BA   .36
1                          HEC-1 INPUT                          PAGE 44

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1437      LG   .22   .25  4.60   .41  44.00
1438      UI    37    81   165   213   269   383   437   325   258   200
1439      UI   142    76    61    37    24    11    11    11    11     0
1440      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *

1441      KK   D39
1442      KM   RETAIN 100 YEAR 2 HOUR, (13% FOR FUTURE DEVELOPMENT)
1443      DT   D39     4
1444      DI    0  10000
1445      DQ    0  10000
        *
        * DDM  ***** Preserved *****

1446      KK   C39A
1447      KM   COMBINE FLOWS FROM C32, C38 AND S39 AT C39
1448      HC    2
        *
        * DDM  ***** Preserved *****

1449      KK   C39B
1450      KM   COMBINE FLOWS FROM C39A AND ADOT BASINS
1451      HC    2
        *
        * DDM  ***** Preserved *****

1452      KK   SOSS
1453      KM   THIS WAS FORMERLY CALLED CHANNEL
1454      KM   DIVERT FLOWS IN EXCESS OF 1800 CFS TO SOSSAMAN DET. BASIN
1455      KM   IN REALITY, BACKWATER FROM THE ADOT CROSSING DETERMINES THE
AMOUNT OF SPILL
1456      KM   SUPERSTITION FREEWAY
1457      ZW   A=SOSSAMAN DRAIN  B=AT SUPERSTITION C=FLOW E=5MIN F=100YR
1458      DT   BASIN
1459      DI    0   1800   2000   10000
1460      DQ    0      0    200    8200
1461      ZZ
1
        SCHEMATIC DIAGRAM OF STREAM NETWORK
INPUT
 LINE    (V) ROUTING        (--->) DIVERSION OR PUMP FLOW

 NO.    (.) CONNECTOR       (<---) RETURN OF DIVERTED OR PUMPED FLOW

 147      42
         V
         V
```

```
159    42T51
        .
        .
164      .       51
        .        .
        .        .
175     C51............
        V
        V
178    51T53
        .
        .
184      .      44A
        .        .
        .        .
198      .        .-------> D44A
196      .    DIV44A
        .        .
        .        .
201      .        .       43
        .        .        .
        .        .        .
212      .      C43............
        .        V
        .        V
215      .     43T53
        .        .
        .        .
220      .        .       53
        .        .        .
        .        .        .
230     C53........................
        .
        .
233      .       54
        .        .
        .        .
244     C54............
        .
        .
250      .-------> SOUTH
247    DCAP12
        V
        V
253    CAP12
        .
        .
260      .        .<------- D44A
258      .    DR44A
        .        V
        .        V
261      .    44ATB
        .        .
        .        .
268      .        .       44B
        .        .        .
        .        .        .
278      .    C44B............
        .        V
        .        V
281      .    CAP10+
        .        V
```

```
        .       V
288     .     RCAP11
        .       .
        .       .
291     C12............
        V
        V
294   ADOT-W
        V
        V
305   RADOTW
        .
        .
311     .       36B
        .       .
        .       .
320     C36B............
        .
        .
326     .         .<-------  SOUTH
324     .     RSOUTH
        .       .
        .       .
327     .       .       57
        .       .       .
        .       .       .
336     .       C57............
        .       V
        .       V
339     .     CAP13+
        .       .
        .       .
346     .       .       36A
        .       .       .
        .       .       .
355     .       C36A............
        .       V
        .       V
358     .     ADOT-E
        .       .
        .       .
370   CFAKE............
        .
        .
374     .       52
        .       .
        .       .
384     .       .       56
        .       .       .
        .       .       .
394     .       C56............
        .       V
        .       V
399     .     56T58
        .       .
        .       .
404     .       .       58
        .       .       .
        .       .       .
414     .       C58............
        .       .
        .       .
```

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422   .   .   46B
      .   .   .
      .   .   .
436   .   .   .-------> D46
434   .   .   D46B
      .   .   V
      .   .   V
439   .   .   CAP6
      .   .   V
      .   .   V
444   .   .   RCAP6B
      .   .   .
      .   .   .
453   .   .   .   29A
      .   .   .   .
      .   .   .   .
467   .   .   .   .-------> D29A
465   .   .   .   D29A
      .   .   .   .
      .   .   .   .
470   .   .   C29A............
      .   .   .
      .   .   .
472   .   .   .   45A
      .   .   .   .
      .   .   .   .
487   .   .   .   .-------> D29A
485   .   .   .   D45A
      .   .   .   .
      .   .   .   .
493   .   .   .   .-------> 45ATB
490   .   .   .   D45A
      .   .   .   .
      .   .   .   .
496   .   .   .   .   55B
      .   .   .   .   .
      .   .   .   .   .
511   .   .   .   .   .-------> D55B
509   .   .   .   .   D55B
      .   .   .   .   .
      .   .   .   .   .
514   .   .   .   C55B............
      .   .   .   V
      .   .   .   V
517   .   .   .   CAP7
      .   .   .   .
      .   .   .   .
525   .   .   .   .   .<------- 45ATB
523   .   .   .   .   RD45A
      .   .   .   .   V
      .   .   .   .   V
526   .   .   .   .   45ATB
      .   .   .   .   .
      .   .   .   .   .
533   .   .   .   .   .   45B
      .   .   .   .   .   .
      .   .   .   .   .   .
546   .   .   .   .   .   .-------> D45B
544   .   .   .   .   .   D45B
      .   .   .   .   .   .
      .   .   .   .   .   .
549   .   .   .   .   C45B............
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        .   .   .   .   V
        .   .   .   .   V
552     .   .   .   .   CAP8
        .   .   .   .   .
        .   .   .   .   .
558     .   .   .   C7+8...........
        .   .   .   V
        .   .   .   V
562     .   .   .   RCAP78
        .   .   .   .
        .   .   .   .
570     .   .   .   .   29B
        .   .   .   .   .
        .   .   .   .   .
583     .   .   .   .   .-------> D29B
581     .   .   .   .   D29B
        .   .   .   .   .
        .   .   .   .   .
586     .   .   .   C29B1...........
        .   .   .   .
        .   .   .   .
589     .   .   C29B2...........
        .   .   V
        .   .   V
592     .   .   TRANS
        .   .   .
        .   .   .
600     .   .   .   29C
        .   .   .   .
        .   .   .   .
613     .   .   .   .-------> D29
611     .   .   .   D29C
        .   .   .   .
        .   .   .   .
616     .   .   C29C2...........
        .   .   V
        .   .   V
619     .   .   29CTD1
        .   .   .
        .   .   .
627     .   .   .   55
        .   .   .   .
        .   .   .   .
639     .   .   .   .-------> D55
637     .   .   .   D55
        .   .   .   V
        .   .   .   V
642     .   .   .   CAP9
        .   .   .   V
        .   .   .   V
647     .   .   .   RCAP9
        .   .   .   .
        .   .   .   .
657     .   .   .   .   29D
        .   .   .   .   .
        .   .   .   .   .
670     .   .   .   .   .-------> D29D
668     .   .   .   .   D29D
        .   .   .   .   .
        .   .   .   .   .
677     .   .   .   .   .-------> D29DE
673     .   .   .   .   D29D2
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        .   .   .     .     .
        .   .   .     .     .
680     .   .   C29C3.......................
        .   .    V
        .   .    V
683     .   .   BASIN5
        .   .    V
        .   .    V
690     .   .   RBAS5
        .   .    .
        .   .    .
701     .   .    .     .<-------  D29DE
698     .   .    .   G29DE
        .   .    .    V
        .   .    .    V
702     .   .    .   29T36
        .   .    .    .
        .   .    .    .
710     .   .    .    .    36C
        .   .    .    .    .
        .   .    .    .    .
721     .   .    .    .    .------->  D36C
719     .   .    .    .   D36C
        .   .    .    .    .
        .   .    .    .    .
724     .   .    C36.......................
        .   .    V
        .   .    V
727     .   .   36T37
        .   .    .
        .   .    .
733     .   .    .    30b
        .   .    .    V
        .   .    .    V
744     .   .    .   30bT3
        .   .    .    .
        .   .    .    .
750     .   .    .    .    37
        .   .    .    .    .
        .   .    .    .    .
759     .   .    C37.......................
        .   .    V
        .   .    V
762     .   .   ADOTEL
        .   .    V
        .   .    V
773     .   .   37T38A
        .   .    .
        .   .    .
779     .   .    .    38A
        .   .    .    .
        .   .    .    .
791     .   .    .    .   202D
        .   .    .    .    .
        .   .    .    .    .
818     .   .   C38A.......................
        .   .    V
        .   .    V
821     .   .   202NE1
        .   .    V
        .   .    V
828     .   .   202NE2
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     .    .    .
     .    .    .
835  .    .    .    17A
     .    .    .    .
     .    .    .    .
845  .    .    .    .    49
     .    .    .    .    V
     .    .    .    .    V
855  .    .    .    .    CAP2
     .    .    .    .    V
     .    .    .    .    V
860  .    .    .    .    BASIN2
     .    .    .    .    V
     .    .    .    .    V
868  .    .    .    .    RCAP2A
     .    .    .    .    V
     .    .    .    .    V
871  .    .    .    .    RCAP2
     .    .    .    .    .
     .    .    .    .    .
877  .    .    .    C17A............
     .    .    .    .
     .    .    .    .
880  .    .    .    .    48
     .    .    .    .    V
     .    .    .    .    V
890  .    .    .    .    CAP3
     .    .    .    .    V
     .    .    .    .    V
895  .    .    .    .    BASIN3
     .    .    .    .    V
     .    .    .    .    V
903  .    .    .    .    RCAP3A
     .    .    .    .    V
     .    .    .    .    V
909  .    .    .    .    RCAP3B
     .    .    .    .    .
     .    .    .    .    .
915  .    .    .    .    .    .    17B
     .    .    .    .    .    .    .
     .    .    .    .    .    .    .
925  .    .    .    .    C17B............
     .    .    .    .    .
     .    .    .    .    .
928  .    .    .    C17C............
     .    .    .    V
     .    .    .    V
931  .    .    .    17CT23
     .    .    .    .
     .    .    .    .
937  .    .    .    .    18F
     .    .    .    .    V
     .    .    .    .    V
944  .    .    .    .    R18FTE
     .    .    .    .    .
     .    .    .    .    .
950  .    .    .    .    .    .    18E
     .    .    .    .    .    .    .
     .    .    .    .    .    .    .
959  .    .    .    .    .    .    .-------> D18E
957  .    .    .    .    .    .    RET18E
     .    .    .    .    .    .    .
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                 .    .    .    .    .    .
962              .    .    .    .    C18E...........
                 .    .    .    .    V
                 .    .    .    .    V
965              .    .    .    .    18ET23
                 .    .    .    .    .
                 .    .    .    .    .
971              .    .    .    C23A...........
                 .    .    .    V
                 .    .    .    V
974              .    .    .    R23ATB
                 .    .    .    .
                 .    .    .    .
980              .    .    .    .    23
                 .    .    .    .    .
                 .    .    .    .    .
989              .    .    .    .    .-------> D23
987              .    .    .    .    RET23
                 .    .    .    .    .
                 .    .    .    .    .
992              .    .    .    C23B...........
                 .    .    .    .
                 .    .    .    .
995              .    .    .    .    47
                 .    .    .    .    V
                 .    .    .    .    V
1006             .    .    .    .    BASIN4
                 .    .    .    .    V
                 .    .    .    .    V
1016             .    .    .    .    RCAP4
                 .    .    .    .    .
                 .    .    .    .    .
1022             .    .    .    .    .    .    22
                 .    .    .    .    .    .    .
                 .    .    .    .    .    .    .
1032             .    .    .    .    C22A...........
                 .    .    .    .    V
                 .    .    .    .    V
1035             .    .    .    .    22AT23
                 .    .    .    .    .
                 .    .    .    .    .
1042             .    .    .    C23C...........
                 .    .    .    V
                 .    .    .    V
1045             .    .    .    RC23
                 .    .    .    .
                 .    .    .    .
1051             .    .    .    .    30a
                 .    .    .    .    V
                 .    .    .    .    V
1062             .    .    .    .    30at31
                 .    .    .    .    .
                 .    .    .    .    .
1072             .    .    .    C31A1...........
                 .    .    .    .
                 .    .    .    .
1075             .    .    .    .    31A
                 .    .    .    .    .
                 .    .    .    .    .
1085             .    .    .    .    .    .    202C
                 .    .    .    .    .    .    .
                 .    .    .    .    .    .    .
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1097    .    .    .    C31A2.......................
        .    .    .    V
        .    .    .    V
1100    .    .    .    R202S
        .    .    .    .
        .    .    .    .
1111    .    .    .    .    202A
        .    .    .    .    V
        .    .    .    .    V
1124    .    .    .    .    R202A
        .    .    .    .    .
        .    .    .    .    .
1127    .    .    .    .    .    202B
        .    .    .    .    .    .
        .    .    .    .    .    .
1140    .    .    .    .    C202B............
        .    .    .    .    V
        .    .    .    .    V
1143    .    .    .    .    R202B
        .    .    .    .    .
        .    .    .    .    .
1146    .    .    .    C202C............
        .    .    .    V
        .    .    .    V
1149    .    .    .    RT202C
        .    .    .    .
        .    .    .    .
1158    .    .    .    .-------> DHAWS
1155    .    .    .    DSPILL
        .    .    .    .
        .    .    .    .
1161    .    .    .    .    38B
        .    .    .    .    .
        .    .    .    .    .
1171    .    .    .    C38B............
        .    .    .    V
        .    .    .    V
1174    .    .    .    202NW1
        .    .    .    V
        .    .    .    V
1184    .    .    .    202NW2
        .    .    .    .
        .    .    .    .
1194    .    .    .    .    50
        .    .    .    .    V
        .    .    .    .    V
1204    .    .    .    .    CAP1
        .    .    .    .    V
        .    .    .    .    V
1209    .    .    .    .    BASIN1
        .    .    .    .    V
        .    .    .    .    V
1217    .    .    .    .    RCAP1
        .    .    .    .    .
        .    .    .    .    .
1223    .    .    .    .    .    18C
        .    .    .    .    .    .
        .    .    .    .    .    .
1234    .    .    .    .    .    .-------> D18C
1232    .    .    .    .    .    RET18C
        .    .    .    .    .    .
        .    .    .    .    .    .
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1237   .   .   .   .   C18C............
     .   .   .   .   V
     .   .   .   .   V
1241   .   .   .   .   18T24
     .   .   .   .   .
     .   .   .   .   .
1248   .   .   .   .   .   18D
     .   .   .   .   .   V
     .   .   .   .   .   V
1254   .   .   .   .   .   18DT24
     .   .   .   .   .   .
     .   .   .   .   .   .
1260   .   .   .   .   .   .   .   24A
     .   .   .   .   .   .   .   .
     .   .   .   .   .   .   .   .
1266   .   .   .   .   .   C24A............
     .   .   .   .   .   V
     .   .   .   .   .   V
1269   .   .   .   .   .   24ATB
     .   .   .   .   .   .
     .   .   .   .   .   .
1275   .   .   .   .   .   .   .   24B
     .   .   .   .   .   .   .   .
     .   .   .   .   .   .   .   .
1284   .   .   .   .   .   .   .   .-------> D24B
1282   .   .   .   .   .   .   .   RET24B
     .   .   .   .   .   .   .   .
     .   .   .   .   .   .   .   .
1287   .   .   .   .   .   C24B............
     .   .   .   .   .   .
     .   .   .   .   .   .
1290   .   .   .   .   C24C............
     .   .   .   .   .
     .   .   .   .   .
1297   .   .   .   .   .-------> DIVBRD
1294   .   .   .   .   BRDHAW
     .   .   .   .   V
     .   .   .   .   V
1300   .   .   .   .   RT31B1
     .   .   .   .   V
     .   .   .   .   V
1310   .   .   .   .   RT31B2
     .   .   .   .   V
     .   .   .   .   V
1318   .   .   .   .   RT31B3
     .   .   .   .   .
     .   .   .   .   .
1330   .   .   .   .   .   31B
     .   .   .   .   .   .
     .   .   .   .   .   .
1343   .   .   .   .   .   .-------> D31BS
1341   .   .   .   .   .   D31BS
     .   .   .   .   .   .
     .   .   .   .   .   .
1346   .   .   .   .   C31B ............
     .   .   .   .   .
     .   .   .   .   .
1356   .   .   .   .   .-------> D31W
1350   .   .   .   .   D31S
     .   .   .   .   V
     .   .   .   .   V
1359   .   .   .   .   31T381
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        .    .    .    .    .
        .    .    .    .    .
1373    .    .    .    .    .      .<-------  DHAWS
1371    .    .    .    .    .    RHAWS
        .    .    .    .    .    V
        .    .    .    .    .    V
1374    .    .    .    .    .    RTHAWS
        .    .    .    .    .    .
        .    .    .    .    .    .
1380    .    .    .    .    C31S ............
        .    .    .    .    V
        .    .    .    .    V
1383    .    .    .    .    31T382
        .    .    .    .    .
        .    .    .    .    .
1391    .    .    .    C38C1............
        .    .    .    .
        .    .    .    .
1394    .    .    C38C............
        .    .    V
        .    .    V
1397    .    .    38T39
        .    .    .
        .    .    .
1405    .    .    .    .<-------  D31W
1403    .    .    .    R31W
        .    .    .    V
        .    .    .    V
1406    .    .    .    31WT32
        .    .    .    .
        .    .    .    .
1412    .    .    .    .    32
        .    .    .    .    .
        .    .    .    .    .
1422    .    .    .    C32............
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1449    .    .    C39B............
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1458    .    .    .------->  BASIN
1452    .    .    SOSS
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(***) RUNOFF ALSO COMPUTED AT THIS LOCATION

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*                    *                    *                    *
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *                    * U.S. ARMY CORPS OF
ENGINEERS    *
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*        JUN  1998        *                    * HYDROLOGIC ENGINEERING CENTER  *
*      VERSION 4.1        *                      *      609 SECOND STREET      *
*                         *                    *   DAVIS, CALIFORNIA 95616     *
* RUN DATE  28APR04  TIME  10:00:35  *                    *     (916) 756-1104      *
*                         *                    *                  *
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MODEL NAME: NE200245.DAT Revised by PARSONS BRINCKERHOFF - December 2003

This model includes the following revisions to DMJM+HARRIS model NE202USR.DAT dated December 2003.

1. The storage volumes for the NE-1, NE-2, NW-1, NW-2 and Southern Avenue detention basins have been updated per the final basin geometry.

2. The discharge rates for detention basins NW-1 and NW-2 have been revised to reflect the revisions to the outlet structures and emergency spillways.

3. The diversion at the box culvert system at Southern Avenue and Hawes Road was revised to simulate blockage of 2 barrels of the existing 3 barrel box culvert under Southern.

4. The diversion at the lateral weir in the Southern Avenue Channel was revised to reflect the final weir geometry and rating analysis.

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MODEL NAME: Ne2002us.DAT Revised by DMJM+HARRIS - August 2003

This model includes various revisions to incorporate the Red Mountain Freeway in association with the University Drive to Southern Avenue.

CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:

1. In order to reflect the proposed 202 Freeway Loopand to facilitate design, drainage basins 18D, 18C and 24 were further subdivided. Additional concentration points were added to provide discharges at more locations.

2. Drainage basin areas for 50 and 202A were modified to reflect design refinements to the Power to University segment of the Red Mountain Freeway

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MODEL NAME: Ne200235.DAT Revised by DMJM+HARRIS - July 2002

This model includes various revisions to incorporate the Red Mountain Freeway in association with the 202L/US60 Traffic Interchange Design Concept Report.

CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:

1. In order to reflect the proposed 202 Freeway Loop, basin areas for 18C, 23, 24, 31A and 31B were revised. Drainage basins 18D, 202A, 202B, and 202D were added. Basin 38 was split into 38A and 38B due to the 202 Loop

2. Several concentration points have been added and basins have been routed to reflect the proposed Red Mountain Freeway alignment.

3. Existing detention basins (ADOT) have been removed and new detention basins are proposed as part of the freeway construction.

4. Modifications were made to the previous (Ne20030) model per the City of Mesa to remove the connection of the Southern Ave. Channel from the structure at Hawes Rd. and instead connect to the Hawes Channel south of the intersection.

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** Previous ** MODEL NAME: NE2002.DAT

THIS MODEL COVERS THE AREA EAST OF HAWES ROAD AND THE SOSSAMAN CHANNEL

MAJOR CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:

1. OLD SUBBASIN 18A HAS BEEN SPLIT INTO TWO SUBBASINS. SUBBASIN 18C REMAINS IN THIS MODEL AS PART OF THE HAWES CHANNEL INFRASTRUCTURE
2. OLD SUBBASIN 30 HAS BEEN SPLIT INTO SUBBASIN 30A AND SUBBASIN 30B. SUBBASIN 30 GETS INTERCEPTED BY A CHANNEL ON THE NORTH SIDE OF CORALBELL AND GETS ROUTED TO SUBBASIN 31A. SUBBASIN 30B STILL GOES SOUTH ALONG ELLSWORTH ROAD
3. FOR THE 2002 YEAR CONDITION, ALL CAP DETENTION BASINS HAVE BEEN PLACED IN THE MODEL. THEIR OUTLET CHANNELS HAVE FOR THE MOST PART NOT BEEN INCLUDED IN THIS MODEL. THE OUTLET CHANNELS WILL BE IN THE FUTURE MODEL
****

SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
AREA NORTH OF SUPERSTITION FREEWAY

REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS

FILENAME: MESANE.DAT

THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.

100-YEAR 24-HOUR FREQUENCY

METHODOLOGY
THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990 VER 4.0

SCS TYPE II RAINFALL DISTRIBUTION
S-GRAPH HYDROGRAPH
GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
NORMAL DEPTH STORAGE CHANNEL ROUTING
APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE BEEN

EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL SURVEYS

DATED 1994
THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS

INITIAL STUDY PERFORMED BY LISA C. YOUNG
REVIEWED BY VALERIE A. SWICK
HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.

ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR WASH/NATURAL CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE CHANNEL

LAST UPDATED ON 3/13/98

UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE FAMILY HOUSING

DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN

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126 IO      OUTPUT CONTROL VARIABLES
             IPRNT        5  PRINT CONTROL
             IPLOT        0  PLOT CONTROL
             QSCAL       0.  HYDROGRAPH PLOT SCALE

  IT       HYDROGRAPH TIME DATA
             NMIN        5  MINUTES IN COMPUTATION INTERVAL
            IDATE    1APR97  STARTING DATE
            ITIME     0000  STARTING TIME
               NQ     1000  NUMBER OF HYDROGRAPH ORDINATES
           NDDATE    4APR97  ENDING DATE
           NDTIME     1115  ENDING TIME
            ICENT       19  CENTURY MARK

         COMPUTATION INTERVAL    .08 HOURS
            TOTAL TIME BASE   83.25 HOURS

      ENGLISH UNITS
         DRAINAGE AREA        SQUARE MILES
         PRECIPITATION DEPTH   INCHES
         LENGTH, ELEVATION     FEET
         FLOW              CUBIC FEET PER SECOND
         STORAGE VOLUME       ACRE-FEET
         SURFACE AREA         ACRES
         TEMPERATURE          DEGREES FAHRENHEIT

128 JD      INDEX STORM NO. 1
             STRM      3.60  PRECIPITATION DEPTH
             TRDA       .01  TRANSPOSITION DRAINAGE AREA

129 PI      PRECIPITATION PATTERN
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139 JD INDEX STORM NO. 2
STRM 3.58 PRECIPITATION DEPTH
TRDA 1.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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140 JD INDEX STORM NO. 3
STRM 3.49 PRECIPITATION DEPTH
TRDA 5.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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141 JD INDEX STORM NO. 4

STRM 3.38 PRECIPITATION DEPTH

TRDA 10.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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144 JD INDEX STORM NO. 7
STRM 3.05 PRECIPITATION DEPTH
TRDA 90.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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145 JD INDEX STORM NO. 8
STRM 3.00 PRECIPITATION DEPTH
TRDA 120.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

146 JD INDEX STORM NO. 9
STRM 2.97 PRECIPITATION DEPTH
TRDA 150.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.01	.00	.01
.01	.01	.01	.01	.01	.01	.01	.01	.03	.03
.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
.01	.01	.01	.01	.01	.01	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00
.00	.00	.00	.00	.00	.00	.00	.00	.00	.00

WARNING --- ROUTED OUTFLOW (1120.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1159.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1192.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1215.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1230.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1235.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1233.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1223.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1207.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1185.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1155.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1115.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1113.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1152.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1184.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1207.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1222.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1227.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1225.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1216.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1200.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1177.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1148.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1108.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1117.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1148.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1171.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1185.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1191.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1189.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1180.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1165.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1143.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1114.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1104.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1126.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1140.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1146.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1145.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1137.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1122.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (1101.) IS GREATER THAN MAXIMUM OUTFLOW (1098.) IN STORAGE-OUTFLOW TABLE

-----DSS---ZOPEN: New File Opened, File: NE200245.DSS
Unit: 71; DSS Version: 6-JG
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/

-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT WEST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /ADOT EAST BASIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /CONCENTRATION POINT C58/FLOW TO OVERCHUTES/FLOW/31MAR1997/5MIN/OBSERVED/
-----DSS---ZWRITE Unit 71; Vers. 1: /CONCENTRATION POINT C58/FLOW TO OVERCHUTES/FLOW/01APR1997/5MIN/OBSERVED/
-----DSS---ZWRITE Unit 71; Vers. 1: /CONCENTRATION POINT C58/FLOW TO OVERCHUTES/FLOW/02APR1997/5MIN/OBSERVED/
-----DSS---ZWRITE Unit 71; Vers. 1: /CONCENTRATION POINT C58/FLOW TO OVERCHUTES/FLOW/03APR1997/5MIN/OBSERVED/
-----DSS---ZWRITE Unit 71; Vers. 1: /CONCENTRATION POINT C58/FLOW TO OVERCHUTES/FLOW/04APR1997/5MIN/OBSERVED/
WARNING EXCESS AT PONDING LESS THAN ZERO FOR PERIOD. EXCESS SET TO ZERO

*** FDKRUT - NEWTON RAPHSON FAILEDFIXED POINT ITERATION USED - ITERATION= 1

*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

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*** FDKRUT WARNING TIME STEP CALCULATION FAILED TO CONVERGE. STABILITY PROBLEMS MAY RESULT

WARNING --- ROUTED OUTFLOW (761.) IS GREATER THAN MAXIMUM OUTFLOW (761.) IN STORAGE-OUTFLOW TABLE

WARNING --- ROUTED OUTFLOW (761.) IS GREATER THAN MAXIMUM OUTFLOW (761.) IN STORAGE-OUTFLOW TABLE

-----DSS---ZWRITE Unit 71; Vers. 1: /HAWES RD @ BROADWAY RD/HAWES CHANNEL PROJECT/FLOW/31MAR1997/5MIN/HYDROGRAPH/
-----DSS---ZWRITE Unit 71; Vers. 1: /HAWES RD @ BROADWAY RD/HAWES CHANNEL PROJECT/FLOW/01APR1997/5MIN/HYDROGRAPH/
-----DSS---ZWRITE Unit 71; Vers. 1: /HAWES RD @ BROADWAY RD/HAWES CHANNEL PROJECT/FLOW/02APR1997/5MIN/HYDROGRAPH/
-----DSS---ZWRITE Unit 71; Vers. 1: /HAWES RD @ BROADWAY RD/HAWES CHANNEL PROJECT/FLOW/03APR1997/5MIN/HYDROGRAPH/
-----DSS---ZWRITE Unit 71; Vers. 1: /HAWES RD @ BROADWAY RD/HAWES CHANNEL PROJECT/FLOW/04APR1997/5MIN/HYDROGRAPH/

*** ***

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       **************
       *            *
1300 KK   *  RT31B1  *
       *            *
       **************

1304 KO      OUTPUT CONTROL VARIABLES
              IPRNT       5  PRINT CONTROL
              IPLOT       0  PLOT CONTROL
              QSCAL       0.  HYDROGRAPH PLOT SCALE
              IPNCH       0  PUNCH COMPUTED HYDROGRAPH
              IOUT       21  SAVE HYDROGRAPH ON THIS UNIT
              ISAV1       1  FIRST ORDINATE PUNCHED OR SAVED
              ISAV2    1000  LAST ORDINATE PUNCHED OR SAVED
              TIMINT   1.000  TIME INTERVAL IN HOURS
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-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW AFTER 360 CFS DIVERT TO WES/HAWES CHANNEL PROJECT/FLOW/31MAR1997/5MIN/HYD/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW AFTER 360 CFS DIVERT TO WES/HAWES CHANNEL PROJECT/FLOW/01APR1997/5MIN/HYD/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW AFTER 360 CFS DIVERT TO WES/HAWES CHANNEL PROJECT/FLOW/02APR1997/5MIN/HYD/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW AFTER 360 CFS DIVERT TO WES/HAWES CHANNEL PROJECT/FLOW/03APR1997/5MIN/HYD/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW AFTER 360 CFS DIVERT TO WES/HAWES CHANNEL PROJECT/FLOW/04APR1997/5MIN/HYD/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW SOUTHERN AND HAWES BEFORE S/HAWES CHANNEL PROJ/FLOW/31MAR1997/5MIN/HYDR/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW SOUTHERN AND HAWES BEFORE S/HAWES CHANNEL PROJ/FLOW/01APR1997/5MIN/HYDR/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW SOUTHERN AND HAWES BEFORE S/HAWES CHANNEL PROJ/FLOW/02APR1997/5MIN/HYDR/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW SOUTHERN AND HAWES BEFORE S/HAWES CHANNEL PROJ/FLOW/03APR1997/5MIN/HYDR/
-----DSS---ZWRITE Unit 71; Vers. 1: /FLOW SOUTHERN AND HAWES BEFORE S/HAWES CHANNEL PROJ/FLOW/04APR1997/5MIN/HYDR/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/

-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 3: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 3: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 3: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 3: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 3: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 4: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 4: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 4: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 4: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 4: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 5: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 5: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 5: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 5: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 5: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 6: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 6: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 6: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 6: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 6: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 7: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 7: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 7: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 7: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 7: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN//
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/??????????????????????????/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/??????????????????????????/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/??????????????????????????/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/??????????????????????????/
-----DSS---ZWRITE Unit 71; Vers. 1: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/??????????????????????????/
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/31MAR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/01APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/02APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/03APR1997/5MIN/100YR/
-----DSS---ZWRITE Unit 71; Vers. 2: /SOSSAMAN DRAIN/AT SUPERSTITION/FLOW/04APR1997/5MIN/100YR/
1

RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

		PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	OPERATION	STATION							
	HYDROGRAPH AT								
+		42	1048.	12.58	206.	56.	19.	1.75	
	ROUTED TO								
+		42T51	962.	13.17	206.	56.	19.	1.75	
	HYDROGRAPH AT								
+		51	1277.	12.25	159.	46.	15.	1.24	
	2 COMBINED AT								
+		C51	1420.	12.33	359.	100.	34.	2.99	
	ROUTED TO								
+		51T53	1129.	13.08	359.	100.	34.	2.99	
	HYDROGRAPH AT								
+		44A	1297.	12.50	277.	89.	30.	1.59	
	DIVERSION TO								
+		D44A	951.	12.50	213.	69.	23.	1.59	
	HYDROGRAPH AT								
+		DIV44A	347.	12.50	64.	20.	7.	1.59	
	HYDROGRAPH AT								
+		43	1365.	12.33	184.	53.	18.	1.42	
	2 COMBINED AT								
+		C43	1646.	12.33	244.	72.	24.	3.01	
	ROUTED TO								
+		43T53	1104.	13.42	244.	72.	24.	3.01	
	HYDROGRAPH AT								
+		53	831.	12.42	108.	31.	11.	.78	
	3 COMBINED AT								
+		C53	2157.	13.33	684.	196.	66.	6.78	
	HYDROGRAPH AT								
+		54	512.	12.42	66.	19.	6.	.49	
	2 COMBINED AT								
+		C54	2173.	13.33	743.	213.	71.	7.27	
	DIVERSION TO								
+		SOUTH	862.	13.33	235.	59.	20.	7.27	
	HYDROGRAPH AT								
+		DCAP12	1312.	13.33	508.	154.	52.	7.27	
	ROUTED TO								
+		CAP12	1166.	13.67	508.	154.	52.	7.27	
	HYDROGRAPH AT								
+		DR44A	951.	12.50	213.	69.	23.	1.59	

ROUTED TO
+ 44ATB 769. 13.58 213. 69. 23. 1.59

HYDROGRAPH AT
+ 44B 1430. 12.25 179. 54. 18. 1.06

2 COMBINED AT
+ C44B 1606. 12.25 393. 123. 41. 1.06

ROUTED TO
+ CAP10+ 1490. 12.33 393. 123. 41. 1.06

ROUTED TO
+ RCAP11 1490. 12.42 393. 123. 41. 1.06

2 COMBINED AT
+ C12 2146. 12.50 874. 269. 90. 8.33

ROUTED TO
+ ADOT-W 439. 15.17 414. 263. 90. 8.33

ROUTED TO
+ RADOTW 438. 15.25 414. 263. 90. 8.33

HYDROGRAPH AT
+ 36B 581. 12.08 49. 14. 5. .32

2 COMBINED AT
+ C36B 745. 12.08 421. 275. 94. 8.65

HYDROGRAPH AT
+ RSOUTH 862. 13.33 235. 59. 20. 7.27

HYDROGRAPH AT
+ 57 318. 12.00 19. 5. 2. .18

2 COMBINED AT
+ C57 941. 13.33 277. 69. 23. .18

ROUTED TO
+ CAP13+ 931. 13.33 277. 69. 23. .18

HYDROGRAPH AT
+ 36A 215. 12.00 15. 4. 1. .10

2 COMBINED AT
+ C36A 934. 13.33 292. 74. 25. .28

ROUTED TO
+ ADOT-E 267. 14.25 200. 73. 25. .28

2 COMBINED AT
+ CFAKE 771. 12.08 594. 339. 116. 8.93

HYDROGRAPH AT
+ 52 572. 12.25 61. 17. 6. .43

HYDROGRAPH AT
+ 56 862. 12.17 88. 25. 8. .55

2 COMBINED AT
+ C56 1400. 12.25 149. 42. 14. .98

```
     ROUTED TO
+          56T58    1068.  12.50     149.     42.     14.    .98

     HYDROGRAPH AT
+             58    1370.  12.17     107.     28.      9.    .95

     2 COMBINED AT
+            C58    1813.  12.25     252.     68.     23.   1.93

     HYDROGRAPH AT
+            46B     300.  12.67      65.     21.      7.    .36

     DIVERSION TO
+            D46      12.   9.67       8.      3.      1.    .36

     HYDROGRAPH AT
+           D46B     300.  12.67      65.     19.      6.    .36

     ROUTED TO
+           CAP6     239.  12.92      65.     19.      6.    .36

     ROUTED TO
+         RCAP6B     239.  12.92      65.     19.      6.    .36

     HYDROGRAPH AT
+            29A     135.  12.67      26.      8.      3.    .18

     DIVERSION TO
+           D29A     135.  12.67      17.      5.      2.    .18

     HYDROGRAPH AT
+           D29A      95.  12.92      12.      3.      1.    .18

     2 COMBINED AT
+           C29A     333.  12.92      76.     22.      7.    .54

     HYDROGRAPH AT
+            45A     336.  12.92      74.     22.      7.    .62

     DIVERSION TO
+           D29A     336.  12.92      45.     12.      4.    .62

     HYDROGRAPH AT
+           D45A     256.  13.17      35.     10.      3.    .62

     DIVERSION TO
+          45ATB     243.  13.17      33.      9.      3.    .62

     HYDROGRAPH AT
+           D45A      13.  13.17       2.      0.      0.    .62

     HYDROGRAPH AT
+            55B     955.  13.17     263.     82.     27.   1.86

     DIVERSION TO
+           D55B     955.  13.17     168.     46.     15.   1.86

     HYDROGRAPH AT
+           D55B     740.  13.42     124.     36.     12.   1.86

     2 COMBINED AT
```

+	C55B	743.	13.42	124.	36.	12.	2.48
	ROUTED TO						
+	CAP7	517.	13.75	124.	36.	12.	2.48
	HYDROGRAPH AT						
+	RD45A	243.	13.17	33.	9.	3.	.62
	ROUTED TO						
+	45ATB	167.	14.17	31.	9.	3.	.62
	HYDROGRAPH AT						
+	45B	653.	12.58	128.	41.	14.	.66
	DIVERSION TO						
+	D45B	358.	12.17	39.	12.	4.	.66
	HYDROGRAPH AT						
+	D45B	653.	12.58	105.	29.	10.	.66
	2 COMBINED AT						
+	C45B	653.	12.58	135.	38.	13.	.66
	ROUTED TO						
+	CAP8	464.	12.83	134.	38.	13.	.66
	2 COMBINED AT						
+	C7+8	727.	13.42	247.	72.	24.	3.14
	ROUTED TO						
+	RCAP78	674.	13.83	243.	72.	24.	3.14
	HYDROGRAPH AT						
+	29B	58.	12.58	9.	3.	1.	.08
	DIVERSION TO						
+	D29B	58.	12.58	9.	3.	1.	.08
	HYDROGRAPH AT						
+	D29B	1.	18.58	0.	0.	0.	.08
	2 COMBINED AT						
+	C29B1	674.	13.83	243.	72.	24.	3.22
	2 COMBINED AT						
+	C29B2	757.	13.75	307.	93.	31.	3.76
	ROUTED TO						
+	TRANS	749.	13.83	307.	93.	31.	3.76
	HYDROGRAPH AT						
+	29C	253.	12.42	38.	12.	4.	.23
	DIVERSION TO						
+	D29	253.	12.42	32.	9.	3.	.23
	HYDROGRAPH AT						
+	D29C	94.	12.83	10.	3.	1.	.23
	2 COMBINED AT						
+	C29C2	765.	13.08	315.	95.	32.	3.99

	ROUTED TO							
+		29CTD1	734.	14.00	313.	95.	32.	3.99
	HYDROGRAPH AT							
+		55	190.	12.25	21.	6.	2.	.14
	DIVERSION TO							
+		D55	190.	12.25	17.	5.	2.	.14
	HYDROGRAPH AT							
+		D55	75.	12.50	6.	2.	1.	.14
	ROUTED TO							
+		CAP9	39.	12.58	6.	2.	1.	.14
	ROUTED TO							
+		RCAP9	23.	13.17	6.	2.	1.	.14
	HYDROGRAPH AT							
+		29D	573.	12.67	114.	36.	12.	.65
	DIVERSION TO							
+		D29D	415.	12.42	46.	14.	5.	.65
	HYDROGRAPH AT							
+		D29D	573.	12.67	82.	23.	8.	.65
	DIVERSION TO							
+		D29DE	378.	12.67	54.	15.	5.	.65
	HYDROGRAPH AT							
+		D29D2	195.	12.67	28.	8.	3.	.65
	3 COMBINED AT							
+		C29C3	771.	13.25	343.	104.	35.	4.78
	ROUTED TO							
+		BASIN5	273.	15.33	251.	104.	35.	4.78
	ROUTED TO							
+		RBAS5	272.	15.42	251.	104.	35.	4.78
	HYDROGRAPH AT							
+		G29DE	378.	12.67	54.	15.	5.	.65
	ROUTED TO							
+		29T36	357.	12.75	54.	15.	5.	.65
	HYDROGRAPH AT							
+		36C	929.	12.08	105.	36.	12.	.44
	DIVERSION TO							
+		D36C	848.	12.00	66.	19.	6.	.44
	HYDROGRAPH AT							
+		D36C	770.	12.17	57.	17.	6.	.44
	3 COMBINED AT							
+		C36	763.	12.17	323.	133.	44.	5.22
	ROUTED TO							
+		36T37	519.	12.92	320.	133.	44.	5.22

```
1****************************************
*************************************
*                    *                    *                    *
* FLOOD HYDROGRAPH PACKAGE (HEC-1) *                    * U.S. ARMY CORPS OF
ENGINEERS    *
*        JUN  1998        *                    * HYDROLOGIC ENGINEERING CENTER   *
*      VERSION 4.1        *                    *      609 SECOND STREET      *
*                    *                    *   DAVIS, CALIFORNIA 95616    *
* RUN DATE  28JAN04  TIME  14:04:51  *                    *      (916) 756-1104       *
*                    *                    *                    *
****************************************
*************************************
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X   X XXXXXXX  XXXXX      X
X   X X    X   X    XX
X   X X    X       X
XXXXXXX XXXX   X    XXXXX  X
X   X X    X       X
X   X X    X   X    X
X   X XXXXXXX  XXXXX     XXX
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THIS PROGRAM REPLACES ALL PREVIOUS VERSIONS OF HEC-1 KNOWN AS HEC1 (JAN 73), HEC1GS, HEC1DB, AND HEC1KW.

THE DEFINITIONS OF VARIABLES -RTIMP- AND -RTIOR- HAVE CHANGED FROM THOSE USED WITH THE 1973-STYLE INPUT STRUCTURE.

