FLOODPLAIN STUDY FOR CHANNELIZATION OF SKUNK CREEK 51ST AVENUE TO 48TH AVENUE REACH

COE & VAN LOO
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LANDSCAPE ARCHITECTURE
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FLOODPLAIN STUDY FOR CHANNELIZATION OF SKUNK CREEK 51ST AVENUE TO 48TH AVENUE REACH

March 18, 1986

Prepared For:
Roadrunner Homes
14255 N. 76th Place, Suite A-1
Scottsdale, Arizona 85160
(602) 998-4444

Prepared By:
Coe & Van Loo Consulting Engineers, Inc.
4550 North 12th Street
Phoenix, Arizona 85014
(602) 264-6831

Job #1053-15
CVL #4/20/24

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Registered Professional Engineer (Civil)
CERTIFICATE NO. 10512
ASHOK C. PATEL
Date Signed 3/13/86
ARIZONA, U.S.A.

Job #1053-15
CVL #4/20/24

CVL

LETTER OF TRANSMITTAL

COE & VAN LOO
PLANNING • ENGINEERING
LANDSCAPE ARCHITECTURE
4550 NORTH 12TH STREET
PHOENIX, ARIZONA 85014
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WILLIAM C. GILLASPY, L.S.
NEWELL ROUNDY, R.L.A.
JAY AHRENS, P.E.
MICHAEL G. RHODES, P.E.

TO: Chief Hydrologist
Maricopa County Flood Control District
3335 West Durango Street
Phoenix, Arizona 85009

ATTN: Dave Johnson

RE: FLOODPLAIN STUDY 51ST AVE & UTOPIA

DATE	CVL JOB NO.
June 3, 86 ~~March 19, 1986~~	1053-15

GENTLEMEN:

WE ARE SENDING YOU HEREWITH ☐ ORIGINALS ☐ COPIES OF THE FOLLOWING:

☐ AS REQUESTED BY: _____

PLATS:
- ____ SKETCH
- ____ PRELIMINARY PLAT
- ____ PRE-FINAL
- ____ FINAL
- ____ MAP OF DEDICATION

PLANS & DRAWINGS:
- ____ MASTER PLAN
- ____ SITE PLAN
- ____ WATER
- ____ SEWER
- ____ PAVING
- ____ GRADING & DRAINAGE
- ____ DEVELOPMENT
- ____ BOUNDRY & TOPO SURVEY
- ____ HORIZONTAL REGIME MAP
- ____ LANDSCAPE PLANS
- ____ IRRIGATION
- ____ IMPROVEMENT PLANS
- ____ ALTA SURVEY

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ASST	LMgt
ADMIN	SUSP
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FINANCE	
REMARKS	

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- ____ SOILS TEST
- ____ LEGAL DESCRIPTION
- ____ COST ESTIMATES
- ____ QUANTITY ESTIMATE
- ____ SPECIFICATIONS
- X DRAINAGE STUDY Floodplain

FORMS AND APPLICATIONS
- ____ SUBDIVISION APPLICATION
- ____ APPLICATION FOR APPROVAL TO CONSTRUCT
- ____ WATER SERVICE AGREEMENT
- ____ SEWER SERVICE AGREEMENT
- ____ GARBAGE SERVICE AGREEMENT

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FOR _____

THESE ARE TRANSMITTED:

☒ FOR REVIEW ☒ FOR APPROVAL ☒ FOR YOUR USE ☐ FOR SIGNATURE

REMARKS: The concept of this report has been approved by the City of Phoenix. (Attached)

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RECEIVED BY: _____ DATE: _____

SINCERELY,
COE & VAN LOO
Ashok Patel, P.E.

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2a - Natural Conditions, Present 100-year Flood
2b - Proposed Channelization Condition, Present 100-year Flood

Registered Professional Engineer (Civil)
CERTIFICATE NO. 10712
SHOK-C. RATEL
Date Signed 3/18/86
ARIZONA, U.S.A.

Job #1053-15
CVL #4/20/24

CVL

COE & VAN LOO

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Civil Engineering
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WILLIAM C. GILLASPY, L.S.
NEWELL ROUNDY, R.L.A.

March 18, 1986

Mr. John Baldwin, P.E.
City of Phoenix
Engineering Division
125 East Washington
Phoenix, AZ 85004

Re: Skunk Creek Channelization - 51st Ave. & Utopia Site

Dear Mr. Baldwin:

Submitted herewith for your review and approval is a Floodplain Study for channelization of Skunk Creek for the referenced project.

As per our previous discussions with the Floodplain Division, this study presents hydraulic computations in accordance with the City of Phoenix Floodplain Ordinance for three conditions. In the first condition, backwater computations are reproduced identical to the Corps of Engineer's study. The second condition incorporates the proposed channelization through the subject parcel for both the natural and floodway conditions. The third computer run was made at the City's request, to study the effect of future 100-year flow on the site.

This study addresses the hydraulic analysis of Skunk Creek in accordance with the FEMA Guidelines. Within the study reach, a minor modification to the floodway alignment is recommended in order to create stable and workable channel section. Once the concept of this study is approved, a detailed hydraulic design of the channel, drop structure and bridge crossing will be performed in conjunction with the final design.

The study also provides sufficient technical information in conjunction with the letter of Map Amendment (LOMA) submittal. It is respectfully requested that the City of Phoenix submit this study to Federal Emergency Management Agency (FEMA) so that a conditional LOMA be obtained from them.

Should you have any questions regarding the content of this study, please feel free to contact us.

Very truly yours,

COE & VAN LOO
Consulting Engineers, Inc.

Ashok C. Patel, P.E., L.S.
Vice President

ACP/ls
2/24/66

CC: Ken Reedy, City of Glendale
Dave Johnson, Maricopa County Flood Control District
Ross Smith, Roadrunner Homes

1.0 INTRODUCTION

1.1 Purpose of Study

This floodplain study demonstrates that a portion of Skunk Creek Floodway can be redefined with channelization to create a stable channel section and create a uniform floodway width to match the existing upstream channelization, without adversely affecting the upstream and downstream conditions.

2.0 AREA STUDIED AND DOWNSTREAM CONDITIONS

2.1 Site Description

The subject parcel addressed in this report (See Figure 1) is a parcel of land described as:

The Southwest Quarter of the Northwest Quarter; and the Northwest Quarter of the Northwest Quarter of the Southwest Quarter of Section 28, Township 4 North, Range 2 East of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The parcel is of an irregular shape and located immediately East of 51st Avenue at Utopia Avenue as shown on the Location Map. Skunk Creek flows in a westerly direction through the parcel at an approximate slope of 0.6 percent.

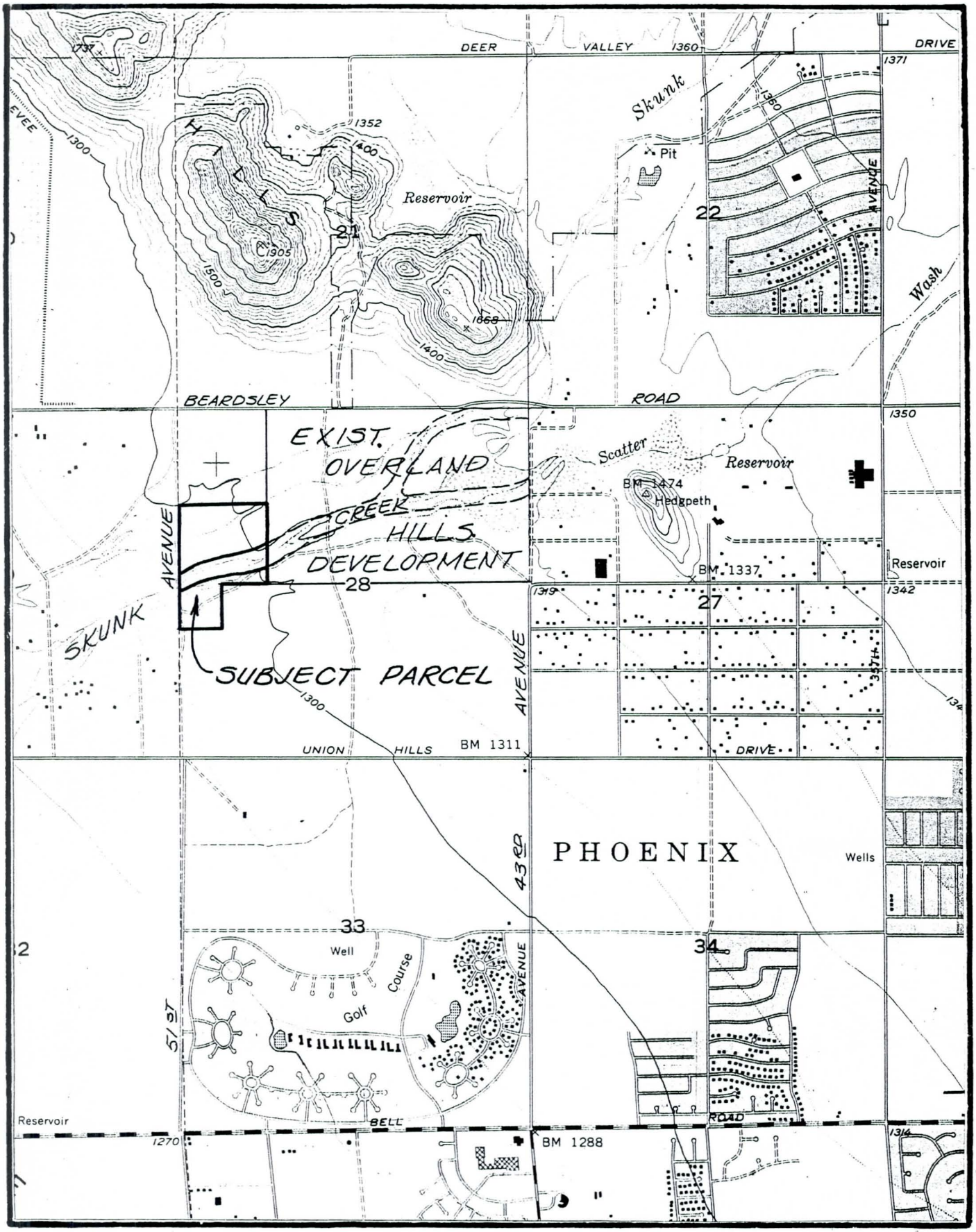
2.2 Scope of Study

This study covers a portion of Skunk Creek Wash from Section 275.1 to Section 310.6 in the vicinity of 51st Avenue and Utopia. This study reach is located in the Cities of Phoenix and Glendale.

The study incorporates recently completed channelization within the Overland Hills Development. (See Exhibit 2b, Attachment 3). It provides sufficient technical information in conjunction with the Letter of Map Amendment (LOMA) request.

2.3 Background Data

Within the past several years, the hydrologic conditions of the watershed upstream of the study reach have changed significantly. The major flood control improvements influencing the Skunk Creek hydrology include: Adobe Dam, Central Arizona Project Leveeand Skunk Creek Channelizations near Interstate 17.



MAPSOURCE:
USGS 7.5 MINUTE SERIES
HEDGPETH HILLS QUADRANGLE

50 ACRE PARCEL
51ST AVENUE ,1/2 MILE NORTH
OF UNION HILLS DRIVE

VICINITY MAP
FIGURE 1

Adobe Dam, a flood retarding structure on Skunk Creek located approximately 1.5 miles upstream from the site was completed in 1982 by the U.S. Army Corps of Engineers (COE). The Central Arizona Canal Levee was also recently completed by the Bureau of Reclamation. Both have a positive impact on the Skunk Creek Watershed.

Due to these improvements, the COE has reestablished discharge-frequency relationships on Skunk Creek. Additionally, COE has redelineated floodplain of Skunk Creek.

3.0 ENGINEERING METHODS

3.1 Hydrologic Analyses

The hydrologic data obtained from COE and the local floodplain management agency, the Flood Control District of Maricopa County (MCFCD) is summarized below:

Table 1. Summary of Discharges

Skunk Creek at 51st Avenue

100 Year Flood Present Condition:	8,400 cfs
100 Year Flood Future Condition:	11,000 cfs

The discharges established by the COE for the FEMA floodplain delineation are based on the present hydrologic conditions (Attachment 1). In addition, the COE has developed discharges based on the future hydrologic conditions which accounts for the buildout condition of the watershed.

3.2 Hydraulic Analyses

3.21 General

Analyses of the hydraulic characteristics of Skunk Creek were carried out to provide estimates of the elevations of 100-year flood along the study reach.

Water-surface elevations for floods of the selected recurrence intervals were computed through the use of the U.S. Army Corps of Engineers HEC-2 step backwater computer program (Reference 2).

Structural geometry and elevation data for the proposed culvert at 51st Avenue were obtained from the preliminary design plans.

Locations of selected cross sections used in the hydraulic analyses are shown on the Flood Profiles (Exhibit 1a & 1b). For stream segments for which floodway is computed, selected cross section locations are also shown on the Flood Boundary and Floodway Map (Exhibits 2a & 2b).

Roughness coefficients (Manning's "n" values) used in the hydraulic computations, were chosen using engineering judgment and based on field observations and photographs of the study reach. These values are shown in Table 2.

Table 2. Summary of Manning's "n" Values

	Manning's "n" Values		
	Left Overbank	Channel	Right Overbank
Existing Condition			
Sec. 275.1 to 312.2	0.045	0.035	0.045
Proposed Channelized Condition			
Sec. 275.1 to 291.1	0.045	0.035	0.045
Sec. 291.8 to 305.7	0.030	0.030	0.030
Sec. 305.7 to 310.6	0.030	0.030	0.030

The starting water surface elevations for the backwater analysis through the study reach were obtained from the COE Floodplain Study. (Ref. 1).

3.22 Present Condition Modelling

The hydraulic analysis presented in this study (Computer Printout 1) is duplicated from the work performed by the COE (Ref. 1). The letter of map amendment has been issued to FEMA for this work (Attachment 2). This data, furnished by the MCFCD, is included for a comparison purpose. The data has been modified at the upstream limit Sections 305.7 - 310.6 to incorporate recently completed channelization within the Overland Hills Development (Ref. 6). This channelization is conditionally approved by FEMA (Attachment 3) and is presently under process for the As-Built review.

3.23 Modelling with Proposed Channelized Condition

In this condition, the present condition hydraulic model was modified within the study reach, (Sections 291.8 to 305.7) to incorporate the proposed channel improvements (Computer Printout 2).

The design of channel improvements is based upon the following parameters established by the MCFCD and Floodplain Management Division of the City of Phoenix.

a) The channel to be designed for the present 100-year discharge with a minimum of one (1) foot of freeboard.

b) The channel to provide a minimum of 0.5 feet freeboard for the future condition 100-year discharge.

c) The 100-year water surface profile to match the adjacent properties.

d) The proposed plan not to utilize any levee.

e) On-site parcel to drain towards wash without obstruction.

To meet local agencies requirements, an additional HEC-2 analysis was performed for the proposed channelization condition modelling the future 100-year discharge (Computer Printout 3).

A Floodway Data Table, Table 3, is presented to show the differences between the natural and floodway WSEL's for the natural and the proposed channelization conditions.

The Floodplain delineations for the 100-year discharge dipicting the above conditions are presented in this study.

Floodway Data is also presented (See Table 4) to show the base-flood WSEL's for future 100-year flow and channel bank elevations.

4.0 OTHER STUDIES

The initial Flood Insurance Study (FIS) in the study area was performed in December, 1979 (FHBM & FIRM 040051-0025). It was subsequently revised in June, 1984. Due to the significant changes in the hydrologic conditions, the COE rerevised the FHBM in 1985 (Ref. 1), for which FEMA issued a LOMA (Attachment 2). In late 1985, FEMA issued a conditional LOMA in conjunction with the Overland Hills Development (Attachment 3).

TABLE 3

FLOODWAY DATA
PROPOSED CHANNELIZATION
(Based on Present 100 Year Flood)

Floodway Elev. lower than, UN encroached (Super)?

BASE FLOOD WATER SURFACE ELEVATION (WSEL)				DIFFERENCE IN WSELS WITH & WITHOUT CHANNELIZATION(2)	
		Proposed Channelization			
STATION (1)	Natural Condition	Natural Condition	Floodway Condition	Natural Condition	Floodway Condition
275.1	1286.61	1286.61	1286.97	0.00	+0.36
280.4	1289.28	1289.28	1290.15	0.00	+0.87
285.7	1291.73	1291.73	1292.07	0.00	+0.34
291.1	1295.87	1295.87	1295.69	0.00	-0.18
296.3	1298.68	1297.19	1297.14	-1.49	-1.54
301.6	1300.37	1297.37	1297.32	-3.00	-3.05
306.55	1301.53	1301.29	1301.29	-0.24	-0.24
306.9	1301.62	1301.40	1301.40	-0.22	-0.22
308.05	1301.89	1301.73	1301.73	-0.16	-0.16
310.55	1302.36	1302.25	1302.25	-0.11	-0.11

(1) Stream distances in stations, increasing upstream from confluence with New River.

(2) The difference between the base water surface elevations (WSEL's) for the proposed channelization and the natural condition.

TABLE 4

FLOODWAY DATA
PROPOSED CHANNELIZATION
FOR FUTURE 100 YEAR FLOOD

STATION (1)	WSELS	PROPOSED CHANNEL BANK ELEVATIONS (2)
275.1	1286.84	
280.4	1289.66	
285.7	1292.22	
291.1	1296.24	
291.8	1296.82	1297.40
293.0	1297.03	1297.53
293.4	1297.58	1298.08
294.0	1297.60	1298.10
296.3	1297.71	1298.21
301.6	1297.92	1298.42
304.2	1298.06	1298.56
304.5	1298.07	1298.57
304.75	1298.07	1298.57
304.76	1299.86	1300.36
305.1	1300.11	1301.21
305.7	1301.41	1302.91
306.55	1301.83	1305.40
306.9	1301.94	1305.42
308.05	1301.29	1305.50
310.55	1302.84	1305.75

(1) Stream Distances in stations, increasing upstream from confluence with New River.

(2) Minimum recommended within the limit of the proposed channelization.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Based upon the results of this study, it can be concluded that:

a) A 100-year flood can safely be conveyed through the study reach by the proposed channelization in accordance with the FEMA Guidelines and specifications.

b) The water surface elevations for the channelized condition are at or below the maximum elevations established by the COE Floodplain study.

c) The channel improvement will provide uniform floodway through the study reach. The floodway will be compatable with the presently improved channel immediately upstream from the study reach.

d) The proposed channel provides more open space than the current Floodway area within the study reach. Additionally, it provides a stable hydraulic section to convey the 100-year discharge.

The following is recommended:

a) This study provides sufficient technical information in conjunction with the letter of Map Amendment (LOMA) submittal. It is requested that the City of Phoenix in cooperation with FEMA provide a conditional LOMA which would remove the area outside the limits of the proposed channelization from the Skunk Floodplain within the study reach.

b) High velocities occuring at the grade control structure and transitions be addressed in the final design of the proposed channelization by selective armoring of the areas of potential erosion.

6.0 BIBLIOGRAPHY & REFERENCES

1. U.S. Army Corps of Engineers, Los Angeles District, Floodplain & Hydrology Study, Skunk Creek, 1984. Source: Maricopa County Flood Control District.

2. U.S. Army Corps of Engineers, Hydrologic Engineering Center, "HEC-2 Water Surface Profiles, Generalized Computer Program," Davis, California - November, 1976.

3. Maricopa County Flood Control District, Topographic Maps, Scale 1:2400, Contour Interval 2 feet, Phoenix, Arizona 1974.

4. Drew-Nykorchuck Associates, Topographic Mapping, Scale 1:600, Contour Interval 1 Foot, Phoenix, Arizona - February, 1985.

5. Drew-Nykowchuck Associates, Results of Survey, Phoenix, Arizona - December, 1984.

6. VanLoo and Patel Consulting Engineers, Inc., 100-Year Floodplain Study for Channelization of Overland Hills, Phoenix, Arizona - March, 1985.

7. Van Te Chow, Open Channel Hydraulics, McGraw Hill, 1959.

8. Federal Emergency Management Agency, Letters of Map Amendment Program, FEMA Manual 7810.1, May, 1984.

A P P E N D I X

Job #1053-15
CVL #4/20/24

A T T A C H M E N T 1

HYDROLOGY, CORPS OF ENGINEERS

Job #1053-15
CVL #4/20/24

TABLE 1

PRESENT CONDITION
PEAK DISCHARGES

HYDROLOGIC ENGINEERING
— SECTION —
PRELIMINARY
Date
REVISION
SUBJECT TO

CP	Location	D.A. (mi^2)	10-Year Flood (ft^3/s)	50-Year Flood (ft^3/s)	100-Year Flood (ft^3/s)	500-Year Flood (ft^3/s)	RSPF (ft^3/s)
	SCATTER WASH:						
1020	Above Hwy 17	6.3	540	3200	5700	16,000	13,000
1021	Above Skunk Creek	8.5	580	3500	6100	17,000	14,000
	SKUNK CREEK:						
1031 U	Inflow-Adobe Dam(1)	89.6	15,000	29,000	39,000	85,000	66,000
1031 D	Outflow-Adobe Dam(1)	0.0	1370	1650	1730	2000	1890
1021 U	Above Scatter Wash	0.9	1600	2200	2600	4600	4000
1021 D	Below Scatter Wash	9.4	2000	5500	8400	22,000	18,000

(1) Discharges taken from Ref. 1c.

References.

a. "Gila River Basin, New River and Phoenix City Streams, Arizona, Design Memorandum No. 2, Hydrology, Part 1", October 1974.

b. "Gila River Basin, Phoenix, Arizona and Vicinity (including New River), Design Memorandum No. 2, Hydrology, Part 2", Draft, April 1982.

c. "Gila River Basin, New River and Phoenix City Streams, Arizona, Adobe Dam (including Skunk Creek to the Arizona Canal), Design Memorandum No. 3, General Design Memorandum-Phase II, Project Design-Part 2", April 1979.

d. "Gila River and Tributaries, Central Arizona Water Control Study, Hydrology", May 1982.

