Conditional Letter of Map Revision

C.W. Ranch

Prepared By:

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for

Beazer Homes
2005 West 14th Street, Suite 100
Tempe, Arizona 85281

JN 45-101651

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Engineer:

Paul Sclafani, P.E.

September 16, 2003

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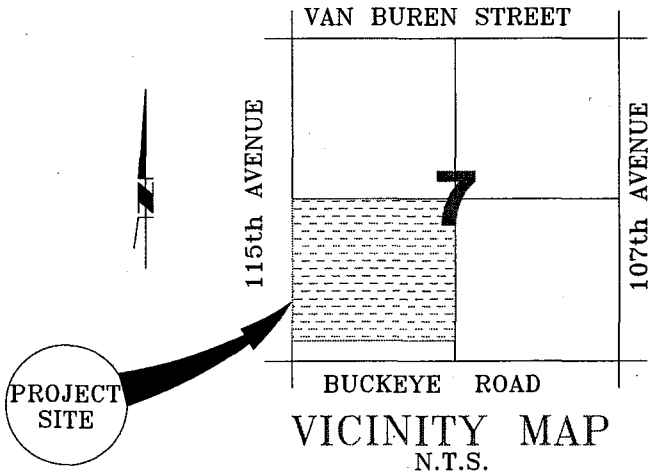
1.0 Introduction

CW Ranch is a proposed 126-acre (gross), single-family residential development located just north of the intersection of 115th Avenue and Buckeye Road. The project site encompasses a portion of the southwest quarter of Section 7, Township 1 North, Range 1 East of the Gila and Salt River Base and Meridian, in the City of Avondale, Maricopa County, Arizona. The vicinity map below shows the general location of the proposed development.

The current zoning for this site is PADD. A City of Avondale benchmark is the vertical basis of the design, and is described as "North Brass Cap in hand hole at intersection of 115th Avenue and Buckeye Road, Elevation 987.43 feet"



The current land cover consists of agricultural fields with a flat, uniform grade that slopes approximately 0.30% to the southwest. Runoff is mainly shallow sheet flow directed across the agricultural fields. Existing roads and irrigation ditches disrupt the shallow sheet flow and concentrate some of the flow.

FEMA's Flood Insurance Rate Map (FIRM) 04013C2085F and 04013C2095E, effective July 19th, 2001, classifies the project site as Zone AH, defined as "Flood Depths of 1 to 3 feet (usually areas of ponding) with base flood elevations determined", Zone AE, defined as "Base flood elevations determined", and Zone X, defined as "Areas of 500-year flood; areas of 100-year with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from the 100-year flood". Appendix B contains the Effective FEMA maps and other information from the Flood Insurance Study for Maricopa County. The

Elevation Reference Marks listed in the FEMA Study are 0.36 feet lower than the City of Avondale Benchmarks.

CW Ranch is bordered by 115th Avenue to the west and the Burlington Northern/Santa Fe Railroad to the south. The eastern boundary of the site is shared with an agricultural field. The northern boundary is shared with the proposed City of Avondale Government Center, which is currently under construction. Appendix F contains the grading plans for the proposed development. The cover sheet to those plans shows the boundary of the property and the adjacent property owners.

2.0 Purpose of Study

The purpose of this study is to revise the effective floodplain, as it is delineated on the current FIRM, to represent improvements to drainage through the project. These improvements include two proposed channels, one that runs along the southern boundary of the project and another that runs north and south through the development. The propose channels were sized to reduce the Flood Hazard Area (FHA) so that all of the residential lots are out of the floodplain. To do this, existing studies of the area were obtained from Maricopa County. The computer models from these studies were then modified to represent the drainage improvements. This report summarizes the methodology used to modify the existing drainage studies.

3.0 Previous Studies

There are two existing reports that discuss the current drainage conditions and proposed drainage improvements in the vicinity of C.W. Ranch. They are the *Floodplain Delineation of the Tolleson Area*, by Dibble and Associates, and the *Durango Area Drainage Master Plan*, also by Dibble and Associates. Both reports were prepared for the Flood Control District of Maricopa County. Each report is discussed below.

3.1 Floodplain Delineation of the Tolleson Area

The *Floodplain Delineation of the Tolleson Area*, by Dibble & Associates for the Flood Control District of Maricopa County, contains the peak flow calculations and floodplain delineation along the Southern Pacific Railroad at the southern edge of the project. This study represents the effective Flood Insurance Study (FIS) on which the FEMA Flood Insurance Rate Maps are based. The copy of the FIRM in Appendix B shows CW Ranch in relation to the effective floodplain boundary.

Appendix B.4 shows the drainage areas from the Floodplain Delineation of the Tolleson Area. C.W. Ranch is part of Sub-Basin KD, a 0.717 square mile sub-basin that has a concentration point at the southwest corner of C.W. Ranch. The southern portion of C.W. Ranch is located in part of the floodplain. Near the southeast corner of the site, the existing study assumes that some of the water from the floodplain flows to the south across the railroad tracks (DILD), reducing the peak flow that enters the site (RTLEKD). The concentration point CPKD is located at the southwest corner of C.W. Ranch. The peak flows at these locations are summarized in Table 1, in Appendix A.

3.2 Durango Area Drainage Master Plan

The Flood Control District of Maricopa County commissioned Dibble & Associates to create the *Durango Area Drainage Master Plan (ADMP)* in order to identify and resolve drainage problems in this area. The ADMP re-analyzed the existing peak flows for both the 100-year 6-hour and the 100-year 24-hour storms, based on the results obtained from the *Floodplain Delineation of the Tolleson Area* study. The drainage point and sub-basin names are the same as those in the *Floodplain Delineation of the Tolleson Area*. Both the 100-year 6-hour and the 100-year 24-hour storms were analyzed as part of the ADMP. Appendices A and B detailed information on previous and current study, including comparison of the flows , comparison of the effective, existing and proposed water surface elevations.

The ADMP identified the *Durango Regional Outfall Project* that includes a preliminary design of a drainage channel and series of detention basins that would channelize the floodplain located in the southern portion of C.W. Ranch. The proposed alignment of the *Durango Regional Outfall Channel (DROC)* is located along the length of the southern boundary of C.W. Ranch. According to preliminary plans by Dibble & Associates, the top width of the channel is to be 110.1 feet, with a design 100-year flow of 931 cfs. The DROC is to be a landscape earthen channel.

4.0 Proposed Conditions

4.1 North-South Channel

Peak flow values from the Durango ADMP, listed in Table 1, are the most up-to-date values for the drainage along the southern boundary of C.W. Ranch. Typically the 100-year, 24-hour storm produces a higher peak flow than the 6-hour storm. Because SUBKD is a small drainage area, the 100-year-6 hour storm produces a higher peak flow in the field to the north than the 24-hour storm, as shown in Table 1. The ADMP reports a peak flow of 465 cfs along the southern boundary of C.W. Ranch (RTLEKD), with only a portion of it entering the site, and a peak flow of 316 cfs leaving SUBKD.

Because C.W. Ranch is a part of SUBKD it was necessary to subdivide the drainage areas in SUBKD into smaller drainage areas in order to get an accurate estimate of the offsite flows impacting the site from the north. RBF Consulting determined the offsite runoff from these fields using the U.S. Army Corp of Engineers HEC-1 Hydrology Software. See Appendix D for HEC-1 results.

There are approximately 285 acres of agricultural fields north and northeast of the project site included in SUBKD that drain toward C.W. Ranch. The offsite drainage areas were subdivided into two drainage areas, SUBKD1 and SUBKD2. SUBKD1 consists of the two fields northeast of C.W. Ranch, and SUBKD2 consists of the two fields north of the project site.

SUBKD1 has a 100-year 6-hour peak flow of 144 cfs near the northeast corner of C.W. Ranch. This flow will be routed through the site by a North-South trapezoidal channel. The SUBKD2 has a 100-year, 6-hour peak flow of 161 cfs. This flow backs up behind the existing irrigation ditches north of C.W. Ranch (located offsite), and discharges into 115th Avenue.

A drainage channel will be constructed to route the offsite flows from the agricultural fields to the northeast through the project, to the proposed DROC. The proposed City of Avondale Government Center north of the site will eliminate the flow split at the northeast corner of the site, resulting in a total of 144 cfs to enter the site from Subbasin KD1.

The proposed channel is designed to be a trapezoidal grass lined channel (a roughness of 0.04) with a bottom width of 6 feet and 4:1 side slopes that can carry the necessary 144 cfs from the northeast corner of the site to the south offsite retention basin/channel. The top width of this channel is 34 feet. The 144 cfs contained within the channel will pass under a proposed culvert crossing at Coldwater Ranch Boulevard via a 5 barrel 30" RGRCP culvert. (See Exhibit C.5 for Channel Cross Sections and Exhibit C.6 for a Culvert Schematic). The 100-year water surface profile for this channel was computed using the Corps of Engineers HEC-RAS program. The starting conditions for this computer model are based on normal depth calculations with an initial slope of 0.0023 ft/ft. The 100-year computed water surface from the DROC has an insignificant influence on the North-South channel. See Appendix E3 for the computer models for this channel. The summary of water surface elevation tables can be found in Appendix A.

The future City of Avondale/County complex plans to retain the 100-year 2-hour storm volume as part of the development. Offsite flows larger than the 100-year 2-hour storm will discharge onto 115th Avenue. Two catch basins have been installed as part of the city's improvements along 115th Avenue and these catch basins are discharging into retention basins located within C.W. Ranch.

4.2 Durango Regional Offsite Channel (DROC)

In addition to the North-South channel, a channel will be constructed along the southern project boundary according to the preliminary design of the Durango Regional Outfall Channel. The channel will be approximately 7 feet deep, with 6 to 1 side slopes, a 40-foot bottom width, and a slope of 0.0013. The channel will drain to the existing culvert at 115th Avenue. A 126 foot wide drainage tract has been set aside along the southern boundary to allow for the construction of the proposed 110.1 foot DROC.

The Flood Control District's design flow, based on regional studies for this channel, is approximately 931 cfs. The computation of this flow includes a large detention basin located at the upstream limit of C.W. Ranch. However, based on current development plans in the area, Maricopa County no longer expects the regional detention pond upstream of C.W. Ranch to be built. Therefore, the latest HEC-1 model was revised to reflect no detention upstream of C.W. Ranch. This resulted in increased offsite flows through the DROC, from 931 cfs to 1,158 cfs. After combining with offsite drainage from the North-South Channel, the 100-Year peak design discharge in the DROC increased to 1,164 cfs beyond confluence with North South Channel.

The portion of the channel that will be constructed for this project runs parallel with the southern edge of the project boundary from 115th Street to 107th Street. Future plans include construction of additional segments of the flood control channel by extending the Durango Regional Outfall Channel upstream of 107th Ave.

HEC-1 was used to analyze the proposed storage capacity of the channel. The inflow hydrograph for the routing procedure includes all of the drainage area upstream of the 115th culvert. Exhibit C.2 shows the results of the storage routing and the storage-rating curve used in the HEC-1 analysis.

Hydraulic Models being submitted with this application can be summarized as below

1. Duplicate effective Model: This is the duplicate of the Effective Model corresponding to Flood Insurance Study for this area dated July 19th, 2001.

2. Existing Conditions Model: The Effective model has been modified to reflect existing field conditions since the FIS was completed. Including addition of a culvert at 115th Ave, that was not initially modeled by the FIS.

3. Proposed Conditions Model: The Proposed conditions Model builds ion the existing conditions represents proposed physical changes at the project site .

In addition to the analysis of the storage capacity of the DROC, the 100-year water surface profile was computed using HEC-RAS. The resulting water surface elevation is higher at every location and therefore is used to map the proposed floodplain. Exhibit C.2 shows the location of the cross sections along with the computed water surface elevations.

5.0 FEMA Forms

FEMA's MT-2 forms are supplied on the following pages in support of this Conditional Letter of Map Request. Explanations necessary to clarify the provided information are included following the forms.

6.0 Conclusion

The purpose of this request is to conditionally revise the floodplain delineation from what is shown on the effective FIRM panel numbers 04013C2085F and 04013C2095E to what is shown in the Annotated FIRM map in Exhibit C.3. The Floodplain Work Map provided in Exhibit C.2 also shows the results of this study and the revisions requested. Models supporting this request are included in Appendix E and electronically in Appendix G. The preliminary grading plans for the channels and the adjacent lots are provided in Appendix F. Once the construction of the project is complete, the construction plans will be revised to represent "As-Built" conditions, and a request for a Letter of Map Revision will be submitted to both the local communities and to FEMA.

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FEDERAL EMERGENCY MANAGEMENT AGENCY

OVERVIEW & CONCURRENCE FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK BURDEN DISCLOSURE NOTICE

Public reporting burden for this form is estimated to average 1 hour per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

A. REQUESTED RESPONSE FROM FEMA

This request is for a (check one):

☒ CLOMR: A letter from FEMA commenting on whether a proposed project, if built as proposed, would justify a map revision, or proposed hydrology changes (See 44 CFR Ch. 1, Parts 60, 65 & 72).

☐ LOMR: A letter from FEMA officially revising the current NFIP map to show the changes to floodplains, regulatory floodway or flood elevations. (See Parts 60 & 65 of the NFIP Regulations.)

B. OVERVIEW

1. The NFIP map panel(s) affected for all impacted communities is (are):

Community No.	Community Name	State	Map No.	Panel No.	Effective Date
Ex: 480301 480287	City of Katy Harris County	TX TX	480301 48201C	0005D 0220G	02/08/83 09/28/90
040038	CITY OF AVONDALE	AZ	04013C	2085F	07/19/01
				2095E	07/19/01

2. Flooding Source: Durango Regional Outfall Channel Along the Southern Pacific Railroad and Tributary

3. Project Name/Identifier: CW RANCH

4. FEMA zone designations affected: AH, AE (choices: A, AH, AO, A1-A30, A99, AE, AR, V, V1-V30, VE, B, C, D, X)

5. Basis for Request and Type of Revision:

a. The basis for this revision request is (check all that apply)

☒ Physical Change ☒ Improved Methodology/Data

☐ Regulatory Floodway Revision ☐ Other (Attach Description)

Note: A photograph and narrative description of the area of concern is not required, but is very helpful during review.

b. The area of revision encompasses the following types of flooding and structures (check all that apply)

Types of Flooding: ☒ Riverine ☐ Coastal ☐ Shallow Flooding (e.g., Zones AO and AH)

☐ Alluvial fan ☐ Lakes ☐ Other (Attach Description)

Structures: ☒ Channelization ☐ Levee/Floodwall ☒ Bridge/Culvert

☐ Dam ☒ Fill ☐ Other, Attach Description

C. REVIEW FEE

Has the review fee for the appropriate request category been included? ☒ Yes Fee amount: $4,000

☐ No, Attach Explanation

Please see the FEMA Web site at http://www.fema.gov/fhm/frm_fees.shtm **for Fee Amounts and Exemptions.**

D. SIGNATURE

All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Name: ANTHONY SUMNER	Company: BEAZER HOMES	
Mailing Address: 2005 W. 14TH STREET, STE 100 TEMPE, ARIZONA 85281	Daytime Telephone No.: 480-967-8655	Fax No.: 480-967-2780
	E-Mail Address: asumner@beazer.com	
Signature of Requester (required):		Date: 9.16.03

As the community official responsible for floodplain management, I hereby acknowledge that we have received and reviewed this Letter of Map Revision (LOMR) or conditional LOMR request. Based upon the community's review, we find the completed or proposed project meets or is designed to meet all of the community floodplain management requirements, including the requirement that no fill be placed in the regulatory floodway, and that all necessary Federal, State, and local permits have been, or in the case of a conditional LOMR, will be obtained. In addition, we have determined that the land and any existing or proposed structures to be removed from the SFHA are or will be reasonably safe from flooding as defined in 44CFR 65.2(c), and that we have available upon request by FEMA, all analyses and documentation used to make this determination.

Community Official's Name and Title:		Telephone No.:
Community Name:	Community Official's Signature (required):	Date:

CERTIFICATION BY REGISTERED PROFESSIONAL ENGINEER AND/OR LAND SURVEYOR

This certification is to be signed and sealed by a licensed land surveyor, registered professional engineer, or architect authorized by law to certify elevation information. All documents submitted in support of this request are correct to the best of my knowledge. I understand that any false statement may be punishable by fine or imprisonment under Title 18 of the United States Code, Section 1001.

Certifier's Name: PAUL SCLAFANI	License No.:	Expiration Date:
Company Name: [illegible]	Telephone No.: 602-467-2200	Fax No.: 602-467-2201
Signature:		Date:

PRELIMINARY - FOR REVIEW ONLY
These documents are for Design Reviews and not intended for Construction, Bidding or Permit Purposes. They were prepared by, or under the supervision of:
PAUL SCLAFANI, P.E. 39722 AZ
Type or Print Name PE # State Date

Ensure the forms that are appropriate to your revision request are included in your submittal.

Form Name and Number	Reason Required
☒ Riverine Hydrology and Hydraulics Form (Form 2)	New or revised discharges or water-surface elevations
☒ Riverine Structures Form (Form 3)	Channel is modified, addition/revision of bridge/culverts, addition/revision of levee/floodwall, addition/revision of dam
☐ Coastal Analysis Form (Form 4)	New or revised coastal elevations
☐ Coastal Structures Form (Form 5)	Addition/revision of coastal structure
☐ Alluvial Fan Flooding Form (Form 6)	Flood control measures on alluvial fans

PRELIMINARY - FOR REVIEW ONLY
These documents are for Design Reviews and not intended for Construction, Bidding or Permit Purposes. They were prepared by, or under the supervision of:
Seal (Optional)
PAUL SCLAFANI, P.E. 39722 AZ
Type or Print Name PE # State Date

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Durango Regional Outfall Channel Along the Southern Pacific Railroad
Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section 2) ☐ No existing analysis ☐ Improved data
☐ Alternative methodology ☐ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)
107th and 115th Avenue		964	1164

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model HEC-1 [TR-20, HEC-1, HEC-HMS etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters) and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/fhm/en_modl.shtm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	El Mirage Road	0.387	964	964
Upstream Limit	River Mile 2.056	2.056	992.39	992.58

2. Hydraulic Method Used

Hydraulic Analysis HEC-RAS [HEC-2 , HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/fhm/frm_soft.shtm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☒ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name: Effective.prj	Floodway File Name:
Corrected Effective Model*	Natural File Name: CWRANCH.prj	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name: CWRANCH.prj	Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name: CWRANCH.prj	Floodway File Name:
Other - (attach description)	Natural File Name: *see introduction*	Floodway File Name:

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) – for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/fhm/en_modl.shtm.

C. MAPPING REQUIREMENTS

A **certified topographic map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM,** annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) increase? ☒ Yes ☐ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☒ Yes ☐ No

If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(a)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☒ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: Durango Regional outfall channel
Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization.....complete Section B
Bridge/Culvert.....complete Section C
Dam .....complete Section D
Levee/Floodwall .....complete Section E
Sediment Transport.....complete Section F (if required)

Description Of Structure

1. Name of Structure: Existing Culvert at 115th Avenue

Type (check one): ☒ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: 115th Avenue at Cross section 1.387

Downstream Limit/Cross Section: 0387 at at El Mirage Rd

Upstream Limit/Cross Section: 2.056 near River Mile 2

2. Name of Structure:

Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section: 0

Upstream Limit/Cross Section:

3. Name of Structure:

Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section:

Upstream Limit/Cross Section:

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: Durango Regional outfall channel

Name of Structure: Durango Regional outfall channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☒ Other (Describe): Stable Channel Section as described in Project Summary
- ☐ Drop structures
- ☐ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry 931 (cfs) and/or the -year flood.

The design elevation in the channel is based on (check one):

☒ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify):

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: Durango Regional outfall channel

Name of Structure: Culvert at 115th Ave

1. This revision reflects (check one):

- ☒ New bridge/culvert not modeled in the FIS
- ☐ Modified bridge/culvert previously modeled in the FIS
- ☐ New analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8):
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☐ Dimensions (height, width, span, radius, length)
- ☐ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Skew Angle
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations – Upstream and Downstream
- ☐ Top of Road Elevations – Upstream and Downstream
- ☐ Structure Invert Elevations – Upstream and Downstream
- ☐ Stream Invert Elevations – Upstream and Downstream
- ☐ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE HYDROLOGY & HYDRAULICS FORM

O.M.B No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 3 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: North Sout channel
Note: Fill out one form for each flooding source studied

A. HYDROLOGY

1. Reason for New Hydrologic Analysis (check all that apply)

☐ Not revised (skip to section 2) ☐ No existing analysis ☒ Improved data
☐ Alternative methodology ☒ Proposed Conditions (CLOMR) ☐ Changed physical condition of watershed

2. Comparison of Representative 1%-Annual-Chance Discharges

Location	Drainage Area (Sq. Mi.)	FIS (cfs)	Revised (cfs)
111th Avenue	--		144

3. Methodology for New Hydrologic Analysis (check all that apply)

☐ Statistical Analysis of Gage Records ☒ Precipitation/Runoff Model HEC-1 [TR-20, HEC-1, HEC-HMS etc.]
☐ Regional Regression Equations ☐ Other (please attach description)

Please enclose all relevant models in digital format, maps, computations (including computation of parameters) and documentation to support the new analysis. The document, "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/fhm/en_modl.shtm.

4. Review/Approval of Analysis

If your community requires a regional, state, or federal agency to review the hydrologic analysis, please attach evidence of approval/review.

5. Impacts of Sediment Transport on Hydrology

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport) of Form 3. If No, then attach your explanation for why sediment transport was not considered.

B. HYDRAULICS

1. Reach to be Revised

	Description	Cross Section	Water-Surface Elevations (ft.) Effective	Proposed/Revised
Downstream Limit	DURANGO REGIONAL OUTFALL CHANNEL	0	-----	986.57
Upstream Limit	North end of 111TH Avenue	2222	----	994.93

2. Hydraulic Method Used

Hydraulic Analysis HEC-RAS [HEC-2 , HEC-RAS, Other (Attach description)]

B. HYDRAULICS (CONTINUED)

3. Pre-Submittal Review of Hydraulic Models

FEMA has developed two review programs, CHECK-2 and CHECK-RAS, to aid in the review of HEC-2 and HEC-RAS hydraulic models, respectively. These review programs verify that the hydraulic estimates and assumptions in the model data are in accordance with NFIP requirements, and that the data are comparable with the assumptions and limitations of HEC-2/HEC-RAS. CHECK-2 and CHECK-RAS identify areas of potential error or concern. These tools do not replace engineering judgment. CHECK-2 and CHECK-RAS can be downloaded from http://www.fema.gov/fhm/frm_soft.shtm. We recommend that you review your HEC-2 and HEC-RAS models with CHECK-2 and CHECK-RAS. If you disagree with a message, please attach an explanation of why the message is not valid in this case. Review of your submittal and resolution of valid modeling discrepancies will result in reduced review time.

HEC-2/HEC-RAS models reviewed with CHECK-2/CHECK-RAS? ☒ Yes ☐ No

4. Models Submitted

Duplicate Effective Model*	Natural File Name: ---	Floodway File Name:
Corrected Effective Model*	Natural File Name: ---	Floodway File Name:
Existing or Pre-Project Conditions Model	Natural File Name: ----	Floodway File Name:
Revised or Post-Project Conditions Model	Natural File Name: NSChannel.prj	Floodway File Name:
Other - (attach description)	Natural File Name:	Floodway File Name:

*Not required for revisions to approximate 1%-annual-chance floodplains (Zone A) – for details, refer to the corresponding section of the instructions.

The document "Numerical Models Accepted by FEMA for NFIP Usage" lists the models accepted by FEMA. This document can be found at: http://www.fema.gov/fhm/en_modl.shtm.

C. MAPPING REQUIREMENTS

A **certified topographic map** must be submitted showing the following information (where applicable): the boundaries of the effective, existing, and proposed conditions 1%-annual-chance floodplain (for approximate Zone A revisions) or the boundaries of the 1%- and 0.2%-annual-chance floodplains and regulatory floodway (for detailed Zone AE, AO, and AH revisions); location and alignment of all cross sections with stationing control indicated; stream, road, and other alignments (e.g., dams, levees, etc.); current community easements and boundaries; boundaries of the requester's property; certification of a registered professional engineer registered in the subject State; location and description of reference marks; and the referenced vertical datum (NGVD, NAVD, etc.).

Note that the boundaries of the existing or proposed conditions floodplains and regulatory floodway to be shown on the revised FIRM and/or FBFM must tie-in with the effective floodplain and regulatory floodway boundaries. Please attach **a copy of the effective FIRM and/or FBFM,** annotated to show the boundaries of the revised 1%- and 0.2%-annual-chance floodplains and regulatory floodway that tie-in with the boundaries of the effective 1%- and 0.2%-annual-chance floodplain and regulatory floodway at the upstream and downstream limits of the area of revision.

D. COMMON REGULATORY REQUIREMENTS

1. For CLOMR requests, do Base Flood Elevations (BFEs) increase? ☐ Yes ☒ No

For CLOMR requests, if either of the following is true, please submit evidence of compliance with Section 65.12 of the NFIP regulations:
- The proposed project encroaches upon a regulatory floodway and would result in increases above 0.00 foot.
- The proposed project encroaches upon a SFHA with BFEs established and would result in increases above 1.00 foot.

2. Does the request involve the placement or proposed placement of fill? ☒ Yes ☐ No

If Yes, the community must be able to certify that the area to be removed from the special flood hazard area, to include any structures or proposed structures, meets all of the standards of the local floodplain ordinances, and is reasonably safe from flooding in accordance with the NFIP regulations set forth at 44 CFR 60.3(a)(3), 65.5(a)(4), and 65.6(a)(14). Please see the MT-2 instructions for more information.

3. For LOMR requests, is the regulatory floodway being revised? ☐ Yes ☒ No

If Yes, attach evidence of regulatory floodway revision notification. As per Paragraph 65.7(b)(1) of the NFIP Regulations, notification is required for requests involving revisions to the regulatory floodway. (Not required for revisions to approximate 1%-annual-chance floodplains [studied Zone A designation] unless a regulatory floodway is being added. Elements and examples of regulatory floodway revision notification can be found in the MT-2 Form 2 Instructions.)

4. For LOMR requests, does this request require property owner notification and acceptance of BFE increases? ☐ Yes ☒ No

If Yes, please attach proof of property owner notification and acceptance (if available). Elements of and examples of property owner notification can be found in the MT-2 Form 2 Instructions.

FEDERAL EMERGENCY MANAGEMENT AGENCY

RIVERINE STRUCTURES FORM

O.M.B. No. 3067-0148
Expires September 30, 2005

PAPERWORK REDUCTION ACT

Public reporting burden for this form is estimated to average 7 hours per response. The burden estimate includes the time for reviewing instructions, searching existing data sources, gathering and maintaining the needed data, and completing, reviewing, and submitting the form. You are not required to respond to this collection of information unless a valid OMB control number appears in the upper right corner of this form. Send comments regarding the accuracy of the burden estimate and any suggestions for reducing this burden to: Information Collections Management, Federal Emergency Management Agency, 500 C Street, SW, Washington DC 20472, Paperwork Reduction Project (3067-0148). Submission of the form is required to obtain or retain benefits under the National Flood Insurance Program. **Please do not send your completed survey to the above address.**

Flooding Source: NORTH SOUTH CHANNEL
Note: Fill out one form for each flooding source studied

A. GENERAL

Complete the appropriate section(s) for each Structure listed below:

Channelization.....complete Section B
Bridge/Culvert.....complete Section C
Dam .....complete Section D
Levee/Floodwall .....complete Section E
Sediment Transport.....complete Section F (if required)

Description Of Structure

1. **Name of Structure: COLDWATER RANCH BOULEVARD CULVERT**

Type (check one): ☒ Channelization ☒ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure: SECTION 911.33 -NORTH OF THE DURANGO REGIONAL OUTFALL CHANNEL BETWEEN 107 AND 115 STREETS

Downstream Limit/Cross Section: 797.88

Upstream Limit/Cross Section: 1024.78

2. **Name of Structure:**

Type (check one): ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section: 0

Upstream Limit/Cross Section:

3. **Name of Structure:**

Type (check one) ☐ Channelization ☐ Bridge/Culvert ☐ Levee/Floodwall ☐ Dam

Location of Structure:

Downstream Limit/Cross Section:

Upstream Limit/Cross Section:

NOTE: For more structures, attach additional pages as needed.

B. CHANNELIZATION

Flooding Source: NORTH SOUTH CHANNEL

Name of Structure: North South Channel

1. Accessory Structures

The channelization includes (check one):

- ☐ Levees [Attach Section E (Levee/Floodwall)]
- ☐ Superelevated sections
- ☐ Debris basin/detention basin
- ☐ Other (Describe):
- ☐ Drop structures
- ☐ Transitions in cross sectional geometry
- ☐ Energy dissipator

2. Drawing Checklist

Attach the plans of the channelization certified by a registered professional engineer, as described in the instructions.

3. Hydraulic Considerations

The channel was designed to carry 931 (cfs) and/or the 100-year flood.

The design elevation in the channel is based on (check one):

☒ Subcritical flow ☐ Critical flow ☐ Supercritical flow ☐ Energy grade line

If there is the potential for a hydraulic jump at the following locations, check all that apply and attach an explanation of how the hydraulic jump is controlled without affecting the stability of the channel.

☐ Inlet to channel ☐ Outlet of channel ☐ At Drop Structures ☐ At Transitions
☐ Other locations (specify):

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If Yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

C. BRIDGE/CULVERT

Flooding Source: North South Channel

Name of Structure: ColdWater Ranch Culvert

1. This revision reflects (check one):

- ☒ New bridge/culvert not modeled in the FIS
- ☐ Modified bridge/culvert previously modeled in the FIS
- ☐ New analysis of bridge/culvert previously modeled in the FIS

2. Hydraulic model used to analyze the structure (e.g., HEC-2 with special bridge routine, WSPRO, HY8):
If different than hydraulic analysis for the flooding source, justify why the hydraulic analysis used for the flooding source could not analyze the structures. Attach justification.

3. Attach plans of the structures certified by a registered professional engineer. The plan detail and information should include the following (check the information that has been provided):

- ☒ Dimensions (height, width, span, radius, length)
- ☒ Shape (culverts only)
- ☐ Material
- ☐ Beveling or Rounding
- ☐ Wing Wall Angle
- ☐ Skew Angle
- ☐ Distances Between Cross Sections
- ☐ Erosion Protection
- ☐ Low Chord Elevations – Upstream and Downstream
- ☐ Top of Road Elevations – Upstream and Downstream
- ☐ Structure Invert Elevations – Upstream and Downstream
- ☐ Stream Invert Elevations – Upstream and Downstream
- ☐ Cross-Section Locations

4. Sediment Transport Considerations

Was sediment transport considered? ☐ Yes ☒ No If yes, then fill out Section F (Sediment Transport).
If No, then attach your explanation for why sediment transport was not considered.

APPENDICES

Appendix A: Water Surface Elevation Tables

A.1 Water Surface Elevation Tables for the DROC
A.2 Water Surface Elevation Tables for the North-South Channel

APPENDIX A

Table 1: Previous Study Results in the Vicinity of C.W. Ranch

Study	SUBLE	CPLE	RSLE	DILD	RTLEKD	SUBKD	CPKD
FIS (100-yr. 24-hr.)	212	632	630	187	442	330	441
Durango ADMP (100-yr. 24-hr.)	223	675	669	206	461	316	459
Durango ADMP (100-yr. 6-hr.)	162	675	673	208	465	241	465

Table 2 Water Surface Elevations for

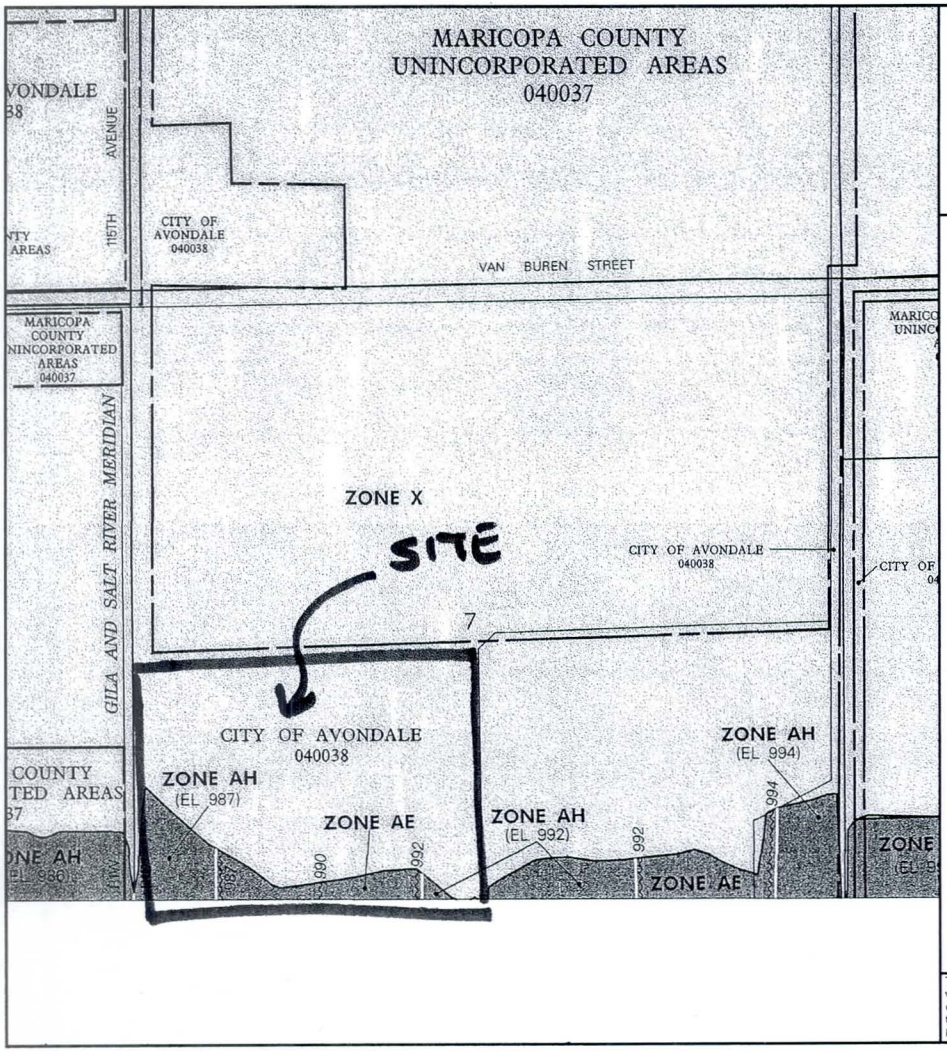
Water Surface Elevations				Difference in Water S. Elevations		
Cross Section	Proposed	Existing	Effective	Existing -Prop	Effective -Prop	Existing-Effective
2.15	993.42	993.38	993.28	-0.04	-0.14	0.1
2.056	992.58	992.88	992.39	0.30	-0.19	0.49
1.961	992.1	992.75	992.16	0.65	0.06	0.59
1.87	991.01	992.57	992.04	1.56	1.03	0.53
1.863	990.71	992.57	992.04	1.86	1.33	0.53
1.856	989.95	992.56	992.04	2.61	2.09	0.52
1.771	987.45	992.22	992	4.77	4.55	0.22
1.677	987.33	991.13	990.75	3.80	3.42	0.38
1.6295*	987.26					0
1.582	987.18	988.99	988.91	1.81	1.73	0.08
1.487	987.09	987.39	987.04	0.30	-0.05	0.35
1.399	987.02	987.03	986.97	0.01	-0.05	0.06
1.387	987	987	986.78	0.00	-0.22	0.22
1.37			986.38			
1.299999	987.01	987.01		0.00		
1.298	987.02	987.02	986.37	0.00	-0.65	0.65
1.203	986.99	986.99	986.37	0.00	-0.62	0.62
1.138	986.67	986.67	986.3	0.00	-0.37	0.37
1.131	986.59	986.59	985.56	0.00	-1.03	1.03
1.109	985.77	985.77	985.34	0.00	-0.43	0.43
1.014	984.31	984.31	983.93	0.00	-0.38	0.38
0.919	984.07	984.07	983.26	0.00	-0.81	0.81
0.883	983.44	983.44	982.76	0.00	-0.68	0.68
0.824	980.5	980.5	979.55	0.00	-0.95	0.95
0.73	976.06	976.06	975.73	0.00	-0.33	0.33
0.635	972.53	972.53	970.81	0.00	-1.72	1.72
0.54	969.76	969.76	968.91	0.00	-0.85	0.85
0.446	966.91	966.91	966.39	0.00	-0.52	0.52
0.387	964	964	964	0.00	0	0

Table 3 Water Surface Elevation Summary

Reach	River Sta	Min Ch El (ft)	W.S. Elev (ft)	Top Width (ft)
NorthSouth Channel	2222	992.38	994.93	26.43
NorthSouth Channel	1965.4	991.4	993.95	26.43
NorthSouth Channel	1767.73	990.65	993.16	26.09
NorthSouth Channel	1387.7	989.21	992.11	29.16
NorthSouth Channel	1194.38	988.47	991.85	33.06
NorthSouth Channel	1074.43	988.02	991.77	35.97
NorthSouth Channel	1024.78	987.6	991.74	38
NorthSouth Channel	911.33			
NorthSouth Channel	797.88	986.77	989.47	38
NorthSouth Channel	774.75	986.57	989.43	28.9
NorthSouth Channel	625.72	986.23	989.09	28.88
NorthSouth Channel	391.43	985.69	988.55	28.88
NorthSouth Channel	166.38	985.17	988.03	28.91
NorthSouth Channel	0	984.79	987.65	28.89

Appendix B: Existing Studies

B.1 Effective FEMA Maps
B.2 Discharge Tables from FIS
B.3 Water Surface Elevation Profiles for the DROC
B.4 Drainage Area Map from Tolleson Floodplain Delineation Study



APPROXIMATE SCALE IN FEET

1000 0 1000

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

MARICOPA COUNTY, ARIZONA AND INCORPORATED AREAS

PANEL 2085 OF 4350

(SEE MAP INDEX FOR PANELS NOT PRINTED)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
AVONDALE, CITY OF	040038	2085	F
MARICOPA COUNTY, UNINCORPORATED AREAS	040037	2085	F
PHOENIX, CITY OF	040051	2085	F
TOLLESON, CITY OF	040056	2085	F

MAP NUMBER
04013C2085 F

MAP REVISED:
JULY 19, 2001

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

Table 3. Summary of Discharges (Cont'd)

Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
Southern Pacific Railroad					
At Apache Road	2.6	220	450	650	--[1]
At Miller Road	2.0	50	210	410	--[1]
At Ray Road	4.7	110	270	360	--[1]
At Railroad Spur	2.2	120	280	320	--[1]
1.0mile north of Guadalupe Road	143.9	200	2,270	4,090	--[1]
0.25 mile north of Western Canal	131.8	130	2,160	3,950	--[1]
At Airport Entrance	2.2	120	280	320	--[1]
Southern Pacific Railroad Spur					
At Ray Road	2.5	--[1]	--[1]	790	--[1]
Southern Pacific Railroad Ditch					
At 115th Avenue	14.52	--[1]	--[1]	440[2]	--[1]
At 107th Avenue	13.55	--[1]	--[1]	930[2]	--[1]
At 99th Avenue	12.12	--[1]	--[1]	850[2]	--[1]
At 91st Avenue	10.24	--[1]	--[1]	760[2]	--[1]
At 83rd Avenue	9.68	--[1]	--[1]	980[2]	--[1]
At 69th Avenue	7.24	--[1]	--[1]	1,020[2]	--[1]
At 67th Avenue	2.46	--[1]	--[1]	1,280[2]	--[1]
Roosevelt Irrigation District Canal					
At 51st Avenue	4.65	--[1]	--[1]	1,755[2]	--[1]
East of 59th Avenue	0.50	--[1]	--[1]	650[2]	--[1]
At 83rd Avenue	9.54	--[1]	--[1]	160[2]	--[1]
At Van Buren Street, West of 83rd Avenue	0.76	--[1]	--[1]	429[2]	--[1]
Apache Creek (Apache Junction Alluvial Fan)					
At U.S. Highway 80 and 108th Street	2.64	433	831	1,021	--[1]
Dreamy Draw Wash East					
At Mouth	0.38	--[1]	--[1]	1,530	--[1]
500 feet upstream of 16th Street	--[1]	300	750	1,000	1,700
Flynn Lane Wash					
At Flynn Lane and Lincoln Drive	0.63	400	800	1,100	2,300
At Ocotillo Road	0.98	700	1,300	1,700	3,300
Granite Reef Wash					
Pima Road	6.2	74	278	644	1,431
McDowell Road	7.2	580	950	1,240	2,660
Van Buren Street	7.5	720	1,158	1,417	3,150

[1]Not Computed
[2]Decreases Due to Diversions along Southern Pacific Railroad

Table 3. Summary of Discharges (Cont'd)

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Flooding Source and Location	Drainage Area (Square Miles)	Peak Discharges (Cubic Feet per Second) 10-Year	50-Year	100-Year	500-Year
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500 feet upstream of 16th Street	--[1]	300	750	1,000	1,700
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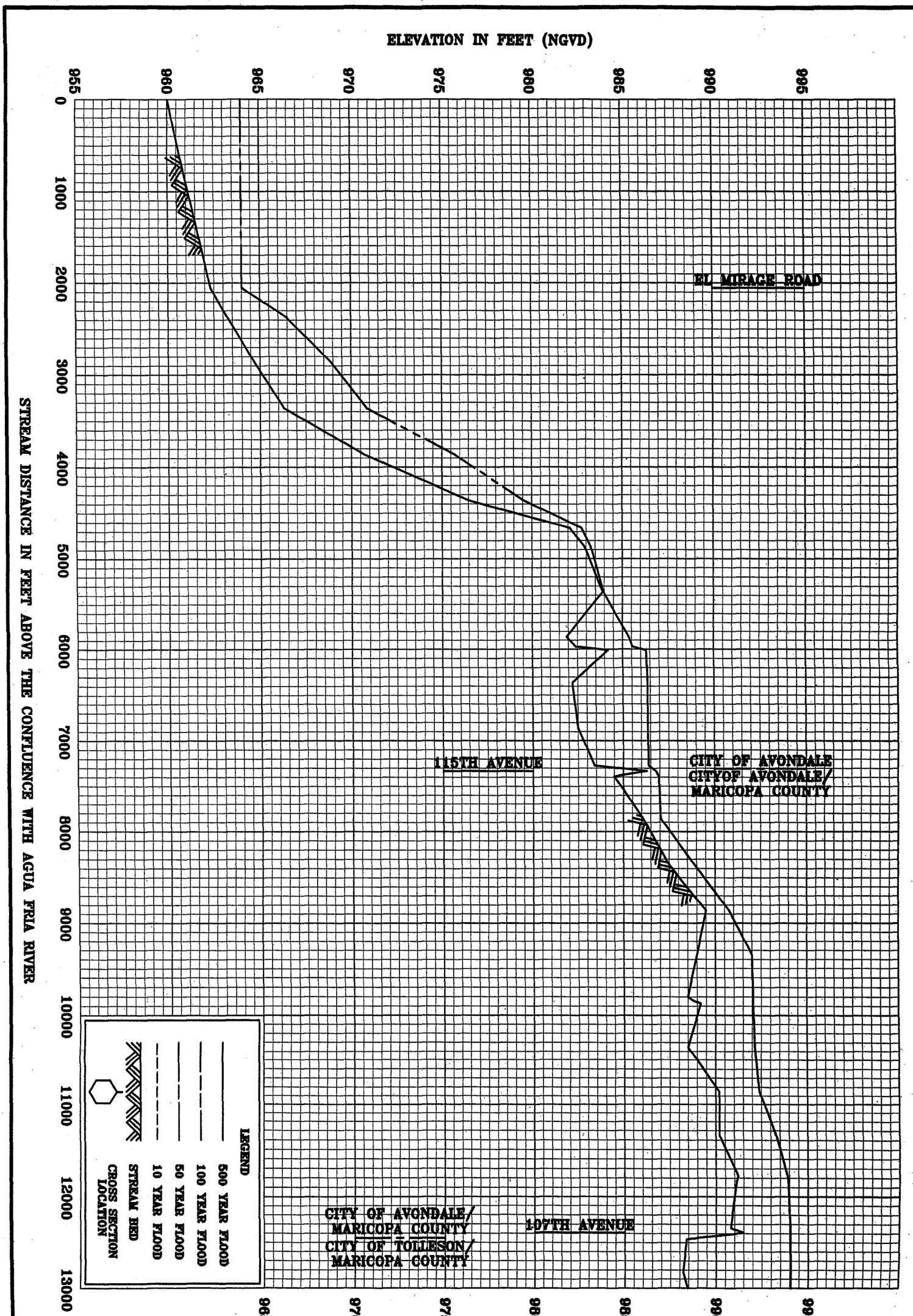
[1]Not Computed
[2]Decreases Due to Diversions along Southern Pacific Railroad

Table 3. Summary of Discharges (Cont'd)



FEDERAL EMERGENCY MANAGEMENT AGENCY

MARICOPA COUNTY, AZ

AND INCORPORATED AREAS

FLOOD PROFILES

SOUTHERN PACIFIC RAILROAD DITCH

1136P

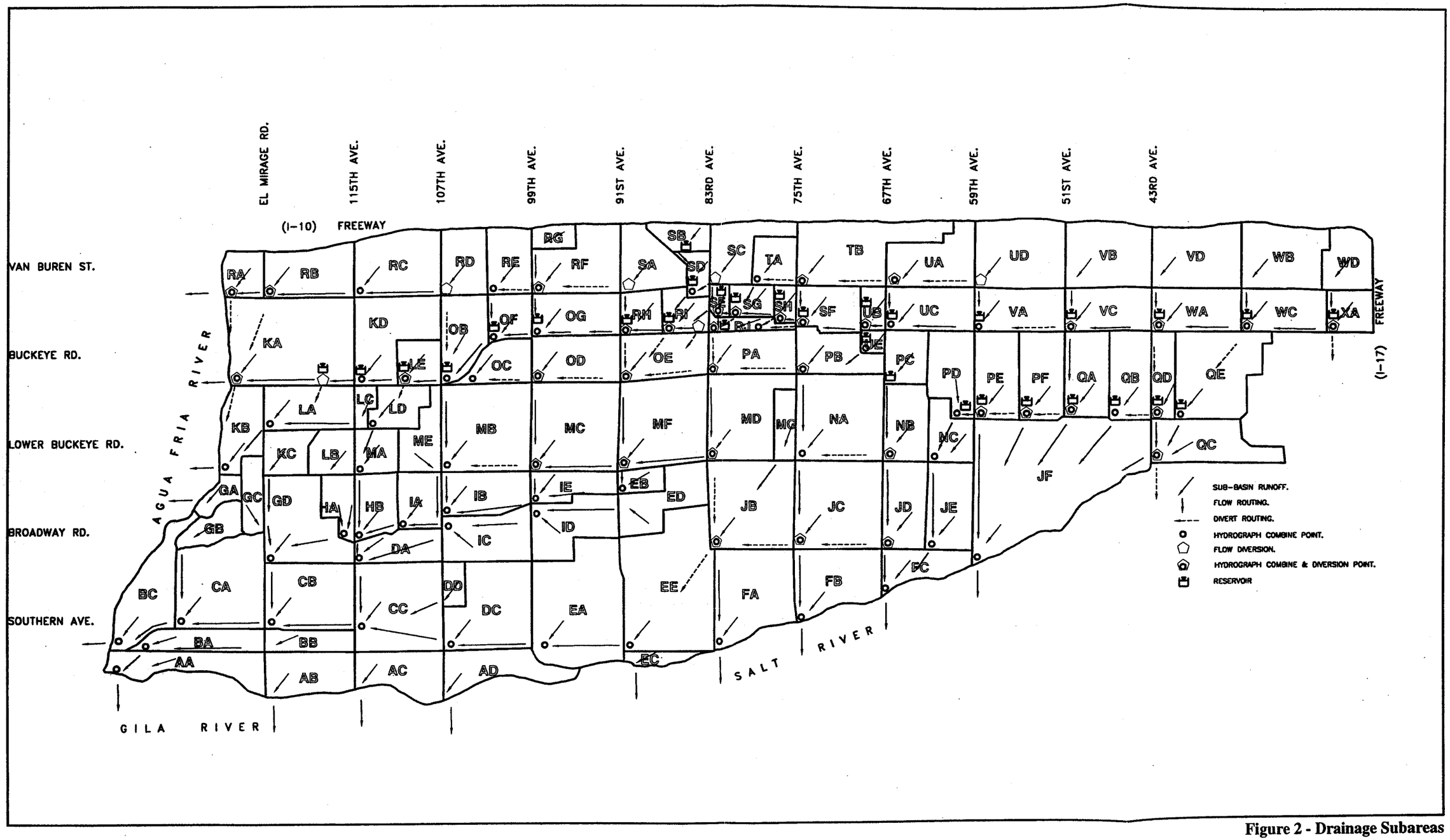
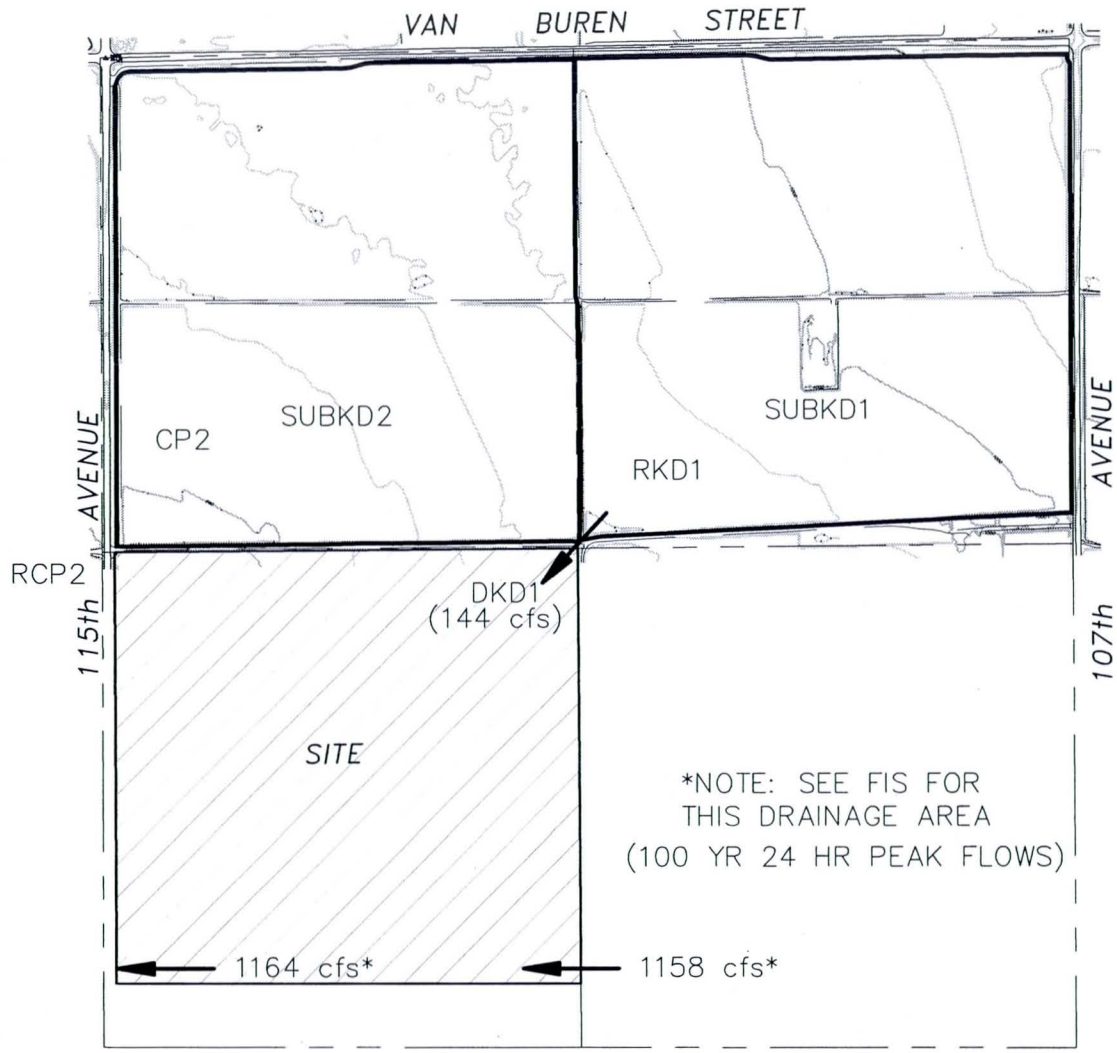


Figure 2 - Drainage Subareas

Appendix C: Exhibits

C.1 100-Year Flowrate Exhibit
C.2 Floodplain Work Map
C.3 Annotated FIRM
C.4 100-Year Profiles
C.5 Cross Sections
C.6 Culvert Schematic

EXHIBIT C.1 OFFSITE DRAINAGE AREAS
FOR
CW RANCH
(100 YR PEAK FLOWS)



SCALE: 1" = 1000'

0 1000 2000 3000

Drainage Boundary

Flow Direction

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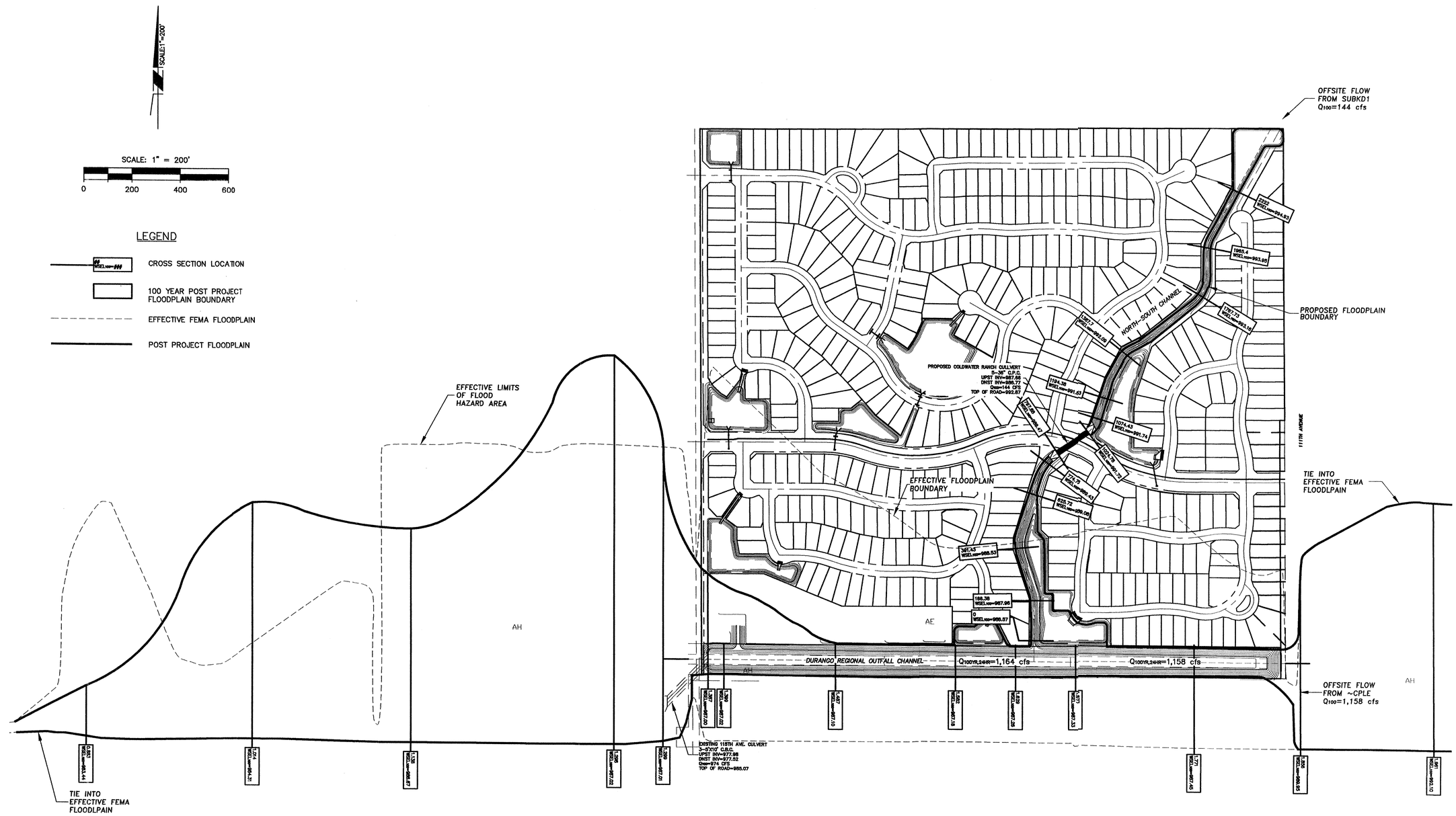
PLANNING
DESIGN
CONSTRUCTION



MANAGING ENGINEER/ SURVEYOR
P. SCHLEANN

PROJECT COORDINATOR
A. D. BARRY

FIELD SURVEY	DRAFTED	CHECKED
DESIGN/LAYOUT	DRAFTED	CHECKED

DRAWING SCALE(S) 1"=200'

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PRELIMINARY FLOODPLAIN WORK MAP

C. W. RANCH

CITY OF AVONDALE, MARICOPA CO., AZ

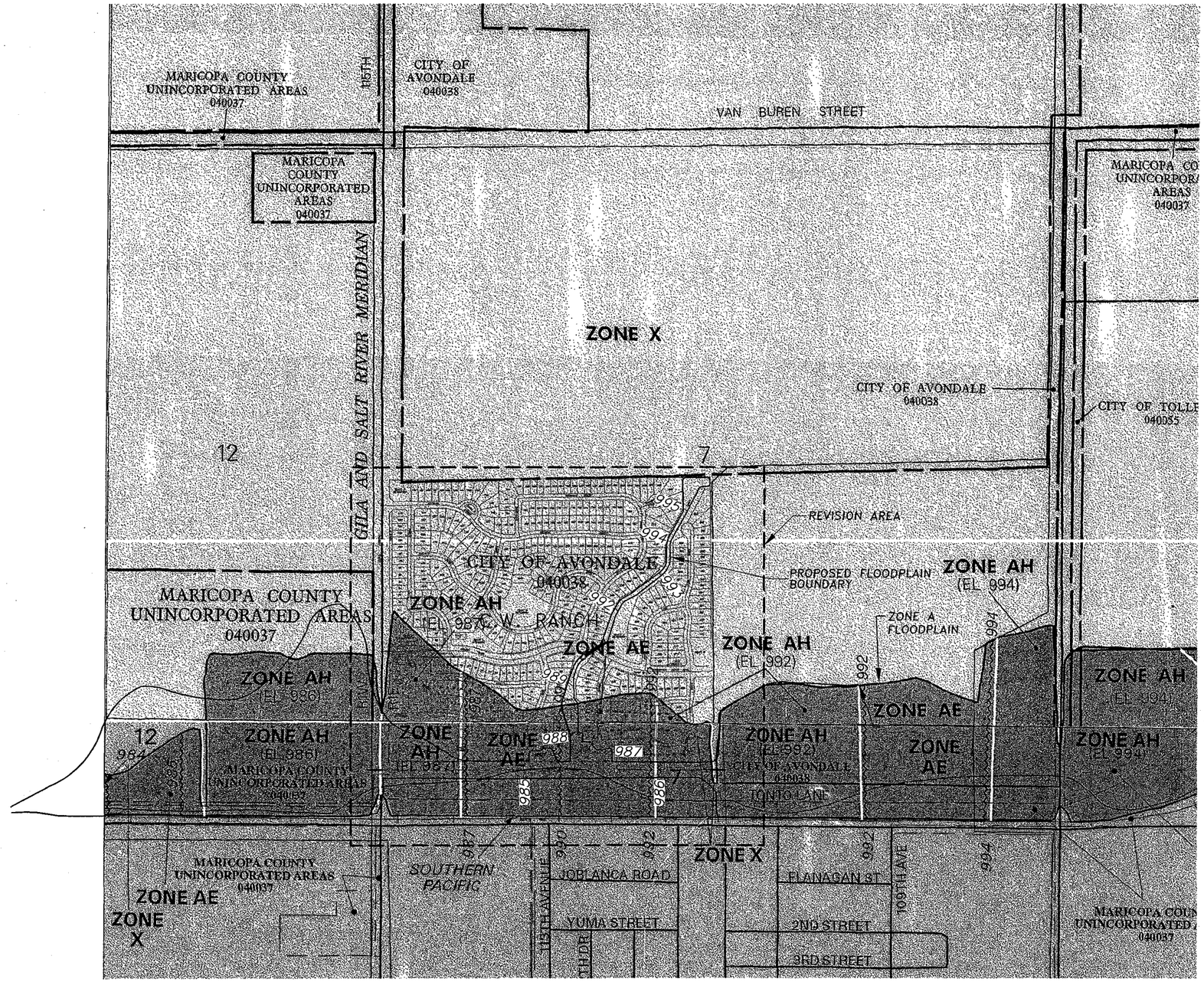
SEALED

ORIGINAL PLAN DATE
9 SEPT. 2003

LATEST REVISION DATE

SHEET NUMBER
1 OF 1

PROJECT NUMBER
45101651



ANNOTATED FIRM

PANEL 2085 OF 4350

PANEL 2095 OF 4350

RBF CONSULTING
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16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 ▪ FAX 602.467.2201 ▪ www.RBF.com