THE DEFINITION OF -AMSKK- ON RM-CARD WAS CHANGED WITH REVISIONS DATED 28 SEP 81. THIS IS THE FORTRAN77 VERSION

NEW OPTIONS: DAMBREAK OUTFLOW SUBMERGENCE , SINGLE EVENT DAMAGE CALCULATION, DSS:WRITE STAGE FREQUENCY,

DSS:READ TIME SERIES AT DESIRED CALCULATION INTERVAL LOSS RATE:GREEN AND AMPT INFILTRATION

KINEMATIC WAVE: NEW FINITE DIFFERENCE ALGORITHM

1 HEC-1 INPUT PAGE 1

```
      LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

         1      ID
         2      ID  FILE:  NE2002B.DAT
         3      ID
         4      ID  MODEL UPDATED BY CWR ON 01/21/04 TO REVISE THE EXISTING CONDITIONS SUB-
BASIN
         5      ID  PARAMETERS FOR SUB-BASINS 47 AND 22 TO MATCH THOSE PARAMETERS IN THE
ADMP.
         6      ID
         7      ID  ***********************************************************************
         8      ID
         9      ID  FILE:  NE2002A.DAT
        10      ID
        11      ID
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      12      ID ****************************************************************************
      13      ID  MODEL NAME: NE2002.DAT
      14      ID
      15      ID  THIS MODEL COVERS THE AREA EAST OF HAWES ROAD AND THE SOSSAMAN
CHANNEL
      16      ID  MAJOR CHANGES TO THIS MODEL INCLUDE THE FOLLOWING:
      17      ID
      18      ID   1. OLD SUBBASIN 18A HAS BEEN SPLIT INTO TWO SUBBASINS. SUBBASIN 18C
REMAINS
      19      ID     IN THIS MODEL AS PART OF THE HAWES CHANNEL INFRASTRUCTURE
      20      ID   2. OLD SUBBASIN 30 HAS BEEN SPLIT INTO SUBBASIN 30A AND SUBBASIN 30B.
      21      ID     SUBBASIN 30 GETS INTERCEPTED BY A CHANNEL ON THE NORTH SIDE OF
CORALBELL
      22      ID     AND GETS ROUTED TO SUBBASIN 31A. SUBBASIN 30B STILL GOES SOUTH
ALONG
      23      ID     ELLSWORTH ROAD
      24      ID   3. FOR THE 2002 YEAR CONDITION, ALL CAP DETENTION BASINS HAVE BEEN
PLACED IN
      25      ID     THE MODEL. THEIR OUTLET CHANNELS HAVE FOR THE MOST PART NOT BEEN
INCLUDED
      26      ID     IN THIS MODEL. THE OUTLET CHANNELS WILL BE IN THE FUTURE MODEL
      27      ID ****************************************************************************
      28      ID
      29      ID  SOUTHEAST MESA AREA DRAINAGE MASTER PLAN
      30      ID  AREA NORTH OF SUPERSTITION FREEWAY
      31      ID
      32      ID
      33      ID  REVISED BY VALERIE SWICK, OCTOBER-NOVEMBER 1996
      34      ID  TO INCORPORATE THE SUPERSITION STRUCTURES AND COMBINE MODELS
      35      ID
      36      ID  FILENAME:  MESANE.DAT
      37      ID
      38      ID  THIS MODEL REPRESENTS THE EXISTING CONDITION OF THE WATERSHED.
      39      ID  TOTAL DRAINAGE AREA IS APPROXIMATELY 17 SQ. MI.
      40      ID
      41      ID  100-YEAR 24-HOUR FREQUENCY
      42      ID
      43      ID
      44      ID  METHODOLOGY
      45      ID  THE US CORPS OF ENGINEERS FLOOD HYDROLOGY MODEL HEC-1 DATED SEP1990
VER 4.0
      46      ID  SCS TYPE II RAINFALL DISTRIBUTION
      47      ID  S-GRAPH HYDROGRAPH
      48      ID  GREEN AND AMPT INFILTRATION EQUATION USED FOR CALCULATING LOSSES
      49      ID  NORMAL DEPTH STORAGE CHANNEL ROUTING
      50      ID  APPROXIMATE DIRECTION, LOCATION, AND LENGTH OF THE WASHES HAVE
BEEN
      51      ID  EVALUATED BASED ON FIELD INVESTIGATION, USGS MAPS, LANDIS AERIAL
SURVEYS
      52      ID  DATED 1994
      53      ID  THE NOAA TECHNICAL MEMORANDUM NOAA ATLAS 2 DEPTH AREA RATIOS
      54      ID
      55      ID  INITIAL STUDY PERFORMED BY LISA C. YOUNG
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    LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

      56      ID  REVIEWED BY VALERIE A. SWICK
      57      ID  HYDROLOGY BRANCH ENGINEERING DIVISION, FLOOD CONTROL
      58      ID  DISTRICT OF MARICOPA COUNTY, DECEMBER - JULY 1995.
      59      ID
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 60      ID  ASSUMED VELOCITY OF 1 FT/SEC FOR SHEET FLOW, 2 FT/SEC FOR
WASH/NATURAL
 61      ID  CHANNEL, 3 FT/SEC FOR ROAD AND GRASS CHANNEL, 10FT/SEC FOR CONCRETE
CHANNEL
 62      ID
 63      ID
 64      ID  LAST UPDATED ON  3/13/98
 65      ID
 66      ID  UPDATE WAS BASED UPON NEW MAG LAND USE DEFINITIONS FOR SINGLE
FAMILY HOUSING
 67      ID
 68      ID  DDM MCUHP2 MESA AREA DRAINAGE MASTER PLAN
        *DIAGRAM
 69      IT    5 1APR97   0000   1000
 70      IO    5
 71      IN   15
 72      JD 3.600   .01
 73      PC  .000  .002  .005  .008  .011  .014  .017  .020  .023  .026
 74      PC  .029  .032  .035  .038  .041  .044  .048  .052  .056  .060
 75      PC  .064  .068  .072  .076  .080  .085  .090  .095  .100  .105
 76      PC  .110  .115  .120  .126  .133  .140  .147  .155  .163  .172
 77      PC  .181  .191  .203  .218  .236  .257  .283  .387  .663  .707
 78      PC  .735  .758  .776  .791  .804  .815  .825  .834  .842  .849
 79      PC  .856  .863  .869  .875  .881  .887  .893  .898  .903  .908
 80      PC  .913  .918  .922  .926  .930  .934  .938  .942  .946  .950
 81      PC  .953  .956  .959  .962  .965  .968  .971  .974  .977  .980
 82      PC  .983  .986  .989  .992  .995  .998 1.000
 83      JD  3.58   1.0
 84      JD  3.49   5.0
 85      JD  3.38  10.0
 86      JD  3.24  30.0
 87      JD  3.10  60.0
 88      JD  3.05  90.0
 89      JD  3.00 120.0
 90      JD  2.97 150.0
        *
        * DDM  ***** Updated ******

 91      KK   42
 92      KM  BASIN 42
 93      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 94      KM  L=    3.1 Lca=    1.5  S=  60.9 Kn= .043 LAG= 51.6
 95      KM  DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
 96      BA  1.75
 97      LG   .32   .29  5.00   .31  10.00
 98      UI  114.  114.  248.  441.  618.  773.  923. 1018. 1086. 1092.
 99      UI 1041.  954.  806.  673.  573.  485.  415.  340.  290.  242.
100      UI  212.  175.  147.  121.  109.   78.   78.   78.   38.   28.
101      UI   28.   28.   28.   28.   28.   28.   28.    0.    0.    0.
102      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
        *
        * DDM  ***** Preserved *****
1                          HEC-1 INPUT                          PAGE 3

    LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


103      KK  42T51
104      RS   10  FLOW   -1
105      RC  0.08 0.055  0.08  7000 0.011
106      RX    0  600   700   710   720   730   830  1630
107      RY   10    5    3    0    0    3    5   10
```

```
*
* DDM   ***** Updated *****

  KK    51
  KM   BASIN 51
  KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  KM   L=     1.5  Lca=      .8  S=  54.4  Kn= .039  LAG=  27.3
  KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
  BA   1.24
  LG    .29    .30   4.60    .37   18.00
  UI   153.   416.   885.  1248.  1446.  1410.  1128.   817.   598.   428.
  UI   311.   232.   163.   110.    99.    37.    37.    37.    37.    37.
  UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
  UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
*
* DDM   ***** Preserved *****

  KK    C51
  KM   COMBINE FLOWS FROM 42 AND 51
  HC     2
*
* DDM   ***** Preserved *****

  KK   51T53
  KM   ROUTE 51 TO 53
  RS     9   FLOW     -1
  RC   0.08  0.055   0.08   8000   0.01
  RX     0    100    200    210    220    230    330    430
  RY     7      6      5      0      0      5      6      7
*
* DDM   ***** Updated *****

  KK    44A
  KM   BASIN 44A
  KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  KM   L=     2.8  Lca=     1.4  S=  54.5  Kn= .039  LAG=  43.6
  KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
  BA   1.59
  LG    .20    .25   4.50    .45   45.00
  UI   123.   123.   390.   597.   813.   994.  1114.  1180.  1153.  1063.
  UI   881.   716.   588.   484.   397.   320.   259.   219.   189.   131.
  UI   126.    84.    84.    75.    30.    30.    30.    30.    30.    30.
  UI    30.    30.     0.     0.     0.     0.     0.     0.     0.     0.
  UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
*
* DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

  KK  DIV44A
  KM   DIVERT 80% OF THE LOW FLOWS WEST AND SOUTH TO 44B, 70% OF HIGH FLOWS
  DT   D44A
  DI     0    500   1000   3000
  DQ     0    400    750   2100
* DDM   ***** Updated *****

  KK    43
  KM   BASIN 43
  KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
  KM   L=     1.9  Lca=      .9  S=  58.2  Kn= .036  LAG=  29.8
```

```
149     KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
150     BA   1.42
151     LG   .29   .30   4.70   .35  18.00
152     UI  161.  376.  827.  1212.  1470.  1531.  1375.  1047.  783.  584.
153     UI  434.  324.  251.  171.  127.  110.  59.  39.  39.  39.
154     UI  39.   0.   0.   0.   0.   0.   0.   0.   0.   0.
155     UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *
       * DDM   ***** Preserved *****

156     KK   C43
157     KM   COMBINE 43 WITH DIVERTED FLOWS FROM 45A
158     HC    2
       *
       * DDM   ***** Preserved *****

159     KK  43T53
160     RS   12  FLOW   -1
161     RC  0.08  0.055  0.08  11250  0.009
162     RX   0  200  300  310  315  325  335  535
163     RY   6   3   2   0   0   2   3   6
       *
       * DDM   ***** Updated *****

164     KK   53
165     KM  BASIN 53
166     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
167     KM  L=   1.9 Lca=    .9  S=  63.5  Kn= .039  LAG= 31.8
168     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
169     BA  .78
170     LG  .29   .30   5.20   .28  20.00
171     UI  83.  189.  377.  486.  616.  903.  943.  707.  555.  428.
172     UI  291.  149.  123.  83.  38.  25.  25.  25.  0.  0.
173     UI  0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *
       * DDM   ***** Preserved *****

174     KK   C53
175     KM   COMBINE 53, 43 AND 51
176     HC    3
       *
       * DDM   ***** Updated *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

177     KK   54
178     KM  BASIN 54
179     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
180     KM  L=   1.5 Lca=    .8  S=  42.8  Kn= .044  LAG= 32.8
181     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
182     BA  .49
183     LG  .30   .29   5.40   .26  17.00
184     UI  50.  107.  221.  287.  359.  502.  603.  449.  358.  278.
185     UI  206.  110.  84.  55.  39.  15.  15.  15.  15.  0.
186     UI  0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
187     UI  0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
       *
       * DDM   ***** Preserved *****

188     KK   C54
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```
 189      KM  COMBINE 53 AND 54
 190      HC     2
         *
         * DDM   ***** Preserved *****

 191      KK  DCAP12
 192      KM  FLOWS SPLIT AT CAP AND SOUTHERN AVE, RATING CURVES BASED ON THREE
5X7 CBCs
 193      KM  PART OF THE FLOW GOES SOUTH ACRSS SOUTHERN TO CAP 13 +14
 194      DT  SOUTH
 195      DI    0   450   1000   2500
 196      DQ    0     0    275   1025
         *
         * DDM   ***** Preserved *****

 197      KK  CAP12
 198      RS    1   FLOW    -1
 199      SV    0  0.238   2.72  13.37  36.82
 200      SE 1563.6   1564   1566   1568   1570
 201      SQ    0    30    188    574   1098
         *
         * DDM   ***** Preserved *****

 202      KK  DR44A
 203      KM  RETRIEVE DIVERTED FLOWS FROM 44A
 204      DR  D44A
         *
         * DDM   ***** Preserved *****

 205      KK  44ATB
 206      KM  ROUTE 44A TO 44B, STREET AND SHEET FLOW THROUGH NEIGHBORHOODS
 207      KM  NO CURB AND GUTTER
 208      RS   15   FLOW    -1
 209      RC  0.055  0.045  0.055   9000  0.008
 210      RX    0   500   1010  1012.5  1022.5  1027.5  1532.5  2037.5
 211      RY    6   5.5    3     0     0     3    5.5     6
         *
         * DDM   ***** Updated *****
1                          HEC-1 INPUT                          PAGE  6

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


 212      KK   44B
 213      KM  BASIN 44B
 214      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 215      KM  L=    1.1  Lca=     .9  S=  64.8  Kn= .041  LAG= 26.2
 216      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
 217      BA  1.06
 218      LG   .26   .24   6.60   .17  30.00
 219      UI  136.  426.  715.  947.  1453.  1456.  1057.  775.  520.  251.
 220      UI  180.  109.   42.   42.   42.    0.    0.    0.    0.    0.
 221      UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
         *
         * DDM   ***** Preserved *****

 222      KK  C44B
 223      KM  COMBINE 44A WITH 44B
 224      HC    2
         *
         * DDM   ***** Preserved *****
```

```
225     KK  CAP10+
226     KM  COMBINED CAP 10 AND 11, SAME CONTRIBUTING AREA AND HYDRAULICALLY
CONNECTED
227     KM  STORAGE AND DISCHARGES WERE ADDED AT THE APPROPRIATE ELEVATIONS
228     RS    1   FLOW    -1
229     SV    0   0.43  3.397  11.626  66.53
230     SE  1562.4   1564   1566   1568   1570
231     SQ    0    180    736   1684   2754
        *
        * DDM   ***** Preserved *****

232     KK  RCAP11
233     KM  ROUTE FLOWS FROM CAP OVERCHUTE #10 AND 11 TO ADOT WEST BASIN
234     RK   2400  0.0003  0.013        TRAP    20     3
        *
        * DDM   ***** Preserved *****

235     KK   C12
236     KM  COMBINE ROUTED FLOWS FROM CAP #10 AND 11 WITH CAP #12
237     HC    2
        *
        * DDM   ***** Preserved *****

238     KK  ADOT-W
239     KM  WEST ADOT DETENTION BASIN 4189, WEST OF CAP AND NORTH OF SUPERSITION
FREEWAY
240     KM  FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
241     KM     COUNTY
242     KM     AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
243     KM        A-N WEST, INC., FEBRUARY, 1987.
244     RS    1   ELEV    36
245     SV    0  12.35   63.5  210.3  367.5  535.1  667.85  713.55
246     SE   36    38    40    44    48    52    55    56
247     SL  36.0  28.27    .6    .5
248     SS   55   200   2.6   1.5
        *
        * DDM   ***** Preserved *****
1                          HEC-1 INPUT                          PAGE  7

    LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


249     KK  RADOTW
250     KM  ROUTE FLOWS IN CONCRETE CHANNEL TO CULVERTS UNDER SUPERSTITION
FREEWAY
251     RS  1.75   FLOW    -1
252     RC  .035  0.012   .035   4500  .0033
253     RX    0    500   1000   1012   1020   1032   1532   2032
254     RY   13   12.5     12      0      0     12   12.5     13
        *
        * DDM   ***** Updated *****

255     KK   36B
256     KM  BASIN 36B
257     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
258     KM  L=    1.0 Lca=     .5  S=  45.0  Kn= .028  LAG=  15.0
259     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
260     BA  .32
261     LG  .30   .29  7.30   .11  16.00
262     UI  125.  387.  715.  627.  361.  139.   58.   22.    0.    0.
263     UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
```

```
          *
          * DDM   ***** Preserved *****

264         KK   C36B
265         KM   COMBINE FLOWS FROM ADOT BASIN W WITH SUB36
266         HC     2
267         ZW    A=ADOT WEST BASIN  B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
          *
          * DDM   ***** Preserved *****

268         KK  RSOUTH
269         KM   RETRIEVE FLOWS CROSSING SOUTHERN AT CAP
270         DR   SOUTH
          *
          * DDM   ***** Updated *****

271         KK     57
272         KM   BASIN 57
273         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
274         KM   L=      .3  Lca=      .1  S=  35.7  Kn= .044  LAG=  9.4
275         KM   DESERT/RANGELAND S-GRAPH WAS USED FOR THE BASIN
276         BA    .18
277         LG    .37    .35    5.40    .25    2.00
278         UI   193.   566.   378.   149.    59.    19.     0.     0.     0.     0.
279         UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          *
          * DDM   ***** Preserved *****

280         KK    C57
281         KM   COMBINE FLOWS CROSSING SOUTHERN AT CAP WITH THOSE OF SUBBASIN 57
282         HC     2
          *
          * DDM   ***** Preserved *****
1                                HEC-1 INPUT                                PAGE  8

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


283         KK  CAP13+
284         KM    CAP OVERCHUTES 13 AND 14 WERE COMBINED SINCE THY HAVE COMMON
DRAINAGE
285         KM    STORAGE AND DISCHARGES WERE ADDED AT SPECIFIED ELEVATIONS
286         RS      1   FLOW     -1
287         SV      0  1.198  2.601  5.746
288         SE   1564   1567   1568   1570
289         SQ      0    180    500   1143
          *
          * DDM   ***** Updated *****

290         KK     36A
291         KM   BASIN 36A
292         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
293         KM   L=      .3  Lca=      .2  S=  44.1  Kn= .028  LAG=  6.6
294         KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
295         BA    .10
296         LG    .27    .34    6.00    .21   28.00
297         UI   201.   435.   101.     0.     0.     0.     0.     0.     0.     0.
298         UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          *
          * DDM   ***** Preserved *****

299         KK    C36A
```

```
      300      KM  COMBINE FLOWS FROM CAP OVERCHUTES INTO ADOT EAST DETENTION BASIN
      301      HC     2
             *
             * DDM  ***** Preserved *****

      302      KK  ADOT-E
      303      KM  EAST ADOT DETENTION BASIN 4105, WEST OF CAP AND NORTH OF
SUPERSTITION
      304      KM  FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
      305      KM     COUNTY
      306      KM     AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
      307      KM        A-N WEST, INC., FEBRUARY, 1987.
      308      RS    1  ELEV  49.5
      309      SV    0   300   340
      310      SE  49.5    60    61
      311      SL  49.5  28.27    .6    .5
      312      SS   60   200   2.6   1.5
      313      ZW   A=ADOT EAST BASIN B=AT SUPERSTITION  C=FLOW  E=5MIN F=100YR
             *
             * DDM  ***** Preserved *****

      314      KK  CFAKE
      315      KM  THIS IS JUST A FAKE CONCENTRATION POINT TO ELIMINATE THE ERROR THAT
SAYS TO
      316      KM  "COMBINE HYDROGRAPHS MORE OFTEN".
      317      HC     2
             *
             * DDM  ***** Updated *****
1                          HEC-1 INPUT                          PAGE  9

    LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


      318      KK    52
      319      KM  BASIN 52
      320      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
      321      KM  L=    1.6 Lca=     .7  S=  54.9  Kn= .035  LAG= 25.3
      322      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
      323      BA   .43
      324      LG   .31   .31  6.60   .15  12.00
      325      UI   58.  191.  311.  418.  657.  573.  419.  304.  176.   98.
      326      UI   63.   30.   18.   18.   18.    0.    0.    0.    0.    0.
      327      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
             * DDM  ***** Updated *****

      328      KK    56
      329      KM  BASIN 56
      330      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
      331      KM  L=     .9 Lca=     .5  S=  57.9  Kn= .040  LAG= 20.2
      332      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
      333      BA   .55
      334      LG   .31   .24  7.30   .13  20.00
      335      UI  106.  393.  593.  982.  870.  588.  362.  157.   97.   30.
      336      UI   28.   28.    0.    0.    0.    0.    0.    0.    0.    0.
      337      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
             *
             * DDM  ***** Preserved *****

      338      KK   C56
      339      KM   COMBINE 52 AND 56 BEHIND THE STOCK POND
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      340       KM    ASSUMING STOCK POND IS EFFECTIVE, DIVERTS FLOWS SOUTH ACROSS
SUPERSTITION
      341       KM    STORAGE ROUTING WAS NOT PERFORMED, CHANNEL/PIPE CROSSING
      342       HC     2
              *
              * DDM  ***** Preserved *****

      343       KK  56T58
      344       RS     3   FLOW    -1
      345       RC  0.08  0.055   0.08   2500  0.004
      346       RX     0   200   300   310   320   330   430   530
      347       RY     6     4     3     0     0     3     4     6
              *
              * DDM  ***** Updated *****

      348       KK    58
      349       KM  BASIN 58
      350       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
      351       KM   L=    1.1  Lca=     .5  S=  50.4  Kn= .033  LAG=  18.3
      352       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
      353       BA   .95
      354       LG   .34   .36   5.60   .22   4.00
      355       UI  238.  813.  1261.  1998.  1385.  886.  384.  213.   76.   54.
      356       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
      357       UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
              *
              * DDM  ***** Preserved *****
1                              HEC-1 INPUT                          PAGE 10

     LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


      358       KK    C58
      359       KM  COMBINE 58 WITH 56
      360       KM  THE VOLUME AT THIS CONCENTRATION POINT WILL BE SPLIT BETWEEN THE
OVERCHUTES
      361       KM  CAP1A AND CAP1B. THIS WILL BE MODELED AS FLAT TOP HYDROGRAPHS WITH
217 CFS
      362       KM  VALUES FOR UI CARDS AT THESE OVERCHUTES
      363       KM  NO DATA AVAILABLE ON CAP OVERCHUTE SIZING
      364       ZW    A=CONCENTRATION POINT C58  B=FLOW TO OVERCHUTES  C=FLOW
F=OBSERVED
      365       HC     2
              *

      366       KK  DIC58
      367       KM  DIVERT 1/2 OF FLOW FROM C58. 1/2 OF FLOW WILL GO TO CAP1A, THE OTHER
HALF TO
      368       KM  THE OTHER OVERCHUTE CAP1B.
      369       ZW   A=CAP1A  B=OVERCHUTE  C=FLOW  F=100YEAR
      370       DT  DICAPB
      371       DI     0   300   600   800  1000  1200  1400  1600  1800  2000
      372       DQ     0   150   200   400   500   600   700   800   900  1000
              *

      373       KK  CAPBRE
      374       KM  RETURN THE DIVERTED FLOW THAT WILL BE BROUGHT INTO CAP1B
      375       ZW   A=CAP1B B=OVERCHUTE   C=FLOW   F=100YEAR
      376       DR  DICAPB
              *

      377       KK  CLEAR
```

```
378      KM  **********FOLLOWING COMBINE TO CLEAR HYDROGRAPHS ONLY*******
379      KM  **********NOTE THAT THESE HYDROGRAPHS DO NOT PHYSICALLY COMBINE
AT THIS LOCAT
380      HC    3
       *

381      KK   46B
382      KM  BASIN 46B
383      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
384      KM   L=    1.4 Lca=     .7  S=  42.9  Kn= .073  LAG=  51.1
385      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
386      BA   .36
387      LG   .21    .24   4.00    .56  51.00
388      UI   24.    24.    59.    95.   118.   135.   156.   182.   232.   298.
389      UI  262.   217.   189.   161.   138.   117.    94.    61.    42.    39.
390      UI   31.    24.    21.     7.     7.     7.     7.     7.     7.     7.
391      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
392      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
       *

393      KK   D46B
394      KM   RETAIN 100 YEAR 2 HOUR, (16% FOR FUTURE DEVELOPMENT)
395      DT   D46     5
396      DI    0  10000
397      DQ    0  10000
       *
1                          HEC-1 INPUT                          PAGE 11

LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


398      KK   CAP6
399      RS    1   FLOW    -1
400      SV    0  0.236  1.627  8.021
401      SE 1556.2   1558   1560   1562
402      SQ    0     52    180    350
       *

403      KK  RCAP6B
404      KM  CHANNEL PARAMETERS TAKEN FROM PLANS BY AMERICAN ENGINEERING
405      KM  FOR THE SUPERSTITION SKYLINE HIGH SCHOOL
406      KM  FLOW IS ROUTED ALONG THE TRANSMISSION LINE CORRIDOR
407      KM  ROUTE CONCENTRATION POINT CAP#6 TO SUBBASIN 29A (CRISMON CHANNEL)
408      RS    2   FLOW    -1
409      RC  .013   .013   .013   2300   .002
410      RX    0    39    40   45.5   53.5    59    60    99
411      RY   6.5    5.5    5.5     0     0   6.5   6.5   6.5
       *

412      KK   29A
413      KM  BASIN 29A
414      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
415      KM   L=     .9 Lca=     .4  S=  41.2  Kn= .107  LAG=  49.5
416      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
417      BA   .18
418      LG   .21    .24   4.00    .58  29.00
419      UI   12.    12.    33.    51.    63.    72.    84.    99.   131.   157.
420      UI  127.   107.    93.    78.    66.    56.    40.    24.    21.    19.
421      UI   12.    12.     5.     4.     4.     4.     4.     4.     4.     0.
422      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
423      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
       *
```

```
424     KK   D29A
425     KM   RETAIN 100 YEAR 2 HOUR, (73% FOR FUTURE DEVELOPMENT)
426     DT   D29A     9
427     DI     0  10000
428     DQ     0  10000
        *

429     KK   C29A
430     HC     2
        *
        * OVERTOPPING OF CRISMON ROAD CHANNEL REMOVED TO REFLECT FUTURE
CHANNEL

431     KK    45A
432     KM   BASIN 45A
433     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
434     KM   L=    2.0  Lca=    1.0  S=  70.4  Kn= .079  LAG=  66.1
435     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
436     BA    .62
437     LG    .21    .25   4.00    .60   19.00
438     UI    31.    31.    31.   101.   126.   150.   171.   187.   210.   238.
439     UI   273.   346.   409.   353.   303.   269.   243.   213.   190.   166.
440     UI   149.   120.    89.    56.    54.    52.    42.    31.    31.    22.
1                              HEC-1 INPUT                              PAGE 12

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

441     UI    10.    10.    10.    10.    10.    10.    10.    10.    10.     0.
442     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
443     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *

444     KK   D45A
445     KM   RETAIN 100 YEAR 2 HOUR, (66% FOR FUTURE DEVELOPMENT)
446     DT   D29A    24
447     DI     0  10000
448     DQ     0  10000
        *

449     KK   D45A
450     KM   DIVERT 75% OF THE FLOW SOUTH,THE REMAINDER ALONG UNIVERSITY TO
NEXT SUBBASIN
451     KM   CHANNEL ALONG UNIVERSITY, SOME SHEET FLOW IS DIVERTED
452     DT   45ATB
453     DI     0   5000
454     DQ     0   4750
        *

455     KK    55B
456     KM   BASIN 55B
457     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
458     KM   L=    3.5  Lca=    1.8  S=  48.6  Kn= .058  LAG=  79.5
459     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
460     BA   1.86
461     LG    .23    .25   4.10    .57   31.00
462     UI    79.    79.    79.   141.   269.   319.   374.   413.   451.   490.
463     UI   542.   600.   670.   821.   973.   999.   852.   753.   682.   628.
464     UI   569.   510.   465.   413.   376.   325.   252.   192.   139.   136.
465     UI   129.   124.    79.    79.    79.    54.    24.    24.    24.    24.
466     UI    24.    24.    24.    24.    24.    24.    24.     0.     0.     0.
467     UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
```

```
          *
468       KK   D55B
469       KM   RETAIN 100 YEAR 2 HOUR, (73% FUTURE DEVELOPMENT)
470       DT   D55B    92
471       DI    0  10000
472       DQ    0  10000
          *

473       KK   C55B
474       KM   COMBINE 55B WITH DIVERTED FLOWS FROM 45A
475       HC    2
          *

476       KK   CAP7
477       KM   ROUTE THROUGH CAP#7
478       RS    1   FLOW    -1
479       SV    0  0.167  0.309  0.539  24.52  85.75
480       SE 1560.5   1563 1564.27   1566   1568   1570
481       SQ    0    0   225   460   756   1017
          *
          * FOLLOWING ROUTING CHANGED TO REFLECT FUTURE LAND USE CHANGES FOR
          * PARKWOOD RANCH
1                          HEC-1 INPUT                          PAGE 13

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


482       KK   RD45A
483       KM   RETURN DIVERTED FLOWS FROM 45A
484       DR   45ATB
          *

485       KK   45ATB
486       KM   ROUTE REMAINDER OF FLOWS TO 45B
487       KM   STREET FLOW AND SHEET FLOW, NO DEFINED CHANNEL
488       RS    17   FLOW    -1
489       RC  0.055  0.035  0.055  10000  0.001
490       RX    0   500   1010  1012.5  1022.5  1027.5  1532.5  2037.5
491       RY    6   5.5    5     0     0     5    5.5     6
          *

492       KK   45B
493       KM   BASIN 45B
494       KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
495       KM   L=    1.9  Lca=     .9  S=  45.0  Kn= .052  LAG= 45.2
496       KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
497       BA   .66
498       LG   .22    .25   6.00    .22   50.00
499       UI   49.    49.   159.   219.   266.   309.   368.   482.   614.   516.
500       UI  425.   363.   302.   252.   202.   124.    86.    80.    53.    49.
501       UI   22.    15.    15.    15.    15.    15.     0.     0.     0.     0.
502       UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          *

503       KK   D45B
504       KM   RETAIN 100 YEAR 2 HOUR, (42% FOR FUTURE DEVELOPMENT)
505       DT   D45B    24
506       DI    0  10000
507       DQ    0  10000
          *
```

```
508     KK   C45B
509     KM   COMBINE FLOWS FROM 45A AND 45B
510     HC     2
       *

511     KK   CAP8
512     KM   ROUTE THROUGH CAP OVERCHUTE #8
513     RS     1   FLOW     -1
514     SV     0  1.449  9.494  43.04
515     SE 1562.1   1564   1566   1568
516     SQ     0    120    436    935
       *

517     KK   C7+8
518     KM   COMBINE FLOW FROM OVERCHUTES #7 & #8
519     KM   ROUTE FLOW FROM HERE THROUGH PARKWOOD RANCH
520     HC     2
       *
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```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

521     KK  RCAP78
522     KM   ROUTE CAP OVERCHUTE #7 & #8 TO SUBBASIN 29B, A ROUTING OF ABOUT 4000
FT
523     KM   CHANNEL DIMENSIONS FROM PARKWOOD RANCH
524     KM  (ADMP CHANNEL ID CN4)
525     RS     3   FLOW     -1
526     RC   .035   .035   .035   4000  .0033
527     RX     0    12    27    45    125    143    158    170
528     RY   6.5    4.5    3    0    0    3    4.5    6.5
       *

529     KK    29B
530     KM   BASIN 29B
531     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
532     KM   L=     .8  Lca=     .5  S=  52.6  Kn= .092  LAG=  42.2
533     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
534     BA    .08
535     LG    .18    .25   4.00    .66  17.00
536     UI    6.    7.    23.    31.    36.    43.    53.    74.    75.    59.
537     UI   50.    41.    34.    27.    16.    11.    10.    6.    6.    2.
538     UI    2.    2.    2.    2.    2.    0.    0.    0.    0.    0.
539     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
       *

540     KK   D29B
541     KM   RETAIN 100 YEAR 2 HOUR, (98% FOR FUTURE DEVELOPMENT)
542     DT   D29B     5
543     DI     0  10000
544     DQ     0  10000
       *

545     KK   C29B1
546     KM   COMBINE FLOWS FROM CAP #7 OVERCHUTE AND SUBBASIN 29B
547     HC     2
       *

548     KK  C29B2
549     KM   COMBINE ROUTED FLOW FROM 29A WITH SUBBASIN 29B
550     HC     2
```

```
*
KK  TRANS
KM  ROUTE FLOW ALONG THE TRANSMISSION CORRIDOR
KM  ADJACENT TO SCHOOL SITE AND PARKWOOD RANCH
KM  (ADMP CHANNEL ID CN3)
RS    1  FLOW    -1
RC  .013  .013  .013  2600  .0015
RX    0   39   40   51   78   89   90  129
RY  6.5  5.5  5.5   0   0  5.5  5.5  6.5
*
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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK   29C
KM  BASIN 29C
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM  L=     .9 Lca=     .5  S=  58.8  Kn= .074  LAG= 34.7
KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA   .23
LG   .24   .25   5.70   .27  32.00
UI   23.   43.   95.  124.  153.  199.  280.  226.  180.  143.
UI  113.   77.   41.   36.   23.   15.    7.    7.    7.    7.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
*

KK   D29C
KM   RETAIN 100 YEAR 2 HOUR, (98% FOR FUTURE DEVELOPMENT)
DT   D29    17
DI    0  10000
DQ    0  10000
*

KK  C29C2
KM  COMBINE ROUTED FLOWS FROM C29B2 AND C29C1
HC    2
*

KK 29CTD1
KM  REACH PR-2, PR-3
KM  ROUTE FLOW ALONG SOUTH OF SCHOOL AND SOUTH ALONG CRISMON TO
SOUTHERN
KM  GRASS LINED CHANNEL
RS    1  FLOW    -1
RC  .045  .045  .045  2500  .0025
RX    0   20   40   69  109  139  147  155
RY  6.5  5.5  4.9   0   0  4.9  5.5  6.5
*

KK    55
KM  BASIN 55
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM  L=     .5 Lca=     .2  S=  72.3  Kn= .081  LAG= 22.2
KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA   .14
LG   .24   .24   4.60   .40  29.00
UI   21.   85.  128.  192.  243.  167.  116.   63.   35.   20.
UI   7.    7.    7.    0.    0.    0.    0.    0.    0.    0.
UI   0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
```

```
*
KK   D55
KM   RETAIN 100 YEAR 2 HOUR, (90% FOR FUTURE DEVELOPMENT)
DT   D55     9
DI    0  10000
DQ    0  10000
*
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK   CAP9
RS    1   FLOW    -1
SV    0   2.03  10.075  43.569
SE  1562.1   1564   1566   1568
SQ    0    120    436    935
*

KK  RCAP9
KM  ROUTE CAP OVERCHUTE #9 TO SUBBASIN 29D
KM  UNLINED CHANNEL THROUGH PARKWOOD RANCH
KM  DESIGN PLANS BY STANDAGE & TRUITT
KM  CHANNEL REVISED BY HOSKIN ENG.
KM  CHANNEL ID FOR THAT PART OF THE CHANNEL THAT CUT ACROSS 29D)
RS    3   FLOW    -1
RC  .035   .035   .035   4700  .0050
RX    0    16    30    40    50    60    74    90
RY   7.4   3.4   2.0    0     0   2.0   3.4   7.4
*

KK   29D
KM  BASIN 29D
KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM   L=    1.2  Lca=     .9  S=  40.7  Kn= .066  LAG=  47.8
KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA   .65
LG   .21    .25   4.90    .35   43.00
UI   46.    46.   133.   196.   239.   275.   325.   390.   532.   552.
UI  439.   375.   319.   270.   225.   177.   111.    80.    75.    51.
UI   46.    26.    14.    14.    14.    14.    14.    14.     0.     0.
UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
*

KK   D29D
KM   RETAIN 100 YEAR 2 HOUR, (53% FOR FUTURE DEVELOPMENT)
DT   D29D    27
DI    0  10000
DQ    0  10000
*

KK  D29D2
KM  DIVERT APPROXIMATLY 2/3 OF SUBBASIN 29D'S FLOW TO THE EAST. THIS
HAPPENS
KM  BECAUSE CHANNEL CN5 CUTS ACROSS SUBBASIN 29D. ONLY THOSE FLOWS TO
THE EAST OF
KM  THE CHANNEL GET INTO THE CHANNEL
DT  D29DE  10000
DI    0    100    200    500    800
DQ    0     66    132    330    528
*
```

```
          *     *****KVM*****
1                          HEC-1 INPUT                          PAGE 17

     LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


     639        KK  C29C3
     640        KM  COMBINE FLOWS FROM C29C2, D29D2, AND RCAP9
     641        HC     3
          *
          * RETENTION BASIN 5, OPTION 2

     642        KK  BASIN5
     643        KM  WITH 36-INCH OUTFALL
     644        RS     1   STOR     -1
     645        SA     0    3.9     11   13.7     14     14
     646        SE  1518   1521   1523   1524   1528   1531
     647        SL  1518  18.00    0.6    0.5
     648        SS  1528    200    2.5    1.5
          *

     649        KK  RBAS5
     650        KM  REACH PR-1
     651        KM  ROUTE FLOWS FORM 29D (WESTERN 1/3) TO SUBBASIN 36.  CRISMON AND
SOUTHERN TO
     652        KM  THE SUPERSTITION FWY. (PREVIOUSLY CALLED 29DT36)
     653        RS     1   FLOW     -1
     654        RC  0.025  0.025  0.025   2150  0.0017
     655        RX     0     20     25     32     44     60     68     76
     656        RY   3.8    3.9      4      0      0      4    3.9    3.8
          *

     657        KK  G29DE
     658        KM  RECALL THE EASTERN 2/3 OF SUBBASIN 29D. THIS IS RECALLED 2600 FT EAST OF
     659        KM  CRISMON RD.
     660        DR  D29DE
          *
          * FOLLOWING ROUTE ADDED BY HOSKIN ENG.*

     661        KK  29T36
     662        KM  ROUTE FLOW FROM PARKWOOD RANCH THROUGH NEW UNLINED CHANNEL
     663        KM  CROSS-SECTION MATCHES PARKWOOD RANCH CHANNEL
     664        KM  (ADMP CHANNEL ID CN5)
     665        RS     3   FLOW     -1
     666        RC   .035   .035   .035   3000   .0050
     667        RX     0     16     30     40     50     60     74     90
     668        RY   7.4    3.4    2.0      0      0    2.0    3.4    7.4
          *

     669        KK    36C
     670        KM  BASIN 36C
     671        KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
     672        KM   L=     1.2  Lca=      .6  S=  44.2  Kn= .020  LAG=  12.4
     673        KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
     674        BA    .44
     675        LG    .10    .25   4.65    .47   80.00
     676        UI   266.   780.  1282.   724.   259.    83.    37.     0.     0.     0.
     677        UI     0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          *
1                          HEC-1 INPUT                          PAGE 18

     LINE       ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
678      KK   D36C
679      KM   RETAIN 100 YEAR 2 HOUR, (87% FOR FUTURE DEVELOPMENT)
680      DT   D36C     38
681      DI     0  10000
682      DQ     0  10000
        *

683      KK    C36
684      KM   COMBINE FLOWS IN CHANNEL ACROSS PARKWOOD RANCH (SUBBASIN 29D)
WITH SUBBASIN 3
685      HC     3
        *
        * DDM   ***** Preserved *****

686      KK   36T37
687      KM   ROUTE C36 TO C37 VIA ADOT CONCRETE CHANNEL
688      RS   1.76   FLOW     -1
689      RC  0.035  0.013  0.035   5280  0.0033
690      RX     0    500   1000   1012   1020   1032   1532   2032
691      RY    13   12.5     12      0      0     12   12.5     13
        *
        * DDM   ***** Updated *****

692      KK    30b
693      KM   BASIN 30b
694      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
695      KM   L=     1.5  Lca=      .9  S=  43.3  Kn= .060  LAG=  48.3
696      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
697      BA    .81
698      LG    .27    .27   4.00    .52   25.00
699      UI   57.    57.   161.   241.   296.   339.   400.   475.   645.   703.
700      UI  558.   475.   407.   344.   288.   236.   149.   101.    94.    71.
701      UI   57.    41.    17.    17.    17.    17.    17.    17.     0.     0.
702      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        * DDM   ***** Preserved *****

703      KK   30bT37
704      KM   ROUTE FLOWS FROM S30b TO C37 VIA NATURAL CHANNEL
705      RS    4.4   FLOW     -1
706      RC  0.040  0.035  0.040   2640  0.053
707      RX     0     2     3     4     7     8    28   528
708      RY     6     5     5     0     0     4   4.5     5
        * DDM   ***** Updated *****

709      KK     37
710      KM   BASIN 37
711      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
712      KM   L=     1.0  Lca=      .5  S=  45.0  Kn= .028  LAG=  15.0
713      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
714      BA    .47
715      LG    .31    .33   4.00    .49   14.00
716      UI   184.   569.  1051.   922.   531.   204.    85.    32.     0.     0.
717      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        * DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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```
718     KK   C37
719     KM  COMBINE FLOWS FROM S37, S30, AND C36 AT C37
720     HC    3
        *
        * DDM   ***** Preserved *****

721     KK  ADOTEL
722     KM  ADOT DETENTION BASIN 4313 AT ELLSWORTH RD. AND SUPERSTITION
723     KM  FROM EASTERN MARICOPA COUNTY AREA DRAINAGE MASTER STUDY, FCD OF
MARICOPA
724     KM      COUNTY
725     KM      AND SUPERSTITION FREEWAY COMPREHENSIVE OFFSITE DRAINAGE PLAN,
726     KM         A-N WEST, INC., FEBRUARY, 1987.
727     RS    1  ELEV    56
728     SV    0   617   650
729     SE   56    74    75
730     SL   56  3.14   0.6   .05
731     SS   74   200   2.6   1.5
        *
        * DDM   ***** Preserved *****

732     KK  37T38
733     KM  ROUTE FLOWS FROM C37 TO C38 VIA ADOT CONCRETE CHANNEL
734     RS  1.76   FLOW    -1
735     RC  0.035  0.012  0.035   5280  0.0045
736     RX    0   500   1000   1012   1020   1032   1532   2032
737     RY   13   12.5    12     0     0    12   12.5    13
        *
        * DDM   ***** Updated *****

738     KK   17A
739     KM  BASIN 17A
740     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
741     KM  L=     .7  Lca=     .5  S=  60.6  Kn= .042  LAG=  18.5
742     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
743     BA   .18
744     LG   .26   .28   4.00   .55  33.00
745     UI   44.   151.   233.   375.   265.   171.   77.   42.   16.   10.
746     UI   10.   0.   0.   0.   0.   0.   0.   0.   0.   0.
747     UI   0.   0.   0.   0.   0.   0.   0.   0.   0.   0.
        *
        * DDM   ***** Preserved *****

748     KK  17AT23
749     KM  ROUTE FLOWS FROM 17 TO 23 VIA DIRT CHANNEL, THEN NATURAL WASH
750     RS    3   FLOW    -1
751     RC  0.045  0.032  0.045   2600  0.015
752     RX    0   100   133   137   142   147   200   300
753     RY    5    4   3.5    0    0   3.5    4    5
        *
        * DDM   ***** Updated *****
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


754     KK    23
755     KM  BASIN 23
756     KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
757     KM  L=     1.0  Lca=     .3  S=  65.0  Kn= .038  LAG=  16.2
758     KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
759     BA   .28
```

```
760     LG   .28   .30   4.00   .53  20.00
761     UI   92.  296.  509.  595.  357.  170.   77.   28.   18.    0.
762     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
763     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
      *
      * DDM   ***** Updated *****

764     KK    48
765     KM   BASIN 48
766     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
767     KM   L=    1.6 Lca=     .8  S=  80.2  Kn= .038  LAG= 26.4
768     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
769     BA   .77
770     LG   .31   .31   4.10   .49  12.00
771     UI   98.  305.  517.  682. 1035. 1076.  777.  573.  390.  190.
772     UI  136.   85.   30.   30.   30.    0.    0.    0.    0.    0.
773     UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
      *
      * DDM   ***** Preserved *****

774     KK   CAP3
775     RS     1   FLOW     -1
776     SV     0  0.934  1.222  4.303  13.13
777     SE  1564.6  1567.5   1568   1570   1572
778     SQ     0     0    143    750   1530
      *

779     KK  BASIN3
      * KO    1     2
780     KM       NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP3
781     KM       WITH 30-INCH OUTFALL    BASIN AE2B (BASIN 3)
782     RS     1   STOR     -1
783     SA     0    .5     1    1.8    3.4     4     6     6
784     SE    55    56    57    58    59    60    62    65
785     SL  56.25   4.91   .62    .5
786     SS    62   100   2.5   1.5
      *
      * DDM   ***** Preserved *****

787     KK  RCAP3A
788     KM   ROUTE CAP OVERCHUTE #3 TO APACHE TRAIL (ALONG NATURAL CHANNEL)
789     RS   3.3   FLOW     -1
790     RC   .055   .045   .055   2000   .020
791     RX    100    200    300    305    310    315    415    515
792     RY      7      6      5      0      0      5      6      7
      *
      * DDM   ***** Preserved *****
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

793     KK  RCAP3B
794     KM   ROUTE CAP OVERCHUTE #3 FROM APACHE TRAIL TO 17B
795     RS     1   FLOW     -1
796     RC   .045   .035   .045   2300   .01
797     RX    100    200    300    301    311    312    412    512
798     RY      3      2      1      0      0      1      2      3
      *
      * DDM   ***** Updated *****

799     KK    17B
```

```
800      KM  BASIN 17B
801      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
802      KM  L=     .8  Lca=     .6  S=  50.0  Kn= .042  LAG=  21.2
803      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
804      BA   .22
805      LG   .26   .28   4.00   .54  30.00
806      UI   37.   146.   220.   348.   372.   252.   169.   77.   47.   23.
807      UI   11.   11.    0.    0.    0.    0.    0.    0.    0.    0.
808      UI    0.    0.    0.    0.    0.    0.    0.    0.    0.    0.
         *
         * DDM   ***** Preserved *****

809      KK   C17B
810      KM   COMBINE FLOWS FROM CAP OVERCHUTE #3 AND S17B
811      HC     2
         * DDM   ***** Preserved *****

812      KK  17BT22
813      KM  ROUTE FLOWS FROM S17 TO C22 VIA LINED CHANNEL
814      RS     3   FLOW     -1
815      RC  0.035  0.015  0.035   2700  0.0114
816      RX     0     1     3     6    18    21    36    70
817      RY   6.25   6.10     6     0     0     3   3.25   3.5
         *
         * DDM   ***** Updated *****

818      KK     47
819      KM   BASIN 47
820      KM   BASIN 47 HAS BEEN RESTORED TO THE ORIGINAL EXISTING CONDITIONS
PARAMETERS IN
821      KM   THE ADMP.  THE LAG OF 97 MIN. IS THE CALCULATED LAG BASED ON Kn = 0.08.
822      KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
         *  REMOVE PREVIOUS DATA
         * KM  L=     3.0  Lca=     1.5  S=  51.2  Kn= .037  LAG=  44.8
         * LG  .32    .32   4.00    .49   8.00
         * UI  126.   126.   418.   569.   691.   804.   959.  1272.  1579.  130
         * UI 1079.   920.   765.   631.   492.   300.   218.   205.   126.   12
         * UI  42.    39.    39.    39.    39.    39.     0.     0.     0.
         * UI   0.     0.     0.     0.     0.     0.     0.     0.     0.
         *
         *  ADD NEW DATA WHICH REFLECTS EXISTING CONDITONS ADMP DATA
823      KM   L=     3.0  Lca=     1.5  S=  51.2  Kn= .080  LAG=   97
824      KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
825      BA   1.67
826      LG   .32    .32   4.00    .44   8.00
```



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LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

827      UI   58.    58.    58.    58.   130.   197.   224.   268.   288.   316.
828      UI  335.   357.   390.   425.   454.   512.   604.   700.   772.   677.
829      UI  604.   548.   506.   472.   441.   402.   366.   342.   311.   286.
830      UI  266.   223.   174.   146.   103.   103.    97.    96.    92.    58.
831      UI   58.    58.    58.    33.    18.    18.    18.    18.    18.    18.
832      UI   18.    18.    18.    18.    18.    18.    18.     0.     0.     0.
833      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
         *
         * DDM   ***** Preserved *****
         * KKCAP4+5
         * KM ROUTE THROUGH OVERCHUTES 4 AND 5, HUYDRAULICALLY CONNECTED
         * KM STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
         * RS    1   FLOW     -1
```

```
          * SV    0  0.081  0.483  4.779  39.02  121.88
          * SE1568.3   1570   1572   1574   1576   1578
          * SQ    0    170    575   1085   1245   1410
          *

834         KK  BASIN4
835         KM  ROUTE THROUGH OVERCHUTES 4 AND 5, HYDRAULICALLY CONNECTED
836         KM  STORAGE AND DISCHARGE WERE ADDED AT APPROPRIATE ELEVATIONS
837         KM  OUTFLOW THROUGH ONE 30-INCH PIPE
838         KM      BASIN4 (BY4B)
839         RS     1   STOR     -1
840         SA     0  0.64    2.3   5.28   6.88   9.41
841         SE    68    69    70    71    72    76
842         SL  69.75   4.91   .62    .5
843         SS    74   200   2.5   1.5
          *
          * DDM   ***** Preserved *****

844         KK  RCAP4
845         KM  ROUTE CAP OVERCHUTE #4 AND #5 TO SUBBASIN 22
846         RS    10   FLOW     -1
847         RC   .05   .045    .05   6000   .005
848         RX   100    200    300    304    310    314    414    514
849         RY     6     5     4     0     0     4     5     6
          *
          * DDM   ***** Updated *****

850         KK    22
851         KM  BASIN 22
852         KM   BASIN 22 HAS BEEN RESTORED TO THE ORIGINAL EXISTING CONDITIONS
PARAMETERS IN
853         KM   THE ADMP.  THE LAG OF 28 MIN. IS THE CALCULATED LAG BASED ON Kn = 0.06.
854         KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
          *
          * REMOVE OLD DATA
          * KM  L=    1.2  Lca=     .3  S=  51.3  Kn= .041  LAG=  19.5
          * LG  .27    .28   4.00    .54  29.00
          * UI  86.   310.   470.   782.   624.   415.   227.   109.    56.    2
          * UI  21.     0.     0.     0.     0.     0.     0.     0.     0.
          * UI  0.     0.     0.     0.     0.     0.     0.     0.     0.
          *
          *  ADD NEW DATA WHICH REFLECTS EXISTING CONDITONS ADMP DATA
855         KM   L=    1.2  Lca=     .3  S=  51.3  Kn= .060  LAG=   28
1                              HEC-1 INPUT                          PAGE 23

LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

856         KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
857         BA   .41
858         LG   .27    .28   4.00    .49  29.00
859         UI   49.   136.   246.   318.   451.   579.   427.   324.   241.   138.
860         UI   83.    56.    33.    15.    15.    15.     0.     0.     0.     0.
861         UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
          * DDM   ***** Preserved *****

862         KK   C22A
863         KM   COMBINE FLOWS FROM CAP OVERCHUTES 4 & 5 AND SUBBASIN 22
864         HC     2
          * DDM   ***** Preserved *****

865         KK    C22
866         KM   COMBINE S17B AND S22
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```
867     HC     2
       * DDM   ***** Preserved *****

868     KK  22T23
869     KM  ROUTE C22 TO C23 VIA CONCRETE CHANNEL
870     KM  VELOCITY = 5FT/S
871     RS     2   FLOW    -1
872     RC  0.045  0.022  0.042   2640  0.001
873     RX     0    102    103    106   1021    124    128    270
874     RY     7    6.5     6      0     0      3      5      7
       *
       * DDM   ***** Preserved *****

875     KK    C23
876     KM  COMBINE FLOWS FROM C22, C17A, AND S23 AT C23
877     HC     3
       * DDM   ***** Preserved *****

878     KK  23T24
879     KM  ROUTE FLOWS FROM C23 TO C24 VIA CONCRETE LINED CHANNEL
880     RS     2   FLOW    -1
881     RC  0.045  0.022  0.045   2640 0.0117
882     RX     0     2     3     6    21    24    26    70
883     RY     6     6     6     0     0     3     5     6
       *
       * DDM   ***** Updated *****

884     KK    49
885     KM  BASIN 49
886     KM   THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
887     KM   L=     1.6 Lca=     .8  S=  73.6 Kn= .040 LAG= 28.4
888     KM   PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
889     BA   .79
890     LG   .30    .30   4.15    .48   14.00
891     UI   94.   257.   467.   603.   836.  1129.   839.   643.   482.   296.
892     UI  161.   117.    74.    29.    29.    29.     0.     0.     0.     0.
893     UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
       *
       * DDM   ***** Preserved *****
1                          HEC-1 INPUT                          PAGE 24

LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10


894     KK   CAP2
895     RS     1   FLOW    -1
896     SV     0   0.02  0.538  2.545  13.729
897     SE  1565.1   1566   1568   1570   1572
898     SQ     0     60    340    807   1395
       *

899     KK  BASIN2
       * KO    1
900     KM      NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP2
901     KM      WITH 24-INCH OUTFALL     (EH1B)
902     RS     1   STOR    -1
903     SA     0    .54   1.81   4.10   5.14    6.3    6.3    6.3
904     SE    49     51     52     53     54     55     64     67
905     SL    50   3.14    .62     .5
906     SS  56.5    100    2.5    1.5
       *
```

```
907      KK  RCAP2A
908      KM  ROUTE BASIN 2 OUTFLOW THROUGH 36-INCH PIPE
909      RK  1370  0.0088  0.012        CIRC     3
        *
        * DDM  ***** Preserved *****

910      KK  RCAP2
911      KM  ROUTE CAP OVERCHUTE #2 ACROSS ELLSWORTH ROAD TO 18A
912      RS    10   FLOW    -1
913      RC  .045   .040   .045   7500   .012
914      RX   100    200    300    316    321    329    429    529
915      RY     6      5      3      0      0      3      5      6
        *
        * DDM  ***** Updated *****

916      KK    50
917      KM  BASIN 50
918      KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
919      KM  L=     .9  Lca=     .4  S=  81.4  Kn= .037  LAG=  15.8
920      KM  PHOENIX VALLEY S-GRAPH WAS USED FOR THIS BASIN
921      BA   .28
922      LG   .33    .31   4.00    .49   5.00
923      UI   97.   306.   543.   575.   342.   149.    71.    21.    18.     0.
924      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
925      UI    0.     0.     0.     0.     0.     0.     0.     0.     0.     0.
        *
        * DDM  ***** Preserved *****

926      KK   CAP1
927      RS     1   FLOW    -1
928      SV     0  0.091  0.575  3.319  13.256
929      SE  1566   1568   1570   1572   1574
930      SQ     5     90    275    470    610
        *
```



```
LINE      ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

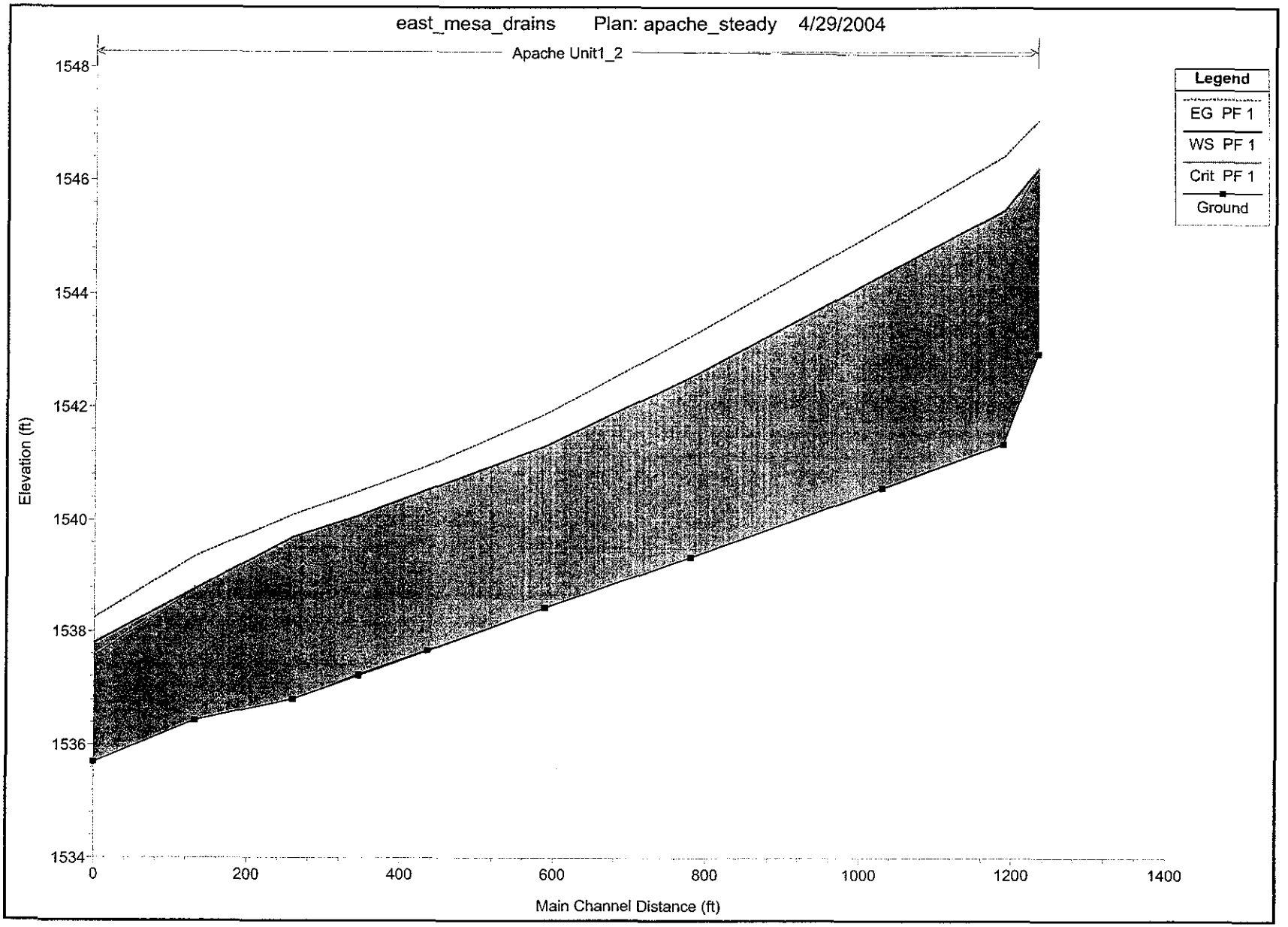
931      KK  BASIN1
        * KO    1     2
932      KM      NEW DETENTION BASIN LOCATED DOWNSTREAM FROM CAP1
933      KM      WITH 24-INCH OUTFALL
934      RS     1   STOR    -1
935      SA  0.01   1.94   3.10   3.49   3.94   4.40   4.85
936      SE    60     61     62     63     64     65     66
937      SL  60.2   3.14    .62     .5
938      SS    64     50    2.5    1.5
        *
        *
        * DDM  ***** Preserved *****

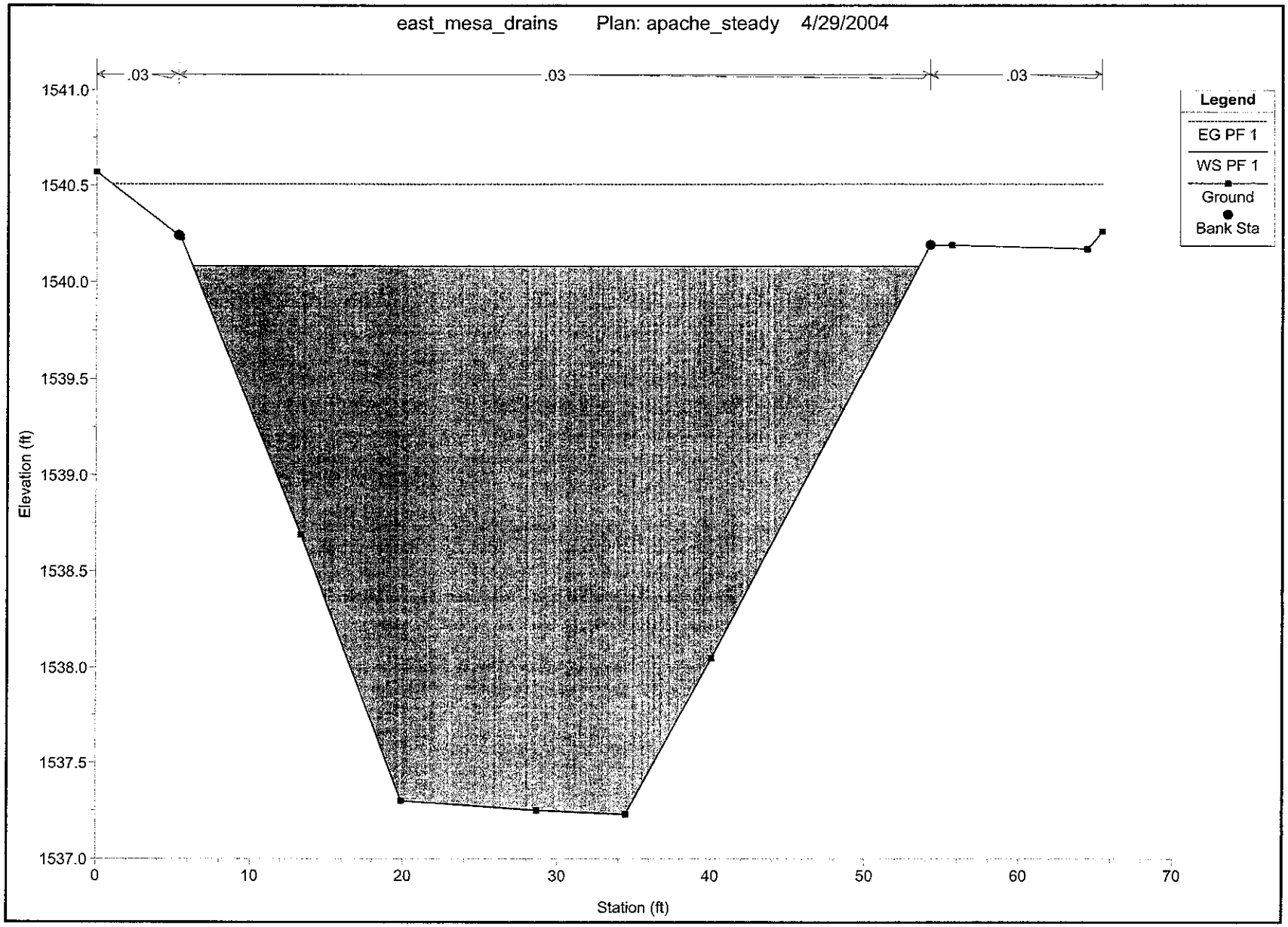
939      KK  RCAP1
940      KM  ROUTE CAP OVERCHUTE #1 TO SUBBASIN 18A
941      RS    11   FLOW    -1
942      RC   .05   .045    .05   7000    .02
943      RX   100    200    300    301    303    304    404    505
944      RY     6      5      2      0      0      2      5      6
        *
        * DDM  ***** Updated *****