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P. O. BOX 2711
LOS ANGELES, CALIFORNIA 90053

July 18, 1983

REPLY TO
ATTENTION OF

SPLED-HE

Evans, Kuhn, and Associates
ATTN: Mr. Greg Schuelke
727 East Bethany Home Road
Phoenix, Arizona 85014

Gentlemen:

Hydrologic data for the Skunk Creek and Scatter Wash drainages was requested verbally by your office. The enclosed information was taken from the latest flood insurance hydrology study, dated June 1983, which gives present condition discharges for selected streams in Maricopa County. As noted, the discharge values are preliminary and subject to revision.

If more detailed information is required, please contact Mr. Richard Rey, Hydrologic Engineering Section at (213) 688-4759.

Sincerely,

Robert E. Kaplin
for Norman Arno
Chief, Engineering Division

Enclosure

A T T A C H M E N T 2

LOMR, SKUNK CREEK FLOODPLAIN DELINEATION, COE

Job #1053-15
CVL #4/20/24

PAT

Federal Emergency Management Agency

Washington, D.C. 20472

1985 MAY -6 PM 12:34

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

IA-RA-RS (102)
Community: City of Phoenix,
Maricopa County, Arizona
Effective Date of
Revision: APR 30 1985
Community Number: 040051
Suffix Code: C

Honorable Terry Goddard
Mayor, City of Phoenix
City Hall
25 West Washington
Phoenix, Arizona 85003

Dear Mayor Goddard:

Flood Insurance Rate Map (FIRM) and Flood Boundary and Floodway Map (FBFM) Panels 0010 C, 0025 C, and 0030 C, dated June 1, 1984, for your community, have been revised to modify the elevations, flood boundaries, and floodway of a flood having a 1-percent chance of occurrence in any given year (base flood) along Skunk Creek within the city, and to modify the elevations, flood boundaries, and floodway of the base flood along Scatter Wash from its confluence with Skunk Creek to a point approximately 1,350 feet upstream of 43rd Avenue. The base flood elevations on the above-mentioned panels, presently shown for Skunk Creek as ranging from 1,296 feet National Geodetic Vertical Datum (NGVD) to 1,461 feet NGVD, have been revised and now range from 1,296 feet NGVD to 1,463 feet NGVD as shown on the enclosed flood profiles, Panels 01P through 07P. The base flood elevations on FIRM Panel 0025 C, presently shown for Scatter Wash as ranging from 1,312 feet NGVD to 1,328 feet NGVD, have been revised and now range from 1,310 feet NGVD to 1,327 feet NGVD as shown on the enclosed profile, Panel 08P. Additionally, the flood boundaries for Skunk Creek have been revised to include an impoundment area with an elevation of 1,378 feet NGVD located west of Skunk Creek, upstream and west of Adobe Dam.

The flood boundaries and floodway for Skunk Creek have been revised as shown on the U.S. Army Corps of Engineers (COE) topographic map of Skunk Creek, New River to Carefree Highway, Sheets 9 of 34 through 12 of 34, 20 of 34, 24 of 34, File No. AR 2413, and on the enclosed copies of FIRM Panels 0025 and 0030, for the City of Phoenix, Arizona. The boundaries of the base flood for Scatter Wash have been revised as shown in red on the enclosed copies of the COE Skunk Creek topographic maps, Sheets 11 and 12 of 34.

The revision was made after reviewing the data that were submitted by the Los Angeles District office of the COE. The revision amends the effective FIRM, dated June 1, 1984, and will be incorporated into a future map revision.

This modification has been made pursuant to Section 206 of the Flood Disaster Protection Act of 1973 (P.L. 93-234) and is in accordance with the National

Flood Insurance Act of 1968, as amended (Title XIII of the Housing and Urban Development Act of 1968, P.L. 90-448), 42 U.S.C. 4001-4128, and 44 CFR Part 65.

Public notification of modification to the flood elevations will be given in the Arizona Business Gazette on May 13, 1985, and May 20, 1985. In addition, a notice of changes will be published in the Federal Register.

As required by the legislation, a community must adopt and enforce flood plain management measures to ensure continued eligibility to participate in the National Flood Insurance Program. Therefore, your community must enforce these regulations using, at a minimum, the base flood elevations, zones, and floodways in the Special Flood Hazard Areas as shown on the FIRM and FBFM for your community, including the revisions mentioned above.

The community number and suffix code listed above will be used for all flood insurance policies and renewals issued for your community on and after the effective date listed above.

The revised base flood elevations, flood boundaries, floodway, and zone designations are effective on the date of this letter; however, within 90 days of the second publication in the Arizona Business Gazette, a citizen may request the Federal Emergency Management Agency (FEMA) to reconsider this determination. Any request for reconsideration must be based on scientific or technical data. All interested parties are on notice that, until the 90-day period elapses, the FEMA determination itself may be modified.

A Consultation Coordination Officer (CCO) has been designated to assist you with any problems that you may have concerning the new base flood elevations, flood boundaries, floodway, and zone designations. The CCO will be the primary liaison between your community and FEMA.

Any questions may be directed to your CCO. Your CCO is Ms. Patty Clendenning, located at the FEMA Regional Office in San Francisco, California. She can be reached at (415) 556-9840; or, you can contact this office at (202) 646-2767.

Sincerely,

John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration

Enclosure

cc: Mr. George L. Evans, Evans, Kuhn & Associates, Inc. (without enclosure)

A T T A C H M E N T 3

Correspondence in Connection with
the LOMA - Review Process, Overland Hills Development

Job #1053-15
CVL #4/20/24

Federal Emergency Management Agency

Washington, D.C. 20472

RECEIVED

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

COE & VAN LOO
Phoenix

OCT 17 1985

Honorable Terry Goddard
Mayor, City of Phoenix
City Hall
25 West Washington
Phoenix, Arizona 85003

Dear Mayor Goddard:

This letter is in reference to a request to revise portions of the Flood Insurance Study (FIS) for the City of Phoenix, Arizona. The revision was requested in a letter from Mr. Ashtok Patel of Coe & Van Loo, Consulting Engineers, Inc., dated July 23, 1985 (copy enclosed).

We are in the process of reviewing the data submitted. Upon completion of that review, you will be notified in writing of the resolution. Revised copies of the FIS report and maps will be provided for your review at that time, if warranted. We anticipate completing our review within 90 days of the date of this letter.

We have experienced delays in addressing these kinds of requests because of the large number received for our review. We regret any inconvenience this delay may have caused you.

If you should have any questions concerning this matter, please call Mr. Philip Myers of my staff in Washington, D.C., at (202) 646-2755.

Sincerely,

John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration

Enclosure

cc: Mr. Ashtok Patel, Coe & Van Loo, Consulting Engineers, Inc.

CITY OF PHOENIX
ENGINEERING DEPARTMENT
125 EAST WASHINGTON
PHOENIX, ARIZONA 85004-2342
WRITER'S DIRECT PHONE:
(602) 262-6797

July 30, 1985

Mr. John L. Matticks
Acting Chief, Risk Studies Division
Federal Insurance Administration
FEDERAL EMERGENCY MANAGEMENT AGENCY
Washington, D.C. 20472

Dear Mr. Matticks:

(LOMAR) SKUNK CREEK &
SCATTER WASH NEAR 43RD
AVENUE AND BEARDSLEY
200 ACRE SITE

Enclosed you will find a packet with the history on a 200 acre site at the confluence of Skunk Creek and Scatter Wash. The proposed channel in this development has been reviewed and approved by Floodplain Management. The intent of the packet is eventually to reduce the boundaries of the floodplain and floodway in the area. We agree with the proposed channel plans and the proposed reduction in the floodway.

For further information concerning the submittal please contact Ashok Patel, P.E., Coe & Van Loo Consulting Engineers, Inc. at (602) 264-6831 or Dennis Siewert with the City of Phoenix at (602) 262-6797.

Very truly yours,

J. E. ATTEBERY, P.E.
City Engineer

Dennis O. Siewert

DENNIS O. SIEWERT, P.E.
Civil Engineer III

DOS/aff

c: Mr. Baldwin
Mr. Patel

CITY OF PHOENIX
ENGINEERING DEPARTMENT
125 EAST WASHINGTON
PHOENIX, ARIZONA 85004-2342
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City Engineer

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Civil Engineer III

DOS/aff

c: Mr. Baldwin
Mr. Patel

DEPARTMENT OF THE ARMY
LOS ANGELES DISTRICT, CORPS OF ENGINEERS
P.O. BOX 2711
LOS ANGELES, CALIFORNIA 90053-2325

December 5, 1984

RECEIVED

REPLY TO
ATTENTION OF:

SPLPD-WF

Mr. Ashok C. Patel, P.E.
Vice President
Coe & Van Loo
4550 North 12th Street
Phoenix, Arizona 85014

Dear Mr. Patel:

Reference is made to your letter regarding your request to comment on the proposed channelization project of Scatter Wash and Skunk Creek in Phoenix, Arizona.

Our office reviewed the proposed flood plain and floodway boundaries for Scatter Wash as shown in the EKA hydraulics report (December 1983) and basically agreed with the overflow analysis for Scatter Wash. We did not evaluate the proposed channelization projects at that time. A copy of these maps were sent to city of Phoenix in September 1984.

Following your letter, we have reviewed the channelization portion of the EKA report and have the following comments:

a. The channelization project is viable because it does not increase the water surface elevations higher than the before project condition.

b. The project does not consist of any levees; therefore, the FEMA criteria of 3-feet of freeboard would not apply.

c. The 100-year flood flow velocities are in the range of 45 to 9 feet per second which would require some bank protection.

d. Since the section numbers in the EKA report did not match with the before and after conditions, it was difficult to compare the floodway limits of the existing condition with the after project condition channel boundaries.

In general, we have to receive a letter from the city of Phoenix stating that this project will be built within the next one-year at which time we will include it in our Maricopa County flood insurance study.

If we can be of further assistance, please contact Mr. Grigor Grigorian at (213) 688-5375 and refer to File No. A-06-400.

Sincerely,

Carl F. Enson
Chief, Planning Divison

C O M P U T E R P R I N T O U T S

Job #1053-15
CVL #4/20/24

```
1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
 *  RUN DATE MON, MAR 17 1986 TIME 11:18:35      *
 *************************************************
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*************************************
*  U.S. ARMY CORPS OF ENGINEERS
*  THE HYDROLOGIC ENGINEERING CENTER
*  609 SECOND STREET, SUITE D
*  DAVIS, CALIFORNIA 95616
*  (916) 440-2105 (FTS) 448-2105
*************************************
```

PRINTOUT 1

PRESENT CONDITION MODELLING
SOURCE. COE, MCFCD

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X        X     X            X     X
X     X  X        X                  X     X
XXXXXXX  XXXX     X          XXXXX    XXXXX
X     X  X        X                  X
X     X  X        X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

1
MON, MAR 17 1986 11:18:37 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 11:18:37

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
```

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C
T1   SKUNK CREEK  100 YEAR FLOOD
T2   53RD AVENUE TO IMMEDIATELY UPSTREAM OF ROADRUNNER PROPERTY
T3      TOPO MAPS USED  11/20/81  2/4/80  6/6/74

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.       4.        0.        0.  0.000000      0.00       0.0       0.  1286.610    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

    1.000     0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

   38.000    43.000     1.000     8.000     4.000     5.000     3.000    17.000    26.000    42.000

   39.000    63.000     0.000   200.000     0.000     0.000     0.000     0.000     0.000     0.000

NC     0.045     0.045     0.035     0.100     0.300     0.000     0.000     0.000     0.000     0.000
QT     6.000  2080.000  5300.000  8980.000  8980.000 10600.000 10600.000     0.000     0.000     0.000
ET   275.100     0.000     0.000     0.000     9.100     0.000     0.000     0.000  9800.000 10150.000
        DATA FOR THIS ANALYSIS IS BASED ON COE INPUT AND VERIFIED
```

BY COE OUTPUT INFORMATION AS OF 11/19/84, EXCEPT FOR
RECENT CHANNELIZATION OF SKUNK CREEK THROUGH OVERLAND
HILLS - CROSS SECTIONS 306.55 THRU 310.55

X1	275.100	20.000	9935.000	10090.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1290.000	9100.000	1288.000	9140.000	1286.000	9556.000	1284.000	9700.000	1284.000	9765.000
GR	1286.000	9910.000	1286.500	9935.000	1280.000	9955.000	1279.000	9985.000	1279.000	10020.000
GR	1280.000	10025.000	1284.000	10040.000	1286.000	10070.000	1286.400	10090.000	1286.000	10100.000
GR	1286.000	10220.000	1288.000	10225.000	1288.000	10370.000	1290.000	10500.000	1290.000	10580.000
QT	6.000	2080.000	5300.000	8920.000	8920.000	10500.000	10500.000	0.000	0.000	0.000
ET	280.400	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9880.000	0.000
X1	280.400	20.000	9885.000	10170.000	520.000	540.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1292.000	9000.000	1290.000	9500.000	1290.000	9550.000	1290.000	9595.000	1290.000	9780.000
GR	1286.000	9795.000	1286.000	9865.000	1287.300	9885.000	1286.000	9900.000	1282.000	9940.000
GR	1281.600	10015.000	1282.000	10020.000	1286.000	10050.000	1288.000	10090.000	1288.000	10130.000
GR	1291.000	10170.000	1290.000	10315.000	1290.000	10320.000	1290.000	10370.000	1290.500	10425.000

1
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QT	6.000	2080.000	5300.000	8800.000	8800.000	10500.000	10500.000	0.000	0.000	0.000
X1	285.700	17.000	9880.000	10170.000	530.000	530.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1296.000	8900.000	1294.000	9200.000	1293.000	9700.000	1290.000	9750.000	1290.000	9790.000
GR	1288.000	9800.000	1288.000	9865.000	1290.000	9880.000	1290.000	9920.000	1288.000	9980.000
GR	1286.700	9985.000	1286.700	10050.000	1288.000	10060.000	1290.000	10070.000	1292.000	10080.000
GR	1293.200	10170.000	1294.000	10580.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	6.000	2080.000	5300.000	8750.000	8750.000	10400.000	10400.000	0.000	0.000	0.000

51ST AVENUE EXTENTION

X1	291.100	19.000	9720.000	10040.000	540.000	540.000	535.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1300.000	8250.000	1298.000	8730.000	1298.000	9198.000	1298.000	9199.000	1298.000	9200.000
GR	1296.000	9720.000	1292.000	9770.000	1292.000	9790.000	1293.200	9890.000	1292.000	9960.000
GR	1290.000	9970.000	1290.000	10030.000	1296.000	10040.000	1296.700	10100.000	1296.000	10130.000
GR	1296.000	10270.000	1298.000	10550.000	1298.000	11170.000	1300.000	12150.000	0.000	0.000
QT	6.000	2040.000	5100.000	8700.000	8700.000	10400.000	10400.000	0.000	0.000	0.000
ET	296.300	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9800.000	0.000
X1	296.300	13.000	9840.000	10090.000	330.000	680.000	528.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1300.000	9160.000	1298.000	9450.000	1298.000	9590.000	1298.000	9675.000	1294.000	9682.000
GR	1294.000	9705.000	1296.000	9730.000	1296.500	9840.000	1296.000	9960.000	1293.000	9990.000
GR	1293.000	10075.000	1299.600	10090.000	1300.000	10500.000	0.000	0.000	0.000	0.000
QT	6.000	2040.000	5100.000	8650.000	8650.000	10400.000	10400.000	0.000	0.000	0.000
ET	301.600	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9870.000	0.000
X1	301.600	13.000	9880.000	10130.000	560.000	440.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1302.000	9375.000	1301.500	9735.000	1300.000	9770.000	1298.000	9840.000	1298.000	9880.000
GR	1296.000	9890.000	1294.000	9965.000	1294.000	10040.000	1296.000	10080.000	1296.000	10100.000
GR	1300.000	10110.000	1301.500	10130.000	1302.000	10550.000	0.000	0.000	0.000	0.000
QT	6.000	2040.000	5100.000	8600.000	8600.000	10400.000	10400.000	0.000	0.000	0.000
NC	0.030	0.030	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
X1	306.550	4.000	9849.000	10151.000	505.000	465.000	495.000	0.000	0.000	0.000
GR	1305.400	9849.000	1296.380	9880.000	1296.380	10120.000	1305.400	10151.000	0.000	0.000

not sure where this input came from — Overland Hills

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X1     306.900      0.000    9849.000   10151.000      35.000      35.000      35.000       0.000       0.020       0.000

X1     308.050      0.000    9849.000   10151.000     115.000     115.000     115.000       0.000       0.080       0.000

X1     310.550      0.000    9849.000   10151.000     250.000     250.000     250.000       0.000       0.250       0.000
EJ       0.000      0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
1
MON, MAR 17 1986  11:18:37                                                                                    PAGE    3

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *PROF 1

 CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

 CCHV=   0.100 CEHV=   0.300
 *SECNO 275.100
 3710 WSEL ASSUMED BASED ON MIN DIFF
            DATA FOR THIS ANALYSIS IS BASED ON COE INPUT AND VERIFIED
            BY COE OUTPUT INFORMATION AS OF 11/19/84, EXCEPT FOR
            RECENT CHANNELIZATION OF SKUNK CREEK THROUGH OVERLAND
            HILLS - CROSS SECTIONS 306.55 THRU 310.55
   275.10      7.61  1286.61  1286.57  1286.61  1287.55      0.94      0.00      0.00  1286.50
    8980.     2503.     6336.      140.      683.      708.      78.        0.        0.   1286.40
     0.00      3.67      8.95      1.81     0.045     0.035    0.045     0.000   1279.00  9429.10
 0.005948        0.        0.        0.         0         5        0      0.00    792.43 10221.52
0
 FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1286.61

 STA=    9429.    9556.    9700.    9765.    9910.    9935.   10090.   10100.   10220.   10222.
   PER Q=      0.5      9.0      9.1      9.1      0.1     70.6      0.1      1.5      0.0
    AREA=     38.7    231.9    169.7    233.5      9.0    708.1      4.1     73.2      0.5
     VEL=      1.2      3.5      4.8      3.5      1.3      8.9      1.4      1.8      1.1

 *SECNO 280.400

 3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00

   280.40      7.68  1289.28  1288.04     0.00  1289.90      0.63      2.33      0.03  1287.30
    8920.     1214.     7706.        0.     302.     1159.       0.       18.        7.   1291.00
     0.02      4.03      6.65      0.00    0.045    0.035    0.000     0.000  1281.60  9782.73
 0.003391      520.      530.      540.        2       11        0      0.00    364.22 10146.95
0
 FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1289.28

 STA=    9783.    9795.    9865.    9885.   10170.
   PER Q=      0.6     10.9      2.1     86.4
    AREA=     20.1    229.0     52.4   1158.6
     VEL=      2.6      4.2      3.7      6.7

 *SECNO 285.700
1
 MON, MAR 17 1986  11:18:37                                                                                    PAGE    4
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

   285.70      5.03  1291.73  1291.41      0.00  1292.86      1.12      2.80      0.15  1290.00
    8800.     2706.     6094.       0.      406.      662.       0.       33.       11.   1293.20
     0.04      6.66      9.20      0.00     0.045     0.035     0.000     0.000  1286.70  9721.00
 0.009468      530.      530.      530.         1        14         0      0.00   357.70 10078.70
0
FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1291.73

STA=    9721.    9750.    9790.    9800.    9865.    9880.   10170.
  PER Q=      0.8      3.7      1.9     21.4      2.9     69.2
   AREA=     25.2     69.6     27.4    243.1     41.1    662.4
    VEL=      2.9      4.6      6.2      7.7      6.3      9.2

*SECNO 291.100

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.00 ELREA=     1296.00

           51ST AVENUE EXTENTION
   291.10      5.87  1295.87  1295.03      0.00  1296.76      0.89      3.88      0.02  1296.00
    8750.        0.     8750.       0.        0.    1158.       0.       47.       16.   1296.00
     0.06      0.00      7.56      0.00     0.000     0.035     0.000     0.000  1290.00  9721.58
 0.005713      540.      535.      540.         3         5         0      0.00   318.20 10039.79
0
FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1295.87

STA=    9722.   10040.
  PER Q=    100.0
   AREA=   1157.5
    VEL=      7.6

*SECNO 296.300

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.50 ELREA=     1299.60

   296.30      5.68  1298.68  1297.62      0.00  1299.22      0.55      2.43      0.03  1296.50
    8700.     2493.     6207.       0.      670.      935.       0.       62.       21.   1299.60
     0.08      3.72      6.64      0.00     0.045     0.035     0.000     0.000  1293.00  9352.07
 0.004189      330.      528.      680.         3        13         0      0.00   735.82 10087.90
0
1
MON, MAR 17 1986  11:18:37                                                                    PAGE    5

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1298.68
```

```
STA=    9352.    9450.    9590.    9675.    9682.    9705.    9730.    9840.   10090.
  PER Q=      0.4      1.8      1.1      0.8      7.4      5.4     11.8     71.3
   AREA=     33.1     94.6     57.4     18.7    107.5     91.9    266.8    935.3
    VEL=      1.0      1.6      1.6      3.7      6.0      5.1      3.9      6.6

*SECNO 301.600

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1298.00 ELREA=     1301.50

   301.60     6.37  1300.37  1298.55     0.00  1301.01     0.64     1.75     0.03  1298.00
    8650.     485.    8165.       0.     192.    1240.       0.      81.      28.   1301.50
     0.11     2.53     6.58     0.00    0.045    0.035    0.000    0.000  1294.00  9761.47
 0.002632     560.     530.     440.        3       15        0     0.00   353.41 10114.88
0
 FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1300.37