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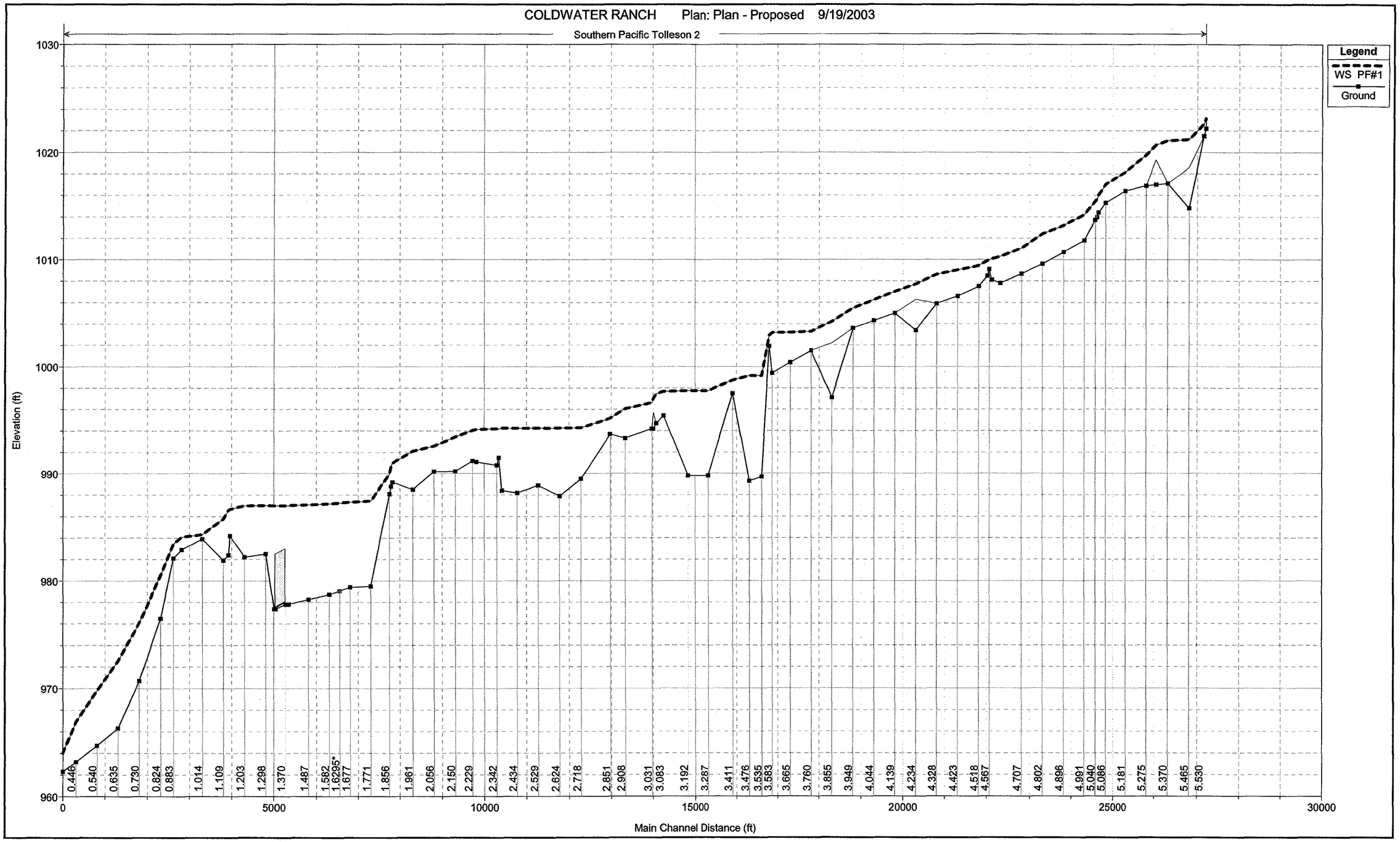
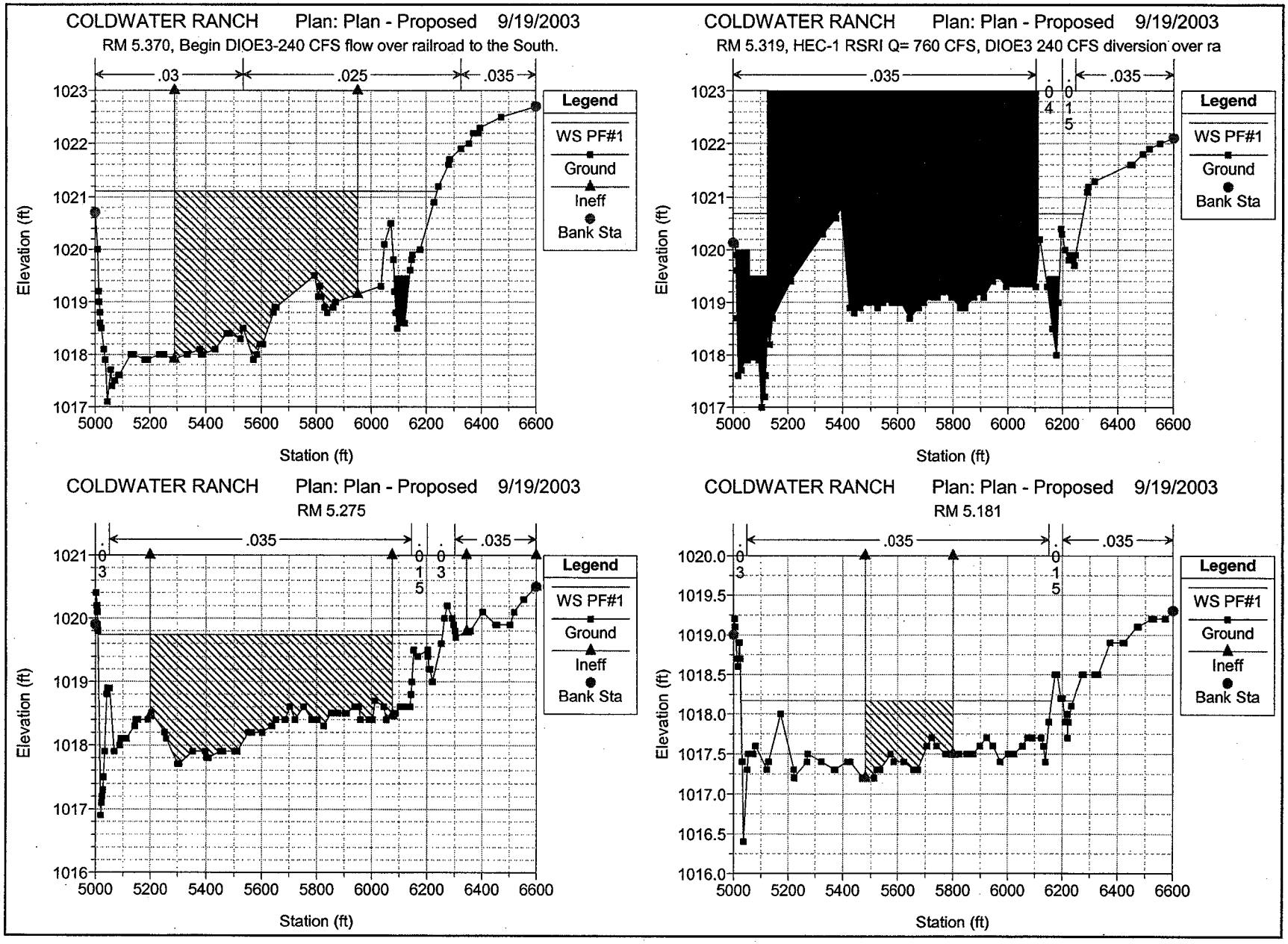
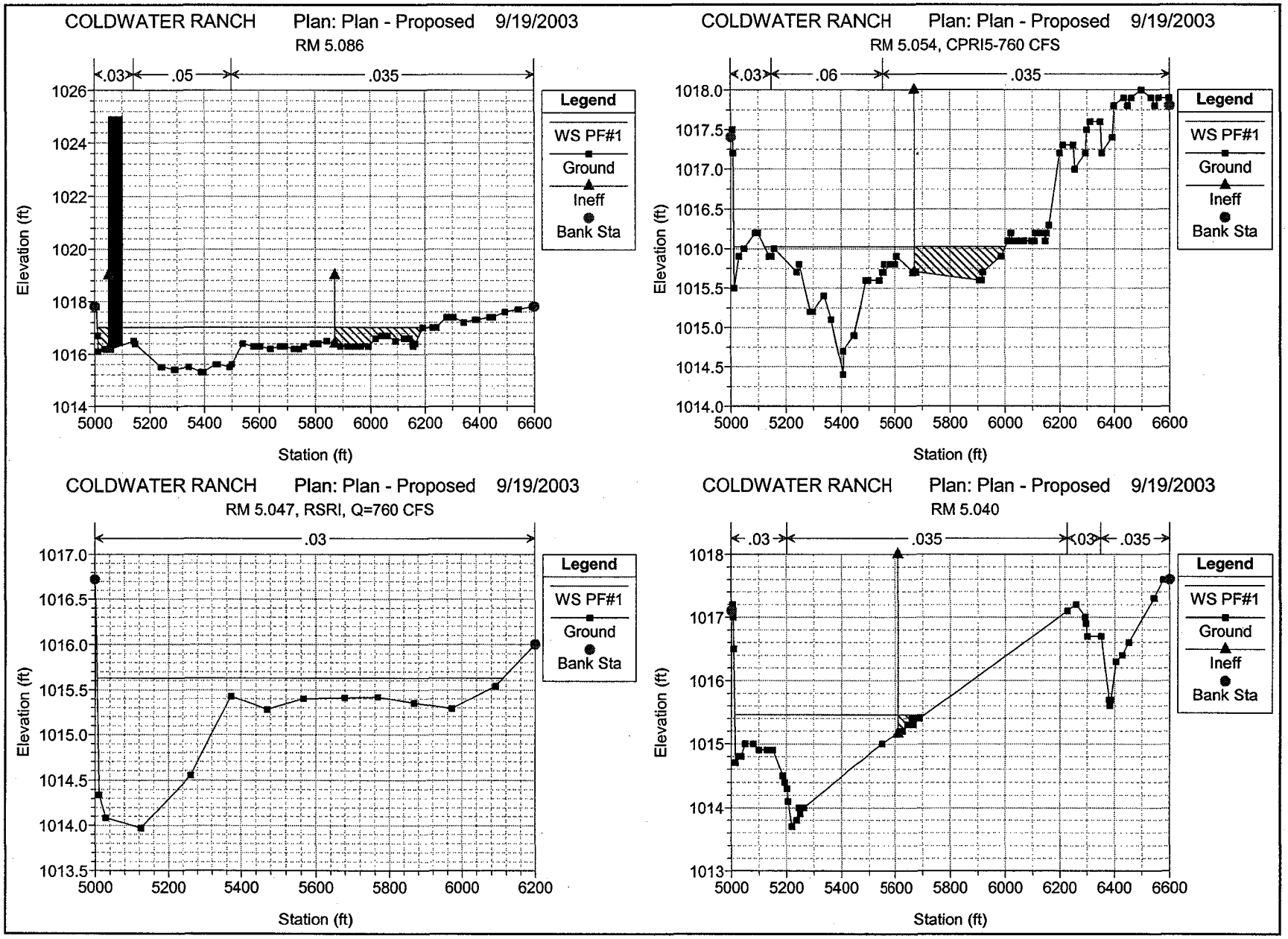
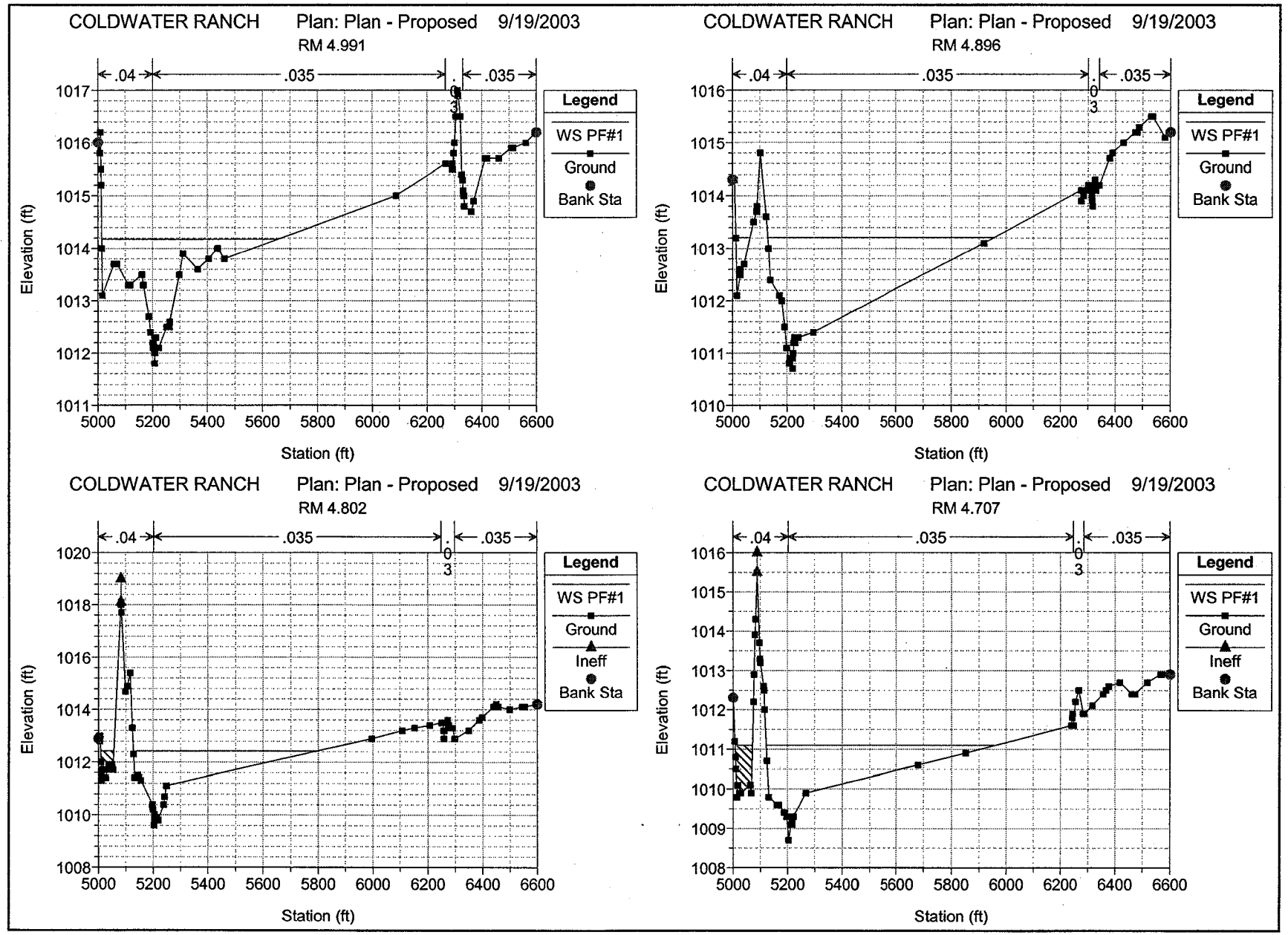
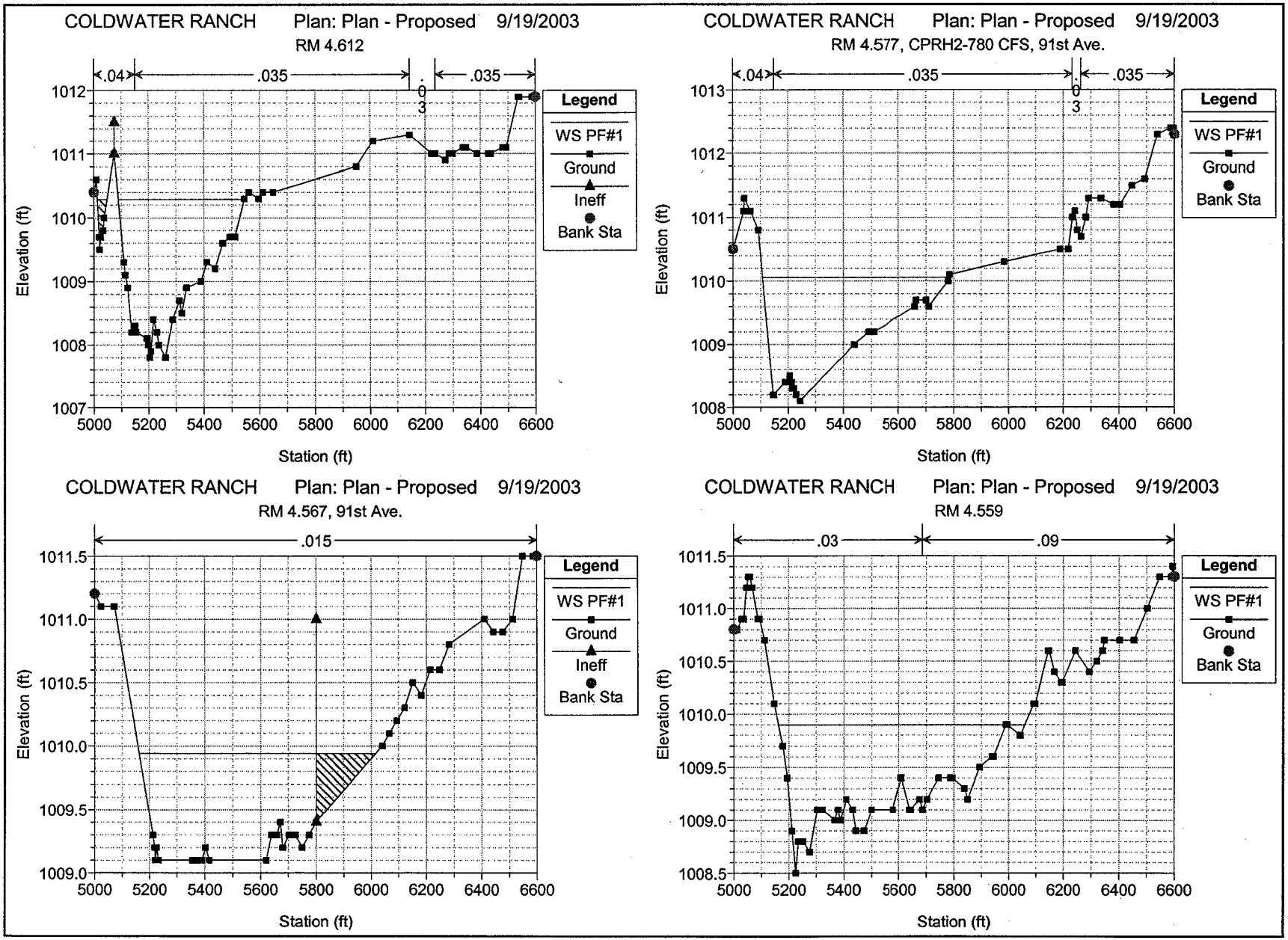
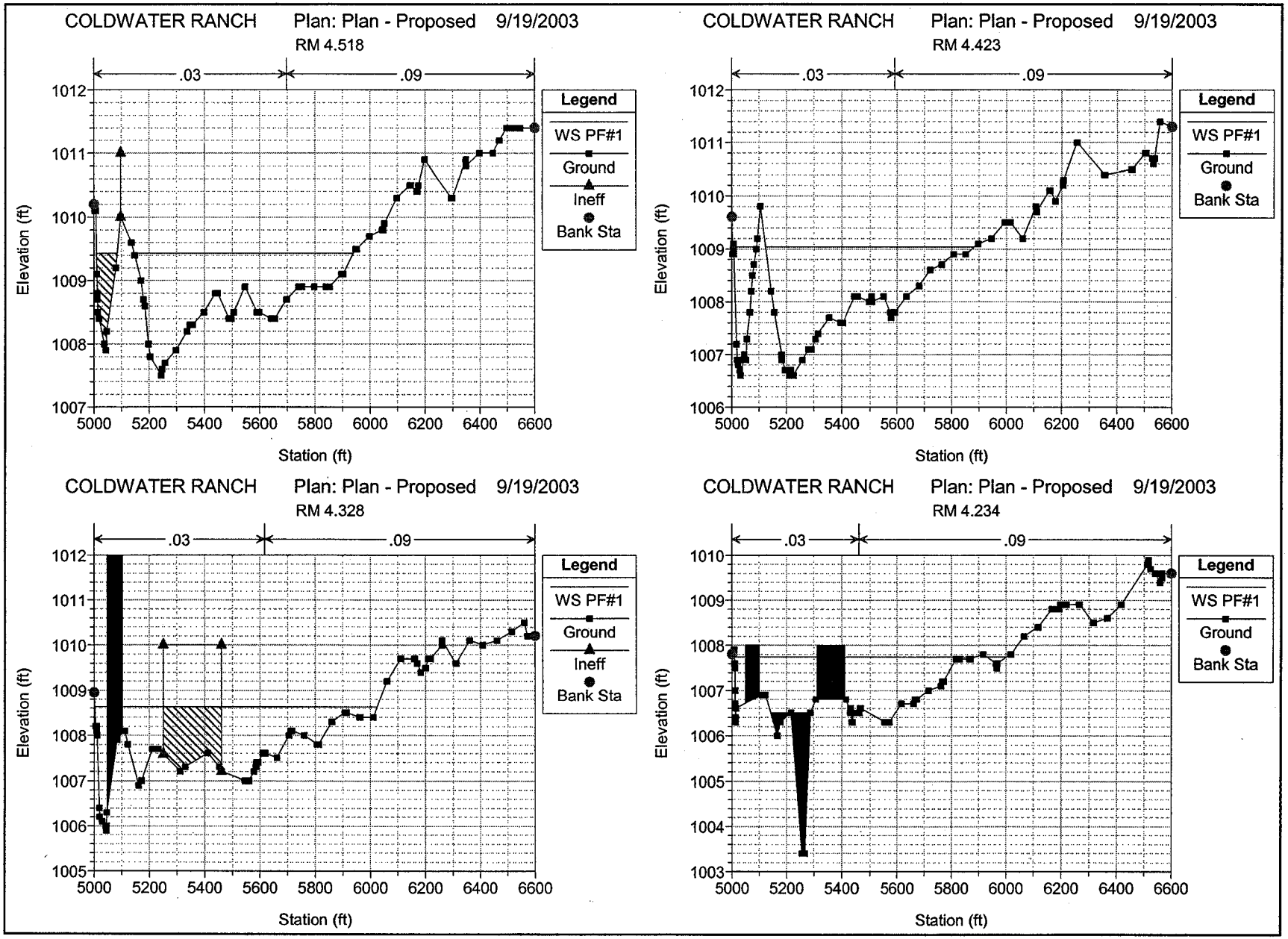

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
Southern Pacific Tolleson 2
Legend
WS PF#1
Ground
Elevation (ft)
1030
1020
1010
1000
990
980
970
960
0
5000
10000
15000
20000
25000
30000
Main Channel Distance (ft)
0.446
0.540
0.635
0.730
0.824
0.883
1.014
1.109
1.203
1.298
1.370
1.487
1.582
1.6295*
1.677
1.771
1.856
1.961
2.056
2.150
2.229
2.342
2.434
2.529
2.624
2.718
2.851
2.908
3.031
3.083
3.192
3.287
3.411
3.476
3.535
3.583
3.665
3.760
3.855
3.949
4.044
4.139
4.234
4.328
4.423
4.518
4.567
4.707
4.802
4.896
4.991
5.040
5.086
5.181
5.275
5.370
5.465
5.530

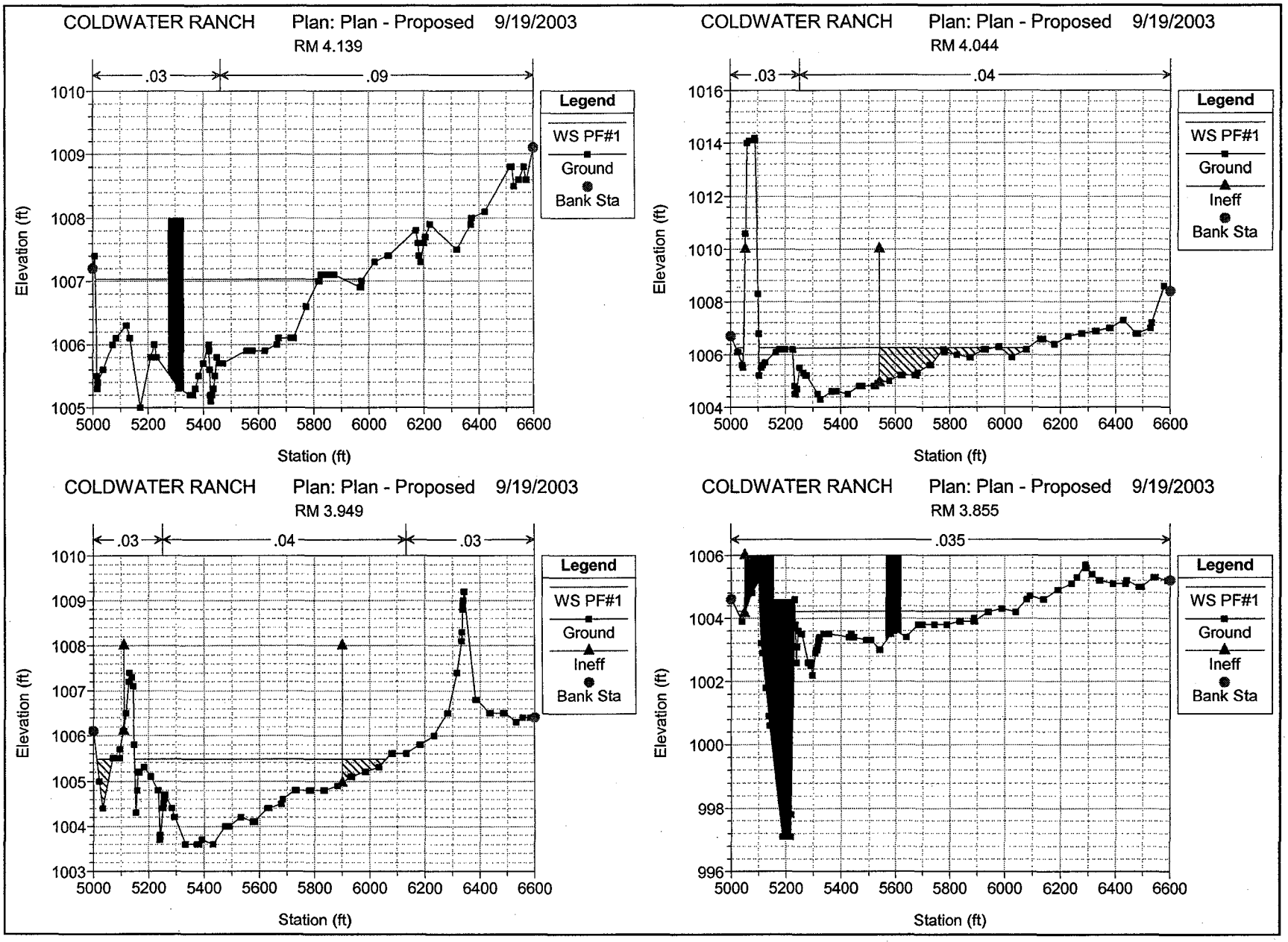

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.370, Begin DIOE3-240 CFS flow over railroad to the South.
.03
.025
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.319, HEC-1 RSRI Q= 760 CFS, DIOE3 240 CFS diversion over ra
.035
.04
.015
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.275
.035
.03
.015
.03
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.181
.035
.03
.015
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

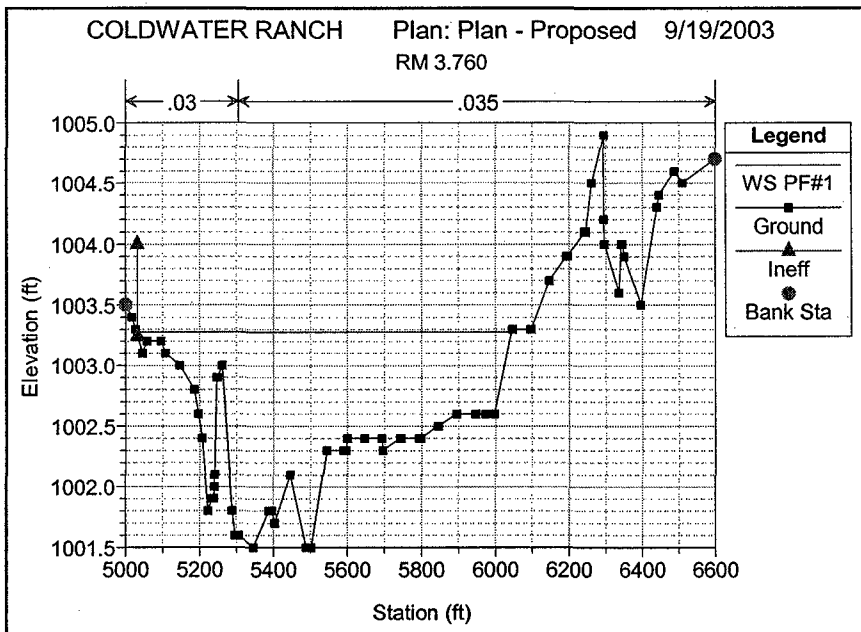

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.086
.03
.05
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.054, CPRI5-760 CFS
.03
.06
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.047, RSRI, Q=760 CFS
.03
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.040
.03
.035
.03
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

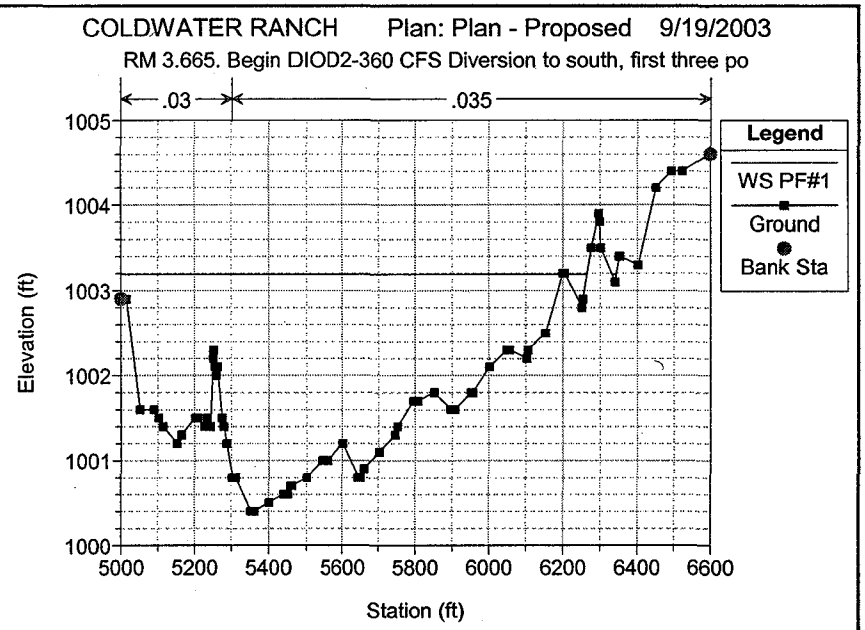

COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.991
.04
.035
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.896
.04
.035
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.802
.04
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.707
.04
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

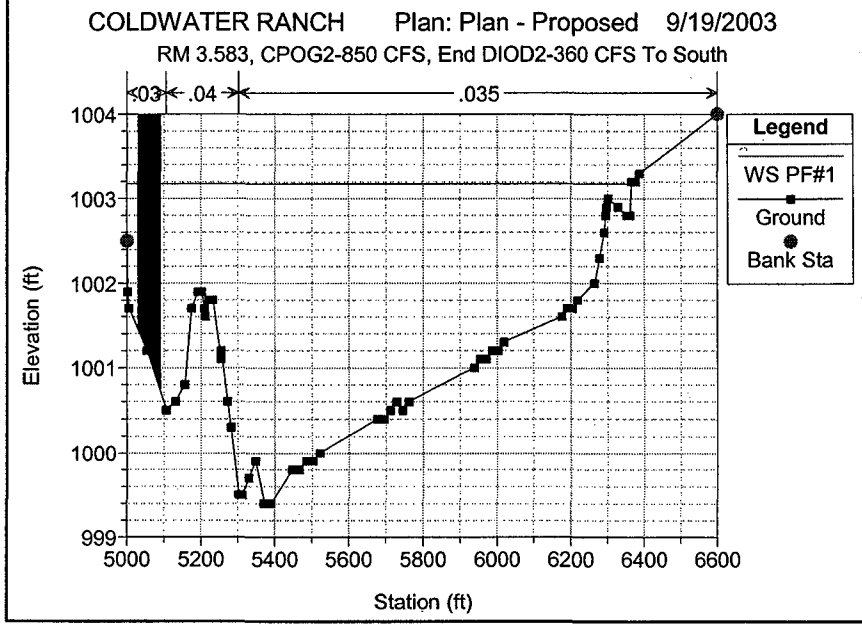

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.612
.04
.035
.03
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.577, CPRH2-780 CFS, 91st Ave.
.04
.035
.03
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.567, 91st Ave.
.015
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.559
.03
.09
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

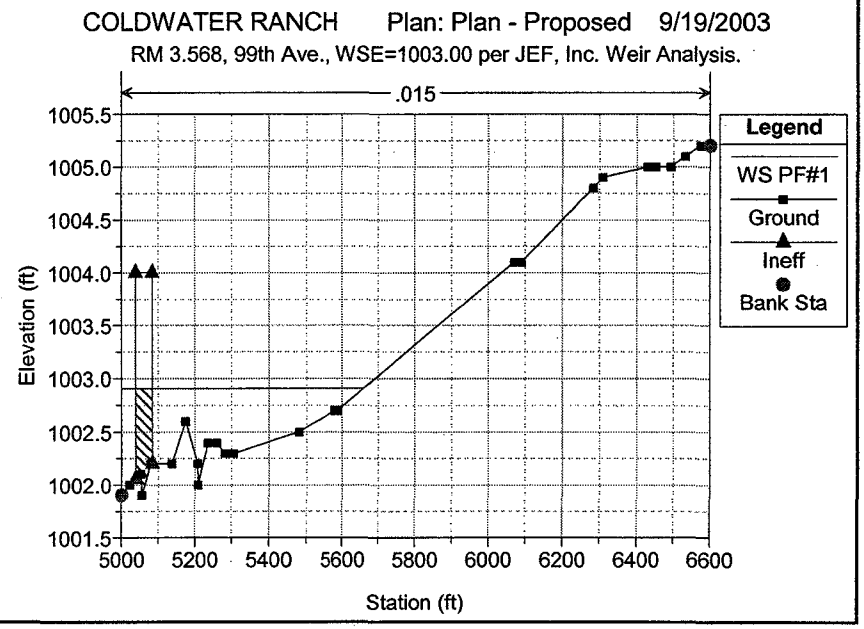

COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.518
.03
.09
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.423
.03
.09
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.328
.03
.09
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 4.234
.03
.09
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

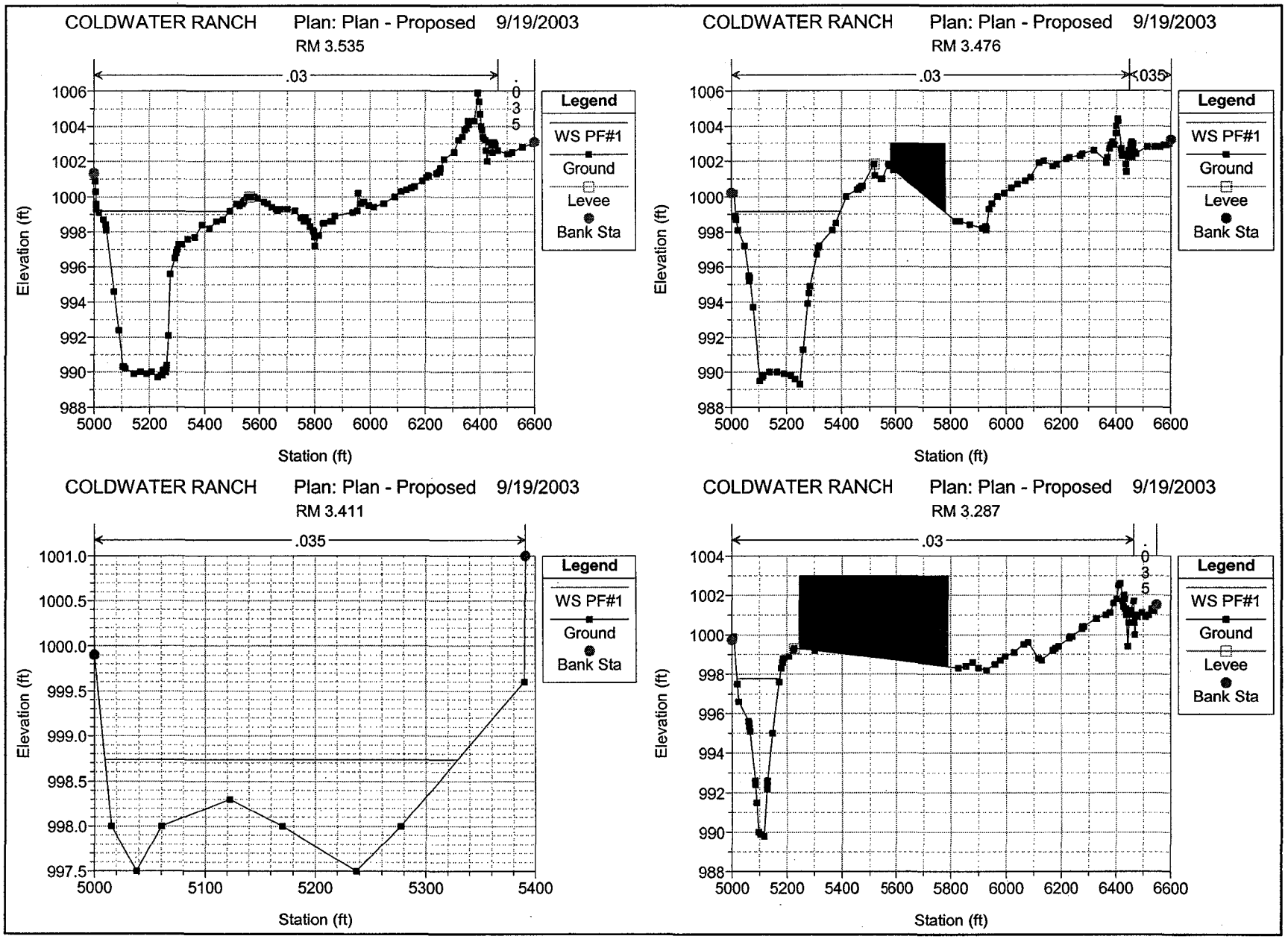

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.139
.03
.09
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 4.044
.03
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.949
.03
.04
.03
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.855
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

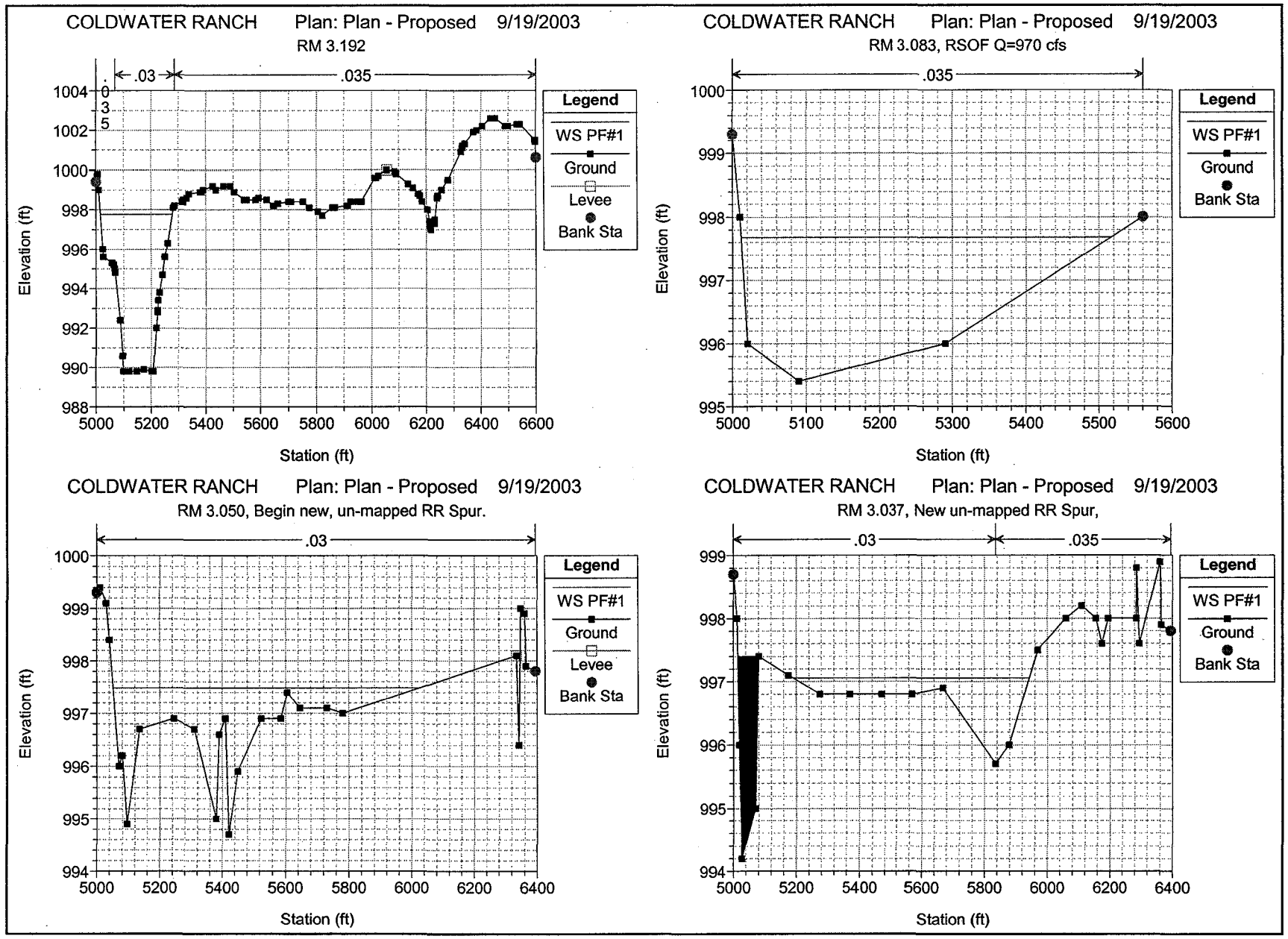

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.760
.03
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

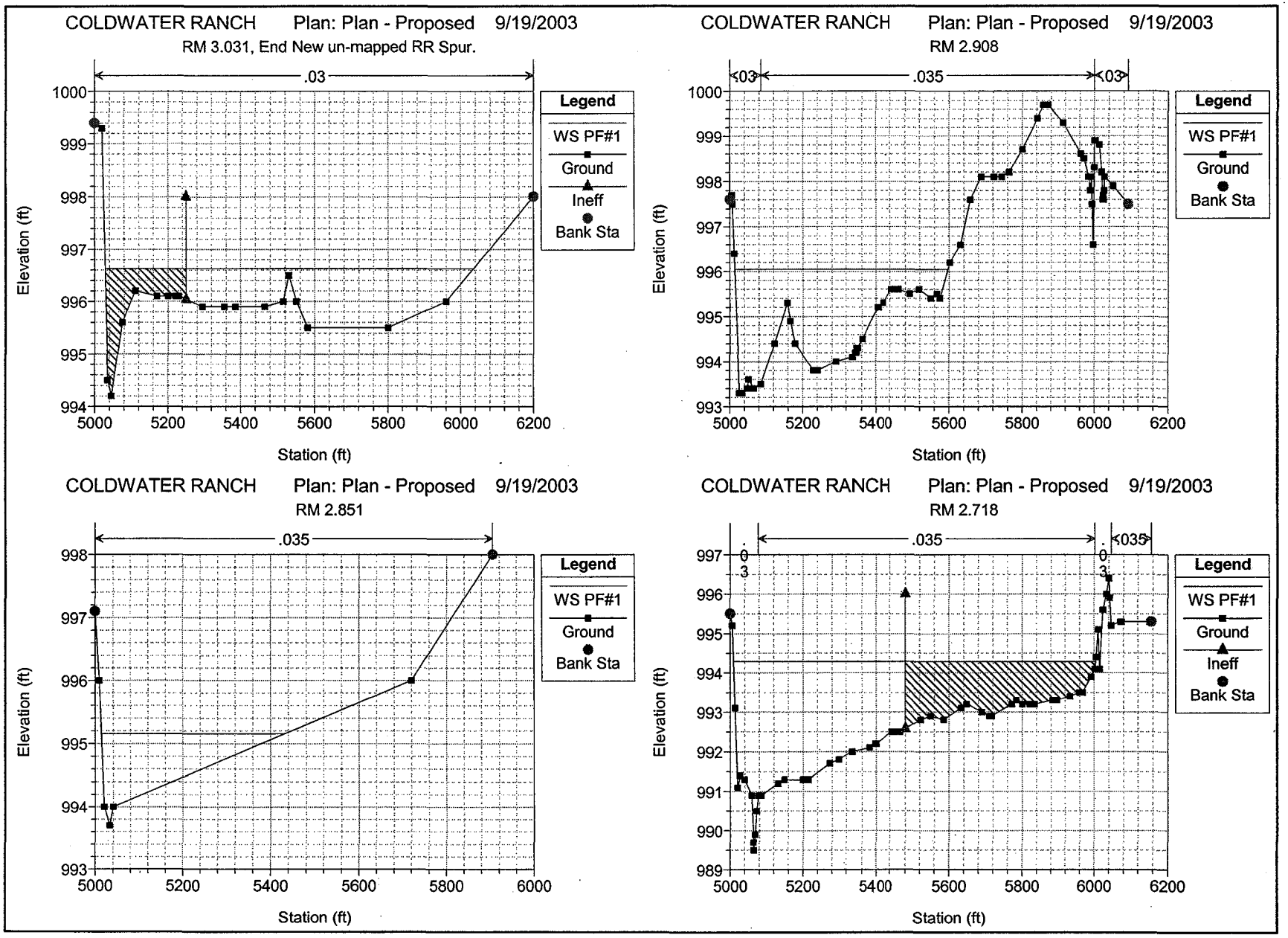

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.665. Begin DIOD2-360 CFS Diversion to south, first three po
.03
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

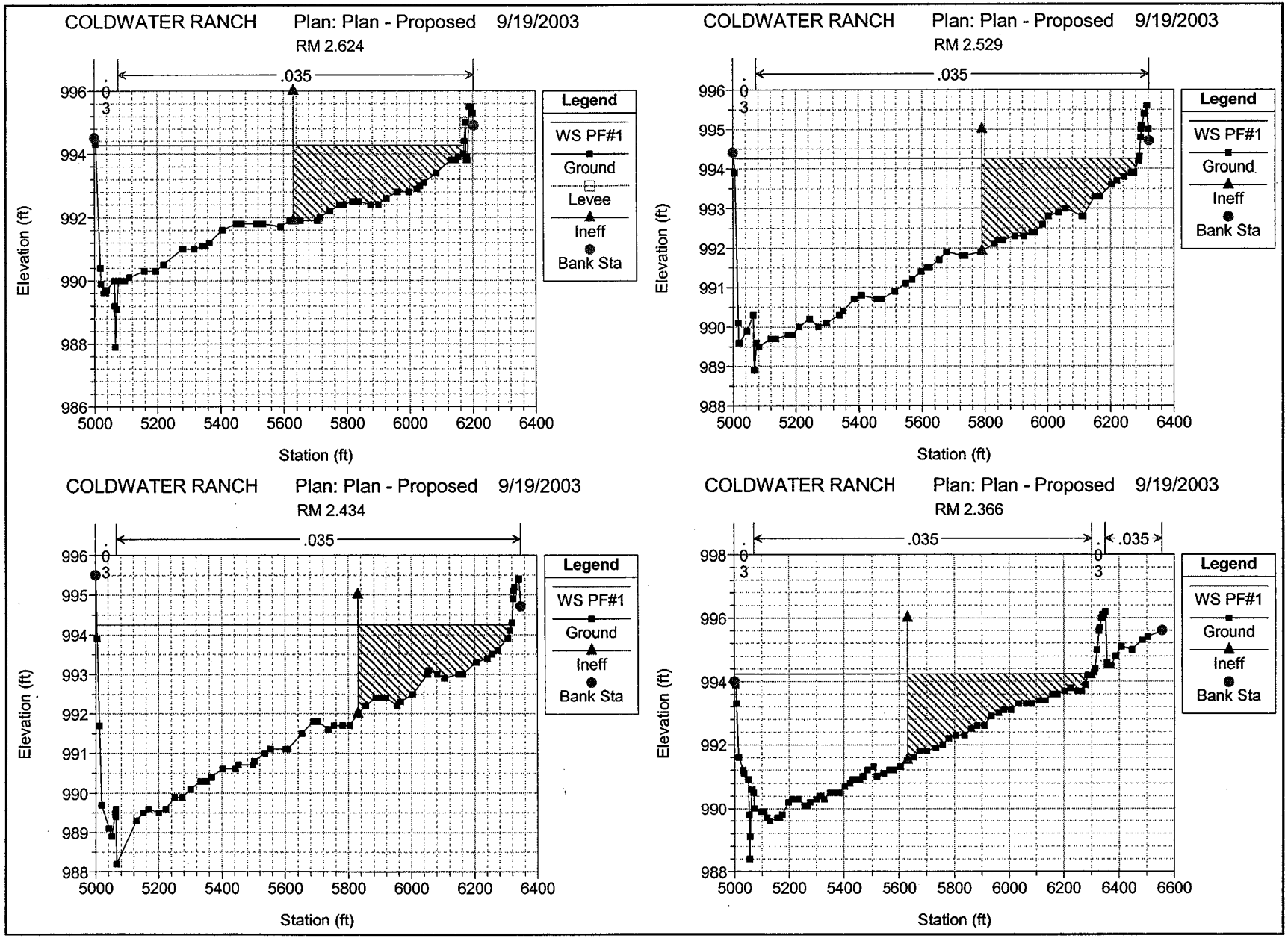

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.583, CPOG2-850 CFS, End DIOD2-360 CFS To South
.03
.04
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

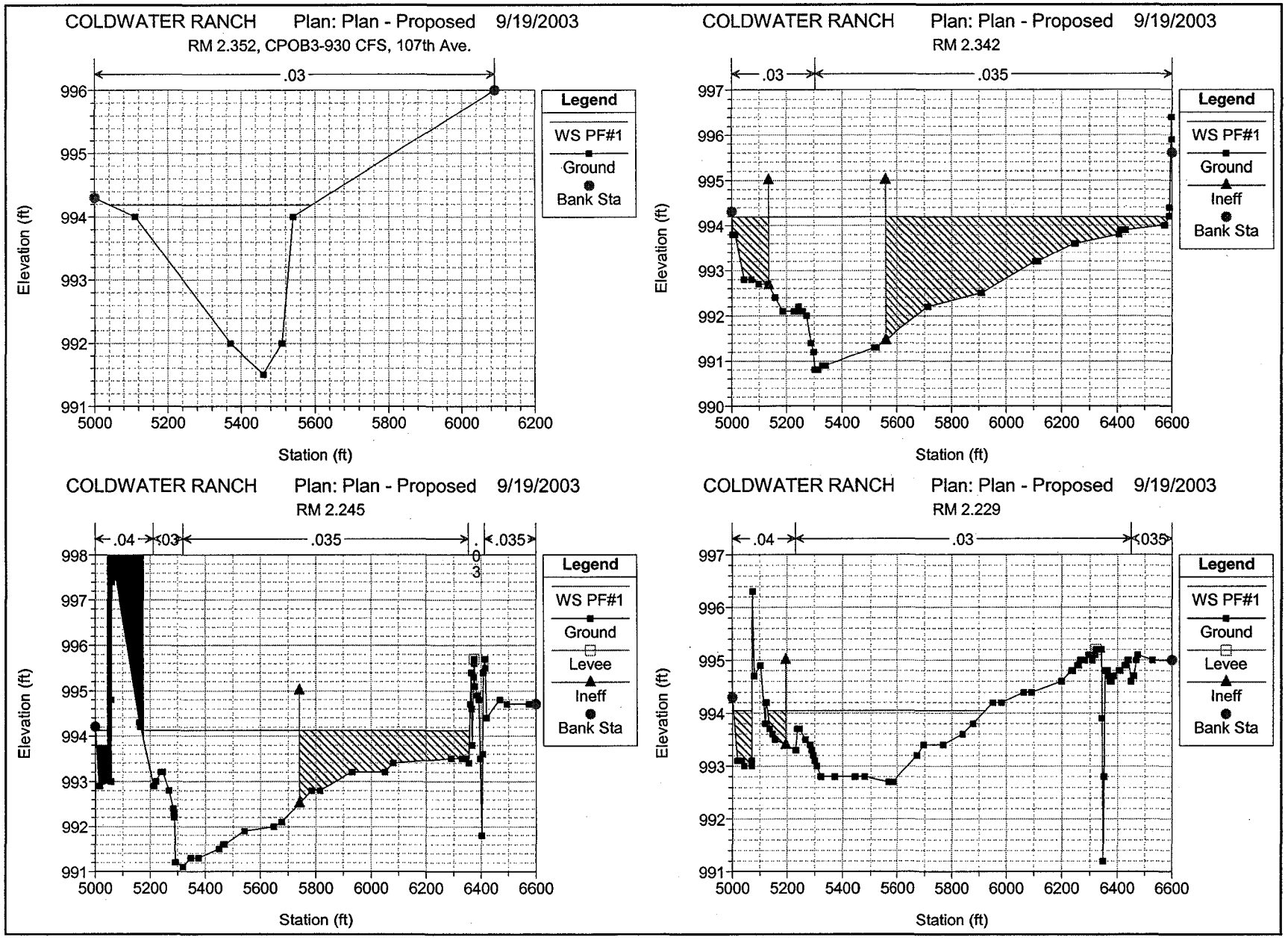

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.568, 99th Ave., WSE=1003.00 per JEF, Inc. Weir Analysis.
.015
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

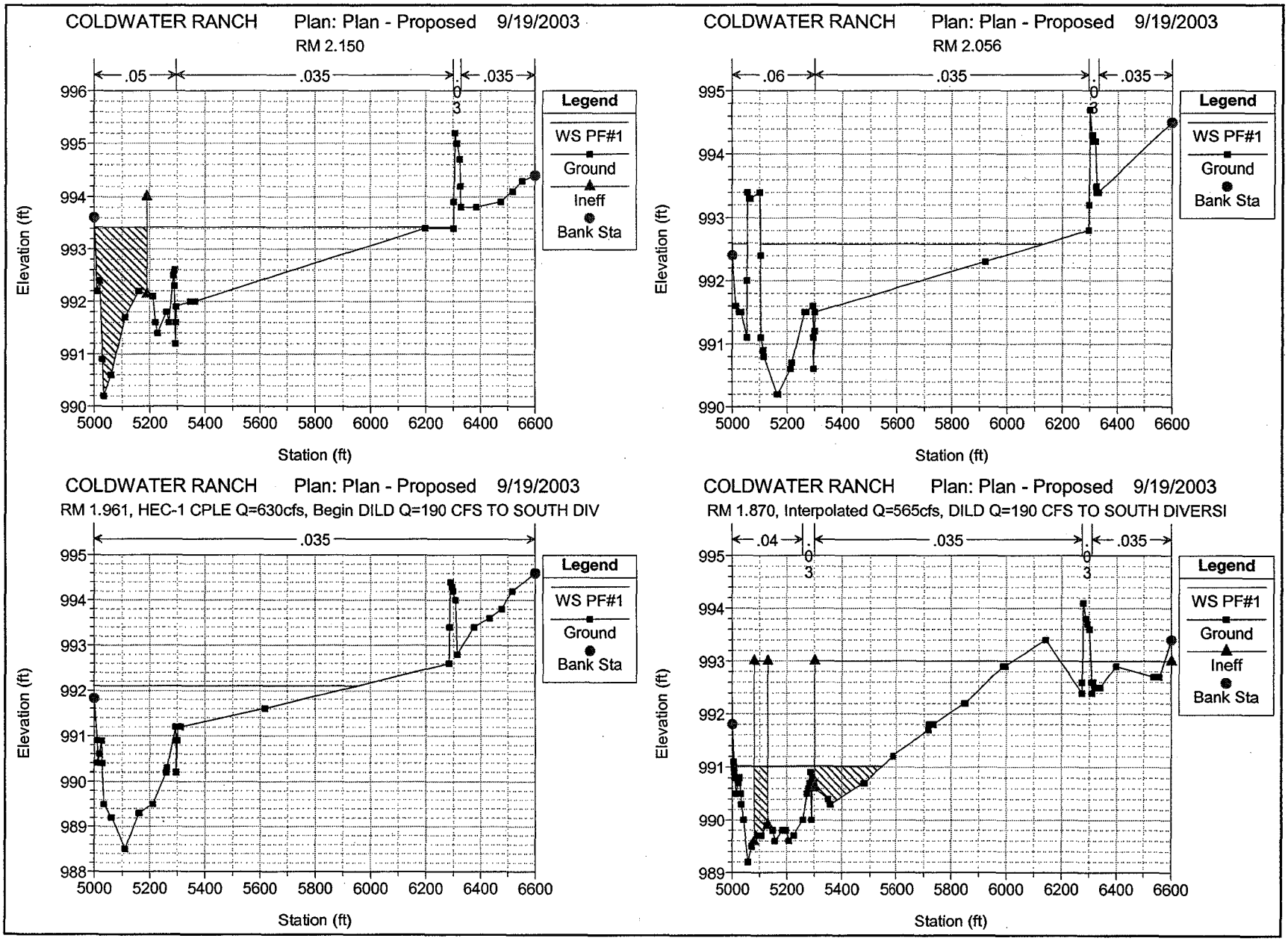

COLDWATER RANCH
Plan: Plan - Proposed
9/19/2003
RM 3.535
.03
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed
9/19/2003
RM 3.476
.03
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed
9/19/2003
RM 3.411
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed
9/19/2003
RM 3.287
.03
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)

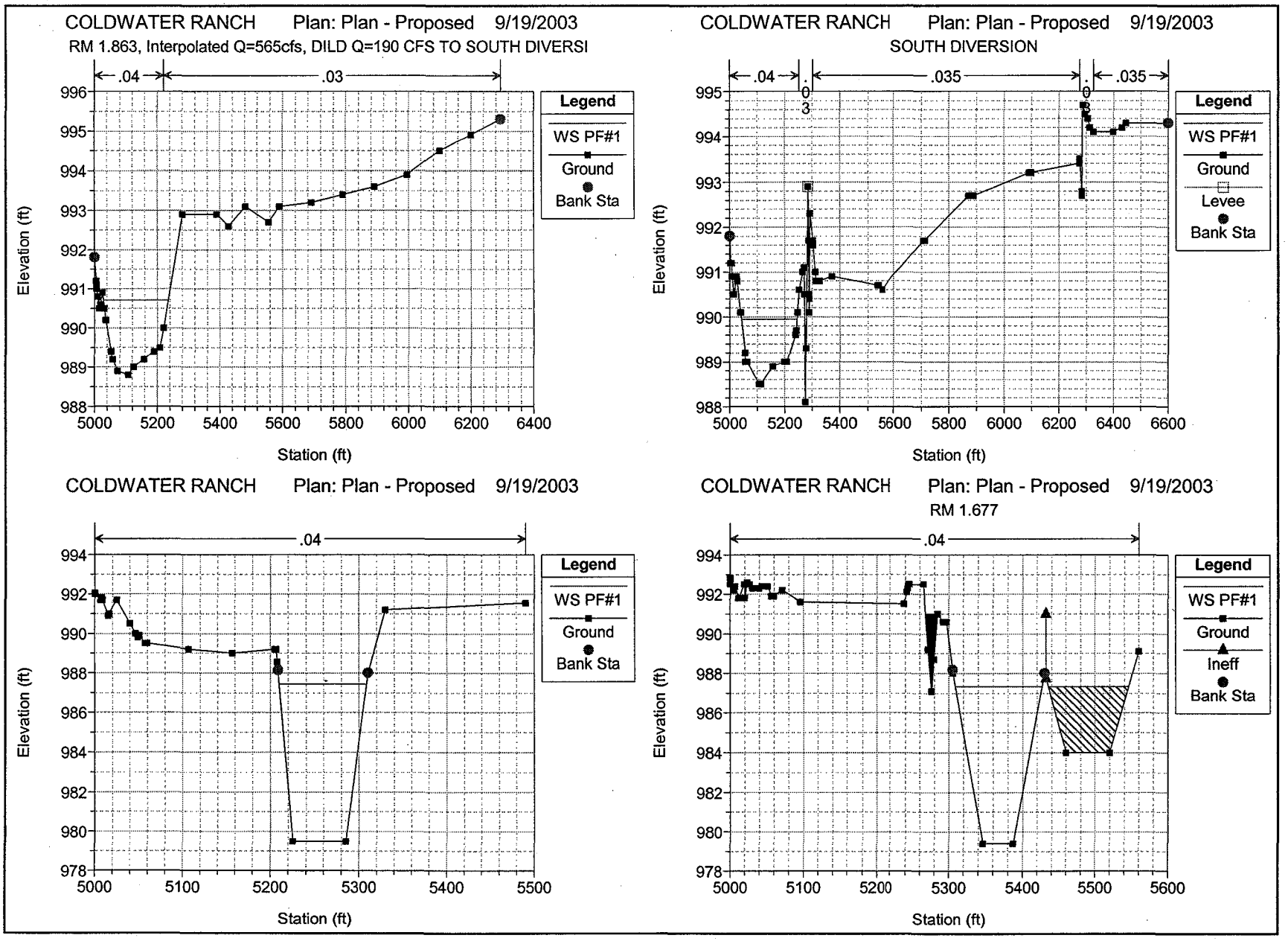

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.192
.03
.035
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.083, RSOF Q=970 cfs
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.050, Begin new, un-mapped RR Spur.
.03
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.037, New un-mapped RR Spur,
.03
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

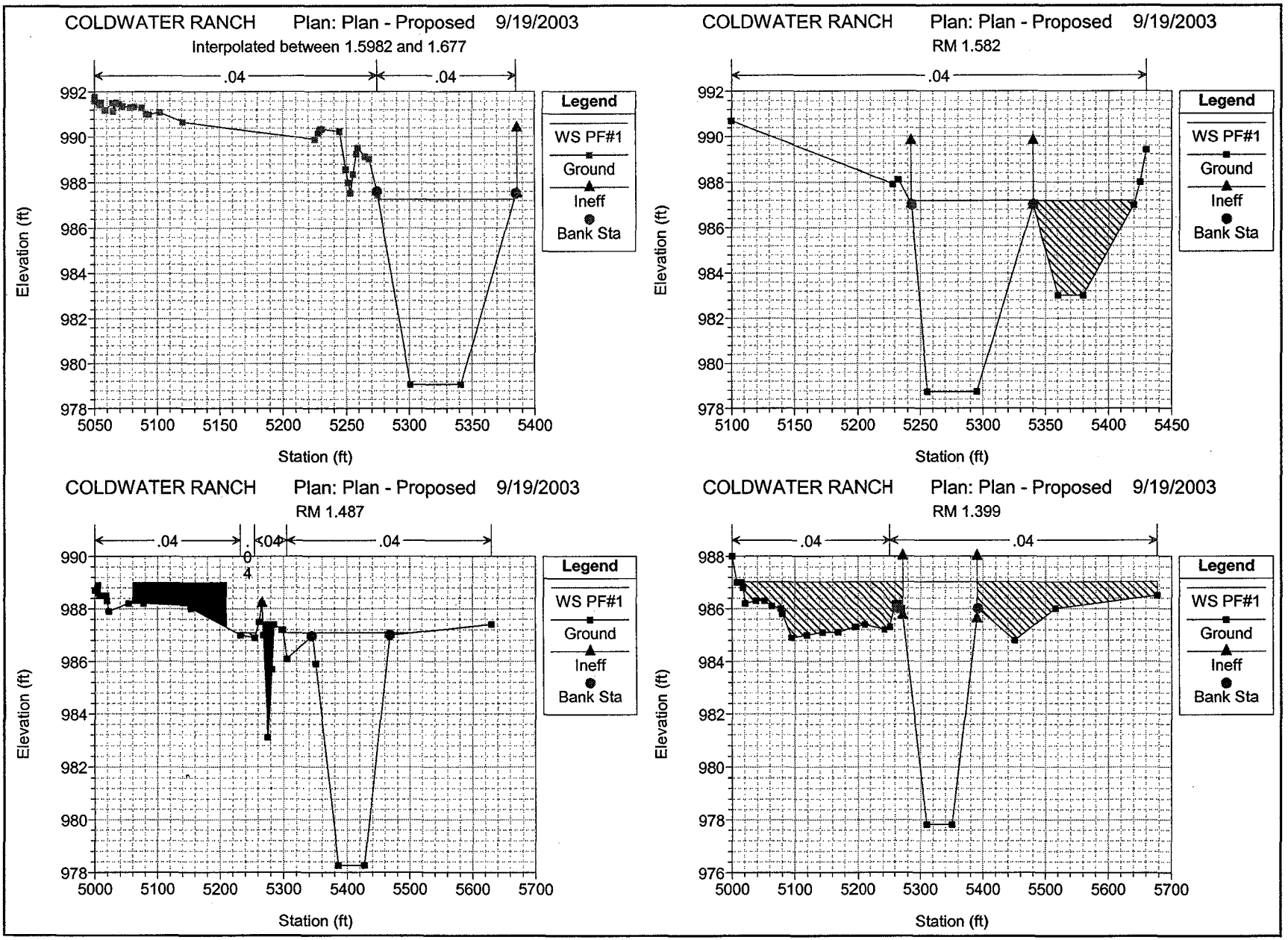

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 3.031, End New un-mapped RR Spur.
.03
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.908
.03
.035
.03
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.851
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.718
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

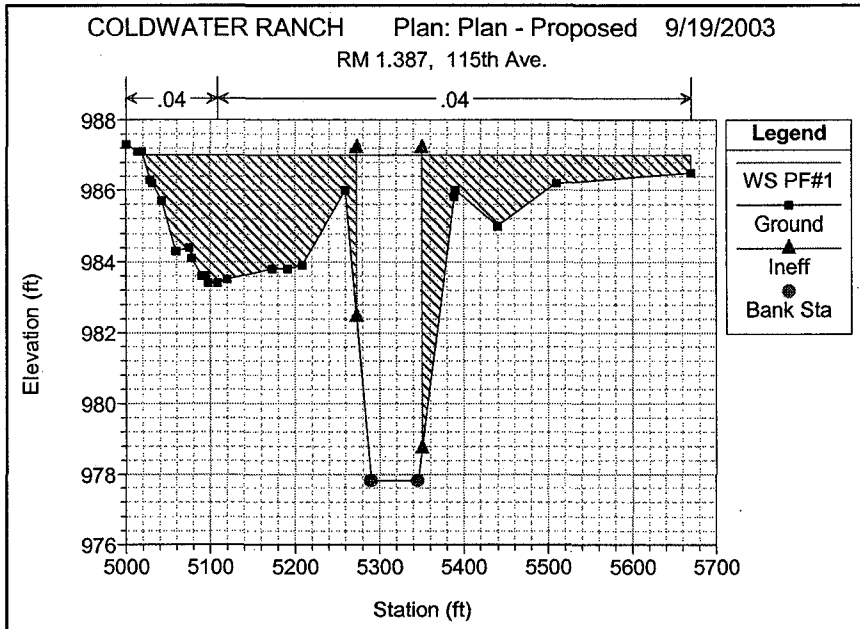

COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 2.624
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 2.529
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 2.434
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 2.366
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

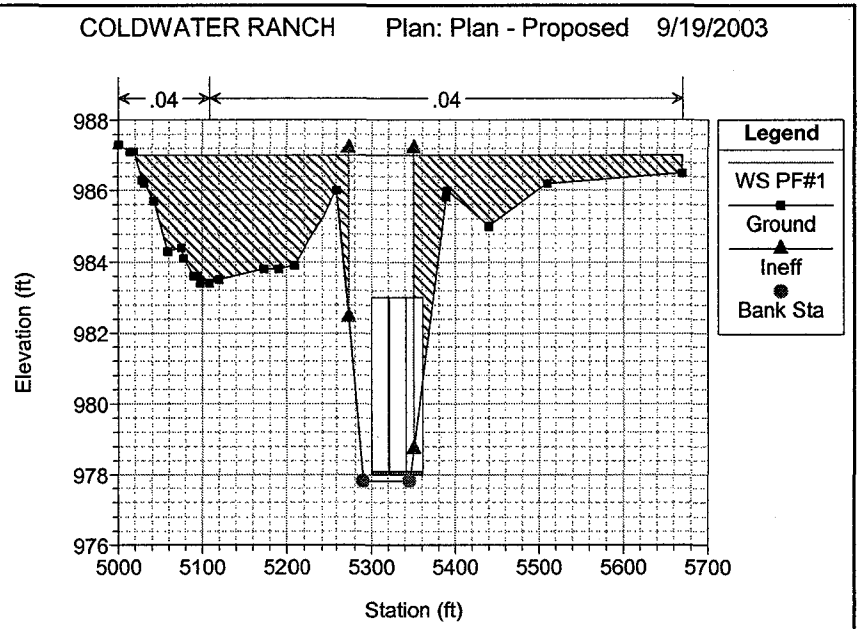

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.352, CPOB3-930 CFS, 107th Ave.
.03
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.342
.03
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.245
.04
.03
.035
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.229
.04
.03
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

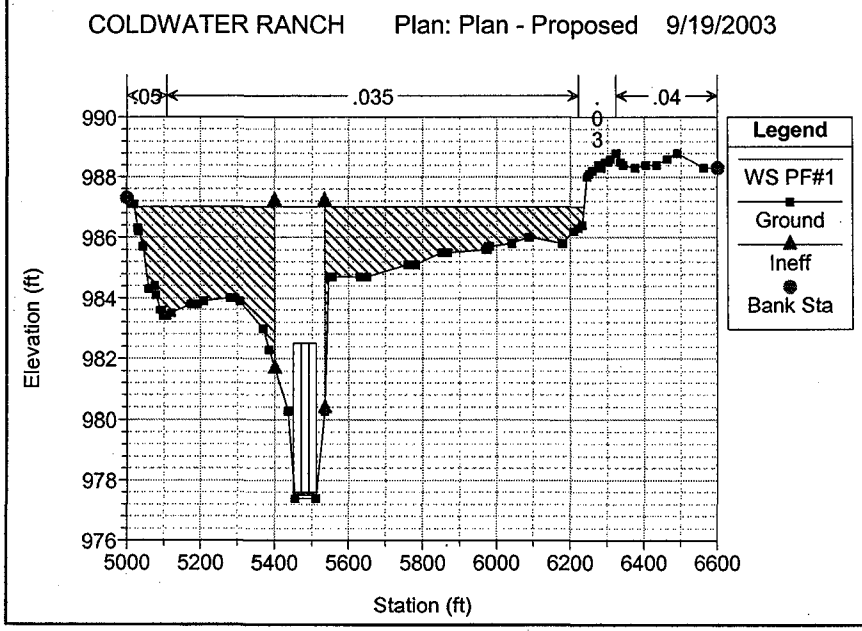

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.150
.05
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 2.056
.06
.035
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.961, HEC-1 CPLE Q=630cfs, Begin DILD Q=190 CFS TO SOUTH DIV
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.870, Interpolated Q=565cfs, DILD Q=190 CFS TO SOUTH DIVERSI
.04
.035
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

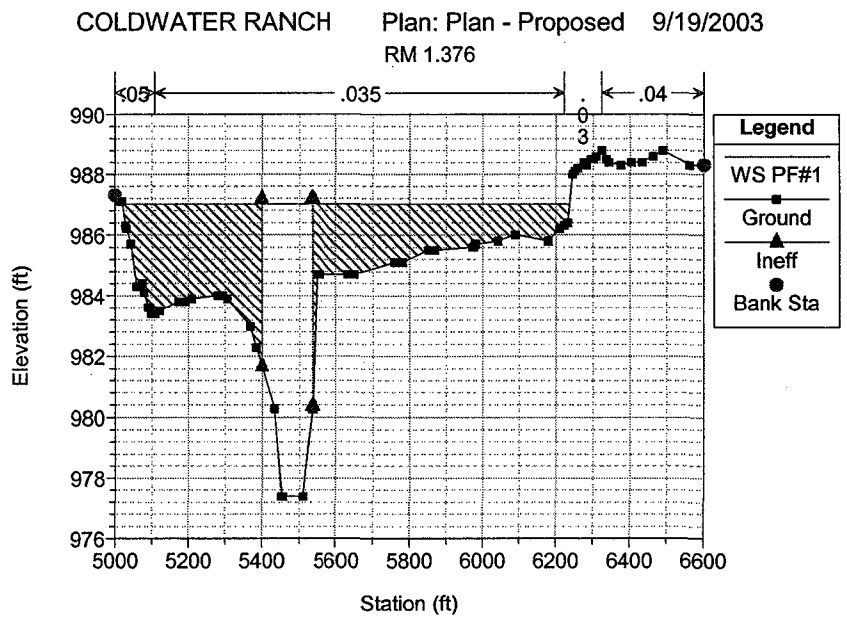

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.863, Interpolated Q=565cfs, DILD Q=190 CFS TO SOUTH DIVERSI
.04
.03
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
SOUTH DIVERSION
.04
.035
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.04
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.677
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

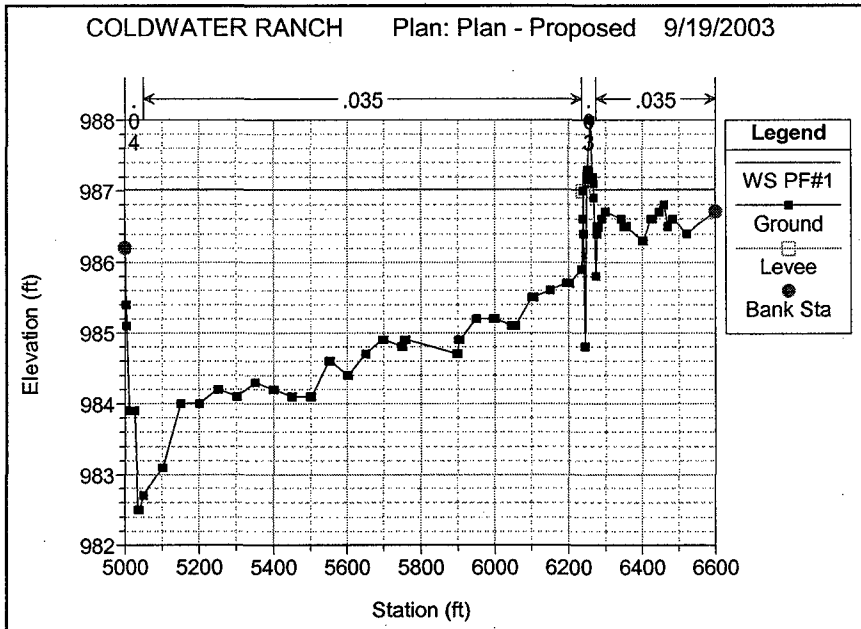

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
Interpolated between 1.5982 and 1.677
.04
.04
Elevation (ft)
Station (ft)
Legend
WS PF#1
Ground
Ineff
Bank Sta
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.582
.04
Elevation (ft)
Station (ft)
Legend
WS PF#1
Ground
Ineff
Bank Sta
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.487
.04
.04
.04
Elevation (ft)
Station (ft)
Legend
WS PF#1
Ground
Ineff
Bank Sta
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.399
.04
.04
Elevation (ft)
Station (ft)
Legend
WS PF#1
Ground
Ineff
Bank Sta

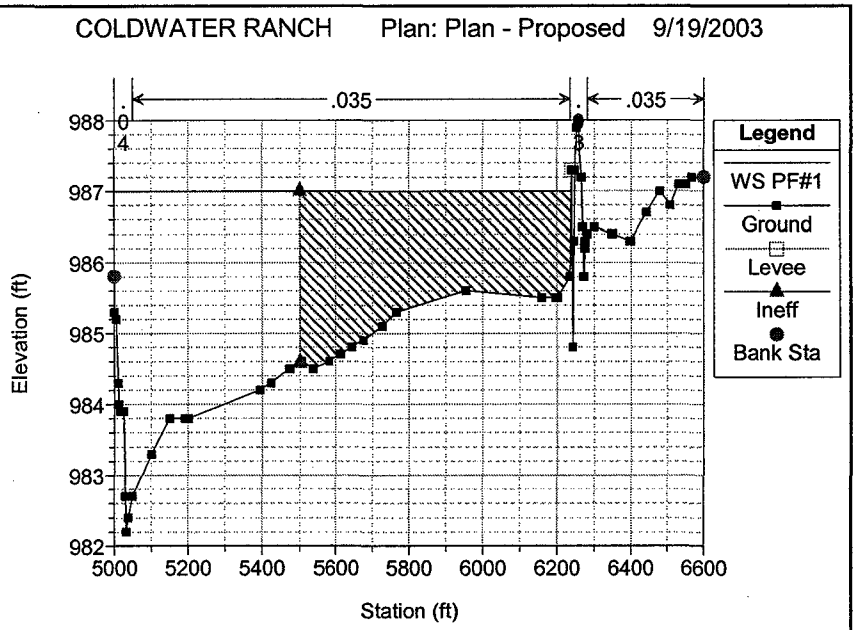

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.387, 115th Ave.
.04
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

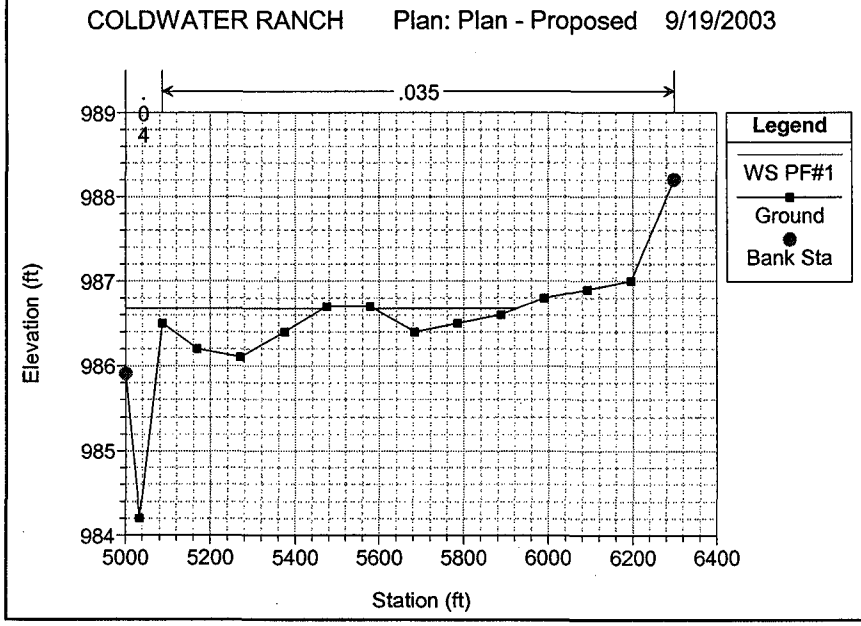

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.04
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

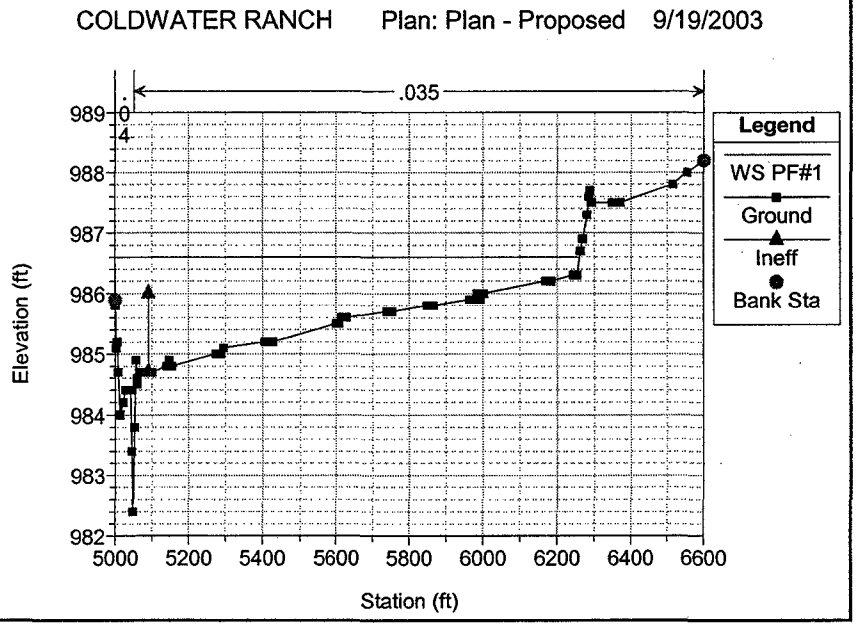

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.05
.035
.03
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

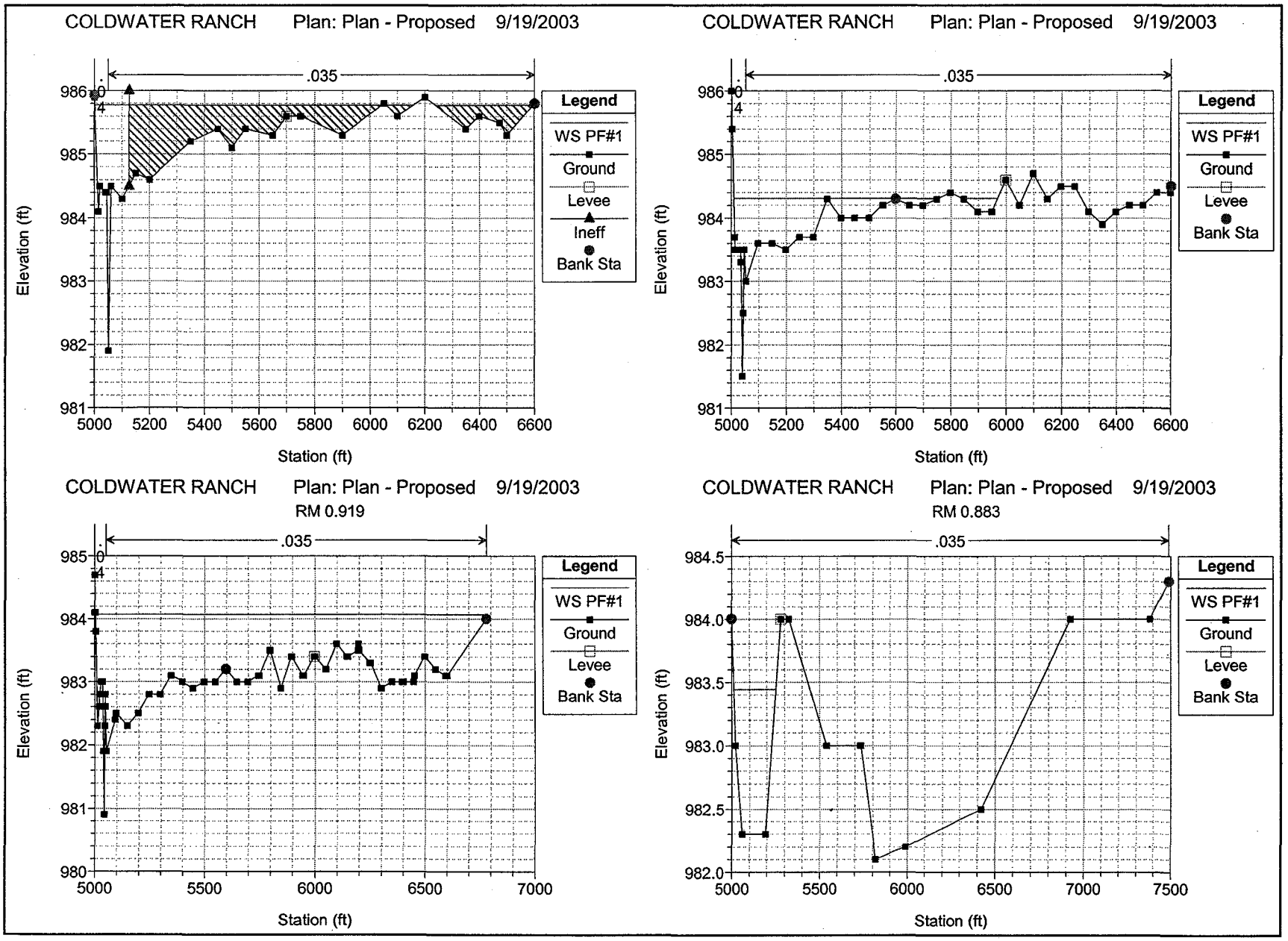

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 1.376
.05
.035
.03
.04
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)