945      KK   18c
```

HEC-RAS Plan: R1:4.13.04 River: Apache Reach: Unit1_2 Profile: PF 1

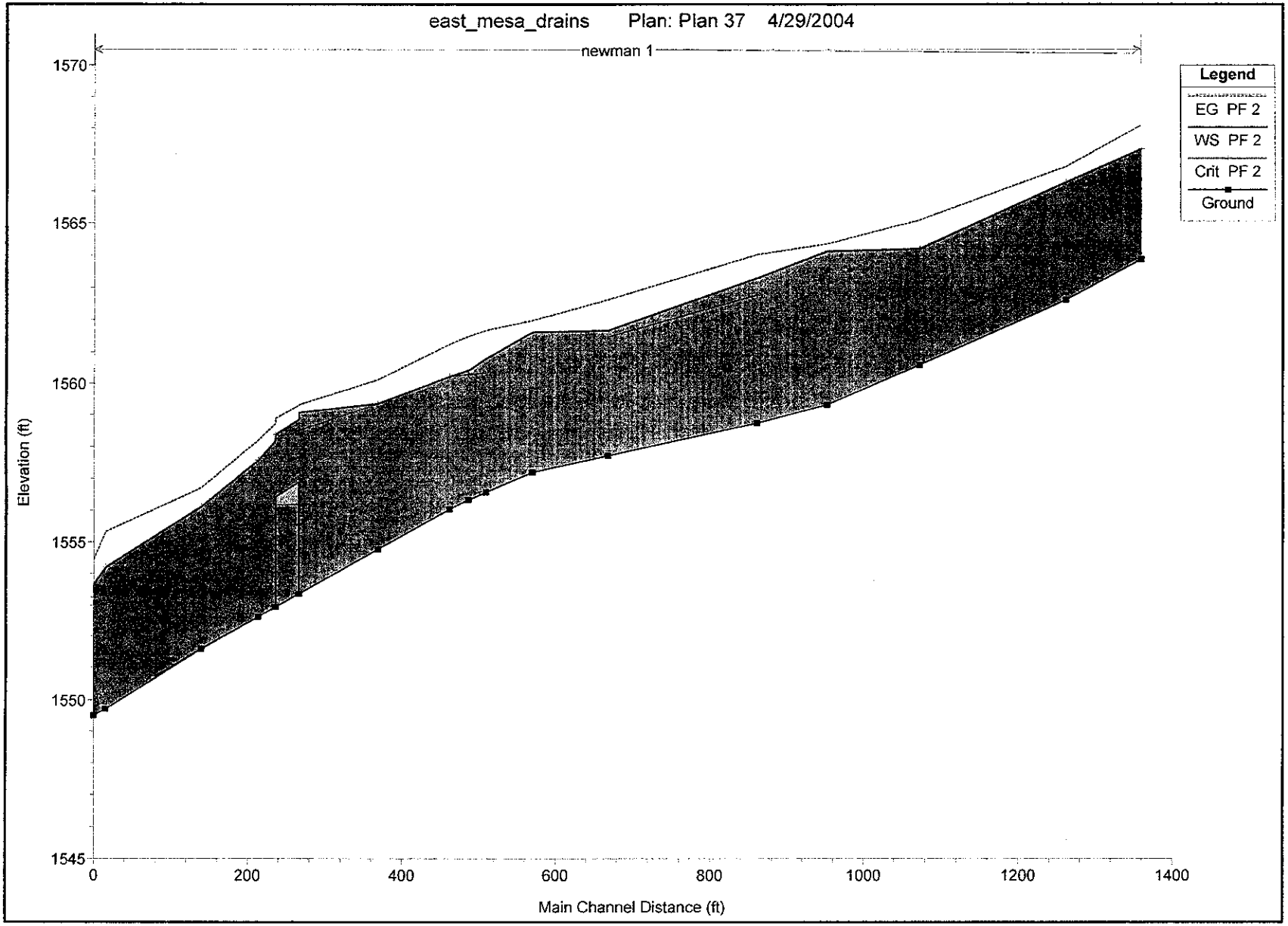
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	EG Elev (ft)	EG Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chl
Unit1_2	2[illegible]	PF 1	456.00	1542.96	1547.24	1546.68	1546.21	1546.21	1547.06	0.011578	7.41	61.55	36.94	1.01
Unit1_2	1154.199	PF 1	456.00	1541.35	1546.65	1545.84	1545.48	1545.16	1546.43	0.007795	7.80	58.43	22.56	0.85
Unit1_2	1082.388	PF 1	456.00	1540.57	1545.76	1544.60	1544.36		1545.18	0.007455	7.29	62.51	26.63	0.84
Unit1_2	782.657	PF 1	456.00	1539.34	1544.48	1542.58	1542.54		1543.27	0.007654	6.85	66.61	32.61	0.84
Unit1_2	592.422	PF 1	456.00	1538.44	1542.80	1541.44	1541.31		1541.87	0.006522	6.03	75.61	40.27	0.78
Unit1_2	438.641	PF 1	456.00	1537.67	1541.21	1540.63	1540.54		1540.96	0.004987	5.20	87.74	47.97	0.68
Unit1_2	346.314	PF 1	456.00	1537.23	1540.24	1540.19	1540.08		1540.50	0.005068	5.26	86.77	47.20	0.68
Unit1_2	262.422	PF 1	456.00	1536.82	1539.17	1539.68	1539.68		1540.09	0.004453	5.15	91.00	67.41	0.65
Unit1_2	134.636	PF 1	456.00	1536.44	1538.12	1537.70	1538.81	1538.78	1539.36	0.007336	6.31	82.79	67.08	0.82
Unit1_2	3.261	PF 1	456.00	1535.70	1537.06	1535.70	1537.59	1537.59	1538.22	0.010283	6.65	74.44	65.72	0.95

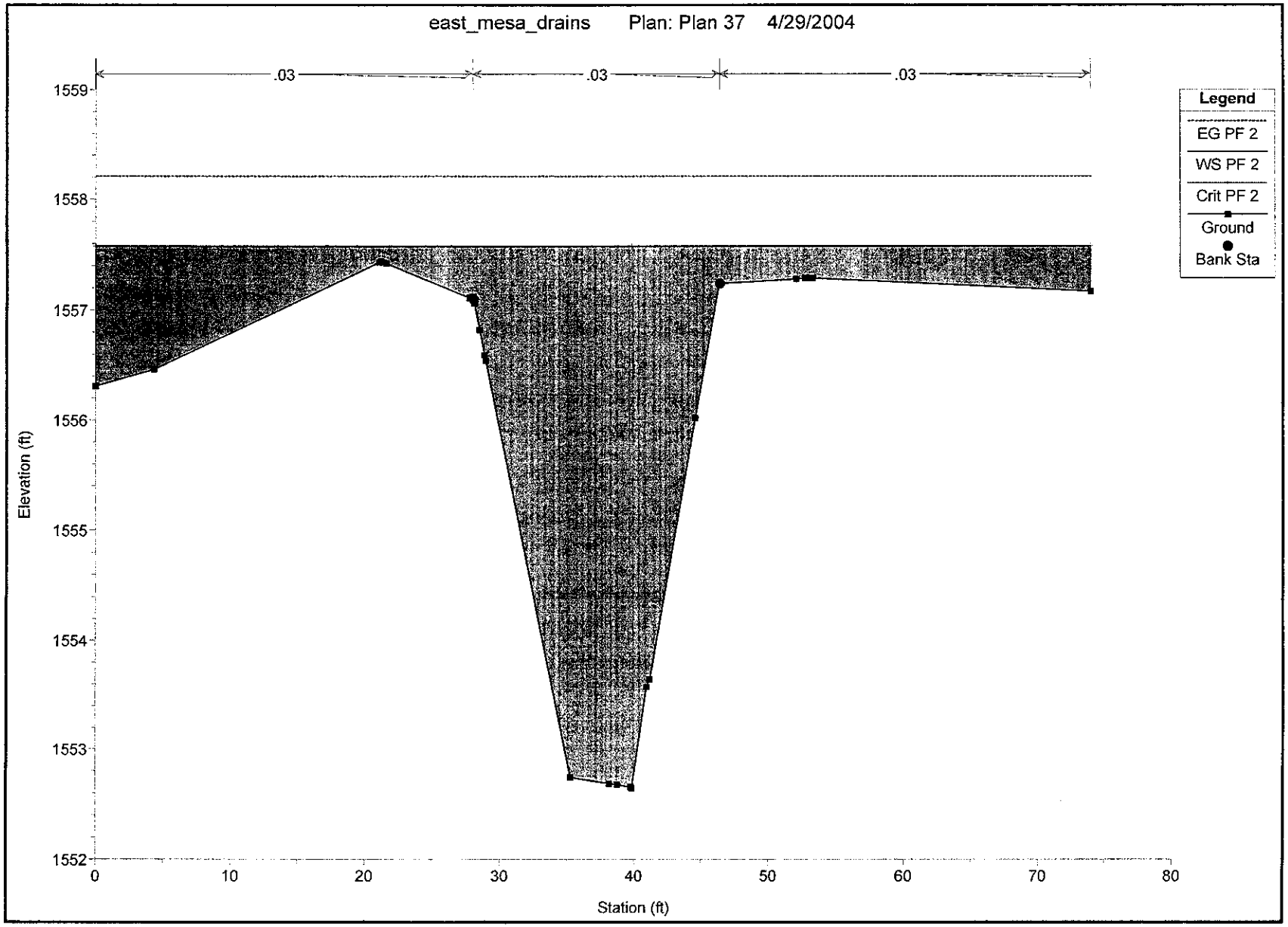

east_mesa_drains Plan: apache_steady 4/29/2004
Apache Unit1_2
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1548
1546
1544
1542
1540
1538
1536
1534
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)


east_mesa_drains Plan: apache_steady 4/29/2004
.03
.03
.03
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1541.0
1540.5
1540.0
1539.5
1539.0
1538.5
1538.0
1537.5
1537.0
0
10
20
30
40
50
60
70
Station (ft)

HEC-RAS Plan: newman River: newman Reach: 1 Profile: PF 2

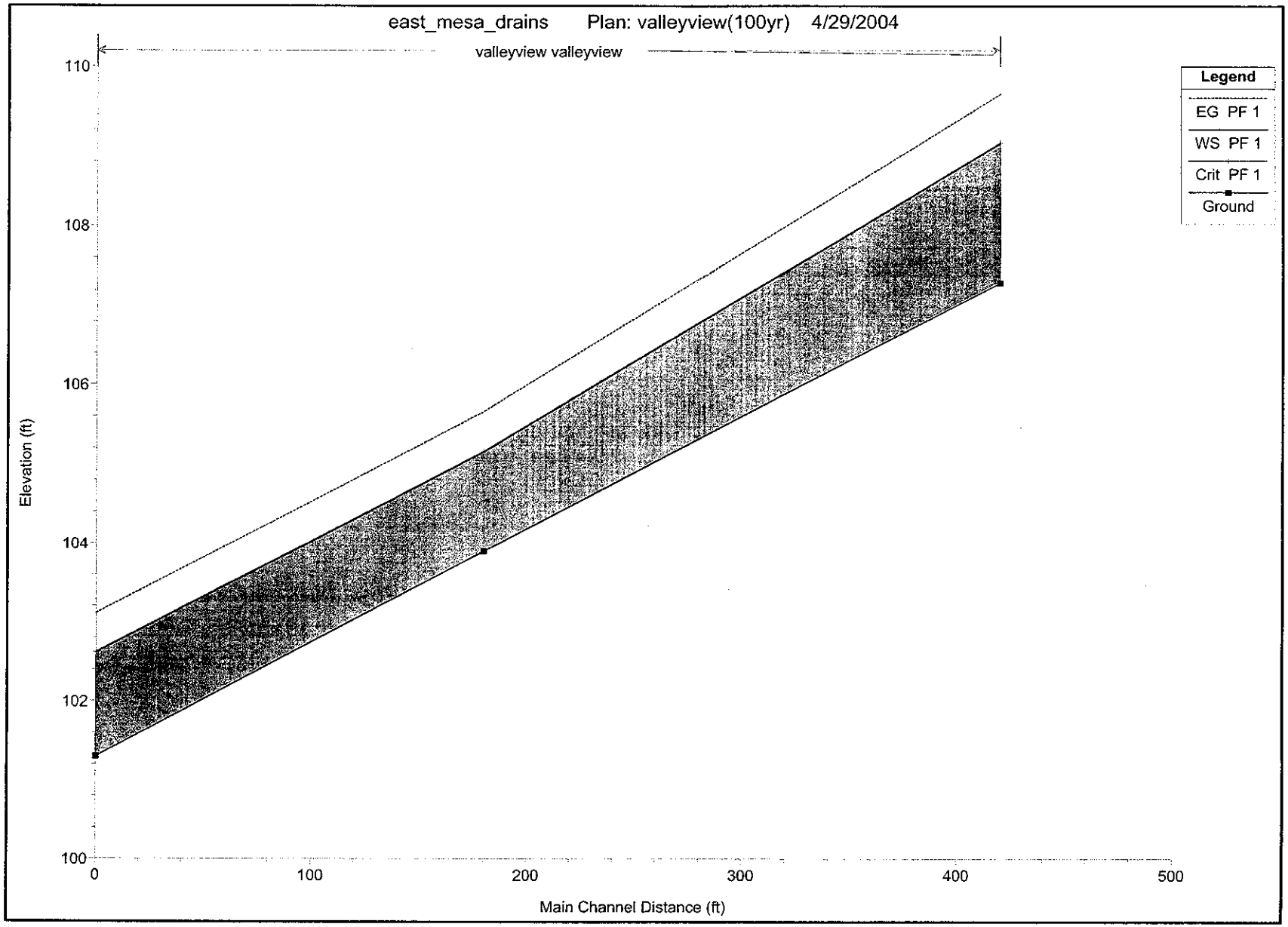
Reach	River Sta	Profile	Q Total	Min Ch El	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	1384.100	PF 2	150.00	1563.89	1565.80	1565.79	1566.50	0.012660	6.70	22.39	16.14	1.00
1	1286.018	PF 2	150.00	1562.62	1564.85	1564.74	1565.40	0.009125	6.04	26.00	20.72	0.86
1	1097.075	PF 2	150.00	1560.59	1562.89	1562.89	1563.49	0.011208	6.44	25.19	21.76	0.94
1	976.433	PF 2	150.00	1559.32	1562.13		1562.46	0.004371	4.61	32.55	18.24	0.61
1	885.125	PF 2	150.00	1558.74	1561.55		1561.98	0.006327	5.26	28.51	17.36	0.72
1	692.350	PF 2	150.00	1557.71	1560.26		1560.71	0.006823	5.34	28.07	17.89	0.75
1	594.214	PF 2	150.00	1557.19	1559.54		1560.00	0.007430	5.50	27.30	17.84	0.78
1	533.823	PF 2	150.00	1556.57	1559.21		1559.60	0.005374	5.03	29.80	16.83	0.67
1	510.915	PF 2	150.00	1556.33	1559.05		1559.47	0.005783	5.19	28.89	16.65	0.69
1	486.328	PF 2	150.00	1556.04	1558.51	1558.51	1559.24	0.012840	6.86	21.86	15.27	1.01
1	392.870	PF 2	150.00	1554.77	1557.57		1558.20	0.008968	6.33	23.68	13.70	0.85
1	290.420	PF 2	150.00	1553.37	1556.98	1556.23	1557.45	0.005318	5.53	27.23	13.88	0.64
1	290.4		Bridge									
1	259.735	PF 2	150.00	1552.95	1555.81	1555.81	1556.80	0.014104	7.98	18.79	9.63	1.01
1	238.116	PF 2	150.00	1552.64	1555.14	1555.14	1556.00	0.013088	7.41	20.25	12.06	1.01
1	164.061	PF 2	150.00	1551.61	1554.07	1554.07	1554.92	0.012954	7.41	20.23	11.94	1.00
1	39.949	PF 2	150.00	1549.71	1552.20	1552.20	1553.04	0.013073	7.35	20.41	12.39	1.01
1	24.760	PF 2	150.00	1549.51	1552.04	1551.62	1552.46	0.006008	5.18	28.97	17.40	0.71

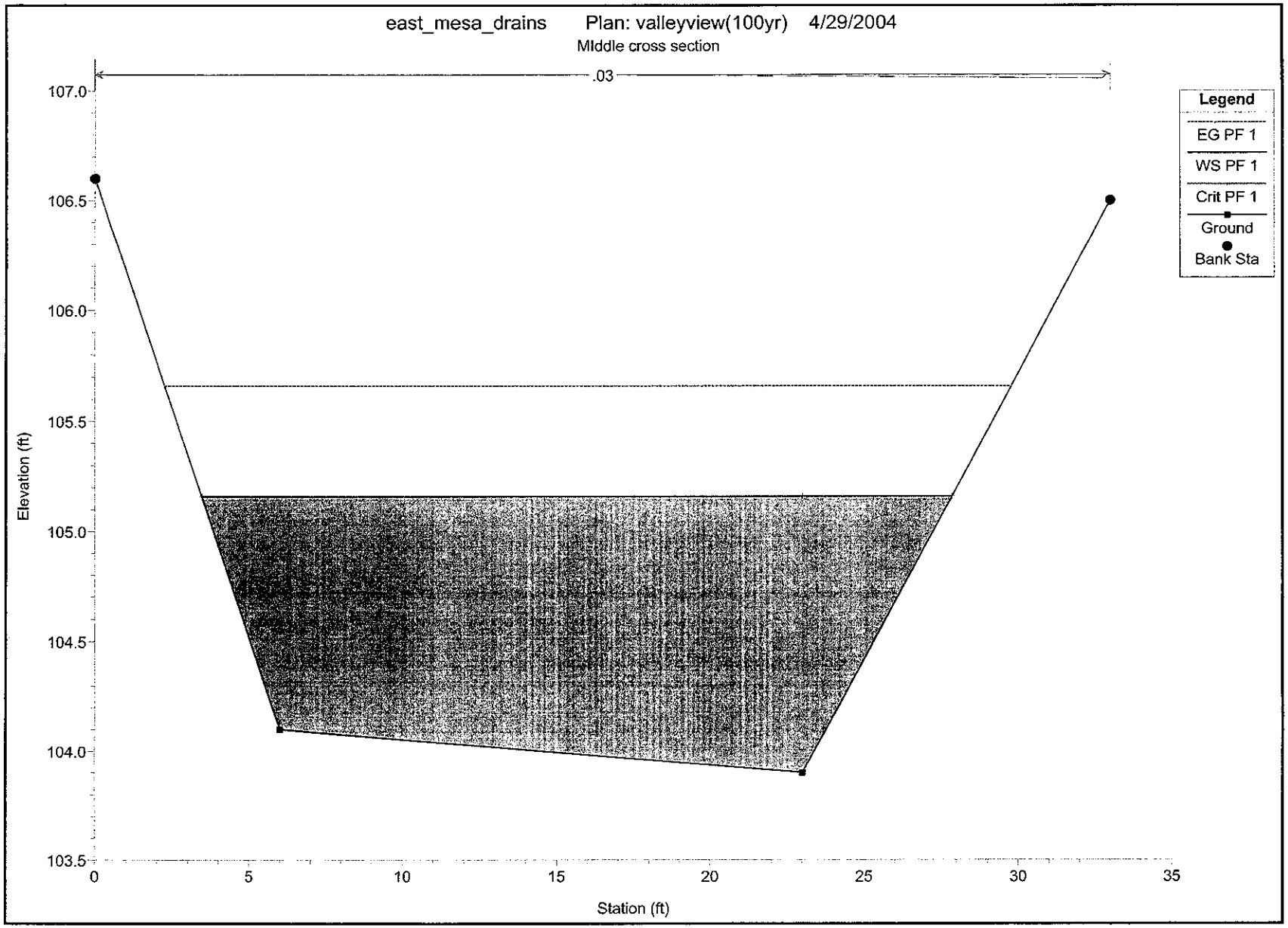

east_mesa_drains Plan: Plan 37 4/29/2004
newman 1
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Elevation (ft)
1570
1565
1560
1555
1550
1545
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)


east_mesa_drains Plan: Plan 37 4/29/2004
.03
.03
.03
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Bank Sta
Elevation (ft)
1559
1558
1557
1556
1555
1554
1553
1552
0
10
20
30
40
50
60
70
80
Station (ft)

HEC-RAS Plan: vllyview-100 River: valleyview Reach: valleyview Profile: PF 1

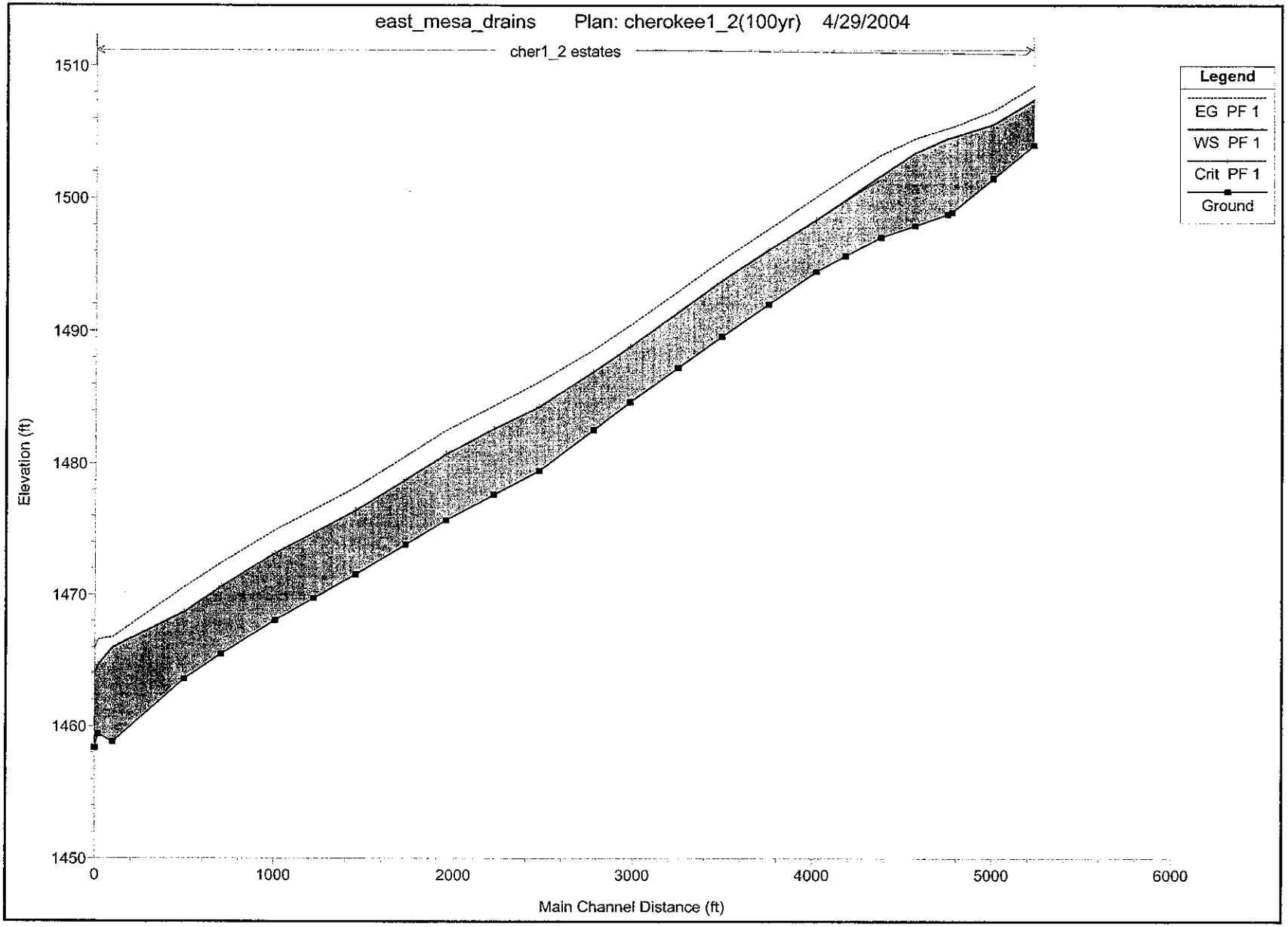
Reach	River Sta	Profile	Q Total	Min Ch El	Crit W.S.	E.G. Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
valleyview	3	PF 1	151.00	107.30	110.90	109.80	112.19		112.23	0.021663	1.58	95.28	25.00	0.14
valleyview	2	PF 1	151.00	103.90	106.60	106.50	108.36		108.38	0.012307	1.22	123.83	33.00	0.11
valleyview	1	PF 1	151.00	101.30	103.00	102.60	106.02	102.68	106.04	0.013812	1.32	114.08	26.50	0.11

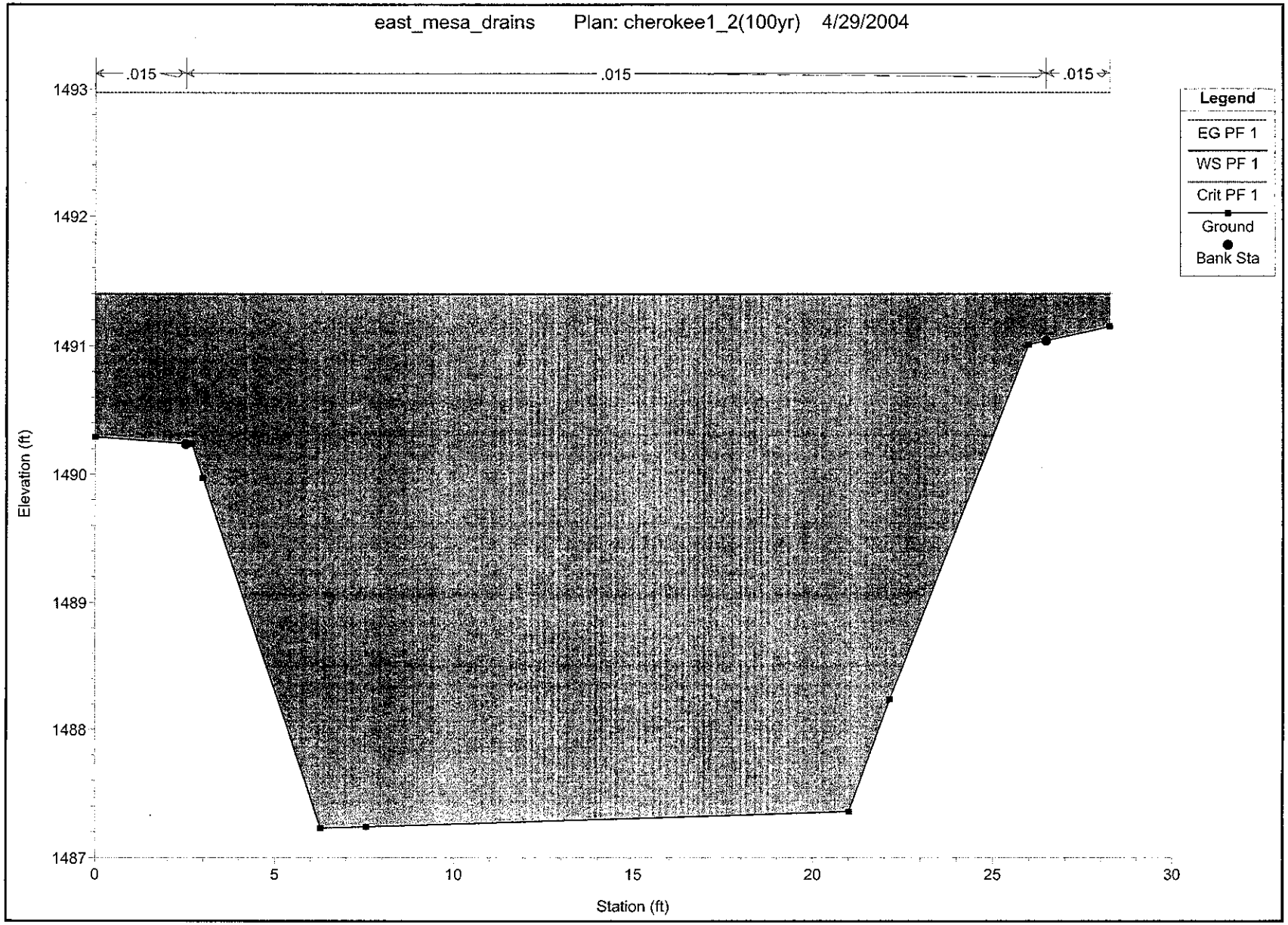

east_mesa_drains Plan: valleyview(100yr) 4/29/2004
valleyview valleyview
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
110
108
106
104
102
100
0
100
200
300
400
500
Main Channel Distance (ft)

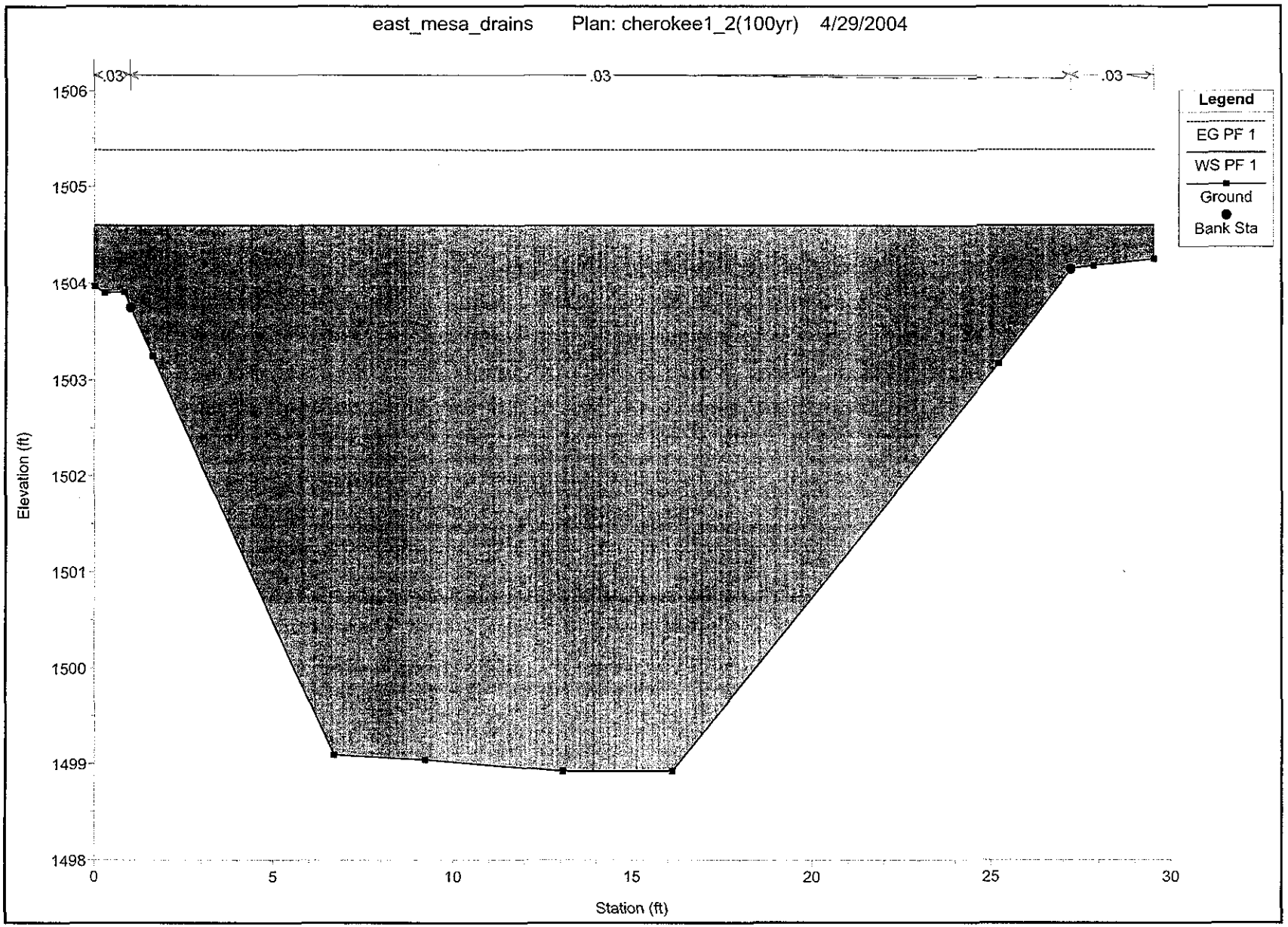

east_mesa_drains Plan: valleyview(100yr) 4/29/2004
MIddle cross section
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
107.0
106.5
106.0
105.5
105.0
104.5
104.0
103.5
0
5
10
15
20
25
30
35
Station (ft)

HEC-RAS Plan: cherokee1_2 River: cher1_2 Reach: estates Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
estates	5280.348	PF 1	751.00	1503.99	1507.67	1507.84	1507.46	1507.36	1508.50	0.009360	8.18	91.81	39.90	0.95
estates	5052.783	PF 1	751.00	1501.47	1505.73	1505.96	1505.61		1506.63	0.007253	8.11	92.65	32.91	0.85
estates	4879.116	PF 1	751.00	1498.92	1503.75	1504.14	1504.60		1505.38	0.003713	7.12	106.79	29.53	0.63
estates	4768.138	PF 1	751.00	1498.78	1503.68	1503.77	1504.52		1505.30	0.003565	7.10	107.55	29.48	0.62
estates	4634.265	PF 1	751.00	1497.92	1502.01	1502.12	1503.41		1504.50	0.005112	8.39	92.06	25.14	0.74
estates	4425.166	PF 1	751.00	1497.03	1500.25	1500.47	1501.68	1501.47	1503.25	0.007928	10.10	76.15	20.69	0.89
estates	4223.456	PF 1	836.00	1495.64	1498.43	1499.35	1499.84	1499.84	1501.53	0.009333	10.47	81.39	25.34	0.98
estates	4064.704	PF 1	836.00	1494.45	1496.98	1498.28	1498.38	1498.38	1500.08	0.002498	10.46	80.65	24.56	1.01
estates	3800.508	PF 1	836.00	1492.00	1494.82	1495.87	1496.10	1496.10	1497.67	0.002303	10.11	84.76	28.25	0.97
estates	3542.110	PF 1	836.00	1489.59	1492.56	1493.22	1493.79	1493.79	1495.35	0.002224	10.08	85.66	28.25	0.95
estates	3297.350	PF 1	836.00	1487.23	1490.24	1491.04	1491.40	1491.40	1492.97	0.002307	10.12	84.79	28.25	0.97
estates	3034.142	PF 1	836.00	1484.65	1487.49	1488.62	1488.82	1488.82	1490.44	0.002410	10.27	83.01	26.79	0.99
estates	2826.327	PF 1	836.00	1482.54	1485.84	1486.42	1486.93	1486.93	1488.58	0.002333	10.39	82.71	26.30	0.97
estates	2521.930	PF 1	836.00	1479.45	1482.89	1484.68	1484.29	1484.29	1486.17	0.002486	11.04	77.01	20.99	0.98
estates	2268.061	PF 1	836.00	1477.63	1482.24	1482.24	1482.64	1482.64	1484.36	0.002376	10.55	80.30	24.88	0.96
estates	2062.047	PF 1	836.00	1475.69	1480.84	1481.07	1480.73	1480.73	1482.51	0.002638	10.72	78.00	22.09	1.01
estates	1779.044	PF 1	836.00	1473.83	1478.56	1478.79	1478.80	1478.80	1480.57	0.002584	10.68	78.39	23.63	1.00
estates	1501.924	PF 1	836.00	1471.55	1475.47	1475.88	1476.44	1476.44	1478.20	0.002343	10.69	79.67	23.86	0.97
estates	1270.475	PF 1	836.00	1469.76	1473.53	1473.90	1474.74	1474.74	1476.51	0.002295	10.77	79.93	23.86	0.97
estates	1054.297	PF 1	836.00	1468.07	1471.68	1472.08	1473.17	1473.17	1474.94	0.002202	10.79	80.53	23.38	0.95
estates	753.256	PF 1	836.00	1465.54	1469.13	1470.07	1470.63	1470.63	1472.43	0.002289	10.85	79.44	23.38	0.96
estates	546.040	PF 1	836.00	1463.63	1467.48	1468.63	1468.72	1468.72	1470.60	0.002507	11.05	77.19	21.76	0.98
estates	147.398	PF 1	836.00	1458.84	1464.74	1465.35	1466.04		1466.81	0.000714	7.09	120.49	23.86	0.52
estates	64.179	PF 1	836.00	1459.44	1464.40	1464.87	1464.68	1464.68	1466.60	0.002800	11.10	75.38	20.57	1.00
estates	48.697	PF 1	836.00	1458.37	1464.50	1464.65	1464.12	1464.12	1466.07	0.002788	11.21	74.59	19.12	1.00

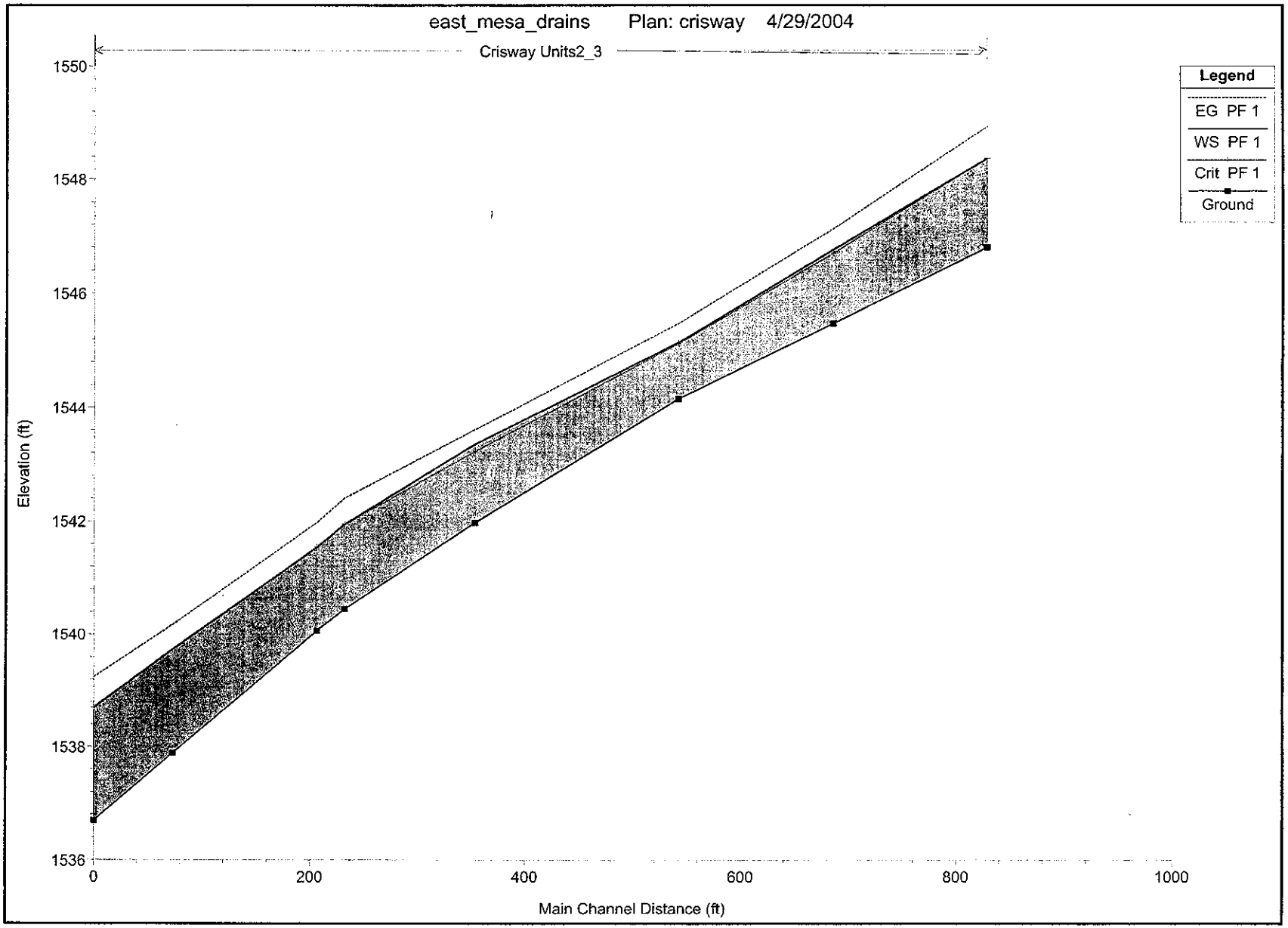

east_mesa_drains Plan: cherokee1_2(100yr) 4/29/2004
cher1_2 estates
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1510
1500
1490
1480
1470
1460
1450
0
1000
2000
3000
4000
5000
6000
Main Channel Distance (ft)

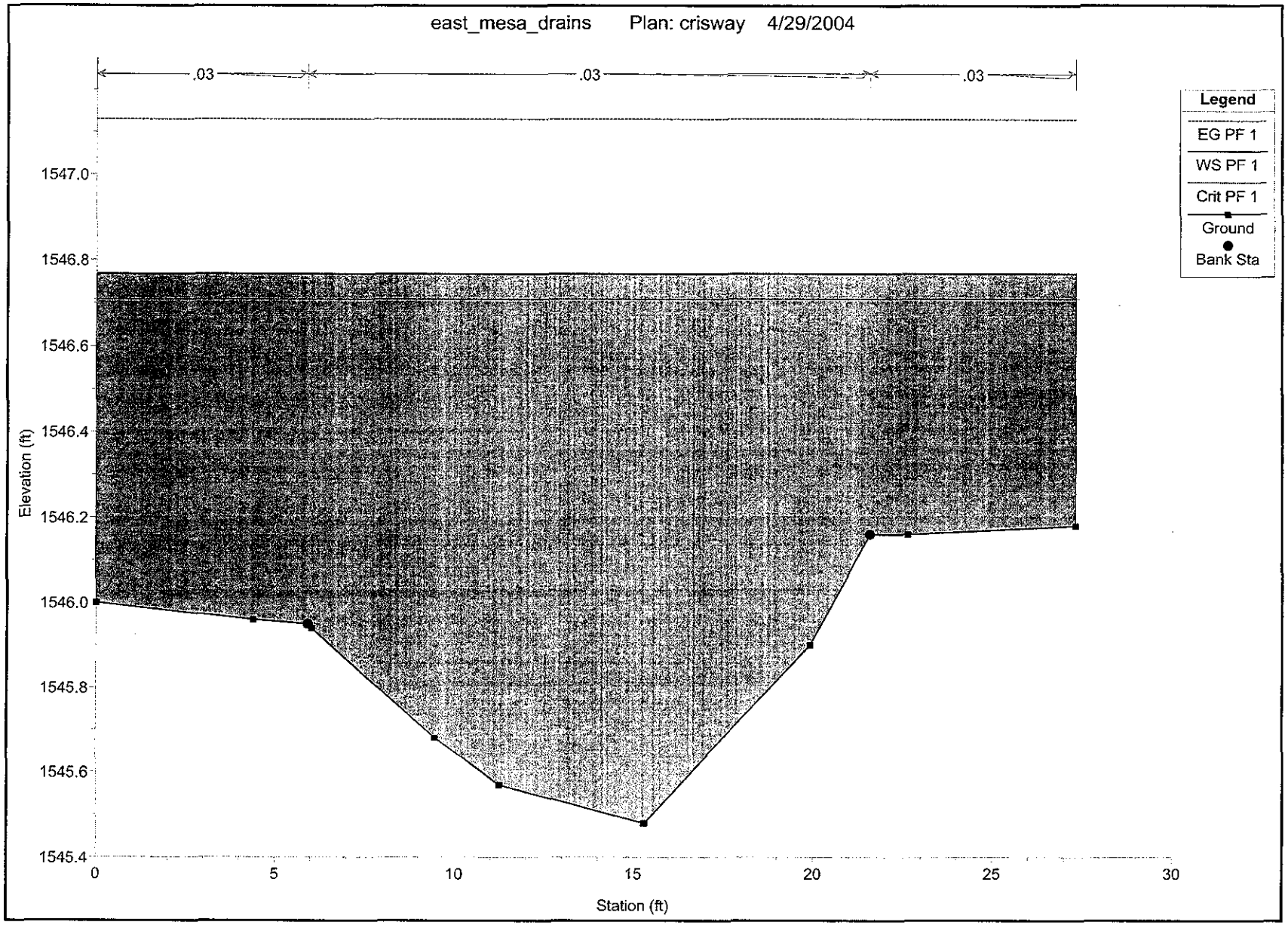

east_mesa_drains Plan: cherokee1_2(100yr) 4/29/2004
.015
.015
.015
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
Elevation (ft)
1493
1492
1491
1490
1489
1488
1487
0
5
10
15
20
25
30
Station (ft)


east_mesa_drains Plan: cherokee1_2(100yr) 4/29/2004
.03
.03
.03
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1506
1505
1504
1503
1502
1501
1500
1499
1498
0
5
10
15
20
25
30
Station (ft)

HEC-RAS Plan: cris-100 River: Crisway Reach: Units2_3 Profile: PF 1

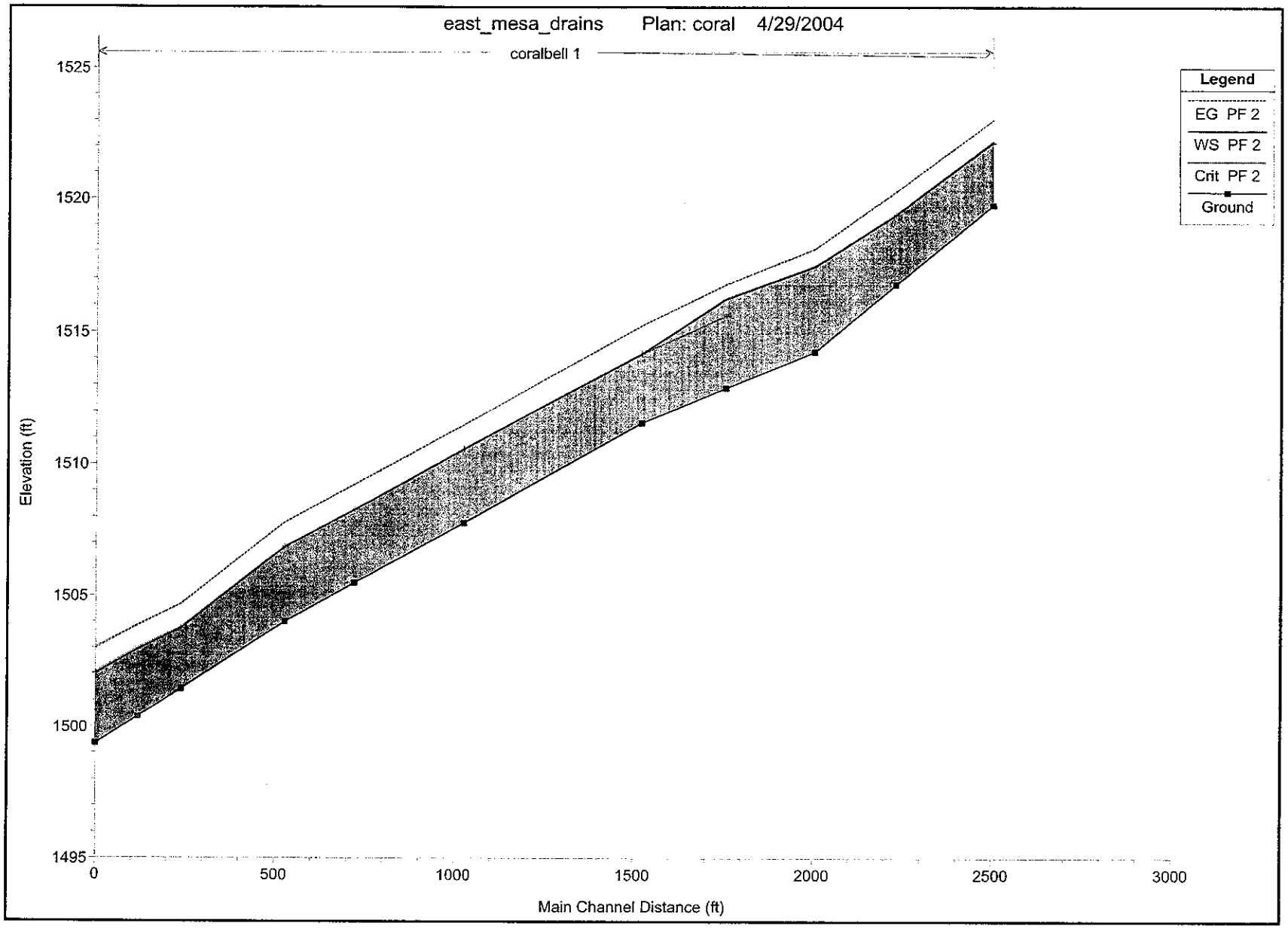
Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
Units2_3	838.962	PF 1	157.00	1546.80	1547.31	1547.86	1548.62	1548.62	1549.31	0.011921	7.02	24.35	17.96	1.01
Units2_3	688.303	PF 1	157.00	1545.48	1545.95	1546.16	1546.93	1546.89	1547.41	0.011067	5.94	29.14	27.33	0.95
Units2_3	548.45	PF 1	157.00	1544.15	1544.55	1544.45	1545.31	1545.28	1545.72	0.012178	5.43	31.30	34.91	0.96
Units2_3	356.156	PF 1	157.00	1541.97	1542.53	1542.95	1543.52		1543.84	0.008072	4.96	35.36	35.50	0.80
Units2_3	234.378	PF 1	157.00	1540.45	1541.20	1542.00	1542.20	1542.20	1542.70	0.010796	5.91	28.89	31.29	0.93
Units2_3	205.726	PF 1	157.00	1540.06	1540.91	1541.72	1541.77	1541.77	1542.25	0.011256	5.81	29.19	35.42	0.94
Units2_3	75.933	PF 1	157.00	1537.89	1539.59	1539.94	1540.01	1540.01	1540.44	0.008674	5.43	32.34	40.48	0.84
Units2_3	2.606	PF 1	157.00	1536.70	1538.85	1538.96	1539.08	1539.08	1539.53	0.009318	5.51	30.77	36.52	0.86

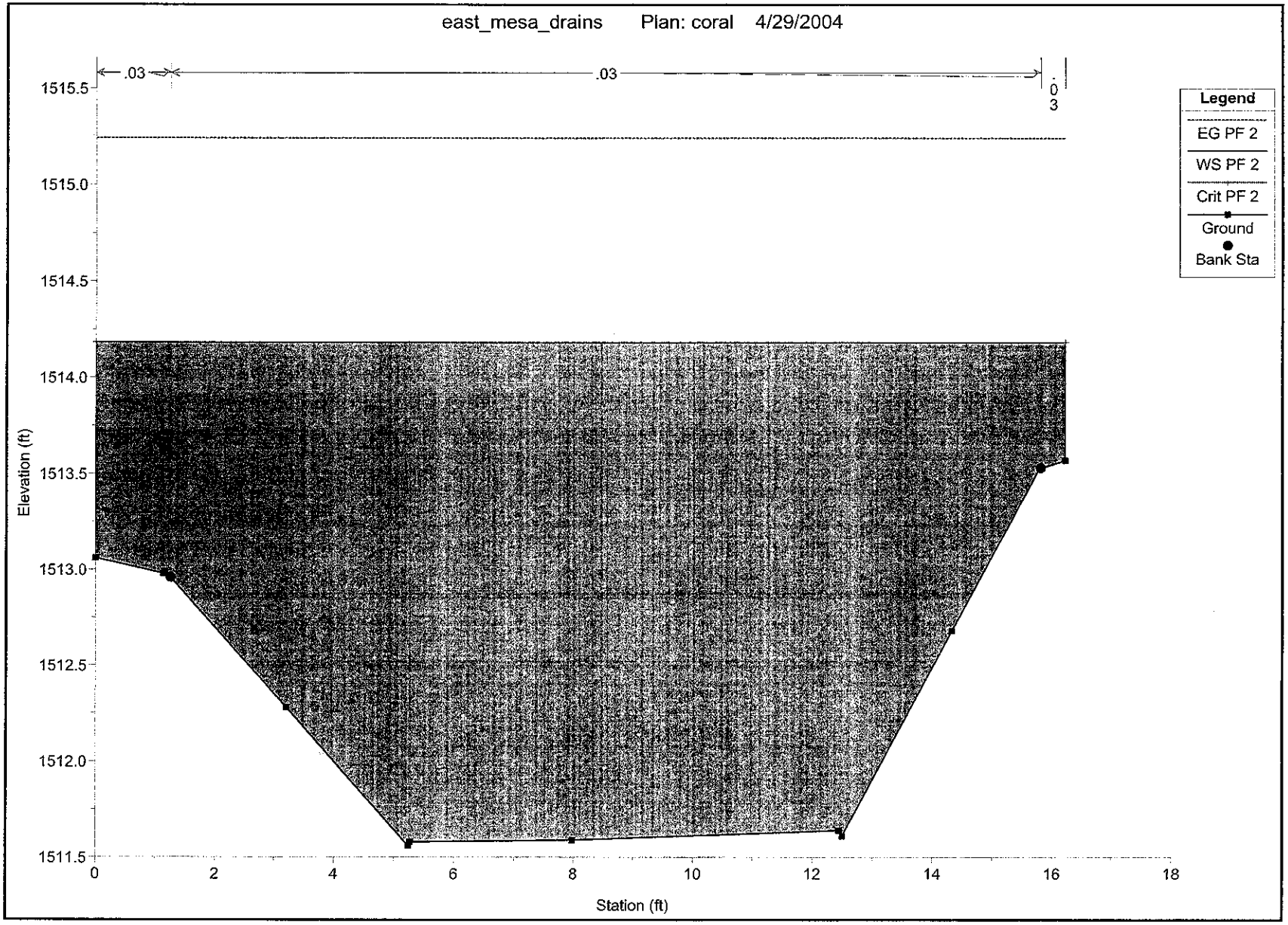

east_mesa_drains Plan: crisway 4/29/2004
Crisway Units2_3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1550
1548
1546
1544
1542
1540
1538
1536
0
200
400
600
800
1000
Main Channel Distance (ft)


east_mesa_drains Plan: crisway 4/29/2004
.03
.03
.03
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta
1547.0
1546.8
1546.6
1546.4
1546.2
1546.0
1545.8
1545.6
1545.4
Elevation (ft)
0
5
10
15
20
25
30
Station (ft)

HEC-RAS Plan: coral(100) River: coralbell Reach: 1 Profile: PF 2

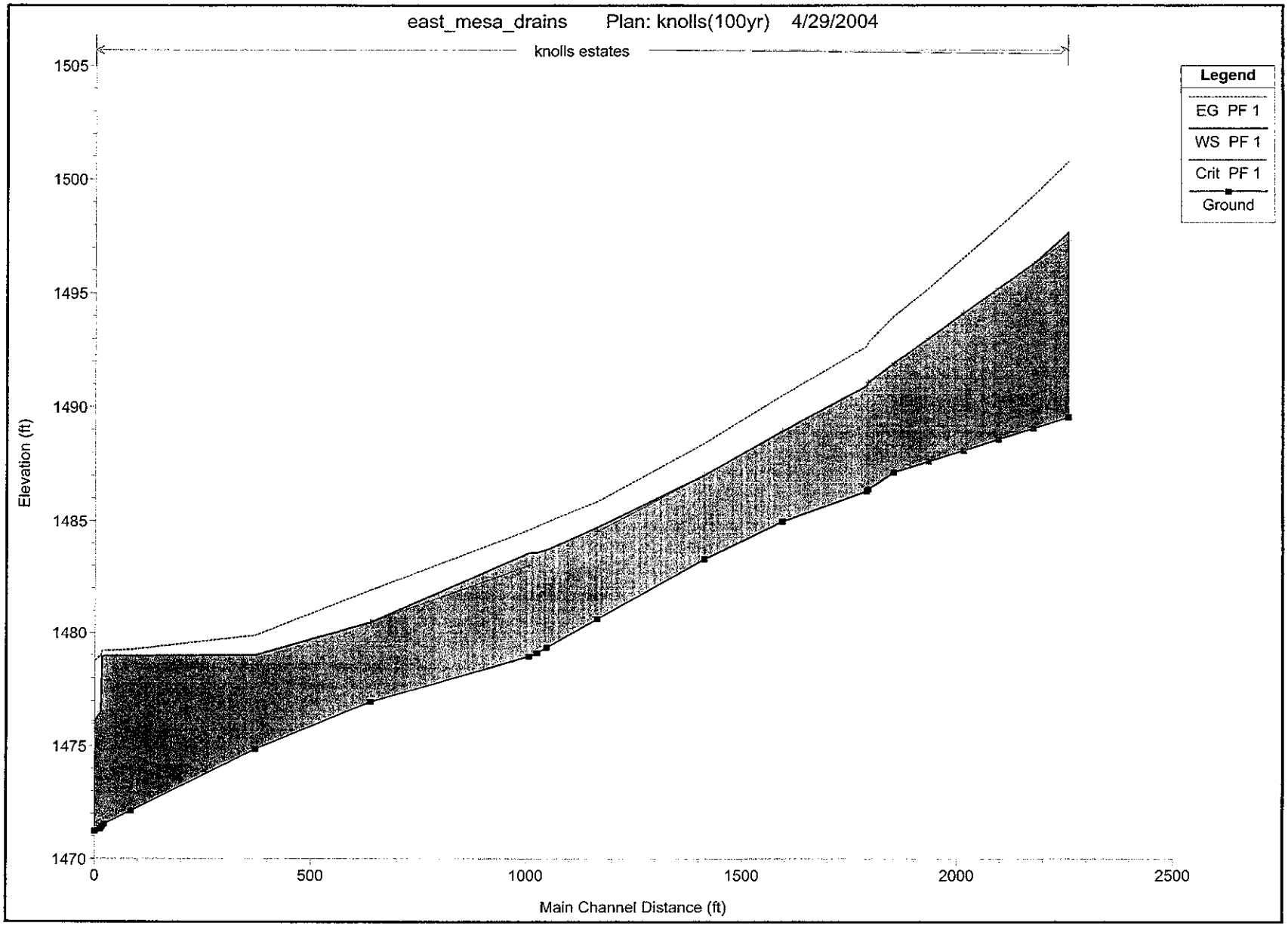
Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	EG Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	2510.106	PF 2	553.00	1519.76	1521.31	1521.28	1523.23	1523.23	1524.68	0.009404	9.72	58.61	20.48	1.00
1	2238.885	PF 2	553.00	1516.77	1519.32	1519.04	1520.48	1520.48	1521.84	0.009304	9.48	60.82	22.58	0.98
1	2091.950	PF 2	553.00	1514.25	1517.61	1516.93	1518.81		1519.80	0.005464	8.06	70.97	21.97	0.76
1	1764.669	PF 2	553.00	1512.89	1515.24	1515.20	1517.73	1516.78	1518.63	0.003940	7.69	74.97	18.91	0.67
1	1530.462	PF 2	553.00	1511.56	1512.96	1513.53	1515.48	1515.48	1517.20	0.009362	10.63	54.50	16.22	1.00
1	1034.134	PF 2	553.00	1507.76	1509.98	1510.68	1511.70	1511.70	1513.08	0.002304	9.59	60.43	22.31	0.97
1	735.500	PF 2	553.00	1505.49	1507.84	1508.55	1509.44	1509.44	1510.89	0.002433	9.74	58.46	20.63	0.99
1	595.533	PF 2	553.00	1504.01	1506.46	1507.03	1508.00	1508.00	1509.41	0.002462	9.64	59.52	21.75	0.99
1	246.617	PF 2	553.00	1501.44	1504.57	1502.78	1504.91	1504.91	1506.23	0.002435	9.36	61.77	24.05	0.99
1	127.637	PF 2	553.00	1500.41	1503.81	1502.81	1504.12	1504.12	1505.45	0.002450	9.29	60.61	23.14	0.99
1	8.498	PF 2	553.00	1499.37	1503.03	1502.83	1503.27	1503.27	1504.61	0.002686	9.27	59.65	22.23	1.00

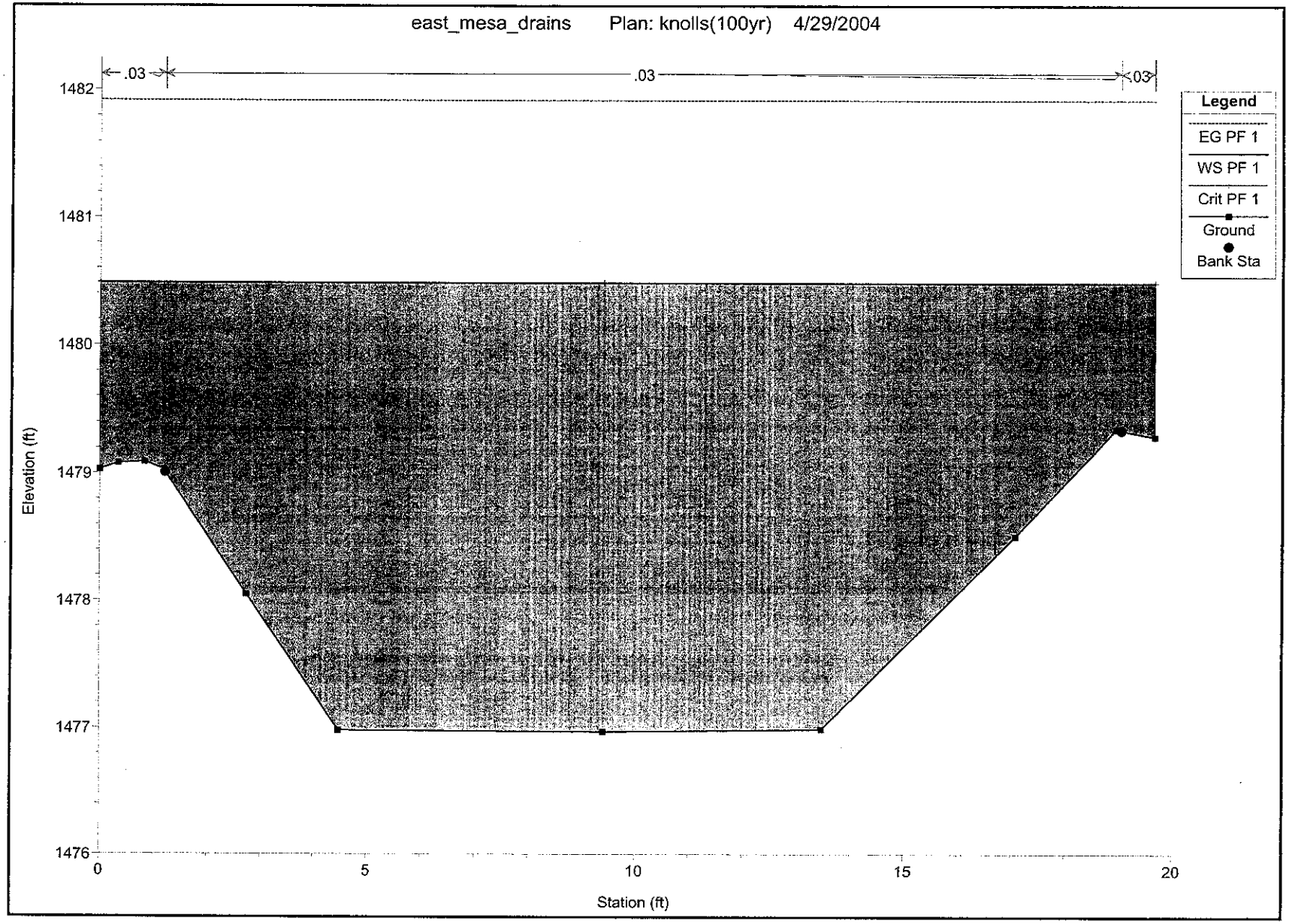

east_mesa_drains Plan: coral 4/29/2004
coralbell 1
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Elevation (ft)
1525
1520
1515
1510
1505
1500
1495
0
500
1000
1500
2000
2500
3000
Main Channel Distance (ft)


east_mesa_drains Plan: coral 4/29/2004
.03
.03
.03
Legend
EG PF 2
WS PF 2
Crit PF 2
Ground
Bank Sta
Elevation (ft)
1515.5
1515.0
1514.5
1514.0
1513.5
1513.0
1512.5
1512.0
1511.5
0
2
4
6
8
10
12
14
16
18
Station (ft)

HEC-RAS Plan: knolls-100 River: knolls Reach: estates Profile: PF 1

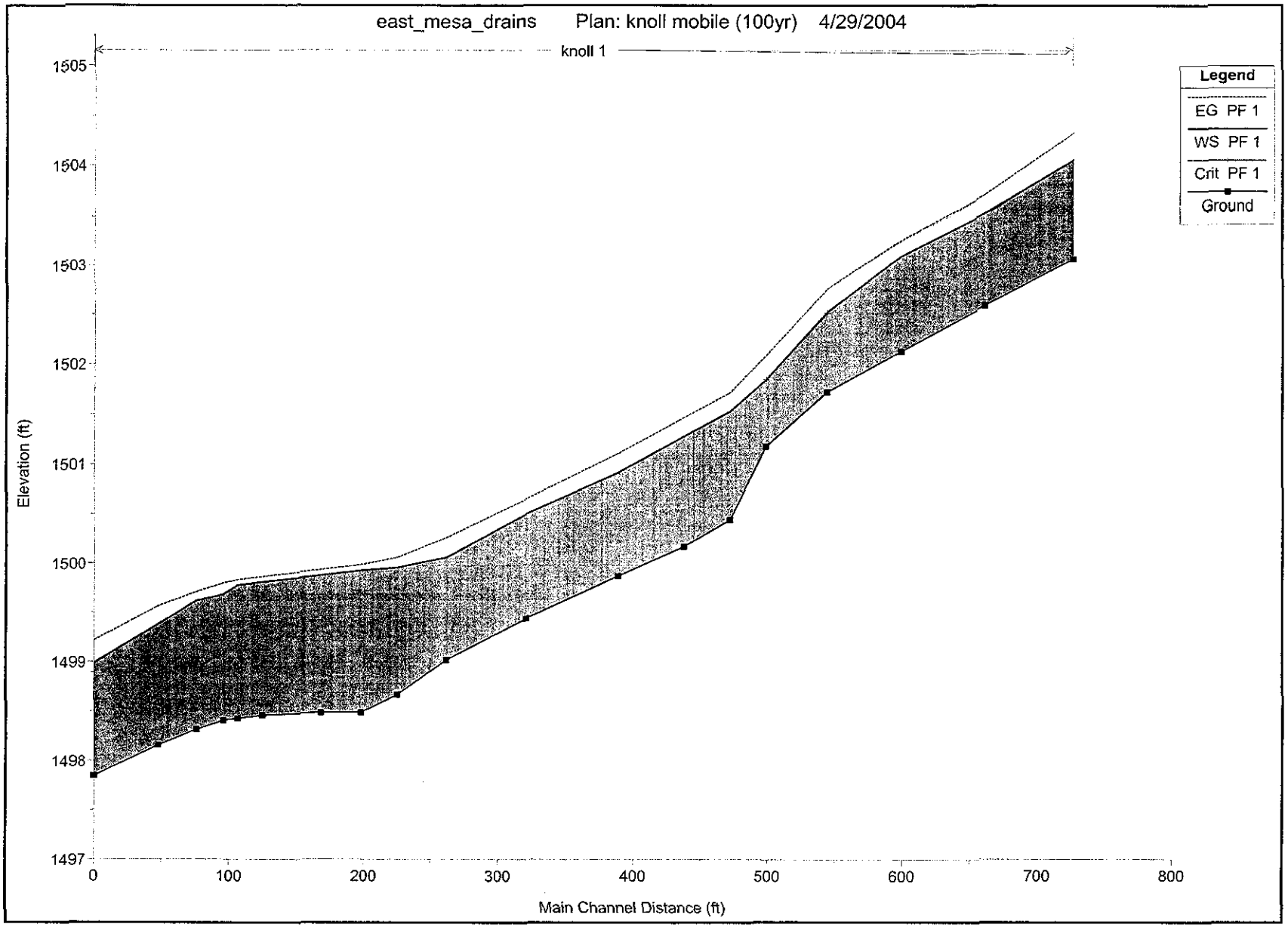
Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chnl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
estates	2079268	PF 1	517.00	1489.53	1492.75	1492.75	1497.67	1497.32	1500.77	0.018768	14.39	39.23	5.73	0.94
estates	2034733	PF 1	517.00	1489.05	1491.80	1491.94	1496.29	1496.29	1499.29	0.017232	14.10	39.58	6.84	1.01
estates	1990120	PF 1	517.00	1488.57	1490.85	1491.13	1495.20	1495.20	1497.90	0.014182	13.37	41.49	7.96	1.02
estates	1945167	PF 1	517.00	1488.09	1489.90	1490.32	1494.11	1494.11	1496.56	0.011919	12.74	43.22	9.07	1.02
estates	1901.11	PF 1	517.00	1487.61	1488.95	1489.51	1493.00	1493.00	1495.21	0.015366	12.10	44.65	10.19	1.01
estates	1856612	PF 1	517.00	1487.13	1488.00	1488.70	1491.91	1491.91	1493.98	0.013481	11.70	46.10	11.30	1.01
estates	1797.050	PF 1	517.00	1486.38	1489.31	1489.81	1491.06	1491.06	1492.84	0.010390	10.77	49.63	14.33	0.99
estates	1793490	PF 1	517.00	1486.30	1489.37	1489.85	1490.91	1490.91	1492.66	0.010633	10.69	49.94	14.82	0.99
estates	1699.347	PF 1	517.00	1484.96	1487.11	1487.78	1488.93	1488.93	1490.50	0.009775	10.14	52.87	17.25	1.00
estates	1496.287	PF 1	517.00	1483.28	1485.27	1485.94	1487.02	1487.02	1488.41	0.009599	9.71	57.10	20.86	0.99
estates	1188542	PF 1	517.00	1480.61	1482.94	1483.59	1484.71	1484.51	1485.86	0.007447	8.90	62.92	22.31	0.87
estates	1050.611	PF 1	517.00	1479.33	1481.67	1482.48	1483.70		1484.95	0.007883	8.99	58.61	19.15	0.89
estates	1626.661	PF 1	517.00	1479.08	1481.58	1482.27	1483.60		1484.76	0.007047	8.75	61.79	19.04	0.83
estates	1003.693	PF 1	517.00	1478.94	1481.43	1482.10	1483.57	1483.00	1484.60	0.005494	8.25	65.78	19.15	0.76
estates	641.208	PF 1	517.00	1476.97	1479.01	1479.34	1480.49	1480.49	1481.92	0.009744	9.67	55.06	19.68	0.99
estates	374.761	PF 1	517.00	1474.87	1477.41	1477.05	1479.03		1479.89	0.004841	7.61	71.75	22.34	0.72
estates	87.059	PF 1	517.00	1472.13	1475.78	1474.01	1479.00		1479.26	0.000764	4.25	132.48	24.12	0.31
estates	25.127	PF 1	517.00	1471.54	1474.71	1473.41	1478.99		1479.21	0.000539	3.85	144.02	23.24	0.27
estates	20.622	PF 1	517.00	1471.43	1473.57	1472.63	1478.94		1479.20	0.000594	4.23	135.82	20.76	0.29
estates	16.212	PF 1	517.00	1471.34	1472.38	1471.99	1476.50	1476.50	1478.97	0.009311	13.23	46.09	9.98	1.07
estates	3.447	PF 1	517.00	1471.24	1471.40	1471.24	1476.11	1476.11	1478.77	0.009928	14.02	45.59	9.54	1.13

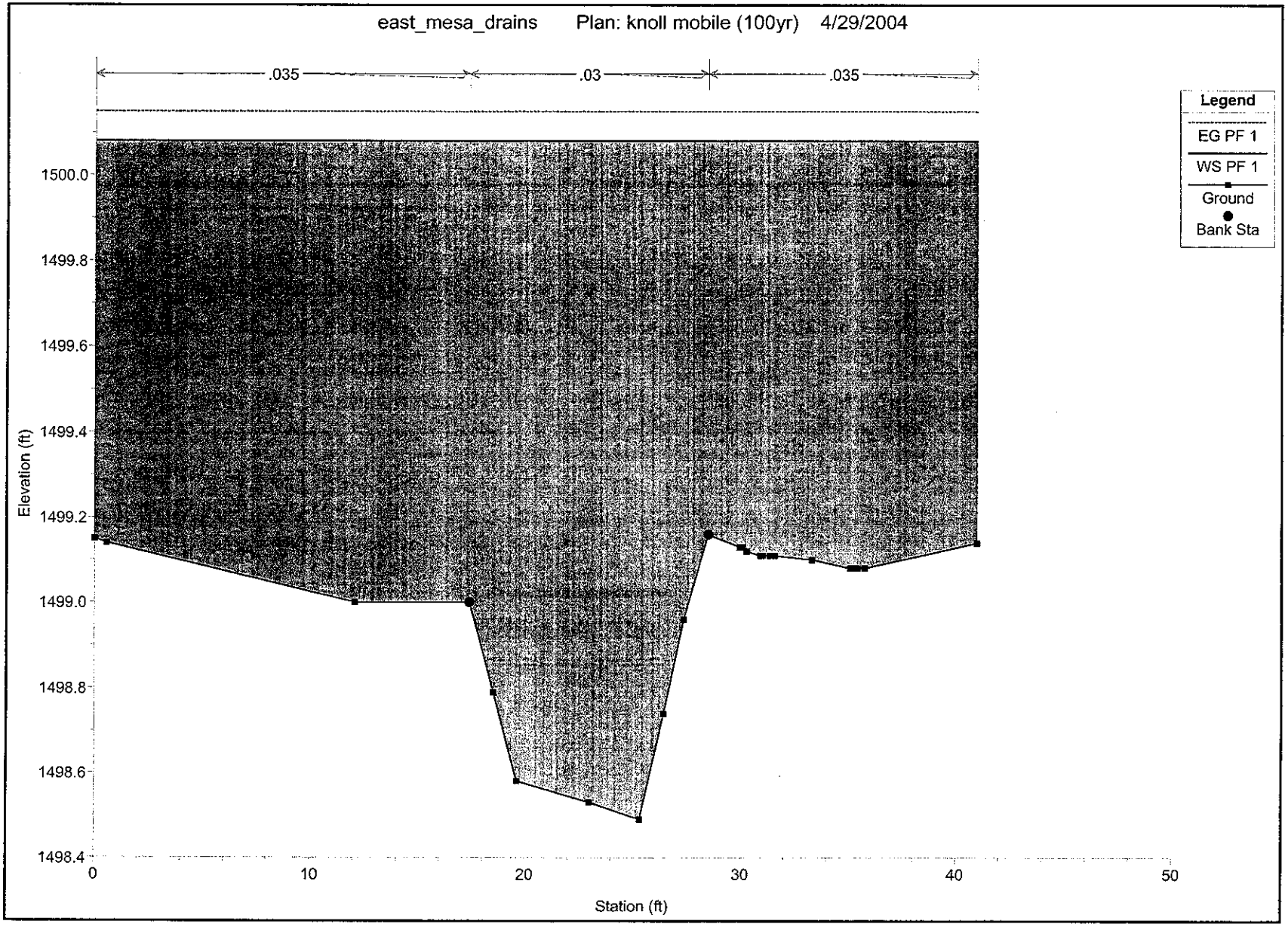

east_mesa_drains Plan: knolls(100yr) 4/29/2004
knolls estates
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1505
1500
1495
1490
1485
1480
1475
1470
0
500
1000
1500
2000
2500
Main Channel Distance (ft)


east_mesa_drains Plan: knolls(100yr) 4/29/2004
.03
.03
.03
1482
1481
1480
1479
1478
1477
1476
Elevation (ft)
0
5
10
15
20
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

HEC-RAS Plan: knllmob(100) River: knoll Reach: 1 Profile: PF 1

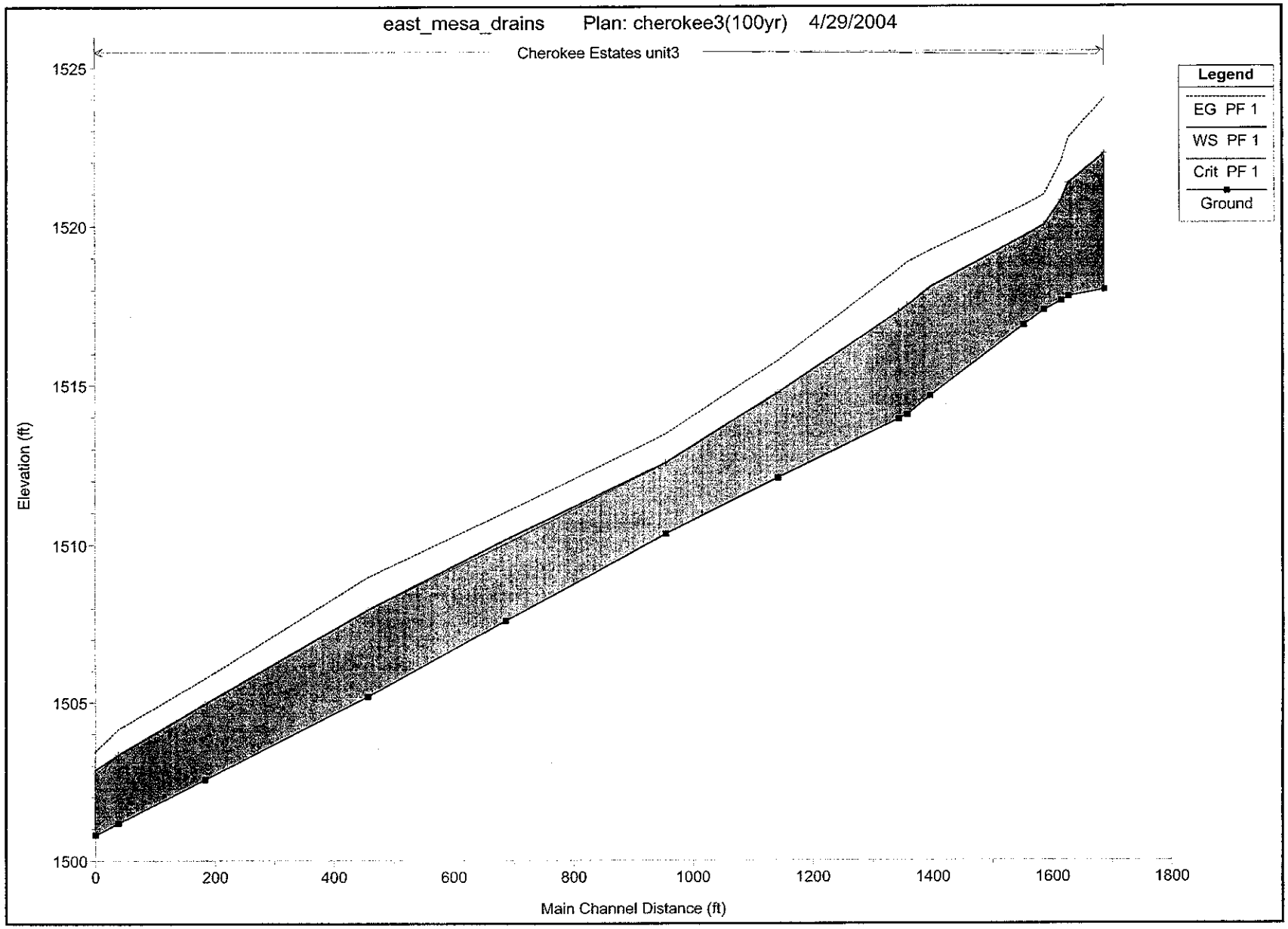
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	LOB Elev (ft)	ROB Elev (ft)	W.S. Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chnl
1	731.140	PF 1	90.00	1503.06	1503.45	1503.54	1504.15		1504.48	0.010647	5.07	20.84	24.99	0.90
1	665.192	PF 1	90.00	1502.59	1502.97	1503.04	1503.62		1503.84	0.008064	4.30	25.69	33.58	0.78
1	599.379	PF 1	90.00	1502.13	1502.52	1502.57	1503.19		1503.38	0.006680	4.00	27.76	35.25	0.71
1	540.658	PF 1	90.00	1501.72	1502.12	1502.16	1502.61	1502.60	1502.88	0.012888	4.85	23.51	39.24	0.95
1	503.335	PF 1	90.00	1501.18	1501.59	1501.61	1501.93	1501.93	1502.21	0.016979	4.95	22.08	38.25	1.06
1	476.119	PF 1	90.00	1500.44	1501.05	1501.07	1501.63		1501.84	0.007602	4.36	27.33	39.25	0.76
1	441.692	PF 1	90.00	1500.17	1500.83	1500.78	1501.38		1501.58	0.007079	4.29	28.13	41.57	0.74
1	392.824	PF 1	90.00	1499.87	1500.59	1500.41	1501.02		1501.23	0.007475	4.28	28.04	44.22	0.75
1	325.206	PF 1	90.00	1499.44	1500.27	1499.88	1500.61		1500.78	0.005584	3.78	31.05	45.57	0.65
1	265.946	PF 1	90.00	1499.02	1499.99	1499.43	1500.20		1500.41	0.006851	4.10	26.63	38.25	0.72
1	229.435	PF 1	90.00	1498.67	1499.35	1499.24	1500.11		1500.22	0.002921	3.15	37.69	42.57	0.49
1	201.827	PF 1	90.00	1498.49	1499.00	1499.16	1500.08		1500.15	0.001679	2.53	45.68	40.99	0.38
1	172.063	PF 1	90.00	1498.49	1498.87	1499.10	1500.03		1500.10	0.001700	2.53	44.55	37.65	0.38