 STA=    9761.    9840.    9880.   10130.
   PER Q=      2.3      3.3     94.4
    AREA=     97.2     94.6   1240.0
     VEL=      2.1      3.0      6.6

 CCHV=   0.100 CEHV=   0.300
 *SECNO 306.550
   306.55     5.15  1301.53  1299.73     0.00  1302.18     0.65     1.17     0.00  1305.40
    8600.       0.    8600.       0.       0.    1325.       0.      96.      31.   1305.40
     0.13     0.00     6.49     0.00    0.000    0.030    0.000    0.000  1296.38  9862.33
 0.002130     505.     495.     465.        2       11        0     0.00   275.34 10137.67
0
 FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1301.53

 STA=    9862.   10151.
   PER Q=    100.0
    AREA=   1324.7
     VEL=      6.5

 *SECNO 306.900
 3710 WSEL ASSUMED BASED ON MIN DIFF
   306.90     5.22  1301.62  1299.75     0.00  1302.25     0.64     0.07     0.00  1305.42
    8600.       0.    8600.       0.       0.    1343.       0.      98.      31.   1305.42
     0.13     0.00     6.40     0.00    0.000    0.030    0.000    0.000  1296.40  9862.10
 0.002037      35.      35.      35.        0       14        0     0.00   275.81 10137.90
0
1
 MON, MAR 17 1986  11:18:37                                                          PAGE    6

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1301.62

 STA=    9862.   10151.
   PER Q=    100.0
    AREA=   1343.5
     VEL=      6.4

 *SECNO 308.050
```

```
*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 275.100
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9800.0   10150.0  TYPE=     1  TARGET=     350.000
            DATA FOR THIS ANALYSIS IS BASED ON COE INPUT AND VERIFIED
            BY COE OUTPUT INFORMATION AS OF 11/19/84, EXCEPT FOR
            RECENT CHANNELIZATION OF SKUNK CREEK THROUGH OVERLAND
            HILLS - CROSS SECTIONS 306.55 THRU 310.55
   275.10      7.97  1286.97  1286.92  1286.61  1288.52     1.55     0.00     0.00  1286.50
    8980.      808.    8021.     152.     208.     764.      56.       0.       0.   1286.40
     0.00      3.88    10.50     2.70    0.045    0.035    0.045    0.000  1279.00  9800.00
 0.007402        0.       0.       0.        0        4        0     0.00   350.00 10150.00
0
FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1286.97

STA=    9800.    9910.    9935.   10090.   10100.   10150.
  PER Q=       8.5      0.5     89.3      0.2      1.5
   AREA=     190.2     18.0    763.8      7.7     48.5
    VEL=       4.0      2.3     10.5      2.4      2.7

*SECNO 280.400

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9880.0   10425.0  TYPE=     1  TARGET=   -9880.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00

   280.40      8.55  1290.15  1287.85  1289.28  1290.78     0.63     2.16     0.09  1287.30
    8920.       38.    8882.       0.      15.    1394.       0.      15.       4.   1291.00
     0.02      2.52     6.37     0.00    0.045    0.035    0.000    0.000  1281.60  9880.00
 0.002579      520.     530.     540.        3       12        0     0.00   278.67 10158.67
0
FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1290.15

STA=    9880.    9885.   10170.
  PER Q=       0.4     99.6
   AREA=      15.1   1393.9
    VEL=       2.5      6.4

1
MON, MAR 17 1986  11:18:37                                                          PAGE    9

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 285.700
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```
 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

    285.70      5.37  1292.07  1291.42  1291.73  1292.97      0.90      2.11      0.08  1290.00
     8800.     2784.     6016.       0.      460.      728.       0.       31.       8.   1293.20
      0.04      6.05      8.26      0.00     0.045     0.035     0.000     0.000  1286.70  9715.50
  0.007022      530.      530.      530.         3        11         0      0.00   369.72 10085.22
0
 FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1292.67

 STA=    9716.    9750.    9790.    9800.    9865.    9880.   10170.
   PER Q=      1.1      4.2      2.0     21.2      3.0     68.4
    AREA=     35.7     82.8     30.7    264.5     46.0    728.4
     VEL=      2.8      4.5      5.8      7.1      5.8      8.3

 *SECNO 291.100

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.00 ELREA=     1296.00

            51ST AVENUE EXTENTION
    291.10      5.69  1295.69  1295.01  1295.87  1296.67      0.98      3.68      0.02  1296.00
     8750.        0.     8750.       0.       0.    1100.       0.       45.       12.   1296.00
      0.06      0.00      7.96      0.00     0.000     0.035     0.000     0.000  1290.00  9723.87
  0.006797      540.      535.      540.         3        11         0      0.00   315.61 10039.48
0
 FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1295.69

 STA=    9724.   10040.
   PER Q=    100.0
    AREA=   1099.5
     VEL=      8.0

 *SECNO 296.300

 3470 ENCROACHMENT STATIONS=    9800.0   10500.0  TYPE=     1  TARGET=   -9800.000

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.50 ELREA=     1299.60

    296.30      5.95  1298.95  1298.18  1298.68  1299.96      1.01      3.28      0.01  1296.50
     8700.      458.     8242.       0.      101.    1003.       0.       58.       16.   1299.60
      0.08      4.52      8.22      0.00     0.045     0.035     0.000     0.000  1293.00  9800.00
  0.005881      330.      528.      680.         2        15         0      0.00   288.52 10088.51
0
1
 MON, MAR 17 1986  11:18:37                                                                PAGE   10

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1298.95

 STA=    9800.    9840.   10090.
   PER Q=      5.3     94.7
    AREA=    101.5   1002.6
     VEL=      4.5      8.2

 *SECNO 301.600
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```
3470 ENCROACHMENT STATIONS=    9870.0   10550.0  TYPE=     1  TARGET=   -9870.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1298.00 ELREA=     1301.50

   301.60      7.11  1301.11  1298.48  1300.37  1301.68      0.56      1.67      0.05  1298.00
    8650.       81.    8569.       0.      31.    1421.       0.       73.       19.   1301.50
     0.10      2.60     6.03     0.00    0.045    0.035    0.000    0.000   1294.00   9870.00
 0.001946      560.     530.     440.        2       15        0     0.00    254.94  10124.93
0
FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1301.11

STA=    9870.    9880.   10130.
  PER Q=      0.9     99.1
   AREA=     31.2   1421.0
    VEL=      2.6      6.0

CCHV=   0.100 CEHV=   0.300
*SECNO 306.550
   306.55      5.62  1302.00  1299.73  1301.53  1302.54      0.54      0.86      0.00  1305.40
    8600.        0.    8600.       0.       0.    1458.       0.       90.       22.   1305.40
     0.13      0.00     5.90     0.00    0.000    0.030    0.000    0.000   1296.38   9860.67
 0.001572      505.     495.     465.        2       14        0     0.00    278.65  10139.32
0
FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1302.00

STA=    9861.   10151.
  PER Q=    100.0
   AREA=   1458.2
    VEL=      5.9

*SECNO 306.900
3710 WSEL ASSUMED BASED ON MIN DIFF
1
MON, MAR 17 1986  11:18:37                                                          PAGE   11

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

   306.90      5.66  1302.06  1299.75  1301.62  1302.60      0.53      0.05      0.00  1305.42
    8600.        0.    8600.       0.       0.    1469.       0.       91.       22.   1305.42
     0.13      0.00     5.85     0.00    0.000    0.030    0.000    0.000   1296.40   9860.54
 0.001535       35.      35.      35.        0       14        0     0.00    278.92  10139.46
0
FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1302.06

STA=    9861.   10151.
  PER Q=    100.0
   AREA=   1469.2
    VEL=      5.9

*SECNO 308.050
   308.05      5.78  1302.26  1299.84  1301.89  1302.77      0.51      0.17      0.00  1305.50
    8600.        0.    8600.       0.       0.    1499.       0.       95.       23.   1305.50
     0.13      0.00     5.74     0.00    0.000    0.030    0.000    0.000   1296.48   9860.17
 0.001440      115.     115.     115.        1       11        0     0.00    279.66  10139.83
```

0
FLOW DISTRIBUTION FOR SECNO= 308.05 CWSEL= 1302.26

STA= 9860. 10151.
PER Q= 100.0
AREA= 1499.2
VEL= 5.7

*SECNO 310.550
3710 WSEL ASSUMED BASED ON MIN DIFF

310.55	5.90	1302.63	1300.09	1302.36	1303.12	0.49	0.35	0.00	1305.75
8600.	0.	8600.	0.	0.	1536.	0.	104.	24.	1305.75
0.15	0.00	5.60	0.00	0.000	0.030	0.000	0.000	1296.73	9859.72
0.001335	250.	250.	250.	0	11	0	0.00	280.56	10140.28

0
FLOW DISTRIBUTION FOR SECNO= 310.55 CWSEL= 1302.63

STA= 9860. 10151.
PER Q= 100.0
AREA= 1535.7
VEL= 5.6

1
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THIS RUN EXECUTED MON, MAR 17 1986 11:18:56

****
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

TOPO MAPS USED 11/20/81

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	TOPWID	10K*S	EG	K*XNCH	VCH	ELMIN	XLCH	TELMX
*	275.100	8980.00	1286.61	7.61	792.43	59.48	1287.55	35.00	8.95	1279.00	0.00	1290.00
*	275.100	8980.00	1286.97	7.97	350.00	74.02	1288.52	35.00	10.50	1279.00	0.00	1290.00
	280.400	8920.00	1289.28	7.68	364.22	33.91	1289.90	35.00	6.65	1281.60	530.00	1290.50
	280.400	8920.00	1290.15	8.55	278.67	25.79	1290.78	35.00	6.37	1281.60	530.00	1290.50
	285.700	8800.00	1291.73	5.03	357.70	94.68	1292.86	35.00	9.20	1286.70	530.00	1294.00
	285.700	8800.00	1292.07	5.37	369.72	70.22	1292.97	35.00	8.26	1286.70	530.00	1294.00
	291.100	8750.00	1295.87	5.87	318.20	57.13	1296.76	35.00	7.56	1290.00	535.00	1300.00
	291.100	8750.00	1295.69	5.69	315.61	67.07	1296.67	35.00	7.96	1290.00	535.00	1300.00
	296.300	8700.00	1298.68	5.68	735.82	41.89	1299.22	35.00	6.64	1293.00	528.00	1300.00
	296.300	8700.00	1298.95	5.95	288.52	58.81	1299.96	35.00	8.22	1293.00	528.00	1300.00

	301.600	8650.00	1300.37	6.37	353.41	26.32	1301.01	35.00	6.58	1294.00	530.00	1302.00
	301.600	8650.00	1301.11	7.11	254.94	19.46	1301.68	35.00	6.03	1294.00	530.00	1302.00
	306.550	8600.00	1301.53	5.15	275.34	21.30	1302.18	30.00	6.49	1296.38	495.00	1305.40
	306.550	8600.00	1302.00	5.62	278.65	15.72	1302.54	30.00	5.90	1296.38	495.00	1305.40
*	306.900	8600.00	1301.62	5.22	275.81	20.37	1302.25	30.00	6.40	1296.40	35.00	1305.42
*	306.900	8600.00	1302.06	5.66	278.92	15.35	1302.60	30.00	5.85	1296.40	35.00	1305.42
	308.050	8600.00	1301.89	5.41	277.21	17.88	1302.48	30.00	6.14	1296.48	115.00	1305.50
	308.050	8600.00	1302.26	5.78	279.66	14.40	1302.77	30.00	5.74	1296.48	115.00	1305.50
*	310.550	8600.00	1302.36	5.63	278.78	15.55	1302.90	30.00	5.88	1296.73	250.00	1305.75
*	310.550	8600.00	1302.63	5.90	280.56	13.35	1303.12	30.00	5.60	1296.73	250.00	1305.75

1
MON, MAR 17 1986 11:18:37

SUMMARY OF ERRORS AND SPECIAL NOTES

CAUTION SECNO= 275.100 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 275.100 PROFILE= 2 WSEL ASSUMED BASED ON MIN DIFF

CAUTION SECNO= 306.900 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 306.900 PROFILE= 2 WSEL ASSUMED BASED ON MIN DIFF

CAUTION SECNO= 310.550 PROFILE= 1 WSEL ASSUMED BASED ON MIN DIFF
CAUTION SECNO= 310.550 PROFILE= 2 WSEL ASSUMED BASED ON MIN DIFF

1
MON, MAR 17 1986 11:18:37

FLOODWAY DATA, TOPO MAPS USED 11/20/81
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
275.100	350.	1028.	8.7	1287.0	1286.6	0.4
280.400	279.	1409.	6.3	1290.2	1289.3	0.9
285.700	370.	1188.	7.4	1292.0	1291.7	0.3
291.100	316.	1100.	8.0	1295.8	1295.9	-0.1
296.300	289.	1104.	7.9	1299.0	1298.7	0.3
301.600	255.	1452.	6.0	1301.1	1300.4	0.7
306.550	279.	1458.	5.9	1302.0	1301.5	0.5
306.900	279.	1469.	5.9	1302.0	1301.6	0.4
308.050	280.	1499.	5.7	1302.3	1301.9	0.4
310.550	281.	1536.	5.6	1302.7	1302.4	0.3

1
MON, MAR 17 1986 11:18:58

THIS RUN EXECUTED MON, MAR 17 1986 11:18:58

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
```

COMPUTER PRINTOUT 2

```
1*************************************************
 *  WATER SURFACE PROFILES                       *
 *  VERSION OF NOVEMBER 1976                     *
 *  UPDATED MAY 1984                             *
 *                                               *
 *  RUN DATE MON, MAR 17 1986 TIME 10:20:49      *
 *************************************************
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*****************************************
*  U.S. ARMY CORPS OF ENGINEERS
*  THE HYDROLOGIC ENGINEERING CENTER
*  609 SECOND STREET, SUITE D
*  DAVIS, CALIFORNIA 95616
*  (916) 440-2105 (FTS) 448-2105
*****************************************
```


PRINTOUT 2

MODELLING WITH PROPOSED CHANNELIZATION CONDITION
Present 100-Yr FLOOD

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X         X     X            X     X
X     X  X         X                  X
XXXXXXX  XXXX      X          XXXXX    XXXXX
X     X  X         X                  X
X     X  X         X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

1
MON, MAR 17 1986 10:20:50 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 10:20:50

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
```

```
C
T1   SKUNK CREEK  100 YEAR FLOOD
T2   53RD AVENUE TO IMMEDIATELY UPSTREAM OF ROADRUNNER PROPERTY
T3      TOPO MAPS USED  11/20/81  2/4/80  6/6/74

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

      0.       4.        0.        0.  0.000000      0.00       0.0       0.  1286.610    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    43.000     1.000     8.000     4.000     5.000     3.000    17.000    26.000    42.000

    39.000    63.000     0.000   200.000     0.000     0.000     0.000     0.000     0.000     0.000