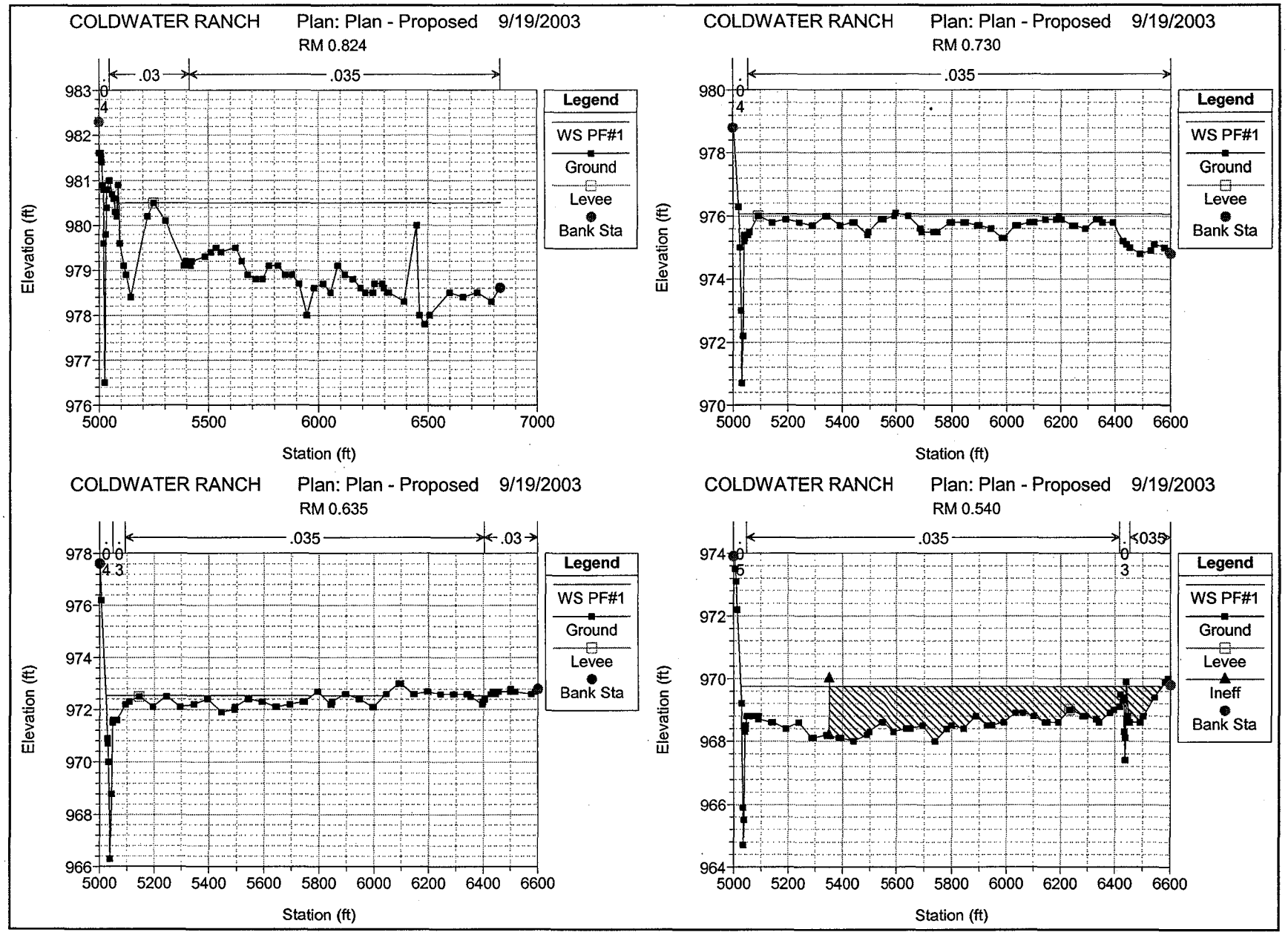

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)


COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

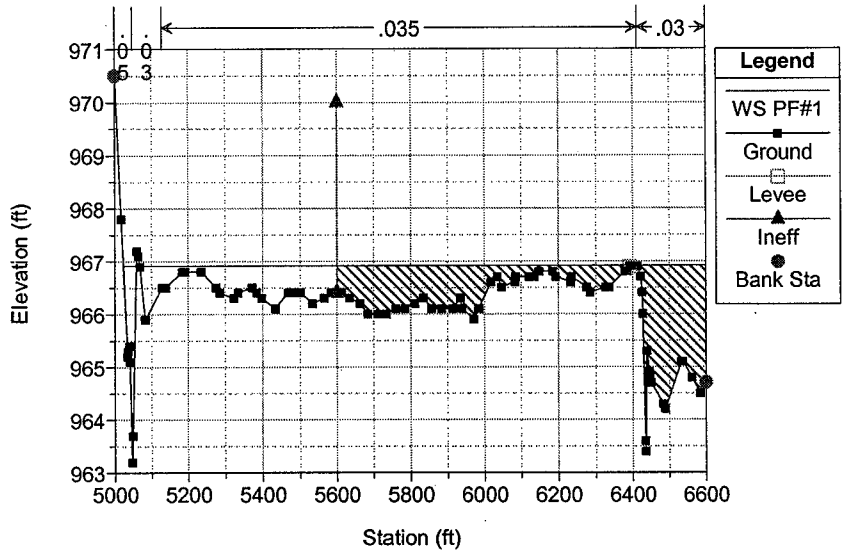

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
Legend
WS PF#1
Ground
Ineff
Bank Sta
Elevation (ft)
Station (ft)


COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 0.919
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 0.883
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)


COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 0.824
.03
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 0.730
.035
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 0.635
.035
.03
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH
Plan: Plan - Proposed 9/19/2003
RM 0.540
.035
.035
Legend
WS PF#1
Ground
Levee
Ineff
Bank Sta
Elevation (ft)
Station (ft)

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003

RM 0.446



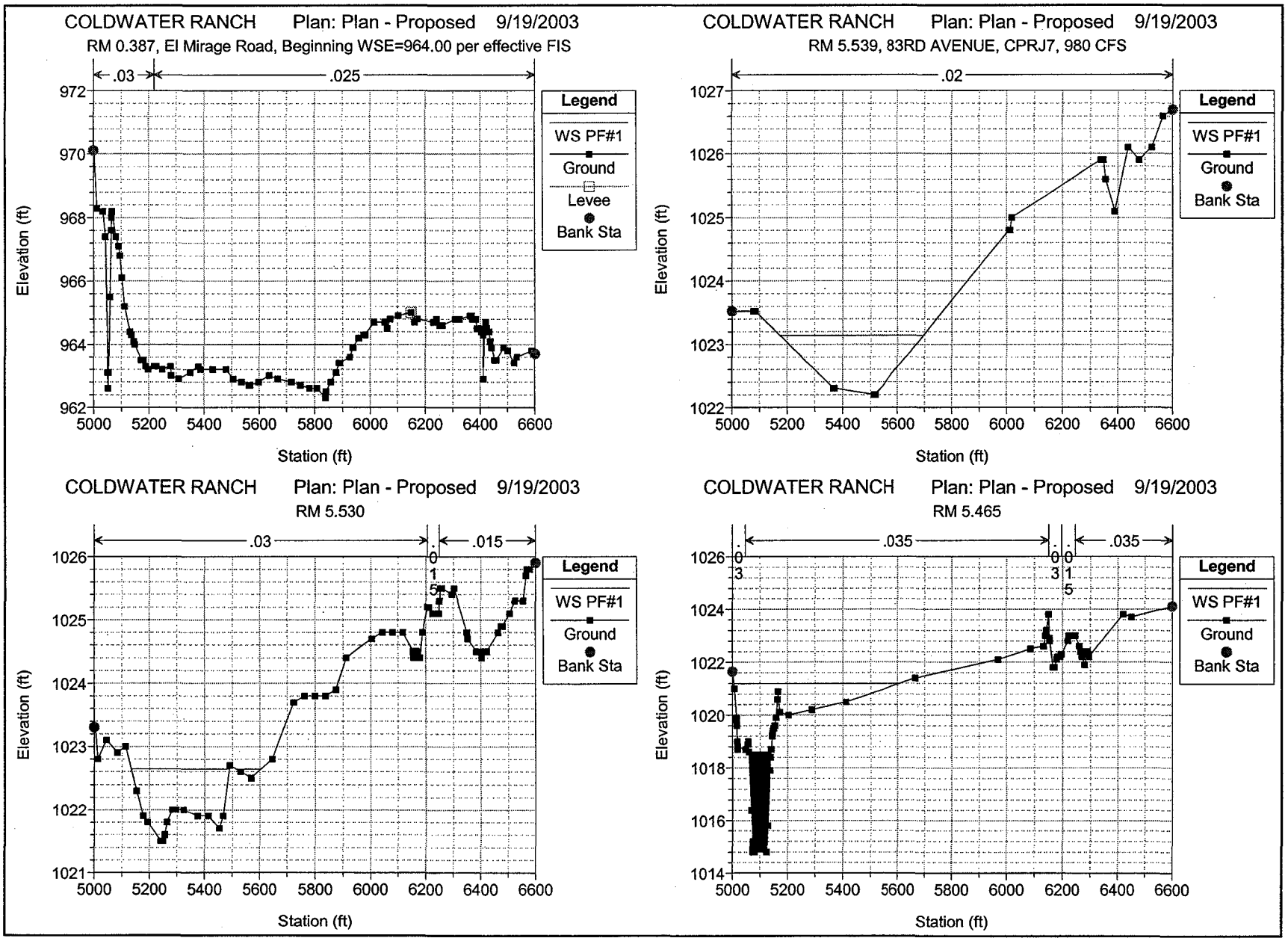
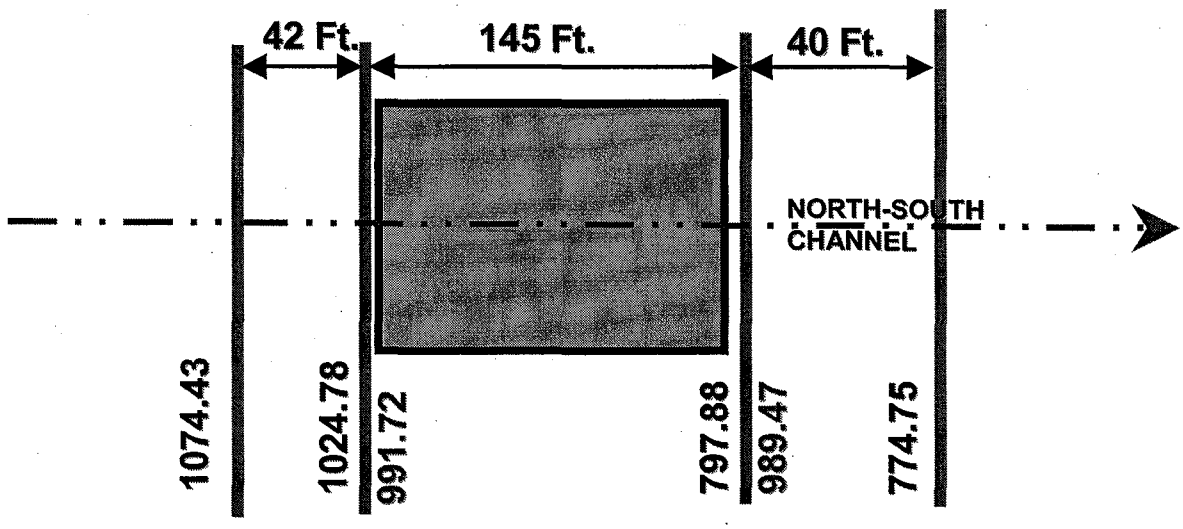

COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 0.387, El Mirage Road, Beginning WSE=964.00 per effective FIS
.03
.025
Legend
WS PF#1
Ground
Levee
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.539, 83RD AVENUE, CPRJ7, 980 CFS
.02
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.530
.03
.015
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)
COLDWATER RANCH Plan: Plan - Proposed 9/19/2003
RM 5.465
.035
.035
Legend
WS PF#1
Ground
Bank Sta
Elevation (ft)
Station (ft)

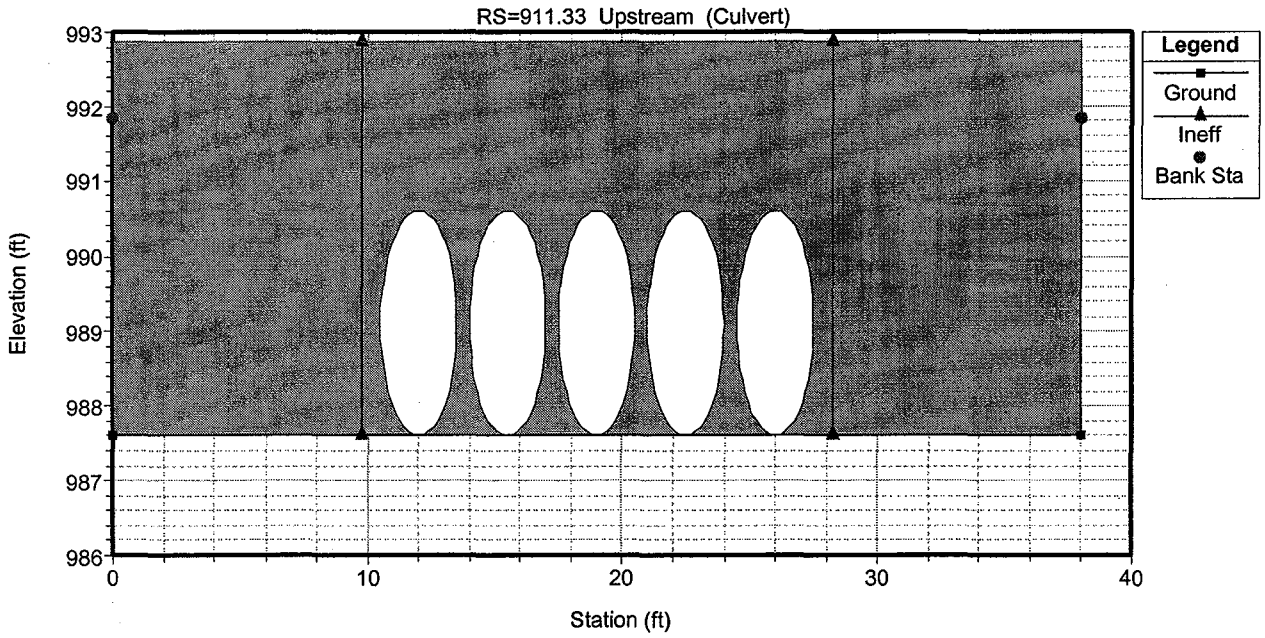
EXHIBIT C.6

COLDWATER RANCH BOULEVARD

Not to Scale



Location	Section	Culvert Type	Culvert Length	U.S. Flowline	D.S. Flowline	Top of Road
			(ft)	(ft)	(ft)	(ft)
COLDWATER RANCI	1024.78	5-36" RCP	145	987.6	986.8	992.9



Appendix D: Hydrology Models

D.1 Revised 24-Hr Hydrology for DROC
D.2 Revised 6-Hr Hydrology for the N-S Channel

```
1****************************************
*                                      *
*   FLOOD HYDROGRAPH PACKAGE  (HEC-1)  *
*              JUN   1998              *
*            VERSION 4.1               *
*                                      *
*  RUN DATE   14SEP03  TIME  17:06:19  *
*                                      *
****************************************
```

```
****************************************
*                                      *
*    U.S. ARMY CORPS OF ENGINEERS      *
*    HYDROLOGIC ENGINEERING CENTER     *
*          609 SECOND STREET           *
*       DAVIS, CALIFORNIA 95616        *
*           (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  CW RANCH PROPOSED CONDITION ADB-9/8/3
  2           ID   Project ID: 1084-IMPROVED - Major Basin: 01 - Return Period: 100 Years
  3           ID   IMPROVED CONDITION  ADMP MODEL
  4           ID   FILENAME: DUR-24im.DAT
  5           ID   NOVEMBER, 2000
  6           ID   Created for the Durango ADMP from the existing file TOLLESON.DAT for
  7           ID   the Floodplain Delineation of the Tolleson Area FCD Project 95-26 by:
  8           ID   Dan Frank (DCF) with Dibble & Associates, Consulting Engineers (DA)
  9           ID   Refer to the End of this file for a list of changes made to the existing
 10           ID   Tolleson model
 11           ID   Original mapping has been supplemented with additional survey by
 12           ID   Project Engineering Consultants
 13           ID   ABBREVIATIONS:
 14           ID   BFC=Buckeye Feeder Canal
 15           ID   SPRR=Southern Pacific Railroad
              * ****************************************************************
              * The following is from the original model provided by FCDMC
              * ****************************************************************
 16           ID
 17           ID   TOLLESON-FOWLER WATERSHED RAINFALL-RUNOFF MODEL, March 1999
 18           ID
 19           ID   DIBBLE & ASSOCIATES, CONSULTING ENGINEERS WITH
 20           ID   JE FULLER/HYDROLOGY & GEOMORPHOLOGY, INC.
 21           ID
 22           ID   THIS MODEL IS BASED ON MAPPING FLOWN BY KENNEY AERIAL MAPPING, INC. 3/28/1994
 23           ID   NGVD 1929, AND SUBSEQUENT SURVEY BY URBAN ENGINEERS
 24           ID
 25           ID   THE HEC-1 HYDROLOGIC MODEL IS DEVELOPED FOR PLANNING PURPOSES AND
 26           ID   IS NOT INTENDED TO BE USED FOR DESIGN WITHOUT MODIFICATION.  THE
 27           ID   INVESTIGATION AND THE HYDROLOGY IS BASED UPON CRITERIA DESCRIBED
 28           ID   IN THE HYDROLOGY DESIGN MANUAL (HDM).
 29           ID
 30           ID   THE JD OPTIONS WITHIN HEC-1 WERE USED TO SIMULATE THE AREAL REDUCTION IN
 31           ID   POINT PRECIPITATION VALUES BASED ON THE ACCUMULATED DRAINAGE AREA.  EVEN
 32           ID   WITH THIS REFINEMENT, APPLICATION OF THIS MODEL TO OTHER AREAS WITHIN THE
 33           ID   WATERSHED AND FOR OTHER PURPOSES SHOULD INCLUDE ANALYSIS OF OTHER STORMS
 34           ID   DURATIONS AND CENTERINGS SUCH AS THE SIX-HOUR STORM WITH RAINFALL PATTERNS
 35           ID   AS DESCRIBED IN DDM1.
 36           ID
 37           ID   FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
 38           ID   HYDROLOGY BRANCH, ENGINEERING DIVISION.
              * ****************************************************************
              *
 39           IT       5 01jan00    1200    2000
 40           IN      15
 41           IO       5       0       0
              *
 42           JD    3.99    0.01
 43           PC   0.000   0.002   0.005   0.008   0.011   0.014   0.017   0.020   0.023   0.026
 44           PC   0.029   0.032   0.035   0.038   0.041   0.044   0.048   0.052   0.056   0.060
 45           PC   0.064   0.068   0.072   0.076   0.080   0.085   0.090   0.095   0.100   0.105
 46           PC   0.110   0.115   0.120   0.126   0.133   0.140   0.147   0.155   0.163   0.172
 47           PC   0.181   0.191   0.203   0.218   0.236   0.257   0.283   0.387   0.663   0.707
 48           PC   0.735   0.758   0.776   0.791   0.804   0.815   0.825   0.834   0.842   0.849
 49           PC   0.856   0.863   0.869   0.875   0.881   0.887   0.893   0.898   0.903   0.908
1                                          HEC-1 INPUT                                                    PAGE  2

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
 50          PC   0.913   0.918   0.922   0.926   0.930   0.934   0.938   0.942   0.946   0.950
 51          PC   0.953   0.956   0.959   0.962   0.965   0.968   0.971   0.974   0.977   0.980
 52          PC   0.983   0.986   0.989   0.992   0.995   0.998   1.000
 53          JD   3.751   10.00
 54          JD   3.591   30.00
 55          JD   3.431   60.00
 56          JD   3.376   90.00
             *
 57          IO       5       0       0

 58          KK   SUBWD   BASIN
 59          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 60          BA   0.393
 61          LG    0.20    0.19    7.00    0.17      12
 62          UI      32      42     116     157     189     226     281     403     348     281
 63          UI     240     193     156     115      65      54      42      32      17      10
 64          UI      10      10      10       9       0       0       0       0       0       0
 65          UI       0       0       0       0       0       0       0       0       0       0
 66          UI       0       0       0       0       0       0       0       0       0       0
             *

 67          KK  RTWDXAROUTE   REACH
 68          KM  ROUTE FLOW FROM WD TO XA (ALONG 27TH AVENUE).
 69          KM  TYPE C CHANNEL
 70          RS       4              -1       0
 71          RC   0.025   0.025   0.025    2500  0.0016    0.00
 72          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
 73          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

 74          KK   SUBXA   BASIN
 75          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 76          BA   0.247
 77          LG    0.13    0.15    9.70    0.06      44
 78          UI      34     125     193     268     417     308     225     157      74      48
 79          UI      29      10      11      11       0       0       0       0       0       0
 80          UI       0       0       0       0       0       0       0       0       0       0
 81          UI       0       0       0       0       0       0       0       0       0       0
             *

 82          KK   CPXA1
 83          KM  ADD HYDROGRAPHS AT XA
 84          HC       2
             *
             * KK  RSXA
             * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
             * RS     1    STOR       0       0
             * SV   .01     .07     1.0     5.1    14.0    28.5    50.0    79.1   117.4   165
             * SE1063.3  1063.5  1063.6  1064.1  1064.6  1065.1  1065.6  1066.1  1066.6  1067
             * SQ     0      15      43     455    1751    3879    6999   11192   17236   253
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 85          KK   DIXAO
 86          KM  DIVERT FLOW FROM XA SOUTHWARD OVER SPRR AND OUT OF MODEL
 87          DT   DIZZ1
 88          DI       0       0      43     455    1751    3879    6999   11192   17236   25382
 89          DQ       0       0       0       0       0       0       0      44     960    3141
             *

 90          KK  RTXAWCROUTE   REACH
 91          KM  ROUTE FLOW FROM XA TO WC (ALONG SPRR).
 92          KM  TYPE C CHANNEL
 93          RS      12              -1       0
 94          RC   0.035   0.035   0.035    5100  0.0016    0.00
 95          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
 96          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
             *

 97          KK   SUBWB   BASIN
 98          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 99          BA   0.667
100          LG    0.16    0.15    9.70    0.06      36
101          UI      60     103     240     316     391     474     689     701     538     442
102          UI     358     278     177     107      94      61      41      19      18      19
103          UI      19      18       0       0       0       0       0       0       0       0
104          UI       0       0       0       0       0       0       0       0       0       0
105          UI       0       0       0       0       0       0       0       0       0       0
             *

106          KK  RTWBWCROUTE   REACH
107          KM  ROUTE FLOW FROM WB TO WC (ALONG 35TH AVENUE).
108          KM  TYPE C CHANNEL
109          RS       3              -1       0
110          RC   0.025   0.025   0.025    2500  0.0020    0.00
111          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
112          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

113          KK   SUBWC   BASIN
114          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
115          BA   0.487
```

```
 116          LG    0.16    0.16    9.70    0.06      42
 117          UI      46      90     195     255     315     404     581     477     377     302
 118          UI     240     167      90      78      48      36      14      15      14      14
 119          UI       0       0       0       0       0       0       0       0       0       0
 120          UI       0       0       0       0       0       0       0       0       0       0
 121          UI       0       0       0       0       0       0       0       0       0       0
              *

 122          KK    CPWC
 123          KM  ADD HYDROGRAPHS AT WC.
 124          HC       3
              *
              * KK  RSWC
              * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
              * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
              * KO      1
              * RS      1    STOR       0       0
              * SV   16.1    27.6    44.0    65.2    90.7   121.5   159.6   206.8   263.7   329
              * SE1057.1  1057.6  1058.1  1058.6  1059.1  1059.6  1060.1  1060.6  1061.1  1061
              * SQ      0      34     456    1381    2859    4933    7982   12958   19919   288
              *
1                                          HEC-1 INPUT                                          PAGE  4

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 125          KK  DIWCWA
 126          KM  DIVERT FLOW FROM WC TO QE
 127          KM  Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP
 128          DT    DIQE
 129          DI       0      34     456    1381    2859    4933    7982   12958   19919   28835
 130          DQ       0       0       0       0       0       0     141    1221    3463    6954
              *
              * KKDIWCQE
              * KM DIVERT FLOW FROM WC TO QE
              * DT  DIQE
              * DI      0     115     608    1579    3086    5253    8972   15024   23745   350
              * DQ      0       0       0       0       0      40     951    3350    7104   121
              *

 131          KK  RTWCWA
 132          KM  HEC-RAS REACH
 133          KO       1
 134          KM  ROUTE FLOW FROM WC TO WA (ALONG SPRR).
 135          KM  Channel geometry changed to match natural conditions 04.11.00  JEP
 136          KM  Manning's N values changed to match approved values 04.11.00  JEP
 137          KM  Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP
 138          KM  Stage-storage values are based on HEC-2 analysis results 06.19.00 JEP
 139          KM  Values transferred directly from HEC-2 file: Tape7_1 09.29.00 JEP
 140          RS      15    STOR       0       0
 141          SV       0     103     168     242     267     296     317     332     338     354
 142          SV     375
 143          SQ       0     200     400     800    1000    1200    1400    1600    1700    1900
 144          SQ    2200
              * RC  .129    .129    .129    4850   .0010
              * RX     0      40     200     410     870    1240    1700    2160
              * RY   4.4     3.8       0     1.6       0     1.8     2.8     4.4
              *
              *

 145          KK   SUBWA   BASIN
 146          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 147          BA   0.492
 148          LG    0.15    0.15   10.10    0.05      43
 149          UI      75     302     455     683     855     573     402     209     117      67
 150          UI      23      23      23       0       0       0       0       0       0       0
 151          UI       0       0       0       0       0       0       0       0       0       0
              *

 152          KK   CPWA1
 153          KM  ADD HYDROGRAPH SUBWA TO RTWCWA
 154          HC       2
              *

 155          KK   SUBVD   BASIN
 156          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 157          BA   0.697
 158          LG    0.16    0.16    9.70    0.06      36
 159          UI      63     108     251     330     408     495     720     733     562     461
 160          UI     375     291     185     112      98      63      44      19      20      19
1                                          HEC-1 INPUT                                          PAGE  5

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 161          UI      20      19       0       0       0       0       0       0       0       0
 162          UI       0       0       0       0       0       0       0       0       0       0
 163          UI       0       0       0       0       0       0       0       0       0       0
              *

 164          KK  RTVDWAROUTE   REACH
 165          KM  ROUTE FLOW FROM VD TO WA (ALONG 43RD AVENUE).
 166          KM  TYPE B CHANNEL
 167          RS       2              -1       0
 168          RC   0.100   0.020   0.100    2500  0.0030    0.00
 169          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
 170          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
```

```
                *
171             KK   CPWA2
172             KM  ADD HYDROGRAPHS FROM SUBWA AND RTWCWA TO RTVDWA.
173             HC       2
                *
                * KK  RSWA
                * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
                * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
                * KO     1
                * RS     1    STOR       0       0
                * SV   1.3     1.9     2.4     3.1     4.0     8.5    16.7    29.9    48.5    74
                * SE1050.7  1050.9  1051.1  1051.3  1051.4  1051.9  1052.4  1052.9  1053.4  1053
                * SQ     0       0       0       0       0      77     562    1532    3131    53
                *

174             KK  DIWAVC
175             KM  DIVERT FLOW FROM WA TO QD OVER SPRR
176             KM  Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP
177             KM  Revised DQ records based on HEC-2 analysis results.  06.28.00 JEP
178             DT    DIQD
179             DI       0     200     400     800    1000    1200    1400    1600    1700    1900
180             DQ       0       0      42     369     555     746     942    1140    1174    1370
                *
                * KKDIVCQD
                * KM DIVERT FLOW FROM VC TO QD OVER SPRR
                * DT  DIQD
                * DI     0     810    9237   10710
                * DQ     0       0       0      63
                *

181             KK  RTWAVC
182             KM  HEC-RAS REACH
183             KO       1
184             KM  MODIFIED PULS ROUTE FLOW FROM WA TO VC (ALONG SPRR).
                * KM      Channel geometry changed to match natural conditions 04.11.00  JEP
185             KM  Manning's N values changed to match approved values 04.11.00  JEP
186             KM  Method changed from Normal Depth Storage to Modified Puls 05.22.00 JEP
187             KM  Stage-Storage values based on HEC-2 analysis results.  06.19.00 JEP
188             KM  Values transferred directly from HEC-2 file:  Tape7_2  9.29.00 JEP
189             RS      15    STOR       0       0
190             SV       0     146     178     193     201     208     212
191             SQ       0     400     600     800     989    1247    1487
                * RC  .317    .317    .317    5270   .0005
                * RX     0      50     120     390     810     950    1400    1700
                * RY   6.8       0       0     1.8     2.8     3.8     5.1     6.8
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

192             KK   SUBVC   BASIN
193             KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
194             BA   0.490
195             LG    0.12    0.16    8.40    0.10      50
196             UI      75     300     454     680     852     570     400     209     116      67
197             UI      23      23      23       0       0       0       0       0       0       0
198             UI       0       0       0       0       0       0       0       0       0       0
199             UI       0       0       0       0       0       0       0       0       0       0
                *

200             KK   CPVC1
201             KM  ADD HYDROGRAPH SUBVC TO RTWAVC.
202             HC       2
                *

203             KK   SUBVB   BASIN
204             KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
205             BA   0.720
206             LG    0.15    0.17    9.70    0.06      45
207             UI     121     489     718    1162    1201     810     529     243     146      66
208             UI      36      36       0       0       0       0       0       0       0       0
209             UI       0       0       0       0       0       0       0       0       0       0
210             UI       0       0       0       0       0       0       0       0       0       0
211             UI       0       0       0       0       0       0       0       0       0       0
212             UI       0       0       0       0       0       0       0       0       0       0
                *

213             KK  RTVBVCROUTE   REACH
214             KM  ROUTE FLOW FROM VB TO VC (ALONG 51ST AVENUE).
215             KM  TYPE B CHANNEL
216             RS       3      -1       0
217             RC   0.100   0.020   0.100    2500  0.0017    0.00
218             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
219             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *
                *

220             KK  ~CPVC2
221             KM  ADD HYDROGRAPHS FROM SUBVC AND RTWAVC TO RTVBVC.
222             HC       2
                *
                * KK  RSVC
                * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
                * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
```

```
* KO     1
* RS     1    STOR       0       0
* SV    70      83      97     113     121     170     192     216     284       3
* SE1051.4  1051.6  1051.8  1052.0  1052.1  1052.6  1052.8  1053.0  1053.3  1053
* SQ    16     246     746    1537    2048    5354    7033    8943   12315   147
*
* THE FOLLOWING DIVERT IS REMOVED TO MODEL THE ADMP CONDITION. 11.01.00 -DCF
* KKDIVCQA
* KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.
* KM Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JE
* KM Revised DQ records based on HEC-2 analysis results.  06.19.00 JEP
* DT  DIVA
* DI     0     100     400     600     800     989    1247    1487
* DQ     0       1      27      32      30      32      32      32
*
* KKDIVCVA
* KM DIVERT FLOW FROM VC TO VA OVER 51st AVE.
* DT  DIVA
* DI     0       9     654    2822    7159
* DQ     0       4     214     753    1814
*
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 223          KK  MCVC47ROUTE   REACH
 224          KM  ADMP CHANNEL
 225          KM  ROUTE FLOW FROM VC TO DET. BASIN 47.
 226          RS       1    FLOW      -1
 227          RC   0.040   0.040   0.040    1175  0.0020    0.00
 228          RX     0.0    16.0    33.7    51.3   101.3   119.0   136.6   152.6
 229          RY     5.6     5.9     2.9     0.0     0.0     2.9     5.9     5.6
              *

 230          KK  SUBQA2   BASIN
 231          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 232          BA   0.120
 233          LG    0.33    0.17    8.80    0.08      19
 234          UI      10      11      34      46      56      65      80     115     110      87
 235          UI      76      59      51      39      23      17      15       9       9       2
 236          UI       3       3       3       3       3       0       0       0       0       0
 237          UI       0       0       0       0       0       0       0       0       0       0
 238          UI       0       0       0       0       0       0       0       0       0       0
 239          UI       0       0       0       0       0       0       0       0       0       0
              *

 240          KK   CPQA2
 241          KM  ADD HYDROGRAPHS AT QA
 242          HC       2
              *

 243          KK   BSN47
 244          KO       1       2
 245          KM  ADMP DETENTION BASIN
 246          KM  LOCATED ALONG 47TH AVE. ALGN. 1/2 MILE SOUTH OF SPRR
 247          RS       1    STOR      -1
 248          SV       0     .12     .86    2.83    6.69   13.55   22.24   34.77   55.53   76.08
 249          SE      31      32      33      34      35      36      37      38      39      40
 250          SQ       0     200     400     600     800    1000    1188    1237
 251          SE      29   31.73   33.35   34.67   36.21   38.06   40.11   40.70
              *

 252          KK  MC47QBROUTE   REACH
 253          KM  ADMP CHANNEL
 254          KM  ROUTE FLOW FROM DET. BASIN 47 TO QB
 255          RS       2    FLOW      -1
 256          RC   0.014   0.014   0.014    2678  0.0005    0.00
 257          RX     0.0    16.0    16.0    16.0    71.0    71.0    71.0    87.0
 258          RY     5.6     5.9     3.0     0.0     0.0     3.0     5.9     5.6
              *

 259          KK   SUBQB   BASIN
 260          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 261          BA   0.505
 262          LG    0.30    0.11   11.20    0.03      27
 263          UI      40      48     143     194     234     276     336     483     465     366
 264          UI     316     253     211     166      97      69      63      41      34      12
 265          UI      13      12      13      12      13       0       0       0       0       0
 266          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

 267          UI       0       0       0       0       0       0       0       0       0       0
              *

 268          KK   ~CPQB
 269          KM  COMBINE FLOWS AT QB INTO NEW CHANNEL
 270          HC       2
              *
              * THE FOLLOWING PONDING REMOVED TO MODEL THE ADMP CONDITION -DCF
              * KK  RSQB
              * KM      MODIFIED PULS ROUTING THROUGH PONDING BEHIND RID.
              * KM THROUGH THE 43RD AVENUE.
              * RS     1    STOR       0       0
```

```
                * SV   9.4    13.9    19.2    25.5    33.1    41.8    51.7    62.9    75.3    89
                * SE1033.3  1033.6  1033.9  1034.2  1034.5  1034.8  1035.1  1035.4  1035.7  1036
                * SQ     0    19.3   123.0   423.5   958.2  1718.8  2775.9  4426.7  6845.4  9954
                *

271             KK   SUBQD   BASIN
272             KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
273             BA   0.249
274             LG   0.17    0.06   12.40    0.02      51
275             UI     35     125     195     271     419     311     227     158      75      48
276             UI     29      10      11      11       0       0       0       0       0       0
277             UI      0       0       0       0       0       0       0       0       0       0
                *

278             KK    DRQD
279             KM  RETURN DIVERT FROM WA
280             DR    DIQD
                *

281             KK  RTDIQDROUTE   REACH
282             KM  ROUTE DIVERT FROM WA TO QD
283             KM  TYPE C CHANNEL
284             RS      5              -1       0
285             RC   0.100   0.020   0.100    5000  0.0030    0.00
286             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
287             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

288             KK   @CPQD
289             KM  ADD HYDROGRAPHS AT QD
290             HC      2    3.24
                *

291             KK    RSQD
292             KM  MODIFIED PULS ROUTING BEHIND RID CANAL.
293             RS      1    STOR       0       0
294             SV    2.8     4.8     8.6    14.6    22.5    31.9    42.6    54.8    65.5
295             SE 1038.1  1038.5  1039.0  1039.5  1040.0  1040.5  1041.0  1041.5  1042.0
296             SQ      0    30.5   388.4  1580.9  4070.0  7936.6 13214.2 19810.4 26117.2
                *
```



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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

297             KK  DIQDQC
298             KM  DIVERT FLOW FROM QD TO QC
299             DT    DIQC
300             DI      0      31     388    1580    4070    7937   13214
301             DQ      0      31     317     989    2171    4054    6590
                * SPLIT WAS "FLIPPED" TO MODEL ADMP CONDITION -DCF
                * ORIGINAL SPLIT IS AS FOLLOWS
                * DI     0      31     388    1580    4070    7937   13214   19810   26117
                * DQ     0       0      71     591    1899    3883    6624   10067   13292
                *

302             KK  RTQDQBROUTE   REACH
303             KM  TYPE C CHANNEL
304             RS      3              -1       0
305             RC   0.100   0.020   0.100    3000  0.0038    0.00
306             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
307             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

308             KK   @CPQB
309             KM  ADD HYDROGRAPHS AT QB
310             HC      2    3.74
                *

311             KK  MCQBJKROUTE   REACH
312             KM  ADMP CHANNEL
313             KM  ROUTE FLOW FROM VC TO DET. BASIN 47.
314             RS      2    FLOW      -1
315             RC   0.040   0.040   0.040    2476  0.0017    0.00
316             RX     1.0    17.0    35.1    53.1   138.1   156.2   174.3   190.3
317             RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
                *

318             KK   SUBJK
319             KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
320             BA   0.485
321             LG   0.34    0.14   10.10    0.05      20
322             UI     38      40     133     178     215     253     303     423     464     361
323             UI    306     252     209     170     115      67      63      44      38      18
324             UI     12      11      12      11      12       0       0       0       0       0
325             UI      0       0       0       0       0       0       0       0       0       0
326             UI      0       0       0       0       0       0       0       0       0       0
327             UI      0       0       0       0       0       0       0       0       0       0
                *

328             KK   CPJK
329             KM  COMBINE HYDROGRAPHS AT JK
330             HC      2
                *
```

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 331          KK  MCJKJLROUTE   REACH
 332          KM  ADMP CHANNEL
 333          KM  ROUTE FLOW FROM JK TO JL.
 334          RS       3    FLOW      -1
 335          RC   0.040   0.040   0.040    3940  0.0017    0.00
 336          RX     0.0    16.0    33.6    51.1   161.1   178.7   196.2   212.2
 337          RY     5.5     5.9     2.9     0.0     0.0     2.9     5.9     5.5
              *

 338          KK   SUBJL
 339          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 340          BA   0.485
 341          LG    0.34    0.14   10.10    0.05      20
 342          UI      38      40     133     178     215     253     303     423     464     361
 343          UI     306     252     209     170     115      67      63      44      38      18
 344          UI      12      11      12      11      12       0       0       0       0       0
 345          UI       0       0       0       0       0       0       0       0       0       0
 346          UI       0       0       0       0       0       0       0       0       0       0
 347          UI       0       0       0       0       0       0       0       0       0       0
              *

 348          KK  ~CPJL1
 349          KM  COMBINE FLOWS INTO NEW CHANNEL AT JL
 350          HC       2
              *

 351          KK   SUBQE   BASIN
 352          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 353          BA   0.913
 354          LG    0.15    0.13   10.10    0.04      56
 355          UI      92     200     409     529     670     915    1121     854     673     525
 356          UI     394     212     156     109      77      28      29      28      29       0
 357          UI       0       0       0       0       0       0       0       0       0       0
 358          UI       0       0       0       0       0       0       0       0       0       0
 359          UI       0       0       0       0       0       0       0       0       0       0
              *

 360          KK    DRQE
 361          KM  RETURN DIVERT FROM WC
 362          DR    DIQE
              *

 363          KK  RTDIQEROUTE   REACH
 364          KM  ROUTE DIVERT FROM WC TO QE
 365          KM  TYPE A CHANNEL
 366          RS       8              -1       0
 367          RC   0.025   0.025   0.025    6600  0.0030    0.00
 368          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
 369          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 370          KK    CPQE
 371          KM  ADD HYDROGRAPHS AT QE.
 372          HC       2
              *

 373          KK    RSQE
 374          KM  MODIFIED PULS ROUTING BEHIND RID CANAL
 375          RS       1    STOR       0       0
 376          SV     9.5    11.0    14.9    20.2    26.5    33.8   55.23    82.5    95.6   159.9
 377          SE  1040.1  1040.2  1040.4  1040.6  1040.8  1041.0  1041.5  1042.0  1042.2  1043.0
 378          SQ       0     1.8    62.8   242.3   581.9    1158    4169    9977   13108   31180
              *

 379          KK  RTQEQCROUTE   REACH
 380          KM  ROUTE FLOW FROM QE TO QC (SHEET FLOW).
 381          KM  TYPE A CHANNEL
 382          RS       3              -1       0
 383          RC   0.025   0.025   0.025    3000  0.0027    0.00
 384          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
 385          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

 386          KK   SUBQC   BASIN
 387          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 388          BA   0.606
 389          LG    0.23    0.16   10.10    0.04      32
 390          UI      63     146     285     371     474     679     733     552     429     333
 391          UI     233     119      98      64      33      20      20      19      20       0
 392          UI       0       0       0       0       0       0       0       0       0       0
 393          UI       0       0       0       0       0       0       0       0       0       0
 394          UI       0       0       0       0       0       0       0       0       0       0
              *

 395          KK  DRDIQC
 396          KM  RETURN DIVERTED FLOW FROM QD
 397          DR    DIQC
              *
```

```
398          KK  RTDIQCROUTE REACH
399          KM  ROUTE FLOW FROM QD TO QC.
400          KM  TYPE B CHANNEL
401          RS      3              -1       0
402          RC   0.100   0.020   0.100    3000  0.0038    0.00
403          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
404          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

405          KK    CPQC
406          KM  ADD HYDROGRAPHS AT QC
407          HC      3
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

408          KK   DIQCR
409          KM  DIVERT 80% OF FLOW FROM QC TO RIVER
410          DT   DISR1
411          DI      0      25      50      75     100     150     200
412          DQ      0      20      40      60      80     120     160
             *

413          KK  RTQCJLROUTE   REACH
414          KM  ROUTE FLOW FROM QC TO JL
415          KM  TYPE A CHANNEL
416          RS      3              -1       0
417          RC   0.100   0.020   0.100    3000  0.0038    0.00
418          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
419          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

420          KK   CPJL2
421          KM  COMBINE HYDROGRAPHS AT JL
422          HC      2
             *

423          KK  SUBQA1   BASIN
424          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
425          BA   0.365
426          LG    0.34    0.14   10.10    0.05      20
427          UI      28      28      96     128     156     181     217     293     350     278
428          UI     234     195     162     136      96      58      48      39      28      22
429          UI       8       9       9       8       9       9       0       0       0       0
430          UI       0       0       0       0       0       0       0       0       0       0
431          UI       0       0       0       0       0       0       0       0       0       0
432          UI       0       0       0       0       0       0       0       0       0       0
             *

433          KK    RSQA
434          KM  MODIFIED PLUS ROUTING THROUGH PONDING BEHIND RID
435          RS      1    STOR      -1       0
436          SV    6.6     9.4    13.0    17.4    22.4    28.1    34.6    42.1    50.4
437          SE 1032.2  1032.4  1032.6  1032.8  1033.0  1033.2  1033.4  1033.6  1033.8
438          SQ      0      69    1129    6033   11213
439          SE 1031.9  1032.4  1032.9  1033.4  1033.9
             *

440          KK  DIQAPF
441          KM  DIVERT FLOW FROM QA TO PF
442          DT    DIPF
443          DI      0      69    1129    6033   11213
444          DQ      0      39     462    1272    2210
             *
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```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

445          KK  RTQAJHROUTE   REACH
446          KM  ROUTE FLOW FROM QA TO JH (SHEET FLOW).
447          KM  TYPE A CHANNEL
448          RS     13              -1       0
449          RC   0.100   0.100   0.100    2800  0.0031    0.00
450          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
451          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

452          KK   SUBJH   BASIN
453          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
454          BA   0.273
455          LG    0.26    0.12   11.20    0.03      32
456          UI      62     221     332     545     416     270     133      69      31      15
457          UI      15       0       0       0       0       0       0       0       0       0
458          UI       0       0       0       0       0       0       0       0       0       0
459          UI       0       0       0       0       0       0       0       0       0       0
             *

460          KK    CPJH
461          HC      2
             *

462          KK  RTJHJIROUTE REACH
463          KM  ROUTE FLOW FROM JH TO JI (SHEET FLOW).
```

```
464          KM  TYPE A CHANNEL
465          RS      15              -1       0
466          RC   0.100   0.100   0.100    4000  0.0031    0.00
467          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
468          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

469          KK   SUBJI   BASIN
470          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
471          BA   0.226
472          LG    0.35    0.14   10.10    0.04      29
473          UI      58     202     310     480     327     202      85      49      14      13
474          UI       0       0       0       0       0       0       0       0       0       0
475          UI       0       0       0       0       0       0       0       0       0       0
             *

476          KK    CPJI
477          KM  COMBINE FLOWS AT JI
478          HC       2
             *

479          KK  CPJISR
480          KM  COMBINE FLOWS AT SALT RIVER
481          HC       2
             *
1                                          HEC-1 INPUT                                          PAGE 14

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

482          KK   SUBPF   BASIN
483          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
484          BA   0.502
485          LG    0.17    0.20    7.30    0.12      52
486          UI     113     407     611    1001     766     497     244     127      58      26
487          UI      28       0       0       0       0       0       0       0       0       0
488          UI       0       0       0       0       0       0       0       0       0       0
489          UI       0       0       0       0       0       0       0       0       0       0
             *

490          KK   RETPF
491          KM  DIVERT RETENTION OUT OF MODEL DUE TO KNIGHT TRANSPORTATION
492          KM  PARKING LOT EXPANSION. -DCF
493          KM  TOTAL RETENTION IS 3.9 AF. 80% OF THAT IS USED HERE. -DCF
494          DT   RETPF     3.1
495          DI       0   10000
496          DQ       0   10000
             *

497          KK    DRPF
498          KM  RETURN DIVERT FROM QA.
499          DR    DIPF
             *

500          KK  RTDIPFROUTE   REACH
501          KM  ROUTE DIVERT FROM QA TO PF.
502          KM  TYPE C CHANNEL
503          RS      11              -1       0
504          RC   0.035   0.035   0.035    2600  0.0005    0.00
505          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
506          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
             *

507          KK    CPPF
508          KM  ADD HYDROGRAPHS AT PF
509          HC       2
             *

510          KK    RSPF
511          KM  MODIFIED PULS ROUTING BEHIND RID
             * KO      1
512          RS       1    STOR       0       0
513          SV    28.2    33.4    39.2    48.8    55.7    67.3    76.0    85.3   100.7   111.8
514          SE  1032.2  1032.4  1032.6  1032.8  1033.0  1033.2  1033.4  1033.6  1033.8  1034.0
515          SQ       0    19.4   124.9   457.5  1050.9  1875.2  2964.8  4437.1  6362.7  8725.9
             *

516          KK  DIPFPE
517          KM  DIVERT FLOW FROM PF TO PE
518          DT    DIPE
519          DI       0     255    1875    5340   11513
520          DQ       0       0       0     160    1143
             *
1                                          HEC-1 INPUT                                          PAGE 15

LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

521          KK  RTPFJFROUTE   REACH
522          KM  ROUTE FLOW FROM PF TO JF.
523          KM  TYPE A CHANNEL
524          RS       6              -1       0
525          RC   0.035   0.035   0.035    4000  0.0040    0.00
526          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
527          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
             *
```

```
528          KK   SUBUD   BASIN
529          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
530          BA   0.759
531          LG    0.31    0.16    9.70    0.07      26
532          UI      56      56     174     246     299     345     411     515     702     605
533          UI     504     426     355     302     243     170      99      93      72      56
534          UI      38      17      18      17      17      17      17       0       0       0
535          UI       0       0       0       0       0       0       0       0       0       0
536          UI       0       0       0       0       0       0       0       0       0       0
537          UI       0       0       0       0       0       0       0       0       0       0
             *

538          KK  DIUDUA
539          KM  DIVERT 25% OF FLOW FROM UD TO UA.
540          DT    DIUA
541          DI       0      25      50      75     100     150     200
542          DQ       0       6      13      19      25      38      50
             *

543          KK  RTUDVAROUTE   REACH
544          KM  ROUTE FLOW FROM UD TO VA (ALONG 59TH AVENUE).
545          KM  TYPE B CHANNEL
546          RS       3              -1       0
547          RC   0.100   0.020   0.100    2600  0.0019    0.00
548          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
549          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

550          KK   SUBVA   BASIN
551          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
552          BA   0.493
553          LG    0.10    0.15    8.40    0.10      58
554          UI      75     303     456     684     857     574     402     210     117      67
555          UI      23      23      24       0       0       0       0       0       0       0
556          UI       0       0       0       0       0       0       0       0       0       0
557          UI       0       0       0       0       0       0       0       0       0       0
             *
             * THE FOLLOWING DIVERT RETURN IS REMOVED TO MODEL THE ADMP CONDITION
             * KK  DRVA
             * KM      RETURN DIVERT FROM VC
             * DR  DIVA
             *
             * KKRTDIVA
             * KM HEC-RAS REACH
             * KO     1
             * KM      ROUTE FLOW FROM VC TO VA (ALONG SPRR).
             * KM      Method changed from Normal Depth Storage to Modified Puls 06.19.00 JEP
             * KM      Stage-Storage values are based on HEC-2 analysis results. 06.19.00 JEP
             * KM      Values transferred directly from HEC-2 file:  Tape7_3  09.29.00  JEP
             * RS    15    STOR       0       0
             * SV     0      56      87     130     163     191     205     218     227
             * SQ     0     100     200     400     600     800    1000    1200    1500
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

558          KK   CPVA1
559          KM  ADD HYDROGRAPH SUBVA TO RTDIVA
560          HC       2
             *
             * KK CPVA2
             * KM      ADD HYDROGRAPHS SUBVA AND RTDIVA TO RTUDVA
             * HC     2
             *
             * KK  RSVA
             * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
             * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
             * KO     1
             * RS     1    STOR       0       0
             * SV  10.3    13.3    15.6    23.9    34.6    48.9    67.7    90.8   118.6
             * SE1044.2  1044.3  1044.5  1045.0  1045.5  1046.0  1046.5  1047.0  1047.5
             * SQ     0       2      39     397    1279    2904    5363    8613   13175
             *

561          KK  DIVAPE
562          KM  DIVERT FLOW FROM VA TO UC OVER 59TH AVE.
563          KM  Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP
564          KM  REVISED DIVERSION RECORDS TO REROUTE DIVERSION AROUND CODE SEQUENCE.
565          KM  INSTEAD OF DIVERTING FLOW OVER THE WEIR TO THE SOUTH, FLOW IS BEING
566          KM  DIVERTED TO THE WEST. 06.02.00 -DCF
567          KM  Revised DQ records based on HEC-2 analysis results.  06.19.00 JEP
568          DT    DIUC
569          DI       0     200     400     600     800    1000    1200    1500
570          DQ       0     200     398     548     656     715     738     756
             * DI     0       2      39     397    1279
             * DQ     0       0       0       0       0
             *

571          KK  RTVAPEROUTE   REACH
572          KM  ROUTE FLOW FROM VA TO PE (ALONG 59TH AVENUE).
573          KM  TYPE B CHANNEL
574          RS       3              -1       0
575          RC   0.100   0.020   0.100    3000  0.0038    0.00
```

```
576          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
577          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

578          KK   SUBPE   BASIN
579          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
580          BA   0.504
581          LG    0.13    0.26    6.20    0.22      56
582          UI     130     449     692    1071     728     453     189     108      32      29
583          UI       0       0       0       0       0       0       0       0       0       0
584          UI       0       0       0       0       0       0       0       0       0       0
585          UI       0       0       0       0       0       0       0       0       0       0
             *
1                                          HEC-1 INPUT                                          PAGE 17
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

586          KK    DRPE
587          KM  RETURN DIVERT FROM PF
588          DR    DIPE
             *

589          KK  RTDIPE
590          KM  ROUTE DIVERT FROM PF TO PE.
591          KM  TYPE C CHANNEL
592          RS       3              -1       0
593          RC    .035    .035    .035    2000   .0005
594          RX       0      20      35      50    50.1     250     450     550
595          RY       5       5     2.5       0       0       2       4       5
             *

596          KK    CPPE
597          KM  ADD HYDROGRAPHS AT PE
598          HC       3
             *

599          KK    RSPE
600          KM  RESERVOIR ROUTING BEHIND 59TH AVE AND RID CANAL
601          RS       1    STOR       0       0
602          SV    15.6    16.9    21.0    24.0    29.5    33.7    38.3    43.2
603          SE  1032.5  1032.6  1032.8  1033.0  1033.2  1033.4  1033.6  1033.7
604          SQ       0    1.44      23     194     637    1420    2516    3177
             *

605          KK  DIPEPD
606          KM  DIVERT FLOW FROM PE TO PD
607          DT    DIPD
608          DI       0     8.2     636    3177
609          DQ       0       0       0     8.1
             *

610          KK  RTPEJFROUTE   REACH
611          KM  ROUTE FLOW FROM PE TO JF (ALONG 59TH AVE).
612          KM  TYPE B CHANNEL
613          RS       2              -1       0
614          RC   0.100   0.020   0.100    2600  0.0036    0.00
615          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
616          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

617          KK   SUBJF   BASIN
618          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
619          KM  L=        .7  Lca=        .4   S=    11.1  Kn= .027  LAG=  22.9
620          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
621          BA   0.501
622          LG    0.10    0.15    7.60    0.14      55
623          UI     320    1108    1172     675     319     146      67      20      19      19
624          UI       0       0       0       0       0       0       0       0       0       0
625          UI       0       0       0       0       0       0       0       0       0       0
626          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

627          KK    CPJF
628          KM  COMBINE FLOWS AT JF.
629          HC       3
             *

630          KK  RTJFJGROUTE   REACH
631          KM  ROUTE FLOW FROM JF TO JE (ALONG 59TH AVE).
632          KM  TYPE B CHANNEL
633          RS       4              -1       0
634          RC   0.100   0.020   0.100    6000  0.0036    0.00
635          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
636          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

637          KK   SUBJG   BASIN
638          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
639          KM  L=        .7  Lca=        .4   S=    11.1  Kn= .027  LAG=  22.9
640          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
641          BA   0.901
```

```
 642          LG    0.12    0.16    8.40    0.10      51
 643          UI     195     717    1181    1396    1191     840     531     336     203     134
 644          UI      96      35      20      21      21      20      21       0       0       0
 645          UI       0       0       0       0       0       0       0       0       0       0
 646          UI       0       0       0       0       0       0       0       0       0       0
              *

 647          KK    CPJG
 648          KM  COMBINE FLOWS AT SALT RIVER.
 649          HC       2
              *

 650          KK  CPJGSR
 651          KM  COMBINE FLOWS AT SALT RIVER
 652          HC       2
              *
              * ***********************************************************************
              *

 653          KK    DRUC
 654          KM  RETURN DIVERT FROM VA
 655          DR    DIUC
              *
              *
              * KKRTVAUC   ROUTE   REACH
              * KM      ROUTE FLOW FROM VA TO UC
              * KM      Channel geometry changed to match natural conditions 04.11.00  JEP
              * KM      Manning's N values changed to match approved values 04.11.00  JEP
              * RS     9              -1       0
              * RC 0.035   0.035   0.035    5200  0.0012    0.00
              * RX   0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
              * RY   5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *
1                                          HEC-1 INPUT                                          PAGE 19

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 656          KK  RTVAUC
 657          KM  HEC-RAS REACH
 658          KO       1
 659          KM  ROUTE FLOW FROM VA TO A POINT IN UC (ALONG SPRR).
 660          KM  Channel geometry changed to match natural conditions 04.11.00  JEP
 661          KM  Manning's N values changed to match approved values 04.11.00  JEP
 662          KM  Method changed from Normal Depth Storage to Modified Puls 05.25.00 JEP
 663          KM  Stage-storage values are from HEC-2 results 06.19.00 JEP
 664          KM  Values transferred directly from HEC-2 file: Tape7_4  09.29.00 JEP
 665          KM  Values modified to reflect channelization downstream  06.11.01 JEP
 666          RS       9    STOR       0       0
 667          SV       0      46      62      76      90     102     114     125     137
 668          SQ       0     200     400     600     800    1000    1200    1400    1600
              *
              * KKSUBUC    BASIN
              * KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
              * BA 0.483
              * LG  0.23    0.15    9.70    0.06      28
              * UI    49     105     217     280     354     484     594     451     356       2
              * UI   208     113      83      57      41      15      15      14      15
              * UI     0       0       0       0       0       0       0       0       0
              * UI     0       0       0       0       0       0       0       0       0
              *
              * KK@CPUC1
              * KM      ADD HYDROGRAPHS SUBUC1 TO RTVAUC
              * HC     2    1.73
              *

 669          KK  MCUCUCROUTE   REACH
 670          KM  ADMP CHANNEL
 671          KM  MASTER CHANNEL ROUTE FROM UC1 TO UC2
 672          KM  ROUTING RECORD ADDED, JEP 6/11/01
 673          RS       1    FLOW      -1
 674          RC   0.014   0.014   0.014    2493  0.0014    0.00
 675          RX     0.0    16.0    16.0    16.0    46.0    46.0    46.0    62.0
 676          RY     4.8     5.1     2.6     0.0     0.0     2.6     5.1     4.8
              *

 677          KK   SUBUC   BASIN
 678          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
 679          BA   0.483
 680          LG    0.23    0.15    9.70    0.06      28
 681          UI      49     105     217     280     354     484     594     451     356     278
 682          UI     208     113      83      57      41      15      15      14      15       0
 683          UI       0       0       0       0       0       0       0       0       0       0
 684          UI       0       0       0       0       0       0       0       0       0       0
              *

 685          KK   @CPUC
 686          KM  ADD HYDROGRAPHS SUBUC TO MCUCUC
 687          HC       2    1.73
              *
1                                          HEC-1 INPUT                                          PAGE 20

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 688          KK   SUBUA   BASIN
```

```
689          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
690          BA   0.561
691          LG    0.23    0.16    9.70    0.06      22
692          UI      44      46     155     204     249     294     350     490     536     417
693          UI     354     291     242     198     133      77      73      51      43      21
694          UI      13      13      14      13      14       0       0       0       0       0
695          UI       0       0       0       0       0       0       0       0       0       0
696          UI       0       0       0       0       0       0       0       0       0       0
             *

697          KK    DRUA
698          KM  RETURN DIVERT FROM UD
699          DR    DIUA
             *

700          KK  RTDIUAROUTE   REACH
701          KM  ROUTE DIVERT TO UA
702          KM  TYPE B CHANNEL
703          RS       7              -1       0
704          RC   0.100   0.020   0.100    5000  0.0014    0.00
705          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
706          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

707          KK   @CPUA
708          KM  ADD HYDROGRAPHS AT UA
709          HC       2    1.32
             *

710          KK  DIUAUC
711          KM  DIVERT 20% OF FLOW FROM UA TO TB
712          DT    DITB
713          DI       0      25      50      75     100     150     200
714          DQ       0       5      10      15      20      30      40
             *

715          KK  RTUAUCROUTE   REACH
716          KM  ROUTE FLOW FROM UA TO UC (ALONG 67TH AVENUE).
717          KM  TYPE B CHANNEL
718          RS       3              -1       0
719          RC   0.100   0.020   0.100    2400  0.0017    0.00
720          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
721          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

722          KK  ~CPUC2
723          KM  ADD HYDROGRAPHS SUBUC AND MCUCUC TO RTUAUC
724          HC       2
             *
             * KK  RSUC
             * KM      ROUTE FLOW FROM UC TO UB OVER 67th AVE.
             * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
             * KO     1
             * RS     1    STOR       0       0
             * SV   4.8     6.9     9.9    19.0    33.0    52.6    77.4   108.7   148.6
             * SE1036.2  1036.3  1036.5  1037.0  1037.5  1038.0  1038.5  1039.0  1039.5
             * SQ     0       0      76     811    2294    4562    7715   11722   16588
             *
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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

725          KK  DIUCPC
726          KM  DIVERT FLOW FROM UC TO PC OVER SPRR
727          KM  Revised DQ records to reflect new weir analysis based on survey. 05.04.00 JEP
728          KM  Revised DQ records based on HEC-2 results.  06.19.00 JEP
729          KM  REVERSE DIVERT TO ROUTE AROUND CODE SEQUENCE. 06.21.00 -DCF
730          KM  DIVERT EFFECTIVELY REMOVED DUE TO ADMP CHANNELIZATION.  06.11.01 -JEP
731          DT    DIUB
732          DI       0     100     400     800    1000    1200    1400    1600
733          DQ       0     100     400     800    1000    1200    1400    1600
             * DI     0     100     400     800    1000    1200    1400    1600
             * DQ     0     100     400     674     825     854     914     945
             * DI     0     100     400     800    1000    1200    1400    1600
             * DQ     0       0       0     126     175     346     486     655
             *

734          KK  RTUCPCROUTE   REACH
735          KM  ROUTE FLOW FROM UC TO PC (ALONG 67TH AVE).
736          KM  TYPE B CHANNEL
737          RS       3              -1       0
738          RC   0.100   0.020   0.100    3000  0.0038    0.00
739          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
740          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

741          KK   SUBPC   BASIN
742          KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
743          BA   0.300
744          LG    0.18    0.19    8.80    0.06      42
745          UI     160     482     829     518     214      79      23       0       0       0
746          UI       0       0       0       0       0       0       0       0       0       0
747          UI       0       0       0       0       0       0       0       0       0       0
748          UI       0       0       0       0       0       0       0       0       0       0
             *
```

```
KK    CPPC
KM  COMBINE POSSIBLE FLOWS FROM UC WITH FLOWS FROM PC
HC       2
*

KK    RSPC
KM  MODIFIED PULS ROUTING FROM PC TO NB.
RS       1    STOR       0       0
SV    29.1    31.8    34.8    38.2      42      46    50.2    78.8   107.9   135.6
SE  1029.8  1029.9  1030.0  1030.1  1030.2  1030.3  1030.4  1031.0  1031.5  1032.0
SQ       5      27      70     134     225     357     545    3654    9263   17876
*

KK  RTPCNBROUTE   REACH
KM  ROUTE FLOW FROM PC TO NB (ALONG 67TH AVE).
KM  TYPE B CHANNEL
RS       4              -1       0
RC   0.100   0.020   0.100    4800  0.0038    0.00
RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
*
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK   SUBNB   BASIN
KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
KM  L=       .9  Lca=        .5   S=    16.8  Kn= .073  LAG=  54.0
KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
BA   0.444
LG    0.13    0.11    6.80    0.17      44
UI      65     194     383     527     550     471     379     271     192     114
UI      86      60      40      38       8       8       8       8       8       9
UI       8       8       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK   CPNB1
KM  ADD HYDROGRAPHS AT NB
HC       2
*

KK  DINBNA
KM  DIVERT 65% OF FLOW FROM NB TO NA
DT    DINA
DI       0      25      50      75     100     150     200
DQ       0      16      33      49      65      98     130
*

KK  RTNBJDROUTE   REACH
KM  ROUTE FLOW FROM NB TO JD (ALONG 67TH AVENUE).
KM  TYPE B CHANNEL
RS       4              -1       0
RC   0.100   0.020   0.100    5200  0.0054    0.00
RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
*

KK   SUBPD   BASIN
KM  VALLEY S-GRAPH WAS USED FOR THIS BASIN
BA   0.443
LG    0.14    0.17    8.00    0.11      24
UI     130     438     708     954     610     331     138      64      27      27
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
UI       0       0       0       0       0       0       0       0       0       0
*

KK    DRPD
KM  RETURN DIVERT FROM PE
DR    DIPD
*
```

1 HEC-1 INPUT PAGE 23

```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

KK   CPPD2
KM  ADD HYDROGRAPH AT PD
HC       2
*

KK    RSPD
KM  MODIFIED PULS ROUTING FROM PD TO NC.
* KO     1
RS       1    STOR       0       0
SV    25.6    37.6    42.4    51.8    53.9    56.1    58.2
SE  1030.6  1030.7  1030.8  1030.9  1031.0  1031.1  1031.2
SQ       0       4      28     101     246     487     820
*
```

```
814          KK  RTPDNCROUTE   REACH
815          KM  ROUTE FLOW FROM PD TO NC (SHEET FLOW).
816          KM  TYPE A CHANNEL
817          RS       5              -1       0
818          RC   0.035   0.035   0.035    3000  0.0027    0.00
819          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
820          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

821          KK   SUBNC   BASIN
822          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
823          KM  L=        .7  Lca=        .3   S=   14.7  Kn= .092  LAG=  43.5
824          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
825          BA   0.306
826          LG    0.47    0.25    5.30    0.35      51
827          UI      86     341     534     508     379     219     121      71      44      23
828          UI       9       8       8       9       8       0       0       0       0       0
829          UI       0       0       0       0       0       0       0       0       0       0
830          UI       0       0       0       0       0       0       0       0       0       0
831          UI       0       0       0       0       0       0       0       0       0       0
             *

832          KK    CPNC
833          KM  ADD HYDROGRAPHS AT NC.
834          HC       2
             *

835          KK  RTNCJEROUTE   REACH
836          KM  ROUTE FLOW FROM NC TO JE (SHEET FLOW).
837          KM  TYPE A CHANNEL
838          RS      12              -1       0
839          RC   0.035   0.035   0.035    5000  0.0014    0.00
840          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
841          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *
```



```
LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

842          KK  SUBJE1   BASIN
843          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
844          KM  L=       1.1  Lca=        .6   S=   12.7  Kn= .090  LAG=  66.1
845          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
846          BA   0.248
847          LG    0.10    0.25    5.40    0.32      55
848          UI     192     630     574     304     118      57      16      11      10       0
849          UI       0       0       0       0       0       0       0       0       0       0
850          UI       0       0       0       0       0       0       0       0       0       0
851          UI       0       0       0       0       0       0       0       0       0       0
852          UI       0       0       0       0       0       0       0       0       0       0
853          UI       0       0       0       0       0       0       0       0       0       0
854          UI       0       0       0       0       0       0       0       0       0       0
855          UI       0       0       0       0       0       0       0       0       0       0
             *

856          KK   CPJE1
857          KM  COMBINE FLOWS FROM NC AND JE1
858          HC       2
             *

859          KK  RTJEJDROUTE   REACH
860          KM  ROUTE FLOW FROM JE TO JD.
861          KM  TYPE B CHANNEL
862          RS       3              -1       0
863          RC   0.035   0.035   0.035    2500  0.0080    0.00
864          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
865          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

866          KK   SUBJD   BASIN
867          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
868          KM  L=       1.1  Lca=        .6   S=   12.7  Kn= .090  LAG=  66.1
869          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
870          BA   0.505
871          LG    0.20    0.17    7.60    0.11      25
872          UI      54      90     230     325     429     458     443     401     334     286
873          UI     200     161     115      86      66      50      41      31      31       8
874          UI       7       6       7       7       7       7       7       7       7       7
875          UI       0       0       0       0       0       0       0       0       0       0
876          UI       0       0       0       0       0       0       0       0       0       0
877          UI       0       0       0       0       0       0       0       0       0       0
878          UI       0       0       0       0       0       0       0       0       0       0
879          UI       0       0       0       0       0       0       0       0       0       0
             *

880          KK    CPJD
881          KM  ADD HYDROGRAPHS AT JD
882          HC       3
             *
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
```

```
883          KK  DIJDJC
884          KM  DIVERT 37% OF FLOW AT JD TO JC2.
885          DT   DIJC2
886          DI       0      25      50     100     150     200
887          DQ       0       9      19      37      56      74
             *

888          KK  RTJDFCROUTE   REACH
889          KM  ROUTE FLOW FROM JD TO FC.
890          KM  TYPE B CHANNEL
891          RS       2              -1       0
892          RC   0.100   0.020   0.100    3000  0.0053    0.00
893          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
894          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
             *

895          KK  SUBJE2   BASIN
896          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
897          KM  L=      1.1  Lca=       .5   S=   19.8  Kn= .097  LAG=  63.6
898          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
899          BA   0.253
900          LG    0.12    0.13   10.10    0.05      44
901          UI     109     427     539     421     225     108      59      33       9       8
902          UI       8       9       0       0       0       0       0       0       0       0
903          UI       0       0       0       0       0       0       0       0       0       0
904          UI       0       0       0       0       0       0       0       0       0       0
905          UI       0       0       0       0       0       0       0       0       0       0
906          UI       0       0       0       0       0       0       0       0       0       0
907          UI       0       0       0       0       0       0       0       0       0       0
             *

908          KK  RETJE2
909          KM  DIVERT RETENTION OUT OF MODEL DUE TO RIO DEL REY DEVELOPMENT. -DCF
910          KM  TOTAL RETENTION IS 5.9 AF. 80% OF THAT IS USED HERE. -DCF
911          DT   RETJE     4.7
912          DI       0   10000
913          DQ       0   10000
             *

914          KK  RTJEFCROUTE   REACH
915          KM  ROUTE FLOW FROM JE TO FC (SHEET FLOW).
916          KM  TYPE A CHANNEL
917          RS       4              -1       0
918          RC   0.035   0.035   0.035    4000  0.0080    0.00
919          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
920          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
             *

921          KK   SUBFC   BASIN
922          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
923          KM  L=      1.0  Lca=       .4   S=   18.6  Kn= .097  LAG=  55.3
924          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
925          BA   0.357
926          LG    0.12    0.16    7.60    0.13      51
```



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LINE         ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

927          UI     101     397     624     592     442     256     140      84      50      28
928          UI      10       9      10      10      10       0       0       0       0       0
929          UI       0       0       0       0       0       0       0       0       0       0
930          UI       0       0       0       0       0       0       0       0       0       0
931          UI       0       0       0       0       0       0       0       0       0       0
932          UI       0       0       0       0       0       0       0       0       0       0
933          UI       0       0       0       0       0       0       0       0       0       0
             *

934          KK    CPFC
935          KM  ADD HYDROGRAPHS AT FC
936          HC       3
             *

937          KK  CPFCSR
938          KM  COMBINE HYDROGRAPHS INTO SALT RIVER AT FC
939          HC       2
             *
             * ************************************************************************
             *