1	128.803	PF 1	90.00	1498.46	1498.68	1499.02	1499.96		1500.03	0.001742	2.47	44.09	36.37	0.38
1	110.478	PF 1	90.00	1498.43	1498.60	1498.99	1499.92		1499.99	0.001900	2.55	43.74	37.36	0.40
1	99.890	PF 1	90.00	1498.41	1499.04	1498.97	1499.82		1499.95	0.004656	3.67	31.40	31.97	0.60
1	80.162	PF 1	90.00	1498.32	1499.30	1498.81	1499.76		1499.87	0.003597	3.30	36.29	38.83	0.53
1	51.573	PF 1	90.00	1498.16	1499.07	1498.60	1499.52		1499.72	0.006305	4.34	27.33	33.03	0.70
1	4.465	PF 1	90.00	1497.85	1498.67	1498.24	1499.12	1499.01	1499.38	0.008001	4.70	23.63	27.81	0.79

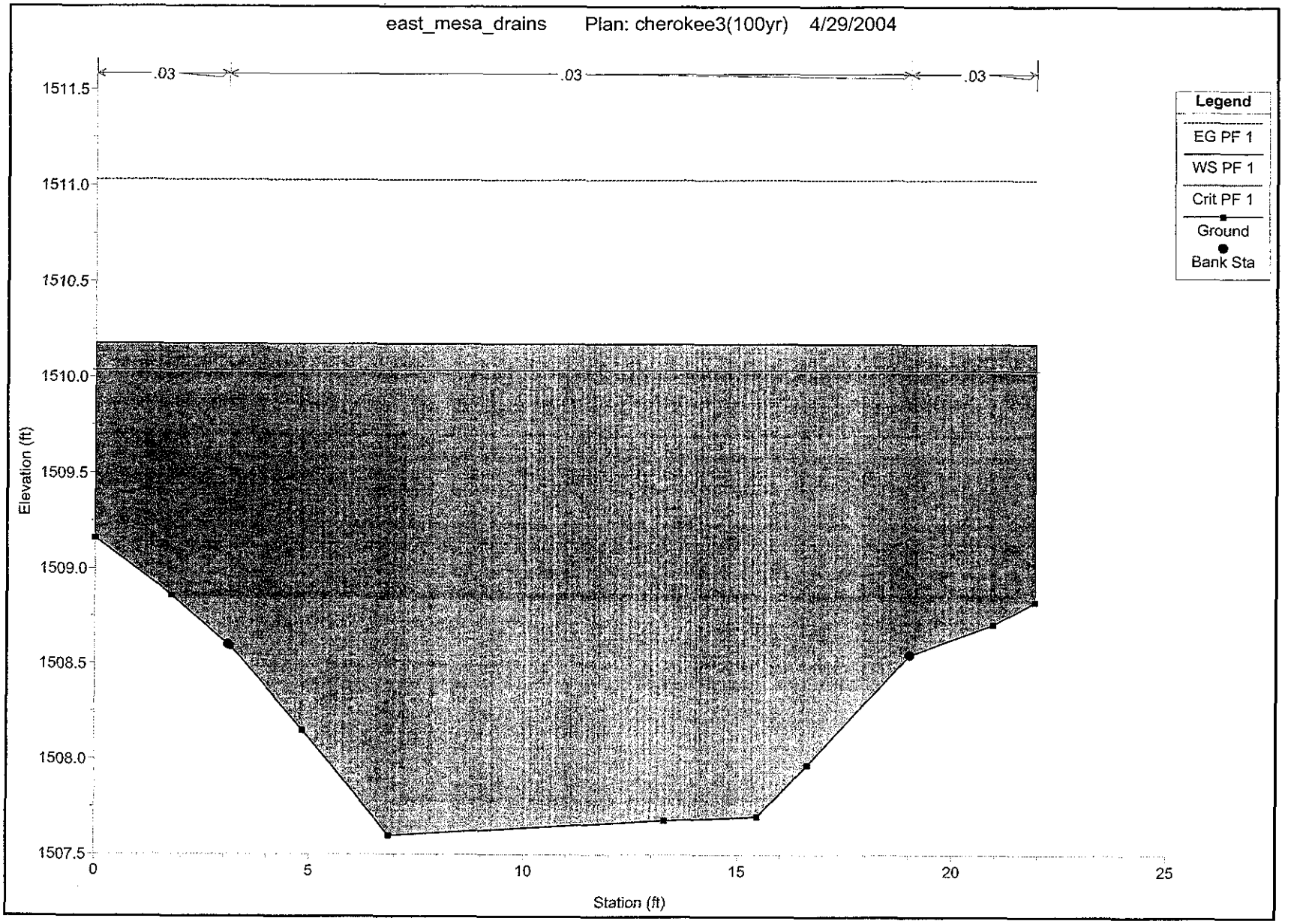

east_mesa_drains Plan: knoll mobile (100yr) 4/29/2004
knoll 1
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1505
1504
1503
1502
1501
1500
1499
1498
1497
0
100
200
300
400
500
600
700
800
Main Channel Distance (ft)


east_mesa_drains Plan: knoll mobile (100yr) 4/29/2004
.035
.03
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1500.0
1499.8
1499.6
1499.4
1499.2
1499.0
1498.8
1498.6
1498.4
0
10
20
30
40
50
Station (ft)

HEC-RAS Plan: chkee-3(100) River: Cherokee Estates Reach: unit3 Profile: PF 1

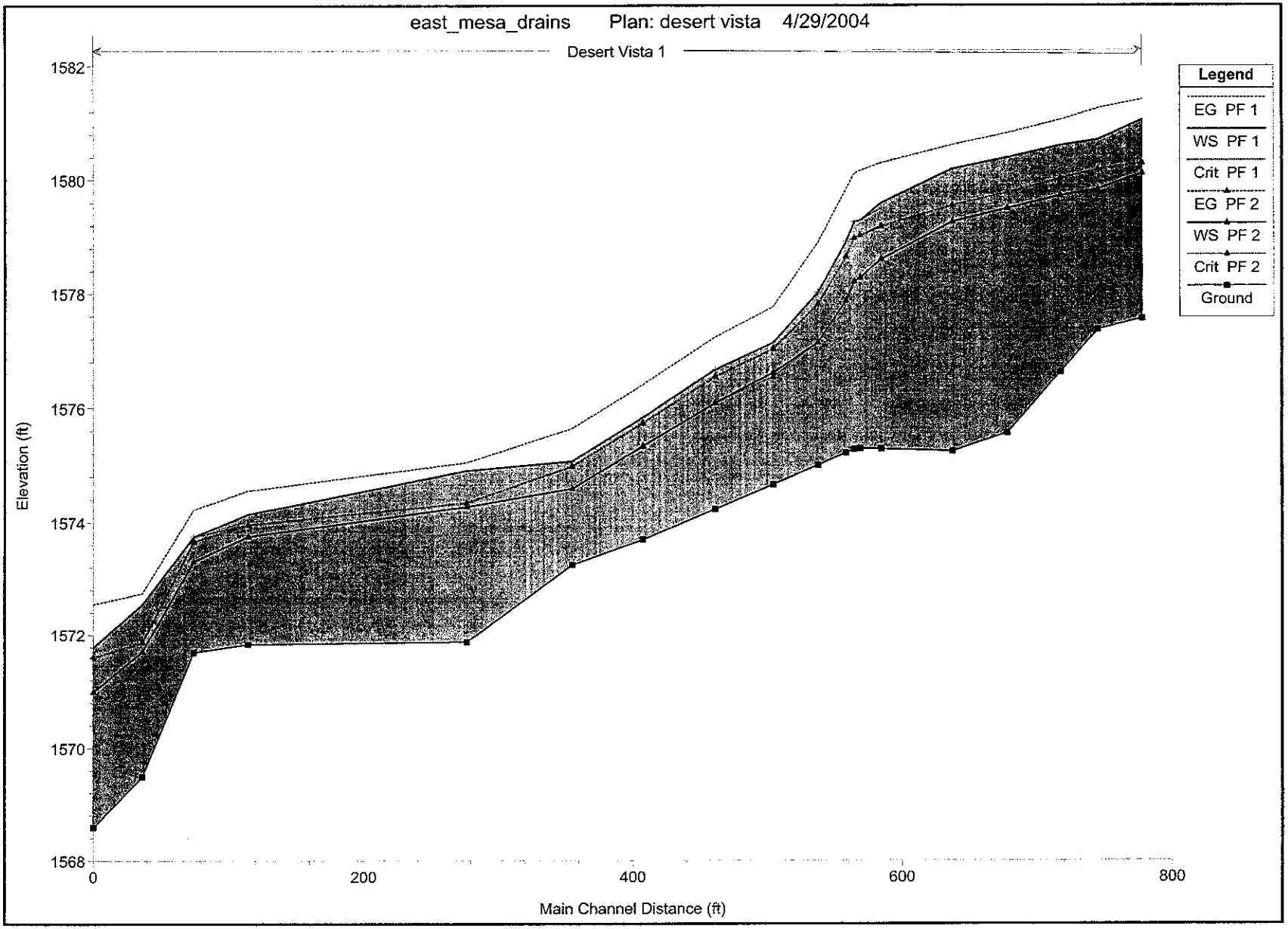
Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
unit3	1695.488	PF 1	321.00	1517.99	1519.95	1519.81	1522.25	1522.25	1523.99	0.010751	10.89	32.39	9.97	1.02
unit3	1635.258	PF 1	321.00	1517.78	1519.26	1519.50	1521.32	1521.32	1522.73	0.009812	9.76	35.37	13.31	0.99
unit3	1624.769	PF 1	321.00	1517.64	1519.14	1519.39	1520.78	1520.78	1521.99	0.010038	9.06	38.07	16.33	0.99
unit3	1584.405	PF 1	321.00	1517.35	1518.86	1519.23	1520.01	1520.01	1520.95	0.010249	7.88	42.30	22.98	0.98
unit3	1560.535	PF 1	321.00	1516.89	1518.28	1518.72	1519.66	1519.63	1520.61	0.009430	7.95	42.43	21.63	0.95
unit3	1403.772	PF 1	321.00	1514.65	1515.86	1516.23	1518.08		1519.22	0.008148	8.90	39.79	15.08	0.92
unit3	1364.32	PF 1	321.00	1514.07	1515.21	1515.60	1517.49	1517.49	1518.85	0.010168	9.80	36.58	14.05	1.02
unit3	1351.008	PF 1	321.00	1513.93	1515.07	1515.34	1517.31	1517.31	1518.63	0.010012	9.78	37.11	14.61	1.01
unit3	1149.538	PF 1	321.00	1512.09	1513.07	1513.22	1514.75	1514.75	1515.76	0.009955	8.46	41.65	20.63	0.99
unit3	962.300	PF 1	321.00	1510.34	1511.23	1511.16	1512.58	1512.57	1513.47	0.010070	7.82	43.88	24.73	0.98
unit3	693.283	PF 1	321.00	1507.60	1508.60	1508.55	1510.17	1510.03	1511.03	0.008136	7.73	45.08	21.93	0.90
unit3	465.935	PF 1	321.00	1505.19	1506.38	1506.33	1507.96	1507.96	1509.00	0.009529	8.55	41.34	19.87	0.97
unit3	190.411	PF 1	321.00	1502.57	1504.38	1504.53	1504.97	1504.97	1505.76	0.009584	7.23	46.04	29.88	0.93
unit3	45.684	PF 1	321.00	1501.18	1503.30	1503.39	1503.35	1503.35	1504.15	0.011656	7.18	44.74	28.71	1.00
unit3	7.545	PF 1	321.00	1500.81	1503.03	1503.54	1502.87	1502.76	1503.45	0.009703	6.13	52.40	36.16	0.90

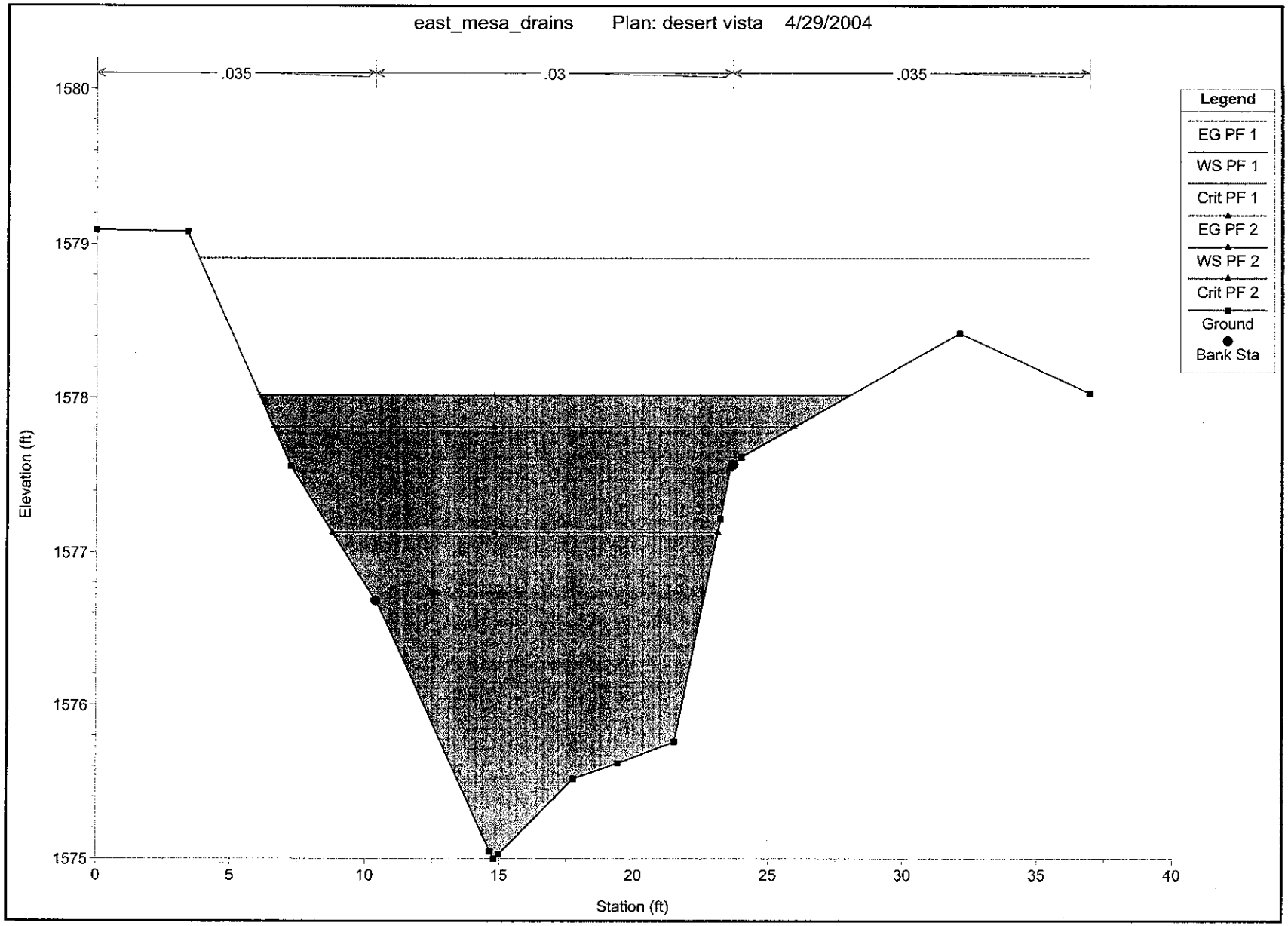

east_mesa_drains Plan: cherokee3(100yr) 4/29/2004
Cherokee Estates unit3
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1525
1520
1515
1510
1505
1500
0
200
400
600
800
1000
1200
1400
1600
1800
Main Channel Distance (ft)


east_mesa_drains Plan: cherokee3(100yr) 4/29/2004
.03
.03
.03
1511.5
1511.0
1510.5
1510.0
1509.5
1509.0
1508.5
1508.0
1507.5
Elevation (ft)
0
5
10
15
20
25
Station (ft)
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Bank Sta

HEC-RAS Plan: DstVsta(100) River: Desert Vista Reach: 1 Profile: PF 1

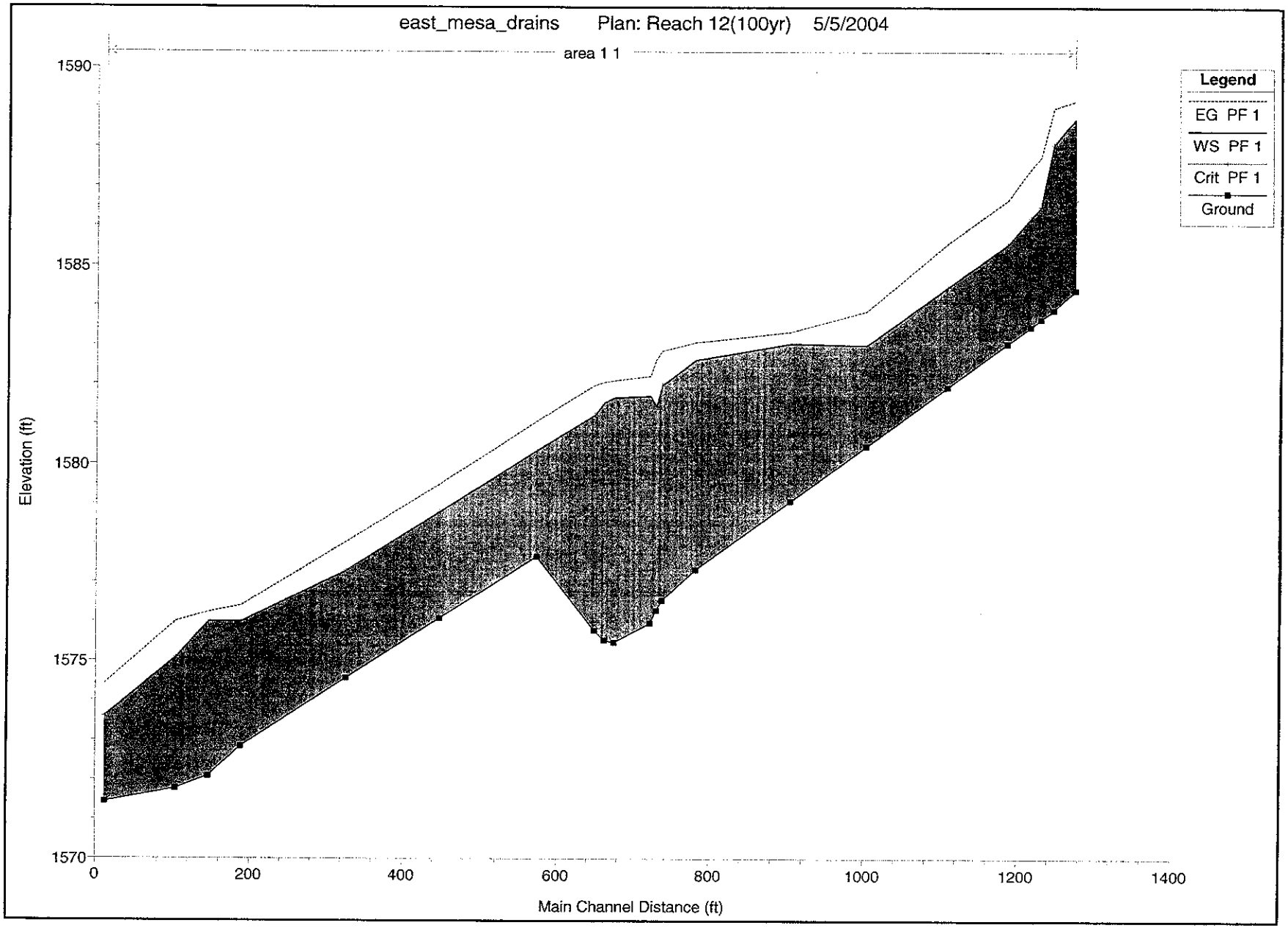
Reach	River Sta	Profile	Q Total (cfs)	Min Ch El (ft)	LOB Elev (ft)	ROB Elev (ft)	WS Elev (ft)	Crit W.S. (ft)	E.G. Elev (ft)	E.G. Slope (ft/ft)	Vel Chnl (ft/s)	Flow Area (sq ft)	Top Width (ft)	Froude # Chnl
1	783937	PF 1	356.00	1577.56	1580.97	1580.97	1581.67		1582.18	0.003373	5.80	64.68	22.70	0.53
1	750991	PF 1	356.00	1577.36	1578.12	1580.83	1581.27		1582.01	0.006230	6.98	53.48	24.30	0.77
1	723355	PF 1	356.00	1576.61	1577.88	1580.44	1581.21		1581.80	0.006019	6.32	59.39	26.37	0.71
1	684250	PF 1	356.00	1575.56	1577.87	1579.89	1580.97		1581.56	0.005901	6.70	60.25	26.29	0.68
1	643367	PF 1	356.00	1575.24	1577.54	1579.32	1580.75		1581.33	0.005162	6.88	63.25	29.74	0.65
1	590493	PF 1	356.00	1575.28	1577.11	1578.58	1580.10		1580.98	0.007354	8.59	54.33	28.10	0.79
1	574839	PF 1	356.00	1575.29	1576.98	1578.36	1579.93	1579.93	1580.86	0.007820	8.91	53.22	28.56	0.81
1	570544	PF 1	356.00	1575.27	1576.94	1578.30	1579.91	1579.91	1580.81	0.007440	8.75	54.97	29.94	0.79
1	564421	PF 1	356.00	1575.21	1576.88	1578.14	1579.76	1579.76	1580.59	0.006108	8.25	58.26	32.72	0.75
1	543571	PF 1	356.00	1575.00	1576.68	1577.57	1578.73	1578.73	1579.60	0.006729	7.93	54.44	32.66	0.82
1	510132	PF 1	356.00	1574.66	1576.36	1576.60	1577.52	1577.52	1578.33	0.009507	7.55	52.45	32.12	0.94
1	467118	PF 1	356.00	1574.23	1575.63	1576.17	1577.01	1577.01	1577.74	0.009184	7.30	56.97	40.25	0.92
1	413546	PF 1	356.00	1573.69	1575.57	1575.63	1576.22	1576.22	1576.88	0.009926	6.63	57.24	43.90	0.92
1	361095	PF 1	356.00	1573.24	1574.70	1575.09	1575.44	1575.44	1576.13	0.010941	6.73	54.87	43.49	0.96
1	282756	PF 1	356.00	1571.87	1573.29	1574.31	1575.39		1575.58	0.001566	3.57	106.38	49.76	0.39
1	120583	PF 1	356.00	1571.83	1573.81	1574.00	1574.39	1574.34	1575.02	0.009743	6.39	57.73	46.96	0.91
1	80352	PF 1	356.00	1571.69	1572.46	1572.92	1574.07	1574.07	1574.64	0.008148	7.00	67.72	53.81	0.88
1	42248	PF 1	356.00	1569.49	1571.52	1571.92	1573.10		1573.34	0.002115	4.05	94.84	44.53	0.45
1	5962	PF 1	356.00	1568.59	1570.44	1571.03	1572.33	1572.33	1573.15	0.007329	7.85	55.87	34.61	0.85

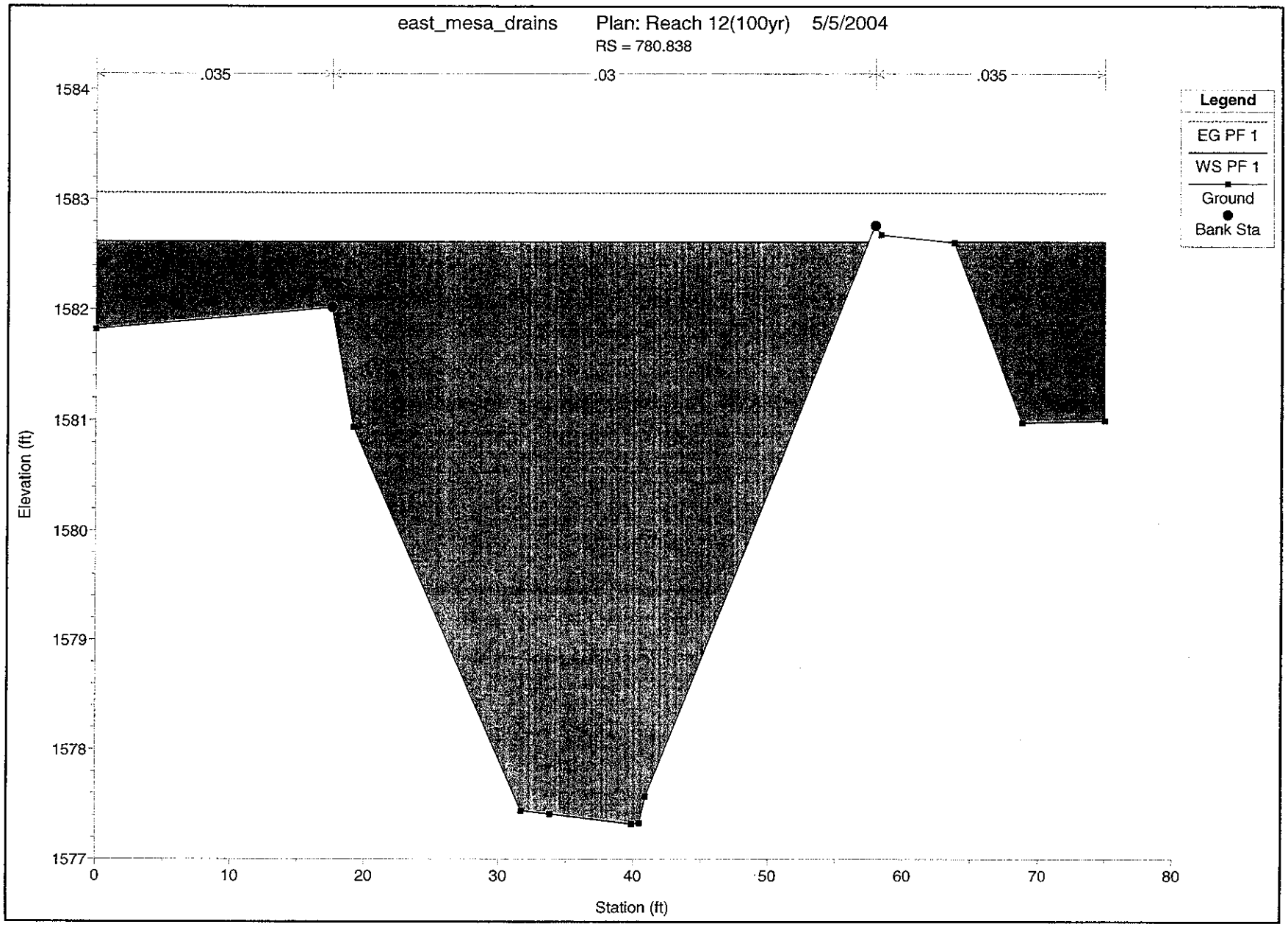

east_mesa_drains Plan: desert vista 4/29/2004
Desert Vista 1
Legend
EG PF 1
WS PF 1
Crit PF 1
EG PF 2
WS PF 2
Crit PF 2
Ground
Elevation (ft)
1582
1580
1578
1576
1574
1572
1570
1568
0
200
400
600
800
Main Channel Distance (ft)


east_mesa_drains Plan: desert vista 4/29/2004
.035
.03
.035
Legend
EG PF 1
WS PF 1
Crit PF 1
EG PF 2
WS PF 2
Crit PF 2
Ground
Bank Sta
Elevation (ft)
1580
1579
1578
1577
1576
1575
0
5
10
15
20
25
30
35
40
Station (ft)

HEC-RAS Plan: reach12(100) River: area 1 Reach: 1 Profile: PF 1

Reach	River Sta	Profile	Q Total	Min Ch El	LOB Elev	ROB Elev	W.S. Elev	Crit W.S.	E.G. Elev	E.G. Slope	Vel Chnl	Flow Area	Top Width	Froude # Chl
			(cfs)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(ft/ft)	(ft/s)	(sq ft)	(ft)	
1	1273.861	PF 1	792.00	1584.39	1585.78	1587.03	1588.71		1589.16	0.003148	6.17	158.77	59.29	0.59
1	1245.763	PF 1	792.00	1583.89	1586.11	1587.05	1588.06	1588.06	1588.98	0.008065	8.73	115.21	58.90	0.91
1	1229.574	PF 1	792.00	1583.66	1584.57	1587.03	1586.51	1586.51	1587.74	0.013245	9.42	88.99	36.30	1.11
1	1215.985	PF 1	792.00	1583.46	1583.52	1586.93	1586.21	1586.21	1587.45	0.012660	9.58	89.42	36.37	1.10
1	1189.829	PF 1	792.00	1583.04	1583.10	1586.63	1585.55	1585.55	1586.66	0.012988	9.17	94.41	42.59	1.10
1	1107.791	PF 1	792.00	1581.94	1582.01	1585.89	1584.47	1584.47	1585.57	0.012976	9.14	94.74	42.66	1.10
1	1002.610	PF 1	792.00	1580.45	1580.53	1584.90	1582.99	1582.84	1583.86	0.010906	7.99	106.00	49.29	1.00
1	994.348	PF 1	792.00	1579.07	1580.51	1583.96	1583.03		1583.34	0.001785	4.43	178.88	54.76	0.43
1	780.838	PF 1	792.00	1577.32	1582.02	1582.76	1582.62		1583.06	0.002566	5.50	161.12	69.22	0.53
1	737.379	PF 1	792.00	1576.54	1581.67	1582.34	1581.98	1581.98	1582.85	0.006804	7.69	120.69	75.83	0.82
1	729.753	PF 1	792.00	1576.28	1581.85	1582.24	1581.45	1581.45	1582.65	0.007658	9.02	97.56	54.11	0.86
1	723.610	PF 1	792.00	1575.96	1582.27	1582.20	1581.71		1582.22	0.002301	5.86	155.86	71.51	0.45
1	674.599	PF 1	792.00	1575.47	1580.55	1580.62	1581.67		1582.10	0.001965	5.68	179.06	76.77	0.46
1	661.476	PF 1	792.00	1575.53	1580.32	1580.54	1581.55		1582.06	0.003249	6.38	162.44	77.98	0.58
1	648.726	PF 1	792.00	1575.77	1579.35	1579.54	1581.23	1581.23	1581.98	0.005640	8.17	139.50	80.35	0.74
1	572.753	PF 1	792.00	1577.66	1579.25	1579.22	1580.34	1580.34	1581.08	0.009870	7.87	124.18	78.56	0.97
1	447.032	PF 1	792.00	1576.08	1577.63	1577.51	1578.78	1578.78	1579.49	0.009011	7.76	130.66	86.32	0.94
1	325.708	PF 1	792.00	1574.57	1576.07	1576.44	1577.29	1577.29	1578.04	0.009816	7.88	126.20	84.54	0.97
1	188.635	PF 1	792.00	1572.85	1574.31	1574.90	1576.00		1576.41	0.004941	5.87	162.36	89.88	0.69
1	146.071	PF 1	792.00	1572.09	1573.81	1576.48	1575.99		1576.24	0.002061	4.49	214.20	94.74	0.47
1	103.808	PF 1	792.00	1571.78	1573.29	1575.59	1575.08	1575.08	1576.00	0.011713	8.60	105.92	55.64	1.05
1	12.138	PF 1	792.00	1571.44	1572.19	1572.21	1573.60	1573.60	1574.42	0.010994	8.09	115.15	69.26	1.02


east_mesa_drains Plan: Reach 12(100yr) 5/5/2004
area 1 1
Legend
EG PF 1
WS PF 1
Crit PF 1
Ground
Elevation (ft)
1590
1585
1580
1575
1570
0
200
400
600
800
1000
1200
1400
Main Channel Distance (ft)


east_mesa_drains
Plan: Reach 12(100yr) 5/5/2004
RS = 780.838
.035
.03
.035
Legend
EG PF 1
WS PF 1
Ground
Bank Sta
Elevation (ft)
1584
1583
1582
1581
1580
1579
1578
1577
0
10
20
30
40
50
60
70
80
Station (ft)

Felicia Terry - FCDX

From: Medina, Frank [MedinaF@pbworld.com]

Sent: Tuesday, June 15, 2004 8:22 AM

To: william.vachon@fhwa.dot.gov; tmolt@dot.state.as.us; afield@dot.state.az.us; ariley@dot.state.az.us; bobwoodring@mail.maricopa.gov; ddrost@dot.state.az.us; dlance@dot.state.az.us; dedwards@dot.state.az.us; dcrandall@dot.state.az.us; fet@mail.maricopa.gov; fbowers@dot.state.az.us; FRoehrich@dot.state.az.us; gchin@dot.state.az.us; jhampshire@dot.state.az.us; jbeimer@dot.state.az.us; jwilson@kleinfelder.com; jdalessio@aztec.us; jsalazar@dot.state.az.us; jwarren@dot.state.az.us; jlawson@dot.state.az.us; lbrady@dot.state.az.us; mgilliland@aztec.us; mviparina@dot.state.az.us; mitchell_foy@ci.mesa.az.us; nwilcox@dot.state.as.us; oantony@dot.state.az.us; psebenik@dot.state.az.us; ppowell@dot.state.az.us; rrichter@dot.state.az.us; ross_renner@ci.mesa.az.us; shasan@dot.state.az.us; spaul@dot.state.az.us; sbeasley@dot.state.az.us; sjimenez@dot.state.az.us; tparlante@dot.state.az.us; Yalung, Mark

Subject: Red Mountain Freeway - University to Southern (RMFUS) Design Kick-off Meeting

Attached please find the Agenda for today's kick-off meeting set for 2:30 in the Arizona Room.

Please call me if you have any questions.

Thanks!

Frank Medina, PE
Parsons Brinckerhoff
1501 W. Fountainhead Parkway, Suite 400
Tempe, Arizona 85282
(480) 966-8295
medinaf@pbworld.com

MEETING AGENDA

RED MOUNTIAN FREEWAY – UNIVERSITY TO SOUTHERN
DESIGN TEAM PROGRESS MEETING
August 17, 2004 2:30 p.m.
Arizona Room – ADOT Engineering Building

Milestone Submittal Dates	
60% Submittal	October 29, 2004
95% Submittal	March 10, 2005
PS&E Submittal	May 27, 2005
Bid Advertisement	July 1, 2005

1. Review Action Items from July 20th Progress Meeting

2. Roadway Status
   - Freeway Design Status
     - Revisions to facilitate future widening for SB between University & Apache
   - Cross-road Design Status
   - CD Roads Design Status
   - Detour geometry
   - Early Excavation Package

Mark

3. Drainage Status
   - Off-site hydrology
     - Wall/Drainage issue on west side of corridor north of Broadway
   - Channel/box culvert geometry
     - 90th Street/Alder
     - Broadway Road & south of Broadway on east side of corridor
   - On-site status

Tony Regis PB

JR is doing Drainage

4. Structures Status
   - Bridge Design Status
   - Apache Trail – Dual Left Turn Lanes – CRITICAL ISSUE
   - Retaining Walls
     - Revisions based roadway revisions
     - Need rustication pattern finalized

Greg - Bridge PB

5. Traffic Status
   - Preliminary signing and marking
     - Signs mounted on all 3 bridge structures
   - Lighting meeting with ADOT (Mike Lessard)

6. Geotechnical Status
   - Clearances
     - ROW Clearance for all borings
     - Environmental Clearance for 119 borings – 40 remain

7. Utilities Status
   - August 11th meeting with Utility Companies
   - Status of utility COM utilities designs
   - New COM gas line in University Drive

8. Environmental Status
   - Soundwall analysis resolution – CRITICAL ISSUE
   - Will commence native plant inventory

9. Right-of-way Status
   - ROW requirements sent to ADOT
     - Review areas of concern

10. Stakeholder Issues
    - ADOT Issues
    - City of Mesa Issues
    - Maricopa County Issue

11. Other issues

12. **Next Meeting – September 21st, 2:30 p.m.**

Felicia,

Here is the IGA Dick referred to.

Don

OFFICIAL RECORDS OF
MARICOPA COUNTY RECORDER
HELEN PURCELL
99-0697395 07/23/99 02:58
LILIAN 3 OF 7

CLERK OF THE BOARD
BASKET PICK UP

This Document Recorded
Without Exhibit "A"

ty

Intergovernmental Agreement
for the
Design, Rights-of-Way Acquisition, Utility Relocation, Construction, Construction Management, and Operation and Maintenance
of the
Five Basins along Central Arizona Project (CAP) Canal
Between
The Flood Control District of Maricopa County
and
City of Mesa

IGA FCD 98049

C 69. 99. 077. 2

This Intergovernmental Agreement (IGA) is entered into by and between the Flood Control District of Maricopa County, a municipal corporation and political subdivision of the State of Arizona, acting by and through its Board of Directors hereinafter called the DISTRICT and City of Mesa, a municipal corporation and political subdivision of the State of Arizona, hereinafter called MESA.

This Agreement shall become effective as of the last date it has been executed by all parties.

DATE FILED WITH MARICOPA COUNTY RECORDER _____

STATUTORY AUTHORIZATION

1. The DISTRICT is empowered by A.R.S. Section 48-3603, as revised, to enter into this Agreement and has authorized the undersigned to execute this Agreement on behalf of the DISTRICT.

2. MESA is empowered by A.R.S. Section11-952 and MESA City Charter 103 to enter into this Agreement and has authorized the undersigned to execute this Agreement on behalf of MESA.

When Recorded Return to:
Flood Control District of Maricopa County
2801 West Durango
Phoenix, AZ. 85009

Intergovernmental Agreement
for the
Design, Rights-of-Way Acquisition, Utility Relocation, Construction, Construction Management, and Operation and Maintenance
of the
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C 69-99-077-2

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2. MESA is empowered by A.R.S. Section11-952 and MESA City Charter 103 to enter into this Agreement and has authorized the undersigned to execute this Agreement on behalf of MESA.

BACKGROUND

3. The DISTRICT undertook a drainage study within east Mesa entitled "East Mesa Area Drainage Master Plan (EMADMP)". The study area is approximately bounded by the Maricopa County/Pinal County line (Meridian Road) to the east, the East Maricopa Floodway (EMF) to the west, the Rittenhouse Channel and Queen Creek Road to the south, the Central Arizona Project (CAP) Canal to the northeast, extending north to Brown Road near Hawes Road, and an approximate diagonal line from Hawes Road and the CAP Canal south to Power Road and the Superstition Freeway as shown in Exhibit "A".

4. MESA, the Maricopa County Department of Transportation (MCDOT), and the DISTRICT have reported severe flooding along several major transportation corridors and near the CAP overchutes at their points of discharge. There are several CAP overchutes within the study area. The CAP Canal is built above ground, creating a barrier to surface runoff. Runoff is impounded behind the north canal bank and discharges southwest via the overchutes. The study recommends four detention basins along the south and one detention basin along the north side of the CAP Canal as shown in Exhibit "B", hereinafter called the PROJECT, to alleviate the flooding downstream of the overchutes.

5. The overchute flows drain into existing washes that have inadequate conveyance capacity. Since the downstream washes do not have adequate capacity to convey the overchute flows, the majority of storm runoff breaks out and floods the adjacent downstream residential and/or commercial properties. Culverts provided under the major street crossings are undersized to convey the overchute flows. The excess flow from these culverts overtops and floods the major street corridors creating safety hazards.