NC      0.045     0.045     0.035     0.100     0.300     0.000     0.000     0.000     0.000     0.000
QT      5.000  2080.000  5300.000  8980.000  8980.000 10600.000     0.000     0.000     0.000     0.000
ET    275.100     0.000     0.000     0.000     9.100     0.000     0.000     0.000  9800.000 10150.000
          DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
```

DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
BY THE COE.

X1	275.100	20.000	9935.000	10090.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1290.000	9100.000	1288.000	9140.000	1286.000	9556.000	1284.000	9700.000	1284.000	9765.000
GR	1286.000	9910.000	1286.500	9935.000	1280.000	9955.000	1279.000	9985.000	1279.000	10020.000
GR	1280.000	10025.000	1284.000	10040.000	1286.000	10070.000	1286.400	10090.000	1286.000	10100.000
GR	1286.000	10220.000	1288.000	10225.000	1288.000	10370.000	1290.000	10500.000	1290.000	10580.000
QT	5.000	2080.000	5300.000	8920.000	8920.000	10500.000	0.000	0.000	0.000	0.000
ET	280.400	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9880.000	0.000
X1	280.400	20.000	9885.000	10170.000	520.000	540.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1292.000	9000.000	1290.000	9500.000	1290.000	9550.000	1290.000	9595.000	1290.000	9780.000
GR	1286.000	9795.000	1286.000	9865.000	1287.300	9885.000	1286.000	9900.000	1282.000	9940.000
GR	1281.600	10015.000	1282.000	10020.000	1286.000	10050.000	1288.000	10090.000	1288.000	10130.000
GR	1291.000	10170.000	1290.000	10315.000	1290.000	10320.000	1290.000	10370.000	1290.500	10425.000

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MON, MAR 17 1986 10:20:50 PAGE 2

QT	5.000	2080.000	5300.000	8800.000	8800.000	10500.000	0.000	0.000	0.000	0.000
X1	285.700	17.000	9880.000	10170.000	530.000	530.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1296.000	8900.000	1294.000	9200.000	1293.000	9700.000	1290.000	9750.000	1290.000	9790.000
GR	1288.000	9800.000	1288.000	9865.000	1290.000	9880.000	1290.000	9920.000	1288.000	9980.000
GR	1286.700	9985.000	1286.700	10050.000	1288.000	10060.000	1290.000	10070.000	1292.000	10080.000
GR	1293.200	10170.000	1294.000	10580.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	5.000	2080.000	5300.000	8750.000	8750.000	10400.000	0.000	0.000	0.000	0.000
X1	291.100	19.000	9720.000	10040.000	540.000	540.000	535.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1300.000	8250.000	1298.000	8730.000	1298.000	9198.000	1298.000	9199.000	1298.000	9200.000
GR	1296.000	9720.000	1292.000	9770.000	1292.000	9790.000	1293.200	9890.000	1292.000	9960.000
GR	1290.000	9970.000	1290.000	10030.000	1296.000	10040.000	1296.700	10100.000	1296.000	10130.000
GR	1296.000	10270.000	1298.000	10550.000	1298.000	11170.000	1300.000	12150.000	0.000	0.000
NC	0.015	0.015	0.015	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	291.800	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9832.000	10157.000

51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
HOMES DEVELOPMENT

X1	291.800	20.000	9832.000	10157.000	70.000	70.000	70.000	0.930	0.000	0.000
BT	20.000	9832.000	1297.700	1297.700	9861.000	1291.500	1291.500	10000.000	1291.500	1291.500
BT	10053.000	1291.800	1291.800	10053.100	1292.000	1290.700	10063.100	1292.100	1290.700	10064.100
BT	1292.200	1290.700	10074.100	1292.300	1290.700	10075.100	1292.350	1290.700	10085.100	1292.400
BT	1290.700	10086.100	1292.450	1290.700	10096.100	1292.500	1290.700	10097.100	1292.600	1290.700
BT	10107.000	1292.700	1290.700	10108.000	1292.750	1290.700	10118.100	1292.800	1290.700	10118.199
BT	1292.800	1292.800	10123.000	1292.900	1292.900	10157.000	1297.700	1297.700	10166.000	1297.700
BT	1297.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1297.700	9832.000	1291.500	9861.000	1291.500	10000.000	1291.500	10053.000	1287.700	10053.100
GR	1287.700	10063.100	1287.700	10064.100	1287.700	10074.100	1287.700	10075.100	1287.700	10085.100
GR	1287.700	10086.100	1287.700	10096.100	1287.700	10097.100	1287.700	10107.000	1287.700	10108.000
GR	1287.700	10118.100	1292.800	10118.199	1292.900	10123.000	1297.700	10157.000	1297.700	10166.000
ET	0.000	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9832.000	10157.000
X1	293.000	0.000	9832.000	10157.000	120.000	120.000	120.000	0.930	0.100	0.000

X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.930	0.000
NC	0.030	0.030	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	293.400	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	293.400	6.000	9855.000	10145.000	40.000	40.000	40.000	0.000	0.000	0.000
GR	1297.800	9700.000	1297.800	9855.000	1287.800	9885.000	1287.800	10115.000	1297.800	10145.000
GR	1297.800	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	294.000	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	294.000	6.000	9855.000	10145.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	1297.900	9700.000	1297.900	9855.000	1287.900	9885.000	1287.900	10115.000	1297.900	10145.000
GR	1297.900	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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QT	5.000	2040.000	5100.000	8700.000	8700.000	10400.000	0.000	0.000	0.000	0.000
ET	296.300	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	296.300	6.000	9855.000	10145.000	290.000	290.000	290.000	0.000	0.000	0.000
GR	1298.200	9700.000	1298.200	9855.000	1288.100	9885.000	1288.100	10115.000	1298.200	10145.000
GR	1298.200	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	5.000	2040.000	5100.000	8650.000	8650.000	10400.000	0.000	0.000	0.000	0.000
ET	301.600	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	301.600	6.000	9855.000	10145.000	530.000	530.000	530.000	0.000	0.000	0.000
GR	1301.200	9700.000	1301.200	9855.000	1288.600	9885.000	1288.600	10115.000	1301.200	10145.000
GR	1301.200	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.038	0.038	0.038	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	304.200	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	304.200	6.000	9855.000	10145.000	265.000	265.000	265.000	0.000	0.000	0.000
GR	1301.500	9700.000	1301.500	9855.000	1288.900	9885.000	1288.900	10115.000	1301.500	10145.000
GR	1301.500	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.015	0.015	0.015	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	304.500	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	304.500	6.000	9855.000	10145.000	30.000	30.000	30.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.530	9855.000	1288.930	9885.000	1288.930	10115.000	1301.530	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	304.750	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	304.750	6.000	9855.000	10145.000	25.000	25.000	25.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.600	9855.000	1289.000	9885.000	1289.000	10115.000	1301.600	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	304.760	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	304.760	6.000	9855.000	10145.000	1.000	1.000	1.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.600	9855.000	1296.000	9885.000	1296.000	10115.000	1301.600	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.038	0.038	0.038	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	305.100	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9855.000	10145.000
X1	305.100	6.000	9855.000	10145.000	34.000	34.000	34.000	0.000	0.000	0.000
GR	1305.300	9700.000	1305.300	9855.000	1296.200	9885.000	1296.200	10115.000	1305.300	10145.000
GR	1305.300	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.030	0.030	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	305.700	0.000	0.000	0.000	9.100	0.000	0.000	0.000	9852.000	10138.000

BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL

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X1     305.700       6.000    9852.000   10148.000      60.300      60.000      60.000       0.000       0.000       0.000
GR    1305.300    9700.000    1305.300    9852.000    1296.270    9882.500    1296.270   10117.500    1305.300   10148.000
GR    1305.300   10300.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000

QT       5.000    2040.000    5100.000    8600.000    8600.000   10400.000       0.000       0.000       0.000       0.000
NC       0.030       0.030       0.030       0.100       0.300       0.000       0.000       0.000       0.000       0.000
1
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            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
X1     306.550       4.000    9849.000   10151.000      85.000      85.000      85.000       0.000       0.000       0.000
GR    1305.400    9849.000    1296.380    9880.000    1296.380   10120.000    1305.400   10151.000       0.000       0.000

X1     306.900       0.000    9849.000   10151.000      35.000      35.000      35.000       0.000       0.020       0.000

X1     308.050       0.000    9849.000   10151.000     115.000     115.000     115.000       0.000       0.080       0.000

X1     310.550       0.000    9849.000   10151.000     250.000     250.000     250.000       0.000       0.250       0.000
EJ       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000       0.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 275.100
3710 WSEL ASSUMED BASED ON MIN DIFF
           DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
           DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
           CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
           DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
           CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
           BY THE COE.
   275.10      7.61  1286.61  1286.57  1286.61  1287.55      0.94      0.00      0.00  1286.50
    8980.     2503.     6336.      140.      683.      708.      78.       0.        0.   1286.40
     0.00      3.67      8.95      1.81     0.045     0.035     0.045     0.000  1279.00  9429.10
 0.005948       0.        0.        0.         0         5         0      0.00   792.43 10221.52
0
FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1286.61

STA=    9429.    9556.    9700.    9765.    9910.    9935.   10090.   10100.   10220.   10222.
  PER Q=      0.5      9.0      9.1      9.1      0.1     70.6      0.1      1.5      0.0
   AREA=     38.7    231.9    169.7    233.5      9.0    708.1      4.1     73.2      0.5
    VEL=      1.2      3.5      4.8      3.5      1.3      8.9      1.4      1.8      1.1

*SECNO 280.400

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00

   280.40      7.68  1289.28  1288.04      0.00  1289.90      0.63      2.33      0.03  1287.30
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     8920.    1214.    7706.       0.     302.    1159.       0.      18.       7.   1291.00
      0.02     4.03     6.65     0.00    0.045    0.035    0.000    0.000  1281.60   9782.73
  0.003391     520.     530.     540.        2       11        0     0.00   364.22  10146.95
0
 FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1289.28

 STA=    9783.    9795.    9865.    9885.   10170.
   PER Q=      0.6     10.9      2.1     86.4
    AREA=     20.1    229.0     52.4   1158.6
     VEL=      2.6      4.2      3.7      6.7

1
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    SECNO    DEPTH    CWSEL    CRIWS    WSELK    EG       HV       HL       OLOSS   BANK ELEV
    Q        QLOB     QCH      QROB     ALOB     ACH      AROB     VOL      TWA   LEFT/RIGHT
    TIME     VLOB     VCH      VROB     XNL      XNCH     XNR      WTN      ELMIN      SSTA
    SLOPE    XLOBL    XLCH     XLOBR    ITRIAL   IDC      ICONT    CORAR    TOPWID     ENDST

 *SECNO 285.700

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

    285.70     5.03  1291.73  1291.41     0.00  1292.86     1.12     2.80     0.15  1290.00
     8800.    2706.    6094.       0.     406.     662.       0.      33.      11.   1293.20
      0.04     6.66     9.20     0.00    0.045    0.035    0.000    0.000  1286.70   9721.00
  0.009468     530.     530.     530.        1       14        0     0.00   357.70  10078.70
0
 FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1291.73

 STA=    9721.    9750.    9790.    9800.    9865.    9880.   10170.
   PER Q=      0.8      3.7      1.9     21.4      2.9     69.2
    AREA=     25.2     69.6     27.4    243.1     41.1    662.4
     VEL=      2.9      4.6      6.2      7.7      6.3      9.2

 *SECNO 291.100

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.00 ELREA=     1296.00

    291.10     5.87  1295.87  1295.03     0.00  1296.76     0.89     3.88     0.02  1296.00
     8750.       0.    8750.       0.       0.    1158.       0.      47.      16.   1296.00
      0.06     0.00     7.56     0.00    0.000    0.035    0.000    0.000  1290.00   9721.58
  0.005713     540.     535.     540.        3        5        0     0.00   318.20  10039.79
0
 FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1295.87

 STA=    9722.   10040.
   PER Q=    100.0
    AREA=   1157.5
     VEL=      7.6

 CCHV=   0.100 CEHV=   0.300
 *SECNO 291.800

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.70

            51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
            HOMES DEVELOPMENT
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    291.80      8.73  1296.43  1294.25      0.00  1297.00      0.57      0.20      0.03  1297.70
     8750.        0.     8750.       0.        0.    1444.        0.       49.       16.   1297.70
      0.06      0.00      6.06     0.00     0.000     0.015     0.000     0.000  1287.70   9837.54
  0.001760       70.       70.      70.         2        20         0    -73.56    288.31 10125.86
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    291.80          CWSEL=   1296.43

 STA=    9838.   10134.
   PER Q=    100.0
    AREA=   1444.4
     VEL=      6.1

 *SECNO 293.000

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.80

    293.00      8.81  1296.61  1294.37      0.00  1297.22      0.60      0.21      0.01  1297.80
     8750.        0.     8750.       0.        0.    1402.        0.       53.       17.   1297.80
      0.07      0.00      6.24     0.00     0.000     0.015     0.000     0.000  1287.80   9836.80
  0.001771      120.      120.     120.         3        20         0    -32.98    269.02 10105.82
0
 FLOW DISTRIBUTION FOR SECNO=    293.00          CWSEL=   1296.61

 STA=    9837.   10113.
   PER Q=    100.0
    AREA=   1402.2
     VEL=      6.2

 CCHV=   0.100 CEHV=   0.300
 *SECNO 293.400
    293.40      9.28  1297.08  1291.29      0.00  1297.28      0.21      0.03      0.04  1297.80
     8750.        0.     8750.       0.        0.    2392.        0.       55.       17.   1297.80
      0.07      0.00      3.66     0.00     0.000     0.030     0.000     0.000  1287.80   9857.17
  0.000325       40.       40.      40.         2        18         0      0.00    285.65 10142.83
0
 FLOW DISTRIBUTION FOR SECNO=    293.40          CWSEL=   1297.08

 STA=    9857.   10145.
   PER Q=    100.0
    AREA=   2391.6
     VEL=      3.7

 *SECNO 294.000
    294.00      9.19  1297.09  1291.39      0.00  1297.30      0.21      0.02      0.00  1297.90
     8750.        0.     8750.       0.        0.    2368.        0.       58.       17.   1297.90
      0.08      0.00      3.70     0.00     0.000     0.030     0.000     0.000  1287.90   9857.42
  0.000336       60.       60.      60.         2        18         0      0.00    285.15 10142.58
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    294.00          CWSEL=   1297.09

 STA=    9857.   10145.
   PER Q=    100.0
    AREA=   2367.7
     VEL=      3.7

 *SECNO 296.300
 3710 WSEL ASSUMED BASED ON MIN DIFF
    296.30      9.09  1297.19  1291.57      0.00  1297.40      0.22      0.10      0.00  1298.20
     8700.        0.     8700.       0.        0.    2335.       0.       73.       19.   1298.20
      0.10      0.00      3.73     0.00     0.000    0.030     0.000     0.000  1288.10   9858.01
  0.000345      290.      290.     290.         0       18         0      0.00    283.99 10141.99
0
 FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1297.19

 STA=    9858.   10145.
   PER Q=    100.0
    AREA=   2335.4
     VEL=      3.7

 *SECNO 301.600
 3710 WSEL ASSUMED BASED ON MIN DIFF
    301.60      8.77  1297.37  1292.07      0.00  1297.61      0.24      0.20      0.01  1301.20
     8650.        0.     8650.       0.        0.    2200.       0.      101.       23.   1301.20
      0.14      0.00      3.93     0.00     0.000    0.030     0.000     0.000  1288.60   9864.12
  0.000394      530.      530.     530.         0       18         0      0.00    271.76 10135.88
0
 FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1297.37

 STA=    9864.   10145.
   PER Q=    100.0
    AREA=   2199.8
     VEL=      3.9

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.200
    304.20      8.59  1297.49  1292.37      0.00  1297.74      0.25      0.13      0.00  1301.50
     8650.        0.     8650.       0.        0.    2152.       0.      114.       24.   1301.50
      0.15      0.00      4.02     0.00     0.000    0.038     0.000     0.000  1288.90   9864.54
  0.000678      265.      265.     265.         2       18         0      0.00    270.92 10135.46
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
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 FLOW DISTRIBUTION FOR SECNO=    304.20          CWSEL=   1297.49

 STA=    9865.   10145.
   PER Q=    100.0
    AREA=   2152.3
     VEL=      4.0

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.500
 3710 WSEL ASSUMED BASED ON MIN DIFF
    304.50      8.57  1297.50  1292.40      0.00  1297.75      0.25      0.01      0.00  1301.53
     8650.        0.    8650.       0.        0.    2148.        0.      116.       25.   1301.53
      0.16      0.00     4.03     0.00     0.000    0.015     0.000     0.000   1288.93   9864.57
  0.000106       30.      30.      30.         0       18         0      0.00    270.85  10135.42
0
 FLOW DISTRIBUTION FOR SECNO=    304.50          CWSEL=   1297.50

 STA=    9865.   10145.
   PER Q=    100.0
    AREA=   2148.4
     VEL=      4.0

 *SECNO 304.750
    304.75      8.50  1297.50  1292.47      0.00  1297.75      0.26      0.00      0.00  1301.60
     8650.        0.    8650.       0.        0.    2128.        0.      117.       25.   1301.60
      0.16      0.00     4.06     0.00     0.000    0.015     0.000     0.000   1289.00   9864.75
  0.000109       25.      25.      25.         1       18         0      0.00    270.49  10135.24
0
 FLOW DISTRIBUTION FOR SECNO=    304.75          CWSEL=   1297.50

 STA=    9865.   10145.
   PER Q=    100.0
    AREA=   2127.9
     VEL=      4.1

 *SECNO 304.760

 3301 HV CHANGED MORE THAN HVINS

 3710 WSEL ASSUMED BASED ON MIN DIFF
 7185 MINIMUM SPECIFIC ENERGY
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

    304.76      3.42  1299.42  1299.42      0.00  1301.03      1.61      0.00      0.41  1301.60
     8650.        0.    8650.       0.        0.     849.        0.      117.       25.   1301.60
      0.16      0.00    10.18     0.00     0.000    0.015     0.000     0.000   1296.00   9866.68
  0.002262        1.       1.       1.         0       18         0      0.00    266.64  10133.32
0
 FLOW DISTRIBUTION FOR SECNO=    304.76          CWSEL=   1299.42

 STA=    9867.   10145.
   PER Q=    100.0
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```
    AREA=     849.3
     VEL=      10.2

 CCHV=   0.100 CEHV=   0.300
 *SECNO 305.100
 3710 WSEL ASSUMED BASED ON MIN DIFF
 7185 MINIMUM SPECIFIC ENERGY
    305.10      3.47  1299.67  1299.67      0.00  1301.33      1.66      0.16      0.01  1305.30
     8650.        0.    8650.       0.        0.     837.        0.      118.       25.   1305.30
      0.16      0.00    10.34      0.00     0.000     0.038     0.000     0.000  1296.20  9873.57
  0.014237       34.      34.       34.         0         5         0      0.00   252.86 10126.43
0
 FLOW DISTRIBUTION FOR SECNO=    305.10          CWSEL=   1299.67

 STA=    9874.   10145.
   PER Q=    100.0
    AREA=    836.9
     VEL=     10.3

 CCHV=   0.100 CEHV=   0.300
 *SECNO 305.700

 3301 HV CHANGED MORE THAN HVINS

            BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL
    305.70      4.62  1300.89  1299.67      0.00  1301.76      0.87      0.35      0.08  1305.30
     8650.        0.    8650.       0.        0.    1159.        0.      119.       25.   1305.30
      0.16      0.00     7.47      0.00     0.000     0.030     0.000     0.000  1296.27  9866.88
  0.003217       60.      60.       60.         3         5         0      0.00   266.23 10133.12
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=    305.70          CWSEL=   1300.89

 STA=    9867.   10148.
   PER Q=    100.0
    AREA=   1158.7
     VEL=      7.5

 CCHV=   0.100 CEHV=   0.300
 *SECNO 306.550
            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
    306.55      4.91  1301.29  1299.74      0.00  1302.01      0.72      0.24      0.01  1305.40
     8600.        0.    8600.       0.        0.    1264.        0.      121.       26.   1305.40
      0.16      0.00     6.81      0.00     0.000     0.030     0.000     0.000  1296.38  9863.09
  0.002474       85.      85.       85.         2        15         0      0.00   273.81 10136.90
0
 FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1301.29

 STA=    9863.   10151.
   PER Q=    100.0
    AREA=   1263.6
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     VEL=      6.8

 *SECNO 306.900
 3710 WSEL ASSUMED BASED ON MIN DIFF
    306.90      5.00  1301.40  1299.75      0.00  1302.10      0.70      0.08      0.00  1305.42
     8600.        0.    8600.       0.        0.    1284.        0.      122.       26.   1305.42
      0.17      0.00      6.70     0.00     0.000    0.030     0.000     0.000  1296.40  9862.84
  0.002351       35.       35.      35.         0       14         0      0.00   274.32 10137.16
0
 FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1301.40

 STA=    9863.   10151.
   PER Q=    100.0
    AREA=   1284.0
     VEL=      6.7

 *SECNO 308.050
    308.05      5.25  1301.73  1299.83      0.00  1302.35      0.63      0.25      0.01  1305.50
     8600.        0.    8600.       0.        0.    1354.        0.      126.       27.   1305.50
      0.17      0.00      6.35     0.00     0.000    0.030     0.000     0.000  1296.48  9861.96
  0.001986      115.      115.     115.         2       14         0      0.00   276.08 10138.04
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    308.05          CWSEL=   1301.73

 STA=    9862.   10151.
   PER Q=    100.0
    AREA=   1354.3
     VEL=      6.4

 *SECNO 310.550
    310.55      5.52  1302.25  1300.08      0.00  1302.81      0.56      0.45      0.01  1305.75
     8600.        0.    8600.       0.        0.    1433.        0.      134.       28.   1305.75
      0.18      0.00      6.00     0.00     0.000    0.030     0.000     0.000  1296.73  9860.98
  0.001661      250.      250.     250.         1       14         0      0.00   278.03 10139.01
0
 FLOW DISTRIBUTION FOR SECNO=    310.55          CWSEL=   1302.25

 STA=    9861.   10151.
   PER Q=    100.0
    AREA=   1433.1
     VEL=      6.0

1
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                                                                  THIS RUN EXECUTED MON, MAR 17 1986  10:21:26
 ************************************************
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  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************

T1   SKUNK CREEK   100 YEAR FLOODWAY
T2   53RD AVENUE TO IMMEDIATELY UPSTREAM OF ROADRUNNER PROPERTY
T3   GRIGORIAN 1983

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       5.        0.        0.  0.000000      0.00      0.0       0.  1286.970    0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000    0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

1
MON, MAR 17 1986  10:20:50                                                                          PAGE   14

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 275.100
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9800.0   10150.0  TYPE=     1  TARGET=     350.000
            DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
            DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
            CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
            DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
            CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
            BY THE COE.
   275.10      7.97  1286.97  1286.92  1286.61  1288.52     1.55     0.00     0.00  1286.50
    8980.     808.     8021.     152.     208.     764.      56.       0.       0.  1286.40
     0.00     3.88     10.50     2.70    0.045    0.035    0.045    0.000  1279.00  9800.00
 0.007402       0.        0.       0.        0        4        0     0.00   350.00 10150.00
0
FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1286.97

STA=    9800.    9910.    9935.   10090.   10100.   10150.
  PER Q=      8.5      0.5     89.3      0.2      1.5
   AREA=    190.2     18.0    763.8      7.7     48.5
    VEL=      4.0      2.3     10.5      2.4      2.7

*SECNO 280.400

3301 HV CHANGED MORE THAN HVINS
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3470 ENCROACHMENT STATIONS=    9880.0   10425.0  TYPE=     1  TARGET=   -9880.000

3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00

   280.40      8.55  1290.15  1287.85  1289.28  1290.78      0.63      2.16      0.09  1287.30
    8920.       38.    8882.       0.      15.    1394.       0.       15.       4.   1291.00
     0.02      2.52     6.37     0.00    0.045    0.035    0.000     0.000  1281.60   9880.00
 0.002579      520.     530.     540.        3       12        0      0.00   278.67  10158.67
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1290.15

 STA=    9880.    9885.   10170.
   PER Q=      0.4      99.6
    AREA=     15.1    1393.9
     VEL=      2.5       6.4

 *SECNO 285.700

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

   285.70      5.37  1292.07  1291.42  1291.73  1292.97      0.90      2.11      0.08  1290.00
    8800.     2784.    6016.       0.     460.     728.       0.       31.       8.   1293.20
     0.04      6.05     8.26     0.00    0.045    0.035    0.000     0.000  1286.70   9715.50
 0.007022      530.     530.     530.        3       11        0      0.00   369.72  10085.22
0
 FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1292.07

 STA=    9716.    9750.    9790.    9800.    9865.    9880.   10170.
   PER Q=      1.1       4.2      2.0     21.2      3.0     68.4
    AREA=     35.7      82.8     30.7    264.5     46.0    728.4
     VEL=      2.8       4.5      5.8      7.1      5.8      8.3

 *SECNO 291.100

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1296.00 ELREA=     1296.00

   291.10      5.69  1295.69  1295.01  1295.87  1296.67      0.98      3.68      0.02  1296.00
    8750.        0.    8750.       0.       0.    1100.       0.       45.      12.   1296.00
     0.06      0.00     7.96     0.00    0.000    0.035    0.000     0.000  1290.00   9723.87
 0.006707      540.     535.     540.        3       11        0      0.00   315.61  10039.48
0
 FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1295.69

 STA=    9724.   10040.
   PER Q=    100.0
    AREA=   1099.5
     VEL=      8.0

 CCHV=   0.100 CEHV=   0.300
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*SECNO 291.800

3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.70


3470 ENCROACHMENT STATIONS=    9832.0   10134.2  TYPE=     1  TARGET=     325.000
            51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
            HOMES DEVELOPMENT
   291.80      8.65  1296.35  1294.25  1296.43  1296.94     0.59      0.22      0.04  1297.70
    8750.        0.    8750.       0.       0.    1422.       0.       47.       12. 100000.00
     0.06      0.00     6.15     0.00    0.000    0.015    0.000    0.000  1287.70  9837.88
 0.001848       70.      70.      70.        2       20        0   -73.56   287.47 10125.35
0
 FLOW DISTRIBUTION FOR SECNO=    291.80          CWSEL=   1296.35

 STA=    9838.   10134.
   PER Q=    100.0
    AREA=   1422.3
     VEL=      6.2

 *SECNO 293.000

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.80


 3470 ENCROACHMENT STATIONS=    9832.0   10157.0  TYPE=     1  TARGET=     325.000
    293.00      8.75  1296.55  1294.37  1296.61  1297.17     0.62      0.22      0.01  1297.80
    8750.        0.    8750.       0.       0.    1384.       0.       51.       13.   1297.80
     0.07      0.00     6.32     0.00    0.000    0.015    0.000    0.000  1287.80  9837.07
 0.001844      120.     120.     120.        3       20        0   -32.98   268.34 10105.41
0
 FLOW DISTRIBUTION FOR SECNO=    293.00          CWSEL=   1296.55

 STA=    9837.   10113.
   PER Q=    100.0
    AREA=   1384.3
     VEL=      6.3

 CCHV=   0.100 CEHV=   0.300
 *SECNO 293.400
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST
```

```
3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   293.40      9.22  1297.02  1291.29  1297.37  1297.23     0.21      0.03      0.04  1297.80
    8750.        0.    8750.       0.       0.    2377.       0.       52.       13. 100000.00
     0.07      0.00     3.68     0.00     0.000    0.030    0.000    0.000  1287.80  9857.33
 0.000332       40.      40.      40.        2       18        0     0.00   285.34 10142.67
0
FLOW DISTRIBUTION FOR SECNO=    293.40          CWSEL=   1297.02

STA=    9857.   10145.
  PER Q=    100.0
   AREA=   2376.8
    VEL=      3.7

*SECNO 294.000

3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   294.00      9.14  1297.04  1291.39  1297.09  1297.26     0.21      0.02      0.00  1297.90
    8750.        0.    8750.       0.       0.    2353.       0.       56.       14. 100000.00
     0.08      0.00     3.72     0.00     0.000    0.030    0.000    0.000  1287.90  9857.58
 0.000342       60.      60.      60.        2       18        0     0.00   284.84 10142.42
0
FLOW DISTRIBUTION FOR SECNO=    294.00          CWSEL=   1297.04

STA=    9858.   10145.
  PER Q=    100.0
   AREA=   2353.0
    VEL=      3.7

*SECNO 296.300
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   296.30      9.04  1297.14  1291.57  1297.19  1297.36     0.22      0.10      0.00  1298.20
    8700.        0.    8700.       0.       0.    2321.       0.       71.       16. 100000.00
     0.10      0.00     3.75     0.00     0.000    0.030    0.000    0.000  1288.10  9858.15
 0.000352      290.     290.     290.        0       18        0     0.00   283.69 10141.84
0
FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1297.14

STA=    9858.   10145.
  PER Q=    100.0
   AREA=   2321.4
    VEL=      3.7

1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

*SECNO 301.600
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   301.60      8.72  1297.32  1292.07  1297.37  1297.56     0.24      0.20      0.01  1301.20
    8650.        0.    8650.       0.       0.    2187.       0.       99.       19. 100000.00
```