940          KK  SUBJC2   BASIN
941          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
942          KM  L=      1.4  Lca=       .7   S=   14.0  Kn= .078  LAG=  76.2
943          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
944          KM  NAME CHANGED FROM SUBJC, JEP 10/5/01
945          BA   0.929
946          LG    0.39    0.15    7.30    0.15       8
947          UI      29      30      30      29      34      62      62      96     125     153
948          UI     186     162     153     209     251     199     249     249     246     251
949          UI     247     245     252     214     206     209     217     218     208     154
950          UI     155     167     178     123     115     112     104      89      85      82
951          UI      96      76      57      57      48      47      48      38      36      37
952          UI      36       0       0       0       0       0       0       0       0       0
953          UI       0       0       0       0       0       0       0       0       0       0
954          UI       0       0       0       0       0       0       0       0       0       0
             *
```

```
 955          KK  RETJC2
 956          KM  DIVERT RETENTION OUT OF MODEL DUE TO MARABELLA DEVELOPMENT. -DCF
 957          KM  TOTAL RETENTION IS 6.4 AF. 80% OF THAT IS USED HERE. -DCF
 958          KM  NAME CHANGED FROM RETJC, JEP 10/5/01
 959          DT  RETJC2     5.1
 960          DI       0   10000
 961          DQ       0   10000
              *

 962          KK   DRJC2
 963          KM  RETURN DIVERT FROM JD
 964          KM  NAME CHANGED FROM DRJC, JEP 10/5/01
 965          DR   DIJC2
              *
1                                        HEC-1 INPUT                                                    PAGE 27

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

 966          KK  RTDIJCROUTE   REACH
 967          KM  ROUTE DIVERT FROM JD TO JC2
 968          KM  TYPE B CHANNEL
 969          RS       5              -1       0
 970          RC   0.100   0.020   0.100    5000  0.0024    0.00
 971          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
 972          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

 973          KK  @CPJC2
 974          KM  ADD HYDROGRAPHS AT JC2
 975          KM  NAME CHANGED FROM @CPJC, JEP 10/5/01
 976          HC       2    3.15
              *

 977          KK  DIJCJB
 978          KM  DIVERT 46% OF FLOW AT JC2 TO JB2.
 979          DT   DIJB2
 980          DI       0      25      50      75     100     150     200
 981          DQ       0      12      23      35      46      69      92
              *

 982          KK  RTJCFBROUTE   REACH
 983          KM  ROUTE FLOW FROM JC2 TO FB (ALONG 75TH AVENUE).
 984          KM  TYPE B CHANNEL
 985          RS       4              -1       0
 986          RC   0.100   0.020   0.100    4200  0.0032    0.00
 987          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
 988          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

 989          KK   SUBFB   BASIN
 990          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
 991          KM  L=      1.2  Lca=       .4   S=   16.2  Kn= .090  LAG=  59.8
 992          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
 993          BA   0.656
 994          LG    0.37    0.21    6.60    0.18       6
 995          UI      49      50     100     201     287     304     386     418     415     398
 996          UI     347     374     267     282     197     166     143     129      89      79
 997          UI      60      54      45      42      28      28      28      15       7       6
 998          UI       6       6       6       7       6       6       6       6       7       6
 999          UI       6       6       6       0       0       0       0       0       0       0
1000          UI       0       0       0       0       0       0       0       0       0       0
1001          UI       0       0       0       0       0       0       0       0       0       0
              *

1002          KK    CPFB
1003          KM  COMBINE FLOWS FROM FB AND JC
1004          HC       2
              *
1                                        HEC-1 INPUT                                                    PAGE 28

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1005          KK  CPFBSR
1006          KM  COMBINE HYDROGRAPHS INTO SALT RIVER AT FB
1007          HC       2
              *
              * ***************************************************************************
              *

1008          KK  SUBJB2   BASIN
1009          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1010          KM  L=      1.3  Lca=       .7   S=   17.4  Kn= .100  LAG=  79.4
1011          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1012          BA   0.493
1013          LG    0.50    0.21    6.40    0.23       0
1014          UI      15      14      15      14      15      28      30      38      51      72
1015          UI      78      95      77      81     103     125      98     123     122     124
1016          UI     123     123     123     124     118     103     102     102     115     107
1017          UI     100      77      77      81      89      68      58      56      57      46
1018          UI      43      41      42      49      35      28      28      24      23      24
1019          UI      20       0       0       0       0       0       0       0       0       0
1020          UI       0       0       0       0       0       0       0       0       0       0
1021          UI       0       0       0       0       0       0       0       0       0       0
1022          UI       0       0       0       0       0       0       0       0       0       0
```

```
                *

1023            KK   DRJB2
1024            KM  RETURN DIVERT FROM JC2
1025            KM  NAME CHANGED FROM DRJB, JEP 10/5/01
1026            DR   DIJB2
                *

1027            KK  RTDIJBROUTE   REACH
1028            KM  ROUTE DIVERT FROM JC2 TO JB2
1029            KM  TYPE B CHANNEL
1030            RS       7              -1       0
1031            RC   0.100   0.020   0.100    5000  0.0015    0.00
1032            RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1033            RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

1034            KK  @CPJB2
1035            KM  ADD HYDROGRAPHS AT JB2
1036            KM  NAME CHANGED FROM @CPJB, JEP 10/5/01
1037            HC       2    3.81
                *

1038            KK  DIJBEE
1039            KM  DIVERT 36% OF FLOW AT JB2 TO EE.
1040            DT    DIEE
1041            DI       0      25      50      75     100     150     200
1042            DQ       0       9      18      27      36      54      72
                *
```



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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1043            KK  RTJBFAROUTE   REACH
1044            KM  ROUTE FLOW FROM JB2 TO FA.
1045            KM  TYPE B CHANNEL
1046            RS      10              -1       0
1047            RC   0.100   0.020   0.100    6000  0.0009    0.00
1048            RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1049            RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

1050            KK   SUBFA   BASIN
1051            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1052            KM  L=       1.4  Lca=       .8   S=    7.9  Kn= .106  LAG= 105.0
1053            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1054            BA   0.764
1055            LG    0.36    0.04    5.30    0.35      19
1056            UI      37      37      37      70      93     154     204     215     227     287
1057            UI     292     309     309     314     310     269     262     279     258     197
1058            UI     203     197     148     141     112     105     116      80      70      60
1059            UI      58      45      46      39      34      34      33      21      21      21
1060            UI      21      21      14       5       4       5       5       4       5       4
1061            UI       5       0       0       0       0       0       0       0       0       0
1062            UI       0       0       0       0       0       0       0       0       0       0
1063            UI       0       0       0       0       0       0       0       0       0       0
1064            UI       0       0       0       0       0       0       0       0       0       0
1065            UI       0       0       0       0       0       0       0       0       0       0
1066            UI       0       0       0       0       0       0       0       0       0       0
                *

1067            KK    CPFA
1068            HC       2
                *

1069            KK  CPSRFA
1070            KM  COMBINE HYDROGRAPHS AT SALT RIVER AND FA.
1071            HC       2
                *

1072            KK  DRUCUB
1073            KM  RETURN DIVERT FROM UC
1074            DR    DIUB
                *

1075            KK  MCUCUBROUTE   REACH
1076            KM  ADMP CHANNEL
1077            KM  MASTER CHANNEL ROUTE FROM UC2 TO UB
1078            KM  ROUTING RECORD ADDED, JEP 6/11/01
1079            RS       1    FLOW      -1
1080            RC   0.014   0.014   0.014    1287  0.0010    0.00
1081            RX     0.0    16.0    16.0    16.0    51.0    51.0    51.0    67.0
1082            RY     4.8     5.1     2.5     0.0     0.0     2.5     5.1     4.8
                *
                * KKRTUCUB
                * KM HEC-RAS REACH
                * KM      ROUTE FLOW FROM UC TO UB
                * KM      Channel geometry changed to match natural conditions 04.11.00  JEP
                * KM      Manning's N values changed to match approved values 04.11.00  JEP
                * RS     4              -1       0
                * RC 0.035   0.035   0.035    1400  0.0043    0.00
                * RX   0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
                * RY   5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
                *
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1083          KK   SUBUB   BASIN
1084          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1085          KM  L=       .8  Lca=       .4   S=   16.2  Kn= .048  LAG=  30.3
1086          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1087          BA   0.127
1088          LG    0.23    0.18    8.80    0.08      12
1089          UI      20      63     119     158     159     140     103      69      49      31
1090          UI      21      16      11       6       3       2       2       3       2       2
1091          UI       3       0       0       0       0       0       0       0       0       0
1092          UI       0       0       0       0       0       0       0       0       0       0
              *

1093          KK  ~@CPUB
1094          KM  ADD HYDROGRAPHS AT UB
1095          HC       2    2.42
              *
              * KK  RSUB
              * KM      STORAGE ROUTING AT UB (69TH AVE.)
              * KM Revised SV-SQ records to reflect new weir analysis based on survey. 03.15.0
              * KO     1
              * RS     1    STOR       0       0
              * SV    18      28      41      59      82     108
              * SE1035.5  1036.0  1036.5  1037.0  1037.5    1038
              * SQ     1      85     494    1666    4725    9654
              *

1096          KK  DIUBSF
1097          KO       1       2
1098          KM  DIVERT FLOW FROM UB TO UE OVER SPRR.
1099          KM  Revised DQ records to reflect new weir analysis based on survey. 05.4.00 JEP
1100          DT    DIUE
              * DI     0      85    1058    1318    1666    2640    4725
              * DQ     0       0       0       7      57     290     913
1101          DI       0      85    1058    1318    1666    2640    4725
1102          DQ       0       0       0       0       0       0       0
              *

1103          KK  71PASS
1104          KO       3
1105          KM  DIVERT OVERFLOW INTO BASIN 5/21/01
1106          DT   D-B71
1107          DI       0     410     411    1000    2000
1108          DQ       0       0       1     590    1590
              *
              * KK D-B71
              * KM DIVERT LOW FLOW AROUND BASIN
              * DT71PASS
              * DI     0     300   10000
              * DQ     0     300     300
              *
              * KK BSN71
              * KO     1       2
              * KM PROPOSED DETENTION BASIN AT 71 AVE. AND SPRR. -DCF
              * RS     1    STOR      -1
              * SV     0     .18     .34    1.85    7.36    18.7    35.4   56.87   81.37
              * SE    23      24      25      26      27      28      29      30   31.01
              * SQ     0       1
              * SE    23      31
              *
              * KK R-B71
              * KM RETURN DIVERT
              * DR71PASS
              *
              * KK C-B71
              * KM RECOMBINE FLOWS AFTER RETENTION BASIN
              * HC     2
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1109          KK  DBSN71
1110          KM  DIVERT FLOWS FROM DETENTION BASIN TO SUB-BASIN PB
1111          DT   BSN71
1112          DI       0   10000
1113          DQ       0   10000
              *

1114          KK   CLEAR
1115          KM  CLEAR HYDROGRAPH STACK
1116          HC       2
              *

1117          KK   SUBTB   BASIN
1118          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1119          KM  L=      2.0  Lca=       .8   S=   10.2  Kn= .052  LAG=  67.9
1120          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1121          BA   0.888
1122          LG    0.25    0.18    8.80    0.08      28
1123          UI      65      67     130     252     382     386     506     550     550     550
1124          UI     462     479     398     371     290     239     191     195     126     106
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```
1125          UI      88      81      60      60      44      37      37      37       8       8
1126          UI       9       8       8       8       9       8       8       8       8       9
1127          UI       8       8       8       8       0       0       0       0       0       0
1128          UI       0       0       0       0       0       0       0       0       0       0
1129          UI       0       0       0       0       0       0       0       0       0       0
1130          UI       0       0       0       0       0       0       0       0       0       0
              *

1131          KK    DRTB
1132          KM  RETURN DIVERT FROM UA
1133          DR    DITB
              *

1134          KK  RTDITBROUTE   REACH
1135          KM  ROUTE DIVERT TO TB
1136          KM  TYPE A CHANNEL
1137          RS       8              -1       0
1138          RC   0.025   0.025   0.025    5200  0.0019    0.00
1139          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1140          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1141          KK    CPTB
1142          KM  ADD HYDROGRAPH AT TB
1143          HC       2
              *

1144          KK  DITBTA
1145          KM  DIVERT 25% OF FLOW TO TA
1146          DT    DITA
1147          DI       0      25      50      75     100     150     200
1148          DQ       0       6      13      19      25      38      50
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1149          KK  RTTBSFROUTE   REACH
1150          KM  ROUTE FLOW FROM TB TO SF (ALONG 75TH AVENUE).
1151          KM  TYPE B CHANNEL
1152          RS       2              -1       0
1153          RC   0.100   0.020   0.100    2400  0.0023    0.00
1154          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1155          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1156          KK   SUBSF   BASIN
1157          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1158          KM  L=        .9  Lca=       .4   S=     9.2  Kn= .097  LAG=  63.6
1159          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1160          BA   0.375
1161          LG    0.49    0.16    9.70    0.07       0
1162          UI      22      23      32      51      94     132     118     176     167     185
1163          UI     191     185     170     157     167     134     121     119      86      78
1164          UI      64      69      49      40      36      29      27      23      20      20
1165          UI      14      13      12      13      10       3       2       3       3       3
1166          UI       3       2       3       3       3       2       3       3       3       3
1167          UI       2       0       0       0       0       0       0       0       0       0
1168          UI       0       0       0       0       0       0       0       0       0       0
              *

1169          KK    CPSF
1170          KM  ADD HYDROGRAPHS AT SF.
1171          HC       2
              *
              * REMOVED THE FOLLOWING PONDING AREA TO MODEL THE ADMP CONDITION
              * KK  RSSF
              * KM     STORAGE ROUTING AT SF
              * RS     1    STOR       0       0
              * SV   6.5     9.6    13.8    18.0    34.2    56.1    84.8   121.0   167.4   219
              * SE1028.3  1028.6  1028.8  1029.0  1029.5  1030.0  1030.5    1031  1031.5  1032
              * SQ     0      32     129     348    1591    3946    7404   11827 17168.7   234
              *

1172          KK  DISFRJ
1173          KM  DIVERT FLOW FROM SF TO RJ1
1174          DT   DIRJ1
1175          DI       1     200     400     800    1600    3200
1176          DQ     0.3      60     120     240     480     960
              *

1177          KK  RTSFSHROUTE   REACH
1178          KM  ROUTE FLOW FROM SF TO SH
1179          KM  TYPE C CHANNEL
1180          RS       9              -1       0
1181          RC   0.035   0.035   0.035    1200  0.0001    0.00
1182          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   600.0
1183          RY     5.5     5.0     2.5     0.0     0.0     2.0     4.0     5.5
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1184          KK   SUBSH   BASIN
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1185          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1186          KM  L=        .4  Lca=        .2   S=   11.1  Kn= .030  LAG=  38.1
1187          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1188          BA   0.103
1189          LG    0.19    0.16    9.70    0.07      40
1190          UI      45     173     220     171      92      44      24      14       3       3
1191          UI       4       3       0       0       0       0       0       0       0       0
1192          UI       0       0       0       0       0       0       0       0       0       0
1193          UI       0       0       0       0       0       0       0       0       0       0
1194          UI       0       0       0       0       0       0       0       0       0       0
              *

1195          KK    CPSH
1196          KM  ADD HYDROGRAPHS AT SH
1197          HC       2
              *

1198          KK    RSSH
1199          KM  MODIFIED PULS ROUTING BEHIND RID.
              * KO     1
1200          RS       1    STOR       0       0
1201          SV      19      21      24      30      37      44    46.4
1202          SE  1027.0  1027.1  1027.2  1027.5  1027.7  1028.0  1028.2
1203          SQ       0   138.6   475.2  1277.3
1204          SE  1027.0  1027.6  1027.8  1028.1
              *
              *

1205          KK  DISHRJ
1206          KM  DIVERT FLOW FROM SH TO RJ2
1207          DT   DIRJ2
1208          DI       0   138.6   475.2  1277.3
1209          DQ       0    88.6   375.2  1077.3
              *
              *

1210          KK  RTSHSGROUTE   REACH
1211          KM  ROUTE FLOW FROM SH TO SG
1212          KM  TYPE C CHANNEL
1213          RS       8              -1       0
1214          RC   0.035   0.035   0.035    2600  0.0008    0.00
1215          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1216          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1217          KK   SUBTA   BASIN
1218          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1219          KM  L=        .8  Lca=        .4   S=   10.5  Kn= .097  LAG=  55.2
1220          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1221          BA   0.241
1222          LG    0.50    0.15    7.00    0.18       0
1223          UI      15      16      26      43      76      91      98     123     131     131
1224          UI     131     118     108     122      82      89      70      59      47      46
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1225          UI      38      28      25      20      19      15      15      13       8       9
1226          UI       9       8       2       2       2       2       2       2       2       2
1227          UI       2       1       2       2       2       2       2       2       2       2
1228          UI       2       0       0       0       0       0       0       0       0       0
1229          UI       0       0       0       0       0       0       0       0       0       0
              *

1230          KK    DRTA
1231          KM  RETURN DIVERT FROM TB
1232          DR    DITA
              *

1233          KK  RTDITAROUTE   REACH
1234          KM  ROUTE DIVERT TO TA
1235          KM  TYPE A CHANNEL
1236          RS       8              -1       0
1237          RC   0.025   0.025   0.024    2600  0.0004    0.00
1238          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1239          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1240          KK   @CPTA
1241          KM  ADD HYDROGRAPHS AT TA
1242          HC       2    1.13
              *

1243          KK  RTTASGROUTE   REACH
1244          KM  ROUTE FLOW FROM TA TO SG (SHEET FLOW).
1245          KM  TYPE A CHANNEL
1246          RS       2              -1       0
1247          RC   0.025   0.025   0.025    2200  0.0050    0.00
1248          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1249          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1250          KK   SUBSG   BASIN
1251          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1252          KM  L=        .6  Lca=        .3   S=    5.0  Kn= .077  LAG=  42.6
1253          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
```

```
1254          BA   0.136
1255          LG    0.25    0.15    8.80    0.09      35
1256          UI      17      33      87     110     139     141     118     105      83      56
1257          UI      46      29      22      16      13       9       8       3       2       2
1258          UI       2       2       2       2       2       2       0       0       0       0
1259          UI       0       0       0       0       0       0       0       0       0       0
1260          UI       0       0       0       0       0       0       0       0       0       0
              *

1261          KK    CPSG
1262          KM  ADD HYDROGRAPHS AT SG
1263          HC       3
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1264          KK    RSSG
1265          KM  MODIFIED PULS ROUTING BEHIND RID AND 81ST AVENUE
              * KO     1
1266          RS       1    STOR       0       0
1267          SV    12.3    13.3    14.9    16.5    18.4    22.4    25.9    35.2
1268          SE  1026.4  1026.6  1026.8  1027.0  1027.2  1027.4  1027.6  1027.9
1269          SQ       0       9     114     525    1221    2143    3276    5343
              *

1270          KK  DISGRJ
1271          KM  DIVERT FLOW FROM SG TO RJ
1272          DT   DIRJ4
1273          DI       0       9     114     525    1221
1274          DQ       0       1      70     400     964
              *

1275          KK  RTSGSEROUTE   REACH
1276          KM  ROUTE FLOW FROM SG TO SE
1277          KM  TYPE C CHANNEL
1278          RS       2              -1       0
1279          RC   0.035   0.035   0.035    1200  0.0030    0.00
1280          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1281          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1282          KK   SUBSC   BASIN
1283          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1284          KM  L=       1.3  Lca=       .7   S=   15.2  Kn= .084  LAG=  69.2
1285          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1286          BA   0.453
1287          LG    0.43    0.26    5.00    0.39       7
1288          UI      24      25      28      52      79     127     147     145     189     194
1289          UI     208     205     206     195     171     182     174     128     139     119
1290          UI      94      83      72      74      57      47      39      36      31      30
1291          UI      22      23      22      14      14      14      14      14       4       3
1292          UI       3       3       3       3       3       3       3       3       3       4
1293          UI       3       0       0       0       0       0       0       0       0       0
1294          UI       0       0       0       0       0       0       0       0       0       0
1295          UI       0       0       0       0       0       0       0       0       0       0
              *

1296          KK  DISCSD
1297          KM  DIVERT 54% OF FLOW AT SC TO SD.
1298          DT    DISD
1299          DI       0      25      50     100     150     200
1300          DQ       0      14      27      54      81     108
              *

1301          KK  RTSCSEROUTE   REACH
1302          KM  ROUTE FLOW FROM SC TO SE (ALONG 83RD AVENUE).
1303          KM  TYPE B CHANNEL
1304          RS       1              -1       0
1305          RC   0.100   0.020   0.100    1000  0.0022    0.00
1306          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1307          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1308          KK   SUBSE   BASIN
1309          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1310          KM  L=       .3  Lca=       .2   S=   26.5  Kn= .028  LAG=  11.0
1311          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1312          BA   0.125
1313          LG    0.10    0.25    4.80    0.39      55
1314          UI     194     456     217      66      20       7       7       0       0       0
1315          UI       0       0       0       0       0       0       0       0       0       0
1316          UI       0       0       0       0       0       0       0       0       0       0
              *

1317          KK    CPSE
1318          KM  ADD HYDROGRAPHS AT SE
1319          HC       3
              *

1320          KK    RSSE
```

```
1321          KM  MODIFIED PULS ROUTING AT SE BEHIND THE RID CANAL
              * KO     1
1322          RS       1    STOR       0       0
1323          SV    13.5    14.8    17.6    20.5
1324          SE  1025.9  1026.0  1026.5  1026.9
1325          SQ    3.14    14.3  479.44 2013.01
              *

1326          KK  DISERJ
1327          KM  DIVERT FLOW FROM SE TO RJ
1328          DT   DIRJ5
1329          DI       0       3     142    1100
1330          DQ       0       3     142    1100
              *

1331          KK  RTSERIROUTE   REACH
1332          KM  ROUTE FLOW FROM SE TO RI
1333          KM  TYPE A CHANNEL
1334          RS       4              -1       0
1335          RC   0.035   0.035   0.035    2000  0.0019    0.00
1336          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1337          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1338          KK   SUBRJ   BASIN
1339          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1340          KM  L=        .7  Lca=        .4   S=    5.6  Kn= .045  LAG=  29.7
1341          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1342          BA   0.163
1343          LG    0.32    0.15    7.00    0.18      25
1344          UI      13      15      32      62      78      97     110     112     112      93
1345          UI     101      73      73      53      42      40      28      21      18      16
1346          UI      12      12       7       8       7       3       2       2       1       2
1347          UI       2       1       2       2       1       2       2       1       2       1
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1348          KK   CPRJ1
1349          KM  RETURN DIVERSION FROM SF
1350          DR   DIRJ1
              *

1351          KK  RTSFRJROUTE   REACH
1352          KM  ROUTE DIVERSION HYDROGRAPH FROM SF TO RJ1
1353          KM  TYPE C CHANNEL
1354          RS      14              -1       0
1355          RC   0.040   0.040   0.040    5300  0.0015    0.00
1356          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1357          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1358          KK   CPRJ2
1359          KM  RETURN DIVERSION FROM SH
1360          DR   DIRJ2
              *

1361          KK  RTSHRJROUTE   REACH
1362          KM  ROUTE HYDROGRAPH FROM SH TO RJ2
1363          KM  TYPE C CHANNEL
1364          RS       7              -1       0
1365          RC   0.050   0.050   0.050    2000  0.0015    0.00
1366          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1367          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1368          KK  @CPRJ3
1369          KM  COMBINE HYDROGRAPHS AT RJ3
1370          HC       2    2.69
              *

1371          KK   RTRJ3ROUTE   REACH
1372          KM  ROUTE HYDROGRAPH FROM RJ3 TO RJ
1373          KM  TYPE C CHANNEL
1374          RS       8              -1       0
1375          RC   0.035   0.035   0.035    3900  0.0015    0.00
1376          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1377          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1378          KK  CPRJ4A
1379          KM  RETURN DIVERT FROM SG
1380          DR   DIRJ4
              *

1381          KK  CPRJ4B
1382          KM  COMBINE HYDROGRAPHS AT RJ4
1383          HC       2
              *
              *
1                                          HEC-1 INPUT                                          PAGE 38

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10
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1384          KK  RTSGRJROUTE   REACH
1385          KM  ROUTE DIVERT FROM SG TO RJ
1386          KM  TYPE C CHANNEL
1387          RS       3              -1       0
1388          RC   0.035   0.035   0.035    1400  0.0019    0.00
1389          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1390          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1391          KK   CPRJ5
1392          KM  RETURN DIVERT FROM SE
1393          DR   DIRJ5
              *

1394          KK  RTSERJROUTE   REACH
1395          KM  ROUTE DIVERT FROM SE TO RJ
1396          KM  TYPE C CHANNEL
1397          RS       9              -1       0
1398          RC   0.035   0.035   0.035    1000  0.0001    0.00
1399          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1400          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *

1401          KK  @CPRJ6
1402          KM  ADD HYDROGRAPHS AT RJ
1403          HC       3    3.81
              *

1404          KK    RSRJ
1405          KM  RESERVOIR ROUTING AT RJ BEHIND 83RD AVE AND THE SPRR
              * KO     1
1406          RS       1    STOR       0       0
1407          SV     3.5     6.2    11.0    18.4    30.9    52.2    76.3
1408          SE  1022.1  1022.5  1023.0  1023.5  1024.0  1024.5  1024.9
1409          SQ       0      50     100     506     899    1369
1410          SE  1022.1  1022.7  1022.9  1023.7  1024.0  1024.2
              *

1411          KK  DIRJPA
1412          KM  DIVERT FLOW OVER SPRR FROM RJ TO PA
1413          DT   DIPA2
1414          DI       0      50     100     506     899    1369
1415          DQ       0       0       0       6     149     369
              *

1416          KK  RTRJRIROUTE   REACH
1417          KM  ROUTE FLOW FROM RJ TO RI1
1418          KM  TYPE C CHANNEL
1419          RS       5              -1       0
1420          RC   0.035   0.035   0.035    2600  0.0019    0.00
1421          RX     0.0    20.0    35.0    50.0    50.1   250.0   450.0   550.0
1422          RY     5.0     5.0     2.5     0.0     0.0     2.0     4.0     5.0
              *
              * THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
              * KKDIRIOE
              * KM DIVERT FLOW FROM RI TO OE OVER SPRR.
              * KM 1/4 MILE WEST OF 83RD AVE.
              * DT DIOE3
              * DI   100     400    1392    1300    1400
              * DQ     0      55     370     680     730
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1423          KK  RTRIRI
1424          KM  TYPE C CHANNEL
1425          RS       4              -1       0
1426          RC    .035    .035    .035    1550   .0019
1427          RX       0      20      35      50    50.1     250     450     550
1428          RY       5       5     2.5       0       0       2       4       5
              *

1429          KK   SUBRI   BASIN
1430          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1431          KM  L=        .6  Lca=       .2   S=   19.3  Kn= .081  LAG=  27.9
1432          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1433          BA   0.232
1434          LG    0.38    0.15    7.60    0.14      24
1435          UI      30      70     166     221     259     237     220     168     116      92
1436          UI      56      42      31      24      17      13       4       4       4       4
1437          UI       3       4       4       4       4       0       0       0       0       0
1438          UI       0       0       0       0       0       0       0       0       0       0
              *

1439          KK   SUBSB   BASIN
1440          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1441          KM  L=       .5  Lca=       .3   S=   15.1  Kn= .087  LAG=  35.7
1442          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1443          BA   0.168
1444          LG    0.50    0.15    9.70    0.07       0
1445          UI      15      20      41      85      90     120     126     129     110     111
1446          UI      84      80      58      44      41      27      23      18      14      14
1447          UI       8       9       8       2       2       2       2       2       1       2
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1448          UI       2       2       2       2       2       2       0       0       0       0
1449          UI       0       0       0       0       0       0       0       0       0       0
              *

1450          KK    RSSB
1451          KM  MODIFIED PULS ROUTING THROUGH PONDING  BEHIND RID CANAL.
              * KO     1
1452          RS       1    STOR       0       0
1453          SV     2.2     5.6    11.9    21.4    33.8
1454          SE  1024.0  1024.5  1025.0  1025.5  1025.9
1455          SQ       0      94     581    2114    4864
              *

1456          KK   SUBSD   BASIN
1457          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1458          KM  L=       .6  Lca=       .3   S=   12.3  Kn= .091  LAG=  43.6
1459          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1460          BA   0.168
1461          LG    0.43    0.28    6.60    0.18       0
1462          UI      21      46     114     146     180     174     154     123      96      64
1463          UI      53      32      25      19      13      12       5       3       2       3
1464          UI       3       2       3       3       2       0       0       0       0       0
1465          UI       0       0       0       0       0       0       0       0       0       0
1466          UI       0       0       0       0       0       0       0       0       0       0
1467          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

1468          KK    DRSD
1469          KM  RETURN DIVERT FROM SC.
1470          DR    DISD
              *

1471          KK   @CPSD
1472          KM  ADD HYDROGRAPHS AT SD.
1473          KM  ROUTING STEP NOT INCLUDED DUE TO SHORT ROUTING LENGTH
1474          HC       3     .79
              *

1475          KK    RSSD
1476          KM  MODIFIED PULS ROUTING BEHIND CANAL, NORTH OF VAN BUREN.
              * KO     1
1477          RS       1    STOR       0       0
1478          SV       0     .01      .1      .6     1.8       5       9      14      23
1479          SE  1021.4  1022.8    1023  1023.3  1023.6    1024  1024.3  1024.6    1025
1480          SQ       0     .16      46     534     939    1427    1993    2767
1481          SE  1021.4  1021.5    1022    1023  1023.5    1024  1024.5    1025
              *

1482          KK  RTSDRIROUTE   REACH
1483          KM  ROUTE FLOW FROM SD TO RI
1484          KM  TYPE A CHANNEL
1485          RS       3              -1       0
1486          RC   0.035   0.035   0.035    2400  0.0046    0.00
1487          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1488          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1489          KK  ~@CPRI
1490          KM  ADD HYDROGRAPHS AT RI (1/2 MILE WEST OF 83RD AVE)
1491          HC       4    4.38
              *
              * THE FOLLWOING PONDING REMOVED TO MODEL THE ADMP CONDITION
              * KK  RSRI
              * KM      MODIFIED PULS ROUTING BEHIND SPRR.
              * KO     1
              * RS     1    STOR      -1       0
              * SV     0       0      .1      .3     1.2     3.0     6.5   13.76    21.8    35
              * SE1014.0  1014.1  1014.5  1015.0  1015.5  1016.0  1016.5  1017.0  1017.5  1018
              * SQ     0       4     142     573    1333    3217    5957    9319   13343   182
              *

1492          KK  MCRIRHROUTE   REACH
1493          KO       1       2
1494          KM  ADMP CHANNEL
1495          KM  ROUTE FLOW FROM RI TO RH
1496          RS       3    FLOW      -1
1497          RC   0.040   0.040   0.040    2482  0.0015    0.00
1498          RX     0.0    16.0    33.7    51.3    71.3    89.0   106.7   122.7
1499          RY     5.6     5.9     3.0     0.0     0.0     3.0     5.9     5.6
              *
1                                          HEC-1 INPUT                                          PAGE 41

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1500          KK   SUBUE   BASIN
1501          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1502          KM  L=       .3  Lca=       .2   S=   26.5  Kn= .066  LAG=  17.3
1503          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1504          BA   0.063
1505          LG    0.40    0.13   10.10    0.05      14
```

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1506          UI      13      45      75      91      83      66      39      27      17      10
1507          UI       7       5       2       1       2       1       1       2       0       0
1508          UI       0       0       0       0       0       0       0       0       0       0
              *

1509          KK    DRUE
1510          KM  RETURN DIVERT FROM UB
1511          DR    DIUE
              *

1512          KK    CPUE
1513          KM  ADD HYDROGRAPHS AT UE
1514          HC       2
              *

1515          KK    RSUE
1516          KM  MODIFIED PULS ROUTING FROM UE TO PB OVER RID
1517          RS       1    STOR       0       0
1518          SV     1.8     4.1    29.1    31.8    34.8    40.0    50.2    59.1    68.6    78.8
1519          SE    1027    1028  1029.8  1029.9  1030.0  1030.2  1030.4  1030.6  1030.8  1031.0
1520          SQ       0       0     5.0    26.6    69.8   224.6   545.0  1176.8  2192.8  3653.9
              *
              *

1521          KK  RTUEPBROUTE   REACH
1522          KM  ROUTE FLOW FROM UE TO PB
1523          KM  TYPE A CHANNEL
1524          RS       7              -1       0
1525          RC   0.025   0.025   0.025    4000  0.0015    0.00
1526          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1527          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

1528          KK   DRB71
1529          KM  RETURN DIVERTED FLOW FROM BASIN 71
1530          DR   BSN71
              *

1531          KK  MC71PBROUTE   REACH
1532          KM  ADMP CHANNEL
1533          RS       3    FLOW      -1
1534          RC   0.040   0.040   0.040    2422  0.0009    0.00
1535          RX     0.0    16.0    33.7    51.3    86.3   104.0   121.6   137.6
1536          RY     5.6     5.9     2.9     0.0     0.0     2.9     5.9     5.6
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1537          KK  SUBPB2   BASIN
1538          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1539          KM  L=        .9  Lca=       .4   S=   12.1  Kn= .048  LAG=  42.2
1540          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1541          BA   0.289
1542          LG    0.33    0.16    8.80    0.08      22
1543          UI      27      36      76     151     171     210     224     224     186     194
1544          UI     144     127      94      78      62      45      35      29      24      20
1545          UI      15      15       8       3       4       3       3       4       3       3
1546          UI       4       3       3       4       3       0       0       0       0       0
1547          UI       0       0       0       0       0       0       0       0       0       0
              *

1548          KK  ~CPPB2
1549          KO       1       2
1550          KM  ADD HYDROGRAPHS AT PB
1551          HC       3
              *

1552          KK  MCPB73ROUTE   REACH
1553          KM  ADMP CHANNEL
1554          KM  ROUTE FLOW FROM PB2 TO BASIN 73
1555          RS       1    FLOW      -1
1556          RC   0.040   0.040   0.040    1288  0.0044    0.00
1557          RX     0.0    16.0    33.1    50.3    58.3    75.4    92.6   108.6
1558          RY     5.4     5.7     2.9     0.0     0.0     2.9     5.7     5.4
              *

1559          KK  73PASS
1560          KO       3       2
1561          KM  DIVERT OVERFLOW INTO BASIN - JLM 5/21/01
1562          DT   D-B73
1563          DI       0     450     451    1000    2000
1564          DQ       0       0       1     550    1550
              *
              * KK D-B73
              * KM DIVERT LOW FLOW AROUND BASIN
              * DT73PASS
              * DI     0     300   10000
              * DQ     0     300     300
              *
              * KK BSN73
              * KM ADMP BASIN
              * KM LOCATED AT APPROX. 73RD AVE. ALIGN. 1/4 MILE SOUTH OF BUCKEYE RD.
              * KO     1       2
              * RS     1    STOR      -1
```

```
                    * SV     0     .42    1.63    3.64    6.52   14.97   32.85   59.31      89
                    * SE     7       8       9      10      11      12      13      14   15.01
                    * SQ     0       1
                    * SE     9      15
                    *
                    * KK R-B73
                    * KM RETURN DIVERT
                    * DR73PASS
                    *
                    * KK C-B73
                    * KM RECOMBINE FLOWS AFTER RETENTION BASIN
                    * HC     2
                    *
1                                                HEC-1 INPUT                                                    PAGE 43

LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1565                KK  MC73NAROUTE   REACH
1566                KM  ADMP CHANNEL
1567                KM  ROUTE FLOW FROM BASIN 73 TO NA
1568                RS       3    FLOW      -1
1569                RC   0.040   0.040   0.040    3037  0.0026    0.00
1570                RX     0.0    16.0    34.0    52.0    72.0    90.1   108.1   124.1
1571                RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
                    *
                    * KKSUBNA2   BASIN
                    * KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
                    * KM  L=      1.4  Lca=       .7   S=   16.2  Kn= .093  LAG=  81.5
                    * KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
                    * BA 0.798
                    * LG  0.44    0.15    8.00    0.12       5
                    * UI    39      39      39      72      97     161     213     225     237     3
                    * UI   304     323     323     328     324     280     274     292     269     2
                    * UI   212     206     154     148     116     111     121      83      74
                    * UI    60      48      48      40      36      35      34      23      21
                    * UI    23      22      14       5       5       5       5       4       5
                    * UI     5       0       0       0       0       0       0       0       0
                    * UI     0       0       0       0       0       0       0       0       0
                    * UI     0       0       0       0       0       0       0       0       0
                    * UI     0       0       0       0       0       0       0       0       0
                    *

1572                KK  SUBNA2   BASIN
1573                KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1574                KM  L=      1.4  Lca=       .7   S=   16.2  Kn= .093  LAG=  81.5
1575                KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1576                BA   0.750
1577                LG    0.44    0.15    8.00    0.12       5
1578                UI      25      24      25      25      33      51      53      87     118     129
1579                UI     159     129     150     185     183     200     208     208     205     210
1580                UI     207     206     188     172     172     183     184     171     132     129
1581                UI     140     143     103      93      96      82      73      70      73      79
1582                UI      51      47      43      41      39      35      31      30      30      25
1583                UI      23       0       0       0       0       0       0       0       0       0
1584                UI       0       0       0       0       0       0       0       0       0       0
1585                UI       0       0       0       0       0       0       0       0       0       0
1586                UI       0       0       0       0       0       0       0       0       0       0
                    *

1587                KK    DRNA
1588                KM  RETURN DIVERT FROM NB
1589                KM  Name changed from CPNA1, JEP 5/10/01
1590                DR    DINA
                    *

1591                KK  RTDINAROUTE   REACH
1592                KM  ROUTE DIVERT FROM NB TO NA2
1593                KM  TYPE B CHANNEL
1594                RS       6              -1       0
1595                RC   0.100   0.020   0.100    4140  0.0012    0.00
1596                RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1                                                HEC-1 INPUT                                                    PAGE 44

LINE                ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1597                RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                    *

1598                KK  ~@CPNA
1599                KM  COMBINE FLOWS FROM PB2, NA2, AND MB INTO ADMP CHANNEL
1600                KM  COMBINE ADDED, JEP 5/10/01
1601                HC       3    2.05
                    *

1602                KK  MCNAJCROUTE   REACH
1603                KM  ADMP CHANNEL
1604                KM  MASTER CHANNEL ROUTE FROM NA2 TO JC1
1605                KM  ROUTING RECORD ADDED, JEP 5/10/01
1606                RS       2    FLOW      -1
1607                RC   0.040   0.040   0.040    2417  0.0020    0.00
1608                RX     0.0    16.0    33.3    50.6    85.6   103.0   120.3   136.3
1609                RY     5.5     5.8     2.9     0.0     0.0     2.9     5.8     5.5
                    *

1610                KK  SUBPB1   BASIN
```

```
1611          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1612          KM  L=        .9  Lca=        .4   S=   12.1  Kn= .048  LAG=  42.2
1613          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1614          BA   0.149
1615          LG    0.33    0.16    8.80    0.08      28
1616          UI      13      17      34      71      77     101     109     112      98      94
1617          UI      82      73      51      42      39      26      22      16      14      12
1618          UI       9       8       7       5       1       2       2       1       2       2
1619          UI       1       2       1       2       2       1       2       0       0       0
1620          UI       0       0       0       0       0       0       0       0       0       0
              *

1621          KK  DIPBPA
1622          KM  DIVERT 19% OF FLOW FROM PB TO PA
1623          DT   DIPA1
1624          DI       0      25      50      75     100     150     200
1625          DQ       0       5      10      14      19      29      38
              *

1626          KK  RTPBNAROUTE   REACH
1627          KM  ROUTE FLOW FROM PB1 TO NA1 ALONG 75th AVE.
1628          KM  TYPE B CHANNEL
1629          RS       6              -1       0
1630          RC   0.100   0.020   0.100    5160  0.0023    0.00
1631          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1632          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1633          KK  SUBNA1   BASIN
1634          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1635          KM  L=       1.4  Lca=        .7   S=   16.2  Kn= .093  LAG=  81.5
1636          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1637          BA   0.228
1638          LG    0.50    0.15    7.60    0.14       0
1639          UI      10       9      10      13      21      28      43      54      57      55
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1640          UI      75      69      81      82      81      81      81      73      68      67
1641          UI      75      62      51      54      54      39      37      32      29      27
1642          UI      31      21      18      15      16      13      12      13       9       9
1643          UI       9       8       7       5       6       5       6       5       4       2
1644          UI       1       0       0       0       0       0       0       0       0       0
1645          UI       0       0       0       0       0       0       0       0       0       0
1646          UI       0       0       0       0       0       0       0       0       0       0
1647          UI       0       0       0       0       0       0       0       0       0       0
              *
              * KK ~CPNA
              * KM COMBINE FLOWS FROM NA1 AND NA2 INTO ADMP CHANNEL
              * HC      3
              *

1648          KK   CPNA1
1649          KM  COMBINE FLOWS FROM PB1 AND NA1 AT NA1
1650          KM  COMBINE ADDED, JEP 5/10/01
1651          HC       2
              *

1652          KK  RTNAJCROUTE   REACH
1653          KM  ROUTE FLOW FROM NA1 TO JC1 (ALONG 75TH AVENUE).
1654          KM  TYPE B CHANNEL
1655          RS       1              -1       0
1656          RC   0.020   0.020   0.020    1435  0.0028    0.00
1657          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1658          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
              * KKRTNAJC   ROUTE   REACH
              * KM      ROUTE FLOW FROM NA TO JC (ALONG 75TH AVENUE).
              * KM      TYPE B CHANNEL
              * RS      4              -1       0
              * RC 0.100   0.020   0.100    5000  0.0028    0.00
              * RX   0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
              * RY   4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1659          KK  SUBJC1   BASIN
1660          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1661          KM  L=       1.4  Lca=        .7   S=   16.2  Kn= .093  LAG=  81.5
1662          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1663          BA   0.058
1664          LG    0.50    0.25    5.00    0.41       0
1665          UI       5       6      12      23      28      37      40      42      39      33
1666          UI      36      25      25      18      15      13       9       8       6       5
1667          UI       4       4       2       3       2       1       0       1       1       0
1668          UI       1       0       1       1       0       1       1       0       1       0
1669          UI       0       0       0       0       0       0       0       0       0       0
1670          UI       0       0       0       0       0       0       0       0       0       0
1671          UI       0       0       0       0       0       0       0       0       0       0
1672          UI       0       0       0       0       0       0       0       0       0       0
1673          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
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1674          KK  ~CPJC1
1675          KM  COMBINE FLOWS FROM NA2, NA1, AND JC1
1676          HC       3
              *

1677          KK  MCJCJBROUTE   REACH
1678          KM  ADMP CHANNEL
1679          KM  MASTER CHANNEL ROUTE FROM JC1 TO JB1
1680          KM  ROUTING RECORD ADDED, JEP 5/10/01
1681          RS      6    FLOW      -1
1682          RC   0.040   0.040   0.040    5964  0.0015    0.00
1683          RX     0.0    16.0    34.0    52.1   102.1   120.1   138.1   154.1
1684          RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
              *
              * ***********************************************************************
              *

1685          KK   SUBPA   BASIN
1686          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1687          KM  L=      1.1  Lca=       .6   S=   16.7  Kn= .065  LAG=  46.5
1688          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1689          BA   0.477
1690          LG    0.33    0.17    7.30    0.14      21
1691          UI      38      42      87     174     220     277     301     323     319     278
1692          UI     282     235     214     161     131     110      98      66      57      48
1693          UI      37      35      27      22      21      18       5       5       5       4
1694          UI       5       5       5       4       5       5       5       5       4       5
1695          UI       5       0       0       0       0       0       0       0       0       0
1696          UI       0       0       0       0       0       0       0       0       0       0
              *

1697          KK    DRPA
1698          KM  RETURN DIVERT FROM PB.
1699          DR   DIPA1
              *

1700          KK  RTDIPAROUTE   REACH
1701          KM  ROUTE DIVERT FROM PB TO PA
1702          KM  TYPE B CHANNEL
1703          RS       5              -1       0
1704          RC   0.100   0.020   0.100    5400  0.0032    0.00
1705          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1706          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1707          KK   DRPA2
1708          KM  RETURN DIVERT FROM RJ.
1709          DR   DIPA2
              *
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1710          KK  RTRJPAROUTE   REACH
1711          KM  ROUTE DIVERT FROM RJ TO PA
1712          KM  TYPE B CHANNEL
1713          RS       2              -1       0
1714          RC   0.100   0.020   0.100    2400  0.0054    0.00
1715          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1716          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1717          KK    CPPA
1718          KM  ADD HYDROGRAPHS AT PA
1719          HC       3
              *

1720          KK  DIPAOE
1721          KM  DIVERT 18% OF FLOW AT PA TO OE.
1722          DT    DIOE
1723          DI       0      25      50      75     100     150     200
1724          DQ       0       5       9      14      18      27      36
              *

1725          KK  RTPAMHROUTE   REACH
1726          KM  ROUTE FLOW FROM PA TO MH (ALONG 83RD AVENUE).
1727          KM  TYPE B CHANNEL
1728          RS       4              -1       0
1729          RC   0.100   0.020   0.100    2640  0.0012    0.00
1730          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1731          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1732          KK   SUBMH   BASIN
1733          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1734          KM  L=       .7  Lca=       .3   S=    8.8  Kn= .057  LAG=  54.6
1735          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1736          BA   0.239
1737          LG    0.50    0.15    8.80    0.09       0
1738          UI      22      32      70     128     157     174     189     184     159     154
1739          UI     128      93      73      68      42      34      29      21      20      13
1740          UI      13      11       3       3       3       3       3       2       3       3
1741          UI       3       3       3       2       0       0       0       0       0       0
```

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1742          UI       0       0       0       0       0       0       0       0       0       0
1743          UI       0       0       0       0       0       0       0       0       0       0
              *

1744          KK    CPMH
1745          KM  ADD HYDROGRAPHS AT PH
1746          HC       2
              *
1                                          HEC-1 INPUT                                                PAGE 48

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1747          KK  RTMHMDROUTE   REACH
1748          KM  ROUTE FLOW FROM PA TO MH (ALONG 83RD AVENUE).
1749          KM  TYPE B CHANNEL
1750          RS       4              -1       0
1751          RC   0.100   0.020   0.100    2640  0.0012    0.00
1752          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1753          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1754          KK   SUBMD   BASIN
1755          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1756          KM  L=      1.4  Lca=       .6   S=   14.3  Kn= .073  LAG=  82.5
1757          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1758          BA   0.255
1759          LG    0.15    0.08    7.60    0.11      30
1760          UI      22      28      60     121     132     172     187     190     169     162
1761          UI     139     126      87      73      67      43      37      28      24      21
1762          UI      15      13      13       7       3       3       3       3       3       2
1763          UI       3       3       3       3       3       2       3       0       0       0
1764          UI       0       0       0       0       0       0       0       0       0       0
1765          UI       0       0       0       0       0       0       0       0       0       0
1766          UI       0       0       0       0       0       0       0       0       0       0
1767          UI       0       0       0       0       0       0       0       0       0       0
1768          UI       0       0       0       0       0       0       0       0       0       0
              *

1769          KK   RETMD
1770          KM  DIVERT RETENTION OUT OF MODEL DUE TO SUNDANCE RANCH DEVELOPMENT. -DCF
1771          KM  TOTAL RETENTION IS 22.7 AF. 80% OF THAT IS USED HERE. -DCF
1772          DT   RETMD    18.2
1773          DI       0   10000
1774          DQ       0   10000
              *

1775          KK    CPMD
1776          KM  ADD HYDROGRAPHS AT MD
1777          HC       2
              *

1778          KK  DIMDJB
1779          KM  DIVERT 21% OF FLOW FROM MD TO JB.
1780          DT   DIJB1
1781          DI       0      25      50      75     100     150     200
1782          DQ       0       5      10      16      21      32      42
              *

1783          KK  DIMDMF
1784          KM  DIVERT FLOW FROM MD TO MF
1785          KM  DUMMY DIVERT TO ROUTE FLOW AROUND CODE SEQUENCE.
1786          DT   DIMFX
1787          DI       0   10000
1788          DQ       0   10000
              *
1                                          HEC-1 INPUT                                                PAGE 49

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1789          KK   SUBMI   BASIN
1790          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1791          KM  L=       .7  Lca=       .3   S=    8.8  Kn= .057  LAG=  54.6
1792          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1793          BA   0.409
1794          LG    0.38    0.15    8.40    0.11      16
1795          UI      48      93     245     318     392     405     353     333     259     180
1796          UI     146      96      70      55      45      28      28      14       6       6
1797          UI       6       6       6       6       6       6       6       0       0       0
1798          UI       0       0       0       0       0       0       0       0       0       0
1799          UI       0       0       0       0       0       0       0       0       0       0
1800          UI       0       0       0       0       0       0       0       0       0       0
              *

1801          KK   RETMI
1802          KM  DIVERT RETENTION OUT OF MODEL DUE TO SWIFT TRANSPORTATION DEVELOPMENT. -DCF
1803          KM  TOTAL RETENTION IS 15.2 AF. 80% OF THAT IS USED HERE. -DCF
1804          DT   RETMI    12.2
1805          DI       0   10000
1806          DQ       0   10000
              *

1807          KK   SUBMG   BASIN
1808          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1809          KM  L=       .7  Lca=       .3   S=    8.8  Kn= .057  LAG=  54.6
```

```
1810          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1811          BA   0.082
1812          LG    0.27    0.15    7.00    0.17      32
1813          UI      23      91     144     136     101      59      32      20      11       6
1814          UI       2       3       2       2       2       0       0       0       0       0
1815          UI       0       0       0       0       0       0       0       0       0       0
1816          UI       0       0       0       0       0       0       0       0       0       0
1817          UI       0       0       0       0       0       0       0       0       0       0
1818          UI       0       0       0       0       0       0       0       0       0       0
              *

1819          KK   RETMG
1820          KM  DIVERT RETENTION OUT OF MODEL DUE TO SWIFT TRANSPORTATION DEVELOPMENT. -DCF
1821          KM  TOTAL RETENTION IS 6.2 AF. 80% OF THAT IS USED HERE. -DCF
1822          DT   RETMG     5.0
1823          DI       0   10000
1824          DQ       0   10000
              *

1825          KK    CPMG
1826          KM  COMBINE FLOWS FROM MI AND MG.
1827          HC       2
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1828          KK  RTMGJBROUTE   REACH
1829          KM  ROUTE FLOW FROM MG TO JB1 (ACROSS SUB JB1).
1830          KM  TYPE B CHANNEL
1831          KM  ROUTE ADDED, JEP 5/10/01
1832          RS       9              -1       0
1833          RC   0.035   0.035   0.035    5050  0.0024    0.00
1834          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
1835          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *
              * KK~CNAMG
              * KM COMBINE FLOWS FROM NA AND MG INTO ADMP CHANNEL
              * HC     3
              *
              * KKMCMGJB   ROUTE   REACH
              * KM ADMP CHANNEL
              * RS     3    FLOW      -1
              * RC 0.040   0.040   0.040    4374  0.0029    0.00
              * RX   0.0    16.0    33.9    51.9    86.9   104.8   122.8   138.8
              * RY   5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
              *

1836          KK  SUBJB1   BASIN
1837          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1838          KM  L=      1.3  Lca=       .7   S=   17.4  Kn= .100  LAG=  79.4
1839          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1840          BA   0.494
1841          LG    0.50    0.25    5.00    0.41       0
1842          UI      15      14      15      15      14      27      30      36      51      70
1843          UI      77      95      77      76     102     128      92     122     121     124
1844          UI     122     122     123     123     122     102     102     102     107     110
1845          UI     107      77      77      78      87      76      59      56      56      49
1846          UI      44      42      41      46      42      28      28      26      23      24
1847          UI      22       0       0       0       0       0       0       0       0       0
1848          UI       0       0       0       0       0       0       0       0       0       0
1849          UI       0       0       0       0       0       0       0       0       0       0
1850          UI       0       0       0       0       0       0       0       0       0       0
              *

1851          KK    DRJB
1852          KM  RETURN DIVERT FROM MD
1853          DR   DIJB1
              *

1854          KK  RDIJB1
1855          KM  ROUTE DIVERT FROM MD TO JB
1856          KM  TYPE B CHANNEL
1857          RS       5              -1       0
1858          RC      .1     .02      .1    2640   .0030
1859          RX       0     470     476     480     520     524     530    1000
1860          RY     4.7       0       0       1       1       0       0     4.7
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1861          KK  ~CPJB1
1862          KM  COMBINE FLOWS FROM MD, JC1, MG AND JB1 INTO ADMP CHANNEL
1863          KM  COMBINE ADDED, JEP 5/10/01
1864          HC       5
              *

1865          KK    DIED
1866          KM  DIVERT FLOWS AT JB TO ED.  THIS IS DONE TO ROUTE FLOW AS NEEDED
1867          KM  FOR THE ADMP
1868          DT    DIED
1869          DI       0   10000
1870          DQ       0   10000
```

```
                 *
1871             KK   SUBSA   BASIN
1872             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1873             KM  L=        .8  Lca=        .3   S=    9.6  Kn= .047  LAG=  26.0
1874             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1875             BA   0.420
1876             LG    0.17    0.15    9.70    0.06      25
1877             UI      55     126     299     401     469     429     399     305     210     165
1878             UI     102      75      56      43      32      23       7       7       7       7
1879             UI       7       7       7       6       7       0       0       0       0       0
1880             UI       0       0       0       0       0       0       0       0       0       0
                 *
                 * THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
                 * KKDISARF
                 * KM        DIVERT 50% OF FLOW AT SA TO RF
                 * DT  DIRF
                 * DI      0      25      50      75     100     150     200
                 * DQ      0      13      25      38      50      75     100
                 *
                 *

1881             KK  MCSARHROUTE   REACH
1882             KM  ROUTE FLOW FROM SA TO RH.
1883             KM  TYPE B CHANNEL
1884             RS       2              -1       0
1885             RC   0.040   0.040   0.040    2001  0.0027    0.00
1886             RX     0.0    16.0    33.9    51.7    67.7    85.6   103.5   119.5
1887             RY     5.6     6.0     3.0     0.0     0.0     3.0     6.0     5.6
                 *

1888             KK  BAS91A
1889             KO       3       2
1890             KM  DIVERT ROUTED FLOWS INTO BASIN 91
1891             DT  D-B91A
1892             DI       0   10000
1893             DQ       0   10000
                 *
```



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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1894             KK   SUBRH   BASIN
1895             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1896             KM  L=        .6  Lca=        .3   S=   15.6  Kn= .100  LAG=  46.8
1897             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1898             BA   0.245
1899             LG    0.50    0.15    8.80    0.09       0
1900             UI      19      20      43      84     112     136     146     163     161     146
1901             UI     140     126     104      93      71      56      57      35      30      25
1902             UI      22      17      17      11      11      11       5       2       2       3
1903             UI       2       3       2       2       3       2       3       2       3       2
1904             UI       2       3       0       0       0       0       0       0       0       0
1905             UI       0       0       0       0       0       0       0       0       0       0
                 *

1906             KK    TEMP
1907             KO       1       2
1908             HC       3
                 *

1909             KK  ~@CPRH
1910             KO       1       2
1911             KM  ADD HYDROGRAPHS AT RH.
1912             HC       2    5.05
                 *
                 * THE FOLLOWING POND AND DIVERT REMOVED TO MODEL THE ADMP CONDITION
                 * KK  RSRH
                 * KM      MODIFIED PULS ROUTING BEHIND SPRR.
                 * RS      1    STOR       0       0
                 * SV    1.0     1.2     1.5     1.8     2.3     4.4     7.7    13.6    24.5   40.
                 * SE1008.8  1008.9  1009.0  1009.1  1009.2  1009.7  1010.2  1010.7  1011.2  1011
                 * SQ      0      50     100     500     750    1000
                 * SE1008.8  1009.3  1009.4  1009.7  1009.9  1010.0
                 *
                 * KK CPRH2
                 * DT DIOE2
                 * DI   5733    9002   13168
                 * DQ      0       0     322
                 *

1913             KK  91PASS
1914             KO       3
1915             KM  DIVERT OVERFLOW INTO BASIN - JLM 5/21/01
1916             DT  D-B91B
1917             DI       0     450     451    1000    2000
1918             DQ       0       0       1     550    1550
                 *

1919             KK  MCRHOGROUTE   REACH
1920             KM  ADMP CHANNEL
1921             KM  ROUTE FLOW FROM RH TO OG
1922             KO               2
1923             RS       5    FLOW      -1
1924             RC   0.040   0.040   0.040    5222  0.0019    0.00
```

```
1925          RX     0.0    16.0    33.2    50.3    75.3    92.5   109.7   125.7
1                                          HEC-1 INPUT                                                    PAGE 53

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1926          RY     5.4     5.7     2.9     0.0     0.0     2.9     5.7     5.4
              *
              * THE FOLLOWING DIVERT REMOVED TO MODEL THE IMPROVED CONDITION
              * KK DIOG1
              * DT DIOD1
              * DI   715    1200
              * DQ     0       0
              *

1927          KK   SUBRG   BASIN
1928          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1929          KM  L=       .6  Lca=       .3   S=   14.3  Kn= .080  LAG=  41.7
1930          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1931          BA   0.111
1932          LG    0.05    0.15    9.70    0.07      90
1933          UI     135     360     230      84      32       7       6       6       0       0
1934          UI       0       0       0       0       0       0       0       0       0       0
1935          UI       0       0       0       0       0       0       0       0       0       0
1936          UI       0       0       0       0       0       0       0       0       0       0
1937          UI       0       0       0       0       0       0       0       0       0       0
              *

1938          KK    CPRG
1939          KM  DIVERT RETENTION OUT OF MODEL DUE TO FREIGHTLINER AZ. LTD. DEVELOPMENT -DCF
1940          KM  TOTAL RETENTION IS 6.9 AF. 80% OF THAT IS USED HERE. -DCF
1941          DT   RETRG     5.5
1942          DI       0   10000
1943          DQ       0   10000
              *

1944          KK  RTRGRFROUTE   REACH
1945          KM  ROUTE FLOW FROM RG TO RF (ALONG 99TH AVENUE)
1946          KM  TYPE B CHANNEL
1947          RS       3              -1       0
1948          RC   0.100   0.020   0.100    2700  0.0022    0.00
1949          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
1950          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

1951          KK   SUBRF   BASIN
1952          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1953          KM  L=      1.2  Lca=       .7   S=   11.6  Kn= .068  LAG=  57.1
1954          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1955          BA   0.629
1956          LG    0.33    0.15    9.70    0.07      23
1957          UI      38      39      59      96     175     227     220     293     314     324
1958          UI     327     323     270     284     275     202     227     159     146     116
1959          UI     112      98      73      62      53      48      40      35      36      24
1960          UI      22      22      22      15       5       5       4       5       5       5
1961          UI       5       4       5       5       5       5       4       5       5       5
1962          UI       5       0       0       0       0       0       0       0       0       0
1963          UI       0       0       0       0       0       0       0       0       0       0
              *
              * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE ADMP CONDITION
              * KK  DRRF
              * KM      RETURN DIVERT FROM SA.
              * DR  DIRF
              *
              * KKRTDIRF   ROUTE   REACH
              * KM      ROUTE DIVERT FROM SA TO RF
              * KM      TYPE B CHANNEL
              * RS     8              -1       0
              * RC 0.100   0.020   0.100    5300  0.0011    0.00
              * RX   0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
              * RY   4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
1                                          HEC-1 INPUT                                                    PAGE 54

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1964          KK   ~CPRF
1965          KM  ADD HYDROGHRAPS AT RF.
1966          HC       2
              *
              * THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
              * KKDIRFRE
              * KM      DIVERT 20% OF FLOW FROM RF TO RE
              * DT  DIRE
              * DI     0      25      50      75     100     150     200
              * DQ     0       5      10      15      20      30      40
              *

1967          KK  MCRFOGROUTE   REACH
1968          KO       1       2
1969          KM  ROUTE FLOW FROM RF TO OG (ALONG 99TH AVENUE)
1970          KM  TYPE B CHANNEL
1971          RS       2              -1       0
1972          RC   0.040   0.040   0.040    2230  0.0039    0.00
1973          RX     0.0    16.0    33.7    51.3    59.3    77.0    94.7   110.7
1974          RY     5.6     5.9     2.9     0.0     0.0     2.9     5.9     5.6
```

```
                 *

1975             KK   SUBOG   BASIN
1976             KO       3       2
1977             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
1978             KM  L=       1.1  Lca=       .6   S=   12.3  Kn= .061  LAG=  46.0
1979             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
1980             BA   0.492
1981             LG    0.23    0.15    9.70    0.07      30
1982             UI      42      51     109     215     248     317     356     355     329     302
1983             UI     285     232     188     147     124     101      73      59      51      39
1984             UI      37      24      24      24       7       5       5       6       5       5
1985             UI       5       6       5       5       5       6       5       5       0       0
1986             UI       0       0       0       0       0       0       0       0       0       0
1987             UI       0       0       0       0       0       0       0       0       0       0
                 *

1988             KK   CPOG1
1989             KO       1       2
1990             HC       2
                 *

1991             KK  BAS99A
1992             KO       3       2
1993             KM  DIVERT ALL FLOW INTO BASIN 99
1994             DT  D-B99A
1995             DI       0     179     180    1000    2000
1996             DQ       0       0       1     821    1821
                 *
1                                          HEC-1 INPUT                                                    PAGE 55

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

1997             KK   ~CPOG
1998             KO       3       2
1999             KM  ADD HYDROGRAPHS AT OG
2000             HC       2
                 *
                 * THE FOLLOWING POND AND DIVERT REMOVED TO MODEL THE IMPROVED CONDITION
                 * KK  RSOG
                 * KM      MODIFIED PULS ROUTING FROM OG TO OF.
                 * KO     1
                 * RS     1    STOR      -1       0
                 * SV    27    29.6    32.3    35.2    51.6    72.2    97.1   126.7   155.4
                 * SE1002.2  1002.3  1002.4  1002.5  1003.0  1003.5  1004.0  1004.5  1004.9
                 * SQ     0       4      23      68     922    3346    7315   12805   18312
                 *
                 *
                 * KKDIOGOD
                 * KM      DIVERT FLOW FROM OG TO OD OVER SPRR
                 * DT DIOD2
                 * DI     0     251     922    3346    7315   12805   18312
                 * DQ     0      40     250    1174    2870    5440    8134
                 *
                 *
                 * KK99PASS
                 * KO     3       2
                 * KM DIVERT OVERFLOW INTO BASIN - JLM 5/21/01
                 * DTD-B99B
                 * DI     0     500     501    1000    2000
                 * DQ     0       0       1     500    1500
                 *
                 * KK D-B99
                 * KM REMOVED PER BJF TO MODEL RETENTION MORE ACCURATELY - JLM 5/21/01
                 * KM DIVERT LOW FLOW AROUND BASIN
                 * DT99PASS
                 * DI     0     500   10000
                 * DQ     0     500     500
                 *
                 * KK BSN99
                 * KO     3
                 * KM REMOVED PER BJF TO MODEL RETENTION MORE ACCURATELY - JLM 5/21/01
                 * KM PROPOSED DETENTION BASIN AT 99 AVE. AND SPRR. -DCF
                 * RS     1    STOR       0
                 * SV     0     .06    1.95    6.25   15.18   30.55   49.16   69.40   91.37   114
                 * SE    91      92      93      94      95      96      97      98      99     1
                 * SQ     0       1
                 * SE    90    99.9
                 *
                 * KK R-B99
                 * KM RETURN DIVERT
                 * KM REMOVED PER BJF TO MODEL RETENTION MORE ACCURATELY - JLM 5/21/01
                 * DR99PASS
                 *
                 * KK C-B99
                 * KM REMOVED PER BJF TO MODEL RETENTION MORE ACCURATELY - JLM 5/21/01
                 * KM RECOMBINE FLOWS AFTER RETENTION BASIN
                 * HC     2
                 *
1                                          HEC-1 INPUT                                                    PAGE 56

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2001             KK  MCOGOFROUTE   REACH
```

```
2002          KM  ADMP CHANNEL
2003          KM  ROUTE FLOW FROM OG TO OF
2004          RS       4    FLOW      -1
2005          RC   0.040   0.040   0.040    4266  0.0020    0.00
2006          RX     1.0    17.0    34.8    52.7    72.7    90.5   108.4   124.4
2007          RY     5.6     6.0     3.0     0.0     0.0     3.0     6.0     5.6
              *

2008          KK   SUBOF   BASIN
2009          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2010          KM  L=       .7  Lca=       .3   S=   27.9  Kn= .069  LAG=  42.9
2011          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2012          BA   0.246
2013          LG    0.19    0.15    8.80    0.09      62
2014          UI      58     215     361     384     322     222     132      76      49      30
2015          UI      20       6       6       6       6       6       6       0       0       0
2016          UI       0       0       0       0       0       0       0       0       0       0
2017          UI       0       0       0       0       0       0       0       0       0       0
2018          UI       0       0       0       0       0       0       0       0       0       0
              *

2019          KK   SUBRE
2020          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2021          KM  L=       .9  Lca=       .5   S=    6.3  Kn= .100  LAG=  74.7
2022          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2023          BA     .36
2024          LG     .50     .00    7.30     .16     .00
2025          UI     18.     18.     18.     35.     47.     78.    103.    100.    114.    137.
2026          UI    147.    151.    151.    151.    149.    126.    126.    135.    116.     94.
2027          UI    105.     83.     69.     63.     53.     52.     52.     34.     31.     29.
2028          UI     24.     22.     21.     16.     16.     16.     12.     10.     10.     10.
2029          UI     10.      9.      2.      2.      2.      2.      2.      2.      2.      2.
2030          UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
2031          UI      2.      2.      2.      2.      2.      2.      0.      0.      0.      0.
2032          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *
              * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE IMPROVED CONDITION
              * KK  CPRE
              * KM      RETURN DIVERT FROM RF
              * DR  DIRE
              *
              * KKRTDIRE   ROUTE   REACH
              * KM      ROUTE DIVERT FROM RF TO RE
              * KM      TYPE B CHANNEL
              * RS     5              -1       0
              * RC 0.100   0.020   0.100    2600  0.0008    0.00
              * RX   0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
              * RY   4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
              * KK @CPRE
              * KM ADD HYDROGRAPHS AT RE
              * HC     2    1.53
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2033          KK  RTREOFROUTE   REACH
2034          KM  ROUTE FLOW FROM RE TO OF
2035          KM  TYPE A CHANNEL
2036          RS      11              -1       0
2037          RC   0.100   0.100   0.100    2700  0.0044    0.00
2038          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
2039          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

2040          KK   ~CPOF
2041          KO       1       2
2042          KM  ADD HYDROGRAPHS AT OF.
2043          HC       3
              *
              * THE FOLLOWING PONE REMOVED TO MODEL THE ADMP CONDITION
              * KK  RSOF
              * KM MODIFIED PULS ROUTING THROUGH PONDING BEHIND SPRR.
              * KO     1
              * RS     1    STOR       0       0
              * SV  48.3    49.5    56.8    65.2    74.8    85.5    96.6    99.2
              * SE 995.4   995.5   996.0   996.5   997.0   997.5   998.0     999
              * SQ     0      50     100     500     750    1000
              * SE 995.4   996.0   996.5   997.3   997.5   997.6
              *

2044          KK  MCOFOBROUTE   REACH
2045          KM  ADMP CHANNEL
2046          KM  ROUTE FLOW FROM OF TO OB
2047          RS       3    FLOW      -1
2048          RC   0.040   0.040   0.040    2177  0.0007    0.00
2049          RX     0.0    16.0    33.6    51.2   126.2   143.7   161.3   177.3
2050          RY     5.5     5.9     2.9     0.0     0.0     2.9     5.9     5.5
              *

2051          KK   SUBOB   BASIN
2052          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2053          KM  L=      1.1  Lca=       .6   S=   17.0  Kn= .063  LAG=  68.9
2054          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
```

```
2055          BA   0.445
2056          LG    0.11     0.25     5.10     0.38       77
2057          UI      80      278      484      628      567      471      329      214      126       83
2058          UI      61       42       20       10        9        9       10        9        9        0
2059          UI       0        0        0        0        0        0        0        0        0        0
2060          UI       0        0        0        0        0        0        0        0        0        0
2061          UI       0        0        0        0        0        0        0        0        0        0
2062          UI       0        0        0        0        0        0        0        0        0        0
2063          UI       0        0        0        0        0        0        0        0        0        0
2064          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

2065          KK   CPOB
2066          KM  COMBINE FLOWS INTO NEW CHANNEL
2067          HC       2
              *

2068          KK   SUBRD
2069          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2070          KM  L=        .9  Lca=        .5   S=   10.5  Kn= .100  LAG=  67.8
2071          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2072          BA     .38
2073          LG     .50      .00     5.80      .28      .00
2074          UI     20.      20.      24.      43.      66.     107.     122.     122.     156.     164.
2075          UI    172.     172.     172.     159.     143.     153.     141.     107.     117.      96.
2076          UI     78.      68.      59.      63.      46.      38.      33.      29.      25.      24.
2077          UI     19.      19.      18.      12.      12.      12.      12.      11.       3.       3.
2078          UI      3.       3.       3.       3.       3.       3.       3.       3.       3.       3.
2079          UI      3.       3.       3.       3.       3.       3.       3.       3.       3.       3.
2080          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
2081          UI      0.       0.       0.       0.       0.       0.       0.       0.       0.       0.
              *

2082          KK  DIRDOB
2083          KM  DIVERT 40% OF FLOW FROM RD TO OB
2084          DT    DIOB
2085          DI       0       25       50       75      100      150      200
2086          DQ       0       10       20       30       40       60       80
              *

2087          KK  RTRDRCROUTE   REACH
2088          KM  ROUTE FLOW FROM RD TO RC (ALONG VAN BUREN).
2089          KM  TYPE B CHANNEL
2090          RS       6               -1        0
2091          RC   0.100    0.020    0.100     5200   0.0023     0.00
2092          RX     0.0    470.0    476.0    480.0    520.0    524.0    530.0   1000.0
2093          RY     4.7      0.0      0.0      1.0      1.0      0.0      0.0      4.7
              *

2094          KK   SUBRC   BASIN
2095          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2096          KM  L=       1.2  Lca=        .6   S=   14.0  Kn= .100  LAG=  78.2
2097          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2098          BA   0.683
2099          LG    0.50     0.23     6.20     0.24        0
2100          UI      32       33       32       58       76      125      169      197      184      260
2101          UI     231      270      270      274      270      253      228      227      249      191
2102          UI     169      191      146      121      115       96       91      100       63       58
2103          UI      52       48       40       40       33       30       29       29       18       18
2104          UI      18       18       19       13        4        4        4        4        5        4
2105          UI       4        0        0        0        0        0        0        0        0        0
2106          UI       0        0        0        0        0        0        0        0        0        0
2107          UI       0        0        0        0        0        0        0        0        0        0
2108          UI       0        0        0        0        0        0        0        0        0        0
              *
1                                                HEC-1 INPUT                                                    PAGE 59

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2109          KK    CPRC
2110          KM  ADD HYDROGRAPHS AT RC
2111          HC       2
              *

2112          KK  RTRCRBROUTE   REACH
2113          KM  ROUTE FLOW FROM RC TO RB (ALONG VAN BUREN).
2114          KM  TYPE B CHANNEL
2115          RS       4               -1        0
2116          RC   0.100    0.020    0.100     5200   0.0042     0.00
2117          RX     0.0    470.0    476.0    480.0    520.0    524.0    530.0   1000.0
2118          RY     4.7      0.0      0.0      1.0      1.0      0.0      0.0      4.7
              *

2119          KK   SUBRB   BASIN
2120          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2121          KM  L=       1.1  Lca=        .6   S=   19.3  Kn= .086  LAG=  59.9
2122          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2123          BA   0.549
2124          LG    0.47     0.28     5.40     0.32        0
2125          UI      34       35       53       88      160      201      203      257      287      288
2126          UI     290      278      239      257      223      180      194      134      121      100
```

```
2127          UI     106      70      61      54      42      42      32      31      27      20
2128          UI      19      20      19       5       4       5       4       4       5       4
2129          UI       4       4       5       4       4       5       4       4       4       5
2130          UI       4       0       0       0       0       0       0       0       0       0
2131          UI       0       0       0       0       0       0       0       0       0       0
              *

2132          KK    CPRB
2133          KM  ADD HYDROGRAPHS AT RB
2134          HC       2
              *

2135          KK  DIRBKA
2136          KM  DIVERT 50% OF FLOW FROM RB TO KA3
2137          DT   DIKA3
2138          DI       0      25      50      75     100     150     200
2139          DQ       0      13      25      38      50      75     100
              *