6. MESA has committed to the design, rights-of-way acquisition, utility relocations, construction and construction management of the Broadway Road Channel and the Basin 5 Outfall Channel at an estimated cost of $4.4 million. The detention basins reduce the peak flow contributing to these channels. Hence, the channel design capacities are based on these basins being constructed. MESA will own, operate and maintain the Broadway Road Channel and Basin 5 Outfall Channel and the Five Basins project at its expense.

7. Resolution FCD 97-11 authorized the Chief Engineer and General Manager of the DISTRICT to negotiate Intergovernmental Agreements with other agencies for cost sharing in the design, rights-of-way acquisition, and construction of drainage components of the Recommended Plan from the EMADMP, acquire rights-of-way for the basins, and to undertake the final design of the Five Basins along the CAP Canal.

PURPOSE OF THE AGREEMENT

8. The purpose of this Intergovernmental Agreement is to identify and define the responsibilities of the DISTRICT and MESA for the design, rights-of-way acquisition, utility relocation, construction, construction management and operation and maintenance for the PROJECT. The total cost of the project including design, rights-of-way acquisition, utility relocations and construction is $8.4 million.

TERMS OF AGREEMENT

9. The DISTRICT shall:

9.1 Fund the cost for the final design, rights-of-way acquisition, utility relocation and construction of the PROJECT estimated to be $8.4 million.

9.2 Be the lead agency for and fund the cost of rights-of-way/easements acquisition, utility relocations, construction and construction management associated with the PROJECT.

9.3 Act as the contracting agency for the PROJECT and perform all services necessary to administer construction, including but not limited to the following: Issue invitations for bids; receive, protect and open bids; determine lowest responsible and responsive bidder; award the contract; and issue the notice to proceed.

9.4 Provide MESA in a timely manner, plans and special provisions for review and comment at appropriate levels of completion, and will work to resolve and/or incorporate such comments into the final design plans and specifications.

9.5 Conduct all public involvement activities concerning the PROJECT.

9.6 Acquire all required permits for construction of the PROJECT.

9.7 Not be responsible for the operation and maintenance of the PROJECT, and the liability for the use by the public of the PROJECT and all other related property, or incur liability from any damages that may occur from the PROJECT not functioning because of lack of maintenance, upon completion and acceptance of the construction of the PROJECT by MESA.

9.8 Reserve the right to review and approve the design and construction of any future changes or modifications to the PROJECT. This right shall be included in the transferring documents for all permanent interests in land that may be conveyed to MESA.

9.8.1 These rights shall only be applicable to the drainage related issues of the PROJECT.

9.8.2 In the event, the DISTRICT requires changes or improvements to the PROJECT; the DISTRICT shall assume the liability for such changes or improvements.

9.9 Not be responsible for the cost of any non-flood control related features, including any aesthetic, recreational and/or landscape improvements in excess of the DISTRICT's aesthetic treatment and landscaping policy. All costs for non-flood control related items such as landscaping and recreational features requested by MESA, in excess of the DISTRICT's aesthetic and landscaping policy and constructed as part of the PROJECT, will be borne solely by MESA at cost, plus 8% for construction management.

9.10 Transfer title of land acquired by the DISTRICT for the PROJECT to MESA, upon completion and acceptance of construction. The DISTRICT shall retain rights to enter and complete maintenance, in the case of nonperformance by MESA required under paragraph 10.6.

10. MESA shall:

10.1 Review and submit written comments on the PROJECT plans and specifications provided by the DISTRICT within 3 weeks of receipt. If the written comments not received within 3 weeks, the PROJECT plans and specifications will be considered acceptable to MESA.

10.2 Participate with the DISTRICT on final inspection and acceptance of the PROJECT.

10.3 Participate in public involvement activities conducted by the DISTRICT for the PROJECT.

10.4 Grant easements to the DISTRICT, for use of MESA owned rights-of-way and utility easements required to construct the PROJECT, at no cost to the PROJECT.

10.5 Require utilities, which do not have prior rights, to relocate their facilities at no cost to the PROJECT.

10.6 Own, operate, maintain, and assume liability for the PROJECT upon completion and acceptance of the PROJECT, at its sole expense. The estimated cost for operation and maintenance of these basins is $2,500,000 over 25 years. The DISTRICT retains the right to inspect and repair and/or maintain the PROJECT if MESA fails to take action within sixty (60) days of written notification by the DISTRICT. MESA shall reimburse the DISTRICT for actual costs incurred by the DISTRICT for any such repair or maintenance within thirty (30) days of receipt of an invoice.

10.7 Be responsible for funding the design, rights-of-way acquisition, utility relocation, construction management, construction, and operation and maintenance of all outfall channel(s) required downstream of the basins except for design of the outfall channel for the fifth basin.

10.8 Be responsible for constructing any non-flood control related features, including any aesthetic, recreation and/or landscape improvements in excess of the DISTRICT'S aesthetic treatment and landscaping policy. All costs attributable to non-flood control related items such as landscaping and recreational features requested by MESA, in excess of the DISTRICT's aesthetic and landscaping policy and constructed as part of the PROJECT will be borne solely by MESA at cost, plus 8% for the construction management.

10.8.1 MESA shall reimburse the District for the above referenced cost within 30 days of receipt of an invoice.

10.9 Waive all MESA permit fees and other fees, which would otherwise be assessed against the DISTRICT and/or its contractor(s) necessary for the planning, design, or construction of the PROJECT.

10.10 Design, construct, operate and maintain the Broadway Road Channel and Basin 5 Outfall Channel as defined in paragraph 6 at an estimated cost of $4.4 million and as shown in Exhibit "C".

11. Each party to this agreement may with mutual written agreement of all parties delegate responsibilities to another party. Any delegation, however, shall not relieve the delegating party of its original responsibilities as defined herein.

12. In the case of any dispute over any items in this Agreement, the parties agree to use their best efforts and enter into good faith negotiations to resolve the disputed matters. However, this shall not limit the rights of the parties to seek any remedies provided by law.

13. All parties to this Agreement shall take reasonable and necessary actions within their authority to assure that any water discharged into the PROJECT comply at the point of discharge with any applicable requirements of the Clean Water Act, National Pollutant Discharge Elimination System (NPDES), or any other applicable discharge requirements, including any permit requirements.

14. Each party to this agreement (indemnitor) shall, to the extent permissible by law, indemnify, defend and save harmless the others (indemnitees) including, agents, officers, directors, governors and employees thereof, from and against any loss or expense incurred as a result of any claim or suit of any nature whatsoever, which arises out of indemnitor's negligent or wrongful acts or omissions pursuant to this agreement. Such indemnification obligation shall encompass any personal injury, death or property damages resulting from the indemnitor's negligent or wrongful acts or omissions, as well as reasonable attorney's fees, court costs, and other expenses relating to the defense against claims or litigation, incurred by the indemnitee. Indemnitee shall be liable for their own negligence or wrongful acts as provided by law.

15. All notices or demands upon any party to this agreement shall be in writing and shall be delivered in person or sent by mail addressed as follows:

Flood Control District of Maricopa County	City of Mesa
Manager, Planning and Project Management Division	City Manager
2801 West Durango Street	20 E. Main Street, #750
Phoenix, AZ 85009-6399	Mesa, AZ 85211-1466

16. Each party to this Agreement will pay for and not seek reimbursement for its own personnel and administrative costs associated with this PROJECT, including but not limited to the following unless specifically identified otherwise in this Agreement: design, land acquisition, inspection, public involvement, permitting, management and administration, and operation and maintenance.

17. This Agreement shall expire ten (10) years from the date of recording with the County Recorder or completion of the PROJECT; whichever is the first to occur. However, by mutual written agreement of all parties, this Agreement may be amended or terminated. The operation and maintenance, feature reviews and indemnification provisions of this Agreement shall survive the expiration of this Agreement.

18. This Agreement is subject to cancellation by any party pursuant to the provisions of A.R.S. Section 38-511.

19. Attached to this Agreement or contained herein are the written determinations by the appropriate attorneys for the parties to this Agreement, that these agencies are authorized under the laws of the State of Arizona to enter into this Agreement and that it is in proper form.

20. If legislation is enacted after the effective date of this Agreement which changes the relationship or structure of one or more parties to this Agreement, the parties agree that this Agreement shall be renegotiated at the written request of either party. The preceding sentence does not bind either party's governing board in any way to accept or approve any amendment or changes to this Agreement.

FLOOD CONTROL DISTRICT OF MARICOPA COUNTY
A Municipal Corporation

Recommended by:

3/22/99

Michael S. Ellegood, P.E. Date:
Chief Engineer and General Manager

Approved and Accepted:

By: 4-7-99
Chairman, Board of Directors Date:

Attest:

By: 4-7-99
Clerk of the Board Date:

The foregoing Intergovernmental Agreement IGA FCD 98049 has been reviewed pursuant to Arizona Revised Statutes 11-952, as amended, by the undersigned General Counsel, who has determined that it is in proper form and within the powers and authority granted to the Flood Control District of Maricopa County under the laws of the State of Arizona

Julie M. Lemmon 3/19/99
General Counsel Date:

CITY OF MESA

By: _____ 7/7/99
City Manager: Date:

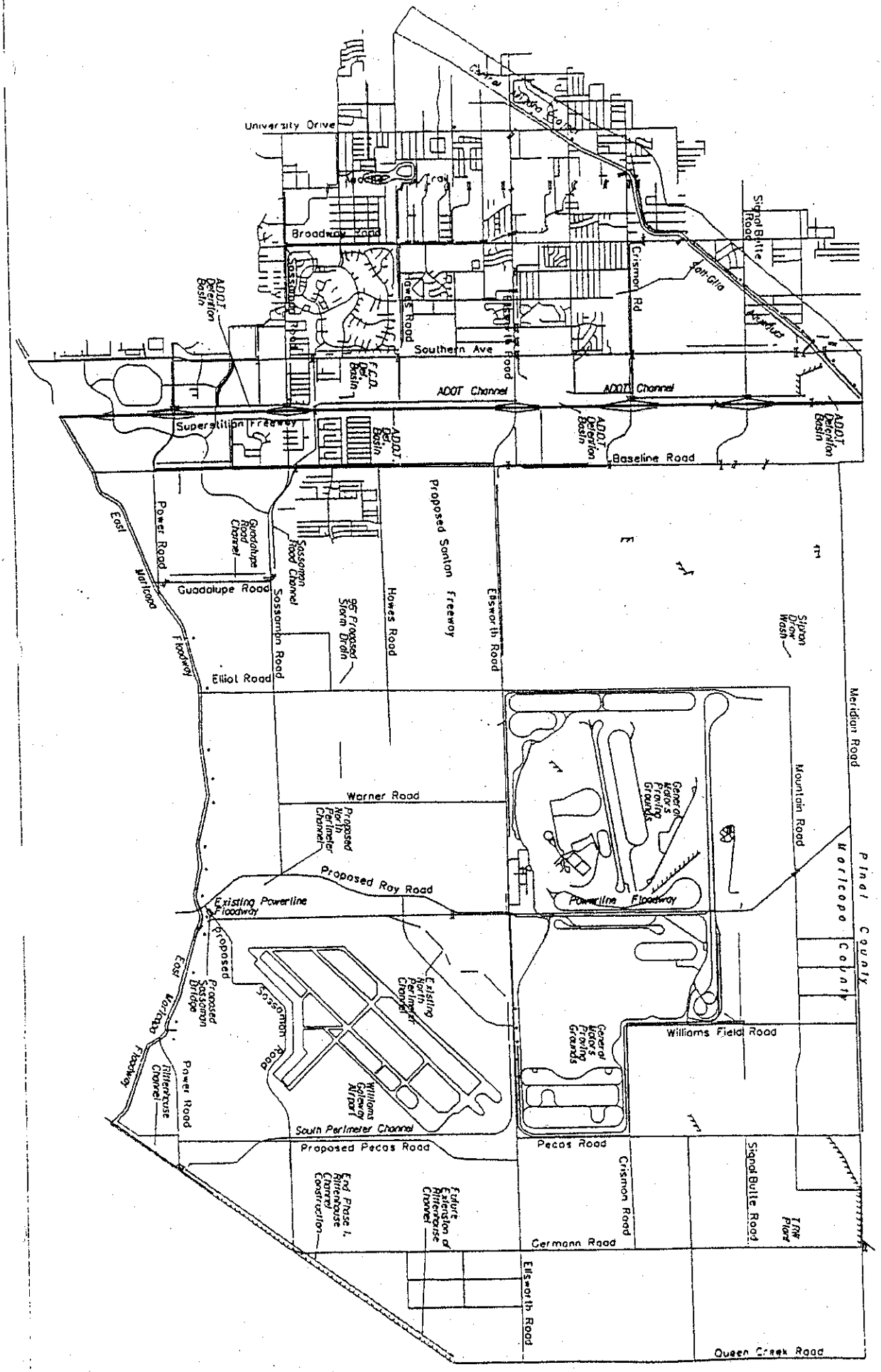
Attest:

By: _____ 7/8/99
City Clerk Date:

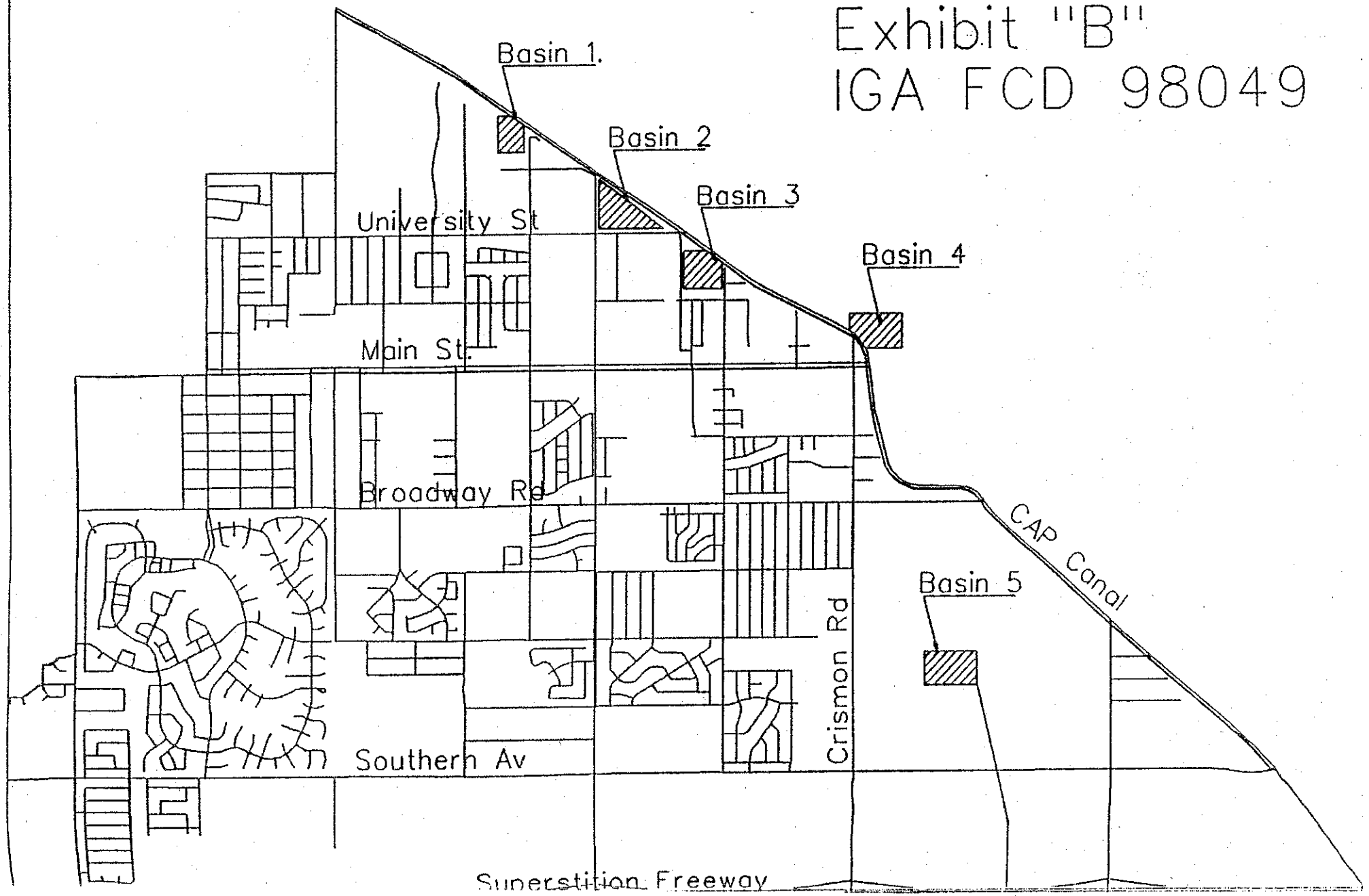
The foregoing Intergovernmental Agreement IGA FCD 98049 has been reviewed pursuant to Arizona Revised Statues 11-952, as amended, by the undersigned attorney who has determined that it is in proper form and within the power and authority granted to the City of Mesa under the laws of the State of Arizona.

_____ 7/7/99
City Attorney Date:

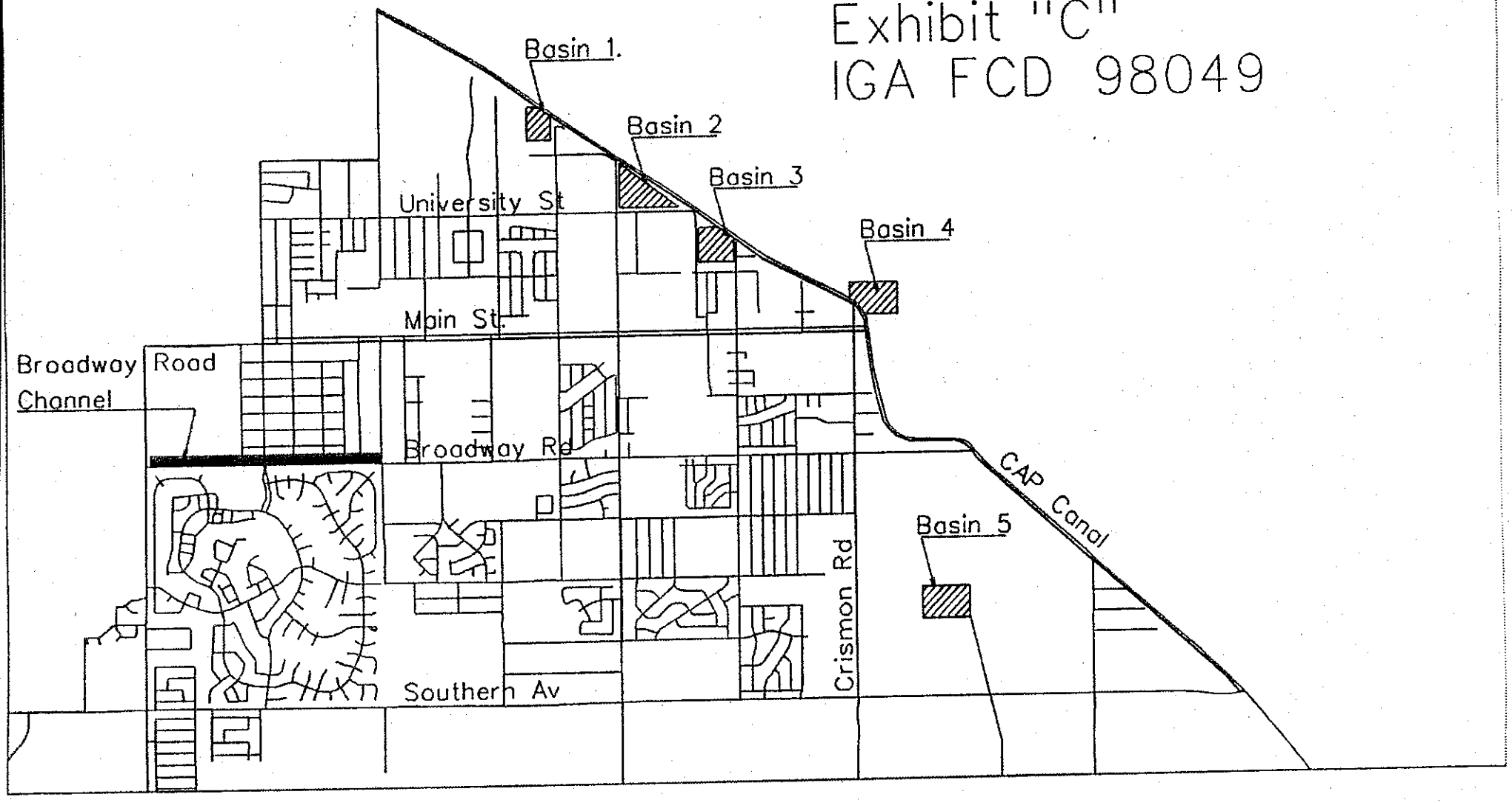
EXHIBIT "A"
EAST MESA ADMP



Five Basins Sites
Exhibit "B"
IGA FCD 98049



Broadway Road Channel
Exhibit "C"
IGA FCD 98049



MEETING MINUTES

Meeting Date:	July 20, 2004
Meeting Time:	2:30 p.m.
Location:	ADOT Engineering Building - Arizona Room
Subject:	**Project Progress Meeting** Red Mountain Freeway – University to Southern TRACS NO. 202L MA 027 H5783 01D
Attendees:	See attached list
Prepared By:	Frank Medina
Published Date:	July 30, 2004

1. **Frank Medina reviewed the Action Items from the June 15th meeting:**

   ACTION ITEM NO. 1 – Frank to update project sign-in list based on mark-ups from the team. Completed.

   ACTION ITEM NO. 2 – Project Team members to copy Steve Beasley, Frank Medina, Mark Gilliland and Mark Yalung on project correspondence and to include Al Field and JoAnne D'Alessio on matters regarding utility issues. Dale Drost is to be included in correspondence regarding constructability and maintenance issues. Information has been passed on to all design team members as part of internal design team meetings. Completed.

   ACTION ITEM NO. 3 – Nan Wilcox to report on reconciliation of basefiles with project ROW needs. Nan indicated that she needed the right-of-way information in order to complete this task. ROW will be discussed later in the meeting.

   ACTION ITEM NO. 4– Tom Molt and Nan Wilcox to provide clearances to NCS as soon as practical. NCS may have to do geotechnical investigation in two phases. Nan waiting on information; Mark Gilliland indicated that Mike Shirley from Aztec is working up the environmental clearances for areas that have already been cleared.

   ACTION ITEM NO. 5 – ***Resolve Qwest trunkline issue at June 24th Utility coordination meeting. Design Team Lead Bridge Engineer Greg Lingor to attend meeting to discuss bridge widening requirements.*** Issue has been resolved; Qwest will relocate under the freeway and not in the bridge. Completed.

   ACTION ITEM NO. 6 – ***Ross Renner/Mark Venti to provide electronic copy of waterline design to Mark Yalung.*** Mark Yalung will contact Stantec through City of Mesa contact Gordon Haws to get a copy of the waterline design.

ACTION ITEM NO. 7 – ***Mark Yalung/Naresh Samtani to keep Bob Woodring informed on roadway and pavement design issues associated with the reconstruction of severed or relocated local streets.*** Staff has been informed of these requirements; Completed.

ACTION ITEM NO. 8 – ***Nan Wilcox to provide Bob Woodring the contact name at the County Planning and Development office.*** Completed.

ACTION ITEM NO. 9 – ***Bob Woodring to have Maricopa County Planning and Development office require the wall adjacent to the Apache Manor subdivision to be constructed per ADOT standards.*** The City of Mesa has annexed the Apache Manor subdivision under resolution 4151 in February 2004. It was a requirement of the subdivision to build the soundwall per ADOT Standards. Need to confirm who (City or County) will get subdivision to build sound wall to ADOT Standards.

ACTION ITEM NO. 10 – ***Mark Yalung to coordinate meeting with DMJM and Stanley to review profile of freeway on north end of the project.*** Completed; more details under Roadway discussion.

ACTION ITEM NO. 11 – ***Nan Wilcox to investigate a non-access easement on the properties along University and 90th Street.*** Nan is doing the title work on these properties to confirm existence of non-access easement.

ACTION ITEM NO. 12 – ***Mark Yalung to investigate detour alignments and TCE needs at Broadway Road.*** Discussion under Roadway Update.

ACTION ITEM NO. 13 – ***Design team to include Ed Green in discussions regarding concrete and pipe removals required on the project.*** Design Team will coordinate. Al Field also requested that sewerlines that are to be relocated be included in the discussion with Ed Green. Nan Wilcox noted that Ed and ADOT EEG are involved in the demolition of homes where concrete features and pipes are being removed.

ACTION ITEM NO. 14 – ***Bob Woodring to check on County's position regarding the wall along Broadway Road.*** Mark Gilliland will contact Bob to determine the County's position.

ACTION ITEM NO. 15 – ***Mark Yalung to coordinate Design Team's efforts in identifying and tracking excess ROW in accordance with new ADOT process.*** Mark will coordinate these efforts with Nan Wilcox later in the project. Nan will forward to Mark an electronic copy of the tracking form.