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      0.14      0.00      3.95      0.00     0.000     0.030     0.000     0.000  1288.60   9864.23
  0.000402      530.      530.      530.         0        18         0      0.00   271.54 10135.77
0
 FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1297.32

 STA=    9864.   10145.
   PER Q=    100.0
    AREA=   2187.3
     VEL=      4.0

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.200

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.20      8.55  1297.45  1292.37  1297.49  1297.70      0.25      0.14      0.00  1301.50
     8650.        0.    8650.       0.       0.    2141.       0.      112.       21. 100000.00
      0.15      0.00      4.04      0.00     0.000     0.038     0.000     0.000  1288.90   9864.64
  0.000689      265.      265.      265.         2        18         0      0.00   270.71 10135.35
0
 FLOW DISTRIBUTION FOR SECNO=    304.20          CWSEL=   1297.45

 STA=    9865.   10145.
   PER Q=    100.0
    AREA=   2140.5
     VEL=      4.0

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.500

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.50      8.53  1297.46  1292.40  1297.50  1297.71      0.25      0.01      0.00  1301.53
     8650.        0.    8650.       0.       0.    2135.       0.      113.       21. 100000.00
      0.16      0.00      4.05      0.00     0.000     0.015     0.000     0.000  1288.93   9864.69
  0.000108       30.       30.       30.         1        18         0      0.00   270.62 10135.31
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    304.50          CWSEL=   1297.46

 STA=    9865.   10145.
   PER Q=    100.0
    AREA=   2135.4
     VEL=      4.1

 *SECNO 304.750

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.75      8.45  1297.45  1292.47  1297.50  1297.71      0.26      0.00      0.00  1301.60
     8650.        0.    8650.       0.       0.    2116.       0.      114.       21. 100000.00
      0.16      0.00      4.09      0.00     0.000     0.015     0.000     0.000  1289.00   9864.86
  0.000111       25.       25.       25.         1        18         0      0.00   270.29 10135.14
0
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FLOW DISTRIBUTION FOR SECNO=    304.75          CWSEL=   1297.45

STA=    9865.   10145.
  PER Q=    100.0
   AREA=   2116.2
    VEL=      4.1

*SECNO 304.760

3301 HV CHANGED MORE THAN HVINS

3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY

3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   304.76      3.42  1299.42  1299.42  1299.42  1301.03     1.61      0.00      0.41  1301.60
    8650.        0.    8650.       0.       0.     849.       0.      114.       21. 100000.00
     0.16      0.00    10.19     0.00    0.000    0.015    0.000     0.000   1296.00   9866.69
 0.002267        1.       1.       1.        0       18        0      0.00    266.62 10133.31
0
FLOW DISTRIBUTION FOR SECNO=    304.76          CWSEL=   1299.42

STA=    9867.   10145.
  PER Q=    100.0
   AREA=    848.7
    VEL=     10.2

1
MON, MAR 17 1986  10:20:50                                                                                    PAGE   20

   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

CCHV=   0.100 CEHV=   0.300
*SECNO 305.100
3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY

3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
   305.10      3.47  1299.67  1299.67  1299.67  1301.33     1.66      0.16      0.01  1305.30
    8650.        0.    8650.       0.       0.     837.       0.      115.       21. 100000.00
     0.16      0.00    10.34     0.00    0.000    0.038    0.000     0.000   1296.20   9873.57
 0.014247       34.      34.      34.        0        5        0      0.00    252.85 10126.42
0
FLOW DISTRIBUTION FOR SECNO=    305.10          CWSEL=   1299.67

STA=    9874.   10145.
  PER Q=    100.0
   AREA=    836.7
    VEL=     10.3

CCHV=   0.100 CEHV=   0.300
*SECNO 305.700

3301 HV CHANGED MORE THAN HVINS
```

```
3470 ENCROACHMENT STATIONS=    9852.0   10138.0  TYPE=     1  TARGET=     286.000
            BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL
   305.70      4.62  1300.89  1299.67  1300.89  1301.76      0.87      0.35      0.08  1305.30
    8650.        0.    8650.       0.       0.    1159.        0.      116.       22. 100000.00
     0.16      0.00     7.46     0.00    0.000    0.030     0.000     0.000  1296.27   9866.88
 0.003217       60.      60.      60.        3        5         0      0.00   266.23 10133.12
0
 FLOW DISTRIBUTION FOR SECNO=    305.70          CWSEL=   1300.89

 STA=    9867.   10148.
   PER Q=    100.0
    AREA=   1158.8
     VEL=      7.5

 CCHV=   0.100 CEHV=   0.300
 *SECNO 306.550
            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
1
 MON, MAR 17 1986  10:20:50
```



```
    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

   306.55      4.91  1301.29  1299.73  1301.29  1302.01      0.72      0.24      0.01  1305.40
    8600.        0.    8600.       0.       0.    1264.        0.      119.       22.   1305.40
     0.16      0.00     6.81     0.00    0.000    0.030     0.000     0.000  1296.38   9863.09
 0.002473       85.      85.      85.        2       15         0      0.00   273.81 10136.90
0
 FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1301.29

 STA=    9863.   10151.
   PER Q=    100.0
    AREA=   1263.7
     VEL=      6.8

 *SECNO 306.900
 3710 WSEL ASSUMED BASED ON MIN DIFF
   306.90      5.00  1301.40  1299.75  1301.40  1302.10      0.70      0.08      0.00  1305.42
    8600.        0.    8600.       0.       0.    1284.        0.      120.       22.   1305.42
     0.17      0.00     6.70     0.00    0.000    0.030     0.000     0.000  1296.40   9862.84
 0.002351       35.      35.      35.        0       14         0      0.00   274.32 10137.16
0
 FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1301.40

 STA=    9863.   10151.
   PER Q=    100.0
    AREA=   1284.0
     VEL=      6.7

 *SECNO 308.050
   308.05      5.25  1301.73  1299.83  1301.73  1302.35      0.63      0.25      0.01  1305.50
    8600.        0.    8600.       0.       0.    1354.        0.      123.       23.   1305.50
     0.17      0.00     6.35     0.00    0.000    0.030     0.000     0.000  1296.48   9861.96
 0.001986      115.     115.     115.        2       14         0      0.00   276.08 10138.04
0
```

FLOW DISTRIBUTION FOR SECNO= 308.05 CWSEL= 1301.73

STA= 9862. 10151.
PER Q= 100.0
AREA= 1354.3
VEL= 6.4

1
MON, MAR 17 1986 10:20:50 PAGE 22

SECNO	DEPTH	CWSEL	CRIWS	WSELK	EG	HV	HL	OLOSS	BANK ELEV
Q	QLOB	QCH	QROB	ALOB	ACH	AROB	VOL	TWA	LEFT/RIGHT
TIME	VLOB	VCH	VROB	XNL	XNCH	XNR	WTN	ELMIN	SSTA
SLOPE	XLOBL	XLCH	XLOBR	ITRIAL	IDC	ICONT	CORAR	TOPWID	ENDST
*SECNO 310.550									
310.55	5.52	1302.25	1300.08	1302.25	1302.81	0.56	0.45	0.01	1305.75
8600.	0.	8600.	0.	0.	1433.	0.	131.	25.	1305.75
0.18	0.00	6.00	0.00	0.000	0.030	0.000	0.000	1296.73	9860.98
0.001661	250.	250.	250.	1	14	0	0.00	278.93	10139.01

0
FLOW DISTRIBUTION FOR SECNO= 310.55 CWSEL= 1302.25

STA= 9861. 10151.
PER Q= 100.0
AREA= 1433.1
VEL= 6.0

1
MON, MAR 17 1986 10:20:50 PAGE 23

THIS RUN EXECUTED MON, MAR 17 1986 10:21:53

****
HEC2 RELEASE DATED NOV 76 UPDATED MAY 1984
ERROR CORR - 01,02,03,04,05,06
MODIFICATION - 50,51,52,53,54,55,56
****

NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

TOPO MAPS USED 11/20/81

SUMMARY PRINTOUT

	SECNO	Q	CWSEL	DEPTH	TOPWID	10K*S	EG	K*XNCH	VCH	ELMIN	XLCH	TELMX
*	275.100	8980.00	1286.61	7.61	792.43	59.48	1287.55	35.00	8.95	1279.00	0.00	1290.00
*	275.100	8980.00	1286.97	7.97	350.00	74.02	1288.52	35.00	10.50	1279.00	0.00	1290.00
	280.400	8920.00	1289.28	7.68	364.22	33.91	1289.90	35.00	6.65	1281.60	530.00	1290.50
	280.400	8920.00	1290.15	8.55	278.67	25.79	1290.78	35.00	6.37	1281.60	530.00	1290.50

	285.700	8800.00	1291.73	5.03	357.70	94.68	1292.86	35.00	9.20	1286.70	530.00	1294.00
	285.700	8800.00	1292.07	5.37	369.72	70.22	1292.97	35.00	8.26	1286.70	530.00	1294.00
	291.100	8750.00	1295.87	5.87	318.20	57.13	1296.76	35.00	7.56	1290.00	535.00	1300.00
	291.100	8750.00	1295.69	5.69	315.61	67.07	1296.67	35.00	7.96	1290.00	535.00	1300.00
	291.800	8750.00	1296.43	8.73	288.31	17.60	1297.00	15.00	6.06	1287.70	70.00	1297.70
	291.800	8750.00	1296.35	8.65	287.47	18.48	1296.94	15.00	6.15	1287.70	70.00	1297.70
	293.000	8750.00	1296.61	8.81	269.02	17.71	1297.22	15.00	6.24	1287.80	120.00	1297.80
	293.000	8750.00	1296.55	8.75	268.34	18.44	1297.17	15.00	6.32	1287.80	120.00	1297.80
	293.400	8750.00	1297.07	9.28	285.65	3.25	1297.28	30.00	3.66	1287.80	40.00	1297.80
	293.400	8750.00	1297.02	9.22	285.34	3.32	1297.23	30.00	3.68	1287.80	40.00	1297.80
	294.000	8750.00	1297.09	9.19	285.15	3.36	1297.30	30.00	3.70	1287.90	60.00	1297.90
	294.000	8750.00	1297.04	9.14	284.84	3.42	1297.26	30.00	3.72	1287.90	60.00	1297.90
*	296.300	8700.00	1297.19	9.09	283.99	3.45	1297.40	30.00	3.73	1288.10	290.00	1298.20
*	296.300	8700.00	1297.14	9.04	283.69	3.52	1297.36	30.00	3.75	1288.10	290.00	1298.20
*	301.600	8650.00	1297.37	8.77	271.76	3.94	1297.61	30.00	3.93	1288.60	530.00	1301.20
*	301.600	8650.00	1297.32	8.72	271.54	4.02	1297.56	30.00	3.95	1288.60	530.00	1301.20
	304.200	8650.00	1297.49	8.59	270.92	6.78	1297.74	38.00	4.02	1288.90	265.00	1301.50
	304.200	8650.00	1297.45	8.55	270.71	6.89	1297.70	38.00	4.04	1288.90	265.00	1301.50

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MON, MAR 17 1986 10:20:50 PAGE 24

	SECNO	Q	CWSEL	DEPTH	TOPWID	10K*S	EG	K*XNCH	VCH	ELMIN	XLCH	TELMX
*	304.500	8650.00	1297.50	8.57	270.85	1.06	1297.75	15.00	4.03	1288.93	30.00	1301.60
	304.500	8650.00	1297.46	8.53	270.62	1.08	1297.71	15.00	4.05	1288.93	30.00	1301.60
	304.750	8650.00	1297.50	8.50	270.49	1.09	1297.75	15.00	4.06	1289.00	25.00	1301.60
	304.750	8650.00	1297.45	8.45	270.29	1.11	1297.71	15.00	4.09	1289.00	25.00	1301.60
*	304.760	8650.00	1299.42	3.42	266.64	22.62	1301.03	15.00	10.18	1296.00	1.00	1301.60
*	304.760	8650.00	1299.42	3.42	266.62	22.67	1301.03	15.00	10.19	1296.00	1.00	1301.60
*	305.100	8650.00	1299.67	3.47	252.86	142.37	1301.33	38.00	10.34	1296.20	34.00	1305.30
*	305.100	8650.00	1299.67	3.47	252.85	142.47	1301.33	38.00	10.34	1296.20	34.00	1305.30
	305.700	8650.00	1300.89	4.62	266.23	32.17	1301.76	30.00	7.47	1296.27	60.00	1305.30
	305.700	8650.00	1300.89	4.62	266.23	32.17	1301.76	30.00	7.46	1296.27	60.00	1305.30
	306.550	8600.00	1301.29	4.91	273.81	24.74	1302.01	30.00	6.81	1296.38	85.00	1305.40
	306.550	8600.00	1301.29	4.91	273.81	24.73	1302.01	30.00	6.81	1296.38	85.00	1305.40
*	306.900	8600.00	1301.40	5.00	274.32	23.51	1302.10	30.00	6.70	1296.40	35.00	1305.42
*	306.900	8600.00	1301.40	5.00	274.32	23.51	1302.10	30.00	6.70	1296.40	35.00	1305.42
	308.050	8600.00	1301.73	5.25	276.08	19.86	1302.35	30.00	6.35	1296.48	115.00	1305.50
	308.050	8600.00	1301.73	5.25	276.08	19.86	1302.35	30.00	6.35	1296.48	115.00	1305.50
	310.550	8600.00	1302.25	5.52	278.03	16.61	1302.81	30.00	6.00	1296.73	250.00	1305.75
	310.550	8600.00	1302.25	5.52	278.03	16.61	1302.81	30.00	6.00	1296.73	250.00	1305.75

SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=   275.100  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   275.100  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   296.300  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   296.300  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   301.600  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   301.600  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   304.500  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   304.760  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   304.760  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   304.760  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   304.760  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   305.100  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   305.100  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   305.100  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   305.100  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   306.900  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   306.900  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
```


FLOODWAY DATA, TOPO MAPS USED 11/20/81
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WATER SURFACE ELEVATION WITHOUT FLOODWAY	DIFFERENCE
275.100	350.	1028.	8.7	1287.0	1286.6	0.4
280.400	279.	1409.	6.3	1290.2	1289.3	0.9
285.700	370.	1188.	7.4	1292.0	1291.7	0.3
291.100	316.	1100.	8.0	1295.8	1295.9	-0.1
291.800	287.	1422.	6.2	1296.4	1296.4	0.0
293.000	268.	1384.	6.3	1296.6	1296.6	0.0
293.400	285.	2377.	3.7	1297.1	1297.1	0.0
294.000	285.	2353.	3.7	1297.1	1297.1	0.0
296.300	284.	2321.	3.7	1297.2	1297.2	0.0
301.600	272.	2187.	4.0	1297.4	1297.4	0.0
304.200	271.	2141.	4.0	1297.5	1297.5	0.0
304.500	271.	2135.	4.1	1297.5	1297.5	0.0
304.750	270.	2116.	4.1	1297.5	1297.5	0.0

304.760	267.	849.	10.2	1299.4	1299.4	0.0
305.100	253.	837.	10.3	1299.7	1299.7	0.0
305.700	266.	1159.	7.5	1300.9	1300.9	0.0
306.550	274.	1264.	6.8	1301.3	1301.3	0.0
306.900	274.	1284.	6.7	1301.4	1301.4	0.0
308.350	276.	1354.	6.4	1301.7	1301.7	0.0
310.550	278.	1433.	6.0	1302.3	1302.3	0.0

1
MON, MAR 17 1986 10:21:57 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 10:21:58

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
```

304.760	267.	849.	10.2	1299.4	1299.4	0.0
305.100	253.	837.	10.3	1299.7	1299.7	0.0
305.700	266.	1159.	7.5	1300.9	1300.9	0.0
306.550	274.	1264.	6.8	1301.3	1301.3	0.0
306.900	274.	1284.	6.7	1301.4	1301.4	0.0
308.050	276.	1354.	6.4	1301.7	1301.7	0.0
310.550	278.	1433.	6.0	1302.3	1302.3	0.0

1
MON, MAR 17 1986 10:21:57 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 10:21:58

```
**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************
```

COMPUTER PRINTOUT 3

```
1*****************************************************
 *  WATER SURFACE PROFILES                           *
 *  VERSION OF NOVEMBER 1976                         *
 *  UPDATED MAY 1984                                 *
 *                                                   *
 *  RUN DATE MON, MAR 17 1986 TIME 10:22:32          *
 *****************************************************
```


```
*************************************
* U.S. ARMY CORPS OF ENGINEERS
* THE HYDROLOGIC ENGINEERING CENTER
* 609 SECOND STREET, SUITE D
* DAVIS, CALIFORNIA 95616
* (916) 440-2105 (FTS) 448-2105
*************************************
```


PRINTOUT 3

MODELLING WITH PROPOSED CHANNELIZATION CONDITION
Future 100-Year Flood

```
X     X  XXXXXXX   XXXXX              XXXXX
X     X  X         X     X            X     X
X     X  X         X                        X
XXXXXXX  XXXX      X          XXXXX    XXXXX
X     X  X         X                  X
X     X  X         X     X            X
X     X  XXXXXXX   XXXXX              XXXXXXX
```

1
MON, MAR 17 1986 10:22:32 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 10:22:33

```
*************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
*************************************************
```

```
C
T1   SKUNK CREEK  100 YEAR FLOOD FUTURE
T2   53RD AVENUE TO IMMEDIATELY UPSTREAM OF ROADRUNNER PROPERTY
T3      TOPO MAPS USED  11/20/81  2/4/80  6/6/74

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.       6.        0.        0.  0.007100      0.00       0.0       0.  1286.750     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     1.000     0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000

J3  VARIABLE CODES FOR SUMMARY PRINTOUT

    38.000    43.000     1.000     8.000     4.000     5.000     3.000    17.000    26.000    42.000


    39.000    63.000     0.000   200.000     0.000     0.000     0.000     0.000     0.000     0.000