2140          KK  RTRBRAROUTE   REACH
2141          KM  ROUTE FLOW FROM RB TO RA (ALONG VAN BUREN).
2142          KM  TYPE B CHANNEL
2143          RS      13              -1       0
2144          RC   0.100   0.020   0.100    2440  0.0001    0.00
2145          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2146          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2147          KK   SUBRA   BASIN
2148          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2149          KM  L=       .8  Lca=       .4   S=    9.2  Kn= .100  LAG=  58.3
2150          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2151          BA   0.222
2152          LG    0.50    0.25    4.80    0.46       0
2153          UI      14      14      23      37      68      82      87     108     118     118
2154          UI     121     109      98     106      86      76      73      54      46      40
2155          UI      41      27      23      21      17      15      13      13       9       8
2156          UI       8       8       5       2       1       2       2       2       1       2
2157          UI       2       2       1       2       2       2       1       2       2       2
2158          UI       1       0       0       0       0       0       0       0       0       0
2159          UI       0       0       0       0       0       0       0       0       0       0
              *

2160          KK    CPRA
2161          KM  ADD HYDROGRAPHS AT RA
2162          HC       2
              *

2163          KK  DIRAKA
2164          KM  DIVERT FLOW FROM RA TO KA4
2165          DT   DIKA4
2166          DI       0      20      50      80     100     154     200
2167          DQ       0       3      25      58      77     129     174
              *

2168          KK  DIKAAF
2169          KM  DUMMY DIVERT TO ROUTE FLOW AS REQUIRED.
2170          DT   DIAFX
2171          DI       0      25      50      75     100     150     200
2172          DQ       0      25      50      75     100     150     200
              *

2173          KK   CPOB2
2174          KM  RETURN DIVERT FROM RD
2175          DR    DIOB
              *

2176          KK  RTDIOBROUTE   REACH
2177          KM  ROUTE FLOW FROM RD TO OB
2178          KM  TYPE B CHANNEL
2179          RS      11              -1       0
2180          RC   0.100   0.020   0.100    5600  0.0007    0.00
2181          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2182          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2183          KK   @CPOB
2184          KM  ADD HYDROGRAPHS AT OB
2185          HC       3     7.6
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2186          KK  MCOBLEROUTE   REACH
2187          KM  ADMP CHANNEL
2188          KM  ROUTE FLOW FROM OB TO LE.
2189          RS       3    FLOW      -1
2190          RC   0.040   0.040   0.040    1551  0.0005    0.00
2191          RX     0.0    16.0    33.7    51.3   151.3   169.0   186.6   202.6
2192          RY     5.6     5.9     2.9     0.0     0.0     2.9     5.9     5.6
```

```
                *
2193            KK   SUBLE   BASIN
2194            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2195            KM  L=        .7  Lca=        .3   S=   14.7  Kn= .087  LAG=  43.1
2196            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2197            BA   0.250
2198            LG    0.45    0.25    4.80    0.45       7
2199            UI      20      22      45      92     115     145     158     169     167     146
2200            UI     148     123     112      85      68      58      51      35      30      25
2201            UI      20      18      14      11      11      10       2       3       2       3
2202            UI       2       3       2       3       2       3       2       3       2       3
2203            UI       2       0       0       0       0       0       0       0       0       0
                *

2204            KK   ~CPLE
2205            KM  ADD HYDROGRAPHS AT LE
2206            HC       2
                *
                * BEGIN CHANGES TO ADMP FOR CW RANCH MODEL, ADB 9/9/3
                * BEGIN REMOVED PORTION, ADB
                * REMOVED ADB 9/8/3 TO MODEL W/OUT BASIN
                * KK111PAS
                * KO     3       2
                * KMDIVERTOVERFLOW  INTO    BASI      N-     JLM 5/21/01
                * DTD-B111
                * DI     0     700     701    2000    5000
                * DQ     0       0       1    1300    4300
                * END REMOVED PORTION, ADB
                *
                * KKD-B111
                * KM DIVERT LOW FLOW AROUND BASIN
                * DT111PAS
                * DI     0     700   10000
                * DQ     0     700     700
                *
                * KKBSN111
                * KO     3
                * KM PROPOSED DETENTION BASIN AT 111 AVE. ALIGN. AND SPRR. -DCF
                * RS     1    STOR      -1
                * SV     0     .30     1.6    4.57    9.87   18.19   29.67   43.51   58.70
                * SE    79      80      81      82      83      84      85      86      87
                * SQ     0       1
                * SE    78    86.9
                *
                * KKR-B111
                * KM RETURN DIVERT
                * DR111PAS
                *
                * KKC-B111
                * KM RECOMBINE FLOWS AFTER RETENTION BASIN
                * HC     2
                *
                * THE FOLLOWING POND REMOVED TO MODEL THE ADMP CONDITION
                * KK   RSLE
                * KM      MODIFIED PULS ROUTING BEHIND DITCH AND SPRR
                * KO     1
                * RS     1    STOR       0       0
                * SV  16.7    18.4    20.2    22.0    24.5    27.7    31.1    34.9    38.9    43
                * SE 991.4   991.5   991.6   991.7   991.8   991.9   992.0   992.1   992.2   992
                * SQ     0     4.7    33.7    91.1   178.5   367.6   688.3  1135.1  1705.8  2391
                *
                * THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
                * KKDILELD
                * KM      DIVERT FLOW FROM LE1 TO SUBBASIN LD
                * DT   DILD
                * DI 178.5   367.6   688.3  1135.1  1705.8
                * DQ     0    62.6   214.9   444.3   745.9
                *
                * BEGIN ADDED PORTION, ADB
                * ADDED ADB 9/8/3, NEW ALTERED SUBKD (ONLY NE PORTION) W/ON SITE RET & NW DEV
1                                          HEC-1 INPUT                                          PAGE 62

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2207            KK  SubKD1
2208            KO       3       2
2209            BA   0.227
2210            LG    0.48    0.02     4.8    0.45       3
2211            UC     1.5   1.286
2212            UA       0       3       5       8      12      20      43      75      90      96
2213            UA     100
                *
                * ADDED ADB 9/9/3 TO ROUTE FLOW FROM SUBKD1 TO KD (THROUGH CW RANCH IN NS CHANNE

2214            KK  NSCHANROUTE   REACH
2215            KO       3       2
2216            RS       3    FLOW      -1
2217            RC   0.040   0.040   0.040    2588 0.00325    0.00
2218            RX     0.0       8      16      18      20      22      30      38
2219            RY       4       2       0     0.0     0.0       0       2       4
                *

2220            KK   ~CPNS
2221            KM  ADD HYDROGRAPHS AT END OF NSCHAN. ADB 9/9/3
```

```
2222        HC       2
            *
            * ADDED ADB 9/9/3 TO MODEL CHANNEL AS RESERVOIR TO DETERMINE WSEL

2223        KK  CWDROC
2224        RS       1    STOR     0.0     0.0
2225        SV     0.0   1.271   3.669   7.036  11.083  15.791   21.18
2226        SE   979.0   980.0   981.0   982.0   983.0   984.0   985.0
2227        SQ     0.0   200.0   400.0   600.0   800.0  1000.0  1200.0  1400.0
2228        SE  977.52  980.03  981.25  982.23  983.09  983.99  985.15  986.36
            * END ADDED PORTION, ADB
            *
            * BEGIN REMOVED PORTION, ADB
            * REMOVED ADB 9/9/3, REPLACED W/ SUBKD1
            * KK SUBKD   BASIN
            * KM   THEFOLLOWINGPARAMETERS    WEREPROVIDED     FOR    THIS   BASIN
            * KM    L=                                          1.4            Lca=.7   S
            * KMAGRICULTURAL S-GRAPH     WAS    USED     FOR    THIS   BASIN
            * BA 0.702
            * LG  0.48    0.25    4.90    0.43       2
            * UI    30      30      31      42      64      91     138     173     171     1
            * UI   250     208     251     254     254     250     255     220     209     2
            * UI   230     172     159     173     151     119     114      94      87
            * UI    89      58      55      48      47      37      38      36      27
            * UI    28      25      18      17      17      17      17      17       6
            * UI     4       0       0       0       0       0       0       0       0
            * UI     0       0       0       0       0       0       0       0       0
            * UI     0       0       0       0       0       0       0       0       0
            * UI     0       0       0       0       0       0       0       0       0
            *
            * KK ~CPKD
            * KM   ADDHYDROGRAPHS      AT     KD.
            * HC     2
            * END REMOVED PORTION, ADB
            * END CHANGES TO ADMP FOR CW RANCH MODEL, ADB 9/9/3
            *
            * THE FOLLWOING POND REMODED TO MODEL THE ADMP CONDITION
            * KK  RSKD
            * KM      MODIFIED PULS ROUTING BEHIND 115TH AVE
            * KO     1
            * RS     1    STOR       0       0
            * SV     3     3.4     3.8     4.2     4.8     5.7     6.8     8.1     9.5    11
            * SE 985.9   986.0   986.1   986.2   986.3   986.4   986.5   986.6   986.7   986
            * SQ     0      50     100     500     750    1000
            * SE 985.9   986.5   986.6   987.0   987.1   987.3
            *
            *
```



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LINE        ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2229        KK  MCKDKAROUTE   REACH
2230        KM  ADMP CHANNEL
2231        KM  ROUTE FLOW FROM KD TO KA (ALONG SPRR).
2232        RS       4    FLOW      -1
2233        RC   0.040   0.040   0.040    2690  0.0006    0.00
2234        RX     0.0    16.0    33.6    51.3   116.3   133.9   151.6   167.6
2235        RY     5.6     5.9     2.9     0.0     0.0     2.9     5.9     5.6
            *
            * THE FOLLOWING POND AND DIVERT REMOVED TO MODEL THE ADMP CONDITION
            * KK RSKA1
            * KM      MODIFIED PULS ROUTING BEHIND 117TH AVE AND SPRR
            * KO     1
            * RS     1    STOR       0       0
            * SV  27.8    34.8    42.6    61.0    77.2    89.1   101.5   121.4   156.7   178
            * SE 984.2   984.4   984.6   985.0   985.3   985.5   985.7   986.0   986.5   986
            * SQ   0.0     0.9     5.1    29.0    64.9    98.6   141.2   223.2   531.2  1106
            *
            * KKDIKALA
            * KM DIVERT FLOW FROM KA2 TO SUBBASIN LA
            * DT  DILA
            * DI 166.1   239.3   364.4   532.6   749.5
            * DQ     0    45.9   141.1   277.2   454.8
            *

2236        KK   SUBKA   BASIN
2237        KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2238        KM  L=      1.7  Lca=       .9   S=   19.5  Kn= .050  LAG=  94.0
2239        KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2240        BA   0.247
2241        LG    0.16    0.25    4.80    0.36      24
2242        UI      16      15      26      42      74      92      96     120     133     130
2243        UI     134     122     109     118      96      84      82      60      51      44
2244        UI      46      30      26      23      19      17      14      14      10       9
2245        UI       9      10       5       2       2       2       2       2       2       2
2246        UI       2       2       1       2       2       2       2       2       2       2
2247        UI       2       0       0       0       0       0       0       0       0       0
2248        UI       0       0       0       0       0       0       0       0       0       0
2249        UI       0       0       0       0       0       0       0       0       0       0
2250        UI       0       0       0       0       0       0       0       0       0       0
2251        UI       0       0       0       0       0       0       0       0       0       0
            *

2252        KK   RETKA
2253        KM  DIVERT RETENTION OUT OF MODEL DUE TO COLDWATER RANCH DEVELOPMENT. -DCF
```

```
2254          KM  TOTAL RETENTION IS 17.6 AF. 80% OF THAT IS USED HERE. -DCF
2255          DT   RETKA    14.1
2256          DI       0   10000
2257          DQ       0   10000
              *
```



```
LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2258          KK   CPKA3
2259          KM  RETURN DIVERT FROM RB.
2260          DR   DIKA3
              *

2261          KK  RTDIKAROUTE   REACH
2262          KM  ROUTE DIVERT FROM RA TO KA4
2263          KM  TYPE A CHANNEL
2264          RS      15              -1       0
2265          RC   0.100   0.100   0.100    5500  0.0050    0.00
2266          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
2267          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

2268          KK   CPKA4
2269          KM  RETURN DIVERT FROM RA.
2270          DR   DIKA4
              *

2271          KK   CPKA
2272          KM  ADD HYDROGRAPHS AT KA
2273          HC       4
              *
              * THE FOLLOWING DIVERT REMOVED TO MODEL THE ADMP CONDITION
              * KKDIKAKB
              * KM  DIVERT FLOW FROM KA TO KB
              * DT  DIKB
              * DI     0     350     420     490     560     630     679
              * DQ     0       0      40     106     174     242     291
              *

2274          KK  CPKAAF
2275          KM  COMBINE FLOWS FROM KA INTO THE AGUA FRIA RIVER
2276          HC       2
              *
              * ***********************************************************************
              *

2277          KK   SUBLC   BASIN
2278          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2279          KM  L=        .3  Lca=        .2   S=    6.7  Kn= .098  LAG=  33.8
2280          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2281          BA   0.120
2282          LG    0.15    0.25    4.80    0.44      47
2283          UI      52     202     256     199     108      51      28      16       3       4
2284          UI       4       4       0       0       0       0       0       0       0       0
2285          UI       0       0       0       0       0       0       0       0       0       0
2286          UI       0       0       0       0       0       0       0       0       0       0
2287          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

2288          KK   RETLC
2289          KM  DIVERT RETENTION OUT OF MODEL DUE TO FIELDCREST DEVELOPMENT. -DCF
2290          KM  TOTAL RETENTION IS 16.3 AF. 80% OF THAT IS USED HERE. -DCF
2291          DT   RETLC    13.0
2292          DI       0   10000
2293          DQ       0   10000
              *

2294          KK  RTLCLAROUTE   REACH
2295          KM  ROUTE FLOW FROM LC TO LA.
2296          KM  TYPE B CHANNEL
2297          RS       4              -1       0
2298          RC   0.100   0.020   0.100    5000  0.0044    0.00
2299          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2300          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2301          KK   SUBLA   BASIN
2302          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2303          KM  L=       1.1  Lca=        .6   S=   12.3  Kn= .096  LAG=  72.8
2304          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2305          BA   0.515
2306          LG    0.30    0.25    4.70    0.42      20
2307          UI      37      38      72     134     219     212     279     315     312     311
2308          UI     274     273     243     203     189     142     115     111      83      64
2309          UI      56      46      40      34      31      21      21      21      14       5
2310          UI       4       5       5       4       5       5       4       5       5       4
2311          UI       5       5       4       5       5       0       0       0       0       0
2312          UI       0       0       0       0       0       0       0       0       0       0
2313          UI       0       0       0       0       0       0       0       0       0       0
2314          UI       0       0       0       0       0       0       0       0       0       0
```

```
                 *
2315             KK   RETLA
2316             KM  DIVERT RETENTION OUT OF MODEL DUE TO CAMBRIDGE ESTATES DEVELOPMENT. -DCF
2317             KM  TOTAL RETENTION IS 31.3 AF. 80% OF THAT IS USED HERE. -DCF
2318             DT   RETLA    25.1
2319             DI       0   10000
2320             DQ       0   10000
                 *
                 * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE ADMP CONDITION
                 * KKDRDILA
                 * KM RETURN DIVERT FROM LA
                 * DR  DILA
                 *
                 * KKRTDILA   ROUTE   REACH
                 * KM      ROUTE DIVERT FROM KA TO LA
                 * KM      TYPE A CHANNEL
                 * RS     7              -1       0
                 * RC 0.025   0.025   0.025    4000  0.0016    0.00
                 * RX   0.0   100.0   400.0   500.0   500.1   524.0   900.0  1000.0
                 * RY   5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2321             KK    CPLA
2322             KM  ADD HYDROGRAPHS AT LA
2323             HC       2
                 *
2324             KK  RTLAKBROUTE   REACH
2325             KM  ROUTE FLOW FROM LA TO KB.
2326             KM  TYPE B CHANNEL
2327             RS       2              -1       0
2328             RC   0.100   0.020   0.100    3500  0.0071    0.00
2329             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2330             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                 *
2331             KK   SUBKB   BASIN
2332             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2333             KM  L=       .9  Lca=       .3   S=   23.2  Kn= .095  LAG=  46.7
2334             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2335             BA   0.420
2336             LG    0.40    0.27    5.00    0.36       7
2337             UI      43      66     162     241     321     360     359     316     312     230
2338             UI     196     140     125      79      62      51      40      31      25      24
2339             UI       9       5       5       6       5       5       6       5       6       5
2340             UI       5       6       0       0       0       0       0       0       0       0
2341             UI       0       0       0       0       0       0       0       0       0       0
2342             UI       0       0       0       0       0       0       0       0       0       0
                 *
                 * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE ADMP CONDITION
                 * KK  DRKB
                 * KM      RETURN DIVERT FROM KA.
                 * DR  DIKB
                 *
                 * KKRTDIKB   ROUTE   REACH
                 * KM      ROUTE DIVERT FROM KA TO KB
                 * KM      TYPE A CHANNEL
                 * RS    13              -1       0
                 * RC 0.100   0.100   0.100    3500  0.0050    0.00
                 * RX   0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
                 * RY   5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                 *
2343             KK    CPKB
2344             KM  ADD HYDROGRAPHS AT KB.
2345             HC       2
                 *
2346             KK  CPAFKB
2347             KM  COMBINE FLOWS INTO AGUA FRIA RIVER AT KB
2348             HC       2
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2349             KK   SUBGA   BASIN
2350             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2351             KM  L=       .6  Lca=       .3   S=   52.6  Kn= .035  LAG=  11.7
2352             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2353             BA   0.139
2354             LG    0.27    0.29    4.55    0.37       8
2355             UI      89     307     325     187      89      40      19       6       5       5
2356             UI       0       0       0       0       0       0       0       0       0       0
2357             UI       0       0       0       0       0       0       0       0       0       0
                 *
2358             KK  CPAFGA
2359             KM  COMBINE FLOWS INTO AUGA FRIA RIVER AT GA
2360             HC       2
```

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                *

2361            KK   SUBEE   BASIN
2362            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2363            KM  L=       1.6  Lca=       1.0   S=   16.0  Kn= .076  LAG=  78.2
2364            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2365            BA   0.958
2366            LG    0.48    0.25    4.90    0.34       1
2367            UI      35      36      36      35      69      75     117     168     192     220
2368            UI     188     243     287     271     297     300     301     300     297     293
2369            UI     249     248     263     270     226     188     193     215     159     138
2370            UI     135     116     104     100     113      89      68      65      57      57
2371            UI      48      44      44      39      33      32      33      32      22      20
2372            UI      20       0       0       0       0       0       0       0       0       0
2373            UI       0       0       0       0       0       0       0       0       0       0
2374            UI       0       0       0       0       0       0       0       0       0       0
2375            UI       0       0       0       0       0       0       0       0       0       0
                *

2376            KK   CPEE1
2377            KM  RETURN DIVERT FROM JB
2378            DR    DIEE
                *

2379            KK  RTDIEEROUTE   REACH
2380            KM  ROUTE DIVERT FROM JB TO EE
2381            KM  TYPE A CHANNEL
2382            RS     10              -1       0
2383            RC   0.100   0.020   0.100    7500  0.0015    0.00
2384            RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
2385            RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                *

2386            KK   CPEC
2387            KM  ADD HYDROGRAPHS AT EC
2388            HC      2
                *
```



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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2389            KK  MCEEECROUTE   REACH
2390            KM  ADMP CHANNEL
2391            KM  ROUTE FLOW FROM EE TO EC
2392            RS      3    FLOW      -1
2393            RC   0.040   0.040   0.040    2766  0.0023    0.00
2394            RX     0.0    16.0    32.3    48.5    52.5    68.8    85.0   101.0
2395            RY     5.1     5.4     2.7     0.0     0.0     2.7     5.4     5.1
                *

2396            KK   SUBEC   BASIN
2397            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2398            KM  L=        .9  Lca=       .5   S=   11.6  Kn= .107  LAG=  72.3
2399            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2400            BA   0.042
2401            LG    0.50    0.25    4.70    0.47       0
2402            UI       2       3       3       4       8      11      14      14      17      18
2403            UI      19      19      19      18      16      17      16      12      13      11
2404            UI       8       8       7       7       5       5       3       3       3       3
2405            UI       2       2       2       1       2       1       1       2       0       1
2406            UI       0       0       0       1       0       0       0       1       0       0
2407            UI       0       0       0       0       0       0       0       0       0       0
2408            UI       0       0       0       0       0       0       0       0       0       0
2409            UI       0       0       0       0       0       0       0       0       0       0
                *

2410            KK  CEECSR
2411            KM  COMBINE FLOWS FROM EC INTO SALT RIVER
2412            KM  ROUTING CHANGE MADE TO MORE ACCURATELY MODEL WATERSHED -DCF 5.18.00
2413            HC      3
                *

2414            KK   SUBOE   BASIN
2415            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2416            KM  L=       1.1  Lca=       .6   S=   17.3  Kn= .073  LAG=  56.8
2417            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2418            BA   0.469
2419            LG    0.31    0.23    6.20    0.24      33
2420            UI      38      41      85     171     217     271     297     318     313     273
2421            UI     278     230     211     160     128     107      97      65      56      47
2422            UI      37      35      26      21      21      17       5       5       4       5
2423            UI       5       4       5       5       5       4       5       5       5       4
2424            UI       5       0       0       0       0       0       0       0       0       0
2425            UI       0       0       0       0       0       0       0       0       0       0
2426            UI       0       0       0       0       0       0       0       0       0       0
                *

2427            KK   RETOE
2428            KM  DIVERT RETENTION OUT OF MODEL DUE TO WILLAMETTE IND. DEVELOPMENT. -DCF
2429            KM  TOTAL RETENTION IS 5.3 AF. 80% OF THAT IS USED HERE. -DCF
2430            DT   RETOE     4.2
2431            DI      0   10000
2432            DQ      0   10000
                *
```

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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2433          KK   CPOE1
2434          KM  RETURN DIVERT FROM PA.
2435          DR    DIOE
              *

2436          KK  RTDIOEROUTE   REACH
2437          KM  ROUTE DIVERT FROM PA TO OE
2438          KM  TYPE B CHANNEL
2439          RS       7              -1       0
2440          RC   0.100   0.020   0.100    5000  0.0013    0.00
2441          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2442          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
              * THE FOLLOWING RETURNS REMOVED TO MODEL THE ADMP CONDITION.
              * KK CPOE2
              * KM RETURN DIVERT FROM RH
              * DR DIOE2
              *
              * KK CPOE3
              * KM RETURN DIVERT FROM RI
              * DR DIOE3
              *

2443          KK   @CPOE
2444          KM  ADD HYDROGRAPHS AT OE
2445          HC       2     .47
              *

2446          KK  DIOEOD
2447          KM  DIVERT 17% OF FLOW FROM OE2 TO OD
2448          DT    DIOD
2449          DI       0      25      50      75     100     150     200
2450          DQ       0       4       9      12      17      26      34
              *

2451          KK  RTOEMFROUTE   REACH
2452          KM  ROUTE FLOW FROM OE TO MF.
2453          KM  TYPE B CHANNEL
2454          RS       6              -1       0
2455          RC   0.100   0.020   0.100    5200  0.0021    0.00
2456          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2457          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2458          KK   SUBMF   BASIN
2459          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2460          KM  L=      1.4  Lca=       .7   S=   12.9  Kn= .100  LAG=  87.9
2461          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2462          BA   0.971
2463          LG    0.50    0.15    8.40    0.10       0
2464          UI      40      41      41      54      86     116     177     221     244     224
2465          UI     300     302     341     345     338     341     345     317     283     287
2466          UI     311     283     217     217     244     171     154     149     123     114
2467          UI     125     105      77      71      66      62      50      50      46      37
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2468          UI      38      37      34      23      23      23      24      22      23      11
2469          UI       5       0       0       0       0       0       0       0       0       0
2470          UI       0       0       0       0       0       0       0       0       0       0
2471          UI       0       0       0       0       0       0       0       0       0       0
2472          UI       0       0       0       0       0       0       0       0       0       0
              *

2473          KK    CPMF
2474          KM  RETURN ROUTING DIVERT FROM MD (DIMFX).
2475          DR   DIMFX
              *
              *

2476          KK  RTMDMFROUTE   REACH
2477          KM  ROUTE FLOW FROM MD TO MF (ALONG LOWER BUCKEYE ROAD).
2478          KM  TYPE B CHANNEL
2479          RS       7              -1       0
2480          RC   0.100   0.020   0.100    5200  0.0015    0.00
2481          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2482          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
              *

2483          KK   CPMF1
2484          KM  ADD HYDROGRAPHS AT MF
2485          HC       3
              *

2486          KK  DIMFEB
2487          KM  DIVERT 47% OF FLOW AT MF TO EB.
2488          DT    DIEB
2489          DI       0      25      50      75     100     150     200
2490          DQ       0      12      23      35      47      71      94
              *
```

```
2491          KK  RTMFMCROUTE   REACH
2492          KM  ROUTE FLOW FROM MF TO MC (ALONG LOWER BUCKEYE ROAD).
2493          KM  TYPE B CHANNEL
2494          RS      7              -1       0
2495          RC   0.100   0.020   0.100    5200  0.0015    0.00
2496          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2497          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2498          KK   SUBOD   BASIN
2499          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2500          KM  L=      1.1  Lca=       .6   S=   18.2  Kn= .060  LAG=  58.3
2501          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2502          BA   0.509
2503          LG   0.31    0.15    9.70    0.07      32
2504          UI     41      44      94     184     236     294     323     344     340     297
2505          UI    302     249     230     171     140     117     105      71      60      51
2506          UI     40      38      28      23      23      19       5       5       6       5
2507          UI      5       5       5       5       5       5       5       6       5       5
2508          UI      5       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

2509          UI      0       0       0       0       0       0       0       0       0       0
2510          UI      0       0       0       0       0       0       0       0       0       0
              *

2511          KK   RETOD
2512          KM  DIVERT RETENTION OUT OF MODEL DUE TO M.B.C.I. DEVELOPMENT. -DCF
2513          KM  TOTAL RETENTION IS 2.5 AF. 80% OF THAT IS USED HERE. -DCF
2514          DT   RETOD     2.0
2515          DI      0   10000
2516          DQ      0   10000
              *

2517          KK    DROD
2518          KM  RETURN DIVERT FROM OE.
2519          DR    DIOD
              *

2520          KK  RTDIODROUTE   REACH
2521          KM  TYPE B CHANNEL
2522          RS      8              -1       0
2523          RC   0.100   0.020   0.100    2700  0.0013    0.00
2524          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2525          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
              * THE FOLLOWING RETURNS REMOVED TO MODEL THE ADMP CONDITION
              * KK DROD2
              * KM  RETURN DIVERT FROM OG1
              * DR DIOD1
              *
              * KK DROD3
              * KM      RETURN DIVERT FROM OG2.
              * DR DIOD2
              *

2526          KK    CPOD
2527          KM  ADD HYDROGRAPHS AT OD.
2528          HC      2
              *

2529          KK  DIODOC
2530          KM  DIVERT 18% OF FLOW FROM OD TO OC.
2531          DT    DIOC
2532          DI      0      25      50      75     100     150     200
2533          DQ      0       5       9      14      18      27      36
              *

2534          KK  RTODMCROUTE   REACH
2535          KM  ROUTE FLOW FROM OD TO MC.
2536          KM  TYPE B CHANNEL
2537          RS      6              -1       0
2538          RC   0.100   0.020   0.100    5200  0.0023    0.00
2539          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2540          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2541          KK   SUBMC   BASIN
2542          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2543          KM  L=      1.4  Lca=       .7   S=   13.6  Kn= .094  LAG=  81.8
2544          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2545          BA   0.999
2546          LG   0.47    0.15    8.80    0.09       5
2547          UI     45      45      45      72      94     152     231     275     236     299
2548          UI    344     369     378     378     377     373     344     313     322     350
2549          UI    259     235     265     213     173     170     133     125     142     106
2550          UI     86      75      72      60      56      55      43      41      41      39
2551          UI     25      25      26      25      26      23       6       6       5       6
2552          UI      6       0       0       0       0       0       0       0       0       0
```

```
2553          UI       0       0       0       0       0       0       0       0       0       0
2554          UI       0       0       0       0       0       0       0       0       0       0
2555          UI       0       0       0       0       0       0       0       0       0       0
              *

2556          KK   CPMC1
2557          KM  ADD HYDROGRAPHS AT MC
2558          HC       3
              *

2559          KK  DIMCMB
2560          KM  DIVERT 39% OF FLOW AT MC TO MB.
2561          DT    DIMB
2562          DI       0      25      50      75     100     150     200
2563          DQ       0       8      20      29      39      59      78
              *

2564          KK  RTMCIEROUTE   REACH
2565          KM  ROUTE FLOW FROM MC TO IE (ALONG 99TH AVENUE).
2566          KM  TYPE B CHANNEL
2567          RS       2              -1       0
2568          RC   0.100   0.020   0.100    2000  0.0030    0.00
2569          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2570          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2571          KK    DREB
2572          KM  RETURN DIVERT FROM MF TO EB
2573          DR    DIEB
              *

2574          KK   SUBEB   BASIN
2575          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2576          KM  L=      .5  Lca=       .3    S=   11.3  Kn= .100  LAG=  42.8
2577          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2578          BA   0.139
2579          LG    0.50    0.21    6.40    0.23       0
2580          UI      12      15      30      61      70      90     100     101      92      86
2581          UI      80      66      53      41      35      29      20      17      15      10
2582          UI      11       7       7       6       2       2       1       2       1       2
2583          UI       1       2       1       1       2       1       2       1       0       0
2584          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

2585          KK    CPEB
2586          HC       2
              *

2587          KK   RDIED
2588          KM  RETURN DIVERT FROM JB1 TO ED1
2589          DR    DIED
              *

2590          KK  MCJBEDROUTE   REACH
2591          KM  ADMP CHANNEL
2592          KM  ROUTE FLOW FROM JB1 TO ED1
2593          RS       7    FLOW      -1
2594          RC   0.040   0.040   0.040    5128  0.0007    0.00
2595          RX     0.0    16.0    33.7    51.5   156.5   174.2   192.0   208.0
2596          RY     5.6     5.9     3.0     0.0     0.0     3.0     5.9     5.6
              *

2597          KK  SUBED1   BASIN
2598          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2599          KM  L=      1.2  Lca=       .6    S=    9.4  Kn= .100  LAG=  84.3
2600          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2601          BA   0.382
2602          LG    0.50    0.25    5.70    0.31       0
2603          UI      17      17      16      25      36      53      82     102      89     105
2604          UI     134     127     141     141     140     141     137     117     117     128
2605          UI     117      88      92      96      68      66      57      49      47      54
2606          UI      34      31      28      27      22      20      21      15      15      15
2607          UI      15       9      10       9      10       9      10       2       2       2
2608          UI       2       0       0       0       0       0       0       0       0       0
2609          UI       0       0       0       0       0       0       0       0       0       0
2610          UI       0       0       0       0       0       0       0       0       0       0
2611          UI       0       0       0       0       0       0       0       0       0       0
              *

2612          KK  SUBED2   BASIN
2613          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2614          KM  L=      1.2  Lca=       .6    S=    9.4  Kn= .100  LAG=  84.3
2615          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2616          BA   0.114
2617          LG    0.50    0.25    5.70    0.31       0
2618          UI       5       5       5       8      10      16      25      30      27      31
2619          UI      40      38      42      42      42      42      40      35      35      38
2620          UI      36      26      27      29      21      18      18      15      13      17
2621          UI      10      10       7       8       7       6       6       5       4       4
2622          UI       5       2       3       3       3       3       3       1       0       1
2623          UI       1       0       0       0       0       0       0       0       0       0
2624          UI       0       0       0       0       0       0       0       0       0       0
```

```
2625          UI       0       0       0       0       0       0       0       0       0       0
2626          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

2627          KK  ~CPED1
2628          KM  ADD HYDROGRAPHS AT ED1
2629          HC       3
              *

2630          KK  ~CPED2
2631          KM  COMBINE FLOW FROM EB & ED WITH FLOW FROM MF DIVERSION
2632          HC       2
              *

2633          KK  MCED95ROUTE   REACH
2634          KO       3       2
2635          KM  ADMP CHANNEL
2636          KM  ROUTE FLOW FROM ED TO BASIN 95
2637          RS       1    FLOW      -1
2638          RC   0.040   0.040   0.040    1250  0.0010    0.00
2639          RX     0.0    16.0    34.1    52.3   152.3   170.4   188.5   204.5
2640          RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
              *
              *

2641          KK  95PASS
2642          KO       3
2643          KM  DIVERT OVERFLOW INTO BASIN - JLM 5/21/01
2644          DT   D-B95
2645          DI       0    1050    1051    2000
2646          DQ       0       0       1     950
              *
              * KK D-B95
              * KM DIVERT LOW FLOW AROUND RETENTION BASIN
              * DT95PASS
              * DI     0    1000   10000
              * DQ     0    1000    1000
              *
              * KK ESN95
              * KM NEW RETENTION BASIN PARK ON 95 ST ALIGN AT BFC. -DCF
              * KO     1       2
              * RS     1    STOR      -1
              * SV     0     .84    2.79    6.68   12.32   20.24   35.22   55.07   75.03
              * SE    78      79      80      81      82      83      84      85    86.1
              * SQ     0       1
              * SE    78      86
              *
              * KK R-B95
              * KM RETURN DIVERTED LOW FLOW
              * DR95PASS
              *
              * KK C-B95
              * KM RECOMBINE FLOWS AFTER RETENTION BASIN
              * HC     2
              *
1                                          HEC-1 INPUT                                          PAGE 75

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2647          KK  MC95IDROUTE   REACH
2648          KM  ADMP CHANNEL
2649          KM  ROUTE FLOW FROM BASIN 95 TO ID
2650          RS       2    FLOW      -1
2651          RC   0.040   0.040   0.040    2778  0.0027    0.00
2652          RX     0.0    16.0    33.8    51.6    81.6    99.3   117.1   133.1
2653          RY     5.6     5.9     3.0     0.0     0.0     3.0     5.9     5.6
              *
              * KM HEC-RAS REACH
              * KM BFC
              * KM ROUTE FLOW FROM EB TO IE.
              * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
              * KM HEC-RAS MODEL. 06.07.00 -DCF
              * RS     8    STOR       0
              * SV     0      82   138.4   188.1     233   277.3   316.8     355   389.7   406
              * SQ     0     400     800    1200    1600    2000    2400    2800    3200    34
              *

2654          KK  SUBID1   BASIN
2655          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2656          KM  L=       1.0  Lca=       .4   S=    7.1  Kn= .092  LAG=  68.2
2657          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2658          BA   0.204
2659          LG    0.50    0.15    8.00    0.11       0
2660          UI      11      11      13      23      36      57      66      65      85      88
2661          UI      93      93      93      87      78      81      79      57      63      54
2662          UI      42      37      33      33      26      21      17      16      14      14
2663          UI      10      10      11       6       6       6       6       7       1       2
2664          UI       1       1       2       1       2       1       2       1       1       2
2665          UI       1       0       0       0       0       0       0       0       0       0
2666          UI       0       0       0       0       0       0       0       0       0       0
2667          UI       0       0       0       0       0       0       0       0       0       0
```

```
                *
2668            KK  SUBID2   BASIN
2669            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2670            KM  L=      1.0  Lca=       .4   S=    7.1  Kn= .092  LAG=  68.2
2671            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2672            BA   0.359
2673            LG    0.49    0.25    4.90    0.40       1
2674            UI      20      20      26      41      73     106     117     128     151     168
2675            UI     169     169     167     148     140     151     121     108     111      80
2676            UI      75      58      59      54      39      33      31      24      25      19
2677            UI      18      19      11      12      11      11      11       3       2       3
2678            UI       2       3       2       3       2       3       2       3       2       3
2679            UI       2       0       0       0       0       0       0       0       0       0
2680            UI       0       0       0       0       0       0       0       0       0       0
2681            UI       0       0       0       0       0       0       0       0       0       0
                *
1                                          HEC-1 INPUT                                                PAGE 76

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2682            KK  ~CPID1
2683            HC       3
                *

2684            KK   SUBIE   BASIN
2685            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2686            KM  L=       .8  Lca=       .4   S=    6.0  Kn= .100  LAG=  68.6
2687            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2688            BA   0.302
2689            LG    0.50    0.15    8.80    0.09       0
2690            UI      16      16      18      34      50      82      96      93     126     122
2691            UI     137     135     135     132     113     115     126      84      88      87
2692            UI      63      59      47      47      46      31      27      26      20      20
2693            UI      16      15      15      12       9      10       9       9       7       2
2694            UI       2       2       2       2       2       2       2       2       2       2
2695            UI       2       0       0       0       0       0       0       0       0       0
2696            UI       0       0       0       0       0       0       0       0       0       0
2697            UI       0       0       0       0       0       0       0       0       0       0
                *

2698            KK   CPID2
2699            HC       3
                *

2700            KK  MCIDIBROUTE   REACH
2701            KM  ADMP CHANNEL
2702            KM  ROUTE FLOW FROM BASIN ID TO IB
2703            RS       4    FLOW      -1
2704            RC   0.040   0.040   0.040    5265  0.0032    0.00
2705            RX     0.0    16.0    34.1    52.2   102.2   120.3   138.4   154.4
2706            RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
                *
                * KM HEC-RAS REACH
                * KM BFC
                * KM ROUTE FLOW FROM ID TO IB.
                * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
                * KM HEC-RAS MODEL. 06.07.00 -DCF
                * RS      5    STOR       0
                * SV      0    58.3   100.7   135.4     164   190.3     214   236.2   258.3   269
                * SQ      0     400     800    1200    1600    2000    2400    2800    3200    34
                *

2707            KK   SUBIB   BASIN
2708            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2709            KM  L=      1.1  Lca=       .6   S=   14.2  Kn= .100  LAG=  73.6
2710            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2711            BA   0.479
2712            LG    0.50    0.15    8.00    0.13       0
2713            UI      24      24      23      48      64     105     139     130     155     178
2714            UI     204     198     202     200     195     166     169     183     141     126
2715            UI     143      98      92      79      68      72      61      46      39      39
2716            UI      30      30      26      21      22      21      14      14      13      14
2717            UI      13       8       3       3       3       3       3       3       3       3
2718            UI       2       0       0       0       0       0       0       0       0       0
1                                          HEC-1 INPUT                                                PAGE 77

LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2719            UI       0       0       0       0       0       0       0       0       0       0
2720            UI       0       0       0       0       0       0       0       0       0       0
                *

2721            KK   SUBIC   BASIN
2722            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2723            KM  L=      1.1  Lca=       .5   S=    4.7  Kn= .100  LAG=  86.2
2724            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2725            BA   0.461
2726            LG    0.50    0.25    5.20    0.36       0
2727            UI      20      19      20      28      42      60      91     113     113     115
2728            UI     164     137     165     166     167     165     168     143     138     145
2729            UI     151     114     104     113     100      78      75      62      57      58
2730            UI      59      38      35      32      31      25      24      24      18      18
2731            UI      18      16      12      11      11      12      11      11       4       3
2732            UI       2       0       0       0       0       0       0       0       0       0
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2733          UI       0       0       0       0       0       0       0       0       0       0
2734          UI       0       0       0       0       0       0       0       0       0       0
2735          UI       0       0       0       0       0       0       0       0       0       0
              *

2736          KK  ~CPIB1
2737          KM  ADD HYDROGRAPHS AT IB.
2738          HC       3
              *

2739          KK   SUBOC   BASIN
2740          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2741          KM  L=        .8  Lca=        .4   S=   13.2  Kn= .055  LAG=  29.9
2742          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2743          BA   0.310
2744          LG    0.20    0.15    9.70    0.07      59
2745          UI      41      93     221     295     346     317     294     225     156     122
2746          UI      75      56      41      32      23      18       5       5       5       5
2747          UI       5       5       5       5       6       0       0       0       0       0
2748          UI       0       0       0       0       0       0       0       0       0       0
              *

2749          KK    DROC
2750          KM  RETURN DIVERT FROM OD.
2751          DR    DIOC
              *

2752          KK  RTDIOCROUTE   REACH
2753          KM  ROUTE DIVERT FROM OD TO OC
2754          KM  TYPE B CHANNEL
2755          RS       7              -1       0
2756          RC   0.100   0.020   0.100    4000  0.0010    0.00
2757          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2758          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2759          KK    CPOC
2760          KM  ADD HYDROGRAPHS AT OC
2761          HC       2
              *

2762          KK  RTOCMBROUTE   REACH
2763          KM  ROUTE FLOW FROM OC TO MB.
2764          KM  TYPE B CHANNEL
2765          RS       4              -1       0
2766          RC   0.100   0.020   0.100    5200  0.0038    0.00
2767          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2768          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2769          KK   SUBMB   BASIN
2770          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2771          KM  L=       1.4  Lca=        .7   S=   17.6  Kn= .100  LAG=  81.1
2772          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2773          BA   0.995
2774          LG    0.49    0.15    8.40    0.10       2
2775          UI      46      47      46      81     106     174     242     285     256     355
2776          UI     342     390     390     392     387     377     328     324     348     309
2777          UI     242     262     237     181     176     139     132     144     107      88
2778          UI      75      76      58      57      54      42      43      42      33      26
2779          UI      27      26      26      27      10       6       6       6       6       5
2780          UI       6       0       0       0       0       0       0       0       0       0
2781          UI       0       0       0       0       0       0       0       0       0       0
2782          UI       0       0       0       0       0       0       0       0       0       0
2783          UI       0       0       0       0       0       0       0       0       0       0
              *

2784          KK    DRMB
2785          KM  RETURN DIVERT FROM MC.
2786          DR    DIMB
              *

2787          KK  RTDIMBROUTE   REACH
2788          KM  ROUTE DIVERT FROM MC TO MB
2789          KM  TYPE B CHANNEL
2790          RS       6              -1       0
2791          RC   0.100   0.020   0.100    5200  0.0023    0.00
2792          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2793          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2794          KK   @CPMB
2795          KM  ADD HYDROGRAPHS AT MB.
2796          HC       3    5.24
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2797          KK  RTMBIBROUTE   REACH
2798          KM  ROUTE FLOW FROM MB TO IB (ALONG 107TH AVENUE).
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```
2799          KM  TYPE B CHANNEL
2800          RS       3              -1       0
2801          RC   0.100   0.020   0.100    2600  0.0015    0.00
2802          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2803          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2804          KK  @CPIB2
2805          KM  COMBINE FLOW FROM IB & IC WITH FLOWS FROM MB
2806          HC       2    5.72
              *

2807          KK  MCIBIAROUTE   REACH
2808          KM  ADMP CHANNEL
2809          KM  ROUTE FLOW FROM IB TO IA
2810          RS       4    FLOW      -1
2811          RC   0.040   0.040   0.040    2493  0.0005    0.00
2812          RX     1.0    17.0    35.2    53.3   263.3   281.5   299.7   315.7
2813          RY     5.7     6.1     3.0     0.0     0.0     3.0     6.1     5.7
              *
2814          KM  HEC-RAS REACH
2815          KM     BFC
2816          KM  ROUTE FLOW FROM IB TO IA (ALONG 107TH AVENUE).
2817          KM  ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
2818          KM  HEC-RAS MODEL. 06.07.00 -DCF
2819          RS       3    STOR       0
2820          SV       0      17    45.4      77     106   135.9   167.9   199.8   228.7     243
2821          SQ       0     400     800    1200    1600    2000    2400    2800    3200    3400
              *
              * KM TYPE B CHANNEL
              * RS     1              -1       0
              * RC 0.100   0.020   0.100     500  0.0120    0.00
              * RX   0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
              * RY   4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2822          KK   SUBME   BASIN
2823          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2824          KM  L=      1.0  Lca=       .4   S=   20.6  Kn= .090  LAG=  54.3
2825          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2826          BA   0.326
2827          LG    0.42    0.26    4.70    0.44       5
2828          UI      23      24      46      85     138     134     177     200     197     198
2829          UI     172     173     154     129     119      90      73      70      53      41
2830          UI      35      29      25      22      20      13      13      14       8       3
2831          UI       3       3       3       3       3       3       3       3       3       3
2832          UI       3       3       3       3       3       0       0       0       0       0
2833          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

2834          KK  RTMEIAROUTE   REACH
2835          KM  ROUTE FLOW FROM ME TO IA (ALONG 107TH AVENUE).
2836          KM  TYPE B CHANNEL
2837          RS       3              -1       0
2838          RC   0.100   0.020   0.100    3400  0.0034    0.00
2839          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2840          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2841          KK   SUBIA   BASIN
2842          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2843          KM  L=       .8  Lca=       .4   S=   17.1  Kn= .085  LAG=  44.5
2844          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2845          BA   0.309
2846          LG    0.38    0.25    6.00    0.25       6
2847          UI      27      35      72     146     160     209     226     231     204     196
2848          UI     169     152     106      88      82      53      43      34      29      25
2849          UI      19      15      16      10       3       3       4       3       4       3
2850          UI       3       4       3       4       3       3       4       0       0       0
2851          UI       0       0       0       0       0       0       0       0       0       0
2852          UI       0       0       0       0       0       0       0       0       0       0
              *

2853          KK   ~CPIA
2854          KM  ADD HYDROGRAPHS AT IA.
2855          HC       3
              *

2856          KK  MCIAHBROUTE   REACH
2857          KM  ADMP CHANNEL
2858          KM  ROUTE FLOW FROM BASIN IA TO HB
2859          RS       4    FLOW      -1
2860          RC   0.040   0.040   0.040    2646  0.0005    0.00
2861          RX     0.0    16.0    34.1    52.2   262.2   280.3   298.4   314.4
2862          RY     5.7     6.0     3.0     0.0     0.0     3.0     6.0     5.7
              * KM HEC-RAS REACH
              * KM BFC
              * KM ROUTE FLOW FROM IA TO HB.
              * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
              * KM HEC-RAS MODEL. 06.07.00 -DCF
              * RS     2    STOR       0
              * SV     0    23.3    45.2      73   102.7   132.9   160.6   189.4   212.1   222
```

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                 * SQ     0     400     800    1200    1600    2000    2400    2800    3200    34
                 *

2863             KK   SUBHB   BASIN
2864             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2865             KM  L=        .8  Lca=        .4   S=   25.0  Kn= .090  LAG=  45.2
2866             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2867             BA   0.343
2868             LG    0.39    0.25    4.80    0.41       6
2869             UI      31      40      84     174     184     246     256     263     223     228
2870             UI     172     163     117      91      84      56      46      38      28      27
2871             UI      18      17      17       4       4       4       4       3       4       4
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2872             UI       4       4       4       3       4       4       0       0       0       0
2873             UI       0       0       0       0       0       0       0       0       0       0
2874             UI       0       0       0       0       0       0       0       0       0       0
                 *

2875             KK   CPHB1
2876             KM  ADD HYDROGRAPHS AT HB.
2877             HC       2
                 *

2878             KK   SUBDA   BASIN
2879             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2880             KM  L=       1.0  Lca=        .6   S=   17.6  Kn= .076  LAG=  51.6
2881             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2882             BA   0.328
2883             LG    0.39    0.17    6.80    0.18       5
2884             UI      22      21      38      60     109     126     143     171     181     180
2885             UI     184     157     153     157     113     124      87      77      62      67
2886             UI      43      36      33      27      24      20      19      14      12      12
2887             UI      13       6       2       3       3       3       2       3       3       2
2888             UI       3       3       3       2       3       3       2       3       3       3
2889             UI       0       0       0       0       0       0       0       0       0       0
                 *

2890             KK   ~CPDA
2891             KM  ADD HYDROGRAPHS AT DA.
2892             HC       2
                 *

2893             KK   SUBLD   BASIN
2894             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2895             KM  L=        .8  Lca=        .4   S=   13.3  Kn= .052  LAG=  30.7
2896             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2897             BA   0.278
2898             LG    0.16    0.26    4.80    0.37      29
2899             UI      36      84     198     265     310     285     263     202     139     109
2900             UI      69      49      38      28      21      15       5       5       4       5
2901             UI       4       5       4       5       5       0       0       0       0       0
2902             UI       0       0       0       0       0       0       0       0       0       0
                 *
                 * THE FOLLOWING RETURN AND ROUTE REMOVED TO MODEL THE ADMP CONDITION
                 * KK  DRLD
                 * KM RETURN DIVERT FROM LE TO LD
                 * DR  DILD
                 *
                 * KKRTDILD   ROUTE   REACH
                 * KM ROUTE DIVERT FROM LE TO LD
                 * KM TYPE A CHANNEL
                 * RS     4              -1       0
                 * RC 0.025   0.025   0.025    2500  0.0016    0.00
                 * RX   0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
                 * RY   5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                 *
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LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2903             KK  RTLDMAROUTE   REACH
2904             KM  ROUTE FLOW FROM LD TO MA
2905             KM  TYPE A CHANNEL
2906             RS       3              -1       0
2907             RC   0.025   0.025   0.025    2600  0.0035    0.00
2908             RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
2909             RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                 *

2910             KK   SUBMA   BASIN
2911             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2912             KM  L=        .7  Lca=        .3   S=   14.7  Kn= .100  LAG=  49.5
2913             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2914             BA   0.247
2915             LG    0.50    0.25    4.55    0.52       0
2916             UI      18      18      37      70     107     106     141     153     153     153
2917             UI     129     133     111     103      81      66      53      54      35      30
2918             UI      25      22      17      16      12      11      10      11       2       3
2919             UI       2       2       2       3       2       2       2       3       2       2
2920             UI       2       3       2       2       0       0       0       0       0       0
2921             UI       0       0       0       0       0       0       0       0       0       0
                 *
```

```
2922          KK    CPMA
2923          KM  ADD HYDROGRAPHS AT MA
2924          HC       2
              *

2925          KK  RTMAHBROUTE   REACH
2926          KM  ROUTE FLOW FROM MA TO HB (ALONG 115TH AVENUE).
2927          KM  TYPE B CHANNEL
2928          RS       2            -1       0
2929          RC   0.100   0.020   0.100    4000  0.0071    0.00
2930          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
2931          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

2932          KK   CPHB2
2933          KM  ADD HYDROGRAPHS AT HB.
2934          HC       2
              *
              * THE FOLLOWING ROUTES REMOVED TO MODEL THE ADMP CONDITION
              * ROUTING TO DA NO LONGER OCCURS BUT IS COMBINED INTO CHANNEL AT HB
              * KKRTHBDA
              * KM HEC-RAS REACH
              * KM BFC
              * KM ROUTE FLOW FROM HB TO DA (ALONG 115TH AVENUE).
              * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
              * KM HEC-RAS MODEL. 06.07.00 -DCF
              * RS     2    STOR       0
              * SV     0    11.3    18.3    26.4    34.3    40.3    46.2    51.7    56.5    59
              * SQ     0     400     800    1200    1600    2000    2400    2800    3200    34
              *
              * KKRTDACC
              * KM HEC-RAS REACH
              * KM BFC
              * KM ROUTE FLOW FROM DA TO CC.
              * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
              * KM HEC-RAS MODEL. 06.07.00 -DCF
              * RS     6    STOR       0
              * SV     0    49.6    80.6   107.1   129.8   149.2     167   184.1   200.2   207
              * SQ     0     400     800    1200    1600    2000    2400    2800    3200    34
              *
```



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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2935          KK   SUBLB   BASIN
2936          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2937          KM  L=        .7  Lca=       .3   S=      8.8  Kn= .100  LAG=  54.6
2938          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2939          BA   0.249
2940          LG    0.50    0.25    4.60    0.49       0
2941          UI      17      17      29      49      87      96     121     127     141     139
2942          UI     141     117     123     110      88      89      66      55      47      48
2943          UI      31      27      23      21      16      15      14       9      10       9
2944          UI       8       2       3       2       2       2       2       2       2       2
2945          UI       2       2       2       2       2       2       2       2       2       0
2946          UI       0       0       0       0       0       0       0       0       0       0
              *

2947          KK  RTLBHAROUTE   REACH
2948          KM  ROUTE FLOW FROM LB TO HA (SHEET FLOW).
2949          KM  TYPE A CHANNEL
2950          RS      13            -1       0
2951          RC   0.100   0.100   0.100    4000  0.0065    0.00
2952          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
2953          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

2954          KK   SUBHA   BASIN
2955          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2956          KM  L=       .8  Lca=       .4   S=     33.8  Kn= .091  LAG=  42.7
2957          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2958          BA   0.150
2959          LG    0.46    0.25    4.70    0.44       5
2960          UI      13      17      35      71      77     102     110     112      99      95
2961          UI      82      74      51      43      39      26      22      16      14      12
2962          UI       9       8       7       5       2       1       2       2       1       2
2963          UI       2       1       2       2       2       1       2       0       0       0
2964          UI       0       0       0       0       0       0       0       0       0       0
              *

2965          KK    CPHA
2966          KM  ADD HYDROGRAPHS AT HA
2967          HC       3
              *

2968          KK  MCHAGDROUTE   REACH
2969          KM  ADMP CHANNEL
2970          KM  ROUTE FLOW FROM HA TO GD1
2971          RS       4    FLOW      -1
2972          RC   0.040   0.040   0.040    5162  0.0024    0.00
2973          RX     0.0    16.0    33.4    50.8   155.8   173.3   190.7   206.7
2974          RY     5.5     5.8     2.9     0.0     0.0     2.9     5.8     5.5
              * KM      TYPE A CHANNEL
              * RS    15            -1       0
```

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                 * RC 0.100   0.100   0.100    4800  0.0029    0.00
                 * RX   0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
                 * RY   5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
                 *
1                                          HEC-1 INPUT                                                          PAGE 84

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

2975             KK  SUBGD1   BASIN
2976             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2977             KM  L=       1.1  Lca=       .6   S=   33.3  Kn= .093  LAG=  58.4
2978             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2979             BA   0.629
2980             LG    0.49    0.25    5.30    0.33       0
2981             UI      22      23      22      22      40      48      66      94     118     143
2982             UI     118     137     174     160     188     191     190     187     189     190
2983             UI     176     157     159     168     167     144     118     120     136     105
2984             UI      89      87      77      67      64      67      68      44      43      37
2985             UI      36      35      28      28      28      23      20      21      20      21
2986             UI      13       0       0       0       0       0       0       0       0       0
2987             UI       0       0       0       0       0       0       0       0       0       0
                 *

2988             KK  ~CPGD1
2989             KM  COMBINE FLOWS FROM GD1 AND HA+HB INTO ADMP CHANNEL
2990             HC       2
                 *

2991             KK   SUBKC   BASIN
2992             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
2993             KM  L=        .8  Lca=       .4   S=   26.3  Kn= .100  LAG=  50.1
2994             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
2995             BA   0.264
2996             LG    0.50    0.25    4.60    0.50       0
2997             UI      19      20      39      75     113     115     151     163     164     163
2998             UI     138     142     118     111      86      70      57      59      37      32
2999             UI      26      24      18      18      13      11      11      11       2       3
3000             UI       2       3       2       2       3       2       2       3       2       3
3001             UI       2       2       3       2       0       0       0       0       0       0
3002             UI       0       0       0       0       0       0       0       0       0       0
                 *

3003             KK  RTKCGDROUTE   REACH
3004             KM  ROUTE FLOW FROM KC TO GD1 (ALONG EL MIRAGE RD).
3005             KM  ASSUME NEGLIGIBLE CHANNEL TRANSMISSION LOSS.
3006             KM  TYPE B CHANNEL
3007             RS       3              -1       0
3008             RC   0.100   0.020   0.100    4090  0.0049    0.00
3009             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3010             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                 *

3011             KK   SUBGC   BASIN
3012             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3013             KM  L=        .8  Lca=       .4   S=   26.5  Kn= .053  LAG=  27.4
3014             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3015             BA   0.215
3016             LG    0.24    0.26    4.70    0.34      16
3017             UI      28      65     153     205     240     220     204     156     107      85
3018             UI      52      39      28      22      17      12       4       3       4       3
3019             UI       4       3       4       3       4       0       0       0       0       0
3020             UI       0       0       0       0       0       0       0       0       0       0
                 *
1                                          HEC-1 INPUT                                                          PAGE 85

LINE             ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3021             KK  RTGCGDROUTE   REACH
3022             KM  ROUTE FLOW FROM GC TO GD1 (ALONG EL MIRAGE ROAD).
3023             KM  TYPE B CHANNEL
3024             RS       1              -1       0
3025             RC   0.100   0.020   0.100     820  0.0049    0.00
3026             RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3027             RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                 *

3028             KK   CPGD1
3029             KM  ADD ALL HYDROGRAPHS AT GD1.
3030             HC       3
                 *

3031             KK  MCGDCAROUTE   REACH
3032             KM  ADMP CHANNEL
3033             KM  ROUTE FLOW FROM GD1 TO CA1
3034             RS       9    FLOW      -1
3035             RC   0.040   0.040   0.040    5595  0.0005    0.00
3036             RX     0.0    16.0    33.8    51.7   286.7   304.5   322.4   338.4
3037             RY     5.6     6.0     3.0     0.0     0.0     3.0     6.0     5.6
                 *

3038             KK  SUBCA1   BASIN
3039             KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3040             KM  L=       1.4  Lca=       .6   S=    6.4  Kn= .098  LAG=  91.0
3041             KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
```

```
3042          BA   0.143
3043          LG    0.50    0.15    7.60    0.14       0
3044          UI       6       7       6      10      14      21      34      39      34      42
3045          UI      50      53      54      54      54      54      49      44      46      51
3046          UI      37      33      38      31      25      24      19      18      20      16
3047          UI      12      11      10       9       8       7       6       6       6       6
3048          UI       3       4       3       4       4       3       1       1       0       1
3049          UI       1       0       0       0       0       0       0       0       0       0
3050          UI       0       0       0       0       0       0       0       0       0       0
3051          UI       0       0       0       0       0       0       0       0       0       0
3052          UI       0       0       0       0       0       0       0       0       0       0
3053          UI       0       0       0       0       0       0       0       0       0       0
              *

3054          KK  ~CPCA1
3055          KM  COMBINE FLOWS FROM CA TO CHANNEL
3056          HC       2
              *

3057          KK   SUBGB   BASIN
3058          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3059          KM  L=       .8  Lca=       .6   S=   36.1  Kn= .056  LAG=  30.7
3060          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3061          BA   0.221
3062          LG    0.23    0.25    4.55    0.42      17
3063          UI      25      45     122     157     209     212     192     186     139     105
3064          UI      77      63      43      32      23      19      15      13       3       4
1                                          HEC-1 INPUT                                          PAGE 86

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3065          UI       3       3       3       3       3       4       3       3       0       0
3066          UI       0       0       0       0       0       0       0       0       0       0
              *

3067          KK  RTGBCAROUTE   REACH
3068          KM  ROUTE FLOW FROM GB TO CA1.
3069          KM  TYPE B CHANNEL
3070          RS       1              -1       0
3071          RC   0.100   0.020   0.100    1150  0.0035    0.00
3072          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3073          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

3074          KK   CPCA1
3075          KM  ADD ALL HYDROGRAPHS AT CA1
3076          HC       2
              *

3077          KK  MCCABCROUTE   REACH
3078          KM  ROUTE ADMP CHANNEL FROM CA1 TO BC1
3079          RS       6    FLOW      -1
3080          RC   0.040   0.040   0.040    3879  0.0005    0.00
3081          RX     0.0    16.0    33.8    51.6   286.6   304.5   322.3   338.3
3082          RY     5.6     5.9     3.0     0.0     0.0     3.0     5.9     5.6
              *
              * KM HEC-RAS REACH
              * KM BFC
              * KM ROUTE FLOW FROM CA TO BC.
              * KM ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
              * KM HEC-RAS MODEL. 06.07.00 -DCF
              * RS    11    STOR       0
              * SV     0    52.4   113.5   174.4   227.6   278.6   321.5     363   401.7     4
              * SQ     0     400     800    1200    1600    2000    2400    2800    3200    34
              *

3083          KK  SUBBC1   BASIN
3084          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3085          KM  L=      1.7  Lca=       .8   S=   11.5  Kn= .099  LAG=  99.7
3086          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3087          BA   0.137
3088          LG    0.21    0.28    4.80    0.38      31
3089          UI      24      86     150     193     174     145     101      67      38      26
3090          UI      18      14       6       3       3       2       3       3       3       0
3091          UI       0       0       0       0       0       0       0       0       0       0
3092          UI       0       0       0       0       0       0       0       0       0       0
3093          UI       0       0       0       0       0       0       0       0       0       0
3094          UI       0       0       0       0       0       0       0       0       0       0
3095          UI       0       0       0       0       0       0       0       0       0       0
3096          UI       0       0       0       0       0       0       0       0       0       0
3097          UI       0       0       0       0       0       0       0       0       0       0
3098          UI       0       0       0       0       0       0       0       0       0       0
3099          UI       0       0       0       0       0       0       0       0       0       0
              *
1                                          HEC-1 INPUT                                          PAGE 87

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3100          KK  ~CPBC1
3101          KM  ADD HYDROGRAPHS AT BC1
3102          HC       2
              *

3103          KK  CPAFBC
3104          KM  COMBINE FLOWS INTO AGUA FRIA RIVER AT BC1
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```
3105          HC       2
              *

3106          KK   SUBEA   BASIN
3107          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3108          KM  L=       1.5  Lca=        .8   S=   21.3  Kn= .098  LAG=  86.9
3109          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3110          BA   1.321
3111          LG    0.50    0.25    5.30    0.34       0
3112          UI      55      55      54      70     116     151     231     288     339     287
3113          UI     386     419     456     461     458     460     464     442     382     386
3114          UI     415     405     291     284     326     260     213     207     171     157
3115          UI     160     168     104     102      89      87      71      68      67      53
3116          UI      50      50      50      36      31      31      31      31      31      27
3117          UI       7       0       0       0       0       0       0       0       0       0
3118          UI       0       0       0       0       0       0       0       0       0       0
3119          UI       0       0       0       0       0       0       0       0       0       0
3120          UI       0       0       0       0       0       0       0       0       0       0
              *

3121          KK  RTEADCROUTE   REACH
3122          KM  TYPE B CHANNEL
3123          RS       7              -1       0
3124          RC   0.100   0.020   0.100    5000  0.0013    0.00
3125          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3126          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

3127          KK   SUBDC   BASIN
3128          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3129          KM  L=       1.4  Lca=        .4   S=   22.1  Kn= .095  LAG=  63.7
3130          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3131          BA   0.830
3132          LG    0.48    0.25    6.00    0.27       1
3133          UI      48      48      64     101     192     270     262     335     366     401
3134          UI     405     401     385     337     355     335     254     274     213     185
3135          UI     151     135     148      90      82      77      59      59      47      43
3136          UI      43      29      28      27      27      24       6       6       6       6
3137          UI       6       6       6       6       6       5       6       6       6       6
3138          UI       6       0       0       0       0       0       0       0       0       0
3139          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

3140          KK    CPDC
3141          KM  ADD HYDROGRAPHS AT DC
3142          HC       2
              *

3143          KK  RTDCCCROUTE   REACH
3144          KM  ROUTE FLOW FROM DC TO CC.
3145          KM  TYPE B CHANNEL
3146          RS       7              -1       0
3147          RC   0.100   0.020   0.100    5200  0.0015    0.00
3148          RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3149          RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
              *

3150          KK   SUBDD   BASIN
3151          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3152          KM  L=        .5  Lca=        .3   S=   28.3  Kn= .100  LAG=  36.4
3153          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3154          BA   0.133
3155          LG    0.50    0.25    4.65    0.43       0
3156          UI      14      21      51      76     102     114     113     100      99      73
3157          UI      62      45      39      25      20      16      13      10       7       8
3158          UI       2       2       2       2       1       2       2       2       1       2
3159          UI       2       2       0       0       0       0       0       0       0       0
3160          UI       0       0       0       0       0       0       0       0       0       0
              *

3161          KK  RTDDCCROUTE   REACH
3162          KM  ROUTE FLOW FROM DD TO CC.
3163          KM  TYPE A CHANNEL
3164          RS       7              -1       0
3165          RC   0.035   0.035   0.035    5000  0.0040    0.00
3166          RX     0.0   100.0   400.0   500.0   500.1   600.0   900.0  1000.0
3167          RY     5.0     4.0     1.0     0.0     0.0     1.0     4.0     5.0
              *

3168          KK   SUBCC   BASIN
3169          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3170          KM  L=       1.4  Lca=        .7   S=   22.8  Kn= .084  LAG=  56.3
3171          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3172          BA   0.981
3173          LG    0.38    0.24    6.20    0.21       6
3174          UI      61      62      96     157     285     360     361     460     513     514
3175          UI     518     497     428     459     399     322     346     239     216     180
3176          UI     188     127     107      98      75      76      55      56      49      35
3177          UI      35      35      35       8       8       8       7       8       8       7
3178          UI       8       8       7       8       8       7       8       8       7       8
3179          UI       8       0       0       0       0       0       0       0       0       0
3180          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

3181            KK    CPCC
3182            HC       3
                *

3183            KK  RTCCCB
3184            KM  HEC-RAS REACH
3185            KM     BFC
3186            KM  ROUTE FLOW FROM CC TO CB.
3187            KM  ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
3188            KM  HEC-RAS MODEL. 06.07.00 -DCF
3189            RS       4    STOR       0
3190            SV       0    38.4    74.7   138.7   197.6     254   306.8     354     397   420.1
3191            SQ       0     400     800    1200    1600    2000    2400    2800    3200    3400
                *
                * KM      TYPE B CHANNEL
                * RS    10              -1       0
                * RC 0.100   0.020   0.100    5700  0.0018    0.00
                * RX   0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
                * RY   4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

3192            KK   SUBCB   BASIN
3193            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3194            KM  L=      1.2  Lca=        .5   S=   11.1  Kn= .097  LAG=  71.6
3195            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3196            BA   0.739
3197            LG    0.50    0.15    9.70    0.07       0
3198            UI      19      20      20      19      20      22      42      42      51      68
3199            UI      94     102     120     115     103     118     138     170     128     165
3200            UI     165     165     166     164     164     165     164     159     138     137
3201            UI     136     141     154     150     116     103     102     109     117     101
3202            UI      82      74      75      75      58      58      55      56      63      57
3203            UI      37       0       0       0       0       0       0       0       0       0
3204            UI       0       0       0       0       0       0       0       0       0       0
3205            UI       0       0       0       0       0       0       0       0       0       0
                *

3206            KK   CPCB1
3207            KM  COMBINE FLOWS IN BFC WITH FLOWS FROM CB
3208            HC       2
                *

3209            KK  SUBGD2
3210            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3211            KM  L=      1.2  Lca=        .5   S=   11.1  Kn= .097  LAG=  71.6
3212            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3213            BA   0.739
3214            LG    0.50    0.15    9.70    0.07       0
3215            UI      37      37      36      73     100     161     215     202     237     275
3216            UI     314     307     310     310     300     257     260     283     216     195
3217            UI     221     152     141     122     105     112      94      70      61      59
3218            UI      46      46      40      34      34      33      21      21      20      21
3219            UI      21      12       4       5       4       5       5       4       5       5
3220            UI       4       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

3221            UI       0       0       0       0       0       0       0       0       0       0
3222            UI       0       0       0       0       0       0       0       0       0       0
                *

3223            KK  RTGDCBROUTE   REACH
3224            KM  ROUTE FLOW FROM GD2 TO CB (ALONG EL MIRAGE RD).
3225            KM  ASSUME NEGLIGIBLE CHANNEL TRANSMISSION LOSS.
3226            KM  TYPE B CHANNEL
3227            RS       6              -1       0
3228            RC   0.100   0.020   0.100    3880  0.0010    0.00
3229            RX     0.0   470.0   476.0   480.0   520.0   524.0   530.0  1000.0
3230            RY     4.7     0.0     0.0     1.0     1.0     0.0     0.0     4.7
                *

3231            KK   CPCB2
3232            KM  COMBINE FLOWS IN BFC WITH FLOWS FROM CB AND GD2
3233            HC       2
                *

3234            KK  RTCBCA
3235            KM     BFC
3236            KM  ROUTE FLOW FROM CB TO CA2.
3237            KM  CHANNEL PARAMETERS MODIFIED FOR PRELIMINARY CHANNEL SIZING -DCF 06.12.00
3238            KM  ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
3239            KM  HEC-RAS MODEL. 06.07.00 -DCF
3240            RS       6    STOR       0
3241            SV       0    25.1    88.1   161.3   218.7   266.5   308.8   352.2     392   414.2
3242            SQ       0     400     800    1200    1600    2000    2400    2800    3200    3400
                *

3243            KK  SUBCA2   BASIN
3244            KO       1       2
```

```
3245          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3246          KM  L=      1.0  Lca=       .5   S=    7.8  Kn= .083  LAG=  62.2
3247          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3248          BA   0.841
3249          LG   0.50    0.15    8.80    0.09       0
3250          UI     21      20      21      20      21      21      36      44      44      63
3251          UI     73     105     107     128     123     108     116     145     173     143
3252          UI    161     173     175     173     173     175     173     173     175     173
3253          UI    145     145     144     145     160     150     163     111     108     107
3254          UI    116     123     111      88      79      78      80      68      63      60
3255          UI     57       0       0       0       0       0       0       0       0       0
3256          UI      0       0       0       0       0       0       0       0       0       0
              *

3257          KK   CPCA2
3258          KM  COMBINE FLOWS AT CA2
3259          HC       2
              *
1                                          HEC-1 INPUT                                          PAGE 91

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3260          KK  RTCABC
3261          KM    BFC
3262          KM  ROUTE FLOW FROM CA2 TO BC2.
3263          KM  CHANNEL PARAMETERS MODIFIED FOR PRELIMINARY CHANNEL SIZING -DCF 06.12.00
3264          KM  ROUTING FOR THIS REACH USES DISCHARGE-STORAGE VALUES DEVELOPED FROM THE
3265          KM  HEC-RAS MODEL. 06.07.00 -DCF
3266          RS       9    STOR       0
3267          SV       0    52.4   113.5   174.4   227.6   278.6   321.5     363   401.7     423
3268          SQ       0     400     800    1200    1600    2000    2400    2800    3200    3400
              *

3269          KK  SUBBC2   BASIN
3270          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3271          KM  L=      1.7  Lca=       .8   S=   11.5  Kn= .099  LAG=  99.7
3272          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3273          BA   0.493
3274          LG   0.47    0.25    5.10    0.39       4
3275          UI     20      21      20      26      44      56      86     108     126     107
3276          UI    145     156     170     172     171     171     174     165     143     143
3277          UI    155     151     109     106     122      97      79      78      63      59
3278          UI     59      64      38      38      33      33      26      26      25      20
3279          UI     18      19      18      14      11      12      11      12      11      10
3280          UI      3       0       0       0       0       0       0       0       0       0
3281          UI      0       0       0       0       0       0       0       0       0       0
3282          UI      0       0       0       0       0       0       0       0       0       0
3283          UI      0       0       0       0       0       0       0       0       0       0
3284          UI      0       0       0       0       0       0       0       0       0       0
3285          UI      0       0       0       0       0       0       0       0       0       0
              *

3286          KK   CPBC2
3287          KM  ADD HYDROGRAPHS AT BC2
3288          HC       2
              *

3289          KK  CPGRBC
3290          KM  COMBINE FLOWS INTO THE GILA RIVER AT BC2
3291          HC       2
              *
              * *************************
              * BEGIN TRES RIOS LEVEE AREA
              * *************************
              *

3292          KK   SUBAD
3293          KO              2
3294          KM  BASIN SUBAD
3295          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3296          KM  L=      1.1  Lca=       .5   S=   10.9  Kn= .103  LAG=  74.5
3297          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3298          BA     .46
3299          LG     .49     .03    5.20     .36     .00
3300          UI     22.     22.     22.     43.     58.     96.    127.    122.    141.    167.
3301          UI    182.    185.    185.    185.    182.    155.    155.    167.    139.    116.
1                                          HEC-1 INPUT                                          PAGE 92

LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3302          UI    130.     99.     84.     76.     64.     65.     62.     42.     38.     36.
3303          UI     29.     27.     26.     20.     20.     20.     14.     13.     13.     13.
3304          UI     13.     10.      3.      3.      3.      3.      3.      3.      3.      3.
3305          UI      3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
3306          UI      3.      3.      3.      3.      3.      3.      0.      0.      0.      0.
3307          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

3308          KK   BSNAD
3309          KO       1       2
3310          KM  RETAIN FLOW AT AD
3311          KM   107TH
3312          RS       1              -1       0
3313          SV       0      .1     1.4     7.3    22.2    42.7
3314          SE      43      44      45      46      47   48.01
```

```
3315          SL      42     .79     .62      .5
3316          SS      48     200     2.5     1.5
              *

3317          KK   SUBAC
3318          KM  BASIN SUBAC
3319          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3320          KM  L=      1.1  Lca=       .6   S=   20.0  Kn= .112  LAG=  75.9
3321          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3322          BA     .46
3323          LG     .44     .05    5.30     .35    1.00
3324          UI     22.     22.     22.     42.     56.     93.    123.    128.    136.    173.
3325          UI    173.    187.    187.    187.    187.    161.    155.    167.    154.    117.
3326          UI    123.    117.     87.     84.     67.     62.     70.     47.     41.     36.
3327          UI     34.     27.     27.     23.     20.     20.     19.     13.     13.     13.
3328          UI     13.     13.      8.      3.      3.      3.      3.      3.      3.      3.
3329          UI      3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
3330          UI      3.      3.      3.      3.      3.      3.      3.      3.      0.      0.
3331          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

3332          KK    CPAC
3333          KO              2
3334          KM  COMBINE FLOW FROM AD & AC AT 115TH AVE. BEHIND THE TRES RIOS LEVEE
3335          HC       2
              *

3336          KK   BSNAC
3337          KO       1       2
3338          KM  RETAIN FLOW AT AC
3339          KM  115TH AVENUE
3340          RS       1              -1       0
3341          SV       0      .2     1.4     7.4    20.1    35.7     100
3342          SE      35      36      37      38      39    40.1      50
3343          SL      39     .76     .62      .5
3344          SS      40     200     2.5     1.5
              *
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LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3345          KK   SUBAB
3346          KM  BASIN SUBAB
3347          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3348          KM  L=      1.1  Lca=       .5   S=   12.3  Kn= .100  LAG=  69.7
3349          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3350          BA     .46
3351          LG     .36     .12    5.60     .31    5.00
3352          UI     24.     24.     26.     51.     74.    121.    145.    136.    192.    180.
3353          UI    204.    204.    204.    202.    170.    170.    189.    139.    130.    137.
3354          UI     97.     93.     73.     68.     76.     46.     43.     39.     33.     30.
3355          UI     27.     22.     22.     21.     14.     14.     14.     14.     14.      3.
3356          UI      3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
3357          UI      3.      3.      3.      3.      3.      3.      3.      3.      3.      3.
3358          UI      3.      3.      0.      0.      0.      0.      0.      0.      0.      0.
3359          UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
              *

3360          KK    CPAB
3361          KO              2
3362          KM  COMBINE FLOW FROM AC & AB AT EL MIRAGE RD. BEHIND THE TRES RIOS LEVEE
3363          HC       2
              *

3364          KK   BSNAB
3365          KO       1       2
3366          KM  RETAIN FLOW AT AB
3367          KM  EL MIRAGE RD
3368          RS       1              -1       0
3369          SV       0      .1     1.3     6.3    20.7    41.6     100
3370          SE      31      32      33      34      35    36.1      50
3371          SL      30      .1     .62      .5
3372          SS      36     200     2.5     1.5
              *

3373          KK   SUBAA
3374          KM  BASIN SUBAA
3375          KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3376          KM  L=      1.9  Lca=      1.3   S=    9.0  Kn= .099  LAG= 130.0
3377          KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3378          BA     .50
3379          LG     .45     .07    4.70     .44     .00
3380          UI     14.     14.     14.     14.     14.     22.     30.     30.     48.     59.
3381          UI     74.     81.     86.     74.     85.     98.    119.    100.    118.    118.
3382          UI    118.    118.    118.    118.    118.    118.     98.     98.     98.    100.
3383          UI    109.    111.     74.     74.     74.     81.     85.     59.     55.     54.
3384          UI     54.     43.     42.     39.     40.     45.     37.     27.     27.     24.
3385          UI     23.     23.     22.     17.     17.     17.     17.     14.     13.     13.
3386          UI     13.     13.     13.      9.      8.      8.      8.      8.      8.      8.
3387          UI      8.      8.      7.      2.      2.      2.      2.      2.      2.      2.
3388          UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3389          UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3390          UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3391          UI      2.      2.      2.      2.      2.      2.      0.      0.      0.      0.
3392          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

3393            KK    CPAA
3394            KM  ADD HYDROGRAPHS AT CPAA.
3395            HC       2
                *

3396            KK   SUBBB
3397            KM  BASIN SUBBB
3398            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3399            KM  L=       1.0  Lca=       .5   S=    7.8  Kn= .083  LAG=  62.2
3400            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3401            BA     .25
3402            LG     .46     .07    7.60     .13     .00
3403            UI     15.     15.     21.     33.     61.     86.     77.    114.    108.    122.
3404            UI    122.    122.    111.    102.    108.     90.     78.     79.     57.     51.
3405            UI     42.     44.     33.     26.     23.     19.     18.     15.     13.     13.
3406            UI      9.      8.      8.      8.      7.      2.      2.      2.      2.      2.
3407            UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3408            UI      2.      2.      2.      2.      2.      0.      0.      0.      0.      0.
3409            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

3410            KK  RTBBBA
3411            KM  ROUTE FLOW FROM CPBB TO CPBA (ALONG SOUTHERN AVENUE).
3412            KM  TYPE B CHANNEL
3413            RS       9              -1       0
3414            RC      .1     .02      .1    5200   .0023
3415            RX       0     470     476     480     520     524     530    1000
3416            RY     4.7       0       0       1       1       0       0     4.7
                *

3417            KK   SUBBA
3418            KM  BASIN SUBBA
3419            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3420            KM  L=       1.5  Lca=       .7   S=    8.1  Kn= .082  LAG=  82.1
3421            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3422            BA     .34
3423            LG     .39     .10    5.10     .35    5.00
3424            UI     15.     15.     15.     25.     33.     52.     79.     95.     81.    103.
3425            UI    119.    127.    130.    130.    130.    130.    118.    108.    111.    119.
3426            UI     91.     81.     90.     75.     60.     58.     46.     44.     48.     38.
3427            UI     30.     26.     25.     21.     19.     19.     15.     14.     14.     14.
3428            UI      9.      9.      9.      9.      9.      9.      2.      2.      2.      2.
3429            UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3430            UI      2.      2.      2.      2.      2.      2.      2.      2.      2.      2.
3431            UI      2.      2.      2.      0.      0.      0.      0.      0.      0.      0.
3432            UI      0.      0.      0.      0.      0.      0.      0.      0.      0.      0.
                *

3433            KK    CPBA
3434            KM  ADD HYDROGRAPHS AT CPBA
3435            HC       2
                *
                * ROUTING REACH NO-LONGER REQUIRED
                * KKRTBAAA
                * KM       ROUTE FLOW FROM CPBA TO CPAA.
                * KM        TYPE A CHANNEL
                * RS     5              -1       0
                * RC    .1      .1      .1    3000   .0013
                * RX     0     100     400     500   500.1     600     900    1000
                * RY     5       4       1       0       0       1       4       5
                *
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LINE            ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

3436            KK   HCTR1
3437            KO              2
3438            KM  COMBINE FLOWS INTO SINGLE BASIN AT APPROXIMATELY DYSART RD AND SOUTHERN AVE.
3439            HC       2
                *

3440            KK   BSNAA
3441            KO       1       2
3442            KM  COMBINE FLOWS GENARATED FROM AA, BA, & BB INTO ONE BASIN
3443            RS       1              -1       0
3444            SV       0     4.5    15.2    34.3    56.7      80     100
3445            SE      17      18      19      20      21    22.1      50
3446            SL      16      .1     .62      .5
3447            SS      22     200     2.5     1.5
                *

3448            KK  SUBWT1   BASIN
3449            KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3450            KM  L=        .9  Lca=       .5   S=   11.6  Kn= .107  LAG=  72.3
3451            KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3452            BA   0.582
3453            LG    0.10    0.25    5.20    0.36      55
3454            UI     113     428     641    1071     920     613     368     169      96      30
3455            UI      30       0       0       0       0       0       0       0       0       0
```