2. **Mark Yalung and Manny Medrano gave an update on the geometrics and roadway status of the project.** The horizontal layout of the freeway has remained unchanged from the 30% plan. Independent profiles were developed for each directional roadway in order to meet ADOT slope criteria in the median and to facilitate future widening in the median area. In coordination with DMJM and Stanley, the mainline profile has been modified to reflect the changes of the freeway over the CAP canal. The mainline profile on the north end has been optimized to lower the profile of University Drive while reducing the excavation required for the freeway.

The profile of University Drive has been lowered by approximately 1.5 feet from the 30% plans profile due to the mainline profile changes over the CAP canal. No horizontal changes have been made to the cross-roads from the 30% layout.

For plan presentation purposes only, the control line for the Collector-Distributor (CD) roadway has been set to run from cross-road to cross-road, with the geometry for the ramps to go from back of mainline gore to back of CD Road gore. The geometry for the ramps and CD roads remains unchanged from the 30% plans.

The Design Team has looked at several detour options at Broadway Road to alleviate the pinch point on the easterly end of the detour at the abutting homes. The shortening of the bridge spans has allowed moving the detour slightly to the west. PB would like to meet with Oliver Antony from ADOT Roadway Group to review 2 concepts that have been developed. Ross Renner inquired if the detours were single or dual lane in each direction. Mark noted that the detours are being laid out as dual lane detours in each direction with a 25 mph posted speed. Ross indicated that the City might consider single lane detours. Mark indicated that the design team would develop dual and single lane detours for discussion with ADOT Roadway Group and the City of Mesa.

<u>ACTION ITEM NO. 1</u> – Mark/Manny to develop single and dual lane detour layouts for discussion with Oliver Antony-ADOT Roadway Group and Ross Renner/Mark Venti from the City of Mesa.

3. **Tony Regis provided the following update on the project drainage.**

The off-site hydrology model is currently being reviewed to confirm flows. Areas of special consideration include concentrated flows from adjoining subdivisions. The drainage design team is also modeling the flows in critical areas to confirm that the box culverts and channels can be accommodated within the current delineated right-of-way.

The location of large diameter on-site trunklines with respect to the bridge abutments is currently being evaluated. At Broadway Road, the shortening of the bridge span has pushed the pipe underneath the mainline pavement. Dale Drost indicated that it would be preferable to keep the pipe line out from underneath the mainline pavement and the manholes are to be directly over the top of the pipe. Tony indicated that this would require moving the pipe out by about 4 feet. It was agreed that the bridge span would be lengthened by 4 feet to accommodate the large diameter drainage pipe. It was also agreed that it would be appropriate to require only RGRCP pipe in the vicinity of the abutments. Oliver Antony noted that the special provisions need to be written to ensure that the RGRCP is not "Value Engineered Out" in favor of cast-in-place pipe.

<u>ACTION ITEM NO. 2</u> – Tony Regis to revise the trunkline location to be out from under the mainline pavement. Greg Lingor to revise abutment location accordingly

<u>ACTION ITEM NO. 3</u> – Tony Regis to develop plans and special provisions to ensure that RGRCP is used for the trunkline in front of the bridge abutments. The special provisions are to preclude any type of VE proposal that would use any other pipe material in these areas.

4. **Greg Lingor provided the following update on the bridge work and Mark Chase provided the status of wall design activities:**

Work continues on revising the abutments to reflect the VE recommendations to pull in the abutments to shorten the span lengths. Based on the drainage discussion, the west abutment at Broadway will have to be moved out four feet. Oliver Antony inquired if the new abutment locations accommodate the future lane without the need for barriers. Greg indicated that the abutment locations will accommodate the ultimate widening. Oliver asked if the new abutment locations had been check for horizontal sight distance. Mark indicated that they would be check.

ACTION ITEM NO. 4 – Mark Yalung to check horizontal sight distance for new abutment locations.

PB has requested electronic copies of the 30% Bridge Selection Reports (BSR) from DMJM in order to revise them to reflect the final span arrangements and structure depths.

Work continues on the angled wall locations in the quadrants of all three bridge locations to ensure there is adequate room to accommodate the utilities and signal equipment at each bridge site.

The retaining wall heights and limits are being revised to reflect the new mainline profile. The Design Team is attempting to set-up a meeting with Joe Salazar to coordinate the architectural treatments that will be placed on the retaining and sound walls. Mike Zimnick requested that the Design Team do a thorough review of the architectural drawings to make sure they are compatible with the bridge and wall structural plans.

ACTION ITEM NO. 5 – Greg Lingor and Mark Chase to set-up meeting with Joe Salazar to coordinate architectural treatments for bridges and walls and to confirm architectural plans are compatible with the structural plans.

5. **Regarding the traffic engineering components of the project, Cathy Hollow indicated that the design team is taking inventory of existing signs and power locations.**

6. **JoAnne D'Alessio provided the following update on the utility status of the project:**

The design team will secure an electronic copy of the new Broadway Road waterline plans from the City of Mesa/Stantec to include the line on the construction plans.

The design team needs a copy of the abandonment plans for the sewer lift station from Steve Ketchum. Design has already begun on the sewer line relocation needed for the early excavation package south of Broadway.

ACTION ITEM NO. 6 – JoAnne D'Alessio to secure set of lift station abandonment plans from Steve Ketchum of the City of Mesa.

The City of Mesa is planning for the installation of a new high pressure gas line that would cross the freeway corridor at University Drive. The City plans to install the majority of the line up to the corridor, with the piece crossing the corridor to be installed as part of the freeway project. Ross indicated that the City would like to have Aztec do the design and then have the plans reviewed and co-sealed by the City. Ross indicated that he would discuss this further with Scott Sherwood. Frank will also discuss this matter with Steve Beasley regarding the addition of the gas line to the project.

Mesa

ACTION ITEM NO. 7 – Ross Renner to discuss the logistics of including the COM gas line design and construction in the RMFUS project.

ACTION ITEM NO. 8 – Frank Medina to discuss the addition of the COM gas line with Steve Beasely.

Al Field noted that he would like a utility relocation schedule developed for the utilities impacted by the early excavation package.

ACTION ITEM NO. 9 – JoAnne D'Alessio to develop a relocation schedule for utilities impacted by the early excavation package.

7. **Mark Gilliland and Shelley Chamberlain provided the following update regarding the environmental status on the project:**

Shelley noted that the noise analysis has been run with and without the ARACFC credit and the results have been documented in the Draft Noise Report which was formally submitted to ADOT yesterday (7/19). The difference in wall heights and limits is significant between the two analyses. A meeting was held with ADOT and FHWA to describe the differences between the analyses. ADOT will review the results of the analyses and provide direction on how to proceed. ADOT will review with the City of Mesa and Maricopa County the proposed direction regarding the soundwalls. Upon concurrence from all stakeholders, the plan will be taken out to the public in October, when the 60% plans are submitted.

ACTION ITEM NO. 10 – ADOT to provide comments and direction regarding noise report submitted July 19th.

Bill Vachon noted that the internal ramps in the vicinity of Apache Trail (northern Broadway Ramps and southern University Ramps) were not included in the original EIS. Therefore, to be technically correct, these new features will need to be taken out to the public to show that we have properly notified and accepted comments from the public. Frank Medina will discuss this matter with Steve Beasley.

ACTION ITEM NO. 11 – Frank Medina to discuss with Steve Beasley the need for taking the internal ramps to the public.

8. **Mark Yalung provided the following update regarding the project right-of-way.**

The design team has remodeled the geometry to determine the impacts on right-of-way needs. The team is currently laying out the slopes to confirm they fall within the current delineated ROW. Nan Wilcox indicated that she needs to give a ROW status report on the project and requested a color-up map showing what has

been completed. Mark Gilliland indicated that with the sound wall limits undetermined at this time, it will be difficult to identify the final ROW needs. Mark Chase noted that the walls have been laid out to reflect both analyses, but it was agreed that the wall agreement process would not start until consensus has been reached on the wall heights and limits. Matt Burdick noted that it is extremely important for ADOT, COM and the County to work together when taking the soundwall issue to the public. The effort to get the word out to the public may require more effort, such as going to the Homeowner's Associations prior to the formal public meeting to ensure that the importance of the public meeting is understood.

ACTION ITEM NO. 12 – Mark Yalung to provide Nan Wilcox a colored map showing status of right-of-way confirmation.

ACTION ITEM NO. 13 – Frank Medina to discuss with Steve Beasley the need for additional public outreach regarding the formal public meeting.

9. **Next Meeting – August 17th, 2:30 pm Engineering Building Main Conference Room**

Flood Control District
Of Maricopa County

INTEROFFICE MEMORANDUM

Date: June 1, 2004

To: Felicia Terry

From: Charles Klenner

Subject: O&M Comments concerning the East Mesa Drain Candidate Assessment Report.

This memo is the Operations and Maintenance Division response to the East Mesa Drain Candidate Assessment Report.

General Comments:

The Operations and Maintenance Division wants to emphasize the importance of an IGA, defining the maintenance responsibilities between the District and Maricopa County. O&M recommends that the Board of Directors issue a written directive that clarifies and defines District O&M responsibilities.

The O&M Division believes that the District should not have responsibility for the maintenance of the Broadway Channel (Reach 4), Corabell Channel (Reach 5), and Reach 12 (O&M Reach 6). These drainage channels, the District has maintained for years, are street drainages. The O&M of these drainages should belong to the Department of Transportation.

The report recommends site-specific improvements that will help reduce maintenance concerns. However, in reviewing the operational rankings, seven of the channels are flood prone and three of the channels are borderline flood prone. Is addressing the maintenance concerns while recognizing that the channels are undersized advisable?

The report recommends that the O&M Division perform monthly inspections of the structures. The Division inspects all structures quarterly and in addition performs post event inspections. This inspection cycle should be sufficient for the East Mesa Drains.

Site Specific Comments:

Reach 1: Installing Bollards at the upstream and down stream terminus of the channel is a good recommendation. The report does not address the dumping of trash from adjacent property owners. O&M recommends a restrictive wall to deter this illegal dumping.

In addition to the report recommendations, O&M recommends removal of the trees in the channel and to stabilize the channel to prevent erosion.

2801 West Durango Street Phoenix, Arizona 85009 Phone: 602-506-1501 Fax: 602-506-4601

Site Specific Comments:

Reach 2: In addition to the report recommendations O&M recommends removing the improvised bank stabilization and shotcrete the channel

Reach 3: In addition to the report recommendations O&M recommends constructing a wall to reduce illegal dumping and discharge. Further O&M recommends the removal of vegetation planted by adjoining property owners.

Reach 4: In addition to the report recommendations O&M recommends removal of trees and shotcrete the channel.

Reach 5a: The report recommends stabilizing half of the channel with a concrete lining. O&M recommends shotcrete the entire reach to the 96th street.

Reach 7: The report should be corrected; Reach 7 has significant erosion on the East bank, not the West bank.

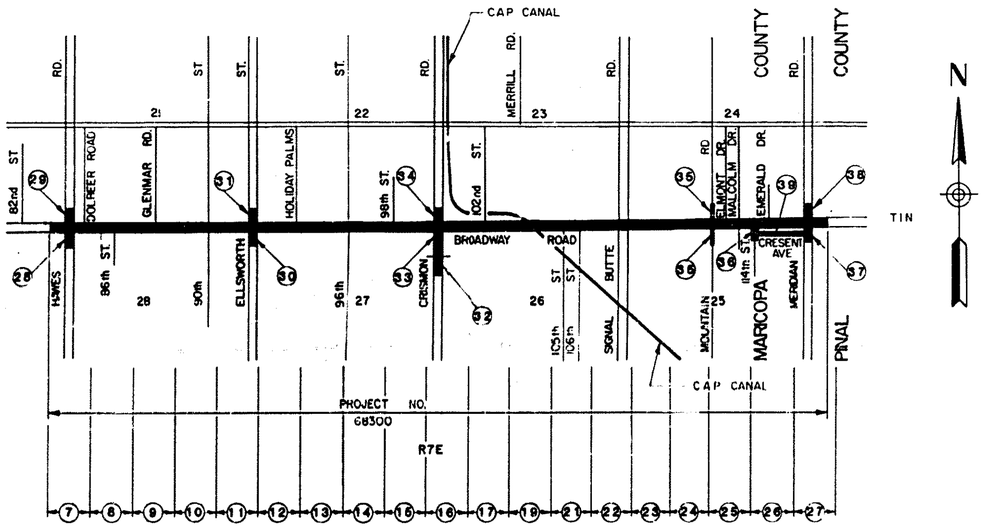
Reach 10: The report recommends loose riprap for erosion control. O&M request that shotcrete be considered for this reach. Erosion at Alder is significant and shotcrete would be a more effective approach to reduce the undercutting and help reduce the sediment buildup at 90th Street, this sediment plugs the box culvert at 90th Street.

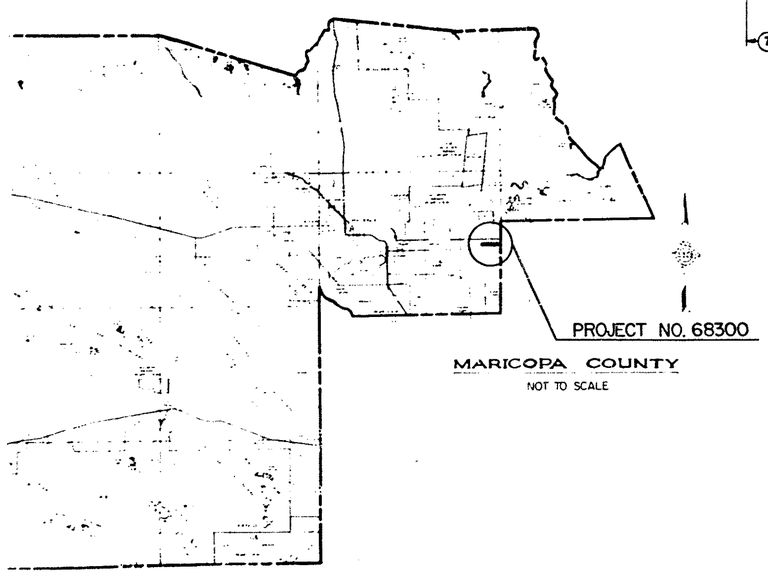
Reach 11: The report recommends loose riprap for erosion control. O&M request that shotcrete be considered for this reach. The ability to access this reach with equipment to perform maintenance of riprap is a challenge.

cc: Ed Loy

MARICOPA COUNTY HIGHWAY DEPARTMENT

PLANS FOR THE CONSTRUCTION OF
BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
PROJECT NO. 68300





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1133 EAST MISSOURI
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As Built 10/1/87 C.B.

10-23-86

DATE: 10/23/86

COUNTY BOARD OF SUPERVISORS

TOM FREESTONE

CAROLE CARPENTER

APPROVED Fred Koory Jr.
CHAIRMAN.

DATE 10/24/86

PROJECT NO. 68300

BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET	OF	AS BUILT
MARICOPA	ARIZ.	68300	4	60	C.B. 10-1-87

3/85 DATE

HOLGATE CONSULTING ENGINEERS, INC.

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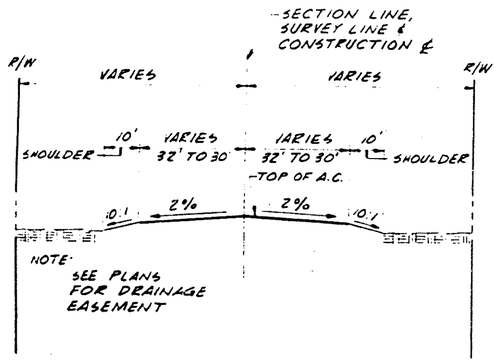

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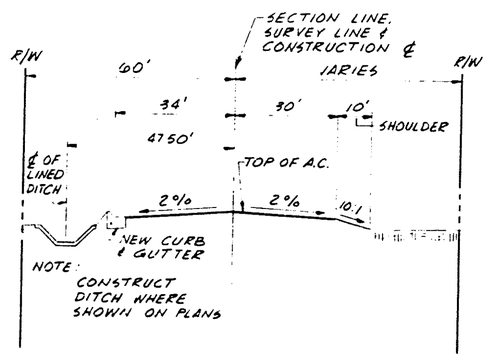

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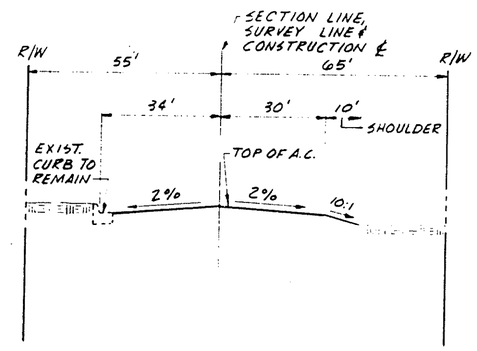

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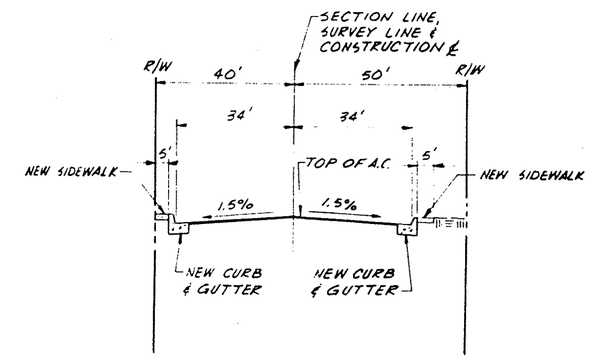

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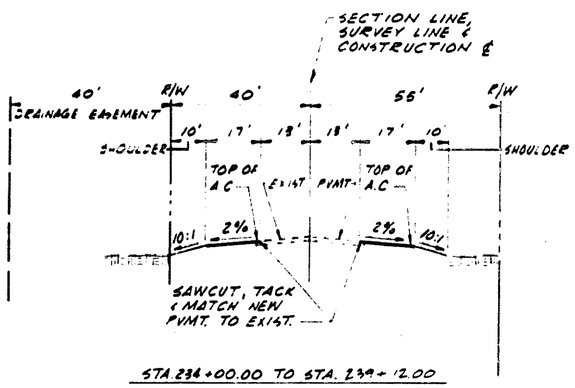

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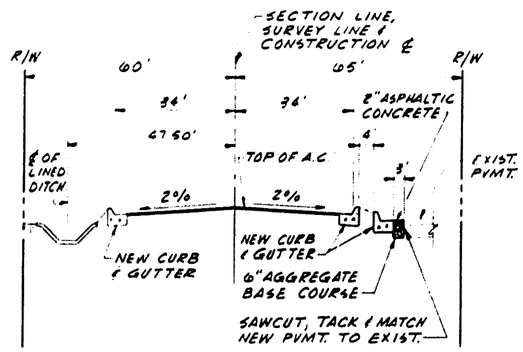

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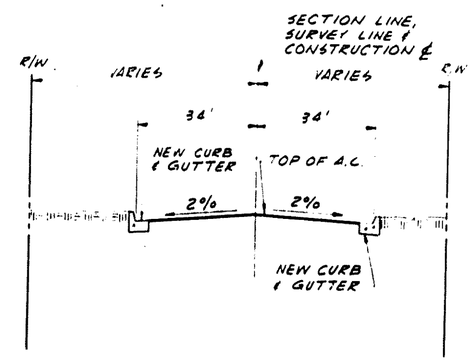

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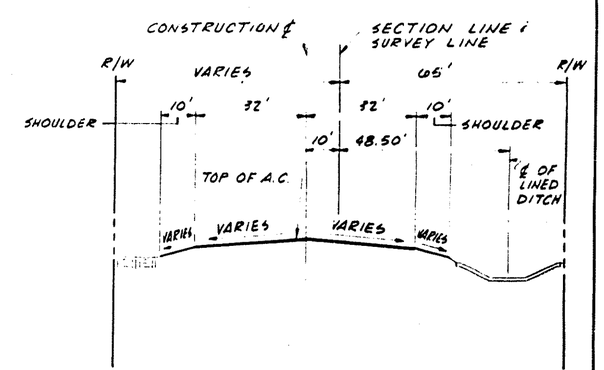

HAWES ROAD
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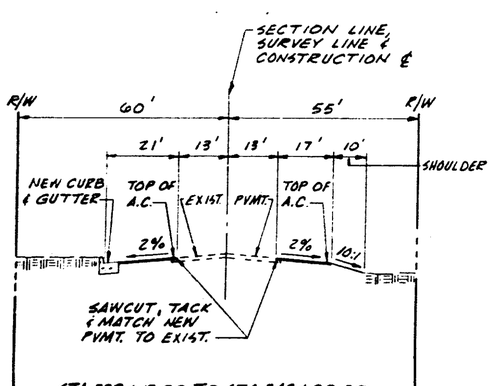

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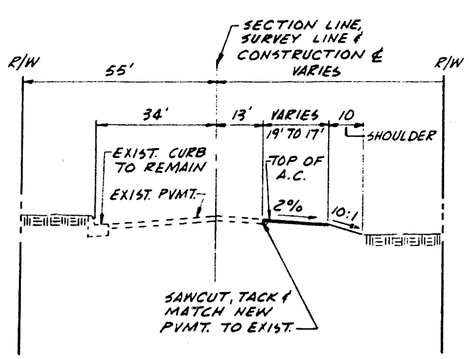

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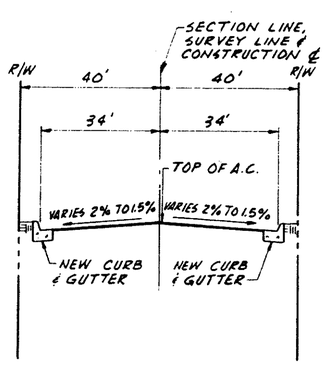

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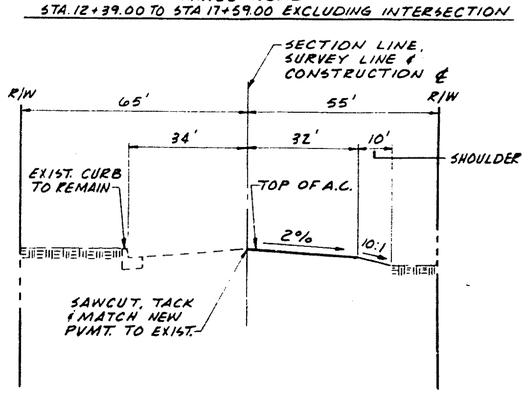


ELLSWORTH ROAD
STA. 12+50.00 TO STA. 14+81.00

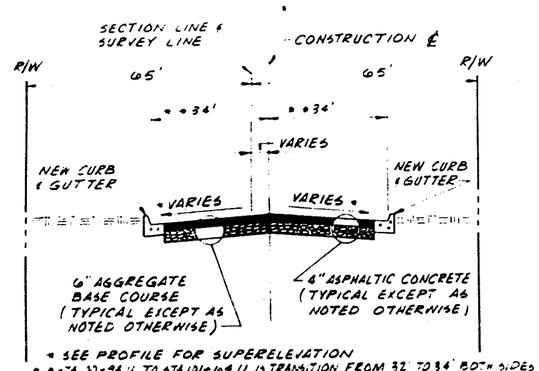
BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET	OF	AS BUILT