NC      0.045     0.045     0.035     0.100     0.300     0.000     0.000     0.000     0.000     0.000
QT      6.000  2080.000  5300.000  8980.000  8980.000 10600.000 10600.000     0.000     0.000     0.000
ET    275.100     0.000     0.000     0.000     9.100     0.000     9.100     0.000  9800.000 10150.000
          THIS ANALYSIS IS BASED ON FUTURE 100 YEAR FLOOD FLOWS
```

DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
BY THE COE

X1	275.100	20.000	9935.000	10090.000	0.000	0.000	0.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1290.000	9100.000	1288.000	9140.000	1286.000	9556.000	1284.000	9700.000	1284.000	9765.000
GR	1286.000	9910.000	1286.500	9935.000	1280.000	9955.000	1279.000	9985.000	1279.000	10020.000
GR	1280.000	10025.000	1284.000	10040.000	1286.000	10070.000	1286.400	10090.000	1286.000	10100.000
GR	1286.000	10220.000	1288.000	10225.000	1288.000	10370.000	1290.000	10500.000	1290.000	10580.000
QT	6.000	2080.000	5300.000	8920.000	8920.000	10500.000	10500.000	0.000	0.000	0.000
ET	280.400	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9880.000	0.000
X1	280.400	20.000	9885.000	10170.000	520.000	540.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1292.000	9000.000	1290.000	9500.000	1290.000	9550.000	1290.000	9595.000	1290.000	9780.000
GR	1286.000	9795.000	1286.000	9865.000	1287.300	9885.000	1286.000	9900.000	1282.000	9940.000
GR	1281.600	10015.000	1282.000	10020.000	1286.000	10050.000	1288.000	10090.000	1288.000	10130.000
GR	1291.000	10170.000	1290.000	10315.000	1290.000	10320.000	1290.000	10370.000	1290.500	10425.000

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QT	6.000	2080.000	5300.000	8800.000	8800.000	10500.000	10500.000	0.000	0.000	0.000
X1	285.700	17.000	9880.000	10170.000	530.000	530.000	530.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1296.000	8900.000	1294.000	9200.000	1293.000	9700.000	1290.000	9750.000	1290.000	9790.000
GR	1288.000	9800.000	1288.000	9865.000	1290.000	9880.000	1290.000	9920.000	1288.000	9980.000
GR	1286.700	9985.000	1286.700	10050.000	1288.000	10060.000	1290.000	10070.000	1292.000	10080.000
GR	1293.200	10170.000	1294.000	10580.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	6.000	2080.000	5300.000	8750.000	8750.000	10400.000	10400.000	0.000	0.000	0.000
X1	291.100	19.000	9720.000	10040.000	540.000	540.000	535.000	0.000	0.000	0.000
X3	10.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1300.000	8250.000	1298.000	8730.000	1298.000	9198.000	1298.000	9199.000	1298.000	9200.000
GR	1296.000	9720.000	1292.000	9770.000	1292.000	9790.000	1293.200	9890.000	1292.000	9960.000
GR	1290.000	9970.000	1290.000	10030.000	1296.000	10040.000	1296.700	10100.000	1296.000	10130.000
GR	1296.000	10270.000	1298.000	10550.000	1298.000	11170.000	1300.000	12150.000	0.000	0.000
NC	0.015	0.015	0.015	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	291.800	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9832.000	10157.000

51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
HOMES DEVELOPMENT

X1	291.800	20.000	9832.000	10157.000	70.000	70.000	70.000	0.930	0.000	0.000
BT	20.000	9832.000	1297.700	1297.700	9861.000	1291.500	1291.500	10000.000	1291.500	1291.500
BT	10053.000	1291.800	1291.800	10053.100	1292.000	1290.700	10063.100	1292.100	1290.700	10064.100
BT	1292.200	1290.700	10074.100	1292.300	1290.700	10075.100	1292.350	1290.700	10085.100	1292.400
BT	1290.700	10086.100	1292.450	1290.700	10096.100	1292.500	1290.700	10097.100	1292.600	1290.700
BT	10107.000	1292.700	1290.700	10108.000	1292.750	1290.700	10118.100	1292.800	1290.700	10118.199
BT	1292.800	1292.800	10123.000	1292.900	1292.900	10157.000	1297.700	1297.700	10166.000	1297.700
BT	1297.700	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
GR	1297.700	9832.000	1291.500	9861.000	1291.500	10000.000	1291.500	10053.000	1287.700	10053.100
GR	1287.700	10063.100	1287.700	10064.100	1287.700	10074.100	1287.700	10075.100	1287.700	10085.100
GR	1287.700	10086.100	1287.700	10096.100	1287.700	10097.100	1287.700	10107.000	1287.700	10108.000
GR	1287.700	10118.100	1292.800	10118.199	1292.900	10123.000	1297.700	10157.000	1297.700	10166.000
ET	0.000	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9832.000	10157.000

X1	293.000	0.000	9832.000	10157.000	120.000	120.000	120.000	0.930	0.100	0.000
X2	0.000	0.000	0.000	0.000	0.000	0.000	1.000	0.000	0.930	0.000
NC	0.030	0.030	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	293.400	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	293.400	6.000	9855.000	10145.000	40.000	40.000	40.000	0.000	0.000	0.000
GR	1297.800	9700.000	1297.800	9855.000	1287.800	9885.000	1287.800	10115.000	1297.800	10145.000
GR	1297.800	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	294.000	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	294.000	6.000	9855.000	10145.000	60.000	60.000	60.000	0.000	0.000	0.000
GR	1297.900	9700.000	1297.900	9855.000	1287.900	9885.000	1287.900	10115.000	1297.900	10145.000
GR	1297.900	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

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QT	6.000	2040.000	5100.000	8700.000	8700.000	10400.000	10400.000	0.000	0.000	0.000
ET	296.300	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	296.300	6.000	9855.000	10145.000	290.000	290.000	290.000	0.000	0.000	0.000
GR	1298.200	9700.000	1298.200	9855.000	1288.100	9885.000	1288.100	10115.000	1298.200	10145.000
GR	1298.200	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
QT	6.000	2040.000	5100.000	8650.000	8650.000	10400.000	10400.000	0.000	0.000	0.000
ET	301.600	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	301.600	6.000	9855.000	10145.000	530.000	530.000	530.000	0.000	0.000	0.000
GR	1301.200	9700.000	1301.200	9855.000	1288.600	9885.000	1288.600	10115.000	1301.200	10145.000
GR	1301.200	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.038	0.038	0.038	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	304.200	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	304.200	6.000	9855.000	10145.000	265.000	265.000	265.000	0.000	0.000	0.000
GR	1301.500	9700.000	1301.500	9855.000	1288.900	9885.000	1288.900	10115.000	1301.500	10145.000
GR	1301.500	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.015	0.015	0.015	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	304.500	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	304.500	6.000	9855.000	10145.000	30.000	30.000	30.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.530	9855.000	1288.930	9885.000	1288.930	10115.000	1301.530	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	304.750	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	304.750	6.000	9855.000	10145.000	25.000	25.000	25.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.600	9855.000	1289.000	9885.000	1289.000	10115.000	1301.600	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
ET	304.760	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	304.760	6.000	9855.000	10145.000	1.000	1.000	1.000	0.000	0.000	0.000
GR	1301.600	9700.000	1301.600	9855.000	1296.000	9885.000	1296.000	10115.000	1301.600	10145.000
GR	1301.600	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.038	0.038	0.038	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	305.100	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9855.000	10145.000
X1	305.100	6.000	9855.000	10145.000	34.000	34.000	34.000	0.000	0.000	0.000
GR	1305.300	9700.000	1305.300	9855.000	1296.200	9885.000	1296.200	10115.000	1305.300	10145.000
GR	1305.300	10300.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
NC	0.030	0.030	0.030	0.100	0.300	0.000	0.000	0.000	0.000	0.000
ET	305.700	0.000	0.000	0.000	9.100	0.000	9.100	0.000	9852.000	10148.000

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            BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL
X1     305.700      6.000   9852.000  10148.000     60.000     60.000     60.000      0.000      0.000      0.000
GR    1305.300   9700.000   1305.300   9852.000   1296.270   9882.500   1296.270  10117.500   1305.300  10148.000
GR    1302.900  10300.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000

QT       6.000   2040.000   5100.000   8600.000   8600.000  10400.000  10400.000      0.000      0.000      0.000
NC       0.030      0.030      0.030      0.100      0.300      0.000      0.000      0.000      0.000      0.000
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            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
X1     306.550      4.000   9849.000  10151.000     85.000     85.000     85.000      0.000      0.000      0.000
GR    1305.400   9849.000   1296.380   9880.000   1296.380  10120.000   1305.400  10151.000      0.000      0.000

X1     306.900      0.000   9849.000  10151.000     35.000     35.000     35.000      0.000      0.020      0.000

X1     308.050      0.000   9849.000  10151.000    115.000    115.000    115.000      0.000      0.080      0.000

X1     310.550      0.000   9849.000  10151.000    250.000    250.000    250.000      0.000      0.250      0.000
EJ       0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000      0.000
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


*PROF 1

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 275.100
3710 WSEL ASSUMED BASED ON MIN DIFF
            THIS ANALYSIS IS BASED ON FUTURE 100 YEAR FLOOD FLOWS
            DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
            DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
            CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
            DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
            CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
            BY THE COE
   275.10      7.84  1286.84  1286.84  1286.75  1287.88     1.04     0.00     0.00  1286.50
   10600.     3221.     7129.      251.      804.      744.     108.       0.       0.  1286.40
     0.00      4.00      9.59      2.32     0.045     0.035    0.045    0.000  1279.00  9381.36
 0.006394       0.        0.        0.        0         4        0     0.00   840.73 10222.10
0
FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1286.84

STA=    9381.    9556.    9700.    9765.    9910.    9935.   10090.   10100.   10220.   10222.
  PER Q=      1.0      9.9      9.2     10.0      0.3     67.3      0.1      2.2      0.0
   AREA=     73.3    264.9    184.6    266.7     14.7    743.6      6.4    100.8      0.9
    VEL=      1.5      4.0      5.3      4.0      1.9      9.6      2.0      2.4      1.4

*SECNO 280.400

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00
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   280.40      8.06  1289.66  1288.22      0.00  1290.38      0.72      2.47      0.03  1287.30
   10500.     1517.     8983.       0.      341.     1260.       0.       20.       7.   1291.00
     0.02      4.45      7.13      0.00    0.045     0.035     0.000     0.000  1281.60  9781.29
 0.003575      520.      530.      540.        2         9         0      0.00   370.77 10152.06
0
 FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1289.66

 STA=    9781.    9795.    9865.    9885.   10170.
   PER Q=      0.7     11.4      2.3     85.5
    AREA=     25.0    255.8     60.1   1259.9
     VEL=      2.9      4.7      4.1      7.1

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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 *SECNO 285.700

 3495 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

   285.70      5.52  1292.22  1291.73      0.00  1293.38      1.16      2.86      0.13  1290.00
   10500.     3412.     7088.       0.      484.      759.       0.       37.      12.   1293.20
     0.04      7.05      9.33      0.00    0.045     0.035     0.000     0.000  1286.70  9713.06
 0.009095      530.      530.      530.        2        14         0      0.00   383.17 10096.23
0
 FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1292.22

 STA=    9713.    9750.    9790.    9800.    9865.    9880.   10170.
   PER Q=      1.3      4.5      2.1     21.5      3.1     67.5
    AREA=     40.9     88.7     32.2    274.1     48.2    759.3
     VEL=      3.4      5.4      6.8      8.2      6.8      9.3

 *SECNO 291.100

 3265 DIVIDED FLOW

   291.10      6.24  1296.24  1295.42      0.00  1297.26      1.02      3.87      0.01  1296.00
   10400.        5.    10358.      37.        7.     1274.      41.       53.      18.   1296.00
     0.06      0.61      8.13      0.91    0.045     0.035     0.045     0.000  1290.00  9657.94
 0.005855      540.      535.      540.        3         8         0      0.00   586.17 10303.42
0
 FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1296.24

 STA=    9658.    9720.   10040.   10060.   10270.   10303.
   PER Q=      0.0     99.6      0.0      0.3      0.0
    AREA=      7.4   1274.4      2.4     34.6      4.0
     VEL=      0.6      8.1      0.6      1.0      0.6

 CCHV=   0.100 CEHV=   0.300
 *SECNO 291.800

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.70
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          51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
          HOMES DEVELOPMENT
    291.80      9.12  1296.82  1294.67      0.00  1297.51      0.69      0.22      0.03  1297.70
    10400.        0.   10400.       0.        0.    1560.       0.       55.       19.   1297.70
      0.06      0.00      6.67     0.00     0.000    0.015     0.000    0.000  1287.70  9835.81
  0.001952       70.       70.      70.         2       20         0   -73.56   292.66 10128.47
0
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    291.80          CWSEL=   1296.82

 STA=    9836.   10134.
   PER Q=    100.0
    AREA=   1559.9
     VEL=      6.7

 *SECNO 293.000

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.80

    293.00      9.23  1297.03  1294.81      0.00  1297.76      0.73      0.23      0.01  1297.80
    10400.        0.   10400.       0.        0.    1515.       0.       59.       19.   1297.80
      0.07      0.00      6.87     0.00     0.000    0.015     0.000    0.000  1287.80  9835.12
  0.001963      120.      120.     120.         3       20         0   -32.98   273.25 10108.37
0
 FLOW DISTRIBUTION FOR SECNO=    293.00          CWSEL=   1297.03

 STA=    9835.   10113.
   PER Q=    100.0
    AREA=   1514.9
     VEL=      6.9

 CCHV=   0.100 CEHV=   0.300
 *SECNO 293.400
    293.40      9.78  1297.58  1291.72      0.00  1297.84      0.26      0.03      0.05  1297.80
    10400.        0.   10400.       0.        0.    2536.       0.       61.       20.   1297.80
      0.07      0.00      4.10     0.00     0.000    0.030     0.000    0.000  1287.80  9855.67
  0.000384       40.       40.      40.         2       14         0     0.00   288.66 10144.33
0
 FLOW DISTRIBUTION FOR SECNO=    293.40          CWSEL=   1297.58

 STA=    9856.   10145.
   PER Q=    100.0
    AREA=   2535.6
     VEL=      4.1

 *SECNO 294.000
    294.00      9.70  1297.60  1291.81      0.00  1297.86      0.27      0.02      0.00  1297.90
    10400.        0.   10400.       0.        0.    2512.       0.       65.       20.   1297.90
      0.07      0.00      4.14     0.00     0.000    0.030     0.000    0.000  1287.90  9855.91
  0.000395       60.       60.      60.         2       18         0     0.00   288.17 10144.09
0
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

 FLOW DISTRIBUTION FOR SECNO=    294.00          CWSEL=   1297.60

 STA=    9856.   10145.
   PER Q=    100.0
    AREA=   2512.1
     VEL=      4.1

 *SECNO 296.300
 3710 WSEL ASSUMED BASED ON MIN DIFF
    296.30      9.61  1297.71  1292.01      0.00  1297.98      0.27      0.12      0.00  1298.20
    10400.       0.   10400.       0.        0.    2484.       0.       81.       22.   1298.20
      0.09      0.00     4.19     0.00     0.000    0.030    0.000    0.000  1288.10  9856.46
  0.000408     290.     290.     290.         0       18         0     0.00   287.08 10143.54
0
 FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1297.71

 STA=    9856.   10145.
   PER Q=    100.0
    AREA=   2484.2
     VEL=      4.2

 *SECNO 301.600
 3710 WSEL ASSUMED BASED ON MIN DIFF
    301.60      9.32  1297.92  1292.52      0.00  1298.22      0.30      0.23      0.01  1301.20
    10400.       0.   10400.       0.        0.    2351.       0.      111.       25.   1301.20
      0.12      0.00     4.42     0.00     0.000    0.030    0.000    0.000  1288.60  9862.81
  0.000463     530.     530.     530.         0       18         0     0.00   274.38 10137.19
0
 FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1297.92

 STA=    9863.   10145.
   PER Q=    100.0
    AREA=   2350.5
     VEL=      4.4

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.200
    304.20      9.17  1298.07  1292.83      0.00  1298.38      0.32      0.16      0.00  1301.50
    10400.       0.   10400.       0.        0.    2308.       0.      125.       27.   1301.50
      0.14      0.00     4.51     0.00     0.000    0.038    0.000    0.000  1288.90  9863.18
  0.000787     265.     265.     265.         2       14         0     0.00   273.64 10136.82
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST
```

```
FLOW DISTRIBUTION FOR SECNO=    304.20          CWSEL=   1298.07

STA=    9863.   10145.
  PER Q=    100.0
   AREA=   2308.0
    VEL=      4.5

CCHV=   0.100 CEHV=   0.300
*SECNO 304.500
   304.50      9.14  1298.07  1292.86     0.00  1298.39     0.32     0.01     0.00  1301.53
   10400.        0.   10400.       0.       0.    2303.       0.     126.      27.   1301.53
     0.14      0.00     4.52     0.00    0.000    0.015    0.000    0.000  1288.93  9863.22
 0.000123       30.      30.      30.        1       14        0     0.00   273.56 10136.78
0
FLOW DISTRIBUTION FOR SECNO=    304.50          CWSEL=   1298.07

STA=    9863.   10145.
  PER Q=    100.0
   AREA=   2303.2
    VEL=      4.5

*SECNO 304.750
   304.75      9.07  1298.07  1292.93     0.00  1298.39     0.32     0.00     0.00  1301.60
   10400.        0.   10400.       0.       0.    2284.       0.     128.      27.   1301.60
     0.14      0.00     4.55     0.00    0.000    0.015    0.000    0.000  1289.00  9863.39
 0.000127       25.      25.      25.        1       14        0     0.00   273.22 10136.61
0
FLOW DISTRIBUTION FOR SECNO=    304.75          CWSEL=   1298.07

STA=    9863.   10145.
  PER Q=    100.0
   AREA=   2283.9
    VEL=      4.6

*SECNO 304.760

3301 HV CHANGED MORE THAN HVINS

3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY
   304.76      3.86  1299.86  1299.86     0.00  1301.65     1.79     0.00     0.44  1301.60
   10400.        0.   10400.       0.       0.     969.       0.     128.      27.   1301.60
     0.14      0.00    10.74     0.00    0.000    0.015    0.000    0.000  1296.00  9864.30
 0.002162        1.       1.       1.        0       14        0     0.00   271.39 10135.70
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=    304.76          CWSEL=   1299.86

STA=    9864.   10145.
```

```
  PER Q=     100.0
   AREA=     968.5
    VEL=      10.7

CCHV=   0.100 CEHV=   0.300
*SECNO 305.100
3710 WSEL ASSUMED BASED ON MIN DIFF
7185 MINIMUM SPECIFIC ENERGY
   305.10      3.91  1300.11  1300.11      0.00  1301.97      1.86      0.15      0.02  1305.30
   10400.        0.   10400.       0.        0.     950.        0.      129.       28.   1305.30
     0.14      0.00     10.95     0.00     0.000    0.038     0.000     0.000   1296.20   9872.11
 0.013728       34.       34.      34.         0        5         0      0.00    255.78  10127.89
0
FLOW DISTRIBUTION FOR SECNO=    305.10          CWSEL=   1300.11

STA=    9872.   10145.
  PER Q=     100.0
   AREA=     949.6
    VEL=      11.0

CCHV=   0.100 CEHV=   0.300
*SECNO 305.700

3301 HV CHANGED MORE THAN HVINS

            BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL
   305.70      5.14  1301.41  1300.10      0.00  1302.41      1.00      0.35      0.09  1305.30
   10400.        0.   10400.       0.        0.    1298.        0.      130.       28.   1305.30
     0.15      0.00      8.01     0.00     0.000    0.030     0.000     0.000   1296.27   9865.13
 0.003245       60.       60.      60.         3        5         0      0.00    269.74  10134.87
0
FLOW DISTRIBUTION FOR SECNO=    305.70          CWSEL=   1301.41

STA=    9865.   10148.
  PER Q=     100.0
   AREA=    1297.9
    VEL=       8.0

1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

CCHV=   0.100 CEHV=   0.300
*SECNO 306.550
            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
   306.55      5.45  1301.83  1300.18      0.00  1302.67      0.84      0.24      0.02  1305.40
   10400.        0.   10400.       0.        0.    1410.        0.      133.       28.   1305.40
     0.15      0.00      7.38     0.00     0.000    0.030     0.000     0.000   1296.38   9861.27
 0.002556       85.       85.      85.         2       15         0      0.00    277.46  10138.73
0
FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1301.83

STA=    9861.   10151.
  PER Q=     100.0
```

```
    AREA=   1410.1
     VEL=      7.4

 *SECNO 306.900
    306.90      5.54  1301.94  1300.19      0.00  1302.76      0.82      0.09      0.00  1305.42
    10400.       0.   10400.       0.        0.    1433.        0.      134.       29.   1305.42
      0.15      0.00      7.26     0.00     0.000    0.030     0.000     0.000  1296.40   9860.98
  0.002427      35.       35.      35.         1       19         0      0.00   278.04 10139.02
0
 FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1301.94

 STA=    9861.   10151.
   PER Q=    100.0
    AREA=   1433.3
     VEL=      7.3

 *SECNO 308.050
    308.05      5.81  1302.29  1300.28      0.00  1303.02      0.74      0.26      0.01  1305.50
    10400.       0.   10400.       0.        0.    1510.        0.      138.       29.   1305.50
      0.16      0.00      6.89     0.00     0.000    0.030     0.000     0.000  1296.48   9860.04
  0.002059     115.      115.     115.         2       14         0      0.00   279.93 10139.96
0
 FLOW DISTRIBUTION FOR SECNO=    308.05          CWSEL=   1302.29

 STA=    9860.   10151.
   PER Q=    100.0
    AREA=   1510.0
     VEL=      6.9

1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *SECNO 310.550
 3710 WSEL ASSUMED BASED ON MIN DIFF
    310.55      6.11  1302.84  1300.52      0.00  1303.50      0.66      0.47      0.01  1305.75
    10400.       0.   10400.       0.        0.    1597.        0.      147.       31.   1305.75
      0.17      0.00      6.51     0.00     0.000    0.030     0.000     0.000  1296.73   9858.97
  0.001726     250.      250.     250.         0       14         0      0.00   282.06 10141.03
0
 FLOW DISTRIBUTION FOR SECNO=    310.55          CWSEL=   1302.84

 STA=    9859.   10151.
   PER Q=    100.0
    AREA=   1597.3
     VEL=      6.5

1
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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
**************************************************

T1   SKUNK CREEK   100 YEAR FLOODWAY
T2   53RD AVENUE TO IMMEDIATELY UPSTREAM OF ROADRUNNER PROPERTY
T3   GRIGORIAN 1983

J1  ICHECK    INQ       NINV      IDIR      STRT      METRIC    HVINS     Q         WSEL      FQ

       0.        7.        0.        0.  0.007800      0.00       0.0        0.  1287.310     0.000

J2  NPROF     IPLOT     PRFVS     XSECV     XSECH     FN        ALLDC     IBW       CHNIM     ITRACE

     15.000     0.000    -1.000     0.000     0.000     0.000    -1.000     0.000     0.000    15.000
```



```
   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

*PROF 2

CRITICAL DEPTH TO BE CALCULATED AT ALL CROSS SECTIONS

CCHV=   0.100 CEHV=   0.300
*SECNO 275.100
3710 WSEL ASSUMED BASED ON MIN DIFF

3470 ENCROACHMENT STATIONS=    9800.0   10150.0  TYPE=     1  TARGET=     350.000
            THIS ANALYSIS IS BASED ON FUTURE 100 YEAR FLOOD FLOWS
            DATA FOR CROSS SECTIONS 275.1 THRU 291.1 PER COE INPUT
            DATA FOR CROSS SECTIONS 291.8 THRU 305.7 PER PROPOSED
            CHANNELIZATION THROUGH ROADRUNNER HOMES DEVELOPMENT
            DATA FOR CROSS SECTIONS 306.55 THRU 310.55 PER RECENT
            CHANNELIZATION BY OVERLAND HILLS DEVELOPMENT AND APPROVED
            BY THE COE
   275.10      8.34  1287.34  1287.34  1286.84  1289.06     1.71     0.00     0.00  1286.50
   10600.     1157.     9176.      267.      259.      822.      79.       0.       0.  1286.40
     0.00      4.47     11.17      3.40     0.045     0.035    0.045    0.000  1279.00  9800.00
 0.007597        0.        0.        0.         0         4        0     0.00   350.00 10150.00
0
FLOW DISTRIBUTION FOR SECNO=    275.10          CWSEL=   1287.34

STA=    9800.    9910.    9935.   10090.   10100.   10150.
  PER Q=     10.1      0.8     86.6      0.3      2.2
   AREA=    231.2     27.3    821.7     11.4     67.1
    VEL=      4.6      3.1     11.2      3.1      3.4

*SECNO 280.400
3280 CROSS SECTION    280.40 EXTENDED      0.18 FEET
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3301 HV CHANGED MORE THAN HVINS

3470 ENCROACHMENT STATIONS=    9880.0   10425.0  TYPE=     1  TARGET=   -9880.000

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1287.30 ELREA=     1291.00

   280.40      9.07  1290.67  1288.42  1289.66  1291.38     0.71     2.22     0.10  1287.30
   10500.       48.   10452.       0.      18.    1540.       0.      17.       4.   1291.00
     0.02      2.73     6.79     0.00    0.045    0.035    0.000    0.000  1281.60  9880.00
 0.002651      520.     530.     540.        2       15        0     0.00   285.69 10165.68
0
1
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   SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
   Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
   TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
   SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

FLOW DISTRIBUTION FOR SECNO=    280.40          CWSEL=   1290.67

STA=    9880.    9885.   10170.
  PER Q=       0.5      99.5
   AREA=      17.7    1539.7
    VEL=       2.7       6.8

*SECNO 285.700

3455 OVERBANK AREA ASSUMED NON-EFFECTIVE,ELLEA=     1290.00 ELREA=     1293.20

   285.70      5.98  1292.68  1291.69  1292.22  1293.55     0.86     2.12     0.05  1290.00
   10500.    3632.    6868.       0.     562.     866.       0.      35.       8.   1293.20
     0.04      6.46     7.93     0.00    0.045    0.035    0.000    0.000  1286.70  9705.46
 0.006704      530.     530.     530.        2       11        0     0.00   424.96 10130.42
0
FLOW DISTRIBUTION FOR SECNO=    285.70          CWSEL=   1292.68

STA=    9705.    9750.    9790.    9800.    9865.    9880.   10170.
  PER Q=       1.9       5.3       2.2      21.9       3.4      65.4
   AREA=      59.5     106.9      36.7     303.7      55.1     865.6
    VEL=       3.3       5.2       6.4       7.6       6.4       7.9

*SECNO 291.100

3265 DIVIDED FLOW

   291.10      6.09  1296.09  1295.41  1296.24  1297.20     1.11     3.58     0.07  1296.00
   10400.        0.   10392.       8.       1.    1228.      14.      51.      14.   1296.00
     0.06      0.35     8.46     0.54    0.045    0.035    0.045    0.000  1290.00  9695.89
 0.006674      540.     535.     540.        2        9        0     0.00   509.02 10282.98
0
FLOW DISTRIBUTION FOR SECNO=    291.10          CWSEL=   1296.09

STA=    9696.    9720.   10040.   10270.   10283.
  PER Q=       0.0      99.9       0.1       0.0
   AREA=       1.1    1227.7      13.5       0.6
```