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3456        UI       0       0       0       0       0       0       0       0       0       0
3457        UI       0       0       0       0       0       0       0       0       0       0
3458        UI       0       0       0       0       0       0       0       0       0       0
3459        UI       0       0       0       0       0       0       0       0       0       0
3460        UI       0       0       0       0       0       0       0       0       0       0
3461        UI       0       0       0       0       0       0       0       0       0       0
            *

3462        KK  SUBWT2   BASIN
3463        KM  THE FOLLOWING PARAMETERS WERE PROVIDED FOR THIS BASIN
3464        KM  L=      .9  Lca=       .5   S=    11.6  Kn= .107  LAG=  72.3
3465        KM  AGRICULTURAL S-GRAPH WAS USED FOR THIS BASIN
3466        BA   0.139
3467        LG    0.10    0.25    5.10    0.37      55
3468        UI      88     265     404     215      69      21      12       0       0       0
3469        UI       0       0       0       0       0       0       0       0       0       0
3470        UI       0       0       0       0       0       0       0       0       0       0
3471        UI       0       0       0       0       0       0       0       0       0       0
3472        UI       0       0       0       0       0       0       0       0       0       0
3473        UI       0       0       0       0       0       0       0       0       0       0
3474        UI       0       0       0       0       0       0       0       0       0       0
3475        UI       0       0       0       0       0       0       0       0       0       0
            *

3476        KK     DUR
3477        KM  COMBINE ALL FLOWS FO DURANGO WATERSHED
3478        HC       4
            *
            * ***************************************************************************
            * ***************************************************************************
            * ***************************************************************************
            * changes made to file by Dibble & Associates
            *
            * 01.04.00   Revised routing from SUBED to SUBDA along Buckeye
            * Feeder Canal. -DCF
            *
            * 03.15.00   Revised stage-discharge data from 69th Ave. to 35th Ave.
            * along the Southern Pacific Railroad based upon survey data. -FEB
            *
            * 04.27.00   Revised HEC1 to account for on-site retention based on
            * development at date of aerial photo (2.15.00). -DCF
            * 80% OF THE TOTAL RETENTION VOLUMES WAS USED.
            * SUB-BASINS MODIFIED INCLUDE;
            * JC,OD,KA,PF,RF,OE,LA,LC,JE,MD,MG
            *
            * 05.04.00   Revised DQ records from 69th Ave. to 35th Ave. along the
            * Southern Pacific Railroad based upon survey data.-JEP
            *
            * 05.04.00   Added storage behind Holly Acres levee -DCF
            *
            * 05.11.00   Modified Channel routing N values and section geometry to match
            * approved values and natural conditions.  -  JEP
            *
            * 05.17.00   Removed Reservoir routing records, leaving only storage routing
            * records for basins XA, WC, WA, VC, VA, UC, UB. - JEP
            *
            * 05.22.00   Revised channel routing method from normal depth storage to
            * modified puls routing for reaches RTWCWA, RTWAVC, RTVCVA
            * RTVAUC, RTUCUB  along SPRR.  - JEP
            *
            * 05.24.00   Revised number of routing steps based upon most current average
            * channel velocities for reaches RTWCWA, RTWAVC, RTVCVA, RTVAUC
            * RTUCUB  along SPRR.  - JEP
            *
            * 06.02.00   Added new sub-basins JH,JG,JI,MH,MI and re-delineated basins
            * JF,MD,MG.  UPDATED LANDUSE AND AREAS USING DDMSW. -DCF
            *
            * 06.06.00   Checked and revised as required route lengths for entire model
            *   -DCF
            *
            * 06.07.00   Revised routing to use HEC-RAS discharge-storage data for the
            * BFC reaches RTEBIE,RTIEIB,RTIBIA,RTIAHB,RTHBDA,RTDACC,RTCCCB
            * RTCBCA,RTCACB. -DCF
            *
            * 06.15.00   Added additional combine records for purposes of future channel
            * design and floodplain delineation at basins WA,VC,VA,UC and
            * IE,IB,HB,CC,CB,CA. Coded in relevant drainage area at areas
            * where diverted flows are being combined -JEP
            *
            * 06.21.00   Revised routing sequence at UC to code in new divert over
            * SPRR -DCF
            *
            * 06.21.00   Revised number of routing steps based upon most current average
            * reach velocities for reaches RTWCWA, RTWAVC, RTVCVA, RTVAUC
            * RTUCUB along SPRR, and reaches RTEBIE,RTIEIB,RTIBIA,RTIAHB
            * RTHBDA,RTDACC,RTCCCB,RTCBCA,RTCACB along BFC. - JEP
            *
            * 06.21.00   Revised routing to use HEC-2 discharge-storage data for the
            * SPRR reaches RTWCWA, RTVCWA, RTDIVA, RTVAUC.  - JEP
            *
            * 06.21.00   Revised DQ records to use HEC-2 split flow data for the SPRR
            * reaches RTWCWA (DIQE), RTWAVC (DIVA) RTDIVA (DIUC), RTVAUC
            * (DIUCUB).  - JEP
            *
            * 06.28.00   Revised routing sequence at BA -DCF
            *
```

```
                    * 09.20.00   Revised S-graph to use Valley for the following subbasins;
                    * WD, WB, WC, WA, XA, VD, VB, VC, VA, UA, UC, UD, PC, PD, PE, PF
                    * QA, JH, JI, QB, QD, QC, QE. -DCF
                    *
                    * 09.20.00   Revised NSTPS per FCD comments -DCF
                    *
                    * 09.29.00   Added comment records referencing appropriate HEC-2 file names
                    * for stage storage values; Modified stage storage values based
                    * on most current HEC-2 split flow results. Records RTWCWA
                    * RTWAVC, RTDIVA, RTVAUC.  -JEP
                    *
                    * 10.31.00   Model methodology and structure approved to date by FCD
                    *
                    * 11.01.00   Model routing revised to model the improved ADMP condition -DCF
                    *
                    * 03.05.01   Revised sub-basins at 91st Ave WWTP to model the condition where
                    * the WWTP does not contribute run-off -DCF
                    *
                    * 05.10.01   Revised sub-basins and routing to model change in proposed ADMP
                    * channel alignment at 75th Ave and Lower Buckeye Road and at
                    * Broadway Road From AF River to 115th Avenue. -JEP
                    *
                    * 06.11.01   Revised routing data at SUBUC and SUBUB to reflect channelizatio
                    * within proposed ADMP.  -JEP
                    *
                    * Wednesday, November 28, 2001
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          LINE          ID.......1.......2.......3.......4.......5.......6.......7.......8.......9......10

          3479          ZZ
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   14SEP03  TIME  17:06:19  *                                       *          (916) 756-1104           *
 *                                   *                                          *                                   *
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                    CW RANCH PROPOSED CONDITION ADB-9/8/3
                     Project ID: 1084-IMPROVED - Major Basin: 01 - Return Period: 100 Years
                     IMPROVED CONDITION  ADMP MODEL
                     FILENAME: DUR-24im.DAT
                     NOVEMBER, 2000
                     Created for the Durango ADMP from the existing file TOLLESON.DAT for
                     the Floodplain Delineation of the Tolleson Area FCD Project 95-26 by:
                     Dan Frank (DCF) with Dibble & Associates, Consulting Engineers (DA)
                     Refer to the End of this file for a list of changes made to the existing
                     Tolleson model
                     Original mapping has been supplemented with additional survey by
                     Project Engineering Consultants
                     ABBREVIATIONS:
                     BFC=Buckeye Feeder Canal
                     SPRR=Southern Pacific Railroad

                     TOLLESON-FOWLER WATERSHED RAINFALL-RUNOFF MODEL, March 1999

                     DIBBLE & ASSOCIATES, CONSULTING ENGINEERS WITH
                     JE FULLER/HYDROLOGY & GEOMORPHOLOGY, INC.

                     THIS MODEL IS BASED ON MAPPING FLOWN BY KENNEY AERIAL MAPPING, INC. 3/28/1994
                     NGVD 1929, AND SUBSEQUENT SURVEY BY URBAN ENGINEERS

                     THE HEC-1 HYDROLOGIC MODEL IS DEVELOPED FOR PLANNING PURPOSES AND
                     IS NOT INTENDED TO BE USED FOR DESIGN WITHOUT MODIFICATION.  THE
                     INVESTIGATION AND THE HYDROLOGY IS BASED UPON CRITERIA DESCRIBED
                     IN THE HYDROLOGY DESIGN MANUAL (HDM).

                     THE JD OPTIONS WITHIN HEC-1 WERE USED TO SIMULATE THE AREAL REDUCTION IN
                     POINT PRECIPITATION VALUES BASED ON THE ACCUMULATED DRAINAGE AREA.  EVEN
                     WITH THIS REFINEMENT, APPLICATION OF THIS MODEL TO OTHER AREAS WITHIN THE
                     WATERSHED AND FOR OTHER PURPOSES SHOULD INCLUDE ANALYSIS OF OTHER STORMS
                     DURATIONS AND CENTERINGS SUCH AS THE SIX-HOUR STORM WITH RAINFALL PATTERNS
                     AS DESCRIBED IN DDM1.

                     FLOOD CONTROL DISTRICT OF MARICOPA COUNTY.
                     HYDROLOGY BRANCH, ENGINEERING DIVISION.

  41 IO          OUTPUT CONTROL VARIABLES
                       IPRNT          5  PRINT CONTROL
                       IPLOT          0  PLOT CONTROL
                       QSCAL         0.  HYDROGRAPH PLOT SCALE

  57 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
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          IDATE      1jan 0  STARTING DATE
          ITIME        1200  STARTING TIME
             NQ        2000  NUMBER OF HYDROGRAPH ORDINATES
         NDDATE      8    0  ENDING DATE
         NDTIME        1035  ENDING TIME
         ICENT           19  CENTURY MARK

     COMPUTATION INTERVAL      .08 HOURS
          TOTAL TIME BASE  166.58 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

42 JD.      INDEX STORM NO. 1
                STRM        3.99  PRECIPITATION DEPTH
                TRDA         .01  TRANSPOSITION DRAINAGE AREA

43 PI        PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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                .03       .09       .09       .09       .01       .01       .01       .01       .01       .01
                .01       .01       .01       .01       .01       .01       .00       .00       .00       .00
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53 JD       INDEX STORM NO. 2
                STRM        3.75  PRECIPITATION DEPTH
                TRDA       10.00  TRANSPOSITION DRAINAGE AREA

 0 PI        PRECIPITATION PATTERN
                .00       .00       .00       .00       .00       .00       .00       .00       .00       .00
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54 JD       INDEX STORM NO. 3
                STRM        3.59  PRECIPITATION DEPTH
                TRDA       30.00  TRANSPOSITION DRAINAGE AREA

 0 PI        PRECIPITATION PATTERN
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55 JD INDEX STORM NO. 4
STRM 3.43 PRECIPITATION DEPTH
TRDA 60.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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56 JD INDEX STORM NO. 5
STRM 3.38 PRECIPITATION DEPTH
TRDA 90.00 TRANSPOSITION DRAINAGE AREA

0 PI PRECIPITATION PATTERN

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.03	.09	.09	.09	.01	.01	.01	.01	.01	.01
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RUNOFF SUMMARY
FLOW IN CUBIC FEET PER SECOND
TIME IN HOURS, AREA IN SQUARE MILES

	OPERATION	STATION	PEAK FLOW	TIME OF PEAK	AVERAGE FLOW FOR MAXIMUM PERIOD 6-HOUR	24-HOUR	72-HOUR	BASIN AREA	MAXIMUM STAGE	TIME OF MAX STAGE
+	HYDROGRAPH AT	SUBWD	432.	12.50	65.	18.	6.	.39		
+	ROUTED TO	RTWDXA	399.	12.75	65.	18.	6.	.39		
+	HYDROGRAPH AT	SUBXA	425.	12.25	60.	18.	6.	.25		
+	2 COMBINED AT	CPXA1	525.	12.33	123.	36.	12.	.64		
+	DIVERSION TO	DIZZ1	0.	.00	0.	0.	0.	.64		
+	HYDROGRAPH AT	DIXAO	525.	12.33	123.	36.	12.	.64		
+	ROUTED TO	RTXAWC	505.	13.00	123.	35.	12.	.64		
+	HYDROGRAPH AT	SUBWB	880.	12.50	155.	46.	15.	.67		
+	ROUTED TO	RTWBWC	823.	12.67	155.	46.	15.	.67		
+	HYDROGRAPH AT	SUBWC	674.	12.42	115.	35.	12.	.49		
+	3 COMBINED AT	CPWC	1526.	12.67	387.	114.	38.	1.79		
+	DIVERSION TO	DIQE	0.	.00	0.	0.	0.	1.79		
+	HYDROGRAPH AT	DIWCWA	1526.	12.67	387.	114.	38.	1.79		
+	ROUTED TO	RTWCWA	708.	15.25	351.	114.	38.	1.79		
+	HYDROGRAPH AT	SUBWA	872.	12.25	120.	36.	12.	.49		
+	2 COMBINED AT	CPWA1	883.	12.25	372.	147.	50.	2.29		
+	HYDROGRAPH AT	SUBVD	917.	12.50	161.	48.	16.	.70		
+	ROUTED TO	RTVDWA	695.	12.75	160.	47.	16.	.70		
+	2 COMBINED AT	CPWA2	1076.	12.25	526.	193.	66.	2.98		
+	DIVERSION TO	DIQD	627.	12.25	171.	44.	15.	2.98		
+	HYDROGRAPH AT	DIWAVC	448.	12.25	356.	149.	51.	2.98		
+	ROUTED TO	RTWAVC	359.	20.33	327.	149.	51.	2.98		
+	HYDROGRAPH AT	SUBVC	857.	12.25	115.	36.	12.	.49		
+	2 COMBINED AT	CPVC1	872.	12.25	336.	181.	63.	3.47		
+	HYDROGRAPH AT	SUBVB	1299.	12.17	171.	52.	17.	.72		
+	ROUTED TO	RTVBVC	850.	12.58	170.	52.	17.	.72		
+	2 COMBINED AT	~CPVC2	1292.	12.33	412.	231.	80.	4.19		
	ROUTED TO									

+		MCVC47	1261.	12.42	411.	230.	80.	4.19
+	HYDROGRAPH AT	SUBQA2	142.	12.50	24.	7.	2.	.12
+	2 COMBINED AT	CPQA2	1387.	12.42	433.	237.	82.	4.31
+	ROUTED TO	BSN47	940.	12.92	432.	237.	82.	4.31
+	ROUTED TO	MC47QB	938.	13.00	431.	237.	82.	4.31
+	HYDROGRAPH AT	SUBQB	629.	12.50	126.	36.	12.	.50
+	2 COMBINED AT	~CPQB	1464.	12.58	541.	270.	94.	4.82
+	HYDROGRAPH AT	SUBQD	439.	12.25	70.	22.	7.	.25
+	HYDROGRAPH AT	DRQD	627.	12.25	171.	44.	15.	2.98
+	ROUTED TO	RTDIQD	353.	13.50	156.	44.	15.	2.98
+	2 COMBINED AT	@CPQD	439.	12.25	218.	69.	23.	3.24
+	ROUTED TO	RSQD	390.	12.33	203.	64.	21.	3.24
+	DIVERSION TO	DIQC	318.	12.33	169.	54.	18.	3.24
+	HYDROGRAPH AT	DIQDQC	73.	12.33	34.	9.	3.	3.24
+	ROUTED TO	RTQDQB	53.	14.42	31.	9.	3.	3.24
+	2 COMBINED AT	@CPQB	1472.	12.58	570.	280.	97.	3.74
+	ROUTED TO	MCQBJK	1436.	12.75	568.	280.	97.	3.74
+	HYDROGRAPH AT	SUBJK	581.	12.58	106.	30.	10.	.49
+	2 COMBINED AT	~CPJK	1935.	12.67	662.	308.	107.	4.22
+	ROUTED TO	MCJKJL	1851.	12.92	658.	308.	107.	4.22
+	HYDROGRAPH AT	SUBJL	581.	12.58	106.	30.	10.	.49
+	2 COMBINED AT	~CPJL1	2230.	12.83	747.	335.	116.	4.71
+	HYDROGRAPH AT	SUBQE	1324.	12.42	238.	75.	25.	.91
+	HYDROGRAPH AT	DRQE	0.	.00	0.	0.	0.	1.79
+	ROUTED TO	RTDIQE	0.	.00	0.	0.	0.	1.79
+	2 COMBINED AT	CPQE	1324.	12.42	238.	75.	25.	.91
+	ROUTED TO	RSQE	1198.	12.50	236.	70.	23.	.91
+	ROUTED TO	RTQEQC	1107.	12.67	236.	70.	23.	.91
+	HYDROGRAPH AT	SUBQC	878.	12.42	144.	42.	14.	.61
+	HYDROGRAPH AT	DRDIQC	318.	12.33	169.	54.	18.	3.24
+	ROUTED TO	RTDIQC	271.	14.08	162.	54.	18.	3.24
+	3 COMBINED AT	CPQC	1773.	12.58	520.	165.	55.	1.52
	DIVERSION TO							

+		DISR1	1419.	12.58	416.	132.	44.	1.52
+	HYDROGRAPH AT	DIQCR	355.	12.58	104.	33.	11.	1.52
+	ROUTED TO	RTQCJL	278.	13.17	102.	33.	11.	1.52
+	2 COMBINED AT	CPJL2	2422.	12.83	843.	367.	127.	6.23
+	HYDROGRAPH AT	SUBQA1	433.	12.58	80.	22.	7.	.37
+	ROUTED TO	RSQA	413.	12.67	81.	22.	7.	.37
+	DIVERSION TO	DIPF	176.	12.67	38.	11.	4.	.37
+	HYDROGRAPH AT	DIQAPF	236.	12.67	42.	12.	4.	.37
+	ROUTED TO	RTQAJH	198.	13.42	42.	11.	4.	.37
+	HYDROGRAPH AT	SUBJH	531.	12.17	69.	20.	7.	.27
+	2 COMBINED AT	CPJH	530.	12.17	109.	31.	10.	.64
+	ROUTED TO	RTJHJI	349.	13.08	108.	31.	10.	.64
+	HYDROGRAPH AT	SUBJI	447.	12.17	53.	15.	5.	.23
+	2 COMBINED AT	CPJI	452.	12.17	155.	46.	15.	.86
+	2 COMBINED AT	CPJISR	2717.	12.92	987.	410.	141.	7.09
+	HYDROGRAPH AT	SUBPF	947.	12.17	115.	37.	12.	.50
+	DIVERSION TO	RETPF	10.	4.67	6.	2.	1.	.50
+	HYDROGRAPH AT	RETPF	947.	12.17	115.	35.	12.	.50
+	HYDROGRAPH AT	DRPF	176.	12.67	38.	11.	4.	.37
+	ROUTED TO	RTDIPF	153.	13.33	38.	11.	4.	.37
+	2 COMBINED AT	CPPF	952.	12.17	152.	46.	15.	.50
+	ROUTED TO	RSPF	342.	12.50	105.	32.	11.	.50
+	DIVERSION TO	DIPE	0.	.00	0.	0.	0.	.50
+	HYDROGRAPH AT	DIPFPE	342.	12.50	105.	32.	11.	.50
+	ROUTED TO	RTPFJF	288.	12.92	103.	32.	11.	.50
+	HYDROGRAPH AT	SUBUD	851.	12.58	159.	46.	15.	.76
+	DIVERSION TO	DIUA	206.	12.58	39.	11.	4.	.76
+	HYDROGRAPH AT	DIUDUA	645.	12.58	120.	35.	12.	.76
+	ROUTED TO	RTUDVA	483.	13.08	120.	34.	12.	.76
+	HYDROGRAPH AT	SUBVA	869.	12.25	121.	39.	13.	.49
+	2 COMBINED AT	CPVA1	898.	12.25	236.	72.	24.	1.25
+	DIVERSION TO	DIUC	685.	12.25	220.	68.	23.	1.25
	HYDROGRAPH AT							

+		DIVAPE	213.	12.25	16.	4.	1.	1.25
+	ROUTED TO	RTVAPE	47.	13.25	16.	4.	1.	1.25
+	HYDROGRAPH AT	SUBPE	944.	12.17	112.	36.	12.	.50
+	HYDROGRAPH AT	DRPE	0.	.00	0.	0.	0.	.50
+	ROUTED TO	RTDIPE	0.	.00	0.	0.	0.	.50
+	3 COMBINED AT	CPPE	944.	12.17	127.	41.	14.	1.76
+	ROUTED TO	RSPE	835.	12.25	108.	32.	11.	1.76
+	DIVERSION TO	DIPD	1.	12.25	0.	0.	0.	1.76
+	HYDROGRAPH AT	DIPEPD	835.	12.25	108.	32.	11.	1.76
+	ROUTED TO	RTPEJF	408.	12.67	104.	32.	11.	1.76
+	HYDROGRAPH AT	SUBJF	1097.	12.08	117.	38.	13.	.50
+	3 COMBINED AT	CPJF	1082.	12.08	306.	97.	33.	2.76
+	ROUTED TO	RTJFJG	580.	13.58	294.	96.	33.	2.76
+	HYDROGRAPH AT	SUBJG	1558.	12.17	210.	66.	22.	.90
+	2 COMBINED AT	CPJG	1576.	12.17	479.	158.	55.	3.66
+	2 COMBINED AT	CPJGSR	3310.	12.92	1445.	562.	194.	10.75
+	HYDROGRAPH AT	DRUC	685.	12.25	220.	68.	23.	1.25
+	ROUTED TO	RTVAUC	492.	13.75	216.	68.	23.	1.25
+	ROUTED TO	MCUCUC	490.	13.83	216.	68.	23.	1.25
+	HYDROGRAPH AT	SUBUC	682.	12.42	108.	31.	10.	.48
+	2 COMBINED AT	@CPUC	704.	12.42	307.	98.	33.	1.73
+	HYDROGRAPH AT	SUBUA	666.	12.58	121.	34.	11.	.56
+	HYDROGRAPH AT	DRUA	206.	12.58	39.	11.	4.	.76
+	ROUTED TO	RTDIUA	83.	14.67	37.	11.	4.	.76
+	2 COMBINED AT	@CPUA	666.	12.58	152.	44.	15.	1.32
+	DIVERSION TO	DITB	133.	12.58	30.	9.	3.	1.32
+	HYDROGRAPH AT	DIUAUC	531.	12.58	121.	35.	12.	1.32
+	ROUTED TO	RTUAUC	389.	13.08	119.	35.	12.	1.32
+	2 COMBINED AT	~CPUC2	773.	12.42	422.	132.	45.	3.05
+	DIVERSION TO	DIUB	773.	12.42	422.	132.	45.	3.05
+	HYDROGRAPH AT	DIUCPC	0.	.00	0.	0.	0.	3.05
+	ROUTED TO	RTUCPC	0.	.00	0.	0.	0.	3.05
	HYDROGRAPH AT							

+	SUBPC	684.	12.08	70.	21.	7.	.30
+ 2 COMBINED AT	CPPC	668.	12.08	69.	21.	7.	3.35
+ ROUTED TO	RSPC	17.	13.83	11.	7.	6.	3.35
+ ROUTED TO	RTPCNB	12.	16.67	11.	7.	6.	3.35
+ HYDROGRAPH AT	SUBNB	664.	12.25	98.	30.	10.	.44
+ 2 COMBINED AT	CPNB1	655.	12.25	102.	36.	15.	3.79
+ DIVERSION TO	DINA	421.	12.25	66.	23.	10.	3.79
+ HYDROGRAPH AT	DINBNA	234.	12.25	36.	13.	5.	3.79
+ ROUTED TO	RTNBJD	90.	13.42	35.	13.	5.	3.79
+ HYDROGRAPH AT	SUBPD	856.	12.17	88.	25.	8.	.44
+ HYDROGRAPH AT	DRPD	1.	12.25	0.	0.	0.	1.76
+ 2 COMBINED AT	CPPD2	856.	12.17	88.	25.	8.	.44
+ ROUTED TO	RSPD	33.	13.08	20.	8.	4.	.44
+ ROUTED TO	RTPDNC	30.	14.00	19.	8.	4.	.44
+ HYDROGRAPH AT	SUBNC	520.	12.08	62.	20.	7.	.31
+ 2 COMBINED AT	CPNC	515.	12.08	74.	26.	10.	.75
+ ROUTED TO	RTNCJE	351.	12.83	74.	26.	10.	.75
+ HYDROGRAPH AT	SUBJE1	528.	12.08	54.	18.	6.	.25
+ 2 COMBINED AT	CPJE1	538.	12.08	122.	43.	16.	1.00
+ ROUTED TO	RTJEJD	459.	12.17	122.	43.	16.	1.00
+ HYDROGRAPH AT	SUBJD	607.	12.33	101.	29.	10.	.50
+ 3 COMBINED AT	CPJD	1014.	12.25	250.	82.	30.	5.30
+ DIVERSION TO	DIJC2	367.	12.25	92.	30.	11.	5.30
+ HYDROGRAPH AT	DIJDJC	647.	12.25	159.	52.	19.	5.30
+ ROUTED TO	RTJDFC	435.	12.75	157.	52.	19.	5.30
+ HYDROGRAPH AT	SUBJE2	544.	12.08	63.	19.	6.	.25
+ DIVERSION TO	RETJE	15.	10.58	7.	2.	1.	.25
+ HYDROGRAPH AT	RETJE2	544.	12.08	62.	17.	6.	.25
+ ROUTED TO	RTJEFC	427.	12.33	61.	17.	6.	.25
+ HYDROGRAPH AT	SUBFC	666.	12.08	82.	26.	9.	.36
+ 3 COMBINED AT	CPFC	1030.	12.25	292.	93.	33.	5.91
+ 2 COMBINED AT	CPFCSR	3817.	12.92	1691.	639.	222.	16.66
HYDROGRAPH AT							

+		SUBJC2	358.	13.42	142.	38.	13.	.93
+	DIVERSION TO	RETJC2	81.	12.25	9.	3.	1.	.93
+	HYDROGRAPH AT	RETJC2	358.	13.42	137.	35.	12.	.93
+	HYDROGRAPH AT	DRJC2	367.	12.25	92.	30.	11.	5.30
+	ROUTED TO	RTDIJC	196.	13.75	89.	30.	11.	5.30
+	2 COMBINED AT	@CPJC2	539.	13.67	223.	65.	23.	3.15
+	DIVERSION TO	DIJE2	248.	13.67	103.	30.	10.	3.15
+	HYDROGRAPH AT	DIJCJB	291.	13.67	120.	35.	12.	3.15
+	ROUTED TO	RTJCFB	255.	14.58	116.	35.	12.	3.15
+	HYDROGRAPH AT	SUBFB	515.	12.50	97.	25.	8.	.66
+	2 COMBINED AT	CPFB	507.	12.50	202.	59.	20.	3.81
+	2 COMBINED AT	CPFBSR	4143.	12.83	1862.	688.	240.	20.47
+	HYDROGRAPH AT	SUBJE2	144.	13.50	58.	14.	5.	.49
+	HYDROGRAPH AT	DRJE2	248.	13.67	103.	30.	10.	3.15
+	ROUTED TO	RTDIJB	202.	15.17	96.	30.	10.	3.15
+	2 COMBINED AT	@CPJE2	258.	15.08	141.	44.	15.	3.81
+	DIVERSION TO	DIEE	93.	15.08	51.	16.	5.	3.81
+	HYDROGRAPH AT	DIJBEE	165.	15.08	90.	28.	10.	3.81
+	ROUTED TO	RTJBFA	132.	17.33	80.	27.	10.	3.81
+	HYDROGRAPH AT	SUBFA	428.	12.92	127.	36.	12.	.76
+	2 COMBINED AT	CPFA	420.	12.92	158.	60.	21.	4.57
+	2 COMBINED AT	CPSRFA	4491.	12.83	1983.	738.	257.	25.04
+	HYDROGRAPH AT	DRUCUB	773.	12.42	422.	132.	45.	3.05
+	ROUTED TO	MCUCUB	765.	12.50	421.	132.	45.	3.05
+	HYDROGRAPH AT	SUBUB	193.	12.25	25.	7.	2.	.13
+	2 COMBINED AT	~@CPUB	897.	12.42	445.	139.	47.	2.42
+	DIVERSION TO	DIUE	0.	.00	0.	0.	0.	2.42
+	HYDROGRAPH AT	DIUBSF	897.	12.42	445.	139.	47.	2.42
+	DIVERSION TO	D-B71	487.	12.42	117.	29.	10.	2.42
+	HYDROGRAPH AT	71PASS	410.	12.08	328.	109.	37.	2.42
+	DIVERSION TO	BSN71	410.	12.08	328.	109.	37.	2.42
+	HYDROGRAPH AT	DBSN71	0.	.00	0.	0.	0.	2.42
	2 COMBINED AT							

+		CLEAR	4491.	12.83	1983.	738.	257.	27.46
+	HYDROGRAPH AT	SUBTB	811.	12.58	185.	54.	18.	.89
+	HYDROGRAPH AT	DRTB	133.	12.58	30.	9.	3.	1.32
+	ROUTED TO	RTDITB	103.	13.25	30.	9.	3.	1.32
+	2 COMBINED AT	CPTB	822.	12.58	212.	62.	21.	.89
+	DIVERSION TO	DITA	199.	12.58	52.	15.	5.	.89
+	HYDROGRAPH AT	DITBTA	623.	12.58	160.	47.	16.	.89
+	ROUTED TO	RTTBSF	512.	13.08	159.	47.	16.	.89
+	HYDROGRAPH AT	SUBSF	272.	12.75	65.	16.	5.	.38
+	2 COMBINED AT	CPSF	745.	13.00	222.	63.	21.	1.26
+	DIVERSION TO	DIRJ1	223.	13.00	67.	19.	6.	1.26
+	HYDROGRAPH AT	DISFRJ	521.	13.00	156.	44.	15.	1.26
+	ROUTED TO	RTSFSH	511.	13.33	155.	44.	15.	1.26
+	HYDROGRAPH AT	SUBSH	220.	12.08	24.	7.	2.	.10
+	2 COMBINED AT	CPSH	520.	13.33	176.	51.	17.	1.37
+	ROUTED TO	RSSH	439.	13.75	146.	42.	14.	1.37
+	DIVERSION TO	DIRJ2	344.	13.75	104.	29.	10.	1.37
+	HYDROGRAPH AT	DISHRJ	95.	13.75	42.	12.	4.	1.37
+	ROUTED TO	RTSHSG	88.	14.42	41.	12.	4.	1.37
+	HYDROGRAPH AT	SUBTA	168.	12.67	35.	9.	3.	.24
+	HYDROGRAPH AT	DRTA	199.	12.58	52.	15.	5.	.89
+	ROUTED TO	RTDITA	184.	13.17	52.	15.	5.	.89
+	2 COMBINED AT	@CPTA	306.	13.00	86.	24.	8.	1.13
+	ROUTED TO	RTTASG	297.	13.17	85.	24.	8.	1.13
+	HYDROGRAPH AT	SUBSG	183.	12.25	30.	9.	3.	.14
+	3 COMBINED AT	CPSG	324.	13.08	147.	44.	15.	2.63
+	ROUTED TO	RSSG	323.	13.17	132.	38.	13.	2.63
+	DIVERSION TO	DIRJ4	238.	13.17	89.	24.	8.	2.63
+	HYDROGRAPH AT	DISGRJ	85.	13.17	43.	15.	5.	2.63
+	ROUTED TO	RTSGSE	84.	13.33	43.	15.	5.	2.63
+	HYDROGRAPH AT	SUBSC	212.	12.83	54.	14.	5.	.45
+	DIVERSION TO	DISD	115.	12.83	29.	8.	3.	.45
	HYDROGRAPH AT							

+		DISCSD	98.	12.83	25.	7.	2.	.45
+	ROUTED TO	RTSCSE	80.	13.17	24.	7.	2.	.45
+	HYDROGRAPH AT	SUBSE	297.	12.00	27.	9.	3.	.13
+	3 COMBINED AT	CPSE	291.	12.00	87.	29.	10.	3.21
+	ROUTED TO	RSSE	169.	13.33	65.	22.	9.	3.21
+	DIVERSION TO	DIRJ5	169.	13.33	65.	22.	9.	3.21
+	HYDROGRAPH AT	DISERJ	0.	.00	0.	0.	0.	3.21
+	ROUTED TO	RTSERI	0.	.00	0.	0.	0.	3.21
+	HYDROGRAPH AT	SUBRJ	152.	12.50	30.	9.	3.	.16
+	HYDROGRAPH AT	CPRJ1	223.	13.00	67.	19.	6.	1.26
+	ROUTED TO	RTSFRJ	206.	13.92	66.	19.	6.	1.26
+	HYDROGRAPH AT	CPRJ2	344.	13.75	104.	29.	10.	1.37
+	ROUTED TO	RTSHRJ	334.	14.08	103.	29.	10.	1.37
+	2 COMBINED AT	@CPRJ3	525.	14.08	166.	47.	16.	2.69
+	ROUTED TO	RTRJ3	498.	14.50	164.	47.	16.	2.69
+	HYDROGRAPH AT	CPRJ4A	238.	13.17	89.	24.	8.	2.63
+	2 COMBINED AT	CPRJ4B	623.	14.50	243.	71.	24.	2.69
+	ROUTED TO	RTSGRJ	613.	14.58	242.	71.	24.	2.69
+	HYDROGRAPH AT	CPRJ5	169.	13.33	65.	22.	9.	3.21
+	ROUTED TO	RTSERJ	165.	13.75	64.	22.	9.	3.21
+	3 COMBINED AT	@CPRJ6	723.	14.58	319.	100.	36.	3.81
+	ROUTED TO	RSRJ	616.	15.00	315.	100.	36.	3.81
+	DIVERSION TO	DIPA2	46.	15.00	7.	2.	1.	3.81
+	HYDROGRAPH AT	DIRJPA	570.	15.00	308.	98.	35.	3.81
+	ROUTED TO	RTRJRI	565.	15.25	307.	98.	35.	3.81
+	ROUTED TO	RTRIRI	563.	15.33	307.	98.	35.	3.81
+	HYDROGRAPH AT	SUBRI	310.	12.25	44.	13.	4.	.23
+	HYDROGRAPH AT	SUBSB	174.	12.42	30.	8.	3.	.17
+	ROUTED TO	RSSB	131.	12.75	26.	6.	2.	.17
+	HYDROGRAPH AT	SUBSD	190.	12.25	22.	6.	2.	.17
+	HYDROGRAPH AT	DRSD	115.	12.83	29.	8.	3.	.45
+	3 COMBINED AT	@CPSD	310.	12.42	75.	19.	6.	.79
	ROUTED TO							

+	RSSD	310.	12.42	75.	19.	6.	.79
	ROUTED TO						
+	RTSDRI	305.	12.75	75.	19.	6.	.79
	4 COMBINED AT						
+	~@CPRI	583.	15.33	388.	128.	45.	4.38
	ROUTED TO						
+	MCRIRH	579.	15.50	386.	128.	45.	4.38
	HYDROGRAPH AT						
+	SUBUE	107.	12.17	14.	4.	1.	.06
	HYDROGRAPH AT						
+	DRUE	0.	.00	0.	0.	0.	2.42
	2 COMBINED AT						
+	CPUE	107.	12.17	14.	4.	1.	.06
	ROUTED TO						
+	RSUE	1.	15.17	1.	1.	0.	.06
	ROUTED TO						
+	RTUEPB	1.	17.58	1.	1.	0.	.06
	HYDROGRAPH AT						
+	DRB71	410.	12.08	328.	109.	37.	2.42
	ROUTED TO						
+	MC71PB	410.	13.00	326.	109.	37.	2.42
	HYDROGRAPH AT						
+	SUBPB2	313.	12.42	59.	17.	6.	.29
	3 COMBINED AT						
+	~CPPB2	716.	12.42	384.	127.	43.	.35
	ROUTED TO						
+	MCPB73	712.	12.50	383.	127.	43.	.35
	DIVERSION TO						
+	D-B73	262.	12.50	31.	8.	3.	.35
	HYDROGRAPH AT						
+	73PASS	450.	12.25	352.	119.	41.	.35
	ROUTED TO						
+	MC73NA	450.	12.92	351.	119.	41.	.35
	HYDROGRAPH AT						
+	SUBNA2	303.	13.33	117.	30.	10.	.75
	HYDROGRAPH AT						
+	DRNA	421.	12.25	66.	23.	10.	3.79
	ROUTED TO						
+	RTDINA	185.	13.50	65.	23.	10.	3.79
	3 COMBINED AT						
+	~@CPNA	934.	13.42	527.	171.	60.	2.05
	ROUTED TO						
+	MCNAJC	931.	13.58	526.	171.	60.	2.05
	HYDROGRAPH AT						
+	SUBPB1	158.	12.42	32.	9.	3.	.15
	DIVERSION TO						
+	DIPA1	30.	12.42	6.	2.	1.	.15
	HYDROGRAPH AT						
+	DIPBPA	127.	12.42	26.	7.	2.	.15
	ROUTED TO						
+	RTPBNA	52.	14.58	25.	7.	2.	.15
	HYDROGRAPH AT						
+	SUBNA1	112.	13.00	34.	9.	3.	.23
	2 COMBINED AT						
+	CPNA1	115.	13.08	57.	16.	5.	.38
	ROUTED TO						
+	RTNAJC	113.	13.33	57.	16.	5.	.38
	HYDROGRAPH AT						
+	SUBJC1	39.	12.50	6.	2.	1.	.06
	3 COMBINED AT						
+	~CPJC1	1041.	13.58	585.	188.	66.	2.48
	ROUTED TO						
+	MCJCJB	1031.	13.92	581.	188.	66.	2.48
	HYDROGRAPH AT						

+	SUBPA	435.	12.50	87.	25.	8.	.48
+ HYDROGRAPH AT	DRPA	30.	12.42	6.	2.	1.	.15
+ ROUTED TO	RTDIPA	9.	15.50	5.	2.	1.	.15
+ HYDROGRAPH AT	DRPA2	46.	15.00	7.	2.	1.	3.81
+ ROUTED TO	RTRJPA	19.	15.58	7.	2.	1.	3.81
+ 3 COMBINED AT	CPPA	435.	12.50	98.	29.	10.	.48
+ DIVERSION TO	DIOE	78.	12.50	18.	5.	2.	.48
+ HYDROGRAPH AT	DIPAOE	357.	12.50	80.	23.	8.	.48
+ ROUTED TO	RTPAMH	250.	13.33	78.	23.	8.	.48
+ HYDROGRAPH AT	SUBMH	248.	12.42	40.	10.	3.	.24
+ 2 COMBINED AT	CPMH	301.	13.17	115.	33.	11.	.72
+ ROUTED TO	RTMHMD	271.	13.83	111.	33.	11.	.72
+ HYDROGRAPH AT	SUBMD	274.	12.42	57.	16.	5.	.25
+ DIVERSION TO	RETMD	274.	12.42	34.	9.	3.	.25
+ HYDROGRAPH AT	RETMD	218.	12.75	27.	7.	2.	.25
+ 2 COMBINED AT	CPMD	305.	13.67	136.	40.	13.	.97
+ DIVERSION TO	DIJB1	63.	13.67	28.	8.	3.	.97
+ HYDROGRAPH AT	DIMDJB	242.	13.67	108.	32.	11.	.97
+ DIVERSION TO	DIMEX	242.	13.67	108.	32.	11.	.97
+ HYDROGRAPH AT	DIMDMF	0.	.00	0.	0.	0.	.97
+ HYDROGRAPH AT	SUBMI	503.	12.33	75.	21.	7.	.41
+ DIVERSION TO	RETMI	362.	12.08	23.	6.	2.	.41
+ HYDROGRAPH AT	RETMI	503.	12.33	56.	15.	5.	.41
+ HYDROGRAPH AT	SUBMG	150.	12.08	16.	5.	2.	.08
+ DIVERSION TO	RETMG	150.	12.08	9.	3.	1.	.08
+ HYDROGRAPH AT	RETMG	118.	12.25	9.	2.	1.	.08
+ 2 COMBINED AT	CPMG	616.	12.25	65.	17.	6.	.49
+ ROUTED TO	RTMGJB	398.	13.00	63.	17.	6.	.49
+ HYDROGRAPH AT	SUBJB1	117.	13.58	47.	12.	4.	.49
+ HYDROGRAPH AT	DRJB	63.	13.67	28.	8.	3.	.97
+ ROUTED TO	RDIJB1	56.	14.75	27.	8.	3.	.97
+ 5 COMBINED AT	~CPJB1	1268.	13.83	705.	222.	77.	4.44
DIVERSION TO							

+	DIED	1268.	13.83	705.	222.	77.	4.44
HYDROGRAPH AT							
+	DIED	0.	.00	0.	0.	0.	4.44
HYDROGRAPH AT							
+	SUBSA	594.	12.25	93.	26.	9.	.42
ROUTED TO							
+	MCSARH	574.	12.33	93.	26.	9.	.42
DIVERSION TO							
+	D-B91A	574.	12.33	93.	26.	9.	.42
HYDROGRAPH AT							
+	BAS91A	0.	.00	0.	0.	0.	.42
HYDROGRAPH AT							
+	SUBRH	218.	12.50	41.	10.	3.	.25
3 COMBINED AT							
+	TEMP	211.	12.50	40.	10.	3.	5.11
2 COMBINED AT							
+	~@CPRH	652.	12.58	420.	138.	48.	5.05
DIVERSION TO							
+	D-B91B	202.	12.58	35.	9.	3.	5.05
HYDROGRAPH AT							
+	91PASS	450.	12.33	385.	129.	45.	5.05
ROUTED TO							
+	MCRHOG	450.	16.25	381.	129.	45.	5.05
HYDROGRAPH AT							
+	SUBRG	276.	12.00	32.	11.	4.	.11
DIVERSION TO							
+	RETRG	23.	11.33	8.	3.	1.	.11
HYDROGRAPH AT							
+	CPRG	276.	12.00	29.	8.	3.	.11
ROUTED TO							
+	RTRGRF	81.	12.83	27.	8.	3.	.11
HYDROGRAPH AT							
+	SUBRF	500.	12.75	130.	37.	12.	.63
2 COMBINED AT							
+	~CPRF	577.	12.75	155.	45.	15.	.74
ROUTED TO							
+	MCRFOG	569.	12.83	155.	45.	15.	.74
HYDROGRAPH AT							
+	SUBOG	513.	12.50	108.	31.	10.	.49
2 COMBINED AT							
+	CPOG1	987.	12.67	260.	75.	25.	1.23
DIVERSION TO							
+	D-B99A	808.	12.67	151.	38.	13.	1.23
HYDROGRAPH AT							
+	BAS99A	179.	11.92	109.	38.	13.	1.23
2 COMBINED AT							
+	~CPOG	629.	13.17	467.	162.	58.	6.28
ROUTED TO							
+	MCOGOF	627.	13.42	466.	162.	57.	6.28
HYDROGRAPH AT							
+	SUBOF	445.	12.17	62.	20.	7.	.25
HYDROGRAPH AT							
+	SUBRE	242.	12.92	72.	18.	6.	.36
ROUTED TO							
+	RTREOF	233.	13.50	72.	18.	6.	.36
3 COMBINED AT							
+	~CPOF	876.	13.42	567.	198.	70.	6.89
ROUTED TO							
+	MCOFOB	871.	13.58	564.	198.	70.	6.89
HYDROGRAPH AT							
+	SUBOB	716.	12.17	112.	38.	13.	.44
2 COMBINED AT							
+	~CPOB	1055.	12.25	649.	233.	82.	7.33
HYDROGRAPH AT							

+	SUBRD	245.	12.83	62.	16.	5.	.38
+ DIVERSION TO	DIOB	98.	12.83	25.	6.	2.	.38
+ HYDROGRAPH AT	DIRDOB	147.	12.83	37.	9.	3.	.38
+ ROUTED TO	RTRDRC	79.	14.83	35.	9.	3.	.38
+ HYDROGRAPH AT	SUBRC	303.	12.92	82.	21.	7.	.68
+ 2 COMBINED AT	CPRC	301.	12.92	113.	30.	10.	1.06
+ ROUTED TO	RTRCRB	217.	14.08	106.	30.	10.	1.06
+ HYDROGRAPH AT	SUBRB	288.	12.67	60.	15.	5.	.55
+ 2 COMBINED AT	CPRB	284.	12.67	157.	44.	15.	1.61
+ DIVERSION TO	DIKA3	142.	12.67	79.	22.	7.	1.61
+ HYDROGRAPH AT	DIRBKA	142.	12.67	78.	22.	7.	1.61
+ ROUTED TO	RTRBRA	112.	15.92	68.	22.	7.	1.61
+ HYDROGRAPH AT	SUBRA	109.	12.67	22.	6.	2.	.22
+ 2 COMBINED AT	CPRA	113.	15.92	71.	27.	9.	1.83
+ DIVERSION TO	DIKA4	90.	15.92	50.	15.	5.	1.83
+ HYDROGRAPH AT	DIRAKA	25.	18.83	23.	11.	4.	1.83
+ DIVERSION TO	DIAFX	25.	18.83	23.	11.	4.	1.83
+ HYDROGRAPH AT	DIKAAF	0.	.00	0.	0.	0.	1.83
+ HYDROGRAPH AT	CPOB2	98.	12.83	25.	6.	2.	.38
+ ROUTED TO	RTDIOB	36.	16.92	21.	6.	2.	.38
+ 3 COMBINED AT	@CPOB	1055.	12.25	660.	238.	84.	7.60
+ ROUTED TO	MCOBLE	1010.	12.42	658.	238.	84.	7.60
+ HYDROGRAPH AT	SUBLE	162.	12.50	29.	8.	3.	.25
+ 2 COMBINED AT	~CPLE	1158.	12.42	683.	245.	86.	7.85
+ HYDROGRAPH AT	SubKD1	97.	13.08	31.	8.	3.	.23
+ ROUTED TO	NSCHAN	95.	13.33	31.	8.	3.	.23
+ 2 COMBINED AT	~CPNS	1164.	12.42	713.	253.	89.	8.08
+ ROUTED TO	CWDROC	974.	13.92	708.	253.	89.	8.08
+ ROUTED TO	MCKDKA	968.	14.17	705.	253.	90.	8.08
+ HYDROGRAPH AT	SUBKA	164.	12.67	40.	12.	4.	.25
+ DIVERSION TO	RETKA	164.	12.67	26.	7.	2.	.25
+ HYDROGRAPH AT	RETKA	108.	13.17	17.	5.	2.	.25
HYDROGRAPH AT							

+		CPKA3	142.	12.67	79.	22.	7.	1.61
	ROUTED TO							
+		RTDIKA	118.	15.17	74.	22.	7.	1.61
	HYDROGRAPH AT							
+		CPKA4	90.	15.92	50.	15.	5.	1.83
	4 COMBINED AT							
+		~CPKA	1093.	14.17	831.	293.	104.	8.32
	2 COMBINED AT							
+		CPKAAF	5302.	12.83	2652.	994.	348.	35.78
	HYDROGRAPH AT							
+		SUBLC	231.	12.08	24.	8.	3.	.12
	DIVERSION TO							
+		RETLC	231.	12.08	23.	7.	2.	.12
	HYDROGRAPH AT							
+		RETLC	6.	13.42	3.	1.	0.	.12
	ROUTED TO							
+		RTLCLA	2.	19.42	2.	1.	0.	.12
	HYDROGRAPH AT							
+		SUBLA	351.	12.58	75.	22.	7.	.51
	DIVERSION TO							
+		RETLA	351.	12.58	47.	13.	4.	.51
	HYDROGRAPH AT							
+		RETLA	255.	12.92	33.	9.	3.	.51
	2 COMBINED AT							
+		CPLA	254.	12.92	34.	10.	3.	.63
	ROUTED TO							
+		RTLAKB	87.	13.83	32.	10.	3.	.63
	HYDROGRAPH AT							
+		SUBKB	357.	12.33	51.	14.	5.	.42
	2 COMBINED AT							
+		CPKB	353.	12.33	79.	23.	8.	1.05
	2 COMBINED AT							
+		CPAFKB	5423.	12.83	2709.	1011.	354.	36.84
	HYDROGRAPH AT							
+		SUBGA	255.	12.08	18.	5.	2.	.14
	2 COMBINED AT							
+		CPAFGA	5424.	12.83	2722.	1014.	355.	36.98
	HYDROGRAPH AT							
+		SUBEE	311.	13.17	104.	26.	9.	.96
	HYDROGRAPH AT							
+		CPEE1	93.	15.08	51.	16.	5.	3.81
	ROUTED TO							
+		RTDIEE	87.	16.25	50.	16.	5.	3.81
	2 COMBINED AT							
+		~CPEC	311.	13.17	145.	42.	14.	.96
	ROUTED TO							
+		MCEEEC	307.	13.42	145.	42.	14.	.96
	HYDROGRAPH AT							
+		SUBEC	18.	12.83	4.	1.	0.	.04
	3 COMBINED AT							
+		CPECSR	5605.	12.83	2840.	1049.	367.	37.98
	HYDROGRAPH AT							
+		SUBOE	405.	12.50	86.	26.	9.	.47
	DIVERSION TO							
+		RETOE	10.	9.08	7.	2.	1.	.47
	HYDROGRAPH AT							
+		RETOE	405.	12.50	86.	24.	8.	.47
	HYDROGRAPH AT							
+		CPOE1	78.	12.50	18.	5.	2.	.48
	ROUTED TO							
+		RTDIOE	26.	15.50	16.	5.	2.	.48
	2 COMBINED AT							
+		@CPOE	406.	12.50	96.	29.	10.	.47
	DIVERSION TO							

+	DIOD	67.	12.50	16.	5.	2.	.47
+ HYDROGRAPH AT	DIOEOD	339.	12.50	80.	24.	8.	.47
+ ROUTED TO	RTOEMF	186.	13.92	75.	24.	8.	.47
+ HYDROGRAPH AT	SUBMF	488.	13.00	154.	39.	13.	.97
+ HYDROGRAPH AT	CPMF	242.	13.67	108.	32.	11.	.97
+ ROUTED TO	RTMDMF	194.	15.33	97.	31.	11.	.97
+ 3 COMBINED AT	CPMF1	568.	13.58	300.	93.	31.	1.44
+ DIVERSION TO	DIEB	263.	13.58	140.	44.	15.	1.44
+ HYDROGRAPH AT	DIMFEB	304.	13.58	160.	50.	17.	1.44
+ ROUTED TO	RTMFMC	250.	14.92	147.	49.	17.	1.44
+ HYDROGRAPH AT	SUBOD	504.	12.50	112.	33.	11.	.51
+ DIVERSION TO	RETOD	6.	5.42	4.	1.	0.	.51
+ HYDROGRAPH AT	RETOD	504.	12.50	112.	32.	11.	.51
+ HYDROGRAPH AT	DROD	67.	12.50	16.	5.	2.	.47
+ ROUTED TO	RTDIOD	40.	14.08	15.	5.	2.	.47
+ 2 COMBINED AT	CPOD	504.	12.50	124.	37.	12.	.51
+ DIVERSION TO	DIOC	91.	12.50	23.	7.	2.	.51
+ HYDROGRAPH AT	DIODOC	414.	12.50	102.	30.	10.	.51
+ ROUTED TO	RTODMC	262.	13.75	99.	30.	10.	.51
+ HYDROGRAPH AT	SUBMC	555.	13.00	170.	44.	15.	1.00
+ 3 COMBINED AT	CPMC1	682.	13.50	380.	120.	41.	2.95
+ DIVERSION TO	DIMB	261.	13.50	146.	46.	16.	2.95
+ HYDROGRAPH AT	DIMCMB	421.	13.50	233.	74.	25.	2.95
+ ROUTED TO	RTMCIE	398.	13.75	229.	74.	25.	2.95
+ HYDROGRAPH AT	DREB	263.	13.58	140.	44.	15.	1.44
+ HYDROGRAPH AT	SUBEB	112.	12.42	18.	4.	1.	.14
+ 2 COMBINED AT	CPEB	293.	12.83	162.	50.	17.	.14
+ HYDROGRAPH AT	RDIED	1268.	13.83	705.	222.	77.	4.44
+ ROUTED TO	MCJBED	1255.	14.17	697.	222.	77.	4.44
+ HYDROGRAPH AT	SUBED1	145.	13.00	42.	10.	3.	.38
+ HYDROGRAPH AT	SUBED2	44.	13.00	13.	3.	1.	.11
+ 3 COMBINED AT	~CPED1	1353.	14.08	742.	240.	83.	.50
2 COMBINED AT							

+		~CPED2	1589.	13.83	885.	288.	100.	.63
	ROUTED TO							
+		MCED95	1585.	13.92	883.	288.	100.	.63
	DIVERSION TO							
+		D-B95	535.	13.92	121.	30.	10.	.63
	HYDROGRAPH AT							
+		95PASS	1050.	13.50	763.	258.	90.	.63
	ROUTED TO							
+		MC95ID	1050.	14.25	761.	258.	90.	.63
	HYDROGRAPH AT							
+		SUBID1	131.	12.83	33.	8.	3.	.20
	HYDROGRAPH AT							
+		SUBID2	164.	12.75	38.	10.	3.	.36
	3 COMBINED AT							
+		~CPID1	1147.	13.75	813.	274.	95.	1.20
	HYDROGRAPH AT							
+		SUBIE	195.	12.92	50.	13.	4.	.30
	3 COMBINED AT							
+		CPID2	1619.	13.75	1075.	357.	123.	4.45
	ROUTED TO							
+		MCIDIB	1601.	14.00	1072.	357.	123.	4.45
	HYDROGRAPH AT							
+		SUBIB	272.	12.83	72.	18.	6.	.48
	HYDROGRAPH AT							
+		SUBIC	165.	13.00	49.	12.	4.	.46
	3 COMBINED AT							
+		~CPIB1	1785.	13.92	1167.	386.	133.	5.39
	HYDROGRAPH AT							
+		SUBOC	449.	12.25	78.	25.	8.	.31
	HYDROGRAPH AT							
+		DROC	91.	12.50	23.	7.	2.	.51
	ROUTED TO							
+		RTDIOC	39.	15.00	21.	7.	2.	.51
	2 COMBINED AT							
+		CPOC	449.	12.25	93.	31.	11.	.31
	ROUTED TO							
+		RTOCMB	221.	13.25	90.	31.	11.	.31
	HYDROGRAPH AT							
+		SUBMB	556.	12.92	162.	41.	14.	1.00
	HYDROGRAPH AT							
+		DRMB	261.	13.50	146.	46.	16.	2.95
	ROUTED TO							
+		RTDIMB	220.	14.83	136.	46.	16.	2.95
	3 COMBINED AT							
+		@CPMB	740.	13.08	355.	114.	39.	5.24
	ROUTED TO							
+		RTMBIB	659.	13.67	346.	114.	39.	5.24
	2 COMBINED AT							
+		@CPIB2	2422.	13.83	1509.	499.	172.	5.72
	ROUTED TO							
+		MCIBIA	2394.	14.08	1502.	499.	172.	5.72
	HYDROGRAPH AT							
+		SUBME	193.	12.58	37.	10.	3.	.33
	ROUTED TO							
+		RTMEIA	109.	13.58	36.	10.	3.	.33
	HYDROGRAPH AT							
+		SUBIA	254.	12.42	42.	11.	4.	.31
	3 COMBINED AT							
+		~CPIA	2479.	14.08	1545.	517.	178.	6.35
	ROUTED TO							
+		MCIAHB	2461.	14.25	1540.	517.	178.	6.35
	HYDROGRAPH AT							
+		SUBHB	258.	12.42	41.	11.	4.	.34
	2 COMBINED AT							

+		CPHB1	2465.	14.25	1546.	526.	181.	6.70
+	HYDROGRAPH AT	SUBDA	235.	12.67	50.	13.	4.	.33
+	2 COMBINED AT	~CPDA	2481.	14.25	1561.	538.	185.	7.03
+	HYDROGRAPH AT	SUBLD	329.	12.25	47.	14.	5.	.28
+	ROUTED TO	RTLDMA	296.	12.50	47.	14.	5.	.28
+	HYDROGRAPH AT	SUBMA	132.	12.58	23.	6.	2.	.25
+	2 COMBINED AT	CPMA	422.	12.50	69.	20.	7.	.52
+	ROUTED TO	RTMAHB	234.	13.17	69.	20.	7.	.52
+	2 COMBINED AT	CPHB2	2574.	14.25	1619.	555.	192.	7.55
+	HYDROGRAPH AT	SUBLB	125.	12.67	24.	6.	2.	.25
+	ROUTED TO	RTLBHA	98.	13.67	24.	6.	2.	.25
+	HYDROGRAPH AT	SUBHA	106.	12.42	17.	4.	1.	.15
+	3 COMBINED AT	CPHA	2644.	14.17	1646.	565.	195.	7.95
+	ROUTED TO	MCHAGD	2632.	14.42	1644.	564.	195.	7.95
+	HYDROGRAPH AT	SUBGD1	194.	13.17	67.	17.	6.	.63
+	2 COMBINED AT	~CPGD1	2730.	14.33	1693.	579.	200.	8.58
+	HYDROGRAPH AT	SUBKC	143.	12.58	25.	6.	2.	.26
+	ROUTED TO	RTKCGD	69.	13.75	25.	6.	2.	.26
+	HYDROGRAPH AT	SUBGC	247.	12.25	32.	9.	3.	.22
+	ROUTED TO	RTGCGD	211.	12.42	32.	9.	3.	.22
+	3 COMBINED AT	CPGD1	2785.	14.33	1724.	593.	205.	9.06
+	ROUTED TO	MCGDCA	2762.	14.75	1715.	591.	205.	9.06
+	HYDROGRAPH AT	SUBCA1	74.	13.00	22.	5.	2.	.14
+	2 COMBINED AT	~CPCA1	2772.	14.75	1721.	595.	206.	9.20
+	HYDROGRAPH AT	SUBGB	220.	12.33	32.	9.	3.	.22
+	ROUTED TO	RTGBCA	162.	12.58	32.	9.	3.	.22
+	2 COMBINED AT	CPCA1	2780.	14.75	1727.	602.	209.	9.42
+	ROUTED TO	MCCABC	2763.	15.00	1718.	600.	209.	9.42
+	HYDROGRAPH AT	SUBBC1	191.	12.17	23.	7.	2.	.14
+	2 COMBINED AT	~CPBC1	2766.	15.00	1720.	603.	211.	9.56
+	2 COMBINED AT	CPAFBC	5605.	12.83	4076.	1588.	561.	47.54
+	HYDROGRAPH AT	SUBEA	458.	13.00	139.	35.	12.	1.32
	ROUTED TO							

+	RTEADC	353.	14.50	133.	35.	12.	1.32
+ HYDROGRAPH AT	SUBDC	427.	12.75	97.	24.	8.	.83
+ 2 COMBINED AT	CPDC	421.	12.75	219.	59.	20.	2.15
+ ROUTED TO	RTDCCC	334.	15.67	202.	59.	20.	2.15
+ HYDROGRAPH AT	SUBDD	104.	12.33	14.	3.	1.	.13
+ ROUTED TO	RTDDCC	70.	13.25	14.	3.	1.	.13
+ HYDROGRAPH AT	SUBCC	621.	12.67	137.	36.	12.	.98
+ 3 COMBINED AT	CPCC	618.	12.67	323.	96.	32.	3.26
+ ROUTED TO	RTCCCB	434.	13.92	312.	96.	32.	3.26
+ HYDROGRAPH AT	SUBCB	260.	13.83	115.	29.	10.	.74
+ 2 COMBINED AT	CPCB1	686.	13.83	414.	124.	42.	4.00
+ HYDROGRAPH AT	SUBGD2	457.	13.00	128.	32.	11.	.74
+ ROUTED TO	RTGDCB	354.	14.17	123.	32.	11.	.74
+ 2 COMBINED AT	CPCB2	1014.	14.00	532.	155.	52.	4.74
+ ROUTED TO	RTCBCA	803.	16.08	528.	155.	52.	4.74
+ HYDROGRAPH AT	SUBCA2	264.	14.00	119.	30.	10.	.84
+ 2 COMBINED AT	CPCA2	893.	15.75	623.	183.	61.	5.58
+ ROUTED TO	RTCABC	832.	17.50	612.	183.	61.	5.58
+ HYDROGRAPH AT	SUBBC2	174.	13.00	55.	14.	5.	.49
+ 2 COMBINED AT	CPBC2	833.	17.50	618.	196.	66.	6.08
+ 2 COMBINED AT	CPGRBC	5604.	12.83	4365.	1723.	606.	53.61
+ HYDROGRAPH AT	SUBAD	236.	12.83	63.	16.	5.	.46
+ ROUTED TO	BSNAD	9.	15.25	9.	9.	7.	.46
+ HYDROGRAPH AT	SUBAC	235.	12.92	64.	16.	5.	.46
+ 2 COMBINED AT	CPAC	241.	12.92	72.	25.	12.	.92
+ ROUTED TO	BSNAC	56.	14.17	22.	12.	8.	.92
+ HYDROGRAPH AT	SUBAB	250.	12.83	64.	17.	6.	.46
+ 2 COMBINED AT	CPAB	248.	12.83	83.	28.	13.	1.38
+ ROUTED TO	BSNAB	11.	19.50	10.	9.	7.	1.38
+ HYDROGRAPH AT	SUBAA	139.	13.58	61.	16.	5.	.50
+ 2 COMBINED AT	CPAA	137.	13.58	62.	23.	12.	1.88
+ HYDROGRAPH AT	SUBBB	179.	12.75	43.	11.	4.	.25
ROUTED TO							

+		RTBBBA	108.	14.58	41.	11.	4.	.25
	HYDROGRAPH AT							
+		SUBBA	161.	12.92	48.	13.	4.	.34
	2 COMBINED AT							
+		CPBA	160.	12.92	86.	23.	8.	.59
	2 COMBINED AT							
+		HCTR1	271.	13.17	147.	45.	19.	2.47
	ROUTED TO							
+		BSNAA	10.	25.25	10.	9.	6.	2.47
	HYDROGRAPH AT							
+		SUBWT1	1000.	12.17	124.	40.	14.	.58
	HYDROGRAPH AT							
+		SUBWT2	306.	12.08	30.	10.	3.	.14
	4 COMBINED AT							
+		DUR	5660.	12.83	4433.	1752.	618.	56.80

*** NORMAL END OF HEC-1 ***

Appendix E: Hydraulic Models

E.1 Effective Tollison Floodplain Delineation Model
E.2 Durango Regional Outfall Channel
E.3 N-S Channel

```
                    HEC-RAS Version 3.1.1 May 2003
                    U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                      609 Second Street, Suite D
                      Davis, California 95616-4687
                             (916) 756-1104

X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X    X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
```

PROJECT DATA
Project Title: Effective MODEL
Project File : EffectiveMODEL.prj
Run Date and Time: 9/18/2003 10:56:22 AM

Project in English units

Project Description:
Tolleson FIS, Project FCD 95-26, El Mirage Road to 69th Avenue Alignment.
August 17, 1998
Dibble & Associates, Inc., with JE Fuller/Hydrology &
Geomorphology, Inc.

The Cross-section data were generated by ROADCALC from
March 28, 1994 Topo flown by Kenney Aerial Mapping, Inc., NGVD 1929.
Top-of-rail elevations and roadway/canal profile data were added to most
cross-sections based on subsequent survey by Urban Engineering. Some cross
sections were edited or added by hand.

Discharge data are from HEC-1 model
for Tolleson Area dated December 1998 unless otherwise noted.

Hydrologic
concentration points are noted in cross-section descriptions using the
corresponding HEC-1 IDs. The flow rates have been rounded to the nearest 10
cubic feet per second (cfs).