MARICOPA	ARIZ.	G8300	3	60	C.B. 10-1-87

3/85 DATE

HOLGATE CONSULTING ENGINEERS, INC.

DESIGN BM | DRAWN BG | CHECKED JH



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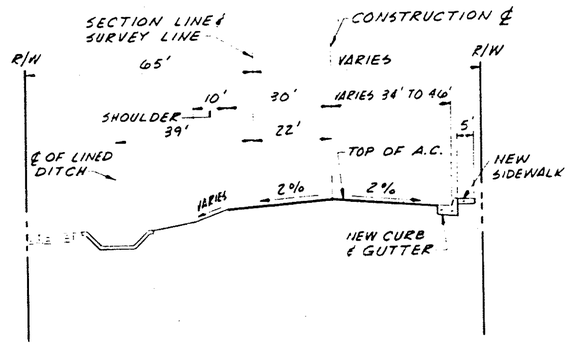

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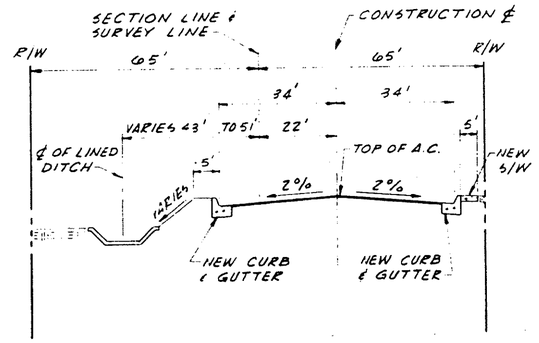

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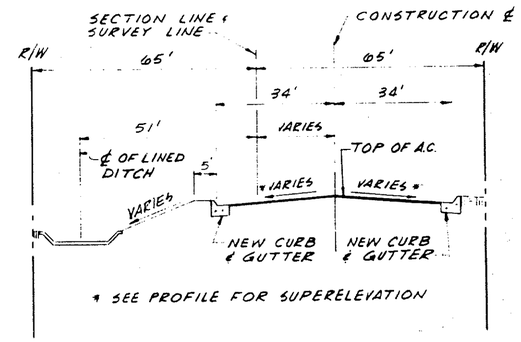

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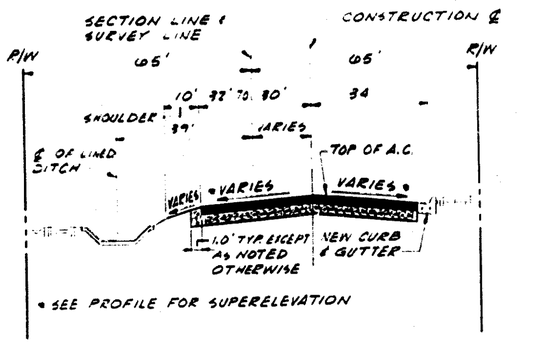

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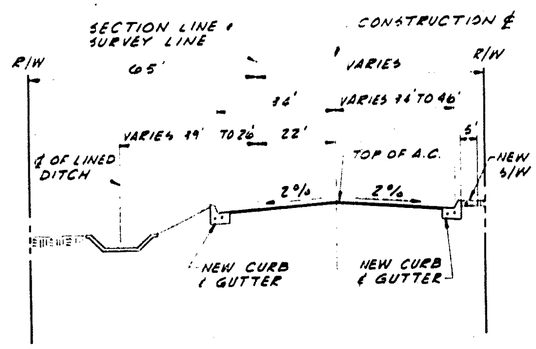

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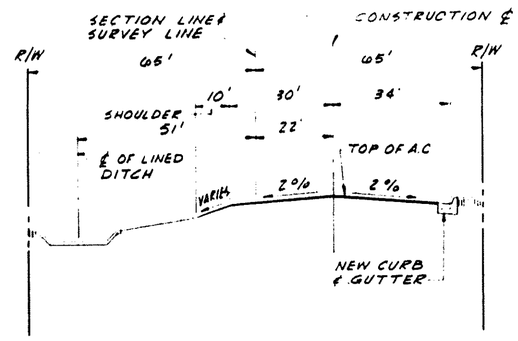

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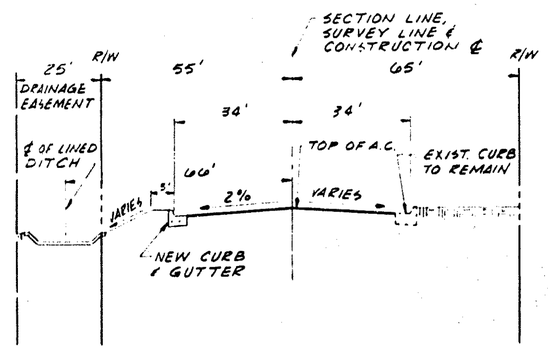

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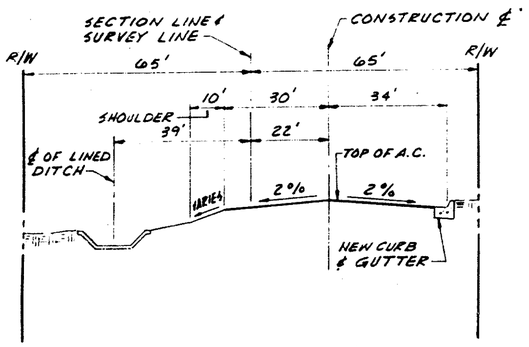
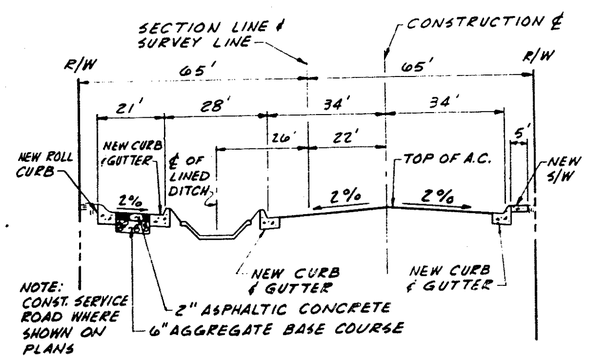
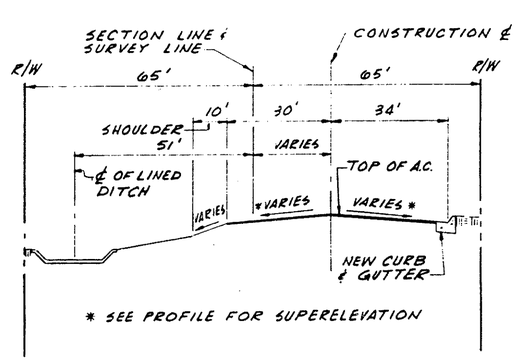


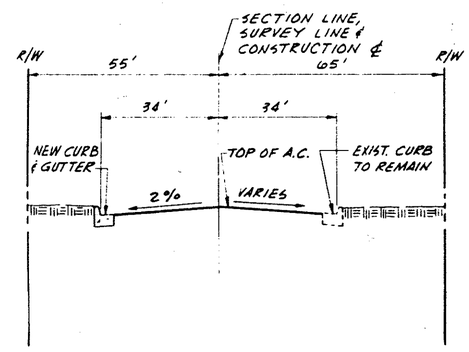
STA. 109 + 83.59 TO STA. 120 + 47.58



STA. 125 + 20.00 TO 129 + 82.53



STA. 136 + 10.52 TO STA. 141 + 00.00



STA. 150 + 01.00 TO STA. 157 + 87.15

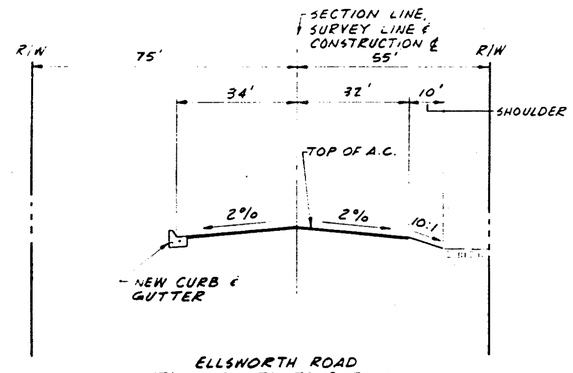
BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO.	SHEET	OF	AS BUILT
MARICOPA	ARIZ.	G8300	5	60	C.B. 10-1-87

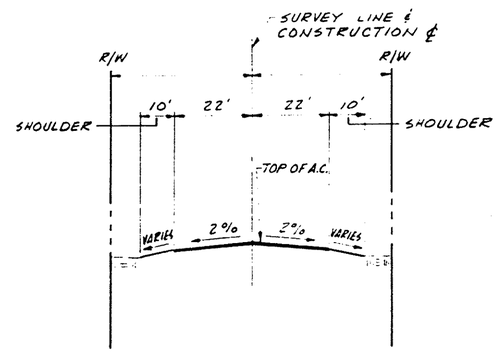
3/85 DATE

HOLGATE CONSULTING ENGINEERS, INC.

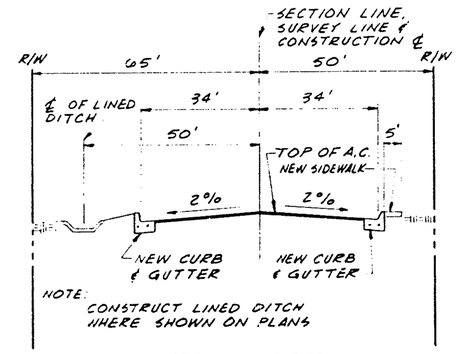
DESIGN BM | DRAWN BG | CHECKED JH



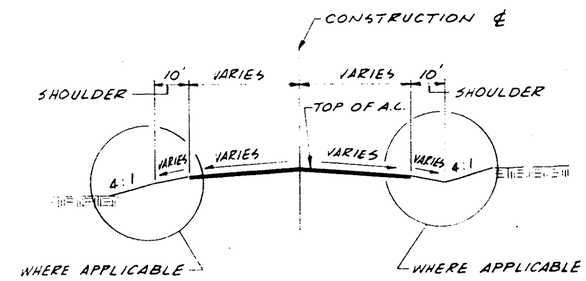
ELLSWORTH ROAD
STA. 15+69.00 TO STA 18+50.00



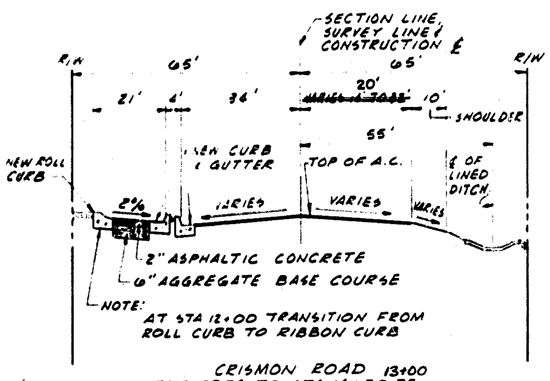
MOUNTAIN ROAD
STA. 3+50.00 TO STA. 5+31.00



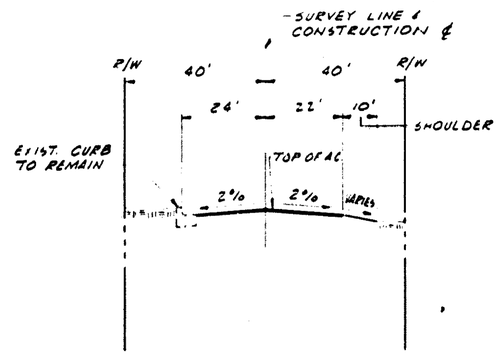
MERIDIAN ROAD
STA. 11+79.73 TO STA 14+31.00



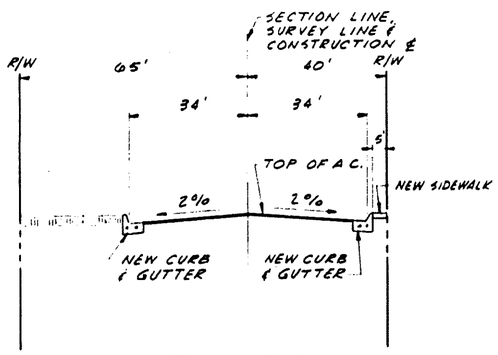
TYPICAL SHOULDER SECTION



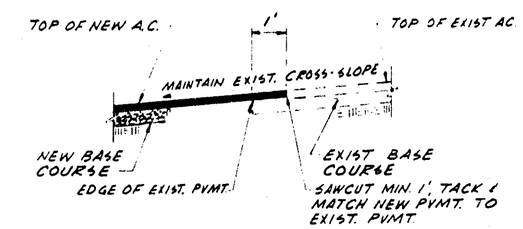
CRISMON ROAD 13+00
STA. 2+29.74 TO STA ~~14+80.72~~



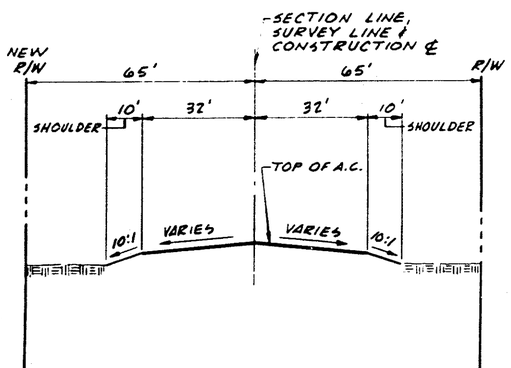
MOUNTAIN ROAD
STA. 6+69.00 TO STA 8+50.00



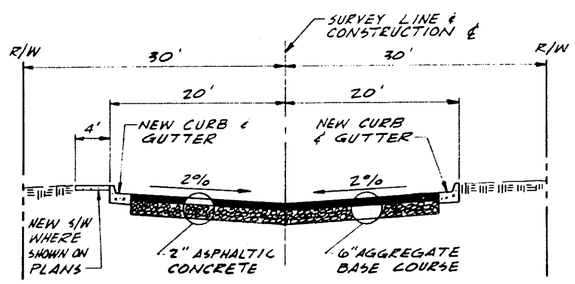
MERIDIAN ROAD
STA. 15+69.00 TO STA. 17+50.00



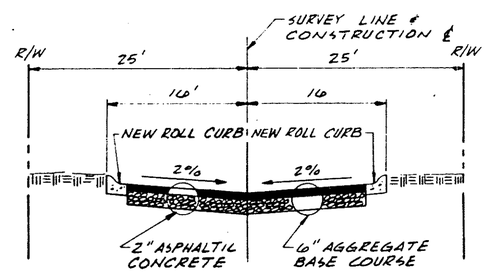
TYPICAL SAWCUT SECTION FOR HAWES, ELLSWORTH, CRISMON, MOUNTAIN AND MERIDIAN



CRISMON ROAD
STA. 15+69.00 TO STA. 17+50.00



114 TH STREET

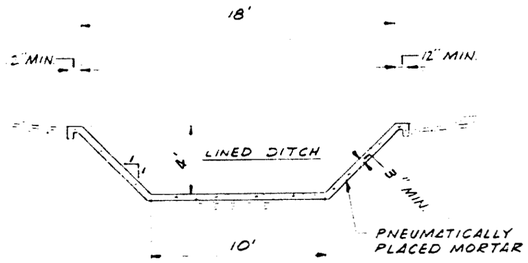


CRESENT AVE.
STA. 0+40.00 TO STA. 12+60.80

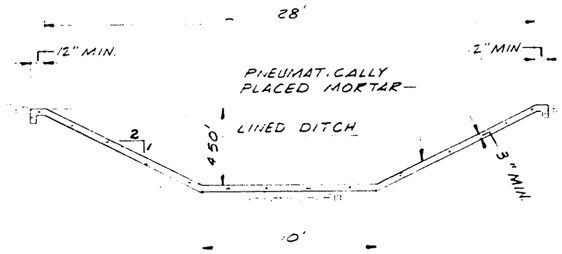
BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO	SHEET	OF	AS BUILT
MARICOPA	ARIZ	FR8 [illegible]	6	60	C.B. 10-1-87

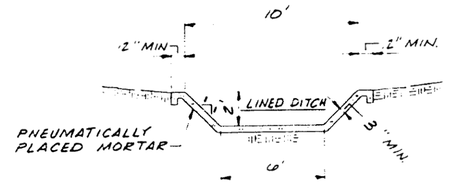
REV. DATE	HOLGATE CONSULTING ENGINEERS, INC.	
DESIGN B.M.	DRAWN B.G.	CHECKED J.H.



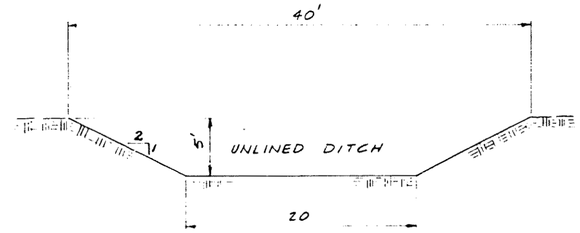
1 LINED DITCH
STA. 105+98.35 TO STA. 133+00.00



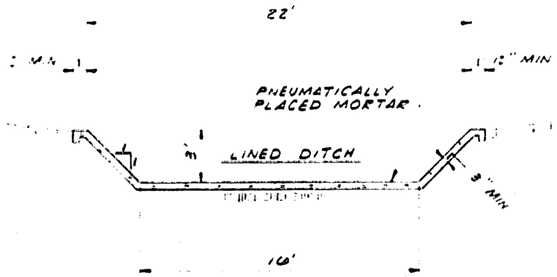
4 HAWES ROAD
LINED DITCH
STA. 12+39.00 TO STA. 14+10.00



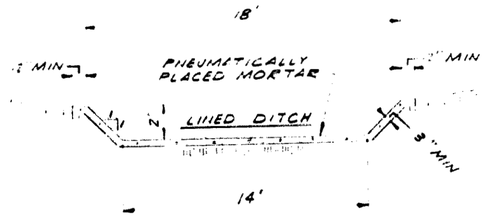
7 MERIDIAN ROAD
LINED DITCH
STA. 12+70.57 TO STA. 14+04.50



10 UNLINED DITCH AT STA. 243+00 (SOUTH)

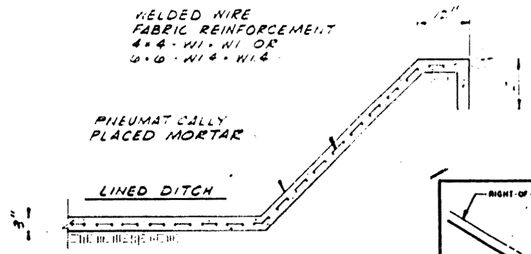


2 LINED DITCH
STA. 136+00.00 TO STA. 150+01.00

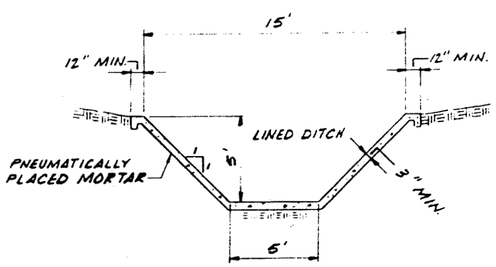


5 HAWES ROAD
LINED DITCH
STA. 15+94.00 TO STA. 17+39.00

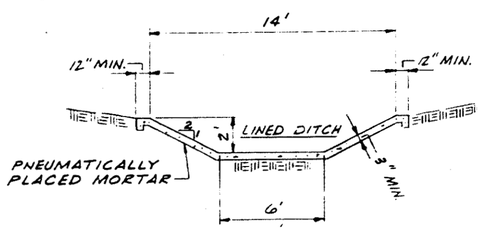
As Built Note:
2' Sta. 17+39 to 5' Sta. 16+14
Tapered To Top of Headwall.



8 TYPICAL SECTION ALL LINED DITCHES

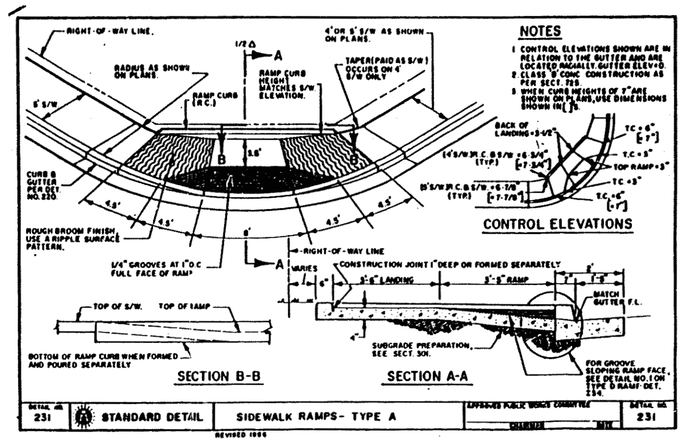


3 LINED DITCH
STA. 243+80.52 TO STA. 264+06.21



6 CRISMON ROAD
LINED DITCH
STA. 1+00.00 TO STA. 16+00.00

ELEV. A =	83.00
ELEV. B =	82.25
ELEV. C =	79.00
ELEV. D =	80.00
E =	4.0'
F =	1.0'
G =	2'-6"
H =	2.0'
I =	3.0'
J =	8.0'
K =	7'-7 1/4"
L =	3 15/16"
M =	3'-10 7/8"



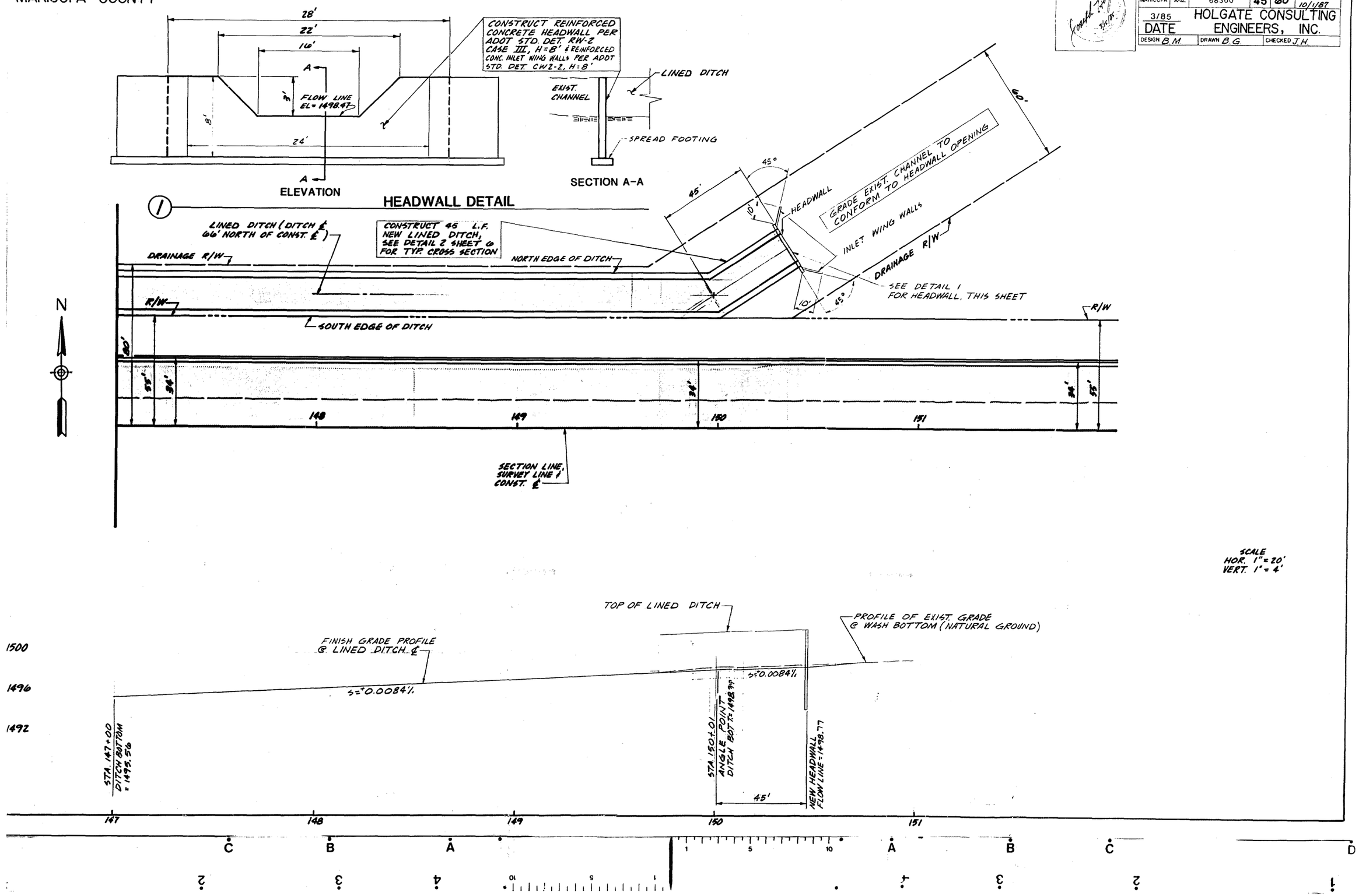
9 HEADWALL AND TRASH RACK (STA. 125+50)
PER MAG STD. DET. 502-1

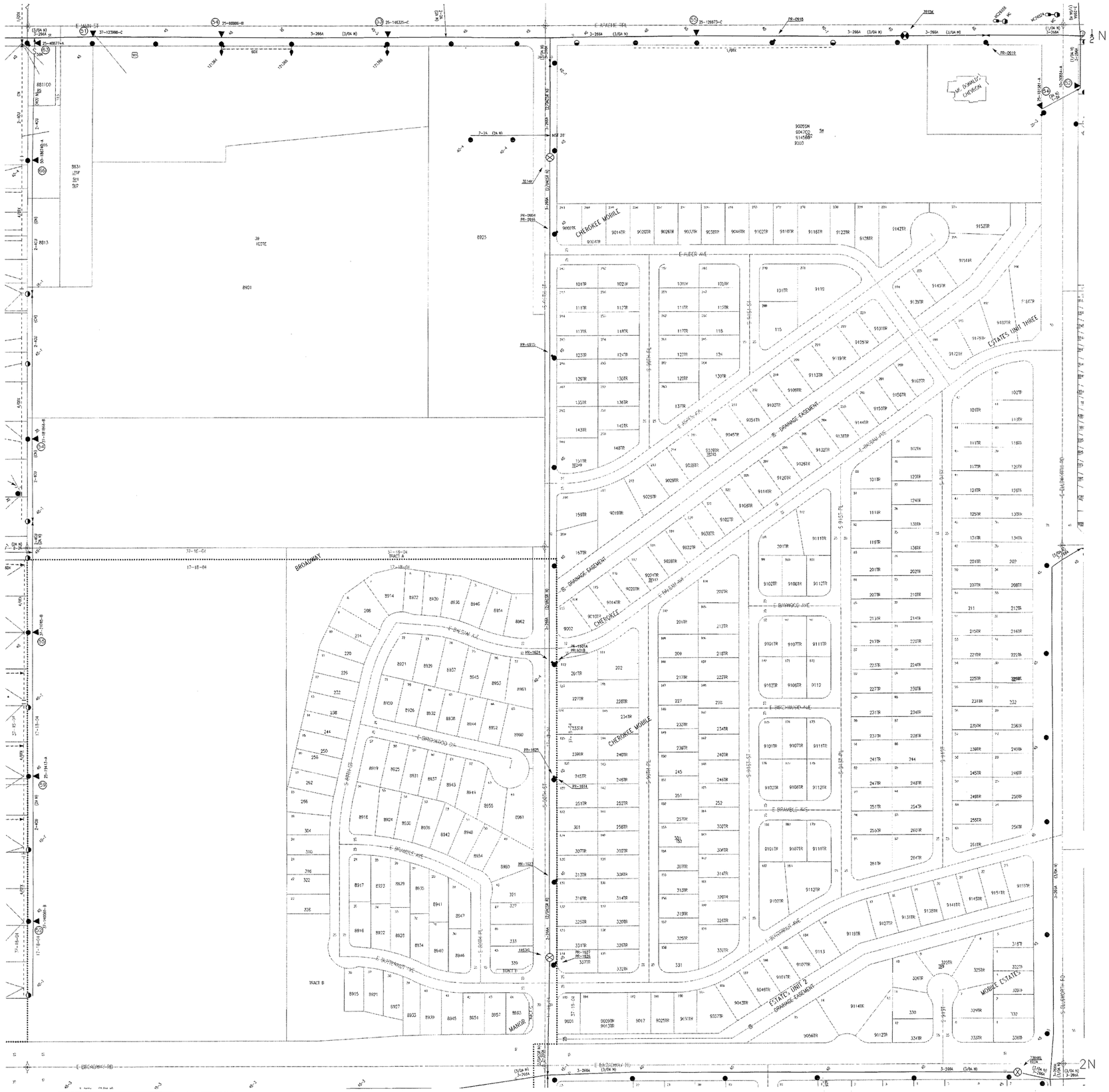
BROADWAY ROAD - HAWES ROAD TO THE COUNTY LINE (MERIDIAN ROAD)
MARICOPA COUNTY

COUNTY	STATE	PROJECT NO	SHEET	OF	AS BUILT
MARICOPA	ARIZ.	68300	45	60	C.B. 10/1/87

3/85 DATE — HOLGATE CONSULTING ENGINEERS, INC.

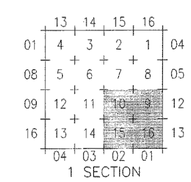
DESIGN B.M. — DRAWN B.G. — CHECKED J.H.





6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1 TOWNSHIP



1 SECTION

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:

1. ALL GANG OPERATED SWITCHES ARE 400 AMPS.
2. ALL COMMUNICATION CABLE TO BE 25-22AWG.

THESE PRINTS OF THE SRP OVERHEAD AND UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT LOCATION OF, THE LOCATION OF OUR EXISTING FACILITIES. SRP MAKES NO REPRESENTATION AS TO THEIR ACCURACY OR FITNESS FOR A PARTICULAR PURPOSE.

TAX CODE MU LT I

SRP

OH LOCATION MAP

AG-21-SE

(T1N R7E 21)

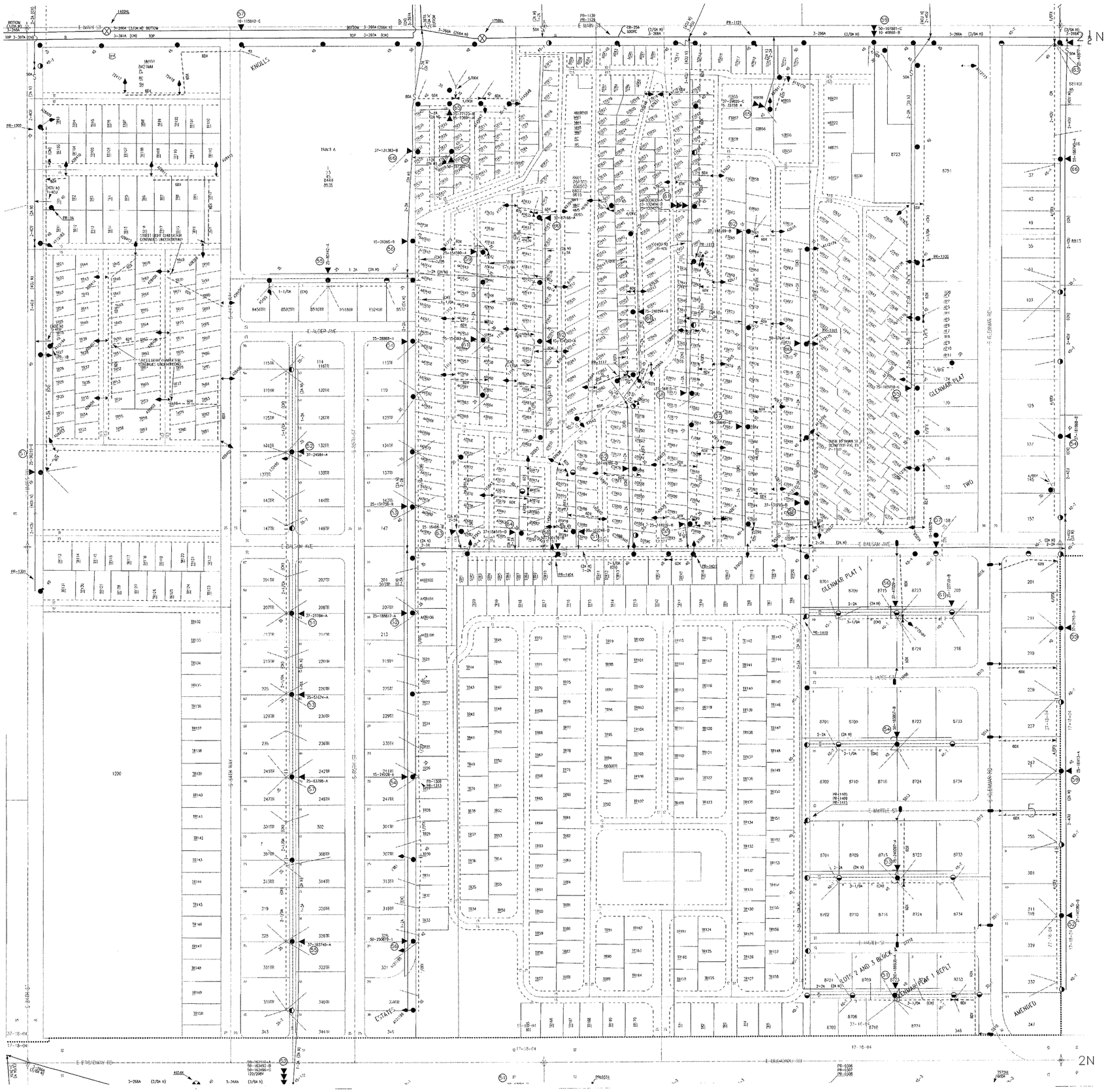
SCALE: 1" = 100'

ISSUE DATE: 28-JUL-03

JO728061427

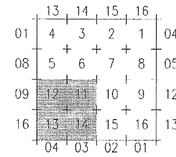
RMSMITH EVS107 82420 JAA-3587-109

Reach 4 & 10



6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1 TOWNSHIP



1 SECTION

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:

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2. ALL COMMUNICATION CABLE TO BE 25-22AWG

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TAX CODE MU LT I

SRP

OH LOCATION MAP

AG-21-SW

(T1N R7E 21)

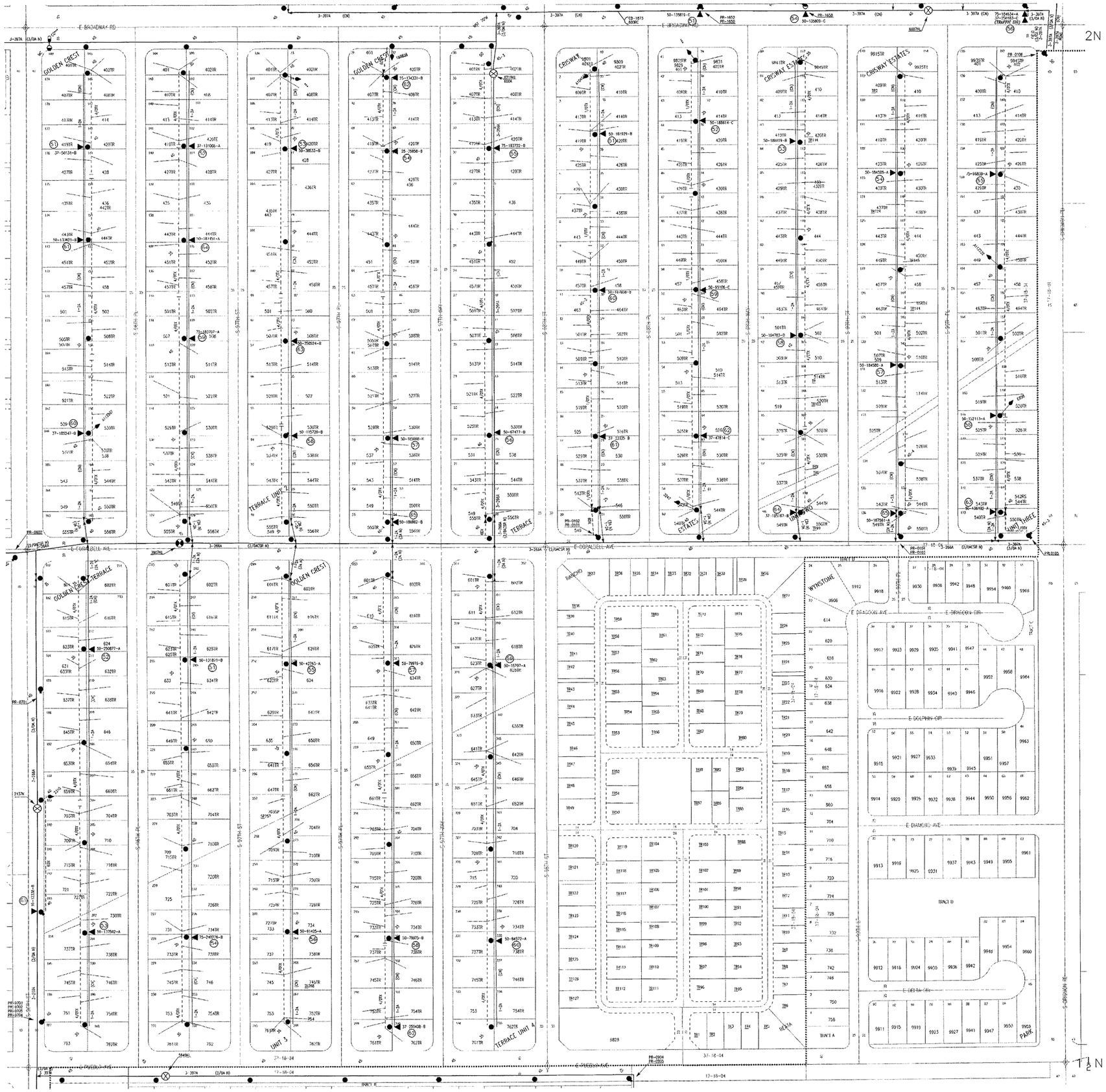
SCALE: 1" = 100'

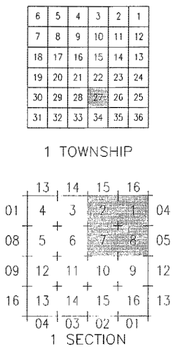
ISSUE DATE: 4-DEC-03

J1204145538

RMSMITH P&I EVS107 82420 JAA-3742-109

REACH 7 ✓
&
REACH 4





NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:
1. ALL GANG OPERATED SWITCHES ARE 400 AMPS.
2. ALL COMMUNICATION CABLE TO BE 25-22AWG

THESE PRINTS OF THE SRP OVERHEAD AND UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT LOCATION OF, THE LOCATION OF OUR EXISTING FACILITIES. SRP MAKES NO REPRESENTATION AS TO THEIR ACCURACY OR FITNESS FOR A PARTICULAR PURPOSE.

TAX CODE MU LT I

SRP

OH LOCATION MAP

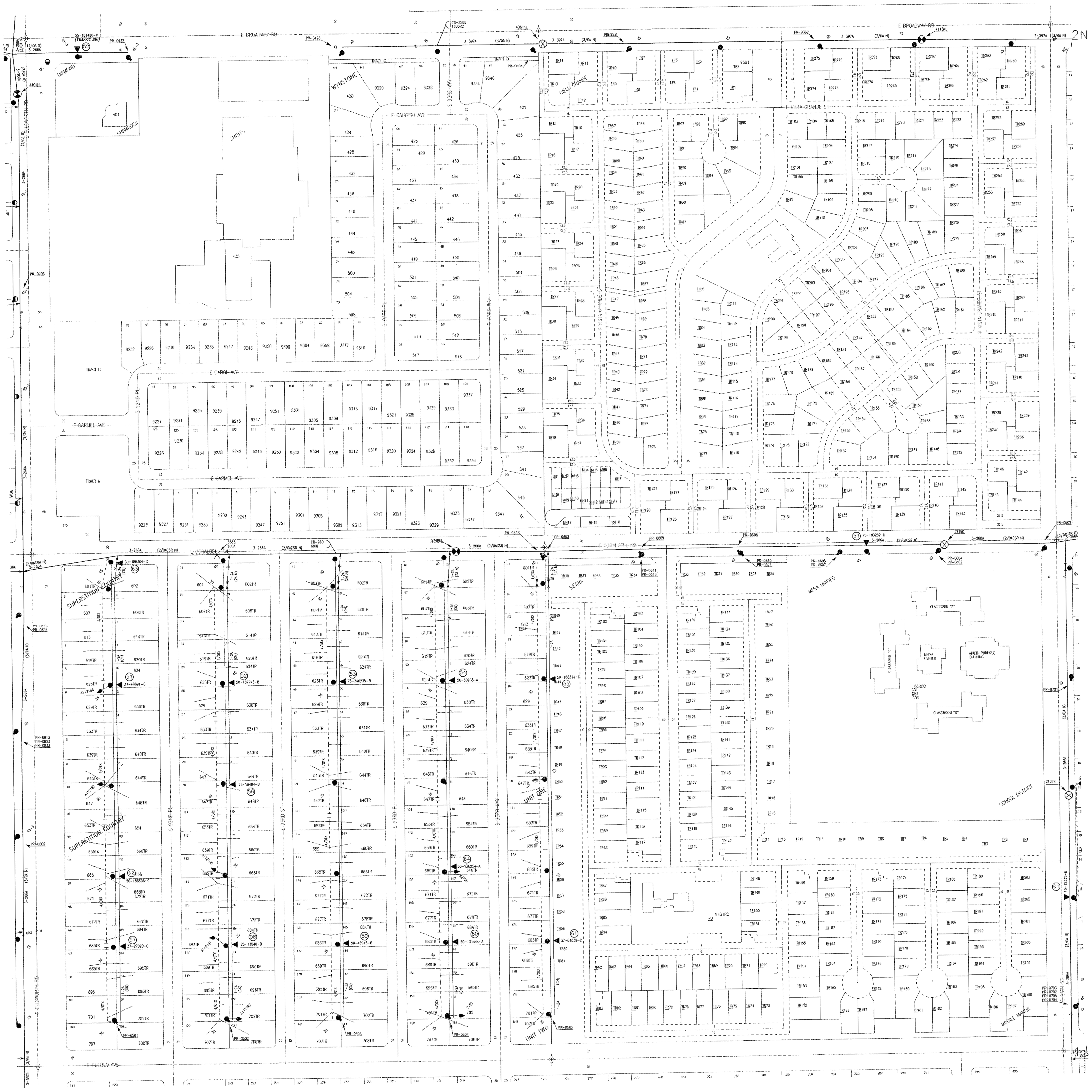
AG-27-NE

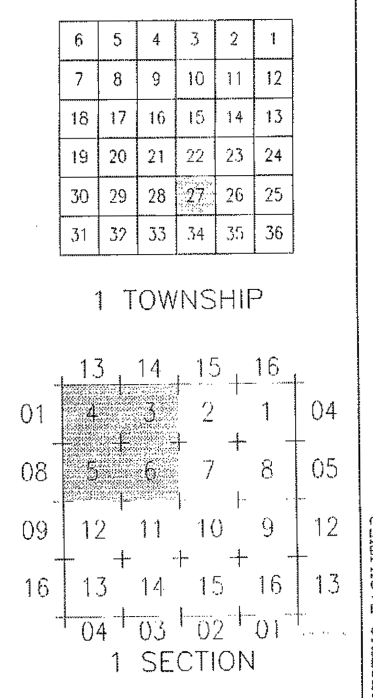
(T1N R7E 27)

SCALE: 1" = 100'
ISSUE DATE: 10-NOV-03
J1110134458

BUFERRY STREET LIGHT CLEAN UP - 88424

REACH 5





NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:

1. ALL GANG OPERATED SWITCHES ARE 400 AMPS.
2. ALL COMMUNICATION CABLE TO BE 25–22AWG

THESE PRINTS OF THE SRP OVERHEAD AND UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT LOCATION OF, THE LOCATION OF OUR EXISTING FACILITIES. SRP MAKES NO REPRESENTATION AS TO THEIR ACCURACY OR FITNESS FOR A PARTICULAR PURPOSE.

TAX CODE 37 18 04

SRP®

OH LOCATION MAP

AG–27–NW

(T1N R7E 27)

SCALE: 1" = 100'

ISSUE DATE: 10–NOV–03

DOC 2

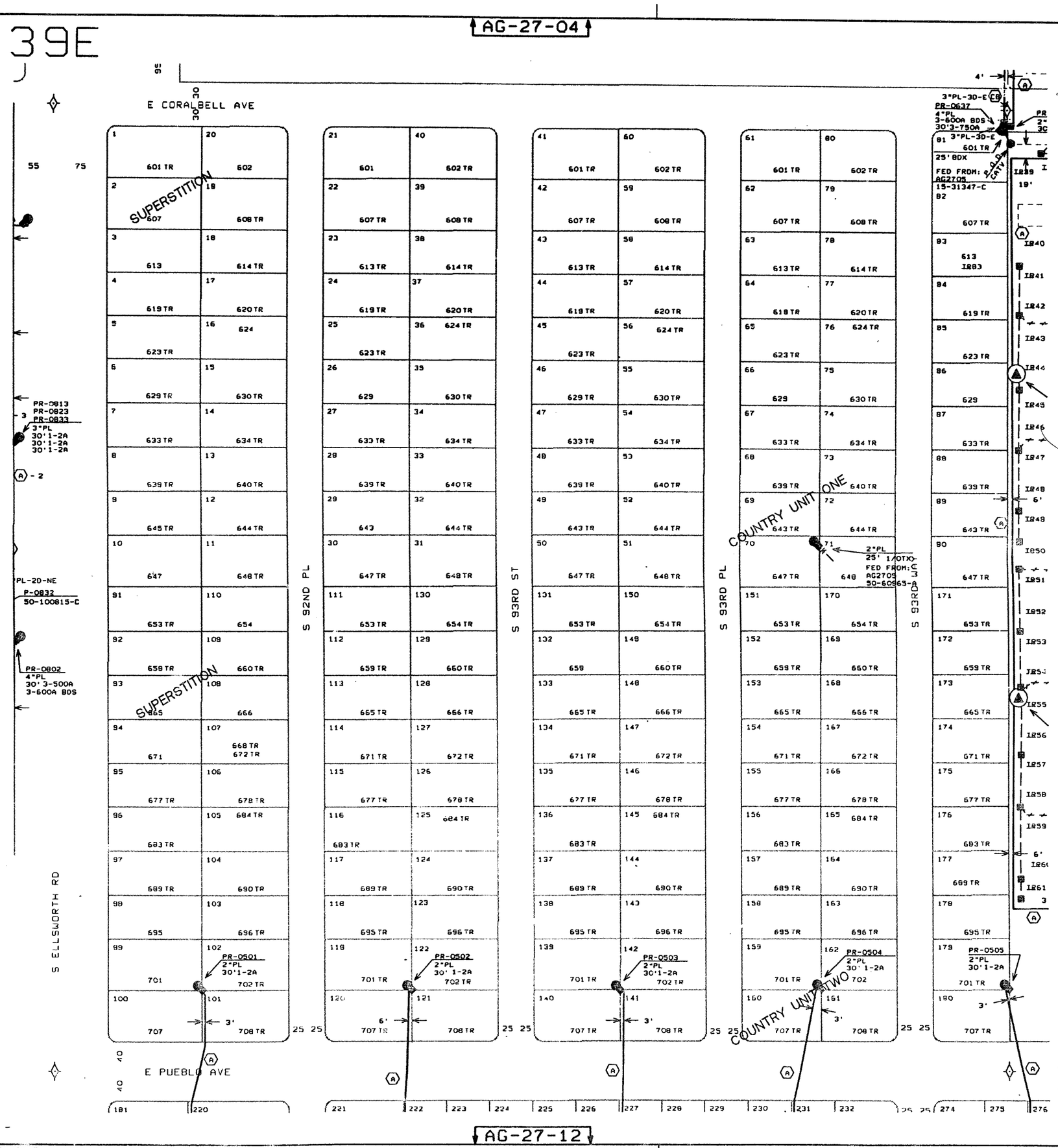
J1110134433

BJPERRY STREET LIGHT CLEAN UP – 58424

Sign Here

REACH 5

THESE PRINTS OF THE SALT RIVER PROJECT OVERHEAD AND UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT LOCATION OF, THE LOCATION OF OUR EXISTING FACILITIES. SRP MAKES NO REPRESENTATION AS TO THEIR ACCURACY OR FITNESS FOR A PARTICULAR PURPOSE.



• MAPPING INSTALLATION RECORD AVAILABLE

JOB NUMBER	JOB NAME	CABLE DATE	REV BY	P&I
82-2815-713		09-16-1970		/
• KG9-304	MCCOY TIE 2	11-25-1991	P	/
MAINT	FAC-2001	SVC	CKE	

SALT RIVER PROJECT

IBM / UG LOCATION

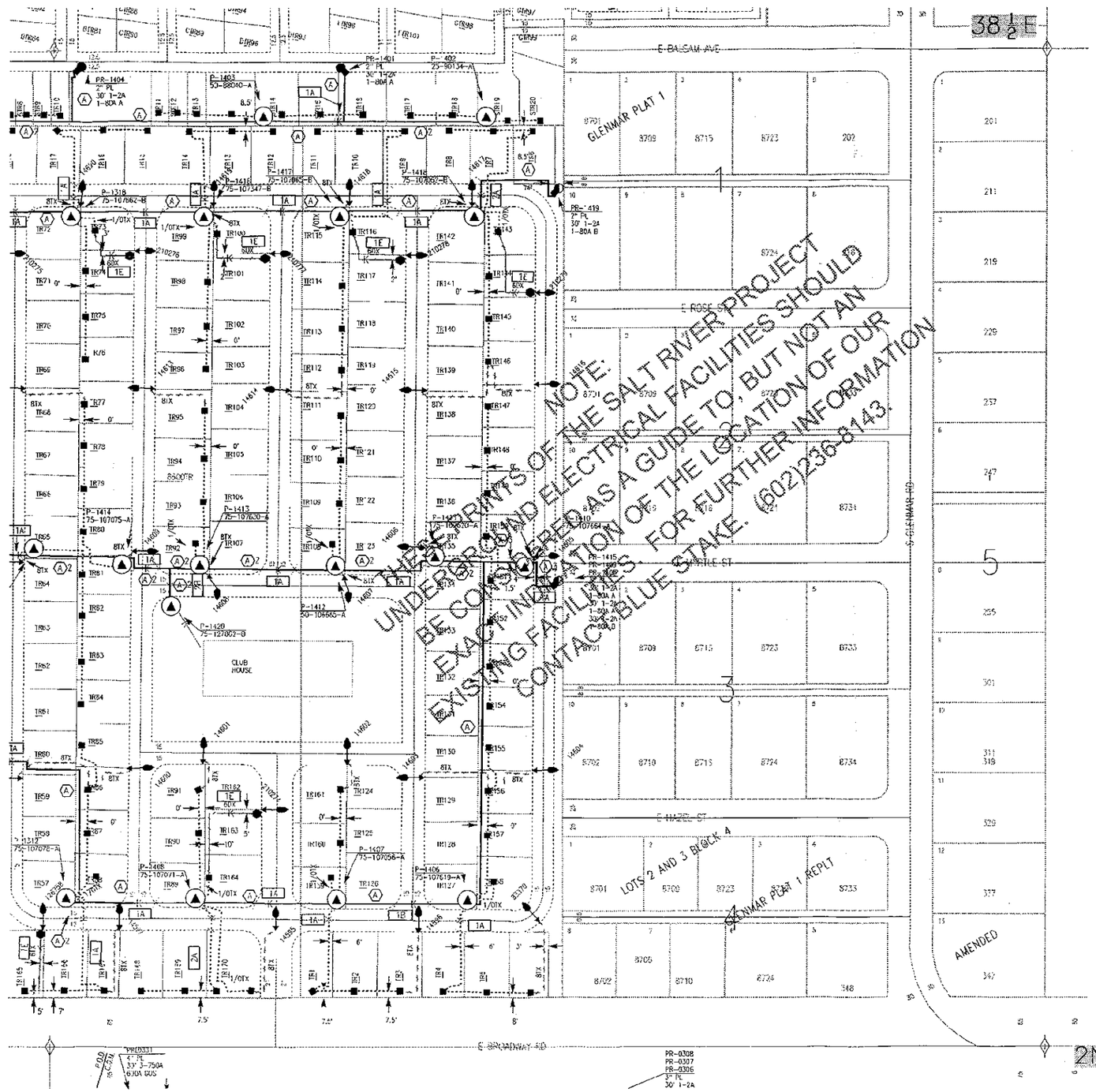
AG-27-05

(T1N R7E 27 05)

SCALE: 1" = 100'
ISSUE DATE: 11-14-1996
0' 25' 50' 100'

DOC 2

P&I 88132 EVS107 CHUCK E J1408294



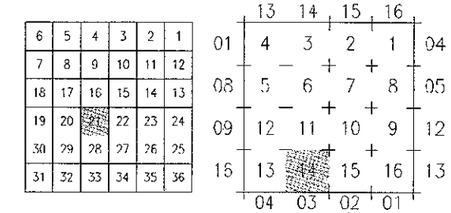
REACH 4: BROADWAY CHANNEL

PRIMARY INDEX

(A) 1-2A(CC)

CONDUIT INDEX

A 3"P.-NE	E 2.5"PL-NE
B 2"P.-NE	



NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:
1. ALL G.O. SWITCHES ARE 600 AMPS.
2. ALL PRIMARY LATERAL TO BE CONCENTRIC NEUTRAL
3. ALL COMMUNICATION CABLE TO BE 25-22AWG.
4. ALL SECONDARY TO BE 120/240V.
5. STREET LIGHT CONDUCTOR STUB-OUTS TO EXISTING LIGHTS ARE NOT ANNOTATED AND MAY NOT BE THE SAME SIZE AS THE DEFAULT CONDUCTOR FOR THIS MAP AREA.
6. SECONDARY CONDUCTOR TO BE 350TX

SEE SCHEMATIC DIAGRAM AG-21-11

NOTE:
* MAPPING INSTALLATION RECORD AVAILABLE

*	JOB NUMBER	JOB NAME	CABLE DATE	REV BY	P&I
*	KE1-6072	STEVENSVILLE SUNSET TRL RANCH	1990/11/26	LC	/
*	KE1-6124	STEVENSVILLE ADDITION	1995/04/24	LC	/
	KF1-8070		1995/05/23	AH	/
	KE3-1633		1998/12/13	JRB	/
*	KE1-17502	STEVENSVILLE ADDN. (FILE NOTES)	1999/01/08	JRB	/
	KF1-8253		1999/01/20	JRB	/
	KF1-8314		1990/12/20	SWB	/
	KED-362	MTN VIEW ESTATES/BROADWAY CD	2002/11/25	RTV	

SRP®

UG LOCATION MAP

AG-21-14

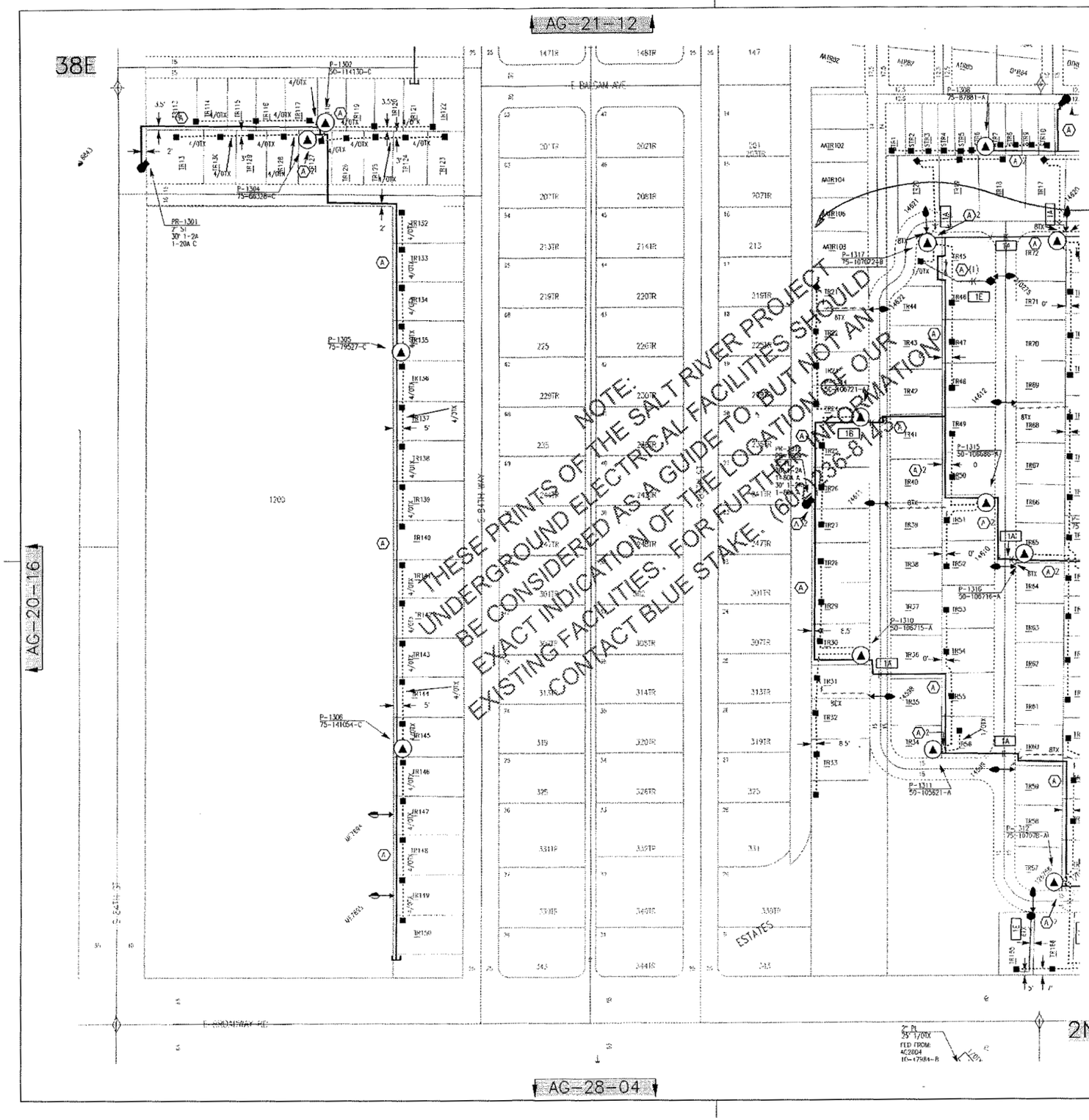
(T1N R7E 21 14)

SCALE: 1" = 100'
ISSUE DATE: 11-FEB-03
J02111120744

DOC 2 PM CODE 6

RTVALDEZ KED-362-109-82420 EVS 107

12/10/2003



NOTE:
THESE PRINTS OF THE SALT RIVER PROJECT
UNDERGROUND ELECTRICAL FACILITIES SHOULD
BE CONSIDERED AS A GUIDE TO, BUT NOT AN
EXACT INDICATION OF THE LOCATION OF OUR
EXISTING FACILITIES. FOR FURTHER INFORMATION
CONTACT BLUE STAKE. (602) 263-8141

PRIMARY INDEX

(A) 1-2A(CC)

CONDUIT INDEX

A 3"P.-NE	C 2.5"P.-NE
B 2"P.-NE	

1 TOWNSHIP					
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1 SECTION					
	13	14	15	16	
01	4	3	2	1	04
08	5	6	7	8	05
09	12	11	10	9	12
16	13	14	15	16	13
	04	03	02	01	

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE

UNLESS OTHERWISE NOTED:
1. ALL G.O. SWITCHES ARE 600 AMPS.
2. ALL PRIMARY LATERAL TO BE CONCENTRIC NEUTRAL
3. ALL COMMUNICATION CABLE TO BE 25-22AWG.
4. ALL SECONDARY TO BE 120/240V.
5. STREET LIGHT CONDUCTOR STUB-OUTS TO EXISTING LIGHTS ARE NOT ANNOTATED AND MAY NOT BE THE SAME SIZE AS THE DEFAULT CONDUCTOR FOR THIS MAP AREA.
6. SECONDARY CONDUCTOR TO BE 350TX

SEE SCHEMATIC DIAGRAM AG-21-11

NOTE: MORE THAN 10 JOBS WORKED IN THIS 40 AREA.
CONTACT MAPPING SERVICES FOR THE ADDITIONAL JOBS.
* MAPPING INSTALLATION RECORD AVAILABLE

*	JOB NUMBER	JOB NAME	CABLE DATE	REV BY	P&I
	A2-2010-693		0000/01/01	GSH	/
	K2T-6016		1976/01/16	CAW	/
	K2T-6055		1978/05/19	JWH	/
*	K2T-6072	STEVENSVILLE SUNSET TRL RANCH	1980/11/26	LC	/
*	K2T-6124	STEVENSVILLE ADDITION	1985/04/24	LC	/
	K2T-8070		1985/05/23	AH	/
	K2T-8253		1989/01/20	JRB	/
	K2T-1661		1989/01/25	JRB	/
	KED-3308	MTN VIEW EST	2001/03/01	JDM	/
	KED-362	MTN VIEW ESTATES/BROADWAY RD	2002/11/25	RTV	

SRP®

UG LOCATION MAP

AG-21-13

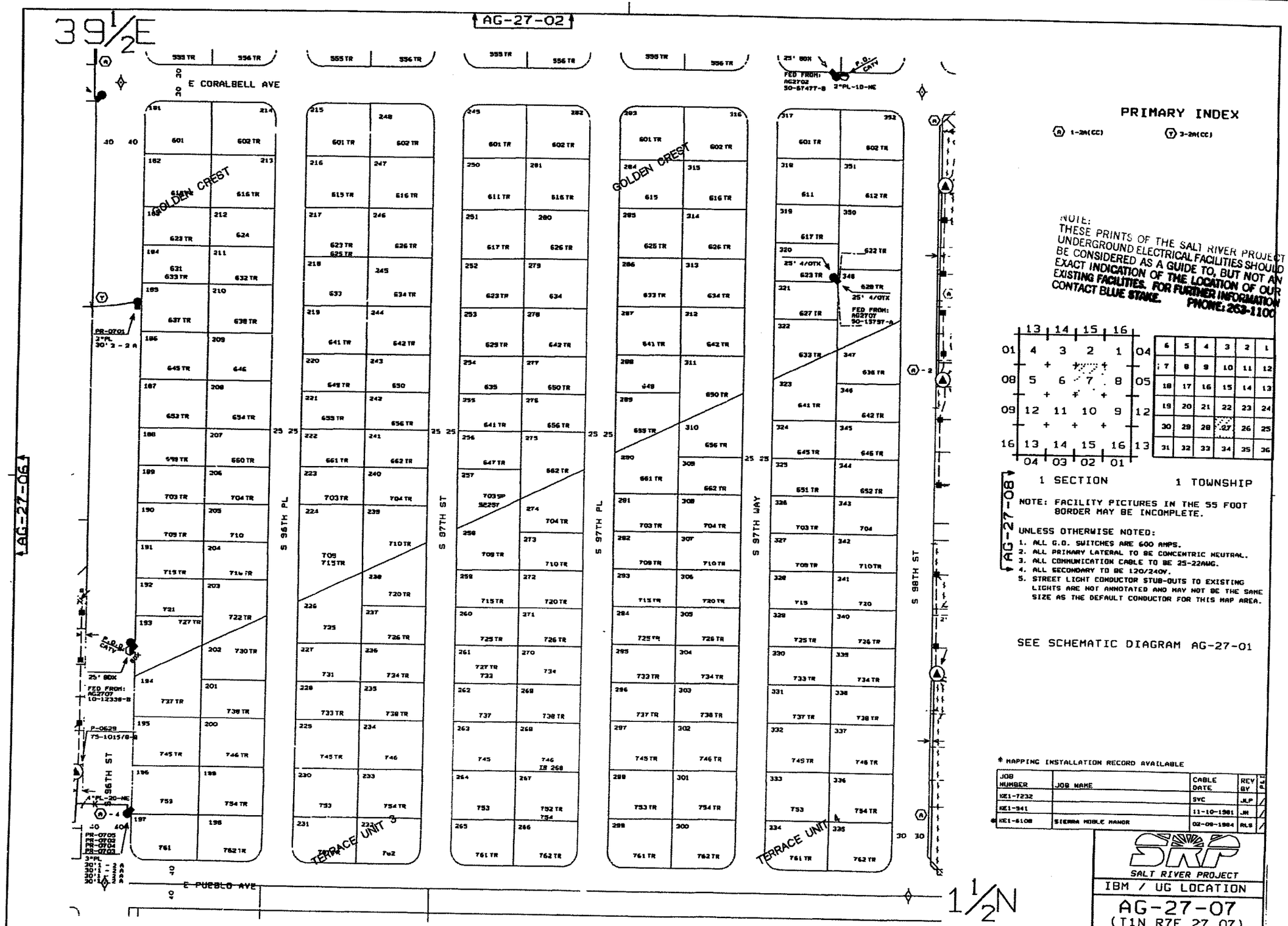
(T1N R7E 21 13)

SCALE: 1" = 100'
ISSUE DATE: 11-FEB-03
J0211120712

DOC 2 6

RTVALDEZ KED-362-109-82420 EVS 107

12/10/2003



PRIMARY INDEX

(R) 1-2A(CC) (Y) 3-2A(CC)

NOTE:
THESE PRINTS OF THE SALT RIVER PROJECT UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT INDICATION OF THE LOCATION OF OUR EXISTING FACILITIES. FOR FURTHER INFORMATION CONTACT BLUE STAKE. PHONE: 263-1100

1 SECTION 1 TOWNSHIP

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:
1. ALL G.O. SWITCHES ARE 600 AMPS.
2. ALL PRIMARY LATERAL TO BE CONCENTRIC NEUTRAL.
3. ALL COMMUNICATION CABLE TO BE 25-22AWG.
4. ALL SECONDARY TO BE 120/240V.
5. STREET LIGHT CONDUCTOR STUB-OUTS TO EXISTING LIGHTS ARE NOT ANNOTATED AND MAY NOT BE THE SAME SIZE AS THE DEFAULT CONDUCTOR FOR THIS MAP AREA.

SEE SCHEMATIC DIAGRAM AG-27-01

* MAPPING INSTALLATION RECORD AVAILABLE

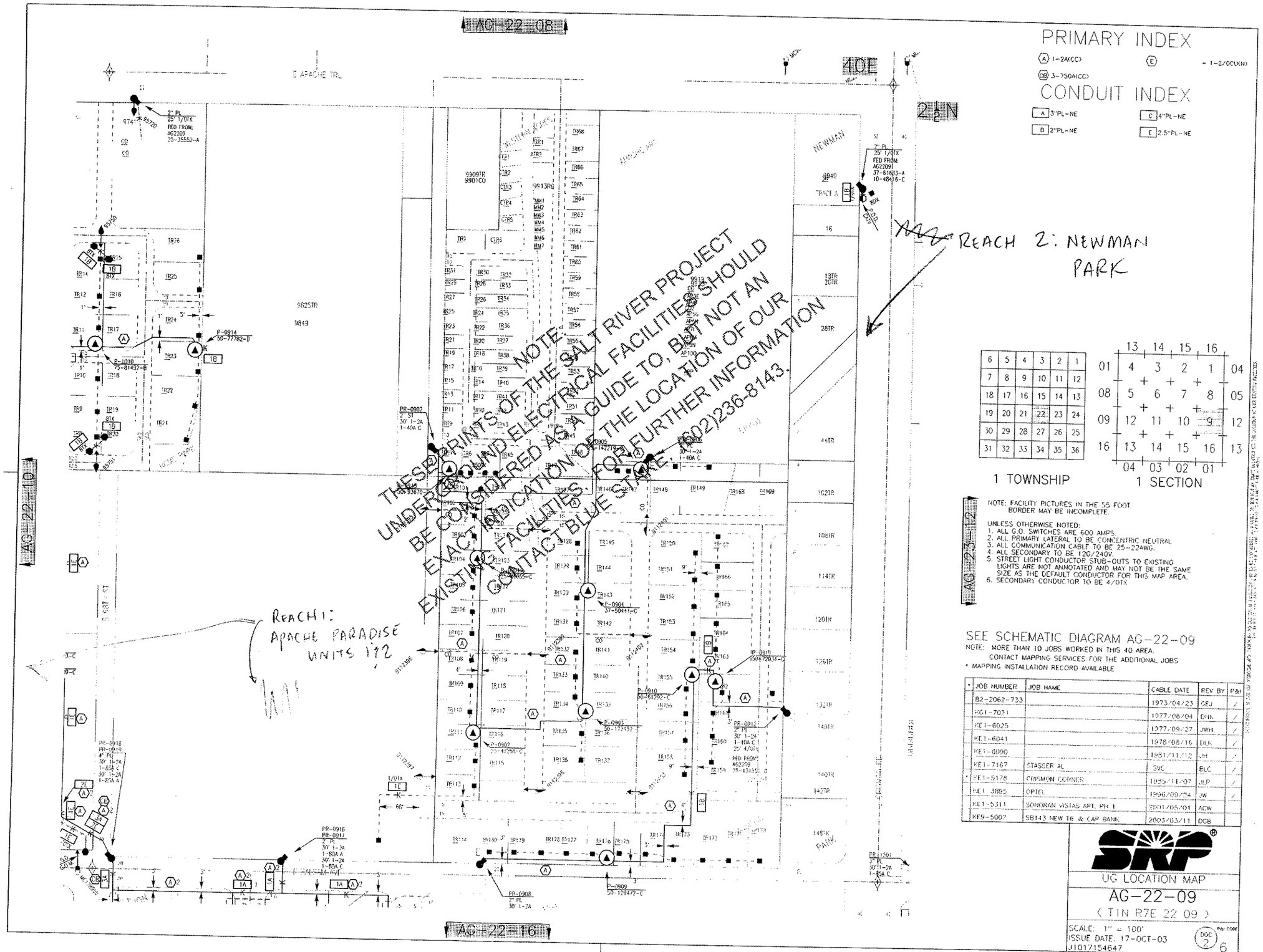
JOB NUMBER	JOB NAME	CABLE DATE	REV BY	*
KE1-7232		SVC	JLP	/
KE1-941		11-10-1981	JM	/
* KE1-6108	SIERRA MOBLE MANOR	02-09-1984	RLS	/

SRP SALT RIVER PROJECT

IBM / UG LOCATION

AG-27-07
(T1N R7E 27 07)

SCALE: 1" = 100'
ISSUE DATE: 12-15-1993
0' 25'50' 100'



PRIMARY INDEX

(A) 1-2A(CC)
(E) 1-2/0CU(N)
(CB) 3-750A(CC)

CONDUIT INDEX

[A] 3"PL-NE
[C] 4"PL-NE
[B] 2"PL-NE
[E] 2.5"PL-NE

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

1 TOWNSHIP

1 SECTION

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:
1. ALL G.O. SWITCHES ARE 600 AMPS.
2. ALL PRIMARY LATERAL TO BE CONCENTRIC NEUTRAL
3. ALL COMMUNICATION CABLE TO BE 25-22AWG.
4. ALL SECONDARY TO BE 120/240V.
5. STREET LIGHT CONDUCTOR STUB-OUTS TO EXISTING LIGHTS ARE NOT ANNOTATED AND MAY NOT BE THE SAME SIZE AS THE DEFAULT CONDUCTOR FOR THIS MAP AREA.
6. SECONDARY CONDUCTOR TO BE 4/0TX.

SEE SCHEMATIC DIAGRAM AG-22-09

NOTE: MORE THAN 10 JOBS WORKED IN THIS 40 AREA.
CONTACT MAPPING SERVICES FOR THE ADDITIONAL JOBS
* MAPPING INSTALLATION RECORD AVAILABLE

*	JOB NUMBER	JOB NAME	CABLE DATE	REV BY	P&I
	B2-2062-733		1973/04/23	GEJ	/
	KG1-7021		1977/08/04	DHK	/
	KE1-6025		1977/09/27	JWH	/
	KE1-6041		1978/08/16	DLK	/
	KE1-6090		1981/11/12	JH	/
	KE1-7167	STASSER AL	SVC	BLC	/
*	KE1-5178	CRISMON CORNER	1985/11/07	JLP	/
	KE1-3895	OPTEL	1996/09/24	JW	/
	KE1-5311	SONORAN VISTAS APT. PH 1	2001/05/01	ACW	
	KE9-5007	SB143 NEW TR & CAP BANK	2003/03/11	DGB	

SRP

UG LOCATION MAP

AG-22-09

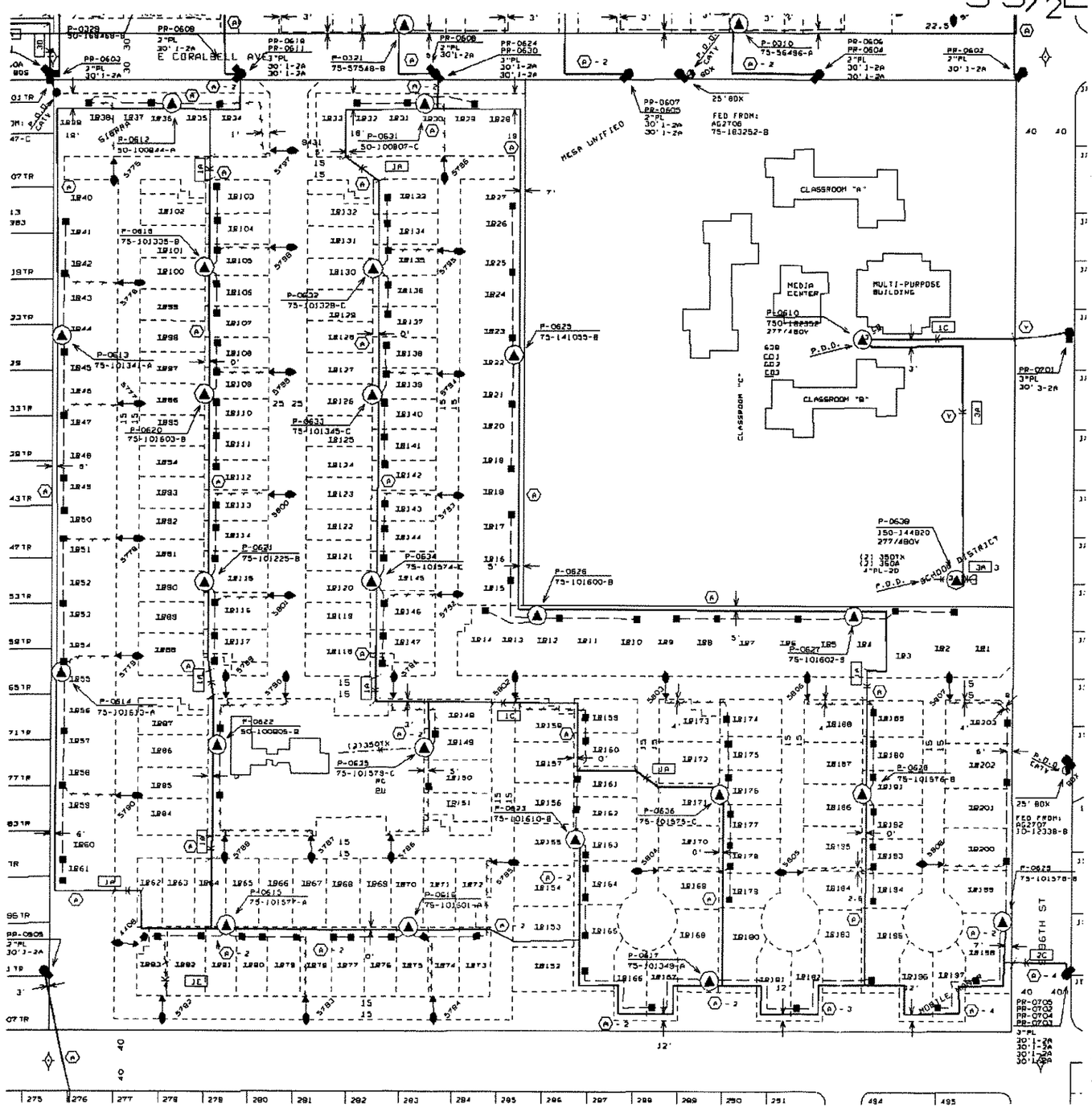
(T1N R7E 22 09)

SCALE: 1" = 100'
ISSUE DATE: 17-OCT-03
J1017154647

DOC 2 / 6

JLSEEFEL P&I 82410 XCT330 KE9-5007-109

12/10/2003



PRIMARY INDEX

(A) 1-2W(CC) (Y) 3-2W(CC)

CONDUIT INDEX

#CODE	SPARES (ABAN)	D	3"PL-EM-B
A	3"PL-NE	E	2.5"PL-NE
C	4"PL-NE		

NOTE:
THESE PRINTS OF THE SALT RIVER PROJECT UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT INDICATION OF THE LOCATION OF OUR EXISTING FACILITIES. FOR FURTHER INFORMATION CONTACT BLUE STAKE. PHONE: 263-1100

6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

13 14 15 16
01 4 3 2 1 04
08 5 6 7 8 05
09 12 11 10 9 12
16 13 14 15 16 13
04 03 02 01

1 TOWNSHIP 1 SECTION

AG-27-07

NOTE: FACILITY PICTURES IN THE 55 FOOT BORDER MAY BE INCOMPLETE.

UNLESS OTHERWISE NOTED:
1. ALL G.O. SWITCHES ARE 600 AMPS.
2. ALL PRIMARY LATERAL TO BE CONCENTRIC NEUTRAL.
3. ALL COMMUNICATION CABLE TO BE 25-22AWG.
4. ALL SECONDARY TO BE 120/240V.
5. STREET LIGHT CONDUCTOR STUB-OUTS TO EXISTING LIGHTS ARE NOT ANNOTATED AND MAY NOT BE THE SAME SIZE AS THE DEFAULT CONDUCTOR FOR THIS MAP AREA.
6. DUSK TO DAWN CONDUCTOR TO BE 8DX
7. SECONDARY CONDUCTOR TO BE 350TX

SEE SCHEMATIC DIAGRAM AG-27-03

* MAPPING INSTALLATION RECORD AVAILABLE

JOB NUMBER	JOB NAME	CABLE DATE	REV BY	PAT
* KEI-6108	SIERRA MOBILE MANOR		RLS	/
KEI-7234		SVC	YA	/
KEI-7144		SVC	GLB	/
KEA-103	PHASE BALANCE	RELEASED	GEC	/
KEI-7018		08-30-1974	CWS	/
* KGS-304	MCCOY TJC 2	11-25-1981	M	/
KEA-103	SIERRA MOBILE MANOR	01-31-1986	JLS	/
KEI-17787	STEVENSON	08-08-1987	PB	/
KEA-103	PHASE BALANCE	10-13-1988	PB	

SALT RIVER PROJECT

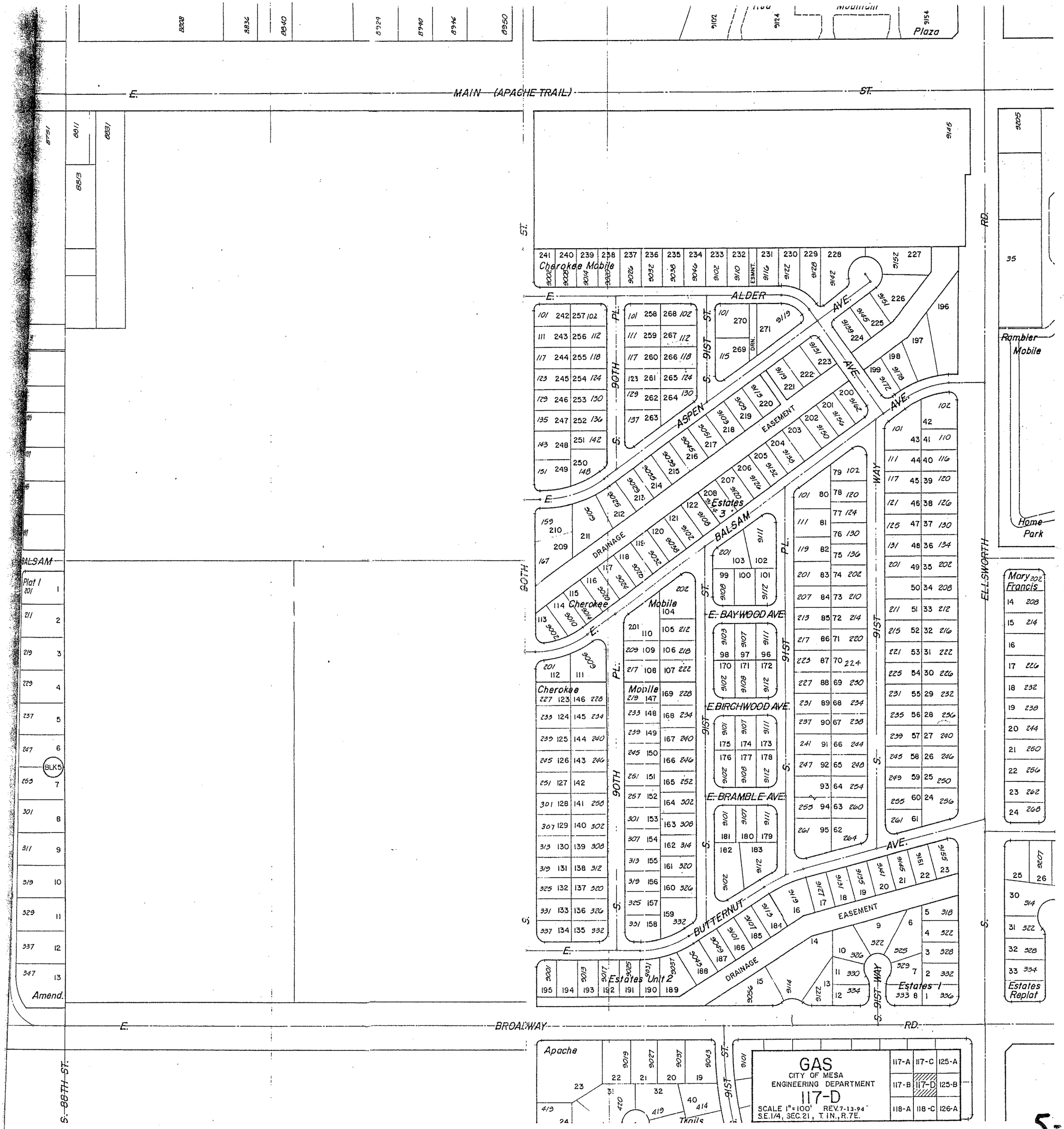
IBM / UG LOCATION

AG-27-06
(T1N R7E 27 06)

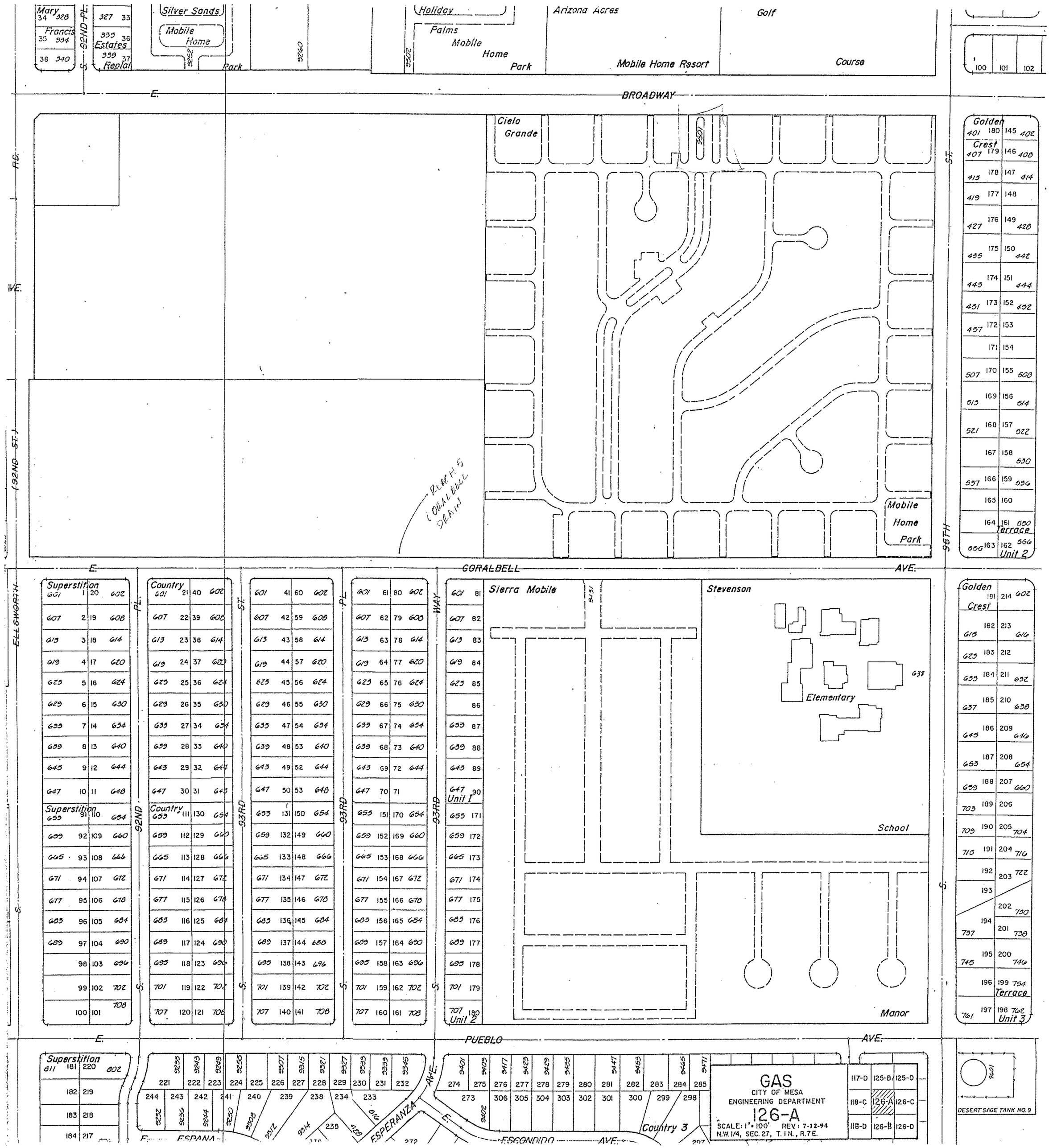
SCALE: 1" = 100'
ISSUE DATE: 10-13-1988
0' 25' 50' 100'

DOC 2

THESE PRINTS OF THE SALT RIVER PROJECT OVERHEAD AND UNDERGROUND ELECTRICAL FACILITIES SHOULD BE CONSIDERED AS A GUIDE TO, BUT NOT AN EXACT LOCATION OF, THE LOCATION OF OUR EXISTING FACILITIES. SRP MAKES NO REPRESENTATION AS TO THEIR ACCURACY OR FITNESS FOR A PARTICULAR PURPOSE.


E. MAIN (APACHE TRAIL) ST.
E. BROADWAY RD.
S. 88TH ST.
S. 90TH PL.
S. 91ST ST.
S. 91ST WAY
ELLSWORTH RD.
E. ALDER AVE.
ASPEN AVE.
BALSAM WAY
E. BAYWOOD AVE.
E. BIRCHWOOD AVE.
E. BRAMBLE AVE.
BUTTERNUT AVE.
Cherokee Mobile
Rambler Mobile
Home Park
Mary Francis
Estates Replat
Estates 1
Estates Unit 2
Estates Unit 3
Plat 1
Amend.
BLK 5
EASEMENT
DRAINAGE
Apache Trails
GAS
CITY OF MESA
ENGINEERING DEPARTMENT
117-D
SCALE 1" = 100' REV. 7-13-94
S.E. 1/4, SEC. 21, T. 1N., R. 7E.
117-A 117-C 125-A
117-B 117-D 125-B
118-A 118-C 126-A

5-78


Mary
Francis
Estates
Replat
Silver Sands
Mobile Home Park
Holiday Palms Mobile Home Park
Arizona Acres
Mobile Home Resort
Golf Course
BROADWAY
Cielo Grande
Golden Crest
Mobile Home Park
Golden Crest Terrace Unit 2
CORALBELL AVE.
Superstition
Country
Sierra Mobile
Stevenson
Elementary
School
Manor
Golden Crest Unit 3
PUEBLO AVE.
ESPANA
ESPERANZA AVE.
ESCONDIDO AVE.
Country 3
DESERT SAGE TANK NO. 9
GAS
CITY OF MESA
ENGINEERING DEPARTMENT
126-A
SCALE: 1" = 100' REV.: 7-12-94
N.W. 1/4, SEC. 27, T. 1 N., R. 7 E.

GAS
CITY OF MESA
ENGINEERING DEPARTMENT
124-B
SCALE 1" = 100' REV. 12-31-92
S.W. 1/4, SEC. 15, T. 1 N., R. 7 E.
116-C 124-A 124-C
116-D 124-B 124-D
117-C 125-A 125-C
C. A. P.
Canal
REACH 11
DESERT VISTA
Abandoned Cogent Sewer Treatment Plant
Superstition
Desert Saguaro
Saguaro
Desert
View Phase 2
View Phase 1
Unit 2
Unit 1
Desert Vista
Estates
Estates Unit No. 1
Estates Unit No. 2
Silver Spur
Sunnycrest
Village
Village Phase IV Mobile Home Park
Unit 4-A
Unit 2
E. ADOBE RD.
E. DUNCAN ST.
E. DENNIS ST.