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     VEL=       0.3       8.5       0.5       0.3

 CCHV=   0.100 CEHV=   0.300
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 *SECNO 291.800

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.70

 3470 ENCROACHMENT STATIONS=    9832.0   10134.2  TYPE=     1  TARGET=     325.000
            51ST AVENUE - BEGIN PROPOSED CHANNELIZATION BY ROADRUNNER
            HOMES DEVELOPMENT
    291.80      9.08  1296.78  1294.67  1296.82  1297.48      0.70      0.23      0.04  1297.70
    10400.        0.   10400.        0.        0.    1547.       0.       53.       15. 100000.00
      0.06      0.00      6.72      0.00     0.000     0.015     0.000     0.000  1287.70  9836.00
  0.002003       70.       70.       70.         2        20         0    -73.56   292.18 10128.18
0
 FLOW DISTRIBUTION FOR SECNO=    291.80          CWSEL=   1296.78

 STA=    9836.   10134.
   PER Q=    100.0
    AREA=   1547.0
     VEL=      6.7

 *SECNO 293.000

 3370 NORMAL BRIDGE,NRD= 20 MIN ELTRD= 1291.50 MAX ELLC= 1297.80

 3470 ENCROACHMENT STATIONS=    9832.0   10157.0  TYPE=     1  TARGET=     325.000
    293.00      9.19  1296.99  1294.81  1297.03  1297.73      0.74      0.24      0.01  1297.80
    10400.        0.   10400.        0.        0.    1504.       0.       58.       15.   1297.80
      0.07      0.00      6.91      0.00     0.000     0.015     0.000     0.000  1287.80  9835.28
  0.002007      120.      120.      120.         3        20         0    -32.98   272.85 10108.13
0
 FLOW DISTRIBUTION FOR SECNO=    293.00          CWSEL=   1296.99

 STA=    9835.   10113.
   PER Q=    100.0
    AREA=   1504.2
     VEL=      6.9

 CCHV=   0.100 CEHV=   0.300
 *SECNO 293.400
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
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```
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST


 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    293.40      9.75  1297.55  1291.72  1297.58  1297.81     0.26      0.03      0.05  1297.80
    10400.        0.   10400.       0.       0.    2527.       0.       59.       16. 100000.00
      0.07      0.00     4.12     0.00    0.000    0.030    0.000    0.000  1287.80  9855.75
  0.000388       40.      40.      40.        2       14        0     0.00   288.49 10144.24
0
 FLOW DISTRIBUTION FOR SECNO=    293.40          CWSEL=   1297.55

 STA=    9856.   10145.
   PER Q=    100.0
    AREA=   2527.1
     VEL=      4.1

 *SECNO 294.000

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    294.00      9.67  1297.57  1291.81  1297.60  1297.83     0.27      0.02      0.00  1297.90
    10400.        0.   10400.       0.       0.    2504.       0.       63.       16. 100000.00
      0.07      0.00     4.15     0.00    0.000    0.030    0.000    0.000  1287.90  9856.00
  0.000399       60.      60.      60.        2       18        0     0.00   288.00 10144.00
0
 FLOW DISTRIBUTION FOR SECNO=    294.00          CWSEL=   1297.57

 STA=    9856.   10145.
   PER Q=    100.0
    AREA=   2503.7
     VEL=      4.2

 *SECNO 296.300
 3710 WSEL ASSUMED BASED ON MIN DIFF

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    296.30      9.58  1297.68  1292.01  1297.71  1297.95     0.27      0.12      0.00  1298.20
    10400.        0.   10400.       0.       0.    2476.       0.       79.       18. 100000.00
      0.09      0.00     4.20     0.00    0.000    0.030    0.000    0.000  1288.10  9856.54
  0.000412      290.     290.     290.        0       18        0     0.00   286.91 10143.46
0
 FLOW DISTRIBUTION FOR SECNO=    296.30          CWSEL=   1297.68

 STA=    9857.   10145.
   PER Q=    100.0
    AREA=   2476.2
     VEL=      4.2

1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


 *SECNO 301.600
 3710 WSEL ASSUMED BASED ON MIN DIFF
```

```
 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    301.60      9.29  1297.89  1292.52  1297.92  1298.20      0.31      0.23      0.01  1301.20
    10400.        0.   10400.       0.       0.    2343.       0.      109.       21. 100000.00
      0.13      0.00      4.44     0.00    0.000    0.030    0.000     0.000  1288.60  9862.87
  0.000468      530.      530.     530.        0       18        0      0.00   274.26 10137.13
0
 FLOW DISTRIBUTION FOR SECNO=    301.60          CWSEL=   1297.89

 STA=    9863.   10145.
   PER Q=    100.0
    AREA=   2343.5
     VEL=      4.4

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.200

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.20      9.14  1298.04  1292.83  1298.06  1298.36      0.32      0.16      0.00  1301.50
    10400.        0.   10400.       0.       0.    2301.       0.      123.       23. 100000.00
      0.14      0.00      4.52     0.00    0.000    0.038    0.000     0.000  1288.90  9863.23
  0.000794      265.      265.     265.        2       14        0      0.00   273.53 10136.76
0
 FLOW DISTRIBUTION FOR SECNO=    304.20          CWSEL=   1298.04

 STA=    9863.   10145.
   PER Q=    100.0
    AREA=   2301.4
     VEL=      4.5

 CCHV=   0.100 CEHV=   0.300
 *SECNO 304.500

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.50      9.12  1298.05  1292.85  1298.07  1298.37      0.32      0.01      0.00  1301.53
    10400.        0.   10400.       0.       0.    2297.       0.      124.       23. 100000.00
      0.14      0.00      4.53     0.00    0.000    0.015    0.000     0.000  1288.93  9863.28
  0.000125       30.       30.      30.        1       14        0      0.00   273.45 10136.72
0
1
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    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 FLOW DISTRIBUTION FOR SECNO=    304.50          CWSEL=   1298.05

 STA=    9863.   10145.
   PER Q=    100.0
    AREA=   2296.7
     VEL=      4.5

 *SECNO 304.750

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=      1  TARGET=      290.000
    304.75      9.05  1298.05  1292.93  1298.07  1298.37      0.32      0.00      0.00  1301.60
```

```
    10400.        0.   10400.        0.        0.     2277.        0.      126.       23. 100000.00
      0.15      0.00      4.57      0.00     0.000     0.015     0.000     0.000  1289.00   9863.45
  0.000128       25.       25.       25.         1        14         0      0.00   273.11  10136.55
0
 FLOW DISTRIBUTION FOR SECNO=    304.75          CWSEL=   1298.05

 STA=    9863.   10145.
   PER Q=    100.0
    AREA=   2277.3
     VEL=      4.6

 *SECNO 304.760

 3301 HV CHANGED MORE THAN HVINS

 3710 WSEL ASSUMED BASED ON MIN DIFF
 7185 MINIMUM SPECIFIC ENERGY

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
    304.76      3.86  1299.86  1299.86  1299.86  1301.65     1.79      0.00      0.44  1301.60
    10400.        0.   10400.        0.        0.      968.        0.      126.       23. 100000.00
      0.15      0.00     10.74      0.00     0.000     0.015     0.000     0.000  1296.00   9864.31
  0.002166        1.        1.        1.         0        14         0      0.00   271.37  10135.68
0
 FLOW DISTRIBUTION FOR SECNO=    304.76          CWSEL=   1299.86

 STA=    9864.   10145.
   PER Q=    100.0
    AREA=    967.9
     VEL=     10.7

1
 MON, MAR 17 1986  10:22:32                                                                    PAGE   20

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST

 CCHV=   0.100 CEHV=   0.300
 *SECNO 305.100
 3710 WSEL ASSUMED BASED ON MIN DIFF
 7185 MINIMUM SPECIFIC ENERGY

 3470 ENCROACHMENT STATIONS=    9855.0   10145.0  TYPE=     1  TARGET=     290.000
    305.10      3.91  1300.11  1300.11  1300.11  1301.97     1.86      0.15      0.02  1305.30
    10400.        0.   10400.        0.        0.      950.        0.      127.       24. 100000.00
      0.15      0.00     10.95      0.00     0.000     0.038     0.000     0.000  1296.20   9872.11
  0.013710       34.       34.       34.         0         5         0      0.00   255.79  10127.89
0
 FLOW DISTRIBUTION FOR SECNO=    305.10          CWSEL=   1300.11

 STA=    9872.   10145.
   PER Q=    100.0
    AREA=    949.9
     VEL=     10.9

 CCHV=   0.100 CEHV=   0.300
```

```
*SECNO 305.700

3301 HV CHANGED MORE THAN HVINS


3470 ENCROACHMENT STATIONS=    9852.0   10148.0  TYPE=     1  TARGET=     296.000
            BEGIN TRANSITION TO EXISTING OVERLAND HILLS CHANNEL
   305.70      5.14  1301.41  1300.10  1301.41  1302.41     1.00     0.35     0.09  1305.30
   10400.        0.   10400.       0.       0.    1298.       0.     128.      24. 100000.00
     0.15      0.00     8.01     0.00    0.000    0.030    0.000    0.000  1296.27  9865.13
 0.003246       60.      60.      60.        3        5        0     0.00   269.74 10134.87
0
 FLOW DISTRIBUTION FOR SECNO=    305.70          CWSEL=   1301.41

 STA=    9865.   10148.
   PER Q=    100.0
    AREA=   1297.8
     VEL=      8.0

 CCHV=   0.100 CEHV=   0.300
 *SECNO 306.550
            BEGINNING CROSS SECTION OF RECENT OVERLAND HILLS CHANNELIZATION
1
 MON, MAR 17 1986  10:22:32                                                                                    PAGE   21


    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS    BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA    LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN       SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID      ENDST


    306.55      5.45  1301.83  1300.18  1301.83  1302.67     0.84     0.24     0.02  1305.40
    10400.        0.   10400.       0.       0.    1410.       0.     131.      24.   1305.40
     0.15      0.00     7.38     0.00    0.000    0.030    0.000    0.000  1296.38  9861.27
 0.002557       85.      85.      85.        2       15        0     0.00   277.46 10138.73
0
 FLOW DISTRIBUTION FOR SECNO=    306.55          CWSEL=   1301.83

 STA=    9861.   10151.
   PER Q=    100.0
    AREA=   1410.0
     VEL=      7.4

 *SECNO 306.900
    306.90      5.54  1301.94  1300.19  1301.94  1302.76     0.82     0.09     0.00  1305.42
    10400.        0.   10400.       0.       0.    1433.       0.     132.      25.   1305.42
     0.15      0.00     7.26     0.00    0.000    0.030    0.000    0.000  1296.40  9860.98
 0.002428       35.      35.      35.        1       19        0     0.00   278.03 10139.02
0
 FLOW DISTRIBUTION FOR SECNO=    306.90          CWSEL=   1301.94

 STA=    9861.   10151.
   PER Q=    100.0
    AREA=   1433.2
     VEL=      7.3

 *SECNO 308.050
    308.05      5.81  1302.29  1300.27  1302.29  1303.02     0.74     0.26     0.01  1305.50
    10400.        0.   10400.       0.       0.    1510.       0.     136.      25.   1305.50
```

```
      0.16      0.00      6.89      0.00     0.000     0.030     0.000     0.000  1296.48   9860.04
  0.002060      115.      115.      115.         2        14         0      0.00   279.92 10139.96
0
 FLOW DISTRIBUTION FOR SECNO=    308.05          CWSEL=   1302.29

 STA=    9860.   10151.
   PER Q=    100.0
    AREA=   1510.0
     VEL=      6.9

 *SECNO 310.550
 3710 WSEL ASSUMED BASED ON MIN DIFF
1
 MON, MAR 17 1986  10:22:32                                                                          PAGE   22

    SECNO     DEPTH     CWSEL     CRIWS     WSELK     EG        HV        HL        OLOSS   BANK ELEV
    Q         QLOB      QCH       QROB      ALOB      ACH       AROB      VOL       TWA   LEFT/RIGHT
    TIME      VLOB      VCH       VROB      XNL       XNCH      XNR       WTN       ELMIN      SSTA
    SLOPE     XLOBL     XLCH      XLOBR     ITRIAL    IDC       ICONT     CORAR     TOPWID     ENDST

    310.55      6.11  1302.84  1300.52  1302.84  1303.50      0.66      0.47      0.01  1305.75
    10400.        0.   10400.        0.        0.    1597.        0.     145.       27.   1305.75
      0.17      0.00      6.51      0.00     0.000     0.030     0.000     0.000  1296.73   9858.97
  0.001726      250.      250.      250.         0        14         0      0.00   282.06 10141.03
0
 FLOW DISTRIBUTION FOR SECNO=    310.55          CWSEL=   1302.84

 STA=    9859.   10151.
   PER Q=    100.0
    AREA=   1597.2
     VEL=      6.5

1
 MON, MAR 17 1986  10:22:32                                                                          PAGE   23


                                                                    THIS RUN EXECUTED MON, MAR 17 1986  10:23:22
 ************************************************
   HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
   ERROR CORR -  01,02,03,04,05,06
   MODIFICATION -  50,51,52,53,54,55,56
 ************************************************

 NOTE- ASTERISK (*) AT LEFT OF CROSS-SECTION NUMBER INDICATES MESSAGE IN SUMMARY OF ERRORS LIST

 TOPO MAPS USED  11/20/81

 SUMMARY PRINTOUT

       SECNO       Q         CWSEL      DEPTH    TOPWID     10K*S      EG       K*XNCH      VCH      ELMIN      XLCH      TELMX

 *    275.100  10600.00   1286.84       7.84    840.73     63.94   1287.88     35.00      9.59   1279.00       0.00   1290.00
 *    275.100  10600.00   1287.34       8.34    350.00     75.97   1289.06     35.00     11.17   1279.00       0.00   1290.00
```

	280.400	10500.00	1289.66	8.06	370.77	35.75	1290.38	35.00	7.13	1281.60	530.00	1290.50
	280.400	10500.00	1290.67	9.07	285.69	26.51	1291.38	35.00	6.79	1281.60	530.00	1290.50
	285.700	10500.00	1292.22	5.52	383.17	90.95	1293.38	35.00	9.33	1286.70	530.00	1294.00
	285.700	10500.00	1292.68	5.98	424.96	67.04	1293.55	35.00	7.93	1286.70	530.00	1294.00
	291.100	10400.00	1296.24	6.24	586.17	58.55	1297.26	35.00	8.13	1290.00	535.00	1300.00
	291.100	10400.00	1296.09	6.09	509.02	66.74	1297.20	35.00	8.46	1290.00	535.00	1300.00
	291.800	10400.00	1296.82	9.12	292.66	19.52	1297.51	15.00	6.67	1287.70	70.00	1297.70
	291.800	10400.00	1296.78	9.08	292.18	20.03	1297.48	15.00	6.72	1287.70	70.00	1297.70
	293.000	10400.00	1297.03	9.23	273.25	19.63	1297.76	15.00	6.87	1287.80	120.00	1297.80
	293.000	10400.00	1296.99	9.19	272.85	20.07	1297.73	15.00	6.91	1287.80	120.00	1297.80
	293.400	10400.00	1297.58	9.78	288.66	3.84	1297.84	30.00	4.10	1287.80	40.00	1297.80
	293.400	10400.00	1297.55	9.75	288.49	3.88	1297.81	30.00	4.12	1287.80	40.00	1297.80
	294.000	10400.00	1297.60	9.70	288.17	3.95	1297.86	30.00	4.14	1287.90	60.00	1297.90
	294.000	10400.00	1297.57	9.67	288.00	3.99	1297.83	30.00	4.15	1287.90	60.00	1297.90
*	296.300	10400.00	1297.71	9.61	287.08	4.08	1297.98	30.00	4.19	1288.10	290.00	1298.20
*	296.300	10400.00	1297.68	9.58	286.91	4.12	1297.95	30.00	4.20	1288.10	290.00	1298.20
*	301.600	10400.00	1297.92	9.32	274.38	4.63	1298.22	30.00	4.42	1288.60	530.00	1301.20
*	301.600	10400.00	1297.89	9.29	274.26	4.68	1298.20	30.00	4.44	1288.60	530.00	1301.20
	304.200	10400.00	1298.06	9.17	273.64	7.87	1298.38	38.00	4.51	1288.90	265.00	1301.50
	304.200	10400.00	1298.04	9.14	273.53	7.94	1298.36	38.00	4.52	1288.90	265.00	1301.50

1
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	SECNO	Q	CWSEL	DEPTH	TOPWID	10K*S	EG	K*XNCH	VCH	ELMIN	XLCH	TELMX
	304.500	10400.00	1298.07	9.14	273.56	1.23	1298.39	15.00	4.52	1288.93	30.00	1301.60
	304.500	10400.00	1298.05	9.12	273.45	1.25	1298.37	15.00	4.53	1288.93	30.00	1301.60
	304.750	10400.00	1298.07	9.07	273.22	1.27	1298.39	15.00	4.55	1289.00	25.00	1301.60
	304.750	10400.00	1298.05	9.05	273.11	1.28	1298.37	15.00	4.57	1289.00	25.00	1301.60
*	304.760	10400.00	1299.86	3.86	271.39	21.62	1301.65	15.00	10.74	1296.00	1.00	1301.60
*	304.760	10400.00	1299.86	3.86	271.37	21.66	1301.65	15.00	10.74	1296.00	1.00	1301.60
*	305.100	10400.00	1300.11	3.91	255.78	137.28	1301.97	38.00	10.95	1296.20	34.00	1305.30
*	305.100	10400.00	1300.11	3.91	255.79	137.10	1301.97	38.00	10.95	1296.20	34.00	1305.30
	305.700	10400.00	1301.41	5.14	269.74	32.45	1302.41	30.00	8.01	1296.27	60.00	1302.90
	305.700	10400.00	1301.41	5.14	269.74	32.46	1302.41	30.00	8.01	1296.27	60.00	1302.90
	306.550	10400.00	1301.83	5.45	277.46	25.56	1302.67	30.00	7.38	1296.38	85.00	1305.40
	306.550	10400.00	1301.82	5.45	277.46	25.57	1302.67	30.00	7.38	1296.38	85.00	1305.40
	306.900	10400.00	1301.94	5.54	278.04	24.27	1302.76	30.00	7.26	1296.40	35.00	1305.42
	306.900	10400.00	1301.94	5.54	278.03	24.28	1302.76	30.00	7.26	1296.40	35.00	1305.42
	308.050	10400.00	1302.29	5.81	279.93	20.59	1303.02	30.00	6.89	1296.48	115.00	1305.50
	308.050	10400.00	1302.29	5.81	279.92	20.60	1303.02	30.00	6.89	1296.48	115.00	1305.50

```
*    310.550  10400.00   1302.84      6.11     282.06     17.26   1303.50     30.00      6.51   1296.73    250.00   1305.75
*    310.550  10400.00   1302.84      6.11     282.06     17.26   1303.50     30.00      6.51   1296.73    250.00   1305.75
```


SUMMARY OF ERRORS AND SPECIAL NOTES

```
CAUTION  SECNO=   275.100  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   275.100  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   296.300  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   296.300  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   301.600  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   301.600  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF

CAUTION  SECNO=   304.760  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   304.760  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   304.760  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   304.760  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   305.100  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   305.100  PROFILE= 1  MINIMUM SPECIFIC ENERGY
CAUTION  SECNO=   305.100  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   305.100  PROFILE= 2  MINIMUM SPECIFIC ENERGY