The floodplain was mapped utilizing HEC-RAS
Version 2.1, dated October 1997.

```
PLAN DATA

Plan Title: Effective Conditions Model
Plan File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\EffectiveMODEL.p01

          Geometry Title: EFFECTIVE GEOMETRY
          Geometry File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\EffectiveMODEL.g02

          Flow Title    : Flow from Existing HEC-1 Model
          Flow File     : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\EffectiveMODEL.f01

Plan Summary Information:
Number of:  Cross Sections =  114    Mulitple Openings  =    0
            Culverts       =    0    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance =  0.01
    Critical depth calculaton tolerance =  0.01
    Maximum number of interations       =  20
    Maximum difference tolerance        =  0.3
    Flow tolerance factor               =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow


FLOW DATA

Flow Title: Flow from Existing HEC-1 Model
Flow File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\EffectiveMODEL.f01

Flow Data (cfs)

  River           Reach           RS                  PF#1

  Southern PacificTolleson 2      5.539                980
  Southern PacificTolleson 2      5.319                760
  Southern PacificTolleson 2      5.054                760
  Southern PacificTolleson 2      4.577                780
  Southern PacificTolleson 2      3.583                850
  Southern PacificTolleson 2      3.083                970
  Southern PacificTolleson 2      2.352                930
  Southern PacificTolleson 2      1.961                630
  Southern PacificTolleson 2      1.870                565
  Southern PacificTolleson 2      1.856                500
```

Southern Pacific	Tolleson 2	1.771	440
Southern Pacific	Tolleson 2	1.387	450
Southern Pacific	Tolleson 2	1.298	360
Southern Pacific	Tolleson 2	1.203	270
Southern Pacific	Tolleson 2	1.138	220

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Southern Pacific	Tolleson 2	PF#1		Known WS = 964

Changes in WS and EG

River	Reach	RS	Profile		Type	Value
Southern Pacific	Tolleson 1	6.532	PF#1	Known WS	1029.46	
Southern Pacific	Tolleson 2	5.539	PF#1	Known WS	1024.18	
Southern Pacific	Tolleson 2	5.054	PF#1	Known WS	1015.2	
Southern Pacific	Tolleson 2	3.568	PF#1	Known WS	1003.1	
Southern Pacific	Tolleson 2	1.771	PF#1	Known WS	992	
Southern Pacific	Tolleson 2	1.138	PF#1	Known WS	986.3	
Canal	Canal Split	5.798	PF#1	Known WS	1026.92	
Canal	Canal Split	5.578	PF#1	Known WS	1026.3	

Profile Output Table - Standard Table 2

River	Reach	River Sta	Profile	E.G. Elev (ft)	W.S. Elev (ft)	Vel Head (ft)	Frctn Loss (ft)	C & E Loss (ft)	Q Left (cfs)	Q Channel (cfs)	Q Right (cfs)	Top Width (ft)
Southern Pacific	Tolleson 2	5.539	PF#1	1024.19	1024.18	0.01			980.00		891.50	
Southern Pacific	Tolleson 2	5.530	PF#1	1022.84	1022.54	0.30	1.49	0.07	980.00		370.38	
Southern Pacific	Tolleson 2	5.465	PF#1	1020.95	1020.89	0.06	0.13	0.01	980.00		513.47	
Southern Pacific	Tolleson 2	5.370	PF#1	1020.80	1020.79	0.01	0.07	0.03	980.00		1222.42	
Southern Pacific	Tolleson 2	5.319	PF#1	1020.70	1020.42	0.28	1.04	0.06	760.00		281.01	
Southern Pacific	Tolleson 2	5.275	PF#1	1019.61	1019.53	0.08	1.56	0.01	760.00		1238.89	
Southern Pacific	Tolleson 2	5.181	PF#1	1018.04	1017.98	0.06	1.21	0.01	760.00		1142.53	
Southern Pacific	Tolleson 2	5.086	PF#1	1016.82	1016.80	0.02	0.73	0.02	760.00		1122.20	
Southern Pacific	Tolleson 2	5.054	PF#1	1016.07	1015.86	0.22			760.00		774.00	
Southern Pacific	Tolleson 2	5.047	PF#1	1015.50	1015.45	0.05	0.16	0.00	760.00		1040.21	

Southern Pacific	Tolleson 2	5.040	PF#1	1015.34	1015.28	0.05	1.30	0.01	760.00	629.32
Southern Pacific	Tolleson 2	4.991	PF#1	1014.04	1013.92	0.12	1.06	0.03	760.00	488.28
Southern Pacific	Tolleson 2	4.896	PF#1	1012.94	1012.92	0.02	0.68	0.00	760.00	760.88
Southern Pacific	Tolleson 2	4.802	PF#1	1012.26	1012.22	0.05	1.42	0.00	760.00	630.02
Southern Pacific	Tolleson 2	4.707	PF#1	1010.84	1010.79	0.05	0.75	0.01	760.00	725.27
Southern Pacific	Tolleson 2	4.612	PF#1	1010.08	1010.05	0.03	0.18	0.00	760.00	461.01
Southern Pacific	Tolleson 2	4.577	PF#1	1009.90	1009.87	0.03	0.06	0.00	780.00	646.30
Southern Pacific	Tolleson 2	4.567	PF#1	1009.83	1009.76	0.07	0.07	0.01	780.00	768.83
Southern Pacific	Tolleson 2	4.559	PF#1	1009.76	1009.71	0.05	0.57	0.00	780.00	782.10
Southern Pacific	Tolleson 2	4.518	PF#1	1009.19	1009.14	0.04	0.42	0.01	780.00	813.34
Southern Pacific	Tolleson 2	4.423	PF#1	1008.76	1008.74	0.02	0.36	0.00	780.00	716.03
Southern Pacific	Tolleson 2	4.328	PF#1	1008.39	1008.36	0.04	0.88	0.00	780.00	813.77
Southern Pacific	Tolleson 2	4.234	PF#1	1007.51	1007.47	0.04	0.76	0.00	780.00	634.97
Southern Pacific	Tolleson 2	4.139	PF#1	1006.74	1006.72	0.02	0.72	0.00	780.00	719.84
Southern Pacific	Tolleson 2	4.044	PF#1	1006.02	1005.96	0.06	0.70	0.01	780.00	655.02
Southern Pacific	Tolleson 2	3.949	PF#1	1005.32	1005.30	0.02	1.26	0.02	780.00	933.41
Southern Pacific	Tolleson 2	3.855	PF#1	1004.05	1003.88	0.17	0.77	0.05	780.00	533.88
Southern Pacific	Tolleson 2	3.760	PF#1	1003.24	1003.22	0.01	0.05	0.00	780.00	1005.15
Southern Pacific	Tolleson 2	3.665	PF#1	1003.18	1003.18	0.00	0.01	0.00	780.00	1265.98
Southern Pacific	Tolleson 2	3.583	PF#1	1003.17	1003.17	0.00	0.00	0.01	850.00	1306.38
Southern Pacific	Tolleson 2	3.568	PF#1	1003.16	1003.10	0.06			850.00	727.02
Southern Pacific	Tolleson 2	3.535	PF#1	998.95	998.94	0.00	0.00	0.00	850.00	454.79
Southern Pacific	Tolleson 2	3.476	PF#1	998.94	998.94	0.00	0.01	0.03	850.00	375.90
Southern Pacific	Tolleson 2	3.411	PF#1	998.90	998.59	0.31	0.34	0.08	850.00	308.12
Southern Pacific	Tolleson 2	3.287	PF#1	997.68	997.65	0.04	0.02	0.01	850.00	153.92
Southern Pacific	Tolleson 2	3.192	PF#1	997.65	997.65	0.01	0.03	0.00	850.00	259.36
Southern Pacific	Tolleson 2	3.083	PF#1	997.62	997.59	0.03	0.17	0.00	970.00	492.16

Southern Pacific	Tolleson 2	3.050	PF#1	997.44	997.41	0.04	0.24	0.02	970.00 933.03
Southern Pacific	Tolleson 2	3.037	PF#1	997.19	997.00	0.19	0.15	0.04	970.00 732.62
Southern Pacific	Tolleson 2	3.031	PF#1	996.55	996.50	0.05	0.60	0.01	970.00 991.45
Southern Pacific	Tolleson 2	2.908	PF#1	995.94	995.92	0.03	0.55	0.03	970.00 578.55
Southern Pacific	Tolleson 2	2.851	PF#1	995.37	995.07	0.30	0.27	0.09	970.00 389.48
Southern Pacific	Tolleson 2	2.718	PF#1	994.12	994.11	0.01	0.03	0.00	970.00 991.97
Southern Pacific	Tolleson 2	2.624	PF#1	994.09	994.09	0.00	0.01	0.00	970.00 1165.72
Southern Pacific	Tolleson 2	2.529	PF#1	994.08	994.08	0.00	0.01	0.00	970.00 1278.74
Southern Pacific	Tolleson 2	2.434	PF#1	994.07	994.07	0.00	0.01	0.00	970.00 1307.35
Southern Pacific	Tolleson 2	2.366	PF#1	994.07	994.07	0.00	0.00	0.00	970.00 1282.69
Southern Pacific	Tolleson 2	2.352	PF#1	994.06	994.03	0.04	0.01	0.01	930.00 446.49
Southern Pacific	Tolleson 2	2.342	PF#1	994.04	994.03	0.01	0.06	0.00	930.00 1574.28
Southern Pacific	Tolleson 2	2.245	PF#1	993.98	993.97	0.01	0.03	0.00	930.00 1226.07
Southern Pacific	Tolleson 2	2.229	PF#1	993.95	993.91	0.05	0.64	0.01	930.00 833.38
Southern Pacific	Tolleson 2	2.150	PF#1	993.31	993.28	0.02	0.89	0.00	930.00 1127.33
Southern Pacific	Tolleson 2	2.056	PF#1	992.42	992.39	0.03	0.25	0.01	930.00 943.46
Southern Pacific	Tolleson 2	1.961	PF#1	992.16	992.16	0.01	0.10	0.00	630.00 990.69
Southern Pacific	Tolleson 2	1.870	PF#1	992.06	992.04	0.02	0.01	0.00	565.00 803.48
Southern Pacific	Tolleson 2	1.863	PF#1	992.05	992.04	0.01	0.01	0.00	565.00 262.19
Southern Pacific	Tolleson 2	1.856	PF#1	992.05	992.04	0.01	0.04	0.00	500.00 282.50
Southern Pacific	Tolleson 2	1.771	PF#1	992.01	992.00	0.01			440.00 930.88
Southern Pacific	Tolleson 2	1.677	PF#1	990.77	990.75	0.03	1.77	0.01	440.00 550.20
Southern Pacific	Tolleson 2	1.582	PF#1	989.00	988.91	0.09	1.93	0.02	440.00 593.74
Southern Pacific	Tolleson 2	1.487	PF#1	987.06	987.04	0.02	0.08	0.01	440.00 708.95
Southern Pacific	Tolleson 2	1.399	PF#1	986.97	986.97	0.00	0.01	0.02	440.00 1463.93
Southern Pacific	Tolleson 2	1.387	PF#1	986.94	986.78	0.16	0.01	0.05	450.00 457.18
Southern Pacific	Tolleson 2	1.376	PF#1	986.38	986.38	0.00	0.01	0.00	450.00 1202.40

Southern Pacific		Tolleson 2	1.298	PF#1	986.37	986.37	0.00	0.00	0.00	360.00	1238.16
Southern Pacific		Tolleson 2	1.203	PF#1	986.37	986.37	0.00	0.01	0.01	270.00	1236.62
Southern Pacific		Tolleson 2	1.138	PF#1	986.36	986.30	0.06			220.00	280.71
Southern Pacific		Tolleson 2	1.131	PF#1	985.62	985.56	0.07	0.23	0.01	220.00	610.76
Southern Pacific		Tolleson 2	1.109	PF#1	985.38	985.34	0.05	1.40	0.00	220.00	535.23
Southern Pacific		Tolleson 2	1.014	PF#1	983.98	983.93	0.05	0.70	0.01	220.00	305.20
Southern Pacific		Tolleson 2	0.919	PF#1	983.27	983.26	0.01	0.35	0.01	203.42	16.58 880.41
Southern Pacific		Tolleson 2	0.883	PF#1	982.90	982.76	0.14	3.20	0.00	220.00	181.30
Southern Pacific		Tolleson 2	0.824	PF#1	979.70	979.55	0.15	3.71	0.01	220.00	106.48
Southern Pacific		Tolleson 2	0.730	PF#1	975.98	975.73	0.25	4.60	0.03	220.00	52.96
Southern Pacific		Tolleson 2	0.635	PF#1	971.36	970.81	0.55	2.27	0.16	220.00	16.76
Southern Pacific		Tolleson 2	0.540	PF#1	968.94	968.91	0.03	2.41	0.01	220.00	1193.43
Southern Pacific		Tolleson 2	0.446	PF#1	966.52	966.39	0.13	0.03	0.04	220.00	668.39
Southern Pacific		Tolleson 2	0.387	PF#1	964.00	964.00	0.00			220.00	803.48

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                    HEC-RAS Version 3.1.1 May 2003
                     U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                      609 Second Street, Suite D
                     Davis, California 95616-4687
                           (916) 756-1104


          X     X  XXXXXX    XXXX        XXXX       XX      XXXX
          X     X  X        X    X       X   X     X  X    X
          X     X  X        X            X   X    X    X   X
          XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
          X     X  X        X            X  X     X    X        X
          X     X  X        X    X       X   X    X    X        X
          X     X  XXXXXX    XXXX        X    X   X    X   XXXXX


PROJECT DATA
Project Title: COLDWATER RANCH
Project File : CWRANCH.prj
Run Date and Time: 9/19/2003 8:25:08 AM

Project in English units


PLAN DATA

Plan Title: Plan - Proposed
Plan File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.p04

          Geometry Title: Proposed Geometry
          Geometry File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.g03

          Flow Title    : NEWLY COMPUTED DISCHARGES -(Based on Improved Data)
          Flow File     : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.f01

Plan Summary Information:
Number of:  Cross Sections =   79    Mulitple Openings  =    0
            Culverts       =    1    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance =  0.01
    Critical depth calculaton tolerance =  0.01
    Maximum number of interations       =  20
    Maximum difference tolerance        =  0.3
    Flow tolerance factor               =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: Between every coordinate point (HEC2 Style)
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow


FLOW DATA

Flow Title: NEWLY COMPUTED DISCHARGES -(Based on Improved Data)
Flow File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.f01

Flow Data (cfs)

  River          Reach          RS                PF#1
  Southern PacificTolleson 2    5.539             1158
  Southern PacificTolleson 2    1.582             1164


Boundary Conditions

  River          Reach          Profile                    Upstream              Downstream

  Southern PacificTolleson 2    PF#1                                             Known WS = 964
```

Profile Output Table - Standard Table 1

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)	
Tolleson 2	5.539	PF#1	1158.00	1022.20	1023.14	1023.09	1023.37	0.005752	3.88	298.29	521.58	0.90
Tolleson 2	5.530	PF#1	1158.00	1021.50	1022.64	1022.64	1022.94	0.015665	4.38	264.52	445.72	1.00
Tolleson 2	5.465	PF#1	1158.00	1018.60	1021.19		1021.24	0.001321	1.74	665.95	602.56	0.29
Tolleson 2	5.370	PF#1	1158.00	1017.10	1021.11	1018.69	1021.12	0.000089	0.90	1287.18	1239.51	0.11
Tolleson 2	5.319	PF#1	1158.00	1019.30	1020.69	1020.59	1021.01	0.010110	4.53	255.46	290.18	0.85
Tolleson 2	5.275	PF#1	1158.00	1016.90	1019.74	1019.18	1019.86	0.002723	2.79	415.32	1267.47	0.48
Tolleson 2	5.181	PF#1	1158.00	1016.40	1018.17	1017.89	1018.24	0.003893	2.08	558.05	1173.62	0.45
Tolleson 2	5.086	PF#1	1158.00	1015.30	1017.02	1016.34	1017.05	0.001563	1.44	804.38	1184.36	0.25
Tolleson 2	5.054	PF#1	1158.00	1014.40	1016.03	1016.03	1016.26	0.047248	3.92	295.74	921.56	0.98
Tolleson 2	5.047	PF#1	1158.00	1013.97	1015.63		1015.68	0.003060	1.86	621.15	1106.68	0.44
Tolleson 2	5.040	PF#1	1158.00	1013.70	1015.46	1015.08	1015.54	0.003153	2.26	512.72	695.81	0.43
Tolleson 2	4.991	PF#1	1158.00	1011.80	1014.18		1014.29	0.008124	2.77	418.48	644.41	0.61
Tolleson 2	4.896	PF#1	1158.00	1010.70	1013.21		1013.23	0.000922	1.29	897.10	880.90	0.23
Tolleson 2	4.802	PF#1	1158.00	1009.60	1012.42	1011.86	1012.48	0.002879	2.04	568.73	715.90	0.39
Tolleson 2	4.707	PF#1	1158.00	1008.70	1011.10	1010.57	1011.15	0.002491	1.80	644.75	902.79	0.36
Tolleson 2	4.612	PF#1	1158.00	1007.80	1010.29	1009.27	1010.34	0.001138	1.79	647.41	490.75	0.26
Tolleson 2	4.577	PF#1	1158.00	1008.10	1010.06		1010.10	0.001433	1.64	705.36	675.95	0.28
Tolleson 2	4.567	PF#1	1158.00	1009.10	1009.94	1009.65	1010.03	0.000906	2.44	473.69	853.42	0.50
Tolleson 2	4.559	PF#1	1158.00	1008.50	1009.90		1009.96	0.003436	2.03	571.43	888.94	0.45
Tolleson 2	4.518	PF#1	1158.00	1007.50	1009.42	1008.92	1009.47	0.001504	1.70	680.76	868.54	0.32
Tolleson 2	4.423	PF#1	1158.00	1006.60	1009.04		1009.06	0.000499	1.23	941.93	846.78	0.21
Tolleson 2	4.328	PF#1	1158.00	1005.90	1008.63	1007.93	1008.67	0.001335	1.66	698.30	966.04	0.30
Tolleson 2	4.234	PF#1	1158.00	1006.30	1007.74		1007.78	0.002487	1.66	697.09	798.16	0.31
Tolleson 2	4.139	PF#1	1158.00	1005.00	1007.03		1007.06	0.000946	1.31	882.47	829.15	0.22

Tolleson 2	4.044	PF#1	1158.00	1004.30	1006.26	1005.50	1006.34	0.002376	2.28	508.02	982.63	0.37
Tolleson 2	3.949	PF#1	1158.00	1003.60	1005.48	1004.63	1005.51	0.001185	1.41	822.48	969.80	0.24
Tolleson 2	3.855	PF#1	1158.00	1002.20	1004.21	1003.98	1004.32	0.006618	2.62	441.51	692.33	0.57
Tolleson 2	3.760	PF#1	1158.00	1001.50	1003.28	1002.58	1003.30	0.000942	1.28	907.85	1014.44	0.24
Tolleson 2	3.665	PF#1	1158.00	1000.40	1003.19		1003.20	0.000085	0.56	2061.01	1269.77	0.08
Tolleson 2	3.583	PF#1	1158.00	999.40	1003.17		1003.18	0.000029	0.39	2972.67	1306.39	0.05
Tolleson 2	3.568	PF#1	1158.00	1001.90	1002.90	1002.90	1003.14	0.004228	3.94	294.15	659.60	1.00
Tolleson 2	3.535	PF#1	1158.00	989.70	999.17	991.14	999.17	0.000017	0.55	2104.66	475.97	0.05
Tolleson 2	3.476	PF#1	1158.00	989.30	999.16	991.03	999.17	0.000012	0.54	2141.62	382.19	0.04
Tolleson 2	3.411	PF#1	1158.00	997.50	998.74	998.74	999.11	0.020220	4.92	235.33	319.73	1.01
Tolleson 2	3.287	PF#1	1158.00	989.80	997.76	993.54	997.82	0.000294	2.02	574.21	155.85	0.19
Tolleson 2	3.192	PF#1	1158.00	989.80	997.76	991.32	997.77	0.000031	0.86	1350.48	271.73	0.07
Tolleson 2	3.083	PF#1	1158.00	995.40	997.68		997.72	0.000843	1.58	733.21	505.49	0.23
Tolleson 2	3.050	PF#1	1158.00	994.70	997.48	996.86	997.52	0.001602	1.62	716.27	971.97	0.33
Tolleson 2	3.037	PF#1	1158.00	995.70	997.05	997.05	997.26	0.016847	3.65	317.22	752.21	0.99
Tolleson 2	3.031	PF#1	1158.00	994.20	996.62	996.19	996.67	0.001798	1.82	635.00	1006.36	0.36
Tolleson 2	2.908	PF#1	1158.00	993.30	996.05		996.08	0.000555	1.38	840.22	583.70	0.20
Tolleson 2	2.851	PF#1	1158.00	993.70	995.15	995.15	995.47	0.021969	4.53	255.59	418.26	1.02
Tolleson 2	2.718	PF#1	1158.00	989.50	994.28	992.09	994.30	0.000123	0.93	1243.93	996.46	0.10
Tolleson 2	2.624	PF#1	1158.00	987.90	994.26	991.11	994.26	0.000035	0.57	2033.86	1167.51	0.06
Tolleson 2	2.529	PF#1	1158.00	988.90	994.25	990.63	994.25	0.000017	0.41	2794.44	1287.44	0.04
Tolleson 2	2.434	PF#1	1158.00	988.20	994.24	990.22	994.24	0.000013	0.38	3076.55	1313.63	0.03
Tolleson 2	2.366	PF#1	1158.00	988.40	994.23	990.84	994.24	0.000025	0.51	2279.77	1304.55	0.05
Tolleson 2	2.352	PF#1	1158.00	991.50	994.19		994.23	0.000823	1.66	695.90	549.14	0.26
Tolleson 2	2.342	PF#1	1158.00	990.80	994.19	991.95	994.21	0.000136	1.02	1135.28	1588.35	0.11
Tolleson 2	2.245	PF#1	1158.00	991.10	994.12	992.29	994.13	0.000172	0.95	1212.87	1229.05	0.12
Tolleson 2	2.229	PF#1	1158.00	991.20	994.04	993.52	994.10	0.001613	1.81	639.28	867.11	0.34

Tolleson 2	2.150	PF#1	1158.00	990.20	993.42	992.70	993.45	0.001470	1.33	869.50	1299.82	0.27
Tolleson 2	2.056	PF#1	1158.00	990.20	992.58		992.61	0.001917	1.35	857.61	1085.60	0.27
Tolleson 2	1.961	PF#1	1158.00	988.50	992.10		992.12	0.000587	1.10	1053.62	953.48	0.18
Tolleson 2	1.870	PF#1	1158.00	989.20	991.01	990.84	991.33	0.012284	4.49	257.98	538.92	0.77
Tolleson 2	1.863	PF#1	1158.00	988.80	990.71		990.97	0.007900	4.06	285.19	217.34	0.62
Tolleson 2	1.856	PF#1	1158.00	988.10	989.95	989.95	990.44	0.022898	5.62	206.19	208.39	0.99
Tolleson 2	1.771	PF#1	1158.00	979.50	987.45		987.50	0.000217	1.84	628.11	98.27	0.13
Tolleson 2	1.677	PF#1	1158.00	979.40	987.33	982.02	987.38	0.000267	1.84	629.88	228.96	0.14
Tolleson 2	1.6295*	PF#1	1158.00	979.07	987.26	981.75	987.31	0.000269	1.90	609.64	108.77	0.14
Tolleson 2	1.582	PF#1	1164.00	978.74	987.18	981.51	987.24	0.000280	2.00	580.62	179.61	0.14
Tolleson 2	1.487	PF#1	1164.00	978.26	987.09	980.89	987.13	0.000176	1.59	754.75	236.21	0.12
Tolleson 2	1.399	PF#1	1164.00	977.82	987.02	980.48	987.06	0.000133	1.49	779.29	669.86	0.10
Tolleson 2	1.387	PF#1	1164.00	977.82	987.00	980.09	987.05	0.000125	1.82	665.02	650.11	0.11
Tolleson 2	1.370		Culvert									
Tolleson 2	1.299999	PF#1	1164.00	977.38	987.01	979.51	987.03	0.000037	1.05	1109.28	1217.78	0.06
Tolleson 2	1.298	PF#1	1164.00	982.50	987.02	984.44	987.02	0.000024	0.36	3220.71	1581.73	0.04
Tolleson 2	1.203	PF#1	1164.00	982.20	986.99	984.37	987.00	0.000070	0.75	1560.44	1238.60	0.07
Tolleson 2	1.138	PF#1	1164.00	984.20	986.67	986.67	986.89	0.016604	3.76	309.93	802.97	1.07
Tolleson 2	1.131	PF#1	1164.00	982.40	986.59	986.00	986.60	0.000324	0.83	1404.90	1260.45	0.14
Tolleson 2	1.109	PF#1	1164.00	981.90	985.77	985.71	986.42	0.015351	6.45	180.39	1498.44	0.94
Tolleson 2	1.014	PF#1	1164.00	983.90	984.31	984.31	984.52	0.012987	1.09	331.87	871.33	0.59
Tolleson 2	0.919	PF#1	1164.00	982.90	984.07	983.25	984.08	0.000235	0.57	1740.19	1775.74	0.11
Tolleson 2	0.883	PF#1	1164.00	982.10	983.44	983.44	983.89	0.018126	5.36	217.22	239.27	0.99
Tolleson 2	0.824	PF#1	1164.00	976.50	980.50	980.50	980.50	0.000048	0.41	2814.54	1768.30	0.06
Tolleson 2	0.730	PF#1	1164.00	970.70	976.06	976.01	976.11	0.004372	1.71	680.33	1562.40	0.46
Tolleson 2	0.635	PF#1	1164.00	966.30	972.53	972.53	972.70	0.011948	3.34	348.00	1013.54	1.01
Tolleson 2	0.540	PF#1	1164.00	964.70	969.76	969.14	969.87	0.002869	2.67	436.54	1542.87	0.40

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                    HEC-RAS Version 3.1.1 May 2003
                     U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                      609 Second Street, Suite D
                     Davis, California 95616-4687
                            (916) 756-1104


          X     X  XXXXXX    XXXX        XXXX       XX      XXXX
          X     X  X        X    X       X   X     X  X    X
          X     X  X        X            X   X    X    X   X
          XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
          X     X  X        X            X  X     X    X        X
          X     X  X        X    X       X   X    X    X        X
          X     X  XXXXXX    XXXX        X    X   X    X   XXXXX
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PROJECT DATA
Project Title: COLDWATER RANCH
Project File : CWRANCH.prj
Run Date and Time: 9/19/2003 8:25:08 AM

Project in English units

PLAN DATA

Plan Title: Plan - Proposed
Plan File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.p04

Geometry Title: Proposed Geometry
Geometry File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.g03

Flow Title : NEWLY COMPUTED DISCHARGES -(Based on Improved Data)
Flow File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.f01

Plan Summary Information:

Number of:	Cross Sections =	79	Mulitple Openings =	0
	Culverts =	1	Inline Structures =	0
	Bridges =	0	Lateral Structures =	0

Computational Information
Water surface calculation tolerance = 0.01
Critical depth calculaton tolerance = 0.01
Maximum number of interations = 20
Maximum difference tolerance = 0.3
Flow tolerance factor = 0.001

Computation Options
Critical depth computed only where necessary
Conveyance Calculation Method: Between every coordinate point (HEC2 Style)
Friction Slope Method: Average Conveyance
Computational Flow Regime: Subcritical Flow

FLOW DATA

Flow Title: NEWLY COMPUTED DISCHARGES -(Based on Improved Data)
Flow File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\CWRANCH.f01

Flow Data (cfs)

River	Reach	RS	PF#1
Southern Pacific	Tolleson 2	5.539	1158
Southern Pacific	Tolleson 2	1.582	1164

Boundary Conditions

River	Reach	Profile	Upstream	Downstream
Southern Pacific	Tolleson 2	PF#1		Known WS = 964

Profile Output Table - Standard Table 1

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)	
Tolleson 2	5.539	PF#1	1158.00	1022.20	1023.14	1023.09	1023.37	0.005752	3.88	298.29	521.58	0.90
Tolleson 2	5.530	PF#1	1158.00	1021.50	1022.64	1022.64	1022.94	0.015665	4.38	264.52	445.72	1.00
Tolleson 2	5.465	PF#1	1158.00	1018.60	1021.19		1021.24	0.001321	1.74	665.95	602.56	0.29
Tolleson 2	5.370	PF#1	1158.00	1017.10	1021.11	1018.69	1021.12	0.000089	0.90	1287.18	1239.51	0.11
Tolleson 2	5.319	PF#1	1158.00	1019.30	1020.69	1020.59	1021.01	0.010110	4.53	255.46	290.18	0.85
Tolleson 2	5.275	PF#1	1158.00	1016.90	1019.74	1019.18	1019.86	0.002723	2.79	415.32	1267.47	0.48
Tolleson 2	5.181	PF#1	1158.00	1016.40	1018.17	1017.89	1018.24	0.003893	2.08	558.05	1173.62	0.45
Tolleson 2	5.086	PF#1	1158.00	1015.30	1017.02	1016.34	1017.05	0.001563	1.44	804.38	1184.36	0.25
Tolleson 2	5.054	PF#1	1158.00	1014.40	1016.03	1016.03	1016.26	0.047248	3.92	295.74	921.56	0.98
Tolleson 2	5.047	PF#1	1158.00	1013.97	1015.63		1015.68	0.003060	1.86	621.15	1106.68	0.44
Tolleson 2	5.040	PF#1	1158.00	1013.70	1015.46	1015.08	1015.54	0.003153	2.26	512.72	695.81	0.43
Tolleson 2	4.991	PF#1	1158.00	1011.80	1014.18		1014.29	0.008124	2.77	418.48	644.41	0.61
Tolleson 2	4.896	PF#1	1158.00	1010.70	1013.21		1013.23	0.000922	1.29	897.10	880.90	0.23
Tolleson 2	4.802	PF#1	1158.00	1009.60	1012.42	1011.86	1012.48	0.002879	2.04	568.73	715.90	0.39
Tolleson 2	4.707	PF#1	1158.00	1008.70	1011.10	1010.57	1011.15	0.002491	1.80	644.75	902.79	0.36
Tolleson 2	4.612	PF#1	1158.00	1007.80	1010.29	1009.27	1010.34	0.001138	1.79	647.41	490.75	0.26
Tolleson 2	4.577	PF#1	1158.00	1008.10	1010.06		1010.10	0.001433	1.64	705.36	675.95	0.28
Tolleson 2	4.567	PF#1	1158.00	1009.10	1009.94	1009.65	1010.03	0.000906	2.44	473.69	853.42	0.50
Tolleson 2	4.559	PF#1	1158.00	1008.50	1009.90		1009.96	0.003436	2.03	571.43	888.94	0.45
Tolleson 2	4.518	PF#1	1158.00	1007.50	1009.42	1008.92	1009.47	0.001504	1.70	680.76	868.54	0.32
Tolleson 2	4.423	PF#1	1158.00	1006.60	1009.04		1009.06	0.000499	1.23	941.93	846.78	0.21
Tolleson 2	4.328	PF#1	1158.00	1005.90	1008.63	1007.93	1008.67	0.001335	1.66	698.30	966.04	0.30
Tolleson 2	4.234	PF#1	1158.00	1006.30	1007.74		1007.78	0.002487	1.66	697.09	798.16	0.31
Tolleson 2	4.139	PF#1	1158.00	1005.00	1007.03		1007.06	0.000946	1.31	882.47	829.15	0.22

Tolleson 2	4.044	PF#1	1158.00	1004.30	1006.26	1005.50	1006.34	0.002376	2.28	508.02	982.63	0.37
Tolleson 2	3.949	PF#1	1158.00	1003.60	1005.48	1004.63	1005.51	0.001185	1.41	822.48	969.80	0.24
Tolleson 2	3.855	PF#1	1158.00	1002.20	1004.21	1003.98	1004.32	0.006618	2.62	441.51	692.33	0.57
Tolleson 2	3.760	PF#1	1158.00	1001.50	1003.28	1002.58	1003.30	0.000942	1.28	907.85	1014.44	0.24
Tolleson 2	3.665	PF#1	1158.00	1000.40	1003.19		1003.20	0.000085	0.56	2061.01	1269.77	0.08
Tolleson 2	3.583	PF#1	1158.00	999.40	1003.17		1003.18	0.000029	0.39	2972.67	1306.39	0.05
Tolleson 2	3.568	PF#1	1158.00	1001.90	1002.90	1002.90	1003.14	0.004228	3.94	294.15	659.60	1.00
Tolleson 2	3.535	PF#1	1158.00	989.70	999.17	991.14	999.17	0.000017	0.55	2104.66	475.97	0.05
Tolleson 2	3.476	PF#1	1158.00	989.30	999.16	991.03	999.17	0.000012	0.54	2141.62	382.19	0.04
Tolleson 2	3.411	PF#1	1158.00	997.50	998.74	998.74	999.11	0.020220	4.92	235.33	319.73	1.01
Tolleson 2	3.287	PF#1	1158.00	989.80	997.76	993.54	997.82	0.000294	2.02	574.21	155.85	0.19
Tolleson 2	3.192	PF#1	1158.00	989.80	997.76	991.32	997.77	0.000031	0.86	1350.48	271.73	0.07
Tolleson 2	3.083	PF#1	1158.00	995.40	997.68		997.72	0.000843	1.58	733.21	505.49	0.23
Tolleson 2	3.050	PF#1	1158.00	994.70	997.48	996.86	997.52	0.001602	1.62	716.27	971.97	0.33
Tolleson 2	3.037	PF#1	1158.00	995.70	997.05	997.05	997.26	0.016847	3.65	317.22	752.21	0.99
Tolleson 2	3.031	PF#1	1158.00	994.20	996.62	996.19	996.67	0.001798	1.82	635.00	1006.36	0.36
Tolleson 2	2.908	PF#1	1158.00	993.30	996.05		996.08	0.000555	1.38	840.22	583.70	0.20
Tolleson 2	2.851	PF#1	1158.00	993.70	995.15	995.15	995.47	0.021969	4.53	255.59	418.26	1.02
Tolleson 2	2.718	PF#1	1158.00	989.50	994.28	992.09	994.30	0.000123	0.93	1243.93	996.46	0.10
Tolleson 2	2.624	PF#1	1158.00	987.90	994.26	991.11	994.26	0.000035	0.57	2033.86	1167.51	0.06
Tolleson 2	2.529	PF#1	1158.00	988.90	994.25	990.63	994.25	0.000017	0.41	2794.44	1287.44	0.04
Tolleson 2	2.434	PF#1	1158.00	988.20	994.24	990.22	994.24	0.000013	0.38	3076.55	1313.63	0.03
Tolleson 2	2.366	PF#1	1158.00	988.40	994.23	990.84	994.24	0.000025	0.51	2279.77	1304.55	0.05
Tolleson 2	2.352	PF#1	1158.00	991.50	994.19		994.23	0.000823	1.66	695.90	549.14	0.26
Tolleson 2	2.342	PF#1	1158.00	990.80	994.19	991.95	994.21	0.000136	1.02	1135.28	1588.35	0.11
Tolleson 2	2.245	PF#1	1158.00	991.10	994.12	992.29	994.13	0.000172	0.95	1212.87	1229.05	0.12
Tolleson 2	2.229	PF#1	1158.00	991.20	994.04	993.52	994.10	0.001613	1.81	639.28	867.11	0.34

Tolleson 2	2.150	PF#1	1158.00	990.20	993.42	992.70	993.45	0.001470	1.33	869.50	1299.82	0.27
Tolleson 2	2.056	PF#1	1158.00	990.20	992.58		992.61	0.001917	1.35	857.61	1085.60	0.27
Tolleson 2	1.961	PF#1	1158.00	988.50	992.10		992.12	0.000587	1.10	1053.62	953.48	0.18
Tolleson 2	1.870	PF#1	1158.00	989.20	991.01	990.84	991.33	0.012284	4.49	257.98	538.92	0.77
Tolleson 2	1.863	PF#1	1158.00	988.80	990.71		990.97	0.007900	4.06	285.19	217.34	0.62
Tolleson 2	1.856	PF#1	1158.00	988.10	989.95	989.95	990.44	0.022898	5.62	206.19	208.39	0.99
Tolleson 2	1.771	PF#1	1158.00	979.50	987.45		987.50	0.000217	1.84	628.11	98.27	0.13
Tolleson 2	1.677	PF#1	1158.00	979.40	987.33	982.02	987.38	0.000267	1.84	629.88	228.96	0.14
Tolleson 2	1.6295*	PF#1	1158.00	979.07	987.26	981.75	987.31	0.000269	1.90	609.64	108.77	0.14
Tolleson 2	1.582	PF#1	1164.00	978.74	987.18	981.51	987.24	0.000280	2.00	580.62	179.61	0.14
Tolleson 2	1.487	PF#1	1164.00	978.26	987.09	980.89	987.13	0.000176	1.59	754.75	236.21	0.12
Tolleson 2	1.399	PF#1	1164.00	977.82	987.02	980.48	987.06	0.000133	1.49	779.29	669.86	0.10
Tolleson 2	1.387	PF#1	1164.00	977.82	987.00	980.09	987.05	0.000125	1.82	665.02	650.11	0.11
Tolleson 2	1.370		Culvert									
Tolleson 2	1.299999	PF#1	1164.00	977.38	987.01	979.51	987.03	0.000037	1.05	1109.28	1217.78	0.06
Tolleson 2	1.298	PF#1	1164.00	982.50	987.02	984.44	987.02	0.000024	0.36	3220.71	1581.73	0.04
Tolleson 2	1.203	PF#1	1164.00	982.20	986.99	984.37	987.00	0.000070	0.75	1560.44	1238.60	0.07
Tolleson 2	1.138	PF#1	1164.00	984.20	986.67	986.67	986.89	0.016604	3.76	309.93	802.97	1.07
Tolleson 2	1.131	PF#1	1164.00	982.40	986.59	986.00	986.60	0.000324	0.83	1404.90	1260.45	0.14
Tolleson 2	1.109	PF#1	1164.00	981.90	985.77	985.71	986.42	0.015351	6.45	180.39	1498.44	0.94
Tolleson 2	1.014	PF#1	1164.00	983.90	984.31	984.31	984.52	0.012987	1.09	331.87	871.33	0.59
Tolleson 2	0.919	PF#1	1164.00	982.90	984.07	983.25	984.08	0.000235	0.57	1740.19	1775.74	0.11
Tolleson 2	0.883	PF#1	1164.00	982.10	983.44	983.44	983.89	0.018126	5.36	217.22	239.27	0.99
Tolleson 2	0.824	PF#1	1164.00	976.50	980.50	980.50	980.50	0.000048	0.41	2814.54	1768.30	0.06
Tolleson 2	0.730	PF#1	1164.00	970.70	976.06	976.01	976.11	0.004372	1.71	680.33	1562.40	0.46
Tolleson 2	0.635	PF#1	1164.00	966.30	972.53	972.53	972.70	0.011948	3.34	348.00	1013.54	1.01
Tolleson 2	0.540	PF#1	1164.00	964.70	969.76	969.14	969.87	0.002869	2.67	436.54	1542.87	0.40

Tolleson 2	0.446	PF#1	1164.00	963.20	966.91	966.91	967.12	0.014396	3.67	317.04	1566.78
0.87											
Tolleson 2	0.387	PF#1	1164.00	962.30	964.00	963.39	964.03	0.000654	1.50	778.19	803.48
0.27											

```
                    HEC-RAS Version 3.1.1 May 2003
                     U.S. Army Corp of Engineers
                    Hydrologic Engineering Center
                      609 Second Street, Suite D
                     Davis, California 95616-4687
                            (916) 756-1104

X     X  XXXXXX    XXXX        XXXX       XX      XXXX
X     X  X        X    X       X   X     X  X     X
X     X  X        X            X   X    X    X   X
XXXXXXX  XXXX     X       XXX  XXXX     XXXXXX    XXXX
X     X  X        X            X  X     X    X        X
X     X  X        X    X       X   X    X    X        X
X     X  XXXXXX    XXXX        X    X   X    X   XXXXX


PROJECT DATA
Project Title: North Sout Channel Model
Project File : NSCHANNEL.prj
Run Date and Time: 9/17/2003 3:57:40 PM

Project in English units


PLAN DATA

Plan Title: PROPOSED CONDITIONS
Plan File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\NSCHANNEL.p01

          Geometry Title: NSCHANNEL
          Geometry File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\NSCHANNEL.g01

          Flow Title    : 100-YEAR
          Flow File     : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\NSCHANNEL.f02

Plan Description:
This plans models the proposed north/south channel that drainage upstream
offsite flows through the site.


Plan Summary Information:
Number of:  Cross Sections =   13    Mulitple Openings  =    0
            Culverts       =    1    Inline Structures  =    0
            Bridges        =    0    Lateral Structures =    0

Computational Information
    Water surface calculation tolerance =  0.01
    Critical depth calculaton tolerance =  0.01
```

```
    Maximum number of interations       =  20
    Maximum difference tolerance        =  0.3
    Flow tolerance factor               =  0.001

Computation Options
    Critical depth computed only where necessary
    Conveyance Calculation Method: At breaks in n values only
    Friction Slope Method:         Average Conveyance
    Computational Flow Regime:     Subcritical Flow


FLOW DATA

Flow Title: 100-YEAR
Flow File : h:\PDATA\45101651\Calcs\Strmwater\CLOMR\FINAL MODELS\NSCHANNEL.f02

Flow Data (cfs)

  River           Reach           RS            100-YR 6-HR         RASPLOT
  NORTH-SOUTH CHANNORTH-SOUTH CHAN2222                  144             144


Boundary Conditions

  River           Reach           Profile                       Upstream                Downstream

  NORTH-SOUTH CHANNORTH-SOUTH CHAN100-YR 6-HR                                       Normal S = 0.0023


Profile Output Table - Standard Table 1

  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)

  NORTH-SOUTH CHAN  2222          100-YR 6-HR       144.00     992.38     994.93                995.12    0.003803
3.48      41.41      26.43          0.49
  NORTH-SOUTH CHAN  2222          RASPLOT           144.00     992.38     994.93                995.12    0.003803
3.48      41.41      26.43          0.49

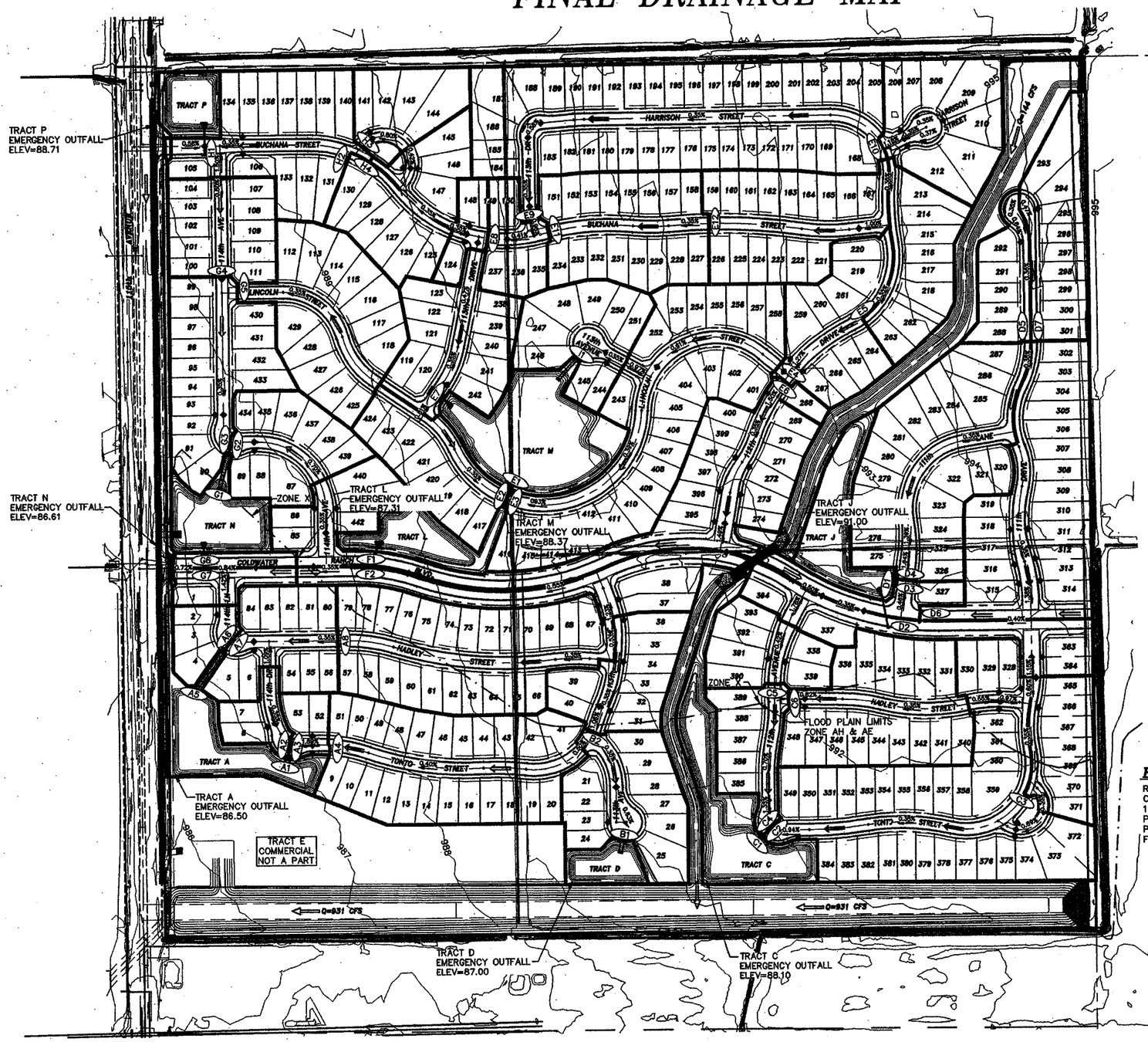
  NORTH-SOUTH CHAN  1965.4        100-YR 6-HR       144.00     991.40     993.95                994.14    0.003808
3.48      41.39      26.43          0.49
  NORTH-SOUTH CHAN  1965.4        RASPLOT           144.00     991.40     993.95                994.14    0.003808
3.48      41.39      26.43          0.49