E. DALLAS ST.
E. DECATUR ST
E. MASON
E. QUARTERLINE RD.
E. CASPER CIR.
E. CISCO RD.
E. SHAW
E. UNIVERSITY DR.
ELLSWORTH RD.
92ND PL.
93RD ST.
94TH ST.
95TH WAY
96TH ST.
N. 94TH CIR.
N. 95TH CIR.
N. 95TH PL.
DOVER
DES MOINES
DALLAS

7-79

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

DRAWING NUMBER

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

DRAWING NUMBER

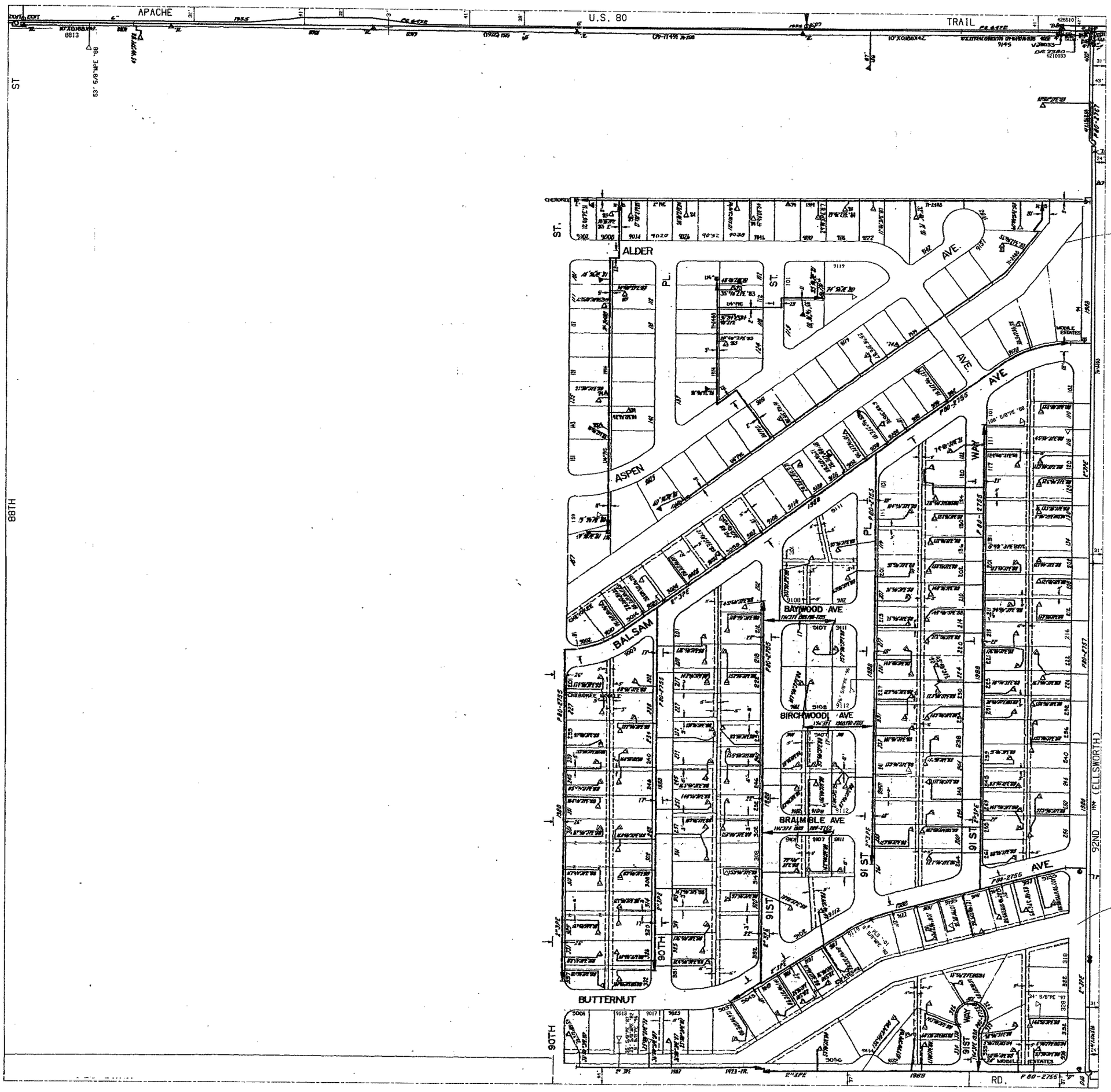
PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

DRAWING NUMBER

5-78

PLAN HOLD CORPORATION • IRVINE, CALIFORNIA

6-78



5-77

5-79

5-78

DLD DOC NUMBER

NOT TO SCALE

NOTICE: THE UTILITY LOCATIONS SHOWN ON THIS MAP ARE APPROXIMATE ONLY, AND ARE NOT RELIABLE FOR CONSTRUCTION PURPOSES. FOR ACTUAL FIELD LOCATIONS, CALL BLUE STAKE 263-1100.

2010070213

USGS NUMBER

SE1/4 SEC 21 TIN - R7E

GAS DISTRIBUTION

SOUTHWEST GAS CORPORATION

PHOENIX, ARIZONA

DATE: 12-20-1997 SMS

SCALE: 1" = 100'

NOTE:

SOUTHWEST GAS CORPORATION DOES NOT GUARANTEE THE ACCURACY OF THE LOCATIONS OR ELEVATIONS OF THE UTILITIES AS SHOWN ON THIS MAP.

4-78

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER

DRAWING NUMBER
5-77

NW ¼ 5-77 | NE ¼ 5-77

6-77

5-76

5-78

←(MESA) APACHE

U.S. 80

TRAIL (SUPERIOR)→

ST.

WAY (RD.)

84TH

E. ALDER (4TH) AVE

DOLBEER ST. (RD)

NORTH

SOUTH

STEVENSVILLE SUNSE TRAIL RANCH

UNLESS NOTED ALL SVES ON CST ARE S/S/CR

RECREATION AND LAUNDRY

POOL HEATER

E. BALSAM AVE

BALSAM AVE.

GLENMAR

PLAT TWO

ROSE ST.

MYRTLE ST.

HAZEL ST.

(87TH)

(203 RD)

GLENMAR

RD.

(DOLBEER) 84TH

(BALLANTYNE) 85TH

ESTATES

REACH 7 KNOLLS ESTATES

BROADWAY

REACH 4: BROADWAY CHANNEL

A P A C H E L I N E

Mesa 5-77

SW ¼ SEC. 21 T. 1 N., R. 7 E.

GAS DISTRIBUTION

SOUTHWEST GAS CORPORATION.

PHOENIX, ARIZONA

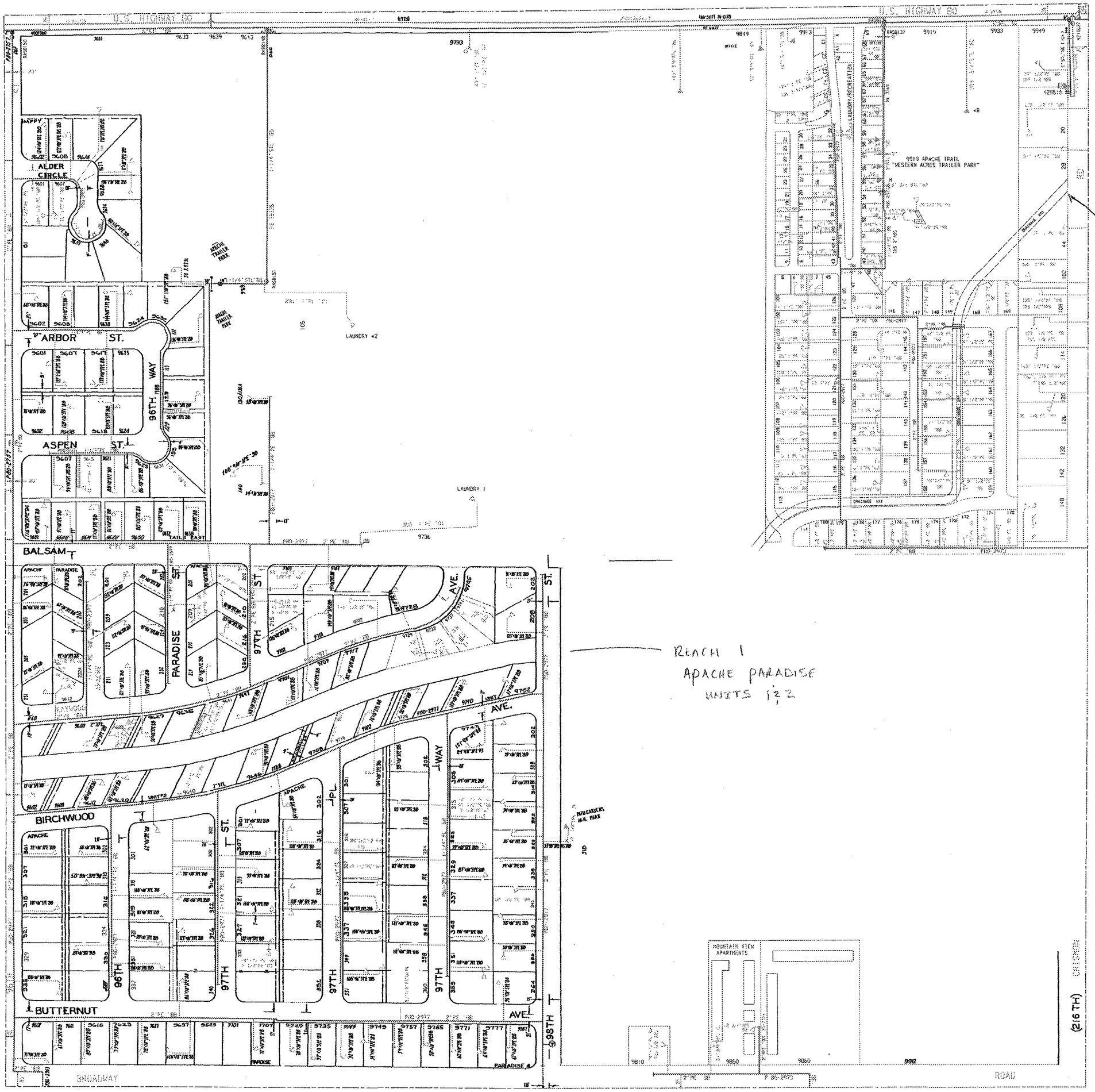
SCALE: 1" = 100' DATE: JUN. 4, 1957

2010070214

REV. MAR 12, 1986

4-77

SW ¼ 5-77 | SE ¼ 5-77



5-79

5-81

5-80

OLD DOC NUMBER

SE1/4 SEC 22 TIN - R7E

2010070223 USGS NUMBER

DATE: 11-25-03 GGT

SCALE: 1" = 100'

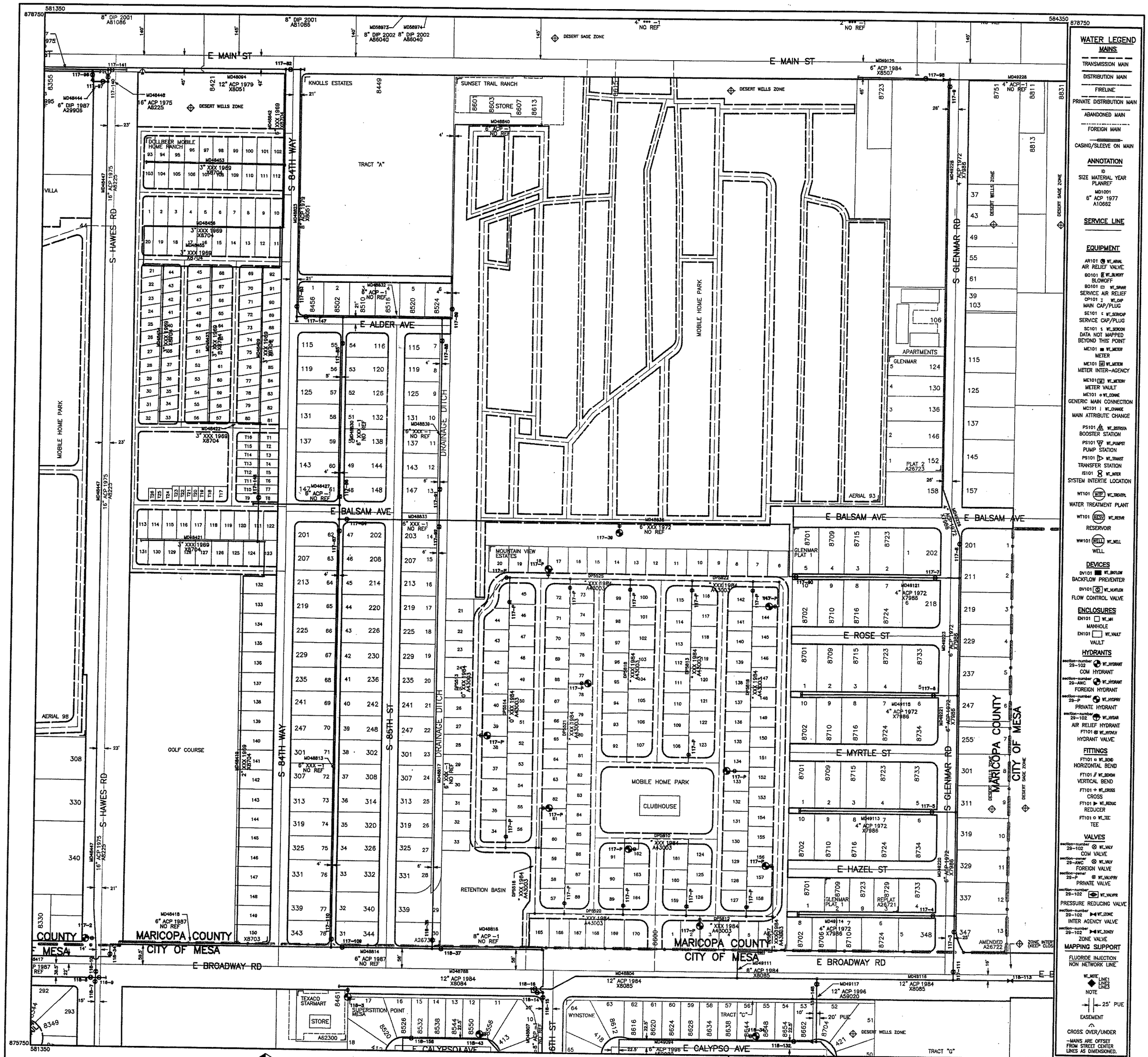
SOUTHWEST GAS CORPORATION

GAS DISTRIBUTION SYSTEM

PHOENIX, ARIZONA

NOTE:

SOUTHWEST GAS CORPORATION DOES NOT GUARANTEE THE ACCURACY OF THE LOCATIONS OR ELEVATIONS OF THE UTILITIES AS SHOWN ON THIS MAP.



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THE CITY OF MESA MAKES NO CLAIMS CONCERNING THE ACCURACY OF THIS MAP NOR ASSUMES ANY LIABILITY RESULTING FROM THE USE OF THE INFORMATION HEREON.

N

2" 1" 0 100' 200'

PLOT COMPILATION DATE: 06/19/03

COM GIS
"Empowered by GIS"

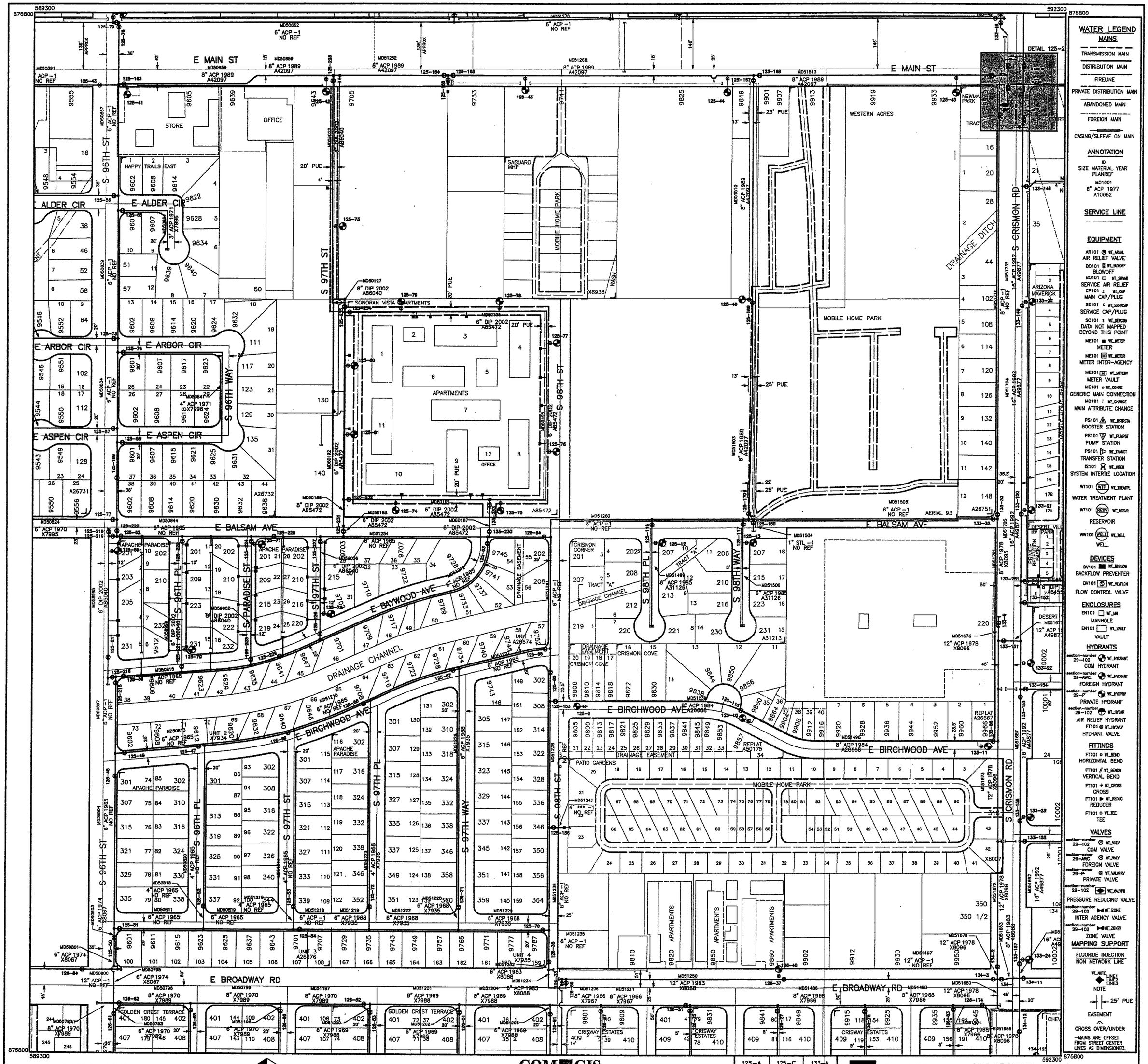
REVISION DATE: 06/19/03 WATER
REVISION DATE: 10/31/01 LAND

109-C	117-A	117-C
109-D	117-B	117-D
110-C	118-A	118-C

CITY OF MESA
Great People, Quality Services!

WATER 117 B

LEGAL: 1N 7E SW 1/4 SEC 21



WATER LEGEND

MAINS

- TRANSMISSION MAIN
- DISTRIBUTION MAIN
- FIRELINE
- PRIVATE DISTRIBUTION MAIN
- ABANDONED MAIN
- FOREIGN MAIN
- CASING/SLEEVE ON MAIN

ANNOTATION

ID
SIZE MATERIAL YEAR PLANREF
MD1001
6" ACP 1977
A10662

SERVICE LINE

EQUIPMENT

- AR101 WT_ARVAL AIR RELIEF VALVE
- BO101 WT_BLOWOFF BLOWOFF
- BO101 WT_SRVAR SERVICE AIR RELIEF
- CP101 WT_CAP MAIN CAP/PLUG
- SE101 WT_SERVCAP SERVICE CAP/PLUG
- SC101 WT_SERCON DATA NOT MAPPED BEYOND THIS POINT
- ME101 WT_METER METER
- ME101 WT_METERI METER INTER-AGENCY
- ME101 WT_METERV METER VAULT
- ME101 WT_CONNE GENERIC MAIN CONNECTION
- MC101 WT_CHANGE MAIN ATTRIBUTE CHANGE
- PS101 WT_BSTRSTA BOOSTER STATION
- PS101 WT_PUMPST PUMP STATION
- PS101 WT_TRANST TRANSFER STATION
- IS101 WT_INTER SYSTEM INTERTIE LOCATION
- WT101 WTP WT_TREATPL WATER TREATMENT PLANT
- WT101 RESV WT_RESVR RESERVOIR
- WW101 WELL WT_WELL WELL

DEVICES

- DV101 WT_BKFLOW BACKFLOW PREVENTER
- DV101 WT_VLVFLOW FLOW CONTROL VALVE

ENCLOSURES

- EN101 WT_MH MANHOLE
- EN101 WT_VAULT VAULT

HYDRANTS

- section-number 29-102 WT_HYDRANT COM HYDRANT
- section-number 29-AWC WT_HYDRANT FOREIGN HYDRANT
- section-number 29-P WT_HYDPRV PRIVATE HYDRANT
- section-number 29-102 WT_HYDAR AIR RELIEF HYDRANT
- FT101 WT_HYDVLV HYDRANT VALVE

FITTINGS

- FT101 WT_BEND HORIZONTAL BEND
- FT101 WT_BENDV VERTICAL BEND
- FT101 WT_CROSS CROSS
- FT101 WT_REDUC REDUCER
- FT101 WT_TEE TEE

VALVES

- section-number 29-102 WT_VALV COM VALVE
- section-owner 29-AWC WT_VALV FOREIGN VALVE
- section-owner 29-P WT_VALVPRV PRIVATE VALVE
- section-number 29-102 WT_VALVPR PRESSURE REDUCING VALVE
- section-number 29-102 WT_ZONIC INTER AGENCY VALVE
- section-number 29-102 WT_ZONEV ZONE VALVE

MAPPING SUPPORT

FLUORIDE INJECTION
NON NETWORK LINE

WT_NOTE
LINE1
LINE2
LINE3
NOTE

25' PUE
EASEMENT

CROSS OVER/UNDER
-MAINS ARE OFFSET FROM STREET CENTER LINES AS DIMENSIONED.

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N

2" 1" 0 100' 200'

PLOT COMPILATION DATE: 11/20/03

COM GIS
"Empowered by GIS"

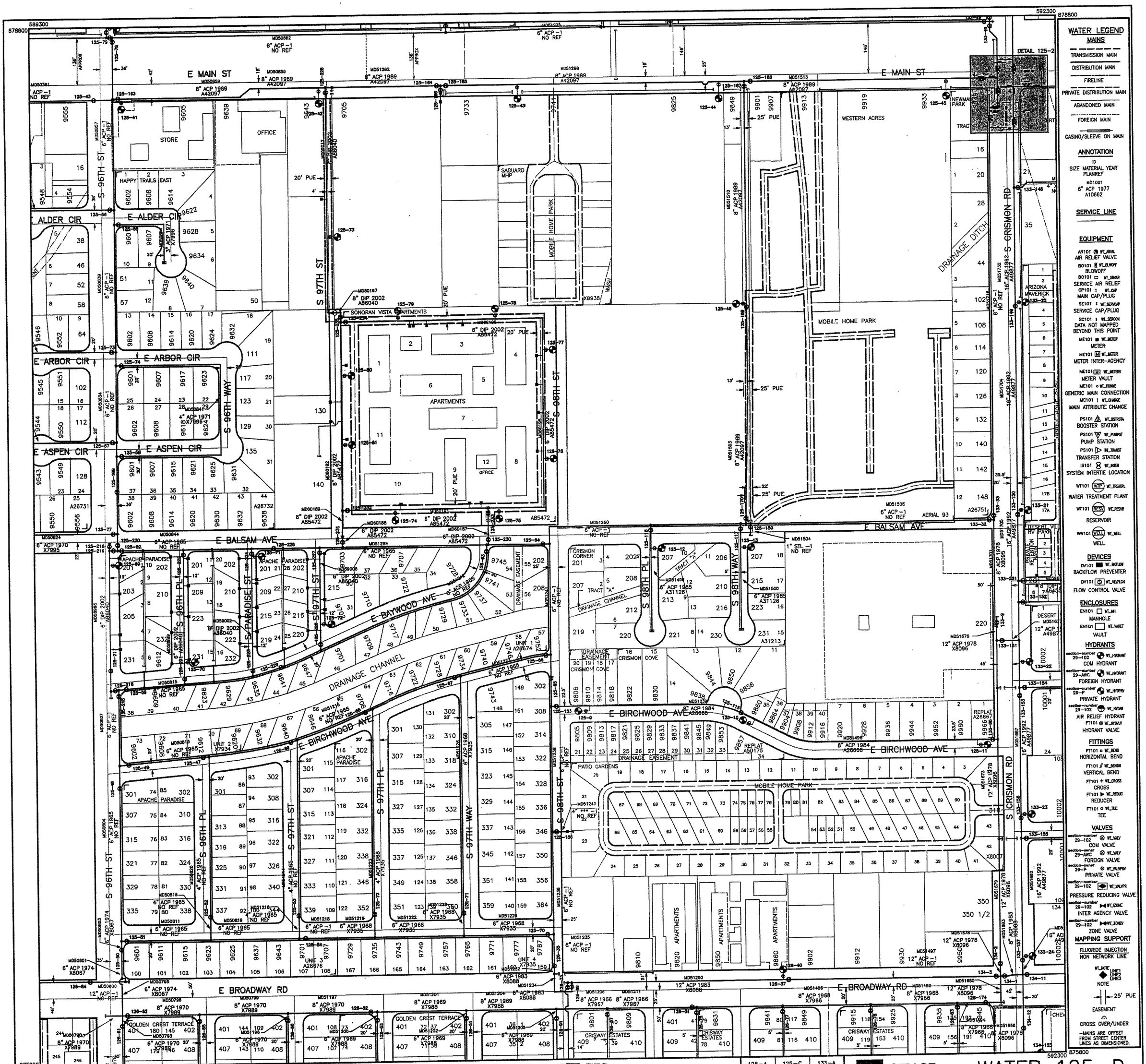
REVISION DATE: 11/20/03 WATER
REVISION DATE: 01/17/03 LAND

125-A	125-C	133-A
125-B	125-D	133-B
126-A	126-C	134-A

CITY OF MESA
Great People, Quality Service!

WATER 125 D

LEGAL: 1N 7E SE 1/4 SEC 22



WATER LEGEND

MAINS

- TRANSMISSION MAIN
- DISTRIBUTION MAIN
- FIRELINE
- PRIVATE DISTRIBUTION MAIN
- ABANDONED MAIN
- FOREIGN MAIN
- CASING/SLEEVE ON MAIN

ANNOTATION

ID
SIZE MATERIAL YEAR
PLANREF

MD1001
6" ACP 1977
A10662

SERVICE LINE

EQUIPMENT

- AR101 WT_ARVAL — AIR RELIEF VALVE
- BO101 WT_BLWOFF — BLOWOFF
- BO101 WT_SRVAR — SERVICE AIR RELIEF
- CP101 WT_CAP — MAIN CAP/PLUG
- SE101 WT_SERVCAP — SERVICE CAP/PLUG
- SC101 WT_SERCON — DATA NOT MAPPED BEYOND THIS POINT
- ME101 WT_METER — METER
- ME101 WT_METERI — METER INTER-AGENCY
- ME101 WT_METERV — METER VAULT
- ME101 WT_CONNE — GENERIC MAIN CONNECTION
- MC101 WT_CHANGE — MAIN ATTRIBUTE CHANGE
- PS101 WT_BSTRSTA — BOOSTER STATION
- PS101 WT_PUMPST — PUMP STATION
- PS101 WT_TRANST — TRANSFER STATION
- IS101 WT_INTER — SYSTEM INTERTIE LOCATION
- WT101 WTP WT_TREATPL — WATER TREATMENT PLANT
- WT101 RESV WT_RESVR — RESERVOIR
- WW101 WELL WT_WELL — WELL

DEVICES

- DV101 WT_BKFLOW — BACKFLOW PREVENTER
- DV101 WT_VLVFLOW — FLOW CONTROL VALVE

ENCLOSURES

- EN101 WT_MH — MANHOLE
- EN101 WT_VAULT — VAULT

HYDRANTS

- section-number 29-102 WT_HYDRANT — COM HYDRANT
- section-number 29-AWC WT_HYDRANT — FOREIGN HYDRANT
- section-number 29-P WT_HYDPRV — PRIVATE HYDRANT
- section-number 29-102 WT_HYDAR — AIR RELIEF HYDRANT
- FT101 WT_HYDALV — HYDRANT VALVE

FITTINGS

- FT101 WT_BEND — HORIZONTAL BEND
- FT101 WT_BENDH — VERTICAL BEND
- FT101 WT_CROSS — CROSS
- FT101 WT_REDUC — REDUCER
- FT101 WT_TEE — TEE

VALVES

- section-number 29-102 WT_VALV — COM VALVE
- section-owner 29-AWC WT_VALV — FOREIGN VALVE
- section-owner 29-P WT_VALVPRV — PRIVATE VALVE
- section-number 29-102 WT_VALVPR — PRESSURE REDUCING VALVE
- section-number 29-102 WT_ZONIC — INTER AGENCY VALVE
- section-number 29-102 WT_ZONEV — ZONE VALVE

MAPPING SUPPORT

- FLUORIDE INJECTION
- NON NETWORK LINE
- WT_NOTE LINE1 LINE2 LINE3 — NOTE
- 25' PUE — EASEMENT
- CROSS OVER/UNDER

-MAINS ARE OFFSET FROM STREET CENTER LINES AS DIMENSIONED.

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N

2" 1" 0 100' 200'

PLOT COMPILATION DATE: 11/20/03

COM GIS
"Empowered by GIS"
REVISION DATE: 11/20/03 WATER
REVISION DATE: 01/17/03 LAND

125-A	125-C	133-A
125-B	125-D	133-B
126-A	126-C	134-A

CITY OF MESA
Great People, Quality Service!

WATER 125 D

LEGAL: 1N 7E SE 1/4 SEC 22

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SCALE: 1" = 200'

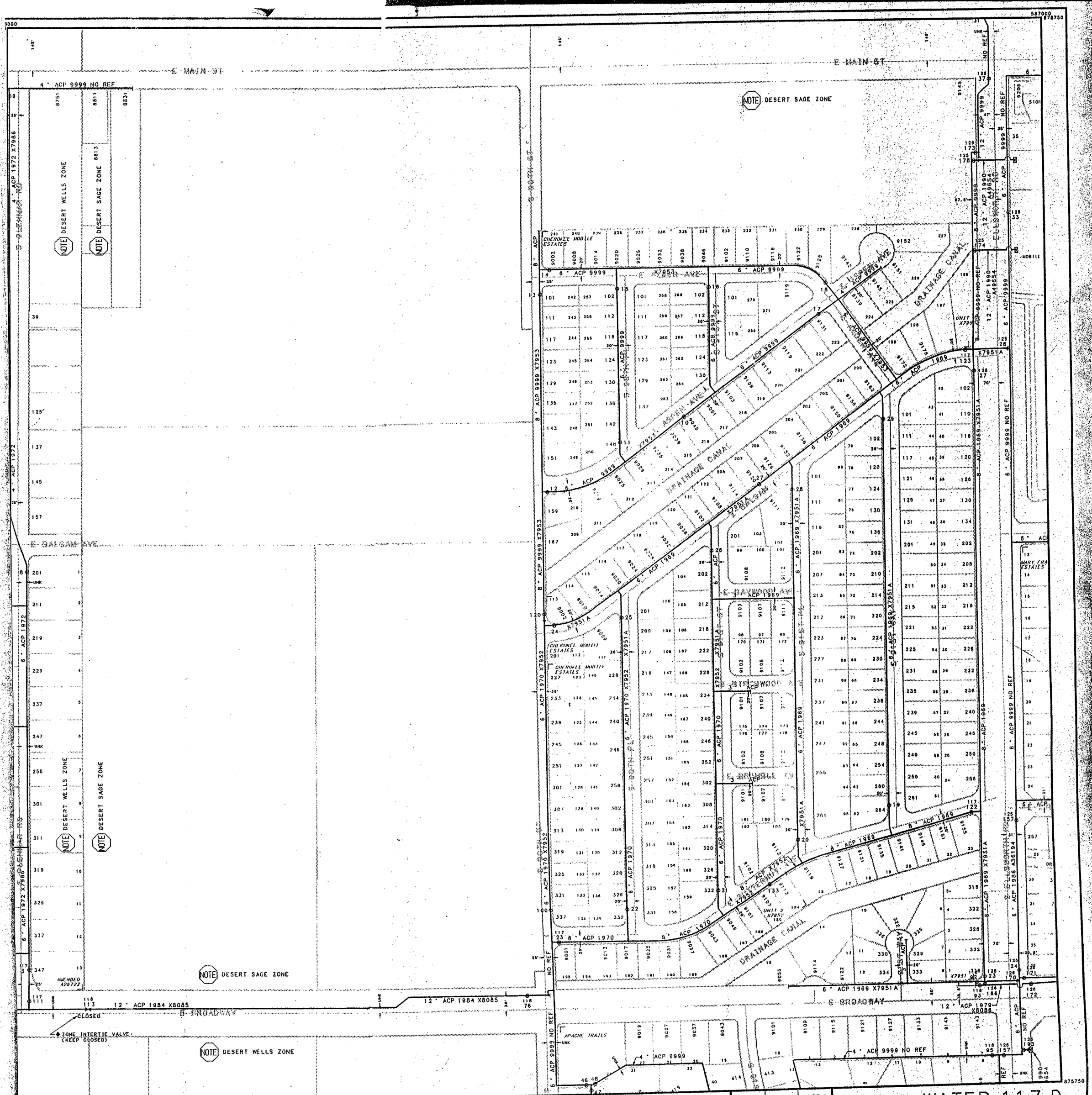
PLOT COMPILATION DATE: 03/22/95

CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 03/22/95 WATER
REVISION DATE: 01/10/95 LAND

116-C	124-A	124-C
116-D	124-B	124-D
117-C	125-A	125-C

WATER 124-B
LEGAL: T.1N. R.7E. SW 1/4 SEC.15

7-79



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SCALE: 1" = 200'

PLOT COMPILATION DATE: 01/17/95

CITY OF MESA GEOSYSTEM

ENGINEERING DIVISION

REVISION DATE: 01/17/95 WATER

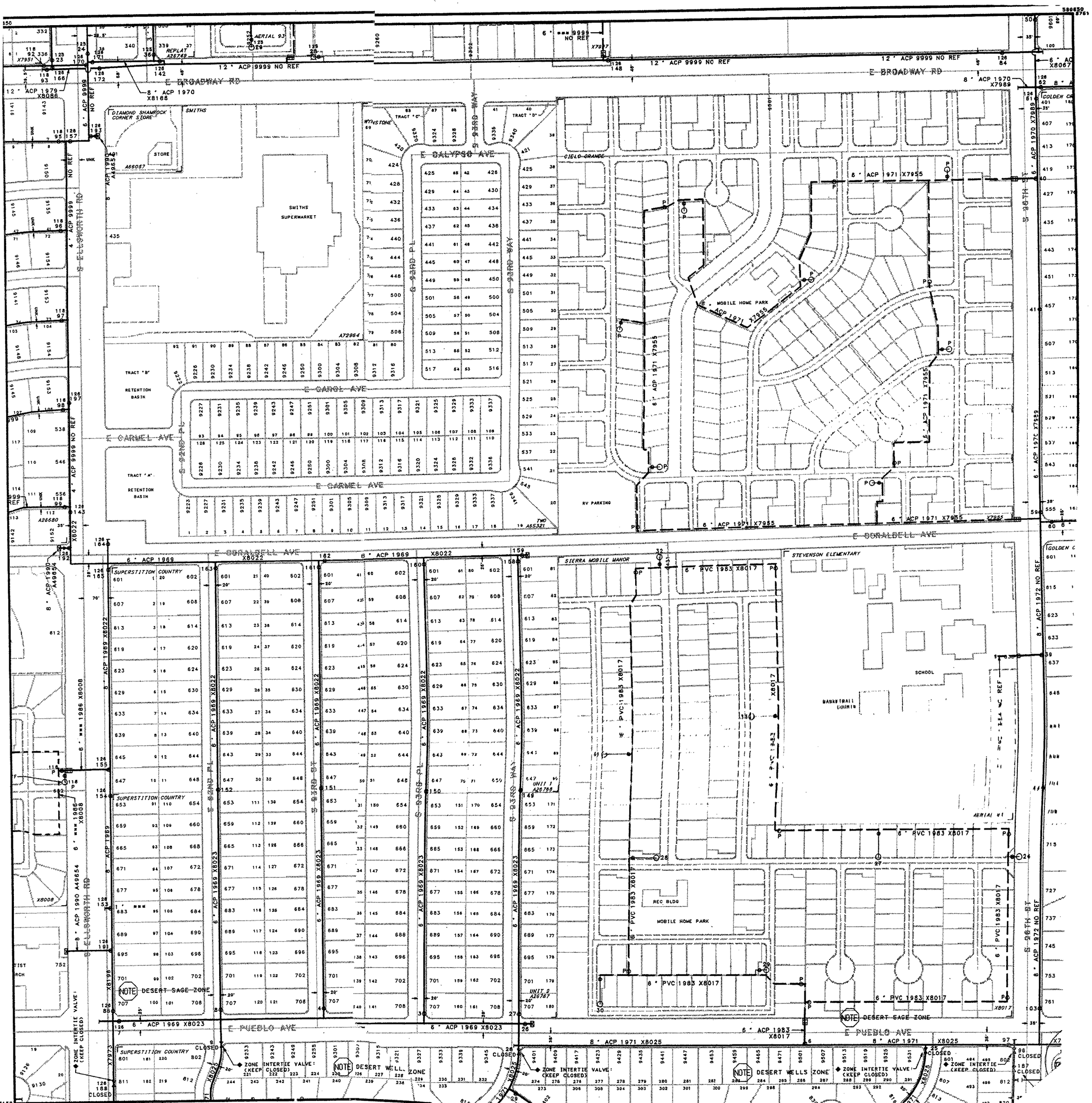
REVISION DATE: 10/04/94 LAND

117-A	117-C	125-A
117-B	117-D	125-B
118-A	118-C	126-A

WATER 117-D

LEGAL: T.1N. R.7E. SE 1/4 SEC. 21

S-7


E BROADWAY RD
E OAKLEY AVE
E CARMEL AVE
E PUEBLO AVE
E DORADELL AVE
S SOUTH ST
SMITHS SUPERMARKET
DIAMOND SHAMROCK CORNER STORE
SMITHS
STORE
TRACT "A" RETENTION BASIN
TRACT "B" RETENTION BASIN
TRACT "C"
TRACT "D"
WINSTONE
CIELO GRANDE
MOBILE HOME PARK
RV PARKING
SIERRA MOBILE MANOR
SUPERSTITION COUNTRY
STEVENSON ELEMENTARY
SCHOOL
REC BLDG
MOBILE HOME PARK
DESERT SAGE ZONE
DESERT WELLS ZONE
ZONE INTERTIE VALVE (KEEP CLOSED)
12" ACP 9999 NO REF
8" ACP 1970 X8168
12" ACP 1979 X8066
8" ACP 1970 X7989
6" ACP 1971 X7955
6" ACP 1969 X8022
8" ACP 1969 X8022
6" ACP 1969 X8023
8" ACP 1971 X8025
6" PVC 1983 X8017
8" ACP 1972 NO REF
6" ACP 1972 NO REF
4" ACP 9999 NO REF
6" ACP 9999 NO REF
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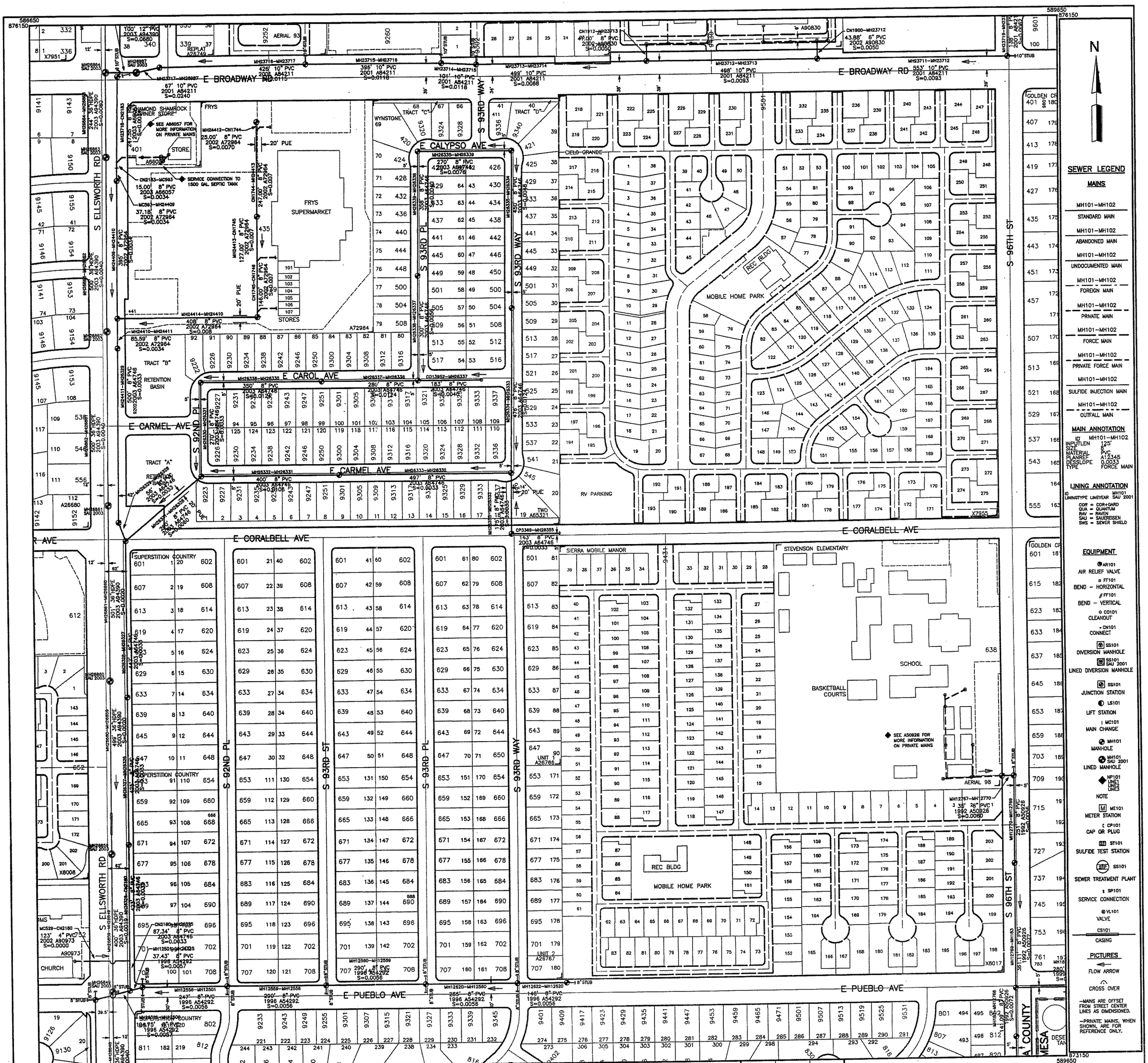
SCALE: 1" = 200'
PLOT COMPILATION DAE: 11/17/98
CITY OF MESA GEOSYSTEM
ENGINEERING DIVISION
REVISION DATE: 11/17/98 WATER
REVISION DATE: 11/09/98 LAND
117-D 125-B 125-D
118-C 126-A 126-C
118-D 126-B 126-D
WATER
LEGAL: T.1N. R.7E. NW 1/4

126A 4-79



SEWER LEGEND

MAINS

- MH101–MH102 — STANDARD MAIN
- MH101–MH102 — ABANDONED MAIN
- MH101–MH102 — UNDOCUMENTED MAIN
- MH101–MH102 — FOREIGN MAIN
- MH101–MH102 — PRIVATE MAIN
- MH101–MH102 — FORCE MAIN
- MH101–MH102 — PRIVATE FORCE MAIN
- MH101–MH102 — SULFIDE INJECTION MAIN
- MH101–MH102 — OUTFALL MAIN

MAIN ANNOTATION

ID MH101–MH102
INPUTLEN 125'
SIZE 8"
MATERIAL PVC
PLANREF A12345
DESSLOPE 0.0033
TYPE FORCE MAIN

LINING ANNOTATION

ID MH101
LININGTYPE LINEYEAR SAU 2001

COR = CORA+GARD
QUA = QUANTUM
RAV = RAVEN
SAU = SAUEREISEN
SWS = SEWER SHIELD

EQUIPMENT

- AR101 — AIR RELIEF VALVE
- FF101 — BEND – HORIZONTAL
- FF101 — BEND – VERTICAL
- CO101 — CLEANOUT
- CN101 — CONNECT
- SS101 — DIVERSION MANHOLE
- SS101 SAU 2001 — LINED DIVERSION MANHOLE
- SS101 — JUNCTION STATION
- LS101 — LIFT STATION
- MC101 — MAIN CHANGE
- MH101 — MANHOLE
- MH101 SAU 2001 — LINED MANHOLE
- NP101 LINE1 LINE2 LINE3 — NOTE
- ME101 — METER STATION
- CP101 — CAP OR PLUG
- ST101 — SULFIDE TEST STATION
- SS101 — SEWER TREATMENT PLANT
- SP101 — SERVICE CONNECTION
- VL101 — VALVE
- CS101 — CASING

PICTURES

- FLOW ARROW
- CROSS OVER

–MAINS ARE OFFSET FROM STREET CENTER LINES AS DIMENSIONED.

–PRIVATE MAINS, WHEN SHOWN, ARE FOR REFERENCE ONLY.

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2" 1" 0 100' 200'

PLOT COMPILATION DATE: 07/25/03

COMGIS "Empowered by GIS"

REVISION DATE: 07/25/03 SEWER
REVISION DATE: 07/19/02 LAND

117–D	125–B	125–D
118–C	126–A	126–C
118–D	126–B	126–D

CITY OF MESA — Great People, Quality Service!

SEWER 126A

LEGAL: 1N 7E NW 1/4 SEC 27

220-21

E ADOBE RD
E DUNCAN ST
E DENNIS ST
E DALLAS ST
E DECATUR ST
E UNIVERSITY DR
N 40TH ST
N 44TH PL
N 44TH WAY
N 45TH PL
N 45TH ST
N 46TH ST
N 47TH PL
N 47TH ST
N 48TH ST
N 48TH PL
N 48TH DR
N 49TH ST
N 49TH PLACE
N 50TH ST
N 50TH PL
N 50TH DR
N 51ST PL
N 51ST ST
N 52ND ST
N 53RD ST
N 54TH ST
N 55TH ST
N 56TH ST
N 57TH ST
N 58TH ST
N ALLEN ST
E POSSO RD
E CASPER CIR
E SUNNYCREST ST
CAP CANAL
SUPERSTITION VIEW
DESERT SAGUARO ESTATES
DESERT VISTA ESTATES
SAGUARO EAST
SILVER SPUR VILLAGE
PHASE 1 X8037
PHASE 2 X8038
UNIT 1 X8210
UNIT 2 X7976
001X
001Q
001R
093
155

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SCALE: 1" = 200'

PLOT COMPILATION DATE: 08/10/95

CITY OF MESA GEOSYSTEM

ENGINEERING DIVISION

REVISION DATE: 08/10/95 SEWER

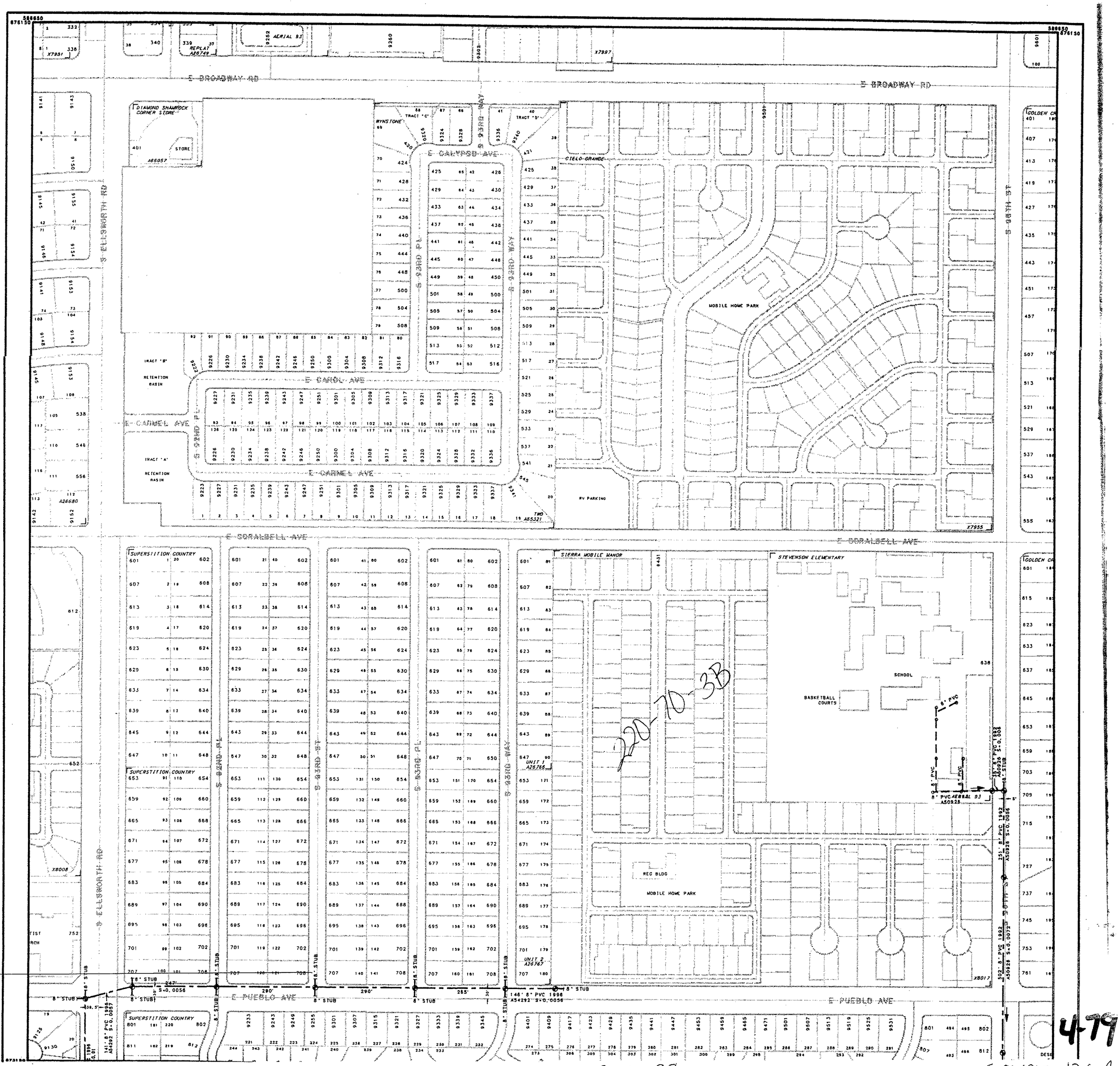
REVISION DATE: 01/10/95 LAND

116-C	124-A	124-C
116-D	124-B	124-D
117-C	125-A	125-C

SEWER 124-B

LEGAL: T.1N. R.7E. SW 1/4 SEC. 15

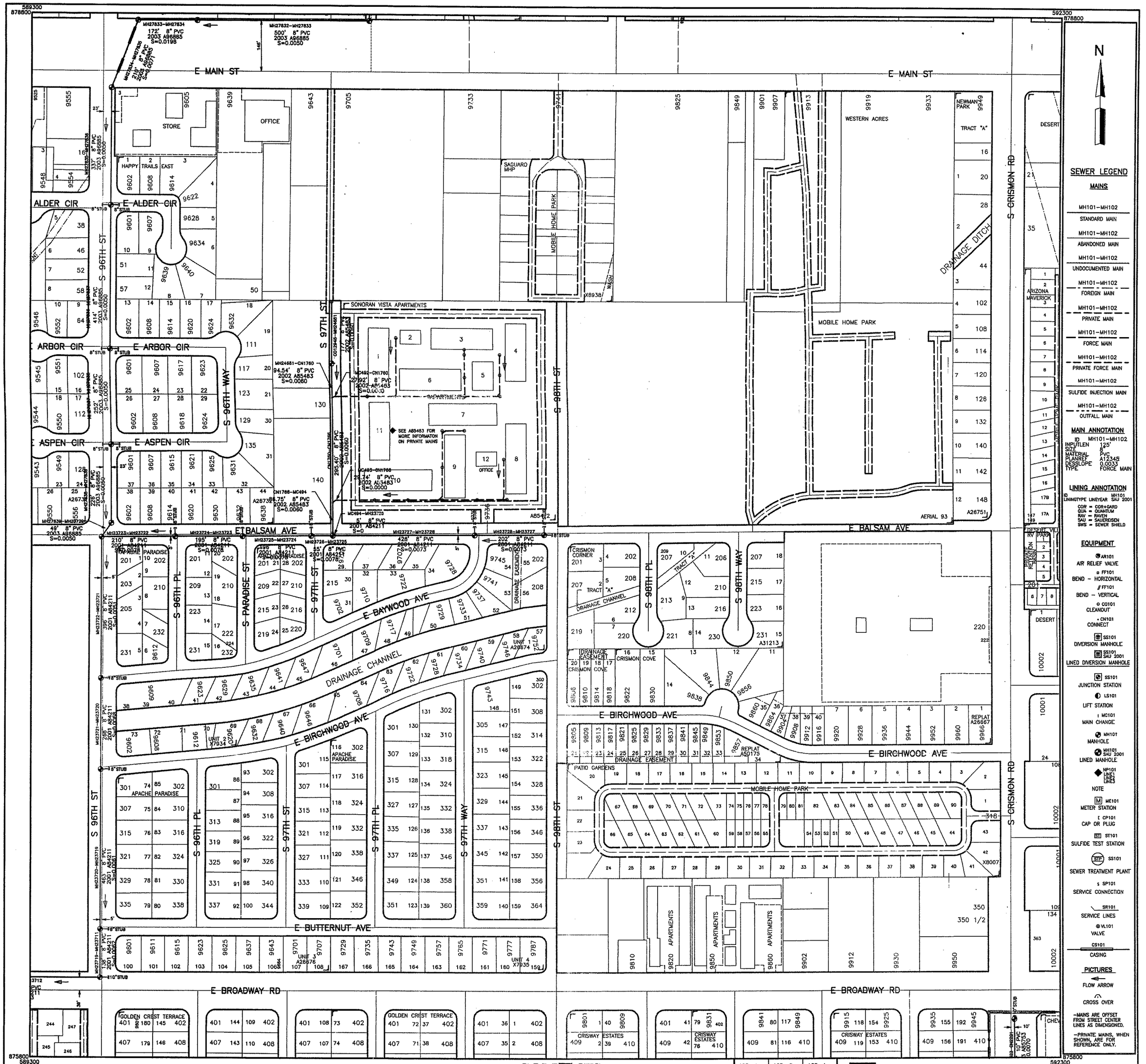
7-79



8-10-98

Sewer 126 A

4-79



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2" 1" 0 100' 200'

PLOT COMPILATION DATE: 11/19/03

COM GIS
"Empowered by GIS"

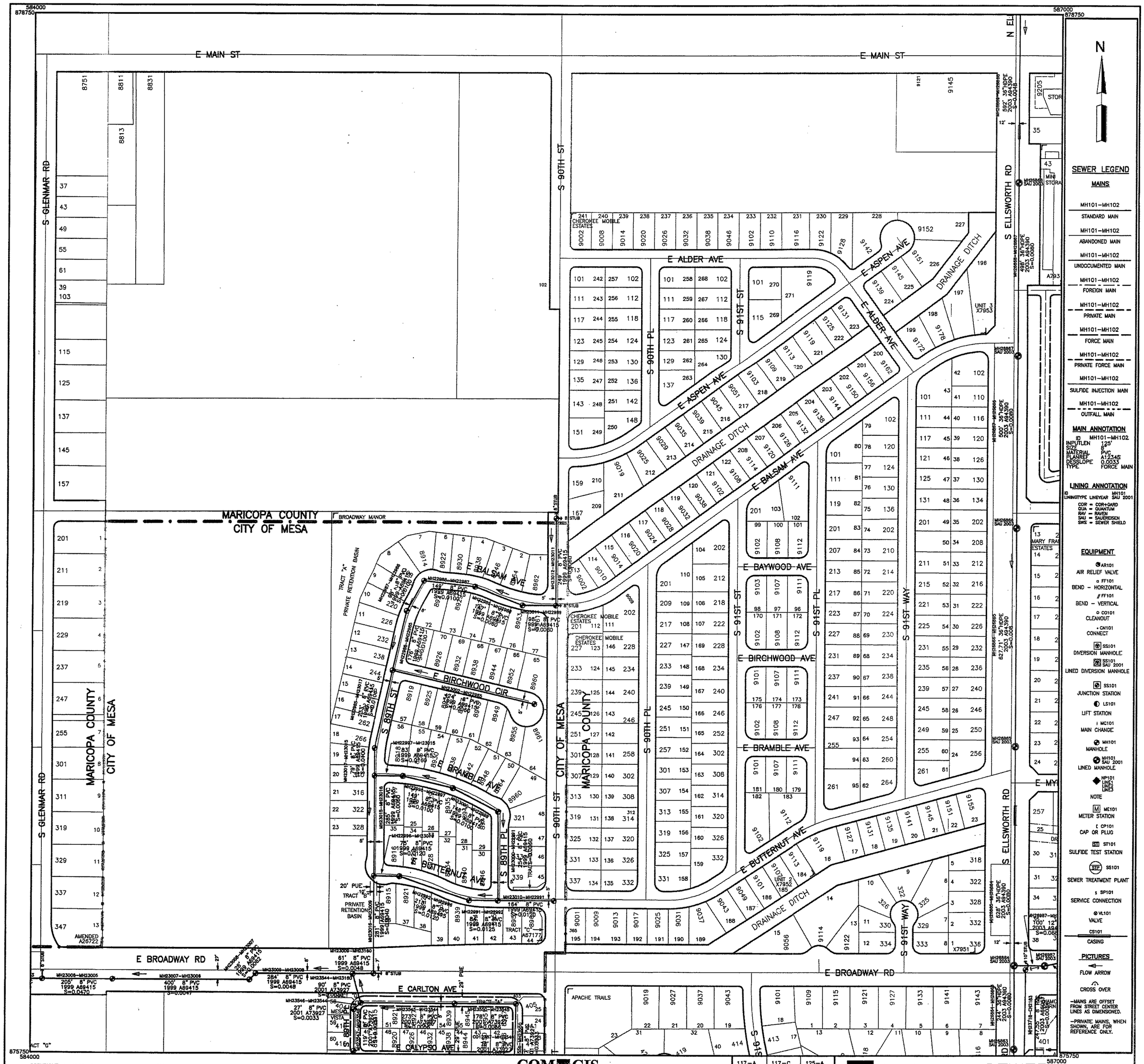
REVISION DATE: 11/19/03 SEWER
REVISION DATE: 01/17/03 LAND

125–A	125–C	133–A
125–B	125–D	133–B
126–A	126–C	134–A

CITY OF MESA
Great People, Quality Service!

SEWER 125D

LEGAL: 1N 7E SE 1/4 SEC 22



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2" 1" 0 100' 200'

PLOT COMPILATION DATE: 09/05/03

COM GIS
"Empowered by GIS"

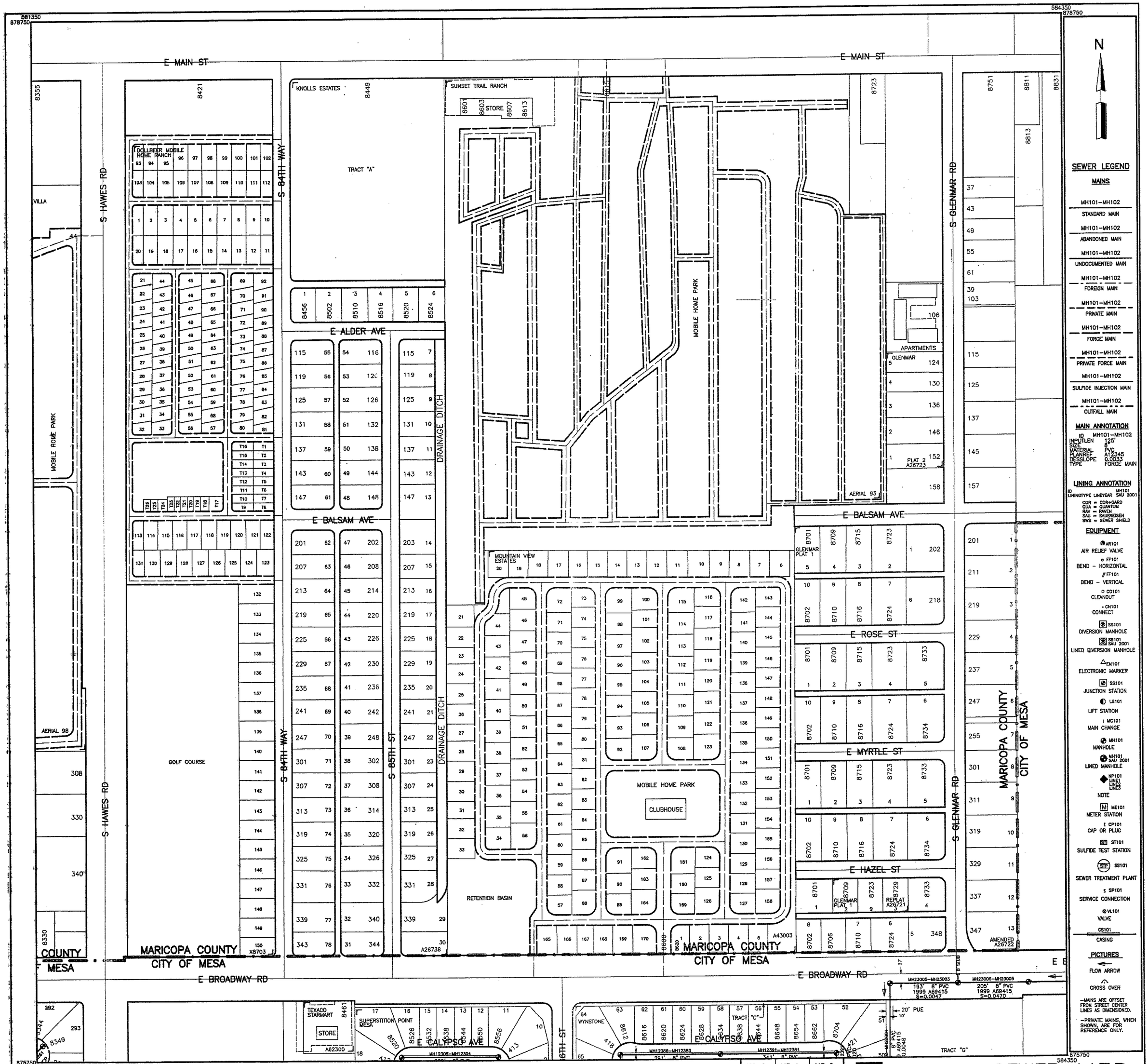
REVISION DATE: 09/05/03 SEWER
REVISION DATE: 01/30/02 LAND

117–A	117–C	125–A
117–B	117–D	125–B
118–A	118–C	126–A

CITY OF MESA
Great People, Quality Service!

SEWER 117D

LEGAL: 1N 7E SE 1/4 SEC 21



SEWER LEGEND

MAINS

- MH101–MH102 STANDARD MAIN
- MH101–MH102 ABANDONED MAIN
- MH101–MH102 UNDOCUMENTED MAIN
- MH101–MH102 FOREIGN MAIN
- MH101–MH102 PRIVATE MAIN
- MH101–MH102 FORCE MAIN
- MH101–MH102 PRIVATE FORCE MAIN
- MH101–MH102 SULFIDE INJECTION MAIN
- MH101–MH102 OUTFALL MAIN

MAIN ANNOTATION

ID MH101–MH102
INPUTLEN 125'
SIZE 8"
MATERIAL PVC
PLANREF A12345
DESSLOPE 0.0033
TYPE FORCE MAIN

LINING ANNOTATION

ID MH101
LININGTYPE LINEYEAR SAU 2001

COR = COR-I-GARD
QUA = QUANTUM
RAV = RAVEN
SAU = SAUEREISEN
SWS = SEWER SHIELD

EQUIPMENT

- AR101 AIR RELIEF VALVE
- FF101 BEND – HORIZONTAL
- FF101 BEND – VERTICAL
- CO101 CLEANOUT
- CN101 CONNECT
- SS101 DIVERSION MANHOLE
- SS101 SAU 2001 LINED DIVERSION MANHOLE
- EM101 ELECTRONIC MARKER
- SS101 JUNCTION STATION
- LS101 LIFT STATION
- MC101 MAIN CHANGE
- MH101 MANHOLE
- MH101 SAU 2001 LINED MANHOLE
- NP101 LINE1 LINE2 LINE3 NOTE
- ME101 METER STATION
- CP101 CAP OR PLUG
- ST101 SULFIDE TEST STATION
- SS101 SEWER TREATMENT PLANT
- SP101 SERVICE CONNECTION
- VL101 VALVE
- CS101 CASING

PICTURES

- FLOW ARROW
- CROSS OVER

–MAINS ARE OFFSET FROM STREET CENTER LINES AS DIMENSIONED.

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2" 1" 0 100' 200'

PLOT COMPILATION DATE: 04/10/03

COM GIS "Empowered by GIS"

REVISION DATE: 04/03/03 SEWER
REVISION DATE: 10/31/01 LAND

109–C	117–A	117–C
109–D	117–B	117–D
110–C	118–A	118–C

CITY OF MESA — Great People, Quality Service!

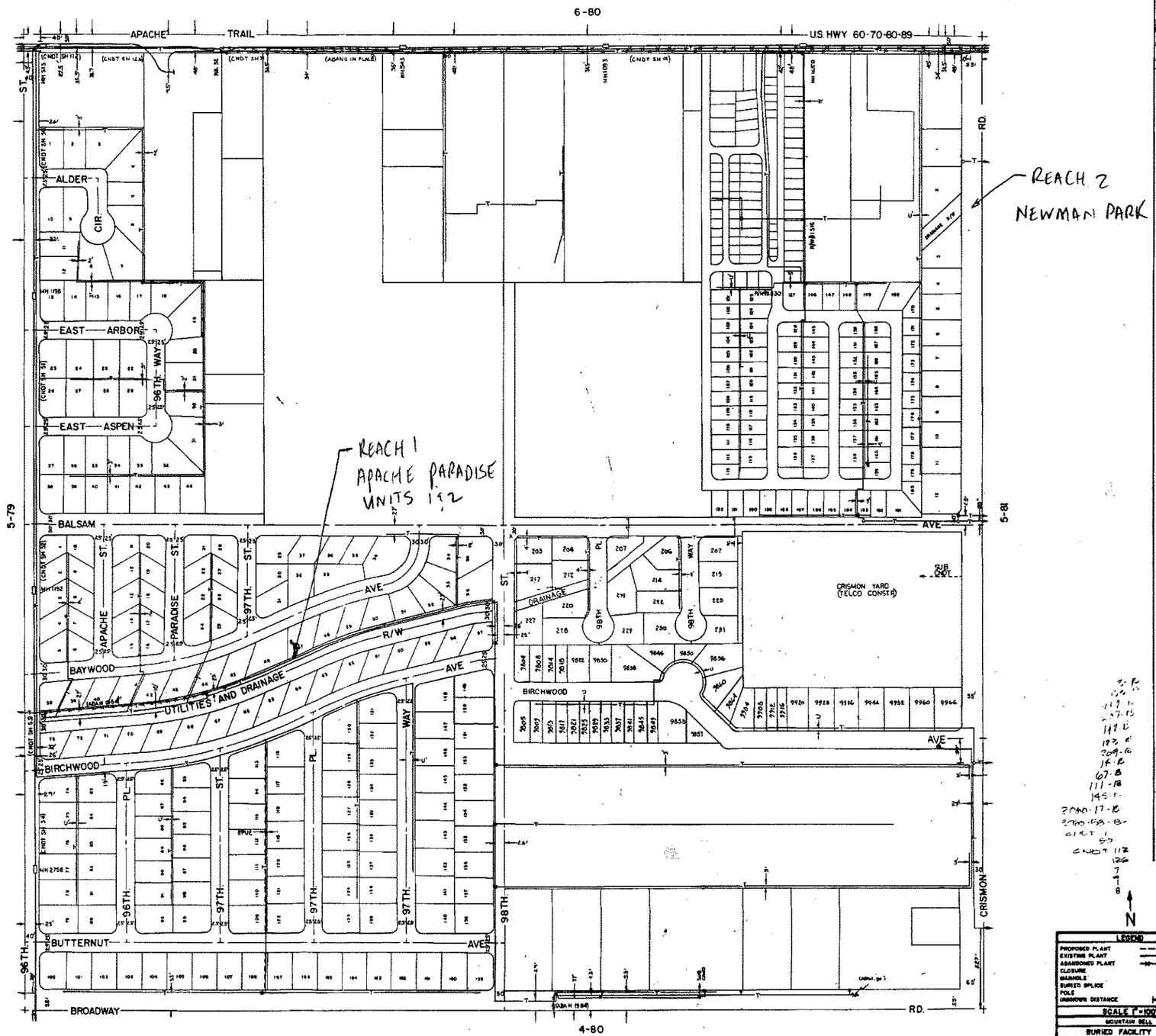
SEWER 117B

LEGAL: 1N 7E SW 1/4 SEC 21

CHRIS LERTIQUE (MLERTIQ) 12/10/2003 07:03 CLLI:SPRSAZMA
RECORD NO: BURSH5-80 SHEET:1 REV:1

CONFIDENTIAL: DISCLOSE AND DISTRIBUTE SOLELY TO US WEST EMPLOYEES HAVING A NEED TO KNOW

INSTALLATION RECORDS ARE FOR THE INTERNAL USE OF THE FACILITY OWNER IN LOCATING ITS UNDERGROUND FACILITIES AND ARE NOT INTENDED TO BE RELIED ON BY OTHERS. FOR UNDERGROUND FACILITIES LOCATIONS CALL BLUE STAKE (602) 263-1100 IN MARICOPA COUNTY OUTSIDE OF MARICOPA COUNTY, CALL 1-800-STAKEIT



LEGEND
PROPOSED PLANT
EXISTING PLANT
ABANDONED PLANT
CLOSURE
MANHOLE
BURIED SPLICE
POLE
UNKNOWN DISTANCE

SCALE 1" = 100'

MOUNTAIN BELL

BURIED FACILITY MAP

MAPPING NO. 5-80

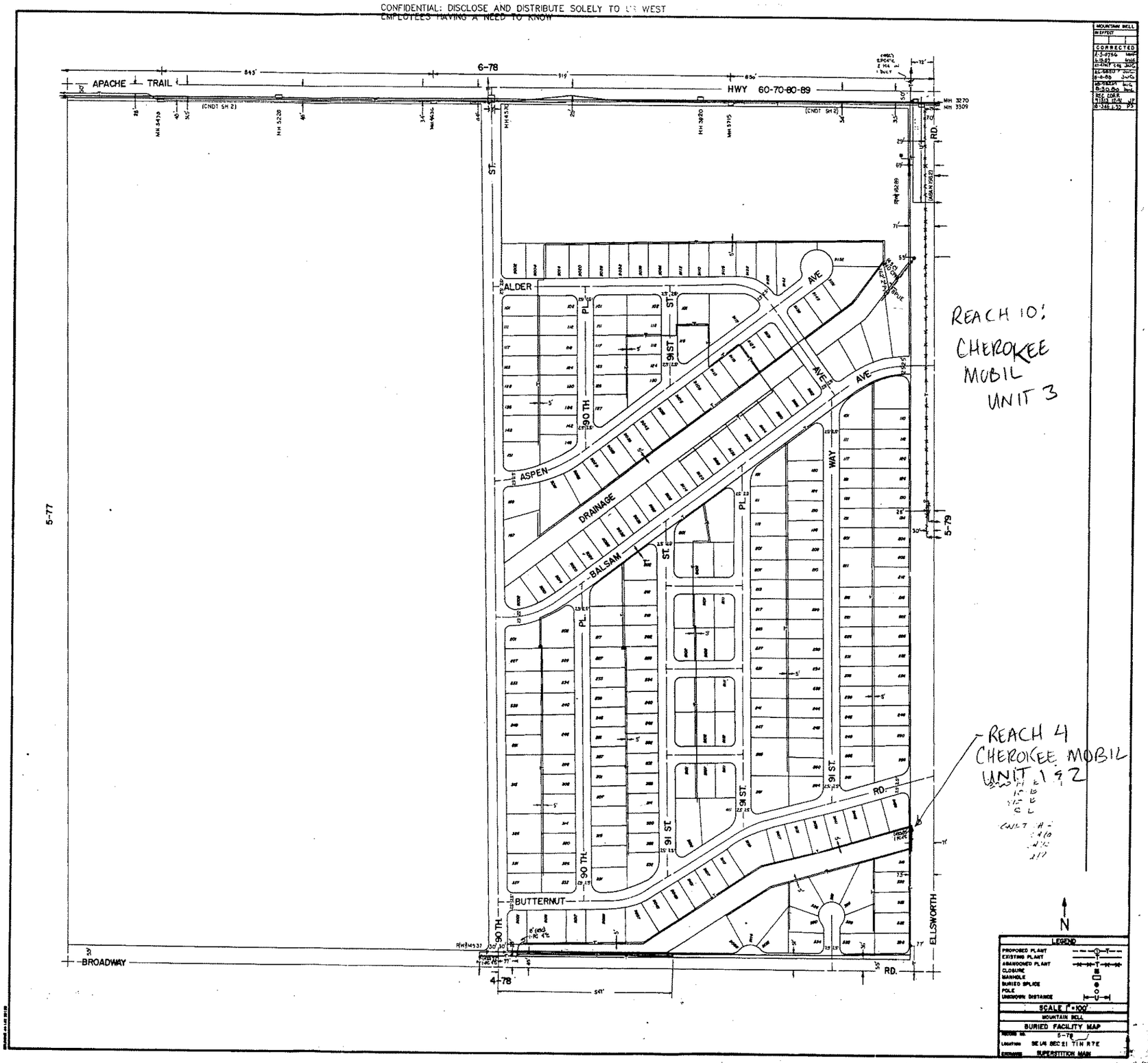
LOCATION SE 1/4 SEC. 22 TN 1N RTE

EXCHANGE SUPERSTITION MAIN

5-80

MARJORIE MCCOMB (MMCCOMB) 03/24/1999 13:33 CLLI:SPRSAZMA
RECORD NO: BURSH5-78 SHEET:1 REV:1

CONFIDENTIAL: DISCLOSE AND DISTRIBUTE SOLELY TO U S WEST
EMPLOYEES HAVING A NEED TO KNOW

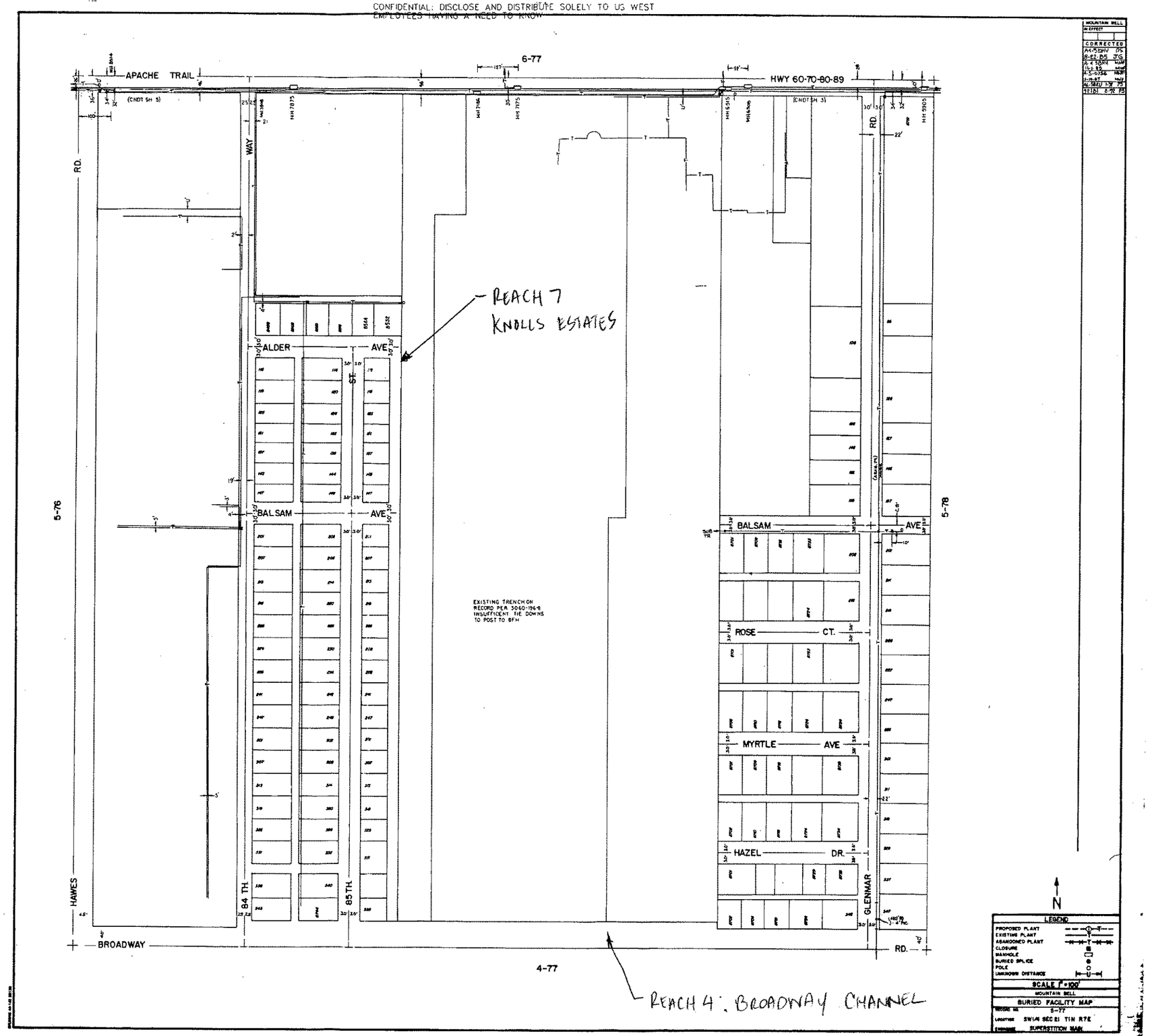


S-78

CHRIS LERTIQUE (MLERTIQ) 12/10/2003 07:02 CLLI:SPRSAZMA
RECORD NO: BURSH5-77 SHEET:1 REV:1

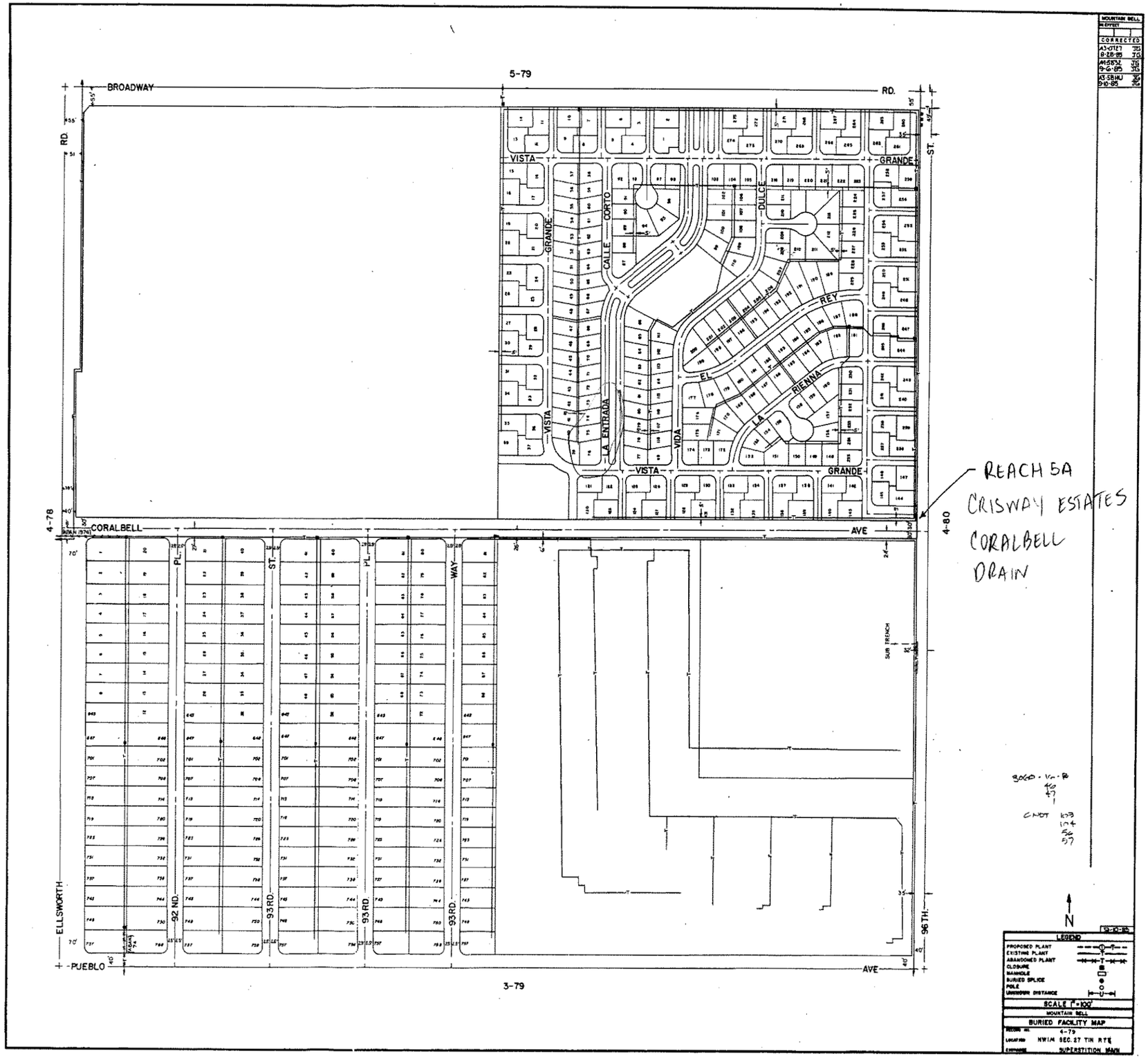
CONFIDENTIAL: DISCLOSE AND DISTRIBUTE SOLELY TO US WEST EMPLOYEES HAVING A NEED TO KNOW

INSTALLATION RECORDS ARE FOR THE INTERNAL USE OF THE FACILITY OWNER IN LOCATING ITS UNDERGROUND FACILITIES AND ARE NOT INTENDED TO BE RELIED ON BY OTHERS. FOR UNDERGROUND FACILITIES LOCATIONS CALL BLUE STAKE (602) 263-1100 IN MARICOPA COUNTY, OUTSIDE OF MARICOPA COUNTY, CALL 1-800-STAKEIT



5-77

MARJORIE MCCOMB (MMCCOMB) 08/19/1997 16:49 CLLI:SPRSAZMA
RECORD NO: BURSH4-79 SHEET:1 REV:1



4-79

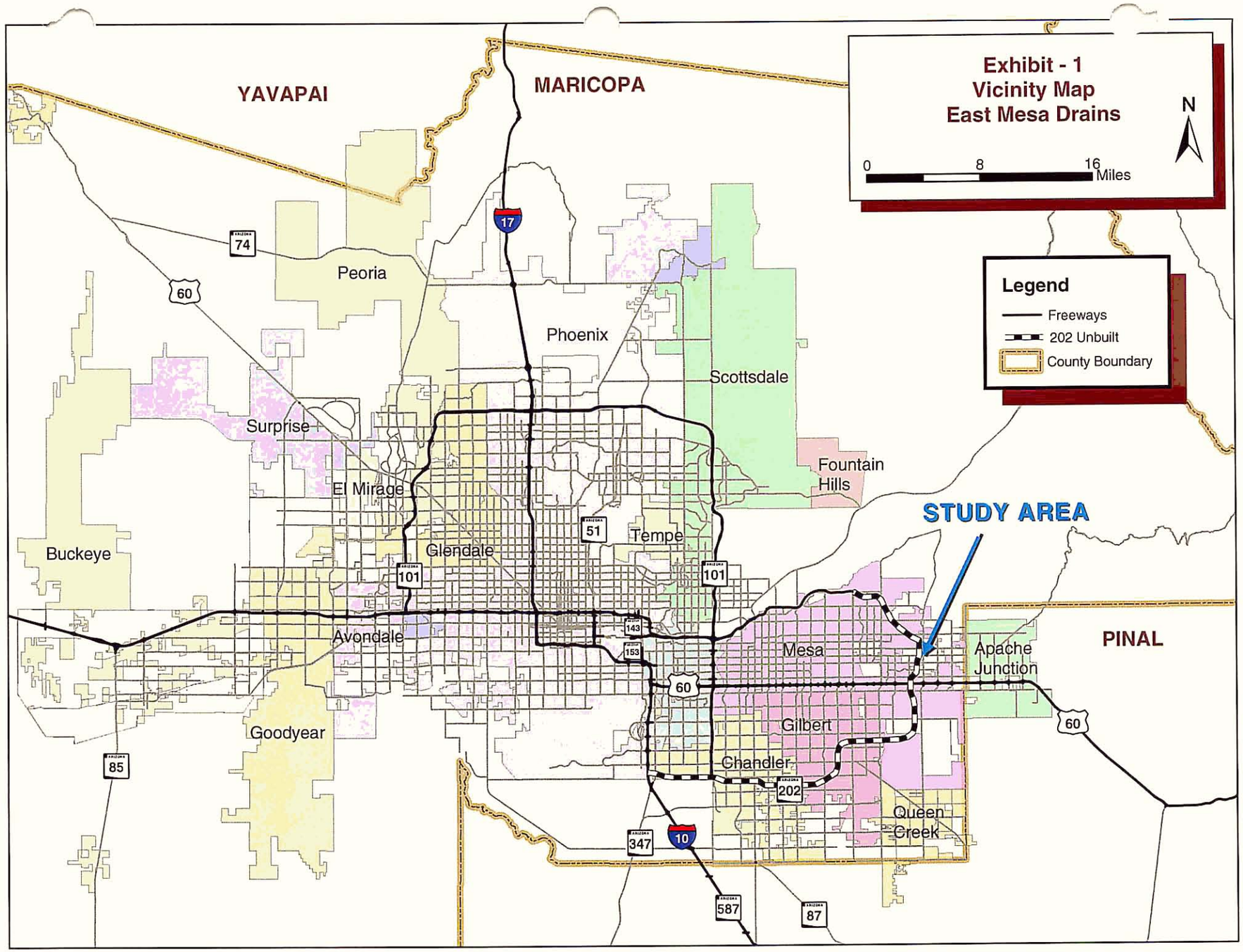


Exhibit - 1
Vicinity Map
East Mesa Drains
N
0
8
16
Miles
Legend
Freeways
202 Unbuilt
County Boundary
YAVAPAI
MARICOPA
PINAL
STUDY AREA
Peoria
Phoenix
Scottsdale
Surprise
El Mirage
Fountain Hills
Buckeye
Glendale
Tempe
Avondale
Mesa
Apache Junction
Goodyear
Gilbert
Chandler
Queen Creek
17
74
60
51
101
143
153
202
85
347
10
587
87