CAUTION  SECNO=   310.550  PROFILE= 1  WSEL ASSUMED BASED ON MIN DIFF
CAUTION  SECNO=   310.550  PROFILE= 2  WSEL ASSUMED BASED ON MIN DIFF
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FLOODWAY DATA, TOPO MAPS USED 11/20/81
PROFILE NO. 2

STATION	FLOODWAY WIDTH	FLOODWAY SECTION AREA	FLOODWAY MEAN VELOCITY	WATER SURFACE ELEVATION WITH FLOODWAY	WITHOUT FLOODWAY	DIFFERENCE
275.100	350.	1159.	9.1	1287.3	1286.8	0.5
280.400	286.	1557.	6.7	1290.7	1289.7	1.0
285.700	425.	1428.	7.4	1292.7	1292.2	0.5
291.100	587.	1243.	8.4	1296.2	1296.2	0.0
291.800	292.	1547.	6.7	1296.8	1296.8	0.0
293.000	273.	1504.	6.9	1297.0	1297.0	0.0
293.400	288.	2527.	4.1	1297.6	1297.6	0.0
294.000	288.	2504.	4.2	1297.6	1297.6	0.0
296.300	287.	2476.	4.2	1297.7	1297.7	0.0
301.600	274.	2343.	4.4	1297.9	1297.9	0.0
304.200	274.	2301.	4.5	1298.1	1298.1	0.0

304.500	273.	2297.	4.5	1298.1	1298.1	0.0
304.750	273.	2277.	4.6	1298.1	1298.1	0.0
304.760	271.	968.	10.7	1299.9	1299.9	0.0
305.100	256.	950.	10.9	1300.1	1300.1	0.0
305.700	270.	1298.	8.0	1301.4	1301.4	0.0
306.550	277.	1410.	7.4	1301.8	1301.8	0.0
306.900	278.	1433.	7.3	1301.9	1301.9	0.0
308.050	280.	1510.	6.9	1302.3	1302.3	0.0
310.550	282.	1597.	6.5	1302.8	1302.8	0.0

1
MON, MAR 17 1986 10:23:26 PAGE 1

THIS RUN EXECUTED MON, MAR 17 1986 10:23:26

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**************************************************
  HEC2 RELEASE DATED NOV 76 UPDATED MAY  1984
  ERROR CORR -  01,02,03,04,05,06
  MODIFICATION -  50,51,52,53,54,55,56
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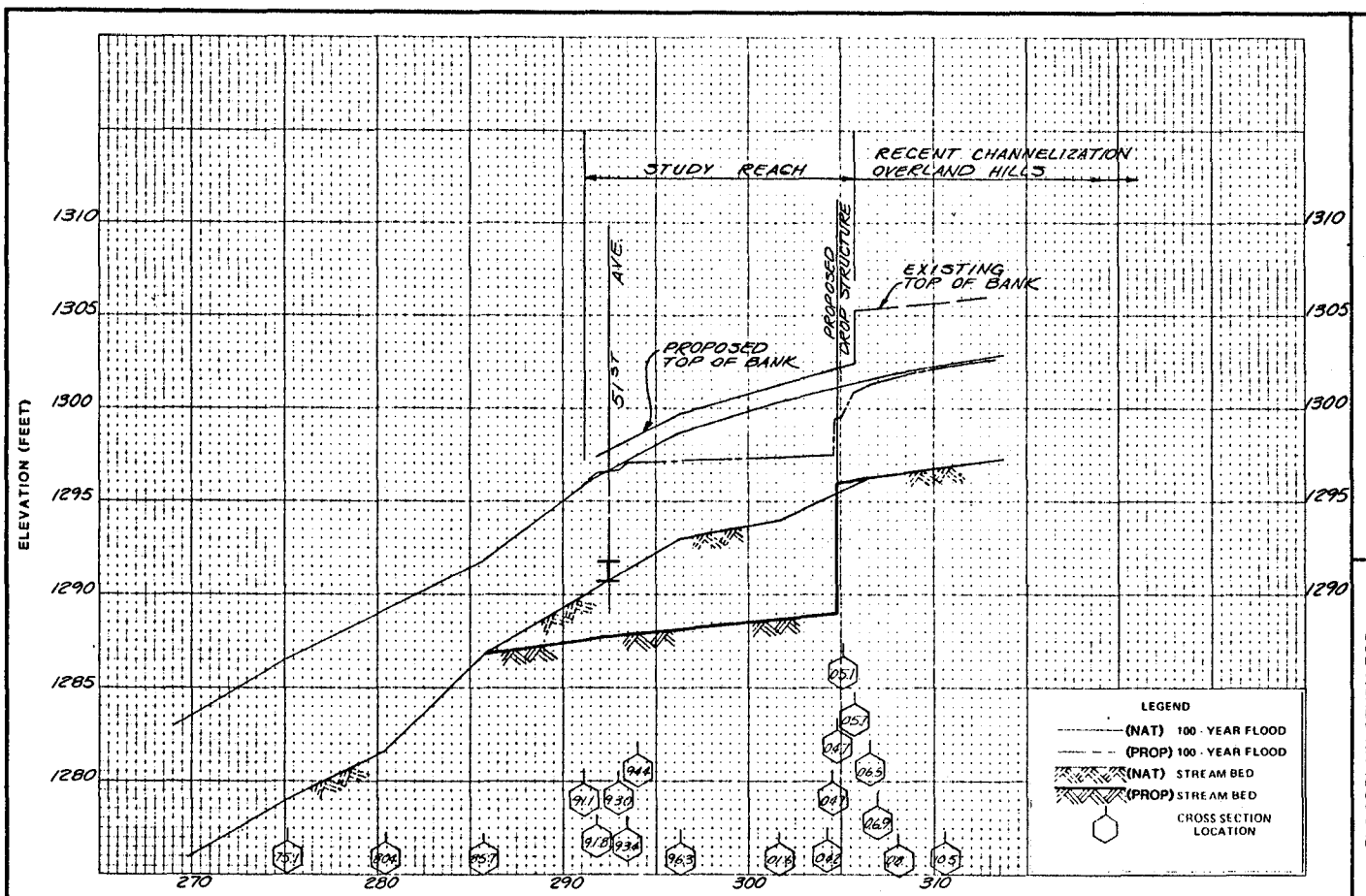
E X H I B I T S

Job #1053-15
CVL #4/20/24

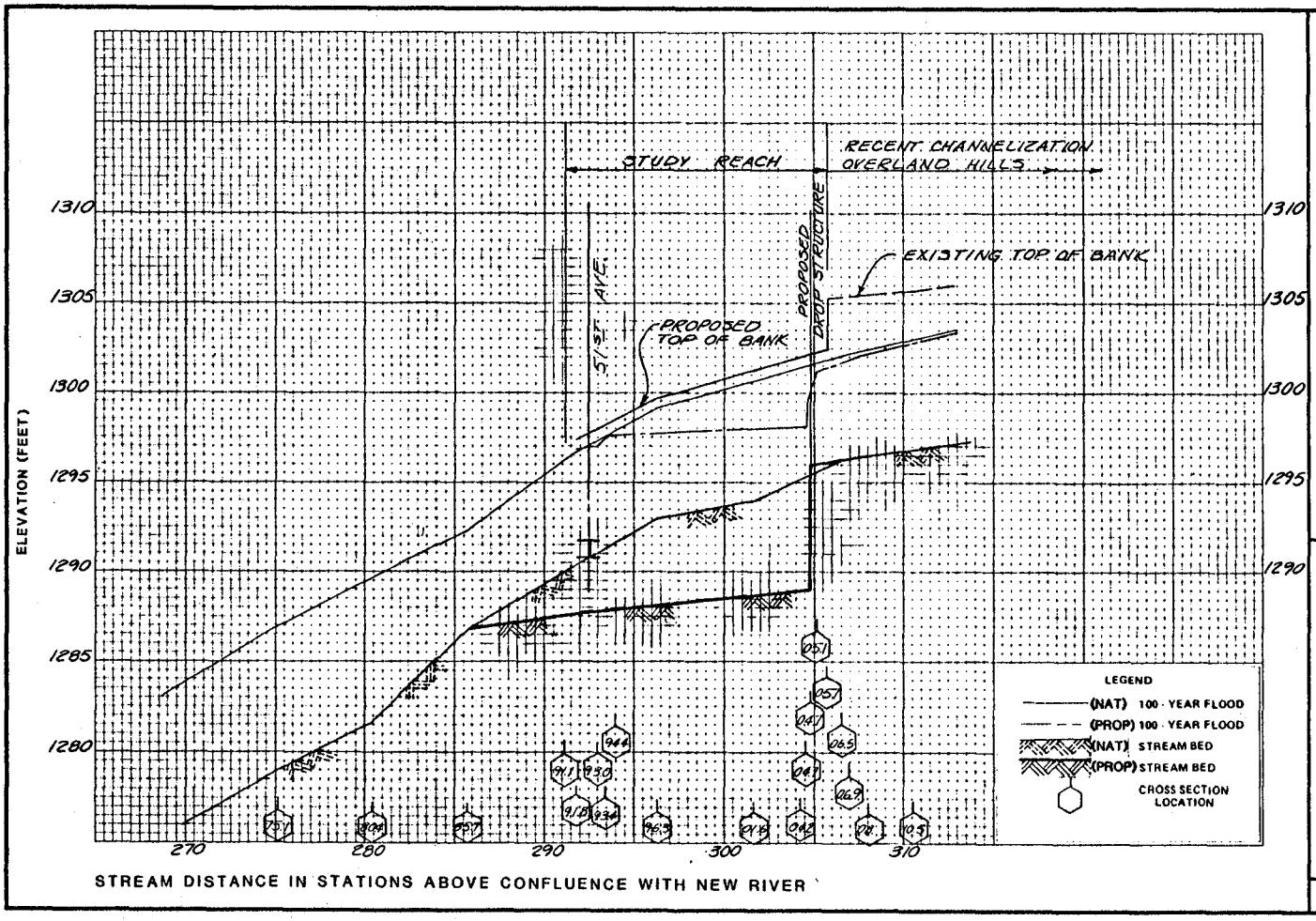


FLOOD PROFILES

SKUNK CREEK

FLOODPLAIN STUDY FOR CHANNELIZATION OF SKUNK CREEK PRESENT 100 YEAR FLOOD

EXH. 1a



FLOOD PROFILES

SKUNK CREEK

FLOODPLAIN STUDY FOR
CHANNELIZATION OF SKUNK CREEK
FUTURE 100 YEAR FLOOD

EXH. 1b

City of Phoenix
Engineering Department

RECEIVED
MAY 27 1986
COE & VAN LOO
Phoenix, AZ

FLD 0616

May 21, 1986

COE & VAN LOO CONSULTING ENGINEERS, INC.
Attention: Mr. Ashok C. Patel, P.E.
4550 North 12th Street
Phoenix, AZ 85014

Dear Mr. Patel:

CASTLE CREEK LOCATED AT 51ST AVENUE &
SKUNK CREEK - FOLDER NO. 13326 -
SITE PLAN NO. P-86052.

The following comments address the Floodplain study for channelization of Skunk Creek, 51st Avenue to 48th Avenue reach, dated March 18, 1986.

The report submitted is in general conformance with the City of Phoenix requirements for channelization and improvement of Skunk Creek. Please forward additional copies of the report to the City of Phoenix, Floodplain Management, Attention: Paul Kienow, so that they can be submitted to FEMA for conditional approval and LOMA.

Final City approval for this proposed channelization is subject to submittal and approval of detailed construction plans for channel excavation, culverts, and drop structures. The entire Castle Creek Project is also subject to Site Plan Review in accordance with the provisions of Section 511 of the Zoning Ordinance.

Very truly yours,

J. E. ATTEBERY, P.E.
City Engineer

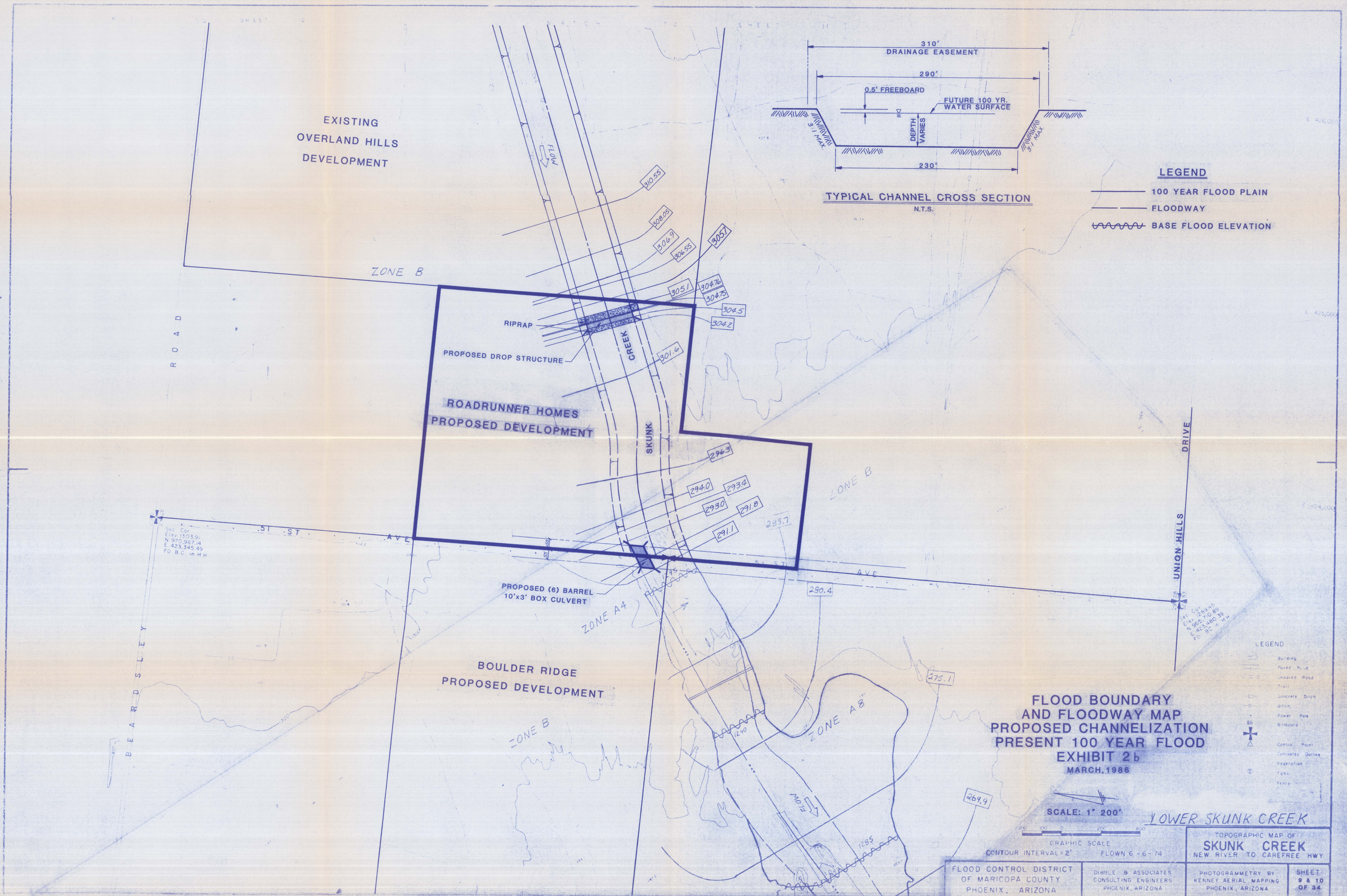
Peter A. Johnson

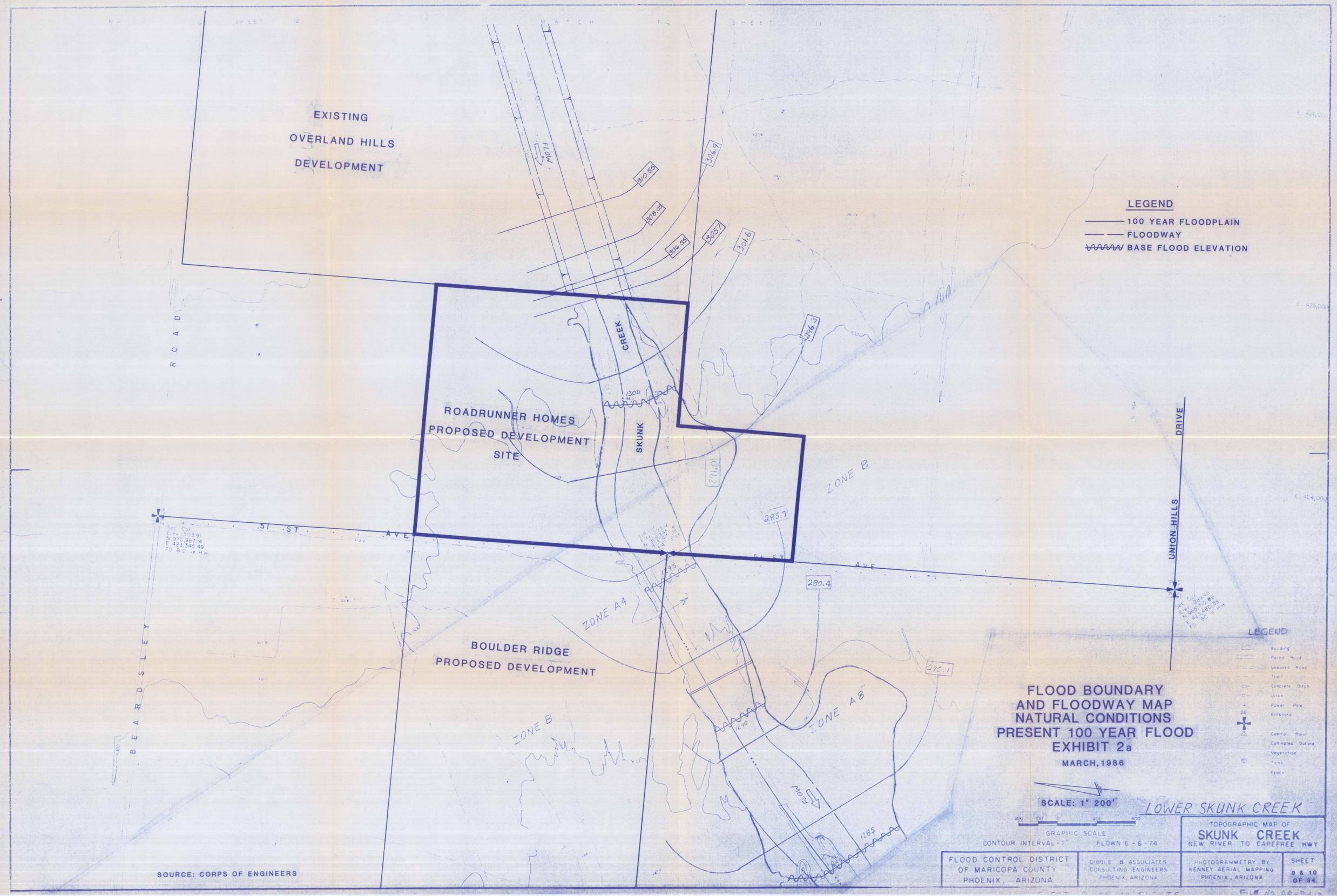
PETER A. JOHNSON, P.E.
Civil Engineer III

PAJ:gs

c: Mr. Baldwin
Mr. Lange
Mr. Kienow

125 East Washington Street, Phoenix, Arizona 85004-2342, Writer's Direct Phone: (602) 262-4979


EXISTING
OVERLAND HILLS
DEVELOPMENT
ZONE B
FLOW
310.55
308.05
306.9
306.55
305.7
305.1
304.76
304.75
304.5
304.2
RIPRAP
PROPOSED DROP STRUCTURE
301.6
ROADRUNNER HOMES
PROPOSED DEVELOPMENT
SKUNK
CREEK
296.3
294.0
293.4
293.0
291.8
291.1
285.7
ZONE B
51 ST AVE
290.4
PROPOSED (6) BARREL
10'x3' BOX CULVERT
ZONE A4
BOULDER RIDGE
PROPOSED DEVELOPMENT
ZONE B
ZONE A8
275.1
269.4
BEARDSLEY
ROAD
UNION HILLS
DRIVE
310'
DRAINAGE EASEMENT
290'
0.5' FREEBOARD
FUTURE 100 YR.
WATER SURFACE
DEPTH
VARIES
3:1 MAX.
3:1 MAX.
230'
TYPICAL CHANNEL CROSS SECTION
N.T.S.
LEGEND
100 YEAR FLOOD PLAIN
FLOODWAY
BASE FLOOD ELEVATION
FLOOD BOUNDARY
AND FLOODWAY MAP
PROPOSED CHANNELIZATION
PRESENT 100 YEAR FLOOD
EXHIBIT 2b
MARCH, 1986
SCALE: 1" 200'
GRAPHIC SCALE
CONTOUR INTERVAL = 2'
FLOWN 6-6-74
LOWER SKUNK CREEK
TOPOGRAPHIC MAP OF
SKUNK CREEK
NEW RIVER TO CAREFREE HWY
FLOOD CONTROL DISTRICT
OF MARICOPA COUNTY
PHOENIX, ARIZONA
DIBBLE & ASSOCIATES
CONSULTING ENGINEERS
PHOENIX, ARIZONA
PHOTOGRAMMETRY BY
KENNEY AERIAL MAPPING
PHOENIX, ARIZONA
SHEET
9 & 10
OF 34



FLOOD BOUNDARY
AND FLOODWAY MAP
NATURAL CONDITIONS
PRESENT 100 YEAR FLOOD
EXHIBIT 2a
MARCH, 1986