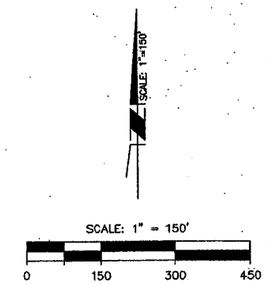
  NORTH-SOUTH CHAN  1767.73       100-YR 6-HR       144.00     990.65     993.16                993.36    0.004099
3.57      40.28      26.09          0.51
  NORTH-SOUTH CHAN  1767.73       RASPLOT           144.00     990.65     993.16                993.36    0.004099
3.57      40.28      26.09          0.51
```

NORTH-SOUTH CHAN	1387.7		100-YR 6-HR		144.00	989.21	992.11		992.23	0.002181	
2.83	50.91	29.16	0.38								
NORTH-SOUTH CHAN	1387.7		RASPLOT		144.00	989.21	992.11		992.23	0.002181	
2.83	50.91	29.16	0.38								
NORTH-SOUTH CHAN	1194.38		100-YR 6-HR		144.00	988.47	991.85		991.93	0.001082	
2.18	66.07	33.06	0.27								
NORTH-SOUTH CHAN	1194.38		RASPLOT		144.00	988.47	991.85		991.93	0.001082	
2.18	66.07	33.06	0.27								
NORTH-SOUTH CHAN	1074.43		100-YR 6-HR		144.00	988.02	991.77		991.82	0.000679	
1.83	78.62	35.97	0.22								
NORTH-SOUTH CHAN	1074.43		RASPLOT		144.00	988.02	991.77		991.82	0.000679	
1.83	78.62	35.97	0.22								
NORTH-SOUTH CHAN	1024.78		100-YR 6-HR		144.00	987.60	991.74	988.84	991.80	0.000295	
1.88	76.63	38.00	0.16								
NORTH-SOUTH CHAN	1024.78		RASPLOT		144.00	987.60	991.74	988.84	991.80	0.000295	
1.88	76.63	38.00	0.16								
NORTH-SOUTH CHAN	911.33				Culvert						
NORTH-SOUTH CHAN	797.88		100-YR 6-HR		144.00	986.77	989.47	988.01	989.60	0.001225	
2.88	49.97	38.00	0.31								
NORTH-SOUTH CHAN	797.88		RASPLOT		144.00	986.77	989.47	988.01	989.60	0.001225	
2.88	49.96	38.00	0.31								
NORTH-SOUTH CHAN	774.75		100-YR 6-HR		144.00	986.57	989.43		989.56	0.002294	
2.88	49.96	28.90	0.39								
NORTH-SOUTH CHAN	774.75		RASPLOT		144.00	986.57	989.43		989.56	0.002294	
2.88	49.96	28.90	0.39								
NORTH-SOUTH CHAN	625.72		100-YR 6-HR		144.00	986.23	989.09		989.22	0.002305	
2.89	49.87	28.88	0.39								
NORTH-SOUTH CHAN	625.72		RASPLOT		144.00	986.23	989.09		989.22	0.002305	
2.89	49.87	28.88	0.39								
NORTH-SOUTH CHAN	391.43		100-YR 6-HR		144.00	985.69	988.55		988.68	0.002307	
2.89	49.86	28.88	0.39								
NORTH-SOUTH CHAN	391.43		RASPLOT		144.00	985.69	988.55		988.68	0.002307	
2.89	49.86	28.87	0.39								
NORTH-SOUTH CHAN	166.38		100-YR 6-HR		144.00	985.17	988.03		988.16	0.002291	
2.88	49.99	28.91	0.39								
NORTH-SOUTH CHAN	166.38		RASPLOT		144.00	985.17	988.03		988.16	0.002292	
2.88	49.98	28.91	0.39								
NORTH-SOUTH CHAN	0		100-YR 6-HR		144.00	984.79	987.65	986.57	987.78	0.002300	
2.89	49.91	28.89	0.39								
NORTH-SOUTH CHAN	0		RASPLOT		144.00	984.79	987.65	986.57	987.78	0.002300	
2.89	49.91	28.89	0.39								

Appendix F: Grading Plans

C.W. RANCH
FINAL DRAINAGE MAP





LEGEND

- (A1) DRAINAGE AREA NUMBER
- 1002 EXISTING GRADE CONTOURS
- ONSITE RUNOFF
- OFFSITE RUNOFF
- DRAINAGE BOUNDARY

RETENTION DATA

TRACT A	TRACT C	TRACT D	TRACT J
FB=986.5	FB=988.1	FB=987.0	FB=991.0
HW=985.5	HW=987.1	HW=986.0	HW=990.0
BOTT=982.5	BOTT=984.1	BOTT=983.0	BOTT=987.0
VOL REQD'=85,509 CF	VOL REQD'=98,362 CF	VOL REQD'=27,776 CF	VOL REQD'=101,086 CF
VOL PROVD'=95,564 CF	VOL PROVD'=116,434 CF	VOL PROVD'=34,010 CF	VOL PROVD'=113,418 CF

TRACT L	TRACT M	TRACT N	TRACT P
FB=987.3	FB=988.2	FB=986.2	FB=988.7
HW=986.3	HW=987.2	HW=985.2	HW=987.7
BOTT=983.3	BOTT=984.2	BOTT=982.2	BOTT=984.7
VOL REQD'=49,527 CF	VOL REQD'=217,725 CF	VOL REQD'=86,982 CF	VOL REQD'=45,430 CF
VOL PROVD'=54,884 CF	VOL PROVD'=222,303 CF	VOL PROVD'=88,193 CF	VOL PROVD'=45,491 CF

ENGINEER

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PHOENIX, AZ 85053-7550
PH: (602) 467-2200
FX: (602) 467-2201

DEVELOPER

BEAZER HOMES
CONTACT: DAVE INOSHITA
2005 W. 14TH STREET, STE 100
TEMPE, AZ 85281
PHONE (480) 967-8655
FAX (480) 967-2780

BENCHMARK

NORTH BRASS CAP IN HAND HOLE AT INTERSECTION OF 115TH AVENUE AND BUCKEYE ROAD, ELEVATION = 987.43'

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. IACUELLI Date Signed 8/5/03 ARIZONA U.S.A.

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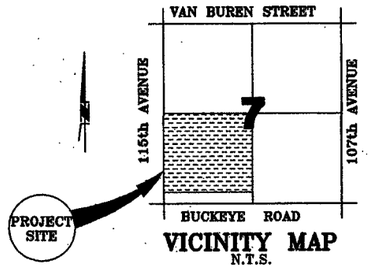
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 • FAX 602.467.2201 • www.RBF.com

SCALE: 1" = 150'
C.W. RANCH
FINAL DRAINAGE MAP

DATE: 08/05/03
JN: 45101651

GRADING PLANS
FOR
C.W. RANCH
AT
A PORTION OF THE SOUTHWEST QUARTER OF SECTION 7, TOWNSHIP 1 NORTH, RANGE 1 EAST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, CITY OF AVONDALE, MARICOPA COUNTY, ARIZONA



VICINITY MAP
N.T.S.

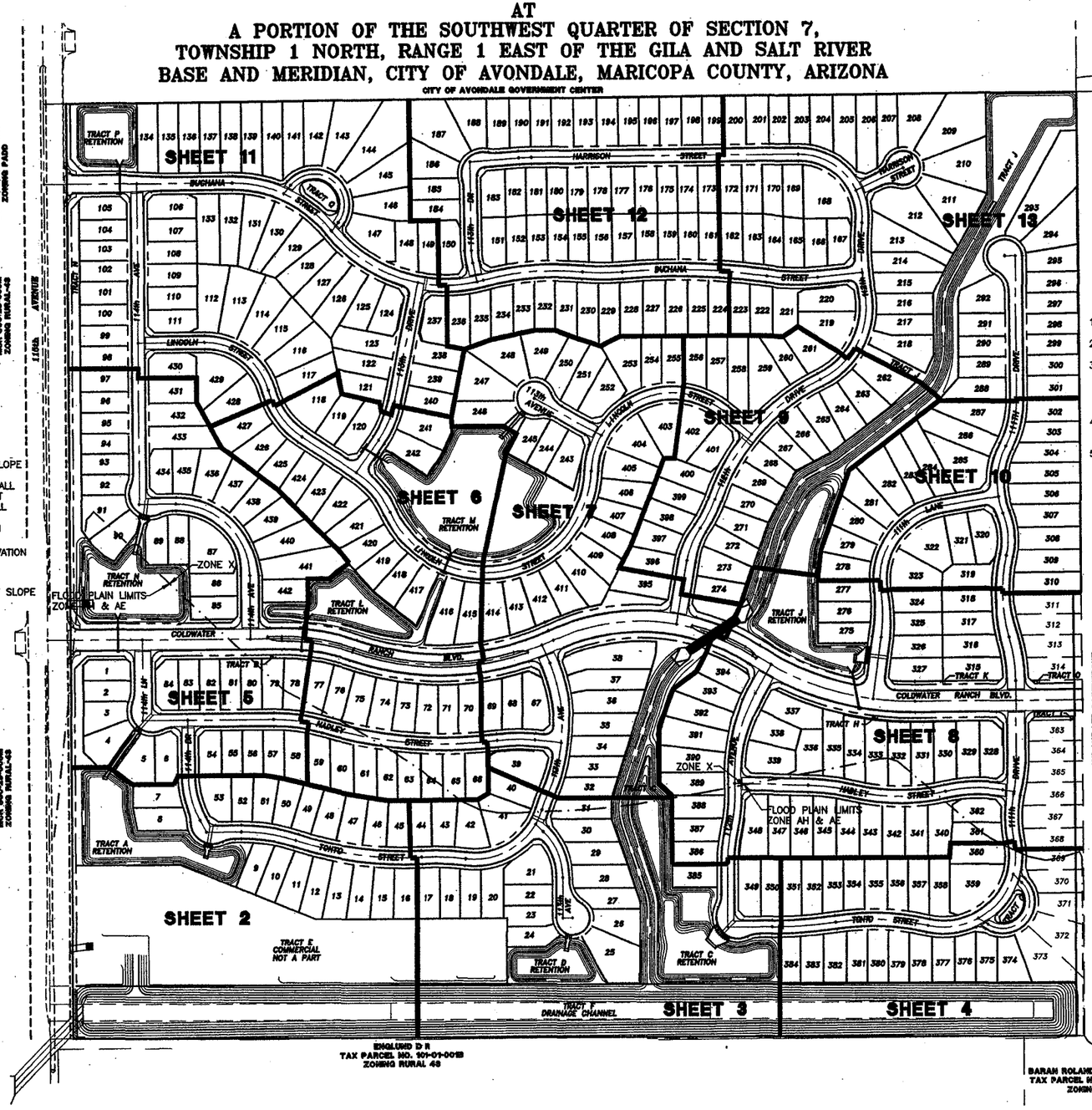
NOTE:
ALL CONSTRUCTION SHALL BE IN ACCORDANCE WITH THE CITY OF AVONDALE CONSTRUCTION SPECIFICATIONS CURRENTLY ON FILE AND AVAILABLE AT THE CITY OF AVONDALE PUBLIC WORKS DEPARTMENTS.

LEGEND

FF=	MIN. FINISHED FLOOR ELEVATION		SURVEY MONUMENT
PAD=	MIN. BUILDING PAD ELEVATION		GRADE BREAK
HW=	HIGH WATER ELEVATION		DRY WELL
BTM=	BASIN BOTTOM ELEVATION	2.00%	PROPOSED STREET SLOPE
SG=	SUBGRADE ELEVATION	FGT=03.50 FGB=01.50	TOP OF RETAINING WALL FINISHED SURFACE AT BOTTOM OF RET. WALL
FG=	FINISHED GRADE		
ESMT	EASEMENT	FL=03.71	FLOW LINE ELEVATION
L/S	LANDSCAPE	NG 10.10	NATURAL GRADE ELEVATION
B/C	BACK OF CURB	1002	EXISTING CONTOURS
S/W	SIDEWALK		TOP AND BOTTOM OF SLOPE
82.6	FINISHED GRADE AT REAR PROPERTY CORNER		STORM DRAIN
79.8	EXISTING GROUND ELEVATION		RETAINING WALL
81.93	PROPOSED TOP OF CURB ELEV.		SIDEWALK
83.1	EXISTING TOP OF CURB ELEV.		DRIVEWAY
			SHEET BOUNDARY

FOR INFORMATION CONCERNING THE STORM WATER POLLUTION PREVENTION PLAN FOR NATIONAL DISCHARGE ELIMINATION SYSTEM, REFER TO NOTICE OF INTENT (NOI) FOR SPECIFIC FACILITY OPERATOR.

UTILITY COMPANIES		SUBMITTAL DATE
ELECTRIC	SALT RIVER PROJECT	
TELEPHONE	QWEST	
SANITARY SEWER	CITY OF AVONDALE	
CABLE	COX COMMUNICATION	
GARBAGE	CITY OF AVONDALE	
FIRE PROTECTION	CITY OF AVONDALE	
POLICE PROTECTION	CITY OF AVONDALE	
IRRIGATION	SRP	



SCALE: 1" = 150'

SCALE: 1" = 150'
0 150 300 450

ESTIMATED QUANTITIES

DRYWELLS	22 EA
RETAINING WALL	2469 LF
GROUTED RIP-RAP	1129 SY

STORM WATER DRAINAGE CERTIFICATION

1. THE SUBDIVISION WILL PROVIDE FOR ON-SITE RETENTION FOR THE RUNOFF FROM A 100-YEAR 2-HOUR STORM.
2. ALL FLOWS FROM THE 10-YEAR STORM WILL BE CONTAINED WITHIN THE STREET (FROM CURB TO CURB).
3. ALL RETENTION BASINS MUST DRAIN ANY STORM EVENT UP TO AND INCLUDING 100-YEAR, 2 HOUR STORM WITHIN 36 HOURS. FOR ANY BASIN FAILING TO MEET THIS REQUIREMENT, DEVELOPER OR HOMEOWNERS ASSOCIATION MUST TAKE CORRECTIVE ACTION TO BRING THE BASIN INTO COMPLIANCE.
4. ALL DRAINAGE DESIGN WILL COMPLY WITH THE DRAINAGE DESIGN MANUAL FOR MARICOPA COUNTY, ARIZONA, VOLUMES I & II, JANUARY 28, 1996, AS AMENDED OR UPDATED.
5. FINISHED FLOOR ELEVATIONS MUST BE A MINIMUM OF 14-INCHES ABOVE THE OUT FALL TOP OF CURB ELEVATION, OR 12-INCHES ABOVE THE COMPUTED 100-YEAR WATER SURFACE ELEVATION WHICH EVER IS GREATER.

MAURICIO M. IACUELLI, P.E. — DATE 8/6/03

SHEET INDEX

1	COVER SHEET
2-13	GRADING PLANS
14-16	DETAILS

BENCH MARK
NORTH BRASS CAP IN HAND HOLE AT INTERSECTION OF 115TH AVENUE AND BUCKEYE ROAD, ELEVATION = 987.43'

DEVELOPER

BEAZER HOMES
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TEMPE, AZ 85281
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FAX (480) 967-2780

ENGINEER

RBF CONSULTING
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16605 N. 28TH AVENUE, STE 100
PHOENIX, AZ 85053
PHONE (602) 467-2200
FAX (602) 467-2201

"AS-BUILT CERTIFICATION"
I HEREBY CERTIFY THAT THE "AS-BUILT" INFORMATION SHOWN HEREON WAS OBTAINED UNDER MY DIRECT SUPERVISION AND IS CORRECT AND COMPLETE TO THE BEST OF MY KNOWLEDGE AND BELIEF.

REGISTERED LAND SURVEYOR/ENGINEER

REGISTRATION NUMBER — DATE

APPROVALS

BY: CITY ENGINEERING DIVISION — DATE

602-263-1100 Blue Stake Center CALL COLLECT

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PHOENIX, ARIZONA 85053-2602
602.467.2200 ■ FAX 602.467.2201 ■ www.RBF.com

WORKING PROJECT COORDINATOR	MAURICIO M. IACUELLI, P.E.
PROJECT COORDINATOR	KEVIN GOODWIN
FIELD SURVEY	
DRAFTED	
CHECKED	
DESIGN/LAYOUT	KMG
DRAFTED	SJH
CHECKED	MMI
DRAWING SCALE(S)	1"=150'

OWNER/DEVELOPER: BEAZER HOMES
PROJECT NAME: C.W. RANCH
PLAN TITLE: GRADING PLANS

SEALED
Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. IACUELLI Date Signed 8-6-03 ARIZONA U.S.A.

ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION DATE: —
SHEET NUMBER: 1 OF 16
PROJECT NUMBER: 45101651

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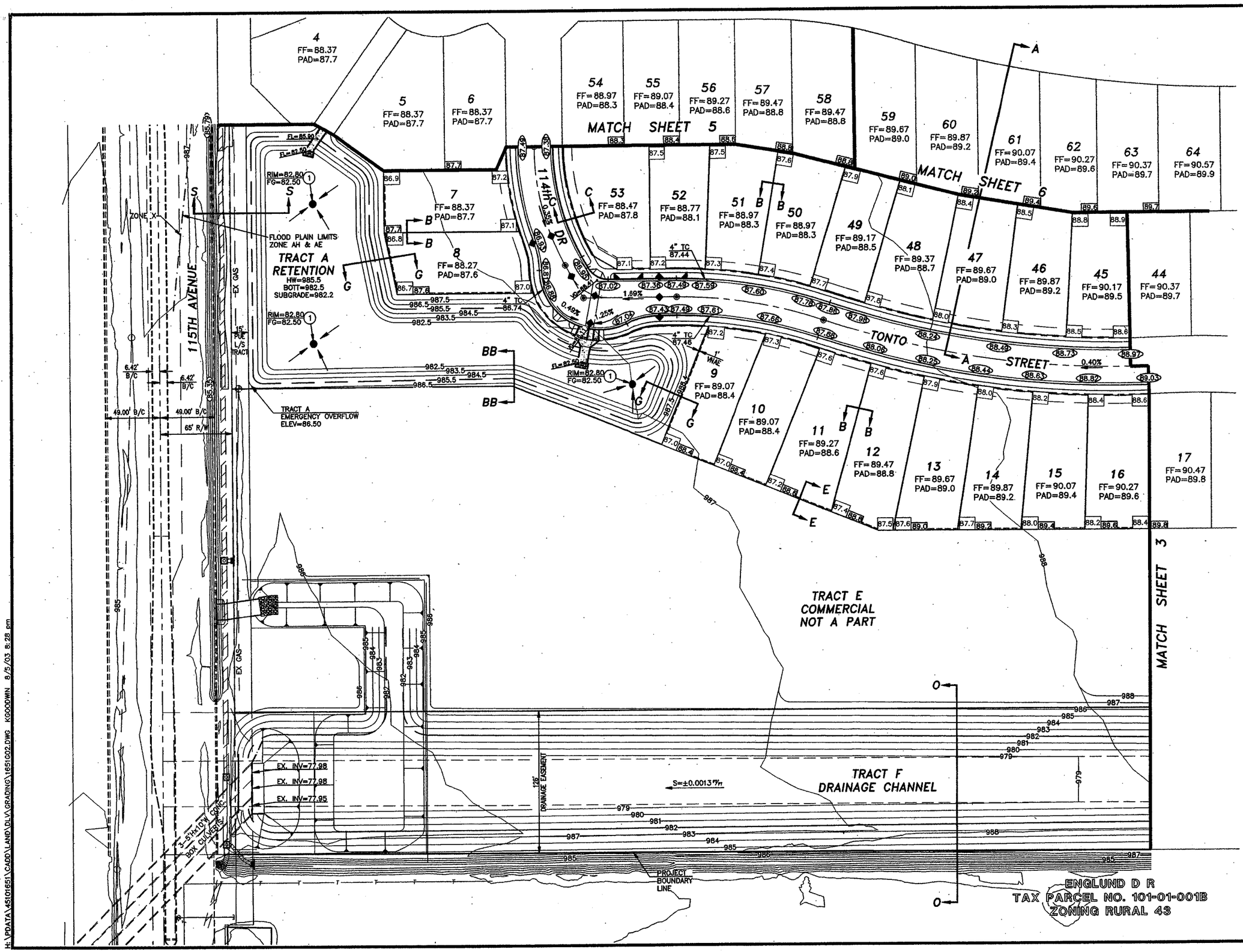
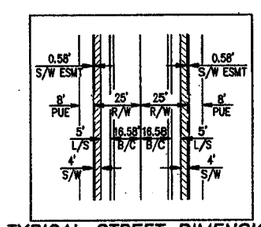


SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE:
   STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

Two working days before you dig CALL FOR THE BLUE STAKES
602-263-1100
Blue Stake Center CALL COLLECT

C.W. RANCH
GRADING PLANS

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Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. IACUELLI Date Signed 8-5-03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: -
PROJECT NUMBER: 45101651
SHEET NO. 2 OF 16 SHEETS

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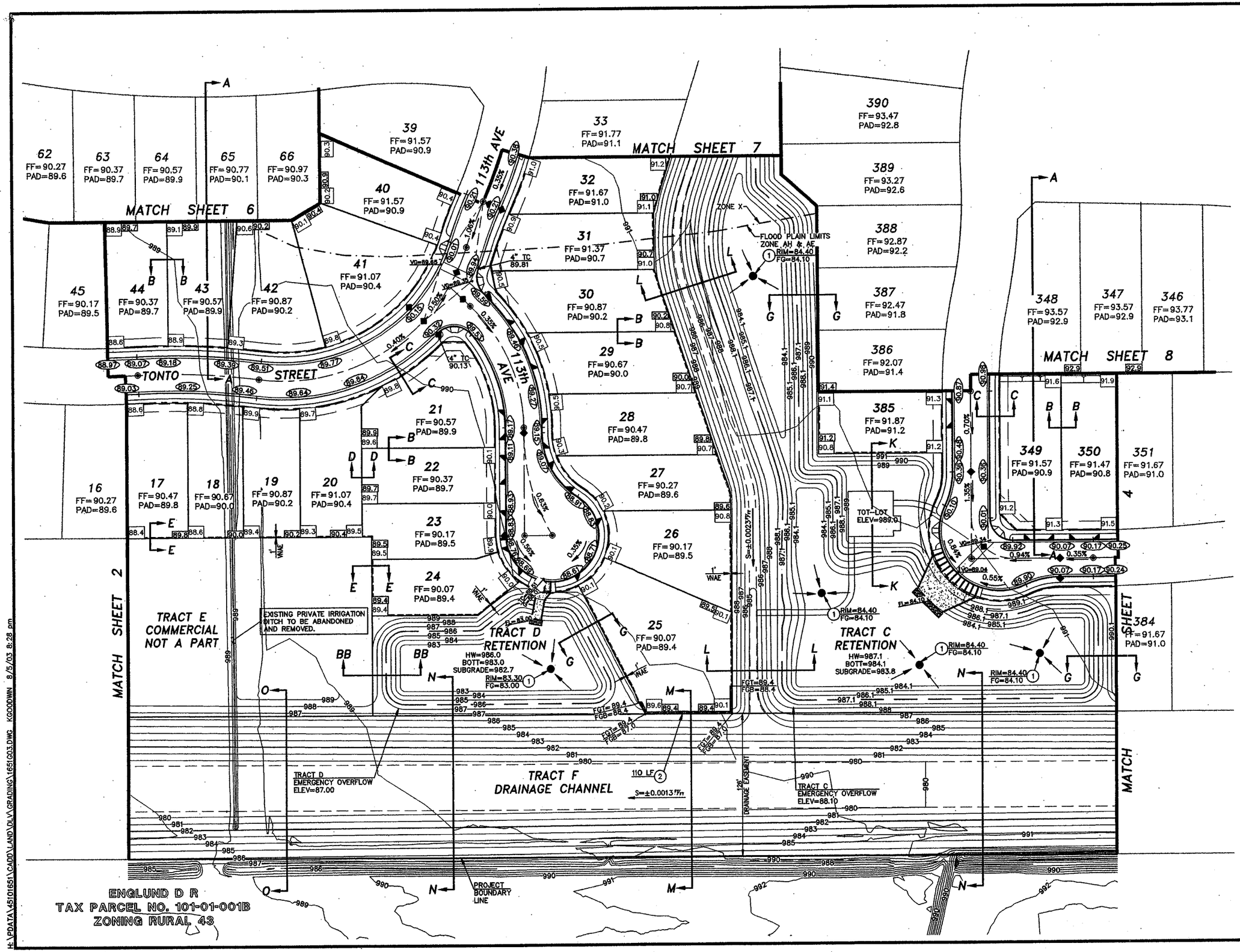
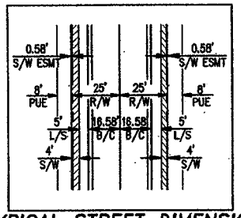


SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL LF PER PLAN. NOTE: STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 Blue Stake, Center CALL COLLECT

C.W. RANCH GRADING PLANS

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602.467.2200 • FAX 602.467.2201 • www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'

ORIGINAL PLAN DATE: AUG/2003

LATEST REVISION: -

PROJECT NUMBER: 45101651

SHEET NO. 3 OF 16 SHEETS

Registered Professional Engineer (Civil) CERTIFICATE NO. 37718 MALCOLM M. MOLELLI Date Signed 8-5-03 Revision

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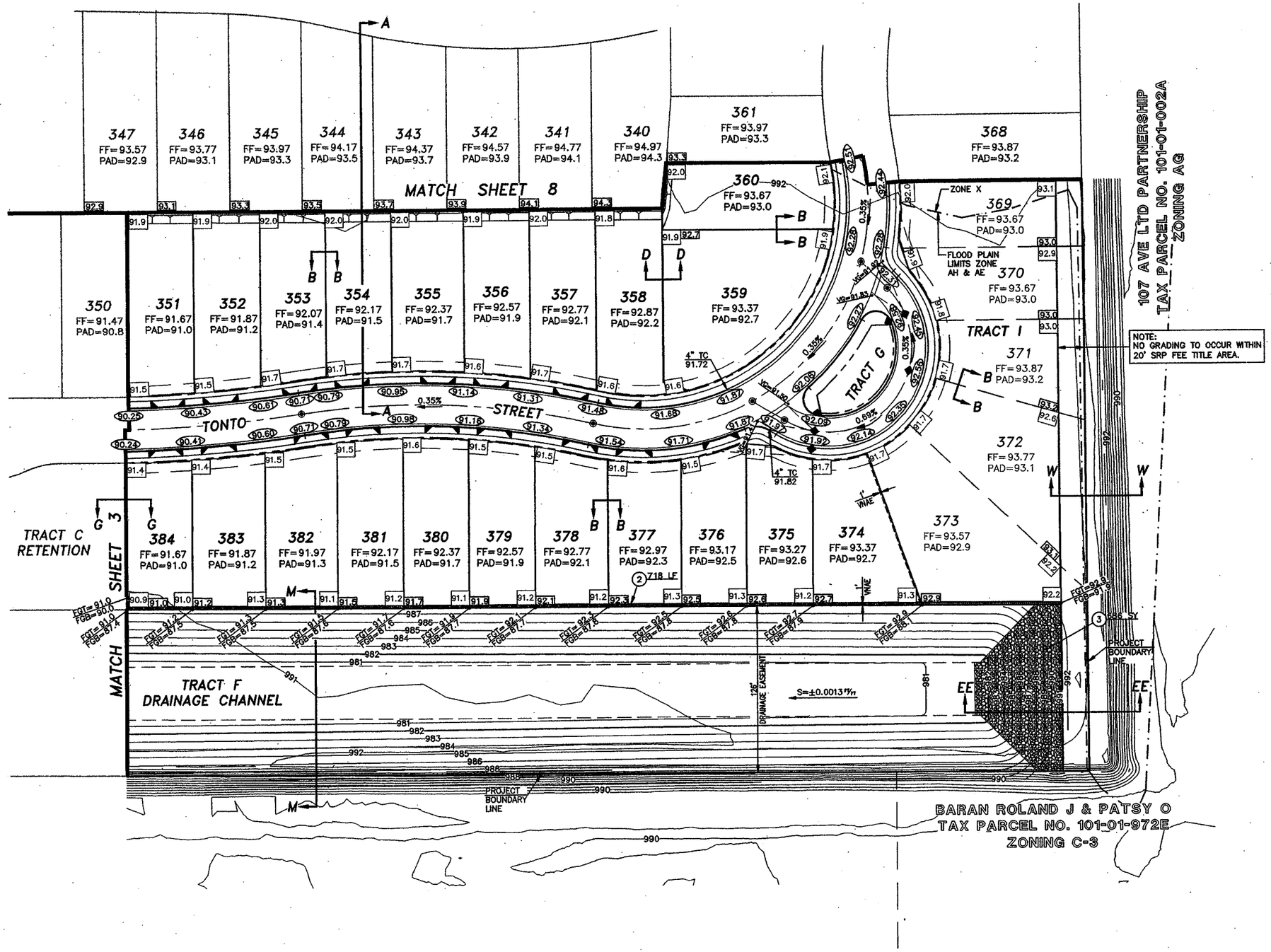
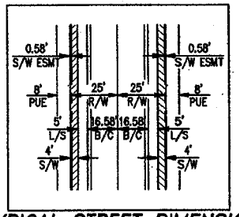


SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE:
   STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

CALL FOR THE BLUE STAKE
602-263-1100
Blue Stake Center
CALL COLLECT

C.W. RANCH
GRADING PLANS

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16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 • FAX 602.467.2201 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAUREEN M. MCLELLAN Date Signed 8-5-03 ARIZONA, U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S) 1" = 40'

ORIGINAL PLAN DATE AUG/2003

LATEST REVISION –

PROJECT NUMBER 45101651

SHEET NO. 4 OF 16 SHEETS

H:\PDATA\45101651\CADD\LAND\DLV\GRADING\1651G04.DWG KGOODWIN 8/5/03 8:29 pm

115th AVENUE

TRACT N

TRACT A RETENTION

TRACT N RETENTION
HW=985.2
BOTT=982.2
SUBGRADE=981.9

TRACT L RETENTION

TRACT L RETENTION

TRACT N EMERGENCY OVERFLOW ELEV=86.61

TRACT L EMERGENCY OVERFLOW ELEV=87.31

FLOOD PLAIN LIMITS ZONE AH & AE

ZONE X

114th LN

114th AVE

114th DR

HADLEY STREET

COLDWATER RANCH BLVD.

MATCH SHEET 2

MATCH SHEET 6

MATCH SHEET 11

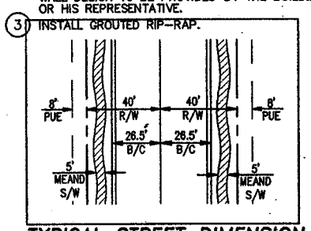
SCALE: 1"=40'

SCALE 1" = 40'

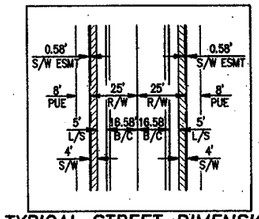
0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE:
   STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION OFF OF COLDWATER RANCH BLVD.



TYPICAL STREET DIMENSION

CALL FOR THE BLUE STAKES
602-263-1100
Blue Stake Center
CALL COLLECT

C.W. RANCH
GRADING PLANS

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7656
602.457.2200 • FAX 602.457.2291 • www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S) 1" = 40'

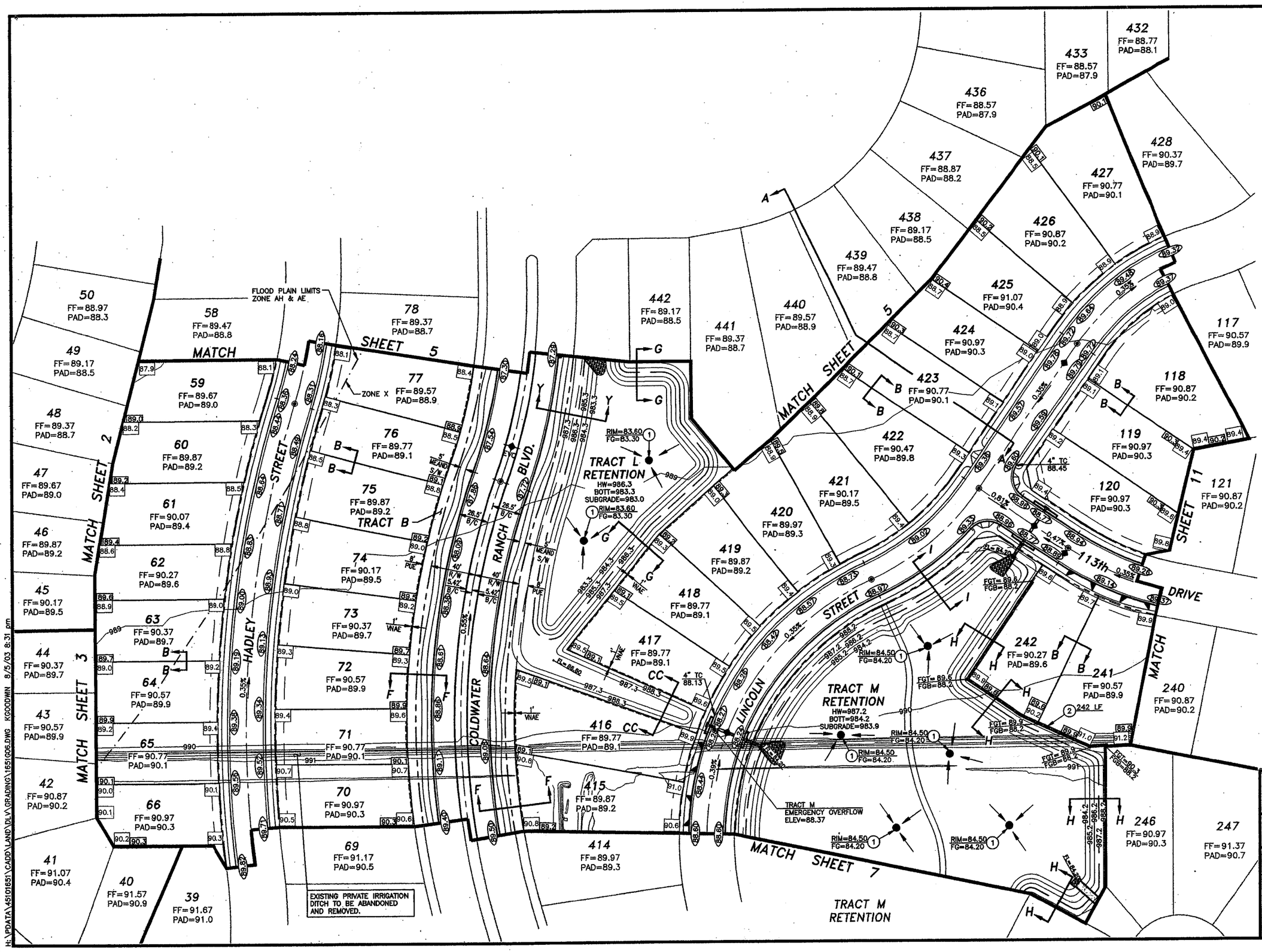
ORIGINAL PLAN DATE AUG/2003

LATEST REVISION –

PROJECT NUMBER 45101651

SHEET NO. 5 OF 18 SHEETS

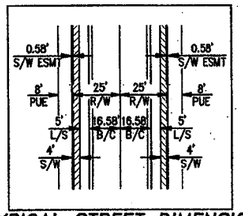
H:\PDATA\45101651\CADD\LAND\DLV\GRADING\1651G05.DWG KGOODWIN 8/5/03 8:30 am



SCALE: 1"=40'

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE:
   STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

602-263-1100

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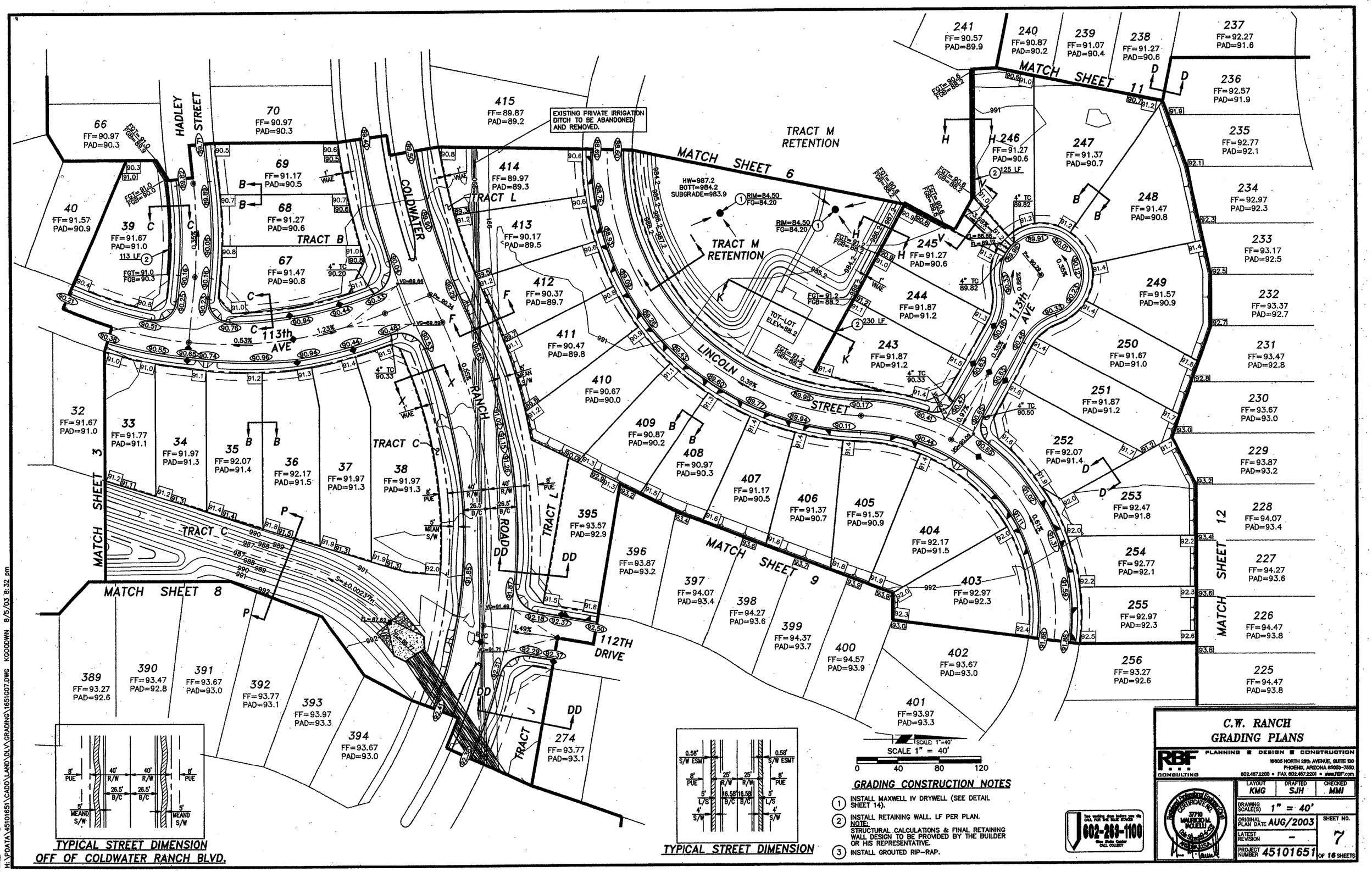
RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7669
602.487.2200 • FAX 602.487.2201 • www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S) 1" = 40'
ORIGINAL PLAN DATE AUG/2003
LATEST REVISION –
PROJECT NUMBER 45101651
SHEET NO. 6 OF 16 SHEETS

H:\PDATA\45101651\CADD\LAND\DLV\GRADING\165\G06.DWG KGOODWIN 8/5/03 8:31 pm



GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE:
   STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.

Two working days before you dig CALL FOR 24-HR. NOTICE 602-263-1100 Blue Stake Center CALL COLLECT

C.W. RANCH GRADING PLANS

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16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7650
602.467.2200 • FAX 602.467.2201 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. INCELLI Date Signed 8-5-03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: –
PROJECT NUMBER: 45101651
SHEET NO. 7 OF 16 SHEETS

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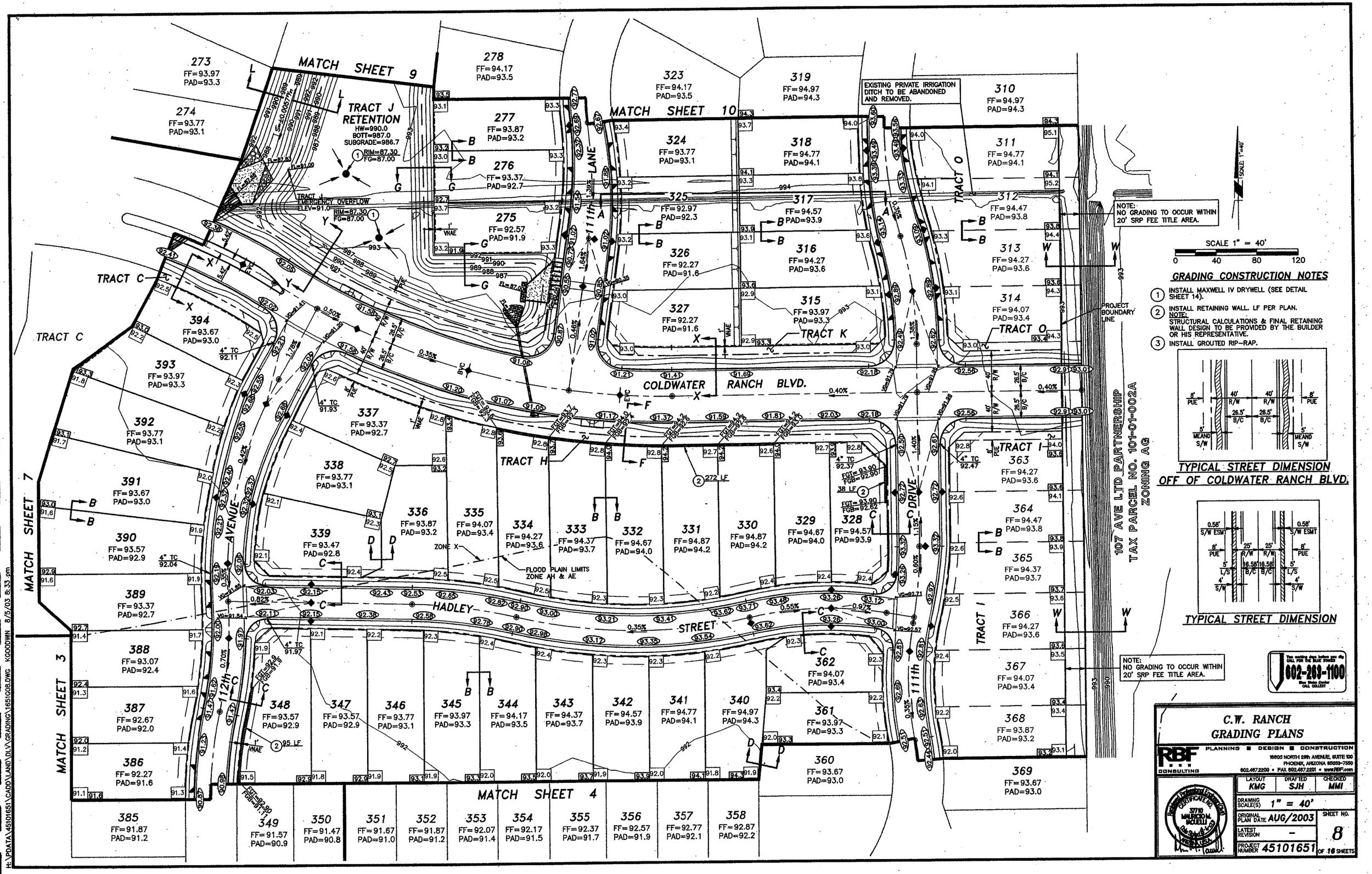

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
   NOTE: STRUCTURAL CALCULATIONS & FINAL RETAINING WALL DESIGN TO BE PROVIDED BY THE BUILDER OR HIS REPRESENTATIVE.
3. INSTALL GROUTED RIP-RAP.

TYPICAL STREET DIMENSION OFF OF COLDWATER RANCH BLVD.

TYPICAL STREET DIMENSION

C.W. RANCH GRADING PLANS

RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7650
602.467.2200 ■ FAX 602.467.2201 ■ www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: –
PROJECT NUMBER: 45101651
SHEET NO. 8 OF 16 SHEETS

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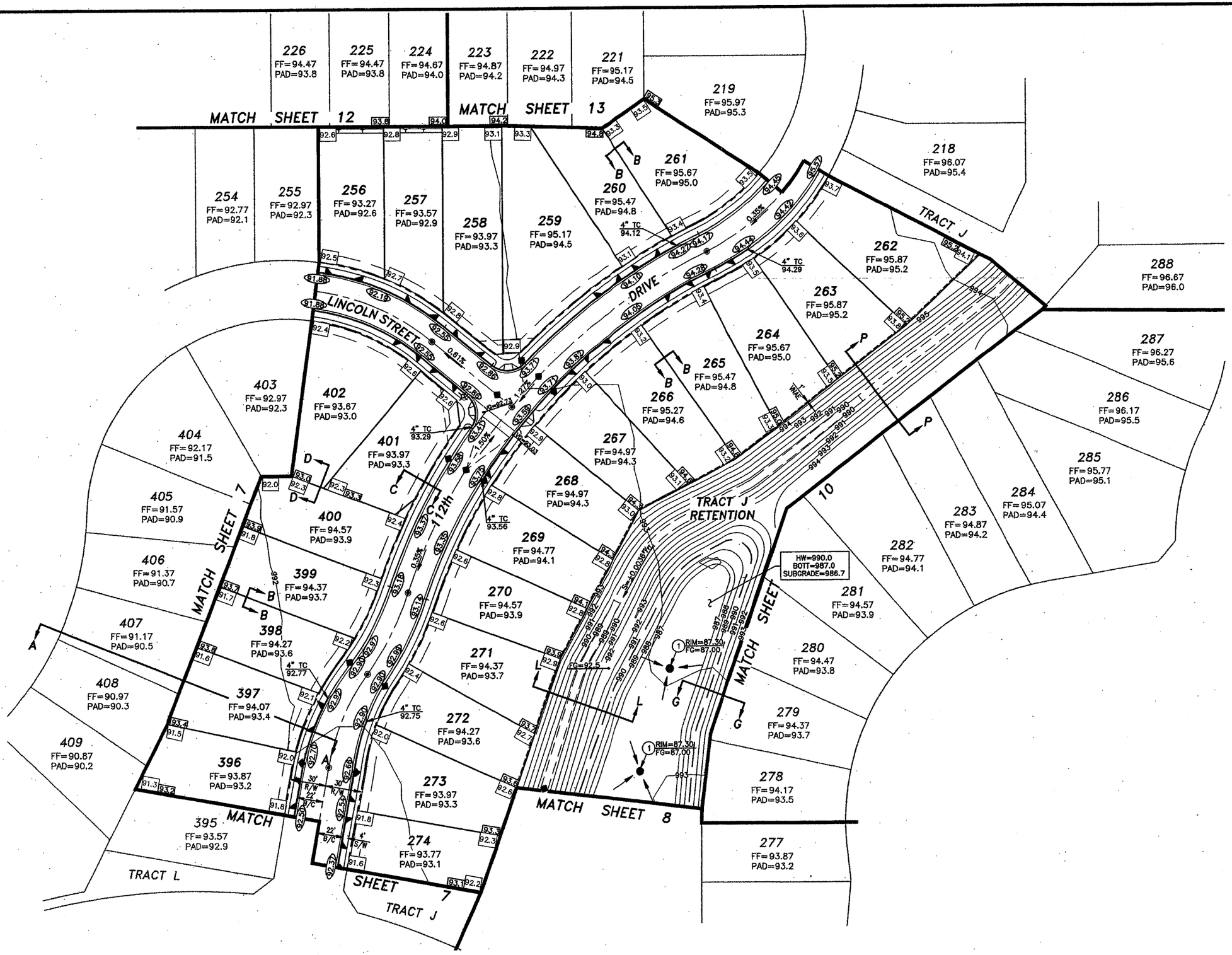

SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
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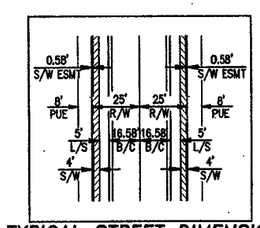
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

602-263-1100

C.W. RANCH
GRADING PLANS

RBF CONSULTING
PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7650
602.487.2200 • FAX 602.487.2201 • www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'

ORIGINAL PLAN DATE: AUG/2003

LATEST REVISION: –

PROJECT NUMBER: 45101651

SHEET NO. 9 OF 16 SHEETS

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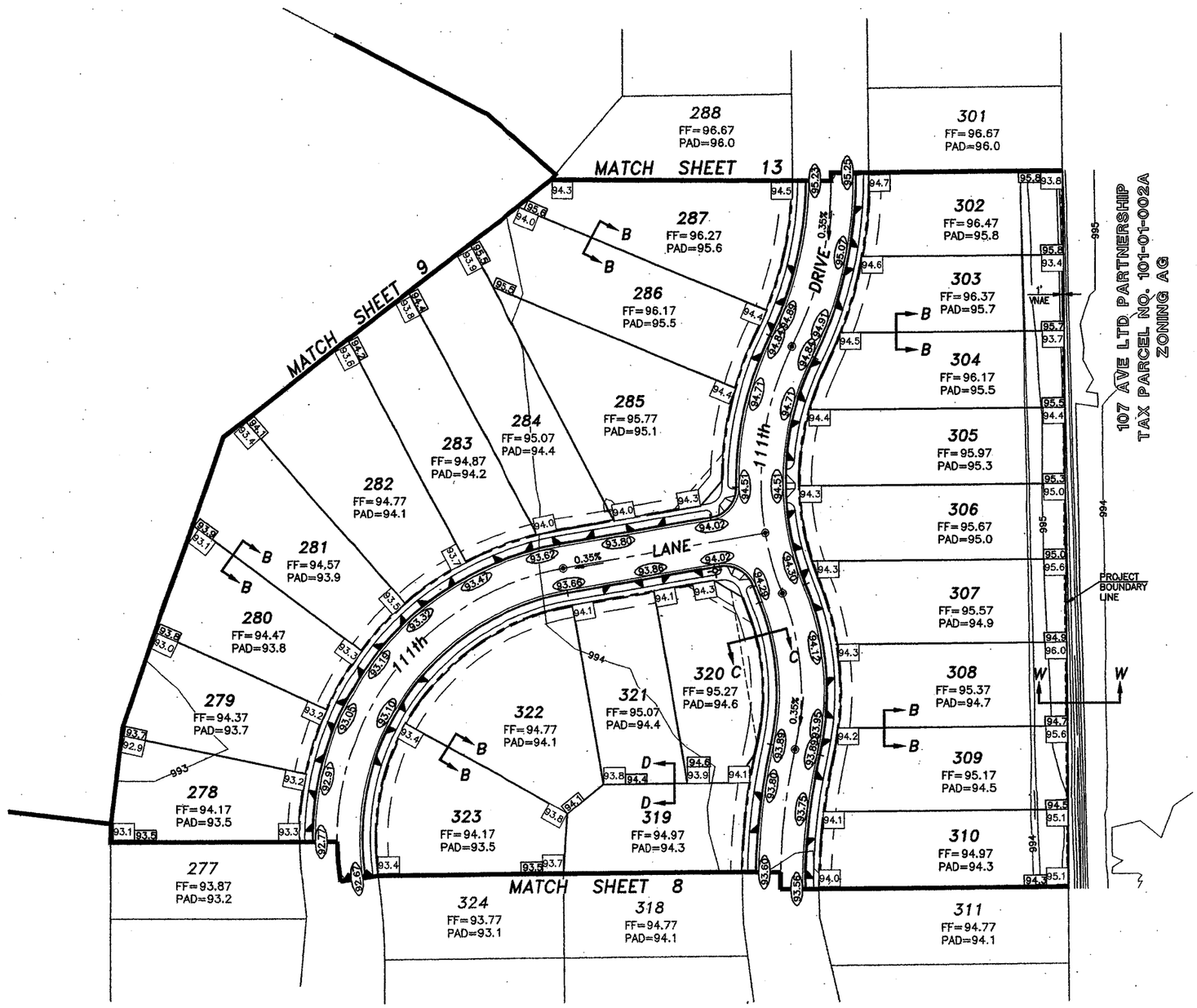

SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

1. INSTALL MAXWELL IV DRYWELL (SEE DETAIL SHEET 14).
2. INSTALL RETAINING WALL. LF PER PLAN.
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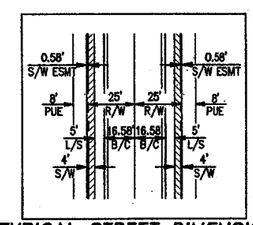


TYPICAL STREET DIMENSION

The mailing date below can be CALL FOR THE BLUE STAKES 602-263-1100 Blue Stake Center CALL COLLECT

C.W. RANCH
GRADING PLANS

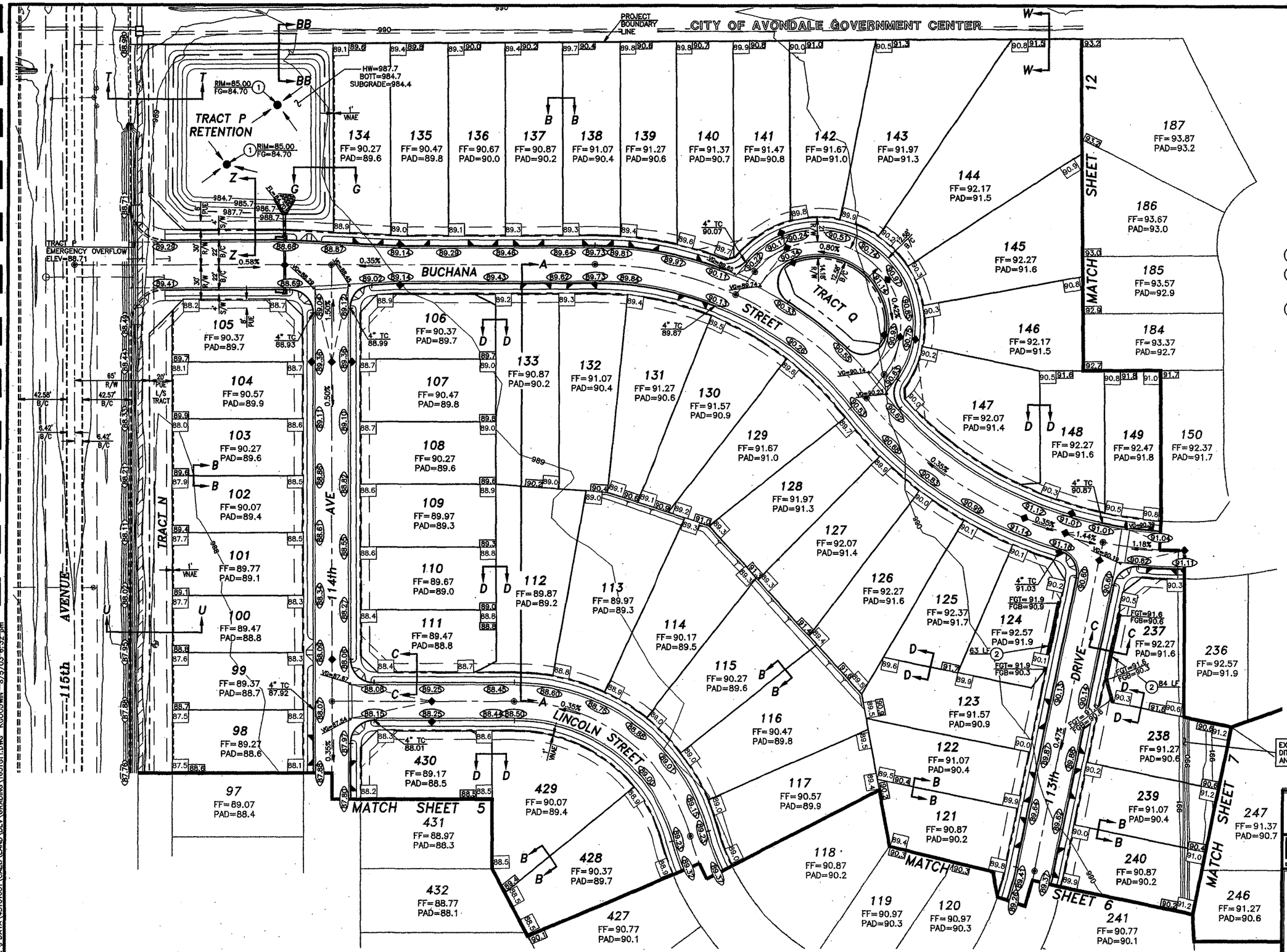
RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7650
602.467.2200 • FAX 602.467.2201 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAUREEN M. IACUELLI Date Signed 8/5/03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: –
PROJECT NUMBER: 45101651
SHEET NO. 10 OF 16 SHEETS

H:\PDATA\45101651\CADD\LAND\DLV GRADING\1651G10.DWG KGOODWIN 8/5/03 6:31 pm



SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

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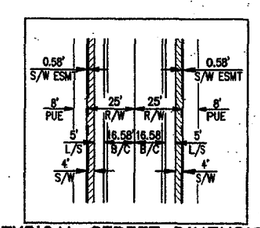


TYPICAL STREET DIMENSION

C.W. RANCH GRADING PLANS

RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7650
602.487.2200 • FAX 602.487.2201 • www.RBF.com

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

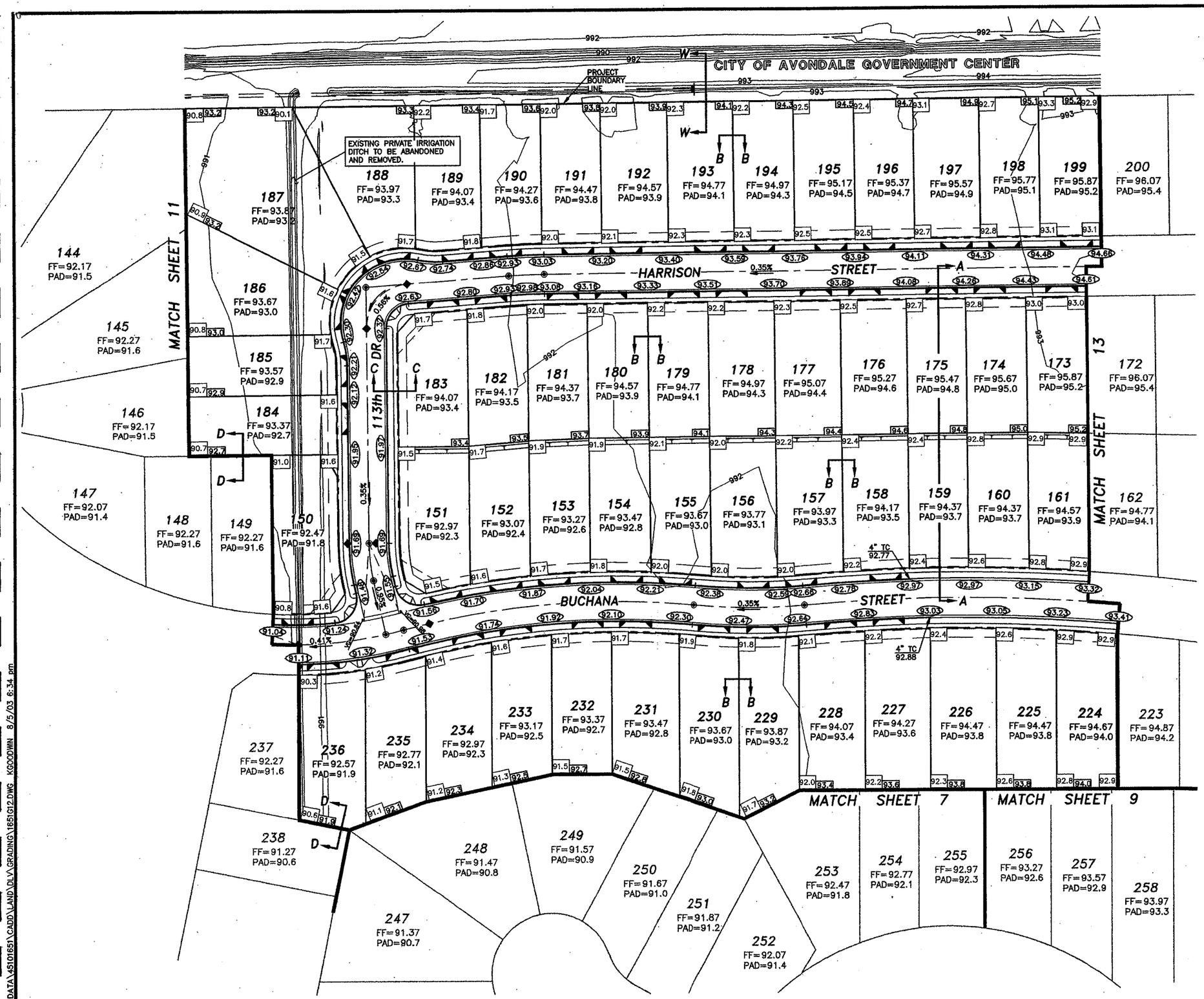
DRAWING SCALE(S): 1" = 40'

ORIGINAL PLAN DATE: AUG/2003

LATEST REVISION: –

PROJECT NUMBER: 45101651

SHEET NO. 11 OF 16 SHEETS



SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

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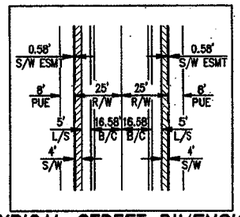


TYPICAL STREET DIMENSION

Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 Blue Stake Center CALL COLLECT

C.W. RANCH
GRADING PLANS

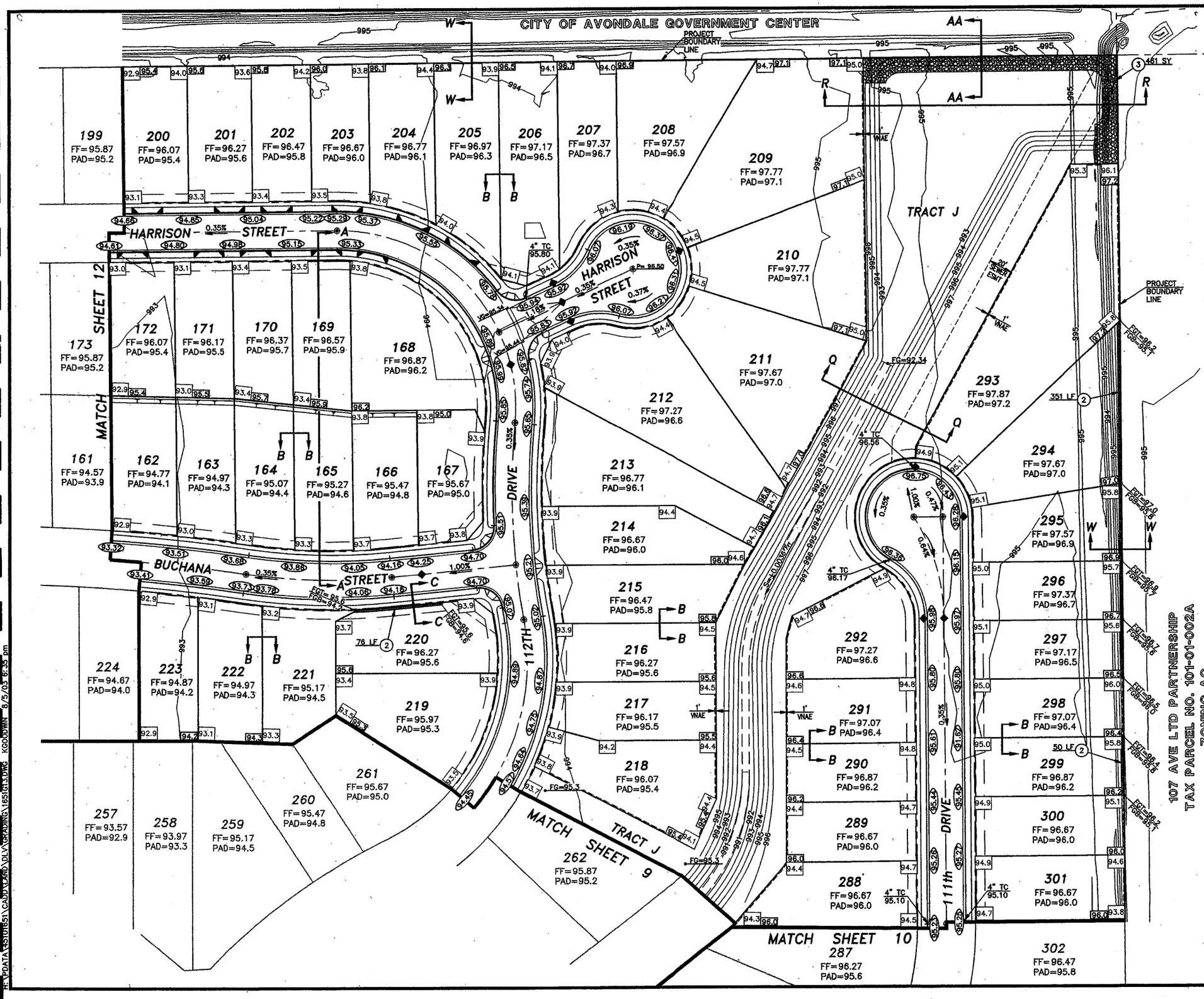
RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7656
602.467.2200 • FAX 602.467.2201 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICE M. MICHELLI Date of Expiration 6/30/04 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S) 1" = 40'
ORIGINAL PLAN DATE AUG/2003
LATEST REVISION -
PROJECT NUMBER 45101651
SHEET NO. 12 OF 16 SHEETS

H:\PDATA\45101651\CADD\LAND\DLV\GRADING\165IG12.DWG KGOODWIN 8/5/03 6:34 pm



SCALE: 1"=40'

SCALE 1" = 40'

0 40 80 120

GRADING CONSTRUCTION NOTES

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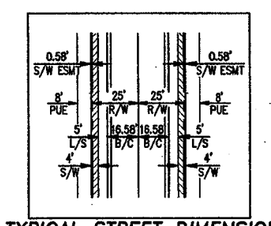
3. INSTALL GROUTED RIP-RAP.



TYPICAL STREET DIMENSION

Two working days before you dig CALL FOR THE BLUE STAKES 602-263-1100 Blue Stake Center CALL COLLECT

C.W. RANCH GRADING PLANS

RBF CONSULTING — PLANNING ■ DESIGN ■ CONSTRUCTION
16605 NORTH 28th AVENUE, SUITE 100
PHOENIX, ARIZONA 85053-7550
602.467.2200 • FAX 602.467.2201 • www.RBF.com

Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAUREEN M. MCLELLAN Date Signed 8/5/03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'

ORIGINAL PLAN DATE: AUG/2003

LATEST REVISION: –

PROJECT NUMBER: 45101651

SHEET NO. 13 OF 16 SHEETS

RE:\PDATA\45101651\CADD\LAND\DLV\GRADING\165161G3.DWG KGOODWIN 8/5/03 8:35 pm

ENGINEER NOTES

THE CONTRACTOR SHALL MAKE NO CLAIM AGAINST THE OWNER OR THE ENGINEER REGARDING ALLEGED INACCURACY OF CONSTRUCTION STAKES SET BY THE ENGINEER UNLESS ALL SURVEY STAKES SET BY THE ENGINEER ARE MAINTAINED INTACT AND CAN BE VERIFIED AS TO THEIR ORIGIN. IF, IN THE OPINION OF THE ENGINEER, THE STAKES ARE NOT MAINTAINED INTACT AND CANNOT BE VERIFIED AS TO THEIR ORIGIN, ANY REMEDIAL WORK REQUIRED TO CORRECT ANY ITEM OR IMPROPER CONSTRUCTION WORK IN THIS DEVELOPMENT SHALL BE PERFORMED AT THE SOLE EXPENSE OF THE RESPONSIBLE CONTRACTOR OR SUBCONTRACTOR.

NOTHING CONTAINED IN THE CONTRACT DOCUMENTS SHALL CREATE, NOR SHALL BE CONSTRUED TO CREATE, ANY CONTRACTUAL RELATIONSHIP BETWEEN THE ENGINEER AND THE CONTRACTOR OR ANY SUBCONTRACTOR.

THE ENGINEER WILL NOT BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES OR PROCEDURES OR FOR SAFETY PRECAUTIONS OR PROGRAMS UTILIZED IN CONNECTION WITH THE WORK, AND HE WILL NOT BE RESPONSIBLE FOR THE CONTRACTOR'S FAILURE TO CARRY OUT THE WORK IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

THE ENGINEER MAKES NO REPRESENTATION OR GUARANTEE REGARDING EARTHWORK QUANTITIES OR THAT THE EARTHWORK FOR THIS PROJECT WILL BALANCE DUE TO THE VARYING FIELD CONDITIONS, CHANGING SOIL TYPES, ALLOWABLE CONSTRUCTION TOLERANCES AND CONSTRUCTION METHODS THAT ARE BEYOND THE CONTROL OF THE ENGINEER.

PRIOR TO BIDDING THE WORK THE CONTRACTOR SHALL THOROUGHLY SATISFY HIMSELF AS TO THE ACTUAL CONDITIONS AND EARTHWORK QUANTITIES, IF ANY. NO CLAIM SHALL BE MADE AGAINST THE OWNER/DEVELOPER OR ENGINEER FOR ANY EXCESS OR DEFICIENCY THEREIN, ACTUAL OR RELATIVE.

THE ENGINEER WILL PERFORM FIELD SURVEYS FOR PAD ELEVATION CERTIFICATIONS UPON NOTIFICATION BY THE GRADING CONTRACTOR THAT THE PADS ARE COMPLETE AND READY FOR CERTIFICATION. IT IS UNDERSTOOD THAT THE CERTIFICATION PROVIDES ONLY A REPRESENTATIVE ELEVATION OF THE AVERAGE GRADE OF EACH LOT, BUILDINGS OR UNIT PAD, AND SHALL NOT BE CONSTRUED TO INCLUDE YARD AND STREET SUBGRADE CERTIFICATION OR CERTIFICATION THAT THE ENTIRE PAD IS LEVEL, THAT IT WAS CONSTRUCTED IN THE DESIGNED LOCATION OR WAS GRADED TO THE CROSS-SECTION SET FORTH ON THE PLANS OR AS DESIGNATED IN THE SOILS REPORT.

EXISTING UTILITIES SHOWN ON THESE PLANS HAVE BEEN LOCATED ACCORDING TO INFORMATION PROVIDED BY THE AGENCY OPERATING EACH UTILITY. LOCATIONS SHOWN ARE APPROXIMATE ONLY, AND ARE NOT RELIABLE FOR CONSTRUCTION PURPOSES. CALL BLUE STAKE FOR FIELD LOCATION @ (602) 263-1100 48 HOURS PRIOR TO CONSTRUCTION.

THE ENGINEER AND APPLICABLE AGENCY MUST APPROVE, PRIOR TO CONSTRUCTION, ANY ALTERATION OR VARIANCE FROM THESE PLANS. ANY VARIATIONS FROM THESE PLANS SHALL BE PROPOSED ON CONSTRUCTION FIELD PRINTS AND TRANSMITTED TO THE ENGINEER.

THE CONTRACTOR SHALL PROTECT AND MAINTAIN ALL EXISTING UTILITIES ON THE SITE. ANY DAMAGE TO EXISTING UTILITIES, WHETHER SHOWN OR NOT ON THE DRAWINGS, SHALL BE REPAIRED/REPLACED AT THE CONTRACTOR'S EXPENSE. EXISTING SURFACE FEATURES AND FENCING SHALL BE REPLACED IN KIND.

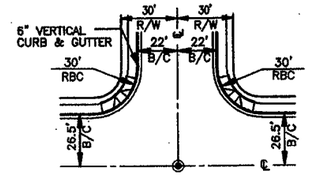
ANY INSPECTION BY THE CITY, COUNTY, OR THE ENGINEER, SHALL NOT, IN ANY WAY, RELIEVE THE CONTRACTOR FROM ANY OBLIGATION TO PERFORM THE WORK IN STRICT COMPLIANCE WITH APPLICABLE CODES AND AGENCY REQUIREMENTS.

CONTRACTOR TO LOCATE ALL EXISTING PROPERTY MONUMENTS PRIOR TO CONSTRUCTION. ANY MONUMENTS DISTURBED DURING THE CONSTRUCTION OF THIS PROJECT SHALL BE REPLACED BY A REGISTERED LAND SURVEYOR AT THE CONTRACTOR'S EXPENSE.

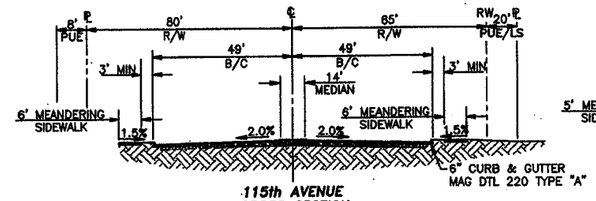
TRAFFIC CONTROL SHALL BE MAINTAINED IN ACCORDANCE WITH THE MAG SPECIFICATION 401 AND THE CITY OF PHOENIX BARRICADE MANUAL.

PRIOR TO FINAL APPROVAL AND ACCEPTANCE OF THE WORK THE DEVELOPER/CONTRACTOR WILL BE REQUIRED TO CLEAN AND REPAIR ADJACENT (OFF-PROJECT) ROADWAYS USED OR DAMAGED DURING THE COURSE OF CONSTRUCTION.

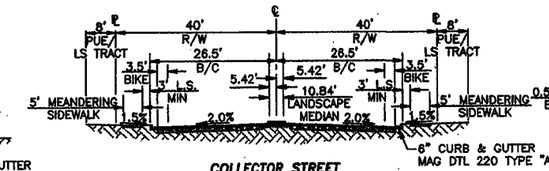
CONTRACTOR IS RESPONSIBLE FOR PROTECTING ALL STORM DRAIN PIPES AND DRAINAGE FACILITIES FROM DAMAGE DURING ALL STAGES OF CONSTRUCTION. THE DEPTH OF COVER ON THE STORM DRAINAGE PIPE IS DESIGNED FOR FINAL GRADE, THEREFORE, EXTRA CARE SUCH AS BERMING OVER PIPES, FLAGGING OR SIGNAGE SHOULD BE USED DURING CONSTRUCTION TO MAINTAIN COVER OR PROTECT THE PIPES.



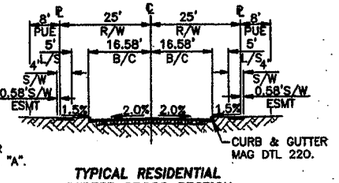
TYPICAL ENTRANCE COLLECTOR STREET DETAIL



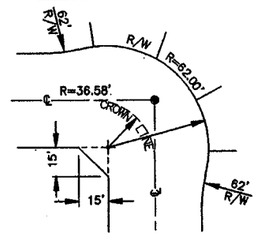
115th AVENUE CROSS SECTION
NTS
TO BE BUILT BY CITY OF AVONDALE LOOKING NORTH



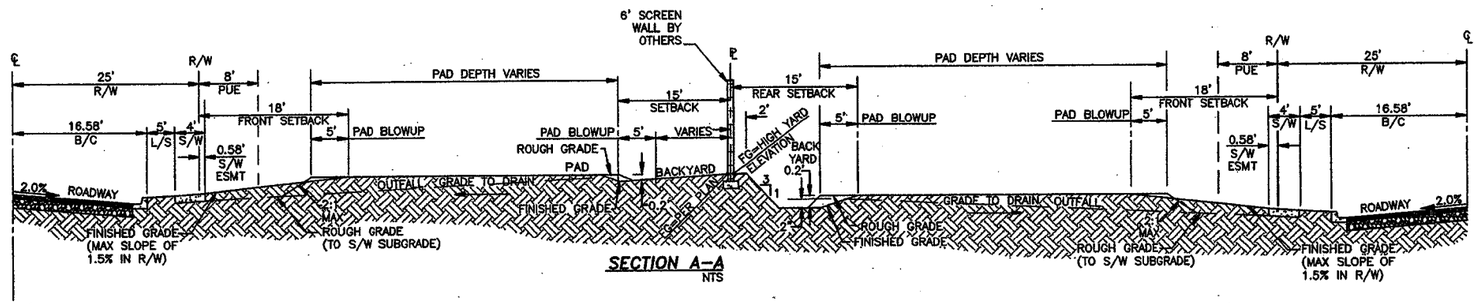
COLLECTOR STREET CROSS SECTION
NTS



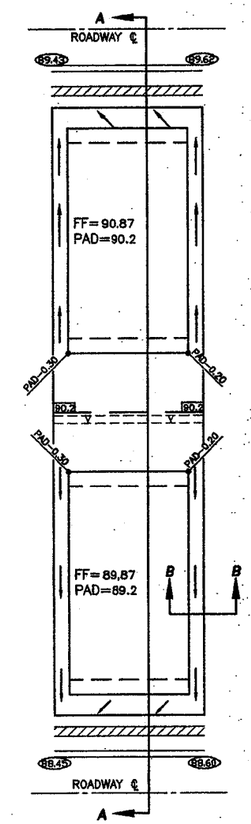
TYPICAL RESIDENTIAL STREET CROSS SECTION
NTS



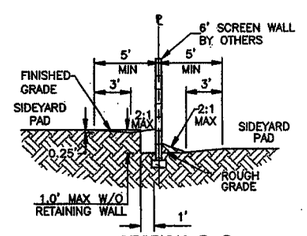
TYPICAL ELBOW R/W DETAIL



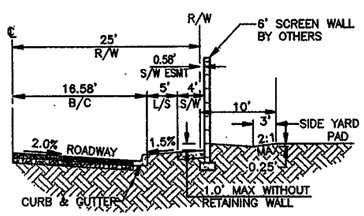
SECTION A-A
NTS



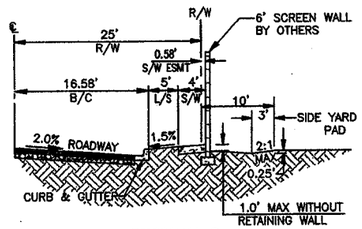
TYPICAL LOT GRADING PLAN



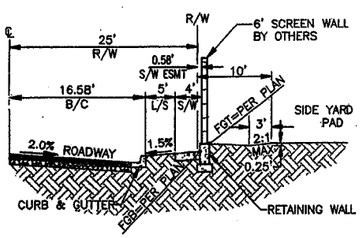
SECTION B-B
(W/O RETAINING WALL)
NTS



SECTION C-C
PAD HIGHER THAN STREET
(W/O RETAINING WALL)



SECTION C-C
PAD LOWER THAN STREET
(W/O RETAINING WALL)
NTS



SECTION C-C
PAD HIGHER THAN STREET
(W/ RETAINING WALL)
NTS

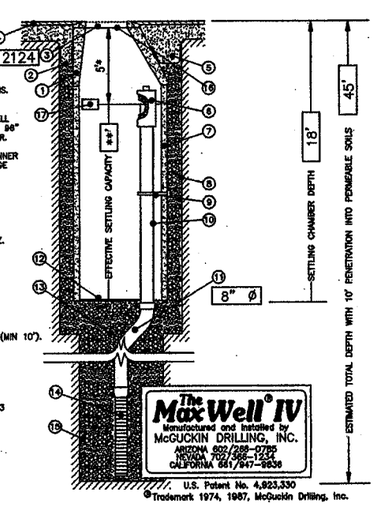
MaxWell IV® Drainage System Detail And Specifications

1. MANHOLE CONE – MODIFIED FLAT BOTTOM.
2. MOISTURE MEMBRANE – 6 MIL PLASTIC. PLACE SECURELY AGAINST CONE AND HOLE SIDEWALL.
3. BOLTED RING & GRATE – CLEAN CAST IRON WITH WORDING "STORM WATER ONLY" IN RAISED LETTERS AND BOLTED IN TWO LOCATIONS, SECURED TO CONE WITH MORTAR. RIM ELEVATION ±0.02' OF PLANS.
4. GRADED BASIN OR PAVING – (BY OTHERS).
5. COMPACTED BASE MATERIAL – (BY OTHERS).
6. PUREFLO® DEBRIS SHIELD – ROLLED 16 GA. STEEL X 24" LENGTH WITH VENTED ANTI-SIPHON AND INTERNAL .265" MAX. SWO FLATTENED EXPANDED STEEL SCREEN X 12" LENGTH. FUSION BONDED EPOXY COATED.
7. PRECAST LINER – 4000 PSI CONCRETE 48" ID. 54" OD. CENTER IN HOLE AND ALIGN SECTIONS TO MAXIMIZE BEARING SURFACE.
8. MIN. 6' ø DRILLED SHAFT.
9. SUPPORT BRACKET – FORMED 12 GA. STEEL. FUSION BONDED EPOXY COATED.
10. OVERFLOW PIPE – SCH 40 PVC MATED TO DRAINAGE PIPE BELOW BASE SEAL.
11. DRAINAGE PIPE – ADS HIGHWAY GRADE WITH MDI-A COUPLER. SUSPEND PIPE DURING BACKFILL OPERATIONS TO PREVENT BUCKLING OR BREAKAGE.
12. BASE SEAL – GEOTEXTILE, POLY LINER OR CONCRETE SLURRY.
13. ROCK – CLEAN AND WASHED, SIZED BETWEEN 3/8" AND 1-1/2", TO BEST COMPLEMENT SOIL CONDITIONS.
14. FLOFAST DRAINAGE SCREEN – SCHEDULE 40 PVC 0.120 SLOTTED WELL SCREEN WITH 32 SLOTS PER ROW/FT. 96" OVERALL LENGTH WITH MDI-B COUPLER.
15. MIN. 4' ø SHAFT – DRILLED IN A MANNER TO MAINTAIN PERMEABILITY OF DRAINAGE SOILS.
16. FABRIC SEAL – UV RESISTANT GEOTEXTILE – TO BE REMOVED BY CUSTOMER AT PROJECT COMPLETION.
17. ABSORBENT – HYDROPHOBIC PETROCHEMICAL SPONGE. MIN. 100 OZ. CAPACITY.

* FREEBOARD DEPTH VARIES WITH INLET PIPE ELEVATION. INCREASE INTERCEPTOR/SETTLING CHAMBER DEPTH AS NEEDED TO MAINTAIN ALL INLET PIPE ELEVATIONS ABOVE CONNECTOR PIPE OVERFLOW.

** TO BE DETERMINED IN THE FIELD. (MIN 10').

AZ Lic. 70485 47067, ADWR 363
CA Lic. 528080, HAZ.
NV Lic. 35350



U.S. Patent No. 4,923,330
®Trademark 1974, 1987, McGuckin Drilling, Inc.

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Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICE M. McCLELLI Date Signed 8-5-03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: –
PROJECT NUMBER: 45101651
SHEET NO. 14 OF 16 SHEETS

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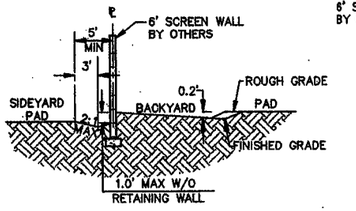

SECTION D-D
(W/O RETAINING WALL)
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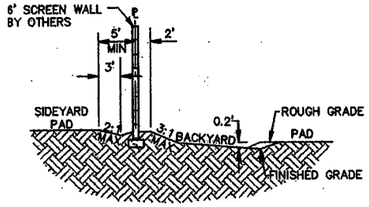
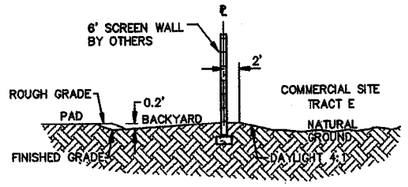
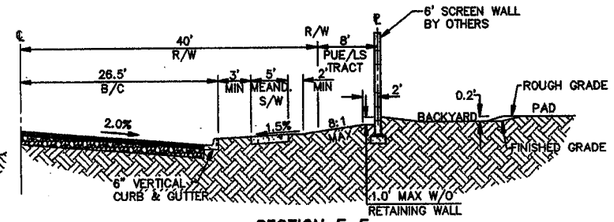
BACKYARD HIGHER THAN SIDEYARD



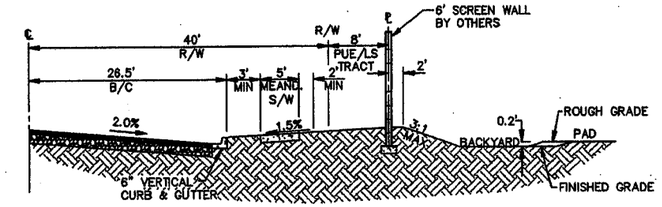
SECTION D-D
SIDEYARD HIGHER THAN BACKYARD
(W/O RETAINING WALL)
NTS



SECTION E-E
NTS



SECTION F-F
NTS
PAD HIGHER THAN STREET



SECTION F-F
NTS
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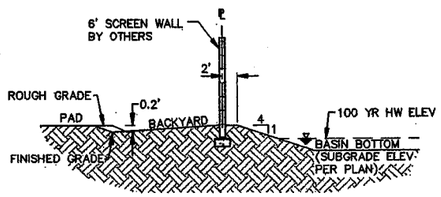

SECTION G-G
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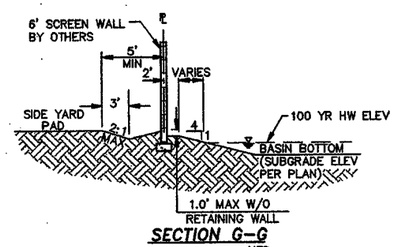
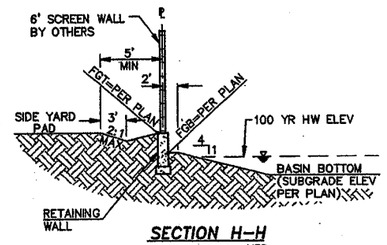
REAR YARD CONDITION



SECTION G-G
NTS
SIDE YARD CONDITION



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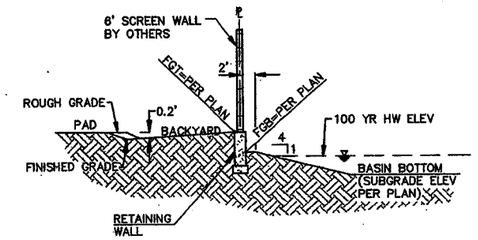
SIDE YARD CONDITION



SECTION H-H
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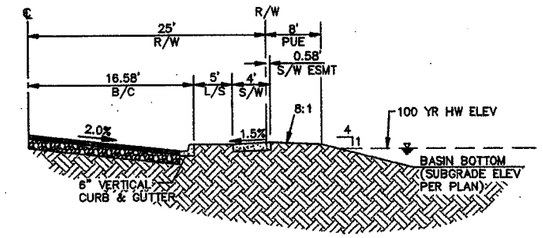
REAR YARD CONDITION



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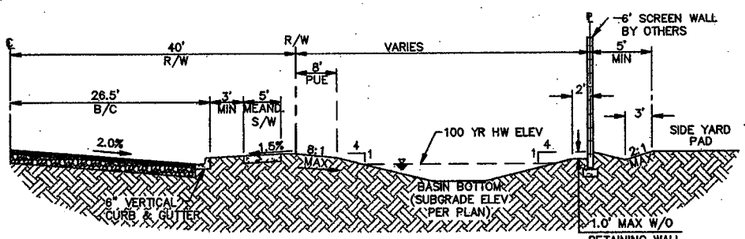

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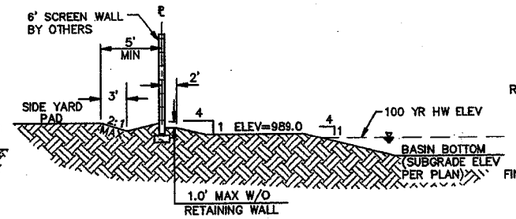

SECTION K-K
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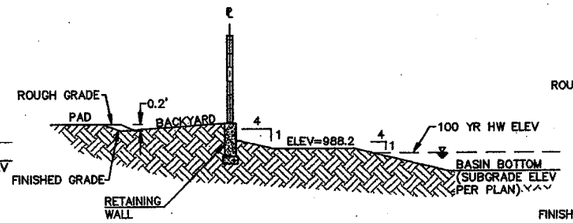
SIDE YARD CONDITION



SECTION K-K
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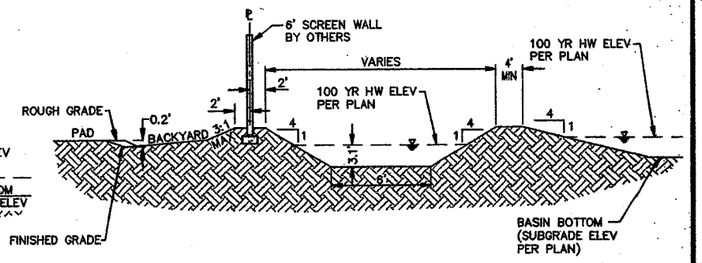
REAR YARD CONDITION



SECTION L-L
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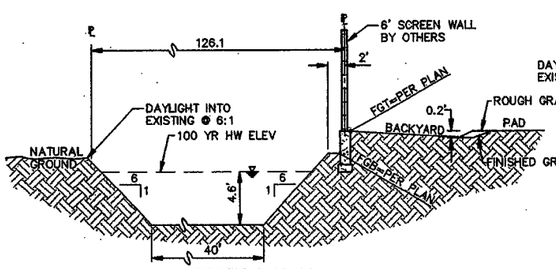

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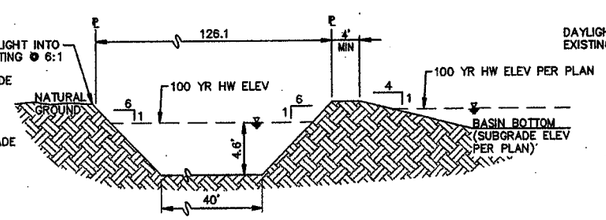

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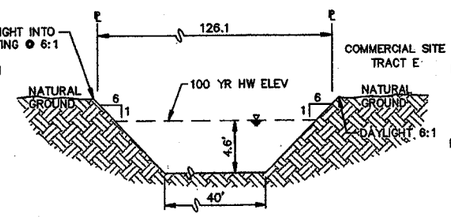

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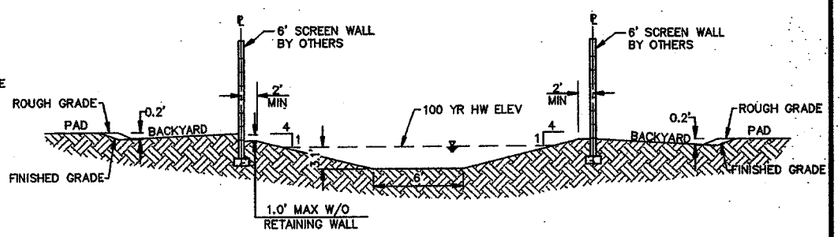

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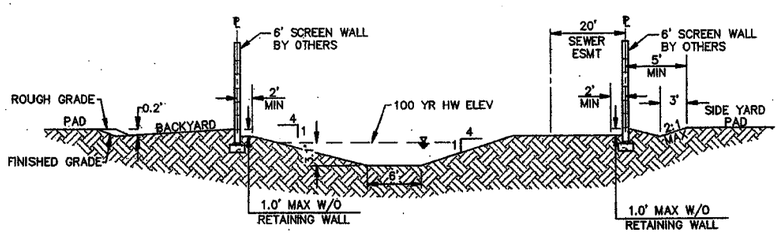

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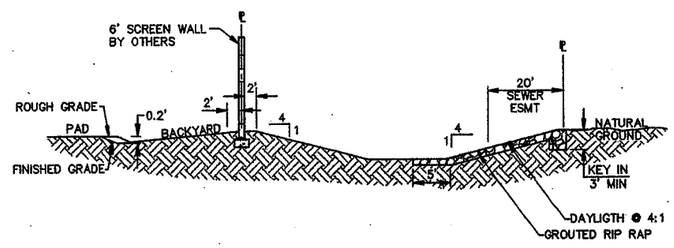

SECTION R-R
NTS

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Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. IACUELLI Date Signed 8/5/03 Arizona, U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S)	1" = 40'
ORIGINAL PLAN DATE	AUG/2003
LATEST REVISION	-
PROJECT NUMBER	45101651
SHEET NO.	15 OF 18 SHEETS

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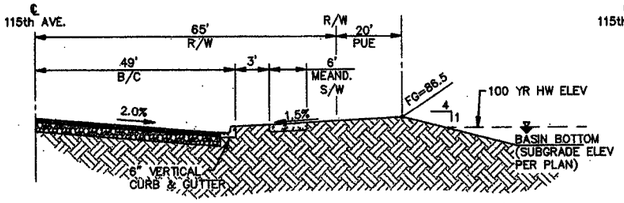

SECTION S-S
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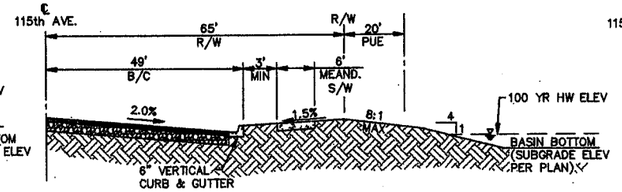

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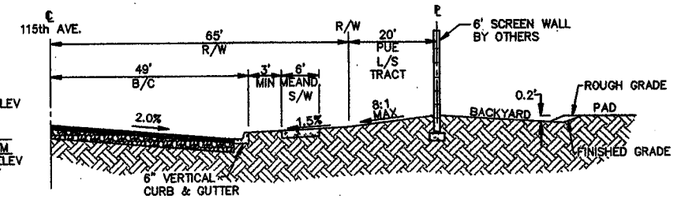

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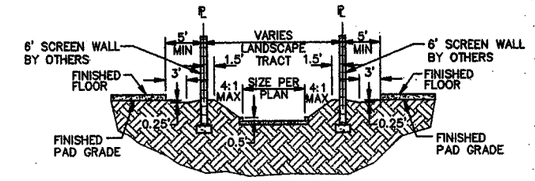

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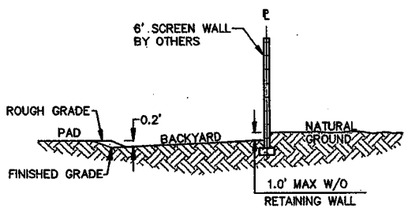
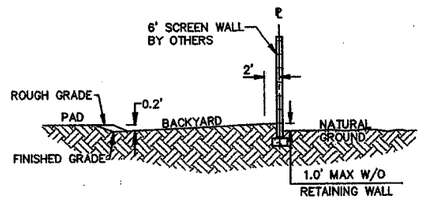
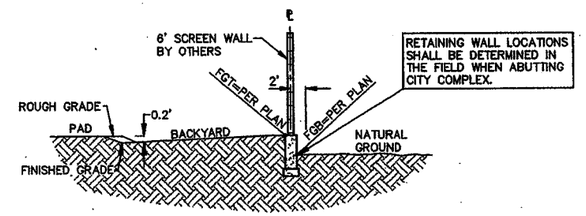


SECTION W-W
BACKYARD LOWER THAN NATURAL GROUND
NTS



SECTION W-W
BACKYARD HIGHER THAN NATURAL GROUND
NTS



SECTION W-W
BACKYARD HIGHER THAN NATURAL GROUND
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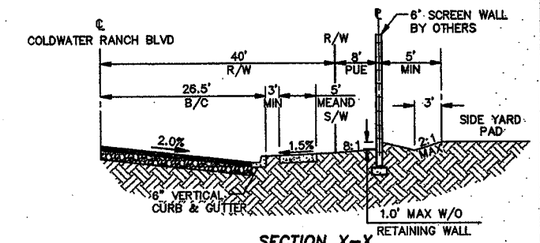

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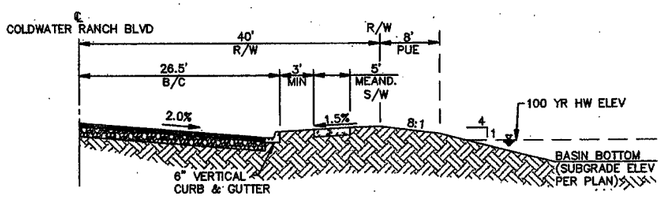

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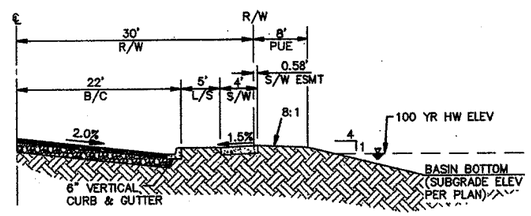

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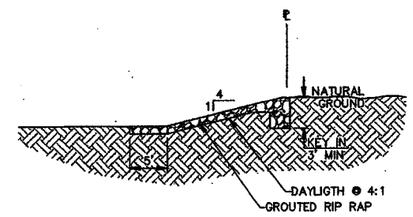

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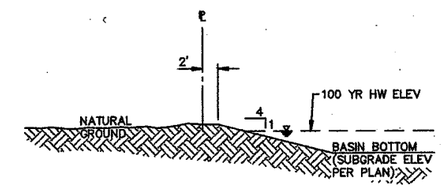

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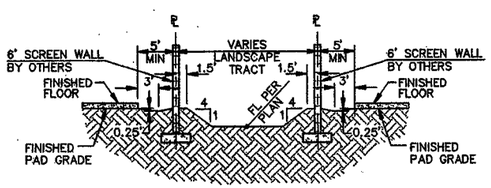

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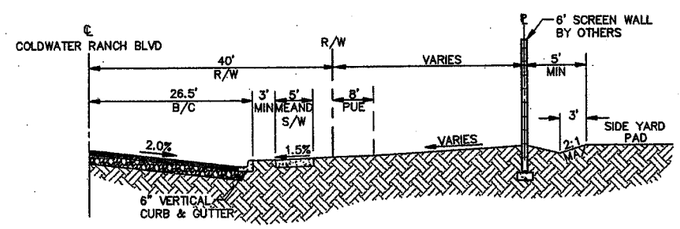

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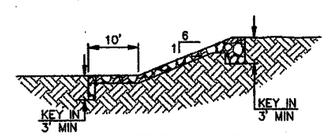

SECTION EE-EE
NTS

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Registered Professional Engineer (Civil) CERTIFICATE NO. 37710 MAURICIO M. INCIELLI Date Signed 8-5-03 ARIZONA U.S.A.

LAYOUT	DRAFTED	CHECKED
KMG	SJH	MMI

DRAWING SCALE(S): 1" = 40'
ORIGINAL PLAN DATE: AUG/2003
LATEST REVISION: –
PROJECT NUMBER: 45101651
SHEET NO.: 16 OF 16 SHEETS

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Appendix G: Computer Disk Containing Electronic Files